

DATE: 12/19/2023 11:15:49 AM FILE: p:\1\tdot\project\wiseonline.com:TXDOT4\Documents\16 - CRP\Maintenance Projects\16 RMC 6459-31-001 Base Repair with Sealcoat\1 - Pre-Letting\Design Files\Plan Set\1. General

CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST	COUNTY	SHEET NO.	
CRP	NUECES	1	

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
GENERAL	
1	TITLE SHEET
2-7	GENERAL NOTES
8	ESTIMATE & QUANTITIES
9-14	TYPICAL SECTIONS
14A	MISC. DETAILS
15	ROADWAY QUANTITIES
16	SURFACE QUANTITIES
17	SW3P QUANTITIES
TRAFFIC CONTROL PLAN	
18	SEQUENCE OF CONSTRUCTION
TRAFFIC CONTROL PLAN STANDARDS	
19-30	#BC (1)-21 THRU BC (12)-21
31-32	#TCP (1-4)-18 - TCP(1-5)-18
33-35	#TCP (2-4)-18 THRU TCP(2-6)-18
36	#TCP (3-3)-14
37	#WZ (STPM)-23
38	#WZ (BRK)-13
39	#WZ (RS)-22
40	#WZ (UL)-13
ROADWAY DETAILS	
41-55	ROADWAY PLAN SHEETS
PAVEMENT MARKINGS	
56-70	SURFACE DETAIL SHEETS
PAVEMENT MARKINGS STANDARDS	
71-74	#PM (1)-22 THRU PM (4)-22
ENVIRONMENTAL ISSUES	
75	STORMWATER POLLUTION PREVENTION PLAN (SW3P)
76	ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS
ENVIRONMENTAL ISSUES STANDARDS	
77-79	#EC (9)-16
RAILROAD	
80-81	RAILROAD SCOPE OF WORK
82-83	RAILROAD REQUIREMENTS

STATE OF TEXAS DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED STATE HIGHWAY IMPROVEMENT COPRUS CHRISTI DISTRICT MAINTENANCE PROJECT NO. RMC 6459-31-001 SS 407 NUECES COUNTY

NET LENGTH OF PROJECT= 6.47 MI.
LIMITS: CANTWELL DR. TO FM 2292
CONSTRUCTION WORK CONSISTING A TWO COURSE SEAL COAT,
CEMENT TREATED BASE, MILL & INLAY, AND PAVEMENT MARKINGS.

FINAL PLANS STATEMENT

I CERTIFY THAT THIS PROJECT WAS COMPLETED IN SUBSTANTIAL COMPLIANCE WITH THE FINAL PLANS AND SPECIFICATIONS.

AREA ENGINEER _____ DATE _____

DATE OF LETTING : _____

CONTRACTOR : _____

DATE WORK BEGAN : _____

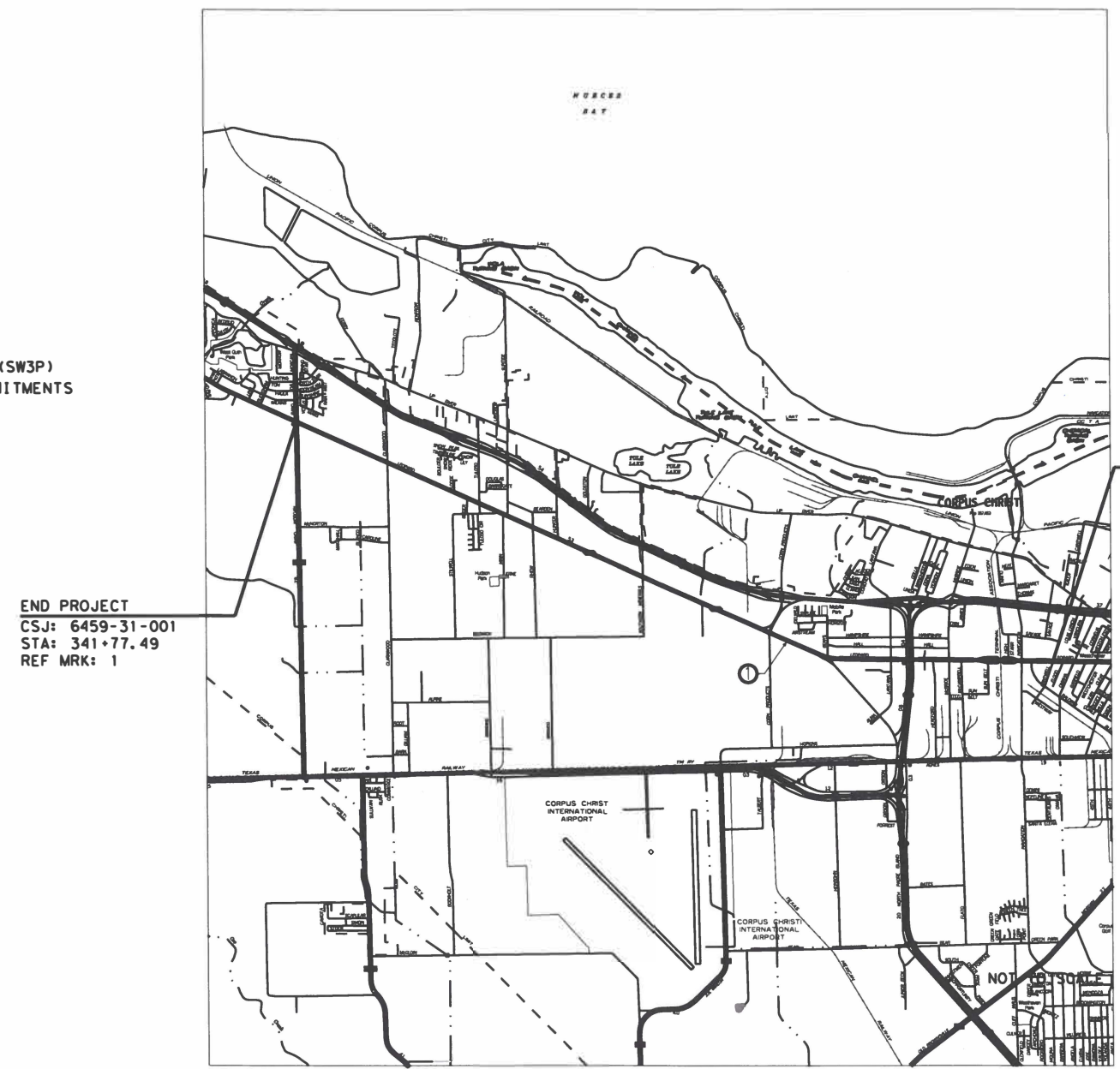
DATE WORK COMPLETED AND ACCEPTED : _____

CONTRACT AMOUNT : _____

FINAL CONTRACT AMOUNT : _____

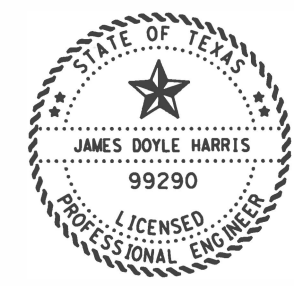
WORKING DAYS ALLOTTED : _____

WORKING DAYS USED : _____



BEGIN PROJECT
CSJ: 6459-31-001
STA: 0+00
REF MRK: 1

END PROJECT
CSJ: 6459-31-001
STA: 341+77.49
REF MRK: 1



THE STANDARD SHEETS SPECIFICALLY IDENTIFIED ABOVE BY A "N" HAVE BEEN ISSUED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AND ARE APPLICABLE TO THIS PROJECT.

James O. Harris P.E. 12-19-23
PROJECT ENGINEER DATE



RECOMMENDED FOR LETTING: 12/19/2023 APPROVED FOR LETTING: 12-19-23

DocuSigned by:
Armando Bosquez, P.E.
B8B23CC13362472...
BRIDGE ENGINEER

James O. Harris, P.E.
DIRECTOR OF MAINTENANCE

EXCEPTIONS: NONE
EQUATIONS: NONE
RAILROAD CROSSINGS: CANADIAN PACIFIC KANSAS CITY RAILROAD-LAREDO SUBDIVISION:
DOT # 900191X @ RRMP 0.000 RR UNDER SS 407(NB)
DOT # 923781J @ RRMP 158.100 RR UNDER SS 407(SB)

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

GENERAL NOTES:

General

This contract shall commence upon the issuance of a work order by the Director of Maintenance or his representative. This project consists of described maintenance work defined with the 2014 Texas Standard Specifications, General Notes and Plans. The Contractor shall have a maximum number of **51** working days to complete the work listed on the work orders before liquidated damages will be assessed.

The Contractor is to visit the site(s), and make his/her own examination of the site(s) where work is to be performed. The Contractor shall carefully examine these specifications and secure from the State any additional information that may be essential for a clear and full understanding of the work.

All work will be scheduled and directed by the following named Area Engineer or their pre-authorized representative.

Ernest Longoria, P.E.

Ernest.Longoria@txdot.gov

The Contractor shall contact the following named Maintenance Supervisors when commencing work within their respective area.

David Franco

David.Franco@txdot.gov

In the event of a called evacuation, emergencies, impending adverse weather or as directed, do not perform any work without written authorization. The State reserves the right to suspend all work in support of evacuations or emergencies occurring from other parts of the state. Any work performed, other than work directed by the State, is unauthorized in accordance with Item 5.

Equipment that remains in the ROW outside of working hours must be parked outside of the clear zone and in a way that does not obstruct sight distance for the traveling public.

Asphalt application season will be considered to be May 1 to Sept 30, except as established in Item 316.4.4 Adverse Weather Conditions or as directed by the Engineer.

Cut existing pavement using a saw, or other approved method, to ensure a neat transverse and/or longitudinal line to assure a smooth tie-in with new pavement. The work performed will not be measured or paid for directly, but will be subsidiary to pertinent Items.

All existing pavements which are cut or damaged by the Contractor in the process of his work shall be repaired as soon as possible and as directed by the Engineer.

Promptly pick up and properly dispose of paper and other materials used for pavement joints.

All pavement markings shall be in accordance with the latest edition of Texas MUTCD.

A vacuum sweeper is required for this project for use during milling, seal coat, and overlay operations. Sweep, clean and remove any construction waste, surplus materials or debris from the roadway and right of way (ROW) at the end of each day, unless otherwise approved. The work performed will not be measured or paid for directly, but will be subsidiary to pertinent Items.

If contract completion (not including add-on locations) has been achieved by the contract completion date specified below, then the associated incentive will be credited to the Contractor.

Contract Completion Date	Lump Sum Incentive
July 1 st , 2024	\$150,000

ITEM 2: Instructions to Bidders

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

Ernest Longoria, P.E.

Ernest.Longoria@txdot.gov

Fidencio Lopez, P.E.

Fidencio.Lopez@txdot.gov

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.

It is recommended that prospective bidders examine the specified work locations with the Engineer to view the nature of the work, the need for close coordination with the various utilities, traffic control considerations, and other factors influencing the prosecution of the work.

County: NUECES

Control: 6459-31-001

Highway: SS 407

ITEM 5: Control of the Work

Questions regarding the plan work limits should be brought to the Engineer's attention prior to commencing work. Measuring equipment will be in working condition and calibrated to the manufacturer's specifications.

Field verify all dimensions and notify Engineer prior to initiating any work.

Verify the locations of utilities, underground or overhead, shown within the limits of the right-of-way. Adhere to OSHA Standards when working within the vicinity of overhead power lines.

The Contractor shall be required to contact the TxDOT Traffic Signals Shop for line locates of their signal, illumination, and fiber optic facilities.

Coordinate with utility companies, City, and TxDOT and notify the Engineer of any possible conflicts. The work performed will not be measured or paid for directly, but will be subsidiary to pertinent Items.

Notify the Engineer immediately of utility conflicts in accordance with Item 5.6. Refer to Item 4.5 for consideration of differing site conditions.

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

Establish and mark the location of existing standard pavement markings including but not limited to edge lines, transitions, passing and no passing zones, gore areas, etc.

ITEM 7: Legal Relationships and Responsibilities

The work performed for Item 7.2.4, "Public Safety and Convenience" will not be measured or paid for directly, but will be subsidiary to pertinent Items.

When working at street, farm-to-market, state highway, and county road intersections, schedule work to minimize intersection closures. During non-working hours, all public road intersections will be open to the traveling public.

The total disturbed area for this project is 0.0 acre. The disturbed area in this project, all project locations in the Contract, and Contractor project specific locations (PSLs), within 1 mile of the project limits, for the Contract will further establish the authorization requirements for storm water discharges. The State will obtain an authorization to discharge storm water from the Texas Commission on Environmental Quality (TCEQ) for the construction activities shown on the plans. The Contractor is to obtain any required authorization from the TCEQ for any Contractor

County: NUECES

Control: 6459-31-001

Highway: SS 407

PSLs for construction support activities on or off ROW. When the total area disturbed for all projects in the Contract and PSLs within 1 mile of the project limits exceeds 5 acres, provide a copy of the Contractor NOI for PSLs on the ROW to the Engineer.

Comply with the Texas Aggregate Quarry and Pit Safety Act for waste areas or material source areas resulting from this project.

ITEM 8: Prosecution and Progress

Prepare the progress schedule using a bar chart. Submit (2) two 11" x 17" hard copies and an electronic file of the original or updated progress schedule. Submit the original progress schedule seven (7) days before the Preconstruction Conference.

Submit an updated progress schedule every month or as directed in to show proposed major changes, changes affection compliance with the contract requirements, or changes affecting the critical path/controlling item of work.

Working days will be computed and charged in accordance with Article 8.3.1.4, "Standard Workweek."

Work above traffic is not allowed.

Weekend and night time work will be allowed if approved by the Engineer. Requests for weekend work shall be made at least 48 hours in advance of weekend or nighttime work.

The Engineer reserves the right to change working hours as working conditions warrant.

ITEM 275: Cement Treatment (Road-Mixed)

Cement and/or asphalt stabilized base may be encountered in the existing pavement structure. Pulverize or scarify the existing material after shaping so that 100% passes a 2-1/2 inch sieve.

Use a mechanical mixer to mix the cement with the existing base material.

County: NUECES

Control: 6459-31-001

Highway: SS 407

ITEM 302: Aggregates for Surface Treatments

As per sampling guidelines, the Engineer will sample Contractor provided pre-coated aggregate for approval, prior to delivery. After approval, the Engineer reserves the right to reject any pre-coated aggregate which is improperly coated or otherwise unsatisfactory for use.

If asphalt emulsion is used, the Engineer shall approve the pre-coat material for the aggregate.

Notify the Engineer at least forty-eight (48) hours prior to delivery to a stockpile location, unless otherwise directed by the Engineer. As per sampling guidelines, all aggregate is subject to testing after delivery to the job site.

When preparing stockpile area(s), stockpile(s) is/are to be placed within State ROW at the location(s) determined by the Engineer. Stockpiles are to be placed so that they neither obstruct traffic nor interfere with roadway drainage. Any location that has been damaged during stockpiling or seal coat operations shall be repaired to the satisfaction of the Engineer at the Contractor's expense.

Deliver aggregate in end-dump haul trucks. Place each load individually and adjacent to the previous end-dump placement unless otherwise directed by the Engineer.

Before beginning work, furnish a certified copy of the legal gross weight of each vehicle hauling materials and certified measurements for each vehicle hauling material by volume.

Provide appropriate traffic control and qualified personnel at all stockpile locations during delivery.

Temporary sediment control fence shall be used around stockpile location(s) and/or as directed by the Engineer. This will not be paid for directly but shall be subsidiary to pertinent Items.

ITEM 316: Surface Treatments

Item 316-6001 "Asph (Multi Option)" shall consist of AC-10, CRS-2, or HFRS-2.

Pre-coated aggregate Type PB shall consist of crushed stone or limestone rock asphalt (LRA). Crushed stone consists of crushed limestone unless otherwise approved.

Material rates shown are for estimating purposes only. Adjust actual rates based on the material used, the existing condition, the type of roadway surface, and as approved by the Engineer.

County: NUECES

Control: 6459-31-001

Highway: SS 407

Asphalt material and aggregate for each course of surface treatment shall be applied at rates approved by the Engineer. A test section(s) of not more than 500 feet (each) may be required by the Engineer to assist in the determination of the required rates of application.

Clean aggregates showing signs of excessive dust from the stockpile or while handling during construction. The work performed will not be measured or paid for directly but will be subsidiary to pertinent Items.

Do not place surface treatment on exposed concrete structures unless directed.

All rolling shall be in accordance with Item 210 except for measurement and payment. The Engineer reserves the right to adjust the rate of pneumatic tire rolling based upon field conditions.

Furnish a distributor equipped with a hand hose in working condition.

Stockpiling of aggregates may begin after the execution of the Authorization to Begin Work or an issuance of the work order.

Remove vegetation and blade pavement edges prior to surfacing operations. The work performed will not be measured or paid for directly, but will be subsidiary to pertinent Items.

Broom and clean sealed sections of roadway and all adjacent paved surfaces, including the gutter line, of any surplus aggregate before opening to traffic or as directed.

ITEM 320: Equipment for Asphalt Pavement

Provide the type of windrow pick-up equipment prior to beginning paving operations.

Use of a motor grader shall not be permitted unless approved by the Engineer.

ITEM 3076: Dense-Graded Hot-Mix Asphalt

The use of Recycled Asphalt Shingles (RAS) will not be allowed.

Provide aggregates with a minimum surface aggregate classification (SAC) of "B" unless otherwise shown. SAC requirements apply to aggregates used on all final roadway surfaces, including shoulders.

Use a cut-off shoe when placing hot-mix asphalt on narrow width locations unless approved.

County: NUECES

Control: 6459-31-001

Highway: SS 407

Construct longitudinal joints with a joint maker providing a maximum one (1) inch vertical edge (1/2 inch desirable) with an adjacent 6:1 taper. Backfill edges within the same day.

Unless otherwise approved by the Engineer, a non-tracking tack coat will be placed on all lifts in accordance to 3076.4.7.2 Tack Coat. This work will be paid for under Item 3076 "Tack Coat".

The Engineer reserves the right to test all sources even if the source is listed in the Bituminous Source Rated Quality Catalog.

Provide the testing lab samples to calibrate the ignition oven no later than five (5) working days prior to mix design verification.

Unfractionated RAP will not be allowed in either surface or non-surface mixtures.

Obtain the current version of the templates at <http://www.txdot.gov/inside-txdot/forms-publications/consultants-contractors/forms/site-manager.html>. Submit electronically to the Engineer.

Place HMA utilizing an automatic, dual longitudinal-grade control system and automatic transverse-grade control system as specified under Item 320, unless otherwise approved by the Engineer.

Contractor shall temporarily cover all inlets during milling and paving operations. Inlets shall be uncovered when milling and paving operations are complete. This shall be subsidiary to Item 3076 and not paid for directly.

Design the mixtures using a Superpave Gyrotory Compactor (SGC).

There will be no "exempt production" on this project.

ITEM 351: Flexible Pavement Structure Repair

Use of motor grader will not be permitted unless approved.

Saw cut and remove the full depth of pavement repair at all transverse joints.

County: NUECES

Control: 6459-31-001

Highway: SS 407

ITEM 354: Planning and Texturing Pavement

The reclaimable asphalt material (RAP) generated from this project will become the property of the State. Contractor shall deliver and stockpile this RAP material at SH 44 and CR 67.

ITEM 500: Mobilization

"Materials on Hand" payments are not considered when determining partial payments.

ITEM 502: Barricades, Signs, and Traffic Handling

Traffic Control Plan (TCP) items listed in standard sheets as optional, such as arrow panels and TMAs, are required.

Furnish additional barricades, signs, and traffic handling as directed. The work performed will not be measured or paid for directly, but will be subsidiary to pertinent Items.

Traffic control for lane closures shall be in accordance with applicable standards.

Project limit barricades shall be required for each work area, and conform to BC (2)-21.

When advanced warning flashing arrow panels are specified, furnish one (1) standby unit in good condition at the job site for immediate use.

The Contractor's Responsible Person (CRP) or his representative(s) shall be located within one hour of traveling time to the project site(s). The Contractor shall notify the Engineer in writing of the name, physical address, and telephone number of this employee or these employees. The Engineer shall furnish this information to local law enforcement officials.

Maintain traffic control devices by taking corrective action as soon as possible. Complete corrective action **within forty-eight (48) hours of written notification** regardless of the day of the week involved, unless otherwise directed.

All signs shall be erected in a manner that they shall not obstruct the traveling public's view of the normal roadway signing. Signs, stands and safety flags shall not be furnished by TxDOT.

An off-duty law enforcement allowance will be set by the Engineer for each location. Any costs exceeding this allowance will be at the expense of the Contractor.

ITEM 504: Field Office and Laboratory

A field office shall not be required for this project.

Provide one (1) Type D Structure (Asphalt Mix Control Laboratory). This lab shall be for TxDOT use only and shall be a separate structure from the Contractor's facilities. Provide 2 sets of keys to the lab.

Apply for and secure permits necessary for the buildings, and pay all utility meter deposits and service bills. The work performed will not be measured or paid for directly, but will be subsidiary to pertinent Items.

Maintain all mechanical, electrical and plumbing facilities at all times.

Furnish and install adequate equipment, outlets, lighting, air conditioning, heating and ventilation as approved. Arrange and install outlets as directed with no less than 1 outlet per wall. Portable toilets will not be allowed.

Use support blocks for stability and tied down portable structures according to applicable zoning requirements or as directed.

Provide ONE (1) EYE WASH STATION, ONE (1) FIRE EXTINGUISHER, and ONE (1) FIRST AID KIT at each facility.

Provide doors with a minimum width of 36 inches and 80 inches in height. Secure all exterior openings with bars.

Provide electrical service for the asphalt content by Ignition Method.

ITEM 585: Ride Quality for Pavement Surfaces

Use Surface Test Type B and Pay Adjustment Schedule 3 to evaluate ride quality of the travel lanes in accordance with Item 585, "Ride Quality for Pavement Surfaces."

ITEM 662

Use temporary flexible-reflective roadway marker tabs at the beginning and end of no passing zones as shown on the TCP (7-1)-13 for seal coats and WZ(STPM)-13 for hot mix overlays.

ITEM 666

Establish and mark the location of existing standard pavement markings including but not limited to edge lines, transitions, passing and no passing zones, gore areas, etc.

ITEM 3076

SAC requirements apply to aggregates used on all surfaces.

Construct longitudinal joints with a joint maker providing a maximum one (1) inch vertical edge (1/2 inch desirable) with an adjacent 6:1 taper. Backfill edges within the same day.

The Engineer reserves the right to test all sources even if the source is listed in the Bituminous Source Rated Quality Catalog

Provide the testing lab samples to calibrate the ignition oven no later than five (5) working days prior to mix design verification.

Place HMA utilizing an automatic, dual, longitudinal-grade control system and automatic transverse-grade control system as specified under Item 320, unless otherwise approved by the Engineer.

Contractor shall temporarily cover all inlets during the milling and paving operations. Inlets shall be uncovered when milling and paving operations are complete. This shall be subsidiary to Item 3076 and not paid for directly.

ITEM 6001: Portable Changeable Message Signs

Furnish the portable changeable message signs displaying the correct message at least seven (7) days prior to beginning scheduled work or as directed.

The Contractor's Responsible Person (CRP) will maintain full control of messages at all times.

The Engineer will provide the sign message text to use at each sign.

County: NUECES

Control: 6459-31-001

Highway: SS 407

A minimum of two (2) PCMS will be required. However, additional units may be necessary depending on the work in progress.

Standby time will not be measured or paid for directly, but will be subsidiary to pertinent Items.

Portable changeable message signs may be moved and message changed at any time as deemed necessary by the Engineer. This will be considered subsidiary to Item 6001.

ITEM 6185: Truck Mounted Attenuators (TMAs)

A minimum of 2 TMAs will be required. However, additional units may be necessary depending on the work in progress.

Provide manufacturer's curb weight or certified scales weight ticket to the Engineer for approval.

TMAs are paid by the each shall be available for the duration of the project. Relocation of TMAs will be as directed by the Engineer, and will be considered subsidiary to this Item.

County: NUECES

Control: 6459-31-001

Highway: SS 407

*****SPECIFICATION DATA*****

UNIT WEIGHT ESTIMATES

ITEM 275 – CEMENT TREAT (EXST MTL)(10")-----132LBS/CF

ITEM 3076 – (2") D-GR HMA TY-D SAC B PG70-22-----220 LBS/SY

TWO COURSE SURFACE TREATMENT DATA

FIRST COURSE

ASPHALT, TYPE ----- ASPH (AC-10, CRS-2, OR HFRS-2)

AVERAGE ASPHALT RATE (GAL/SY) ----- 0.39

AGGREGATE TYPE ----- PB

AGGREGATE GRADE----- 3 or 3S SAC B

AVERAGE AGGREGATE RATE (CY/SY) ----- 1/85

SECOND COURSE

ASPHALT, TYPE ----- ASPH (AC-15P)

AVERAGE ASPHALT RATE (GAL/SY) ----- 0.32

AGGREGATE TYPE ----- PB

AGGREGATE GRADE----- 4 or 4S SAC B

AVERAGE AGGREGATE RATE (CY/SY) ----- 1/110



Estimate & Quantity Sheet

CONTROLLING PROJECT ID 6459-31-001

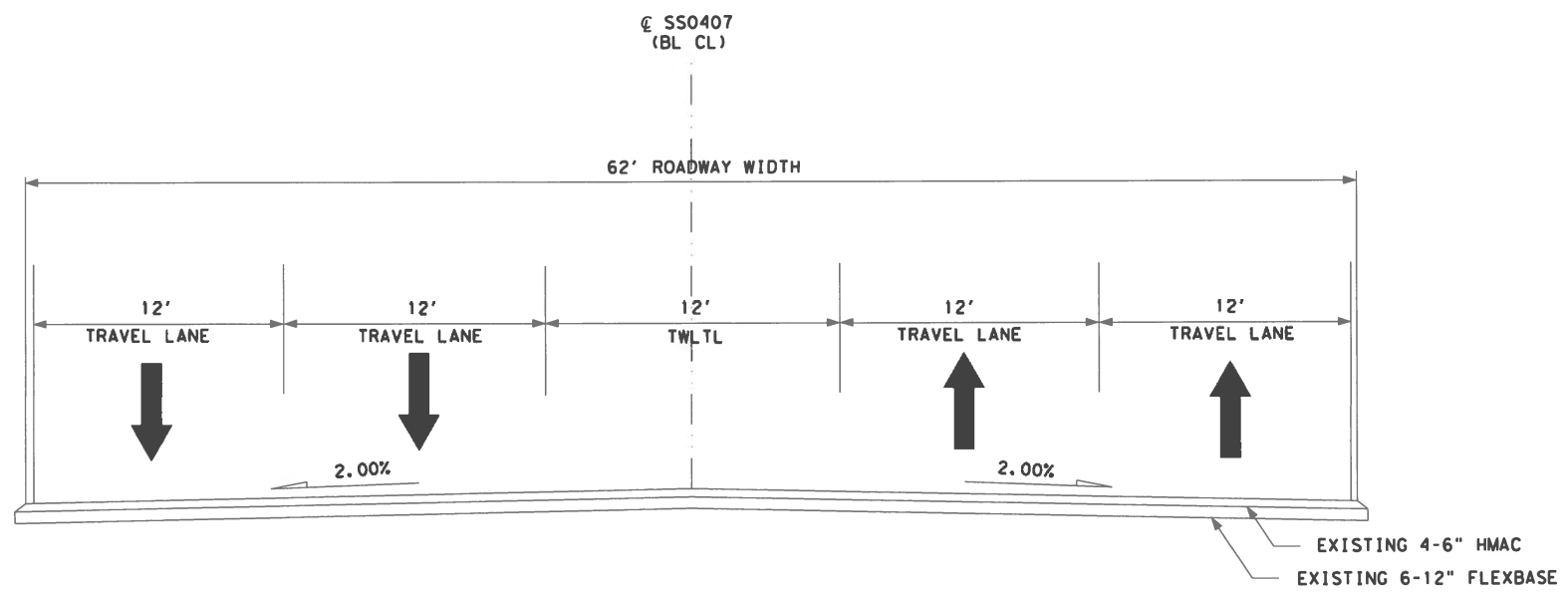
DISTRICT Corpus Christi
HIGHWAY SS0407

COUNTY Nueces

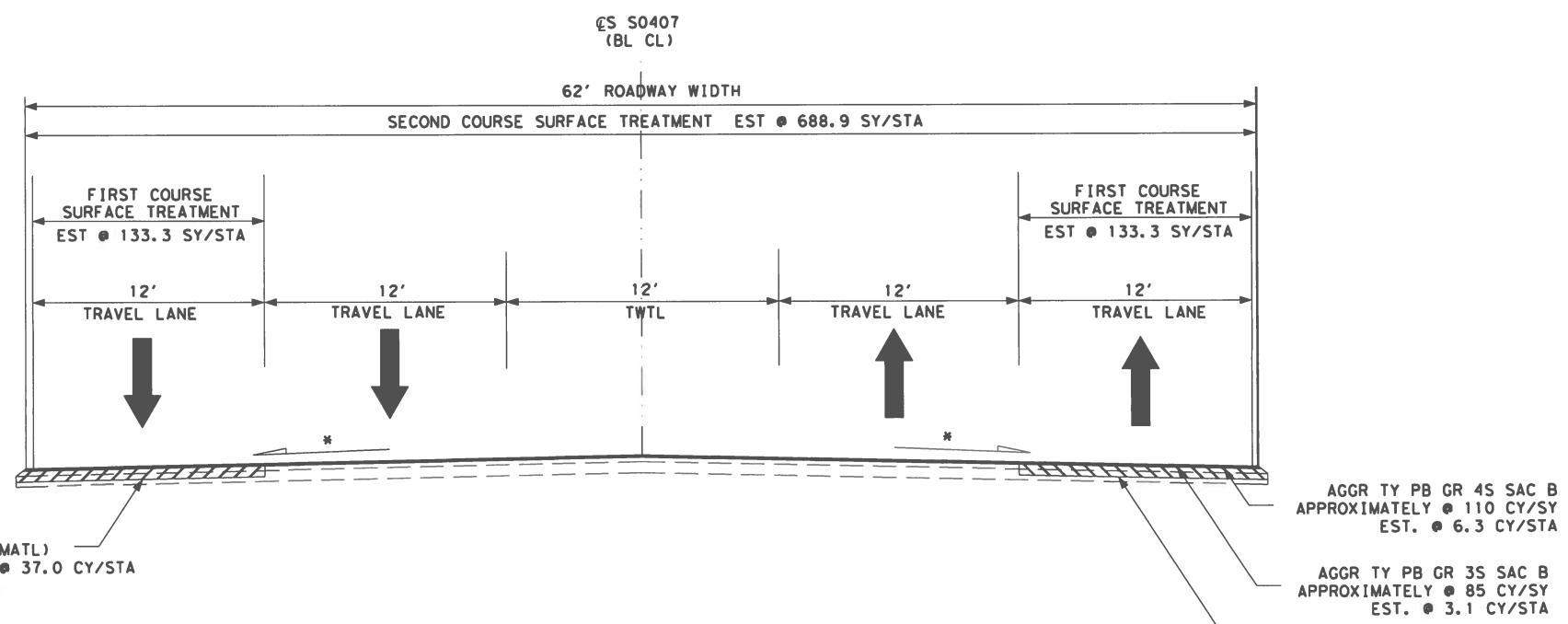
CONTROL SECTION JOB				6459-31-001		TOTAL EST.	TOTAL FINAL
PROJECT ID				A00205579			
COUNTY				Nueces			
HIGHWAY				SS0407			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL		
	275-6001	CEMENT	TON	494.000		494.000	
	275-6006	CEMENT TREAT (EXIST MATL) (10")	SY	40,302.000		40,302.000	
	316-6001	ASPH (MULTI OPTION)	GAL	35,546.000		35,546.000	
	316-6015	ASPH (AC-15P)	GAL	77,143.000		77,143.000	
	316-6427	AGGR(TY-PB GR-4S OR TY-PB GR-4)(SAC-B)	CY	2,182.000		2,182.000	
	316-6430	AGGR(TY-PB GR-3 OR TY-PB GR-3S)(SAC-B)	CY	1,075.000		1,075.000	
	351-6013	FLEXIBLE PAVEMENT STRUCTURE REPAIR(4")	SY	670.000		670.000	
	354-6021	PLANE ASPH CONC PAV(0" TO 2")	SY	53,189.000		53,189.000	
	500-6001	MOBILIZATION	LS	1.000		1.000	
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	3.000		3.000	
	506-6041	BIODEG EROSN CONT LOGS (IN STL) (12")	LF	391.000		391.000	
	506-6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	391.000		391.000	
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA	1,388.000		1,388.000	
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	1,940.000		1,940.000	
	666-6036	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF	2,996.000		2,996.000	
	666-6306	RE PM W/RET REQ TY I (W)6"(BRK)(100MIL)	LF	16,550.000		16,550.000	
	666-6309	RE PM W/RET REQ TY I (W)6"(SLD)(100MIL)	LF	63,917.000		63,917.000	
	666-6318	RE PM W/RET REQ TY I (Y)6"(BRK)(100MIL)	LF	2,180.000		2,180.000	
	666-6321	RE PM W/RET REQ TY I (Y)6"(SLD)(100MIL)	LF	67,047.000		67,047.000	
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF	850.000		850.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA	36.000		36.000	
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA	17.000		17.000	
	668-6106	PREFAB PAV MRK TY C (Y) (12") (SLD)	LF	200.000		200.000	
	672-6007	REFL PAV MRKR TY I-C	EA	175.000		175.000	
	672-6009	REFL PAV MRKR TY II-A-A	EA	575.000		575.000	
	672-6010	REFL PAV MRKR TY II-C-R	EA	850.000		850.000	
	3076-6042	D-GR HMA TY-D SAC-B PG70-22	TON	5,865.000		5,865.000	
	6001-6001	PORTABLE CHANGEABLE MESSAGE SIGN	DAY	116.000		116.000	
	6185-6002	TMA (STATIONARY)	DAY	51.000		51.000	
	6185-6005	TMA (MOBILE OPERATION)	DAY	102.000		102.000	

