FED. RD. DIV. NO.			SHEET NO.
6	STP 2024(107)TAPS		1
STATE	STATE DIST.	COUNTY	
TEXAS	PAR	RED RIVER	
CONT.	SECT.	JOB	HIGHWAY NO.
0901	27	055	VAR

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
PEDESTRIAN IMPROVEMENT

FEDERAL AID PROJECT: STP 2024(107)TAPS

CSJ: 0901-27-055

RED RIVER COUNTY

ROADWAY = 2.32 MI
BRIDGE = 0 MI

LIMITS FROM: ON NETT NW OF CLARKSVILLE
TO: BU 82 J

CONSISTING OF: CONSTRUCT 10-FOOT-WIDE SHARED USE PATH ON FORMER RAILROAD ROW, INCLUDES BENCHES, BIKE RACKS, TRASH RECEPTACLES, BOLLARDS, SIGNAGE/PAVEMENT MARKINGS; IMPROVES A SECTION OF NETT AND PART OF FUTURE TX BYCYLE TOURISM TRAIL NETWORK

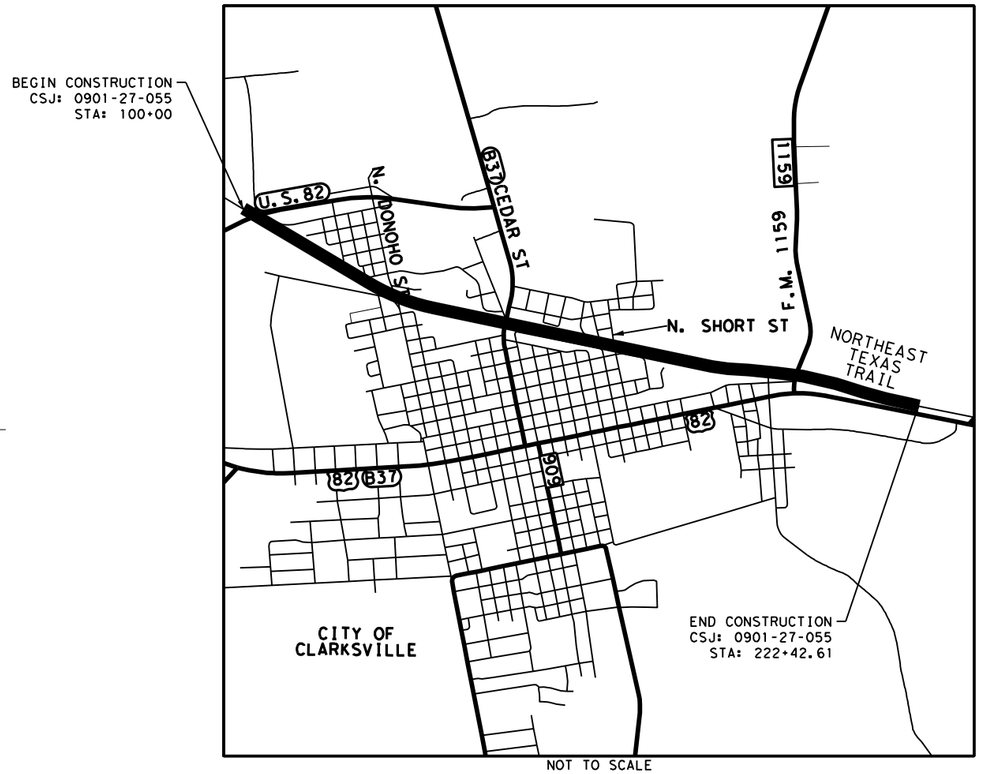
DESIGN SPEED = N/A
AREA OF DISTURBED SOIL = 1.06 AC
ADT: N/A
ACCESSIBILITY STANDARDS = PROWAG

INDEX OF SHEETS

SEE SHEET 2 FOR INDEX OF SHEETS

FINAL PLANS

LETTING DATE:
DATE CONTRACTOR BEGAN WORK:
DATE WORK WAS COMPLETED:
DATE WORK WAS ACCEPTED:
ORIGINAL CONTRACT WORKING DAYS:
USED OF WORKING DAYS
NO. OF CHANGE ORDERS:
FINAL CONTRACT COST:
PERCENT OVER/UNDER RUN:
CONTRACTOR:



NOT TO SCALE

EXCEPTIONS: NONE
EQUATIONS: NONE
R.R. CROSSINGS: N/A

REGISTERED ACCESSIBILITY SPECIALIST (RAS) INSPECTION REQUIRED. TDLR NO.: TABS2023025706

I CERTIFY THAT THIS PROJECT WAS BUILT IN ACCORDANCE WITH PLANS AND SPECIFICATIONS.

AREA ENGINEER DATE

APPROVAL

STATE OF TEXAS · JOHN A. TYLER · 105193 · LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. 8/1/2023
DATE

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION, NOVEMBER 1, 2014 AND SPECIFICATION ITEMS LISTED AND DATED AS FOLLOWS, SHALL GOVERN ON THIS PROJECT: REQUIRED CONTRACT PROVISIONS FOR ALL FEDERAL-AID CONSTRUCTION CONTRACTS (FORM FHWA 1273, October 23,2023

SUBMITTED FOR LETTING 8/11/2023
DocuSigned by: Daniel H. Taylor, P.E.
D3B5B88489E542B...
AREA ENGINEER

RECOMMENDED FOR LETTING 8/11/2023
DocuSigned by: Noel Paramanantham
AF7AF41AFE6049E...
DISTRICT ENGINEER

APPROVED FOR LETTING 8/10/2023
DocuSigned by:
18841028B1974EC...
DIRECTOR, TP&D DIRECTOR

T:\Engdata\Standards\Misc\TITLESHT.DGN

FILE LOCATION AND NAME

LEVELS DISPLAYED

COUNTY RD RVR PROJ. NO.
HWY. NO. VAR LETTING DATE
DATE ACCEPTED

GENERAL

TRAFFIC CONTROL

ROADWAY

TRAFFIC ITEMS

ENVIRONMENTAL ISSUES

[*] THE STANDARDS SHEETS SPECIFICALLY IDENTIFIED ON THIS SHEET HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

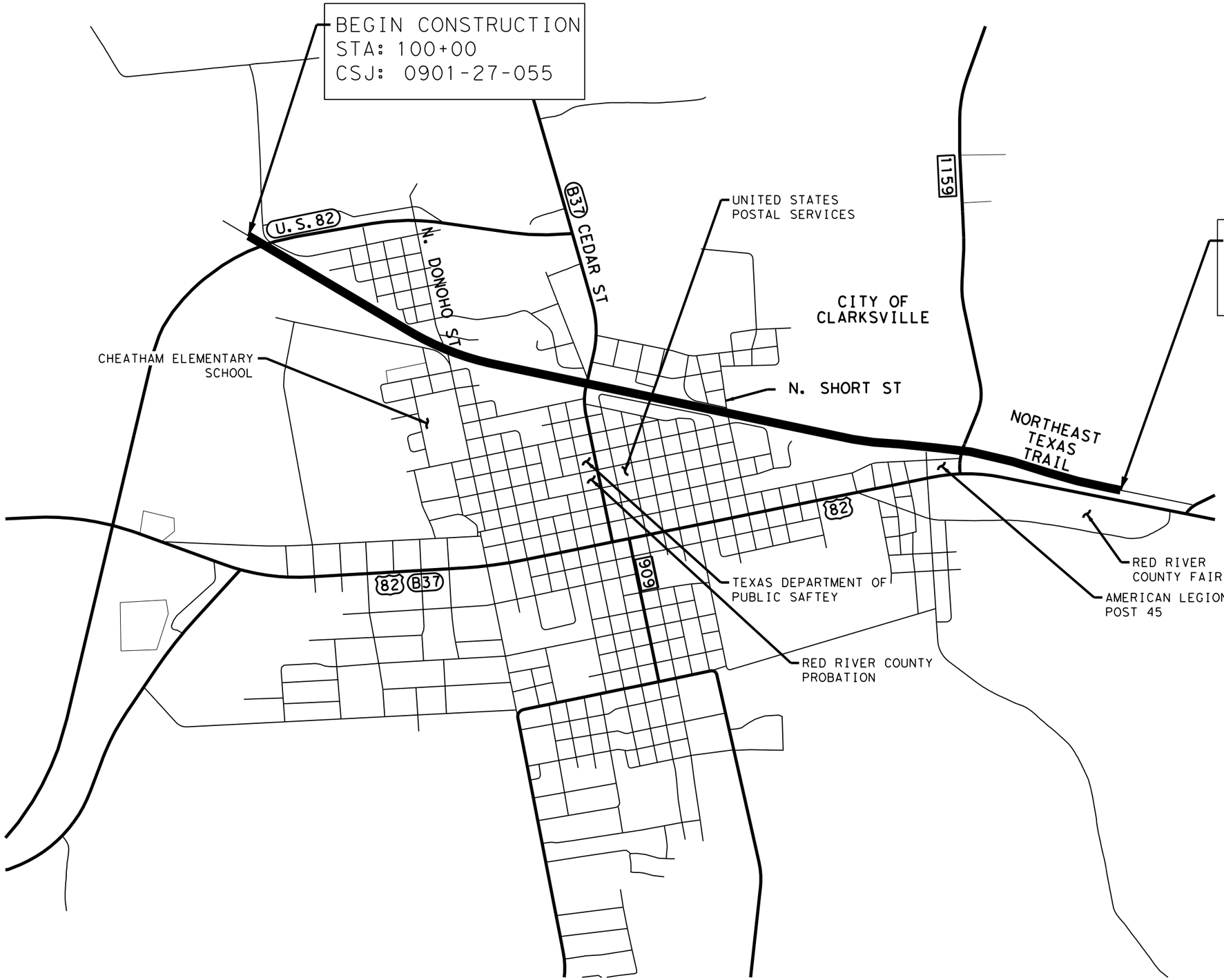
REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

INDEX OF SHEETS

SHEET 1 OF 1

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	2



NOT TO SCALE

DESIGN

STATE OF TEXAS
TYLER PAYNE DUBE
118612
LICENSED
PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS
JOHN A. TYLER
105193
LICENSED
PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

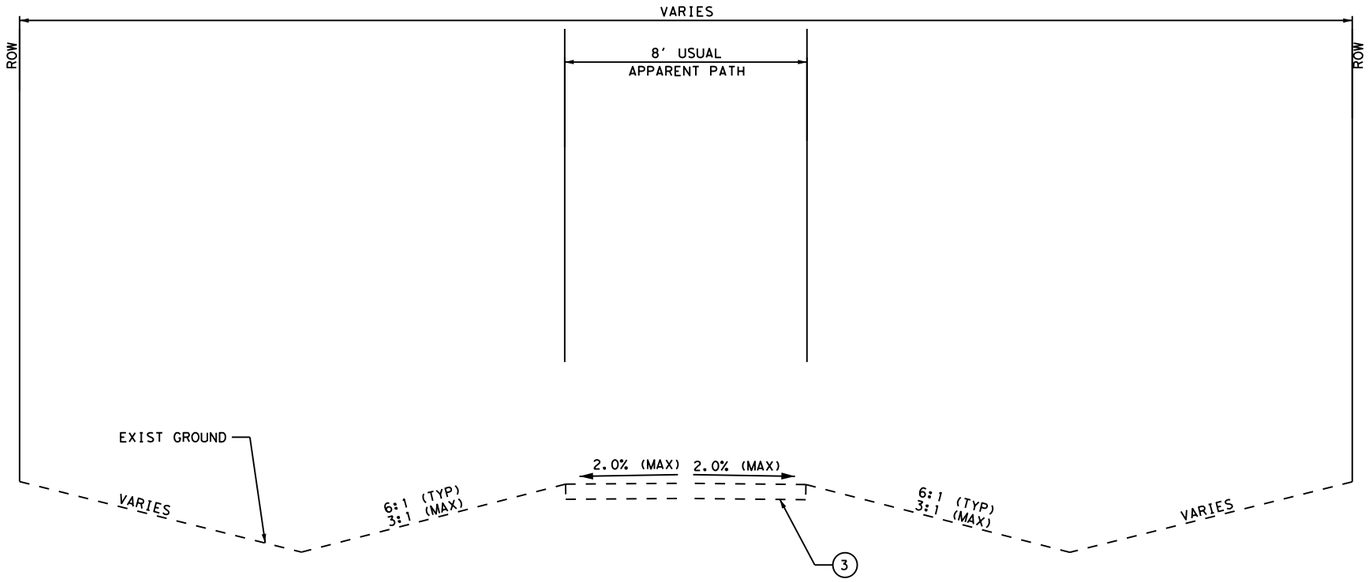
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

PROJECT LAYOUT

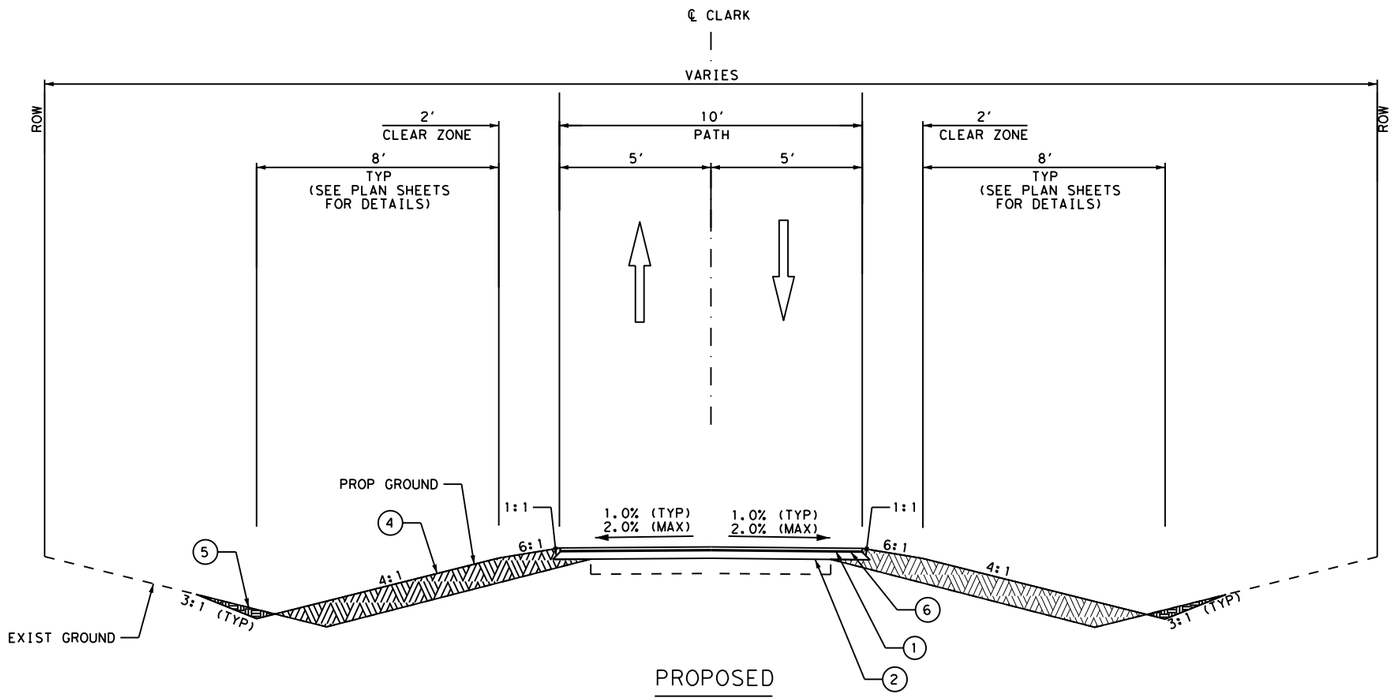
DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	3

Plotted on: 1/4/2024

Design Filename: S:\projects\612540\02\Design\02_Clarksville_ADA\Civil\General\612540202_PRJLAYOUT.dgn



EXISTING



PROPOSED

LEGEND

1. 2" D-GR HMA TY-D PG64-22
2. 6" FLEX BASE (CMP IN PLC)(TY A GR 4)
3. EXISTING CEMENT STABILIZED SUBGRADE
4. EMBANKMENT(FINAL)(ORD COMP(TY B)
5. EXCAVATION(ROADWAY)
6. ASPH (RC-250)

DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

NOT TO SCALE

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

TYPICAL SECTIONS

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	4

Plotted on: 1/4/2024

Design Filename: S:\projects\612\54\02\Design\02_Clarksville_ADA\Civil\General\612540202_typ.dgn

SUMMARY OF SMALL SIGNS

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

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	POST TYPE FRP = Fiberglass TWT = Thin-Wall 10BWG = 10 BWG S80 = Sch 80	POSTS 1 or 2	ANCHOR TYPE UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	MOUNTING DESIGNATION PREFABRICATED P = "Plain" T = "T" U = "U"	1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing Channel EXAL= Extruded Alum Sign Panels	BRIDGE MOUNT CLEARANCE SIGNS (See Note 2) TY = TYPE TY N TY S
2,3,5, 6	1	R5-3	NO MOTOR VEHICLES	24X24			10 BWG	1	SA	P		
2,3,5	2	W11-15		18X18			10 BWG	1	SA	P		
2,3,5	2	W16-7p		24X12			10 BWG	1	SA	P		
2,3,5	3	W11-15		18X18			10 BWG	1	SA	P		
2,3,5	3	W11-15P	TRAIL X-ING	18X12			10 BWG	1	SA	P		
2,3,5	3	W16-9p	AHEAD	24X12			10 BWG	1	SA	P		
4	4	W2-2R/W2-2L		18X18			10 BWG	1	SA	P		

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

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

http://www.txdot.gov/

NOTE:

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

DATE: 1/4/2024 7:45:55 AM
FILE: S:\Projects\6121\54\02\Design\02_Clarksville_ADA\Civil\Standards\Traffic\sums16.dgn

Texas Department of Transportation

Traffic Operations Division Standard

SUMMARY OF SMALL SIGNS

SOSS

FILE: sums16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT May 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS	0901	27	055	VAR
4-16 8-16	DIST	COUNTY		SHEET NO.
	PAR	RD RVR		5

GENERAL NOTES

Item	Description	Rate	Unit
0168-6001	Vegetative Watering	12	MG/AC/CYCLE
3076-6035	D-GR HMA TY-D SAC-A PG64-22	110	LBS/IN/SY

Note: Rates are for informational purposes only.

General:

Contractor questions on this project are to be addressed to the following individual(s):
Paris Area Office:
Daniel Taylor P.E. - Daniel.Taylor@txdot.gov
Zachary Smith P.E. - Zachary.Smith@txdot.gov

Contractor questions will be accepted through email, phone, and in person by the above individuals.

Questions may be submitted via the Letting Pre-Bid Q&A web page. This webpage can be accessed from the Notice to Contractors dashboard located at the following Address:
https://tableau.txdot.gov/views/ProjectInformationDashboard/NoticetoContractors

All contractor questions will be reviewed by the Engineer. All questions and any corresponding responses that are generated will be posted through the same Letting Pre-Bid Q&A web page.

The Letting Pre-Bid Q&A web page for each project can be accessed by using the dashboard to navigate to the project you are interested in by scrolling or filtering the dashboard using the controls on the left. Hover over the blue hyperlink for the project you want to view the Q&A for and click on the link in the window that pops up.

On Contractor request, earthwork cross sections and construction timelines will be posted to TxDOT's Public FTP at the following Address:
https://ftp.dot.state.tx.us/pub/txdot-info/Pre-Letting%20Responses/
The site is organized by District, Project Type (Construction or Maintenance), Letting Date, CCSJ/Project Name.

Dispose of waste materials at an approved site. Furnish written approval from the property owner before disposal of waste materials.

Locate equipment a minimum of 30 feet from roadway when possible. Place signs and barricades as approved.

Stockpile sites for construction materials must be approved. Give at least 48 hours notification prior to stockpiling material.

Item 5 Control of the Work:

The responsibility for the construction surveying on this contract will be in accordance with Section 5.9.3, Method C.

Working days will be computed and charged in accordance with Article 8.3.1.4 Standard Work Week.

Right and left are determined based upon the forward direction of stationing in the specific control section.

Per Item 5.11 FINAL CLEANUP, prior to requesting final inspection the Contractor shall leave the work locations in a neat and presentable condition. This may include but is not limited to mowing, trimming and removal litter, debris, objectionable material, temporary structures, excess materials, and equipment from the work locations.

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

Item 6 Control of Materials:

To comply with the latest provisions of Build America, Buy America Act (BABA Act) of the Bipartisan Infrastructure Law, the contractor must submit an original of the TxDOT Construction Material Buy America Certification Form for all items classified as construction materials. This form is not required for materials classified as a manufactured product.

Refer to the Buy America Material Classification Sheet for clarification on material categorization.

The Buy America Material Classification Sheet is located at the below link.
https://www.txdot.gov/business/resources/materials/buy-america-material-classification-sheet.html

Item 7 Legal Relations and Responsibilities:

No significant traffic generator events identified.

Item 8 Prosecution and Progress:

Before beginning work on this project submit in writing, for approval, a plan of construction operations outlining in detail a sequence of work to be followed.

Provide a Bar Chart progress schedule for this project.

This project includes SP 008-003 which allows up to a 90-day delay to begin work on the project to allow for Contractor Mobilization.

Item 9 Measurement and Payment:

Items of work for the Monthly Estimate will be cut off on the 25th of each month. Items of work performed after the 25th will be processed and paid on the following month's estimate. Material On Hand (MOH) will cut off on the 20th of each month. Special circumstances will be considered on a case-by-case basis.

Item 100 Preparing Right of Way:

Remove all trees 40 foot from centerline on both sides of roadway. At cross structures, remove trees to ROW line and within 100' of the structure, parallel to the roadway. Remove underbrush and neatly trim trees and overhanging branches to produce a 60' vertical clear area within the limits of Prep ROW. Remove any trees or underbrush that interferes with any construction operation, including relocation of ditches or other drainage elements. Receive approval of equipment used to trim limbs. A boom axe will not be allowed. Remove all trimmed debris from the ROW or mulch all debris and incorporate into the topsoil on State ROW to the satisfaction of the Engineer.

Item 110 Excavation:

Material below finished subgrade elevation suspected of containing sulfates will be tested in accordance with Tex-145-E by the Department. Treat subgrade material to the required depth and width in accordance with the Soil Sulfates Mitigation General Notes.

Before excavation operations the existing topsoil shall be salvaged in a manner to preserve the vigor of the existing Bermuda grass sod per Item 160.

Item 132 Embankment:

Test potential embankment sources using Tex-145-E to determine the presence and concentration of sulfates. Do not bring soil with greater than 3000 ppm sulfates into project.

Embankment sources containing sulfates that meet specification requirements may be used as fill material provided it is placed with at least one foot of separation from materials to be treated with lime, cement, or other calcium-based stabilizers. When soils are to be placed with less than one foot of separation from material to be treated with lime, cement, or other calcium-based stabilizers, process and treat such soils according to the Soil Sulfates Mitigation General Notes.

Excavation pits for project embankment made within 250 feet of State Right of Way must be approved.

Before embankment operations the existing topsoil shall be salvaged in a manner to preserve the vigor of the existing Bermuda grass sod per Item 160.

Item 164 Seeding for Erosion Control, 166 Fertilizer:

Apply fertilizer with a ratio of 3-1-2 (N-P-K) over the areas to be seeded. This work will not be paid for directly, but will be considered subsidiary.

Item 168 Vegetative Watering:

Use water trucks equipped with a sprinkler system adequate to permit coverage of the entire seeded area from the roadbed. This equipment must be available to perform watering throughout the duration of vegetative establishment.

Water all seeded areas the day seed is applied. Thereafter, maintain the seeded areas in a well-watered condition throughout the duration of vegetative establishment up to 60 watering cycles.

Item 247 Flexible Base:

Grading requirements

Tests to be in accordance with TxDOT Standard Test Methods

Soil Constants

Item Desc.	Linear Shrinkage	LL	Wet Ball	WBMV (incr. passing #40 sieve)
Item 247 Flex Base	6.0 max.	40 max.	40 max.	20% max.

PERCENT RETAINED ON SIEVE:

1-3/4"	7/8"	3/8"	No. 4	No. 40
0	10-35	30-50	45-65	70-85

Flexible Base will not contain more than 1% by weight of clay balls.

Place blue top hubs for alignment and elevations of new base at centerline and edge of pavement. Measure roadway profile smoothness prior to the cover prime or prime course application.

Item 302 Aggregates for Surface Treatments:

Grade 5 Modified Grading Requirements

CUMULATIVE PERCENT RETAINED ON SIEVE:

1/2"	3/8"	No. 4	No. 8	No. 200
0	0-5	30-80	85-100	95-100

The decantation requirement for Grade 5 Modified aggregate is 4% maximum.

The requirements for Flakiness Index, Magnesium Sulfate Soundness, and Los Angeles Abrasion are waived for the Grade 5 Modified aggregate.

Item 316 Surface Treatments:

Unless otherwise permitted by the Engineer in writing, the open season for asphalt placement will be:

May 15- August 31 for AC

Permission to place asphalt outside of the open season may require the contractor to place a fog seal at the contractor's expense.

***Rates For Construction Projects**

First Course

ITEM	APPLICATION	
	Cover Prime	1st Course
*Asphalt Type	RC-250	AC-20-5TR or AC-20XP
*Asph. Rate (Gal/SY)	0.28	0.46
Aggregate Type	B	B
Aggregate Grade	5 or Mod 5	3
Aggr. Rate (CY/SY)	1:140	1:105
Min. Cure Time	14 days **	

Second Course

ITEM	APPLICATION
	2nd Course
*Asphalt Type	AC-20-5TR or AC-20XP
*Asph. Rate (Gal/SY)	0.36
Aggregate Type	PB
Aggregate Grade	4
Aggr. Rate (CY/SY)	1:120

* The information above is intended to provide general guidance and as a basis of estimate. Based on the season and weather conditions at the time, the engineer will determine the asphalt type and rates to be used at the time of application.
** Or as approved by the Engineer

Item 420 Concrete Structures:

Do not use membrane curing for structural elements.

Item 450 Railing:

Provide railing with black powder coat finish. Contractor shall submit a shop drawing for review and approval prior to painting. This work is not paid for separately and considered subsidiary to Item 450.

Item 464 Reinforced Concrete Pipe:

Required excavation and backfill will be subsidiary to this Item.

Concrete pipe collars shall be subsidiary to this item.

Item 467 Safety End Treatment:

Parallel pipe culverts ~ 30" diameter and smaller require precast SET unless directed by the Engineer to use cast-in-place SETs when precast SETs would project over 3" above surrounding ground surface or when otherwise indicated in the plans. Additional work to install cast in place SETs will be subsidiary to this Item.

Cross pipe culverts ~ 30" diameter and smaller require precast SET unless indicated otherwise in the plans.

Repair damage culvert ends prior to SET installation. Straighten CMP ends by straightening or cutting off damaged ends. Paint cut off ends with zinc paint. Repair minor damaged RCP ends with epoxy mortar. This work will be subsidiary to this Item.

When necessary to close connection gaps, grout precast SETs to culvert ends. Materials, labor and equipment will be subsidiary to this item.

On existing CMP parallel culverts with mitered metal ends, construct concrete cast in place SETs or remove the mitered ends and install precast or cast-in-place SETs. Replace/remove existing mitered metal ends that are not 6:1 or flatter.

Required excavation, backfill and pipe saw cutting will be subsidiary to this Item.

Unless shown in the plans to obtain backfill from offsite source, obtain SET backfill from the Right-of-Way. This work will be subsidiary to this Item.

Placement of concrete Riprap between multiple SETs on multiple barrel culverts will be subsidiary to this Item.

During SET installation, unless indicated otherwise in the plans, match SET flow line grade with the culvert flow line grade.

Removal and disposal of existing headwalls for parallel culverts will be subsidiary to this Item. Removed concrete headwalls and wingwalls may be broken into riprap size pieces (12" average diameter) for use as stone riprap. Cut protruding steel reinforcement. Broken concrete and riprap must be stored according to the requirements for material stockpiles indicated on BC(10)-21.

At culvert stations, 148+61, 203+53, 204+27, 222+28, saw cut pipe behind headwall, then install SET.

Item 502 Barricades, Signs and Traffic Handling:

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

The following items will be required for flagger on this project:

1. Flaggers are required to wear a white hard hat while performing flagging operations.
2. Flaggers will be required at the intersection of all State maintained roadways.
3. Flaggers may be required at other high traffic generating intersections as deemed necessary by the Area Engineer.

The traffic control plan for this contract consists of the installation and maintenance of warning signs and other traffic control devices shown in the plans, specification data which may be included in the general notes, applicable provisions of the Texas Manual on Uniform Traffic Control Devices (TMUTCD), traffic control plan sheets included in the plans, standard BC sheets and Item 502 of the Standard Specifications.

Do not begin Item 502, Barricades, Signs, and Traffic Handling, on the roadway until both of the following conditions are met:

1. The work schedule is approved.
2. No more than 5 workdays will pass between the beginning of Item 502 and the actual commencement of roadway work bid items.

The final estimate will be withheld until all disturbed areas are covered with at least 70% perennial vegetative cover.

Correct all deficiencies within the time frame noted on the Traffic Control Device Inspection Form 599. Failure to make corrections within time frame specified may result in no payment for this Item for the month of the noted deficiency.

Provide shadow vehicles equipped with Truck Mounted Attenuators (TMA) as shown on Traffic Control Plan (TCP) standards.

Ensure that all travel lanes are open at night.

Provide pilot car during one lane/two-way traffic operations.

Road closures must be approved by the Engineer. Provide a two-week advance notice to the Engineer prior to desired roadway closure period. Begin display of closure information on PCMSs ten days prior to roadway closure.

County: Red River **Control:** 0901-27-055

Item 506 Temporary Erosion, Sedimentation & Environmental Controls:

The Temporary Erosion Control measures for this project will consist of using the following items, as directed:

1. Temporary Sediment Control Fence
2. Rock Filter Dams: All rock filter dams shall be installed with 6:1 slopes regardless of their location on the project. Failure to do so will result in no payment for the dam.

Temporary Sediment Control Fence will remain the property of the Contractor upon completion of the project. The final estimate will not be released until all Temporary Sediment Control Fence have been properly removed, or as directed and 70% establishment of vegetative cover is obtained.

Acquire approval for any change to the location of temporary sediment fence, as shown in the plans, prior to installation. Placement of erosion protection devices may be altered, as directed, to satisfy the requirements of the SW3P.

The pay item to remove rock filter dams will require only a partial removal after 70 percent perennial vegetation has been established and approved. When removing the rock filter dams, leave the lower layer of rock adjacent to the ground in place so as not to disturb the soil.

Refer to the SW3P sheet for the total disturbed area for the project.

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

Item 531 Sidewalks:

Sidewalk shall be reinforced longitudinally with #3 rebar along sidewalk edges (place 2" from face of sidewalk edge) and #3 rebar at 12" c-c spacing between the #3 bars. Place lateral #3 rebar at 12" c-c spacing. Center rebar vertically in the sidewalk. Use grade 60 rebar.

Joints shall be tooled or saw-cut every 4' to a depth of 1 1/2" unless otherwise directed. All expansion joints shall consist of fiberboard and sealed with a Class 7 silicone sealant according to DMS-6310.

All longitudinal joints adjacent to curb shall have fiberboard and sealed with a Class 7 silicone sealant according to DMS-6310.

Item 531 Sidewalks (Cont.):

The surfaces of sloped areas shall be broomed to provide a slip resistant finish.

ADA Ramps ~ Concrete shall be placed around existing features such as signs, fireplugs, utility poles, and etc. when located within the limits of the new ramp to provide a four foot (4') minimum pathway. Any excavation/embankment necessary for establishing ramps to proper grade shall be considered subsidiary to the various bid items. Ramps shall be added, deleted, and/or changed as directed by the Engineer.

Any verbal approval, inspection, or concurrence of the Contractor's layout shall not relieve the Contractor of his responsibility to secure the proper dimensions, grades, and elevations of the various parts of the work in accordance with Public Rights-of-Way Accessibility Guidelines (PROWAG). Any work not compliant with PROWAG will be reconstructed to meet compliance and all associated work will be subsidiary to this item.

Item 644 Small Roadside Sign Support and Assemblies:

Upon removal of sign assemblies, deliver sign faces to TxDOT office at Red River County Maintenance Office at 2002 West Main Street, Clarksville, TX 75246. Dispose of foundations, posts, and hardware.

Use the Southern Plains style triangular slip base for all post types.

When city or county signs are located on TxDOT signs – replace with new signs of the same dimensions and style. This work will be subsidiary to Item 644.

Stake proposed sign locations and obtain Engineer's approval of locations prior to placing foundations.

Contact the Engineer to obtain updated curve travel speeds before manufacture of curve speed warning signs.

Item 666 Reflectorized Pavement Markings:

No stripe will be placed unless the inspector is present and at least 24 hours advance notice has been given by the Contractor.

Lay out pilot lines for approval 24 hours prior to all final pavement marking applications.

Use equipment with footage counters capable of measuring the linear footage placed. Calibrate counters prior to the beginning of striping operations.

Reduce truck speed enough to ensure that the beads drop onto the stripe and do not roll in the paint film.

Due to problems in traffic handling, do not place a dash center stripe and edge line at the same time.

Item 3076 Dense-Graded Hot-Mix Asphalt:

The use of PG 64-22 asphalt is required.

Use a self-propelled wheel mounted MTV capable of receiving mix from the haul trucks, separate from the paver. It shall have a minimum storage capacity of approximately 25 tons. It shall be equipped with a pivoting discharge conveyor and shall completely and thoroughly remix the material prior to placement. The effectiveness of the MTV's remixing ability is subject to the approval of the Engineer. In addition, the paver shall have a surge storage insert with a minimum capacity of 20 tons.

Specify Hot Mix Asphalt Concrete (HMAC) or Warm Mix Asphalt (WMA) at the time of design submittal. After design submittal, continue producing the chosen design unless otherwise approved.

Evaluation of the mixture for moisture susceptibility will be performed by using test method TEX 530-C (boil test) and there shall be no evidence of stripping during design verification or at any time during production.

The maximum nighttime paved surface vertical differential will be limited to two inches. Prevent ponding of water on any travel ways that are exposed to traffic.

Perform all sampling for aggregate quality testing on stockpiles at the HMAC plant. Mixture sampling for QC/QA testing will typically be taken from the truck at the plant; however, the Engineer may direct that a sample be taken at any point or location of mixture during production, delivery or placement.

Preparation and construction of permanent / temporary transitions, terminations of mix courses and transitions to driveways and intersecting roadways is subsidiary to Item 341. This includes all labor, machinery, materials and incidentals to complete the work including planing, removal, hauling and stockpiling of materials and necessary clean-up.

Item 6185 Truck Mounted Attenuators:

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

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0901-27-055 **DISTRICT** Paris **COUNTY** Red River
HIGHWAY Various

ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL
	100-6002	PREPARING ROW	STA	122.500	
	104-6001	REMOVING CONC (PAV)	SY	580.000	
	105-6021	REMOVING STAB BASE AND ASPH PAV (0-4")	SY	477.000	
	105-6128	REMOVING UNTREATED BASE (8")	SY	368.000	
	110-6001	EXCAVATION (ROADWAY)	CY	6,416.000	
	132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	2,091.000	
	164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	26,010.000	
	164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	52,020.000	
	168-6001	VEGETATIVE WATERING	MG	3,871.300	
	169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	18,735.000	
	247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	14,208.000	
	316-6029	ASPH (RC-250)	GAL	3,847.000	
	420-6074	CL C CONC (MISC)	CY	4.400	
	450-6051	RAIL (HANDRAIL)(TY E)	LF	527.000	
	450-6059	RAIL (HANDRAIL)(RR BRIDGE)	LF	180.000	
	464-6003	RC PIPE (CL III)(18 IN)	LF	103.000	
	467-6359	SET (TY II) (18 IN) (RCP) (4: 1) (P)	EA	8.000	
	471-6003	GRATE & FRAME	EA	5.000	
	496-6007	REMOV STR (PIPE)	LF	12.000	
	496-6030	REMOVE STR (BOLLARD)	EA	6.000	
	500-6001	MOBILIZATION	LS	1.000	
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	9.000	
	506-6001	ROCK FILTER DAMS (INSTALL) (TY 1)	LF	150.000	
	506-6011	ROCK FILTER DAMS (REMOVE)	LF	150.000	
	506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	13,740.000	
	506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	13,740.000	
	531-6001	CONC SIDEWALKS (4")	SY	27.000	
	550-6008	CHAIN LINK FENCE (INSTALL) (8')	LF	652.000	
	644-6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	27.000	
	644-6068	RELOCATE SM RD SN SUP&AM TY 10BWG	EA	4.000	
	644-6076	REMOVE SM RD SN SUP&AM	EA	1.000	
	666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	160.000	
	666-6210	REFL PAV MRK TY II (Y) 6" (SLD)	LF	450.000	
	666-6225	PAVEMENT SEALER 6"	LF	450.000	
	666-6230	PAVEMENT SEALER 24"	LF	160.000	
	666-6231	PAVEMENT SEALER (ARROW)	EA	22.000	
	666-6232	PAVEMENT SEALER (WORD)	EA	8.000	
	666-6245	PAVEMENT SEALER (BIKE SYMBOL)	EA	8.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA	22.000	
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA	8.000	
	668-6096	PREFAB PAV MRK TY C (W)(BIKE SYMBOL)	EA	8.000	

ESTIMATE & QUANTITY

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0901-27-055 **DISTRICT** Paris **COUNTY** Red River
HIGHWAY Various

ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL
	677-6001	ELIM EXT PAV MRK & MRKS (4")	LF	40.000	
	678-6002	PAV SURF PREP FOR MRK (6")	LF	400.000	
	678-6008	PAV SURF PREP FOR MRK (24")	LF	160.000	
	678-6009	PAV SURF PREP FOR MRK (ARROW)	EA	22.000	
	678-6016	PAV SURF PREP FOR MRK (WORD)	EA	8.000	
	678-6028	PAV SURF PREP FOR MRK (BIKE SYMBOL)	EA	8.000	
	772-6003	POST AND CABLE FENCE (NEW INSTALLATION)	LF	1,720.000	
	1002-6001	LANDSCAPE AMENITY	EA	1.000	
	1002-6025	LANDSCAPE AMENITY (TRASH/RECYCLE BIN)	EA	2.000	
	1002-6026	LANDSCAPE AMENITY (BENCH)	EA	9.000	
	3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	1,424.000	
	5131-6001	FIXED BOLLARDS	EA	34.000	
	6185-6002	TMA (STATIONARY)	DAY	20.000	
	7006-6001	REMOVE/REPLACE TIMBERS	LF	250.000	
	18	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS	1.000	
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS	1.000	

ROADWAY QUANTITIES

ITEM	0100-6002	0104-6001	0105-6021	0105-6128	0110-6001	0132-6003	0164-6003
DESCRIPTION	PREPARING ROW	REMOVING CONC (PAV)	REMOVING STAB BASE AND ASPH PAV (0-4")	REMOVING UNTREATED BASE (8")	EXCAVATION (ROADWAY)	EMBANKMENT (FINAL) (ORD COMP) (TY B)	BROADCAST SEED (PERM) (RURAL) (CLAY)
	STA	SY	SY	SY	CY	CY	SY
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 1 OF 42	3.00		228		217	10	584
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 2 OF 42	3.00		249		37		452
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 3 OF 42	3.00				312	42	779
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 4 OF 42	3.00				9	26	178
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 5 OF 42	3.00				45	43	584
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 6 OF 42	3.00				493	26	1142
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 7 OF 42	3.00				282	40	1020
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 8 OF 42	3.00				197	53	936
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 9 OF 42	3.00				186	58	720
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 10 OF 42	3.00					64	320
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 11 OF 42	3.00			83	182	95	906
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 12 OF 42	3.00				175	36	696
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 13 OF 42	3.00				24	136	445
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 14 OF 42	3.00				83	10	390
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 15 OF 42	3.00				18	42	421
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 16 OF 42	3.00				129	69	749
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 17 OF 42	2.50				218	52	768
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 18 OF 42	2.50	2		163	250	29	705
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 19 OF 42	3.00	169			216	67	1005
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 20 OF 42	3.00	168			303	37	1232
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 21 OF 42	3.00	135			540	70	1352
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 22 OF 42	3.00	106			472	90	1295
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 23 OF 42	3.00				306	69	1055
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 24 OF 42	3.00				406	8	1069
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 25 OF 42	3.00				218	37	294
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 26 OF 42	3.00				4	34	270
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 27 OF 42	3.00				1	116	576
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 28 OF 42	3.00				41	103	637
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 29 OF 42	3.00				29	124	616
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 30 OF 42	3.00				26	103	317
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 31 OF 42	3.00			22	102	46	849
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 32 OF 42	3.00				202	39	517
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 33 OF 42	3.00				2	51	185
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 34 OF 42	3.00				10	39	198
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 35 OF 42	2.50				234	35	914
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 36 OF 42	2.50				268	29	441
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 37 OF 42	3.00			100	47	21	184
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 38 OF 42	3.00				39	11	258
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 39 OF 42	3.00				35	47	445
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 40 OF 42	3.00				34	42	225
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 41 OF 42	3.00				17	23	190
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 42 OF 42	1.50				10	19	91
TOTALS	122.50	580	477	368	6416	2091	26010

ROADWAY QUANTITIES

ITEM	0164-6071	0168-6001	0169-6001	0247-6064	0316-6029	0420-6074	0450-6051
DESCRIPTION	BROADCAST SEED (TEMP) (WARM OR COOL)	VEGETATIVE WATERING	SOIL RETENTION BLANKETS (CL 1) (TY A)	FL BS (CMP IN PLC) (TY A GR 4) (6")	ASPH (RC-250)	CL C CONC (MISC)	RAIL (HANDRAIL) (TY E)
	SY	MG	SY	SY	GAL	CY	LF
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 1 OF 42	1168	86.9	322	194	48		53
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 2 OF 42	904	67.3	287	177	43		74
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 3 OF 42	1558	115.9	511	367	100		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 4 OF 42	356	26.5	178	367	100		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 5 OF 42	1168	86.9	380	367	100		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 6 OF 42	2284	169.9	667	368	101		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 7 OF 42	2040	151.8	665	368	101		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 8 OF 42	1872	139.3	664	367	100		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 9 OF 42	1440	107.2	519	367	100		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 10 OF 42	640	47.7	320	367	100		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 11 OF 42	1812	134.8	604	341	92		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 12 OF 42	1392	103.6	529	367	100		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 13 OF 42	890	66.2	445	369	101		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 14 OF 42	780	58.1	390	267	70		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 15 OF 42	842	62.7	367	367	100		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 16 OF 42	1498	111.5	560	367	100		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 17 OF 42	1536	114.3	452	303	81		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 18 OF 42	1410	104.9	452	252	66	4.4	
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 19 OF 42	2010	149.6	663	371	101		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 20 OF 42	2464	183.3	667	367	100		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 21 OF 42	2704	201.2	668	367	100		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 22 OF 42	2590	192.7	668	367	100		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 23 OF 42	2110	157.0	663	367	100		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 24 OF 42	2138	159.1	831	346	94		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 25 OF 42	588	43.8	294	362	99		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 26 OF 42	540	40.2	270	367	100		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 27 OF 42	1152	85.7	576	367	100		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 28 OF 42	1274	94.8	637	282	75		182
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 29 OF 42	1232	91.7	616	367	100		18
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 30 OF 42	634	47.2	317	367	100		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 31 OF 42	1698	126.3	559	367	100		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 32 OF 42	1034	77.0	358	367	100		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 33 OF 42	370	27.6	185	367	100		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 34 OF 42	396	29.5	198	367	100		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 35 OF 42	1828	136.0	555	311	83		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 36 OF 42	882	65.7	305	261	68		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 37 OF 42	368	27.4	184	269	71		136
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 38 OF 42	516	38.4	258	367	100		64
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 39 OF 42	890	66.2	445	367	100		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 40 OF 42	450	33.5	225	367	100		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 41 OF 42	380	28.3	190	367	100		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 42 OF 42	182	13.6	91	192	48		
TOTALS	52020	3871.3	18735	14208	3847	4.4	527

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

SUMMARY OF ROADWAY QUANTITIES

SHEET 1 OF 3

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	8

Plotted on: 1/4/2024
Design Filename: S:\projects\612540202_RDWYSUMM01.dgn

Plotted on: 1/4/2024

Design Filename: S:\projects\612540202_RDWYSUMM01.dgn

ROADWAY QUANTITIES

ITEM	0450-6059	0464-6003	0467-6359	0471-6003	0496-6007	0496-6030	0506-6001
DESCRIPTION	RAIL (HANDRAIL)(RR BRIDGE)	RC PIPE (CL III)(18 IN)	SET (TY II) (18 IN) (RCP) (4:1) (P)	GRATE & FRAME	REMOV STR (PIPE)	REMOVE STR (BOLLARD)	ROCK FILTER DAMS (INSTALL) (TY 1)
	LF	LF	EA	EA	LF	EA	LF
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 1 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 2 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 3 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 4 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 5 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 6 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 7 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 8 OF 42					12		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 9 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 10 OF 42							21
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 11 OF 42							28
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 12 OF 42							17
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 13 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 14 OF 42						6	
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 15 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 16 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 17 OF 42		40	2				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 18 OF 42				5			
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 19 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 20 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 21 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 22 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 23 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 24 OF 42							48
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 25 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 26 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 27 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 28 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 29 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 30 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 31 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 32 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 33 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 34 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 35 OF 42							12
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 36 OF 42		42	4				12
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 37 OF 42	180						
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 38 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 39 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 40 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 41 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 42 OF 42		21	2				12
TOTALS	180	103	8	5	12	6	150

ROADWAY QUANTITIES

ITEM	0506-6011	0506-6038	0506-6039	0531-6001	0550-6008	0772-6003	1002-6001
DESCRIPTION	ROCK FILTER DAMS (REMOVE)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	CONC SIDEWALKS (4")	CHAIN LINK FENCE (INSTALL) (8')	POST AND CABLE FENCE (NEW INSTALLATION)	LANDSCAPE AMENITY
	LF	LF	LF	SY	LF	LF	EA
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 1 OF 42		36	36		310		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 2 OF 42					342		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 3 OF 42		206	206				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 4 OF 42		600	600				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 5 OF 42		400	400				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 6 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 7 OF 42		40	40				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 8 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 9 OF 42		262	262				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 10 OF 42	21	604	604				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 11 OF 42	28	144	144	3		410	
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 12 OF 42	17	428	428			370	
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 13 OF 42		600	600				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 14 OF 42		416	416				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 15 OF 42		516	516				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 16 OF 42		300	300				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 17 OF 42		118	118	12		350	1
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 18 OF 42		24	24	3		310	
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 19 OF 42						130	
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 20 OF 42		48	48				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 21 OF 42		50	50				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 22 OF 42							
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 23 OF 42		40	40				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 24 OF 42	48			3			
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 25 OF 42		572	572				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 26 OF 42		600	600				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 27 OF 42		784	784				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 28 OF 42		642	642				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 29 OF 42		718	718				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 30 OF 42		600	600				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 31 OF 42		172	172				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 32 OF 42		410	410			50	
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 33 OF 42		600	600			100	
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 34 OF 42		600	600				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 35 OF 42	12	34	34	3			
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 36 OF 42	12	228	228	3			
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 37 OF 42		426	426				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 38 OF 42		600	600				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 39 OF 42		600	600				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 40 OF 42		600	600				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 41 OF 42		600	600				
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 42 OF 42	12	122	122	3			
TOTALS	150	13740	13740	27	652	1720	1

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

SUMMARY OF ROADWAY QUANTITIES

SHEET 2 OF 3

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	9

ROADWAY QUANTITIES

ITEM	1002-6025	1002-6026	3076-6068	5131-6001	7006-6001
DESCRIPTION	LANDSCAPE AMENITY (TRASH/RECYCLE BIN)	LANDSCAPE AMENITY (BENCH)	D-GR HMA TY-D SAC-A PG64-22 (EXEMPT)	FIXED BOLLARDS	REMOVE/REPLACE TIMBERS
	EA	EA	TON	EA	LF
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 1 OF 42			18	1	
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 2 OF 42			16		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 3 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 4 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 5 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 6 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 7 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 8 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 9 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 10 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 11 OF 42		1	34	6	
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 12 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 13 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 14 OF 42		2	26		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 15 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 16 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 17 OF 42	1	1	30	3	
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 18 OF 42		1	25	3	
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 19 OF 42			38		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 20 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 21 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 22 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 23 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 24 OF 42		1	35	3	
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 25 OF 42			37	3	
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 26 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 27 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 28 OF 42			28		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 29 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 30 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 31 OF 42			37	6	
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 32 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 33 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 34 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 35 OF 42		1	31	3	
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 36 OF 42		1	26	3	
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 37 OF 42			26		250
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 38 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 39 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 40 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 41 OF 42			37		
NORTHEAST TEXAS TRAIL SIDEWALK PLAN SHEET 42 OF 42	1	1	18	3	
TOTALS	2	9	1424	34	250

INCIDENTAL QUANTITIES

ITEM	6185-6002
DESCRIPTION	TMA (STATIONARY)
	DAY
INCIDENTAL QUANTITIES	20
TOTALS	20

Plotted on: 1/4/2024

Design Filename: S:\projects\612\54\02\Design\02_Clarksville_ADA\Civil\Summaries\612540202_RDWYSUMM01.dgn

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

SUMMARY OF ROADWAY QUANTITIES

SHEET 3 OF 3

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	10

SIGNING AND PAVEMENT QUANTITIES

ITEM	0644-6001	0644-6068	0644-6076	0666-6048	0666-6210	0666-6225
DESCRIPTION	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	RELOCATE SM RD SN SUP&AM TY 10BWG	REMOVE SM RD SN SUP&AM	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	REFL PAV MRK TY II (Y) 6" (SLD)	PAVEMENT SEALER 6"
	EA	EA	EA	LF	LF	LF
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 1 OF 7			1			
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 2 OF 7	6	1		30	100	100
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 3 OF 7	6	2		50	100	100
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 4 OF 7	6			30	100	100
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 5 OF 7	2					
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 6 OF 7	6			50	100	100
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 7 OF 7	1	1			50	50
TOTALS	27	4	1	160	450	450

ITEM	0666-6230	0666-6231	0666-6232	0666-6245	0668-6077	0668-6085
DESCRIPTION	PAVEMENT SEALER 24"	PAVEMENT SEALER (ARROW)	PAVEMENT SEALER (WORD)	PAVEMENT SEALER (BIKE SYMBOL)	PREFAB PAV MRK TY C (W) (ARROW)	PREFAB PAV MRK TY C (W) (WORD)
	LF	EA	EA	EA	EA	EA
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 1 OF 7						
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 2 OF 7	30	4	2	2	4	2
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 3 OF 7	50	4	2	2	4	2
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 4 OF 7	30	4	2	2	4	2
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 5 OF 7		4			4	
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 6 OF 7	50	4	2	2	4	2
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 7 OF 7		2			2	
TOTALS	160	22	8	8	22	8

ITEM	0668-6096	0677-6001	0678-6002	0678-6008	0678-6009	0678-6016
DESCRIPTION	PREFAB PAV MRK TY C (W)(BIKE SYMBOL)	ELIM EXT PAV MRK & MRKS (4")	PAV SURF PREP FOR MRK (6")	PAV SURF PREP FOR MRK (24")	PAV SURF PREP FOR MRK (ARROW)	PAV SURF PREP FOR MRK (WORD)
	EA	LF	LF	LF	EA	EA
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 1 OF 7						
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 2 OF 7	2		100	30	4	2
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 3 OF 7	2	40	100	50	4	2
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 4 OF 7	2		100	30	4	2
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 5 OF 7					4	
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 6 OF 7	2		100	50	4	2
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 7 OF 7					2	
TOTALS	8	40	400	160	22	8

ITEM	0678-6028
DESCRIPTION	PAV SURF PREP FOR MRK (BIKE SYMBOL)
	EA
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 1 OF 7	
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 2 OF 7	2
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 3 OF 7	2
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 4 OF 7	2
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 5 OF 7	
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 6 OF 7	2
NORTHEAST TEXAS TRAIL SIGNING AND PAVEMENT MARKING PLAN SHEET 7 OF 7	
TOTALS	8

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

SUMMARY OF SIGNING AND PAVEMENT MARKINGS QUANTITIES

SHEET 1 OF 1

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	11

Plotted on: 1/4/2024

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DATE: 1/4/2024 7:46:12 AM
FILE: S:\Projects\612\54\02\Design\02_Clarksville_ADA\Civil\Standards\TCP\bc-21.dgn

BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

1. The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).

2. The development and design of the Traffic Control Plan (TCP)is the responsibility of the Engineer.

3. The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.

4. The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.

5. Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets," the TxDOT "Roadway Design Manual" or engineering judgment.

6. When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.

7. The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.

8. All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.

9. The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.

10. Where highway construction or maintenance work is being undertaken, other than mobile operations as defined by the Texas Manual on Uniform Traffic Control Devices, CSJ limit signs are required. CSJ limit signs are shown on BC(2). The OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits. For mobile operations, CSJ limit signs are not required.

11. Traffic control devices should be in place only while work is actually in progress or a definite need exists.

12. The Engineer has the final decision on the location of all traffic control devices.

13. Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

WORKER SAFETY NOTES:

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

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

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

1. Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources.

2. Work zone traffic control devices shall be compliant with the Manual for Assessing safety Hardware (MASH).

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0901	27	055	VAR
4-03 7-13	DIST	COUNTY		SHEET NO.
9-07 8-14				
5-10 5-21	PAR	RD RVR		12

DATE: 1/4/2024 7:46:12 AM
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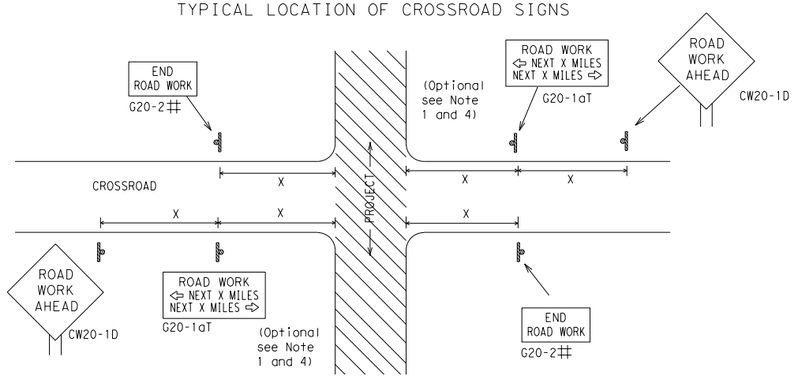
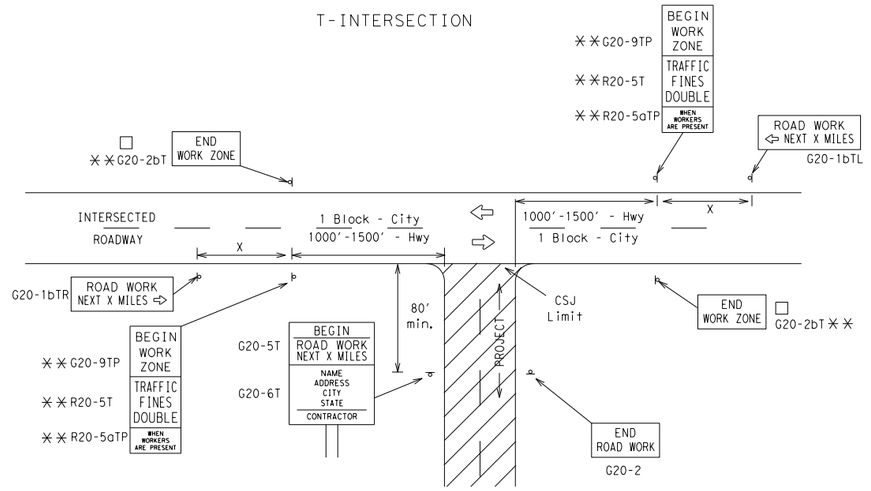
TYPICAL LOCATION OF CROSSROAD SIGNS



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

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

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

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

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

SIZE

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

SPACING

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

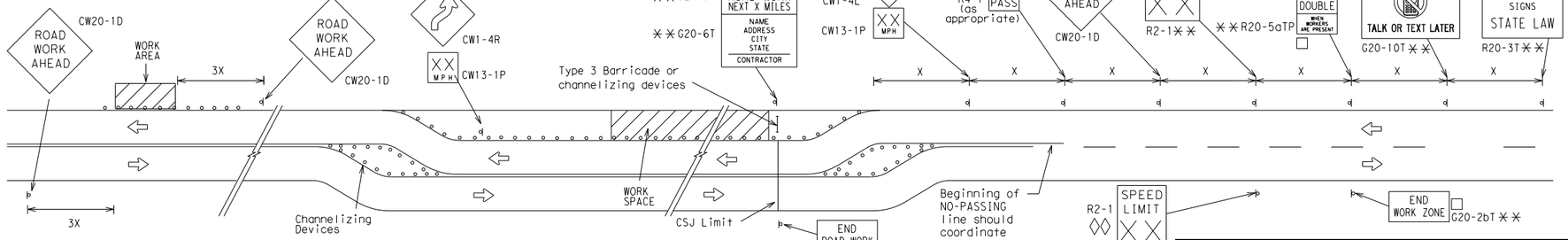
✳ For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

GENERAL NOTES

1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D)signs may be used on low volume crossroads at the discretion of the Engineer as per TMUTCD Part 5. See Note 2 under "Typical Location of Crossroad Signs".
5. Only diamond shaped warning sign sizes are indicated.
6. See sign size listing in "TMUTCD", Sign Appendix or the "Standard Highway Sign Designs for Texas" manual for complete list of available sign design sizes.

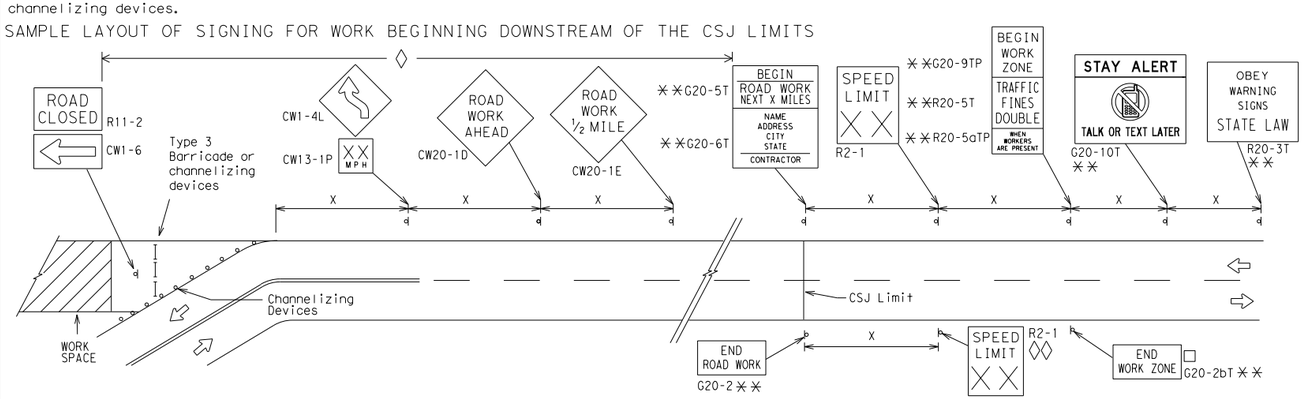
WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS



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

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS

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



NOTES

The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and "BEGIN ROAD WORK NEXT X MILES"(G20-5T)sign for each specific project. This distance shall replace the "X" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.

□ The "BEGIN WORK ZONE"(G20-9TP) and "END WORK ZONE" (G20-2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.

✳✳ CSJ limit signing is required for highway construction and maintenance work, with the exception of mobile operations.

◊ Area for placement of "ROAD WORK AHEAD" (CW20-1D)sign and other signs or devices as called for on the Traffic Control Plan.

◊◊ Contractor will install a regulatory speed limit sign at the end of the work zone.

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

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0901	27	055	VAR
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	PAR	RD RVR		13

DATE: 1/4/2024 7:46:12 AM
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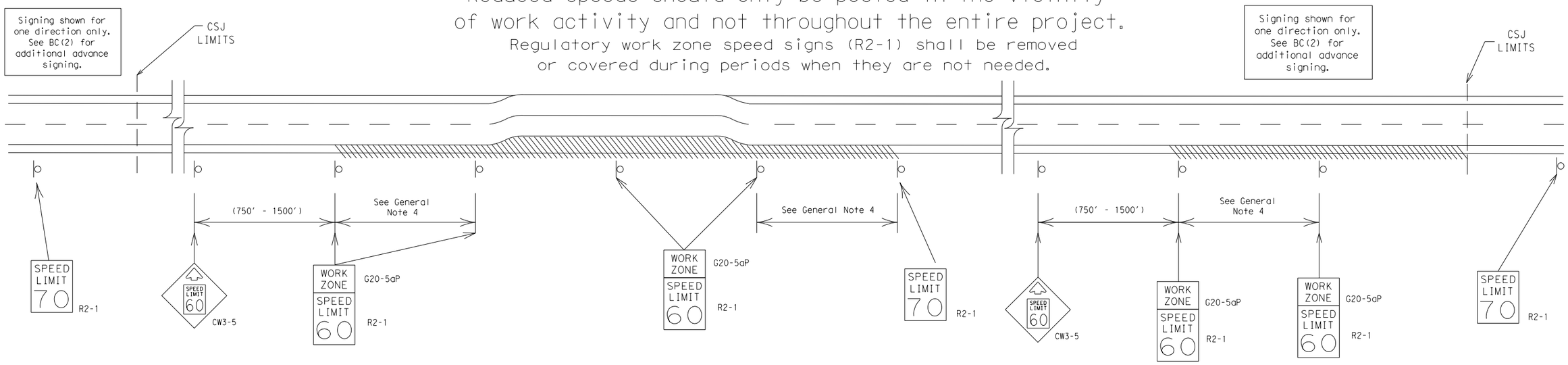
TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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

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

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



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

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

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

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

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

SHORT TERM WORK ZONE SPEED LIMITS

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

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

GENERAL NOTES

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

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS 9-07 8-14 7-13 5-21	0901	27	055	VAR
	DIST	COUNTY		SHEET NO.
	PAR	RD RVR		14

DATE: 1/4/2024 7:46:13 AM
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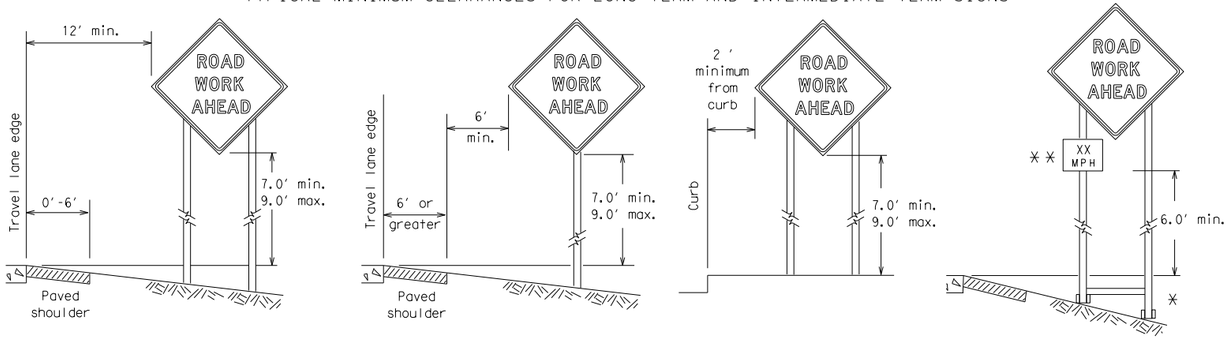
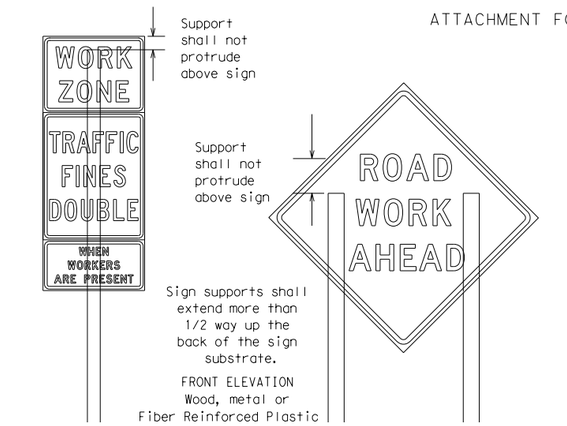
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS

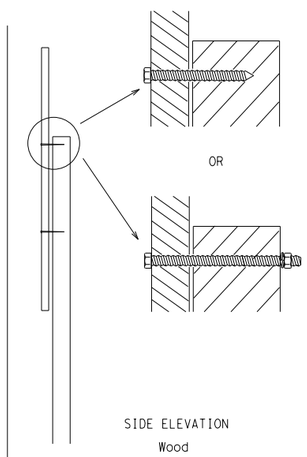


⁎ When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

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

ATTACHMENT FOR SIGN SUPPORTS





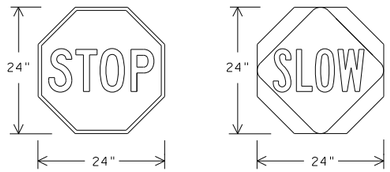
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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

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

STOP/SLOW PADDLES

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



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

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

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

GENERAL NOTES FOR WORK ZONE SIGNS

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

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

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

SIGN MOUNTING HEIGHT

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

SIZE OF SIGNS

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

SIGN SUBSTRATES

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

REFLECTIVE SHEETING

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

SIGN LETTERS

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

REMOVING OR COVERING

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

SIGN SUPPORT WEIGHTS

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

FLAGS ON SIGNS

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

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
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9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	PAR	RD RVR		15

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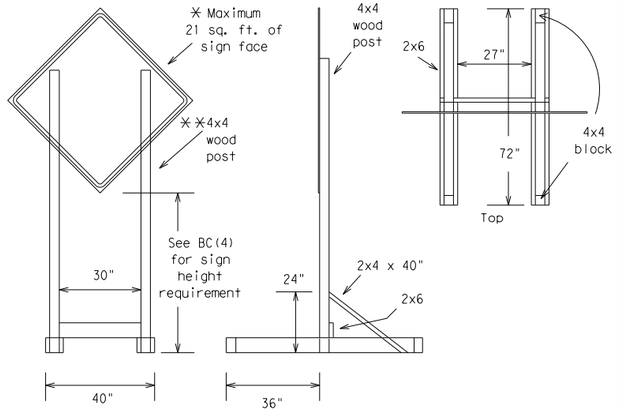
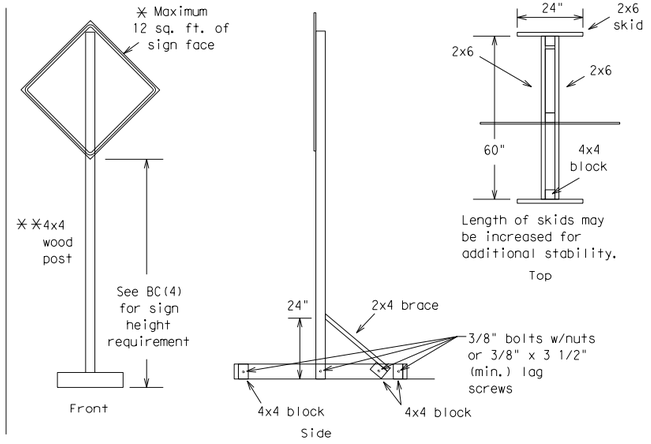
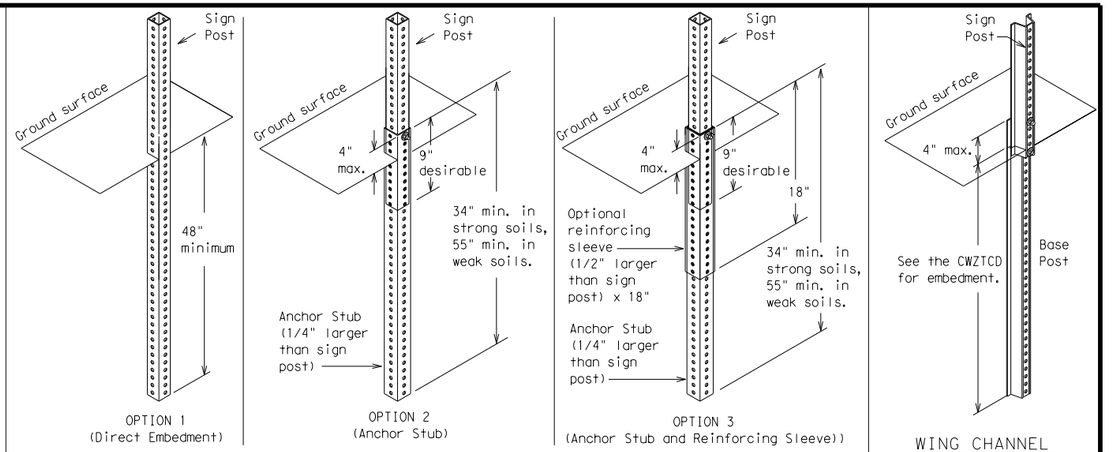




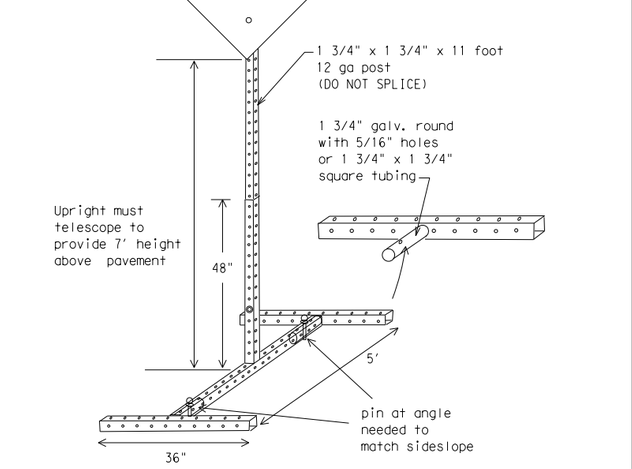
SKID MOUNTED WOOD SIGN SUPPORTS

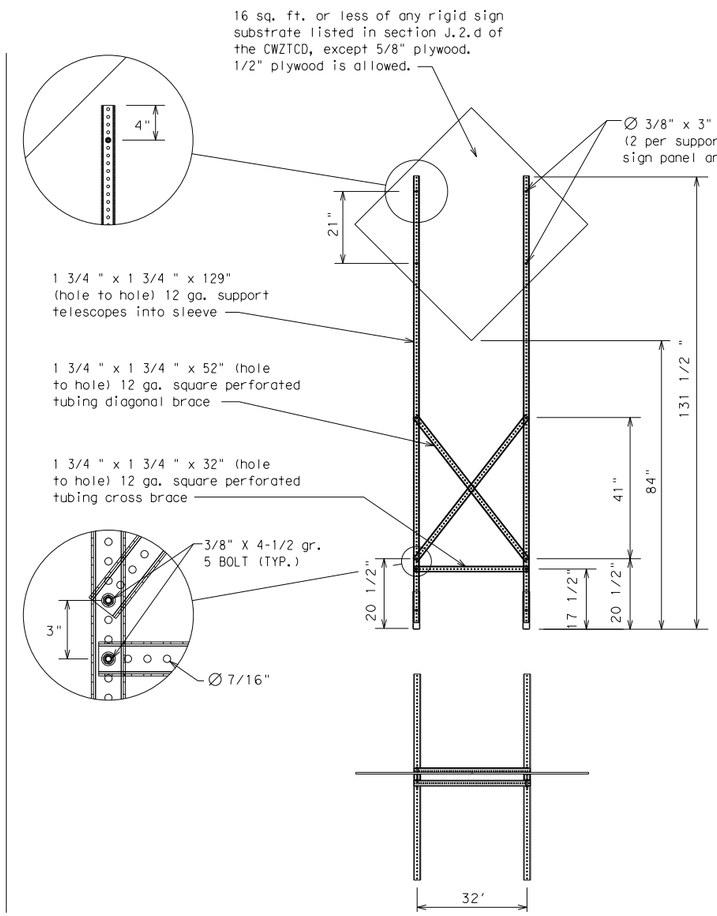
* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS

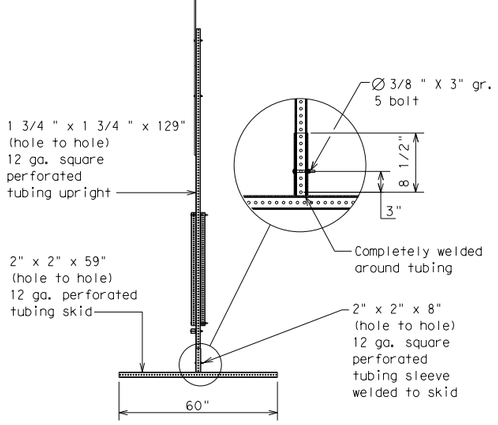


GROUND MOUNTED SIGN SUPPORTS

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







SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

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

WEDGE ANCHORS

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

OTHER DESIGNS

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

GENERAL NOTES

1. Nails may be used in the assembly of wooden sign supports, but 3/8" bolts with nuts or 3/8" x 3 1/2" lag screws must be used on every joint for final connection.
2. No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
3. When project is completed, all sign supports and foundations shall be removed from the project site. This will be considered subsidiary to Item 502.

* See BC(4) for definition of "Work Duration."

** Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.

☐ See the CWZTCD for the type of sign substrate that can be used for each approved sign support.

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

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©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
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9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	PAR	RD RVR		16

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

PORTABLE CHANGEABLE MESSAGE SIGNS

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

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

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

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

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

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

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

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

Other Condition List

- ROADWORK XXX FT
- ROAD REPAIRS XXXX FT
- FLAGGER XXXX FT
- LANE NARROWS XXXX FT
- RIGHT LN NARROWS XXXX FT
- TWO-WAY TRAFFIC XX MILE
- MERGING TRAFFIC XXXX FT
- CONST TRAFFIC XXX FT
- LOOSE GRAVEL XXXX FT
- UNEVEN LANES XXXX FT
- DETOUR X MILE
- ROUGH ROAD XXXX FT
- ROADWORK PAST SH XXXX
- ROADWORK NEXT FRI-SUN
- BUMP XXXX FT
- US XXX EXIT X MILES
- TRAFFIC SIGNAL XXXX FT
- LANES SHIFT ⁂

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

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

- MERGE RIGHT
- FORM X LINES RIGHT
- DETOUR NEXT X EXITS
- USE XXXXX RD EXIT
- USE EXIT XXX
- USE EXIT I-XX NORTH
- STAY ON US XXX SOUTH
- USE I-XX E TO I-XX N
- TRUCKS USE US XXX N
- WATCH FOR TRUCKS
- WATCH FOR TRUCKS
- EXPECT DELAYS
- EXPECT DELAYS
- PREPARE TO STOP
- REDUCE SPEED XXX FT
- END SHOULDER USE
- USE OTHER ROUTES
- WATCH FOR WORKERS
- STAY IN LANE ⁂

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

Location List

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

Warning List

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

⁂⁂ Advance Notice List

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

⁂⁂ See Application Guidelines Note 6.

APPLICATION GUIDELINES

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

WORDING ALTERNATIVES

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

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

FULL MATRIX PCMS SIGNS

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

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-21

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©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0901	27	055	VAR
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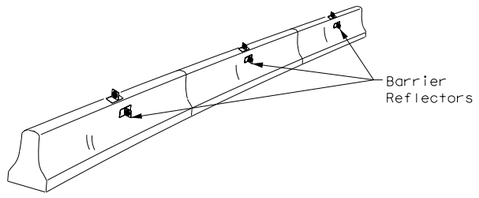
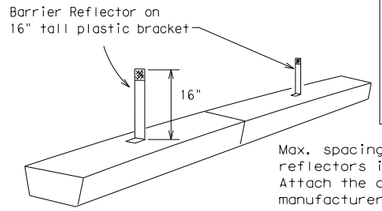
1. Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
2. Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.



CONCRETE TRAFFIC BARRIER (CTB)

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

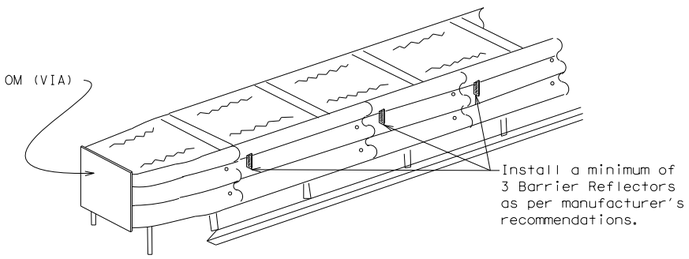


Max. spacing of barrier reflectors is 20 feet. Attach the delineators as per manufacturer's recommendations.

LOW PROFILE CONCRETE BARRIER (LPCB)

LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES

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

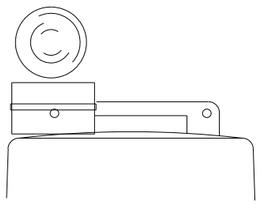


DELINEATION OF END TREATMENTS

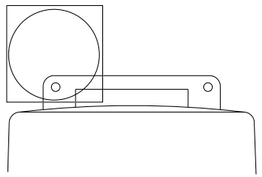
END TREATMENTS FOR CTB'S USED IN WORK ZONES

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

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS



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



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

WARNING LIGHTS

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

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

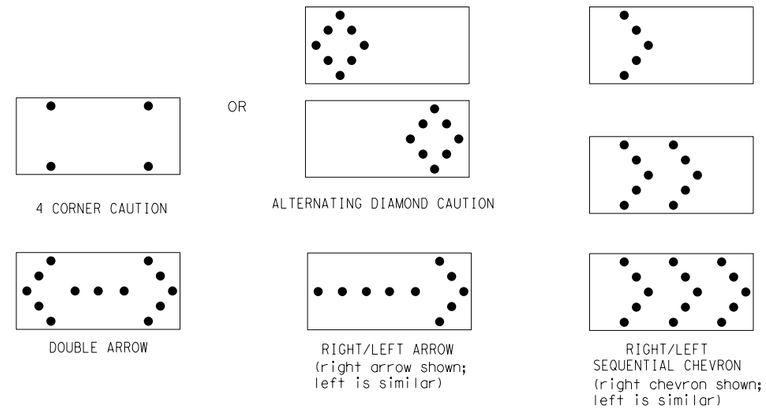
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing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

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

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

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

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



4 CORNER CAUTION

ALTERNATING DIAMOND CAUTION

DOUBLE ARROW

RIGHT/LEFT ARROW
(right arrow shown;
left is similar)

RIGHT/LEFT
SEQUENTIAL CHEVRON
(right chevron shown;
left is similar)

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

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

ATTENTION

Flashing Arrow Boards shall be equipped with automatic dimming devices.