DATE: 12/19/2023 8:48:08 AM
 FILE: p:\t\tdot\project\wiseonline.com\TXDOT14\Documents\16 - CRP\Maintenance Projects\16_RMC_6459-31-001_Base Repair with Sealcoat\1 - Pre-Letting\Design Files\Pldm_Set1

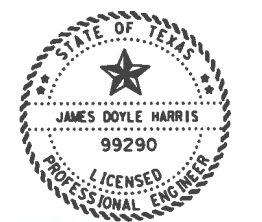
**NOTES:
 SEE ROADWAY QUANTITIES SHEET FOR LIMITS
 OF 10" CEMENT TREATMENT (EXIST MTL)



EXISTING TYPICAL SECTION
 STA 0+00 TO 89+00
 (BL CL)



PROPOSED TYPICAL SECTION
 STA 0+00 TO 89+00 - LIMITS VARY
 (BL CL)



James Harris
 12-19-23

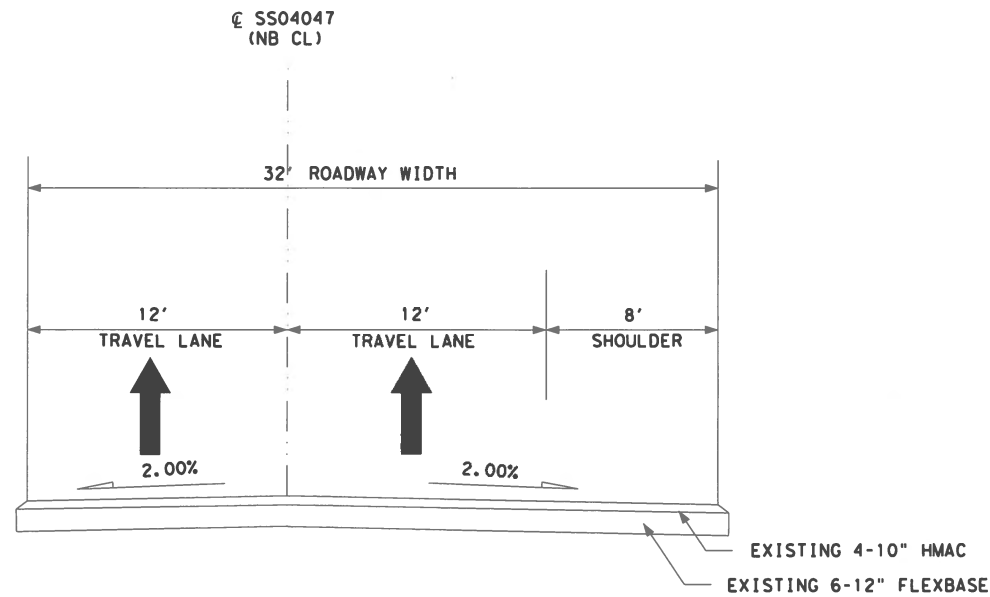
SS 407
 TYPICAL SECTIONS

SHEET 1 OF 6

CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST		COUNTY	SHEET NO.
CRP		NUECES	9

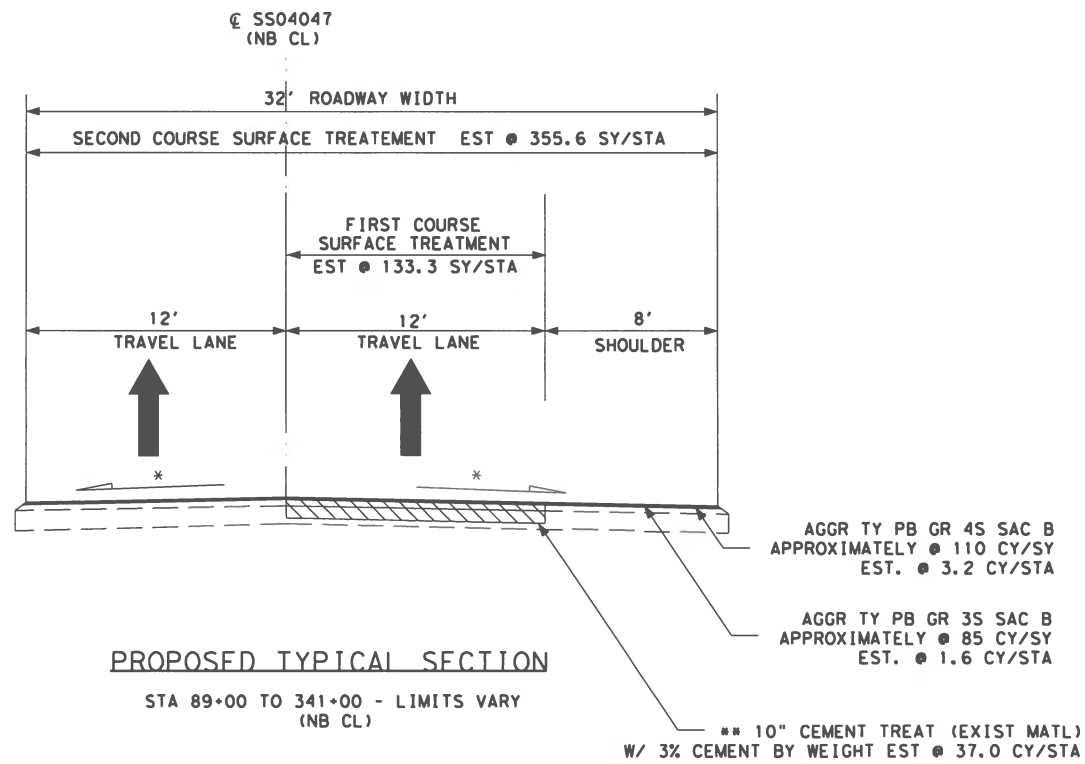
LEGEND:
 * - MATCH EXISTING CROSS SLOPE

DATE: 12/19/2023 8:48:15 AM
 FILE: p:\t\tdot.projects\wiseonline.com\TXDOT4\Documents\16 - CRP\Maintenance Projects\16_RMC_6459-31-001_Base Repair with Sealcoat\1 - Pre-Letting\Design Files\Plan Set



EXISTING TYPICAL SECTION

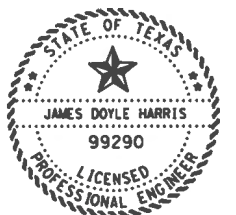
STA 89+00 TO 341+00
(NB CL)



PROPOSED TYPICAL SECTION

STA 89+00 TO 341+00 - LIMITS VARY
(NB CL)

**NOTES:
 SEE ROADWAY QUANTITIES SHEET FOR LIMITS
 OF 10" CEMENT TREATMENT (EXIST MTL)



James D Harris
 12-19-23

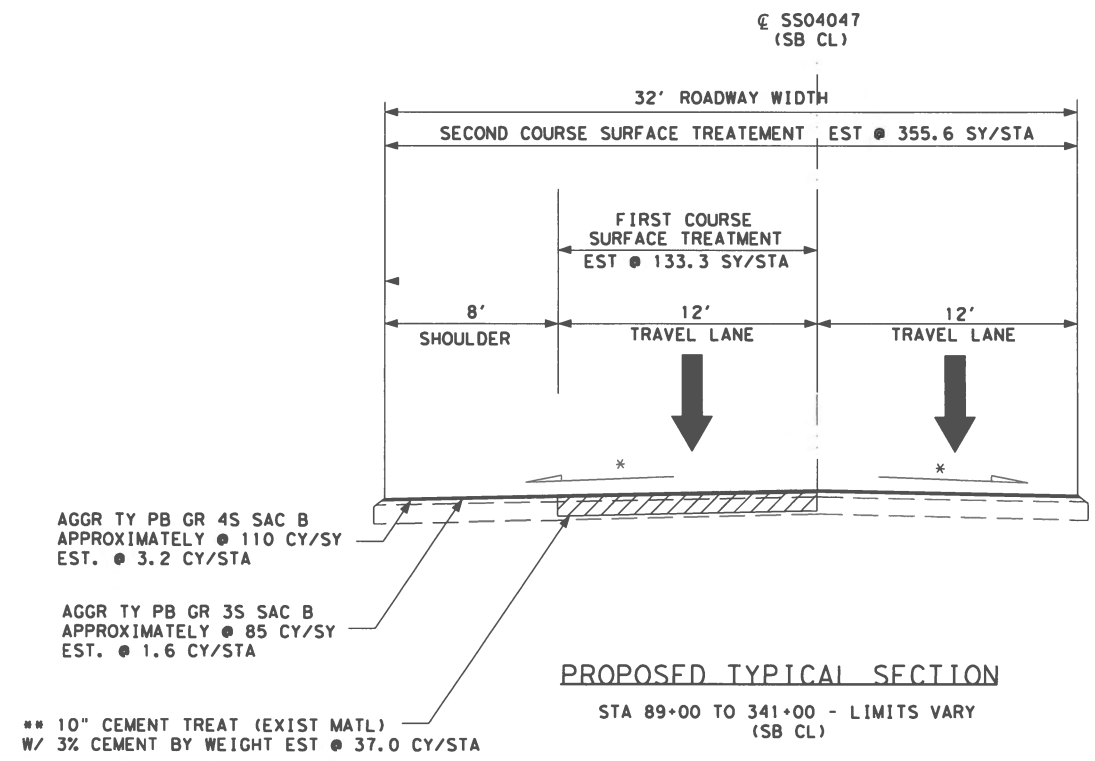
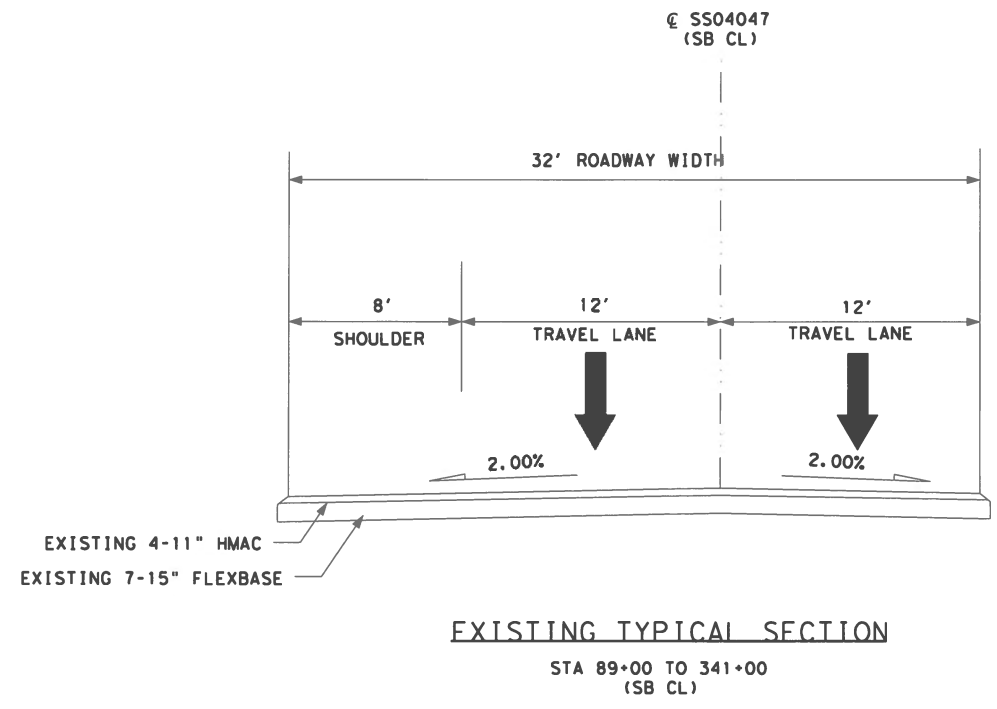
SS 407
 TYPICAL SECTIONS

SHEET 2 OF 6

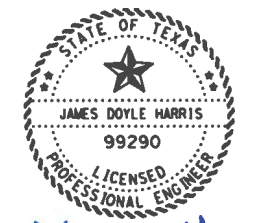
CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST	COUNTY	SHEET NO.	
CRP	NUECES	10	

LEGEND:
 * - MATCH EXISTING CROSS SLOPE

DATE: 12/19/2023 8:48:29 AM
 FILE: p:\t\tdot\projectwiseonline.com\TXDOT4\Documents\16 - CRP\Maintenance Projects\16 RMC 6459-31-001 Base Repair with Sealcoat\1 - Pre-Letting\Design Files\P\16-Set7



****NOTES:**
 SEE ROADWAY QUANTITIES SHEET FOR LIMITS OF 10" CEMENT TREATMENT (EXIST MTL)



James Attami
 12-19-23

SS 407
 TYPICAL SECTIONS

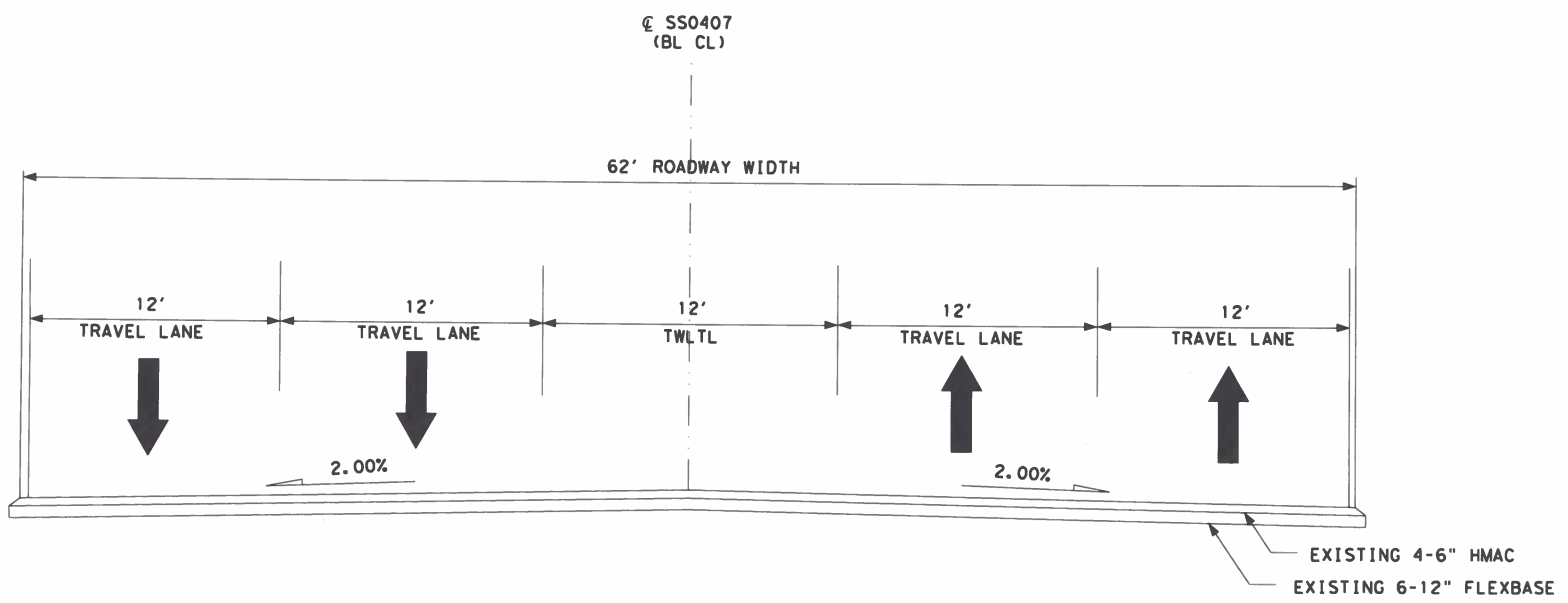
SHEET 3 OF 6

CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST		COUNTY	SHEET NO.
CRP		NUECES	11

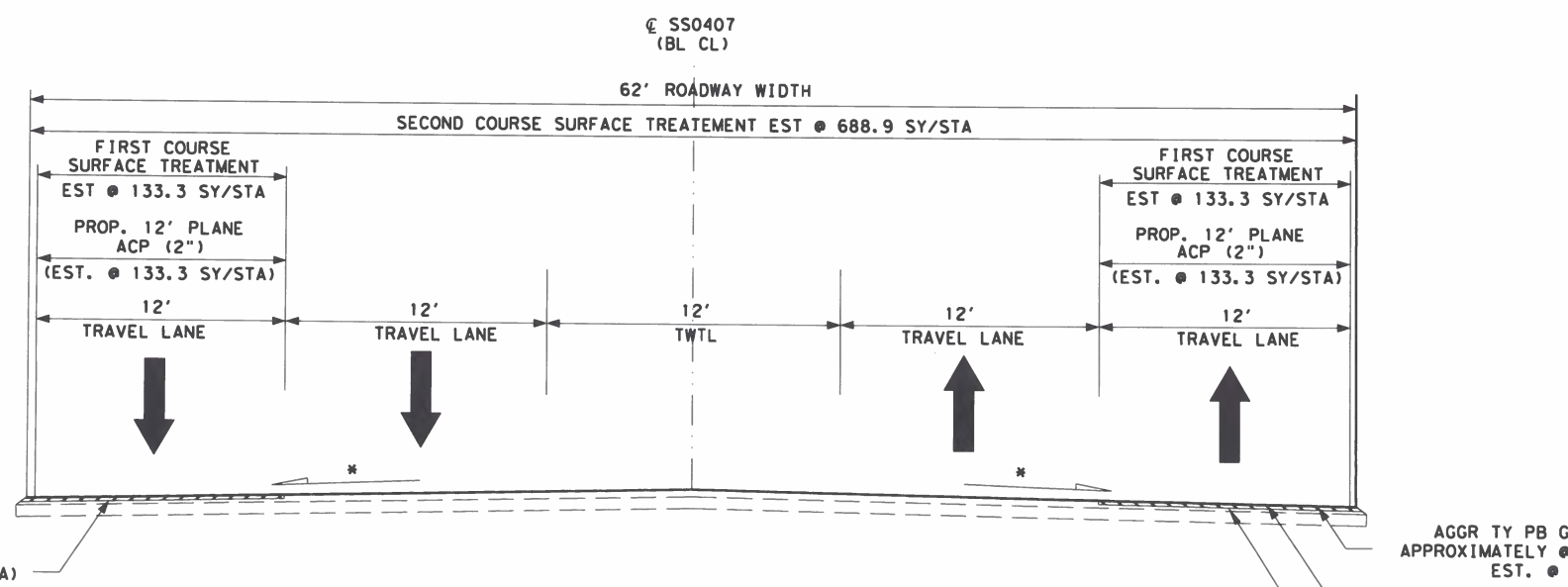
LEGEND:
 * - MATCH EXISTING CROSS SLOPE

DATE: 12/15/2023 5:41:39 PM
 FILE: pwr://txdot.projectwiseonline.com/TXD014/Documents/16 - CRP/Maintenance Projects/16 RMC 6459-31-001 Base Repair with Sealcoat/1 - Pre-Letting/Design Files/Plgpr Set/1.c6Gene

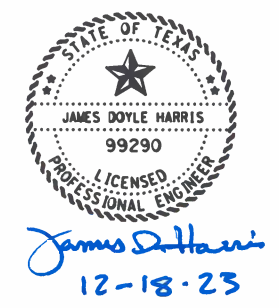
NOTES:
 ** SEE ROADWAY QUANTITIES SHEET FOR LIMITS OF 2" PLANE ACP & 2" D-GR HMA TY-D



EXISTING TYPICAL SECTION
 STA 0+00 TO 89+00
 (BL CL)



PROPOSED TYPICAL SECTION
 STA 0+00 TO 89+00 - LIMITS VARY
 (BL CL)



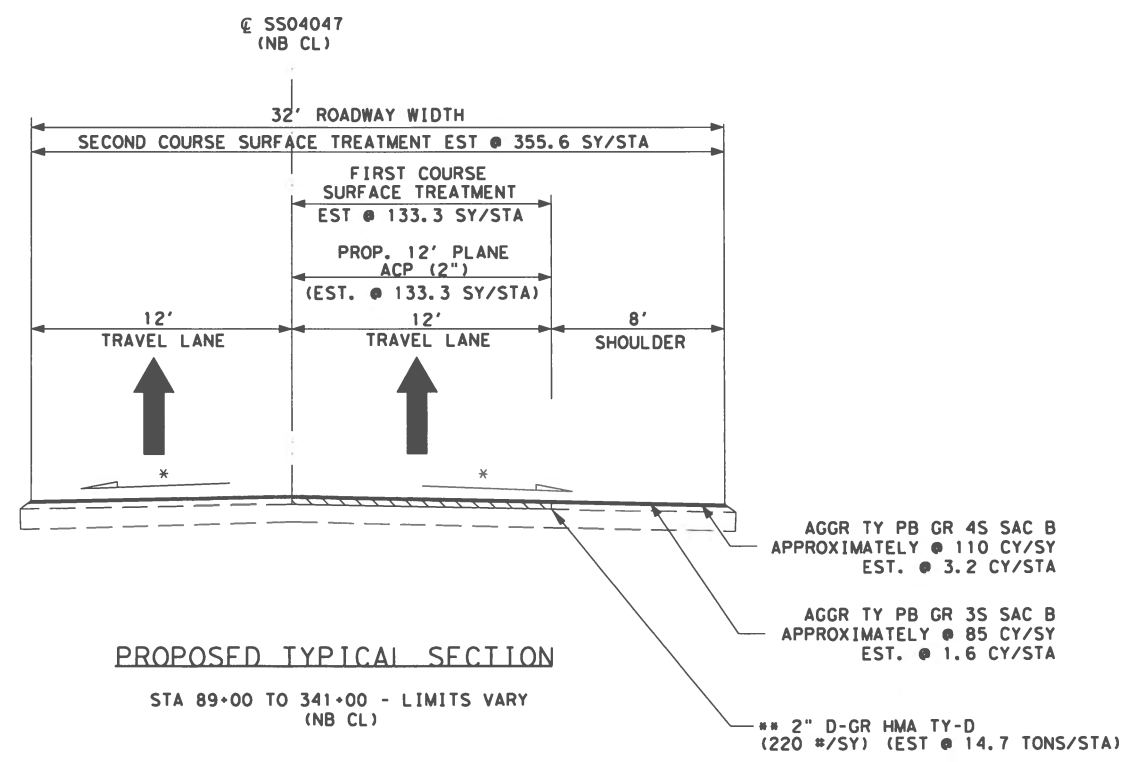
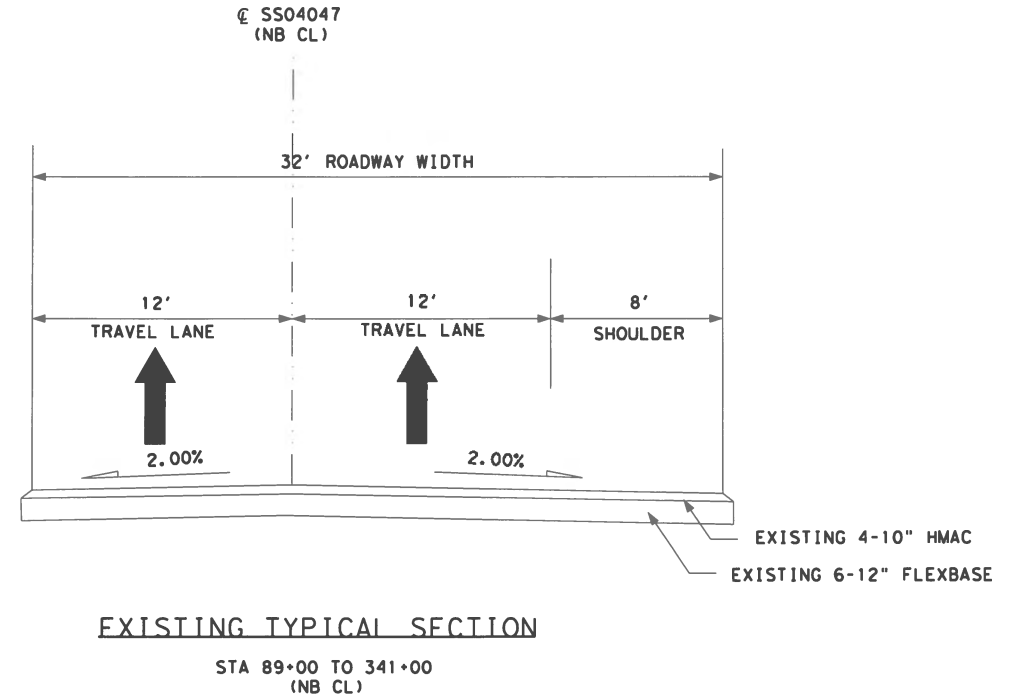
SS 407
 TYPICAL SECTIONS

LEGEND:
 * - MATCH EXISTING CROSS SLOPE

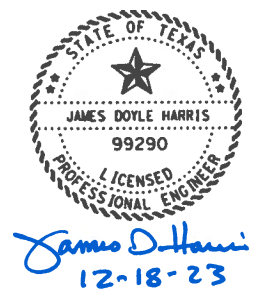
SHEET 4 OF 6

		CONT	SECT	JOB	HIGHWAY
		6459	31	001	SS 407
		DIST	COUNTY		SHEET NO.
		CRP	NUECES		12

DATE: 12/15/2023 5:41:48 PM
 FILE: pw://txdot.projectwiseonline.com:TXDOT4/Documents/16 - CRP/Maintenance Projects/16 RMC 6459-31-001 Base Repair with Sealcoat/1 - Pre-Letting/Design Files/Plgns/Set/1/General



NOTES:
 ** SEE ROADWAY QUANTITIES SHEET FOR LIMITS OF 2" PLANE ACP & 2" D-GR HMA TY-D



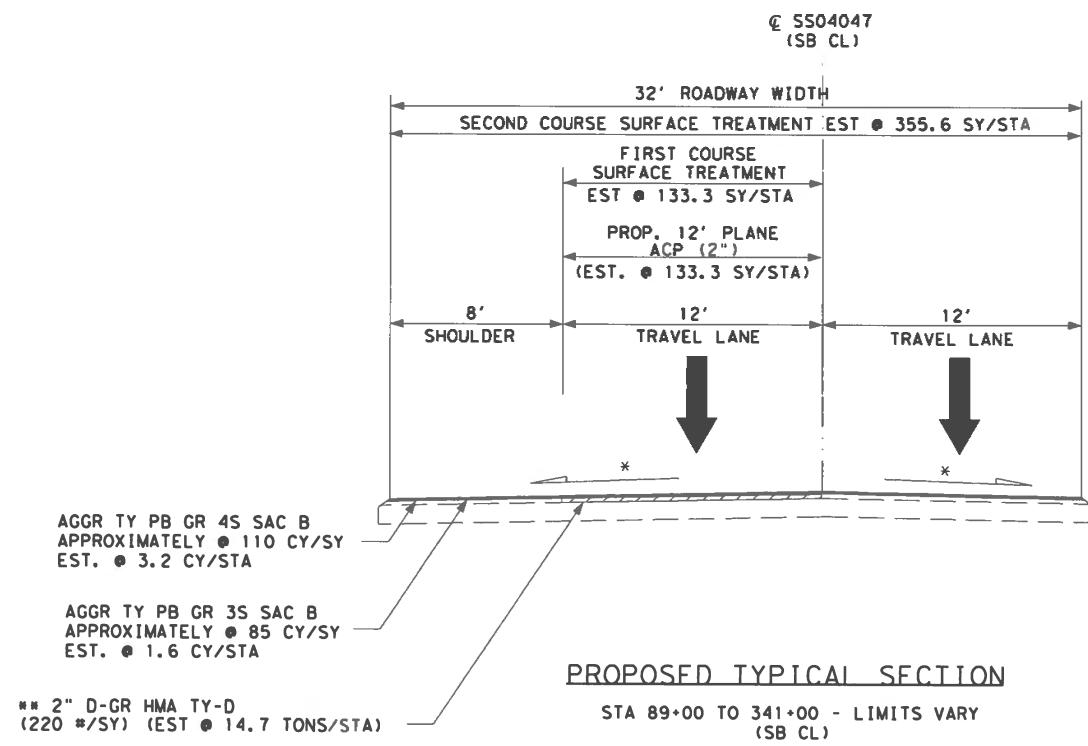
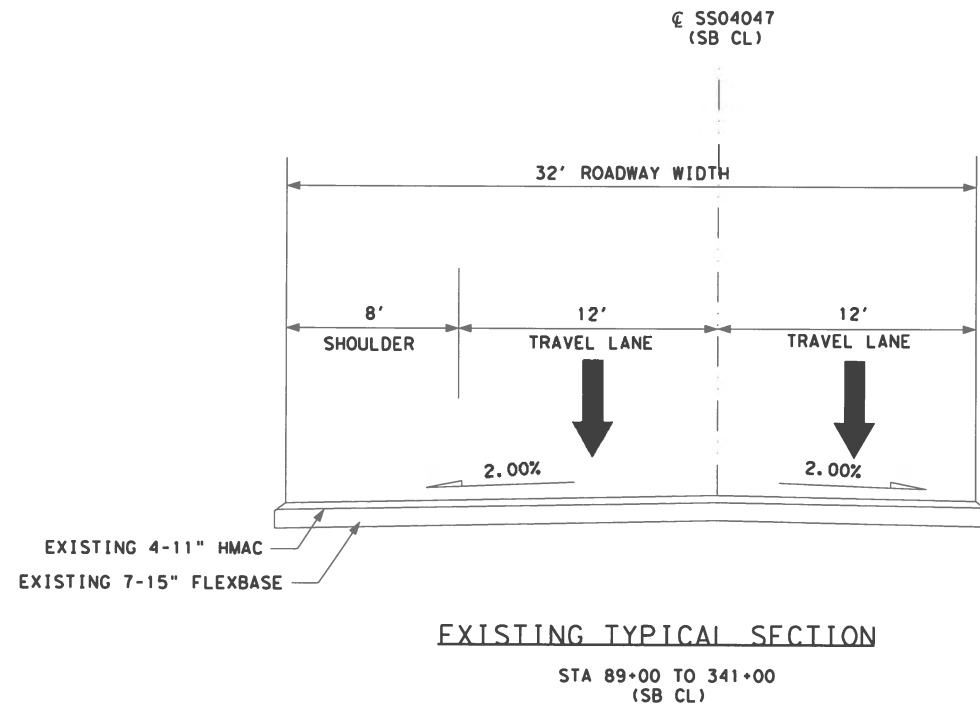
SS 407
 TYPICAL SECTIONS

SHEET 5 OF 6

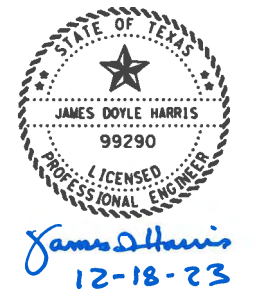
CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST	COUNTY		SHEET NO.
CRP	NUECES		13

LEGEND:
 * - MATCH EXISTING CROSS SLOPE

DATE: 12/15/2023 5:41:57 PM
 FILE: pw://txdot-projectwiseonline.com:TXDOT4/Documents/16 - CRP/Maintenance Projects/16 RMC 6459-31-001 Base Repair with Sealcoat/1 - Pre-Letting/Design Files/Plans/Set/1/General



NOTES:
 ** SEE ROADWAY QUANTITIES SHEET FOR LIMITS OF 2" PLANE ACP & 2" D-GR HMA TY-D

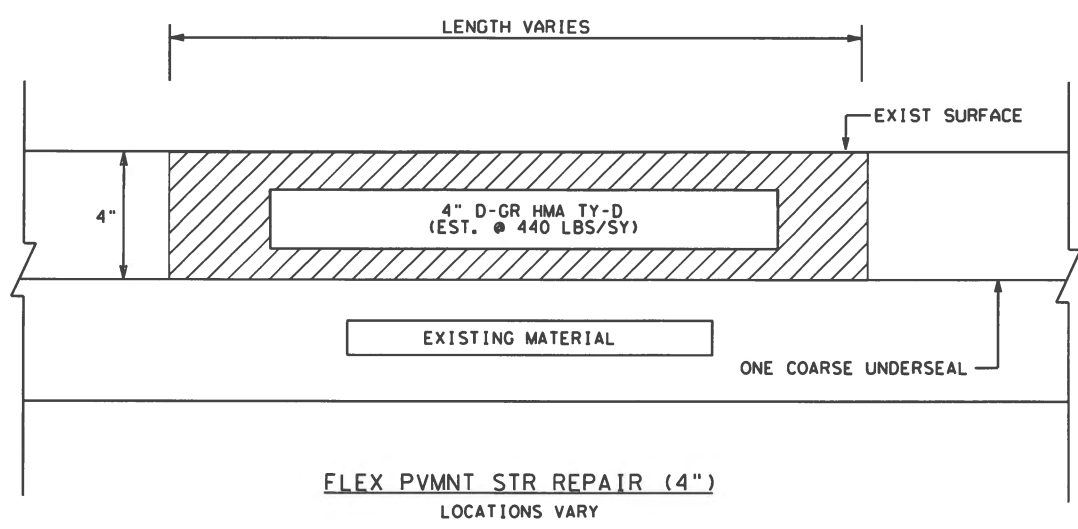


SS 407
TYPICAL SECTIONS

LEGEND:
 * - MATCH EXISTING CROSS SLOPE

SHEET 6 OF 6

CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST		COUNTY	SHEET NO.
CRP		NUECES	14



- NOTE:**
1. LOCATIONS AND DIMENSIONS OF FLEXIBLE PAVEMENT STRUCTURE REPAIR ARE APPROXIMATE. EXACT LOCATIONS MUST BE VERIFIED WITH THE ENGINEER. THE ENGINEER MAY ADD ADDITIONAL LOCATIONS AS NEEDED AND QUANTITIES WILL BE ADJUSTED. PROVIDE MATERIALS OF THE TYPE AND GRADE AS SHOWN BELOW AND IN ACCORDANCE WITH ITEM 341, "DENSE-GRADED HOT-MIX ASPHALT". THE FOLLOWING DATA IS FOR CONTRACTOR'S INFORMATION ONLY AND WILL BE SUBSIDIARY TO ITEM 351, "FLEXIBLE PAVEMENT STRUCTURE REPAIR."
 2. PAVEMENT REPAIR WIDTHS WILL BE 6' TO 12' TYP AS DETERMINED BY THE ENGINEER AND A MINIMUM OF 50' IN LENGTH.

HOT MIX DATA

(4") HMA (TY D) PG 70-22-----440 LBS/SY
 NON-TRACKING TACK COAT USING MANUFACTURER RECOMMENED RATES.

UNDERSEAL DATA

ASPHALT (AC-15P)-----0.32 GAL/SY
 AGGREGATE PB 4 OR 4S SAC B-----1/110 CY/SY

FLEX PVMNT STR REPAIR (4")
 LOCATIONS VARY

DATE: 12/19/2023 11:35:42 AM
 FILE: C:\Users\AHERNA12\Desktop\Maintenance Files\Leopard St\6459-31-001_MISC_DETAILS.dgn



**SPOT BASE REPAIR
 FLEXIBLE PAVEMENT
 REPAIR DETAIL**

SHEET 1 OF 1


CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST	COUNTY	SHEET NO.	
CRP	NUECES	14A	

DATE: 12/19/2023 11:56:12 AM
 FILE: p:\t\tdot\projectwiseonline.com\TXDOT4\Documents\16 - CRP\Maintenance Projects\16 RMC_6459-31-001_Base Repair with Sealcoat\1 - Pre-Letting\Design Files\Pldmr Set\1\General\

SHEET NO.	BEGIN STA.	END STA.	316				275		6077 PLANE ASPH CONC PAV (0" TO 2")	6042 D-GR HMA TY-D SAC-B PG70-22
			6001	6221	6015	6223	6001	6006		
			ASPH (MULTI OPTION)	AGGR (TY-PB GR-3S SAC-B)	ASPH (AC-15P)	AGGR (TY-PB GR-4S SAC-B)	CEMENT	CEMENT TREAT (EXIST MATL) (10")		
			GAL	CY	GAL	CY	TON	SY	SY	TON
ALIGN "BL CL"										
1	00+00.00	24+00.00	2496	74	5290	151	22	1829	4684	517
2	24+00.00	48+00.00	2496	74	5290	151	48	3944	4427	488
3	48+00.00	72+00.00	2496	74	5290	151	16	1267	5285	583
4	72+00.00	89+00.00	1768	53	3747	107	5	392	4336	478
ALIGN "BL CL" TOTALS:			9256	275	19617	560	91	7432	18732	2066
ALIGN "NBCL"										
5	89+00.00	113+00.00	1248	38	2731	151	16	1273	1926	212
6	113+00.00	137+00.00	1248	38	2731	151	0	0	3199	353
7	137+00.00	161+00.00	1248	38	2731	151	9	773	2426	268
8	161+00.00	185+00.00	1248	38	2731	151	19	1549	1650	182
9	185+00.00	209+00.00	1248	38	2731	151	24	1927	1273	140
10	209+00.00	233+00.00	1248	38	2731	151	33	2716	484	53
11	233+00.00	257+00.00	1248	38	2731	151	7	561	2638	291
12	257+00.00	281+00.00	1248	38	2731	151	6	493	2706	298
13	281+00.00	305+00.00	1248	38	2731	151	0	0	3199	353
14	305+00.00	329+00.00	1248	38	2731	151	8	633	2566	283
15	329+00.00	341+77.49	665	20	1453	80	12	984	736	81
ALIGN "NBCL" TOTALS:			13145	400	28763	1590	134	10909	22803	2514
ALIGN "SBCL"										
5	89+00.00	113+00.00	1248	38	2731	151	27	2208	992	109
6	113+00.00	137+00.00	1248	38	2731	151	23	1860	1340	148
7	137+00.00	161+00.00	1248	38	2731	151	28	2275	925	102
8	161+00.00	185+00.00	1248	38	2731	151	39	3200	0	0
9	185+00.00	209+00.00	1248	38	2731	151	39	3200	0	0
10	209+00.00	233+00.00	1248	38	2731	151	38	3092	108	12
11	233+00.00	257+00.00	1248	38	2731	151	37	3025	175	19
12	257+00.00	281+00.00	1248	38	2731	151	20	1621	1578	174
13	281+00.00	305+00.00	1248	38	2731	151	18	1480	1720	190
14	305+00.00	329+00.00	1248	38	2731	151	0	0	3199	353
15	329+00.00	341+77.49	665	20	1453	80	0	0	1617	178
ALIGN "SBCL" TOTALS:			13145	400	28763	1590	269	21961	11654	1285
PROJECT TOTALS:			35546	1075	77143	3740	494	40302	53189	5865

**SS 407
 ROADWAY
 QUANTITIES SHEET**

SHEET 1 OF 1



Texas
Department
of Transportation

CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST	COUNTY		SHEET NO.
CRP	NUECES		15


DATE: 12/18/2023 1:19:26 PM
 FILE: p:\t\tdot\projectwiseonline.com\TXDOT14\Documents\16 - CRP\Maintenance Projects\16 RMC 6459-31-001 Base Repair with Sealcoat\1 - Pre-Letting\Design Files\Pldmr Set\1.cad

STATION		SURFACE QUANTITIES						
		ITEM 662		ITEM 666			ITEM 666	
		6109	6111	6036	6306	6309	6318	6321
WK ZN PAV MRK SHT TERM (TAB) TY W	WK ZN PAV MRK SHT TERM (TAB) TY Y-2	REFL PAV MRK TY I (W) 8" (SLD) (100MIL)	REFL PM W/ RET REQ TY I (W) 6" (BRK) (100MIL)	RE PM W/RET REQ TY I (W) 6" (SLD) (100MIL)	RE PM W/RET REQ TY I (Y) 6" (BRK) (100MIL)	RE PM W/RET REQ TY I (Y) 6" (SLD) (100MIL)		
FROM	TO	EA	EA	LF	LF	LF	LF	LF
0+00	341+77.49	1388	1940	2996	16550	63917	2180	67047
PROJECT TOTALS		1388	1940	2996	16550	63917	2180	67047

STATION		SURFACE QUANTITIES						
		ITEM 668			ITEM 672			
		6076	6077	6085	6106	6007	6009	6010
PREFAB PAV MRK TY C (W) (24") (SLD)	PREFAB PAV MRK TY C (W) (ARROW)	PREFAB PAV MRK TY C (W) (WORD)	PREFAB PAV MRK TY C (Y) (12") (SLD)	REFL PAV MRK TY I-C	REFL PAV MRK TY II-A-A	REFL PAV MRK TY II-C-R		
FROM	TO	LF	EA	EA	LF	EA	EA	EA
0+00	341+77.49	850	36	17	200	175	575	850
PROJECT TOTALS		850	36	17	200	175	575	850

SS 407
SURFACE DETAILS
SUMMARY SHEET


SHEET 1 OF 1

			
CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST	COUNTY		SHEET NO.
CRP	NUECES		16

SW3P QUANTITIES				
STATION	506	506	INSTALL DATE:	REMOVE DATE:
	6041	6043		
	BIODEG EROSN CONT LOGS (INSTL)	BIODEG EROSN CONT LOGS (REMOVE)		
	LF	LF		
ALIGN "SB CL"				
108+48.00	9	9		
108+97.00	9	9		
132+50.00	9	9		
133+03.00	9	9		
155+77.00	9	9		
156+21.00	9	9		
181+05.00	9	9		
182+10.00	20	20		
182+27.00	9	9		
202+75.00	9	9		
203+35.00	9	9		
216+72.00	9	9		
217+43.00	9	9		
229+55.00	9	9		
230+13.00	9	9		
232+88.00	20	20		
233+24.00	20	20		
244+13.00	9	9		
245+00.00	9	9		
248+51.00	9	9		
249+09.00	9	9		
258+83.00	20	20		
269+00.00	9	9		
269+61.00	9	9		
270+06.00	9	9		
270+07.00	9	9		
288+06.00	18	18		
300+75.00	9	9		
301+00.00	50	50		
326+00.00	9	9		
326+62.00	9	9		
336+23.00	9	9		
336+79.00	9	9		
ALIGN "SB CL" TOTALS:	391	391		

**SS 407
 SW3P
 QUANTITIES SHEET**

SHEET 1 OF 1



**Texas
Department
of Transportation**

CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST	COUNTY		SHEET NO.
CRP	NUECES		17

DATE: 12/12/2023 4:16:58 PM
 FILE: P:\t\tdot\project\wiseonline.com\TXDOT4\Documents\16 - CRP\Maintenance Projects\16 RMC 6459-31-001 Base Repair with Sealcoat\1 - Pre-Letting\Design Files\Plan Set\2.cvt

GENERAL NOTES FOR THE CONSTRUCTION SEQUENCE

- ALL BEGINNING AND ENDING BARRICADES AND SIGNS ARE TO REMAIN IN PLACE FOR THE DURATION OF THE PROJECT.
- ALL SIGNS, BARRICADES AND PAVEMENT MARKINGS SHALL CONFORM WITH THE BC STANDARD SHEETS, TCP SHEETS, AND THE LATEST EDITION OF THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
- CW20-1D, G20-2 & EITHER G20-1bTL or G20-1bTR SIGNS WILL BE REQUIRED AT ALL PUBLIC ROADS, AND INTERSECTIONS WITHIN LIMITS. (G20-2) SIGNS MAY BE MOUNTED ON BACK OF CW20-1D, SEE BC(2)-14.
- THE CONTRACTOR SHALL PROVIDE FOR SAFE AND CONVENIENT INGRESS AND EGRESS TO ABUTTING PROPERTY HIGHWAY, PUBLIC ROAD, AND STREET CROSSING FOR ALL VEHICLES. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL CROSSINGS IN A SAFE AND PASSABLE CONDITION.
- FOR SPACING OF SIGNS AND BARRICADES SEE "BC" & "TCP" STANDARD SHEETS OR AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR MAY BE REQUIRED TO FURNISH ADDITIONAL BARRICADES, SIGNS, AND WARNING LIGHTS TO MAINTAIN TRAFFIC AND PROMOTE MOTORISTS SAFETY. ANY SUCH ADDITIONAL SIGNS AND BARRICADES SHALL BE CONSIDERED SUBSIDIARY TO ITEM 502.
- ALL SIGNS SHALL BE NEW OR FRESHLY PAINTED, AND KEPT CLEAN FOR THE DURATION OF THE PROJECT.
- ALL TRAFFIC BARRELS & EDGE LINE CHANNELIZERS SHALL BE USED IN ACCORDANCE WITH THE PLANS AND MANUFACTURER'S RECOMMENDATIONS AND SHALL HAVE A 7" PRISMATIC REFLECTOR UNIT, AS APPROVED BY THE ENGINEER. ALL MATERIALS SHALL BE CONSIDERED SUBSIDIARY TO ITEM 502.
- SIGNS, PAVEMENT MARKINGS, CHANNELIZING DEVICES, AND OTHER TRAFFIC CONTROL DEVICES THAT ARE INCONSISTENT WITH INTENDED TRAVEL PATHS THROUGH THE PROJECT AREA SHALL BE REMOVED IMMEDIATELY. THIS WORK SHALL BE CONSIDERED SUBSIDIARY TO ITEM 502.
- ALL TRAFFIC CONTROL DEVICES SHALL BE REMOVED WHEN NO LONGER NEEDED. WHEN WORK IS SUSPENDED FOR SHORT TIME PERIOD, ADVANCED WARNING SIGNS THAT ARE NO LONGER APPROPRIATE SHALL BE REMOVED FROM THE PROJECT AREA.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR MARKING THE LOCATION OF ALL TRAFFIC CONTROL STRIPING, CENTERLINE AND SHOULDER TEXTURING, AND PERMANENT STRIPING AS DIRECTED BY THE ENGINEER.
- SHORT TERM FLEXIBLE REFLECTIVE ROADWAY TABS SHALL BE USED TO DELINEATE THE CENTERLINE FOR A MAXIMUM OF 14 DAYS. PERMANENT STRIPING SHALL THEN BE PLACED, IN ACCORDANCE WITH ALL APPLICABLE STANDARDS. THE CONTRACTOR SHOULD BE AWARE, DEPENDING ON THE SEQUENCE OF CONSTRUCTION, THE STRIPING CREW MAY HAVE SEVERAL MOVE-INS. ALL SHORT TERM FLEXIBLE REFLECTIVE ROADWAY TABS SHALL BE REPLACED AS NEEDED WITHIN THAT 14 DAY PERIOD AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR MAY SUBMIT AN ALTERNATE TRAFFIC CONTROL PLAN AND/OR SEQUENCE OF CONSTRUCTION, IN ADVANCE AND IN WRITING, SUBJECT TO THE APPROVAL OF THE ENGINEER. REFER TO ITEM 502.2 "CONSTRUCTION".

UNEVEN LANES

- ANY VERTICAL OR NEAR VERTICAL LONGITUDINAL FACE EXCEEDING 1/4 INCHES IN HEIGHT IN THE PAVEMENT SURFACE OPEN TO TRAFFIC AT THE END OF THE WORK DAY SHALL BE SLOPED A MINIMUM OF 3:1. TRANSVERSE FACES THAT ARE PRESENT AT THE END OF THE WORK DAY SHALL BE TAPERED IN A MANNER ACCEPTABLE TO THE ENGINEER
- SIGNING FOR UNEVEN LANES (CW8-11) SHOULD BE INSTALLED IN ADVANCE TO THE CONDITION AND REPEATED EVERY 1 MILE. SIGNS INSTALLED ALONG THE UNEVEN LANE CONDITION SHOULD BE SUPPLEMENTED WITH THE NEXT XX MILES SIGN (CW7-3aP) OR ADVISORY SPEED SIGN (CW13-1P). SEE WZ(UL)-13 FOR ADDITIONAL DETAILS.
- UNEVEN LANE SIGNS (CW8-11) SHALL BE ERECTED ON BOTH ENDS ON THE AREA WHERE THERE IS A DIFFERENCE IN ELEVATION BETWEEN ADJACENT LANES GREATER THAN ONE INCH.

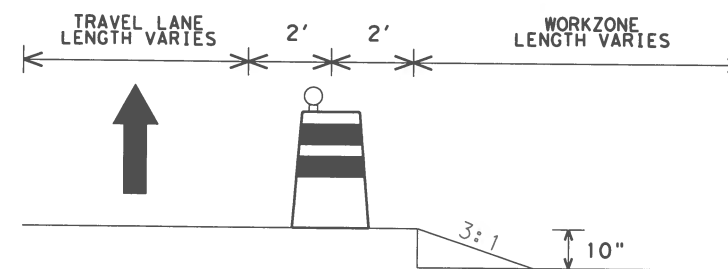
PAVEMENT DROP-OFF

- SIGNING FOR PAVEMENT DROP-OFF (CW8-9aT) SHOULD BE INSTALLED IN ADVANCE OF THE CONDITION AND REPEATED EVERY 1 MILE. SIGNS INSTALLED ALONG THE PAVEMENT EDGE SHOULD BE SUPPLEMENTED WITH THE NEXT XX MILES SIGN (CW7-3aP) OR ADVISORY SPEED SIGN (CW13-1P).

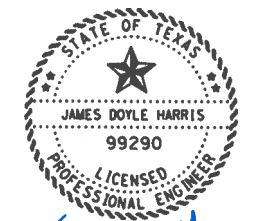
SUGGESTED SEQUENCE OF CONSTRUCTION

- PLACE ADVANCE WARNING SIGNS IN ACCORDANCE WITH THE "BC" AND "WZ" STANDARD SHEETS.
- PLACE SW3P EROSION CONTROL MEASURES IN ACCORDANCE WITH THE SW3P LAYOUT SHEETS AND APPLICABLE STANDARDS.
- UTILIZING A ONE-LANE CLOSURE (SEE TCP(2-2)-18 FOR UNDIVIDED HIGHWAYS OR TCP(2-6)-18 FOR DIVIDED HIGHWAYS) AND TEMPORARY RUMBLE STRIPS (WZ (RS)-16), BEGIN THE 10" CEMENT TREATMENT ON THE OUTSIDE LANE WORKING IN 1 MILE INCREMENTS. UTILIZE "TAPER DETAIL" BELOW.
- UTILIZING A ONE-LANE CLOSURE (SEE TCP(2-2)-18 FOR UNDIVIDED HIGHWAYS OR TCP(2-6)-18 FOR DIVIDED HIGHWAYS) AND TEMPORARY RUMBLE STRIPS (WZ (RS)-16), COMPLETE FLEXIBLE PAVEMENT REPAIR (2") AS SHOWN ON THE DESIGNATED LIMITS ON THE ROADWAY PLAN SHEETS AND "FLEXIBLE PAVEMENT REPAIR (2")" DETAILS SHOWN ON THE ROADWAY PLAN SHEETS SUMMARY SHEET. SAW-CUT VERTICALLY AT BEGINNING AND END OF EACH PLANED SECTION DAILY. CONSTRUCT UP TO THE PREVIOUSLY PLANED PAVEMENT SURFACE BY THE END OF THE WORKING DAY TO AVOID ANY PAVEMENT DROP-OFFS. THE TOP OF THE TY B HMAC IN THE FLEXIBLE PAVEMENT REPAIR (2") SHALL BE FLUSH WITH THE SURFACE OF THE PREVIOUSLY PLANED PAVEMENT SURFACE.
- UTILIZING A ONE-LANE CLOSURE (SEE TCP(2-2)-18 FOR UNDIVIDED HIGHWAYS OR TCP(2-6)-18 FOR DIVIDED HIGHWAYS) AND TEMPORARY RUMBLE STRIPS (WZ (RS)-16), PLACE FULL WIDTH TWO-COURSE SURFACE TREATMENT.

USE WK ZN PAV MRK (REMOV) SHORT TERM REFLECTIVE TABS TO RE-ESTABLISH LANE LINES.
- APPLY FINAL STRIPING.



TAPER DETAIL



James A. Harris
12-18-23

**SS 407
SUGGESTED
SEQUENCE OF
CONSTRUCTION**

SHEET 1 OF 1

		CONT	SECT	JOB	HIGHWAY
		6459	31	001	SS 407
		DIST	COUNTY	SHEET NO.	
		CRP	NUECES	18	

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

DATE: 11/17/2023 8:47:38 AM
 FILE: C:\Users\VAHERNA12\Desktop\Leopard_St\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).

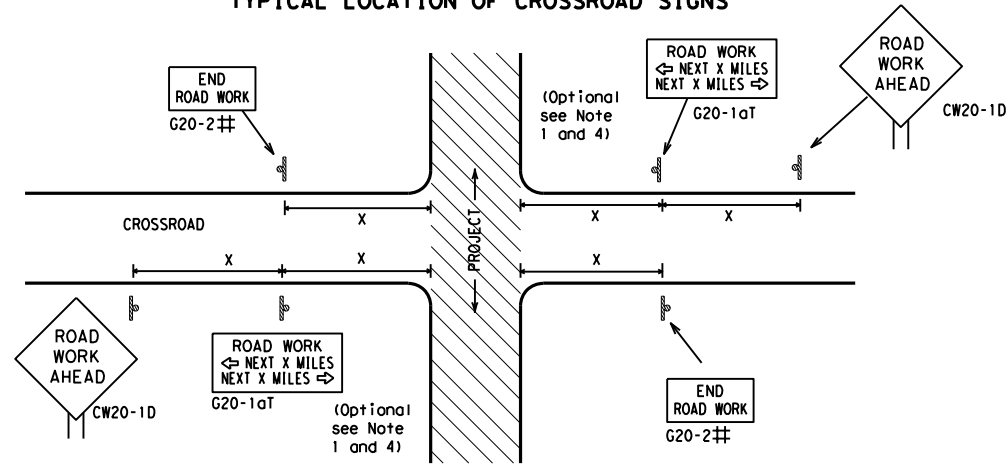
<p>THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT http://www.txdot.gov</p>
COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD)
DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS)
MATERIAL PRODUCER LIST (MPL)
ROADWAY DESIGN MANUAL - SEE "MANUALS (ONLINE MANUALS)"
STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD)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

SHEET 1 OF 12

Texas Department of Transportation		Traffic Safety Division Standard
<p>BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS</p> <p>BC (1) -21</p>		
FILE: bc-21.dgn	DN: TxDOT	CR: TxDOT
© TxDOT November 2002	CONT SECT	JOB HIGHWAY
REVISIONS	6459 31	001 SS 407
4-03 7-13	9-07 8-14	5-10 5-21
DIST	COUNTY	SHEET NO.
CRP	NUECES	19

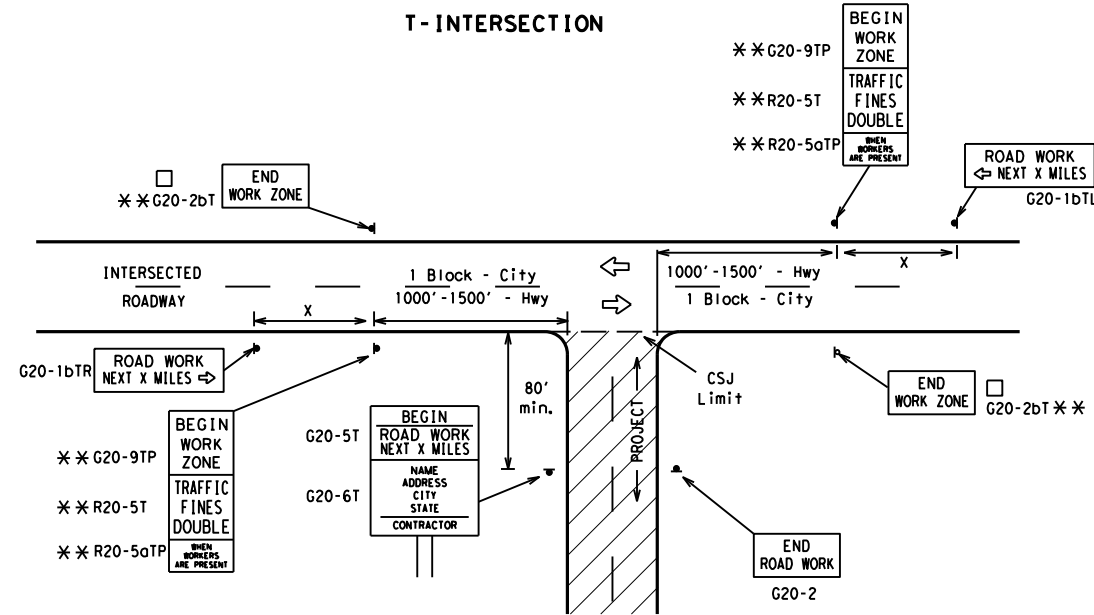
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

TYPICAL LOCATION OF CROSSROAD SIGNS



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

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

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

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

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

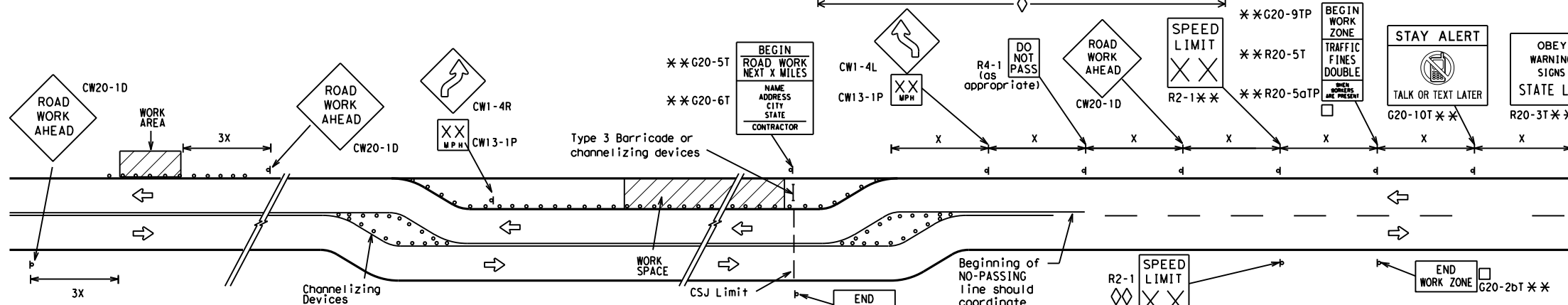
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

GENERAL NOTES

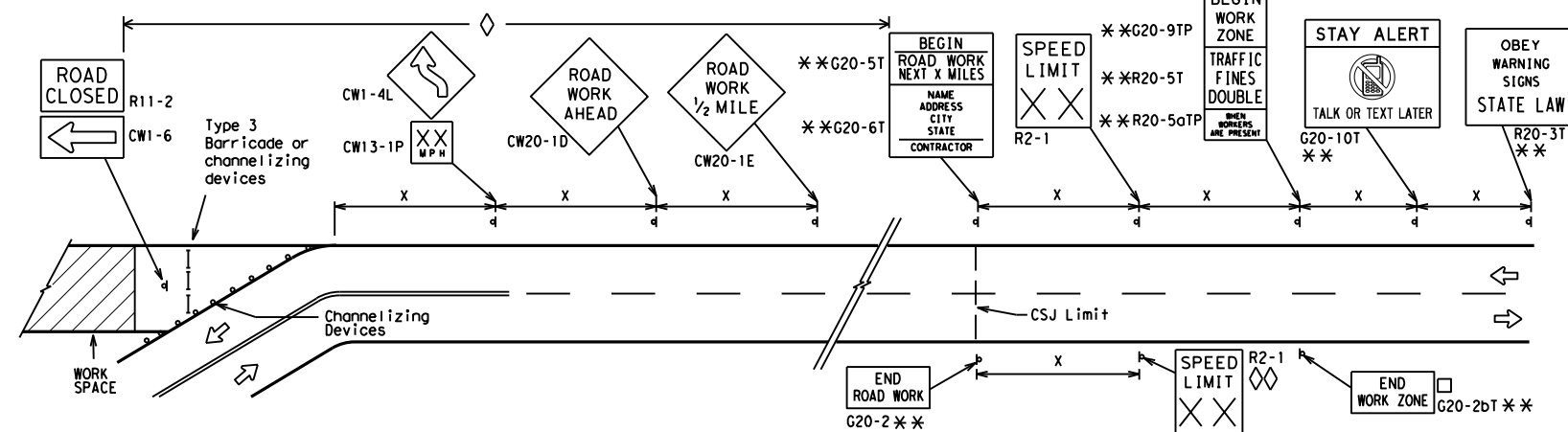
- Special or larger size signs may be used as necessary.
- Distance between signs should be increased as required to have 1500 feet advance warning.
- Distance between signs should be increased as required to have 1/2 mile or more advance warning.
- 36" x 36" "ROAD WORK AHEAD" (CW20-1D) signs may be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