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

FLASHING ARROW BOARDS

TRUCK-MOUNTED ATTENUATORS

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

Texas Department of Transportation

Traffic Safety Division Standard

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

BC(7)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0901	27	055	VAR
9-07 8-14	DIST	COUNTY		SHEET NO.
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GENERAL NOTES

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

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

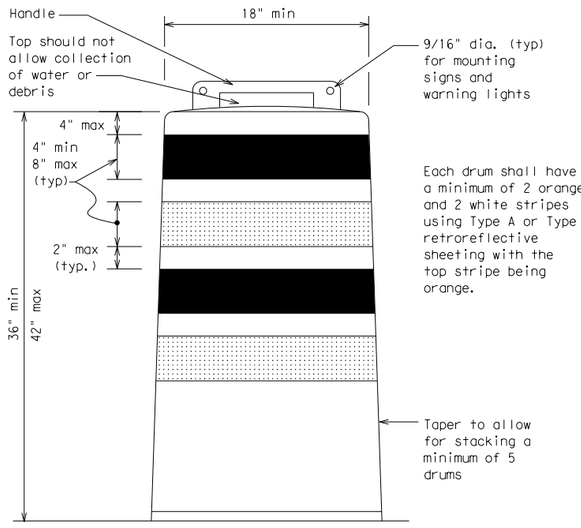
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents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

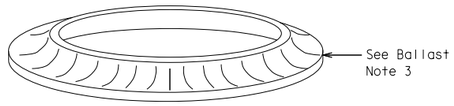
RETROREFLECTIVE SHEETING

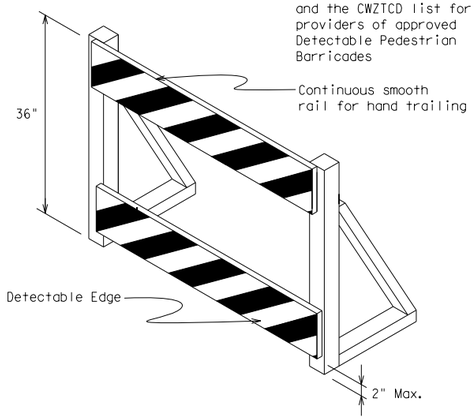
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall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

BALLAST

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

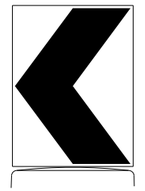




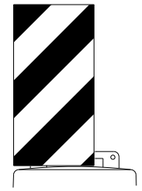


DETECTABLE PEDESTRIAN BARRICADES

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



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



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

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

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

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REVISIONS	0901	27	055	VAR
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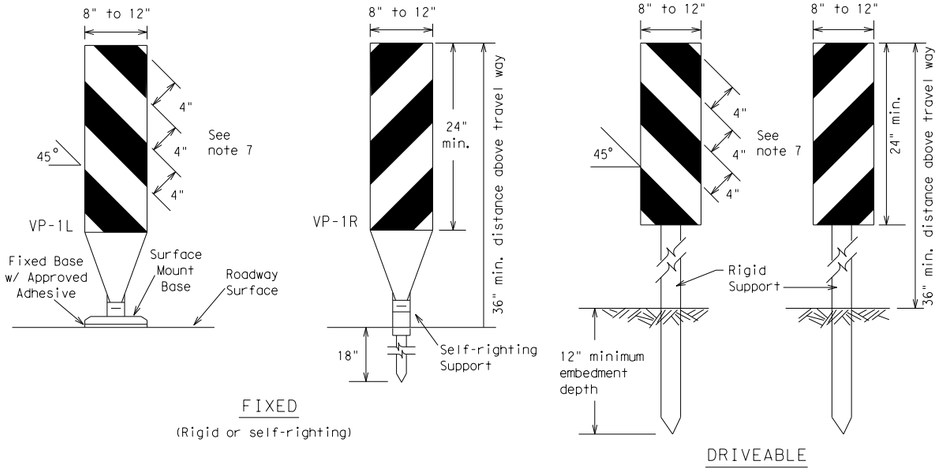
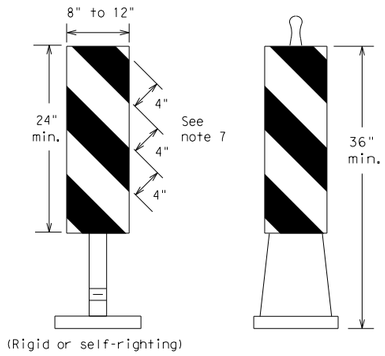
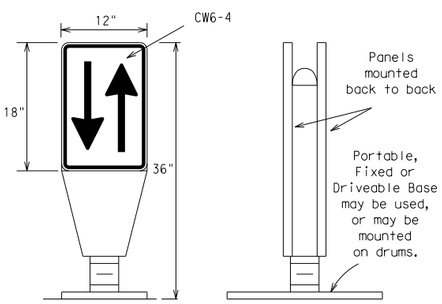




PORTABLE

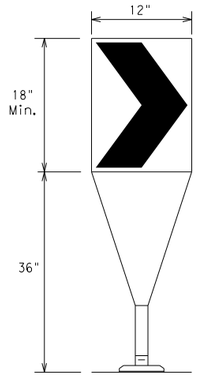
1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is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

VERTICAL PANELS (VPs)



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

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



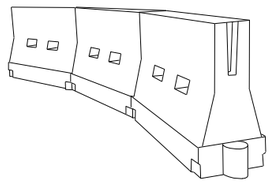
Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

1. The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
2. Chevrons are intended to give notice of a sharp change of alignment with the direction of travel and provide additional emphasis and guidance for vehicle operators with regard to changes in horizontal alignment of the roadway.
3. Chevrons, when used, shall be erected on the outside of a sharp curve or turn, or on the far side of an intersection. They shall be in line with and at right angles to approaching traffic. Spacing should be such that the motorist always has three in view, until the change in alignment eliminates its need.
4. To be effective, the chevron should be visible for at least 500 feet.
5. Chevrons shall be orange with a black nonreflective legend. Sheeting for the chevron shall be retroreflective Type B_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.
6. For Long Term Stationary use on tapers or transitions on freeways and divided highways, self-righting chevrons may be used to supplement plastic drums but not to replace plastic drums.

CHEVRONS

GENERAL NOTES

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



LONGITUDINAL CHANNELIZING DEVICES (LCD)

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

WATER BALLASTED SYSTEMS USED AS BARRIERS

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

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

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

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

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

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

SHEET 9 OF 12

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(9)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	0901	27	055	VAR
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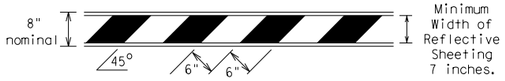
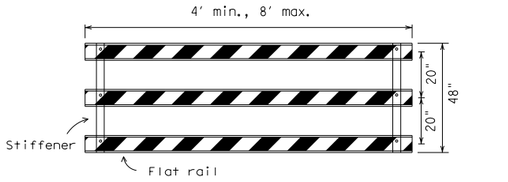
TYPE 3 BARRICADES

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

Barricades shall NOT be used as a sign support.



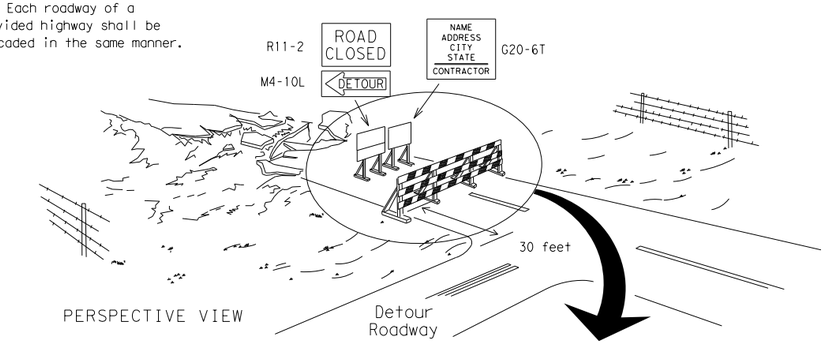
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



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

TYPICAL PANEL DETAIL
FOR SKID OR POST TYPE BARRICADES

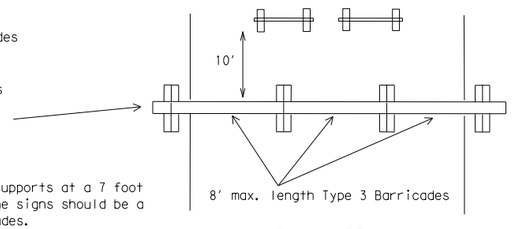
Each roadway of a divided highway shall be barricaded in the same manner.



PERSPECTIVE VIEW

The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.

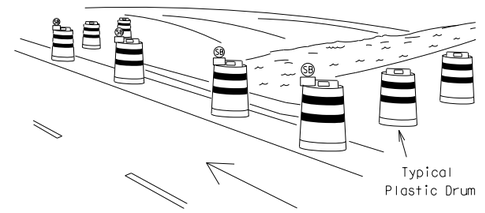
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

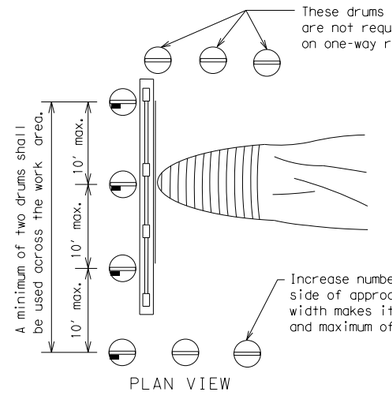
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

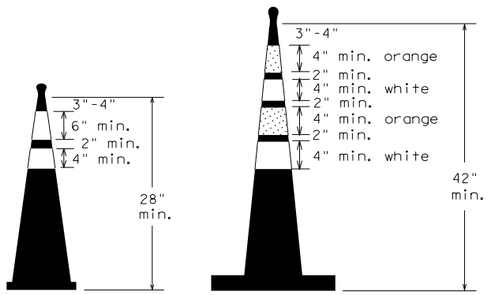
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder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



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

PLAN VIEW

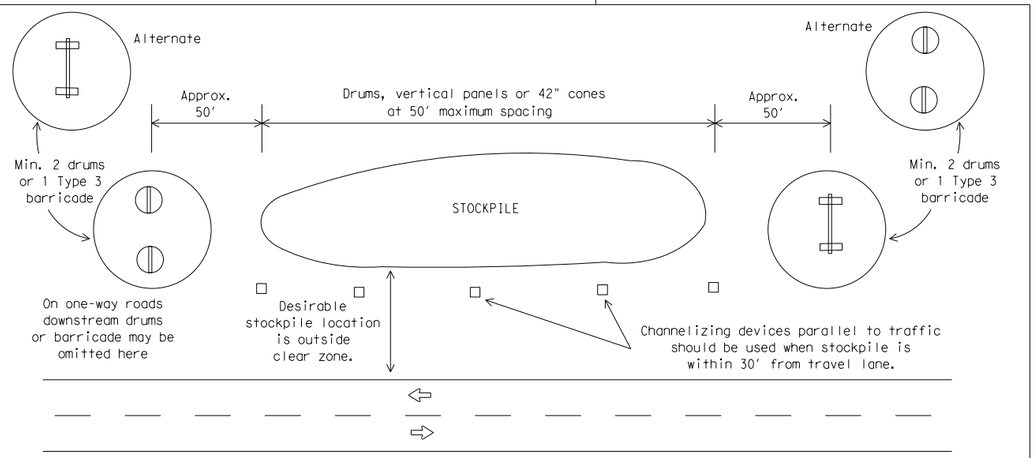
CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



28" Cones shall have a minimum weight of 9 1/2 lbs.

42" 2-piece cones shall have a minimum weight of 30 lbs. including base.

1. Traffic cones and tubular markers shall be predominantly orange, and meet the height and weight requirements shown above.
2. One-piece cones have the body and base of the cone molded in one consolidated unit. Two-piece cones have a cone shaped body and a separate rubber base, or ballast, that is added to keep the device upright and in place.
3. Two-piece cones may have a handle or loop extending up to 8" above the minimum height shown, in order to aid in retrieving the device.
4. Cones or tubular markers shall have white or white and orange reflective bands as shown above. The reflective bands shall have a smooth, sealed outer surface and meet the requirements of Departmental Material Specification DMS-8300 Type A or Type B.
5. 28" cones and tubular markers are generally suitable for short duration and short-term stationary work as defined on BC(4). These should not be used for intermediate-term or long-term stationary work unless personnel is on-site to maintain them in their proper upright position.
6. 42" two-piece cones, vertical panels or drums are suitable for all work zone durations.
7. Cones or tubular markers used on each project should be of the same size and shape.



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

SHEET 10 OF 12

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-21

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WORK ZONE PAVEMENT MARKINGS

GENERAL

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

RAISED PAVEMENT MARKERS

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

PREFABRICATED PAVEMENT MARKINGS

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

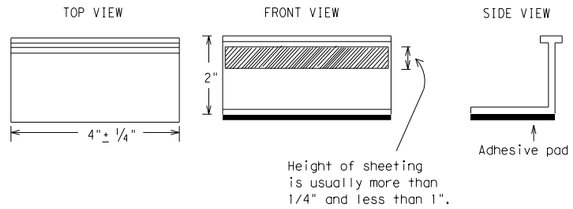
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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

REMOVAL OF PAVEMENT MARKINGS

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

Temporary Flexible-Reflective Roadway Marker Tabs



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

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

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

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

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

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

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

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS 2-98 9-07 5-21 1-02 7-13 11-02 8-14	0901	27	055	VAR
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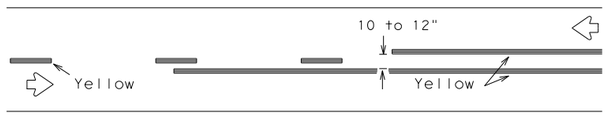
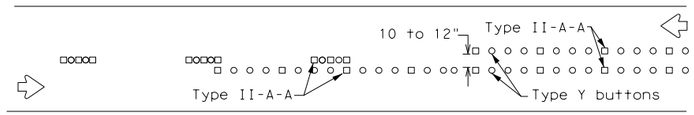
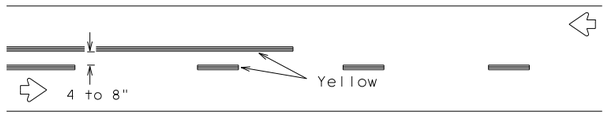
PAVEMENT MARKING PATTERNS



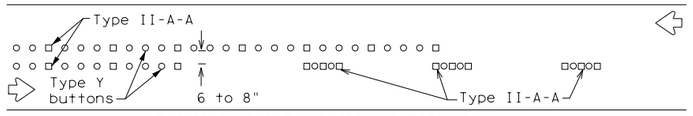
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



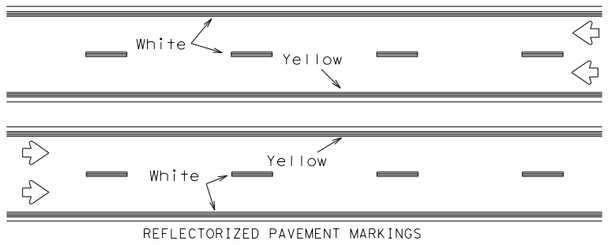
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



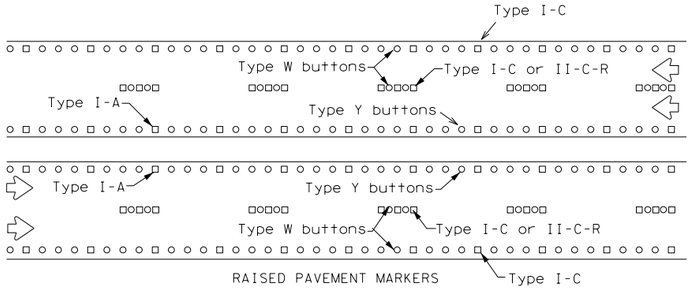
RAISED PAVEMENT MARKERS - PATTERN B

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

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



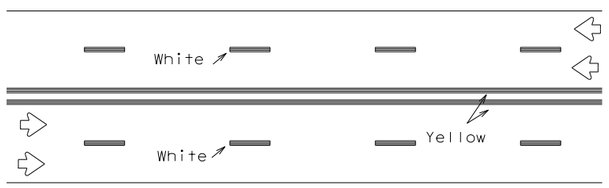
REFLECTORIZED PAVEMENT MARKINGS



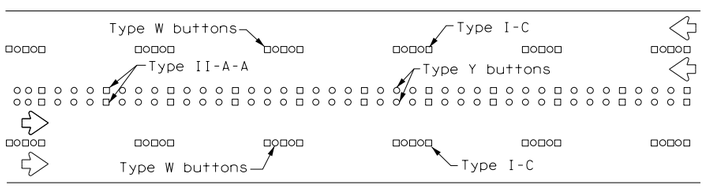
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



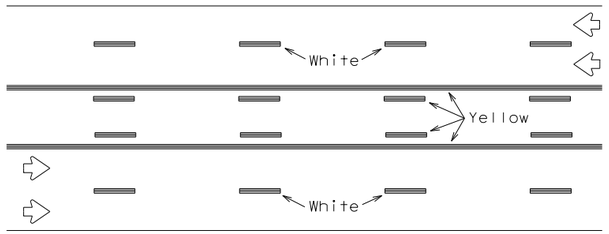
REFLECTORIZED PAVEMENT MARKINGS



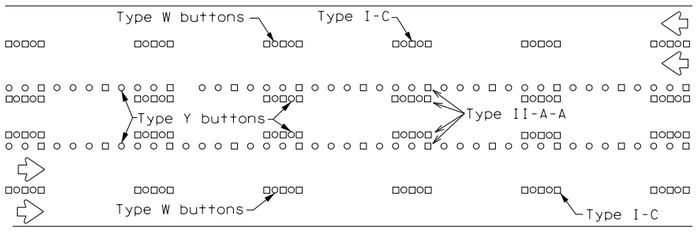
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

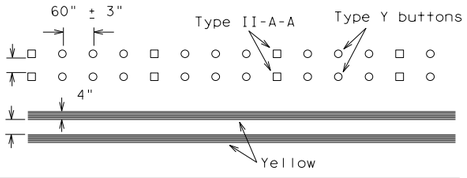
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

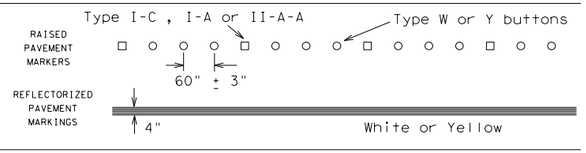
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

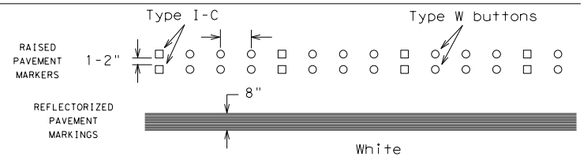


EDGE LINE OR SINGLE NO-PASSING LINE



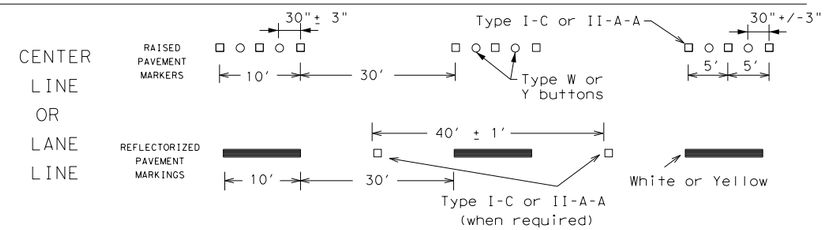
WIDE LINE

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

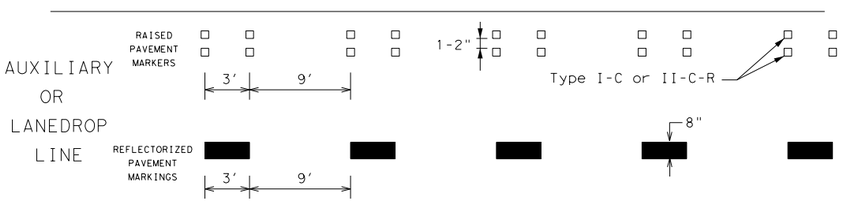


BROKEN LINES

CENTER LINE OR LANE LINE

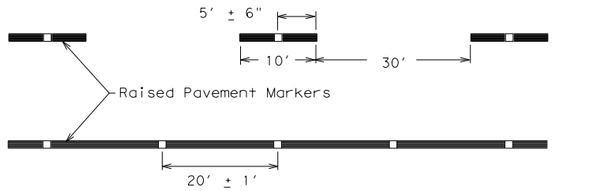


AUXILIARY OR LANEDROP LINE



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

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



Centerline only - not to be used on edge lines

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

Texas Department of Transportation

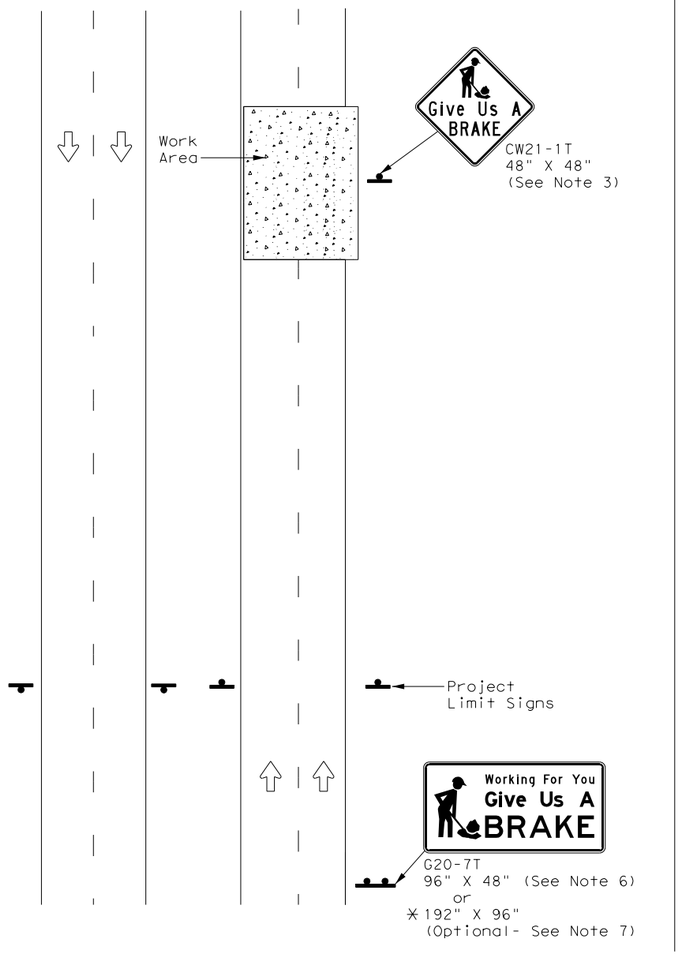
Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

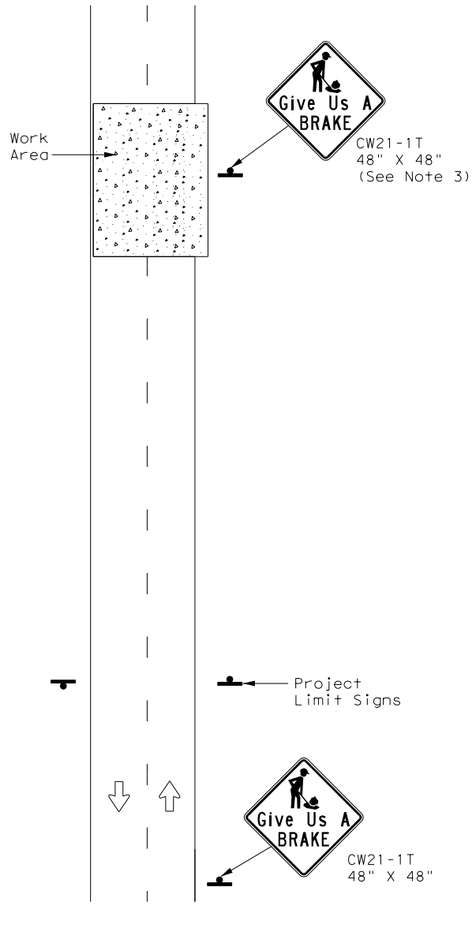
BC(12)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS	0901	27	055	VAR
1-97 9-07 5-21	DIST	COUNTY		SHEET NO.
2-98 7-13	PAR	RD RVR		23
11-02 8-14				

DATE: 1/4/2024 7:46:18 AM
FILE: S:\Projects\612\54\02\Design\02_Clarksville_ADA\Civil\Standards\TCP\wzbrk-13.dgn



DIVIDED HIGHWAY



UNDIVIDED HIGHWAY

SIGNS ARE SHOWN FOR ONE DIRECTION OF TRAVEL

✳ When the optional larger WORKING FOR YOU GIVE US A BRAKE (G20-7T) 192" x 96" sign is required, the locations shall be noted elsewhere in the plans.

SUMMARY OF LARGE SIGNS

BACKGROUND COLOR	SIGN DESIGNATION	SIGN	SIGN DIMENSIONS	REFLECTIVE SHEETING	SQ FT	GALVANIZED STRUCTURAL STEEL			DRILLED SHAFT 24" DIA. (LF)
						Size	(LF) ①	(LF) ②	
Orange	G20-7T	Working For You Give Us A BRAKE	96" X 48"	Type B_{FL} or C_{FL}	32	▲	▲	▲	▲
Orange	G20-7T	Working For You Give Us A BRAKE	192" X 96"	Type B_{FL} or C_{FL}	128	W8x18	16	17	12

▲ See Note 6 Below

LEGEND	
	Sign
	Large Sign
	Traffic Flow

DEPARTMENTAL MATERIAL SPECIFICATIONS	
PLYWOOD SIGN BLANKS	DMS-7100
ALUMINUM SIGN BLANKS	DMS-7110
SIGN FACE MATERIALS	DMS-8300

COLOR	USAGE	SHEETING MATERIAL
ORANGE	BACKGROUND	TYPE B_{FL} OR TYPE C_{FL}
BLACK	LEGEND & BORDERS	NON-REFLECTIVE ACRYLIC FILM

GENERAL NOTES

1. See BC and SMD sheets for additional sign support details.
2. Sign locations shall be approved by the Engineer.
3. For projects more than two miles in length, Give Us a BRAKE signs should be repeated halfway through the project. The Give Us a Brake (CW21-1T) may be used for this purpose.
4. Work zone speed limits are sometimes used in conjunction with GIVE US A BRAKE signing. See BC(3) for location and spacing of construction speed zone signing when required.
5. Give Us a Brake (CW21-1T) signs and supports shall be considered subsidiary to Item 502, "Barricades, Signs and Traffic Handling."
6. The 96" X 48" Working For You Give Us A BRAKE (G20-7T) may use a 1/2" or 5/8" plywood substrate or 0.125" aluminum sheeting substrate and may be supported by two 4" x 6" wood posts with drilled holes for breakaway as per BC(5) and will be subsidiary to Item 502.
7. The Working For You Give Us A BRAKE (G20-7T) 192" X 96" sign shall be paid for under the following specification items:
   Item 636 - Aluminum Signs
   Item 647 - Large Roadside Sign Supports and Assemblies.
   Item 416 - Drilled Shaft Foundations
8. All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.

Texas Department of Transportation

Traffic Operations Division Standard

WORK ZONE "GIVE US A BRAKE" SIGNS

WZ(BRK)-13

FILE: wzbrk-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT August 1995	CONT	SECT	JOB	HIGHWAY
REVISIONS	0901	27	055	VAR
6-96 5-98 7-13	DIST	COUNTY		SHEET NO.
8-96 3-03	PAR	RD RVR		24

DATE: 1/4/2024 7:46:18 AM
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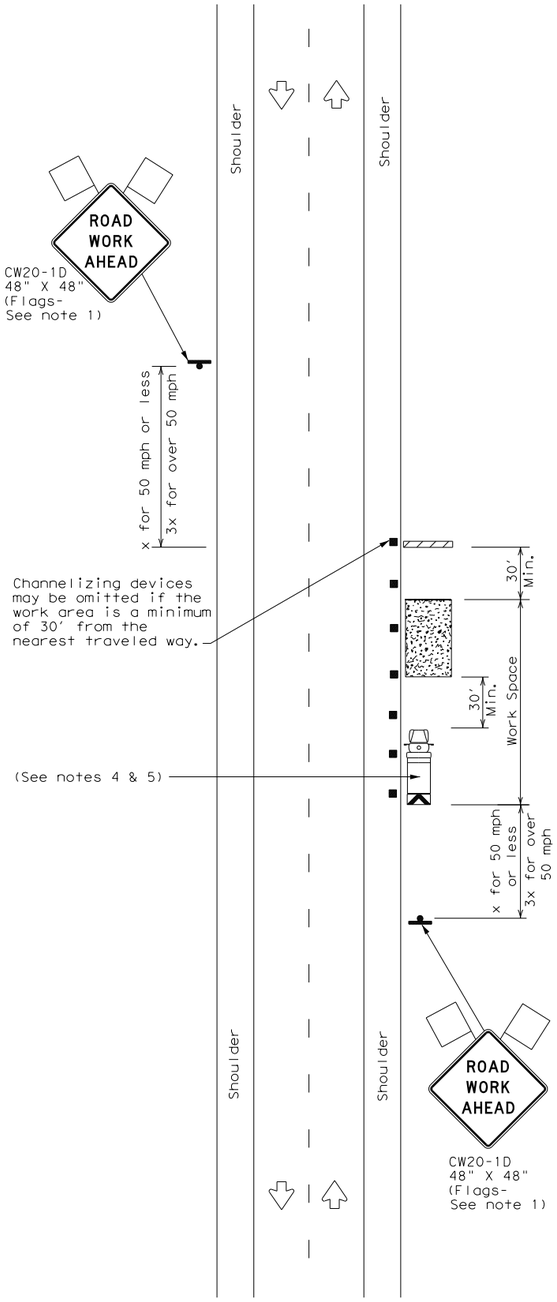
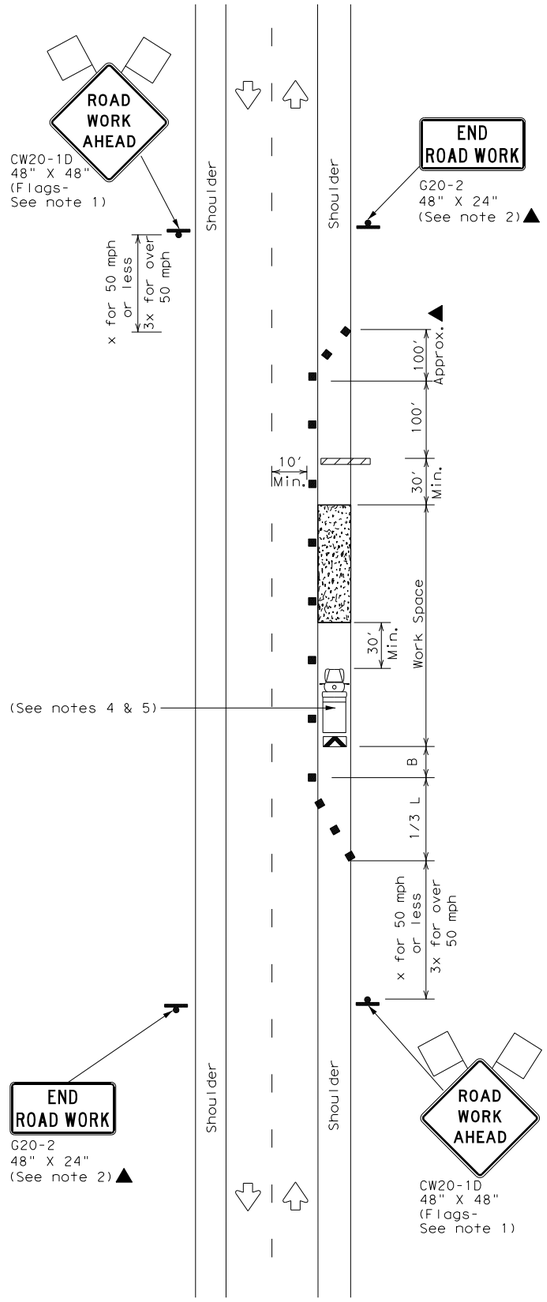


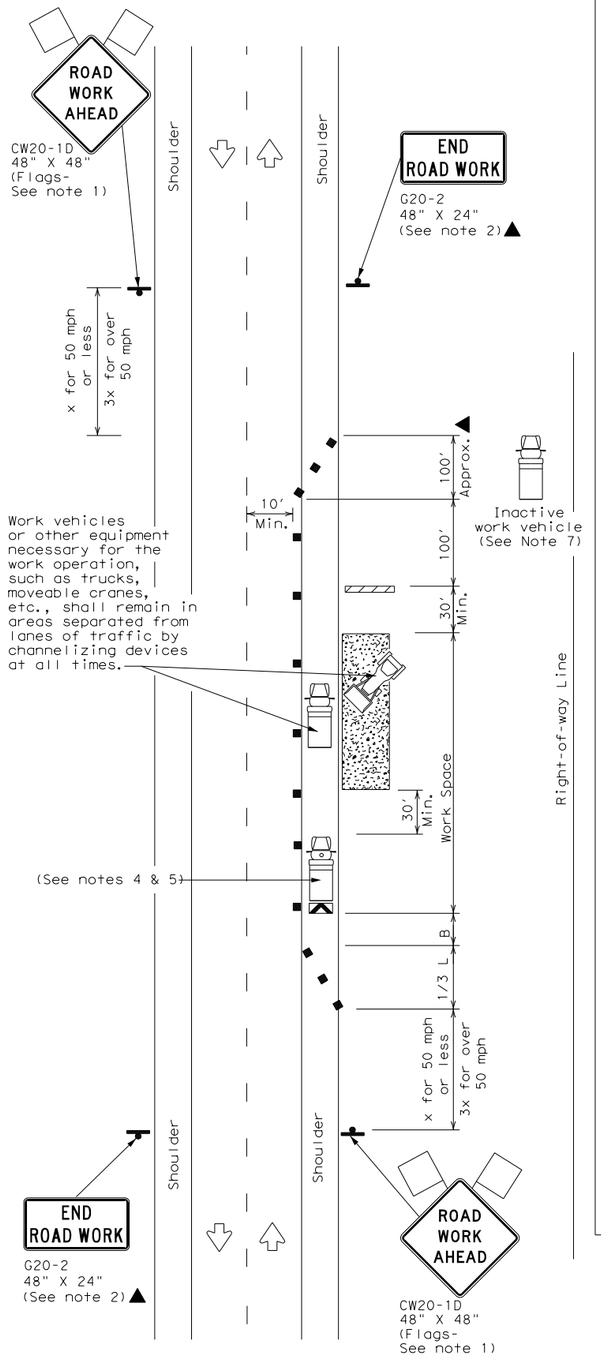
TCP (2-1a)

WORK SPACE NEAR SHOULDER
Conventional Roads



TCP (2-1b)

WORK SPACE ON SHOULDER
Conventional Roads



TCP (2-1c)

WORK VEHICLES ON SHOULDER
Conventional Roads

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

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

* Conventional Roads Only

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

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

GENERAL NOTES

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

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK

TCP(2-1)-18

FILE: tcp2-1-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	0901	27	055	VAR
2-94 4-98	DIST	COUNTY		SHEET NO.
8-95 2-12				
1-97 2-18	PAR	RD RVR		25

DATE: 1/4/2024 7:46:19 AM
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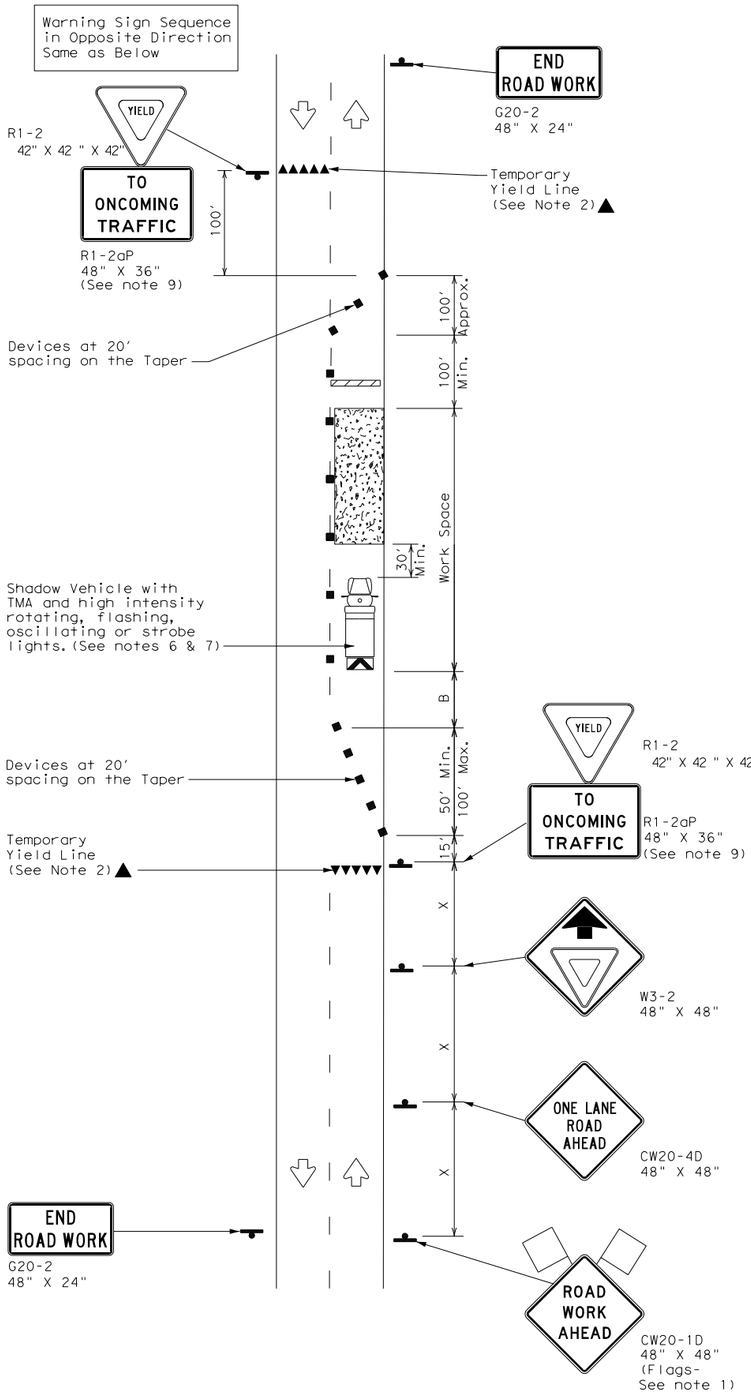
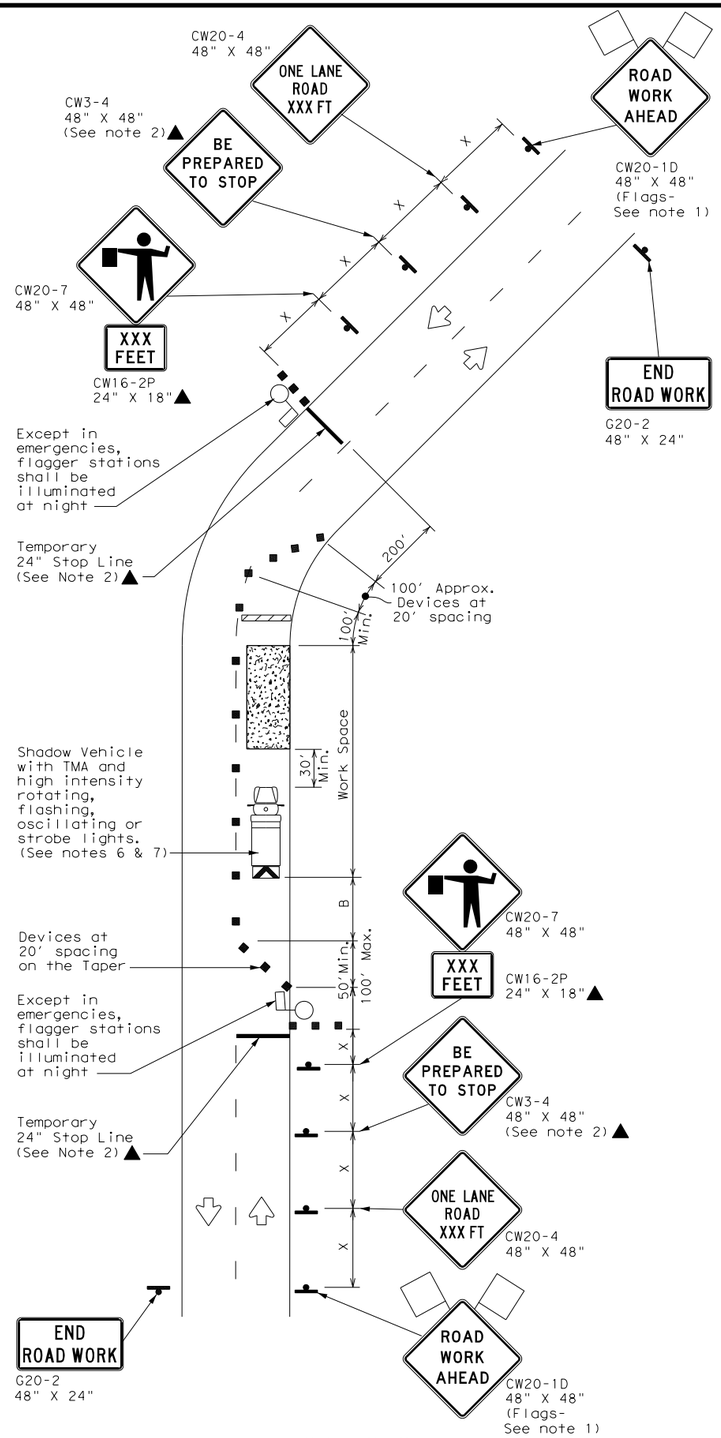


TCP (2-2a)
2-LANE ROADWAY WITHOUT PAVED SHOULDERS
ONE LANE TWO-WAY
CONTROL WITH YIELD SIGNS
(Less than 2000 ADT - See Note 9)



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

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

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

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

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

GENERAL NOTES

1. Flags attached to signs where shown, are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4 "ONE LANE ROAD XXX FT" sign, but proper sign spacing shall be maintained.
4. Flaggers should use two-way radios or other methods of communication to control traffic.
5. Length of work space should be based on the ability of flaggers to communicate.
6. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
7. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.

TCP (2-2a)

8. The R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work space should be no longer than one half city block. In rural areas, roadways with less than 2000 ADT, work space should be no longer than 400 feet.
9. The R1-2aP "YIELD TO ONCOMING TRAFFIC" sign shall be placed on a support at a 7 foot minimum mounting height.

TCP (2-2b)

10. Channelizing devices on the center line may be omitted when a pilot car is leading traffic and approved by the Engineer.
11. If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain stopping sight distance to the flagger and a queue of stopped vehicles. (See table above).
12. Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situtations.

Texas Department of Transportation
Traffic Operations Division Standard

TRAFFIC CONTROL PLAN ONE-LANE TWO-WAY TRAFFIC CONTROL

TCP(2-2)-18

FILE: tcp2-2-18.dgn	DN:	CK:	DW:	CK:
©TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS 8-95 3-03 1-97 2-12 4-98 2-18	0901	27	055	VAR
	DIST	COUNTY		SHEET NO.
	PAR	RD RVR		26

Plotted on: 1/4/2024

Design Filename: S:\projects\612154\02\Design\02_Clarksville_ADA\Civil\General\612540202_hc.dgn

CLARK

Beginning chain CL_CLARK description
Feature: Geom_Centerline

Point 69 N 7,291,345.21 E 3,013,721.34 Sta 100+00.00

Course from 69 to 70 S 58° 31′ 55" E Dist 475.00

Point 70 N 7,291,097.25 E 3,014,126.48 Sta 104+75.00

Course from 70 to 71 S 59° 09′ 37" E Dist 825.00

Point 71 N 7,290,674.32 E 3,014,834.83 Sta 113+00.00

Course from 71 to PC CL_CLARK_7 S 58° 39′ 38" E Dist 498.28

Curve Data

Curve CL_CLARK_7						
P.I. Station		118+00.00	N	7,290,414.27	E	3,015,261.88
Delta	=	3° 17′ 33"	(RT)			
Degree	=	95° 29′ 35"				
Tangent	=	1.72				
Length	=	3.45				
Radius	=	60.00				
External	=	0.02				
Long Chord	=	3.45				
Mid. Ord.	=	0.02				
P.C. Station		117+98.28	N	7,290,415.16	E	3,015,260.40
P.T. Station		118+01.72	N	7,290,413.29	E	3,015,263.30
C.C.			N	7,290,363.92	E	3,015,229.20
Back	= S 58° 39′ 38" E					
Ahead	= S 55° 22′ 05" E					
Chord Bear	= S 57° 00′ 51" E					

Course from PT CL_CLARK_7 to PC CL_CLARK_10 S 55° 22′ 05" E Dist 101.21

Curve Data

Curve CL_CLARK_10						
P.I. Station		119+05.00	N	7,290,354.59	E	3,015,348.27
Delta	=	3° 56′ 29"	(RT)			
Degree	=	95° 29′ 35"				
Tangent	=	2.06				
Length	=	4.13				
Radius	=	60.00				
External	=	0.04				
Long Chord	=	4.13				
Mid. Ord.	=	0.04				
P.C. Station		119+02.93	N	7,290,355.77	E	3,015,346.58
P.T. Station		119+07.06	N	7,290,353.31	E	3,015,349.89
C.C.			N	7,290,306.40	E	3,015,312.48
Back	= S 55° 22′ 05" E					
Ahead	= S 51° 25′ 36" E					
Chord Bear	= S 53° 23′ 50" E					

Course from PT CL_CLARK_10 to PC CL_CLARK_13 S 51° 25′ 36" E Dist 90.67

Curve Data

Curve CL_CLARK_13						
P.I. Station		120+08.00	N	7,290,290.37	E	3,015,428.80
Delta	=	19° 25′ 24"	(LT)			
Degree	=	95° 29′ 35"				
Tangent	=	10.27				
Length	=	20.34				
Radius	=	60.00				
External	=	0.87				
Long Chord	=	20.24				
Mid. Ord.	=	0.86				
P.C. Station		119+97.73	N	7,290,296.78	E	3,015,420.77
P.T. Station		120+18.07	N	7,290,287.00	E	3,015,438.50
C.C.			N	7,290,343.68	E	3,015,458.18
Back	= S 51° 25′ 36" E					
Ahead	= S 70° 50′ 59" E					
Chord Bear	= S 61° 08′ 17" E					

Course from PT CL_CLARK_13 to PC CL_CLARK_16 S 70° 50′ 59" E Dist 84.05

Curve Data

Curve CL_CLARK_16						
P.I. Station		121+07.80	N	7,290,257.57	E	3,015,523.27
Delta	=	10° 49′ 30"	(RT)			
Degree	=	95° 29′ 35"				
Tangent	=	5.68				
Length	=	11.34				
Radius	=	60.00				
External	=	0.27				
Long Chord	=	11.32				
Mid. Ord.	=	0.27				
P.C. Station		121+02.12	N	7,290,259.43	E	3,015,517.90
P.T. Station		121+13.45	N	7,290,254.73	E	3,015,528.19
C.C.			N	7,290,202.75	E	3,015,498.21
Back	= S 70° 50′ 59" E					
Ahead	= S 60° 01′ 29" E					
Chord Bear	= S 65° 26′ 14" E					

Course from PT CL_CLARK_16 to PC CL_CLARK_19 S 60° 01′ 29" E Dist 91.31

Curve Data

Curve CL_CLARK_19						
P.I. Station		122+12.77	N	7,290,205.11	E	3,015,614.22
Delta	=	15° 12′ 27"	(RT)			
Degree	=	95° 29′ 35"				
Tangent	=	8.01				
Length	=	15.93				
Radius	=	60.00				
External	=	0.53				
Long Chord	=	15.88				
Mid. Ord.	=	0.53				
P.C. Station		122+04.76	N	7,290,209.11	E	3,015,607.28
P.T. Station		122+20.68	N	7,290,199.43	E	3,015,619.87
C.C.			N	7,290,157.13	E	3,015,577.31
Back	= S 60° 01′ 29" E					
Ahead	= S 44° 49′ 02" E					
Chord Bear	= S 52° 25′ 15" E					

Course from PT CL_CLARK_19 to PC CL_CLARK_22 S 44° 49′ 02" E Dist 81.16

Curve Data

Curve CL_CLARK_22						
P.I. Station		123+08.67	N	7,290,137.01	E	3,015,681.89
Delta	=	12° 59′ 52"	(LT)			
Degree	=	95° 29′ 35"				
Tangent	=	6.83				
Length	=	13.61				
Radius	=	60.00				
External	=	0.39				
Long Chord	=	13.58				
Mid. Ord.	=	0.39				
P.C. Station		123+01.84	N	7,290,141.86	E	3,015,677.07
P.T. Station		123+15.45	N	7,290,133.37	E	3,015,687.67
C.C.			N	7,290,184.15	E	3,015,719.63
Back	= S 44° 49′ 02" E					
Ahead	= S 57° 48′ 54" E					
Chord Bear	= S 51° 18′ 58" E					

Course from PT CL_CLARK_22 to PC CL_CLARK_25 S 57° 48′ 54" E Dist 86.84

Curve Data

Curve CL_CLARK_25						
P.I. Station		124+08.61	N	7,290,083.74	E	3,015,766.52
Delta	=	12° 01′ 55"	(LT)			
Degree	=	95° 29′ 35"				
Tangent	=	6.32				
Length	=	12.60				
Radius	=	60.00				
External	=	0.33				
Long Chord	=	12.58				
Mid. Ord.	=	0.33				
P.C. Station		124+02.29	N	7,290,087.11	E	3,015,761.17
P.T. Station		124+14.89	N	7,290,081.56	E	3,015,772.46
C.C.			N	7,290,137.89	E	3,015,793.13
Back	= S 57° 48′ 54" E					
Ahead	= S 69° 50′ 49" E					
Chord Bear	= S 63° 49′ 52" E					

Course from PT CL_CLARK_25 to PC CL_CLARK_28 S 69° 50′ 49" E Dist 92.61

Curve Data

Curve CL_CLARK_28						
P.I. Station		125+12.57	N	7,290,047.91	E	3,015,864.15
Delta	=	9° 39′ 24"	(RT)			
Degree	=	95° 29′ 35"				
Tangent	=	5.07				
Length	=	10.11				
Radius	=	60.00				
External	=	0.21				
Long Chord	=	10.10				
Mid. Ord.	=	0.21				
P.C. Station		125+07.50	N	7,290,049.66	E	3,015,859.39
P.T. Station		125+17.61	N	7,290,045.39	E	3,015,868.55
C.C.			N	7,289,993.33	E	3,015,838.72
Back	= S 69° 50′ 49" E					
Ahead	= S 60° 11′ 26" E					
Chord Bear	= S 65° 01′ 07" E					

Course from PT CL_CLARK_28 to PC CL_CLARK_31 S 60° 11′ 26" E Dist 191.53

Curve Data

Curve CL_CLARK_31						
P.I. Station		127+12.54	N	7,289,948.49	E	3,016,037.69
Delta	=	6° 29′ 46"	(LT)			
Degree	=	95° 29′ 35"				
Tangent	=	3.40				
Length	=	6.80				
Radius	=	60.00				
External	=	0.10				
Long Chord	=	6.80				
Mid. Ord.	=	0.10				
P.C. Station		127+09.14	N	7,289,950.18	E	3,016,034.73
P.T. Station		127+15.94	N	7,289,947.14	E	3,016,040.82
C.C.			N	7,290,002.24	E	3,016,064.56
Back	= S 60° 11′ 26" E					
Ahead	= S 66° 41′ 11" E					
Chord Bear	= S 63° 26′ 18" E					

Course from PT CL_CLARK_31 to PC CL_CLARK_34 S 66° 41′ 11" E Dist 308.11

DESIGN

STATE OF TEXAS · TYLER PAYNE DUBE · 118612 · LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS · JOHN A. TYLER · 105193 · LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

HORIZONTAL ALIGNMENT DATA SHEET

SHEET 1 OF 3

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	27

Curve Data

Curve CL_CLARK_34

P.I. Station	130+31.76	N	7,289,822.15	E	3,016,330.85
Delta =	14° 38′ 19" (LT)				
Degree =	95° 29′ 35"				
Tangent =	7.71				
Length =	15.33				
Radius =	60.00				
External =	0.49				
Long Chord =	15.29				
Mid. Ord. =	0.49				
P.C. Station	130+24.05	N	7,289,825.20	E	3,016,323.77
P.T. Station	130+39.38	N	7,289,820.99	E	3,016,338.47
C.C.		N	7,289,880.30	E	3,016,347.52

Back = S 66° 41′ 11" E
Ahead = S 81° 19′ 30" E
Chord Bear = S 74° 00′ 21" E

Course from PT CL_CLARK_34 to PC CL_CLARK_37 S 81° 19′ 30" E Dist 43.15

Curve Data

Curve CL_CLARK_37

P.I. Station	131+05.44	N	7,289,811.03	E	3,016,403.77
Delta =	41° 47′ 42" (RT)				
Degree =	95° 29′ 35"				
Tangent =	22.91				
Length =	43.77				
Radius =	60.00				
External =	4.22				
Long Chord =	42.80				
Mid. Ord. =	3.95				
P.C. Station	130+82.54	N	7,289,814.48	E	3,016,381.13
P.T. Station	131+26.30	N	7,289,793.36	E	3,016,418.36
C.C.		N	7,289,755.17	E	3,016,372.08

Back = S 81° 19′ 30" E
Ahead = S 39° 31′ 49" E
Chord Bear = S 60° 25′ 39" E

Course from PT CL_CLARK_37 to PC CL_CLARK_40 S 39° 31′ 49" E Dist 7.71

Curve Data

Curve CL_CLARK_40

P.I. Station	131+50.74	N	7,289,774.51	E	3,016,433.91
Delta =	31° 09′ 29" (LT)				
Degree =	95° 29′ 35"				
Tangent =	16.73				
Length =	32.63				
Radius =	60.00				
External =	2.29				
Long Chord =	32.23				
Mid. Ord. =	2.20				
P.C. Station	131+34.01	N	7,289,787.41	E	3,016,423.26
P.T. Station	131+66.64	N	7,289,768.98	E	3,016,449.70
C.C.		N	7,289,825.60	E	3,016,469.54

Back = S 39° 31′ 49" E
Ahead = S 70° 41′ 18" E
Chord Bear = S 55° 06′ 33" E

Course from PT CL_CLARK_40 to 72 S 70° 41′ 18" E Dist 364.27

Point 72 N 7,289,648.51 E 3,016,793.47 Sta 135+30.91

Course from 72 to PC CL_CLARK_45 S 72° 42′ 45" E Dist 454.72

Curve Data

Curve CL_CLARK_45

P.I. Station	139+88.91	N	7,289,512.41	E	3,017,230.78
Delta =	6° 15′ 15" (LT)				
Degree =	95° 29′ 35"				
Tangent =	3.28				
Length =	6.55				
Radius =	60.00				
External =	0.09				
Long Chord =	6.55				
Mid. Ord. =	0.09				
P.C. Station	139+85.63	N	7,289,513.38	E	3,017,227.65
P.T. Station	139+92.18	N	7,289,511.78	E	3,017,234.00
C.C.		N	7,289,570.67	E	3,017,245.48

Back = S 72° 42′ 45" E
Ahead = S 78° 58′ 00" E
Chord Bear = S 75° 50′ 23" E

Course from PT CL_CLARK_45 to PC CL_CLARK_48 S 78° 58′ 00" E Dist 86.19

Curve Data

Curve CL_CLARK_48

P.I. Station	140+80.90	N	7,289,494.80	E	3,017,321.08
Delta =	4° 50′ 16" (RT)				
Degree =	95° 29′ 35"				
Tangent =	2.53				
Length =	5.07				
Radius =	60.00				
External =	0.05				
Long Chord =	5.06				
Mid. Ord. =	0.05				
P.C. Station	140+78.37	N	7,289,495.29	E	3,017,318.59
P.T. Station	140+83.43	N	7,289,494.11	E	3,017,323.52
C.C.		N	7,289,436.40	E	3,017,307.11

Back = S 78° 58′ 00" E
Ahead = S 74° 07′ 45" E
Chord Bear = S 76° 32′ 53" E

Course from PT CL_CLARK_48 to PC CL_CLARK_51 S 74° 07′ 45" E Dist 144.67

Curve Data

Curve CL_CLARK_51

P.I. Station	142+30.90	N	7,289,453.78	E	3,017,465.36
Delta =	5° 20′ 21" (LT)				
Degree =	95° 29′ 35"				
Tangent =	2.80				
Length =	5.59				
Radius =	60.00				
External =	0.07				
Long Chord =	5.59				
Mid. Ord. =	0.07				
P.C. Station	142+28.10	N	7,289,454.55	E	3,017,462.67
P.T. Station	142+33.69	N	7,289,453.27	E	3,017,468.11
C.C.		N	7,289,512.26	E	3,017,479.08

Back = S 74° 07′ 45" E
Ahead = S 79° 28′ 06" E
Chord Bear = S 76° 47′ 55" E

Course from PT CL_CLARK_51 to 73 S 79° 28′ 06" E Dist 114.20

Point 73 N 7,289,432.40 E 3,017,580.39 Sta 143+47.90

Course from 73 to PC CL_CLARK_56 S 77° 50′ 52" E Dist 523.49

Curve Data

Curve CL_CLARK_56

P.I. Station	148+80.12	N	7,289,320.36	E	3,018,100.69
Delta =	16° 34′ 12" (RT)				
Degree =	95° 29′ 35"				
Tangent =	8.74				
Length =	17.35				
Radius =	60.00				
External =	0.63				
Long Chord =	17.29				
Mid. Ord. =	0.63				
P.C. Station	148+71.38	N	7,289,322.20	E	3,018,092.15
P.T. Station	148+88.73	N	7,289,316.16	E	3,018,108.35
C.C.		N	7,289,263.54	E	3,018,079.52

Back = S 77° 50′ 52" E
Ahead = S 61° 16′ 39" E
Chord Bear = S 69° 33′ 45" E

Course from PT CL_CLARK_56 to PC CL_CLARK_59 S 61° 16′ 39" E Dist 87.53

Curve Data

Curve CL_CLARK_59

P.I. Station	149+84.09	N	7,289,270.33	E	3,018,191.98
Delta =	14° 51′ 58" (LT)				
Degree =	95° 29′ 35"				
Tangent =	7.83				
Length =	15.57				
Radius =	60.00				
External =	0.51				
Long Chord =	15.52				
Mid. Ord. =	0.50				
P.C. Station	149+76.27	N	7,289,274.09	E	3,018,185.11
P.T. Station	149+91.83	N	7,289,268.46	E	3,018,199.58
C.C.		N	7,289,326.71	E	3,018,213.95

Back = S 61° 16′ 39" E
Ahead = S 76° 08′ 38" E
Chord Bear = S 68° 42′ 38" E

Course from PT CL_CLARK_59 to PC CL_CLARK_62 S 76° 08′ 38" E Dist 203.91

Curve Data

Curve CL_CLARK_62

P.I. Station	152+06.83	N	7,289,216.97	E	3,018,408.32
Delta =	20° 56′ 02" (LT)				
Degree =	95° 29′ 35"				
Tangent =	11.08				
Length =	21.92				
Radius =	60.00				
External =	1.02				
Long Chord =	21.80				
Mid. Ord. =	1.00				
P.C. Station	151+95.75	N	7,289,219.62	E	3,018,397.56
P.T. Station	152+17.67	N	7,289,218.33	E	3,018,419.32
C.C.		N	7,289,277.88	E	3,018,411.92

Back = S 76° 08′ 38" E
Ahead = N 82° 55′ 20" E
Chord Bear = S 86° 36′ 39" E

Course from PT CL_CLARK_62 to PC CL_CLARK_65 N 82° 55′ 20" E Dist 86.41

Curve Data

Curve CL_CLARK_65

P.I. Station	153+14.67	N	7,289,230.29	E	3,018,515.58
Delta =	20° 01′ 29" (RT)				
Degree =	95° 29′ 35"				
Tangent =	10.59				
Length =	20.97				
Radius =	60.00				
External =	0.93				
Long Chord =	20.86				
Mid. Ord. =	0.91				
P.C. Station	153+04.08	N	7,289,228.98	E	3,018,505.07
P.T. Station	153+25.05	N	7,289,227.91	E	3,018,525.90
C.C.		N	7,289,169.44	E	3,018,512.46

Back = N 82° 55′ 20" E
Ahead = S 77° 03′ 11" E
Chord Bear = S 87° 03′ 55" E

DESIGN

STATE OF TEXAS · TYLER PAYNE DUBE · 118612 · LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS · JOHN A. TYLER · 105193 · LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

HORIZONTAL ALIGNMENT DATA SHEET

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DW:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DW:	PAR	RD RVR	0901	27	055	28

Plotted on: 1/4/2024

Design Filename: S:\projects\612\54\02\Design\02_Clarksville_ADA\Civil\General\612540202_hc.dgn

Course from PT CL_CLARK_65 to 74 S 77° 03′ 11" E Dist 219.41

Point 74 N 7,289,178.75 E 3,018,739.73 Sta 155+44.45

Course from 74 to 75 S 76° 14′ 27" E Dist 498.00

Point 75 N 7,289,060.31 E 3,019,223.44 Sta 160+42.45

Course from 75 to 76 S 78° 13′ 26" E Dist 397.00

Point 76 N 7,288,979.28 E 3,019,612.08 Sta 164+39.45

Course from 76 to PC CL_CLARK_74 S 80° 08′ 17" E Dist 137.44

Curve Data

Curve CL_CLARK_74						
P.I. Station		165+78.45	N	7,288,955.48	E	3,019,749.03
Delta	=	2° 58′ 09"	(RT)			
Degree	=	95° 29′ 35"				
Tangent	=	1.56				
Length	=	3.11				
Radius	=	60.00				
External	=	0.02				
Long Chord	=	3.11				
Mid. Ord.	=	0.02				
P.C. Station		165+76.90	N	7,288,955.74	E	3,019,747.50
P.T. Station		165+80.01	N	7,288,955.13	E	3,019,750.55
C.C.			N	7,288,896.63	E	3,019,737.22
Back	= S 80° 08′ 17" E					
Ahead	= S 77° 10′ 08" E					
Chord Bear	= S 78° 39′ 13" E					

Course from PT CL_CLARK_74 to 77 S 77° 10′ 08" E Dist 501.44

Point 77 N 7,288,843.77 E 3,020,239.47 Sta 170+81.45

Course from 77 to 78 S 75° 48′ 56" E Dist 90.00

Point 78 N 7,288,821.72 E 3,020,326.73 Sta 171+71.45

Course from 78 to 79 S 77° 35′ 53" E Dist 1,088.00

Point 79 N 7,288,588.05 E 3,021,389.34 Sta 182+59.45

Course from 79 to PC CL_CLARK_83 S 78° 11′ 12" E Dist 502.23

Curve Data

Curve CL_CLARK_83						
P.I. Station		187+63.45	N	7,288,484.87	E	3,021,882.66
Delta	=	3° 23′ 08"	(LT)			
Degree	=	95° 29′ 35"				
Tangent	=	1.77				
Length	=	3.55				
Radius	=	60.00				
External	=	0.03				
Long Chord	=	3.54				
Mid. Ord.	=	0.03				
P.C. Station		187+61.68	N	7,288,485.23	E	3,021,880.93
P.T. Station		187+65.22	N	7,288,484.61	E	3,021,884.42
C.C.			N	7,288,543.96	E	3,021,893.21
Back	= S 78° 11′ 12" E					
Ahead	= S 81° 34′ 20" E					
Chord Bear	= S 79° 52′ 46" E					

Course from PT CL_CLARK_83 to PC CL_CLARK_86 S 81° 34′ 20" E Dist 315.91

Curve Data

Curve CL_CLARK_86						
P.I. Station		190+87.45	N	7,288,437.38	E	3,022,203.16
Delta	=	12° 00′ 50"	(LT)			
Degree	=	95° 29′ 35"				
Tangent	=	6.31				
Length	=	12.58				
Radius	=	60.00				
External	=	0.33				
Long Chord	=	12.56				
Mid. Ord.	=	0.33				
P.C. Station		190+81.14	N	7,288,438.31	E	3,022,196.92
P.T. Station		190+93.72	N	7,288,437.78	E	3,022,209.47
C.C.			N	7,288,497.66	E	3,022,205.71
Back	= S 81° 34′ 20" E					
Ahead	= N 86° 24′ 50" E					
Chord Bear	= S 87° 34′ 45" E					

Course from PT CL_CLARK_86 to PC CL_CLARK_89 N 86° 24′ 50" E Dist 11.13

Curve Data

Curve CL_CLARK_89						
P.I. Station		191+10.40	N	7,288,438.82	E	3,022,226.12
Delta	=	10° 34′ 49"	(RT)			
Degree	=	95° 29′ 35"				
Tangent	=	5.56				
Length	=	11.08				
Radius	=	60.00				
External	=	0.26				
Long Chord	=	11.06				
Mid. Ord.	=	0.26				
P.C. Station		191+04.85	N	7,288,438.47	E	3,022,220.57
P.T. Station		191+15.93	N	7,288,438.15	E	3,022,231.63
C.C.			N	7,288,378.59	E	3,022,224.33
Back	= N 86° 24′ 50" E					
Ahead	= S 83° 00′ 20" E					
Chord Bear	= S 88° 17′ 45" E					

Course from PT CL_CLARK_89 to 80 S 83° 00′ 20" E Dist 239.44

Point 80 N 7,288,408.99 E 3,022,469.30 Sta 193+55.37

Course from 80 to 81 S 83° 40′ 29" E Dist 485.00

Point 81 N 7,288,355.55 E 3,022,951.34 Sta 198+40.37

Course from 81 to PC CL_CLARK_96 S 83° 21′ 13" E Dist 519.67

Curve Data

Curve CL_CLARK_96						
P.I. Station		203+62.37	N	7,288,295.14	E	3,023,469.83
Delta	=	4° 27′ 25"	(RT)			
Degree	=	95° 29′ 35"				
Tangent	=	2.33				
Length	=	4.67				
Radius	=	60.00				
External	=	0.05				
Long Chord	=	4.67				
Mid. Ord.	=	0.05				
P.C. Station		203+60.04	N	7,288,295.41	E	3,023,467.52
P.T. Station		203+64.71	N	7,288,294.69	E	3,023,472.13
C.C.			N	7,288,235.81	E	3,023,460.57
Back	= S 83° 21′ 13" E					
Ahead	= S 78° 53′ 48" E					
Chord Bear	= S 81° 07′ 30" E					

Course from PT CL_CLARK_96 to 82 S 78° 53′ 48" E Dist 92.67

Point 82 N 7,288,276.84 E 3,023,563.06 Sta 204+57.37

Course from 82 to PC CL_CLARK_101 S 78° 11′ 56" E Dist 96.14

Curve Data

Curve CL_CLARK_101						
P.I. Station		205+55.37	N	7,288,256.80	E	3,023,658.98
Delta	=	3° 32′ 44"	(RT)			
Degree	=	95° 29′ 35"				
Tangent	=	1.86				
Length	=	3.71				
Radius	=	60.00				
External	=	0.03				
Long Chord	=	3.71				
Mid. Ord.	=	0.03				
P.C. Station		205+53.51	N	7,288,257.18	E	3,023,657.17
P.T. Station		205+57.23	N	7,288,256.31	E	3,023,660.78
C.C.			N	7,288,198.45	E	3,023,644.90
Back	= S 78° 11′ 56" E					
Ahead	= S 74° 39′ 12" E					
Chord Bear	= S 76° 25′ 34" E					

Course from PT CL_CLARK_101 to 83 S 74° 39′ 12" E Dist 226.14

Point 83 N 7,288,196.45 E 3,023,878.85 Sta 207+83.37

Course from 83 to 84 S 73° 17′ 39" E Dist 780.00

Point 84 N 7,287,972.24 E 3,024,625.93 Sta 215+63.37

Course from 84 to PC CL_CLARK_108 S 74° 11′ 46" E Dist 494.30

Curve Data

Curve CL_CLARK_108						
P.I. Station		220+59.37	N	7,287,837.15	E	3,025,103.18
Delta	=	3° 14′ 19"	(LT)			
Degree	=	95° 29′ 35"				
Tangent	=	1.70				
Length	=	3.39				
Radius	=	60.00				
External	=	0.02				
Long Chord	=	3.39				
Mid. Ord.	=	0.02				
P.C. Station		220+57.67	N	7,287,837.61	E	3,025,101.55
P.T. Station		220+61.06	N	7,287,836.78	E	3,025,104.84
C.C.			N	7,287,895.35	E	3,025,117.89
Back	= S 74° 11′ 46" E					
Ahead	= S 77° 26′ 04" E					
Chord Bear	= S 75° 48′ 55" E					

Course from PT CL_CLARK_108 to PC CL_CLARK_111 S 77° 26′ 04" E Dist 140.42

Curve Data

Curve CL_CLARK_111						
P.I. Station		222+17.05	N	7,287,802.85	E	3,025,257.09
Delta	=	29° 05′ 45"	(RT)			
Degree	=	95° 29′ 35"				
Tangent	=	15.57				
Length	=	30.47				
Radius	=	60.00				
External	=	1.99				
Long Chord	=	30.14				
Mid. Ord.	=	1.92				
P.C. Station		222+01.48	N	7,287,806.23	E	3,025,241.90
P.T. Station		222+31.95	N	7,287,792.50	E	3,025,268.73
C.C.			N	7,287,747.67	E	3,025,228.84
Back	= S 77° 26′ 04" E					
Ahead	= S 48° 20′ 20" E					
Chord Bear	= S 62° 53′ 12" E					

Course from PT CL_CLARK_111 to 85 S 48° 20′ 20" E Dist 34.70

Point 85 N 7,287,769.43 E 3,025,294.65 Sta 222+66.66

==========

Ending chain CL_CLARK description

DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

HORIZONTAL ALIGNMENT DATA SHEET

SHEET 3 OF 3

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	29

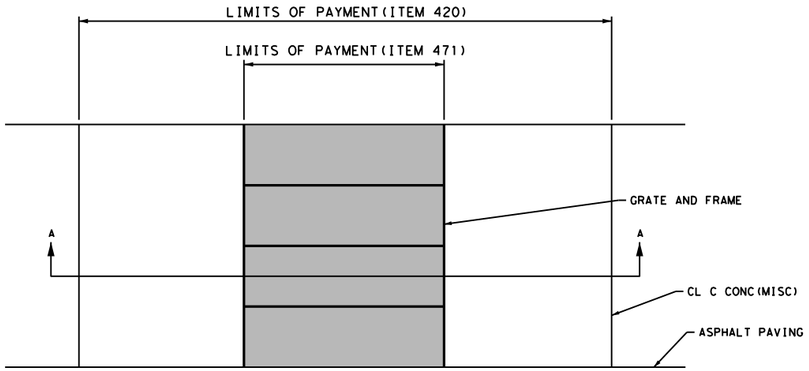
Plotted on: 1/4/2024

Design Filename: S:\projects\612\54\02\Design\02_Clarksville_ADA\Civil\General\612540202_hc.dgn

GRATE & FRAME DETAIL

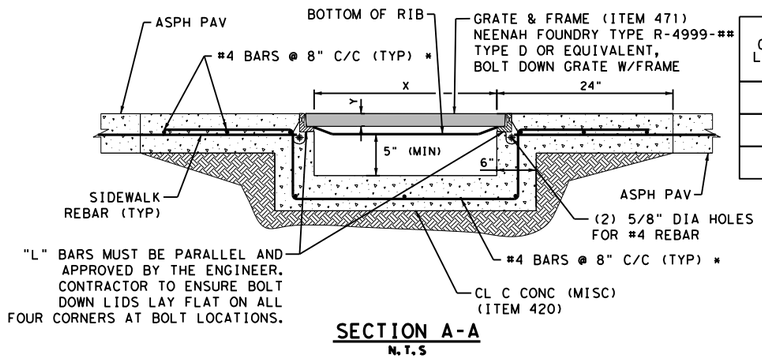
N.T.S

* REINFORCEMENT IS SUBSIDIARY TO ITEM 420.



SINGLE CHANNEL PLAN VIEW

N.T.S

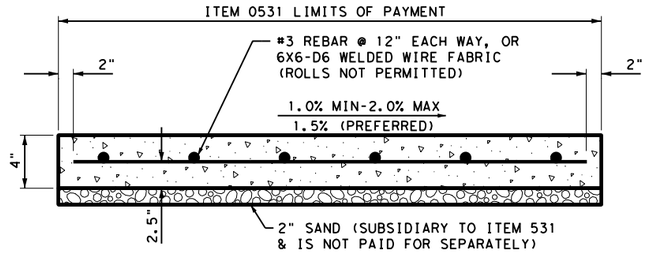


GRATE LENGTH	X	Y	R-4999-##
24"	24"	1.5"	HX
36"	36"	2.0"	MX
48"	48"	2.0"	OX

SECTION A-A

N.T.S

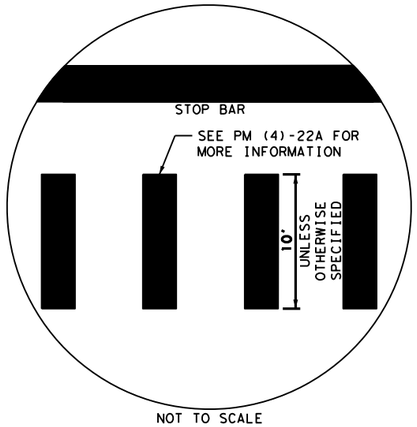
SIDEWALK DETAILS



NOTES:

1. PLACE GROOVED JOINTS IN THE SIDEWALK AT A MAX SPACING OF 6 FT
2. PLACE 1/2" EXPANSION JOINTS AT A MAX SPACING OF 40FT AND COINCIDE WITH THE CURB EXPANSION JOINTS.
3. TOOLED OR SAWED EXPANSION/CONTRACTION JOINTS ARE NOT ALLOWED.