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS

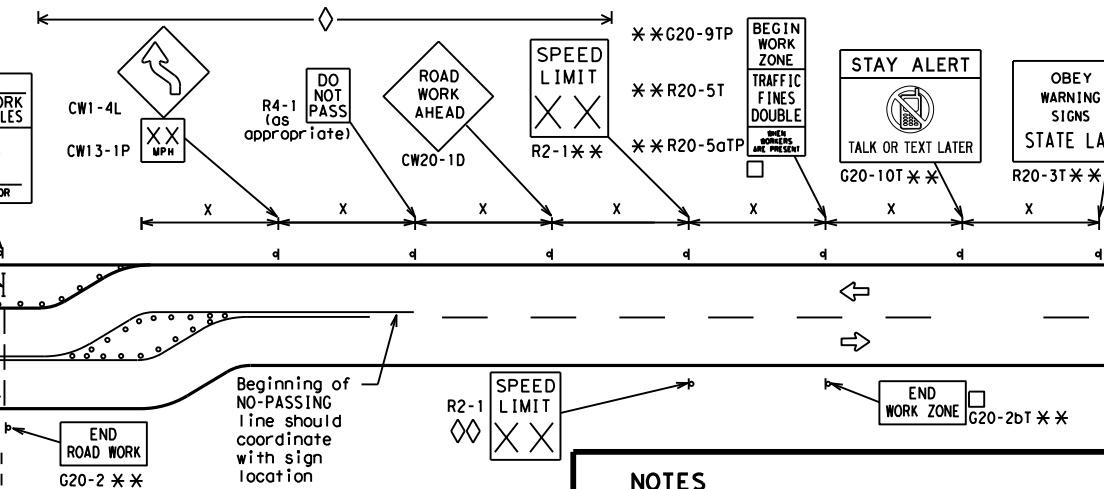


When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD" (CW20-1D) signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing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

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



SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS



NOTES

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

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

SHEET 2 OF 12



BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC (2) - 21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CR: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6459	31	001	SS 407
9-07 8-14	DIST	COUNTY	SHEET NO.	
7-13 5-21	CRP	NUECES	20	

DATE: 11/17/2023 8:47:39 AM
 FILE: C:\Users\AHERNA12\Desktop\Leopard St\bc-21.dgn

TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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

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



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

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

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

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

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

SHORT TERM WORK ZONE SPEED LIMITS

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

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

GENERAL NOTES

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

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

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

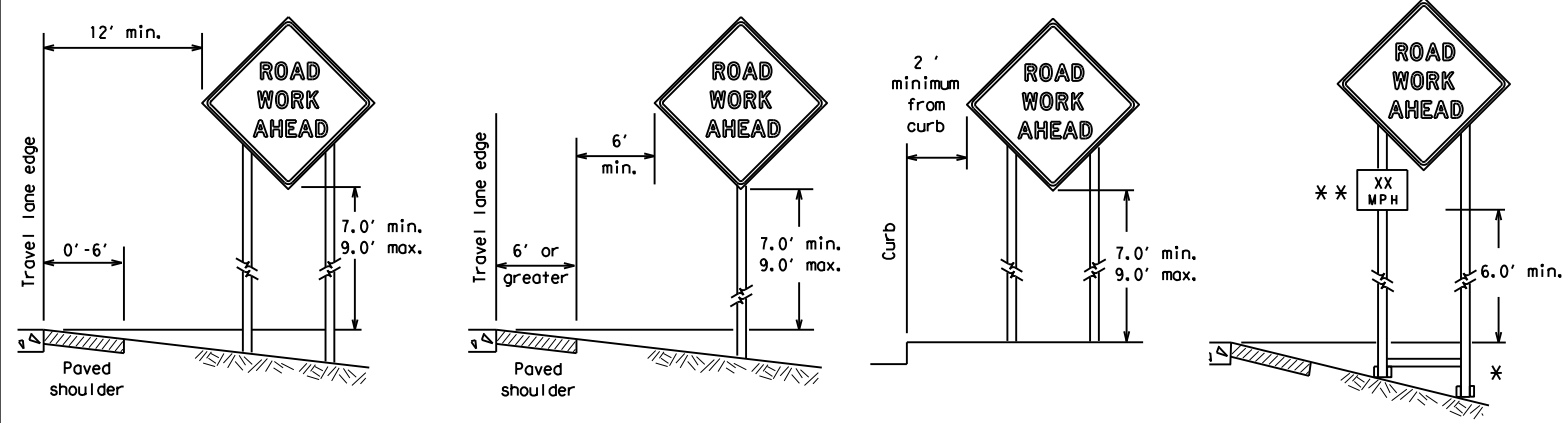
DATE: 11/17/2023 8:47:40 AM
FILE: C:\Users\VAHERNA12\Desktop\Leopard_St\bc-21.dgn

SHEET 3 OF 12

		Traffic Safety Division Standard	
<h2>BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT</h2>			
<h3>BC (3) - 21</h3>			
FILE:	bc-21.dgn	DW:	TxDOT
© TxDOT	November 2002	CONT:	6459 31
REVISIONS		JOB:	001
9-07 8-14		HIGHWAY:	SS 407
7-13 5-21		DIST:	CRP
		COUNTY:	NUECES
		SHEET NO.:	21

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

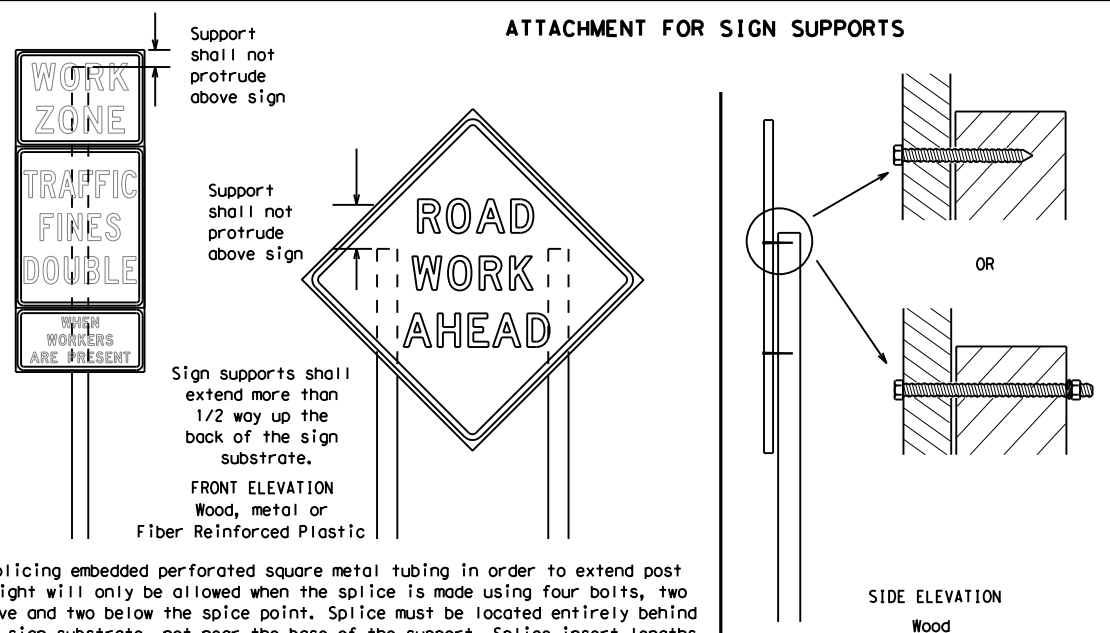
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



* 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

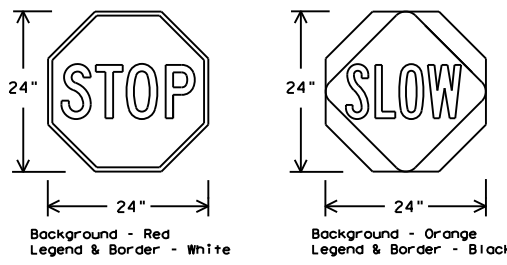


Nails shall NOT be allowed.
Each sign shall be attached directly to the sign support. Multiple signs shall not be joined or spliced by any means. Wood supports shall not be extended or repaired by splicing or other means.

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

STOP/SLOW PADDLES

1. STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24".
2. STOP/SLOW paddles shall be 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.

SHEET 4 OF 12



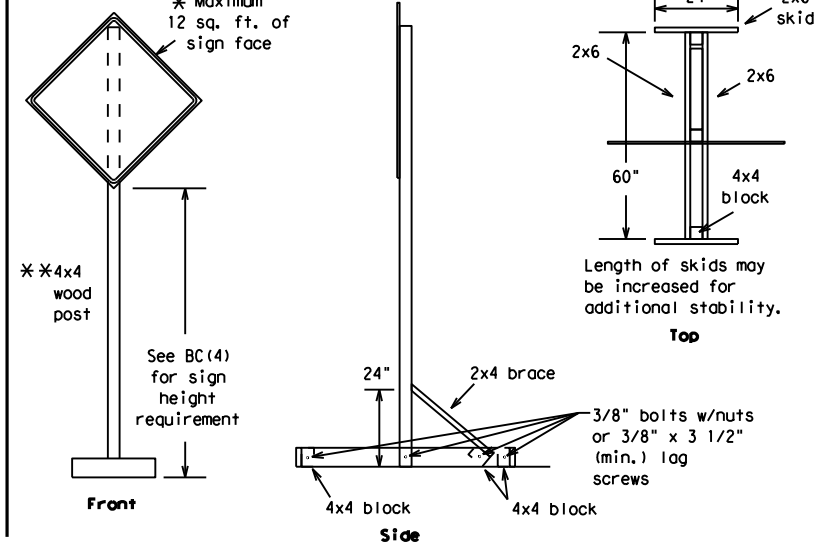
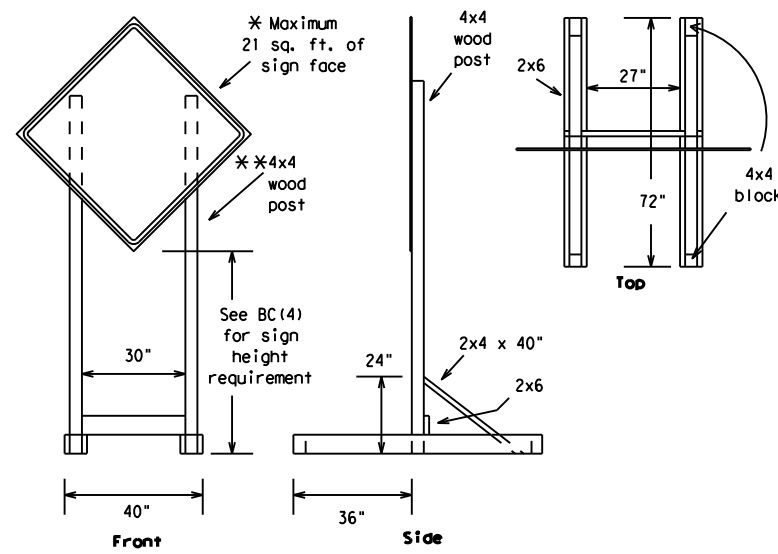
BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC (4) -21

FILE:	bc-21.dgn	DN:	TxDOT	CK:	TxDOT	OW:	TxDOT	CR:	TxDOT
© TxDOT	November 2002	CONT	SECT	JOB	HIGHWAY				
REVISIONS		6459	31	001	SS 407				
9-07	8-14	DIST	COUNTY		SHEET NO.				
7-13	5-21	CRP	NUECES		22				

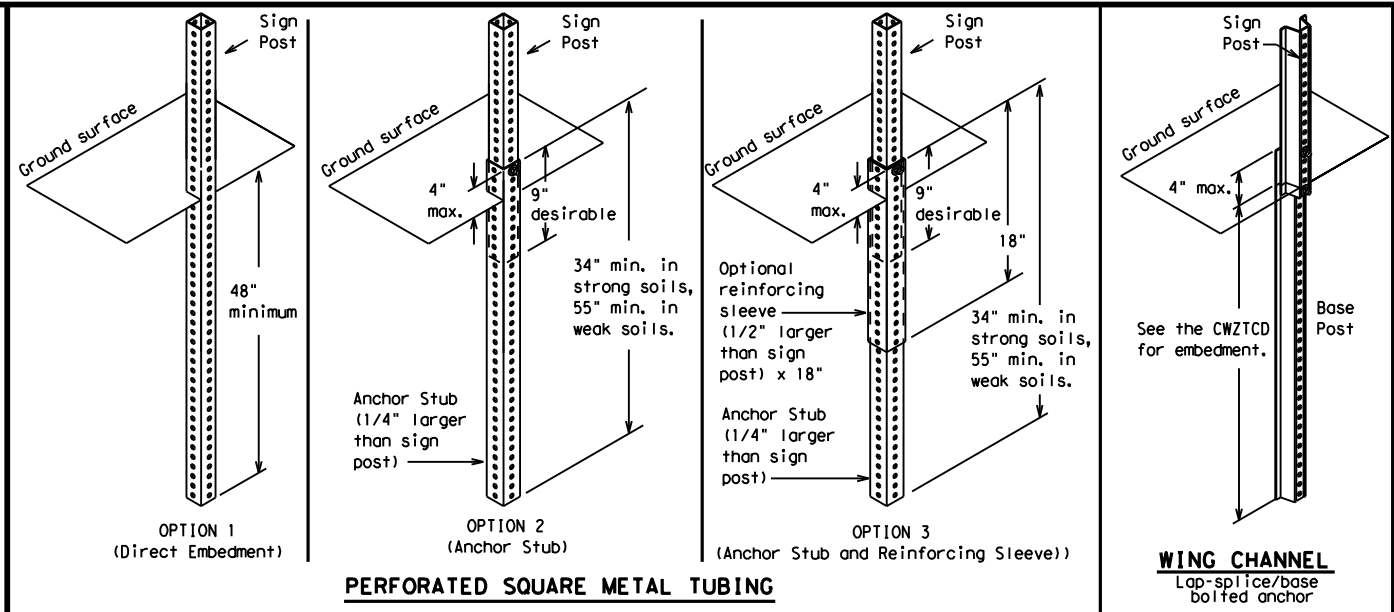
DATE: 11/17/2023 8:47:41 AM
FILE: C:\Users\AHERNA12\Desktop\Leopard_St\bc-21.dgn

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



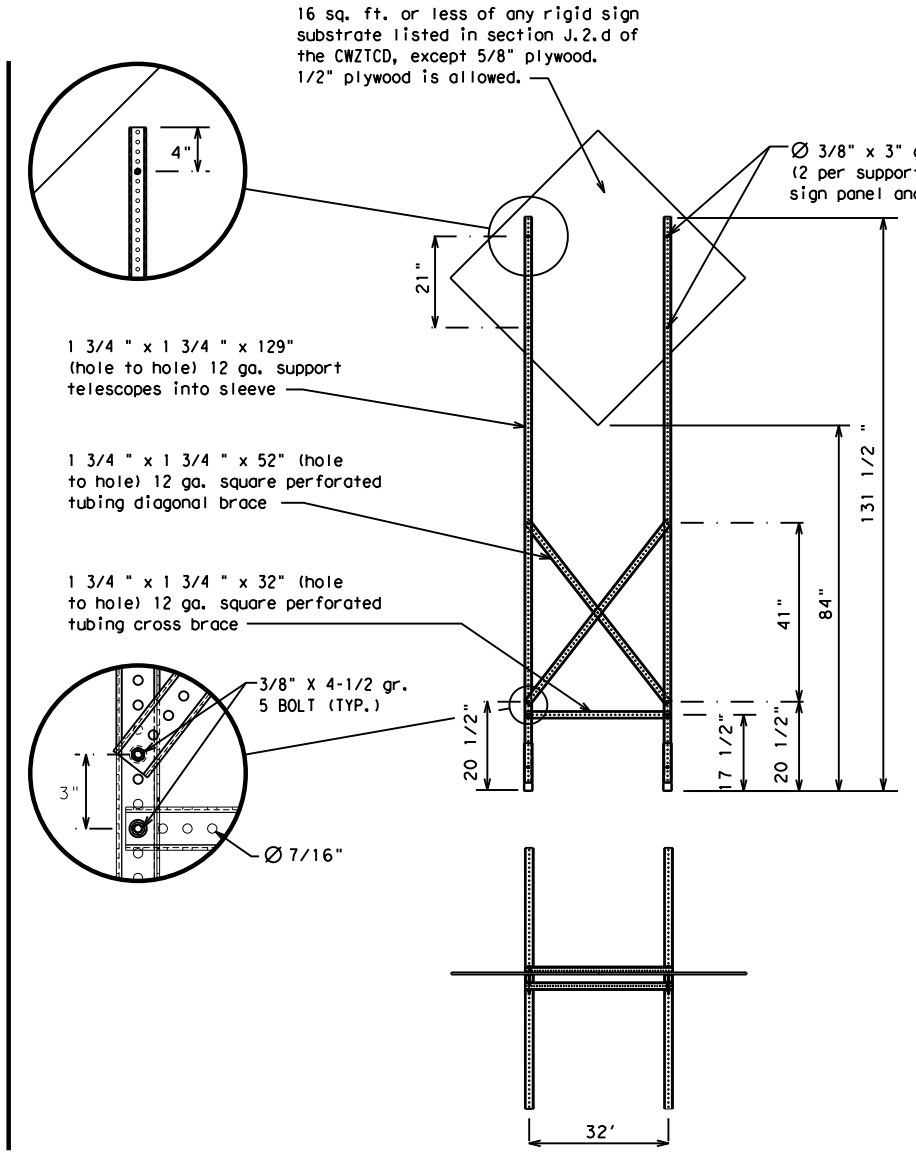
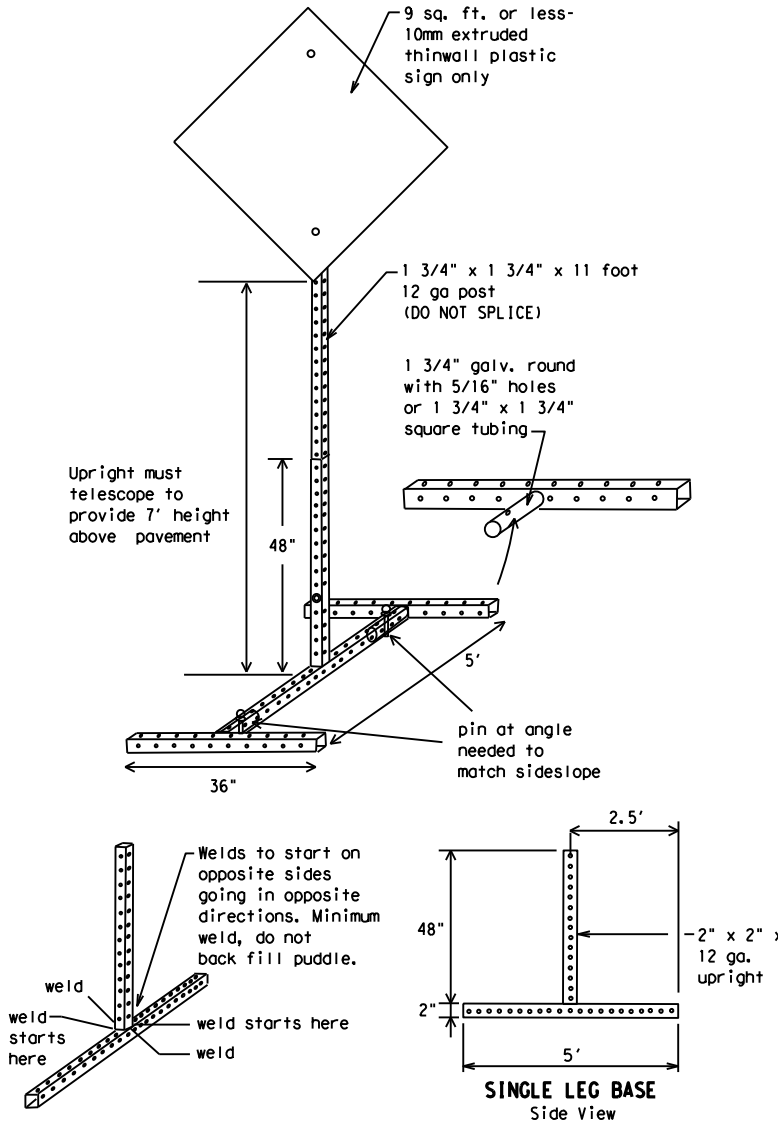
SKID MOUNTED WOOD SIGN SUPPORTS

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



GROUND MOUNTED SIGN SUPPORTS

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



SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

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

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

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

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

SHEET 5 OF 12



BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5) - 21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CR: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6459	31	001	SS 407
9-07 8-14	DIST	COUNTY	SHEET NO.	
7-13 5-21	CRP	NUECES	23	

DATE: 11/17/2023 8:47:42 AM
FILE: C:\Users\VAHERNA12\Desktop\Leopard St\bc-21.dgn

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

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

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

PORTABLE CHANGEABLE MESSAGE SIGNS

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

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

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

Other Condition List

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

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

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

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

Location List

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

Warning List

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

** Advance Notice List

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

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

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

WORDING ALTERNATIVES

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

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

FULL MATRIX PCMS SIGNS

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

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

DATE: 11/17/2023 8:47:43 AM
FILE: C:\Users\VAHERNA12\Desktop\Leopard_St\bc-21.dgn

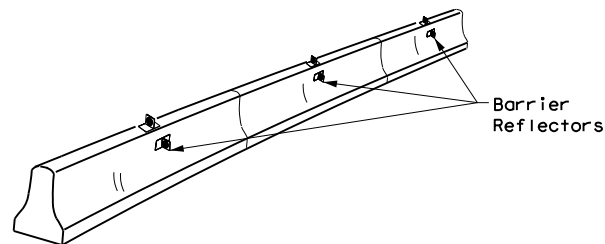
WORD OR PHRASE	ABBREVIATION	WORD OR PHRASE	ABBREVIATION
Access Road	ACCS RD	Major	MAJ
Alternate	ALT	Miles	MI
Avenue	AVE	Miles Per Hour	MPH
Best Route	BEST RTE	Minor	MNR
Boulevard	BLVD	Monday	MON
Bridge	BRDG	Normal	NORM
Cannot	CANT	North	N
Center	CTR	Northbound	(route) N
Construction Ahead	CONST AHD	Parking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

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

<h3>BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)</h3>			
<h2>BC (6) - 21</h2>			
FILE:	bc-21.dgn	DN:	TxDOT
© TxDOT	November 2002	CR:	TxDOT
REVISIONS	6459	OW:	TxDOT
9-07	8-14	CR:	TxDOT
7-13	5-21	JOB	SS 407
		DIST	COUNTY
		CRP	NUECES
		SHEET NO.	24

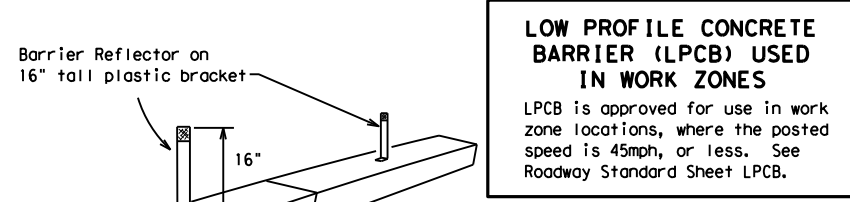
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

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



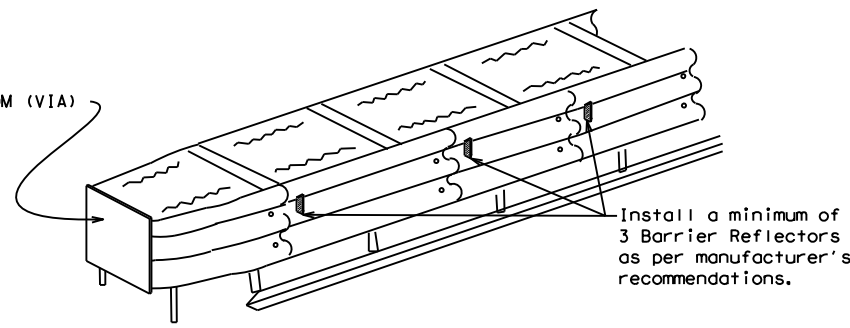
CONCRETE TRAFFIC BARRIER (CTB)

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



LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES
 LPCB is approved for use in work zone locations, where the posted speed is 45mph, or less. See Roadway Standard Sheet LPCB.

LOW PROFILE CONCRETE BARRIER (LPCB)



DELINEATION OF END TREATMENTS

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

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS

WARNING LIGHTS

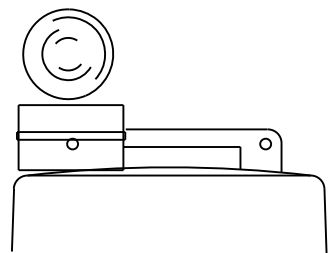
- Warning lights shall meet the requirements of the TMUTCD.
- Warning lights shall NOT be installed on barricades.
- Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet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

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

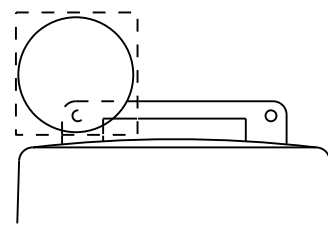
- Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
- Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
- A series of sequential flashing warning lights placed on channelizing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

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

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



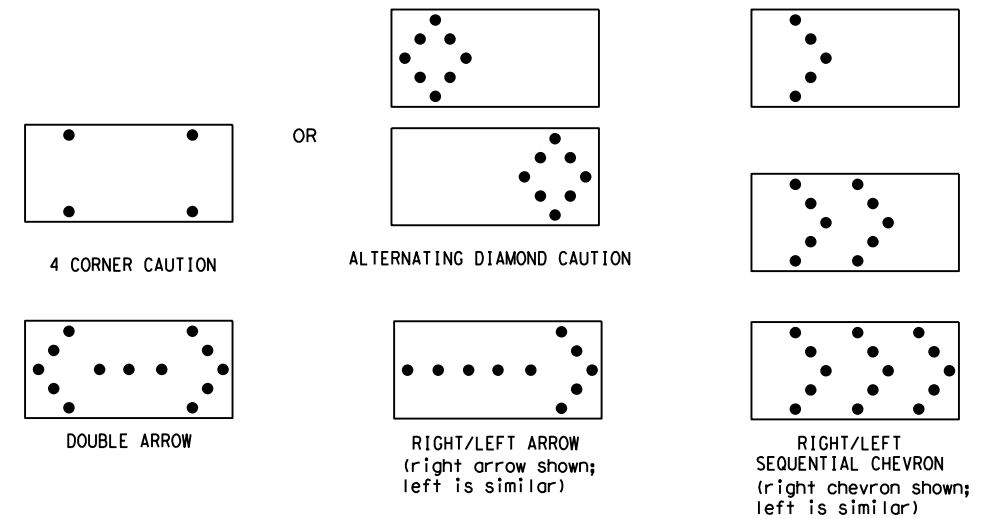
Type C Warning Light or approved substitute mounted on a drum adjacent to the travel way.



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

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

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



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

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

ATTENTION
 Flashing Arrow Boards shall be equipped with automatic dimming devices.