HIGH VISIBILITY LONGITUDINAL CROSSWALK DETAIL



NOT TO SCALE

DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

NOT TO SCALE

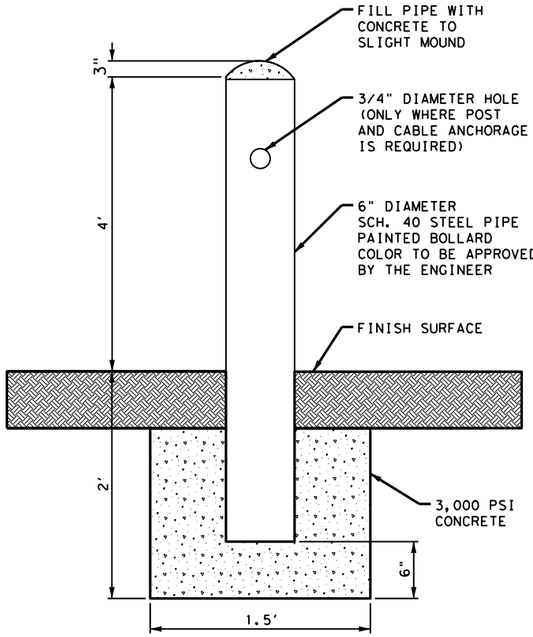
REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

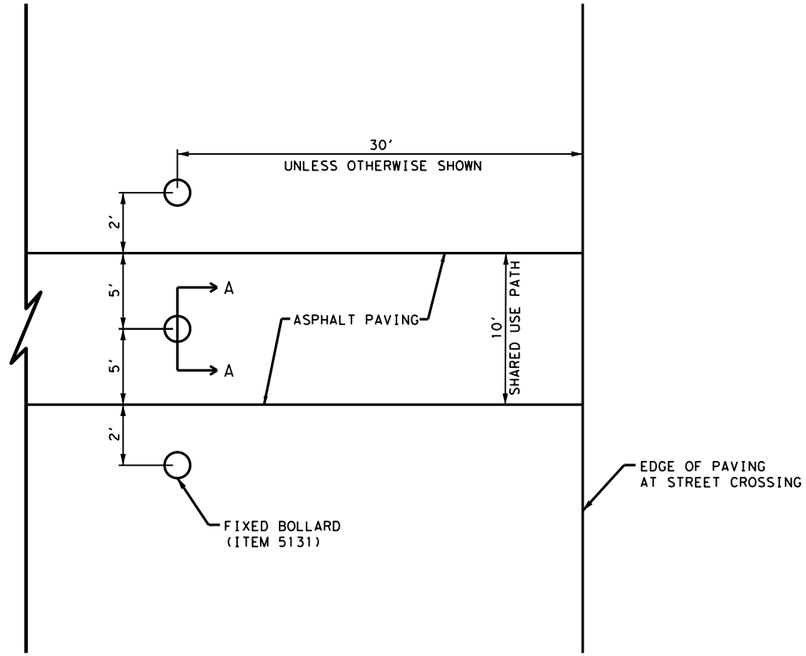
SPECIAL DETAILS

SHEET 1 OF 5

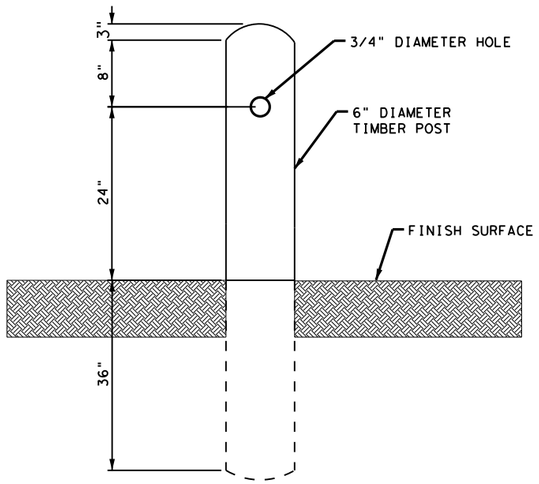
DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	30



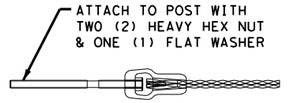
SECTION A-A
N.T.S



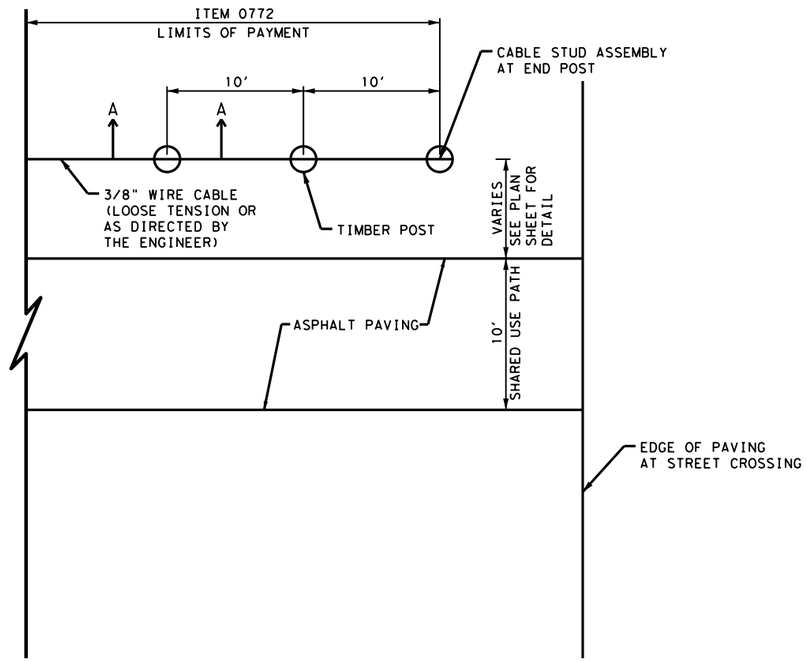
FIXED BOLLARD DETAIL (ITEM 5131)
N.T.S



SECTION A-A
N.T.S



CABLE STUD ASSEMBLY
N.T.S



POST AND CABLE DETAIL (ITEM 0772)
N.T.S

DESIGN

STATE OF TEXAS
TYLER PAYNE DUBE
118612
LICENSED
PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS
JOHN A. TYLER
105193
LICENSED
PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

NOT TO SCALE

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

SPECIAL DETAILS

SHEET 2 OF 5

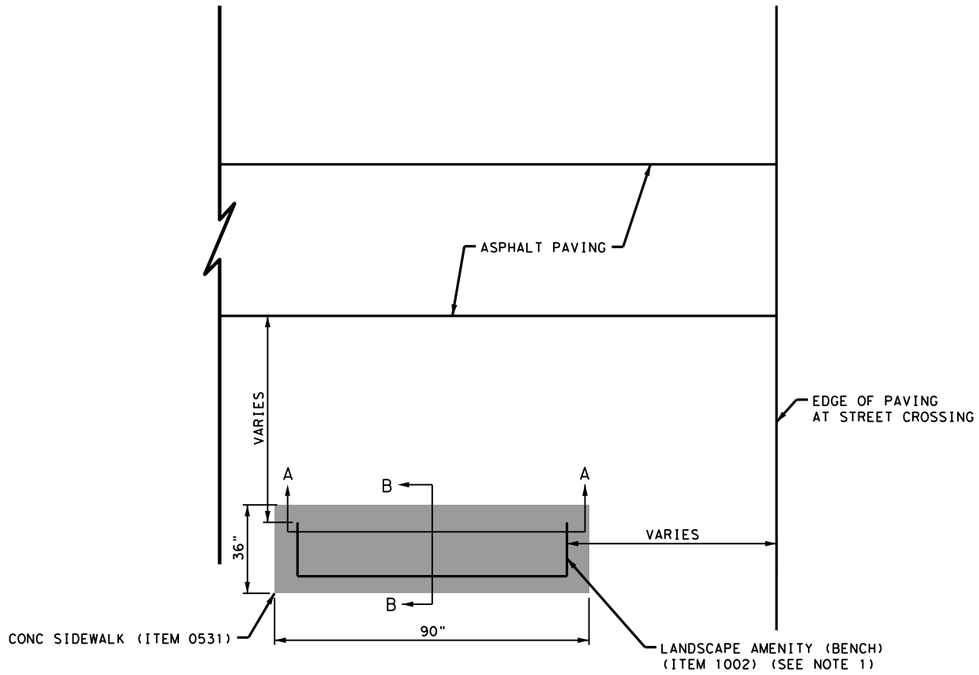
DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	31

Plotted on: 1/4/2024

Design Filename: S:\projects\612154\02\Design\02_Clarksville_ADA\Civil\General\612540202_sample02.dgn

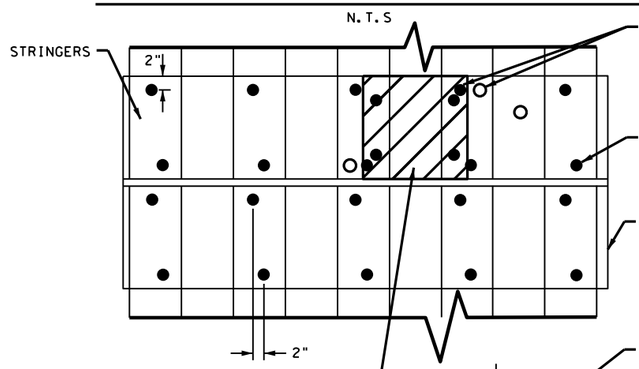
METAL BENCH DETAIL (ITEM 1002)

N.T.S

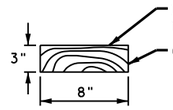


REMOVE & REPLACE TIMBERS (ITEM 7006)

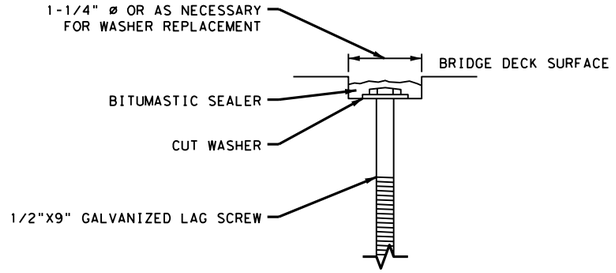
N.T.S

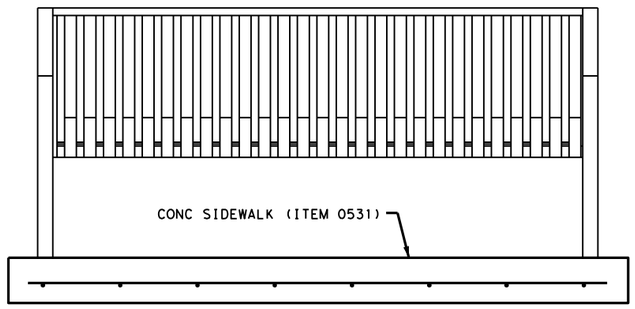


CONTRACTOR SHALL LOCATE THE CENTERLINE OF THE EXISTING STRINGER. SAW CUT DAMAGED DECK TIMBER AT CENTERLINE OF STRINGER AND REMOVE DAMAGED DECK TIMBER. INSTALL REPLACEMENT SECTION OF DECK TIMBER WITH LAG SCREWS (4 EA) AS SHOWN. THE PORTION OF EXISTING DECK TIMBER TO REMAIN SHALL BE SECURED TO THE STRINGER WITH A NEW LAG SCREW PRIOR TO REMOVAL OF THE DAMAGED DECK TIMBER SECTION.



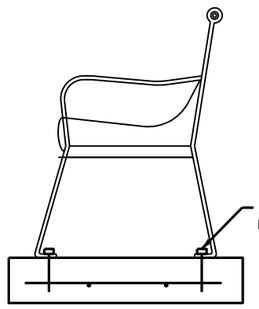
NOTES:
1. THE INTENT OF THIS DETAIL IS TO REPAIR DAMAGED TIMBER SECTION DURING OVERHAUL WORK.
2. THIS WORK SHALL BE PAID BY ITEM 7006.





FRONT VIEW A-A

N.T.S



SIDE VIEW B-B

N.T.S

NOTES:

1. INSTALL A COMMERCIAL STEEL OUTDOOR BENCH WITH STRAIGHT BACK, BELSON OR SIMILAR. SUBMIT SHOP DRAWING INCLUDING BENCH AND MOUNTING HARDWARE FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO INSTALLATION.

DESIGN

STATE OF TEXAS · TYLER PAYNE DUBE · 118612 · LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS · JOHN A. TYLER · 105193 · LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

NOT TO SCALE

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

SPECIAL DETAILS

SHEET 3 OF 5

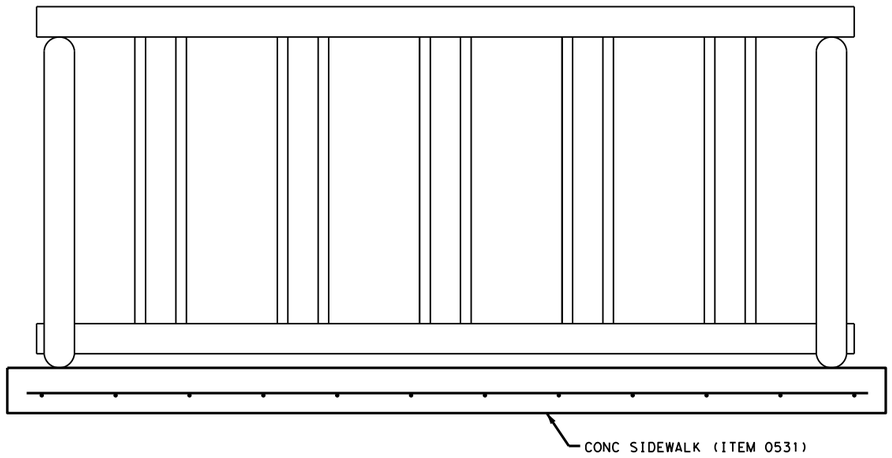
DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	32

Plotted on: 1/4/2024

Design Filename: S:\projects\612540202\Design\02_Clarksville_ADA\Civil\General\612540202_sample04.dgn

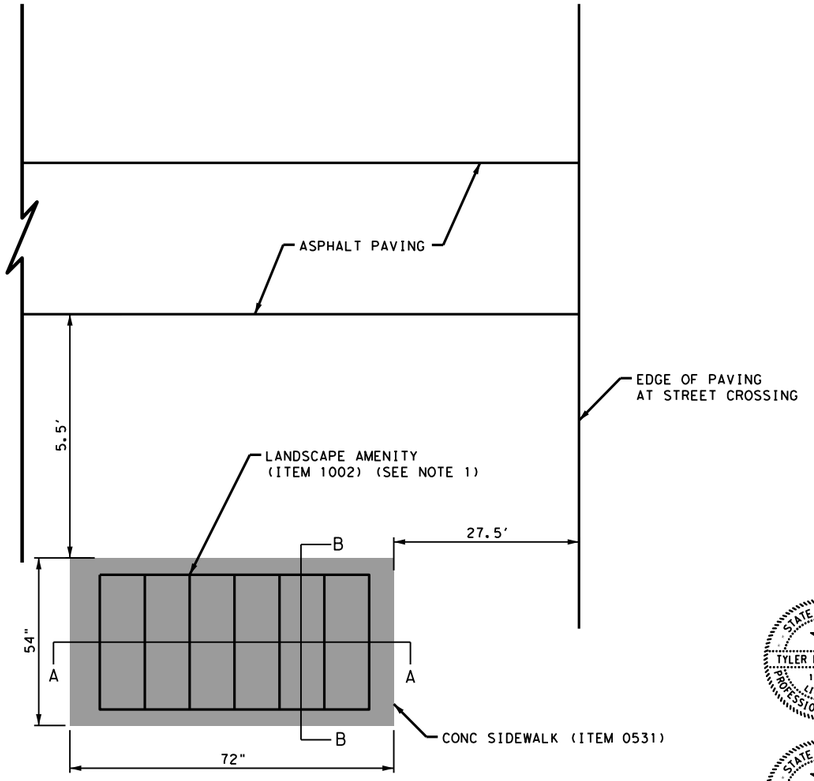
BIKE RACK DETAIL (ITEM 1002)

N.T.S



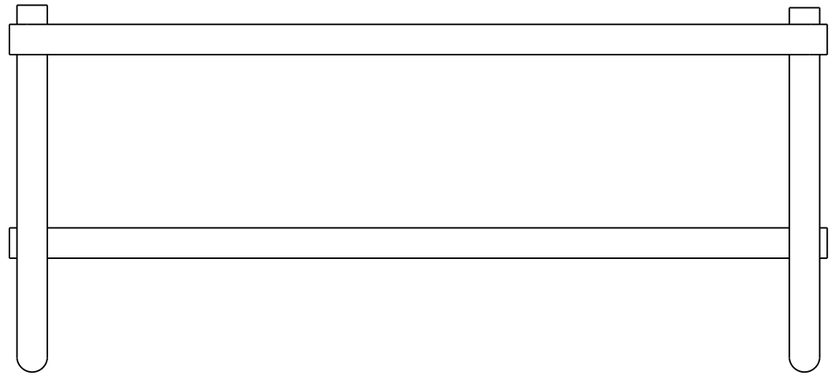
ELEVATION VIEW

N.T.S



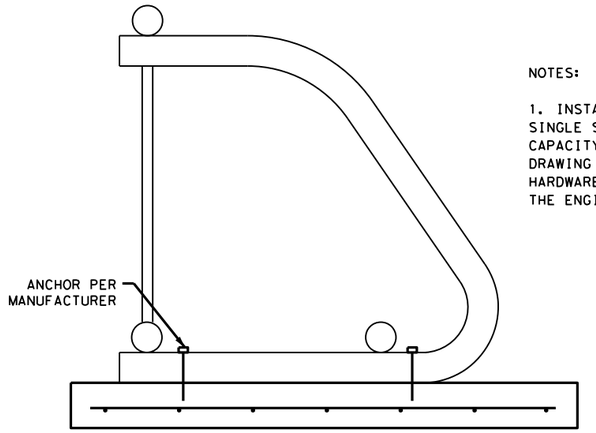
PLAN VIEW

N.T.S



SECTION A-A

N.T.S



SECTION B-B

N.T.S

NOTES:

1. INSTALL A COMMERCIAL STEEL OUTDOOR SINGLE SIDED GRID BIKE RACK WITH 5 BIKE CAPACITY, BELSON OR SIMILAR. SUBMIT SHOP DRAWING INCLUDING RACK AND MOUNTING HARDWARE FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO INSTALLATION.

DESIGN

STATE OF TEXAS
TYLER PAYNE DUBE
118612
LICENSED
PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS
JOHN A. TYLER
105193
LICENSED
PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

NOT TO SCALE

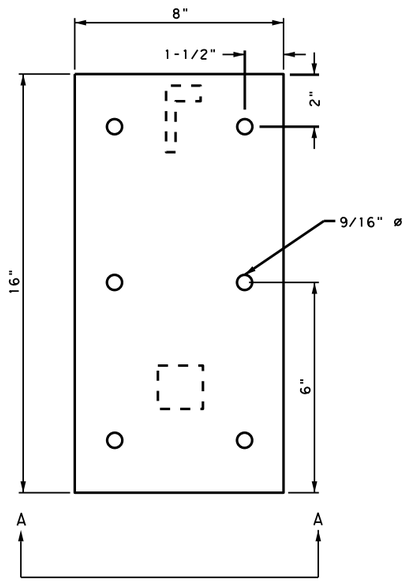
REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

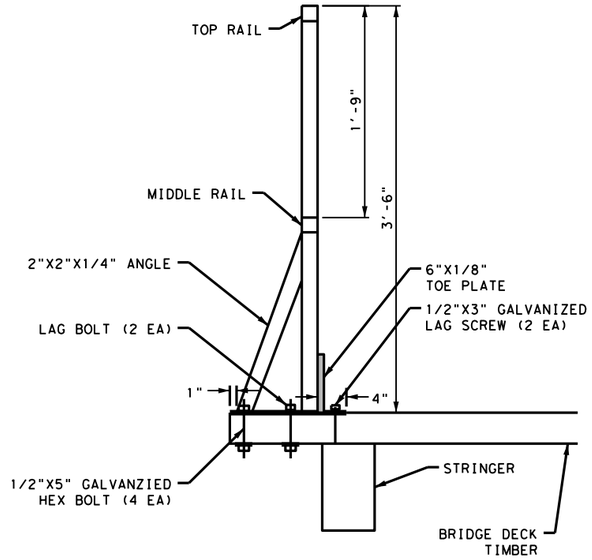
SPECIAL DETAILS

SHEET 4 OF 5

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	33



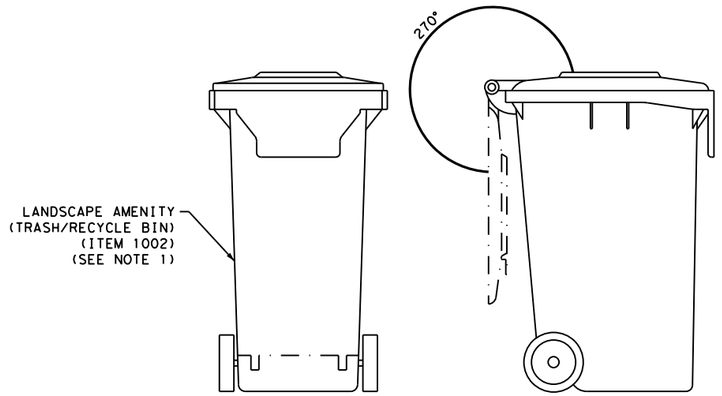
HANDRAIL BASE PLATE DETAIL
N.T.S



HANDRAIL BRACE & TOE PLATE DETAIL
N.T.S

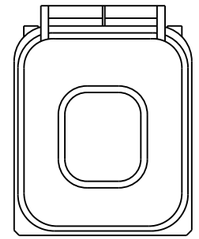
TRASH BIN DETAIL (ITEM 1002)

N.T.S



NOTES:

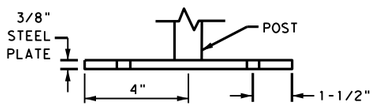
1. PROVIDE A COMMERCIAL GRADE 95-GAL TRASH RECEPTACLE, GLOBAL INDUSTRIES OR SIMILAR. SUBMIT SHOP DRAWING INCLUDING COLOR FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO INSTALLATION.



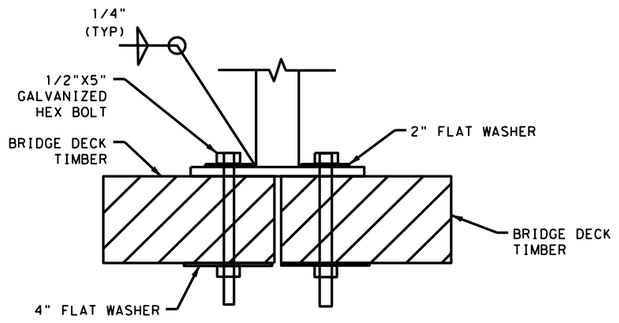
FRONT VIEW
N.T.S

SIDE VIEW
N.T.S

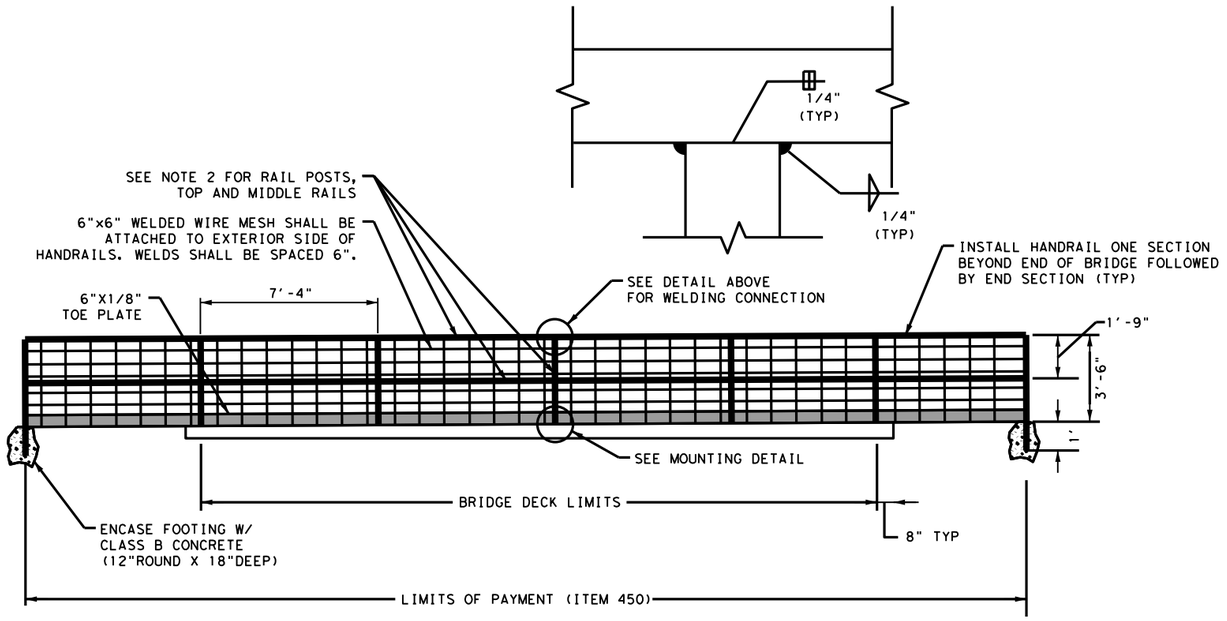
TOP VIEW
N.T.S



SECTION A-A



MOUNTING DETAIL
N.T.S



BRIDGE HANDRAIL (ITEM 450)

N.T.S

NOTES:

1. ALL STEEL MEMBERS SHALL BE CONNECTED USING A 1/4" FILLET WELD.

2. ALL STEEL IS 2" SQUARE TUBING EXCEPT BRACES, TOE PLATES, AND BASE PLATES.

DESIGN

STATE OF TEXAS · TYLER PAYNE DUBE · 118612 · LICENSED · PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS · JOHN A. TYLER · 105193 · LICENSED · PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

NOT TO SCALE

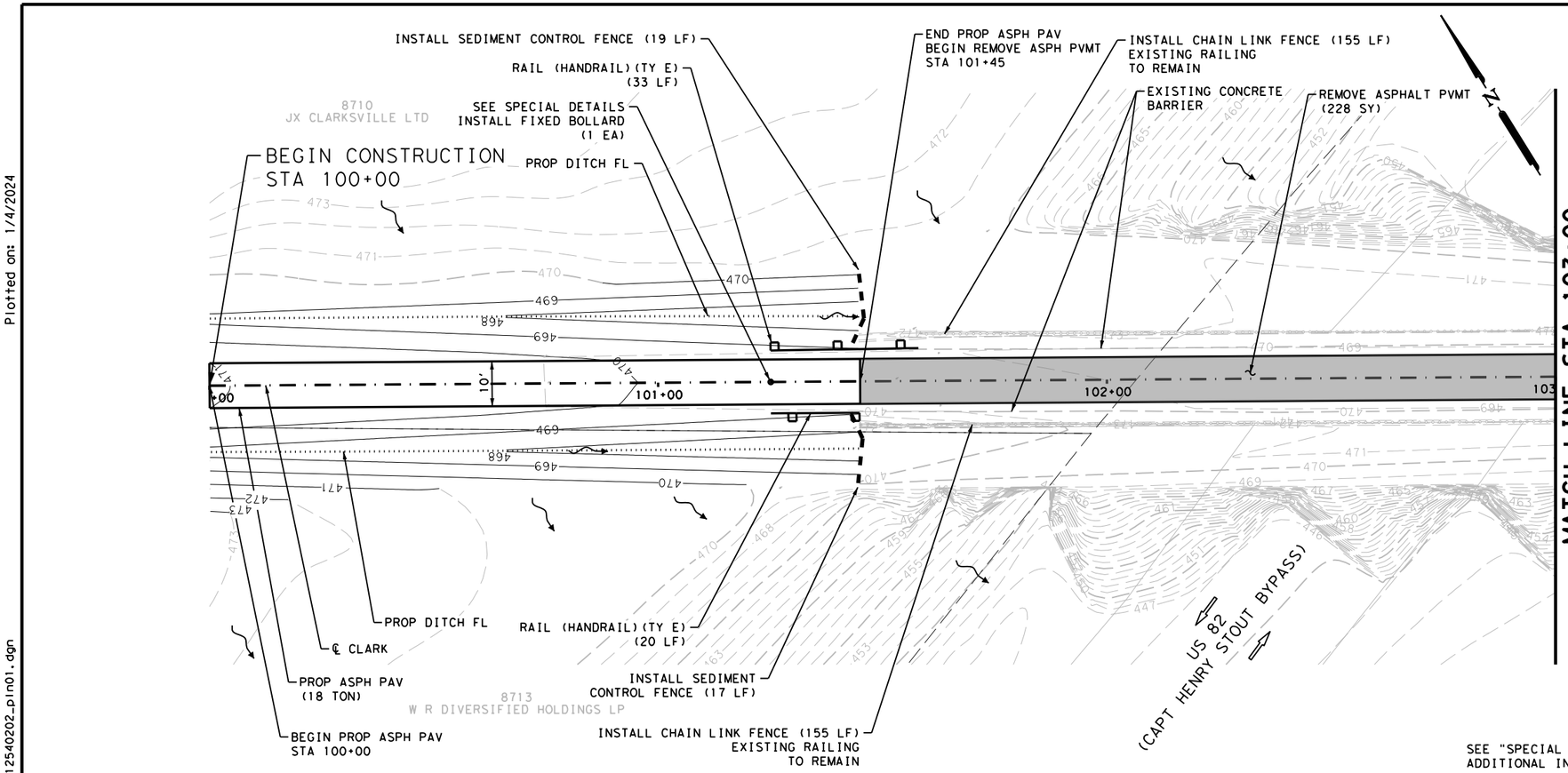
REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

SPECIAL DETAILS

SHEET 5 OF 5

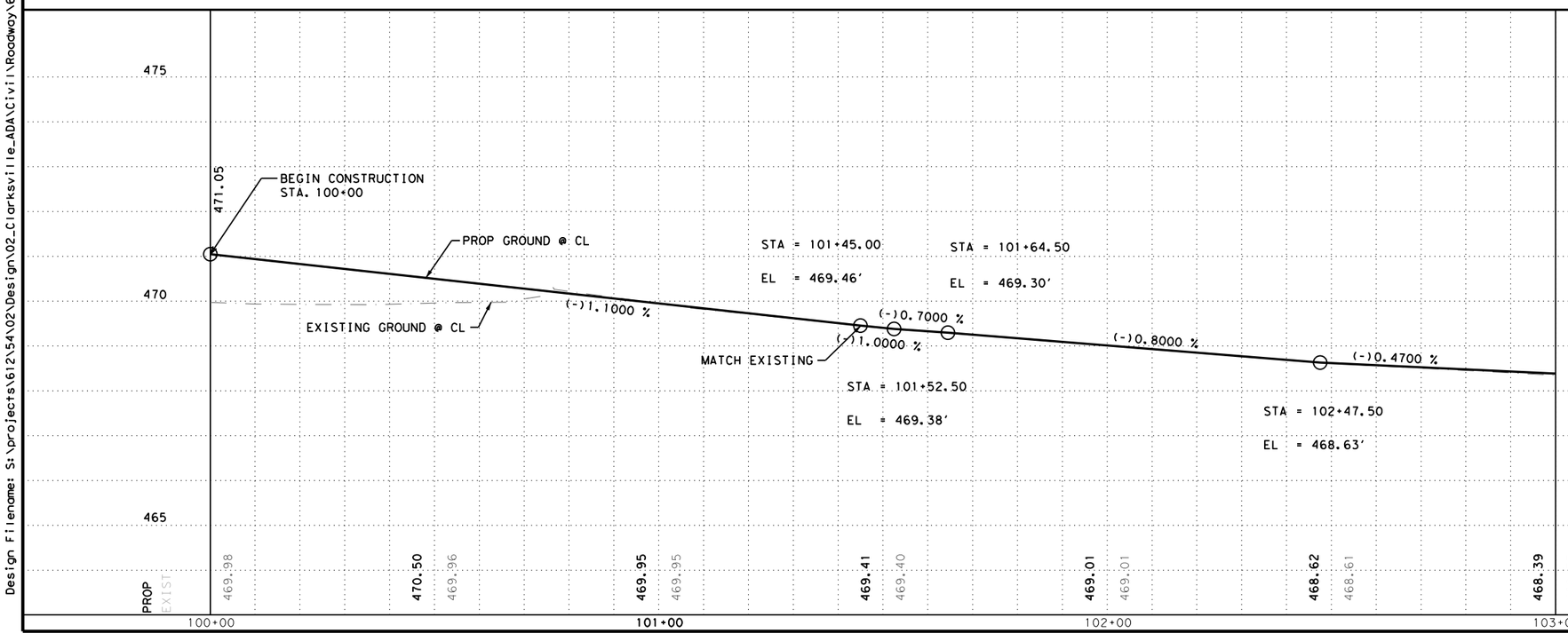
DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	34



ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0105-6021	REMOVING STAB BASE AND ASPH PAV (0-4")	SY	228
0110-6001	EXCAVATION (ROADWAY)	CY	217
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	10
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	584
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	1168
0168-6001	VEGETATIVE WATERING	MG	86.9
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	322
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	194
0316-6029	ASPH (RC-250)	GAL	48
0450-6051	RAIL (HANDRAIL)(TY E)	LF	53
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	36
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	36
0550-6008	CHAIN LINK FENCE (INSTALL) (8')	LF	310
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	18
5131-6001	FIXED BOLLARDS	EA	1

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE



NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.

DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1"= 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

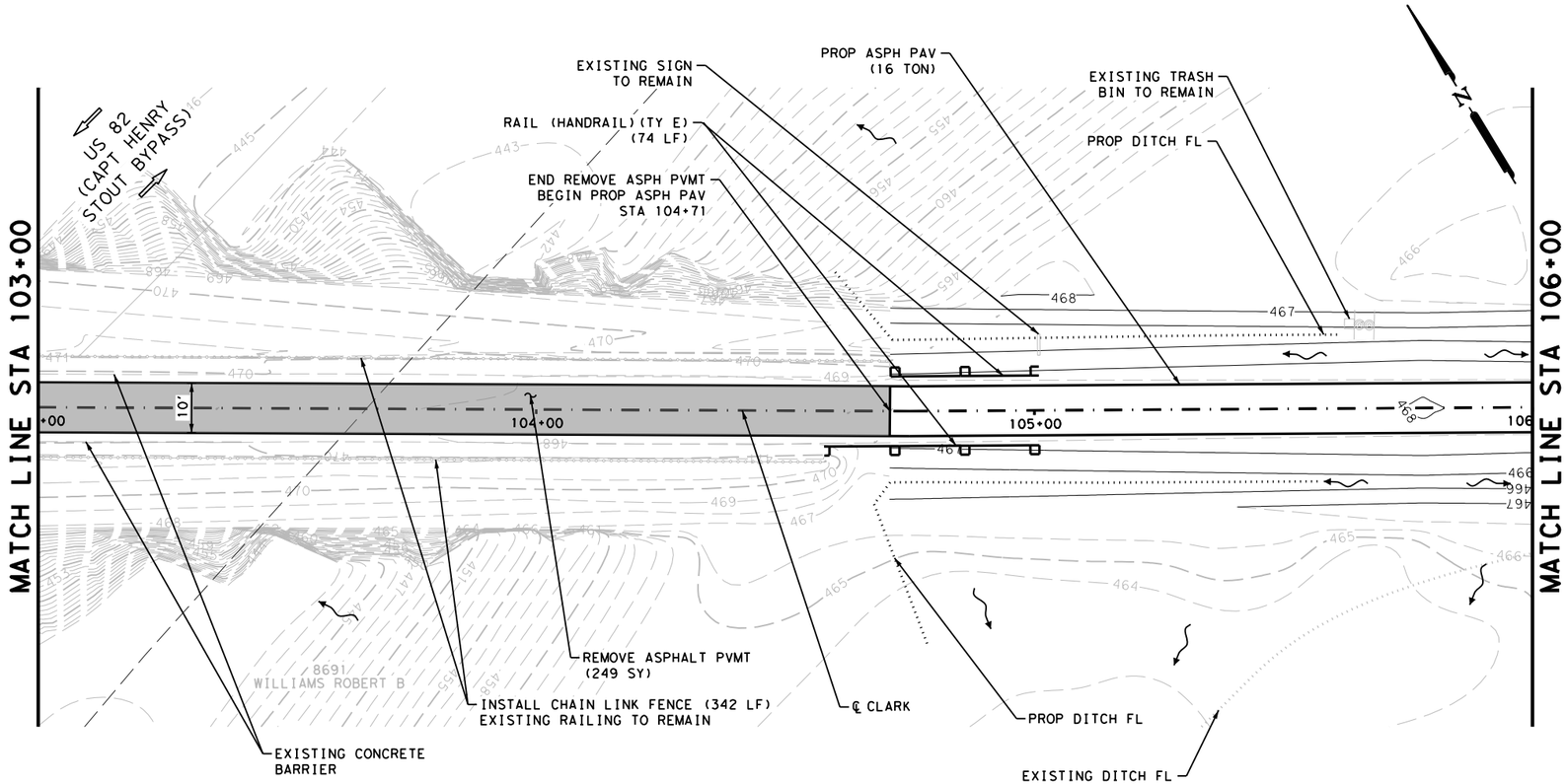
SIDEWALK PLAN

BEGIN CONSTRUCTION TO STA 103+00

SHEET 1 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	35

Plotted on: 1/4/2024
Design Filename: S:\projects\612\54\02\Design\02_Clarksville_ADA\Civil\Roadway\612540202_pln01.dgn



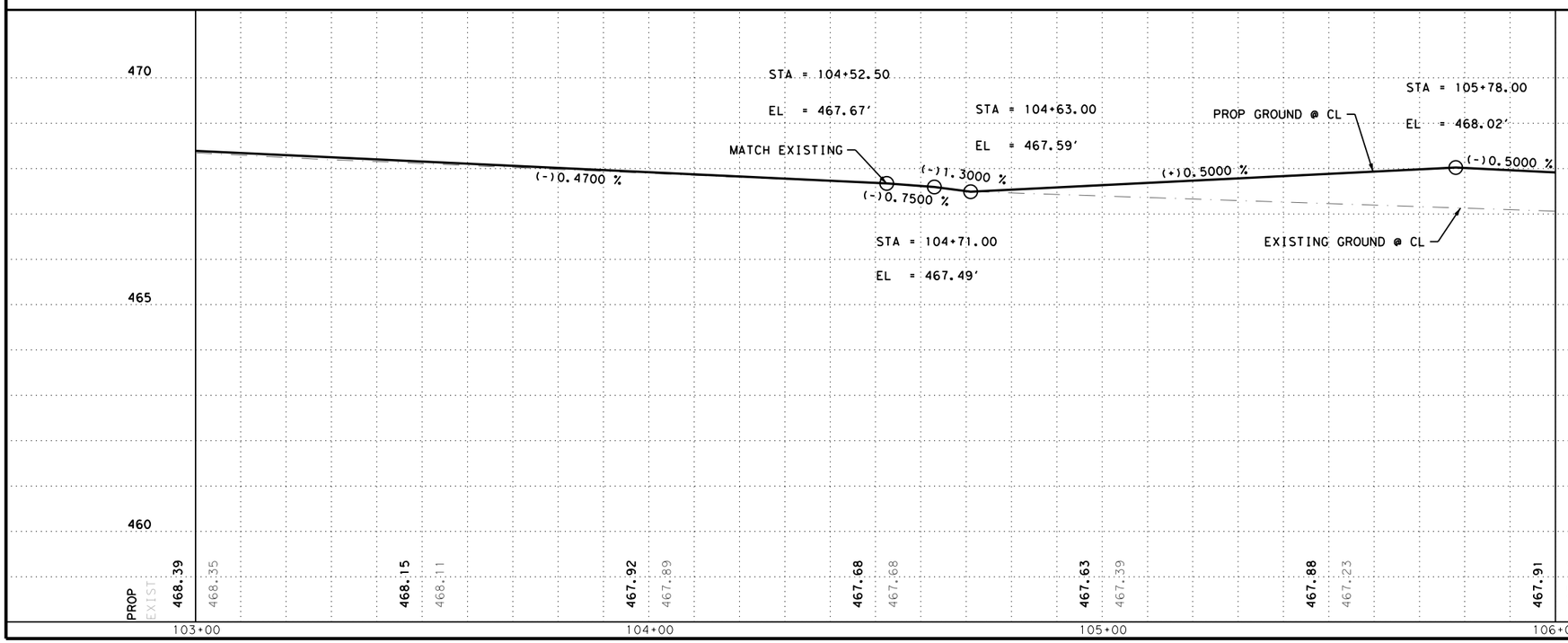
ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0105-6021	REMOVING STAB BASE AND ASPH PAV (0-4")	SY	249
0110-6001	EXCAVATION (ROADWAY)	CY	37
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	452
0164-6071	BROADCAST SEED (TEMP) (WARM OR COOL)	SY	904
0168-6001	VEGETATIVE WATERING	MG	67.3
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	287
0247-6064	FL BS (CMP IN PLC) (TY A GR 4) (6")	SY	177
0316-6029	ASPH (RC-250)	GAL	43
0450-6051	RAIL (HANDRAIL) (TY E)	LF	74
0550-6008	CHAIN LINK FENCE (INSTALL) (8')	LF	342
3076-6068	D-GR HMA TY-D SAC-A PG64-22 (EXEMPT)	TON	16

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS

2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000

TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

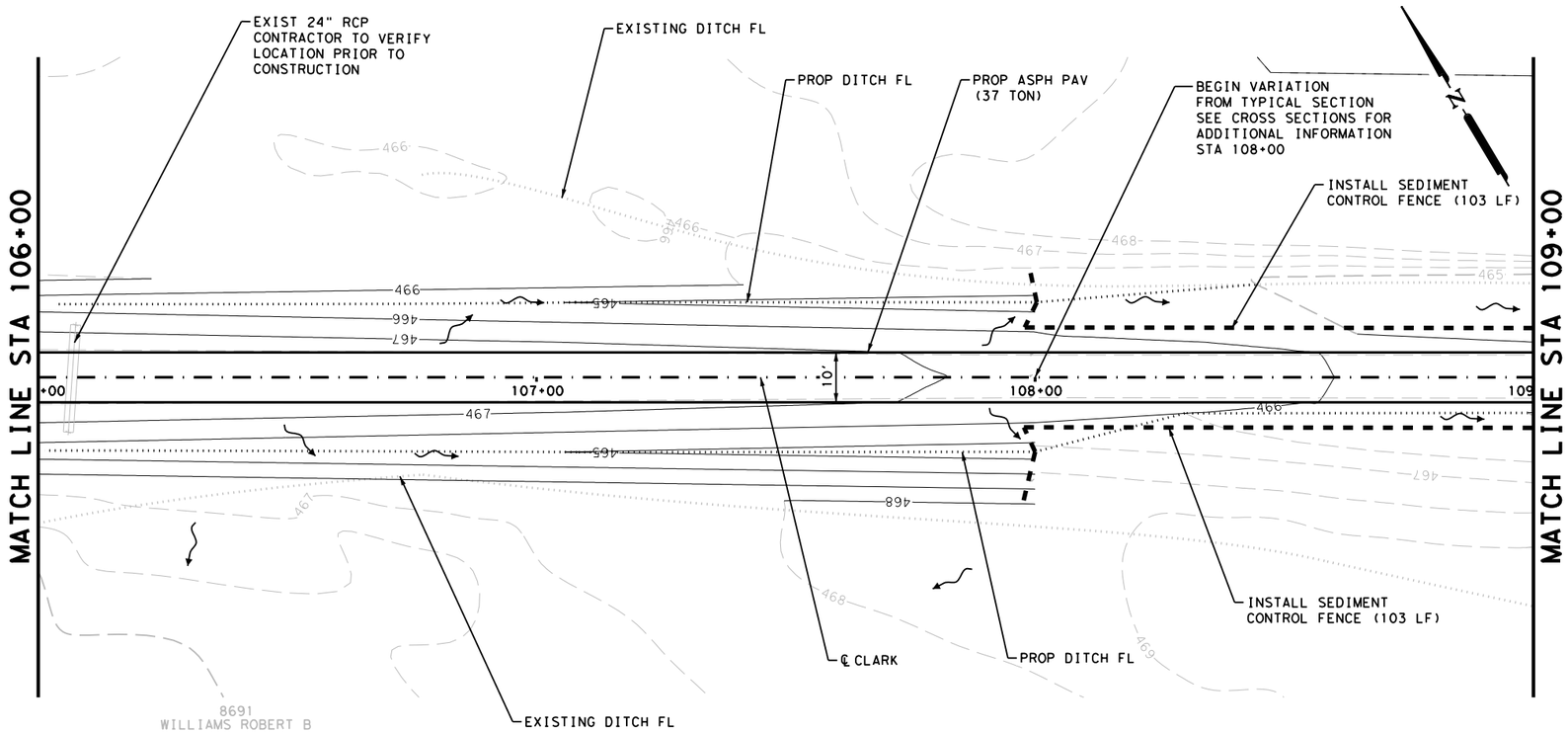
103+00 TO STA 106+00

SHEET 2 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	36

Plotted on: 1/4/2024

Design Filename: S:\projects\612\54\02\Design\02_Clarksville_ADA\Civil\Roadway\612540202_pln02.dgn



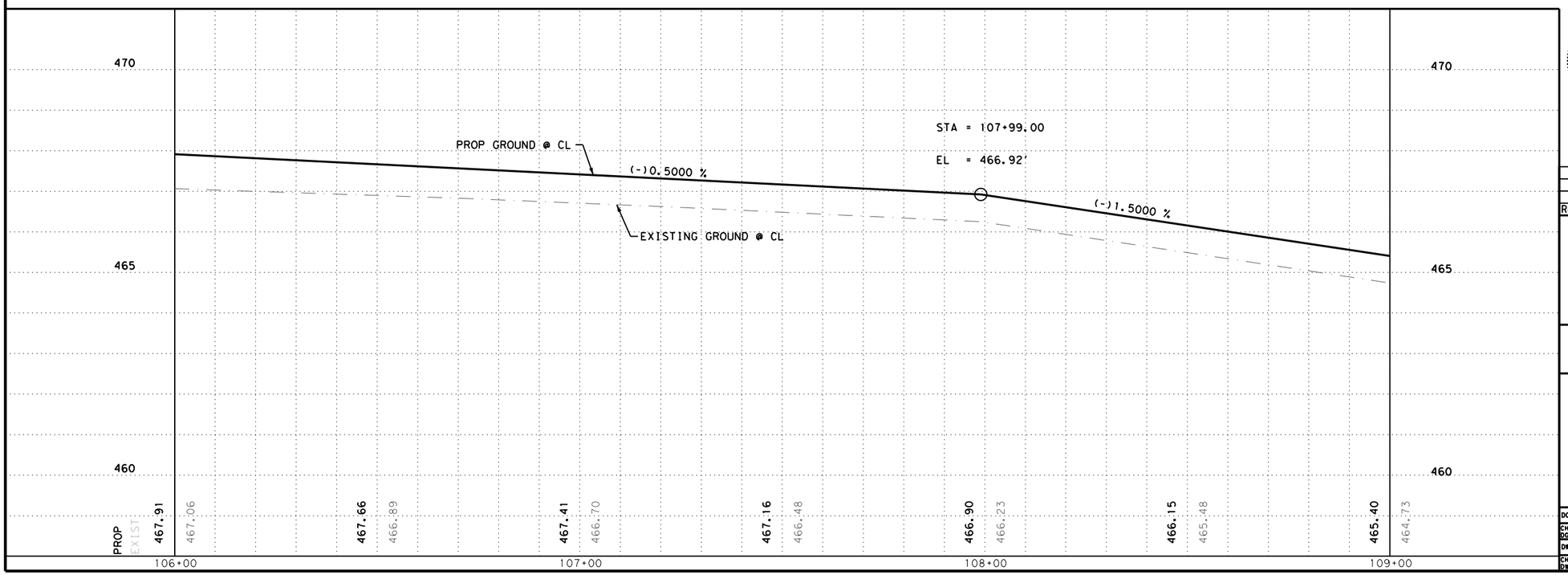
ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	312
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	42
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	779
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	1558
0168-6001	VEGETATIVE WATERING	MG	115.9
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	511
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	367
0316-6029	ASPH (RC-250)	GAL	100
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	206
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	206
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	37

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

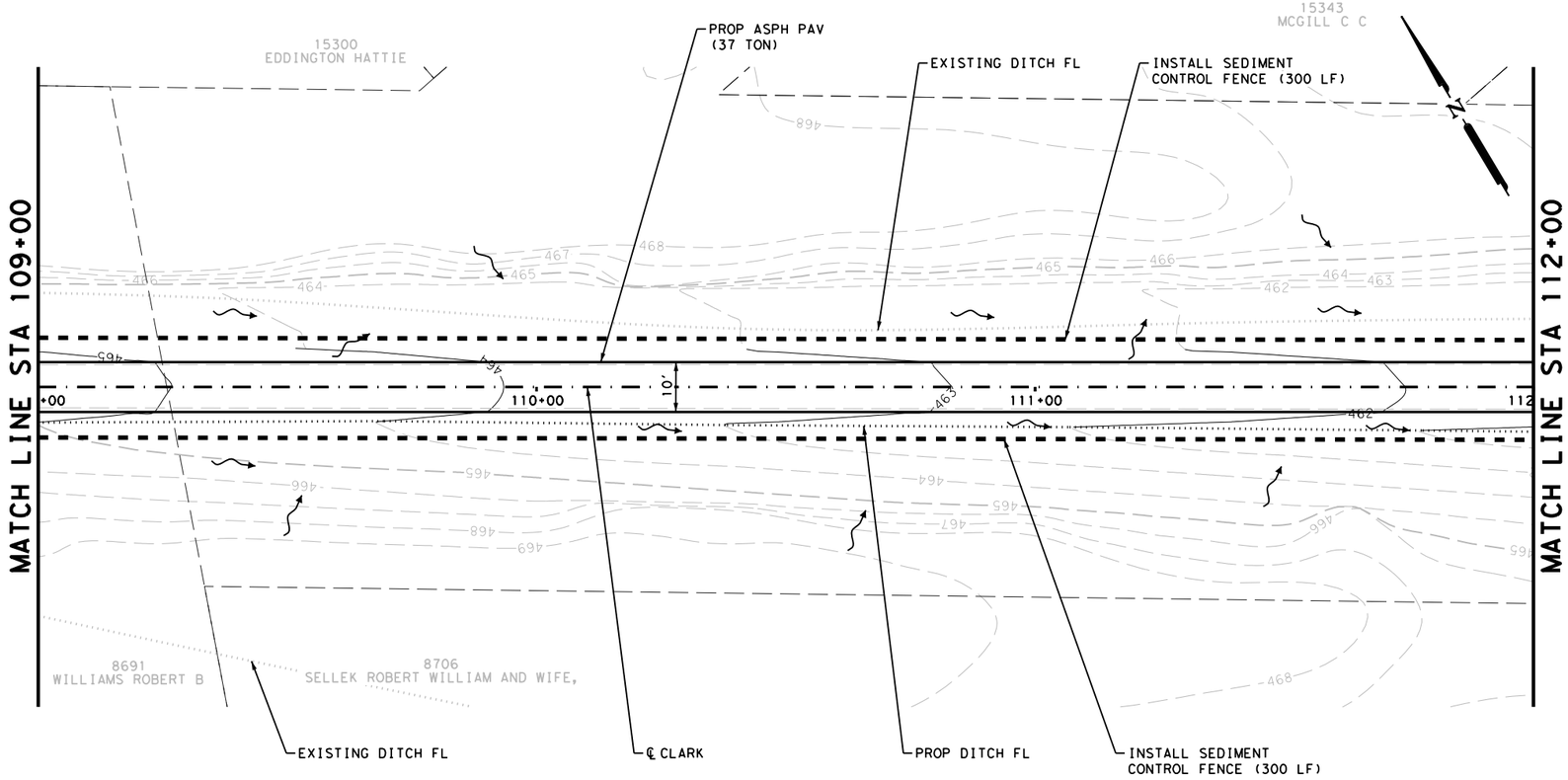
NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 106+00 TO STA 109+00

SHEET 3 OF 42

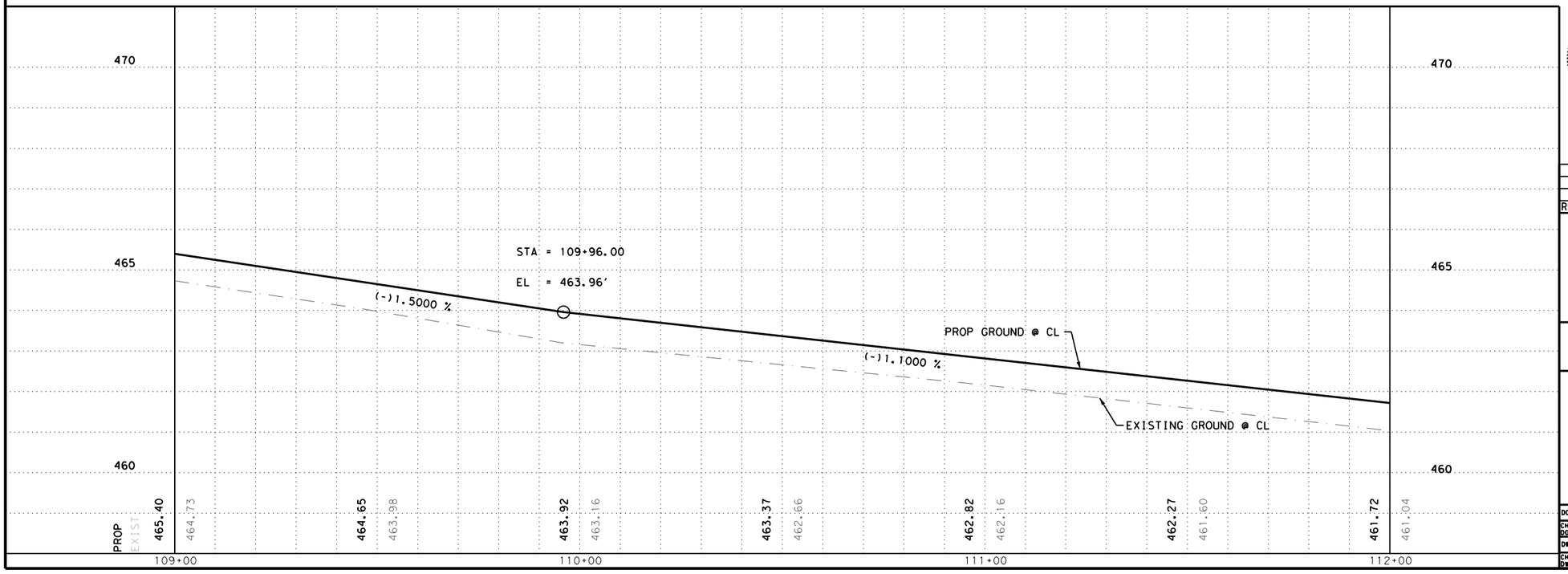
DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	37



ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	9
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	26
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	178
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	356
0168-6001	VEGETATIVE WATERING	MG	26.5
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	178
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	367
0316-6029	ASPH (RC-250)	GAL	100
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	600
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	600
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	37

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE



NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.

DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

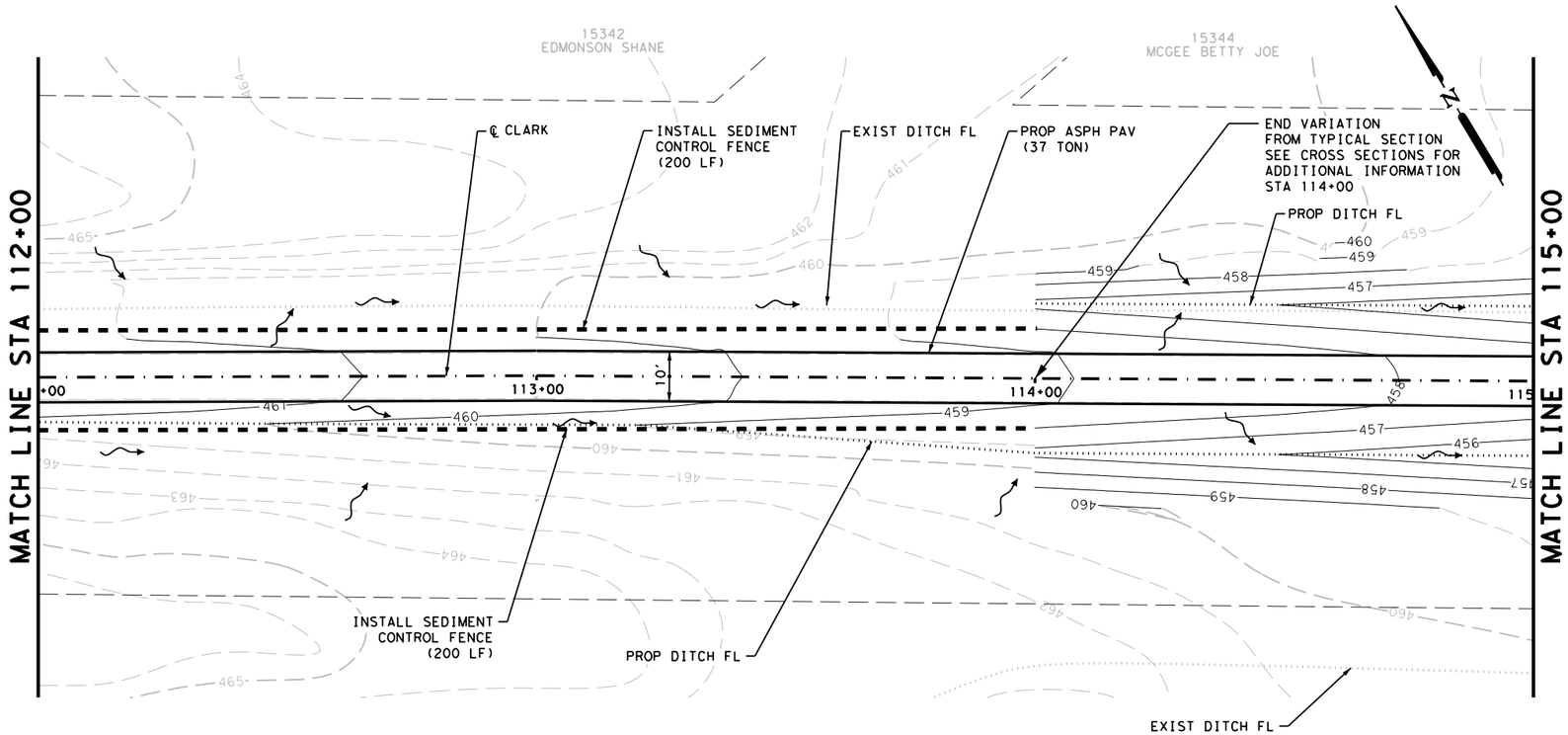
STA 109+00 TO STA 112+00

SHEET 4 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	38

Plotted on: 1/4/2024

Design Filename: S:\projects\612\54\02\Design\02_Clarksville_ADA\Civil\Roadway\612540202_pln04.dgn



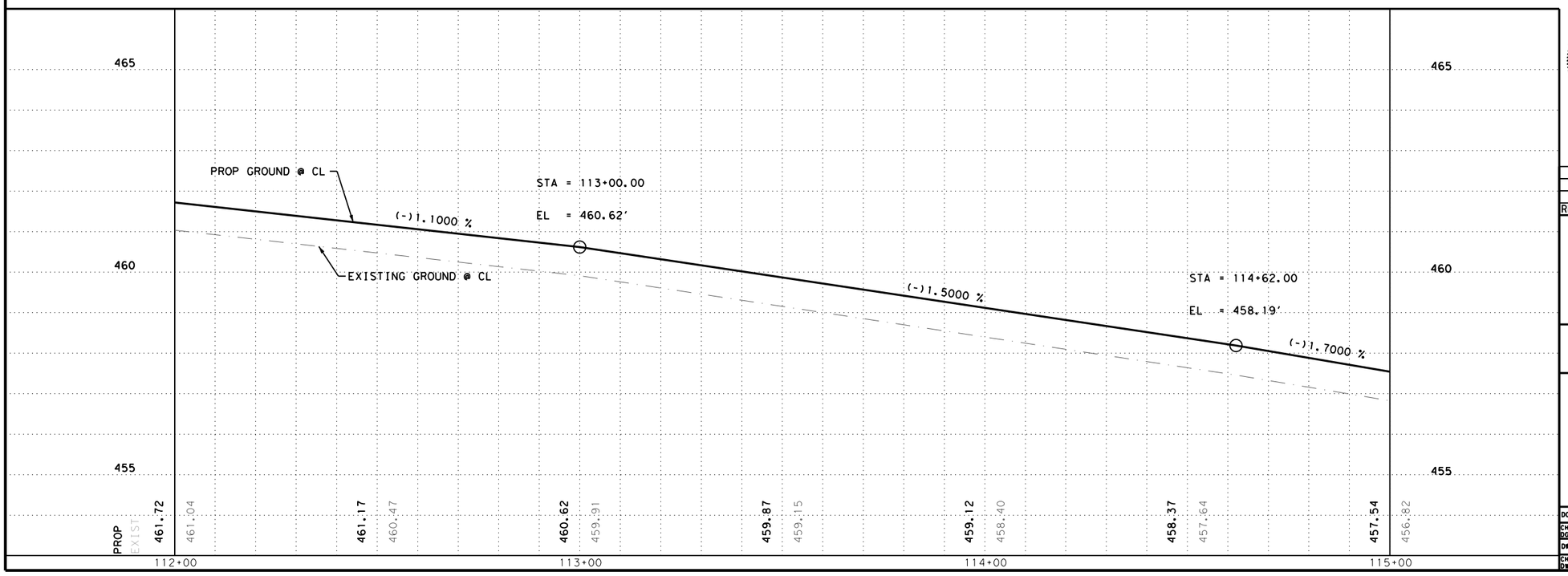
ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	45
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	43
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	584
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	1168
0168-6001	VEGETATIVE WATERING	MG	86.9
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	380
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	367
0316-6029	ASPH (RC-250)	GAL	100
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	400
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	400
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	37

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40
SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

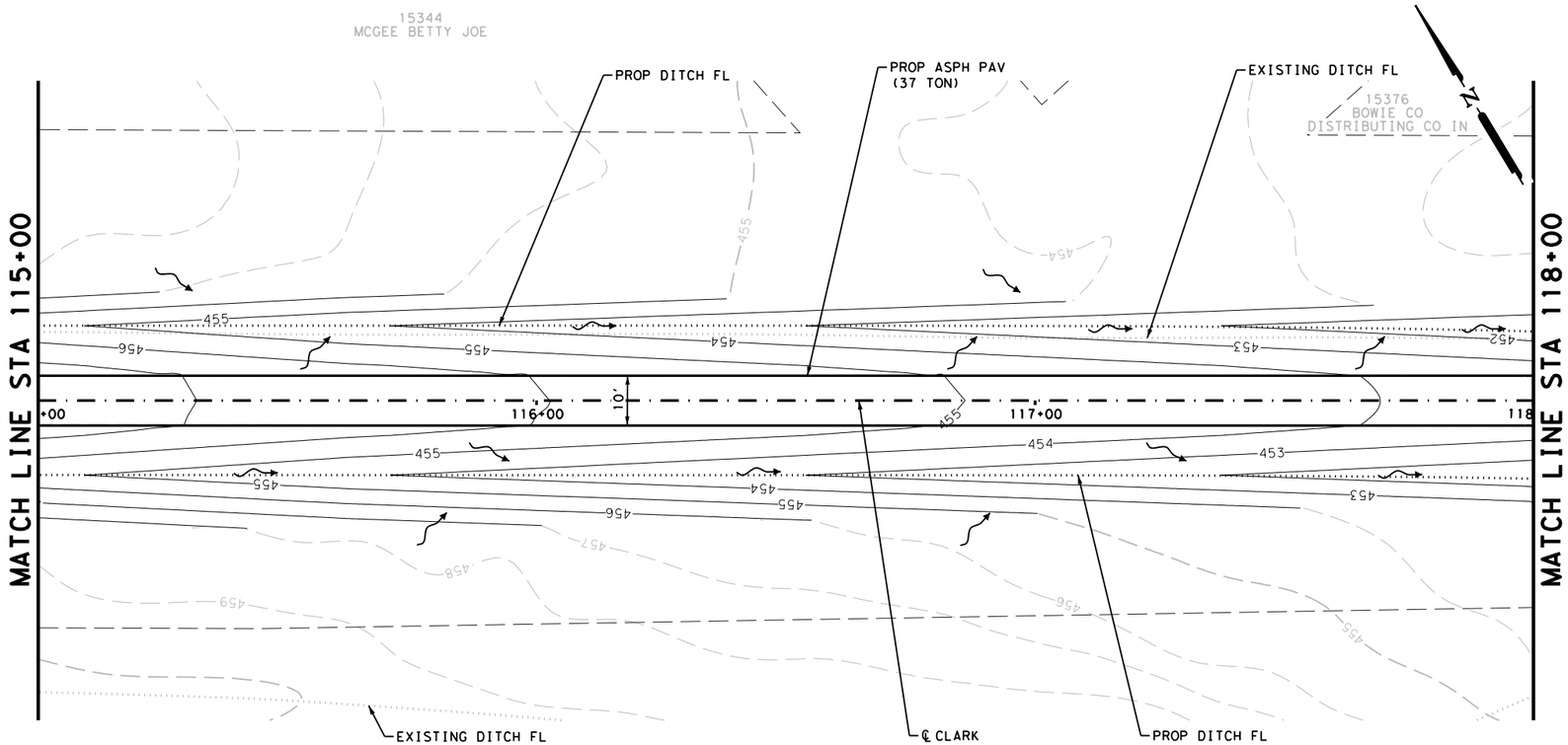
NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 112+00 TO STA 115+00

SHEET 5 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	39



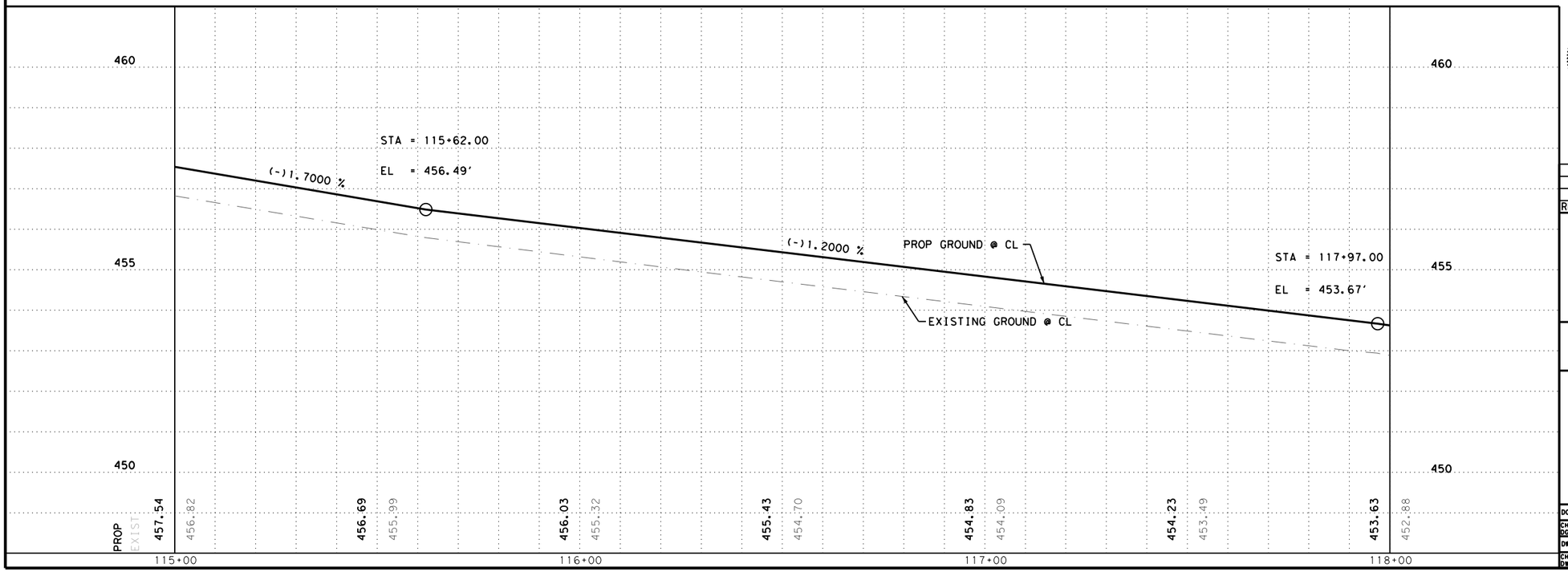
ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	493
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	26
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	1142
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	2284
0168-6001	VEGETATIVE WATERING	MG	169.9
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	667
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	368
0316-6029	ASPH (RC-250)	GAL	101
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	37

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

STATE OF TEXAS · TYLER PAYNE DUBE · 118612 · LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS · JOHN A. TYLER · 105193 · LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 115+00 TO STA 118+00

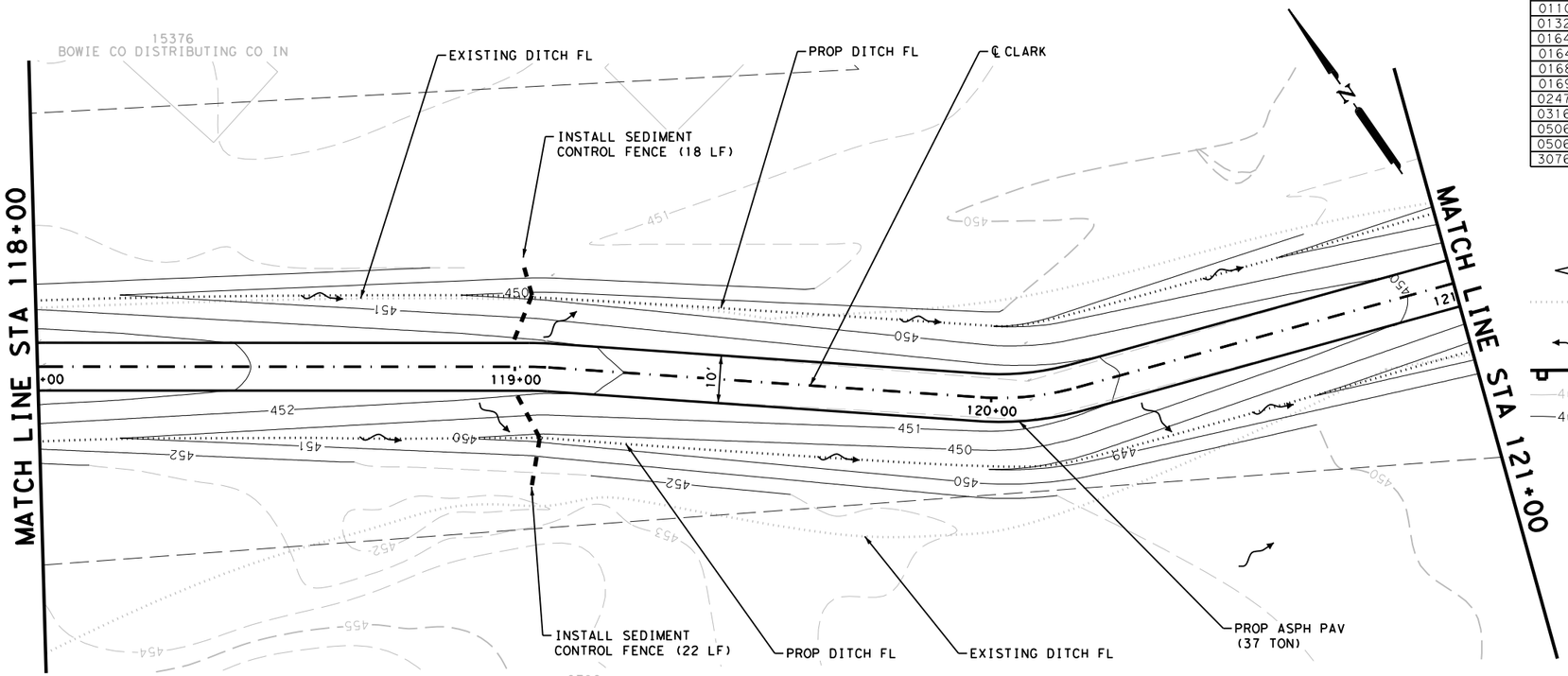
SHEET 6 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	40

Plotted on: 1/4/2024

Design Filename: S:\projects\612\54\02\Design\02_Clarksville_ADA\Civil\Roadway\612540202_pln06.dgn

ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	282
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	40
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	1020
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	2040
0168-6001	VEGETATIVE WATERING	MG	151.8
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	665
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	368
0316-6029	ASPH (RC-250)	GAL	101
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	40
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	40
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	37



PI STATION = 118+00.00
DELTA = 3° 17' 32.82" (RT)
DEGREE OF CURVE = 95° 29' 34.68"
TANGENT = 1.72
LENGTH = 3.45
RADIUS = 60.00
PC STATION = 117+98.28
PT STATION = 118+01.72

PI STATION = 119+05.00
DELTA = 3° 56' 29.36" (RT)
DEGREE OF CURVE = 95° 29' 34.68"
TANGENT = 2.06
LENGTH = 4.13
RADIUS = 60.00
PC STATION = 119+02.93
PT STATION = 119+07.06

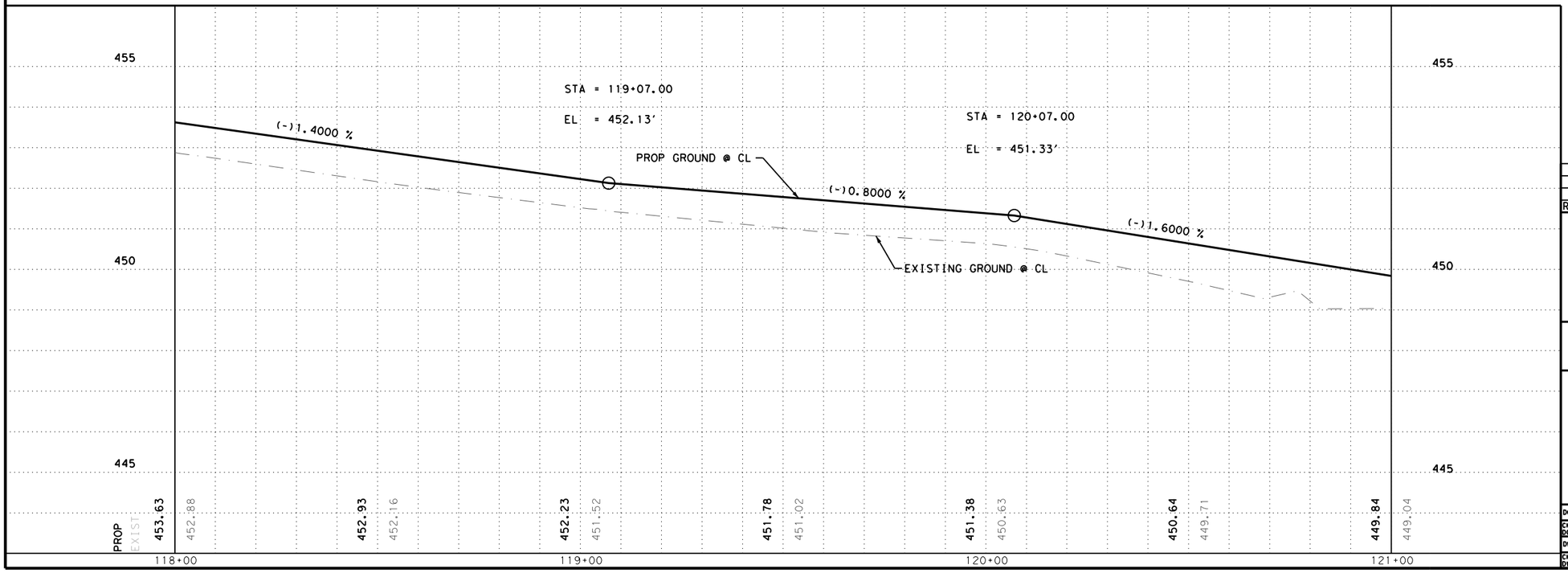
PI STATION = 120+08.00
DELTA = 19° 25' 23.55" (LT)
DEGREE OF CURVE = 95° 29' 34.68"
TANGENT = 10.27
LENGTH = 20.34
RADIUS = 60.00
PC STATION = 119+97.73
PT STATION = 120+18.07

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40
SCALE: 1"= 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 118+00 TO STA 121+00

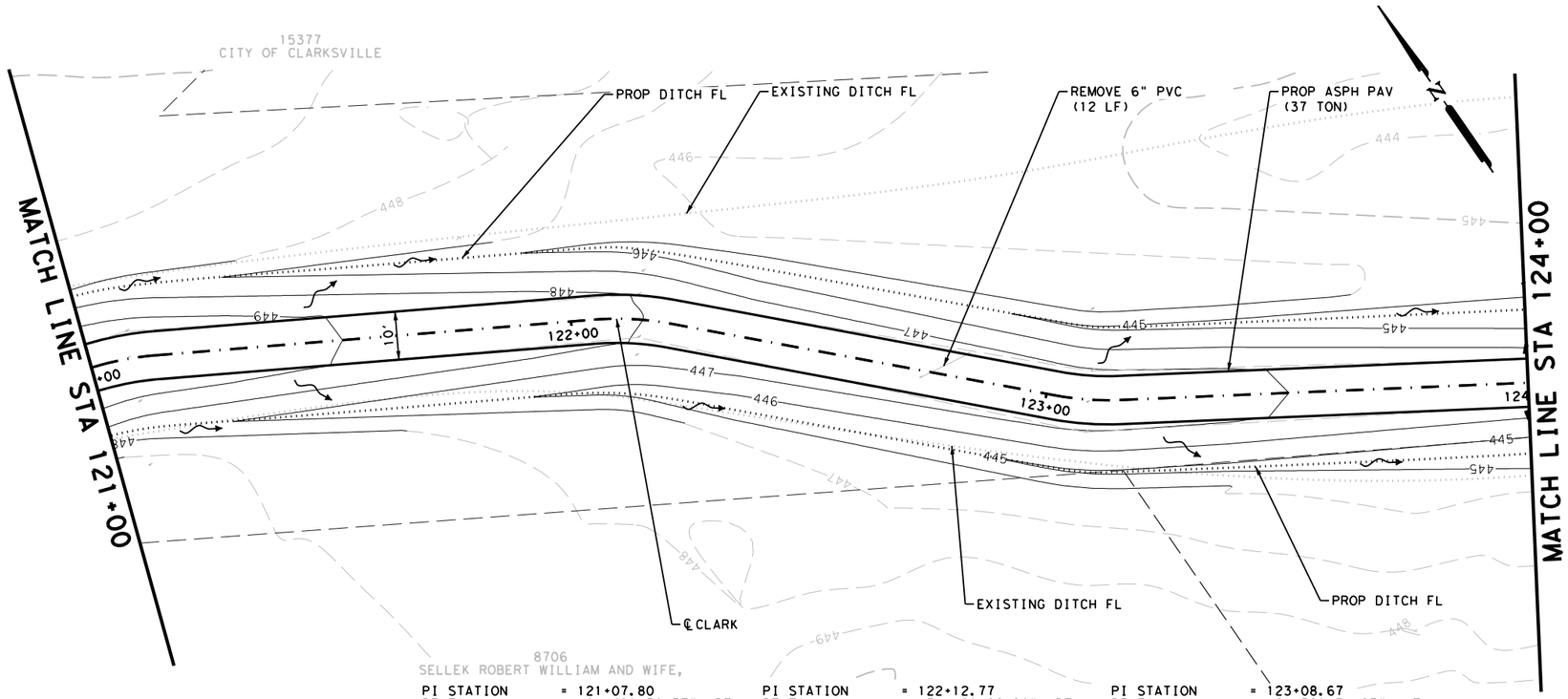
SHEET 7 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	41

Plotted on: 1/4/2024

Design Filename: S:\projects\612\54\02\Design\02_Clarksville_ADA\Civil\Roadway\612540202_pln07.dgn

ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	197
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	53
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	936
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	1872
0168-6001	VEGETATIVE WATERING	MG	139.3
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	664
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	367
0316-6029	ASPH (RC-250)	GAL	100
0496-6007	REMOV STR (PIPE)	LF	12
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	37



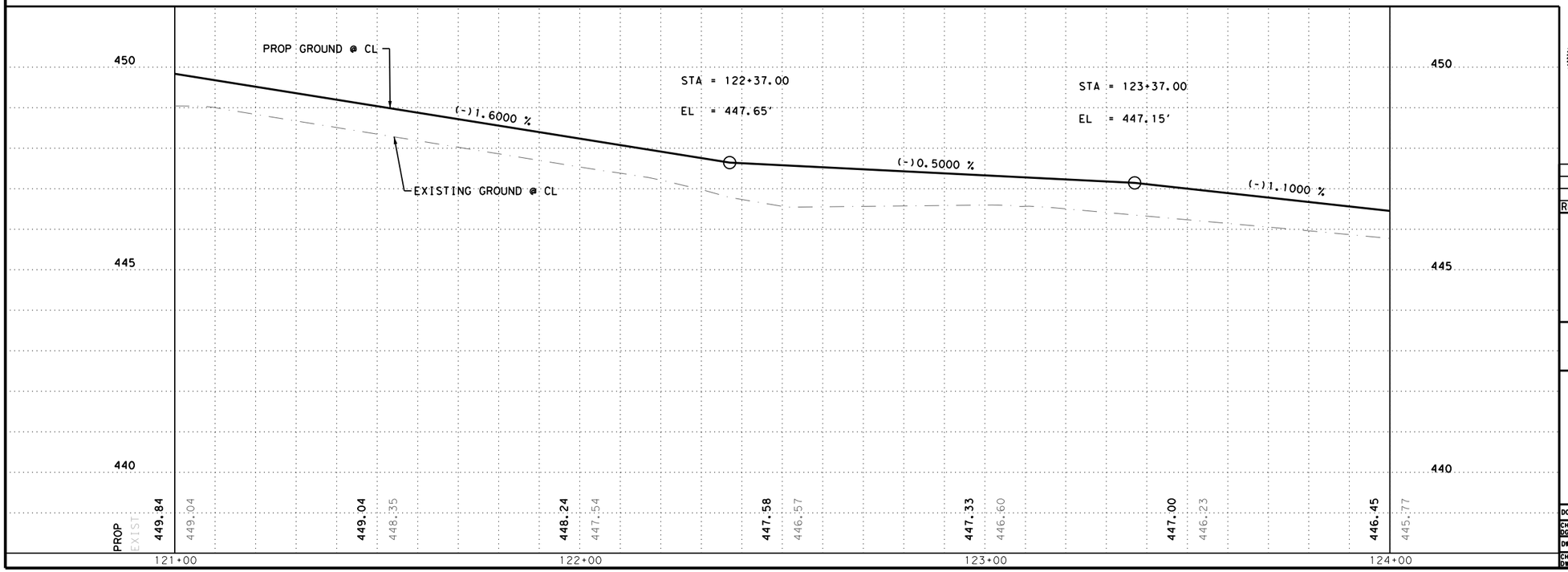
PI STATION = 121+07.80
DELTA = 10° 49' 30.37" (RT)
DEGREE OF CURVE = 95° 29' 34.68"
TANGENT = 5.68
LENGTH = 11.34
RADIUS = 60.00
PC STATION = 121+02.12
PT STATION = 121+13.45

PI STATION = 122+12.77
DELTA = 15° 12' 26.90" (RT)
DEGREE OF CURVE = 95° 29' 34.68"
TANGENT = 8.01
LENGTH = 15.93
RADIUS = 60.00
PC STATION = 122+04.76
PT STATION = 122+20.68

PI STATION = 123+08.67
DELTA = 12° 59' 51.93" (LT)
DEGREE OF CURVE = 95° 29' 34.68"
TANGENT = 6.83
LENGTH = 13.61
RADIUS = 60.00
PC STATION = 123+01.84
PT STATION = 123+15.45

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

DESIGN

STATE OF TEXAS · TYLER PAYNE DUBE · 118612 · LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS · JOHN A. TYLER · 105193 · LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40
SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

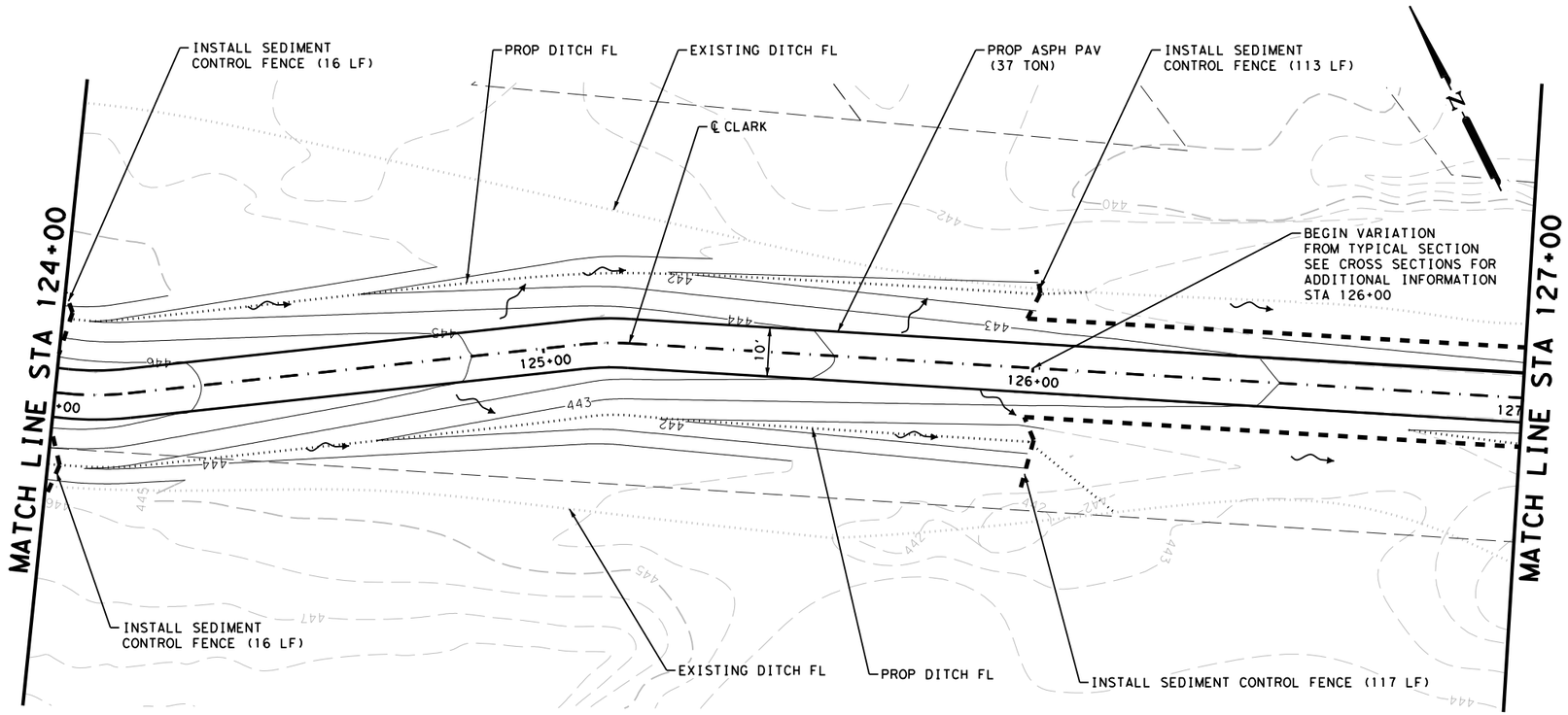
NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 121+00 TO STA 124+00

SHEET 8 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	42



ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	186
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	58
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	720
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	1440
0168-6001	VEGETATIVE WATERING	MG	107.2
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	519
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	367
0316-6029	ASPH (RC-250)	GAL	100
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	262
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	262
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	37

PI STATION = 124+08.61
DELTA = 12° 01' 55.41" (LT)
DEGREE OF CURVE = 95° 29' 34.68"
TANGENT = 6.32
LENGTH = 12.60
RADIUS = 60.00
PC STATION = 124+02.29
PT STATION = 124+14.89

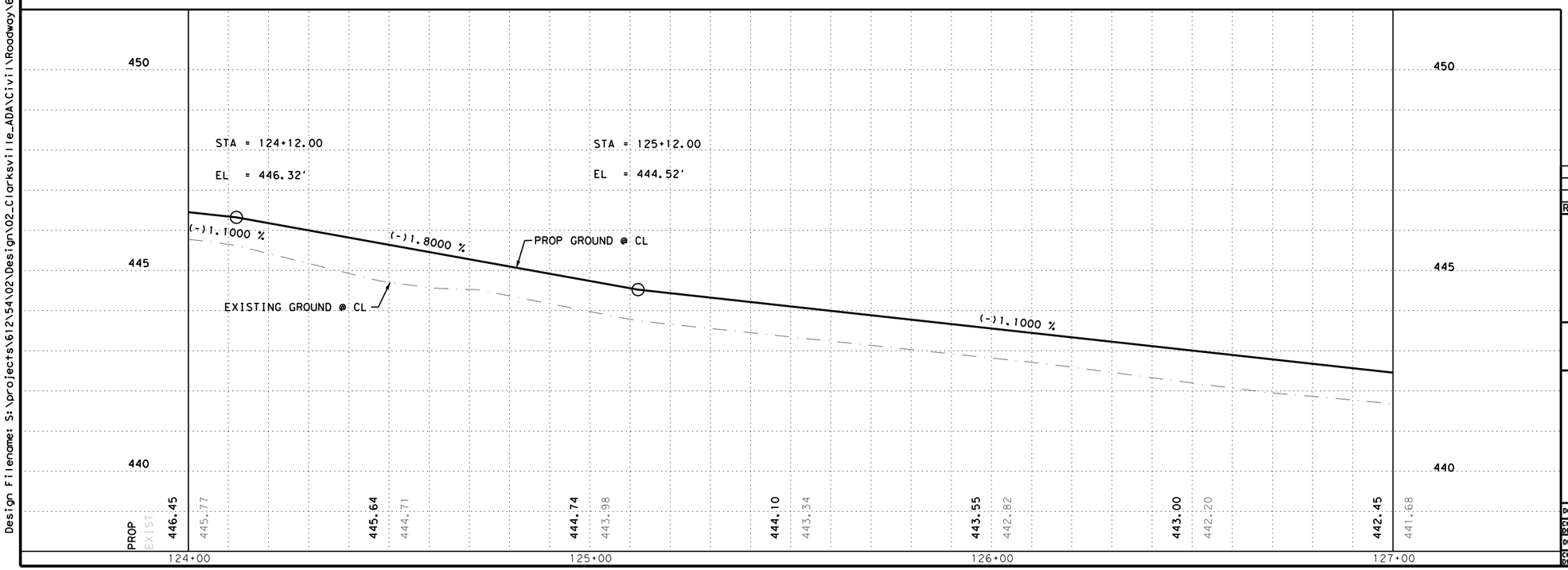
PI STATION = 125+12.57
DELTA = 9° 39' 23.71" (RT)
DEGREE OF CURVE = 95° 29' 34.68"
TANGENT = 5.07
LENGTH = 10.11
RADIUS = 60.00
PC STATION = 125+07.50
PT STATION = 125+17.61

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40
SCALE: 1"= 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

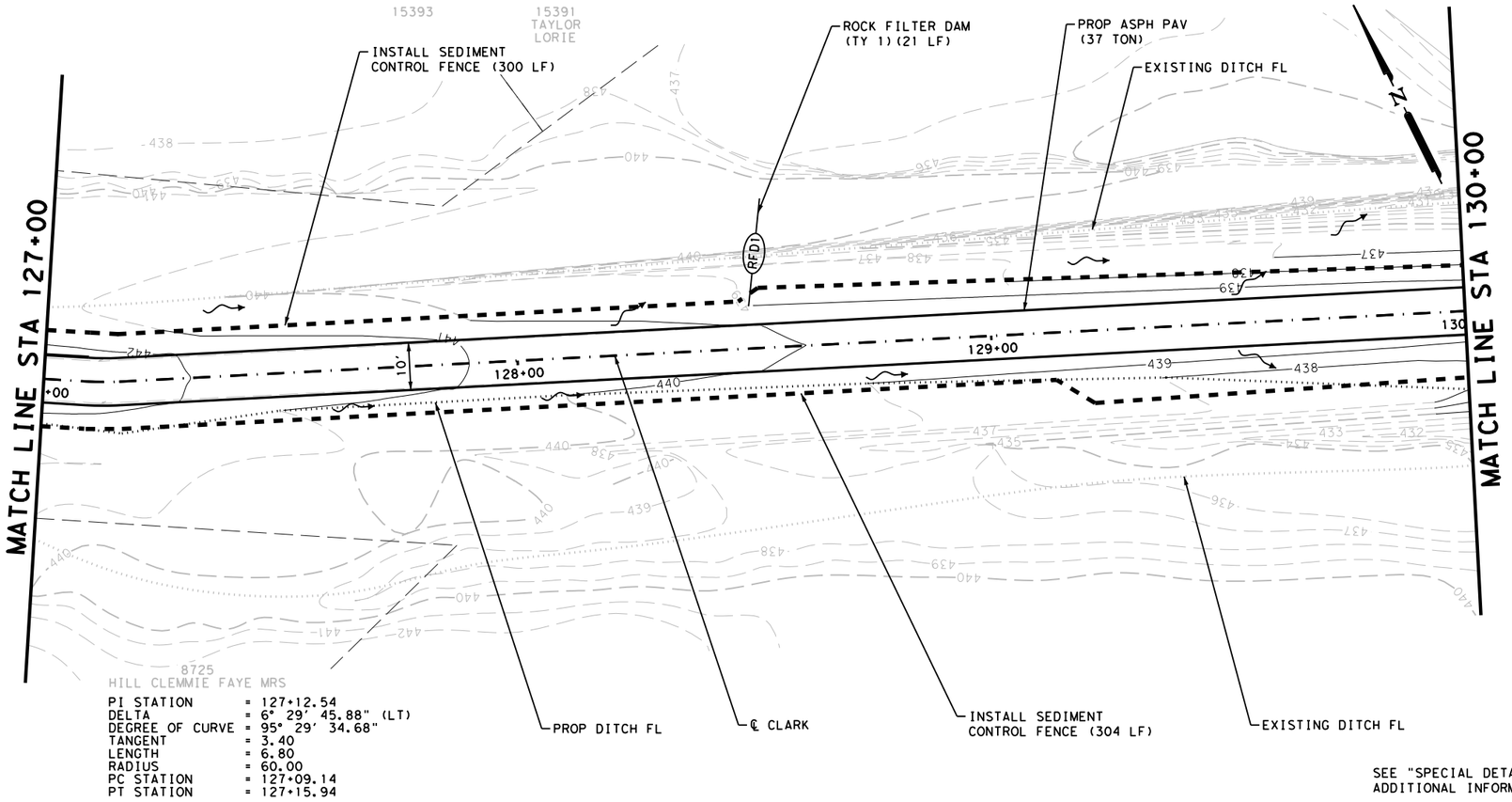
STA 124+00 TO STA 127+00

SHEET 9 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	43

Plotted on: 1/4/2024

Design Filename: S:\projects\612\54\02\Design\02_Clarksville_ADA\Civil\Roadway\612540202_pln09.dgn



PI STATION = 127+12.54
DELTA = 6° 29' 45.88" (LT)
DEGREE OF CURVE = 95° 29' 34.68"
TANGENT = 3.40
LENGTH = 6.80
RADIUS = 60.00
PC STATION = 127+09.14
PT STATION = 127+15.94

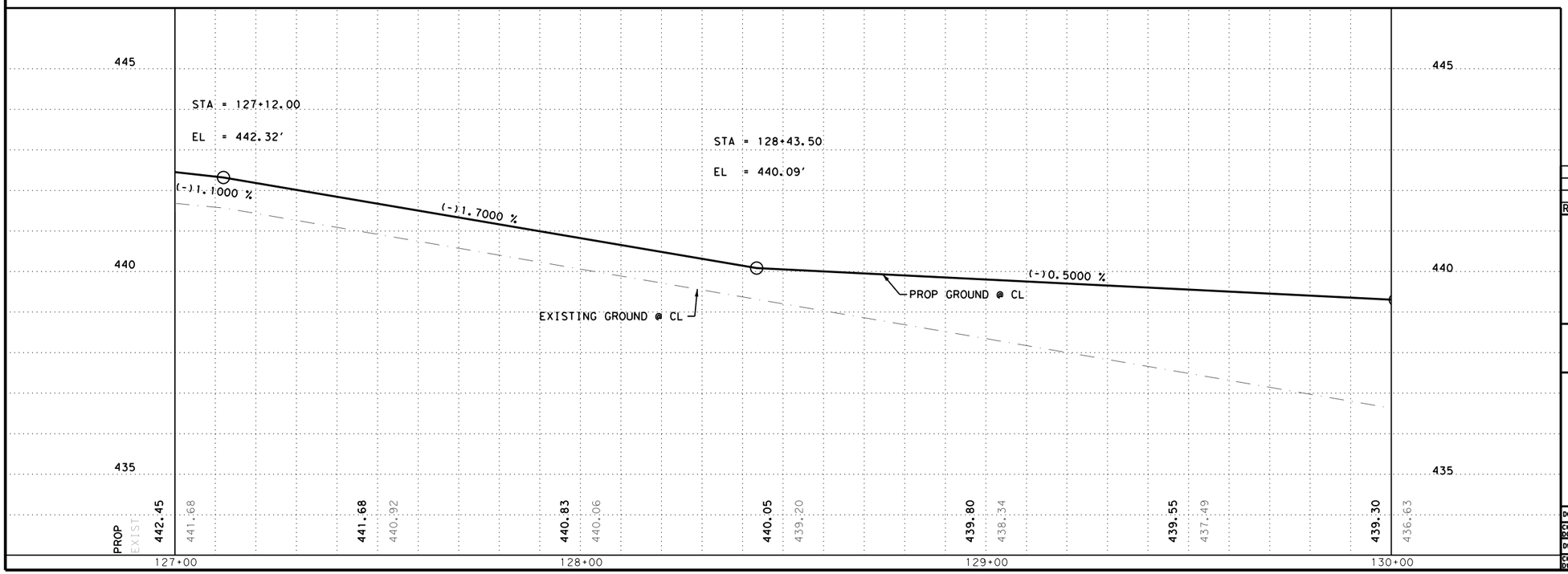
ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	64
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	320
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	640
0168-6001	VEGETATIVE WATERING	MG	47.7
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	320
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	367
0316-6029	ASPH (RC-250)	GAL	100
0506-6001	ROCK FILTER DAMS (INSTALL) (TY 1)	LF	21
0506-6011	ROCK FILTER DAMS (REMOVE)	LF	21
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	604
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	604
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	37

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40
SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

Texas Department of Transportation
©2024

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 127+00 TO STA 130+00

SHEET 10 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	44

Plotted on: 1/4/2024

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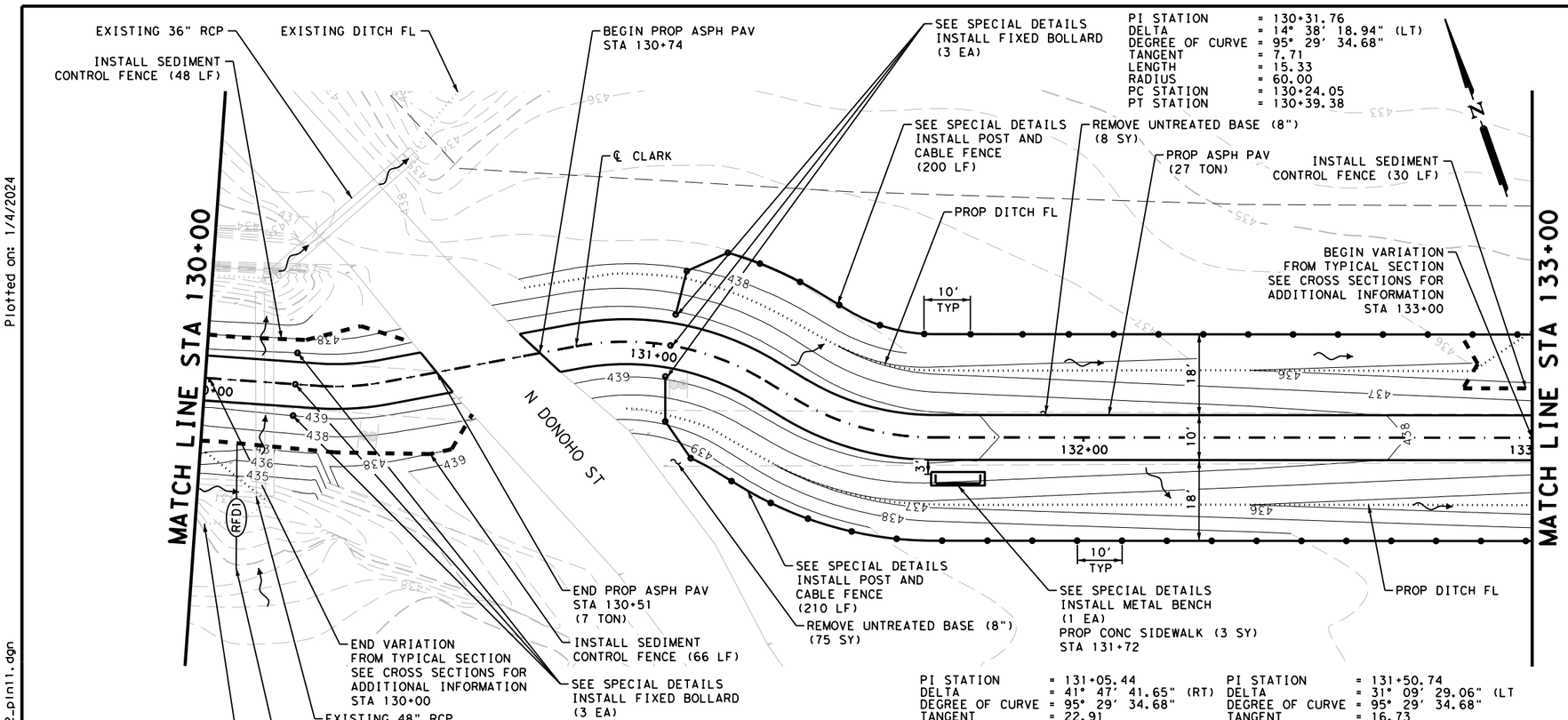
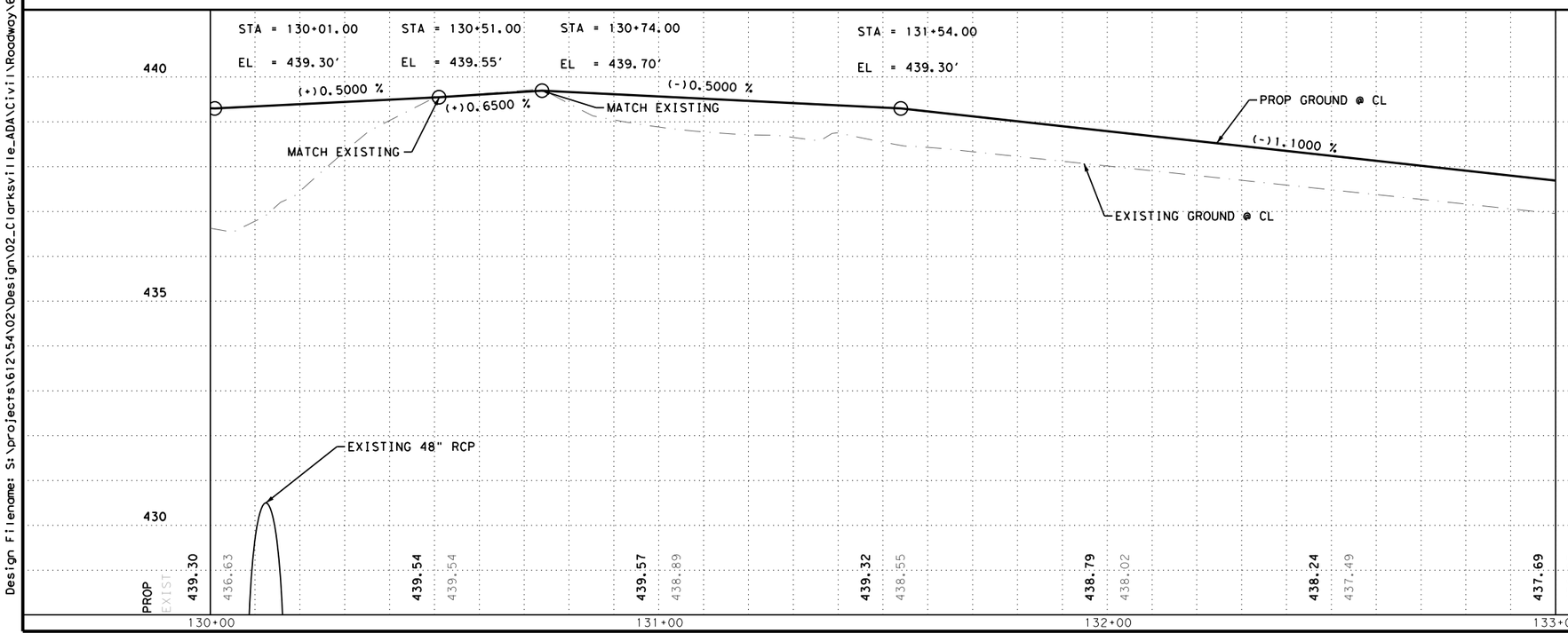


ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0105-6128	REMOVING UNTREATED BASE (8")	SY	83
0110-6001	EXCAVATION (ROADWAY)	CY	182
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	95
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	906
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	1812
0168-6001	VEGETATIVE WATERING	MG	134.8
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	604
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	341
0316-6029	ASPH (RC-250)	GAL	92
0506-6001	ROCK FILTER DAMS (INSTALL) (TY 1)	LF	28
0506-6011	ROCK FILTER DAMS (REMOVE)	LF	28
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	144
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	144
0531-6001	CONC SIDEWALKS (4")	SY	3
0772-6003	POST AND CABLE FENCE (NEW INSTALLATION)	LF	410
1002-6026	LANDSCAPE AMENITY (BENCH)	EA	1
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	34
5131-6001	FIXED BOLLARDS	EA	6

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE



NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.

DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1"= 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 130+00 TO STA 133+00

SHEET 11 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	45

Plotted on: 1/4/2024

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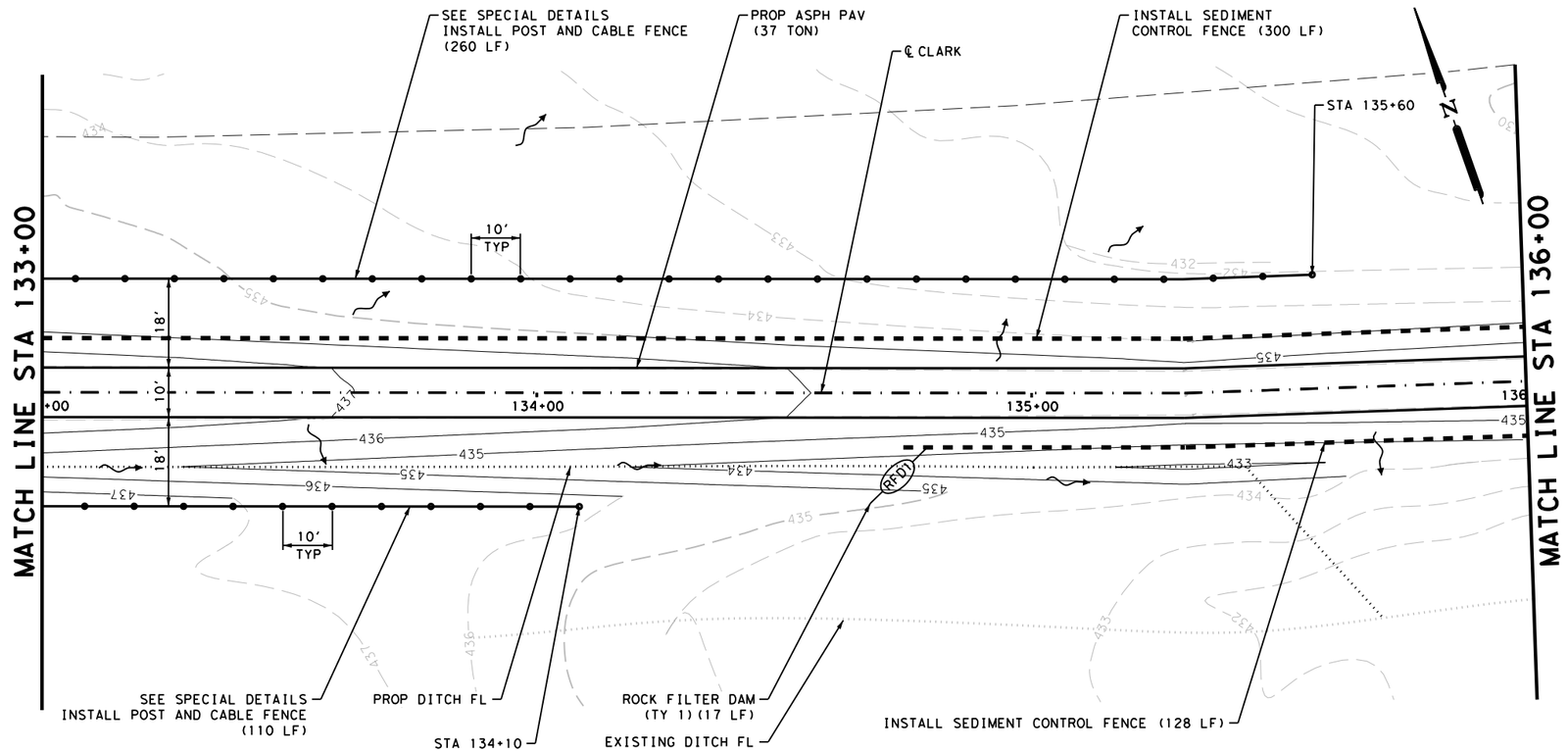


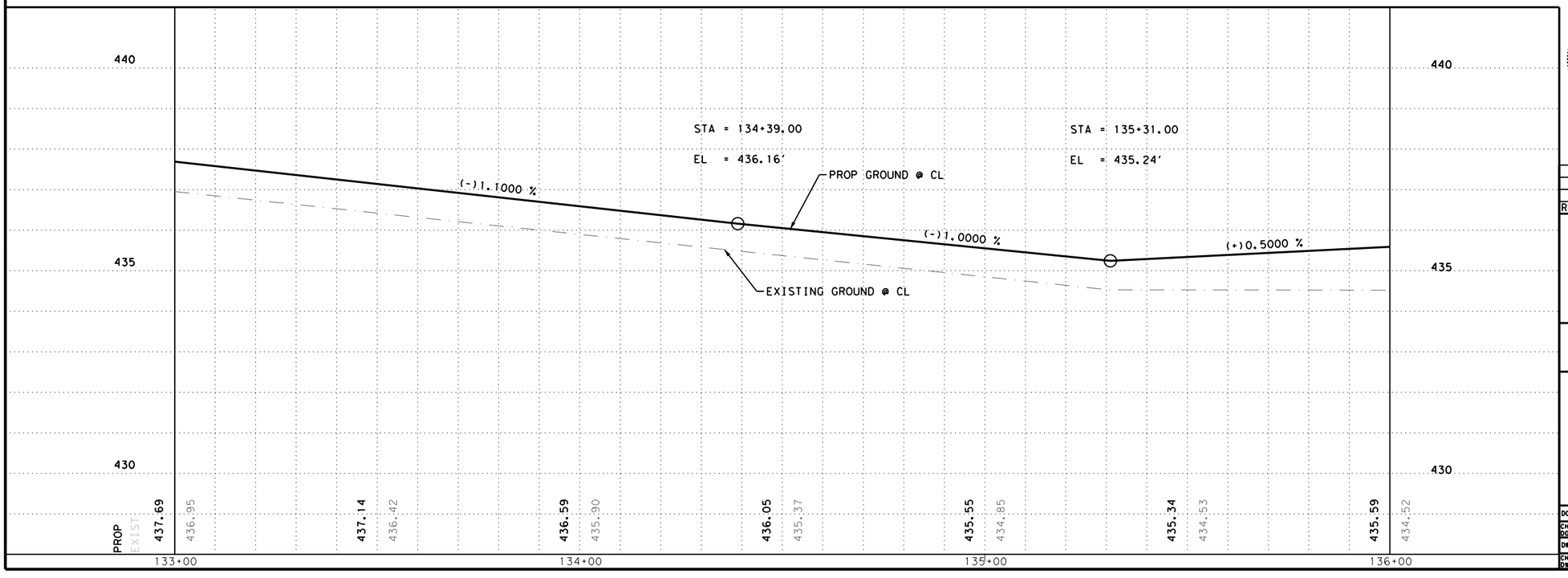
ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	175
0132-6003	EMBANKMENT (FINAL) (ORD COMP) (TY B)	CY	36
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	696
0164-6071	BROADCAST SEED (TEMP) (WARM OR COOL)	SY	1392
0168-6001	VEGETATIVE WATERING	MG	103.6
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	529
0247-6064	FL BS (CMP IN PLC) (TY A GR 4) (6")	SY	367
0316-6029	ASPH (RC-250)	GAL	100
0506-6001	ROCK FILTER DAMS (INSTALL) (TY 1)	LF	17
0506-6011	ROCK FILTER DAMS (REMOVE)	LF	17
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	428
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	428
0772-6003	POST AND CABLE FENCE (NEW INSTALLATION)	LF	370
3076-6068	D-GR HMA TY-D SAC-A PG64-22 (EXEMPT)	TON	37

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 133+00 TO STA 136+00

SHEET 12 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	46

Plotted on: 1/4/2024

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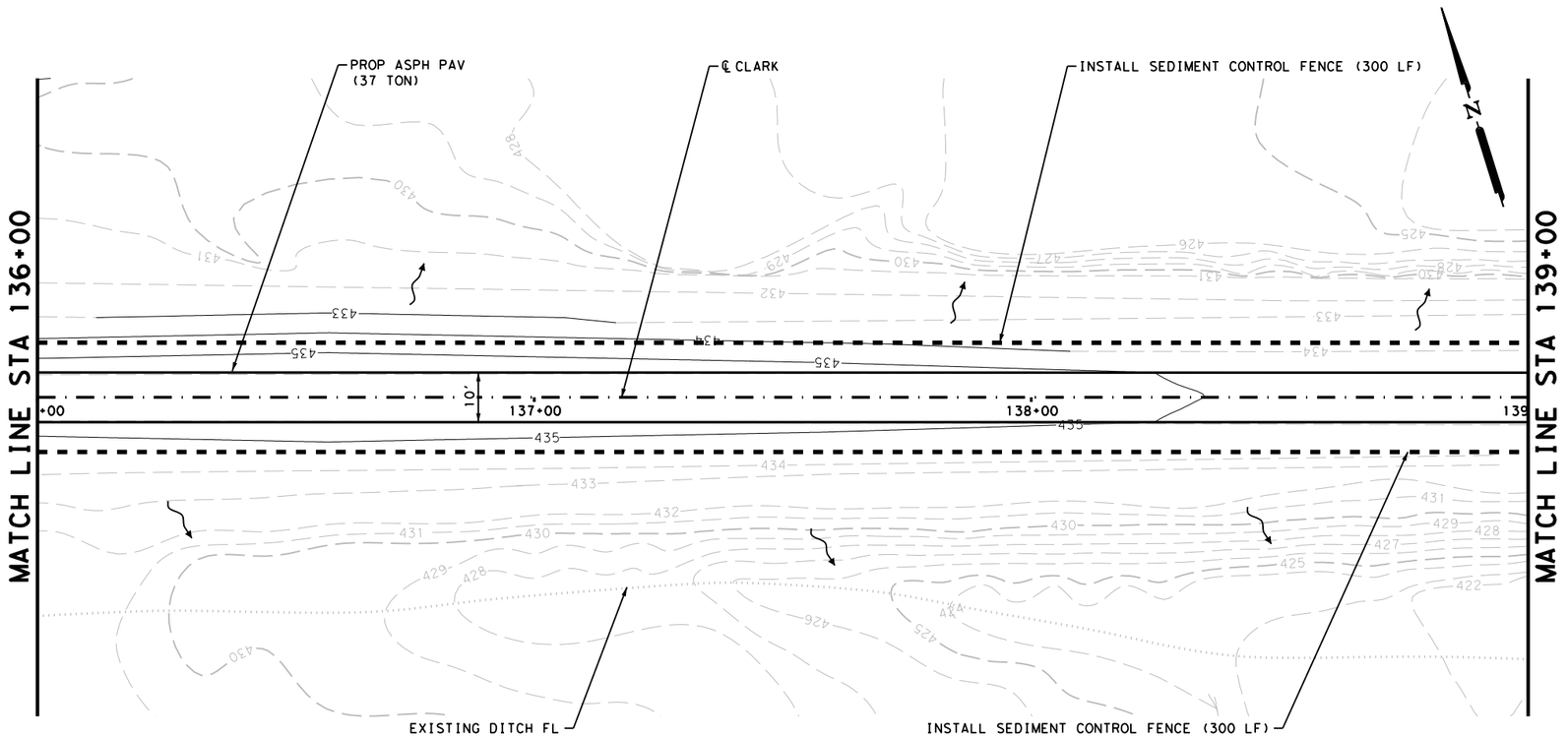


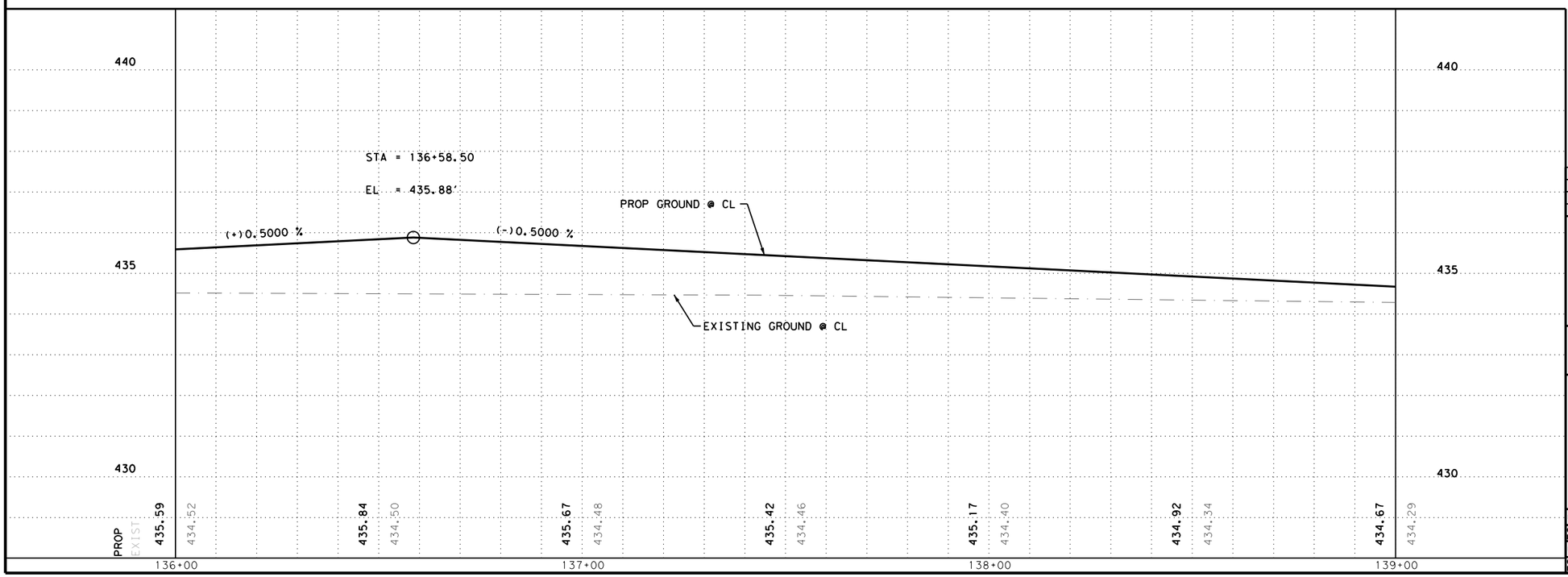
ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	24
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	136
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	445
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	890
0168-6001	VEGETATIVE WATERING	MG	66.2
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	445
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	369
0316-6029	ASPH (RC-250)	GAL	101
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	600
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	600
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	37

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

STATE OF TEXAS · TYLER PAYNE DUBE · 118612 · LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS · JOHN A. TYLER · 105193 · LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 136+00 TO STA 139+00

SHEET 13 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	47

Plotted on: 1/4/2024

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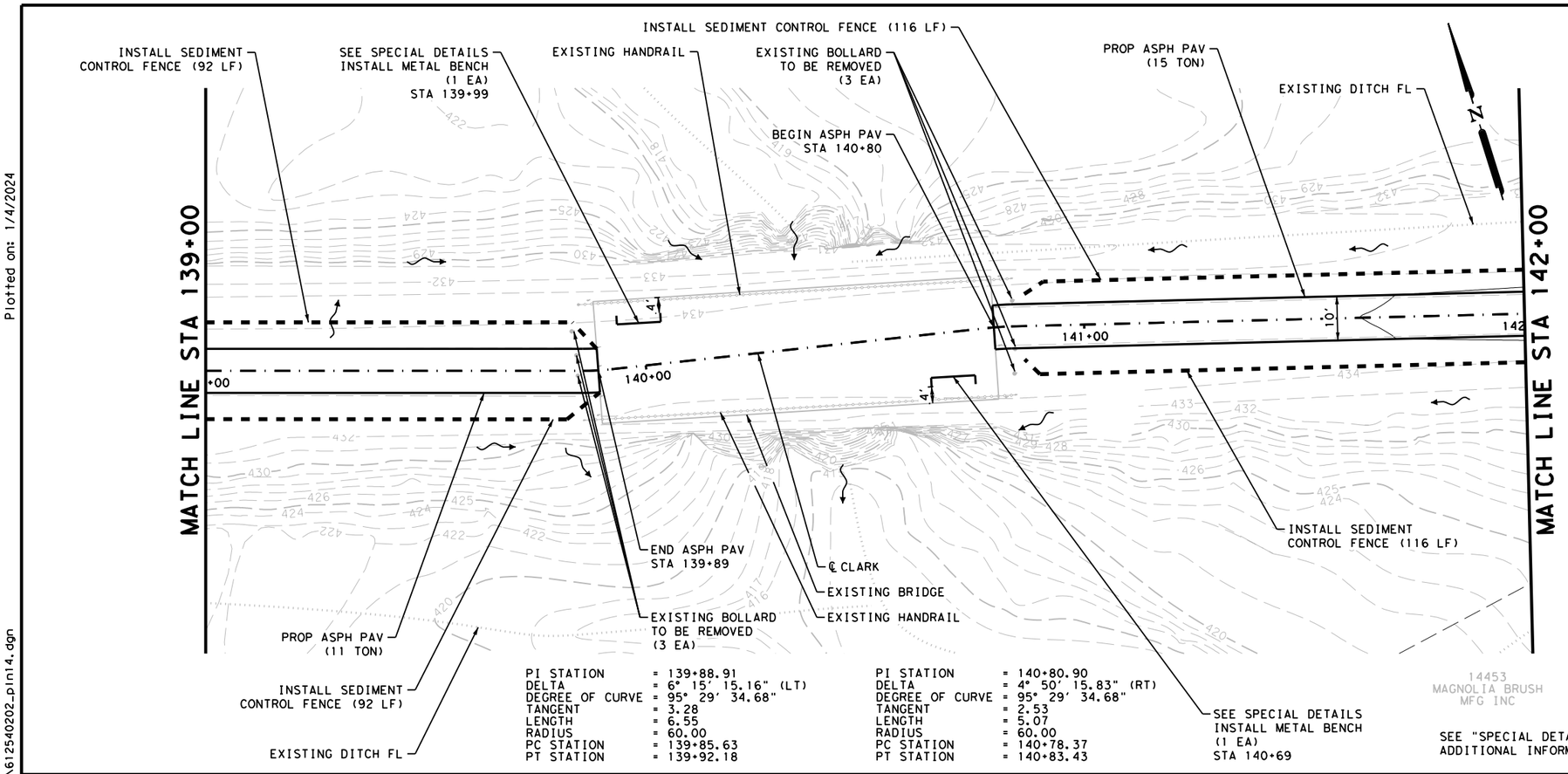


PI STATION = 139+88.91
DELTA = 6° 15' 15.16" (LT)
DEGREE OF CURVE = 95° 29' 34.68"
TANGENT = 3.28
LENGTH = 6.55
RADIUS = 60.00
PC STATION = 139+85.63
PT STATION = 139+92.18

PI STATION = 140+80.90
DELTA = 4° 50' 15.83" (RT)
DEGREE OF CURVE = 95° 29' 34.68"
TANGENT = 2.53
LENGTH = 5.07
RADIUS = 60.00
PC STATION = 140+78.37
PT STATION = 140+83.43

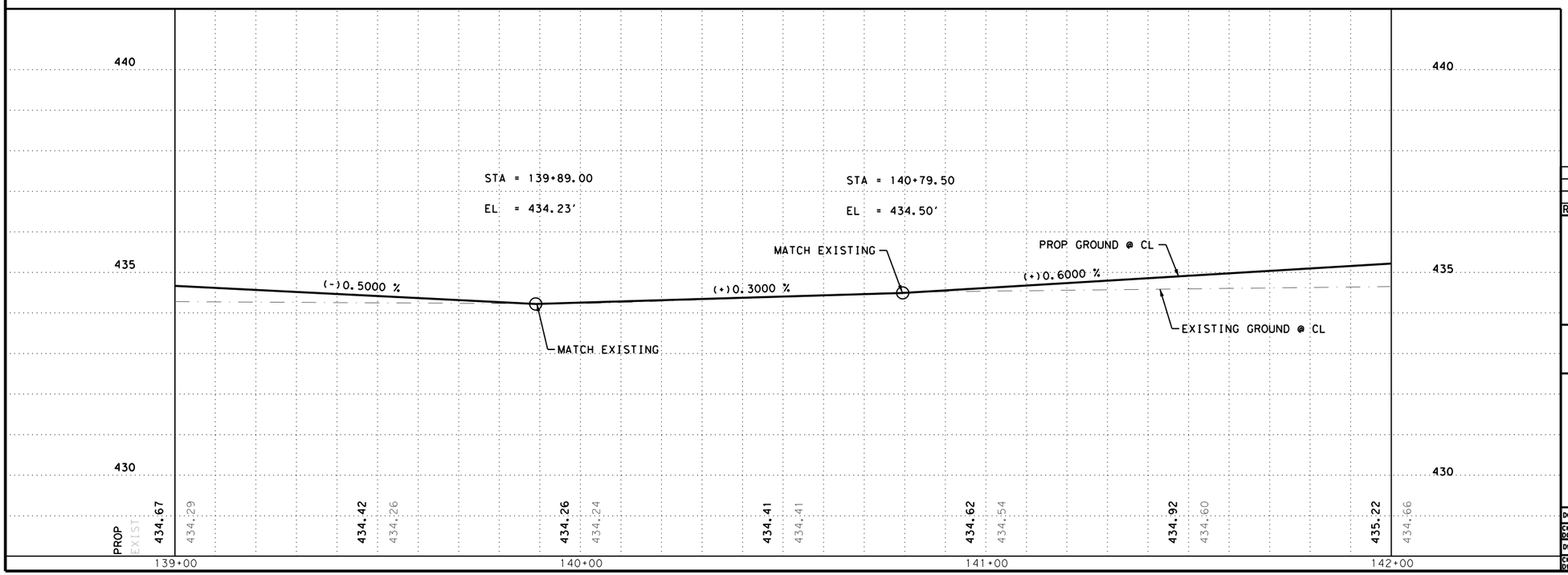
ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	83
0132-6003	EMBANKMENT (FINAL) (ORD COMP) (TY B)	CY	10
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	390
0164-6071	BROADCAST SEED (TEMP) (WARM OR COOL)	SY	780
0168-6001	VEGETATIVE WATERING	MG	58.1
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	390
0247-6064	FL BS (CMP IN PLC) (TY A GR 4) (6")	SY	267
0316-6029	ASPH (RC-250)	GAL	70
0496-6030	REMOVE STR (BOLLARD)	EA	6
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	416
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	416
1002-6026	LANDSCAPE AMENITY (BENCH)	EA	2
3076-6068	D-GR HMA TY-D SAC-A PG64-22 (EXEMPT)	TON	26

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1"= 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 139+00 TO STA 142+00

SHEET 14 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	48

Plotted on: 1/4/2024

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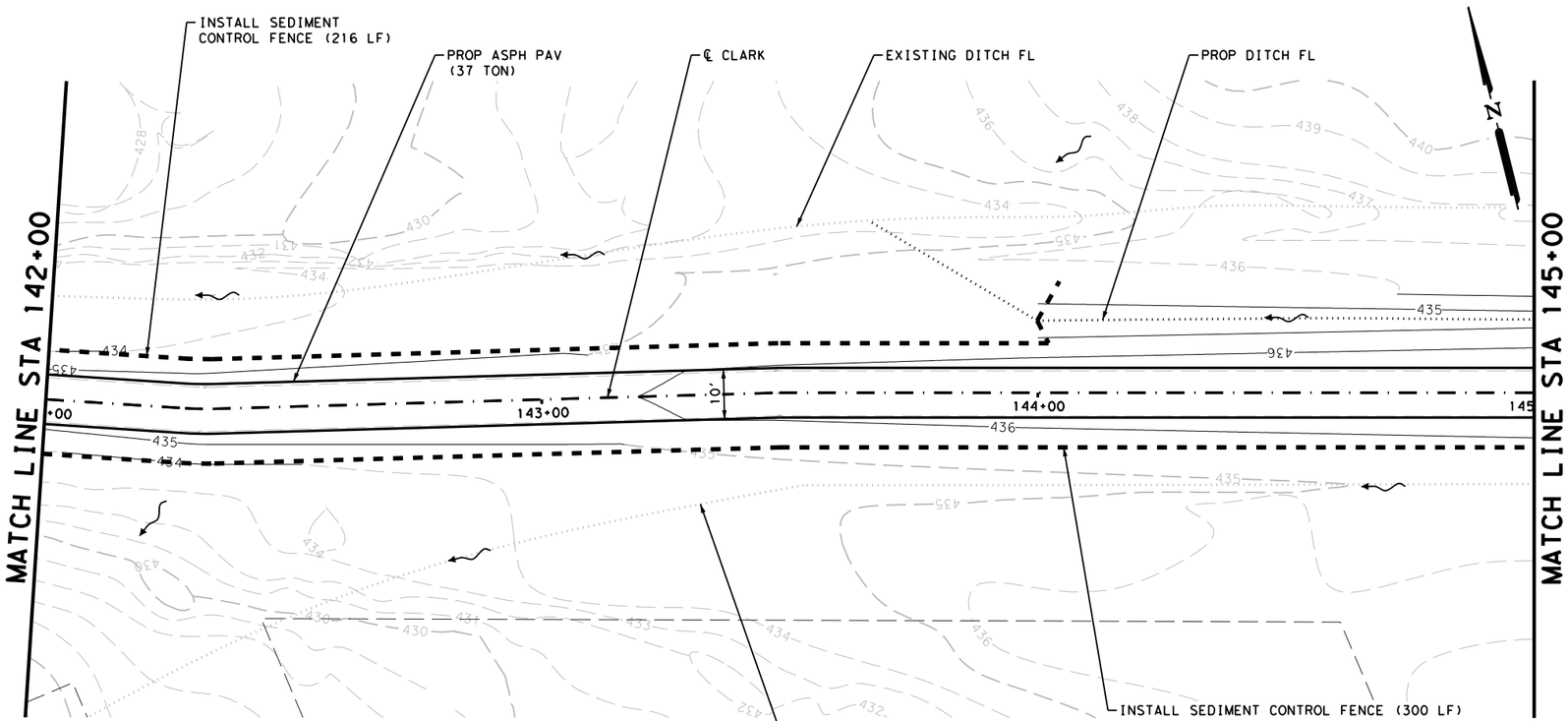
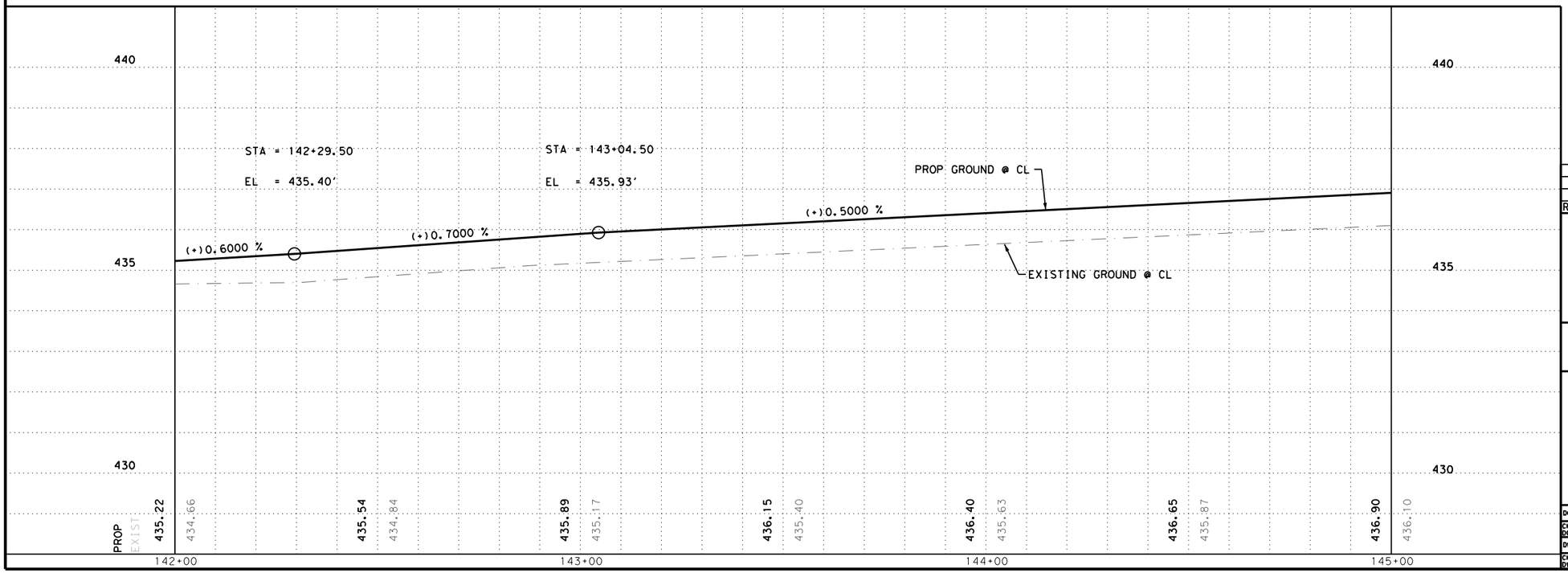


PI STATION = 142+30.90
DELTA = 5° 20' 21.31" (LT)
DEGREE OF CURVE = 95° 29' 34.68"
TANGENT = 2.80
LENGTH = 5.59
RADIUS = 60.00
PC STATION = 142+28.10
PT STATION = 142+33.69

ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	18
0132-6003	EMBANKMENT (FINAL) (ORD COMP) (TY B)	CY	42
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	421
0164-6071	BROADCAST SEED (TEMP) (WARM OR COOL)	SY	842
0168-6001	VEGETATIVE WATERING	MG	62.7
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	367
0247-6064	FL BS (CMP IN PLC) (TY A GR 4) (6")	SY	367
0316-6029	ASPH (RC-250)	GAL	100
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	516
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	516
3076-6068	D-GR HMA TY-D SAC-A PG64-22 (EXEMPT)	TON	37

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE



DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40
SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

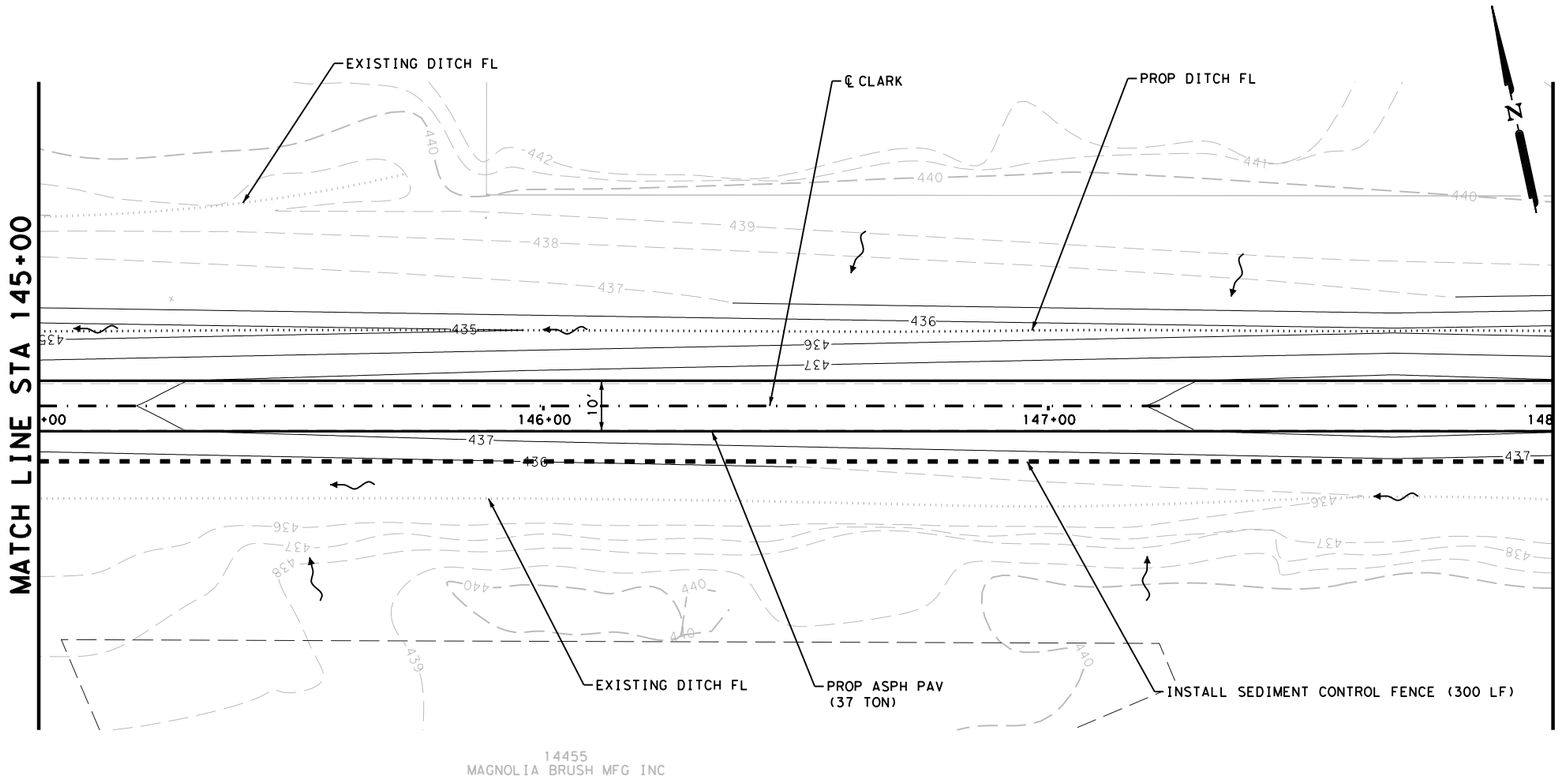
STA 142+00 TO STA 145+00

SHEET 15 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	49

Plotted on: 1/4/2024

Design Filename: S:\projects\612\54\02\Design\02_Clarksville_ADA\Civil\Roadway\612540202_pln15.dgn



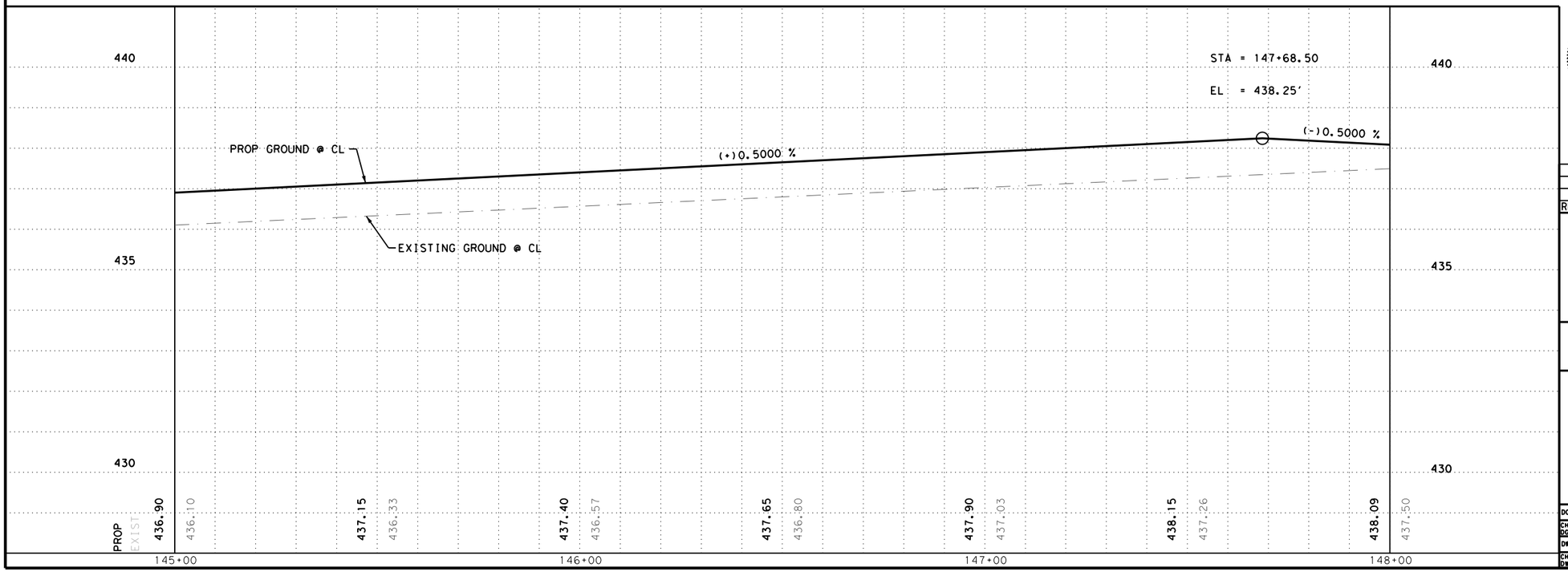
ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	129
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	69
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	749
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	1498
0168-6001	VEGETATIVE WATERING	MG	111.5
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	560
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	367
0316-6029	ASPH (RC-250)	GAL	100
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	300
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	300
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	37

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

STATE OF TEXAS · TYLER PAYNE DUBE · 118612 · LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS · JOHN A. TYLER · 105193 · LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

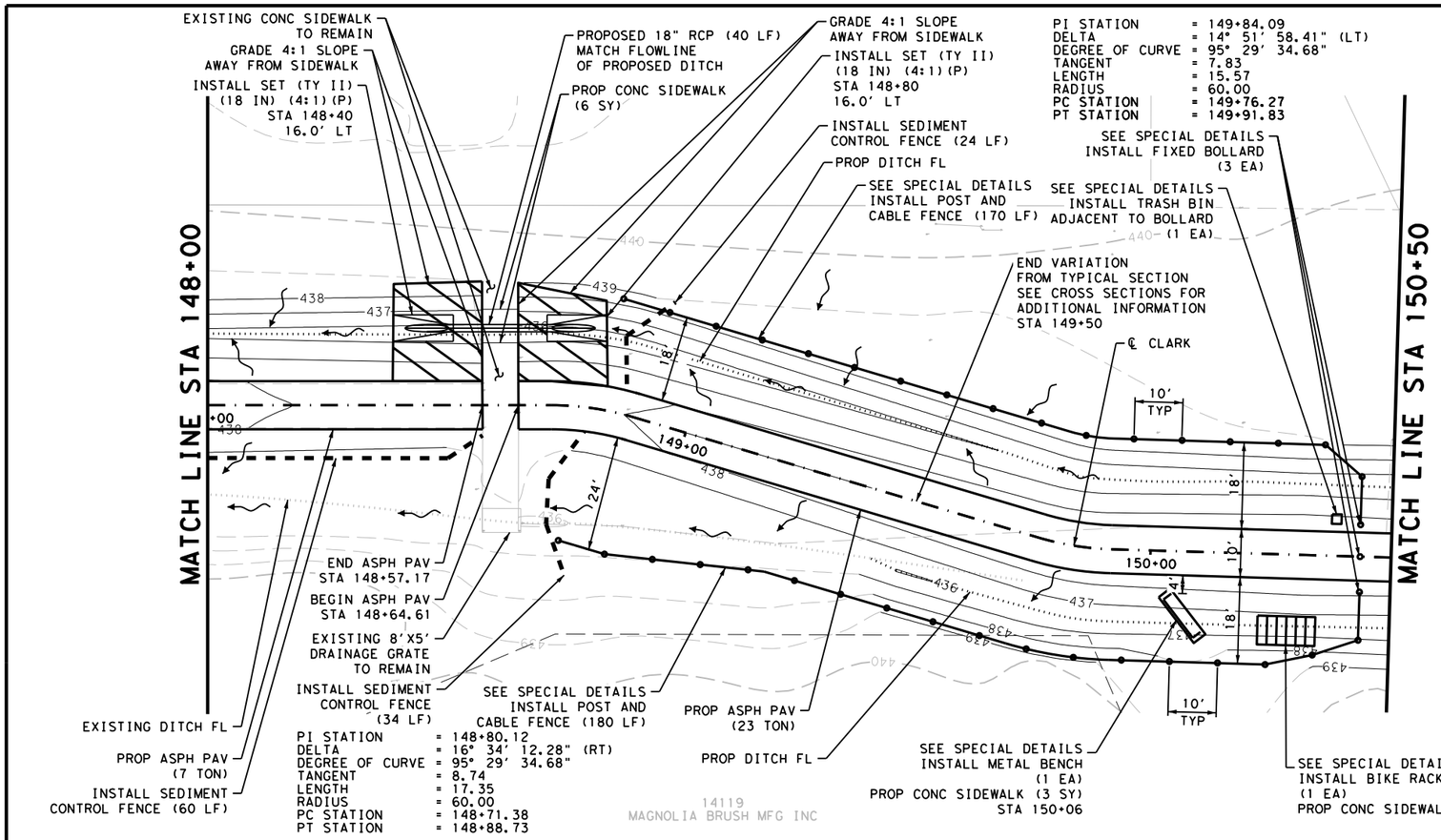
STA 145+00 TO STA 148+00

SHEET 16 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	50

Plotted on: 1/4/2024

Design Filename: S:\projects\612\54\02\Design\02_Clarksville_ADA\Civil\Roadway\612540202_pln16.dgn



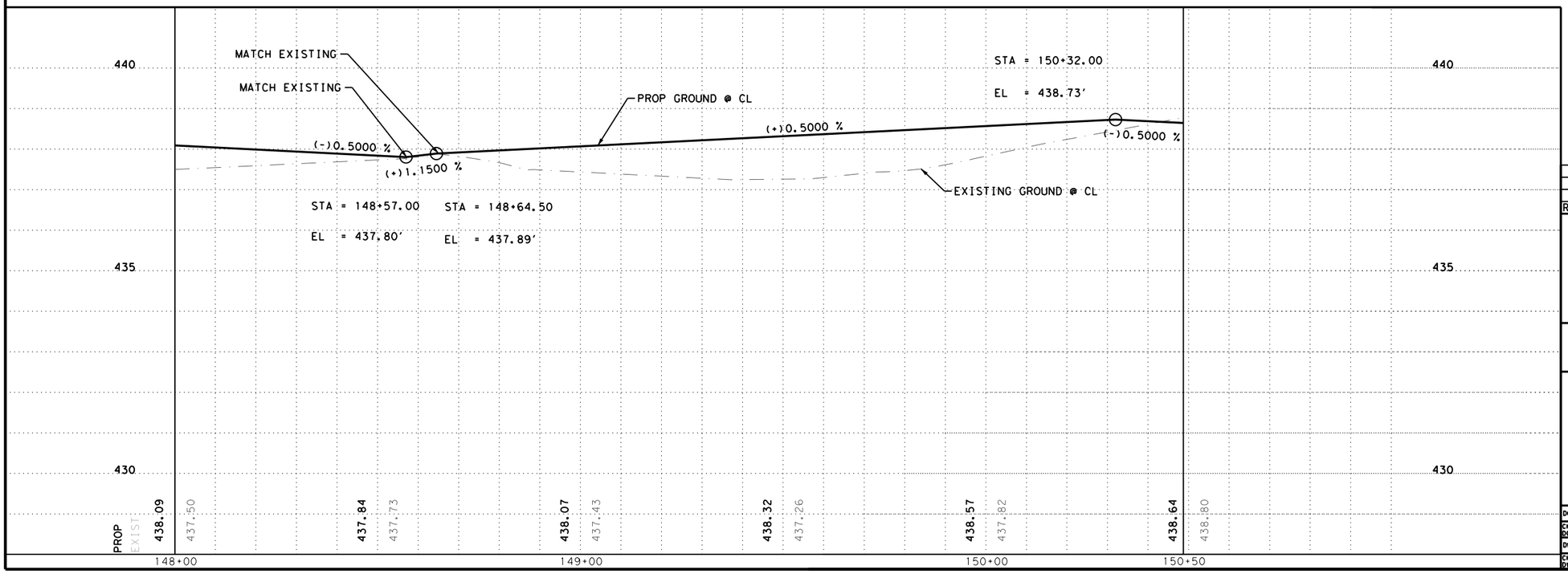
ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	2.50
0110-6001	EXCAVATION (ROADWAY)	CY	218
0132-6003	EMBANKMENT (FINAL) (ORD COMP) (TY B)	CY	52
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	768
0164-6071	BROADCAST SEED (TEMP) (WARM OR COOL)	SY	1536
0168-6001	VEGETATIVE WATERING	MG	114.3
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	452
0247-6064	FL BS (CMP IN PLC) (TY A GR 4) (6")	SY	303
0316-6029	ASPH (RC-250)	GAL	81
0464-6003	RC PIPE (CL III) (18 IN)	LF	40
0467-6359	SET (TY II) (18 IN) (RCP) (4:1) (P)	EA	2
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	118
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	118
0531-6001	CONC SIDEWALKS (4")	SY	12
0772-6003	POST AND CABLE FENCE (NEW INSTALLATION)	LF	350
1002-6001	LANDSCAPE AMENITY	EA	1
1002-6025	LANDSCAPE AMENITY (TRASH/RECYCLE BIN)	EA	1
1002-6026	LANDSCAPE AMENITY (BENCH)	EA	1
3076-6068	D-GR HMA TY-D SAC-A PG64-22 (EXEMPT)	TON	30
5131-6001	FIXED BOLLARDS	EA	3

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- 4:1 GRADING
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS

2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000

TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 148+00 TO STA 150+50

SHEET 17 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	51

Plotted on: 1/4/2024

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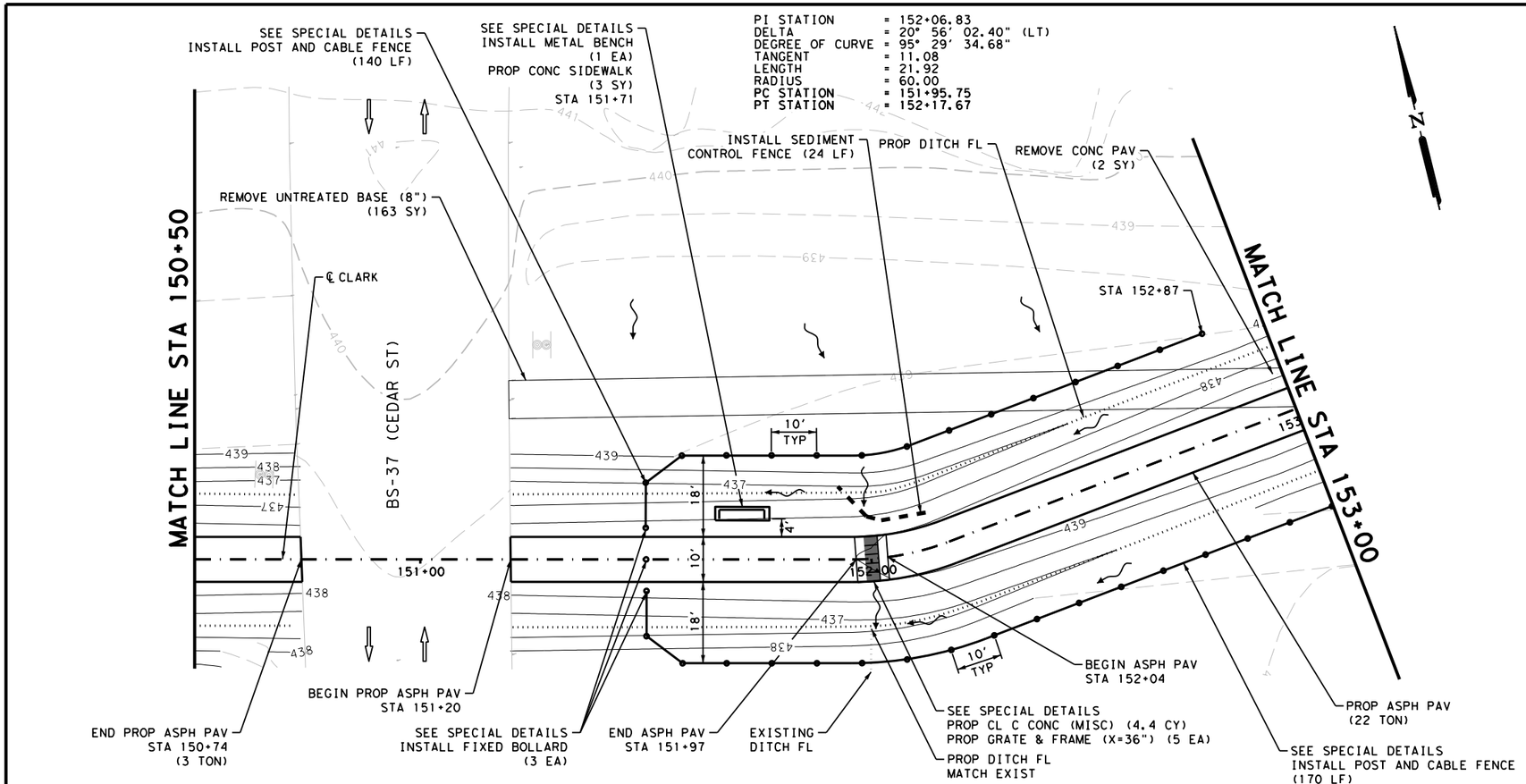
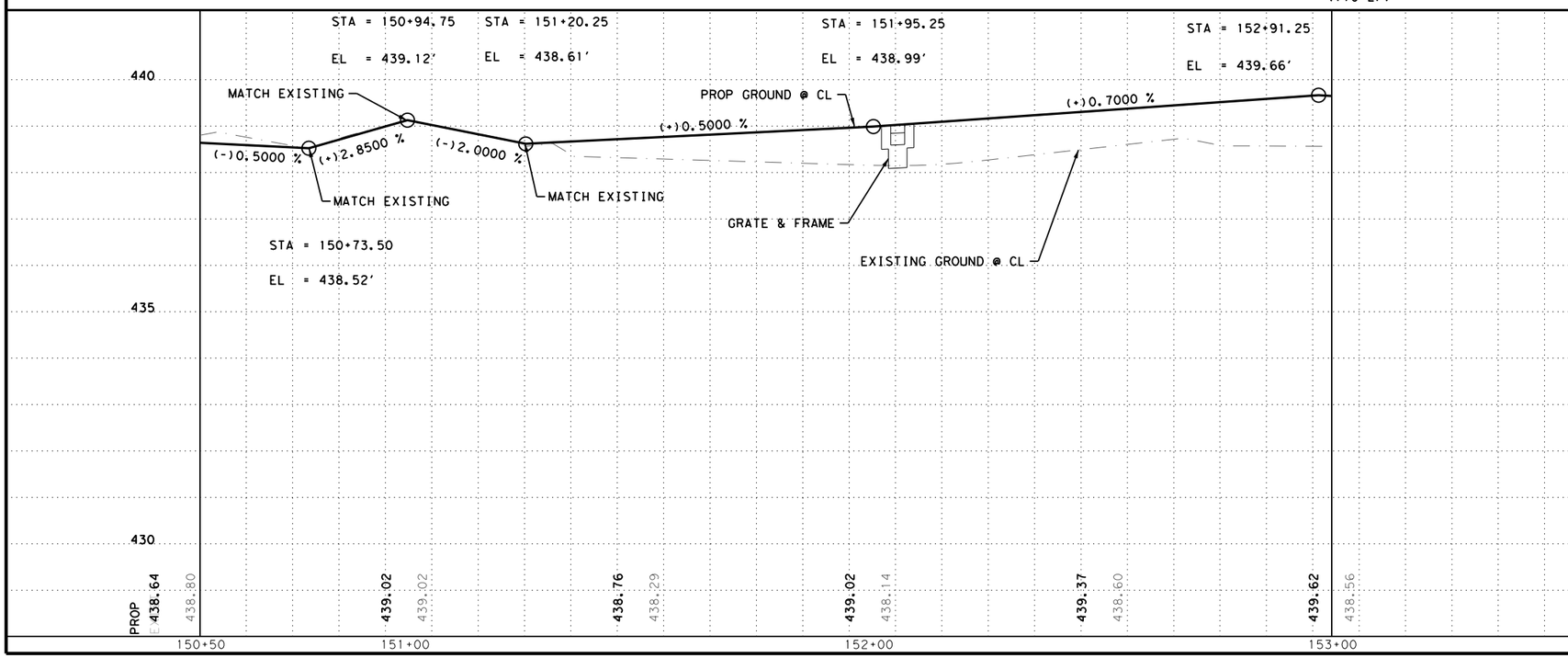


ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	2.50
0104-6001	REMOVING CONC (PAV)	SY	2
0105-6128	REMOVING UNTREATED BASE (8")	SY	163
0110-6001	EXCAVATION (ROADWAY)	CY	250
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	29
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	705
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	1410
0168-6001	VEGETATIVE WATERING	MG	104.9
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	452
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	252
0316-6029	ASPH (RC-250)	GAL	66
0420-6074	CL C CONC (MISC)	CY	4.4
0471-6003	GRATE & FRAME	EA	5
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	24
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	24
0531-6001	CONC SIDEWALKS (4")	SY	3
0772-6003	POST AND CABLE FENCE (NEW INSTALLATION)	LF	310
1002-6026	LANDSCAPE AMENITY (BENCH)	EA	1
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	25
5131-6001	FIXED BOLLARDS	EA	3

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE



DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1"= 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS

2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000

TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 150+50 TO STA 153+00

SHEET 18 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	52

Plotted on: 1/4/2024

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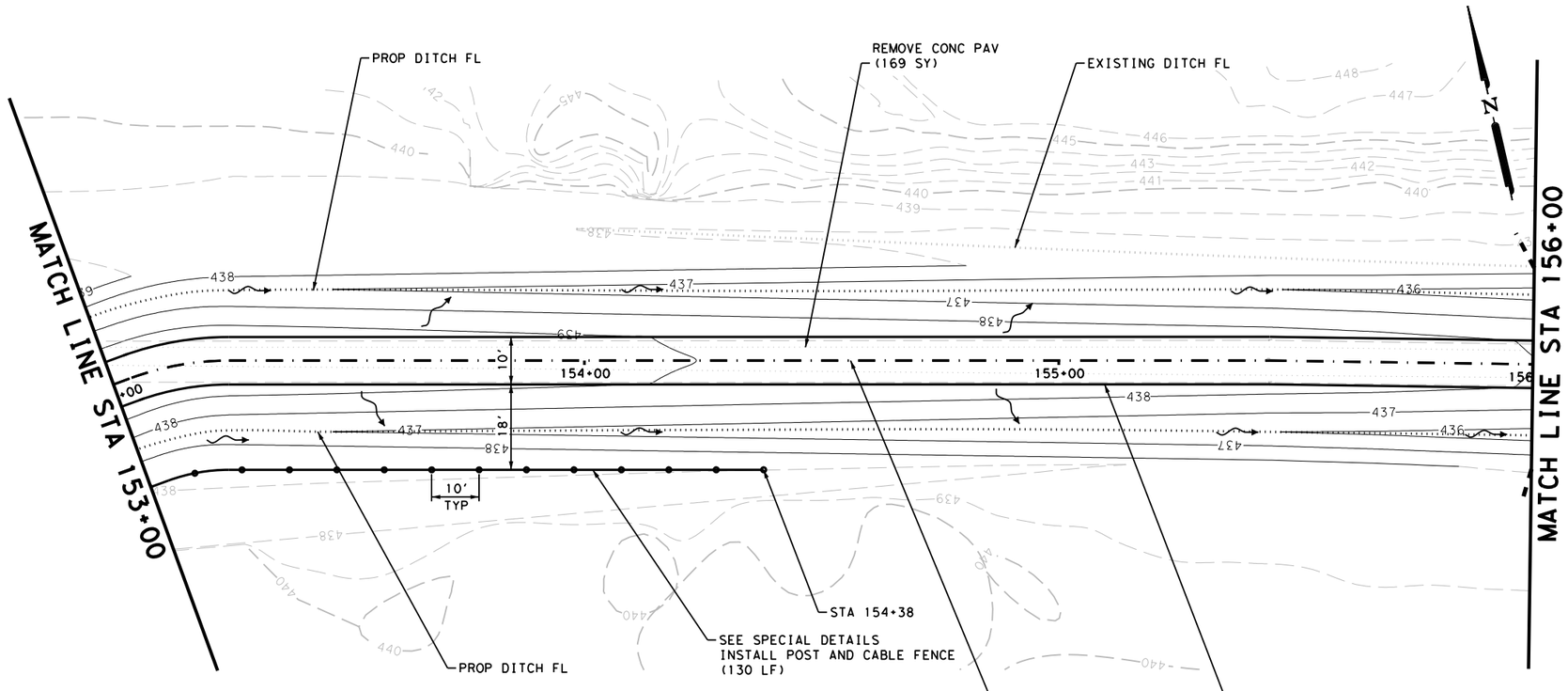


PI STATION = 153+14.67
DELTA = 20° 01' 29.18" (RT)
DEGREE OF CURVE = 95° 29' 34.68"
TANGENT = 10.59
LENGTH = 20.97
RADIUS = 60.00
PC STATION = 153+04.08
PT STATION = 153+25.05

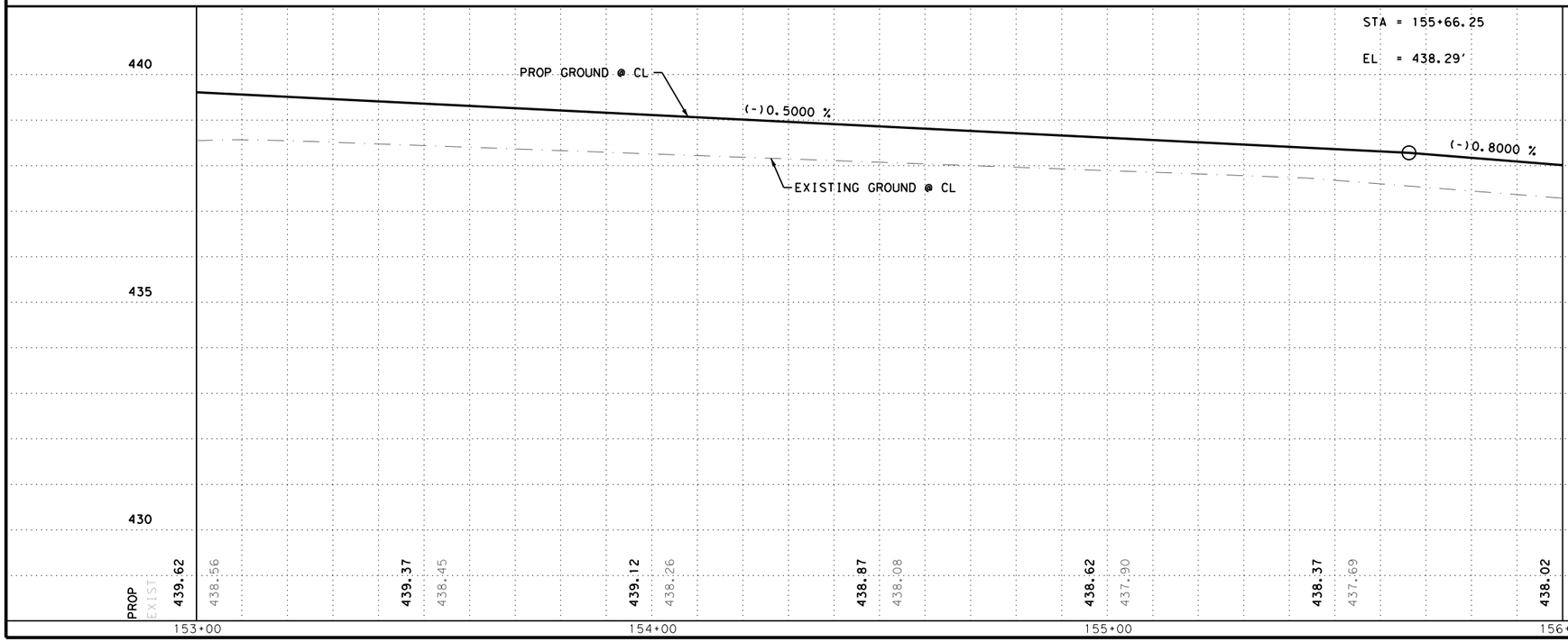
ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0104-6001	REMOVING CONC (PAV)	SY	169
0110-6001	EXCAVATION (ROADWAY)	CY	216
0132-6003	EMBANKMENT (FINAL) (ORD COMP) (TY B)	CY	67
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	1005
0164-6071	BROADCAST SEED (TEMP) (WARM OR COOL)	SY	2010
0168-6001	VEGETATIVE WATERING	MG	149.6
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	663
0247-6064	FL BS (CMP IN PLC) (TY A GR 4) (6")	SY	371
0316-6029	ASPH (RC-250)	GAL	101
0772-6003	POST AND CABLE FENCE (NEW INSTALLATION)	LF	130
3076-6068	D-GR HMA TY-D SAC-A PG64-22 (EXEMPT)	TON	38

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 153+00 TO STA 156+00

SHEET 19 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	53

Plotted on: 1/4/2024

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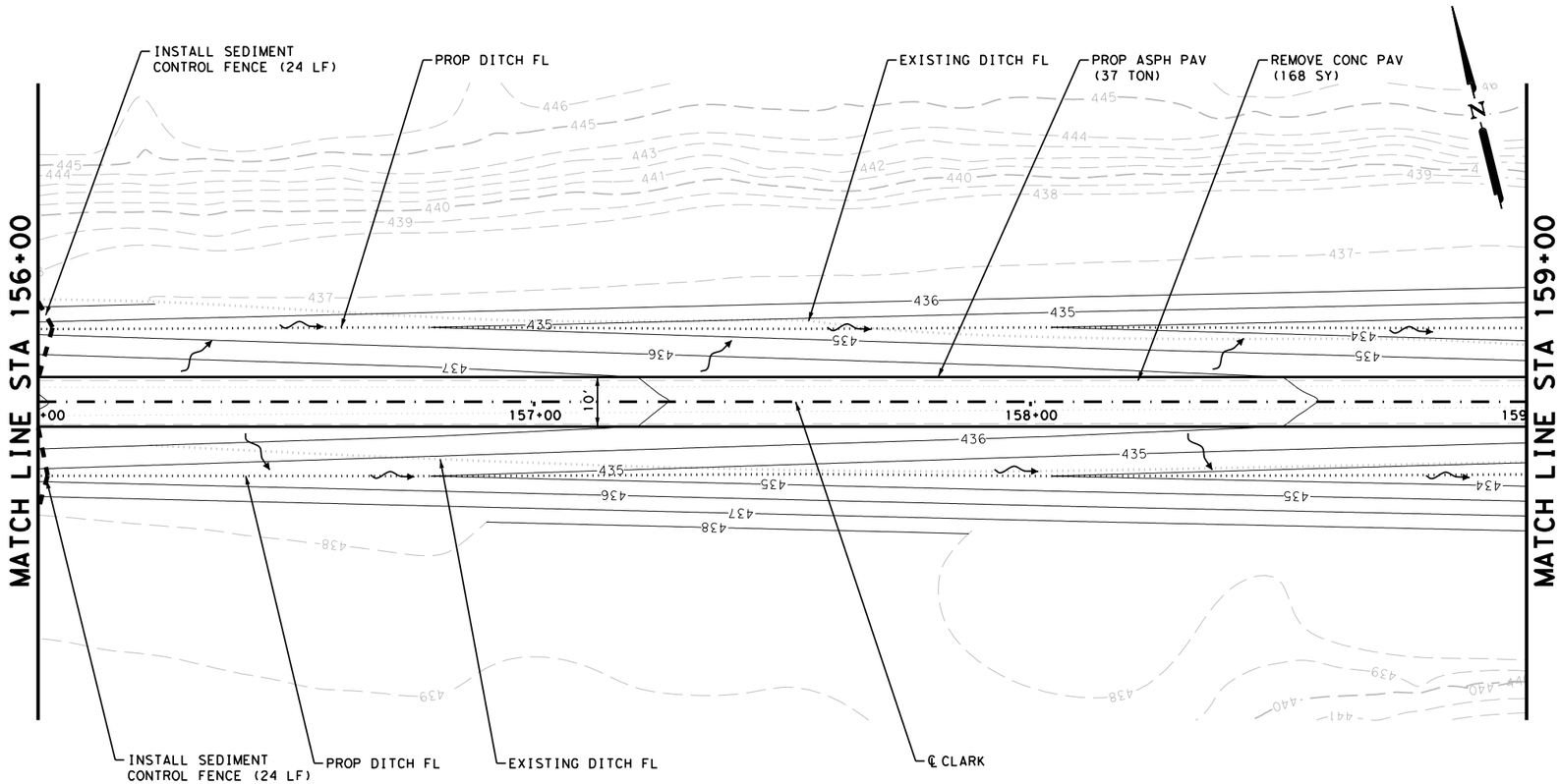
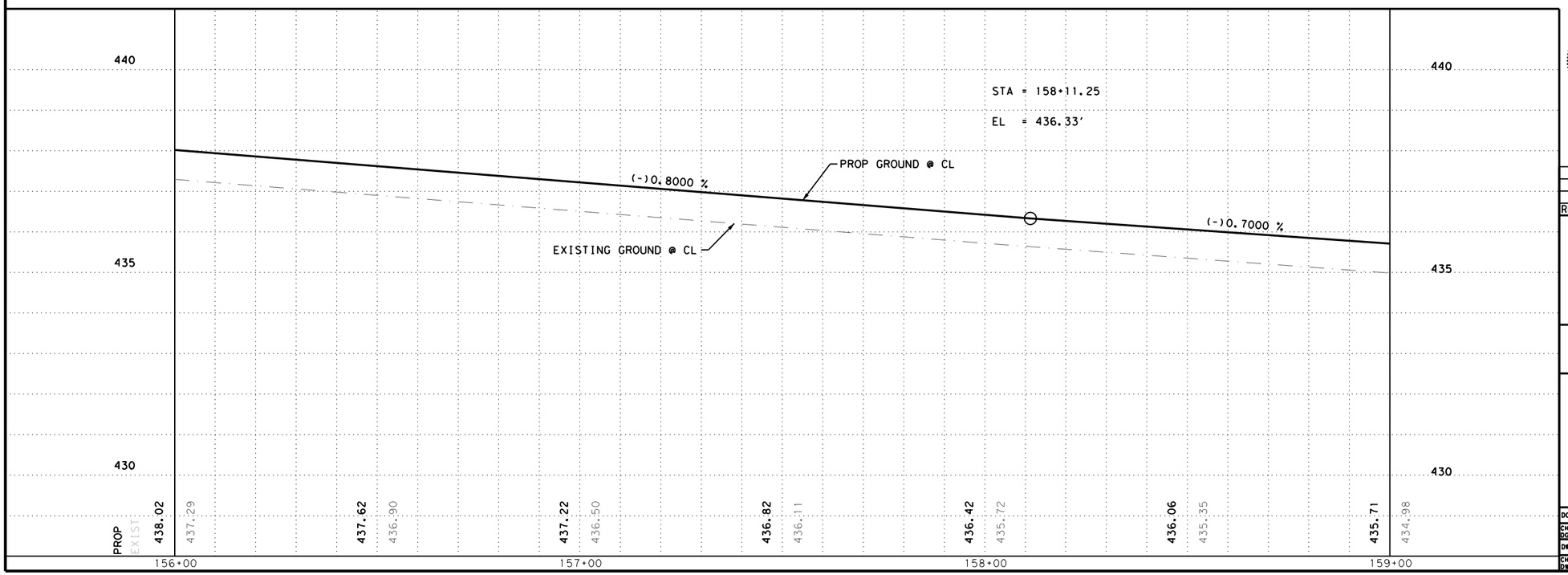


ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0104-6001	REMOVING CONC (PAV)	SY	168
0110-6001	EXCAVATION (ROADWAY)	CY	303
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	37
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	1232
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	2464
0168-6001	VEGETATIVE WATERING	MG	183.3
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	667
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	367
0316-6029	ASPH (RC-250)	GAL	100
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	48
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	48
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	37

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE



NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.

DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS

2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000

TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 156+00 TO STA 159+00

SHEET 20 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	54

Plotted on: 1/4/2024

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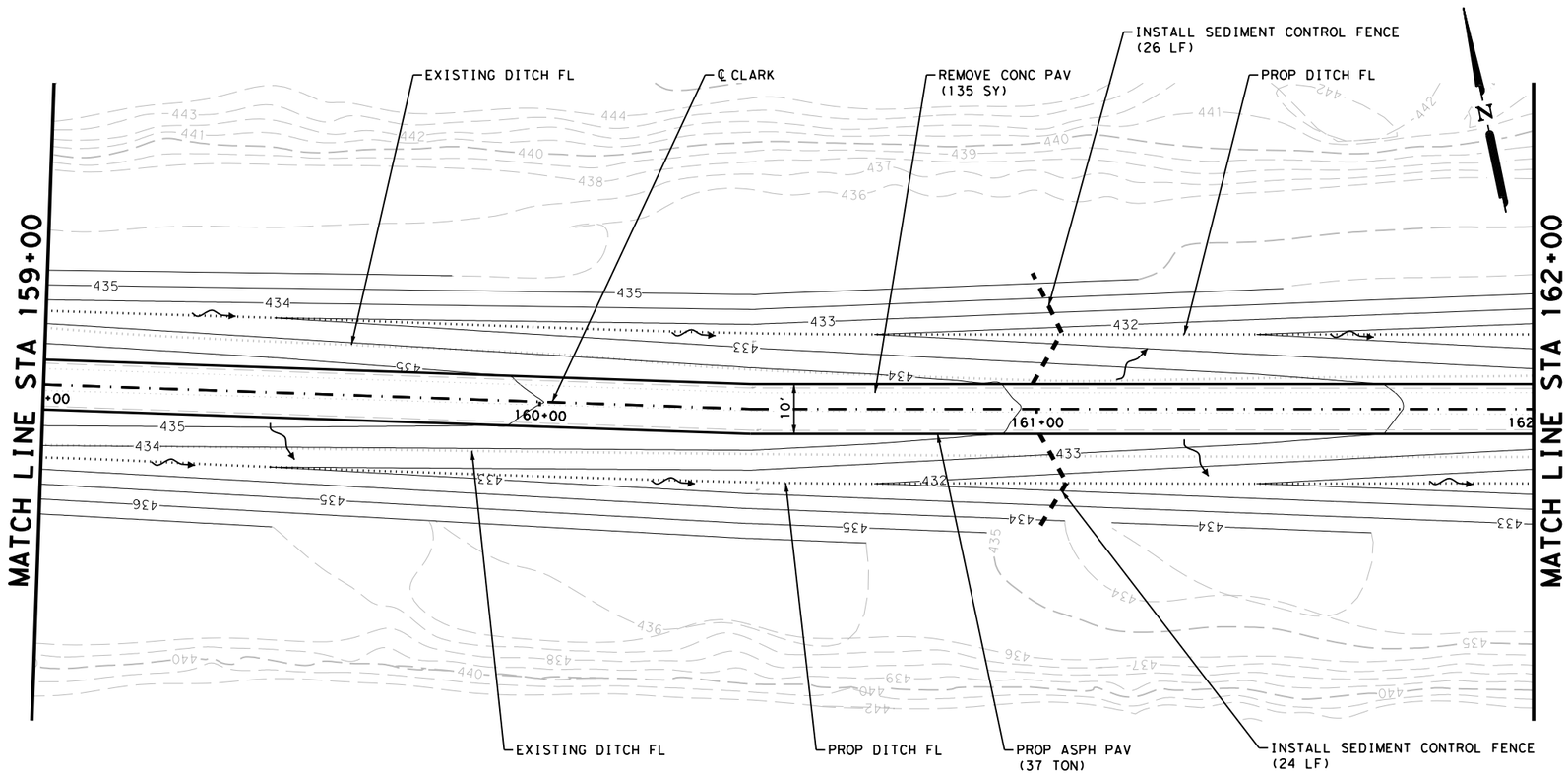


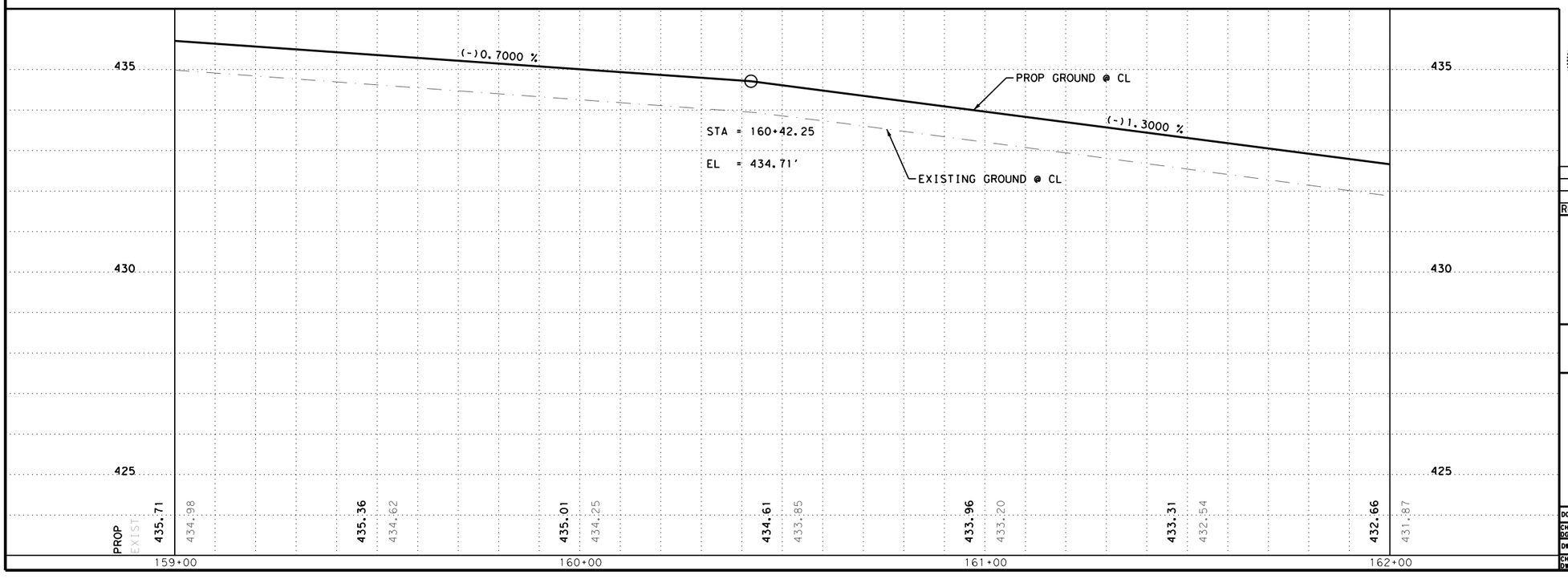
ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0104-6001	REMOVING CONC (PAV)	SY	135
0110-6001	EXCAVATION (ROADWAY)	CY	540
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	70
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	1352
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	2704
0168-6001	VEGETATIVE WATERING	MG	201.2
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	668
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	367
0316-6029	ASPH (RC-250)	GAL	100
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	50
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	50
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	37

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

STATE OF TEXAS · TYLER PAYNE DUBE · 118612 · LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS · JOHN A. TYLER · 105193 · LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1"= 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

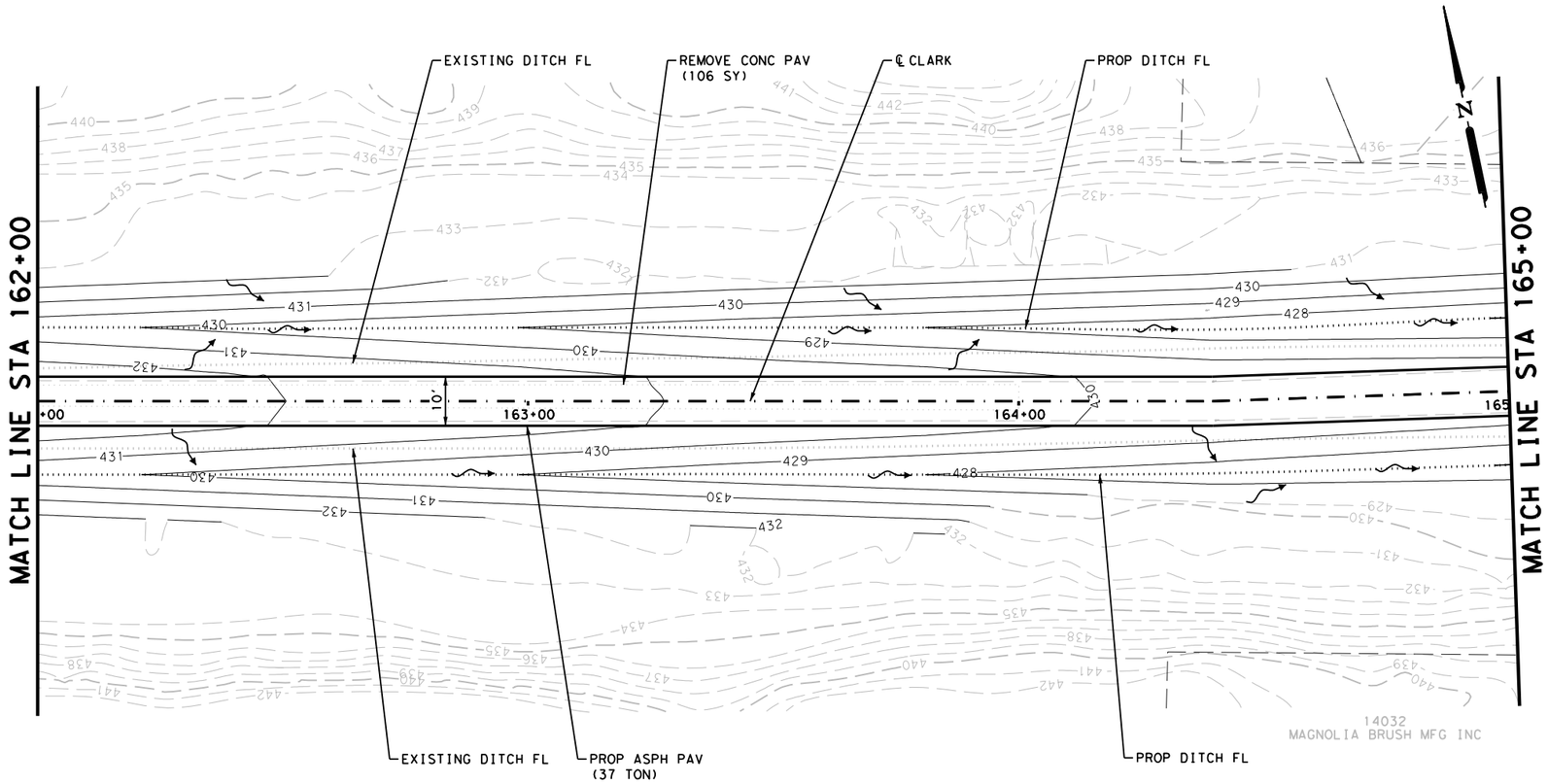
SIDEWALK PLAN

STA 159+00 TO STA 162+00

SHEET 21 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	55

ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0104-6001	REMOVING CONC (PAV)	SY	106
0110-6001	EXCAVATION (ROADWAY)	CY	472
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	90
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	1295
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	2590
0168-6001	VEGETATIVE WATERING	MG	192.7
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	668
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	367
0316-6029	ASPH (RC-250)	GAL	100
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	37

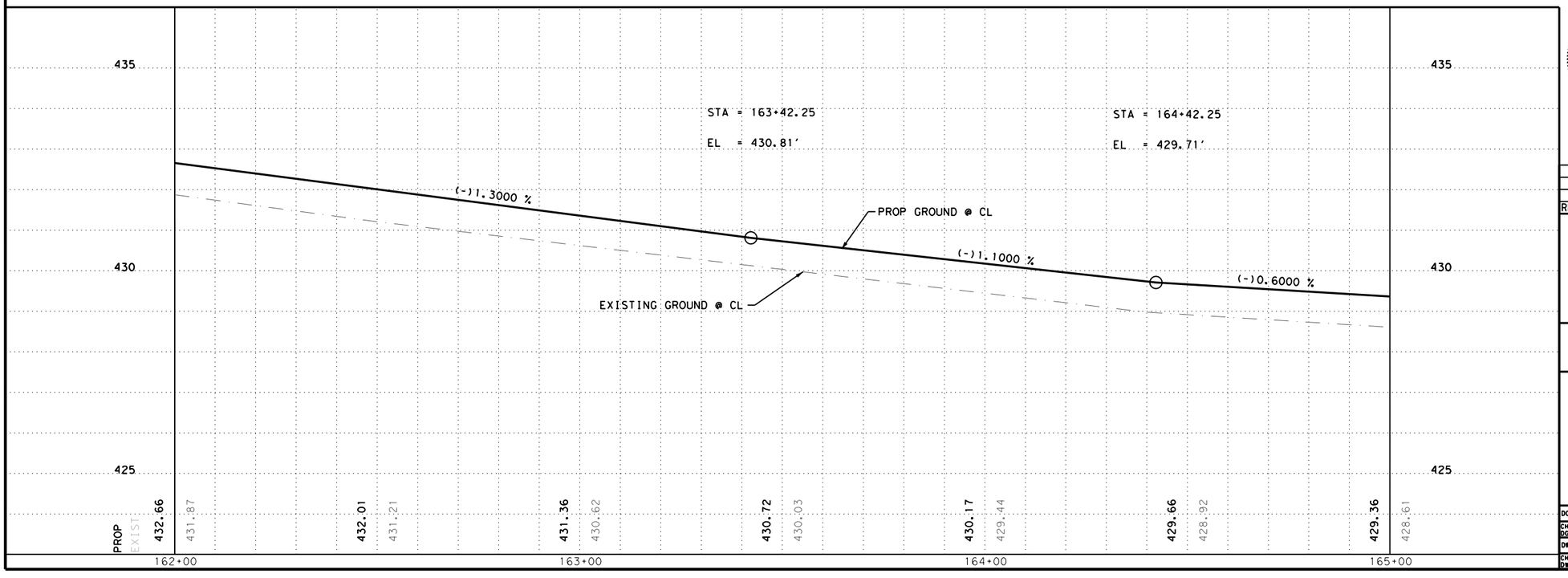


NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE



DESIGN

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40
SCALE: 1"= 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

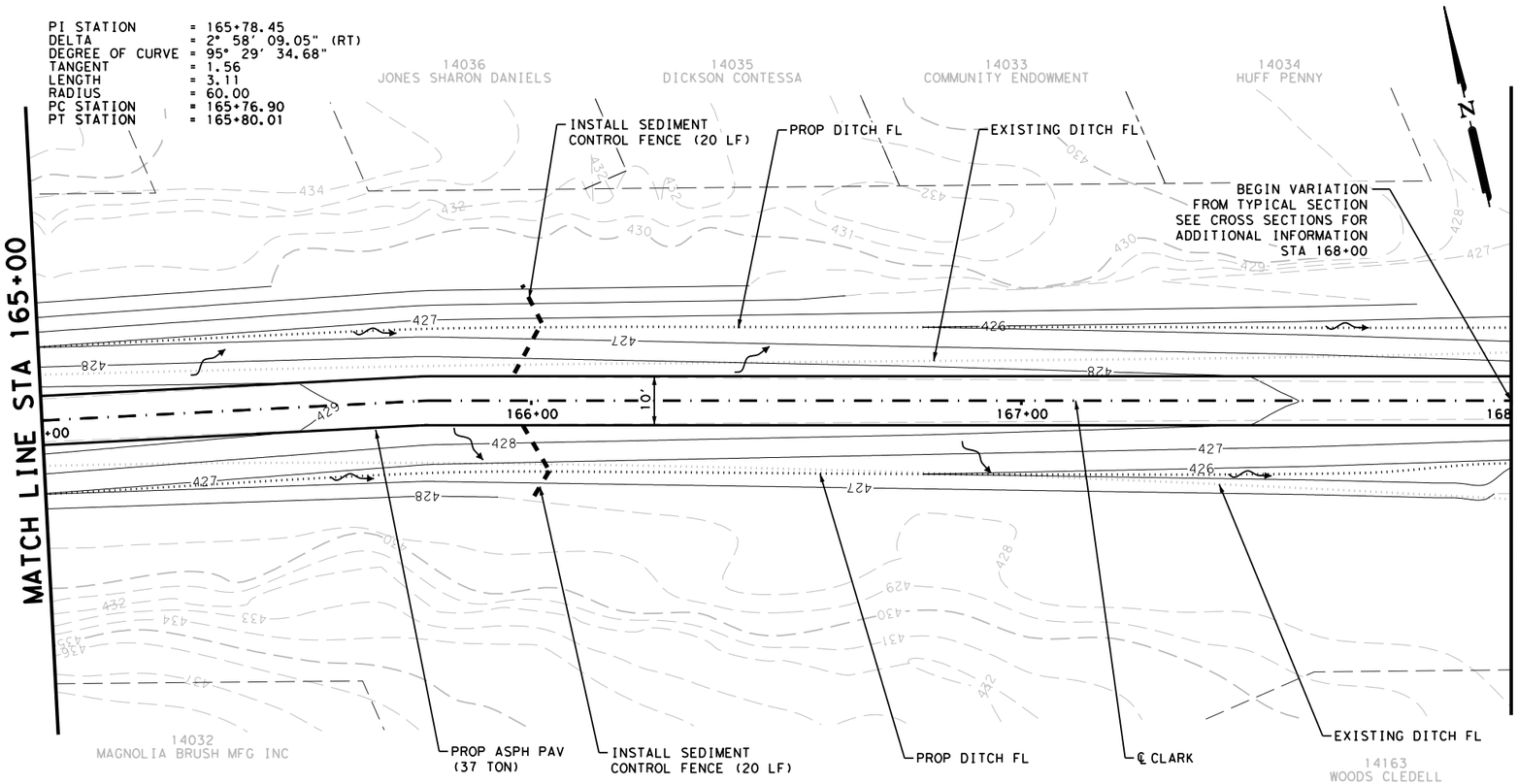
SIDEWALK PLAN

STA 162+00 TO STA 165+00

SHEET 22 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	56

PI STATION = 165+78.45
DELTA = 2° 58' 09.05" (RT)
DEGREE OF CURVE = 95° 29' 34.68"
TANGENT = 1.56
LENGTH = 3.11
RADIUS = 60.00
PC STATION = 165+76.90
PT STATION = 165+80.01



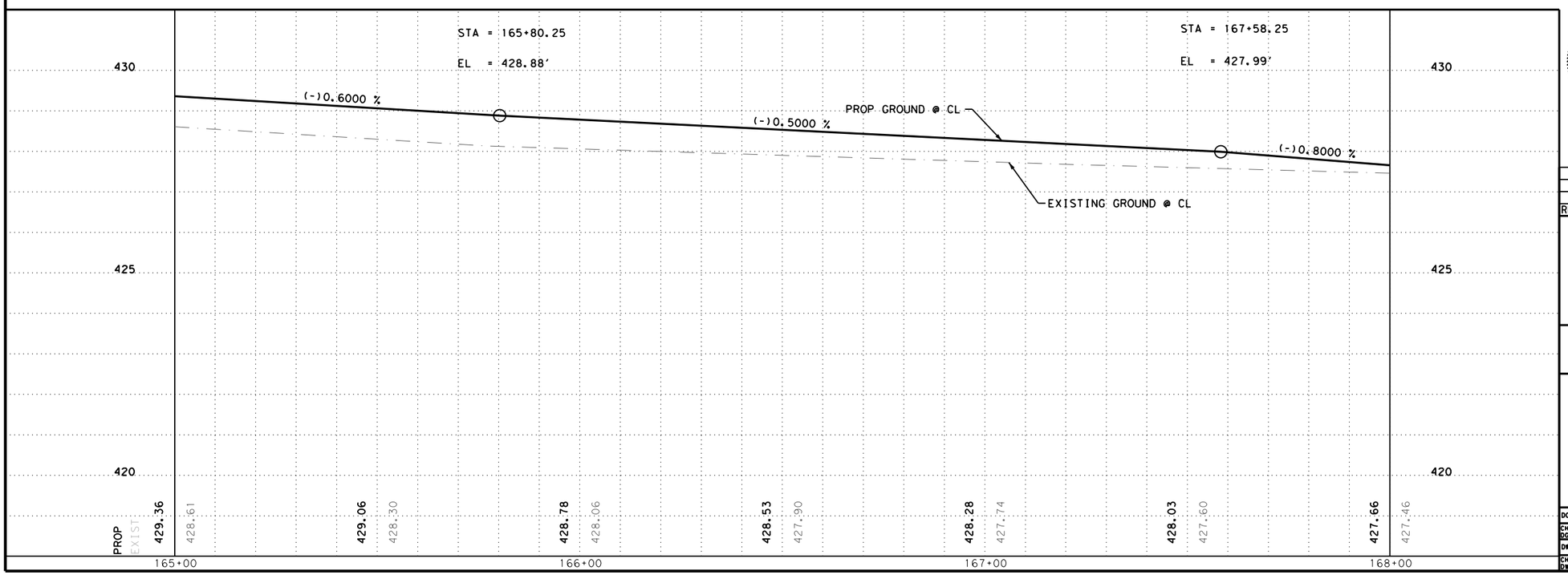
ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	306
0132-6003	EMBANKMENT (FINAL) (ORD COMP) (TY B)	CY	69
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	1055
0164-6071	BROADCAST SEED (TEMP) (WARM OR COOL)	SY	2110
0168-6001	VEGETATIVE WATERING	MG	157.0
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	663
0247-6064	FL BS (CMP IN PLC) (TY A GR 4) (6")	SY	367
0316-6029	ASPH (RC-250)	GAL	100
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	40
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	40
3076-6068	D-GR HMA TY-D SAC-A PG64-22 (EXEMPT)	TON	37

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40
SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

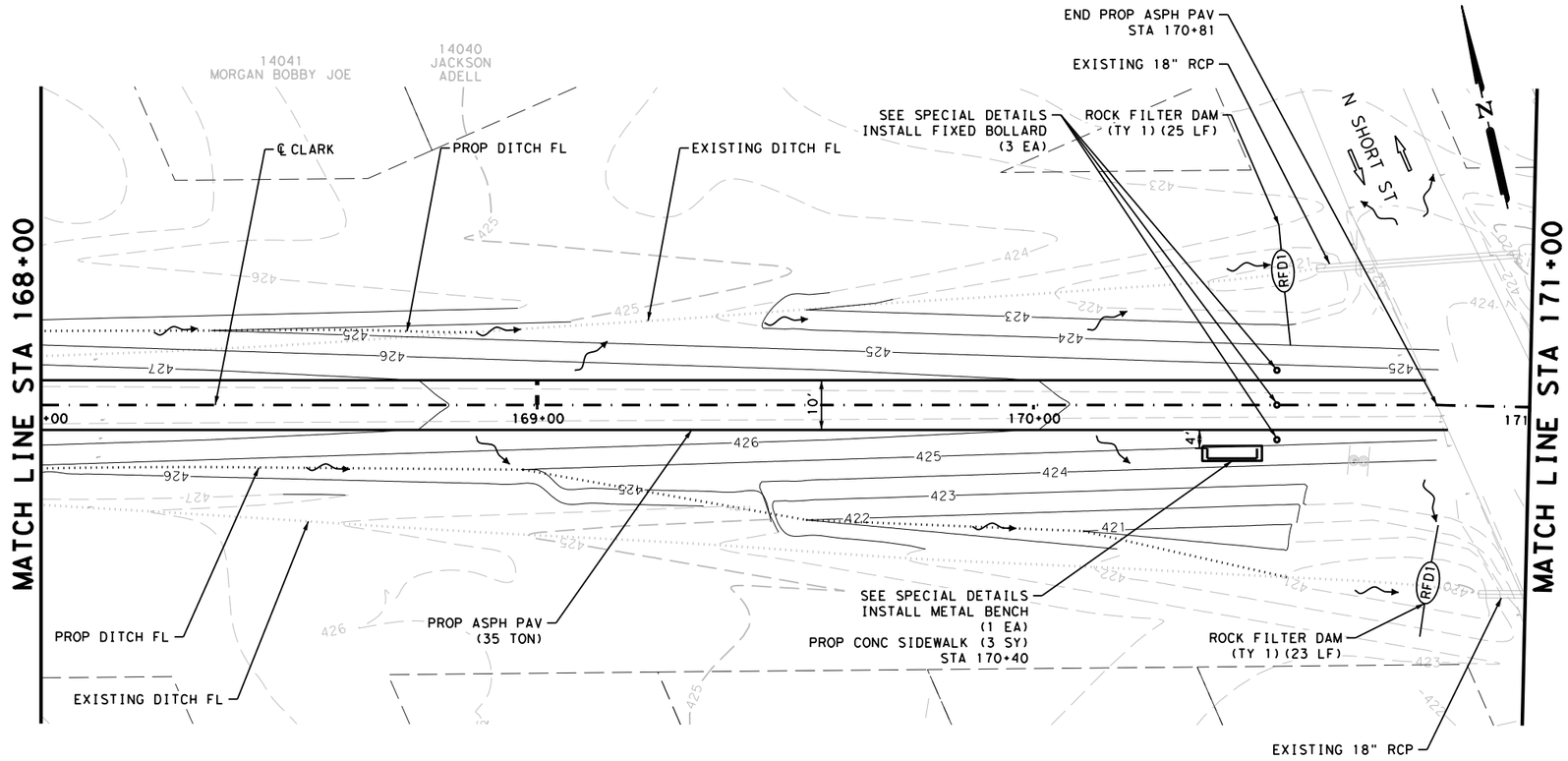
NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 165+00 TO STA 168+00

SHEET 23 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	57



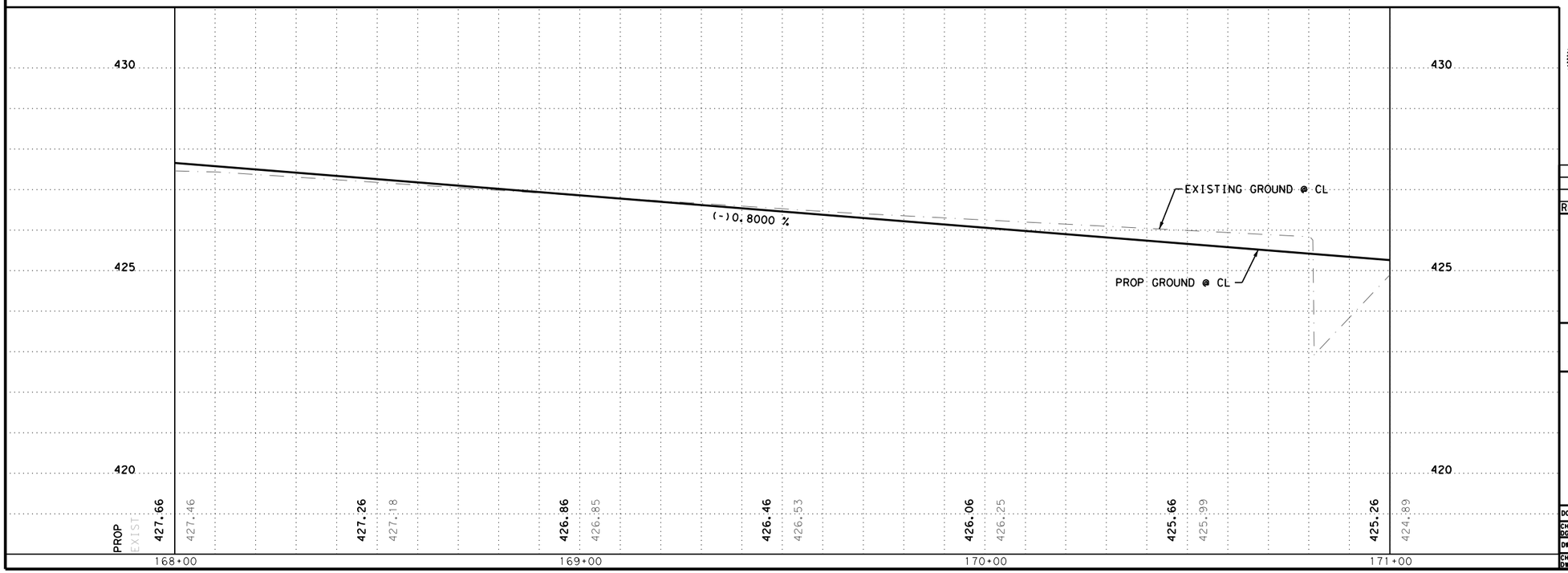
ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	406
0132-6003	EMBANKMENT (FINAL) (ORD COMP) (TY B)	CY	8
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	1069
0164-6071	BROADCAST SEED (TEMP) (WARM OR COOL)	SY	2138
0168-6001	VEGETATIVE WATERING	MG	159.1
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	831
0247-6064	FL BS (CMP IN PLC) (TY A GR 4) (6")	SY	346
0316-6029	ASPH (RC-250)	GAL	94
0506-6001	ROCK FILTER DAMS (INSTALL) (TY 1)	LF	48
0506-6011	ROCK FILTER DAMS (REMOVE)	LF	48
0531-6001	CONC SIDEWALKS (4")	SY	3
1002-6026	LANDSCAPE AMENITY (BENCH)	EA	1
3076-6068	D-GR HMA TY-D SAC-A PG64-22 (EXEMPT)	TON	35
5131-6001	FIXED BOLLARDS	EA	3

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

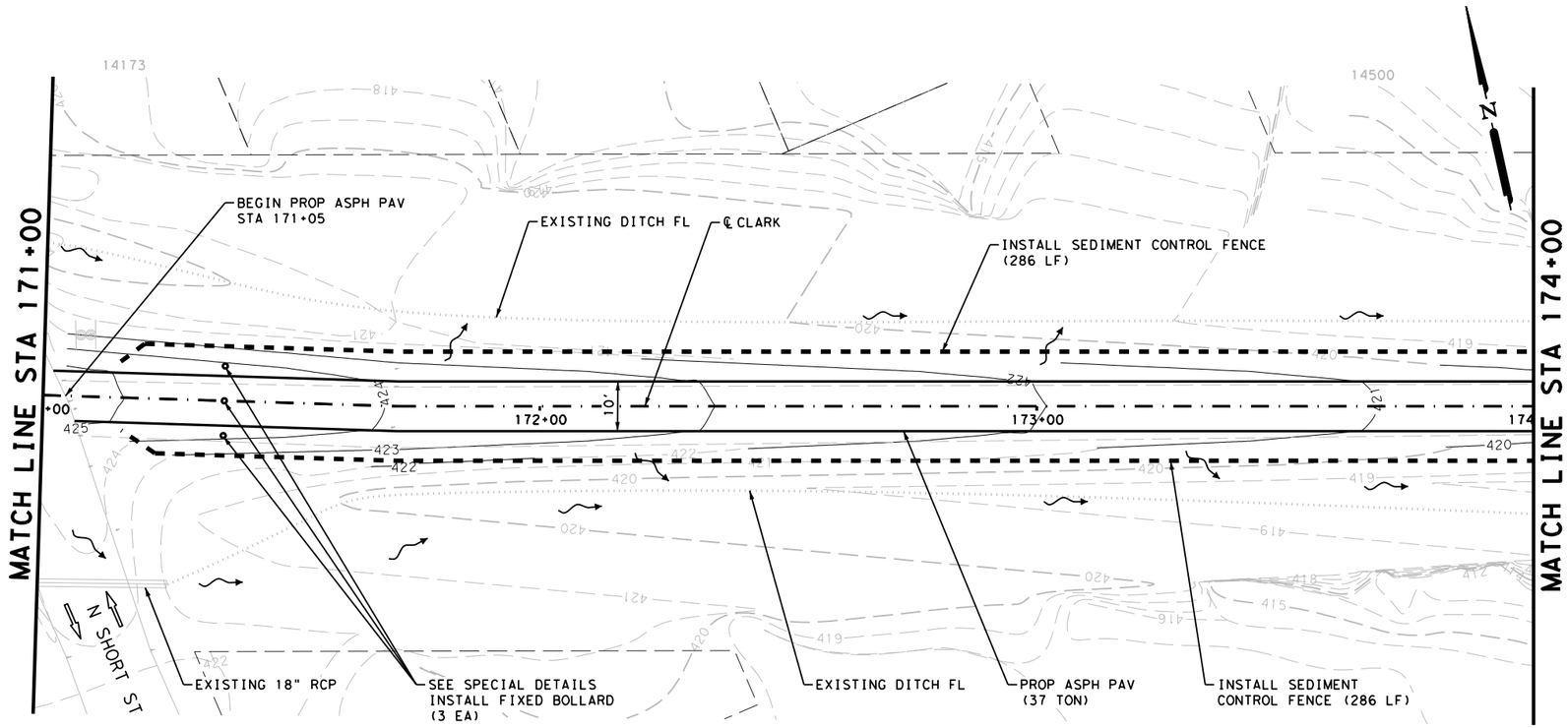
SIDEWALK PLAN

STA 168+00 TO STA 171+00

SHEET 24 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	58

Plotted on: 1/4/2024
Design Filename: S:\projects\612\54\02\Design\02_Clarksville_ADA\Civil\Roadway\612540202_pln24.dgn



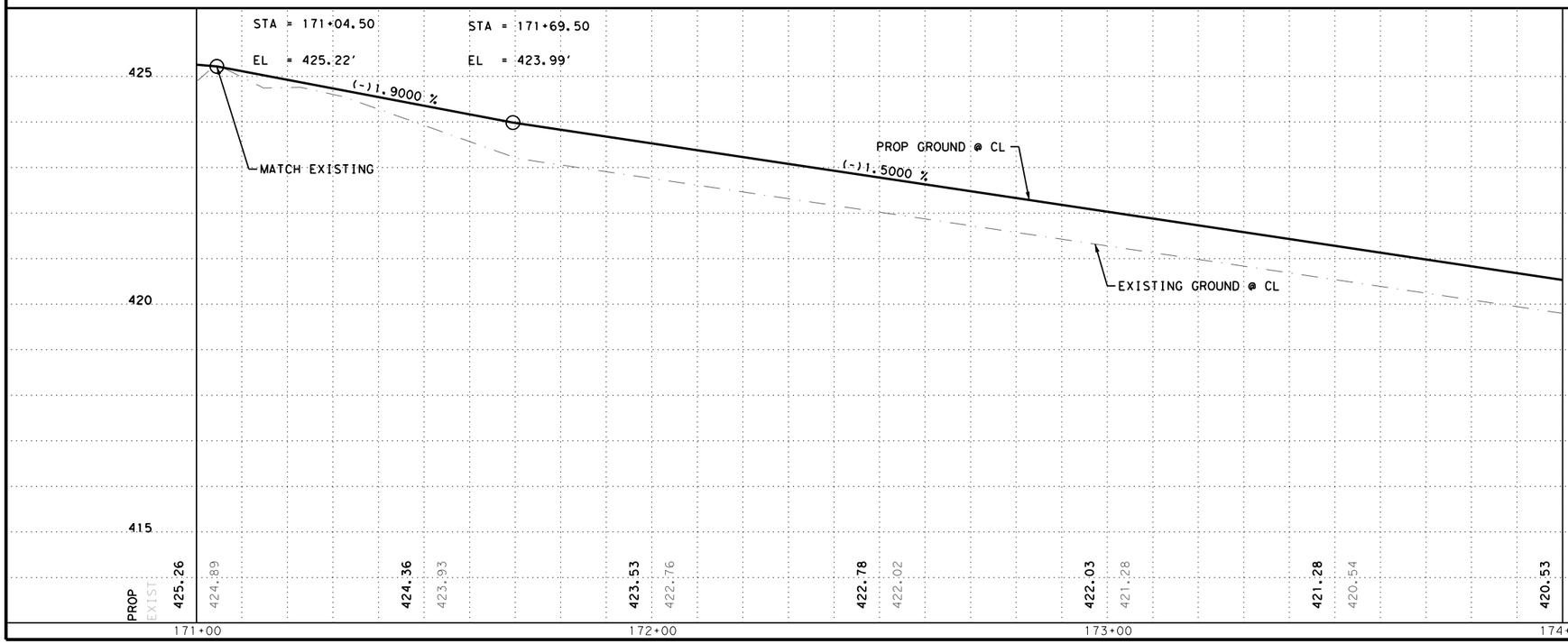
ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	218
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	37
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	294
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	588
0168-6001	VEGETATIVE WATERING	MG	43.8
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	294
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	362
0316-6029	ASPH (RC-250)	GAL	99
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	572
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	572
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	37
5131-6001	FIXED BOLLARDS	EA	3

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1"= 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

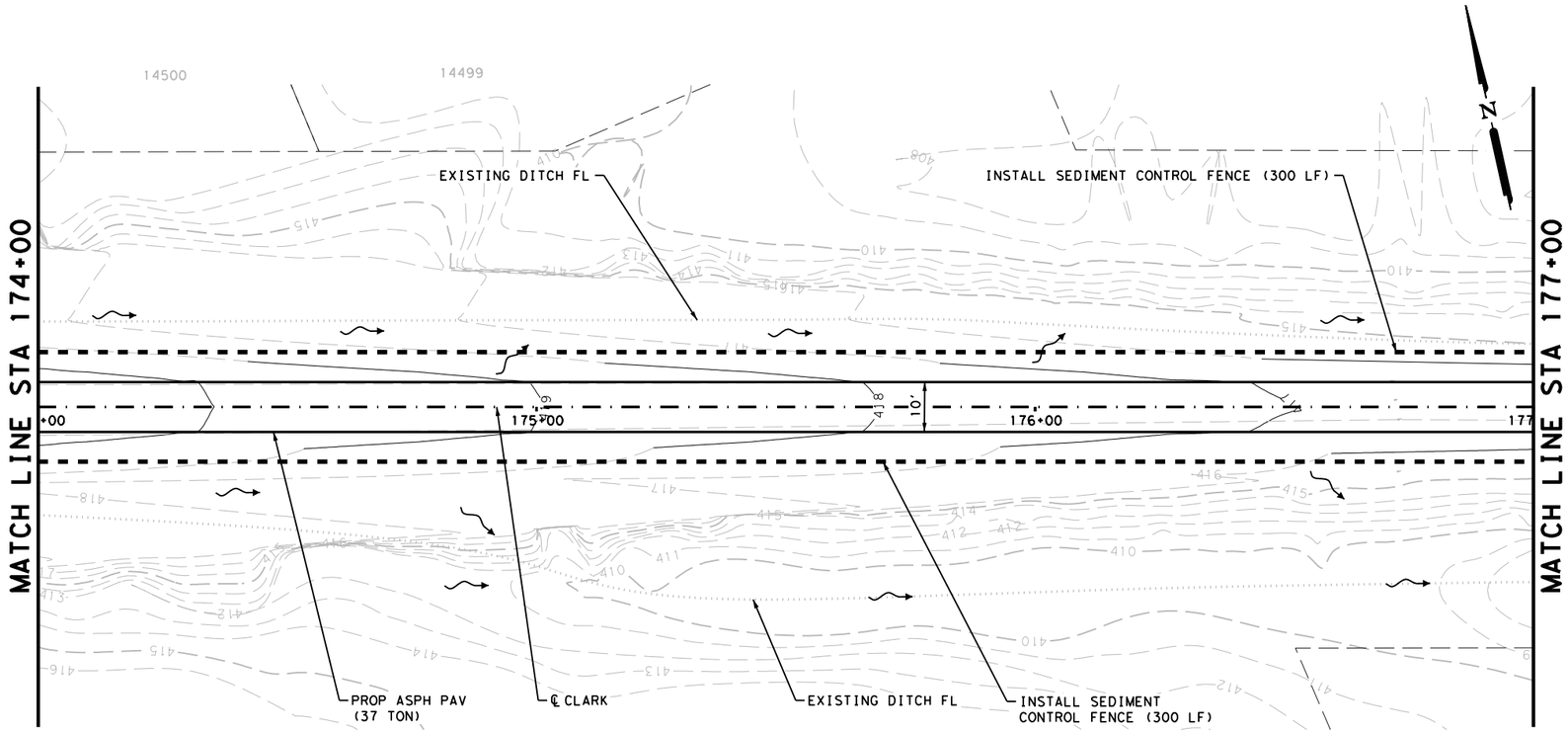
STA 171+00 TO STA 174+00

SHEET 25 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	59

Plotted on: 1/4/2024

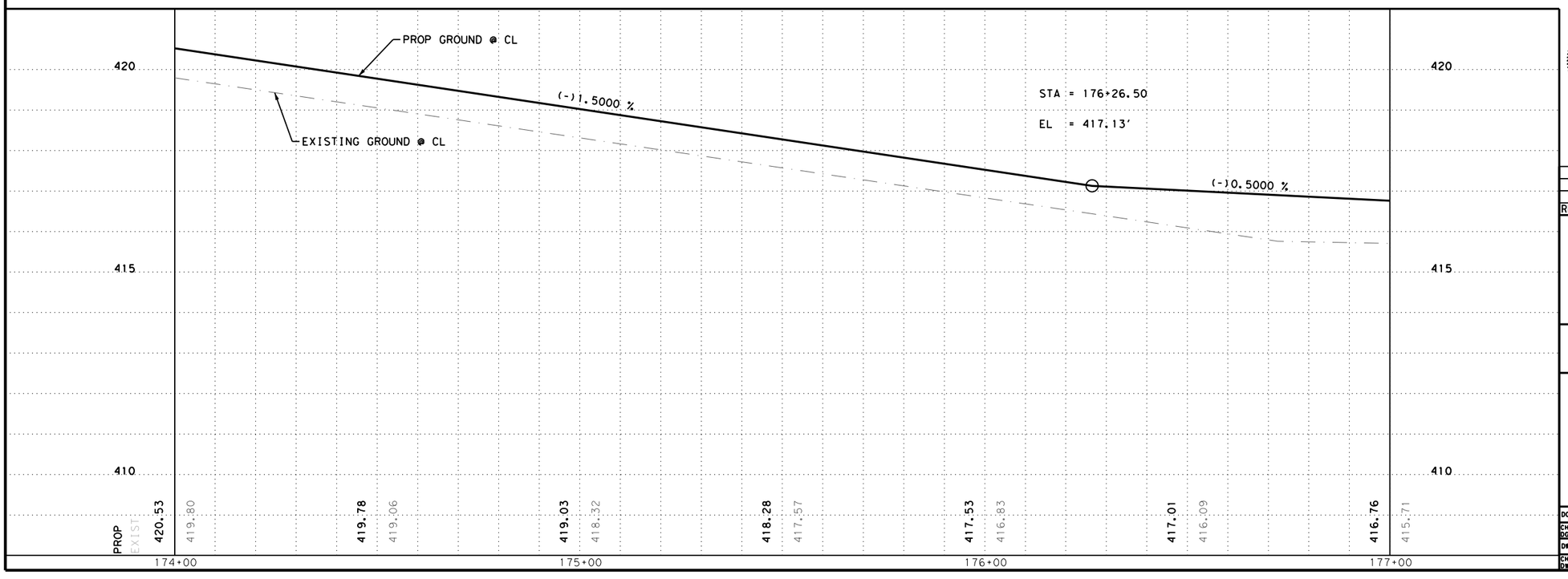
Design Filename: S:\projects\612\54\02\Design\02_Clarksville_ADA\Civil\Roadway\612540202_pln25.dgn



ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	4
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	34
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	270
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	540
0168-6001	VEGETATIVE WATERING	MG	40.2
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	270
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	367
0316-6029	ASPH (RC-250)	GAL	100
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	600
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	600
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	37

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE



NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.

DESIGN

STATE OF TEXAS · TYLER PAYNE DUBE · 118612 · LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS · JOHN A. TYLER · 105193 · LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

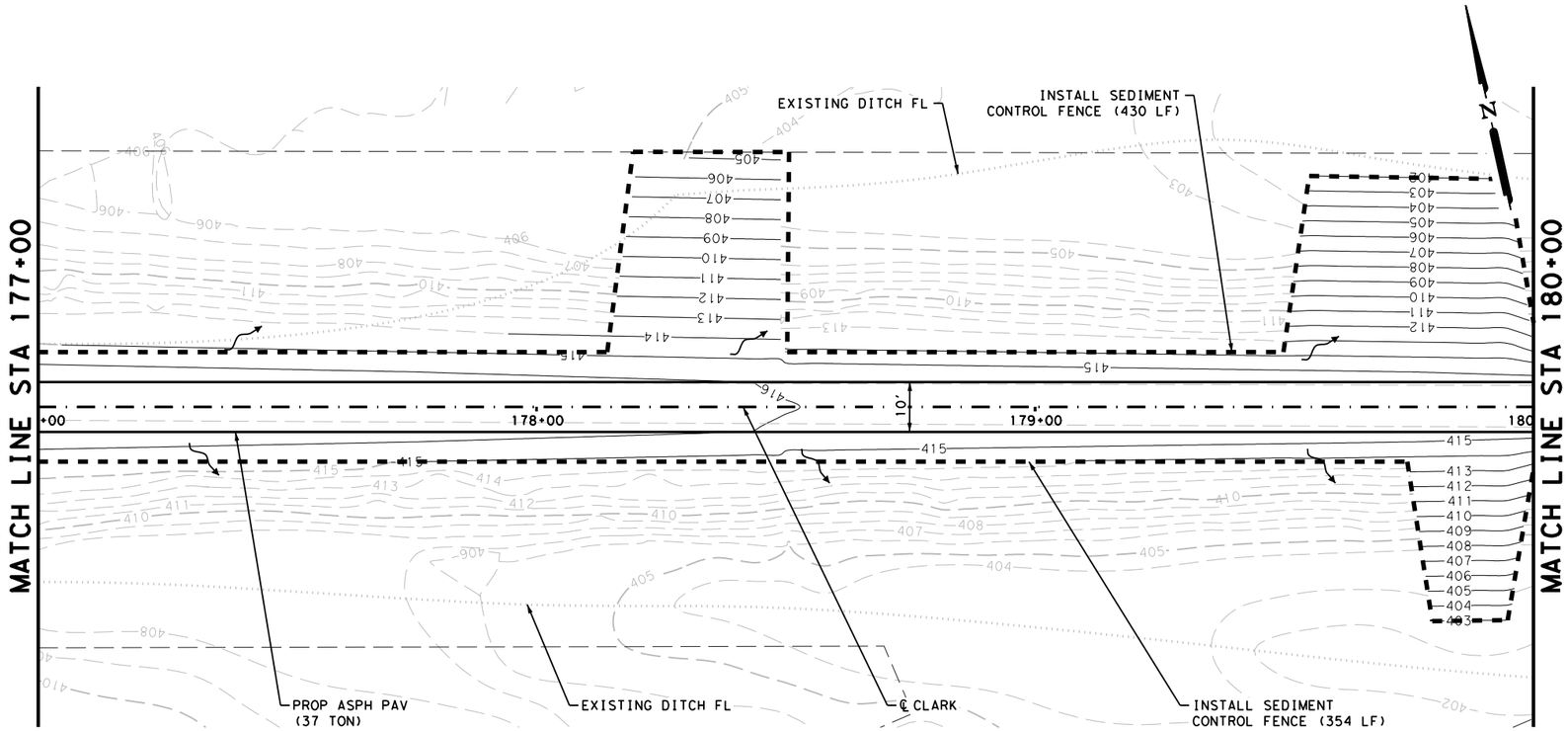
SIDEWALK PLAN

STA 174+00 TO STA 177+00

SHEET 26 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	60

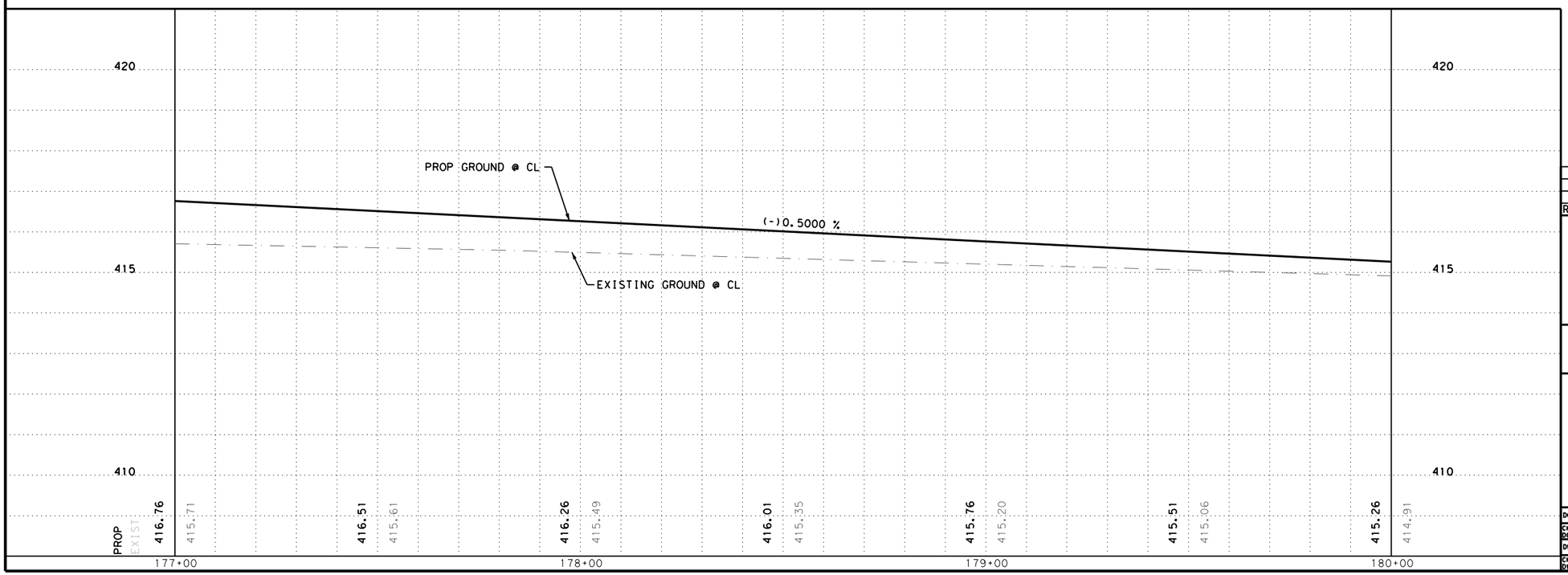
Plotted on: 1/4/2024
Design Filename: S:\projects\612\54\02\Design\02_Clarksville_ADA\Civil\Roadway\612540202_pln26.dgn



ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	1
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	116
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	576
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	1152
0168-6001	VEGETATIVE WATERING	MG	85.7
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	576
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	367
0316-6029	ASPH (RC-250)	GAL	100
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	784
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	784
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	37

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE



14783
SKEETER'S ENTREPRENEURIAL

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.

DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40
SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 177+00 TO STA 180+00

SHEET 27 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	61

Plotted on: 1/4/2024

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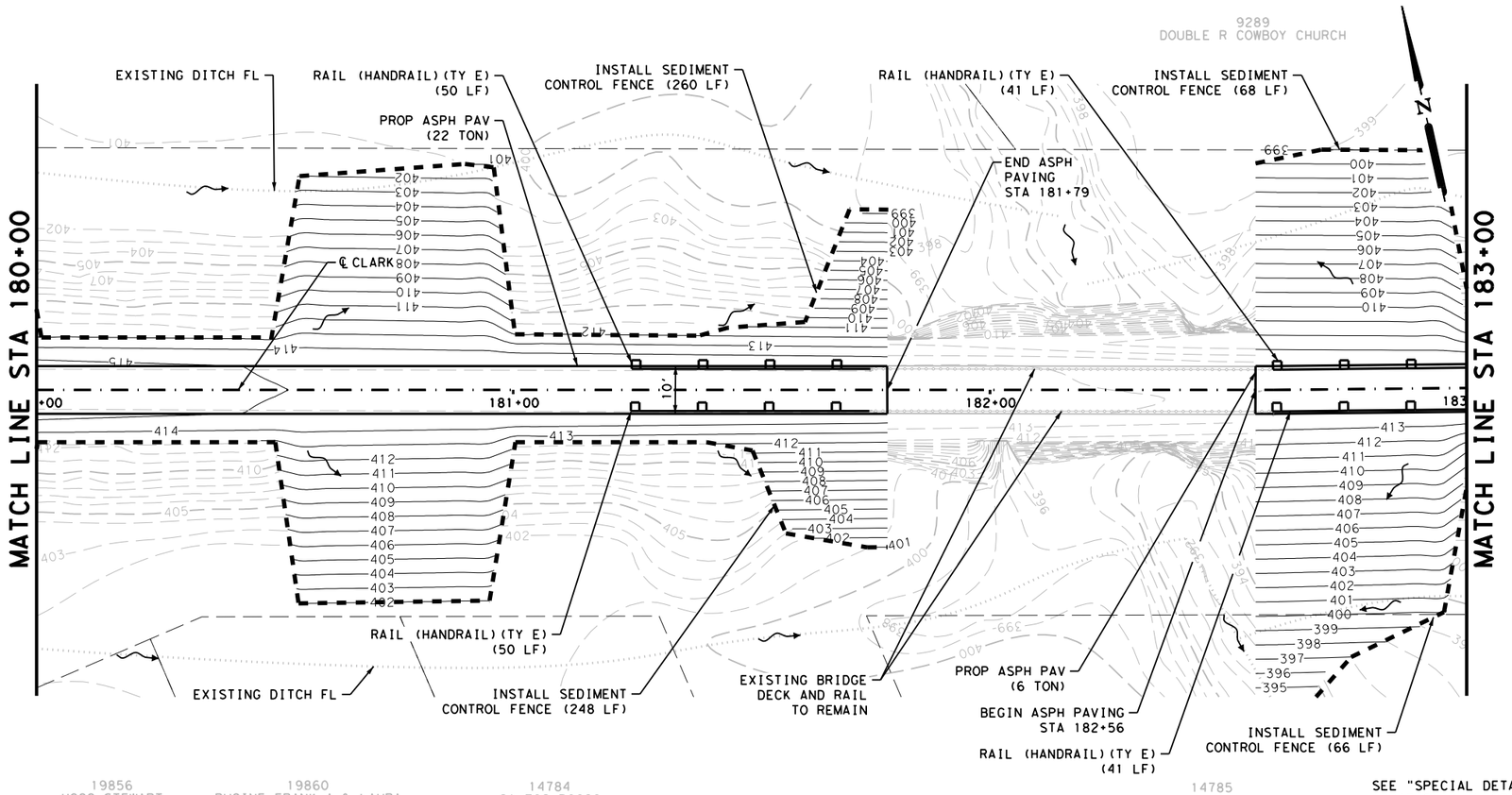
ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	41
0132-6003	EMBANKMENT (FINAL) (ORD COMP) (TY B)	CY	103
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	637
0164-6071	BROADCAST SEED (TEMP) (WARM OR COOL)	SY	1274
0168-6001	VEGETATIVE WATERING	MG	94.8
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	637
0247-6064	FL BS (CMP IN PLC) (TY A GR 4) (6")	SY	282
0316-6029	ASPH (RC-250)	GAL	75
0450-6051	RAIL (HANDRAIL) (TY E)	LF	182
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	642
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	642
3076-6068	D-GR HMA TY-D SAC-A PG64-22 (EXEMPT)	TON	28

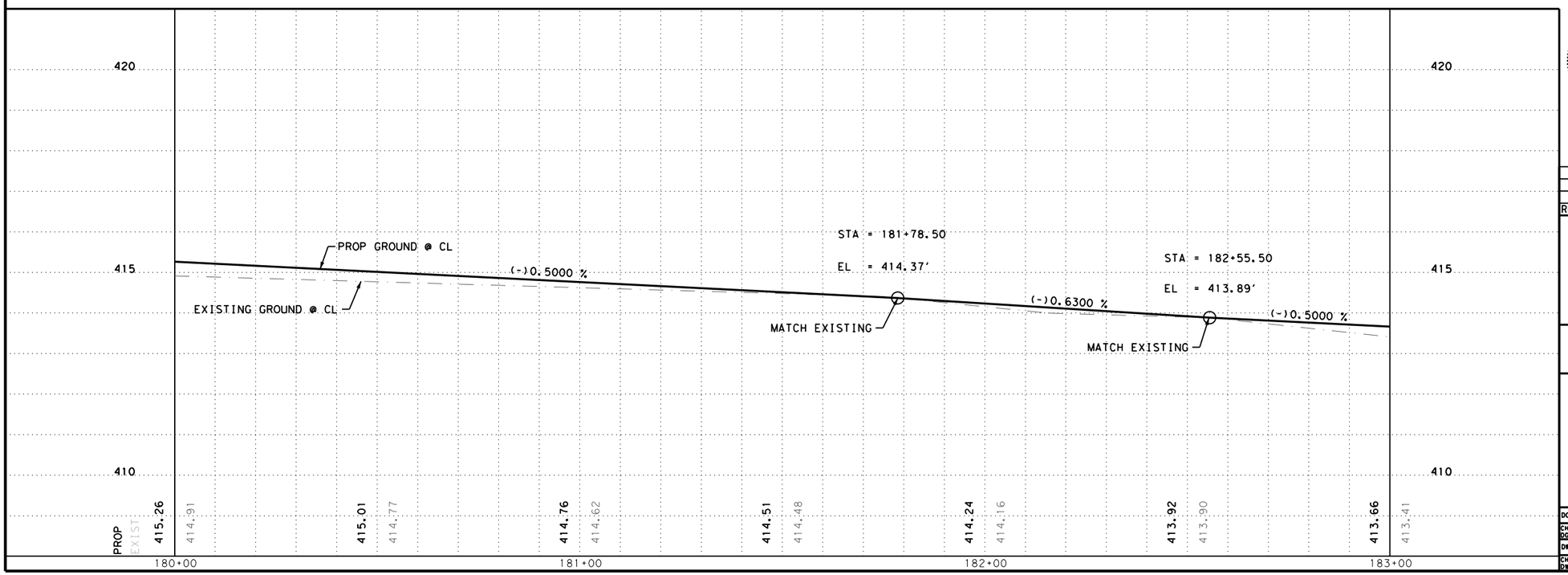


LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1"= 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

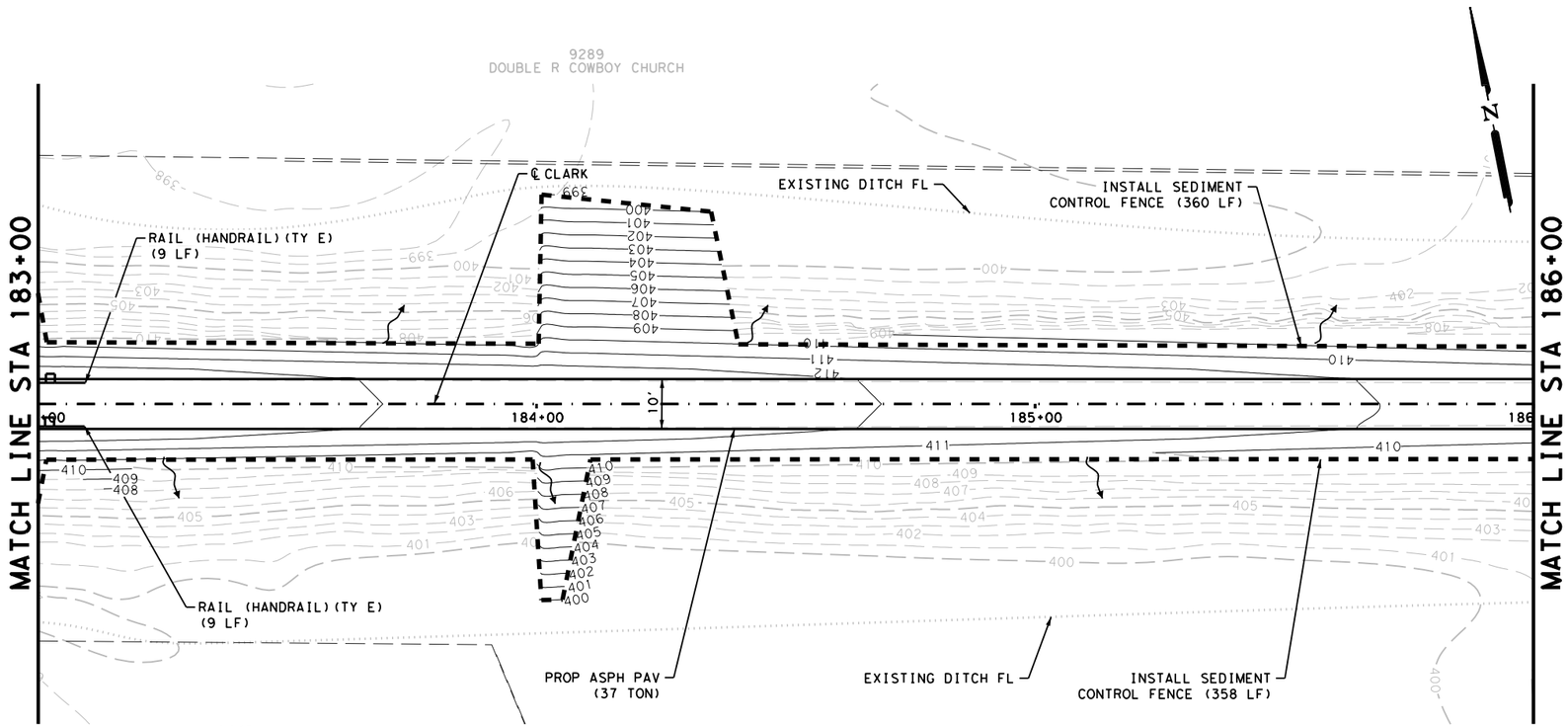
NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 180+00 TO STA 183+00

SHEET 28 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	62



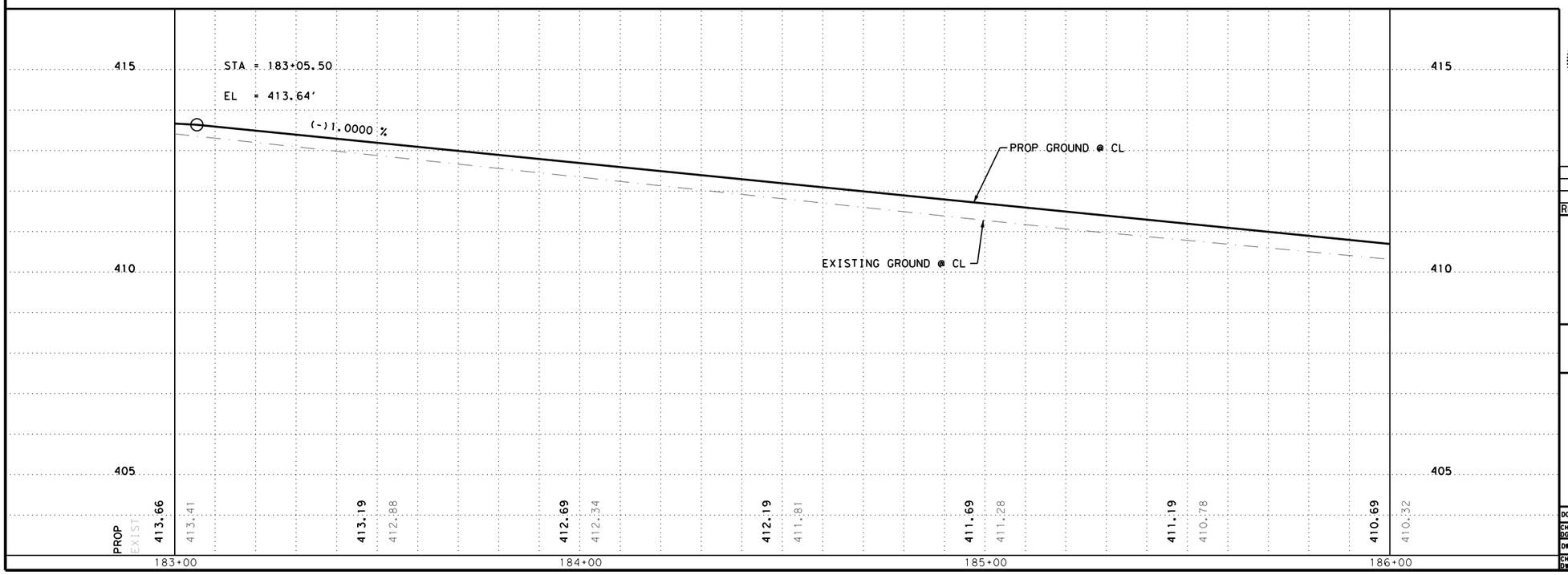
ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	29
0132-6003	EMBANKMENT (FINAL) (ORD COMP) (TY B)	CY	124
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	616
0164-6071	BROADCAST SEED (TEMP) (WARM OR COOL)	SY	1232
0168-6001	VEGETATIVE WATERING	MG	91.7
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	616
0247-6064	FL BS (CMP IN PLC) (TY A GR 4) (6")	SY	367
0316-6029	ASPH (RC-250)	GAL	100
0450-6051	RAIL (HANDRAIL) (TY E)	LF	18
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	718
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	718
3076-6068	D-GR HMA TY-D SAC-A PG64-22 (EXEMPT)	TON	37

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS

2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000

TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

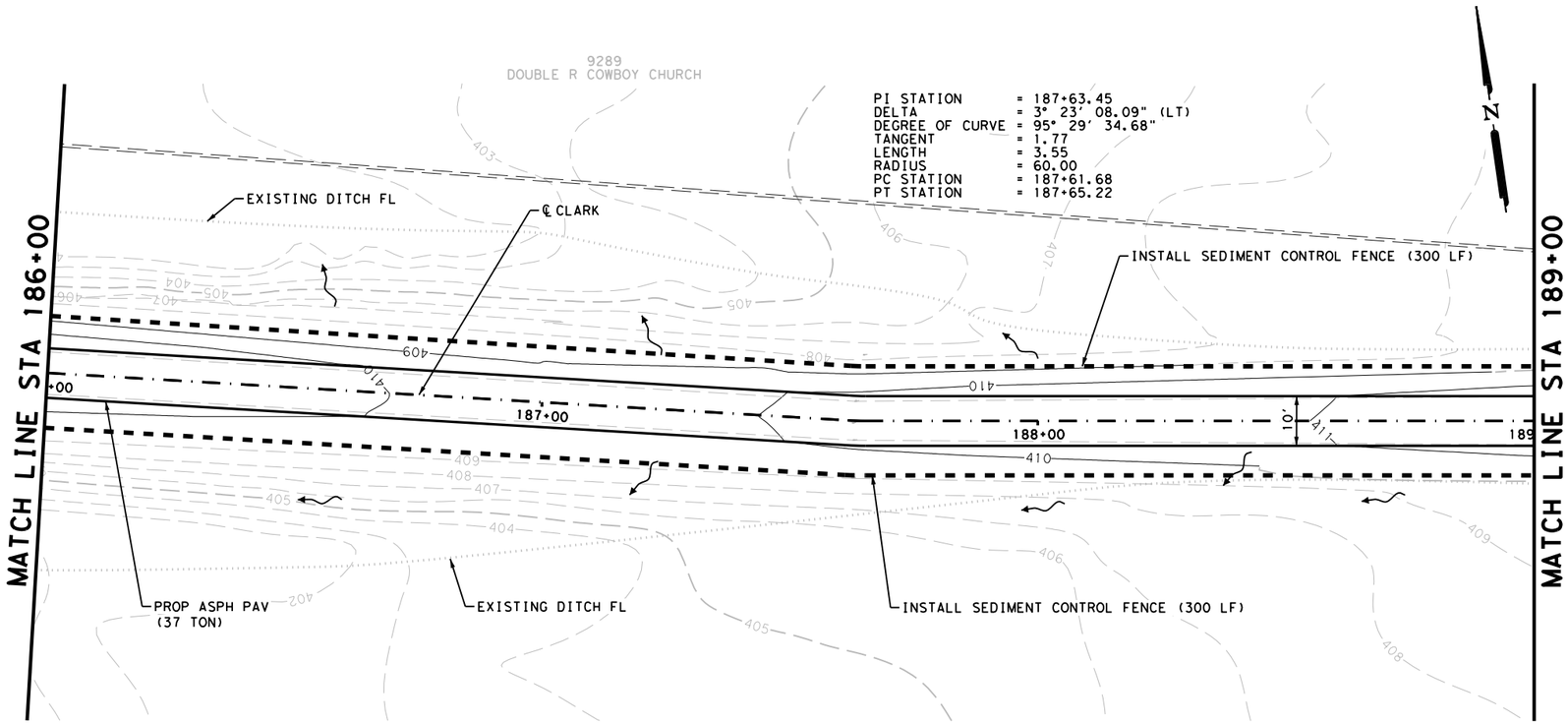
STA 183+00 TO STA 186+00

SHEET 29 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	63

Plotted on: 1/4/2024

Design Filename: S:\projects\612\54\02\Design\02_Clarksville_ADA\Civil\Roadway\612540202_pln29.dgn