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

FLASHING ARROW BOARDS

SHEET 7 OF 12

TRUCK-MOUNTED ATTENUATORS

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



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

BC (7) -21

FILE:	bc-21.dgn	DN:	TxDOT	CR:	TxDOT	DW:	TxDOT	CK:	TxDOT
© TxDOT	November 2002	CONT	SECT	JOB	HIGHWAY				
REVISIONS		6459	31	001	SS 407				
9-07	8-14	DIST	COUNTY	SHEET NO.					
7-13	5-21	CRP	NUECES	25					

DATE: 11/17/2023 8:47:44 AM
 FILE: C:\Users\VAHERNA12\Desktop\Leopard_St\bc-21.dgn

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

DATE: 11/17/2023 8:47:45 AM
 FILE: C:\Users\VAHERNA12\Desktop\Leopard_St\bc-21.dgn

GENERAL NOTES

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

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

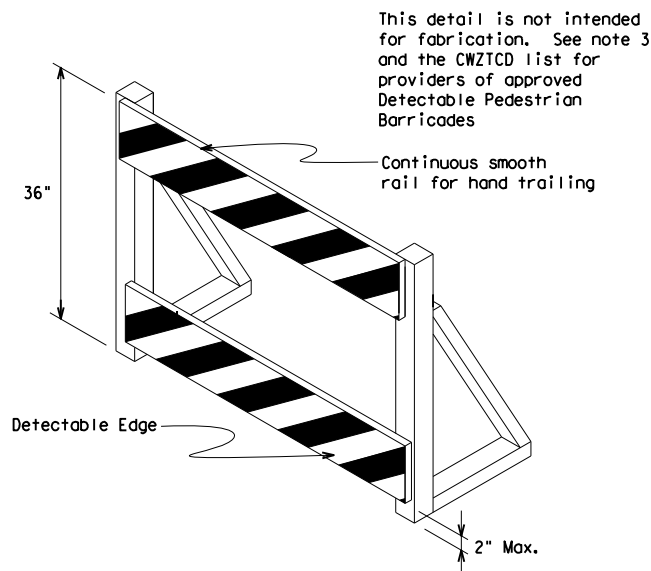
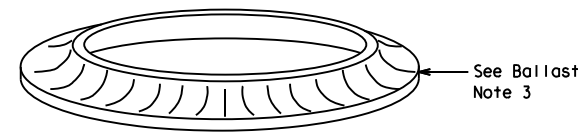
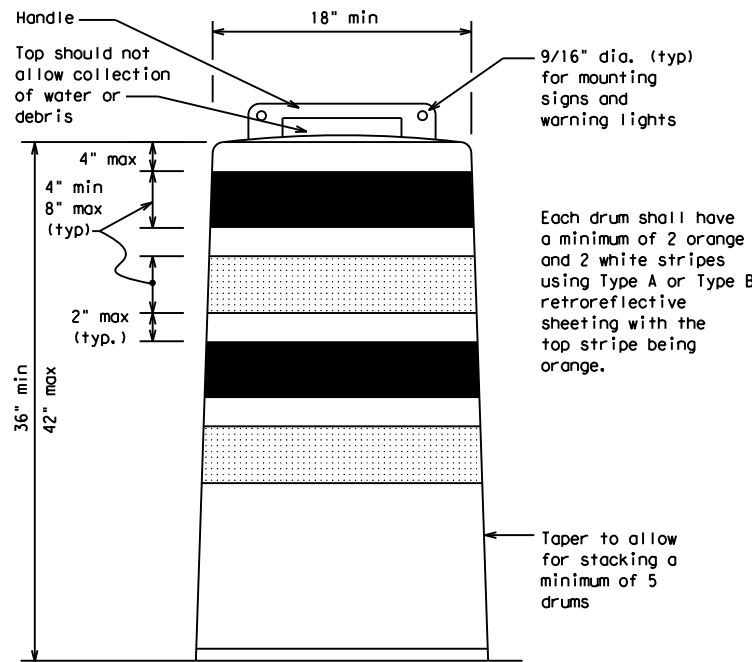
- Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
- The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents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

RETROREFLECTIVE SHEETING

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

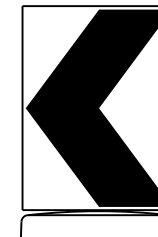
BALLAST

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

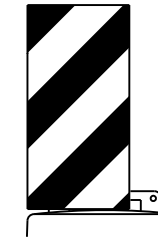


DETECTABLE PEDESTRIAN BARRICADES

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



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



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

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

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

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

SHEET 8 OF 12

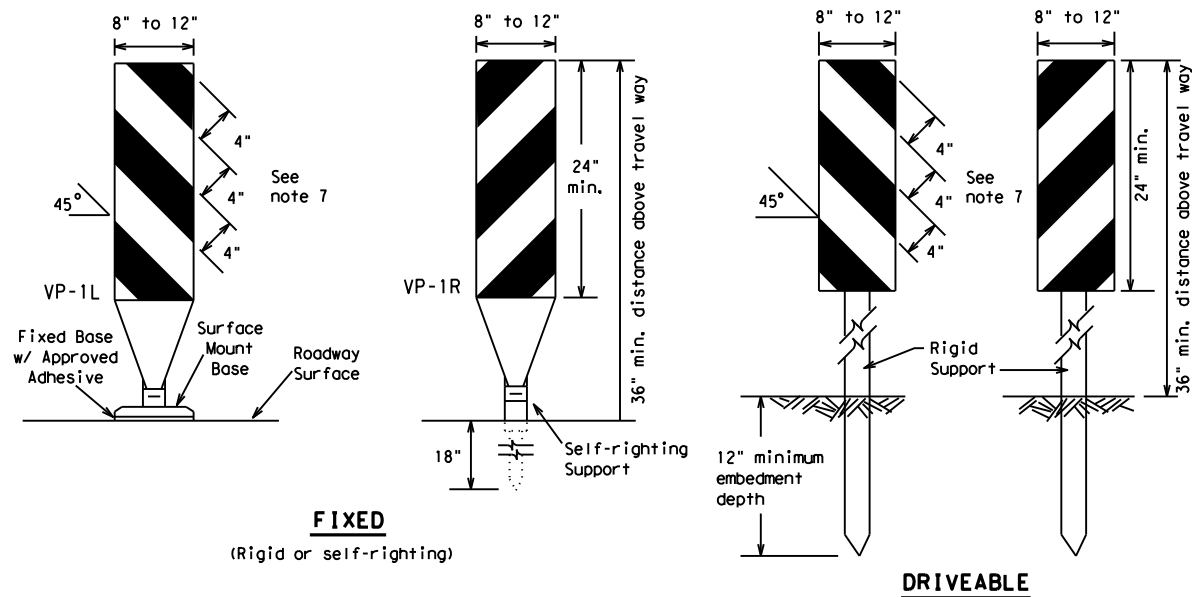


BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC (8) - 21

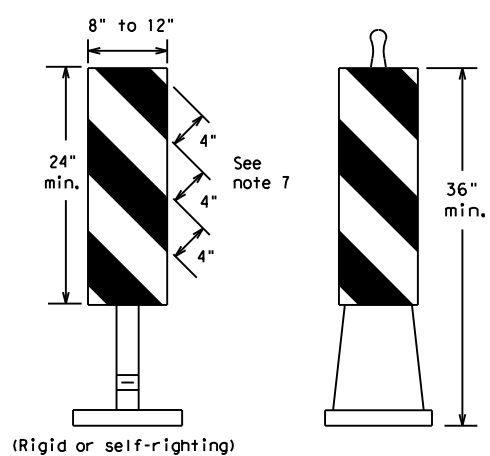
FILE:	bc-21.dgn	DN:	TxDOT	CR:	TxDOT	OW:	TxDOT	CK:	TxDOT
© TxDOT	November 2002	CONT	SECT	JOB	HIGHWAY				
REVISIONS		6459	31	001	SS 407				
4-03	8-14	DIST	COUNTY	SHEET NO.					
9-07	5-21	CRP	NUECES	26					
7-13									

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



FIXED
(Rigid or self-righting)

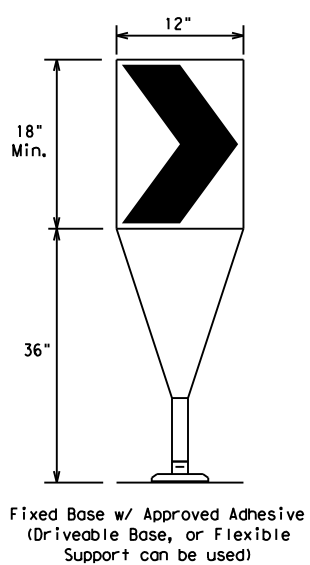
DRIVEABLE



PORTABLE

VERTICAL PANELS (VPs)

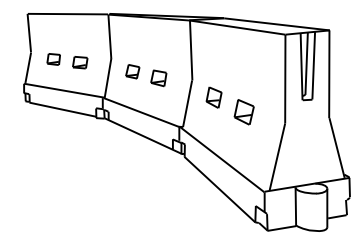
- Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
- VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is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



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

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

CHEVRONS



LONGITUDINAL CHANNELIZING DEVICES (LCD)

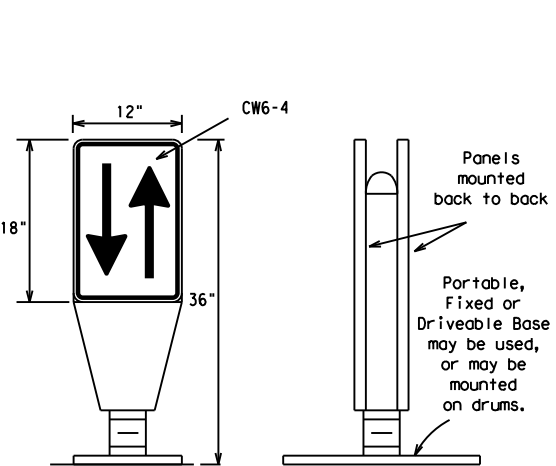
- LCDs are crashworthy, lightweight, deformable devices that are highly visible, have good target value and can be connected together. They are not designed to contain or redirect a vehicle on impact.
- LCDs may be used instead of a line of cones or drums.
- LCDs shall be placed in accordance to application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

WATER BALLASTED SYSTEMS USED AS BARRIERS

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

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

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



OPPOSING TRAFFIC LANE DIVIDERS (OTLD)

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

GENERAL NOTES

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

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

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

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

SHEET 9 OF 12



BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC (9) - 21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CR: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6459	31	001	SS 407
9-07 8-14	DIST	COUNTY	SHEET NO.	
7-13 5-21	CRP	NUECES	27	

DATE: 11/17/2023 8:47:46 AM
FILE: C:\Users\AHERNA12\Desktop\Leopard_St\bc-21.dgn

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

TYPE 3 BARRICADES

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

Barricades shall NOT be used as a sign support.



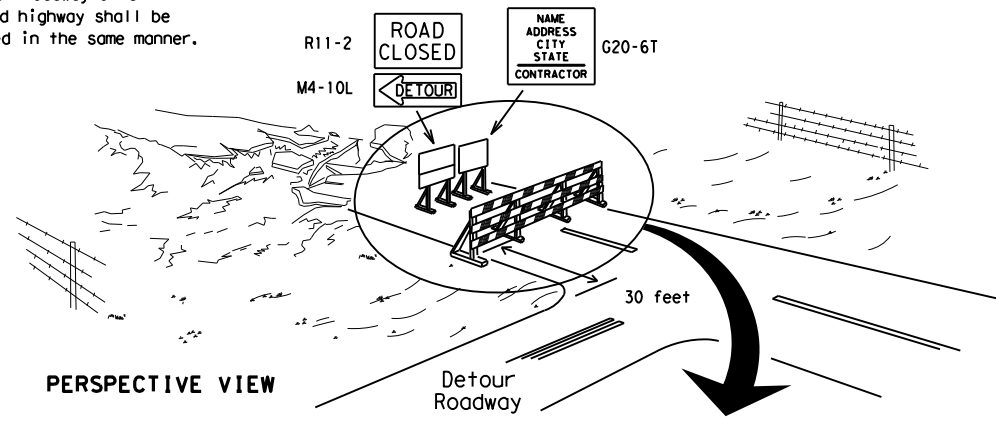
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



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

TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

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



PERSPECTIVE VIEW

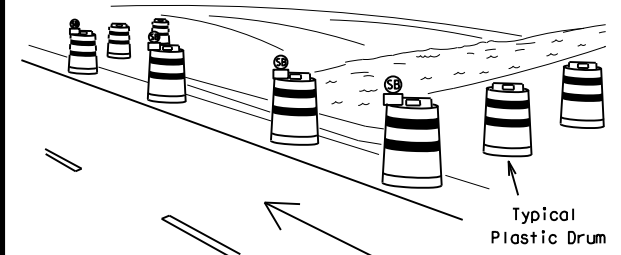
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic. Barricade striping should slant downward in the direction of detour.



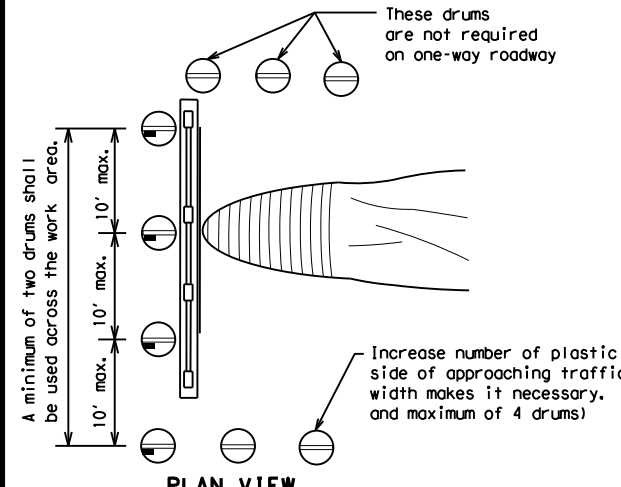
PLAN VIEW

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

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

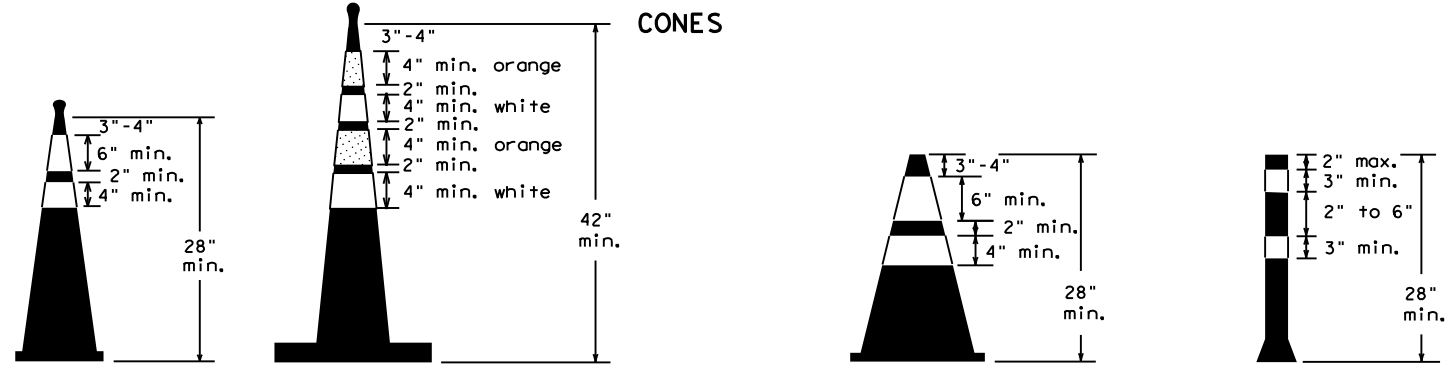


PLAN VIEW

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS

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

1. Where positive redirection 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.



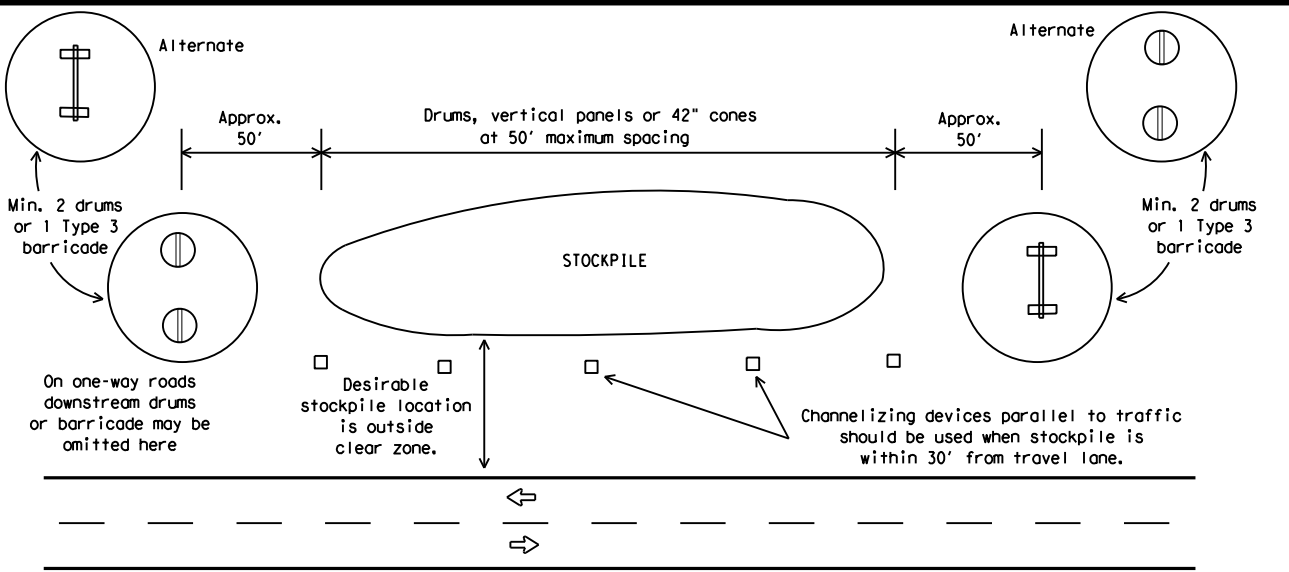
Two-Piece cones

One-Piece cones

Tubular Marker

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

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



BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC (10) - 21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	OW: TxDOT	CR: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6459	31	001	SS 407
9-07 8-14	DIST	COUNTY	SHEET NO.	
7-13 5-21	CRP	NUECES	28	

DATE: 11/17/2023 8:47:47 AM
 FILE: C:\Users\VAHERNA12\Desktop\Leopard_St\bc-21.dgn

WORK ZONE PAVEMENT MARKINGS

GENERAL

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

RAISED PAVEMENT MARKERS

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

PREFABRICATED PAVEMENT MARKINGS

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

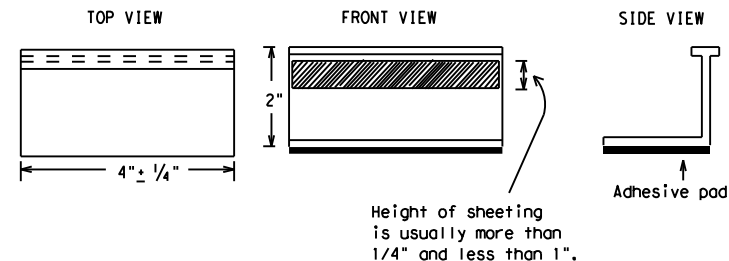
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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

REMOVAL OF PAVEMENT MARKINGS

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

Temporary Flexible-Reflective Roadway Marker Tabs



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

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

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

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

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

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

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

SHEET 11 OF 12



BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-21

FILE: bc-21.dgn	DN: TxDOT	CR: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS	6459	31	001	SS 407
2-98 9-07 5-21	DIST	COUNTY	SHEET NO.	
1-02 7-13	CRP	NUECES	29	
11-02 8-14				

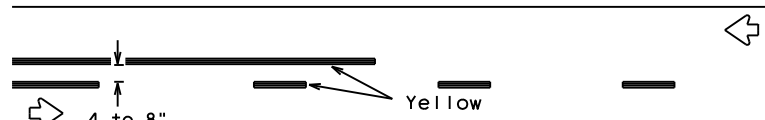
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: 11/17/2023 8:47:48 AM
FILE: C:\Users\VAHERNA12\Desktop\Leopard_St\bc-21.dgn

PAVEMENT MARKING PATTERNS

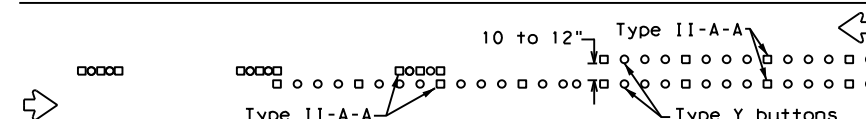


REFLECTORIZED PAVEMENT MARKINGS - PATTERN A

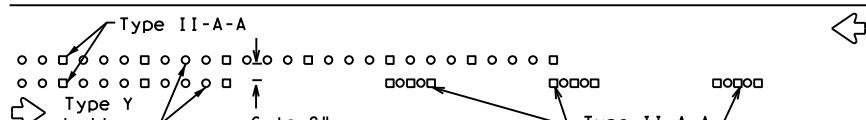


REFLECTORIZED PAVEMENT MARKINGS - PATTERN B

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



RAISED PAVEMENT MARKERS - PATTERN A



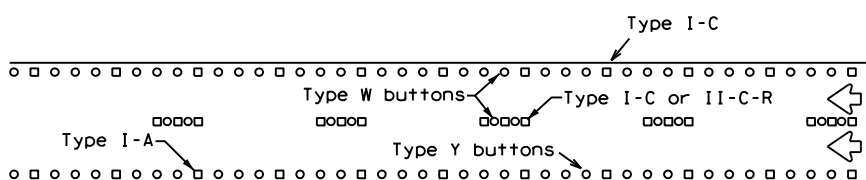
RAISED PAVEMENT MARKERS - PATTERN B

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



REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectORIZED pavement markings.



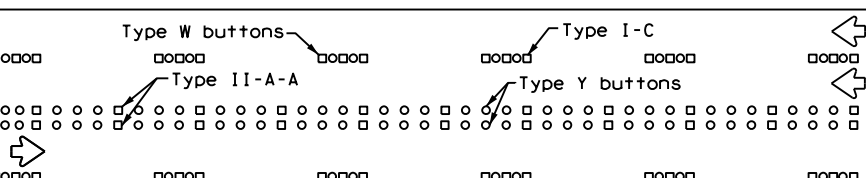
RAISED PAVEMENT MARKERS

EDGE & LANE LINES FOR DIVIDED HIGHWAY



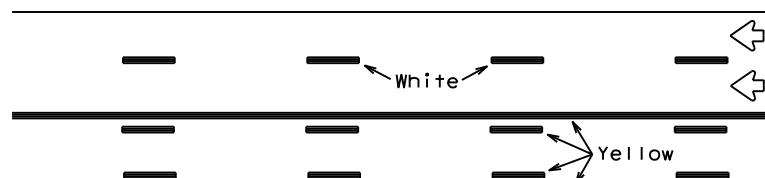
REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectORIZED pavement markings.



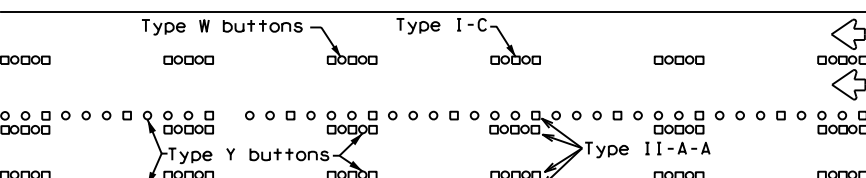
RAISED PAVEMENT MARKERS

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS

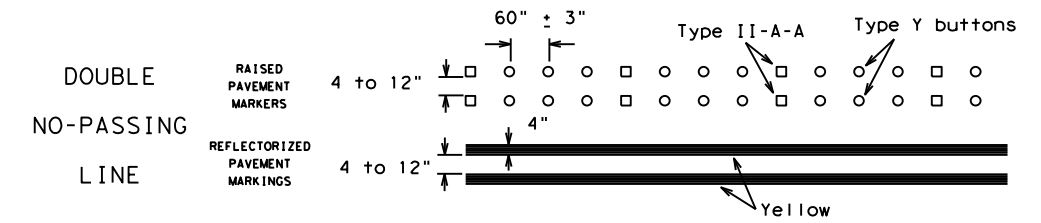
Prefabricated markings may be substituted for reflectORIZED pavement markings.



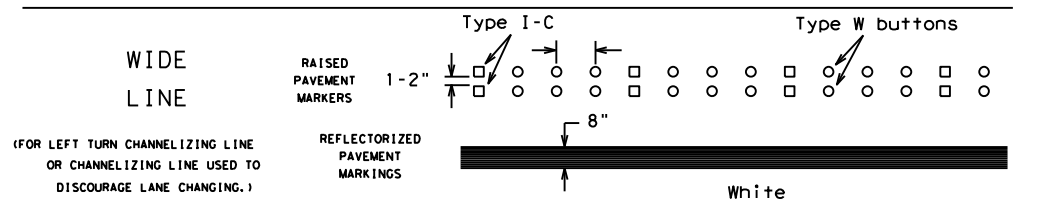
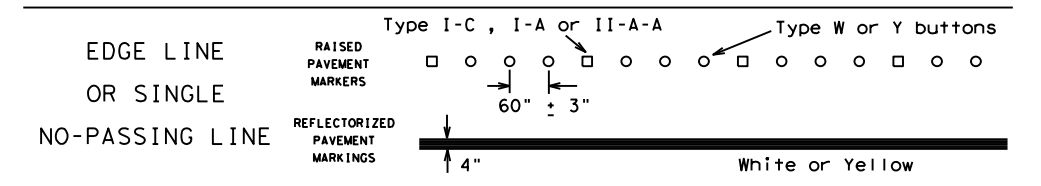
RAISED PAVEMENT MARKERS

TWO-WAY LEFT TURN LANE

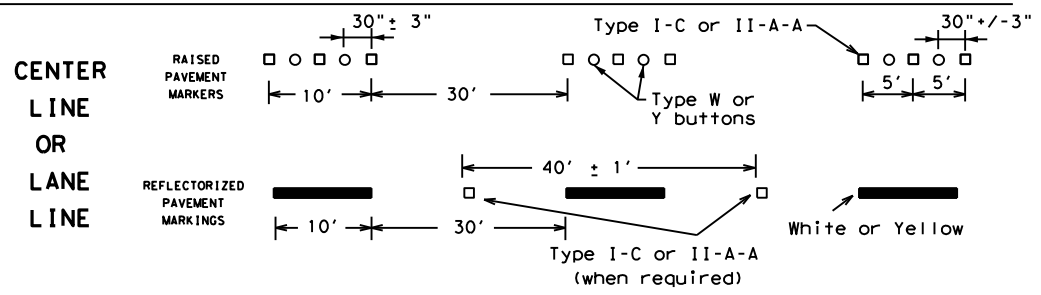
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS



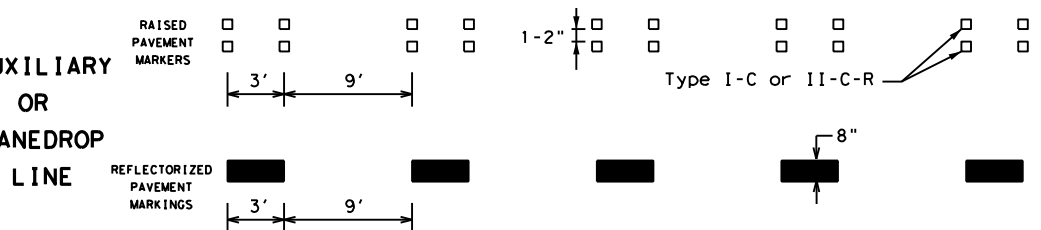
SOLID LINES



BROKEN LINES

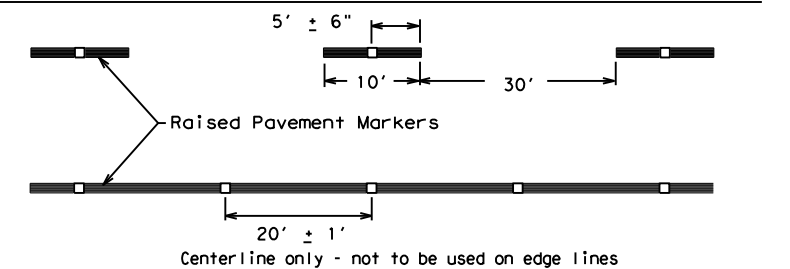


AUXILIARY OR LANEDROP LINE



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

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



SHEET 12 OF 12



BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

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."

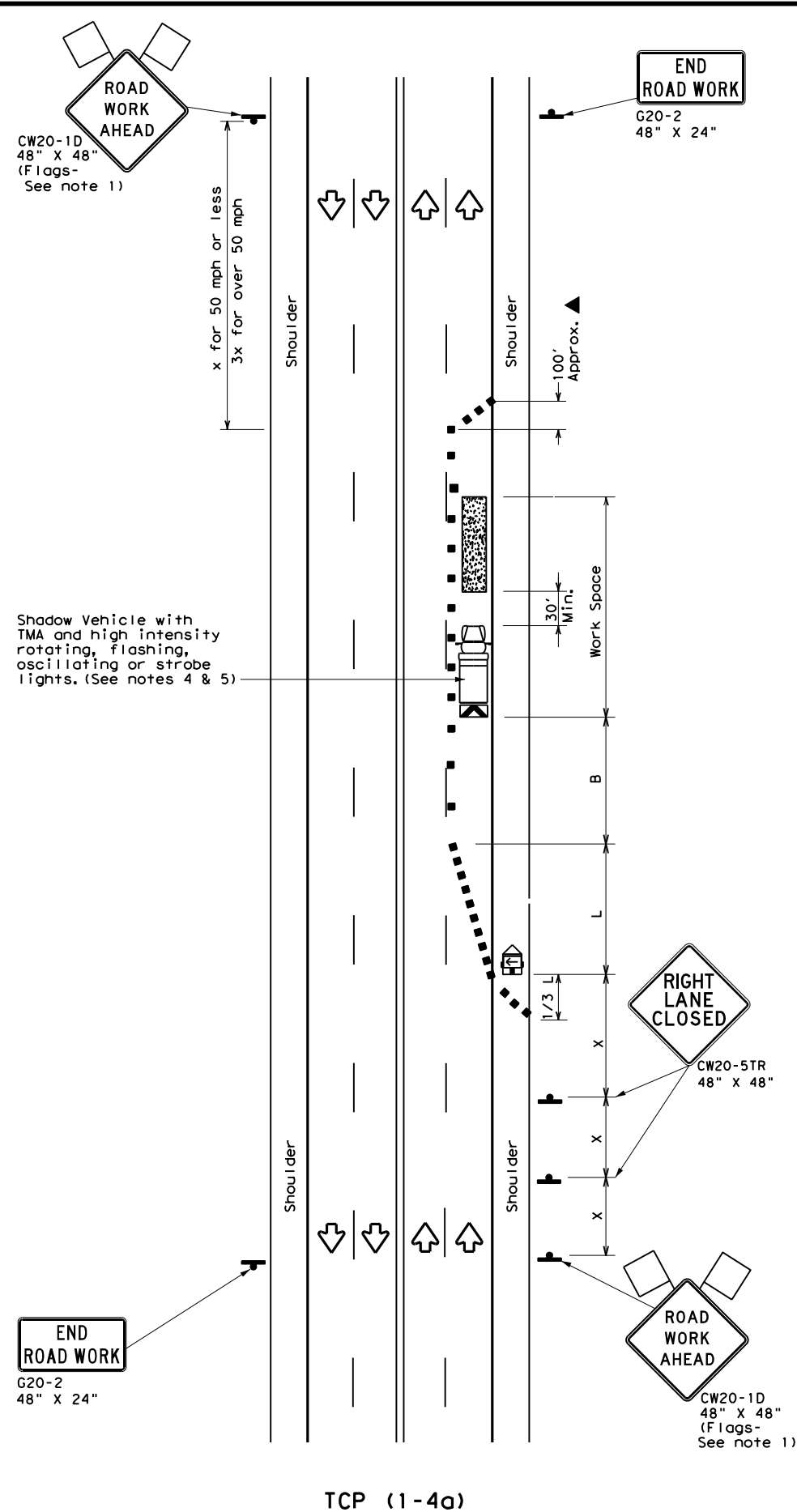
FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	OW: TxDOT	CR: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS	6459	31	001	SS 407
1-97 9-07 5-21	DIST	COUNTY	SHEET NO.	
2-98 7-13	CRP	NUECES	30	
11-02 8-14				

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

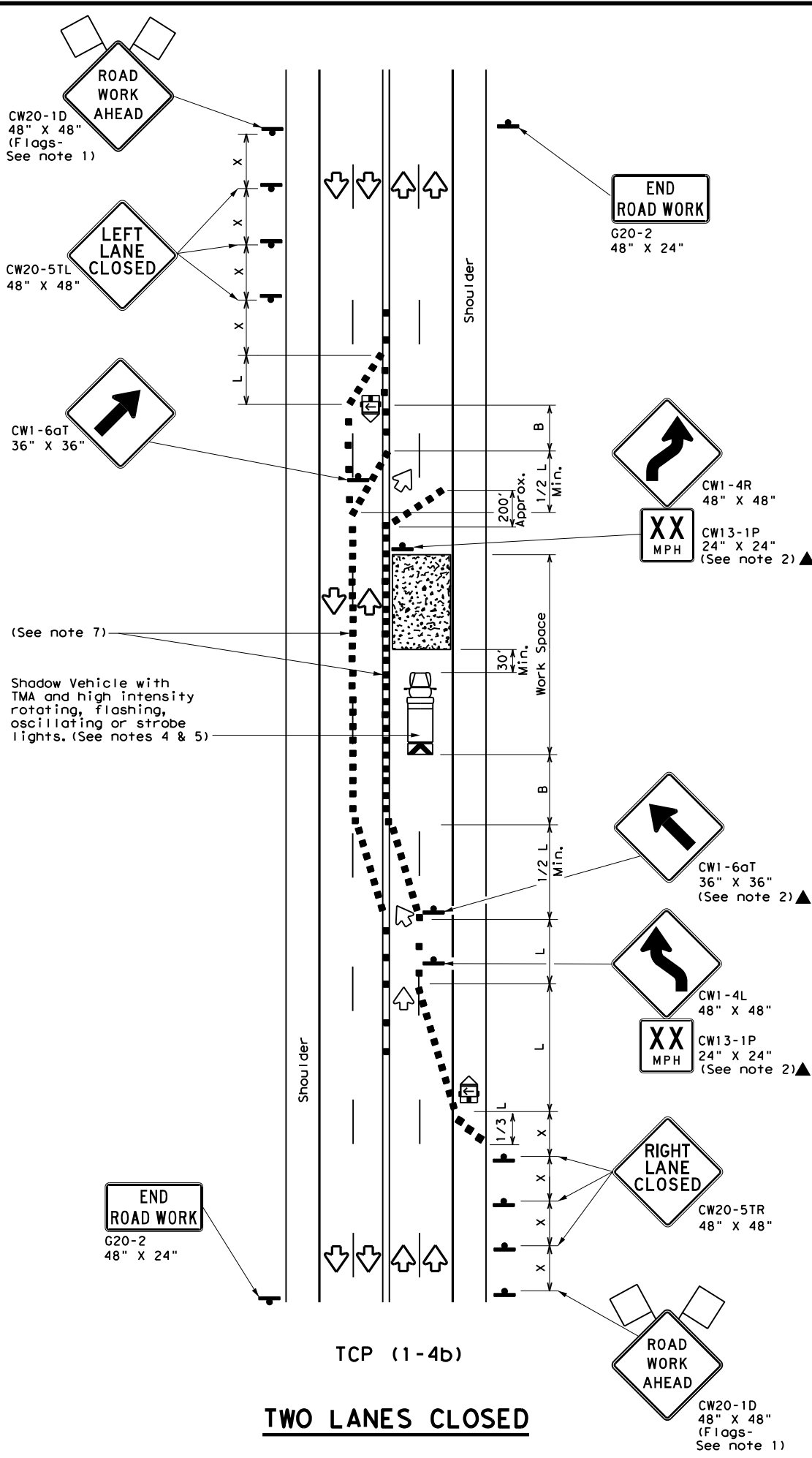
DATE: 11/17/2023 8:47:49 AM
FILE: C:\Users\VAHERNA12\Desktop\Leopard_St\bc-21.dgn

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

DATE: 11/17/2023 8:47:50 AM
 FILE: C:\Users\AHERNA12\Desktop\Leopard_St\tcp1-4-18.dgn



TCP (1-4a)
ONE LANE CLOSED



TCP (1-4b)
TWO LANES CLOSED

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

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

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

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

- GENERAL NOTES**
- Flags attached to signs where shown are REQUIRED.
 - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
 - The CW20-1D "ROAD WORK AHEAD" sign may be repeated if the visibility of the work zone is less than 1500 feet.
 - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
 - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.

TCP (1-4a)

- If this TCP is used for a left lane closure, CW20-5TL "LEFT LANE CLOSED" signs shall be used and channelizing devices shall be placed on the centerline where needed to protect the work space from opposing traffic with the arrow panel placed in the closed lane near the end of the merging taper.

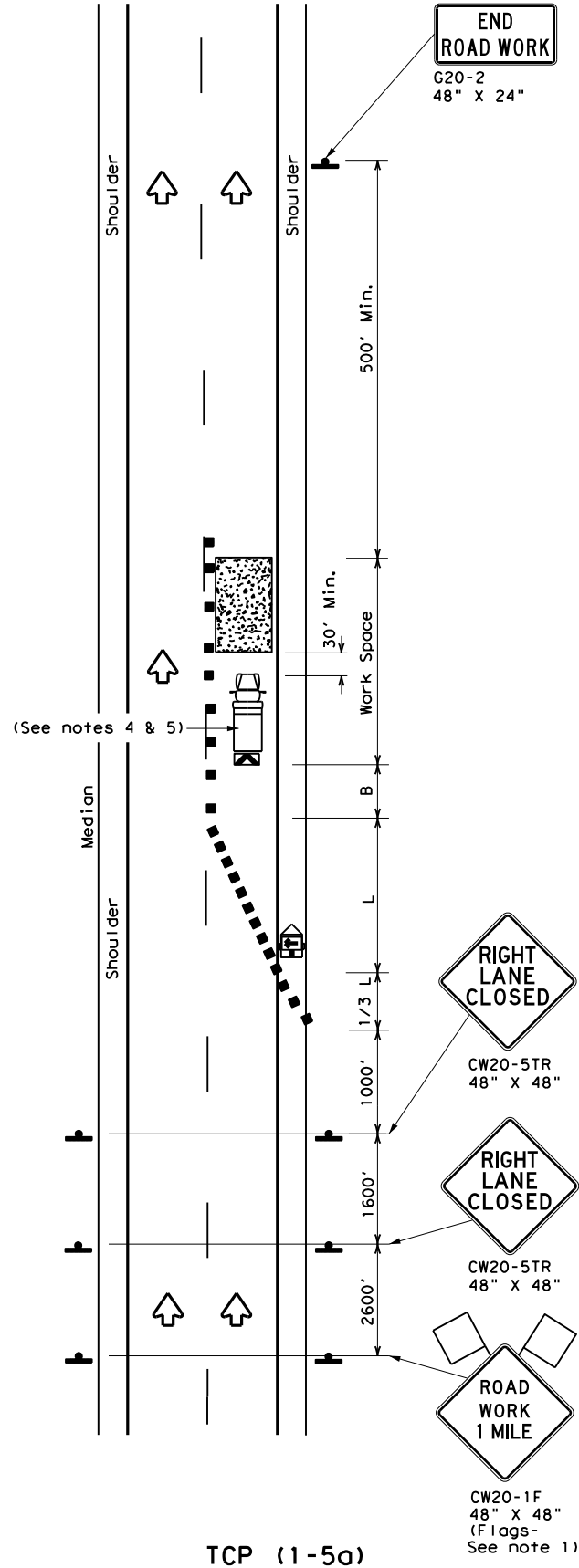
TCP (1-4b)

- Where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20' or 15' if posted speeds are 35 mph or slower, and for tangent sections, at 1/2S where S is the speed in mph. This tighter device spacing is intended for the areas of conflicting markings, not the entire work zone.

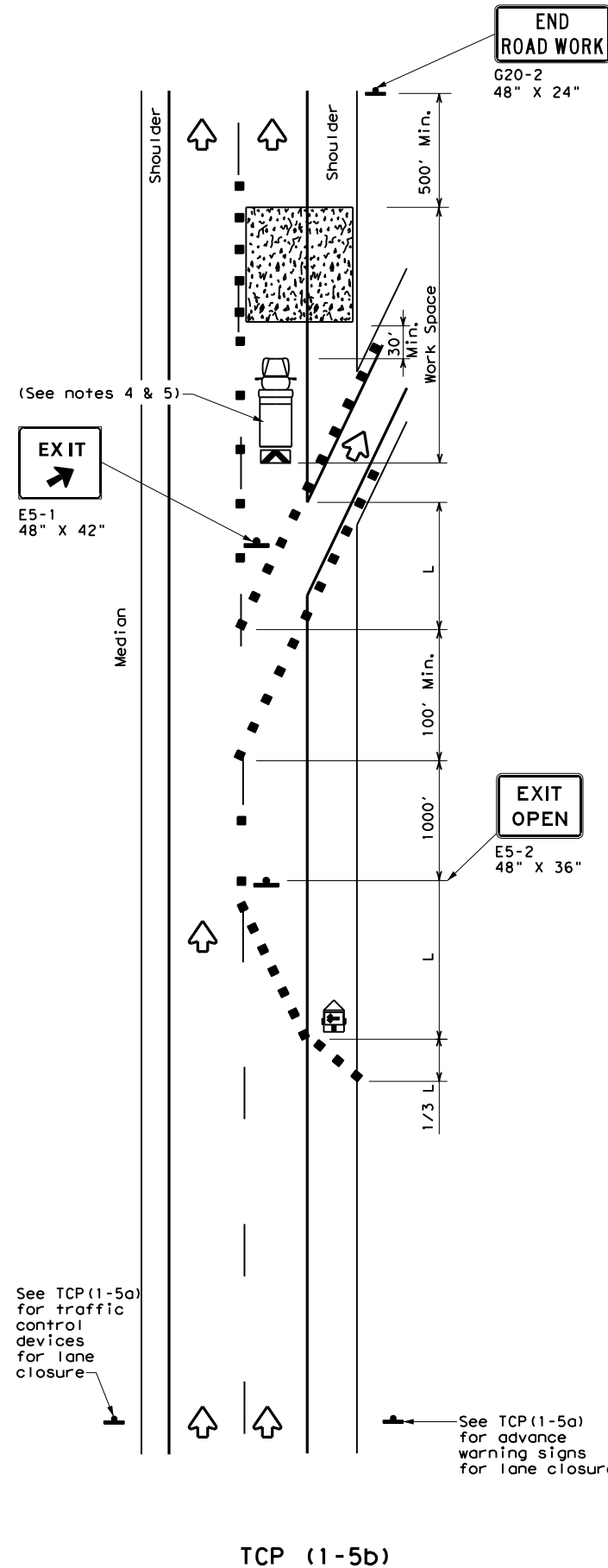
		Traffic Operations Division Standard	
TRAFFIC CONTROL PLAN LANE CLOSURES ON MULTILANE CONVENTIONAL ROADS			
TCP (1-4) - 18			
FILE:	tcp1-4-18.dgn	DN:	CK:
© TxDOT	December 1985	CONT	SECT
REVISIONS		6459	31
2-94	4-98	JOB	HIGHWAY
8-95	2-12	001	SS 407
1-97	2-18	DIST	COUNTY
		CRP	NUECES
			SHEET NO.
			31

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

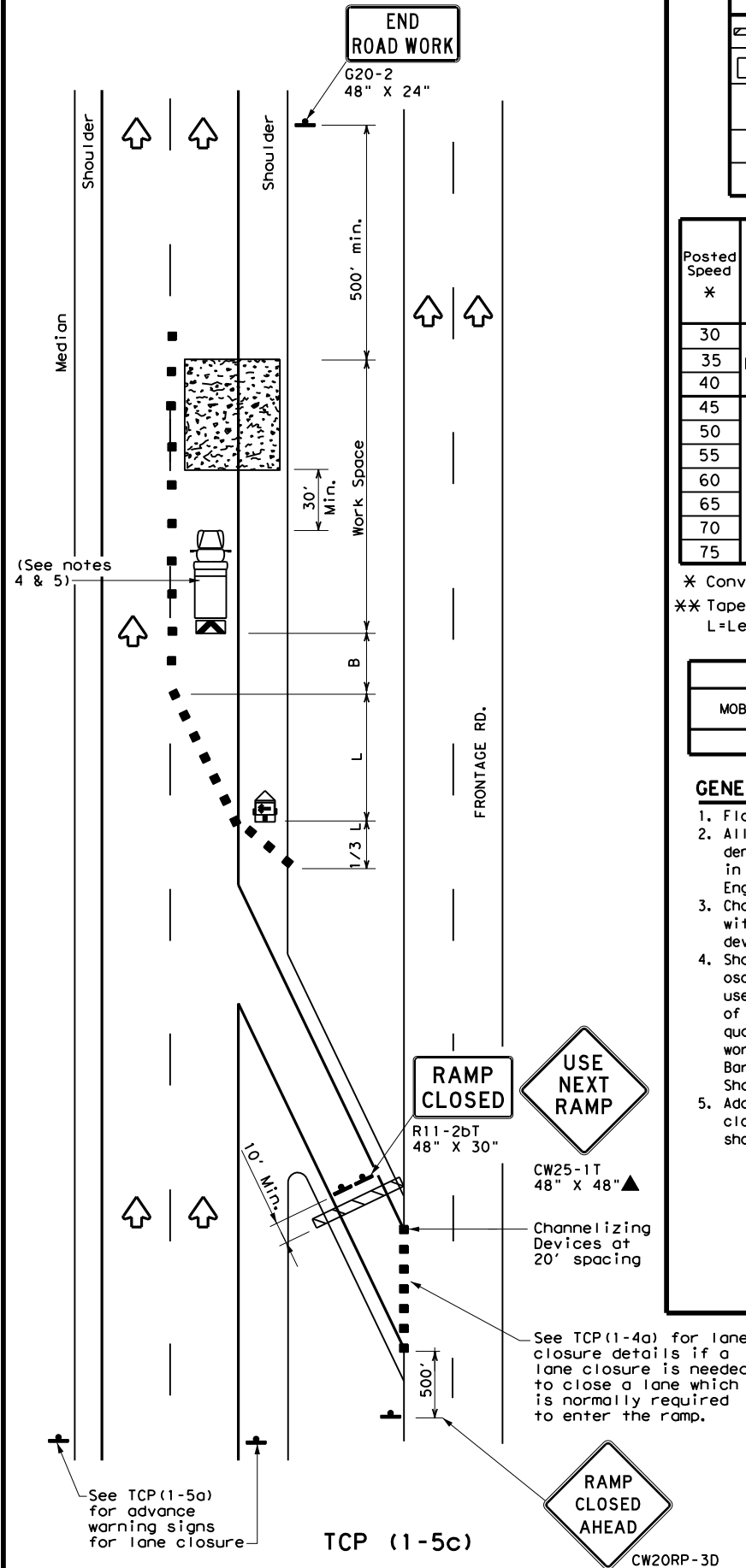
DATE: 11/17/2023 8:47:51 AM
 FILE: C:\Users\AHERNA12\Desktop\Leopard_St\tcp1-5-18.dgn



ONE LANE CLOSURE



LANE CLOSURE NEAR EXIT RAMP



LANE CLOSURE NEAR ENTRANCE RAMP

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

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

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

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

GENERAL NOTES

- Flags attached to signs where shown, are REQUIRED.
- All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
- Channelizing devices used to close lanes may be supplemented with the Chevron Alignment Sign placed on every other channelizing device. Chevrons may be attached to plastic drums as per BC Standards.
- Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
- Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.

Traffic Operations Division Standard

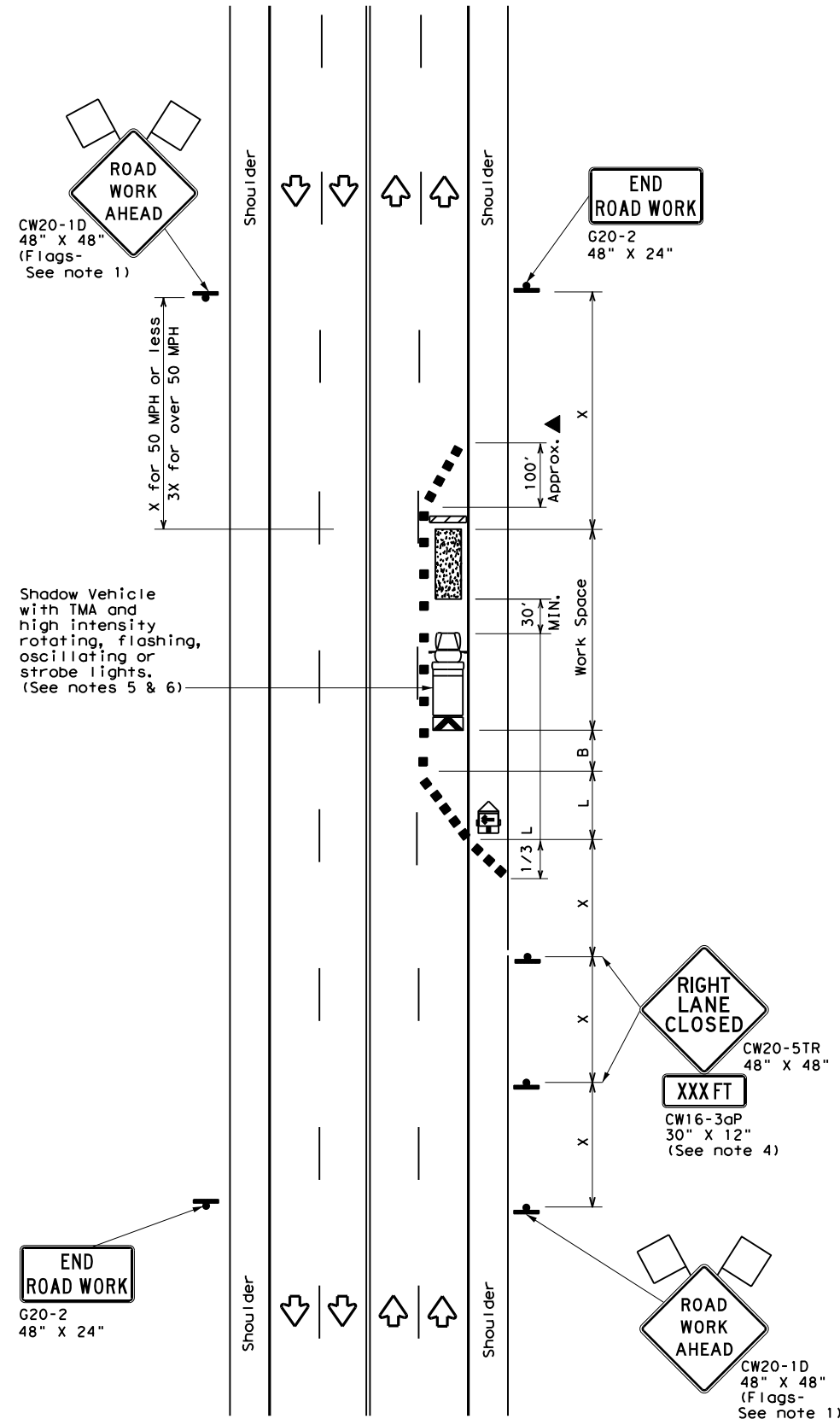
TRAFFIC CONTROL PLAN LANE CLOSURES FOR DIVIDED HIGHWAYS

TCP (1-5) - 18

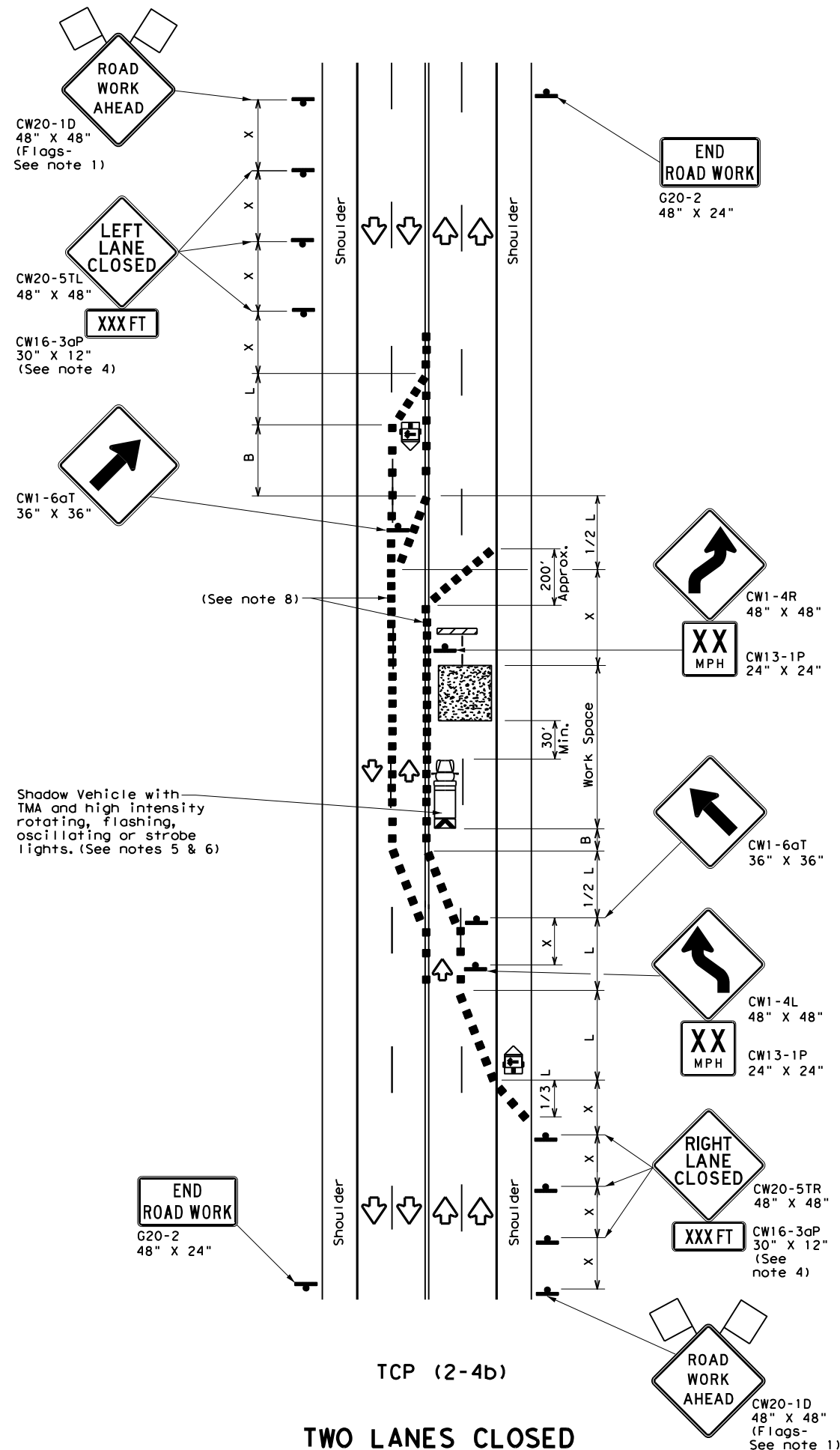
FILE: tcp1-5-18.dgn	DN:	CK:	DW:	CK:
© TxDOT February 2012	CONT	SECT	JOB	HIGHWAY
2-18	6459	31	001	SS 407
REVISIONS	DIST	COUNTY	SHEET NO.	
	CRP	NUECES	32	

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

DATE: 11/17/2023 8:47:53 AM
 FILE: C:\Users\VAHERNA12\Desktop\Leopard_St\tcp2-4-18.dgn



TCP (2-4a)
ONE LANE CLOSED



TCP (2-4b)
TWO LANES CLOSED

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

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

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

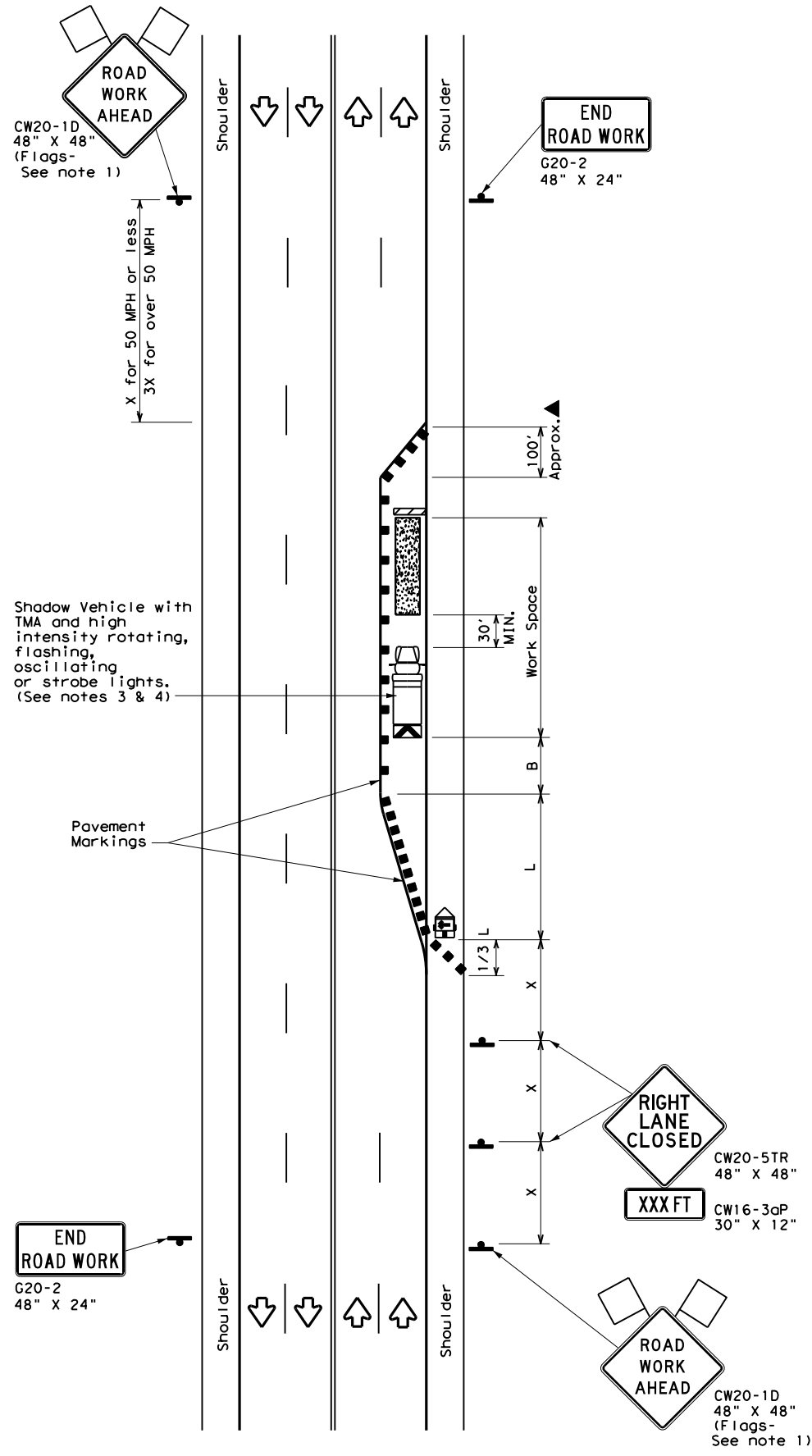
TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
		✓	✓	

- GENERAL NOTES**
- Flags attached to signs where shown, are REQUIRED.
 - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
 - The downstream taper is optional. When used, it should be 100 feet minimum length per lane.
 - For short term applications, when post mounted signs are not used, the distance legend may be shown on the sign face rather than on a CW16-3aP supplemental plaque.
 - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
 - Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.
- TCP (2-4a)**
- If this TCP is used for a left lane closure, CW20-5TL "LEFT LANE CLOSED" signs shall be used and channelizing devices shall be placed on the centerline to protect the work space from opposing traffic with the arrow board placed in the closed lane near the end of the merging taper.
- TCP (2-4b)**
- For shorter durations where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20' or 15' if posted speeds are 35 mph or slower, and for tangent sections, at 1/2(S) where S is the speed in mph. This tighter devices spacing is intended for the area of conflicting markings, not the entire work zone.

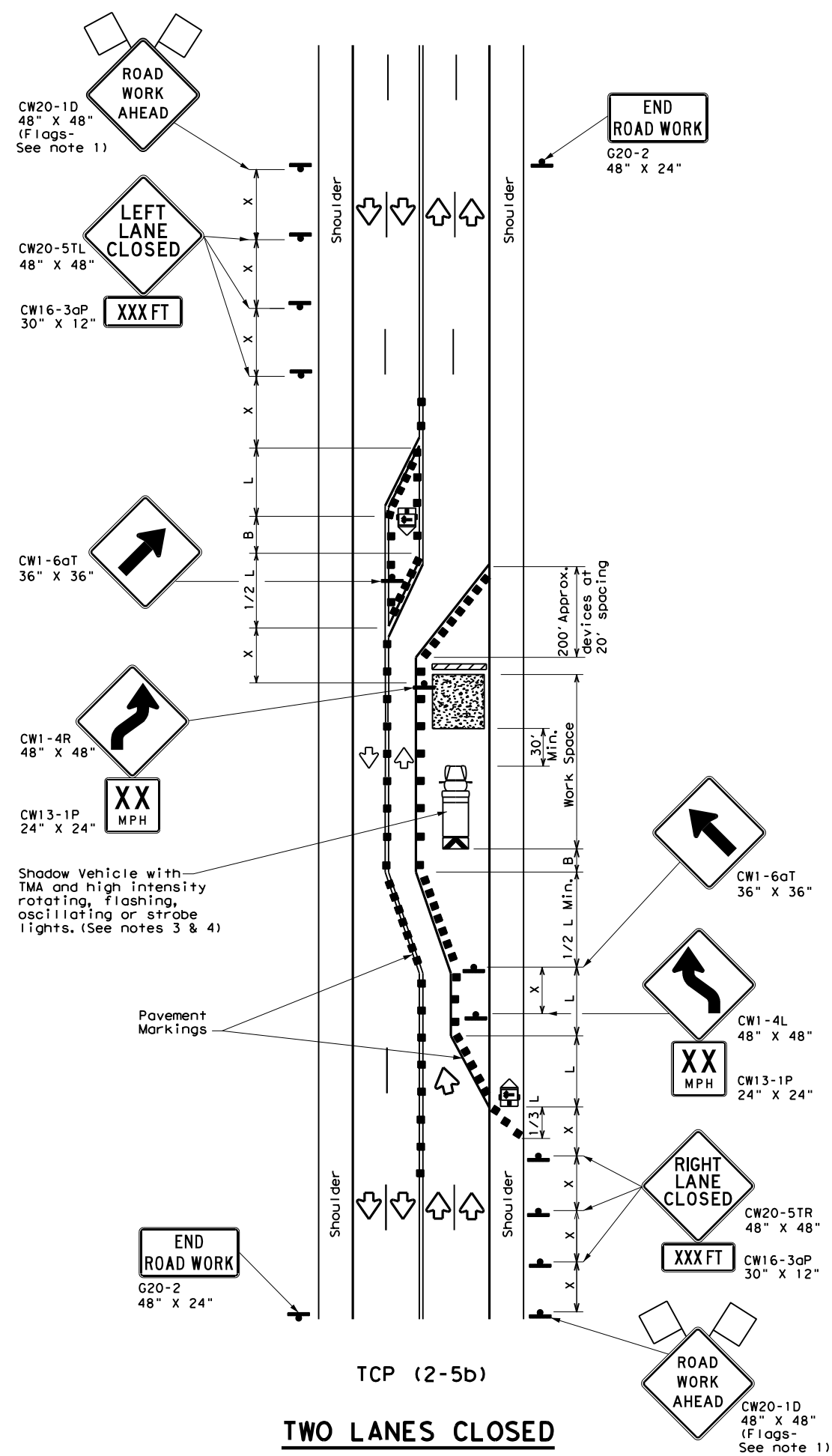
		Traffic Operations Division Standard	
TRAFFIC CONTROL PLAN			
LANE CLOSURES ON MULTILANE CONVENTIONAL ROADS			
TCP (2-4) - 18			
FILE: tcp2-4-18.dgn	DN:	CK:	DW:
© TxDOT December 1985	CONT	SECT	JOB
REVISIONS	6459	31	001
8-95 3-03	DIST	COUNTY	SHEET NO.
1-97 2-12	CRP	NUECES	33
4-98 2-18			

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

DATE: 11/17/2023 8:47:54 AM
 FILE: C:\Users\AHERNA12\Desktop\Leopard_St\tcp2-5-18.dgn



TCP (2-5a)
ONE LANE CLOSED



TCP (2-5b)
TWO LANES CLOSED

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

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

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

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

- GENERAL NOTES**
- Flags attached to signs where shown, are REQUIRED.
 - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
 - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
 - Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.
 - The downstream taper is optional. When used, it should be 100 feet approximately per lane, with channelizing devices spaced at 20 feet.

- TCP (2-5a)**
- If this TCP is used for a left lane closure, CW20-5TL "LEFT LANE CLOSED" signs shall be used and channelizing devices shall be placed on the centerline to protect the work space from opposing traffic, with the arrow board placed in the closed lane near the end of the merging taper.
- TCP (2-5b)**
- Conflicting pavement markings shall be removed for long-term projects.