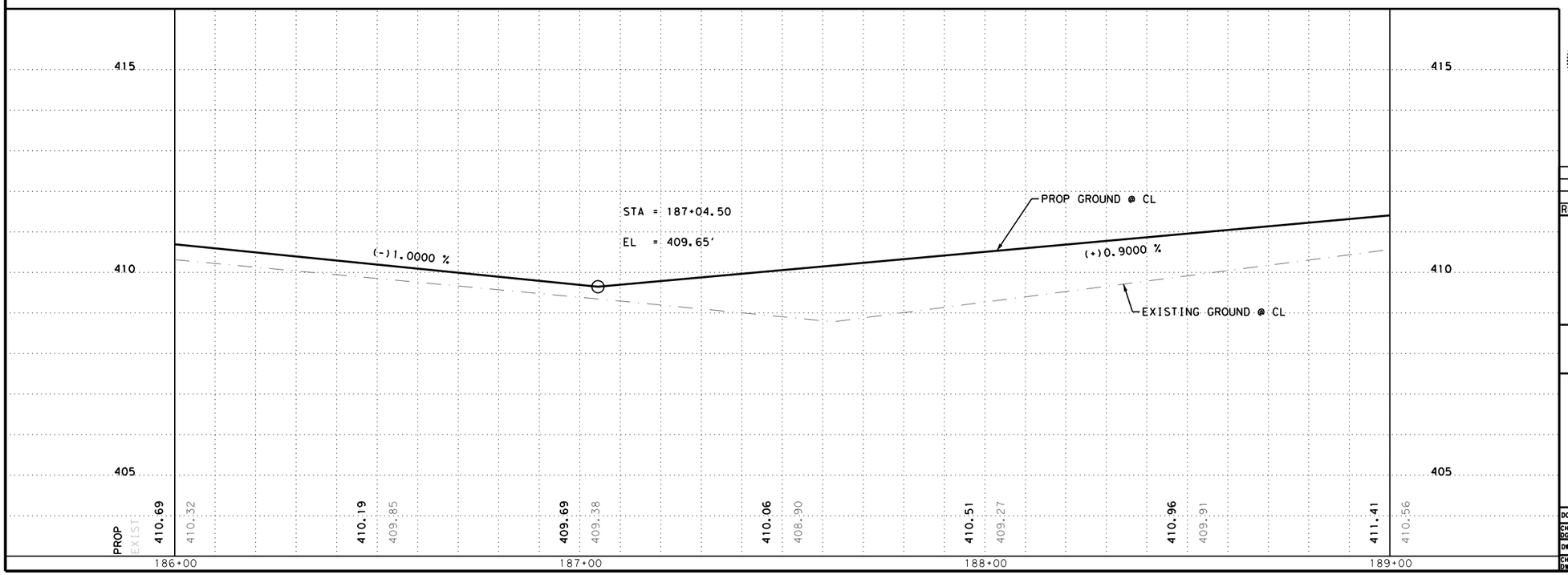
ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	26
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	103
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	317
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	634
0168-6001	VEGETATIVE WATERING	MG	47.2
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	317
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	367
0316-6029	ASPH (RC-250)	GAL	100
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	600
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	600
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	37

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

STATE OF TEXAS · TYLER PAYNE DUBE · 118612 · LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS · JOHN A. TYLER · 105193 · LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40
SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

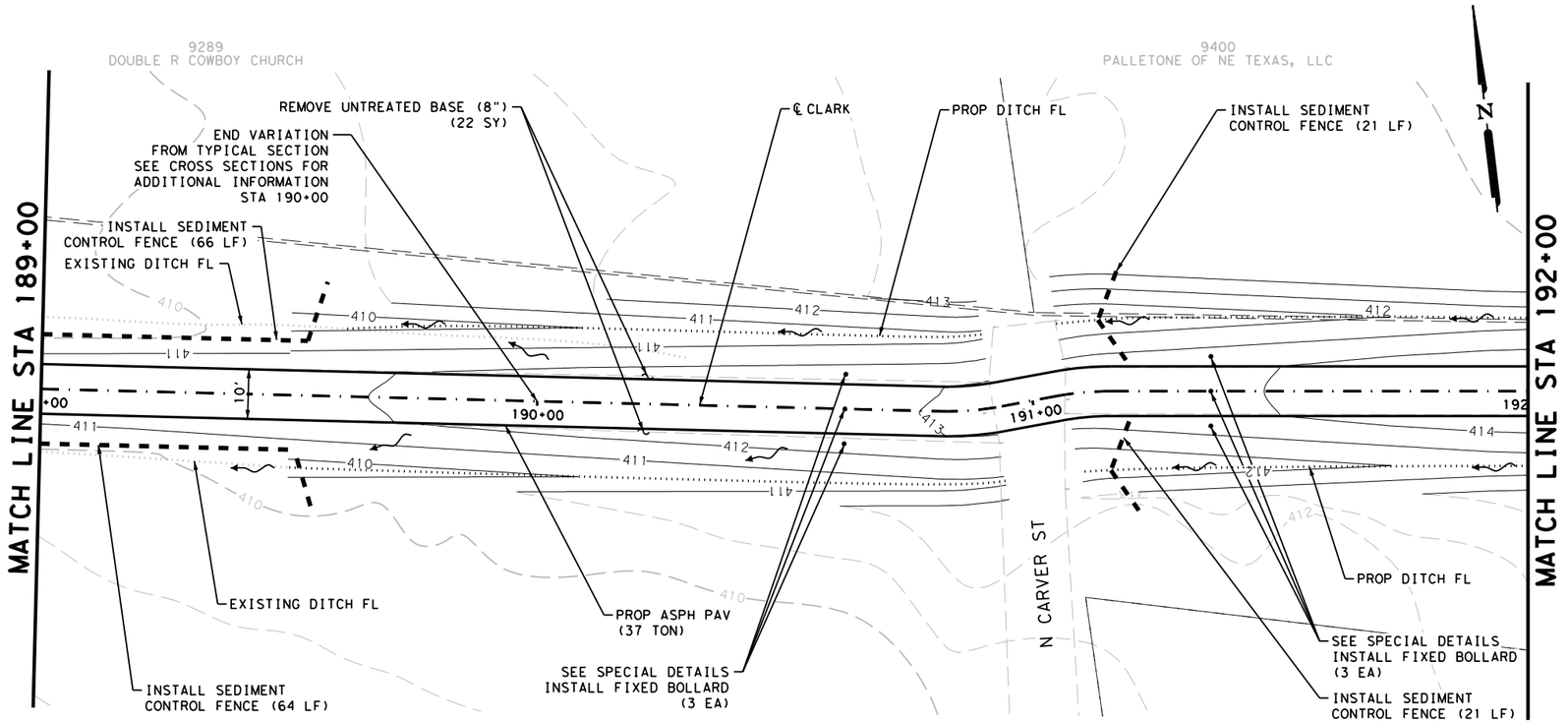
NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 186+00 TO STA 189+00

SHEET 30 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	64



ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0105-6128	REMOVING UNTREATED BASE (8")	SY	22
0110-6001	EXCAVATION (ROADWAY)	CY	102
0132-6003	EMBANKMENT (FINAL) (ORD COMP) (TY B)	CY	46
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	849
0164-6071	BROADCAST SEED (TEMP) (WARM OR COOL)	SY	1698
0168-6001	VEGETATIVE WATERING	MG	126.3
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	559
0247-6064	FL BS (CMP IN PLC) (TY A GR 4) (6")	SY	367
0316-6029	ASPH (RC-250)	GAL	100
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	172
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	172
3076-6068	D-GR HMA TY-D SAC-A PG64-22 (EXEMPT)	TON	37
5131-6001	FIXED BOLLARDS	EA	6

LEGEND

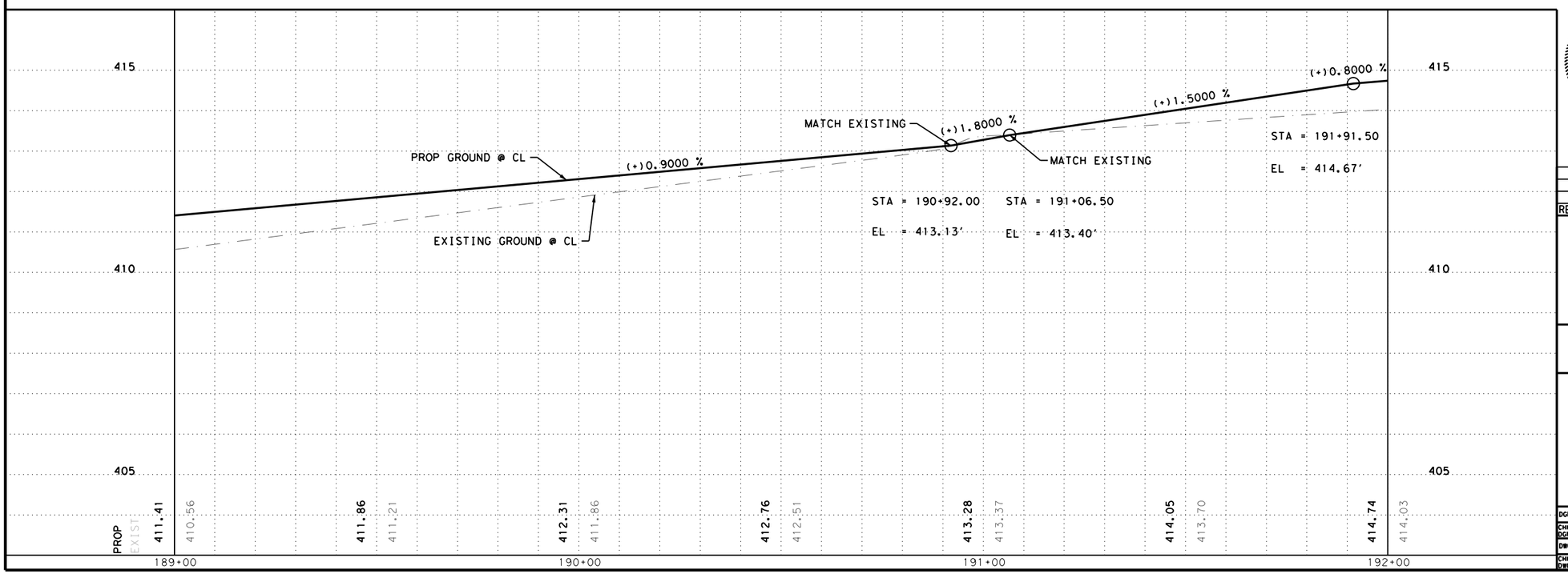
- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

PI STATION	= 190+87.45
DELTA	= 12° 00' 49.62" (LT)
DEGREE OF CURVE	= 95° 29' 34.68"
TANGENT	= 6.31
LENGTH	= 12.58
RADIUS	= 60.00
PC STATION	= 190+81.14
PT STATION	= 190+93.72

PI STATION	= 191+10.40
DELTA	= 10° 34' 49.42" (RT)
DEGREE OF CURVE	= 95° 29' 34.68"
TANGENT	= 5.56
LENGTH	= 11.08
RADIUS	= 60.00
PC STATION	= 191+04.85
PT STATION	= 191+15.93

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1"= 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

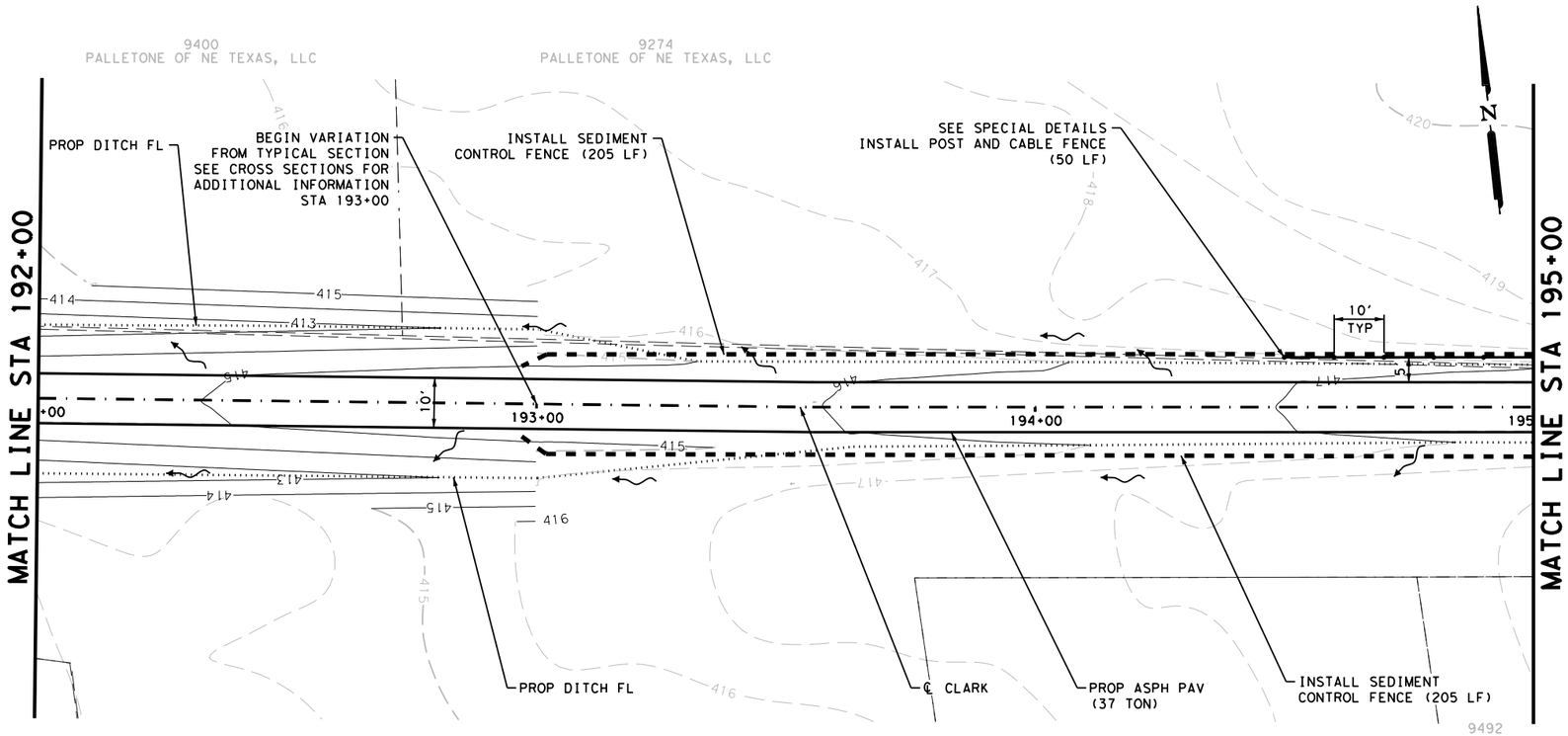
STA 189+00 TO STA 192+00

SHEET 31 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	65

Plotted on: 1/4/2024

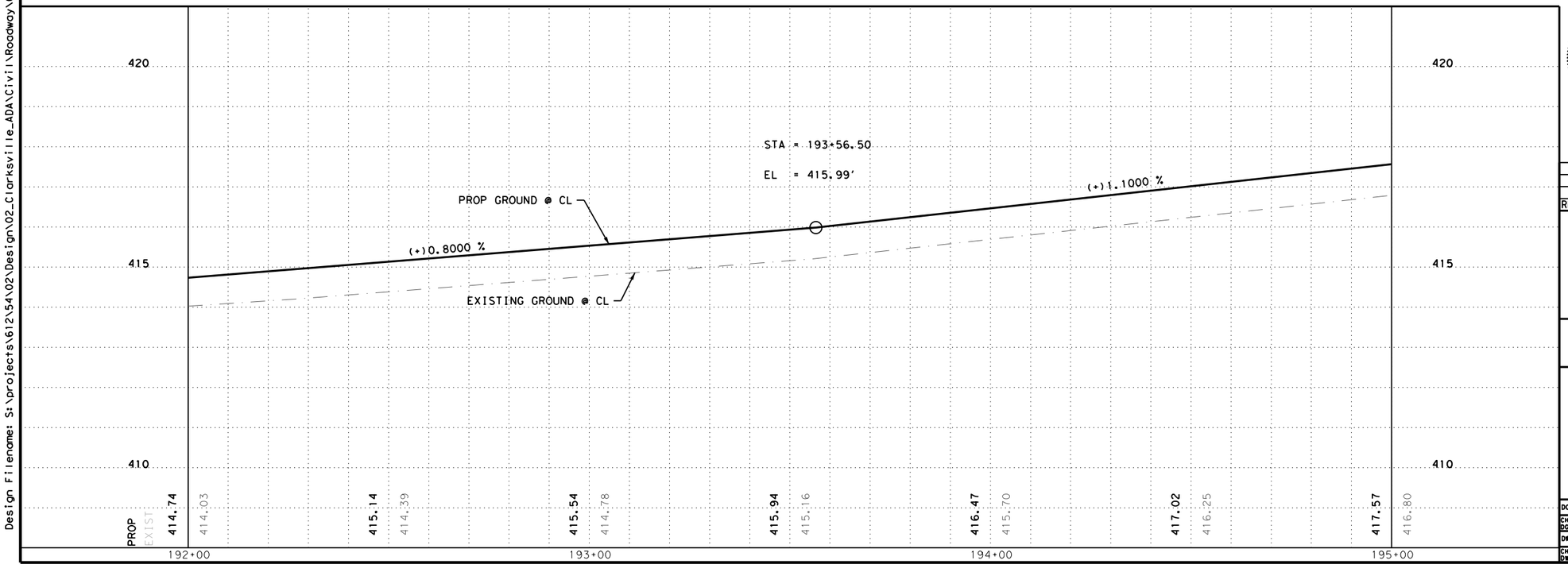
Design Filename: S:\projects\612\54\02\Design\02_Clarksville_ADA\Civil\Roadway\612540202_pln31.dgn



ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	202
0132-6003	EMBANKMENT (FINAL) (ORD COMP) (TY B)	CY	39
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	517
0164-6071	BROADCAST SEED (TEMP) (WARM OR COOL)	SY	1034
0168-6001	VEGETATIVE WATERING	MG	77.0
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	358
0247-6064	FL BS (CMP IN PLC) (TY A GR 4) (6")	SY	367
0316-6029	ASPH (RC-250)	GAL	100
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	410
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	410
0772-6003	POST AND CABLE FENCE (NEW INSTALLATION)	LF	50
3076-6068	D-GR HMA TY-D SAC-A PG64-22 (EXEMPT)	TON	37

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE



NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.

DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS

2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000

TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 192+00 TO STA 195+00

SHEET 32 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	66

Plotted on: 1/4/2024

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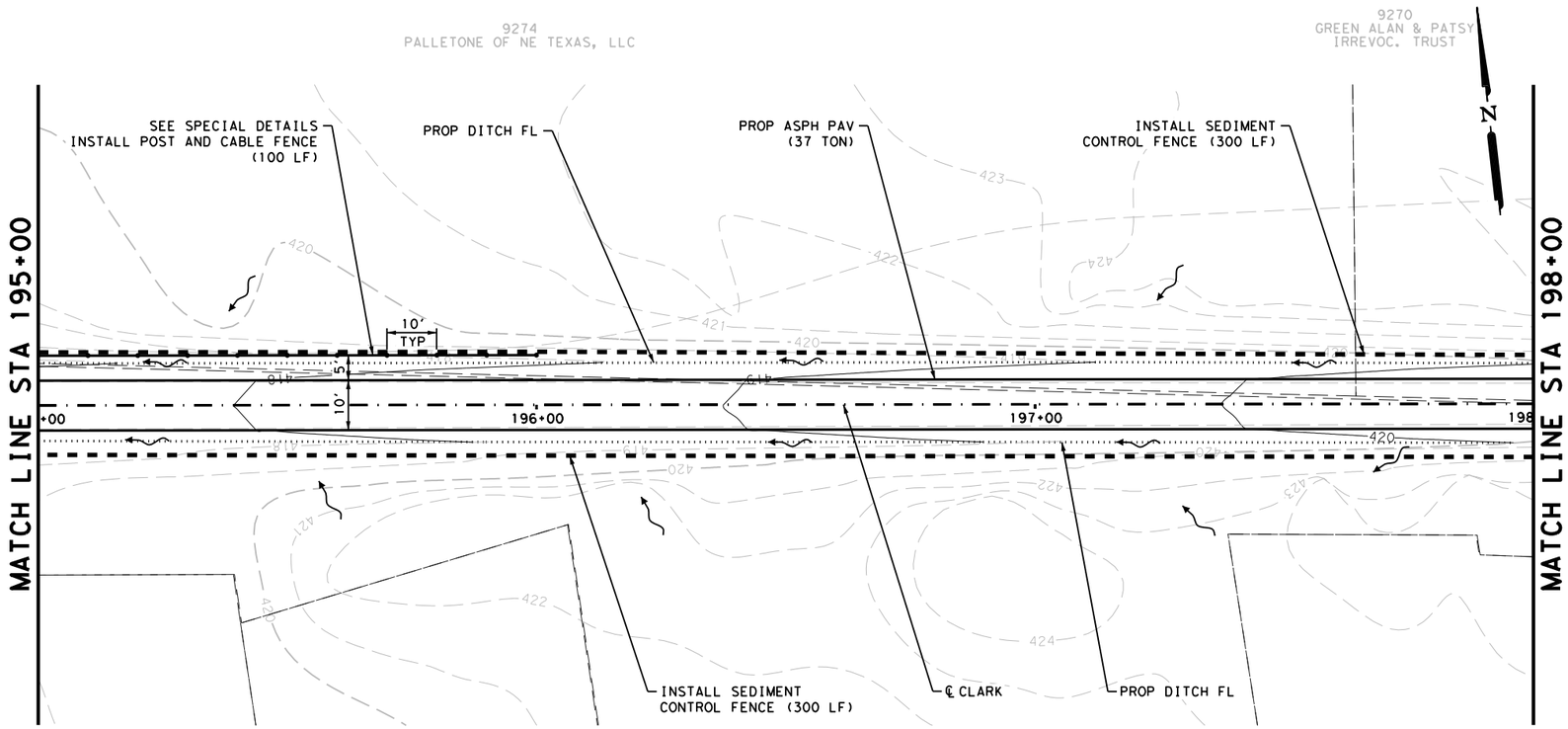
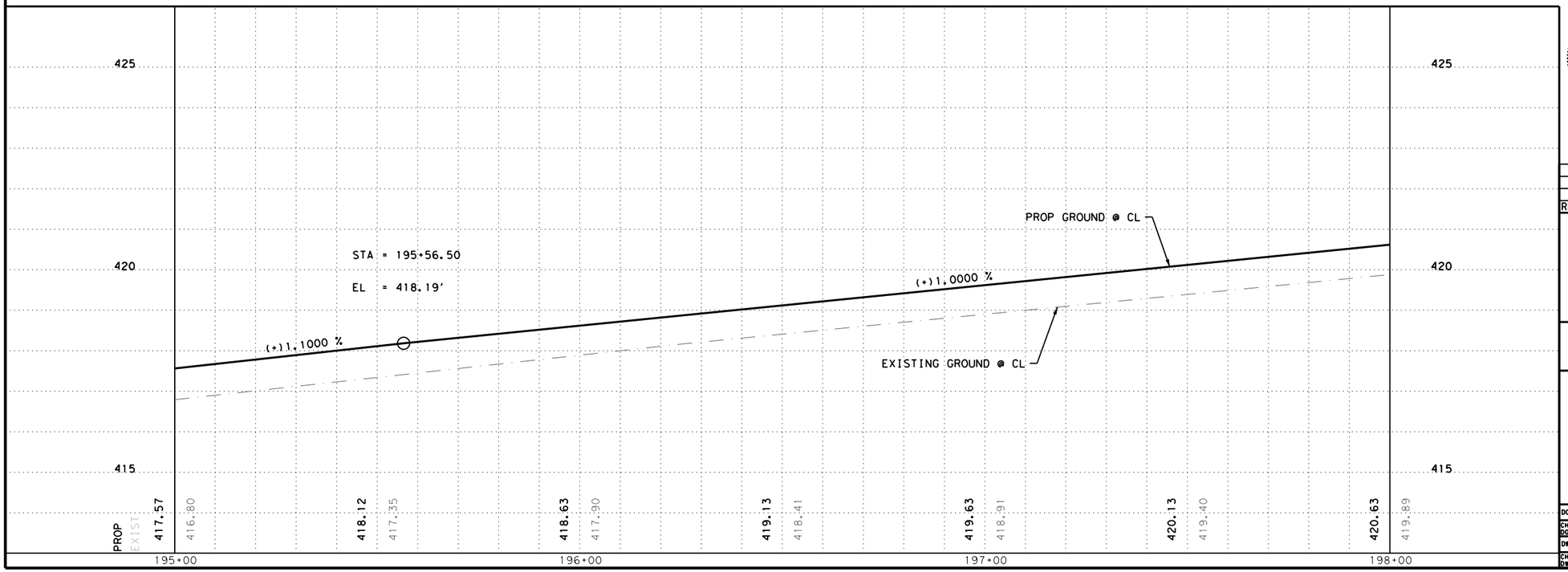


ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	2
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	51
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	185
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	370
0168-6001	VEGETATIVE WATERING	MG	27.6
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	185
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	367
0316-6029	ASPH (RC-250)	GAL	100
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	600
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	600
0772-6003	POST AND CABLE FENCE (NEW INSTALLATION)	LF	100
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	37

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE



NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.

DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 195+00 TO STA 198+00

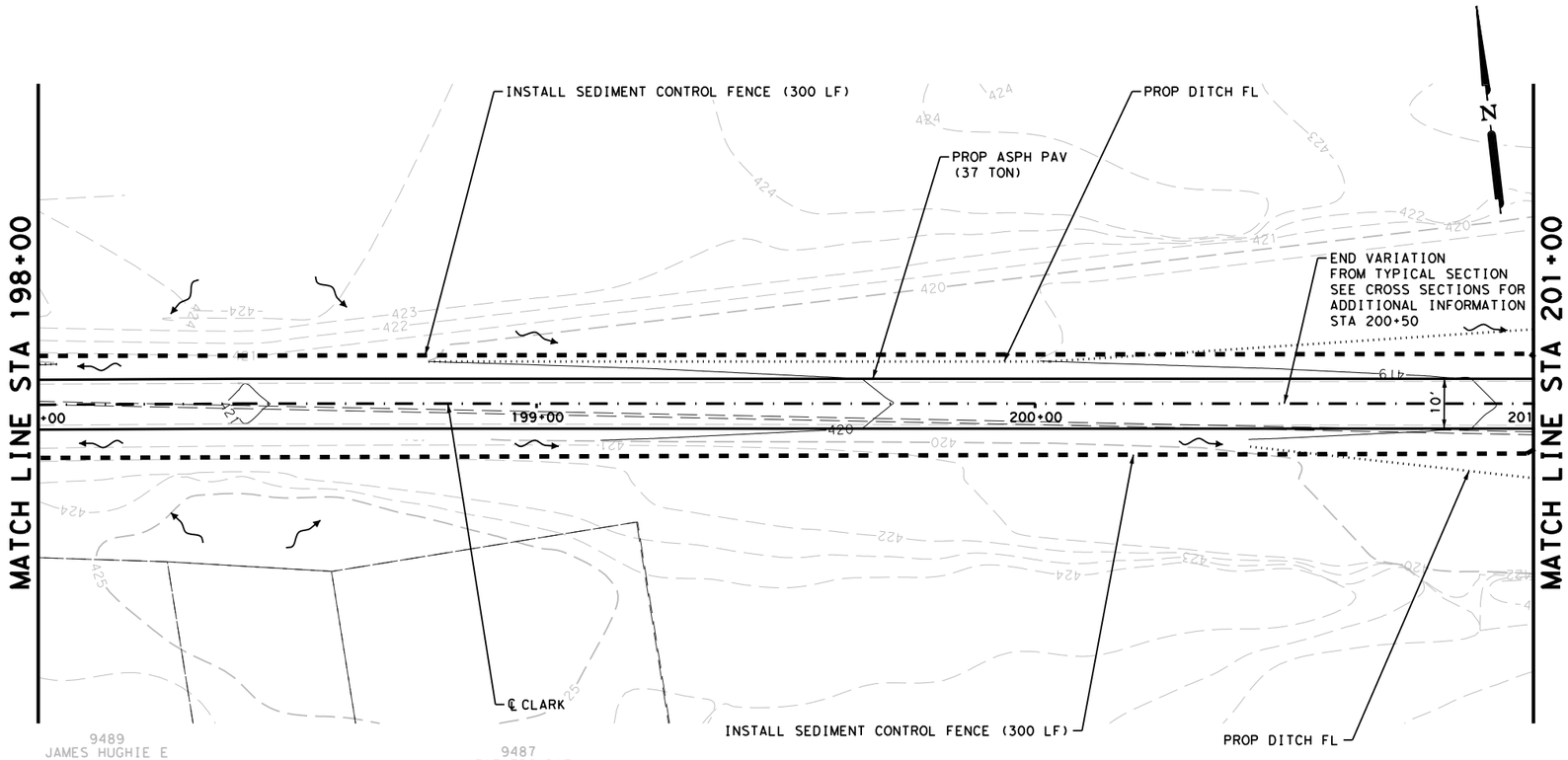
SHEET 33 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	67

Plotted on: 1/4/2024

Design Filename: S:\projects\612\54\02\Design\02_Clarksville_ADA\Civil\Roadway\612540202_pln33.dgn

ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	10
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	39
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	198
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	396
0168-6001	VEGETATIVE WATERING	MG	29.5
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	198
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	367
0316-6029	ASPH (RC-250)	GAL	100
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	600
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	600
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	37

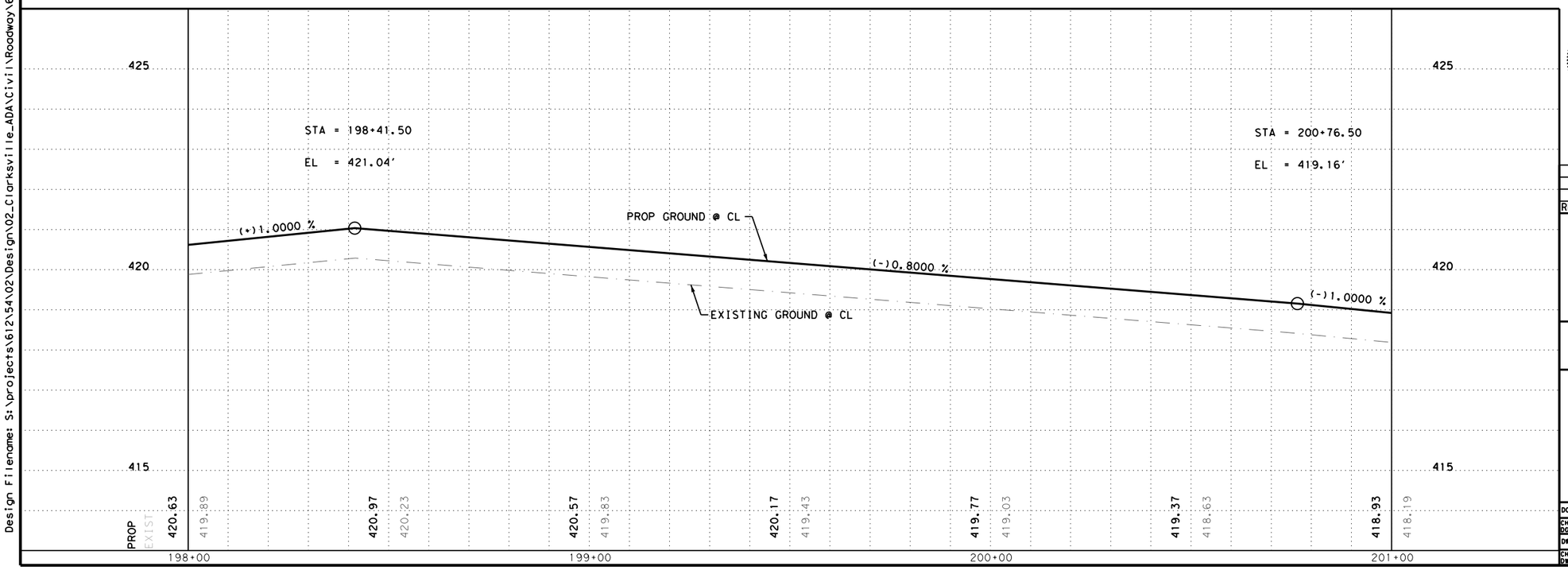


LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40
SCALE: 1"= 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

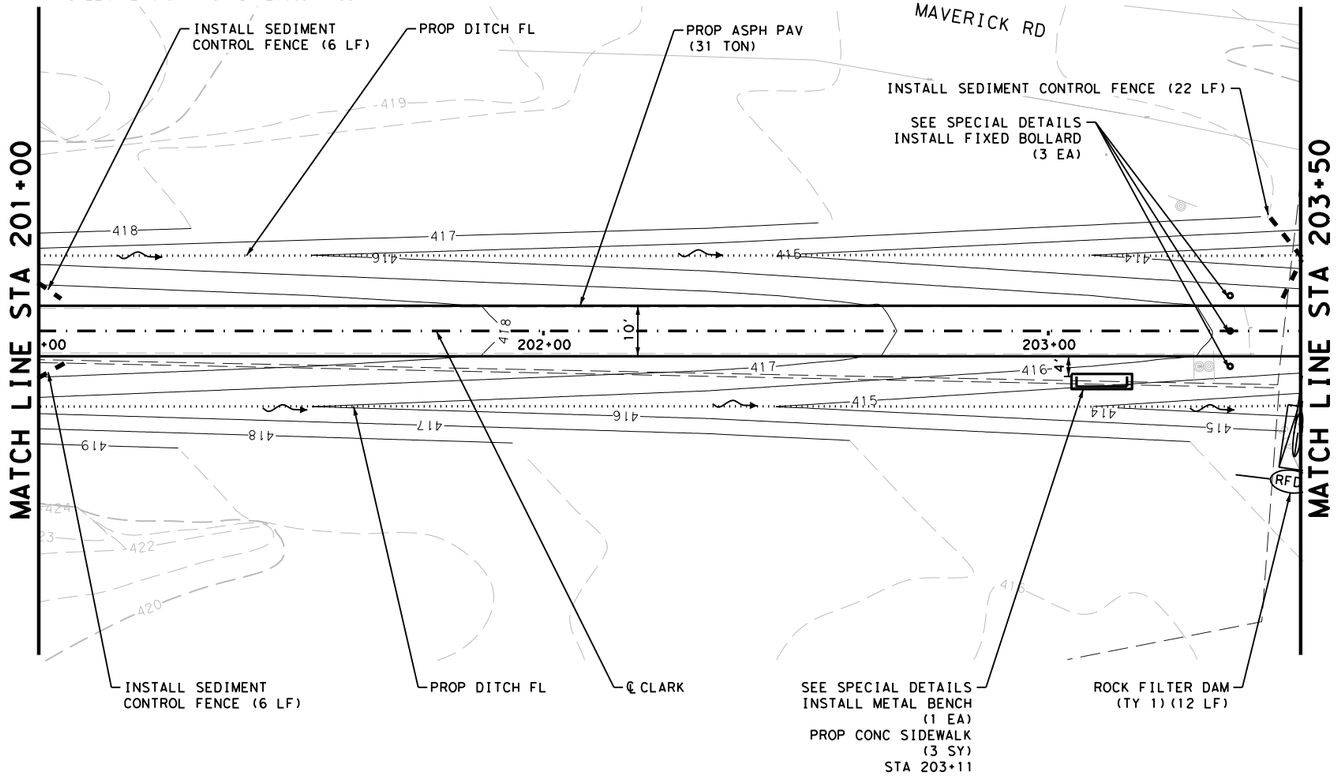
NORTHEAST TEXAS TRAIL

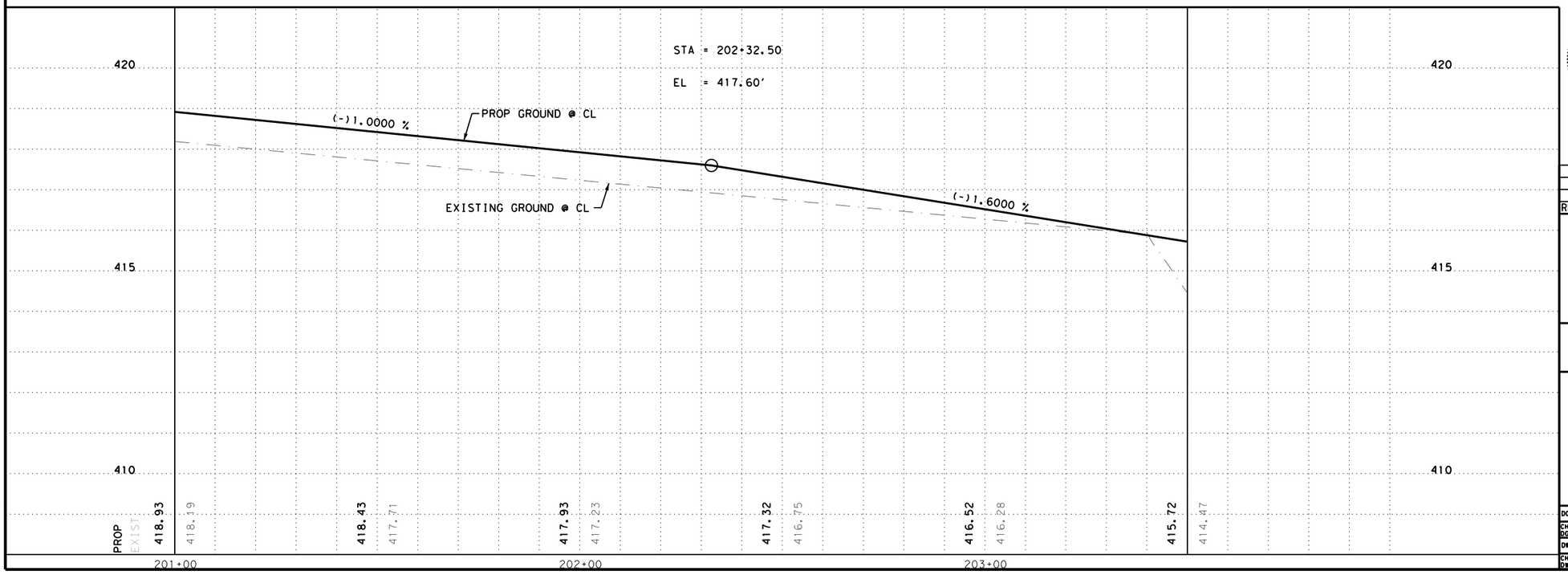
SIDEWALK PLAN

STA 198+00 TO STA 201+00

SHEET 34 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	68





ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	2.50
0110-6001	EXCAVATION (ROADWAY)	CY	234
0132-6003	EMBANKMENT (FINAL) (ORD COMP) (TY B)	CY	35
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	914
0164-6071	BROADCAST SEED (TEMP) (WARM OR COOL)	SY	1828
0168-6001	VEGETATIVE WATERING	MG	136.0
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	555
0247-6064	FL BS (CMP IN PLC) (TY A GR 4) (6")	SY	311
0316-6029	ASPH (RC-250)	GAL	83
0506-6001	ROCK FILTER DAMS (INSTALL) (TY 1)	LF	12
0506-6011	ROCK FILTER DAMS (REMOVE)	LF	12
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	34
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	34
0531-6001	CONC SIDEWALKS (4")	SY	3
1002-6026	LANDSCAPE AMENITY (BENCH)	EA	1
3076-6068	D-GR HMA TY-D SAC-A PG64-22 (EXEMPT)	TON	31
5131-6001	FIXED BOLLARDS	EA	3

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.

DESIGN

STATE OF TEXAS · TYLER PAYNE DUBE · 118612 · LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS · JOHN A. TYLER · 105193 · LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 201+00 TO STA 203+50

SHEET 35 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	69

Plotted on: 1/4/2024

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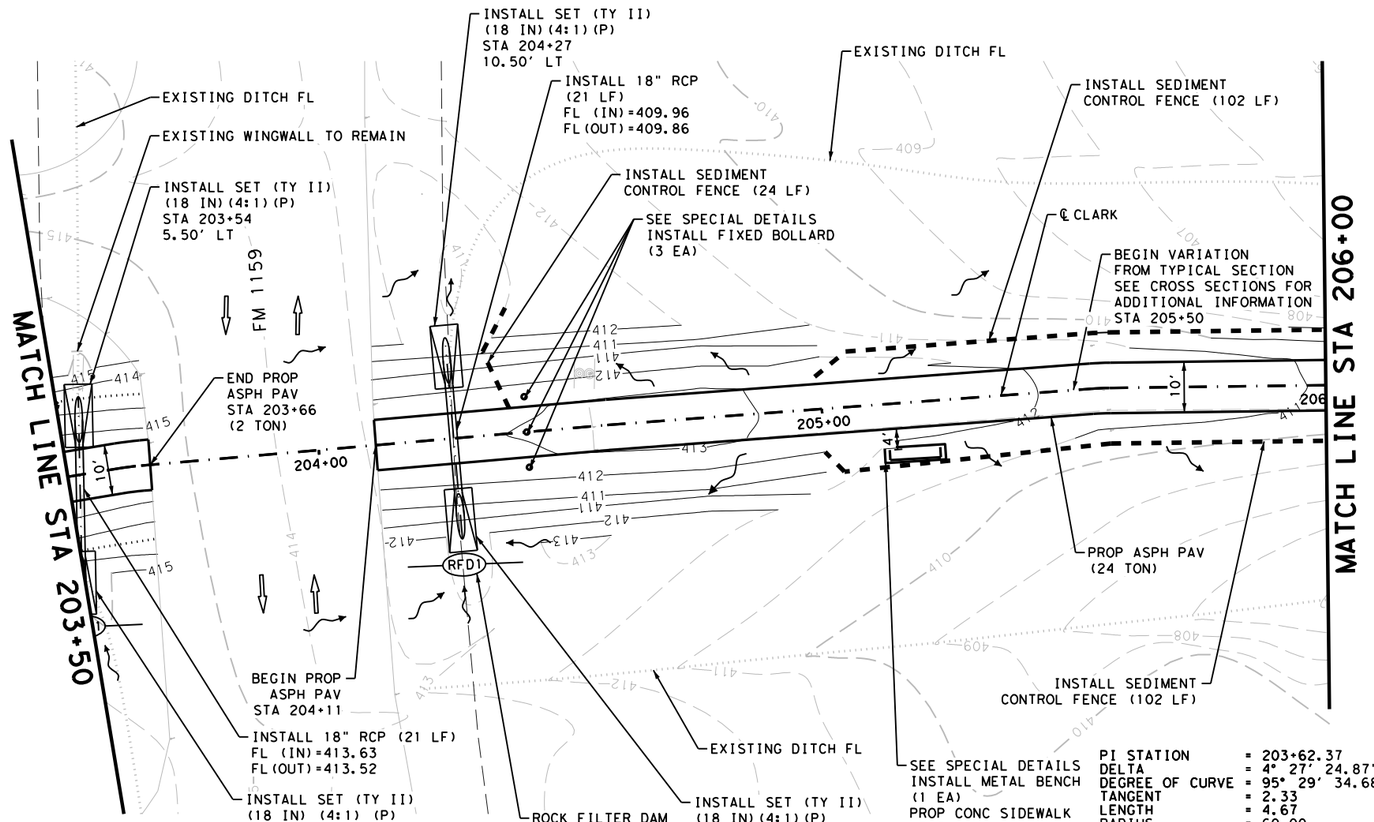


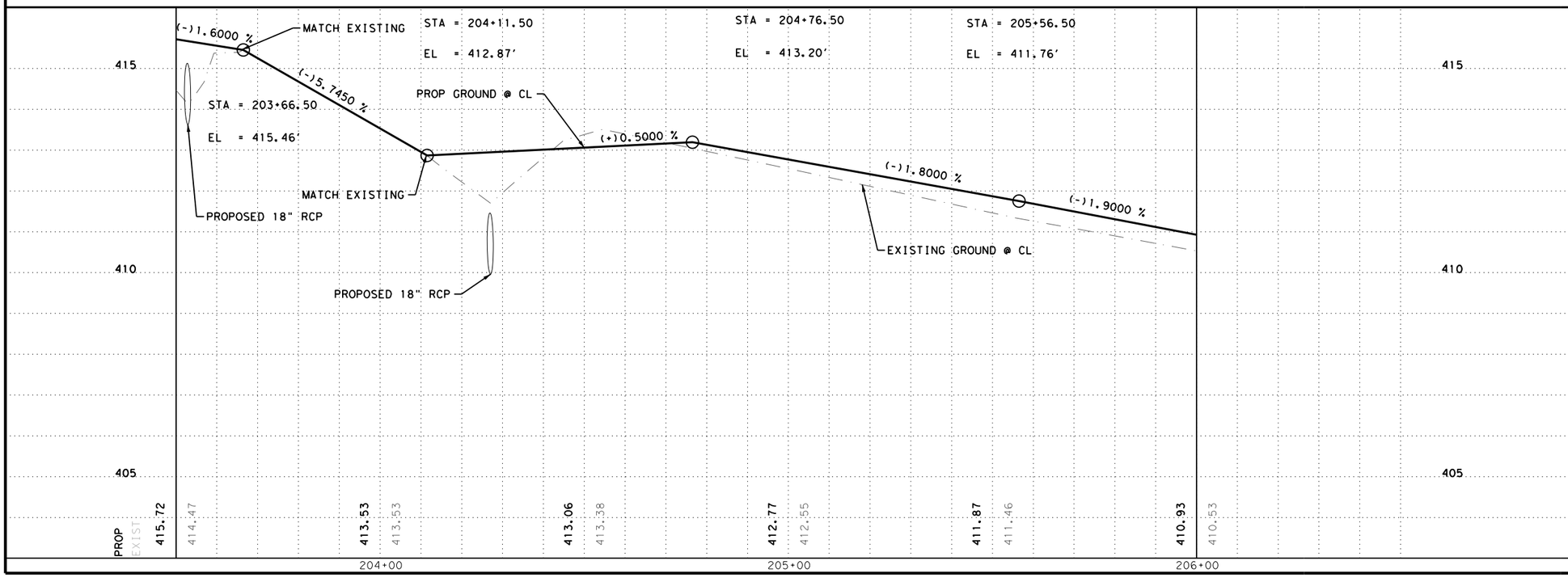
ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	2.50
0110-6001	EXCAVATION (ROADWAY)	CY	268
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	29
0164-6003	BROADCAST SEED (PERM)(RURAL)(CLAY)	SY	441
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	882
0168-6001	VEGETATIVE WATERING	MG	65.7
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	305
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	261
0316-6029	ASPH (RC-250)	GAL	68
0464-6003	RC PIPE (CL III)(18 IN)	LF	42
0467-6359	SET (TY II) (18 IN) (RCP) (4:1) (P)	EA	4
0506-6001	ROCK FILTER DAMS (INSTALL) (TY 1)	LF	12
0506-6011	ROCK FILTER DAMS (REMOVE)	LF	12
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	228
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	228
0531-6001	CONC SIDEWALKS (4")	SY	3
1002-6026	LANDSCAPE AMENITY (BENCH)	EA	1
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	26
5131-6001	FIXED BOLLARDS	EA	3

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE



DESIGN

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 203+50 TO STA 206+00

SHEET 36 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	70

Plotted on: 1/4/2024

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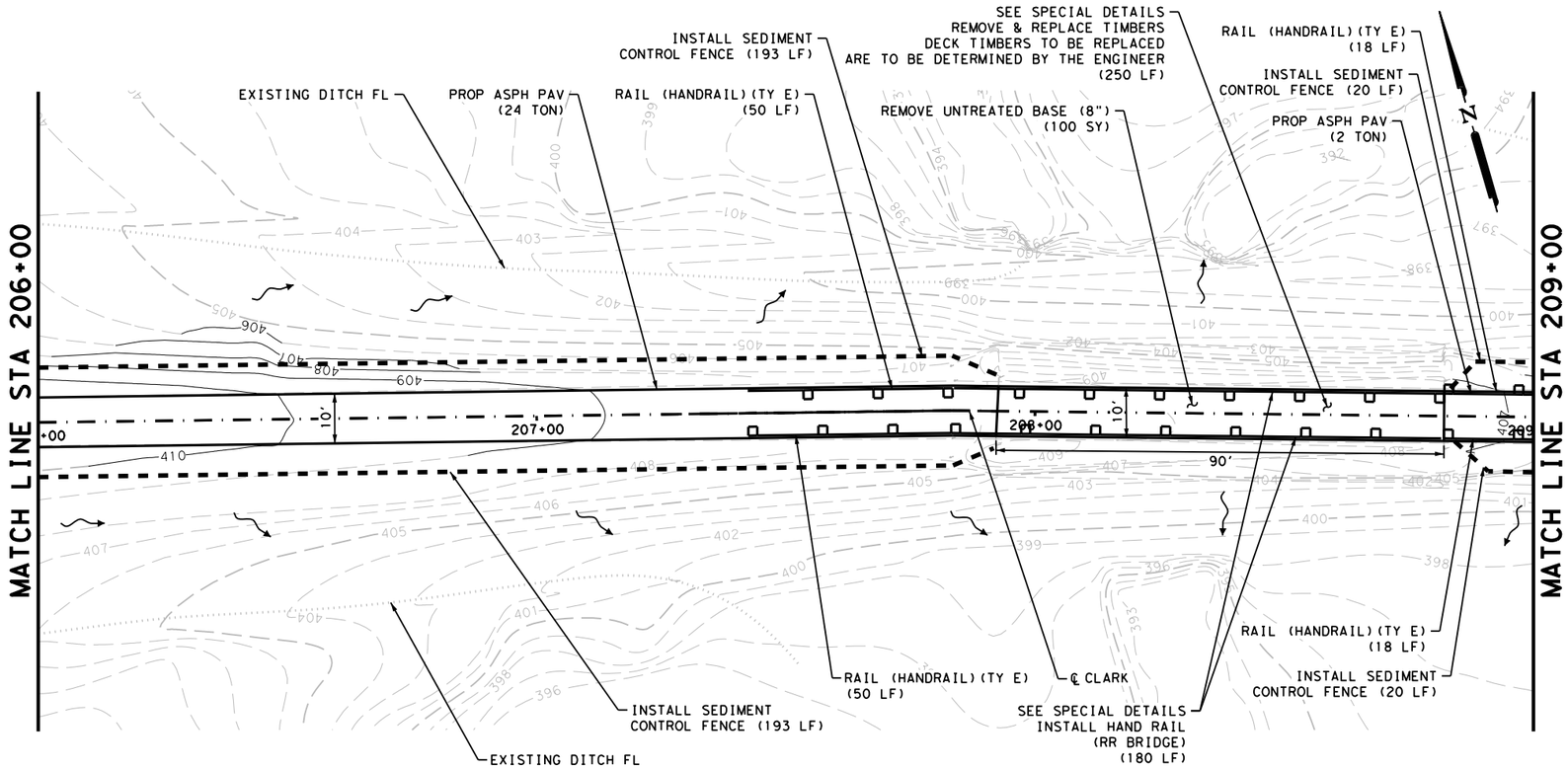


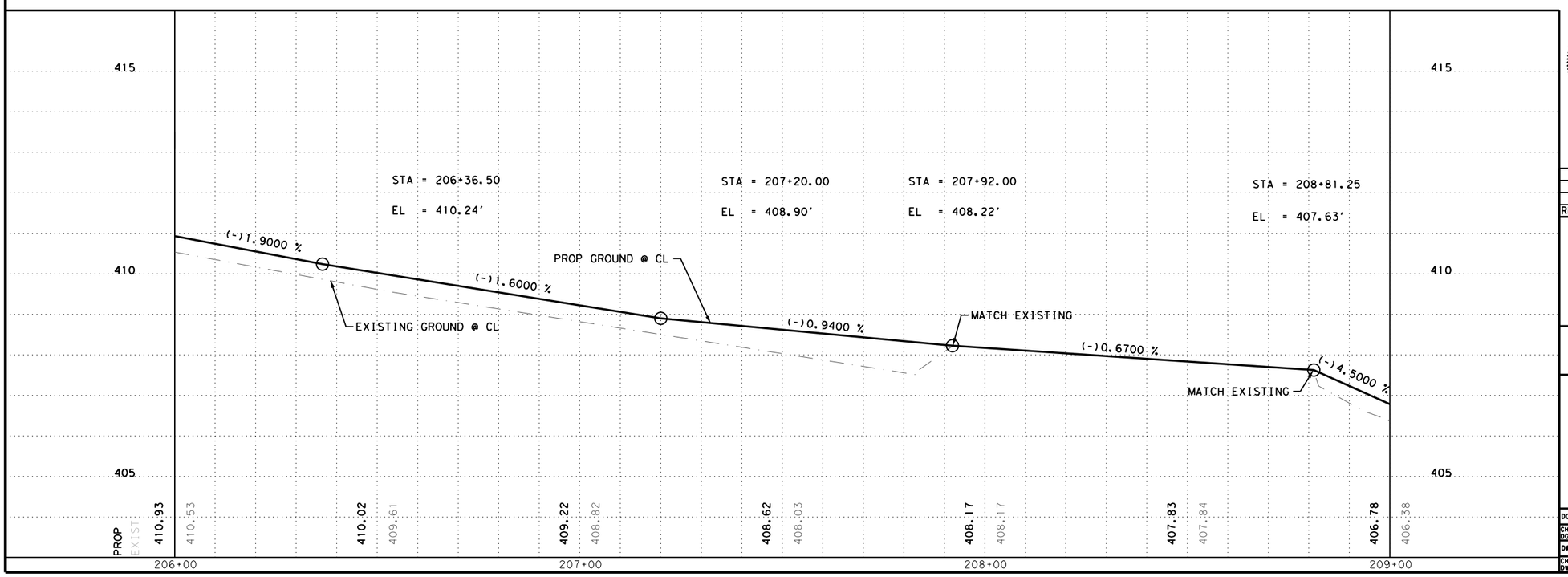
ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0105-6128	REMOVING UNTREATED BASE (8")	SY	100
0110-6001	EXCAVATION (ROADWAY)	CY	47
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	21
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	184
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	368
0168-6001	VEGETATIVE WATERING	MG	27.4
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	184
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	269
0316-6029	ASPH (RC-250)	GAL	71
0450-6051	RAIL (HANDRAIL)(TY E)	LF	136
0450-6059	RAIL (HANDRAIL)(RR BRIDGE)	LF	180
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	426
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	426
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	26
7006-6001	REMOVE/REPLACE TIMBERS	LF	250

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1"= 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

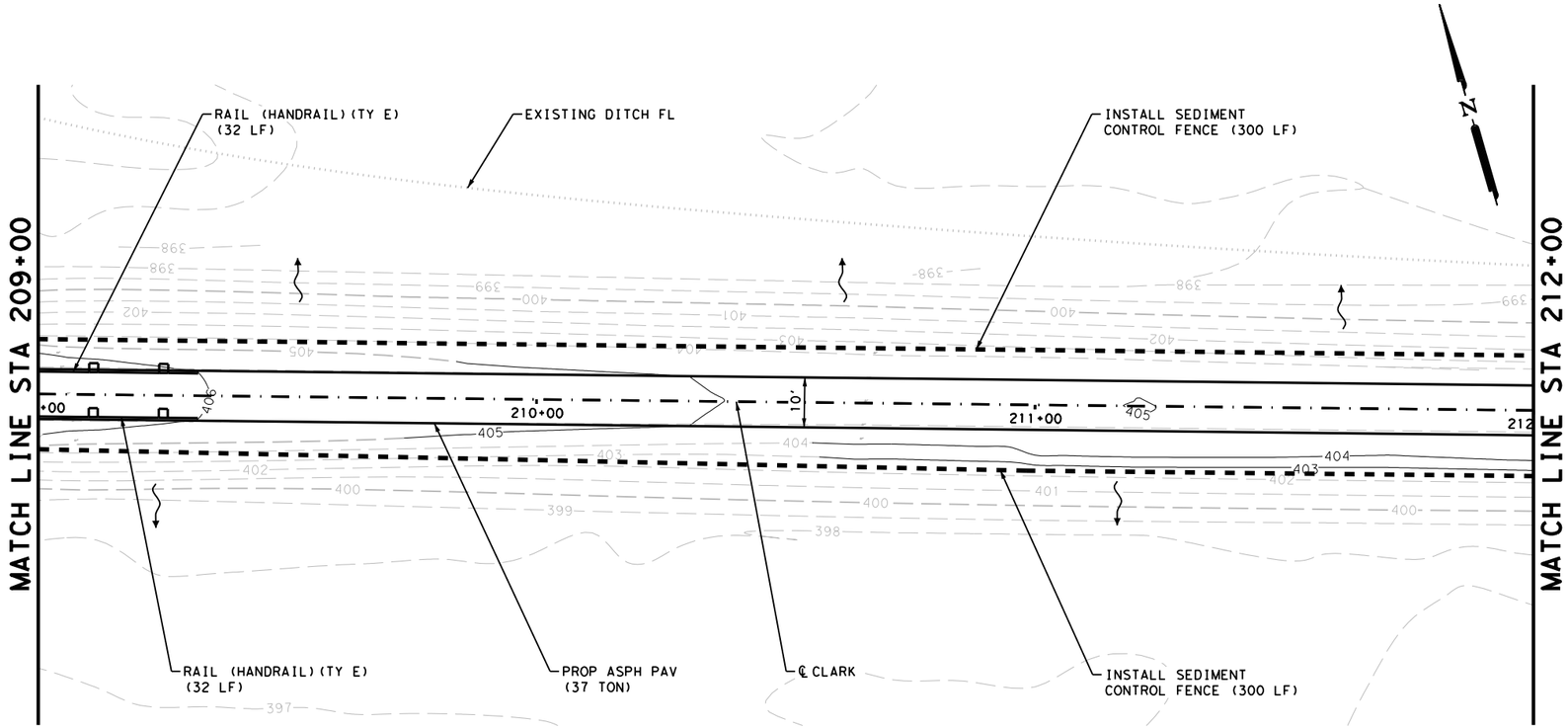
STA 206+00 TO STA 209+00

SHEET 37 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	71

Plotted on: 1/4/2024

Design Filename: S:\projects\612\54\02\Design\02_Clarksville_ADA\Civil\Roadway\612540202_pln37.dgn



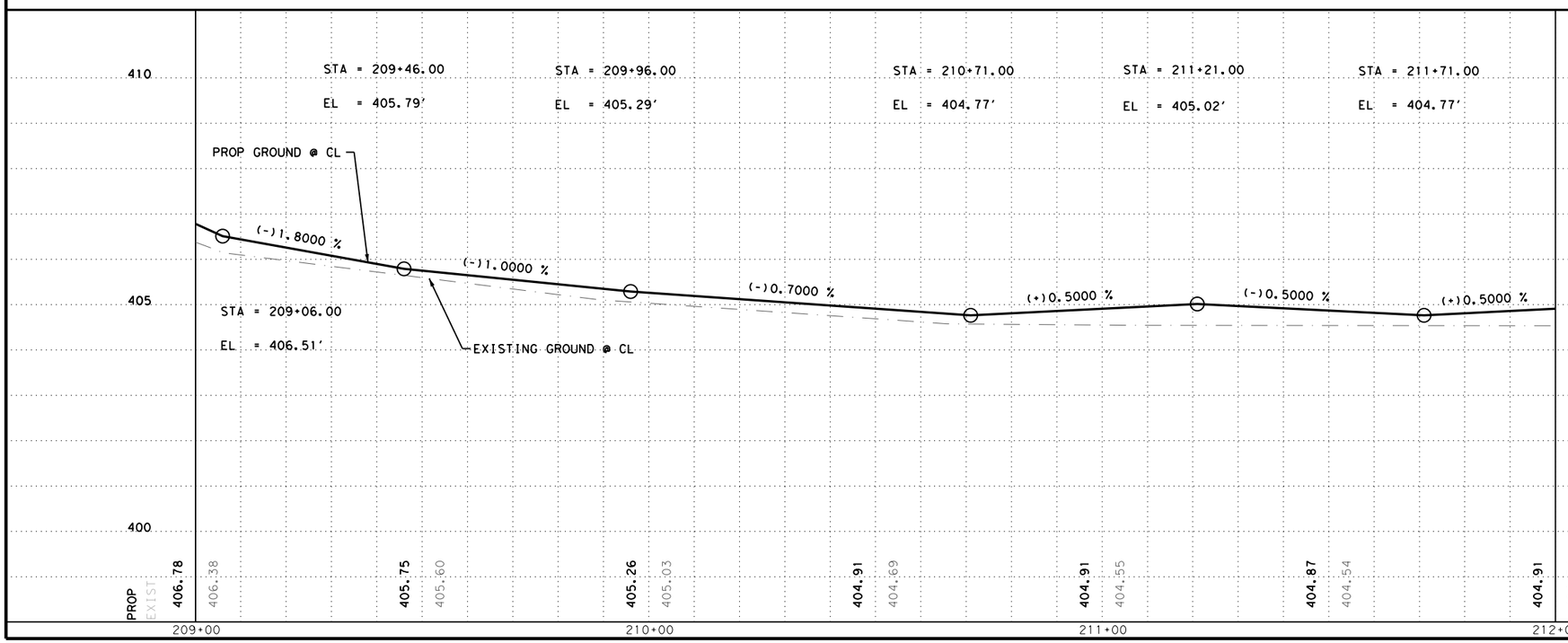
ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	39
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	11
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	258
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	516
0168-6001	VEGETATIVE WATERING	MG	38.4
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	258
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	367
0316-6029	ASPH (RC-250)	GAL	100
0450-6051	RAIL (HANDRAIL)(TY E)	LF	64
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	600
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	600
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	37

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS

2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000

TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 209+00 TO STA 212+00

SHEET 38 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	72

Plotted on: 1/4/2024

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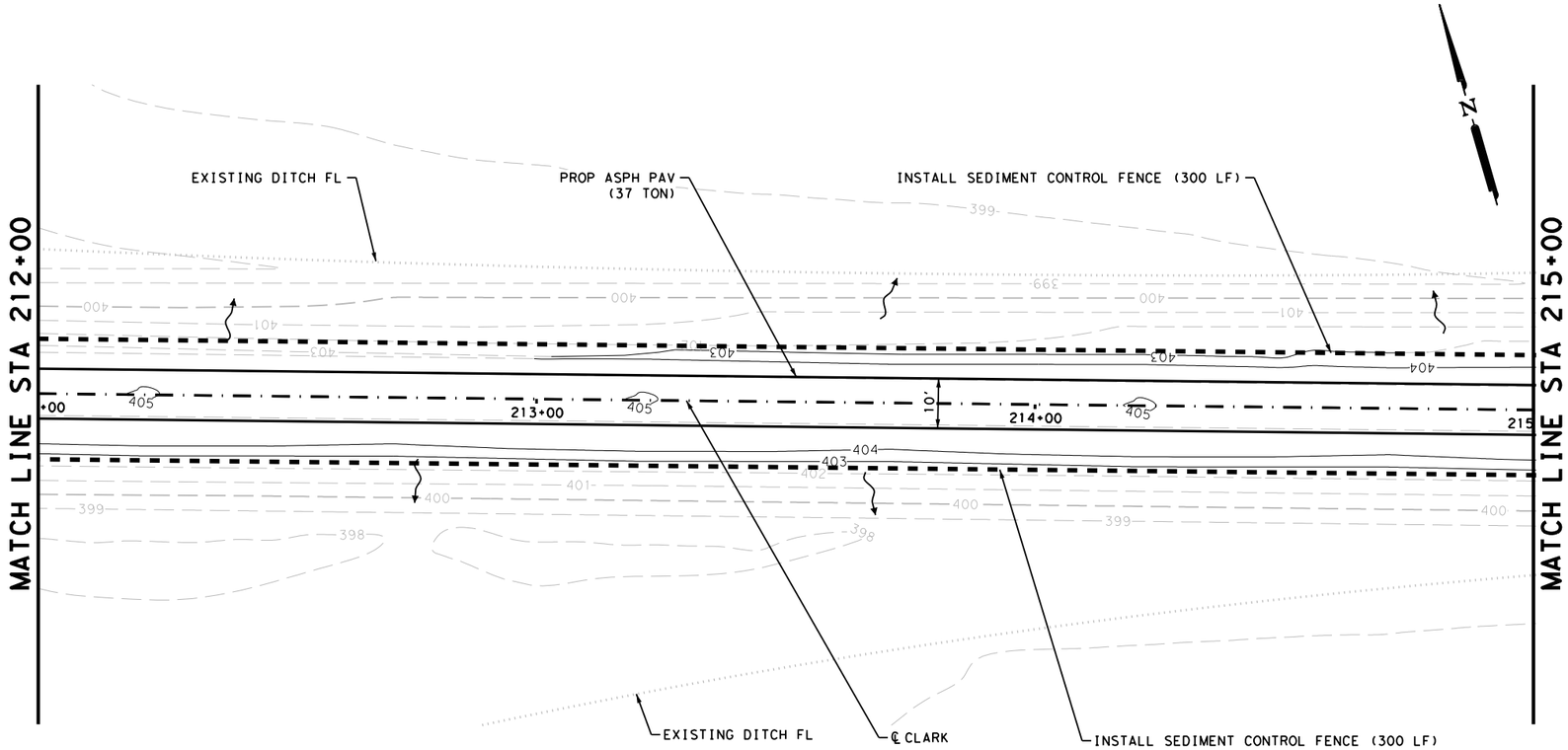


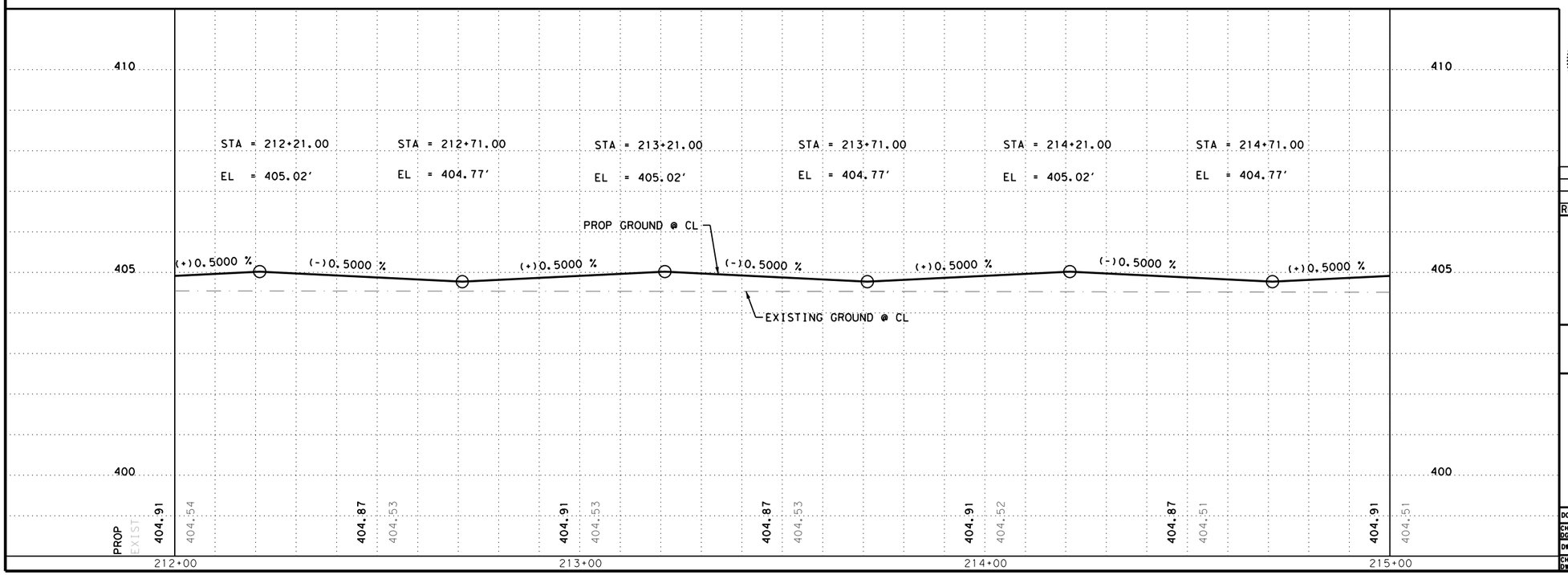
ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	35
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	47
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	445
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	890
0168-6001	VEGETATIVE WATERING	MG	66.2
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	445
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	367
0316-6029	ASPH (RC-250)	GAL	100
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	600
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	600
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	37

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1"= 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

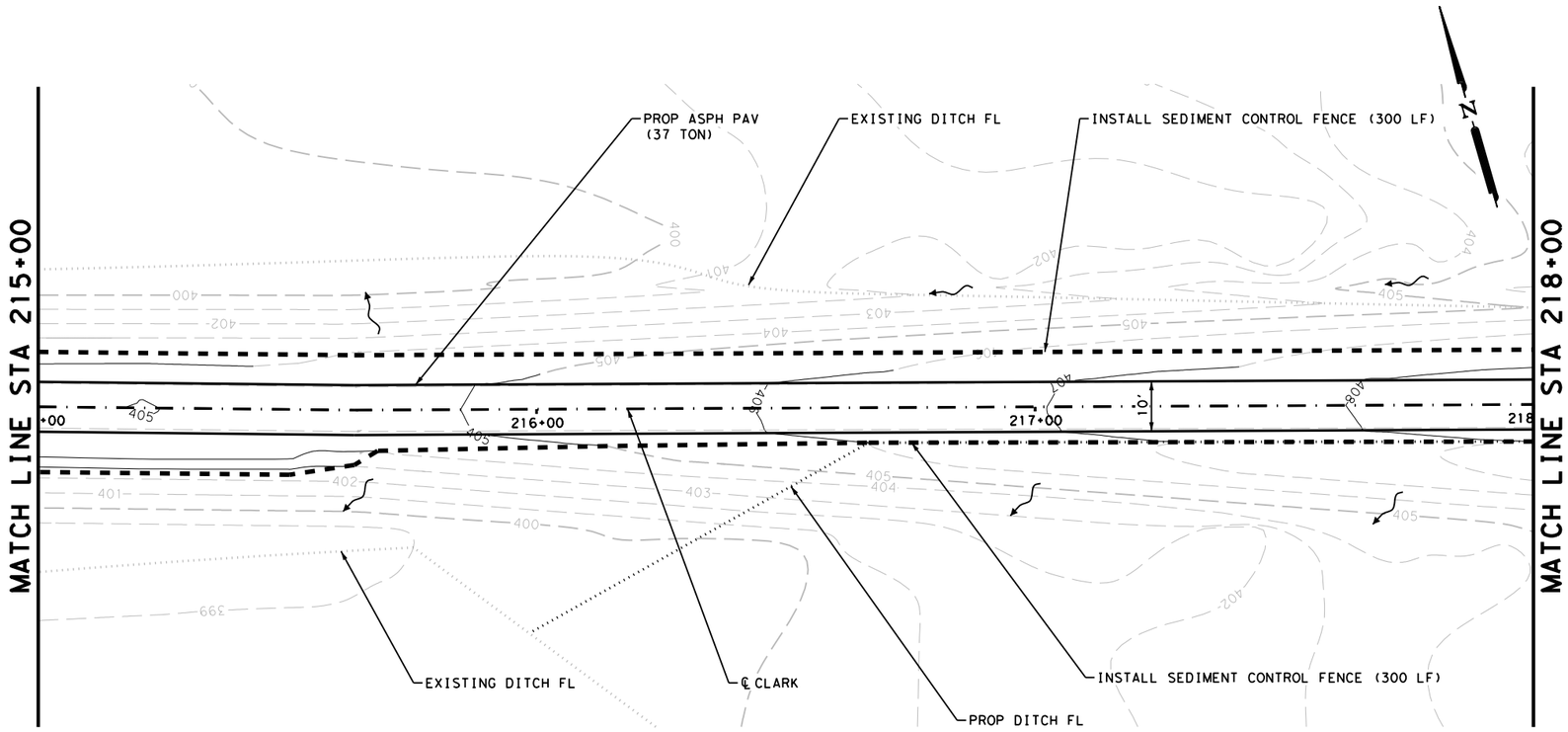
NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 212+00 TO STA 215+00

SHEET 39 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	73



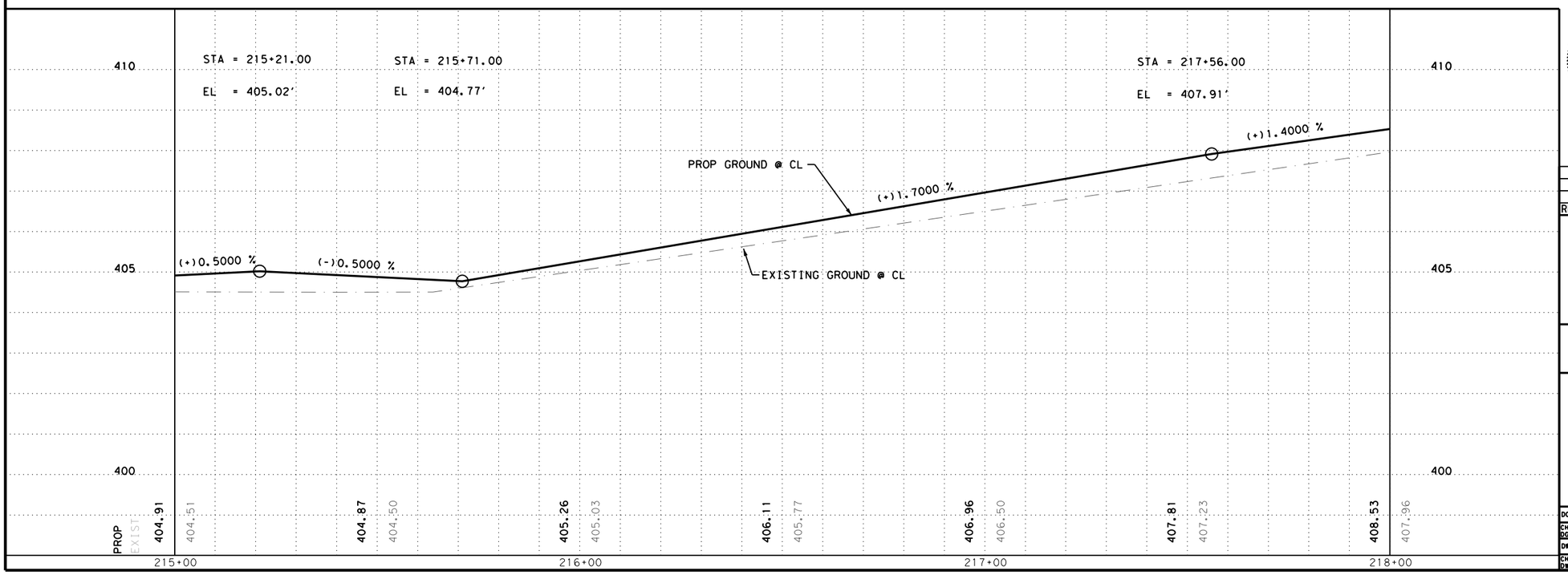
ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	34
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	42
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	225
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	450
0168-6001	VEGETATIVE WATERING	MG	33.5
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	225
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	367
0316-6029	ASPH (RC-250)	GAL	100
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	600
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	600
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	37

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40

SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 215+00 TO STA 218+00

SHEET 40 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	74

Plotted on: 1/4/2024
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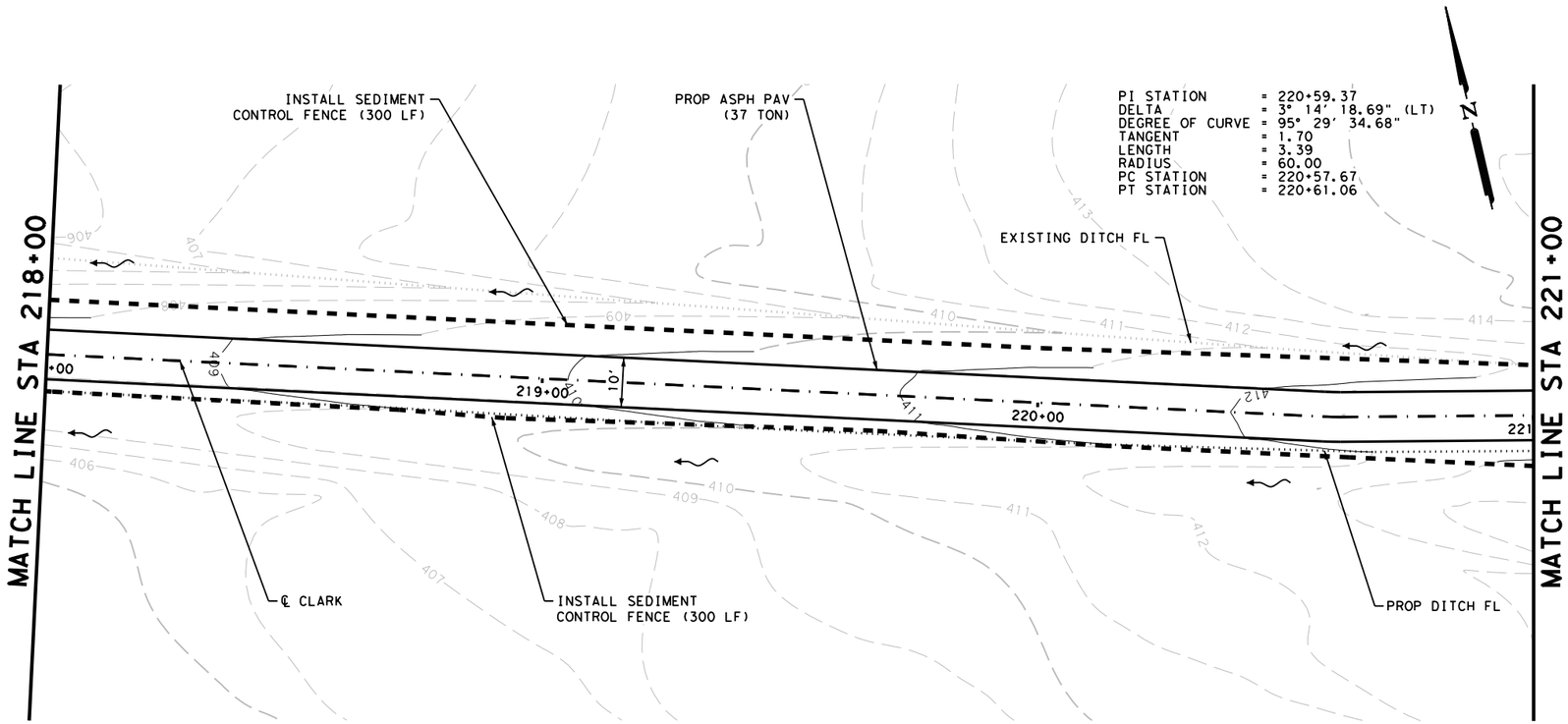


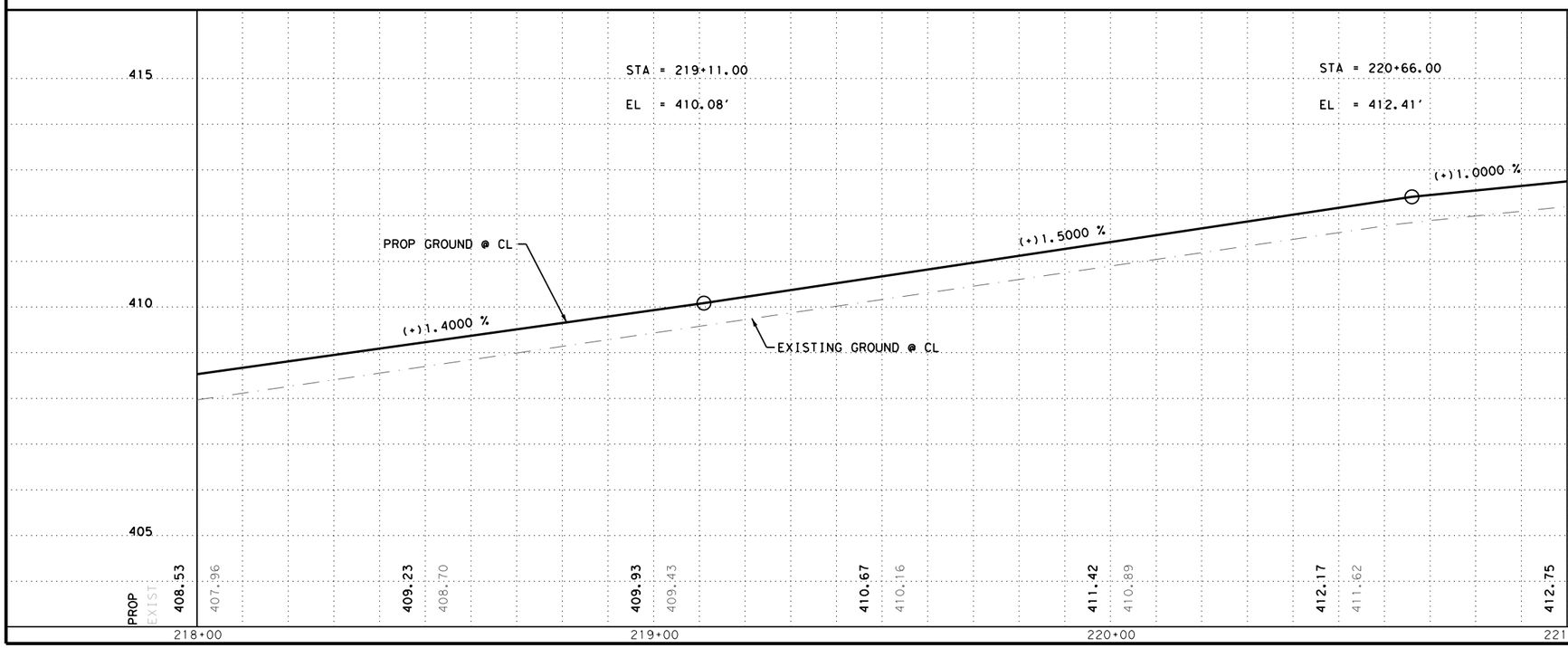
ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	3.00
0110-6001	EXCAVATION (ROADWAY)	CY	17
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	23
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	190
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	380
0168-6001	VEGETATIVE WATERING	MG	28.3
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	190
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	367
0316-6029	ASPH (RC-250)	GAL	100
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	600
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	600
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	37

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40
SCALE: 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 218+00 TO STA 221+00

SHEET 41 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	75

Plotted on: 1/4/2024

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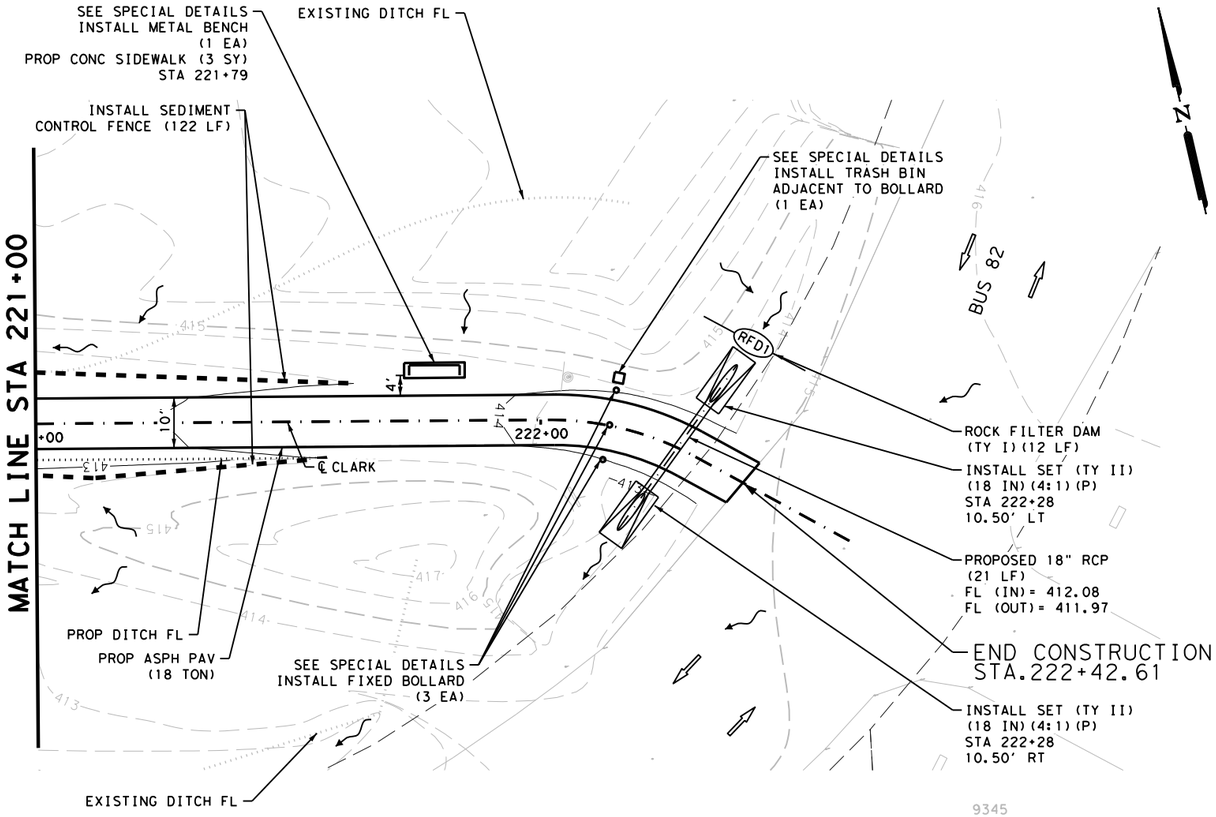


PI STATION = 222+17.05
DELTA = 29° 05' 44.76" (RT)
DEGREE OF CURVE = 95° 29' 34.68"
TANGENT = 15.57
LENGTH = 30.47
RADIUS = 60.00
PC STATION = 222+01.48
PT STATION = 222+31.95

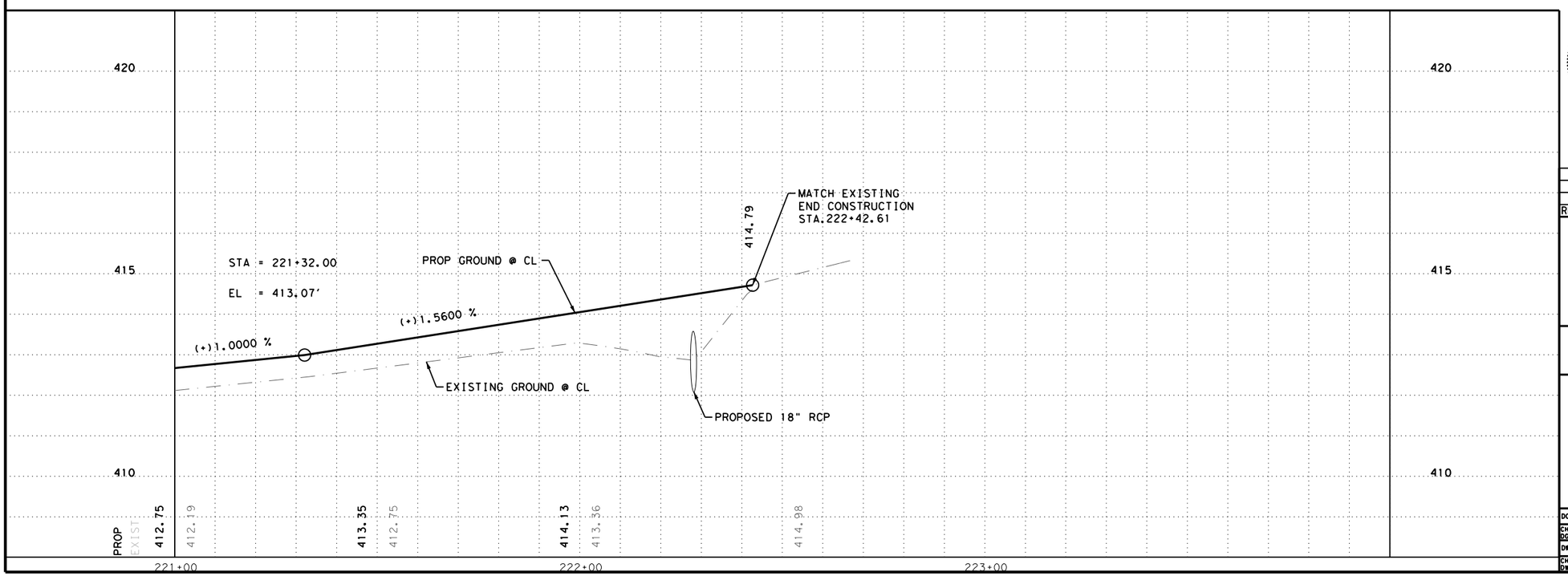
ITEM	DESCRIPTION	UNIT	QTY
0100-6002	PREPARING ROW	STA	1.50
0110-6001	EXCAVATION (ROADWAY)	CY	10
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	19
0164-6003	BROADCAST SEED (PERM) (RURAL) (CLAY)	SY	91
0164-6071	BROADCAST SEED (TEMP)(WARM OR COOL)	SY	182
0168-6001	VEGETATIVE WATERING	MG	13.6
0169-6001	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	91
0247-6064	FL BS (CMP IN PLC)(TY A GR 4) (6")	SY	192
0316-6029	ASPH (RC-250)	GAL	48
0464-6003	RC PIPE (CL III)(18 IN)	LF	21
0467-6359	SET (TY II) (18 IN) (RCP) (4:1) (P)	EA	2
0506-6001	ROCK FILTER DAMS (INSTALL) (TY 1)	LF	12
0506-6011	ROCK FILTER DAMS (REMOVE)	LF	12
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	122
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	122
0531-6001	CONC SIDEWALKS (4")	SY	3
1002-6025	LANDSCAPE AMENITY (TRASH/RECYCLE BIN)	EA	1
1002-6026	LANDSCAPE AMENITY (BENCH)	EA	1
3076-6068	D-GR HMA TY-D SAC-A PG64-22(EXEMPT)	TON	18
5131-6001	FIXED BOLLARDS	EA	3

LEGEND

- TRAFFIC FLOW DIRECTION
- EXISTING DITCH FLOW LINE
- DRAINAGE FLOW DIRECTION
- PROPOSED HANDRAIL
- 466 EXISTING CONTOUR
- 467 PROPOSED CONTOUR
- PROPOSED DITCH FLOW LINE
- ADJACENT PROPERTY LINE
- EXISTING FEATURE
- PROPOSED FEATURE
- EXISTING SIGN
- SEDIMENT CONTROL FENCE

NOTES

SEE "SPECIAL DETAILS" SHEETS FOR ADDITIONAL INFORMATION.



DESIGN

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 10 20 30 40
SCALE: 1"= 30'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIDEWALK PLAN

STA 221+00 TO END CONSTRUCTION

SHEET 42 OF 42

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	76

Plotted on: 1/4/2024

Design Filename: S:\projects\612554\02Design\02_Clarksville_ADA\Civil\Roadway\612540202_pln42.dgn

DATE: 1/4/2024
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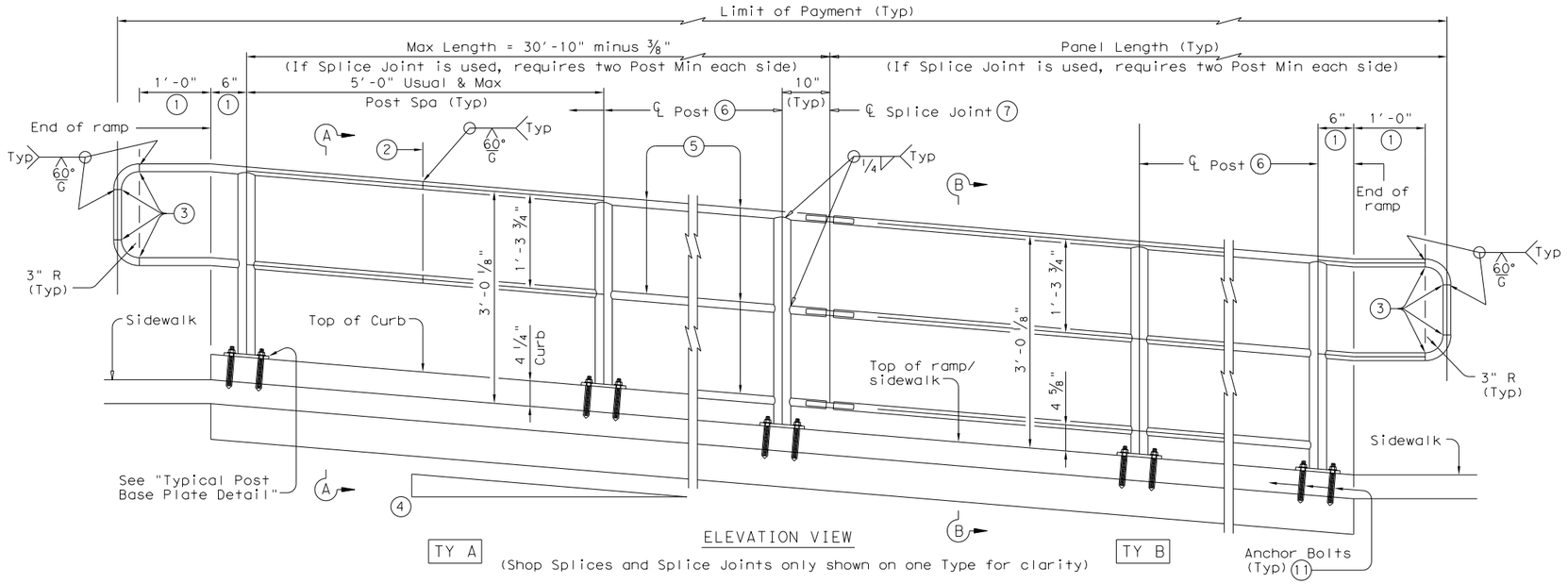
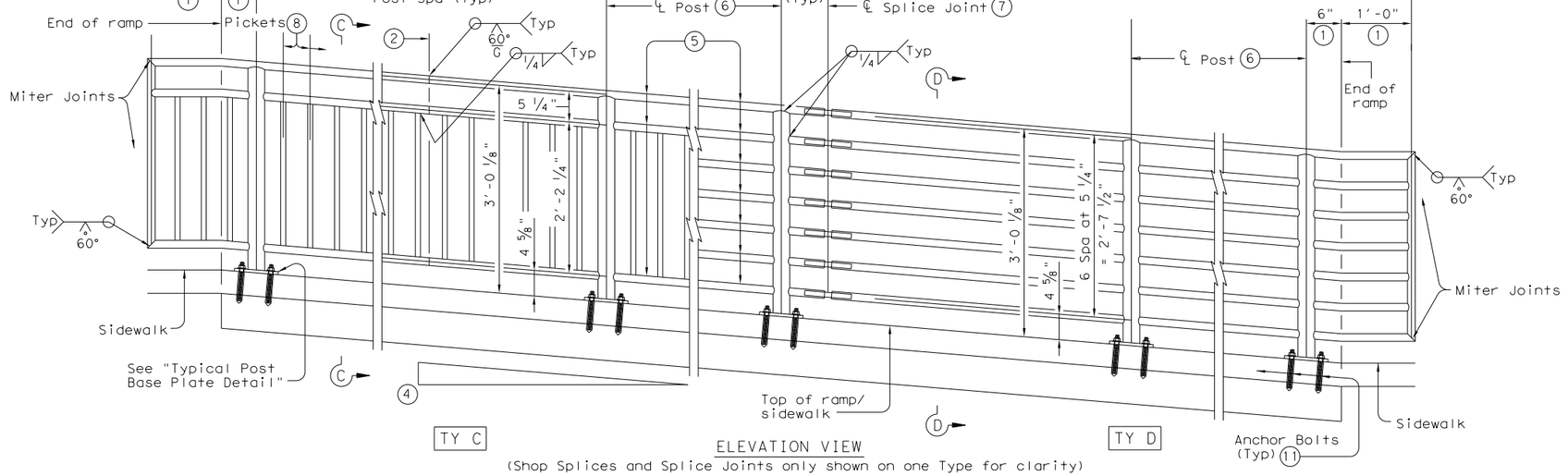


ELEVATION VIEW

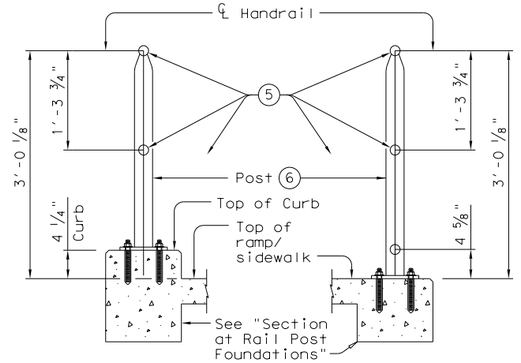
(Shop Splices and Splice Joints only shown on one Type for clarity)



ELEVATION VIEW

(Shop Splices and Splice Joints only shown on one Type for clarity)

RECOMMENDED USAGE (9) (10)	
Dropoff Height/ Condition	Recommended Rail Options
< 30" dropoff	TY A, TY B, TY C, or TY D
≥ 30" dropoff, or along Bike Path	TY E or TY F

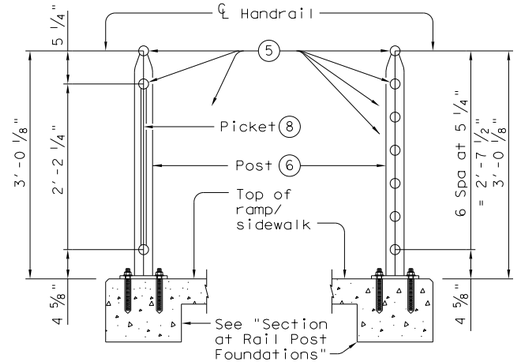


SECTION A-A

(Showing Handrail TY A)

SECTION B-B

(Showing Handrail TY B)



SECTION C-C

(Showing Handrail TY C)

SECTION D-D

(Showing Handrail TY D)

(1) Parallel to ground.

(2) One shop splice per panel is permitted with minimum 85 percent penetration. The weld may be square groove or single vee groove. Grind smooth.

(3) Shop splice is permitted with minimum 85 percent penetration. The weld may be square groove or single vee groove. Grind smooth.

(4) See Ramp Details located elsewhere in plans for ramp slope and dimensions. Maximum ramp slope will not exceed 8.3 percent. Level landing required for each 30" rise if grade exceeds 5 percent.

(5) 1 ½" Dia. Standard Pipe (1.900" O.D., 0.145" wall thickness). Parallel to ramp / sidewalk. Provide holes as needed in 1 ½" Dia. pipe for galvanizing drainage and venting.

(6) 2 ½" Dia. Standard Pipe (2.875" O.D., 0.203" wall thickness). See "Post Mount Detail" for crimping and trimming post to fit Dia. of top rail. Provide holes as needed in post for galvanizing drainage and venting. Plumb all posts.

(7) See "Handrail Fabrication Details" for Splice Joints.

(8) ℄ ⅝" Dia. Round Bar equal spacing at 4 ½" Max. Plumb all pickets.

(9) When needed for accessibility (grade > 5 percent) or as needed for pedestrian safety.

(10) Not to be used on bridges.

(11) See "General Notes" for anchor bolt information.

SHEET 1 OF 3

Texas Department of Transportation

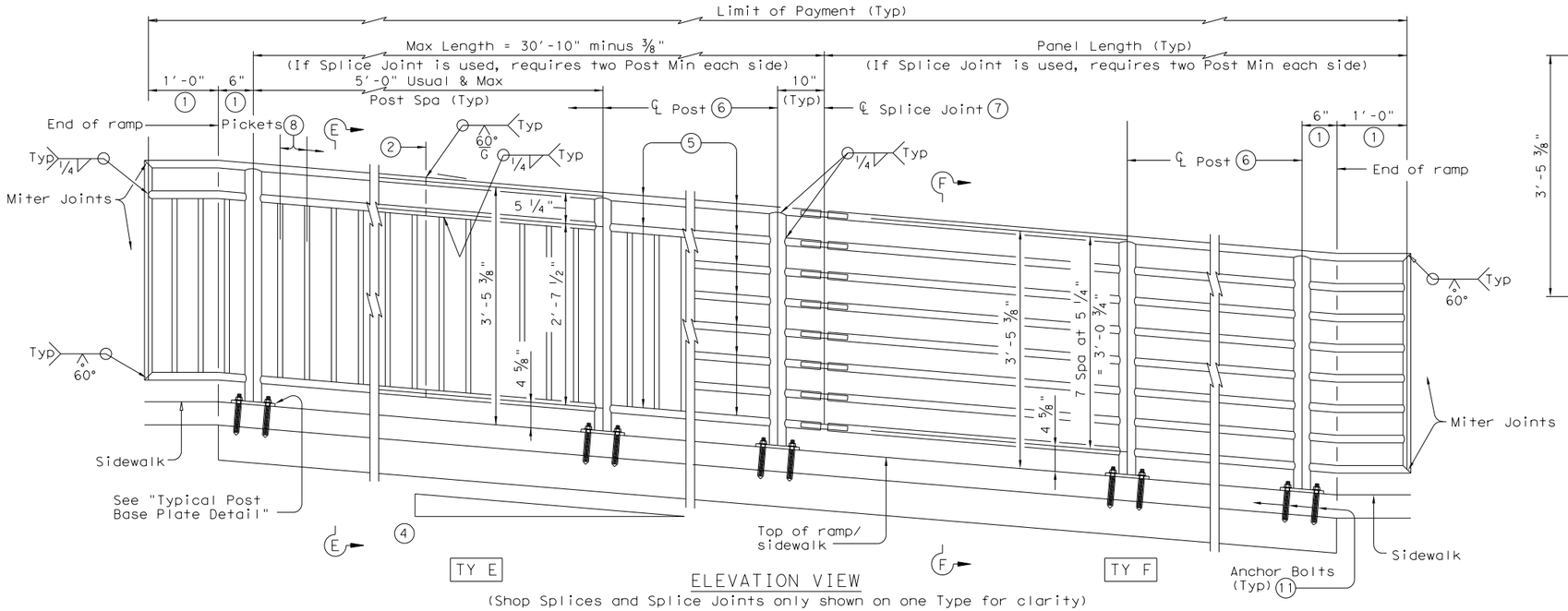
Design Division Standard

PEDESTRIAN HANDRAIL DETAILS

PRD-13

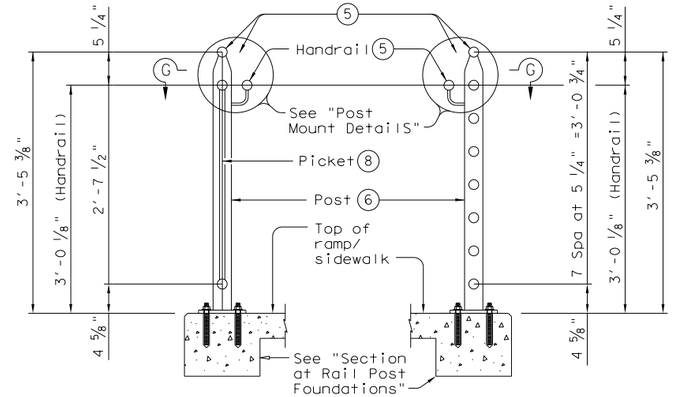
FILE: prd13.dgn	DN: TxDOT	CK: AM	DW: JTR	CK: CGL
©TxDOT Decmeber 2006	CONT	SECT	JOB	HIGHWAY
REVISIONS REVISED MAY, 2013 (VP)	0901	27	055	VAR
	DIST	COUNTY		SHEET NO.
	PAR	RD RVR		77

DATE: 1/4/2024
FILE: S:\Projects\612\54\02\Design\02_Clarksville_ADA\Civil\Standards\Roadway\prd13.dgn



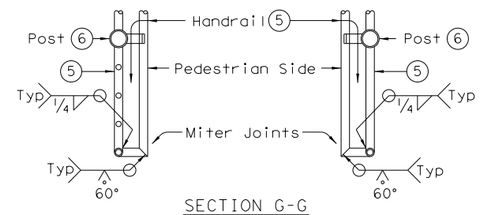
ELEVATION VIEW

(Shop Splices and Splice Joints only shown on one Type for clarity)

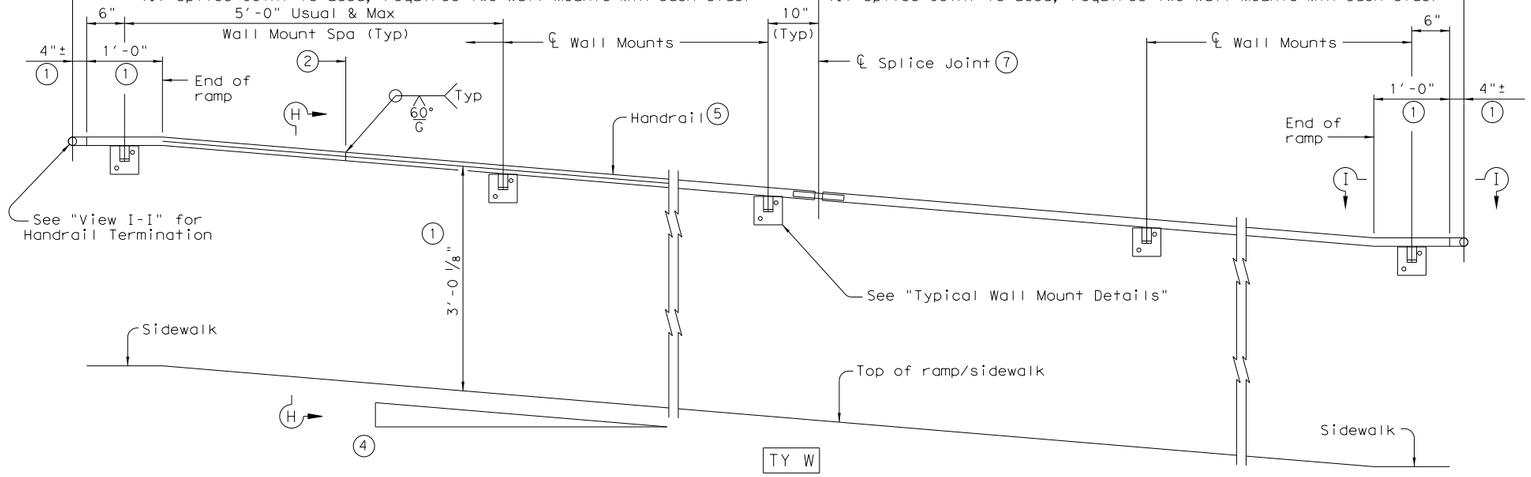


SECTION E-E
(Showing Handrail TY E)

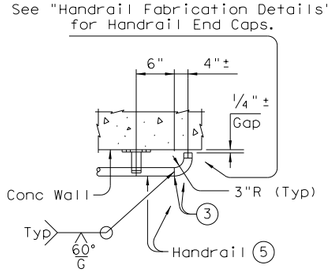
SECTION F-F
(Showing Handrail TY F)



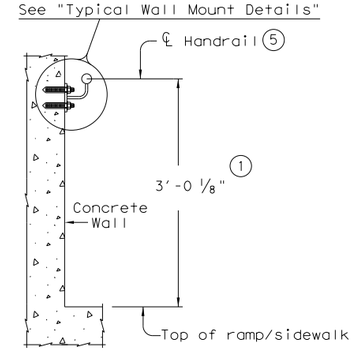
SECTION G-G
(Showing Handrail Termination)



ELEVATION VIEW



VIEW I-I
(Showing Handrail Termination)



SECTION H-H
(Showing Handrail TY W)

(1) Parallel to ground.

(2) One shop splice per panel is permitted with minimum 85 percent penetration. The weld may be square groove or single vee groove. Grind smooth.

(3) Shop splice is permitted with minimum 85 percent penetration. The weld may be square groove or single vee groove. Grind smooth.

(4) See Ramp Details located elsewhere in plans for ramp slope and dimensions. Maximum ramp slope will not exceed 8.3 percent. Level landing required for each 30" rise if grade exceeds 5 percent.

(5) 1 ½" Dia. Standard Pipe (1.900" O.D., 0.145" wall thickness). Parallel to ramp / sidewalk. Provide holes as needed in 1 ½" Dia. pipe for galvanizing drainage and venting.

(6) 2 ½" Dia. Standard Pipe (2.875" O.D., 0.203" wall thickness). See "Post Mount Detail" for crimping and trimming post to fit Dia. of top rail. Provide holes as needed in post for galvanizing drainage and venting. Plumb all posts.

(7) See "Handrail Fabrication Details" for Splice Joints.

(8) ℄ ⅝" Dia. Round Bar equal spacing at 4 ½" Max. Plumb all pickets.

(11) See "General Notes" for anchor bolt information.

Texas Department of Transportation

Design Division Standard

PEDESTRIAN HANDRAIL DETAILS

PRD-13

FILE: prd13.dgn	DN: TxDOT	CK: AM	DW: JTR	CK: CGL
©TxDOT December 2006	CONT	SECT	JOB	HIGHWAY
REVISIONS REVISED MAY, 2013 (VP)	0901	27	055	VAR
	DIST	COUNTY		SHEET NO.
	PAR	RD RVR		78

DATE: 1/4/2024
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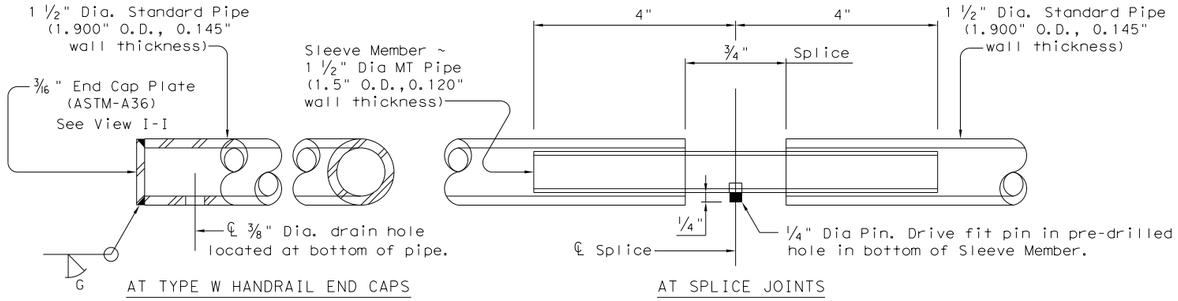
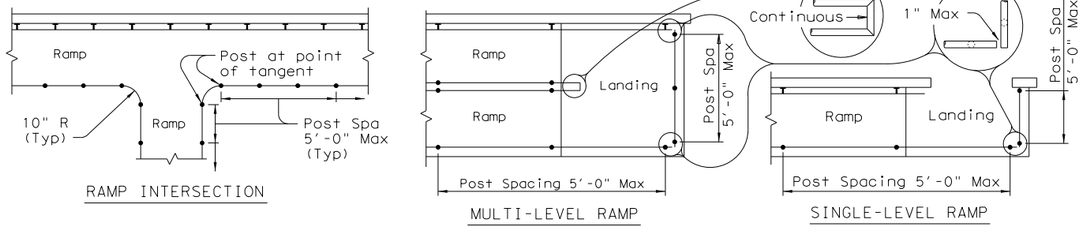
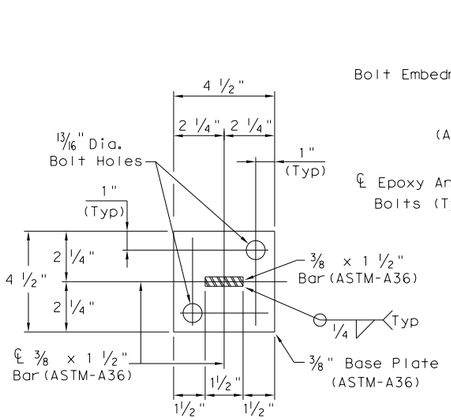
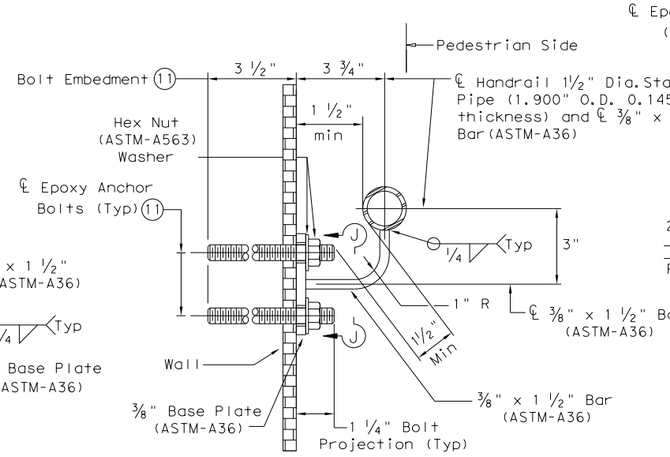


HANDRAIL FABRICATION DETAILS

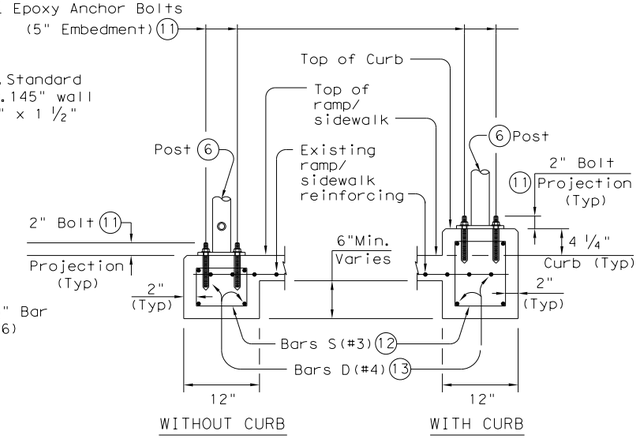


PLAN SHOWING RAIL AT RAMP CONDITIONS





TYPICAL WALL MOUNT DETAILS



SECTION AT RAIL POST FOUNDATIONS

GENERAL NOTES

Designed according to ADAAG, Texas Accessibility Standards, Uniform Building Code, and AASHTO LRFD Specifications.

Handrail anchorage details shown on this standard may require modification for select structure types. See appropriate details elsewhere in plans for these modifications.

Pipe will conform to ASTM-A53 Grade B or A500 Grade B. Steel plates and steel bars will conform to ASTM-A36. Mechanical tubing (MT) will conform to ASTM A513 Grade 1015 or higher. Galvanize all steel components except reinforcing steel unless noted otherwise.

Concrete for foundations will be in accordance with Item 531 "Sidewalks". All reinforcing steel must be Grade 60. Bar laps, where required, will be as follows: Uncoated ~ #4 = 1'-5" Epoxy coated ~ #4 = 2'-1"

When the plans require painted steel, follow the requirements for painting galvanized steel in Item 446, "Cleaning and Painting Steel". Sleeve Members will receive galvanization and only get field painted after installation unless directed otherwise by Engineer.

Epoxy Anchor bolts for wall mount and post base plate will be ⅝" Dia. ASTM A36 threaded rods with one hex nut and one hardened steel washer at each bolt. ⅝" Dia. threaded rod embedment depth for wall mounts is 3 ½" and embedment depth for post base plate is 5".

Embed threaded rods into concrete with a Type III (Class C) epoxy meeting the requirements of DMS-6100, "Epoxies and Adhesives". Mix and dispense adhesive with the manufacturer's static mixing nozzle/dual cartridge system. Core drill holes (percussion drilling not permitted).

At the contractor's option the post base plate anchor bolts may be cast with the Ramp/Sidewalk (See Cast-in-Place Anchor Bolt Options).

Optional cast-in-place anchor bolts will be ⅝" Dia ASTM A307 Grade A bolts (or A36 threaded rods with one tack welded hex nut each) with one hex nut and one hardened steel washer at each bolt. Embedment depth of cast-in-place bolt will be 8" for post base plate.

Handrails and any wall or other surface adjacent to them will be free of any sharp or abrasive elements.

Submit shop drawings to the Engineer unless otherwise noted. For curved handrail applications, fabricate the handrail to the curve if radius is less than 600 ft. Shop drawings are required when rail is fabricated to the curve.

For all handrails, erection drawings will be submitted to the Engineer for approval to ensure proper installation.

Drawings will show handrail mount locations with bolts setting, spacing, ramp slope, and/or splice joint locations, and handrail lengths with identification showing where each handrail goes on the layout.

Payment for concrete sidewalks or curb ramps will be paid for in accordance with Item 531 "Sidewalks".

Payment for all items shown is to be included in unit price bid in accordance with Item 450 "Railing" of the type specified.

All exposed edges will be rounded or chamfered to approximately ⅛" by grinding.

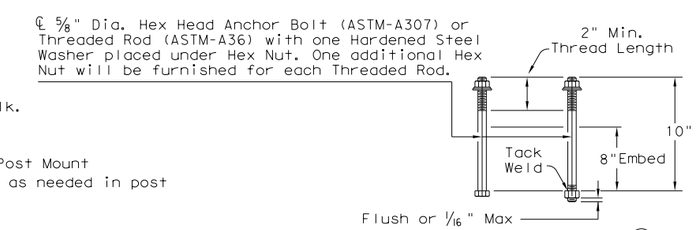
(5) 1 ½" Dia. Standard Pipe (1.900" O.D., 0.145" wall thickness). Parallel to ramp/sidewalk. Provide holes as needed in 1 ½" Dia. pipe for galvanizing drainage and venting.

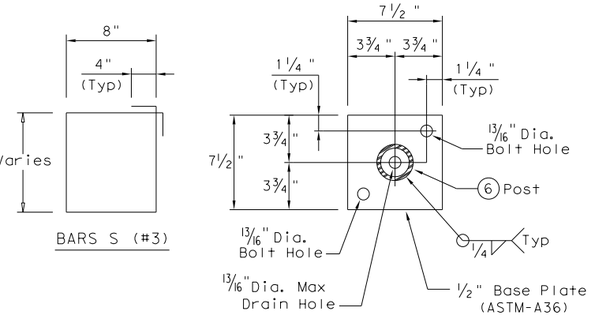
(6) 2 ½" Dia. Standard Pipe (2.875" O.D., 0.203" wall thickness). Plumb all posts. See "Post Mount Detail" for crimping and trimming post to fit the diamenter of top rail. Provide holes as needed in post for galvanizing drainage and venting.

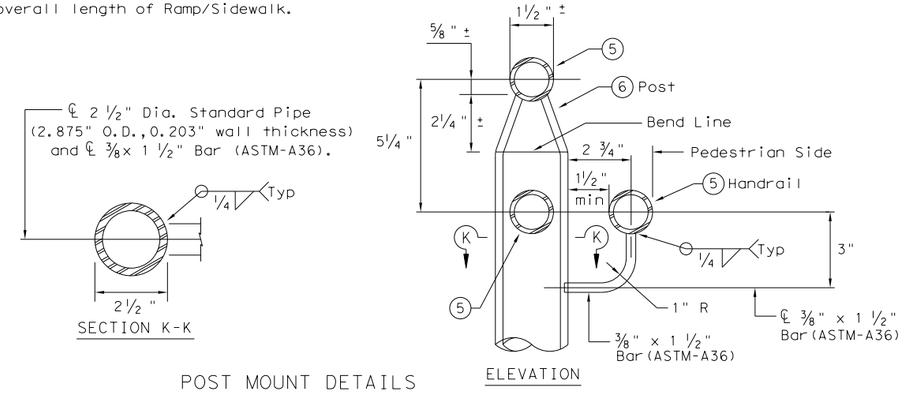
(11) See "General Notes" for anchor bolt information.

(12) Bars S(#3) spaced at 12" Max (Spaced 3" from outside edge of overall length of Ramp/Sidewalk).

(13) Provide 1 ½" end cover to Bars D(#4) from outside edge of overall length of Ramp/Sidewalk.







SHEET 3 OF 3

Texas Department of Transportation

Design Division Standard

PEDESTRIAN HANDRAIL DETAILS

PRD-13

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©TxDOT December 2006	CONT	SECT	JOB	HIGHWAY
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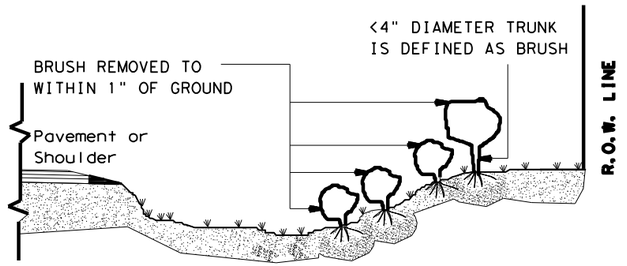
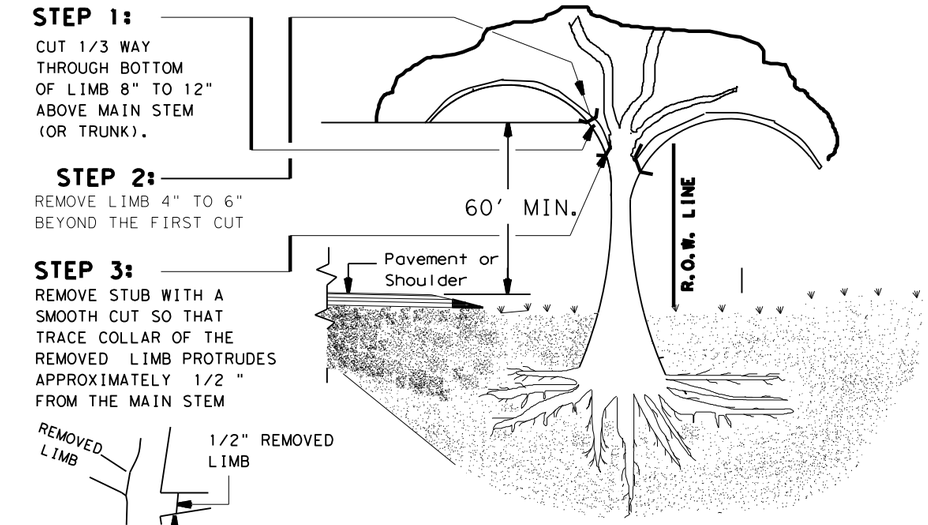
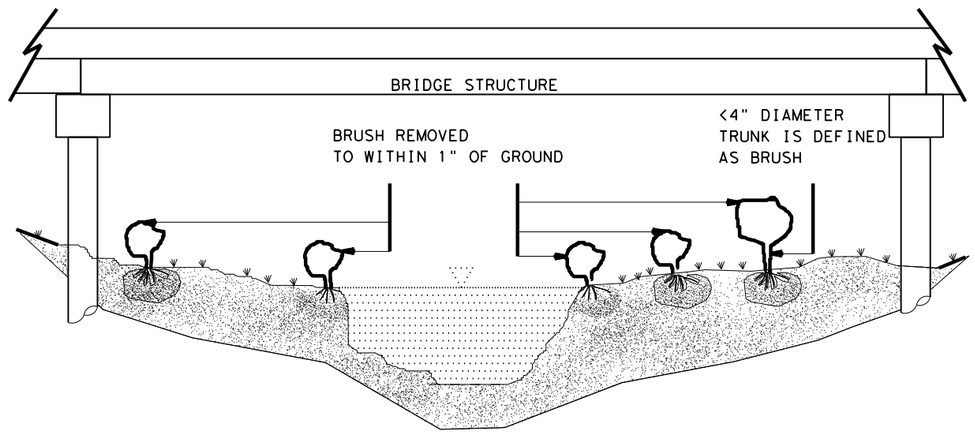
REVISED MAY, 2013 (VP)	DIST	COUNTY		SHEET NO.
	PAR	RD RVR		79



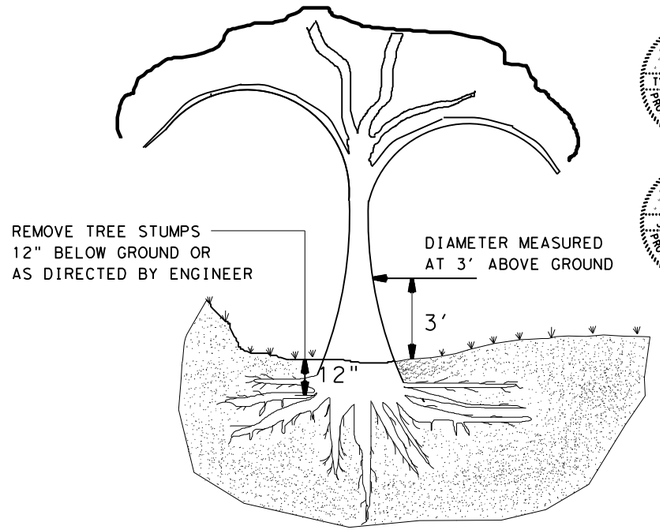
BRUSH REMOVAL



TREE TRIMMING



BRUSH REMOVAL UNDER BRIDGE AND IN CHANNEL



TREE REMOVAL

SPECIFIC LOCATION SPECIFIED IN PLANS

DESIGN

STATE OF TEXAS
TYLER PAYNE DUBE
118612
LICENSED
PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS
JOHN A. TYLER
105193
LICENSED
PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

TREE TRIMMING & BRUSH REMOVAL

SHEET 1 OF 1

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
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DIST	COUNTY		SHEET NO.
PAR	RD RVR		80

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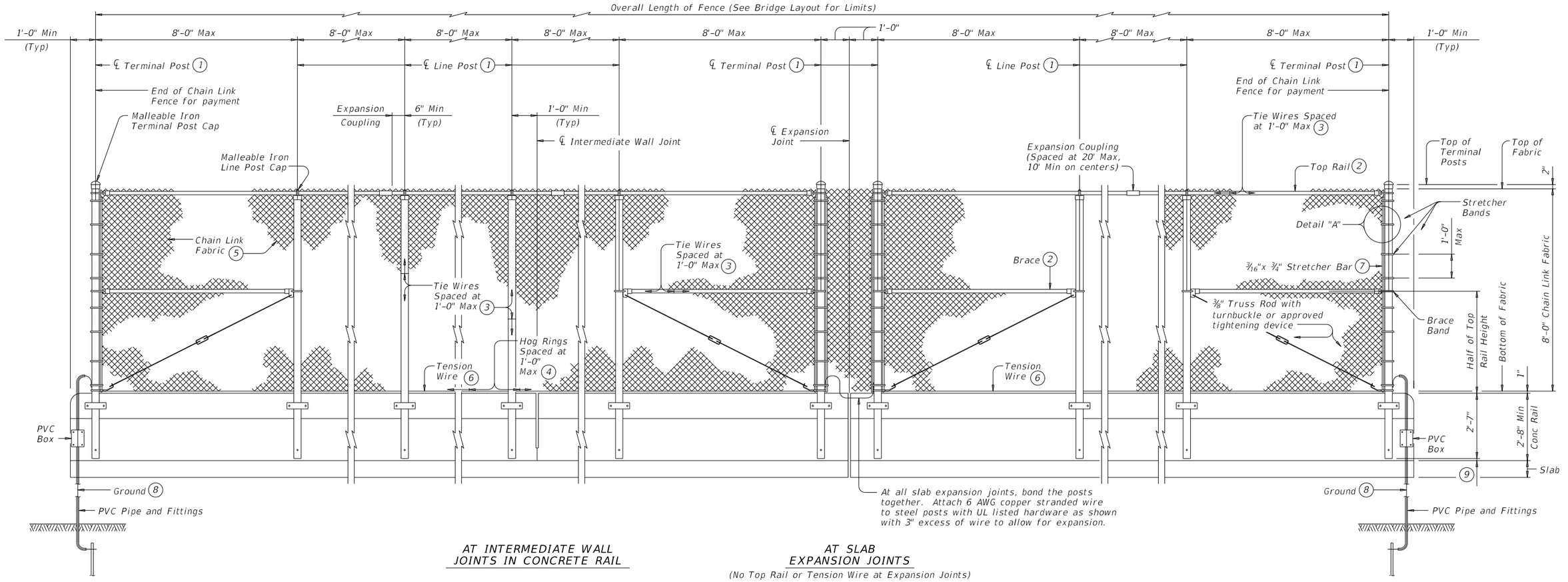
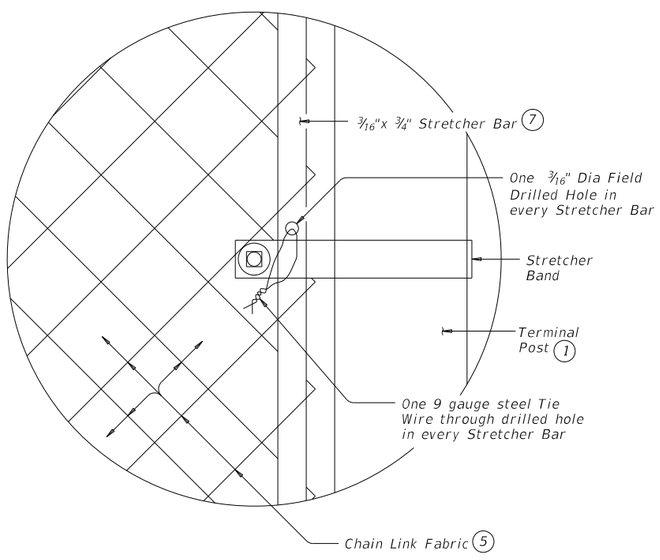


AT INTERMEDIATE WALL JOINTS IN CONCRETE RAIL

AT SLAB EXPANSION JOINTS
(No Top Rail or Tension Wire at Expansion Joints)

OUTSIDE ELEVATION OF CHAIN LINK FENCE



DETAIL "A"

(1) HSS 3.500 x 0.216 ASTM A1085 or A500 Gr B.

(2) HSS 1.660 x 0.140 ASTM A500 Gr B or A53 Gr B.

(3) 9 gauge steel Tie Wires attach chain link fabric to HSS.

(4) 9 gauge steel Hog Rings attach chain link fabric to tension wire.

(5) 9 gauge steel Chain Link Fabric, 2" Mesh, knuckle selvage top and bottom.

(6) 7 gauge steel Tension Wire.

(7) Contractor must field drill one 3/16" Dia hole in every stretcher bar and use a 9 gauge steel tie wire to tie one stretcher band and chain link fabric together. Locate drilled hole for tie wire at approximate mid-height of fence.

(8) Ground terminal post at the beginning and end of fence and down the nearest bent. Attach 6 AWG copper stranded wire to steel post with UL listed hardware and run other end of copper stranded wire to 5/8" Dia minimum copper-clad steel rod 8 ft in length. Install ground rod as per Item 550 and this sheet. The 6 AWG copper stranded wire must run through 1/2" Schedule 40 PVC pipe, fittings and PVC box attached to the back of rail.

(9) Dimension varies on rail types and superstructure type. T551, T221 and C221 Rails = 1" with no overlay, T222 Rail and SSTR Rail = 5" with no overlay, increased 2" for overlay. On bridges with significant beam camber variable length in dimension may be anticipated.

SHEET 1 OF 2

Texas Department of Transportation

Bridge Division Standard

8 FT CHAIN LINK FENCE FOR RAILROAD OVERPASS

CLF-RO

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	PAR	RD RVR		81

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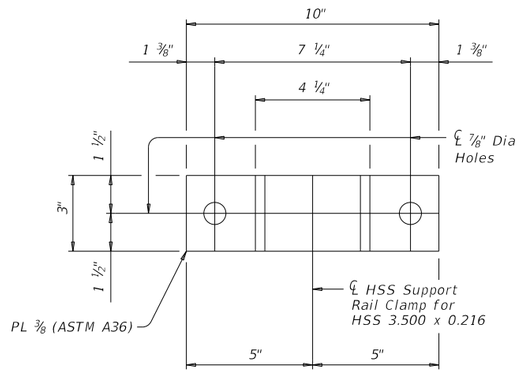
(1) HSS 3.500 x 0.216 ASTM A1085 or A500 Gr B.

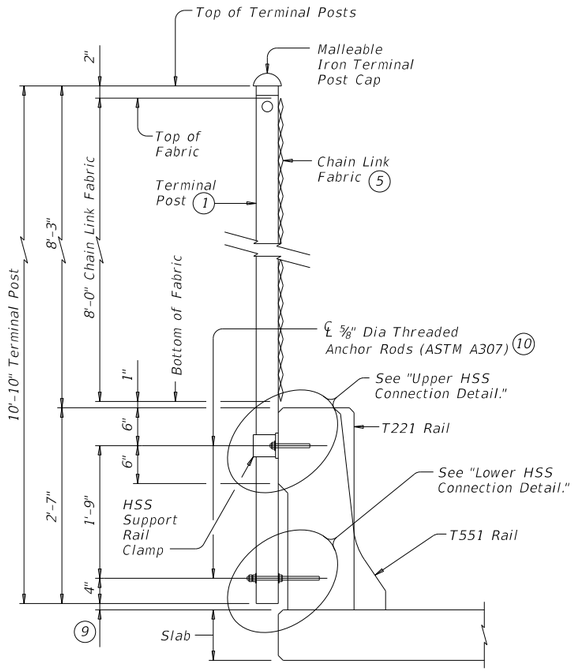
(5) 9 gauge steel Chain Link Fabric, 2" Mesh, knuckle selvage top and bottom.

(9) Dimension varies on rail types and superstructure type. T551, T221 and C221 Rails = 1" with no overlay, T222 Rail and SSTR Rail = 5" with no overlay, increased 2" for overlay. On bridges with significant beam camber variable length in dimension may be anticipated.

(10) See "Material Notes" for threaded anchor rod information.

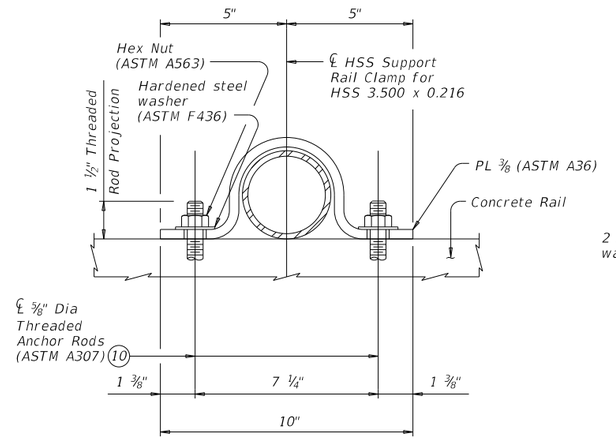


PIPE SUPPORT
RAIL CLAMP ELEVATION



CHAIN LINK FENCE SECTION

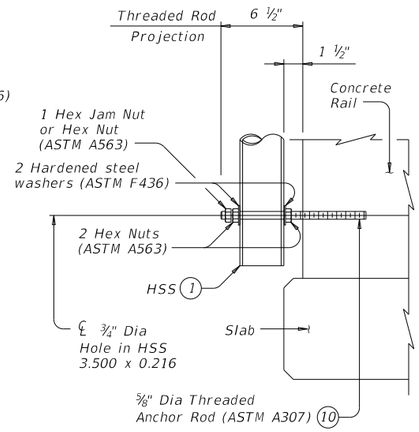
(Showing Terminal Post on a T551 or T221 Rail, Line Post, T222 Rail and SSTR Rail similar.)



HSS SUPPORT
RAIL CLAMP ASSEMBLY

UPPER HSS
CONNECTION DETAIL

(Dimensions may vary according to Manufacturer's specifications.)



LOWER HSS
CONNECTION DETAIL

(Showing Terminal Post or Line Post)

CONSTRUCTION NOTES:

Chain link fence post must be plumb unless otherwise approved.

Test adhesive anchors in accordance with Item 450.3.3, "Tests". Test 3 anchors per 100 anchors installed. Perform corrective measures to provide adequate capacity if any of the tests do not meet the required test load. Repair damage from testing as directed.

MATERIAL NOTES:

All Chain Link Fence materials must conform to standard specifications, Item "Chain Link Fence" unless shown otherwise.

Galvanize all steel components unless noted otherwise.

Provide ASTM A1085, A500 Gr B for HSS 3.500 x 0.216. Provide ASTM A500 Gr B or A53 Gr B for HSS 1.660 x 0.140.

Provide ASTM A36 for steel plates.

Anchor bolts must be 5/8" Dia ASTM A307 Gr A fully threaded rods. Hex nuts must conform to ASTM A563 requirements. Embed fully threaded rods into parapet wall with a Type III, Class C, D, E, or F anchor adhesive. Minimum adhesive anchor embedment depth is 5". Anchor adhesive chosen must be able to achieve a factored bond strength in tension of 6 kips each anchor (edge distance and anchor spacing must be accounted for). Submit signed and sealed calculations or the manufacturer's published literature showing the proposed anchor adhesive's ability to develop this load to the Engineer for approval prior to use. Anchor installation, including hole size, drilling, and clean out, must be in accordance with Item 450, "Railing".

GENERAL NOTES:

This sheet must be used with a concrete Traffic or Combination Rail. Rails that can be used with this sheet are T551, SSTR, T221, T222, and C221 Rails. Chain link fence details shown on this standard are adequate for all speeds. If used, optional side slot drains shown on rail standards must not be any closer than 6" from chain link post to edge of side slot drains.

This railing cannot be used on bridges with expansion joints providing more than 5" movement.

Payment for materials, fabrication, and installation of this assembly are to be included in unit price bid in accordance with Item 450, "Rail (CLF-RO)."

Approximate weight of fence = 20 plf.

Texas Department of Transportation

Bridge Division Standard

8 FT CHAIN LINK FENCE FOR RAILROAD OVERPASS

CLF-RO

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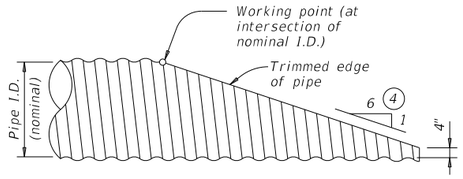
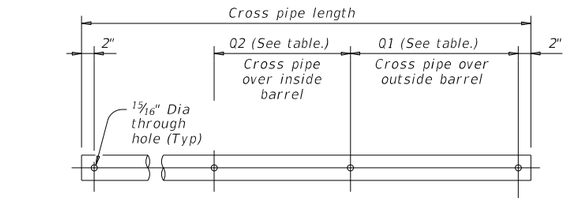


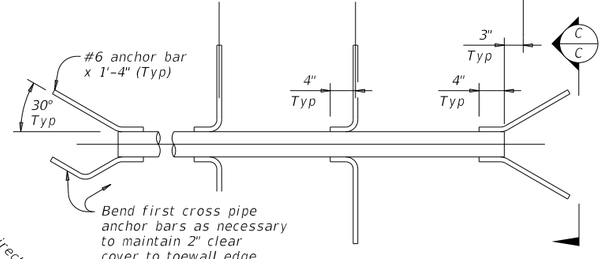
NOTE: All cross pipes, calculations, and dimensions are based on the pipe culverts mitered as shown in this detail. Alternate styles of mitered ends will require that appropriate adjustments be made to the values presented on this standard.

SIDE ELEVATION OF TYPICAL PIPE CULVERT MITER

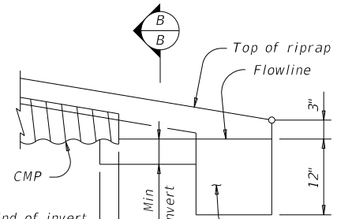
(Showing corrugated metal pipe (CMP) culvert Details at reinforced concrete pipe (RCP) culvert are similar.)



PIPE WITH BOLTED ANCHOR

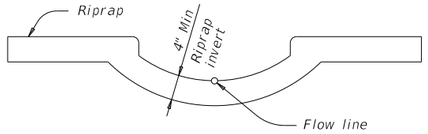


PIPE WITH ANCHOR BARS



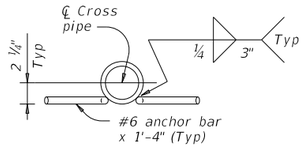
DETAIL "A"

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



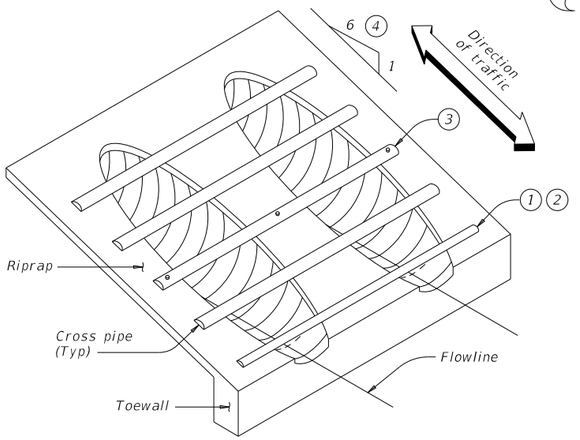
SECTION B-B

(Cross pipes not shown for clarity.)

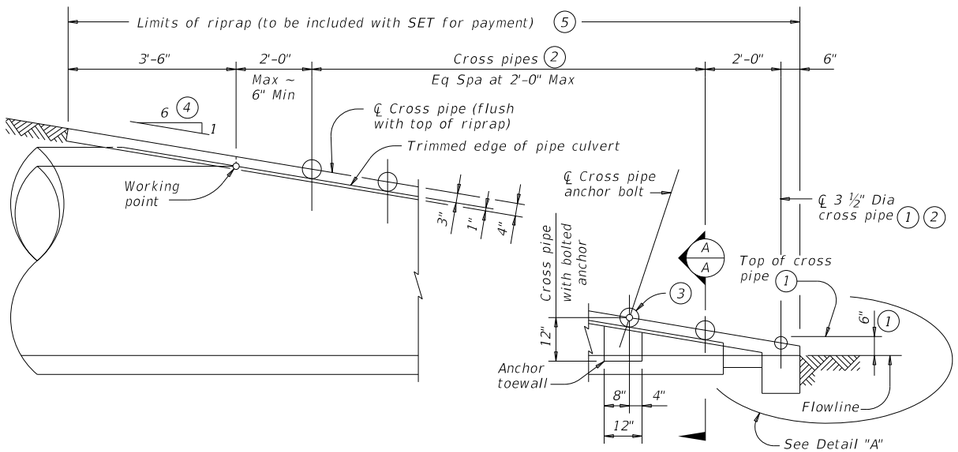


SECTION C-C

CROSS PIPE DETAILS

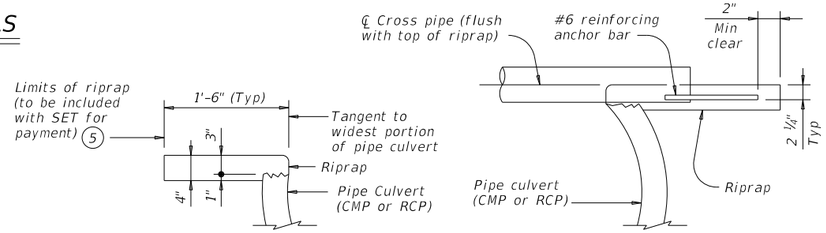


ISOMETRIC VIEW OF TYPICAL INSTALLATION



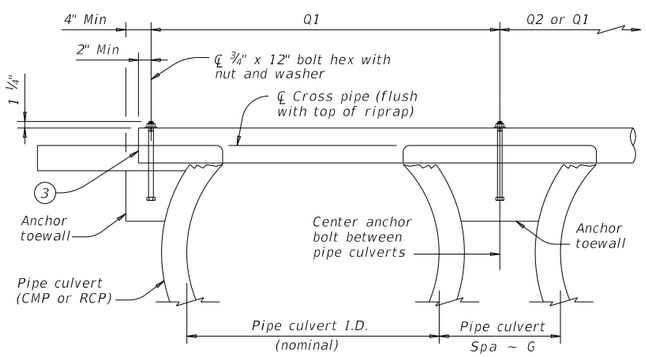
SIDE ELEVATION OF CAST-IN-PLACE CONCRETE

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



SHOWING TYPICAL PIPE CULVERT AND RIPRAP

SHOWING CROSS PIPE WITH ANCHOR BAR



SHOWING CROSS PIPE WITH BOLTED ANCHOR

SECTION A-A

CROSS PIPE LENGTHS, REQUIRED PIPE SIZES, AND RIPRAP QUANTITIES (2)

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

(1) The proper installation of the first cross pipe is critical for vehicle safety. Place the top of the first cross pipe no more than 6" above the flow line.

(2) Provide cross pipes, except the first bottom pipe, of the size shown in the table. Provide a 3 1#2" standard pipe (4" O.D.) for the first bottom pipe.

(3) Install the third cross pipe from the bottom of the culvert using a bolted connection. Ensure that riprap concrete does not flow into the cross pipe so as to permit disassembly of the bolted connection to allow cleanout access. At the Contractor's option, install all other cross pipes using the bolted connection details.

(4) Match cross slope as shown elsewhere in the plans. Cross slope of 6:1 or flatter is required for vehicle safety.

(5) Riprap placed beyond the limits shown will be paid for as concrete riprap in accordance with Item 432, "Riprap."

(6) Quantities shown are for one end of one reinforced concrete pipe (RCP) culvert. For multiple pipe culverts or for corrugated metal pipe (CMP) culverts, quantities will need to be adjusted. Riprap quantities are for contractor's information only.

MATERIAL NOTES:

Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.

Provide cross pipes that meet the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 (Gr B), or API 5LX52.

Provide ASTM A307 bolts and nuts.

Galvanize all steel components, except concrete reinforcing, after fabrication. Repair galvanizing damaged during transport or construction in accordance with the specifications.

GENERAL NOTES:

Cross pipes are designed for a traversing load of 10,000 pounds at yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981.

Safety end treatments (SET) shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the cross pipes.

Construct concrete riprap and all necessary inverts in accordance with the requirements of Item 432, "Riprap."

Payment for riprap and toewall is included in the Price Bid for each Safety End Treatment.

Texas Department of Transportation

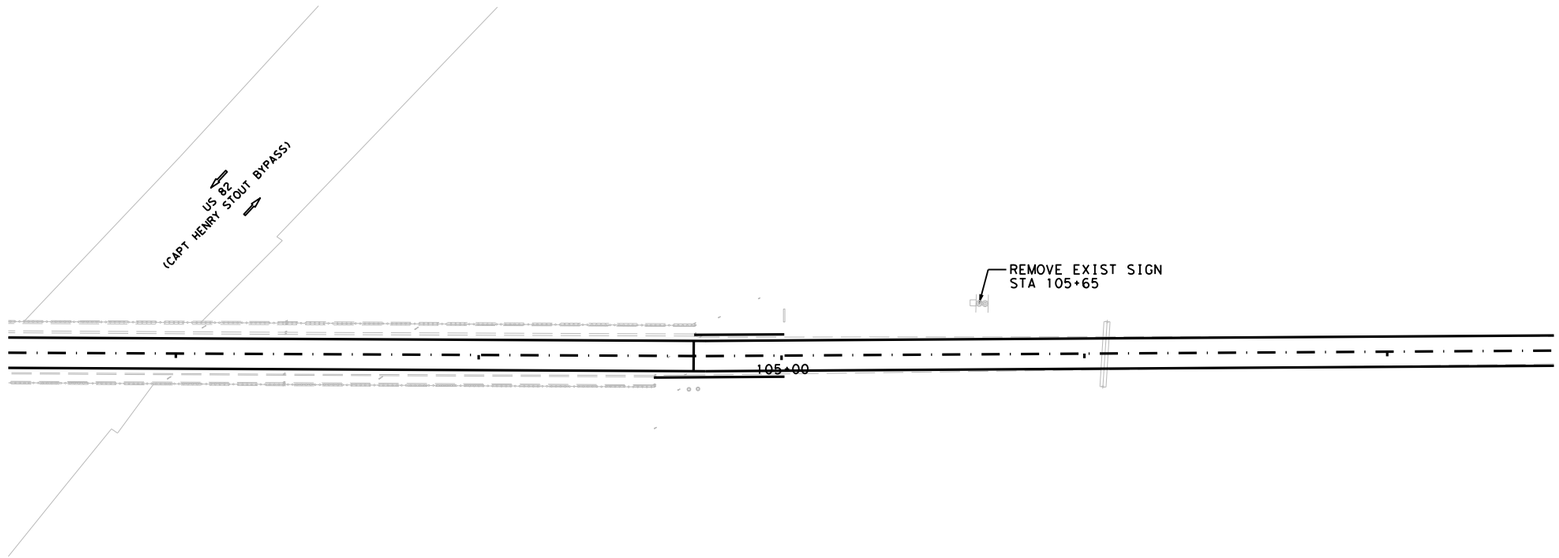
Bridge Division Standard

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

SETP-PD

FILE:	DN: GAF	CK: CAT	DW: JRP	CK: GAF
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	0901	27	055	VAR
	DIST	COUNTY		SHEET NO.
	PAR	RD RVR		83

ITEM	DESCRIPTION	UNIT	QTY
0644-6076	REMOVE SM RD SN SUP&AM	EA	1



LEGEND

A	6" SOLID YELLOW STRIPE
B	6" SOLID DOUBLE YELLOW STRIPE
C	24" SOLID WHITE STRIPE
D	WORD
E	SYMBOL
F	ARROW
X-X	SMALL SIGN DESIGNATION
	PROPOSED SIGN
	EXISTING SIGN

DESIGN

STATE OF TEXAS
TYLER PAYNE DUBE
118612
LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS
JOHN A. TYLER
105193
LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIGNING AND PAVEMENT MARKING PLAN

SHEET 1 OF 7

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	84

Plotted on: 1/4/2024
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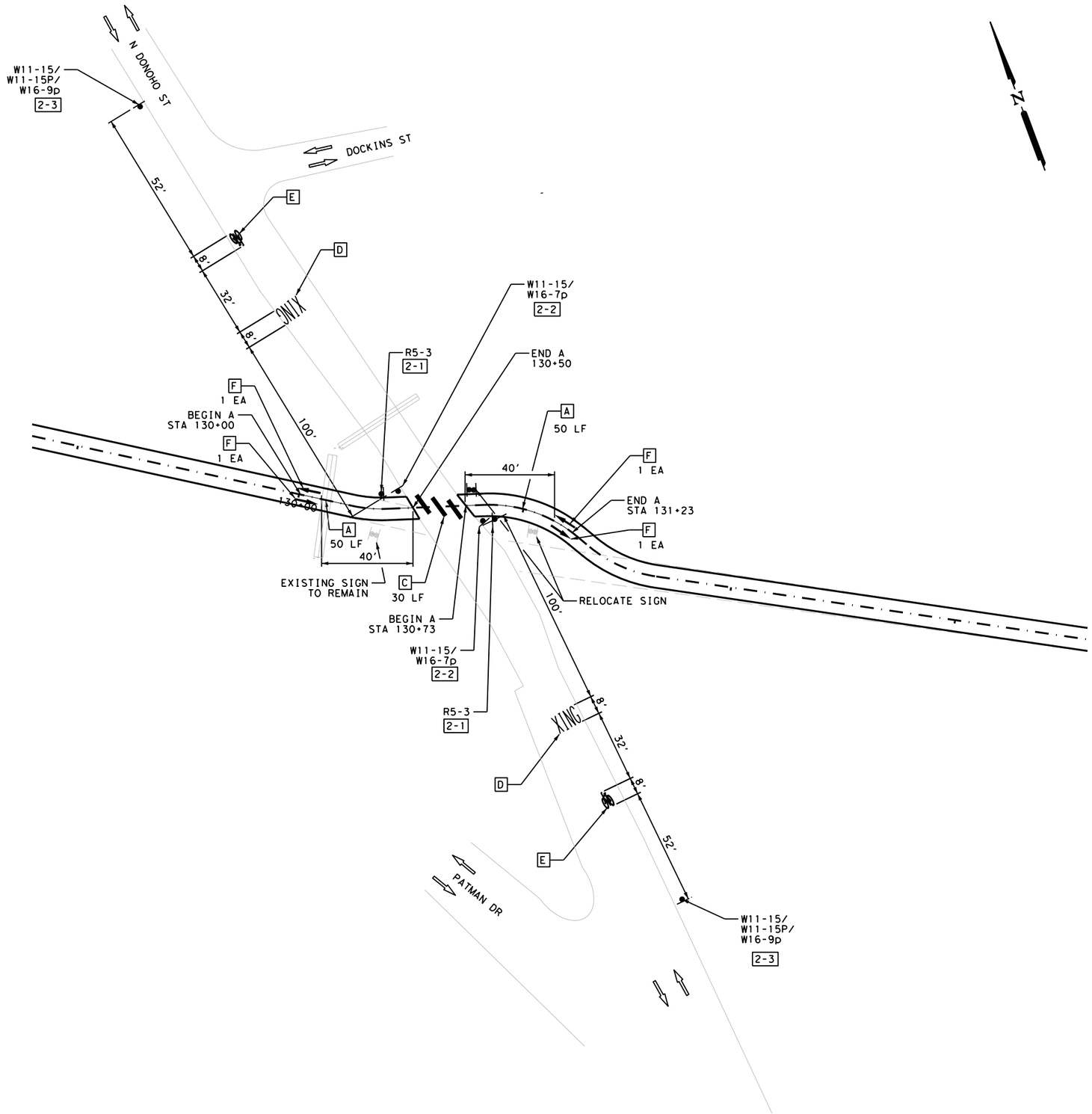

ITEM	DESCRIPTION	UNIT	QTY
0644-6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	6
0644-6068	RELOCATE SM RD SN SUP&AM TY 10BWG	EA	1
0666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	30
0666-6210	REFL PAV MRK TY II (Y) 6" (SLD)	LF	100
0666-6225	PAVEMENT SEALER 6"	LF	100
0666-6230	PAVEMENT SEALER 24"	LF	30
0666-6231	PAVEMENT SEALER (ARROW)	EA	4
0666-6232	PAVEMENT SEALER (WORD)	EA	2
0666-6245	PAVEMENT SEALER (BIKE SYMBOL)	EA	2
0668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA	4
0668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA	2
0668-6096	PREFAB PAV MRK TY C (W)(BIKE SYMBOL)	EA	2
0678-6002	PAV SURF PREP FOR MRK (6")	LF	100
0678-6008	PAV SURF PREP FOR MRK (24")	LF	30
0678-6009	PAV SURF PREP FOR MRK (ARROW)	EA	4
0678-6016	PAV SURF PREP FOR MRK (WORD)	EA	2
0678-6028	PAV SURF PREP FOR MRK (BIKE SYMBOL)	EA	2

LEGEND

A	6" SOLID YELLOW STRIPE
B	6" SOLID DOUBLE YELLOW STRIPE
C	24" SOLID WHITE STRIPE
D	WORD
E	SYMBOL
F	ARROW
X-X	SMALL SIGN DESIGNATION
	PROPOSED SIGN
	EXISTING SIGN

DESIGN

STATE OF TEXAS · TYLER PAYNE DUBE · 118612 · LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS · JOHN A. TYLER · 105193 · LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 25 50 75

SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

Texas Department of Transportation
©2024

NORTHEAST TEXAS TRAIL

SIGNING AND PAVEMENT MARKING PLAN

SHEET 2 OF 7

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	85

Plotted on: 1/4/2024

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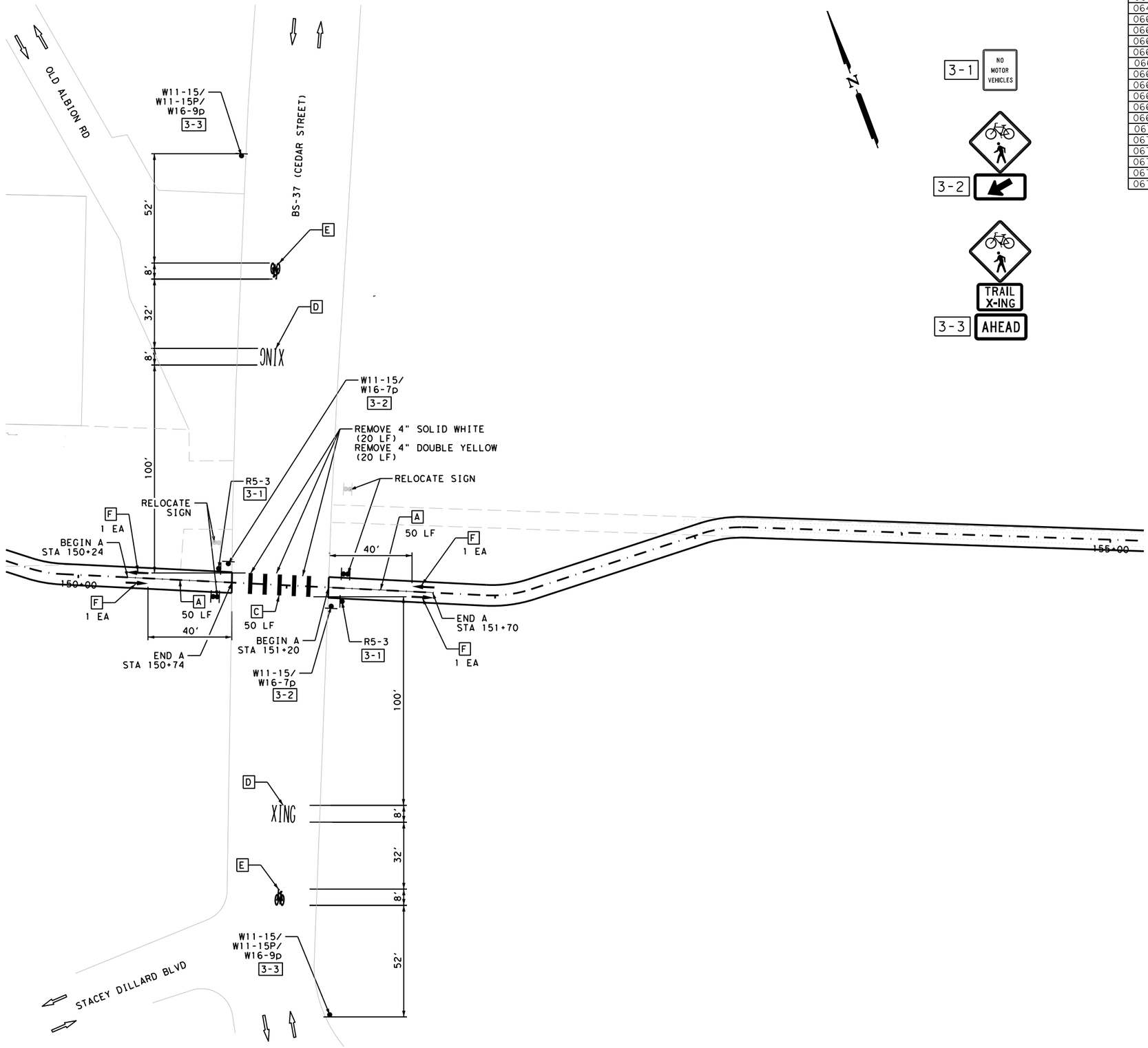

ITEM	DESCRIPTION	UNIT	QTY
0644-6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	6
0644-6068	RELOCATE SM RD SN SUP&AM TY 10BWG	EA	2
0666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	50
0666-6210	REFL PAV MRK TY II (Y) 6" (SLD)	LF	100
0666-6225	PAVEMENT SEALER 6"	LF	100
0666-6230	PAVEMENT SEALER 24"	LF	50
0666-6231	PAVEMENT SEALER (ARROW)	EA	4
0666-6232	PAVEMENT SEALER (WORD)	EA	2
0666-6245	PAVEMENT SEALER (BIKE SYMBOL)	EA	2
0668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA	4
0668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA	2
0668-6096	PREFAB PAV MRK TY C (W)(BIKE SYMBOL)	EA	2
0677-6001	ELIM EXT PAV MRK & MRKS (4")	LF	40
0678-6002	PAV SURF PREP FOR MRK (6")	LF	100
0678-6008	PAV SURF PREP FOR MRK (24")	LF	50
0678-6009	PAV SURF PREP FOR MRK (ARROW)	EA	4
0678-6016	PAV SURF PREP FOR MRK (WORD)	EA	2
0678-6028	PAV SURF PREP FOR MRK (BIKE SYMBOL)	EA	2

LEGEND

- A — 6" SOLID YELLOW STRIPE
- B — 6" SOLID DOUBLE YELLOW STRIPE
- C — 24" SOLID WHITE STRIPE
- D — WORD
- E — SYMBOL
- F — ARROW
- X-X — SMALL SIGN DESIGNATION
- PROPOSED SIGN
- EXISTING SIGN

DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 25 50 75

SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

Texas Department of Transportation

NORTHEAST TEXAS TRAIL

SIGNING AND PAVEMENT MARKING PLAN

SHEET 3 OF 7

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	86

Plotted on: 1/4/2024

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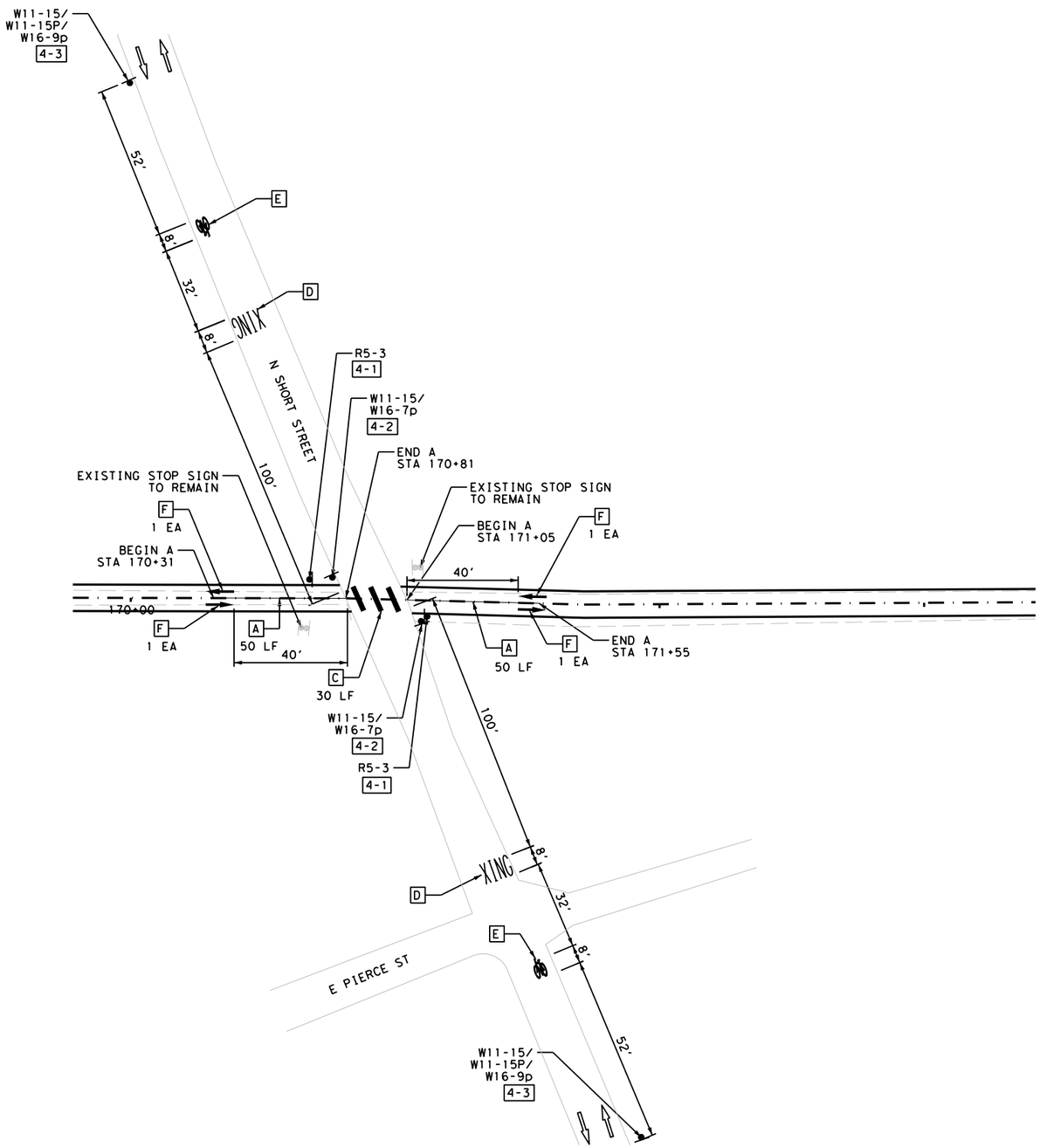

ITEM	DESCRIPTION	UNIT	QTY
0644-6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	6
0666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	30
0666-6210	REFL PAV MRK TY II (Y) 6" (SLD)	LF	100
0666-6225	PAVEMENT SEALER 6"	LF	100
0666-6230	PAVEMENT SEALER 24"	LF	30
0666-6231	PAVEMENT SEALER (ARROW)	EA	4
0666-6232	PAVEMENT SEALER (WORD)	EA	2
0666-6245	PAVEMENT SEALER (BIKE SYMBOL)	EA	2
0668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA	4
0668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA	2
0668-6096	PREFAB PAV MRK TY C (W)(BIKE SYMBOL)	EA	2
0678-6002	PAV SURF PREP FOR MRK (6")	LF	100
0678-6008	PAV SURF PREP FOR MRK (24")	LF	30
0678-6009	PAV SURF PREP FOR MRK (ARROW)	EA	4
0678-6016	PAV SURF PREP FOR MRK (WORD)	EA	2
0678-6028	PAV SURF PREP FOR MRK (BIKE SYMBOL)	EA	2

LEGEND

- [A] 6" SOLID YELLOW STRIPE
- [B] 6" SOLID DOUBLE YELLOW STRIPE
- [C] 24" SOLID WHITE STRIPE
- [D] WORD
- [E] SYMBOL
- [F] ARROW
- [X-X] SMALL SIGN DESIGNATION
- PROPOSED SIGN
- EXISTING SIGN

DESIGN

STATE OF TEXAS
TYLER PAYNE DUBE
118612
LICENSED
PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS
JOHN A. TYLER
105193
LICENSED
PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

Texas Department of Transportation

NORTHEAST TEXAS TRAIL

SIGNING AND PAVEMENT MARKING PLAN

SHEET 4 OF 7

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	87

Plotted on: 1/4/2024

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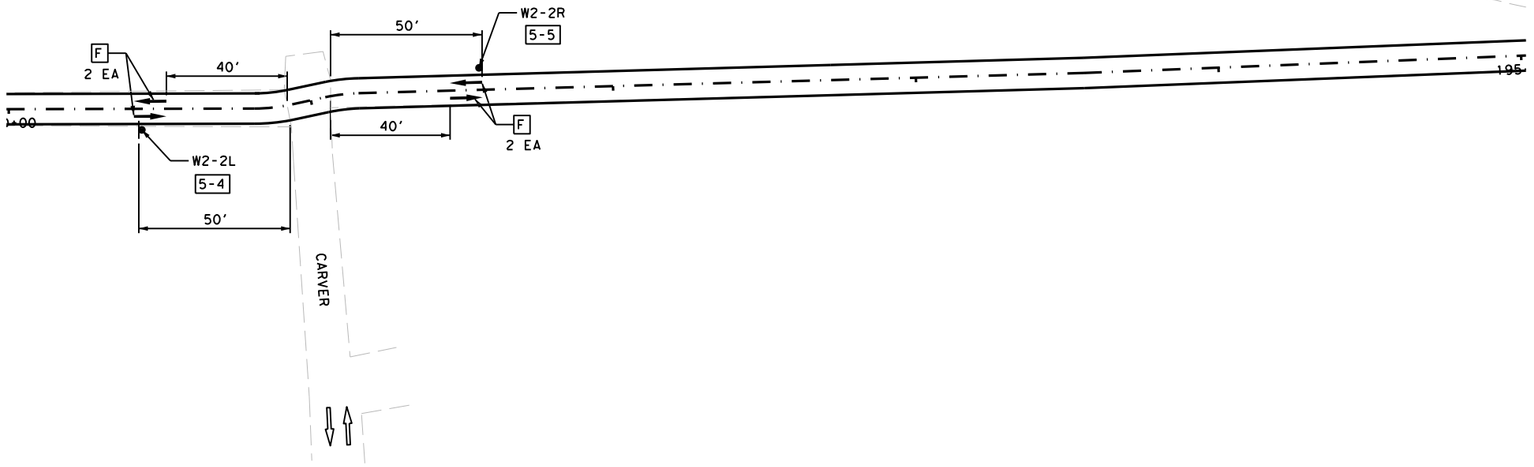
ITEM	DESCRIPTION	UNIT	QTY
0644-6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	2
0666-6231	PAVEMENT SEALER (ARROW)	EA	4
0668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA	4
0678-6009	PAV SURF PREP FOR MRK (ARROW)	EA	4



LEGEND

A	6" SOLID YELLOW STRIPE
B	6" SOLID DOUBLE YELLOW STRIPE
C	24" SOLID WHITE STRIPE
D	WORD
E	SYMBOL
F	ARROW
X-X	SMALL SIGN DESIGNATION
	PROPOSED SIGN
	EXISTING SIGN

DESIGN

STATE OF TEXAS · TYLER PAYNE DUBE · 118612 · LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS · JOHN A. TYLER · 105193 · LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 25 50 75

SCALE: 1" = 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

NORTHEAST TEXAS TRAIL

SIGNING AND PAVEMENT MARKING PLAN

SHEET 5 OF 7

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	88

Plotted on: 1/4/2024

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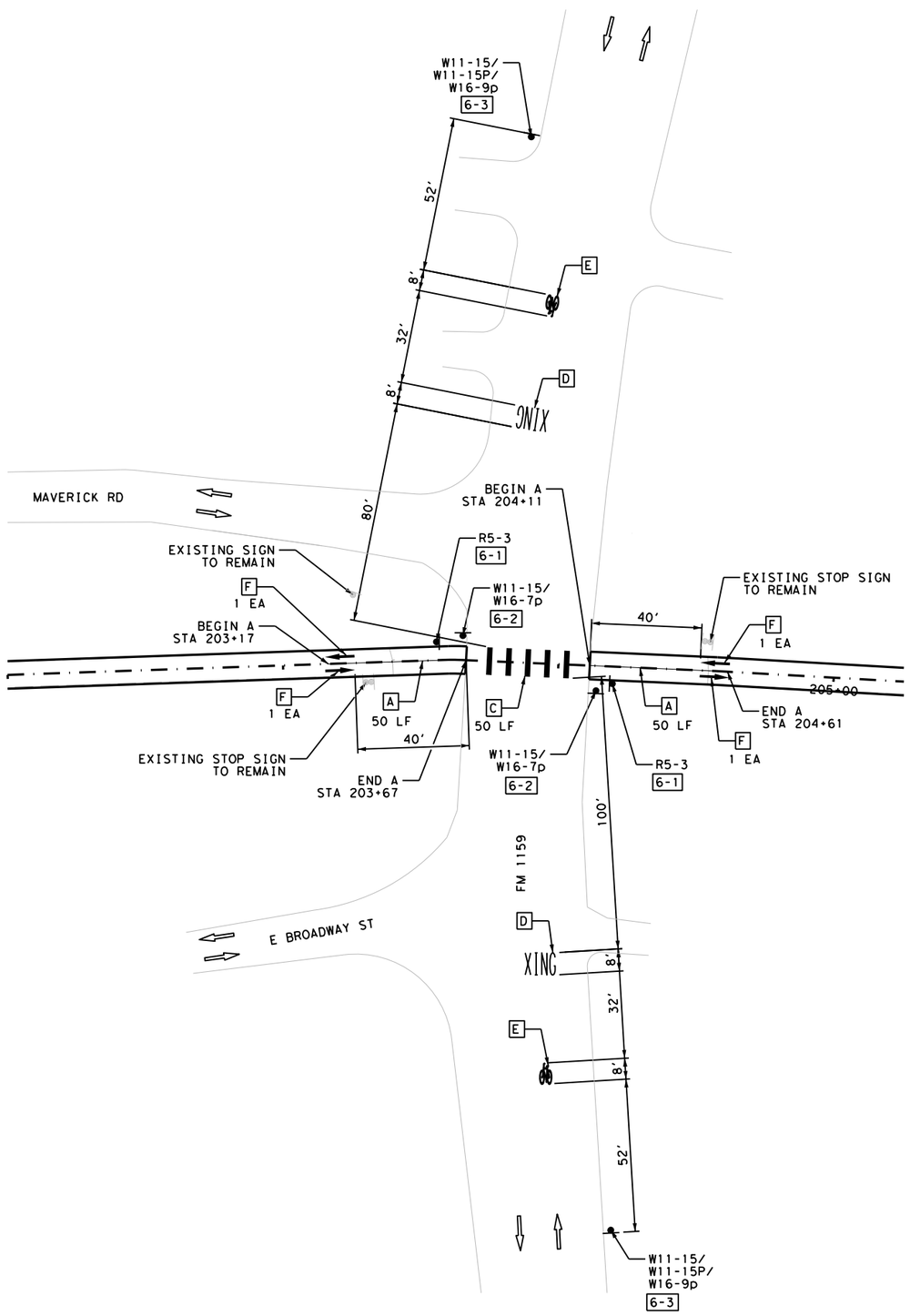


ITEM	DESCRIPTION	UNIT	QTY
0644-6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	6
0666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	50
0666-6210	REFL PAV MRK TY II (Y) 6" (SLD)	LF	100
0666-6225	PAVEMENT SEALER 6"	LF	100
0666-6230	PAVEMENT SEALER 24"	LF	50
0666-6231	PAVEMENT SEALER (ARROW)	EA	4
0666-6232	PAVEMENT SEALER (WORD)	EA	2
0666-6245	PAVEMENT SEALER (BIKE SYMBOL)	EA	2
0668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA	4
0668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA	2
0668-6096	PREFAB PAV MRK TY C (W)(BIKE SYMBOL)	EA	2
0678-6002	PAV SURF PREP FOR MRK (6")	LF	100
0678-6008	PAV SURF PREP FOR MRK (24")	LF	50
0678-6009	PAV SURF PREP FOR MRK (ARROW)	EA	4
0678-6016	PAV SURF PREP FOR MRK (WORD)	EA	2
0678-6028	PAV SURF PREP FOR MRK (BIKE SYMBOL)	EA	2

LEGEND

A	6" SOLID YELLOW STRIPE
B	6" SOLID DOUBLE YELLOW STRIPE
C	24" SOLID WHITE STRIPE
D	WORD
E	SYMBOL
F	ARROW
X-X	SMALL SIGN DESIGNATION
	PROPOSED SIGN
	EXISTING SIGN

DESIGN

STATE OF TEXAS · TYLER PAYNE DUBE · 118612 · LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS · JOHN A. TYLER · 105193 · LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 25 50 75

SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

Texas Department of Transportation

NORTHEAST TEXAS TRAIL

SIGNING AND PAVEMENT MARKING PLAN

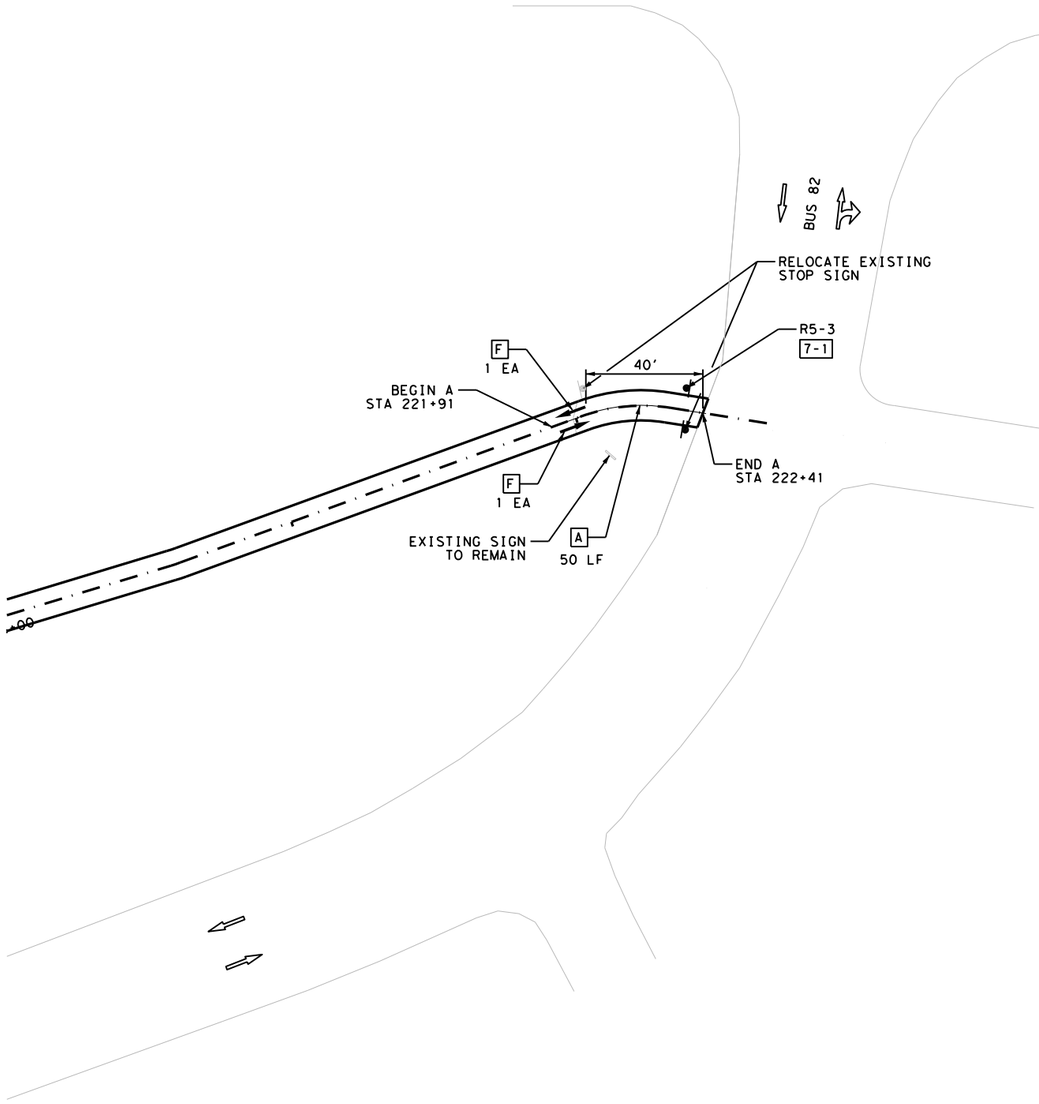
SHEET 6 OF 7

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	PAR	RD RVR	0901	27	055	89

ITEM	DESCRIPTION	UNIT	QTY
0644-6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	1
0644-6068	RELOCATE SM RD SN SUP&AM TY 10BWG	EA	1
0666-6210	REFL PAV MRK TY II (Y) 6" (SLD)	LF	50
0666-6225	PAVEMENT SEALER 6"	LF	50
0666-6231	PAVEMENT SEALER (ARROW)	EA	2
0668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA	2
0678-6009	PAV SURF PREP FOR MRK (ARROW)	EA	2

7-1 NO MOTOR VEHICLES

N



LEGEND

- A — 6" SOLID YELLOW STRIPE
- B — 6" SOLID DOUBLE YELLOW STRIPE
- C — 24" SOLID WHITE STRIPE
- D — WORD
- E — SYMBOL
- F — ARROW
- X-X — SMALL SIGN DESIGNATION
- PROPOSED SIGN
- EXISTING SIGN

DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

0 25 50 75

SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

Texas Department of Transportation

NORTHEAST TEXAS TRAIL

SIGNING AND PAVEMENT MARKING PLAN

SHEET 7 OF 7

DGN:	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
CHK DGN:	6	TEXAS				VAR
DW:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DW:	PAR	RD RVR	0901	27	055	90

Plotted on: 1/4/2024

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REFLECTOR UNIT SIZES FOR DELINEATORS AND OBJECT MARKERS

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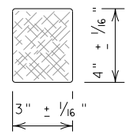
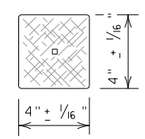
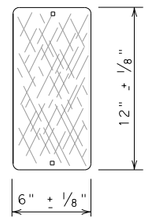
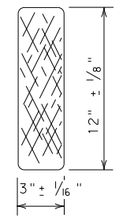
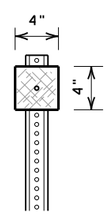
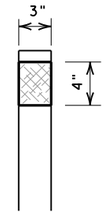
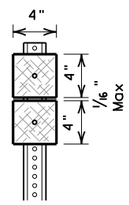
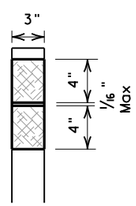
DEVICE				
SHEETING	Yellow, White or Red Type B or C reflective sheeting			
NOTE	1. Size 1 and 4 - Direct applied reflective sheeting for use on flexible post (flx). 2. Size 2 and 3 - For use on wing channel (wc) post only. Use approved metal, plastic or fiberglass backplate with 17/64" mounting holes.			

DELINEATORS

	SINGLE		DOUBLE	
DEVICE				
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SHEETING	Yellow, White or Red Type B or C Reflective Sheeting			
POST TYPE	WC	YFLX, WFLX	WC	YFLX, WFLX
MOUNT TYPE	GND	GND, SRF	GND	GND, SRF

D & OM DESCRIPTIVE CODES

INSTL DEL ASSM (D-XX)SZ X (XXXX)XXX(XX)

NUMBER OF REFLECTORS
- S = Single
- D = Double

COLOR OF REFLECTORS
- W = White
- Y = Yellow
- R = Red

REFLECTOR UNIT SIZE
- 1 or 2

TYPE OF POST OR DELINEATOR
- WC = Wing Channel Post
- YFLX = Yellow Flexible Post
- WFLX = White Flexible Post
- BRF = Barrier Reflector

TYPE OF MOUNT
- GND = Embedded (drivable or set in concrete)
- CTB = Concrete Barrier Mount
- GF1 or GF2 = Guard Fence Attachment
- SRF = Surface Mount

DIRECTION
- If Required
- BI = Bi-Directional
- BR = Bi-Directional with red on back

INSTL OM ASSM (OM-XX) (XXXX)XXX(XX)

TYPE OF OBJECT MARKER
- 1, 2, 3, or 4

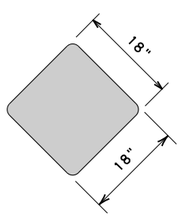
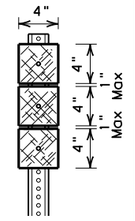
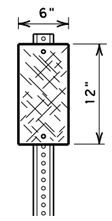
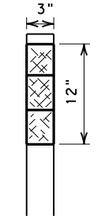
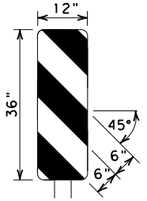
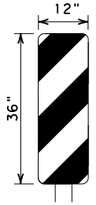
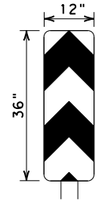
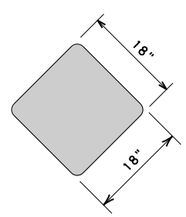
NUMBER OF REFLECTORS OR DIRECTION
- X = 3-Size 2 reflector units (Type 2 only)
- Y = 1-Size 3 reflector unit (Type 2 only)
- Z = 3-Size 1 or 1-Size 4 reflector unit(s)(Type 2 only)
- L = Left Side (Type 3 Object Marker only)
- R = Right Side (Type 3 Object Marker only)
- C = Center (Type 3 Object Marker only)

TYPE OF POST
- WC = Wing Channel Post
- WFLX = White Flexible Post
- TWT = Thin Walled Tubing

TYPE OF MOUNT
- GND = Embedded (drivable)
- SRF = Surface Mount
- WAS = Wedge Anchor Steel
- WAP = Wedge Anchor Plastic

DIRECTION
- If Required
- BI = Bi-Directional

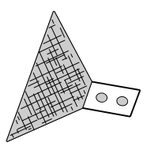
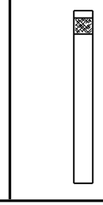
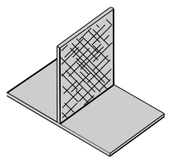
OBJECT MARKERS

	Type 1 (OM-1)	Type 2 (OM-2)			Type 3 (OM-3)			Type 4 (OM-4)
	OM-1	OM-2X	OM-2Y	OM-2Z	OM-3L	OM-3R	OM-3C	OM-4
DEVICE								
		3-Size 2 reflector units	1-Size 3 reflector unit	3-Size 1 reflector units or 1-Size 4 reflector unit				
SHEETING	Yellow-Type B_{FL} or C_{FL} Sheeting	Yellow - Type B or C Sheeting			Alternating acrylic black and retroflective yellow - Type B_{FL} or C_{FL} Sheeting			Red -Type B_{FL} or C_{FL} Sheeting
POST TYPE	TWT	WC	WC	WFLX	TWT			TWT
MOUNT TYPE	WAS, WAP	GND	GND	GND, SRF	WAS, WAP			WAS, WAP

DEPARTMENTAL MATERIAL SPECIFICATIONS

FLEXIBLE DELINEATOR & OBJECT MARKER POSTS (EMBEDDED & SURFACE MOUNT TYPES)	DMS-4400
SIGN FACE MATERIALS	DMS-8300
DELINEATORS, OBJECT MARKERS AND BARRIER REFLECTORS	DMS-8600

BARRIER REFLECTORS (BRF)

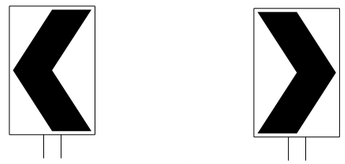
	GF1	GF2	CTB
DEVICE			

1. Barrier reflectors shall meet the requirements of DMS 8600.
2. Approved Barrier Reflectors are listed on the "Barrier Reflectors" Material Producer List at: www.txdot.gov.

SHEETING: Yellow, White, Red

NOTE: 1. Reflective sheeting shall have a minimum dimension of 3 inches and minimum surface area of 9 square inches.

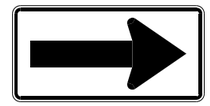
CHEVRONS

DEVICE:  W1-8

SIZE (W x L)	18"x 24" (Conventional)	24"x 30" (Conventional Oversize)	30"x 36" (Expressway)	36" x 48" (Freeway)
MOUNTING HEIGHT	4'-0" or 7'-0"		7'-0" Only	

NOTE:
1. CHEVRON (W1-8) signs and ONE DIRECTION LARGE ARROW (W1-6) Signs shall be installed per Sign Mounting Details (SMD) Standard Sheets and paid under Item 644 (Small Roadside Sign Assemblies).
2. When there is a need to increase conspicuity, the Texas version of the ONE DIRECTION LARGE ARROW sign (W1-9T) may be used instead of the ONE DIRECTION LARGE ARROW (W1-6).

ONE DIRECTION LARGE ARROW

DEVICE:  W1-6

SIZE (W x L)	48" x 24" (Conventional)	60" x 30" (Expressway & Freeway)
MOUNTING HEIGHT	7'-0"	

NOTE:

Delineator and object marker substrates and sign substrates shall be 0.080" Aluminum sign blank to conform to ASTM B-209 Alloy 6061-T6 or approved alternative.

Texas Department of Transportation — Traffic Safety Division Standard

DELINEATOR & OBJECT MARKER MATERIAL DESCRIPTION

D & OM(1)-20

FILE: dom1-20.dgn	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
©TxDOT August 2004	CONT	SECT	JOB	HIGHWAY
REVISIONS	0901	27	055	VAR
10-09 3-15	DIST	COUNTY		SHEET NO.
4-10 7-20	PAR	RD RVR		91

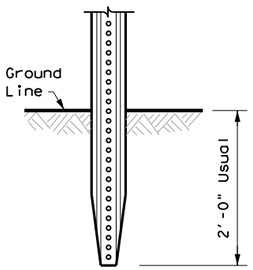
20A

DATE: DATE 2012 7:48:07 AM
FILE: DOCUMENT NAME: C:\12\54\02\Design\02_Clarksville_ADA\Civil\Standards\Traffic\dom2-20.dgn

POST TYPE AND SUPPORT FOUNDATION DETAILS

WING CHANNEL (WC)

GND

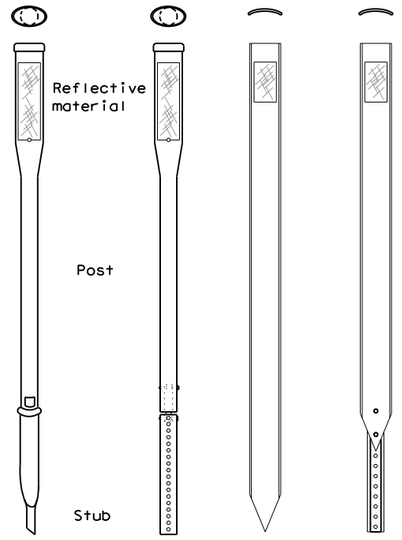


NOTES

1. Embedded Wing Channel (WC) post option may be used for Type 2 Object Markers and Delineators only.
2. 1.12 lbs/ft steel per ASTM A 1011 SS Gr. 50, or ASTM A499.

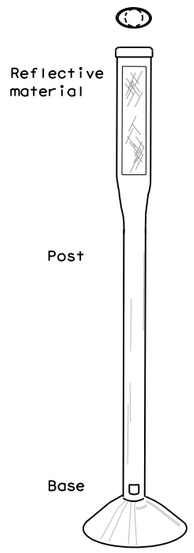
FLEXIBLE POSTS (YFLX, WFLX)

GND



EMBEDDED

SRF



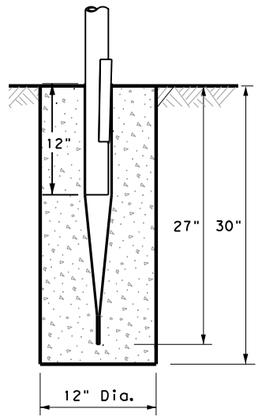
SURFACE MOUNT

NOTES

1. See "Flexible Delineator and Object Marker Posts" Material Producer List for approved devices.
2. Install per manufacturer's recommendations.
3. Post length may vary to meet field conditions.
4. When using yellow delineators with flexible posts to separate opposing direction of travel, such as centerline or median use, the flexible posts shall be yellow.

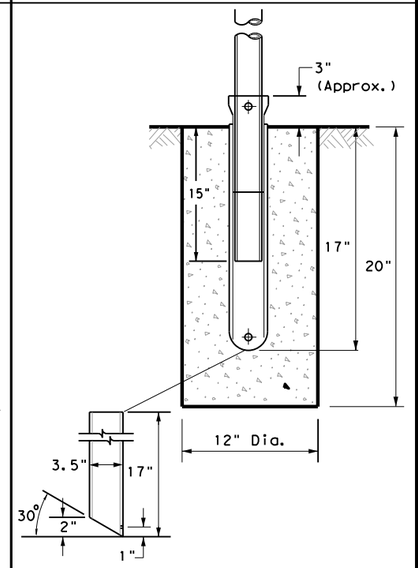
WEDGE ANCHOR SYSTEMS

WAS



STEEL

WAP



PLASTIC

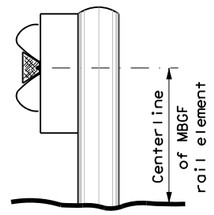
NOTE

1. Install per manufacturer's recommendations.

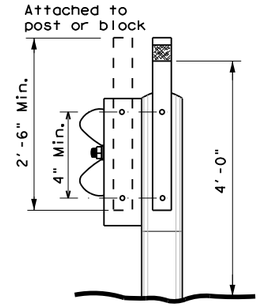
TYPE OF BARRIER MOUNTS

GUARD FENCE ATTACHMENT

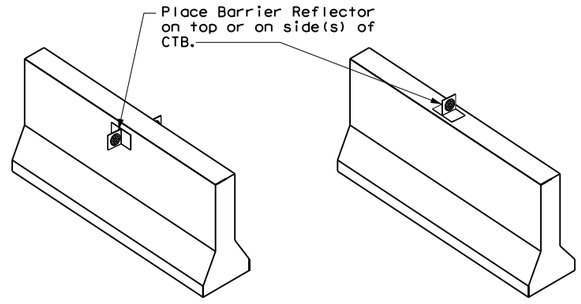
GF1



GF2



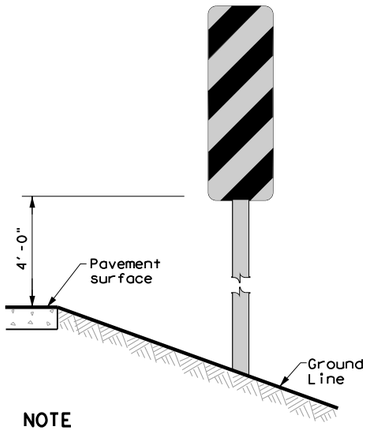
CONCRETE TRAFFIC BARRIER (CTB)



GENERAL NOTES

1. Place delineators on a section of roadway at a consistent distance from the edge of pavement.
2. Where a restriction prevents consistent placement from the pavement edge, place the affected object markers in line with the innermost edge of the obstruction.
3. When Type 2 object markers and delineators are more than 8'-0" from the edge of the pavement, it may not be possible to maintain a height of approximately 4'-0". If this is the case, place the object marker or delineator as close to the desired height as possible.
4. Install all delineators, object markers and barrier reflectors in accordance with the manufacturer's recommendation.
5. Barrier reflectors should be installed a minimum of 18 inches above the edge of the pavement surface.
6. Diagonal stripes on Type 3 object markers shall slope down toward the intended travel lane.

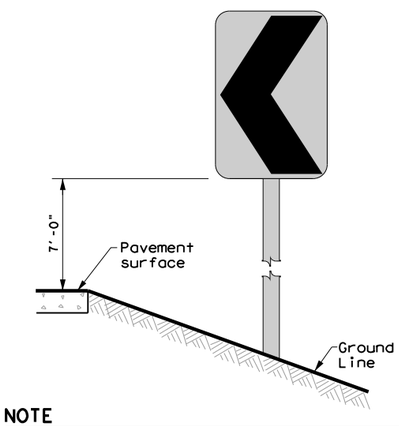
TYPES 1, 3, AND 4 OBJECT MARKERS AND CHEVRONS



NOTE

Mounting at 4 feet to the bottom of the chevron is permitted for chevrons that will not exceed a height of 6'-6" to the top of the chevron (sizes 24" x 30" and smaller)

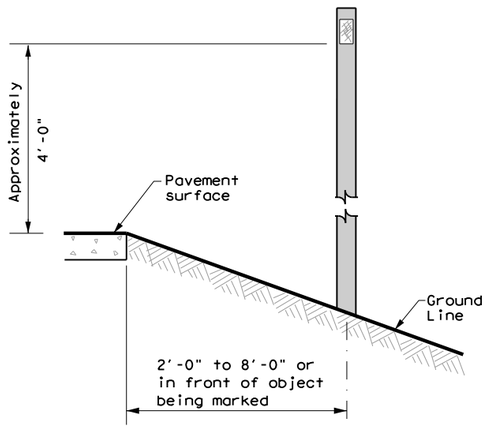
CHEVRONS AND ONE DIRECTION LARGE ARROW SIGN



NOTE

Chevrons 30" x 36" and larger shall be mounted at a height of 7' to the bottom of the chevron. Chevron sign and ONE DIRECTION LARGE ARROW sign (W1-9T) shall be installed per SMD standard sheets and paid under item 644.

DELINEATORS AND TYPE 2 OBJECT MARKERS



See general notes 1, 2 and 3.

Texas Department of Transportation

Traffic Safety Division Standard

DELINEATOR & OBJECT MARKER INSTALLATION

D & OM(2)-20

FILE: dom2-20.dgn	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
© TxDOT August 2004	CONT	SECT	JOB	HIGHWAY
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4-10 7-20	PAR	RD RVR		92

20B

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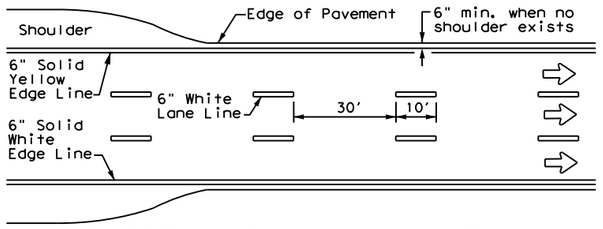
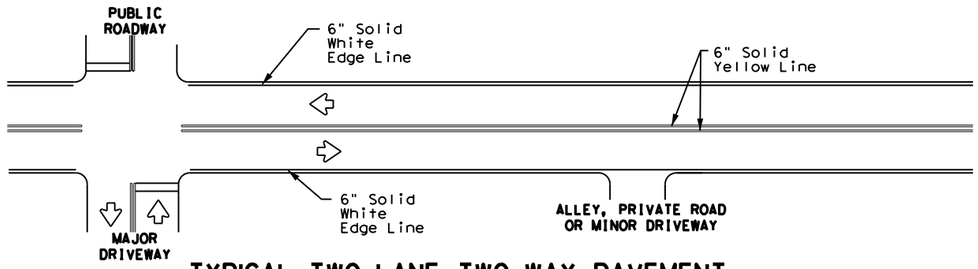
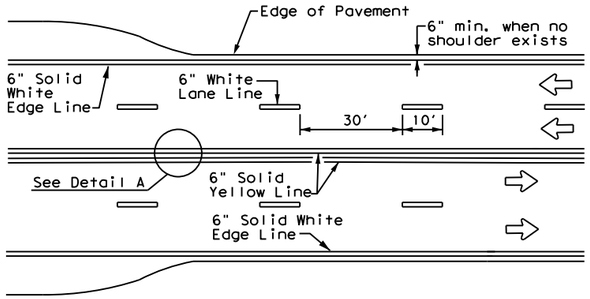
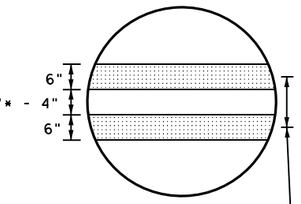


EDGE LINE AND LANE LINES ONE-WAY ROADWAY WITH OR WITHOUT SHOULDERS



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





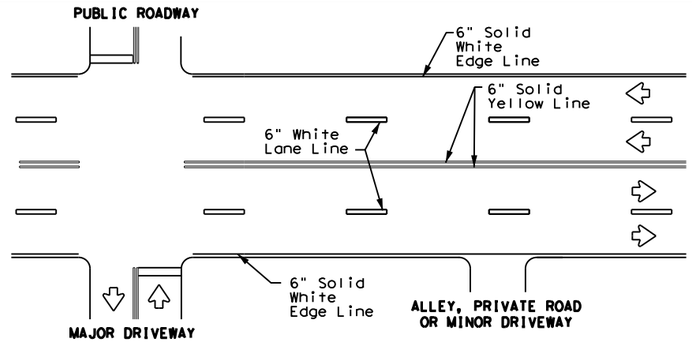
DETAIL "A"

9"** min. - 10" typ.
(18" max. for traveled way greater than 48' only)

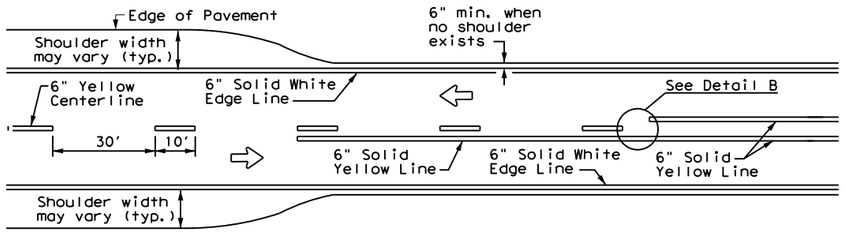
CENTERLINE AND LANE LINES FOUR LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS

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

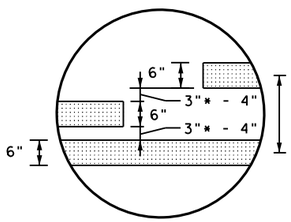
** 8" minimum for restripe projects when approved by the Engineer.



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



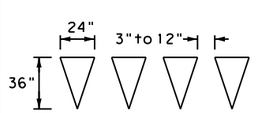
TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



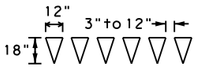
18" min. - 20" max.
(16" minimum for restripe projects when approved by the Engineer.)

DETAIL "B"

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

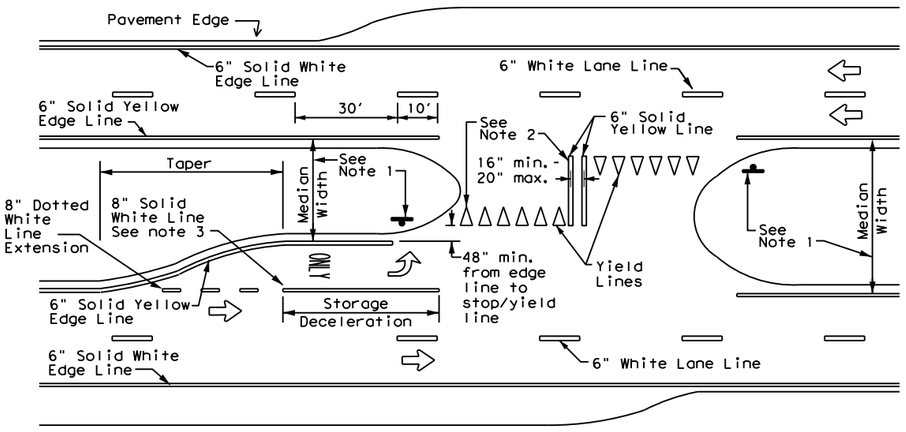


For posted speed on road being marked equal to or greater than 45 MPH.



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

YIELD LINES



FOUR LANE DIVIDED ROADWAY CROSSOVERS

NOTES

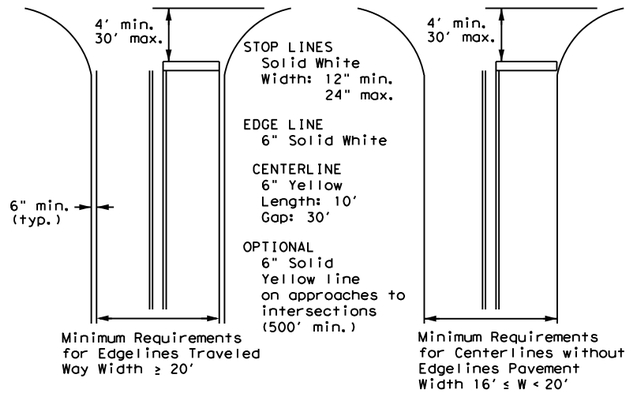
1. Where divided highways are separated by median widths at the median opening itself of 30 feet or more, median openings shall be signed as two separate intersections.
   Each median opening has two width measurements, with one measurement for each approach. The narrow median width will be the controlling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

GENERAL NOTES

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

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

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



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

GUIDE FOR PLACEMENT OF STOP LINES, EDGE LINE & CENTERLINE

Based on Traveled Way and Pavement Widths for Undivided Roadways

Texas Department of Transportation

Traffic Safety Division Standard

TYPICAL STANDARD PAVEMENT MARKINGS

PM(1)-22

FILE: pm1-22.dgn	DN:	CK:	DW:	CK:
© TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
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8-95 3-03 12-22	DIST	COUNTY		SHEET NO.
5-00 2-12	PAR	RD RVR		93

22A

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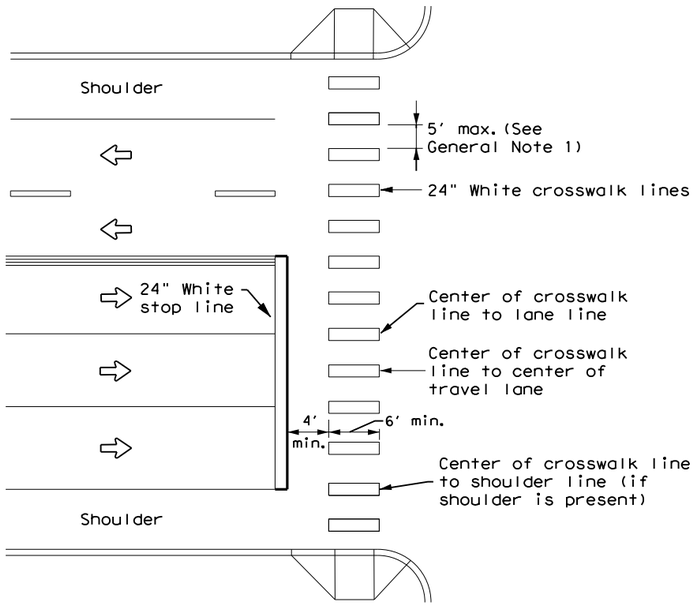


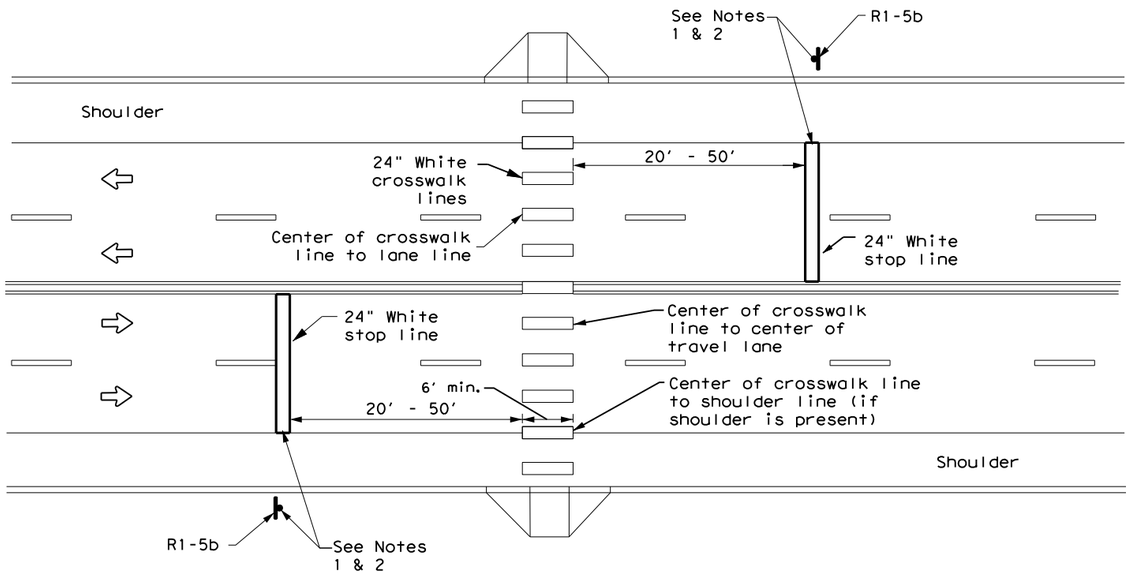
HIGH-VISIBILITY LONGITUDINAL CROSSWALK AT CONTROLLED APPROACH

GENERAL NOTES

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

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

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



UNSIGNALIZED MIDBLOCK HIGH-VISIBILITY LONGITUDINAL CROSSWALK

NOTES:

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

Texas Department of Transportation

Traffic Safety Division Standard

CROSSWALK PAVEMENT MARKINGS

PM(4)-22A

FILE: pm4-22a.dgn	DN:	CK:	DW:	CK:
© TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0901	27	055	VAR
6-20	DIST	COUNTY		SHEET NO.
6-22	PAR	RD RVR		94
12-22				

220

STORMWATER POLLUTION PREVENTION PLAN (SWP3):

This SWP3 has been developed in accordance with the TPDES Construction General Permit TXR150000 (CGP). The Texas Department of Transportation (TxDOT) ensures that project specifications include adequate best management practices (BMPs) for this project.

For all projects with any soil disturbing activities, TxDOT will maintain a SWP3 with all pertinent records, correspondence, environmental documents, etc. at the project field office. If no field office is available, then this SWP3 shall be kept in the appropriate TxDOT Area Office.

This SWP3 is consistent with requirements specified in applicable stormwater plans and the projects environmental permits, issues, and commitments (EPICs). A copy of the CGP is included in Attachment 2.12 of the SWP3 binder.

1.0 SITE/PROJECT DESCRIPTION

1.1 PROJECT CONTROL SECTION JOB (CSJ):
0901-27-055

1.2 PROJECT LIMITS:
From: ON NETT NW OF CLARKSVILLE

To: BU 82 J

1.3 PROJECT COORDINATES:
BEGIN: (Lat) 33.6229420 N ,(Long) 95.0669575 W

END: (Lat) 33.6121220 N ,(Long) 95.0294085 W

1.4 TOTAL PROJECT AREA (Acres): 11.63

1.5 TOTAL AREA TO BE DISTURBED (Acres): 1.06

1.6 NATURE OF CONSTRUCTION ACTIVITY:
Construction of 10-foot wide shared use path and other pedestrian related infrastructure.

1.7 MAJOR SOIL TYPES:

Soil Type	Description
Austin silty clay	1-3% slopes
Houston Black clay	1-3% slopes
Burleson clay	1-3% slopes

1.8 PROJECT SPECIFIC LOCATIONS (PSLs):
PSLs must be depicted on the Environmental Layout Sheets in Attachment 1.2 of this SWP3. PSLs may be identified during preconstruction meetings or during the construction process. Please choose from the options below:

☐ PSLs determined during preconstruction meeting
☐ PSLs determined during construction
☒ No PSLs planned for construction

Type	Sheet #s

All off-ROW PSLs required by the Contractor are the Contractor's responsibility. The Contractor shall secure all permits required by local, state, federal laws for off-ROW PSLs. The contractor shall provide diagrams, areas of disturbance, acreage, and BMPs for all off-ROW PSLs within one mile of the project.

1.9 CONSTRUCTION ACTIVITIES:
(Use the following list as a starting point when developing the Construction Activity Schedule and Ceasing Record in Attachment 2.5.)

☒ Mobilization
☒ Install sediment and erosion controls
☒ Blade existing topsoil into windrows, prep ROW, clear and grub
☐ Remove existing pavement
☒ Grading operations, excavation, and embankment
☐ Excavate and prepare subgrade for proposed pavement widening
☐ Remove existing culverts, safety end treatments (SETs)
☐ Remove existing metal beam guard fence (MBGF), bridge rail
☐ Install proposed pavement per plans
☐ Install culverts, culvert extensions, SETs
☐ Install mow strip, MBGF, bridge rail
☒ Place flex base
☐ Rework slopes, grade ditches
☐ Blade windrowed material back across slopes
☒ Revegetation of unpaved areas
☒ Achieve site stabilization and remove sediment and erosion control measures
☐ Other: _____
☐ Other: _____
☐ Other: _____

1.10 POTENTIAL POLLUTANTS AND SOURCES:

☒ Sediment laden stormwater from stormwater conveyance over disturbed area
☒ Fuels, oils, and lubricants from construction vehicles, equipment, and storage
☐ Solvents, paints, adhesives, etc. from various construction activities
☒ Transported soils from offsite vehicle tracking
☒ Construction debris and waste from various construction activities
☐ Contaminated water from excavation or dewatering pump-out water
☒ Sanitary waste from onsite restroom facilities
☒ Trash from various construction activities/receptacles
☐ Long-term stockpiles of material and waste
☐ Other: _____
☐ Other: _____
☐ Other: _____

1.11 RECEIVING WATERS:
Receiving waters must be depicted on the Environmental Layout Sheets in Attachment 1.2 of this SWP3. Include Segment # for receiving waters.

Tributaries	Classified Waterbody
Langford Creek	(0303J) Cuthand Creek
Delaware Creek	(0303J) Cuthand Creek

* Add (*) for impaired waterbodies with pollutant in ().

1.12 ROLES AND RESPONSIBILITIES: TxDOT

☒ Development of plans and specifications
☒ Submit Notice of Intent (NOI) to TCEQ (≥5 acres)
☒ Post Construction Site Notice
☒ Submit NOI/CSN to local MS4
☒ Perform SWP3 inspections
☒ Maintain SWP3 records and update to reflect daily operations
☒ Complete and submit Notice of Termination to TCEQ
☒ Maintain SWP3 records for 3 years
☐ Other: _____
☐ Other: _____
☐ Other: _____

1.13 ROLES AND RESPONSIBILITIES: CONTRACTOR

☒ Day To Day Operational Control
☒ Submit Notice of Intent (NOI) to TCEQ (≥5 acres)
☒ Post Construction Site Notice
☒ Submit NOI/CSN to local MS4
☒ Maintain schedule of major construction activities
☒ Install, maintain and modify BMPs
☒ Complete and submit Notice of Termination to TCEQ
☒ Maintain SWP3 records for 3 years
☐ Other: _____
☐ Other: _____
☐ Other: _____

1.14 LOCAL MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) OPERATOR COORDINATION:

MS4 Entity

DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

STORMWATER POLLUTION PREVENTION PLAN (SWP3)

Texas Department of Transportation

FED. RD. DIV. NO.			SHEET NO.
6			95
STATE	STATE DIST.	COUNTY	
TEXAS	PAR	RD RVR	
CONT.	SECT.	JOB	HIGHWAY NO.
0901	27	055	VAR

STORMWATER POLLUTION PREVENTION PLAN (SWP3):

2.0 BEST MANAGEMENT PRACTICES (BMPs) AND CONTROLS, INSPECTION, AND MAINTENANCE

The Contractor shall be the responsible party for implementing the BMPs described herein and for complying with the SWP3 for control of erosion and sedimentation during day-to-day operations. The Contractor shall implement changes to this SWP3 approved by TxDOT within the times specified in this SWP3 or the CGP.

2.1 EROSION CONTROL AND SOIL STABILIZATION BMPs:

T / P

- [X] [ ] Protection of Existing Vegetation
- [ ] [ ] Vegetated Buffer Zones
- [ ] [X] Soil Retention Blankets
- [ ] [ ] Geotextiles
- [ ] [ ] Mulching/ Hydromulching
- [ ] [ ] Soil Surface Treatments
- [ ] [ ] Temporary Seeding
- [ ] [X] Permanent Planting, Sodding or Seeding
- [X] [ ] Biodegradable Erosion Control Logs
- [ ] [ ] Rock Filter Dams/ Rock Check Dams
- [ ] [ ] Vertical Tracking
- [ ] [ ] Interceptor Swale
- [ ] [ ] Riprap
- [ ] [ ] Diversion Dike
- [ ] [ ] Temporary Pipe Slope Drain
- [ ] [ ] Embankment for Erosion Control
- [ ] [ ] Paved Flumes
- [ ] [ ] Other: _____
- [ ] [ ] Other: _____
- [ ] [ ] Other: _____
- [ ] [ ] Other: _____

2.2 SEDIMENT CONTROL BMPs:

T / P

- [X] [ ] Biodegradable Erosion Control Logs
- [ ] [ ] Dewatering Controls
- [ ] [ ] Inlet Protection
- [ ] [ ] Rock Filter Dams/ Rock Check Dams
- [ ] [ ] Sandbag Berms
- [ ] [ ] Sediment Control Fence
- [ ] [ ] Stabilized Construction Exit
- [ ] [ ] Floating Turbidity Barrier
- [ ] [ ] Vegetated Buffer Zones
- [ ] [ ] Vegetated Filter Strips
- [ ] [ ] Other: _____
- [ ] [ ] Other: _____
- [ ] [ ] Other: _____
- [ ] [ ] Other: _____

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

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

T / P

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

2.3 PERMANENT CONTROLS:

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

BMPs To Be Left In Place Post Construction:

Type	Stationing	
	From	To
Soil Retention Blankets (CL 1) (TY A)	STA. 100+00.00	STA. 222+41.61

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

2.4 OFFSITE VEHICLE TRACKING CONTROLS:

- [X] Excess dirt/mud on road removed daily
- [ ] Haul roads dampened for dust control
- [X] Loaded haul trucks to be covered with tarpaulin
- [ ] Stabilized construction exit
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

2.5 POLLUTION PREVENTION MEASURES:

- [X] Chemical Management
- [X] Concrete and Materials Waste Management
- [X] Debris and Trash Management
- [X] Dust Control
- [X] Sanitary Facilities
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

2.6 VEGETATED BUFFER ZONES:

Natural vegetated buffers shall be maintained as feasible to protect adjacent surface waters. If vegetated natural buffer zones are not feasible due to site geometry, the appropriate additional sediment control measures have been incorporated into this SWP3.

Type	Stationing	
	From	To

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

2.7 ALLOWABLE NON-STORMWATER DISCHARGES:

- [X] Fire hydrant flushings
- [X] Irrigation drainage
- [X] Pavement washwater (where spills or leaks have not occurred, and detergents are not used)
- [X] Potable water sources
- [X] Springs
- [X] Uncontaminated groundwater
- [X] Water used to wash vehicles or control dust
- [X] Other allowable non-stormwater discharges as allowed by TPDES GP TXR150000.

2.8 DEWATERING:

Dewatering discharges of accumulated stormwater, groundwater, and surface water including discharges from dewatering of trenches, excavations, foundations, vaults, and other points of accumulation are prohibited unless managed by appropriate controls to prevent and minimize the offsite discharge of sediment and other pollutants.

2.9 INSPECTIONS:

All disturbed areas and erosion and sediment control devices shall be inspected at least once every seven (7) days. Inspections shall be performed by TxDOT as indicated on the Field Inspection and Maintenance Report Form 2118 and retained in Attachment 2.5 of this SWP3 .
When dewatering activities are present, a daily inspection will be conducted once per day during those activities and documented in accordance with CGP and TxDOT requirements.

2.10 MAINTENANCE:

Control measures shall be properly installed according to specifications. If it is determined that a BMP or control measure is not operating effectively, maintenance must be accomplished as soon as possible and before the next anticipated rain event, but in no case later than 7 calendar days after being able to access the site. Maintenance shall be performed by the Contractor as indicated on the Field Inspection and Maintenance Report Form 2118 and retained in Attachment 2.5 of this SWP3.

DESIGN

STATE OF TEXAS — TYLER PAYNE DUBE — 118612 — LICENSED PROFESSIONAL ENGINEER

TYLER PAYNE DUBE, P.E. — 1/4/2024 DATE

APPROVAL

STATE OF TEXAS — JOHN A. TYLER — 105193 — LICENSED PROFESSIONAL ENGINEER

JOHN A. TYLER, P.E. — 1/4/2024 DATE

STORMWATER POLLUTION PREVENTION PLAN (SWP3)

Texas Department of Transportation

FED. RD. DIV. NO.			SHEET NO.
6			96
STATE	STATE DIST.	COUNTY	
TEXAS	PAR	RD RVR	
CONT.	SECT.	JOB	HIGHWAY NO.
0901	27	055	VAR

DATE: 1/4/2024
FILE: S:\projects\612\54\02\Design\02_Clarksville_ADA\Civil\Standards\SW3P\epic.dgn

I. STORMWATER POLLUTION PREVENTION-CLEAN WATER ACT SECTION 402

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

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

1.

2.

☐ No Action Required ☒ Required Action

Action No.

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

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

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

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

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

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

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

☒ No Permit Required

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

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

☐ Individual 404 Permit Required

☐ Other Nationwide Permit Required: NWP# _____

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

1.

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

Best Management Practices:

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

III. CULTURAL RESOURCES

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

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

4.

IV. VEGETATION RESOURCES

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

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

4.

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

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

4.

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

LIST OF ABBREVIATIONS

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

VI. HAZARDOUS MATERIALS OR CONTAMINATION ISSUES

General (applies to all projects):

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

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

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

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

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

☐ Yes ☒ No

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

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

☐ Yes ☐ No

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

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

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

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

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

VII. OTHER ENVIRONMENTAL ISSUES

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

☒ No Action Required ☐ Required Action

Action No.

1.

2.

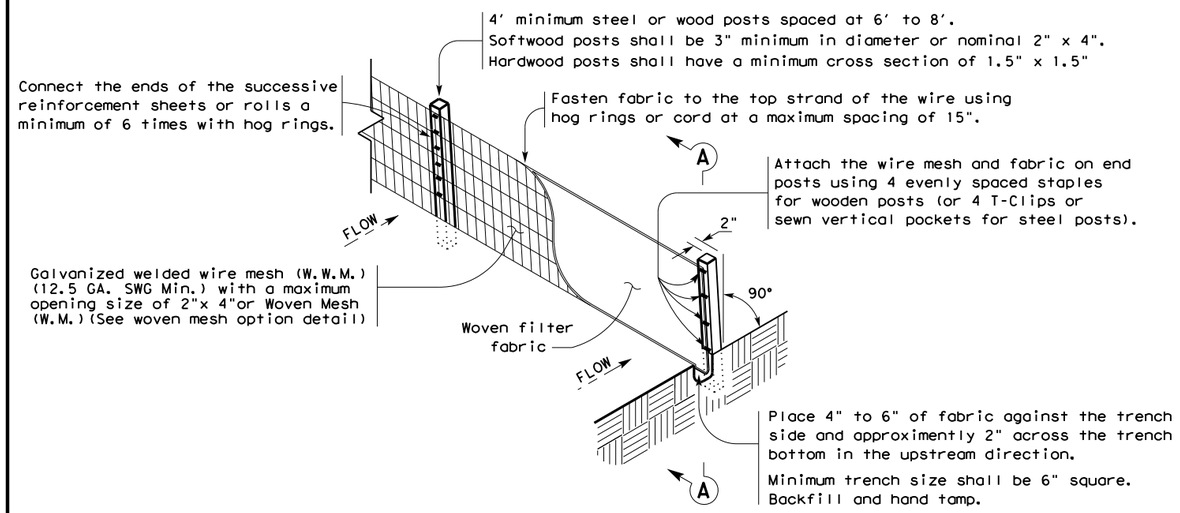
3.

Texas Department of Transportation — Design Division Standard

ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS

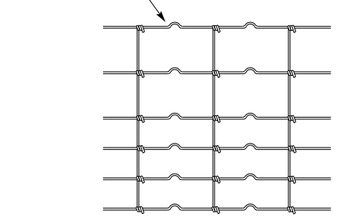
EPIC

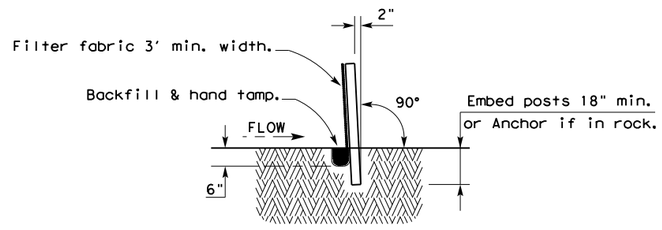
FILE: epic.dgn	DN: TxDOT	CK: RG	DW: VP	CK: AR	
©TxDOT: February 2015	CONT	SECT	JOB	HIGHWAY	
REVISIONS 12-12-2011 (DS)	0901	27	055	VAR	
05-07-14 ADDED NOTE SECTION IV.	DIST	COUNTY		SHEET NO.	
01-23-2015 SECTION I (CHANGED ITEM 1122 TO ITEM 506, ADDED GRASSY SWALES.	PAR	RD RVR		97	



TEMPORARY SEDIMENT CONTROL FENCE

SCF





SECTION A-A

HINGE JOINT KNOT WOVEN MESH (OPTION) DETAIL

Galvanized hinge joint knot woven mesh (12.5 GA.SWG Min.) requires a minimum of five horizontal wires spaced at a maximum of 12 inches apart and all vertical wires spaced at a maximum of 12 inches apart.

SEDIMENT CONTROL FENCE USAGE GUIDELINES

A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

Sediment control fence should be sized to filter a maximum flow through rate of 100 GPM/FT^2. Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

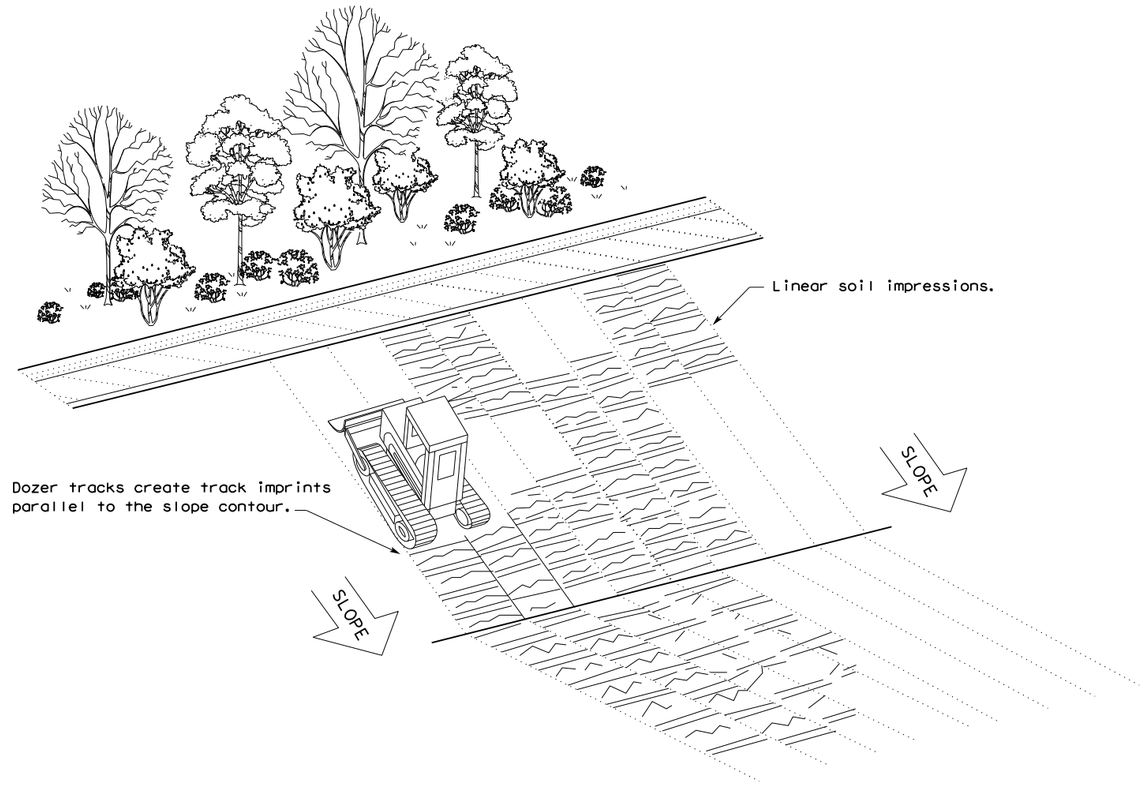
LEGEND

Sediment Control Fence

SCF

GENERAL NOTES

1. Vertical tracking is required on projects where soil distributing activities have occurred unless otherwise approved.
2. Perform vertical tracking on slopes to temporarily stabilize soil.
3. Provide equipment with a track undercarriage capable of producing linear soil impressions measuring a minimum of 12" in length by 2" to 4" in width by 1/2" to 2" in depth.
4. Do not exceed 12" between track impressions.
5. Install continous linear track impressions where the minimum 12" length impressions are perpendicular to the slope or direction of water flow.



VERTICAL TRACKING

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

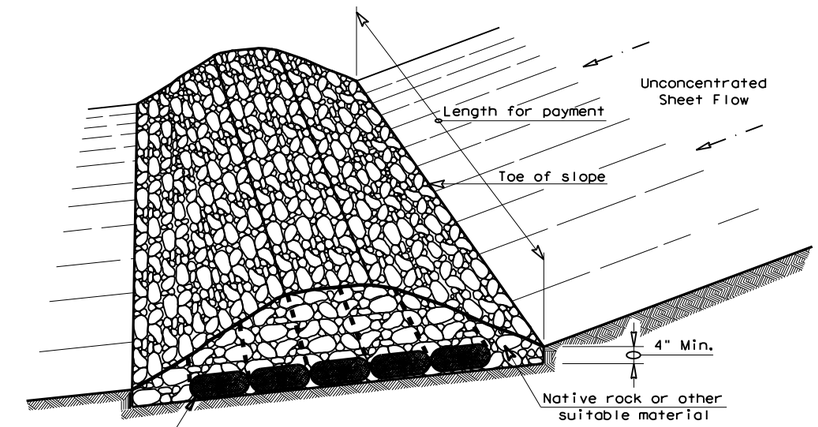
FENCE & VERTICAL TRACKING

EC(1)-16

FILE: ec116	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY
REVISIONS	0901	27	055	VAR
	DIST	COUNTY		SHEET NO.
	PAR	RD RVR		98

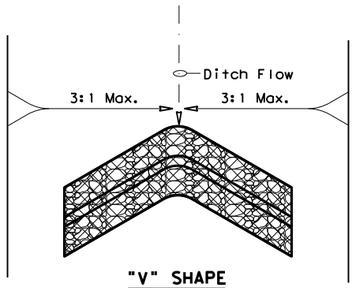
DATE
FILE

DATE:
FILE:

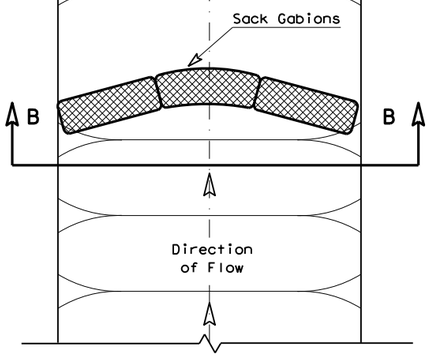


FILTER DAM AT TOE OF SLOPE

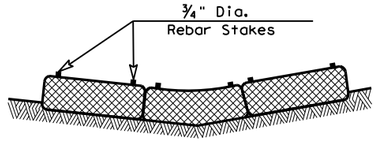
RFD1



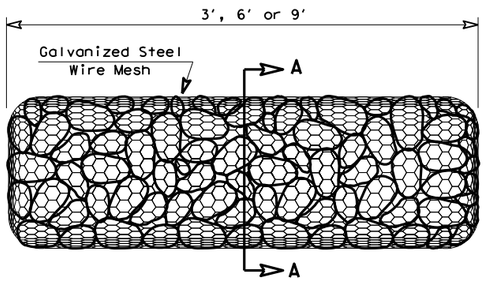
"V" SHAPE PLAN VIEW



PLAN VIEW

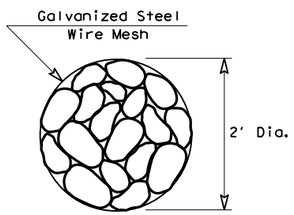


SECTION B-B

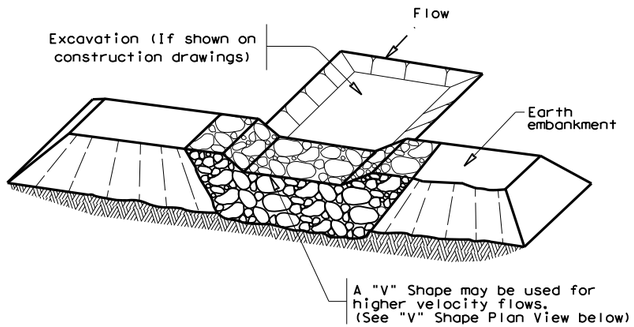


TYPE 4 (SACK GABIONS)

RFD4

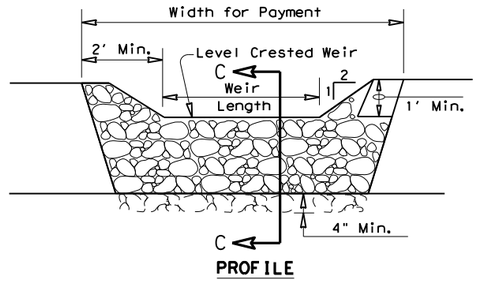


SECTION A-A

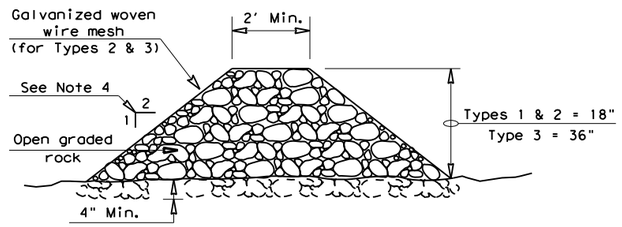


FILTER DAM AT SEDIMENT TRAP

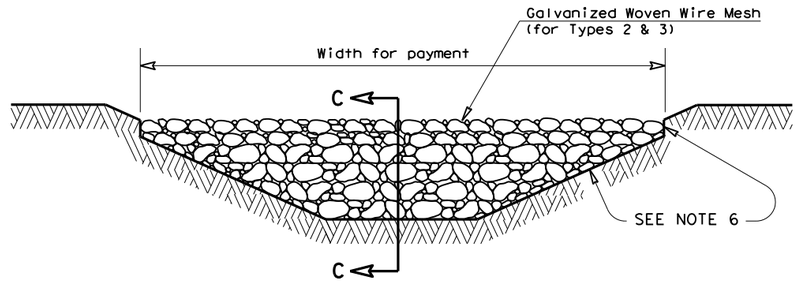
RFD1 — OR — RFD2



PROFILE



SECTION C-C



FILTER DAM AT CHANNEL SECTIONS

RFD1 — OR — RFD2 — OR — RFD3

ROCK FILTER DAM USAGE GUIDELINES

Rock Filter Dams should be constructed downstream from disturbed areas to intercept sediment from overland runoff and/or concentrated flow. The dams should be sized to filter a maximum flow through rate of 60 GPM/FT^2 of cross sectional area. A 2 year storm frequency may be used to calculate the flow rate.

Type 1 (18" high with no wire mesh) (3" to 6" aggregate): Type 1 may be used at the toe of slopes, around inlets, in small ditches, and at dike or swale outlets. This type of dam is recommended to control erosion from a drainage area of 5 acres or less. Type 1 may not be used in concentrated high velocity flows (approximently 8 Ft/Sec or more) in which aggregate wash out may occur. Sandbags may be used at the embedded foundation (4" deep min.) for better filtering efficiency of low flows if called for on the plans or directed by the Engineer.

Type 2 (18" high with wire mesh) (3" to 6" aggregate): Type 2 may be used in ditches and at dike or swale outlets.

Type 3 (36" high with wire mesh) (4" to 8" aggregate): Type 3 may be used in stream flow and should be secured to the stream bed.

Type 4 (Sack gabions) (3" to 6" aggregate): Type 4 May be used in ditches and smaller channels to form an erosion control dam.

Type 5: Provide rock filter dams as shown on plans.

GENERAL NOTES

1. If shown on the plans or directed by the Engineer, filter dams should be placed near the toe of slopes where erosion is anticipated, upstream and/or downstream at drainage structures, and in roadway ditches and channels to collect sediment.
2. Materials (aggregate, wire mesh, sandbags, etc.) shall be as indicated by the specification for "Rock Filter Dams for Erosion and Sedimentation Control".
3. The rock filter dam dimensions shall be as indicated on the SW3P plans.
4. Side slopes should be 2:1 or flatter. Dams within the safety zone shall have sideslopes of 6:1 or flatter.
5. Maintain a minimum of 1' between top of rock filter dam weir and top of embankment for filter dams at sediment traps.
6. Filter dams should be embedded a minimum of 4" into existing ground.
7. The sediment trap for ponding of sediment laden runoff shall be of the dimensions shown on the plans.
8. Rock filter dam types 2 & 3 shall be secured with 20 gauge galvanized woven wire mesh with 1" diameter hexagonal openings. The aggregate shall be placed on the mesh to the height & slopes specified. The mesh shall be folded at the upstream side over the aggregate and tightly secured to itself on the downstream side using wire ties or hog rings. For in stream use, the mesh should be secured or staked to the stream bed prior to aggregate placement.
9. Sack Gabions should be staked down with ¾" dia. rebar stakes, and have a double-twisted hexagonal weave with a nominal mesh opening of 2 ½" x 3 ¼"
10. Flow outlet should be onto a stabilized area (vegetation, rock, etc.).
11. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

PLAN SHEET LEGEND

Type 1 Rock Filter Dam	RFD1
Type 2 Rock Filter Dam	RFD2
Type 3 Rock Filter Dam	RFD3
Type 4 Rock Filter Dam	RFD4

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

ROCK FILTER DAMS

EC(2)-16

FILE: ec216	DN: TxDOT	CK: KM	DW: VP		DN/CK: LS
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