Texas Department of Transportation

Traffic Operations Division Standard

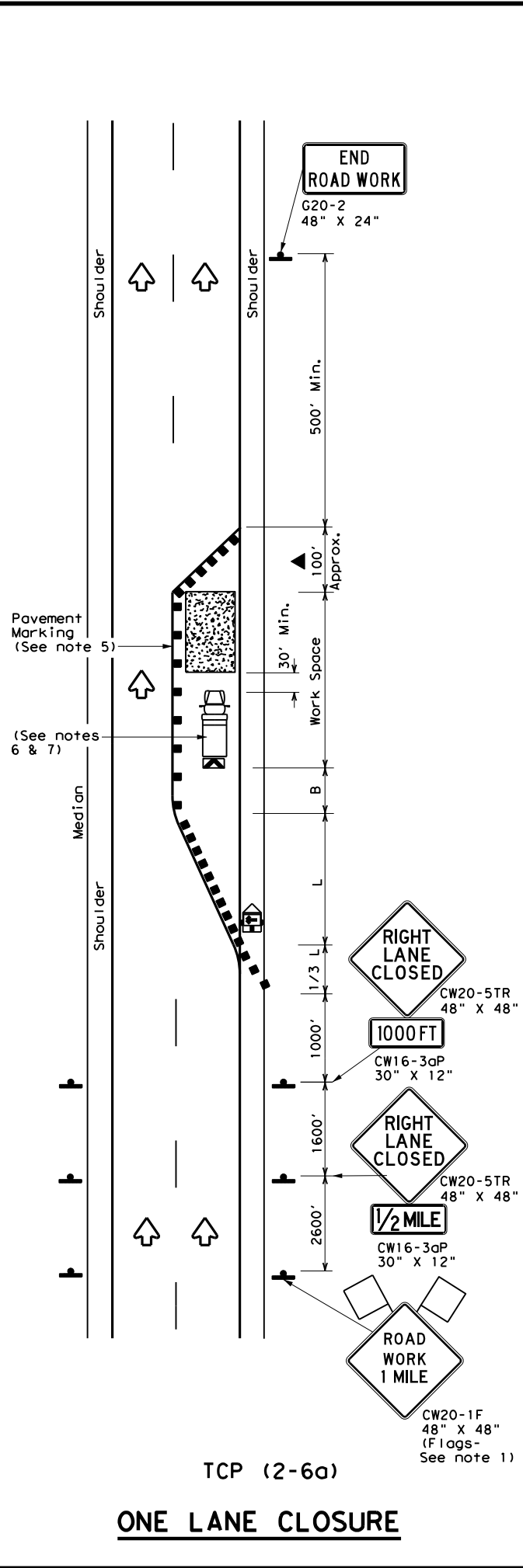
TRAFFIC CONTROL PLAN LONG TERM LANE CLOSURES MULTILANE CONVENTIONAL RDS.

TCP (2-5) - 18

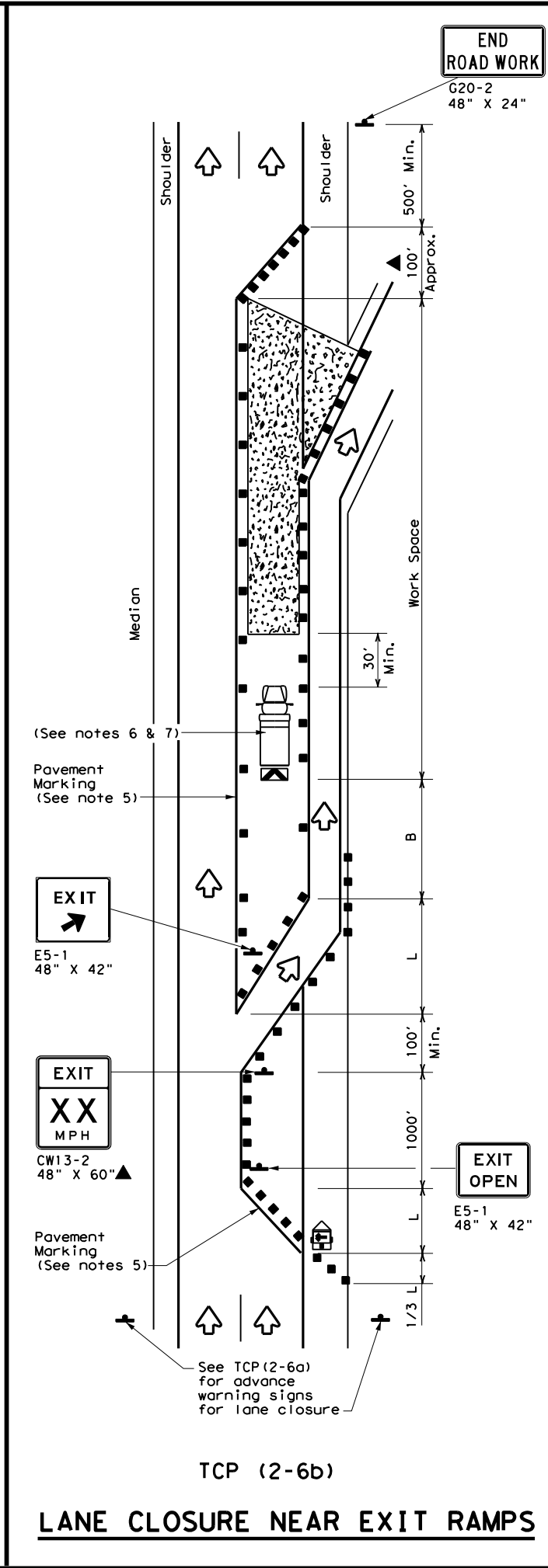
FILE: tcp2-5-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
8-95 2-12 REVISIONS	6459	31	001	SS 407
1-97 3-03	DIST	COUNTY	SHEET NO.	
4-98 2-18	CRP	NUECES	34	

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

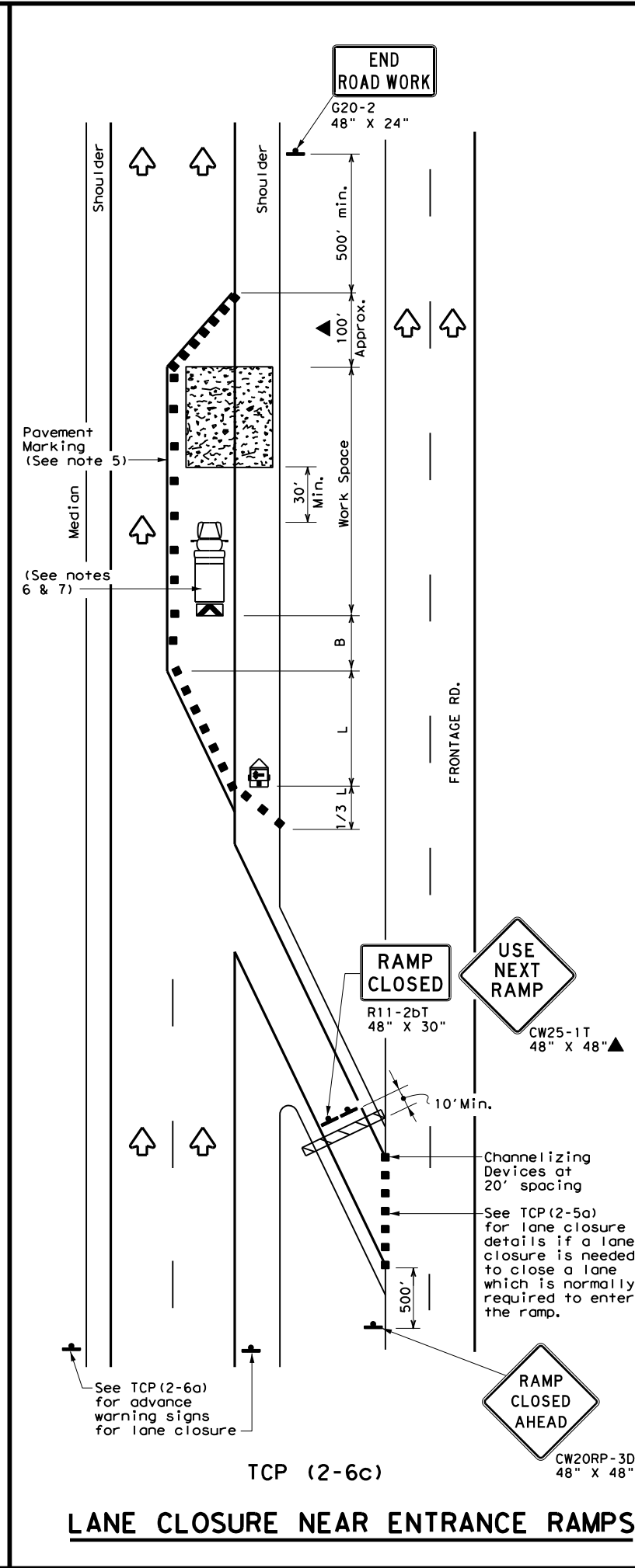
DATE: 11/17/2023 8:47:55 AM
 FILE: C:\Users\AHERNA12\Desktop\Leopard_St\tcp2-6-18.dgn



TCP (2-6a)
ONE LANE CLOSURE



TCP (2-6b)
LANE CLOSURE NEAR EXIT RAMP



TCP (2-6c)
LANE CLOSURE NEAR ENTRANCE RAMP

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

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

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

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

- GENERAL NOTES**
- Flags attached to signs where shown, are REQUIRED.
 - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
 - Channelizing devices used to close lanes may be supplemented with the Chevron Alignment Sign placed on every other channelizing device. Chevrons may be attached to plastic drums as per BC Standards.
 - Channelizing devices used along the work space or along tangent sections may be supplemented with vertical panels (VP) placed on every other channelizing device. If night time conditions make it difficult to see at least two VPs, the VPs may be placed on each channelizing device.
 - The placement of pavement markings may be omitted on intermediate-term stationary work zones with the approval of the Engineer.
 - Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
 - Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.

Texas Department of Transportation
 Traffic Operations Division Standard

TRAFFIC CONTROL PLAN LANE CLOSURES ON DIVIDED HIGHWAYS

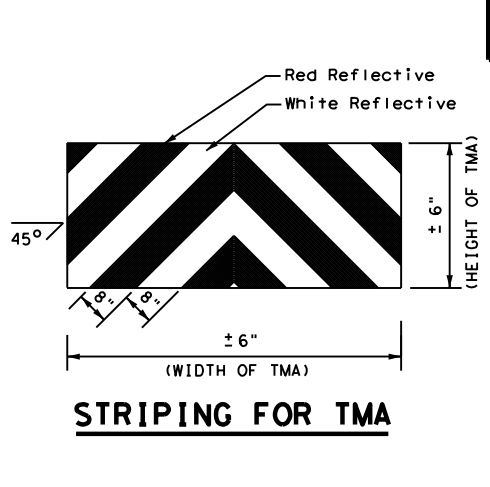
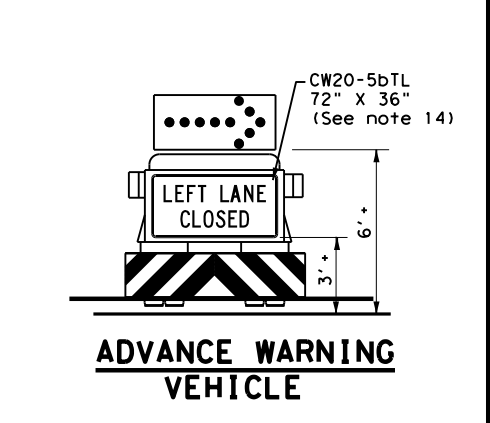
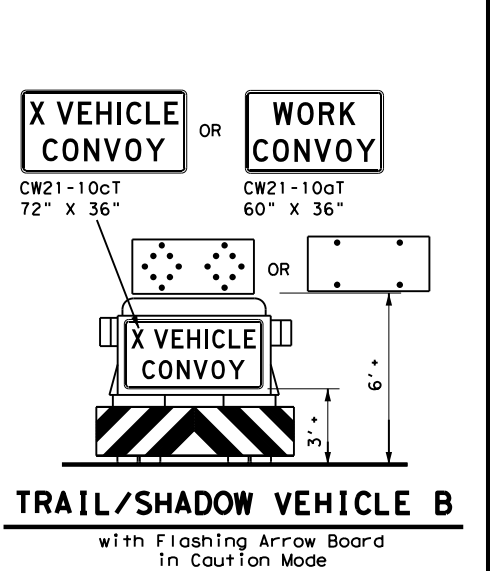
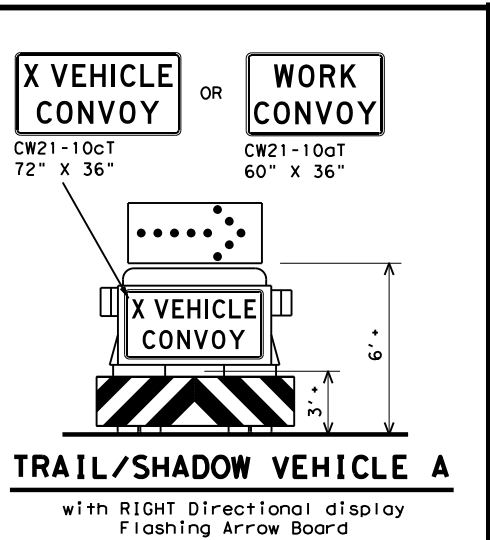
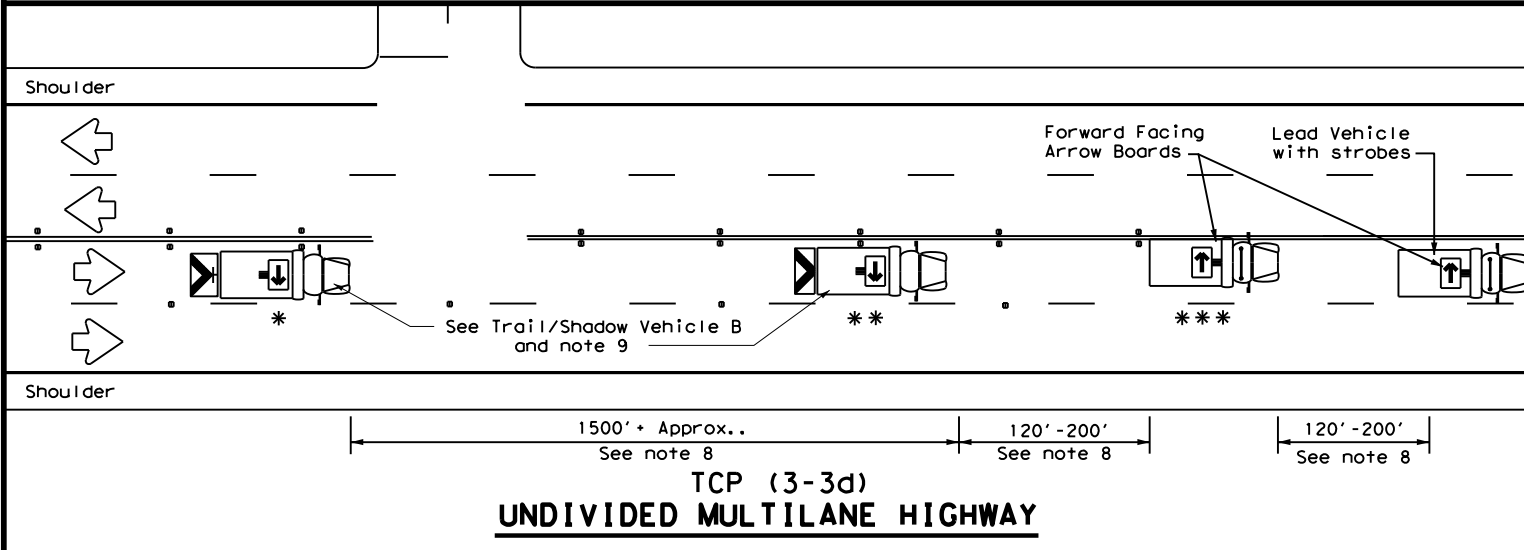
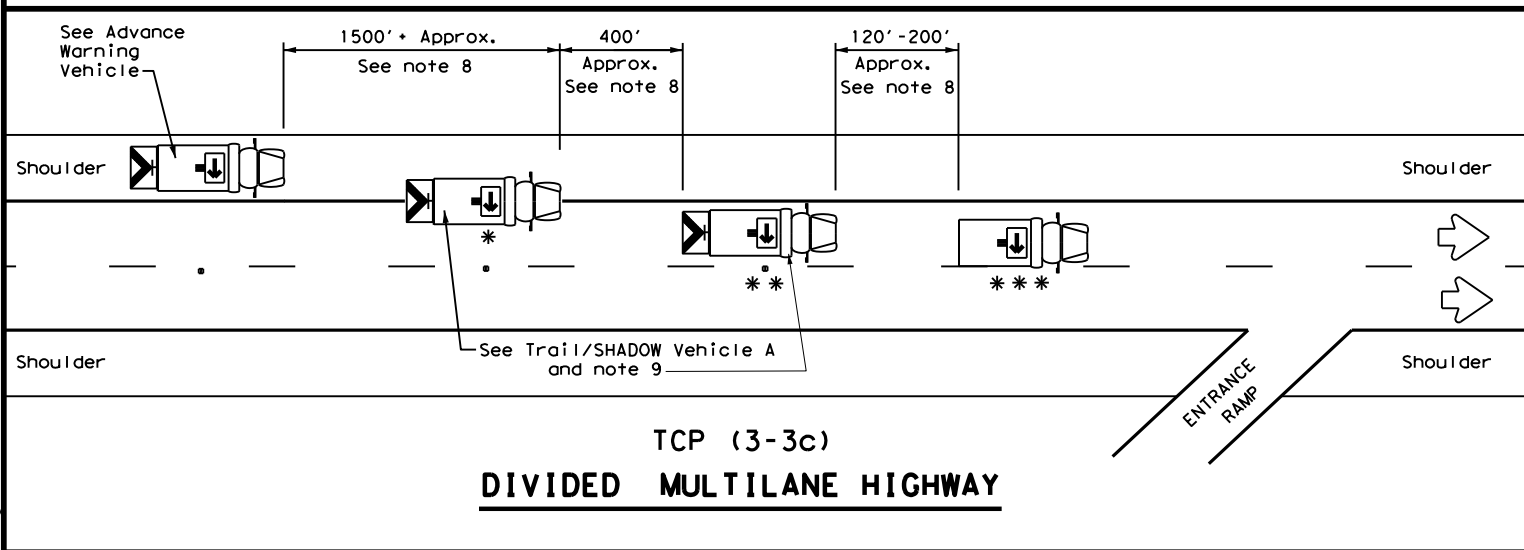
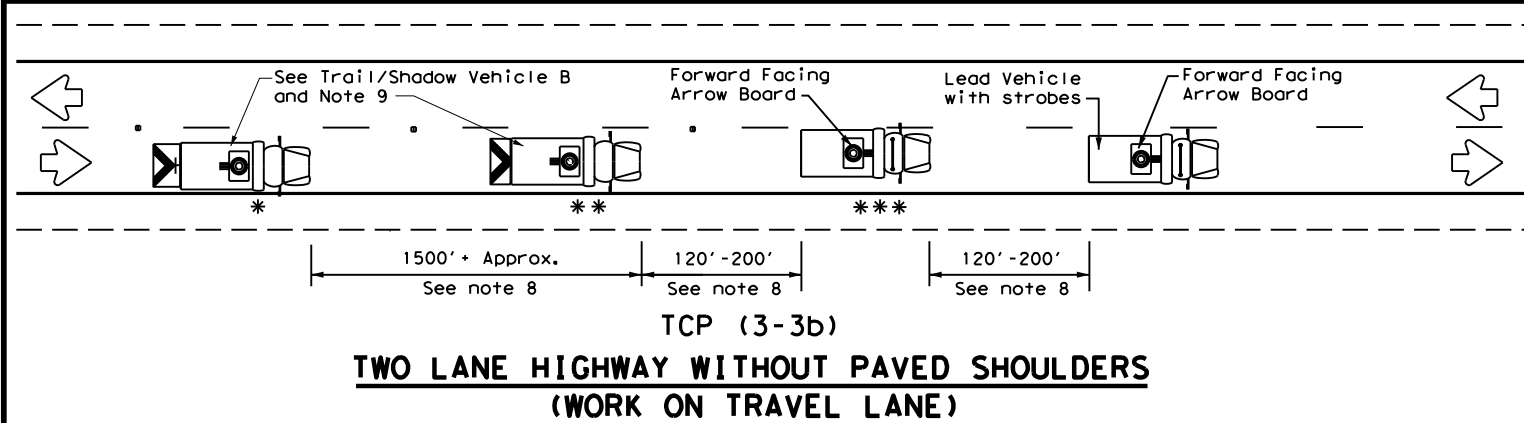
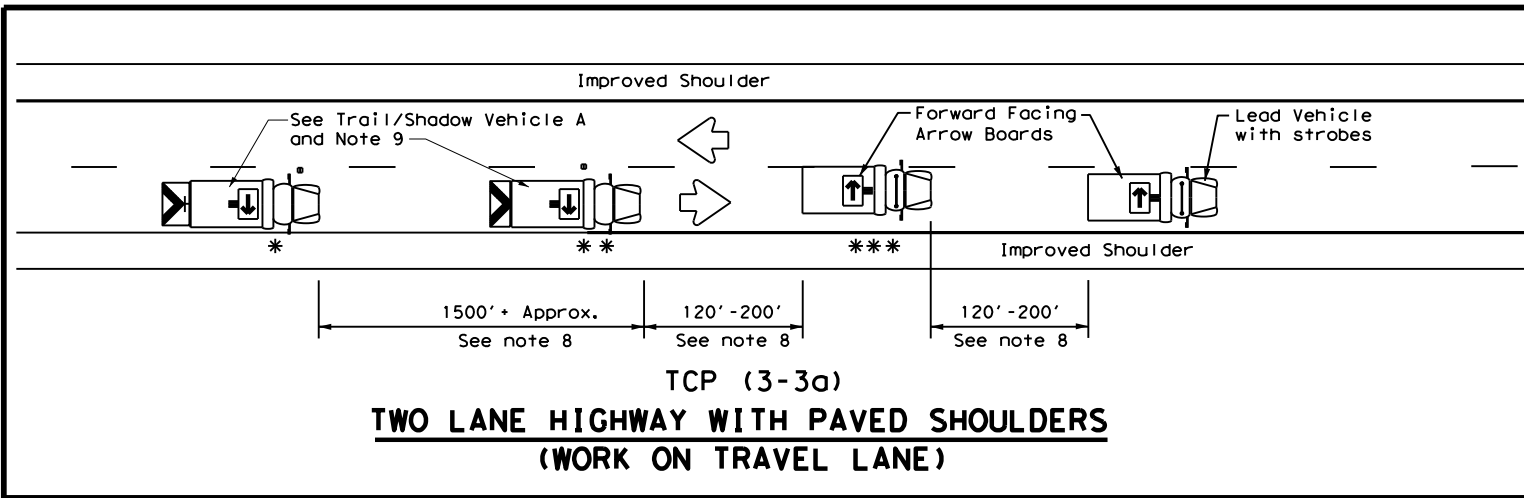
TCP (2-6) - 18

FILE: tcp2-6-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	6459	31	001	SS 407
2-94 4-98	DIST	COUNTY	SHEET NO.	
8-95 2-12	CRP	NUECES	35	
1-97 2-18				

166

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

DATE: 11/17/2023 8:47:56 AM
 FILE: C:\Users\VAHERNA12\Desktop\Leopard St\tcp3-3.dgn



LEGEND		
* Trail Vehicle	ARROW BOARD DISPLAY	
** Shadow Vehicle		
*** Work Vehicle		RIGHT Directional
		LEFT Directional
		Double Arrow
		CAUTION (Alternating Diamond or 4 Corner Flash)

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

GENERAL NOTES

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

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN

MOBILE OPERATIONS

RAISED PAVEMENT

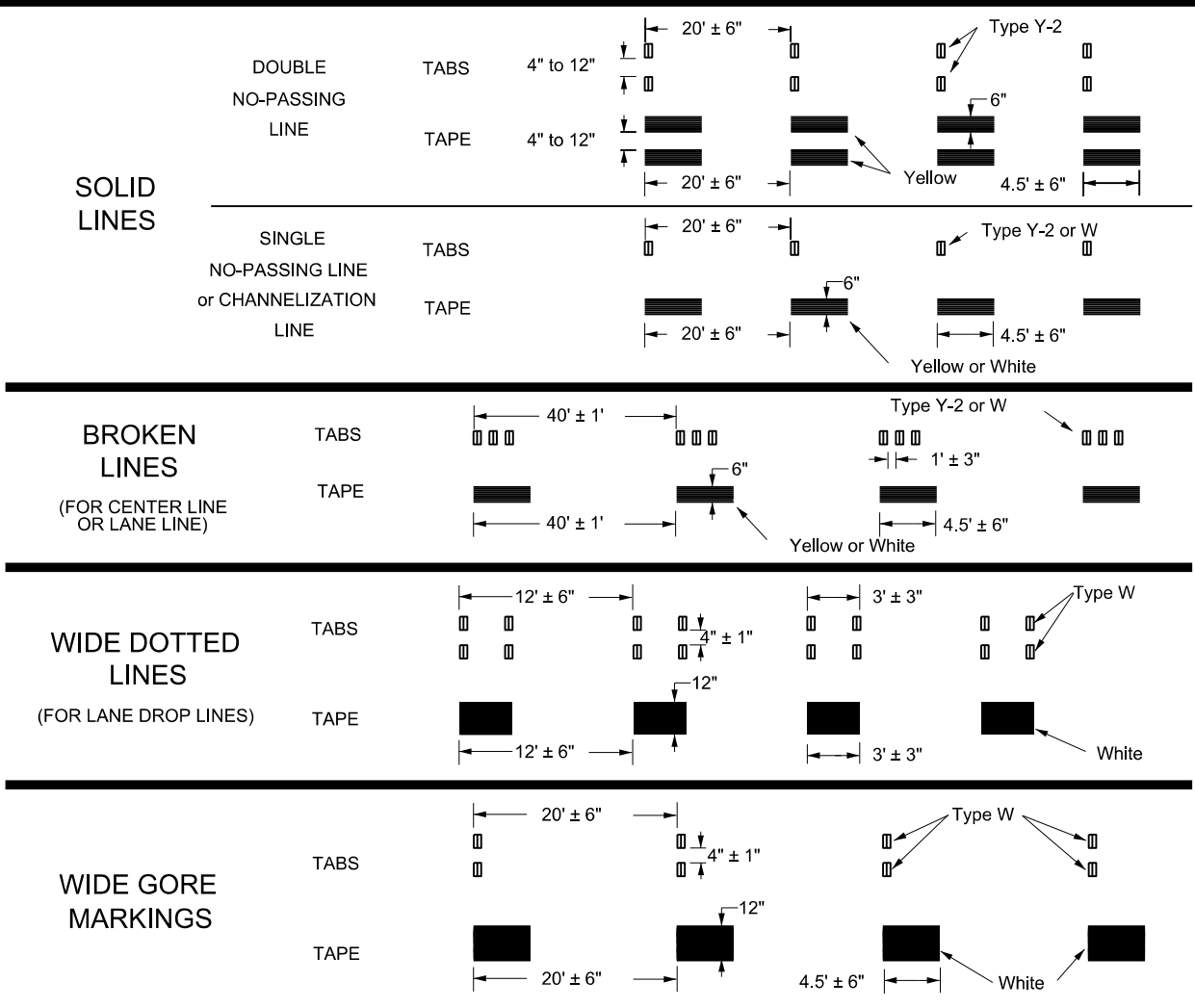
MARKER INSTALLATION/REMOVAL

TCP (3-3) - 14

FILE: tcp3-3.dgn	DN: TxDOT	CK: TxDOT	OW: TxDOT	CK: TxDOT
© TxDOT September 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS	6459	31	001	SS 407
2-94 4-98				
8-95 7-13				
1-97 7-14				
	DIST	COUNTY		SHEET NO.
	CRP	NUECES		36

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

WORK ZONE SHORT TERM PAVEMENT MARKINGS DETAILS



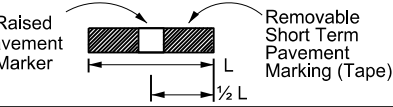
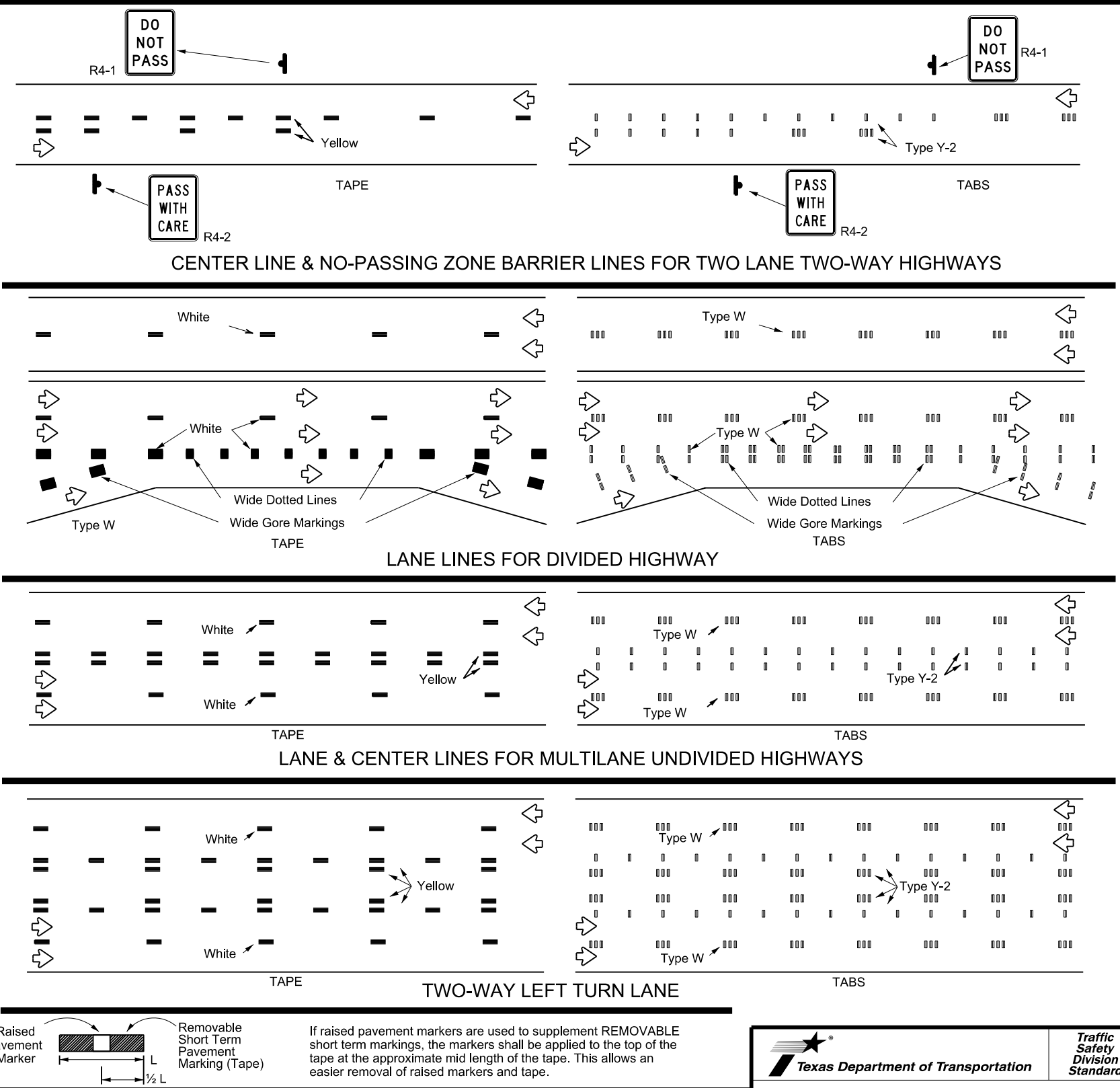
NOTES:

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

TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS (TABS)

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

WORK ZONE SHORT TERM PAVEMENT MARKINGS PATTERNS



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

PREFABRICATED PAVEMENT MARKINGS

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

RAISED PAVEMENT MARKERS

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

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

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

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



WORK ZONE SHORT TERM PAVEMENT MARKINGS

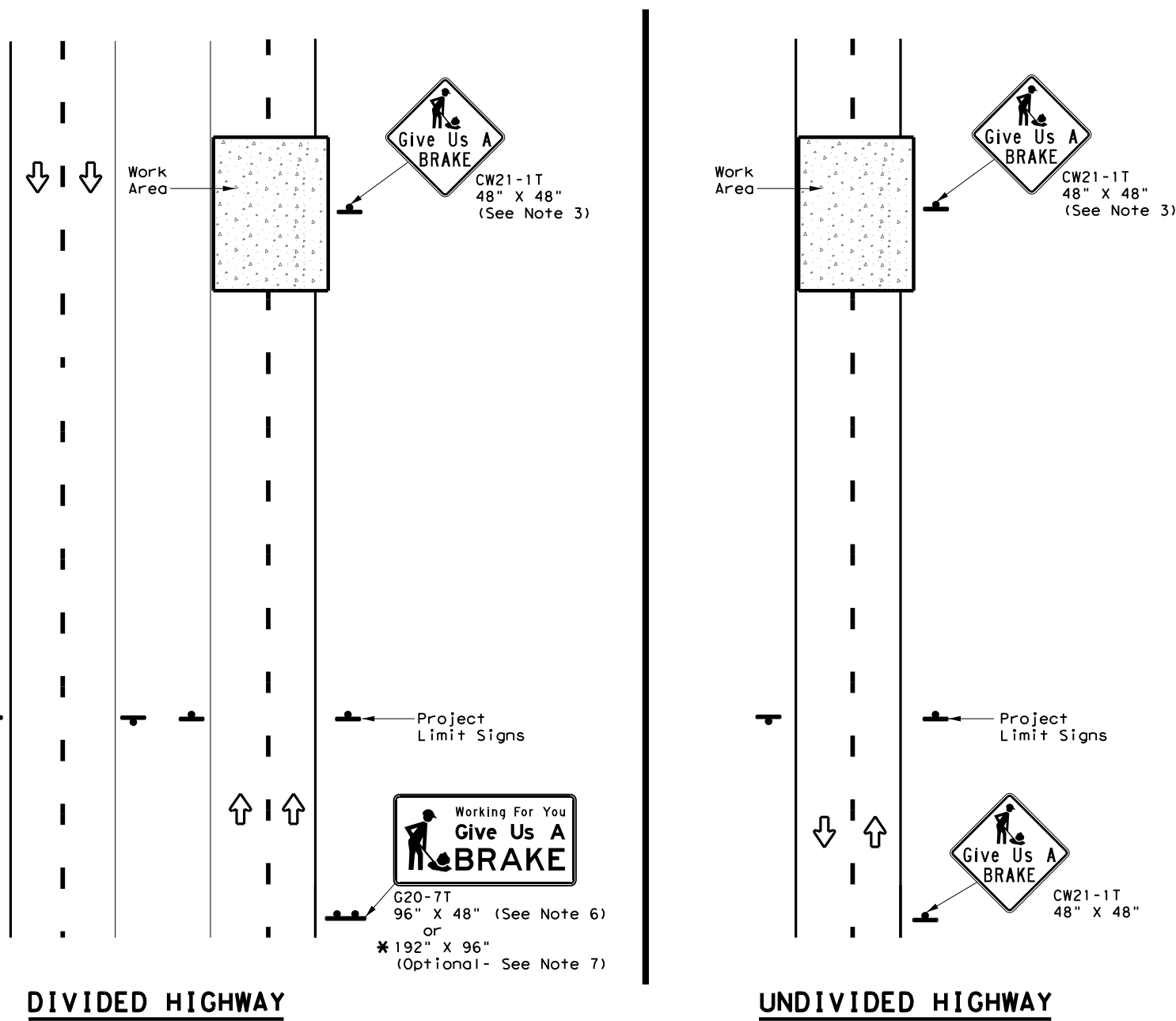
WZ(STPM)-23

FILE: wzsstpm-23.dgn	DWG: 6459	SECT: 31	JOB: 001	HIGHWAY: SS 407
© TxDOT February 2023	REVISIONS: 4-92 7-13, 1-97 2-23, 3-03	DIST: CRP	COUNTY: NUECES	SHEET NO.: 37

DATE: 11/17/2023 8:47:57 AM
 FILE: C:\Users\AHERNA\OneDrive\Desktop\Leopard\Stwz(stpm)-23.dgn

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

DATE: 11/17/2023 8:47:58 AM
 FILE: C:\Users\AHERNA12\Desktop\Leopard_St\wzbrk-13.dgn



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
						Size	(LF)	
							① ②	24" DIA. (LF)
Orange	G20-7T		96" X 48"	Type B _{FL} or C _{FL}	32	▲	▲ ▲	▲
Orange	G20-7T		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

- See BC and SMD sheets for additional sign support details.
- Sign locations shall be approved by the Engineer.
- 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.
- 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.
- Give Us a Brake (CW21-1T) signs and supports shall be considered subsidiary to Item 502, "Barricades, Signs and Traffic Handling."
- 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.
- 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
- 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.



**WORK ZONE
 "GIVE US A BRAKE"
 SIGNS**

WZ (BRK) - 13

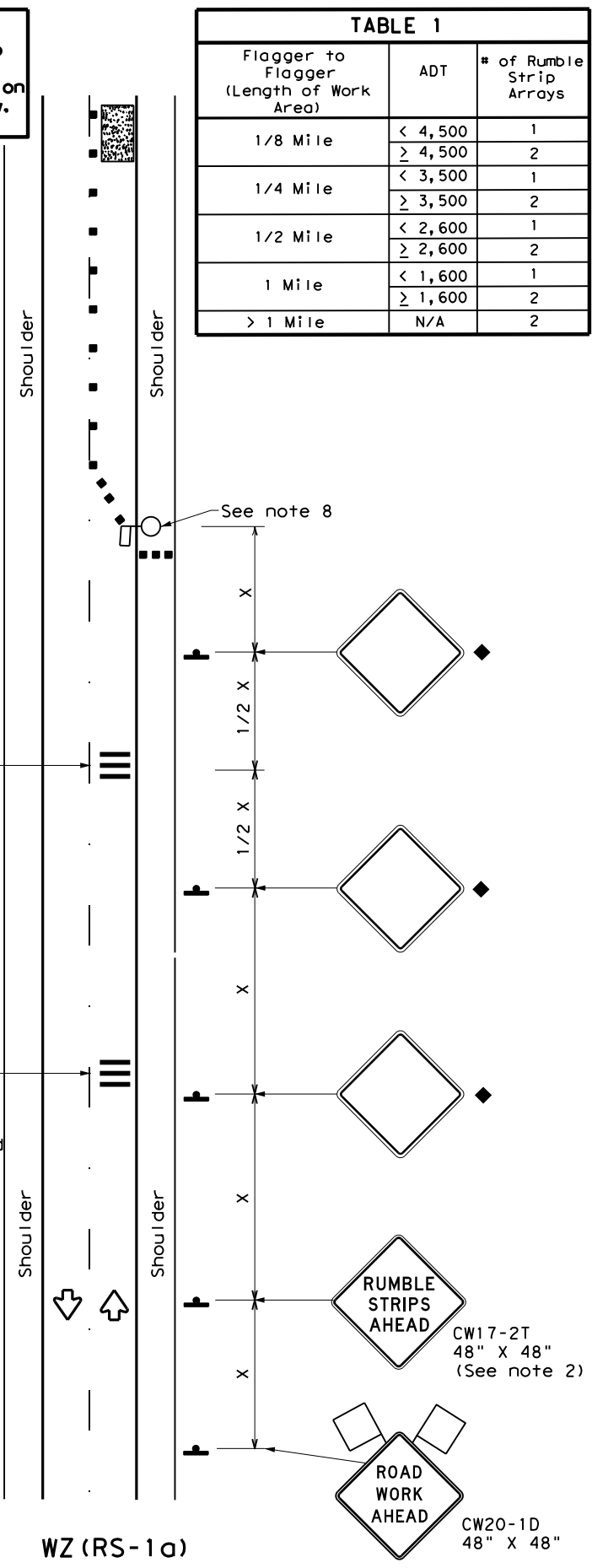
FILE: wzbrk-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CR: TxDOT
©TxDOT August 1995	CONT	SECT	JOB	HIGHWAY
REVISIONS	6459	31	001	SS 407
6-96 5-98 7-13	DIST	COUNTY	SHEET NO.	
8-96 3-03	CRP	NUECES	38	

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

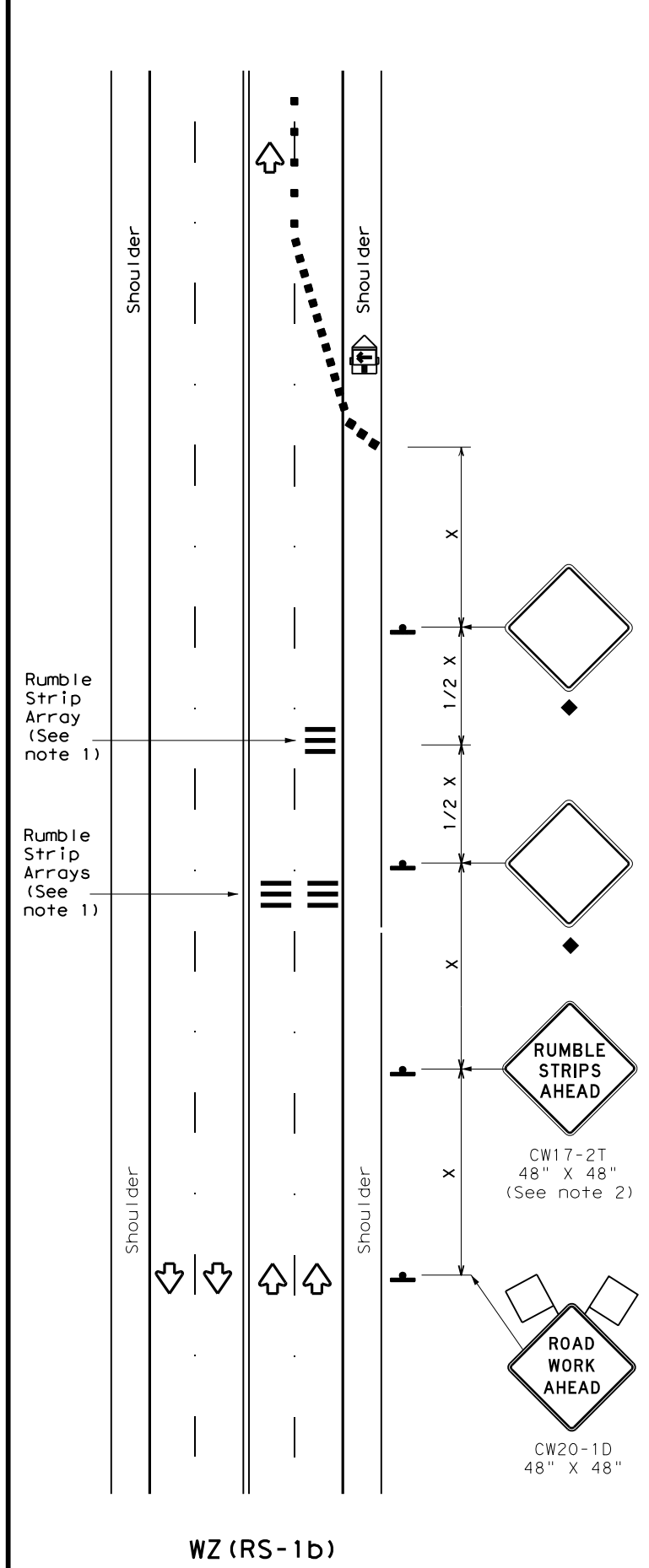
DATE: 11/17/2023 8:47:59 AM
 FILE: C:\Users\AHERNA12\Desktop\Leopard St\wzrs22.dgn

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

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



RUMBLE STRIPS ON ONE-LANE TWO-WAY APPLICATION



RUMBLE STRIPS FOR LANE CLOSURE ON CONVENTIONAL ROADWAY

GENERAL NOTES

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

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

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

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	L = WS 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)

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

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

Texas Department of Transportation Traffic Safety Division Standard

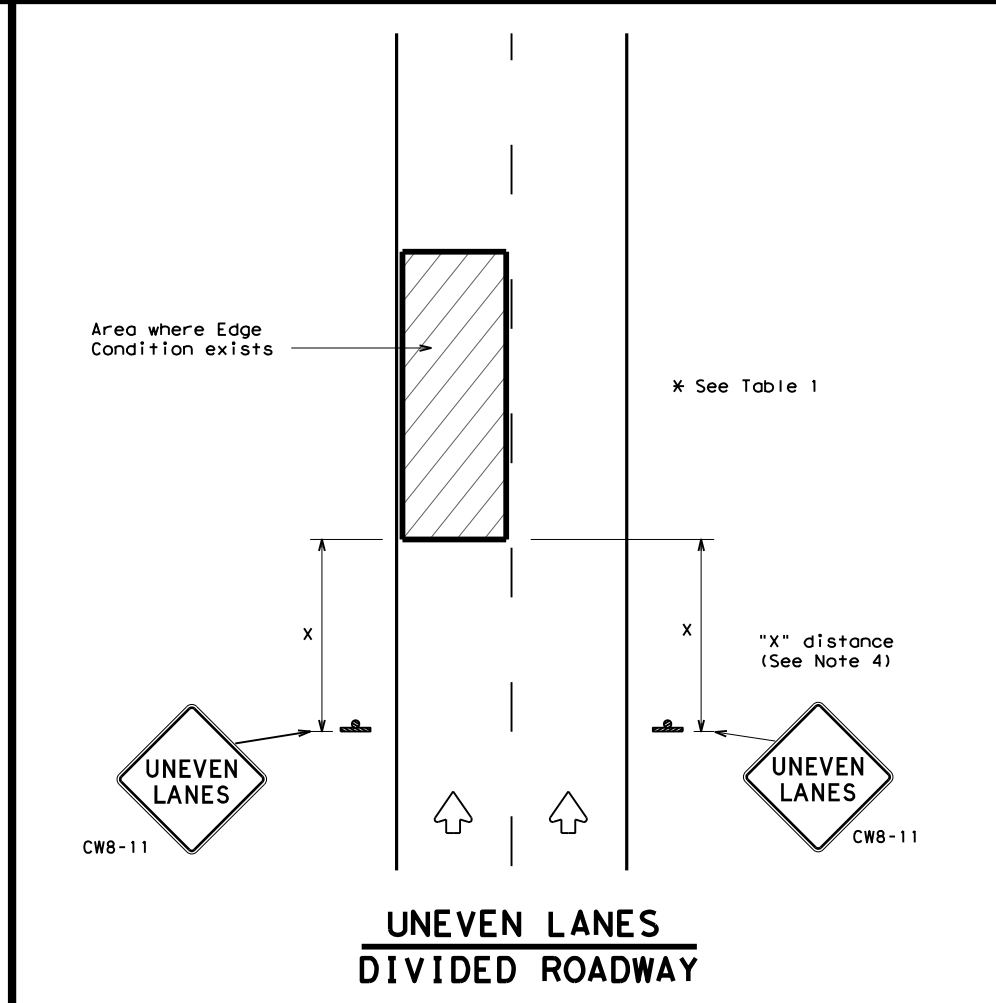
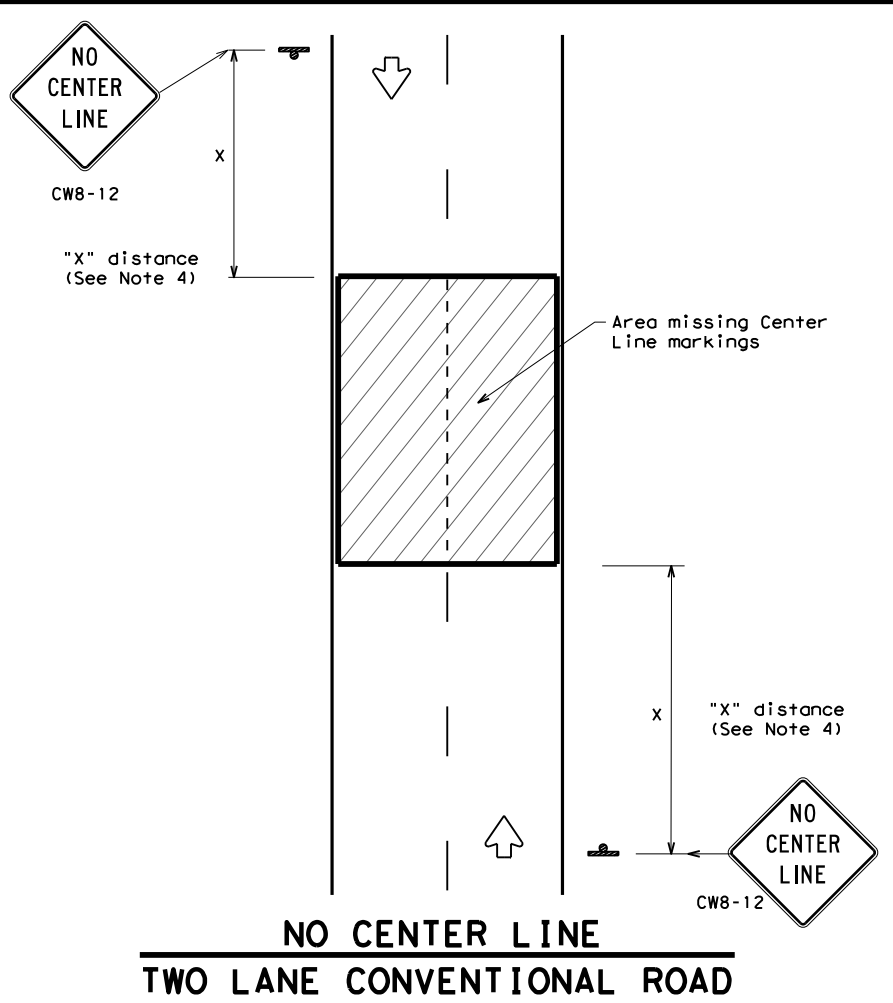
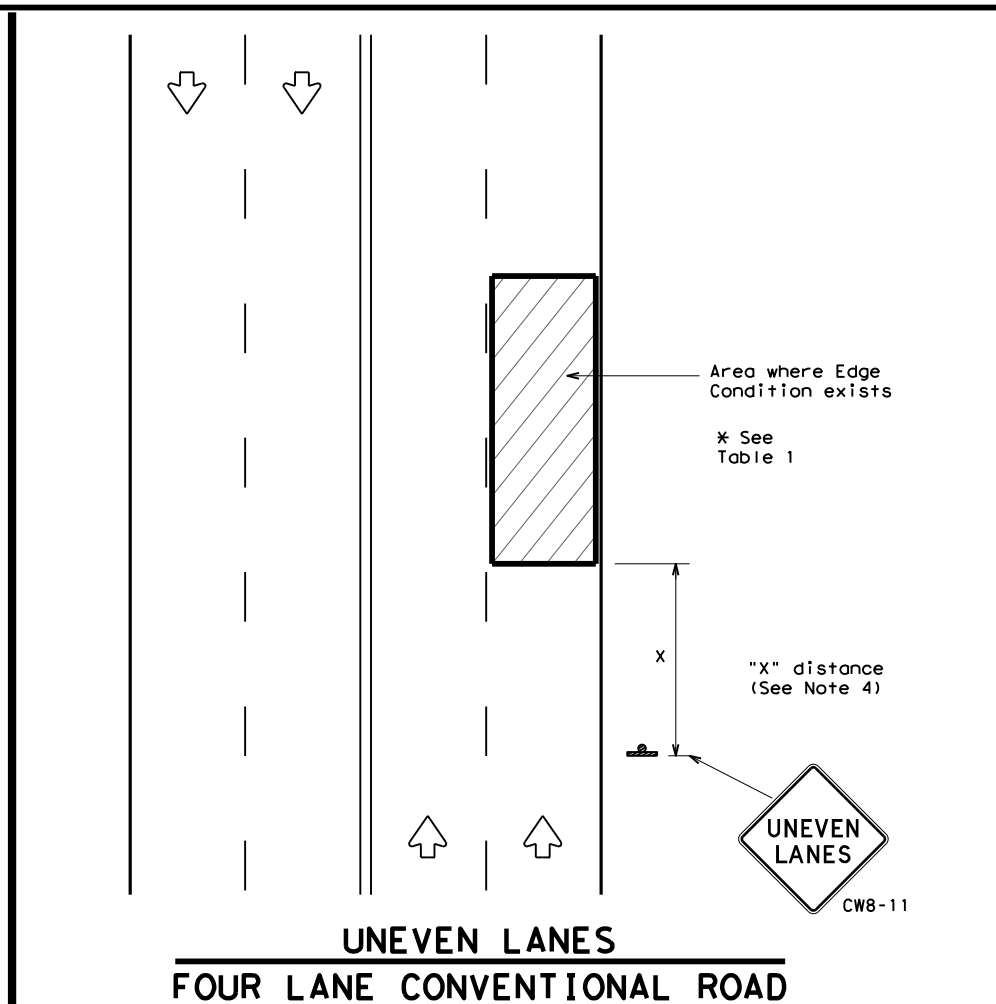
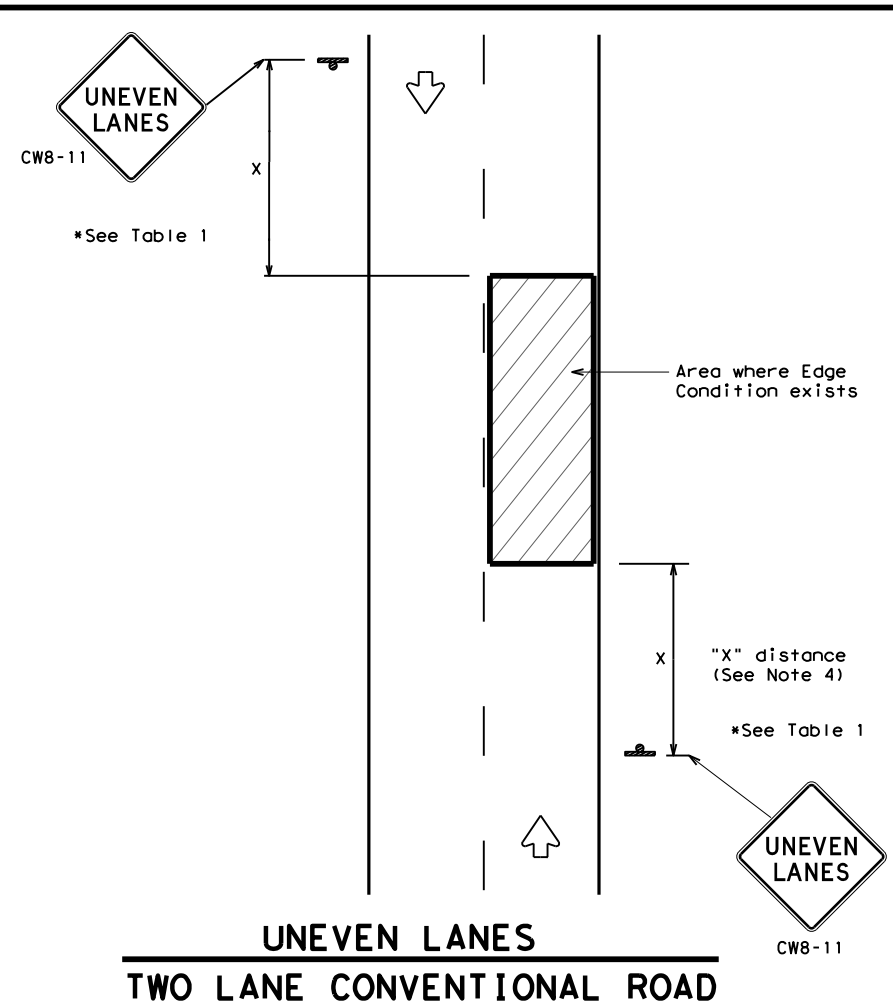
TEMPORARY RUMBLE STRIPS

WZ (RS) - 22

FILE: wzrs22.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2012	CONT	SECT	JOB	HIGHWAY
REVISIONS	6459	31	001	SS 407
2-14 1-22	DIST	COUNTY	SHEET NO.	
4-16	CRP	NUECES	39	

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

DATE: 11/17/2023 8:48:01 AM
 FILE: C:\Users\AHERNA12\Desktop\Leopard St\WZUL-13.dgn



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

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

GENERAL NOTES

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

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

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

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

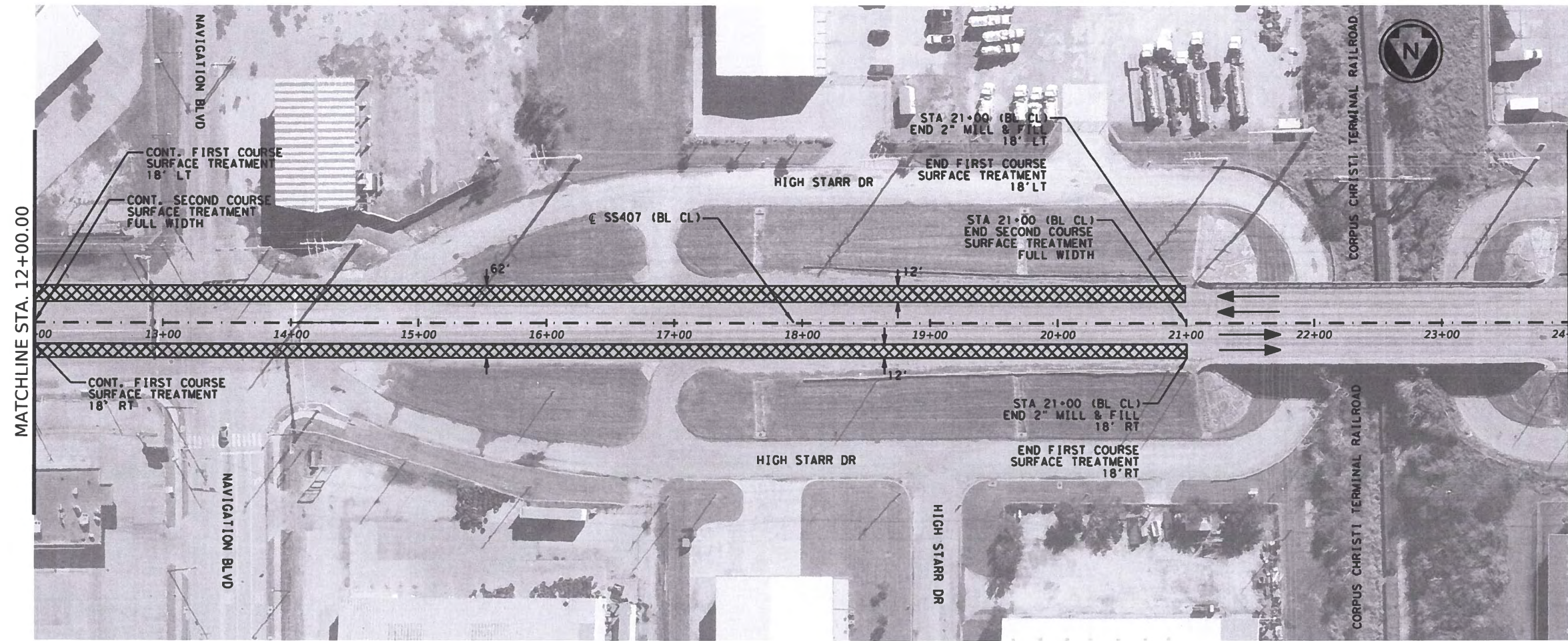
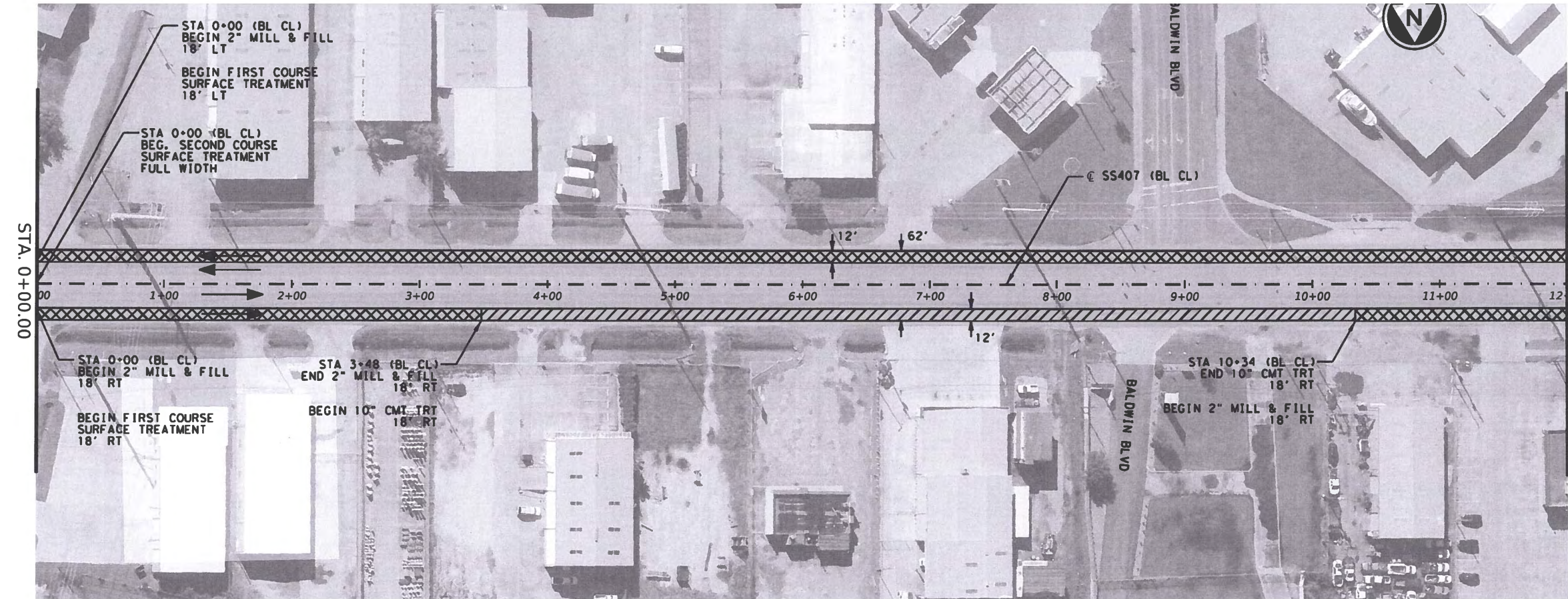


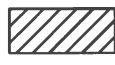

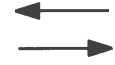
SIGNING FOR UNEVEN LANES

WZ (UL) - 13

FILE: WZUL-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT	APRIL 1992	CONT	SECT	JOB
REVISIONS	6459	31	001	SS 407
8-95 2-98 7-13	DIST	COUNTY	SHEET NO.	
1-97 3-03	CRP	NUECES	40	

DATE: 12/19/2023 10:39:05 AM
 FILE: p:\w\txdot\projectwiseonline.com\TXDOT4\Documents\16 - CRP\Maintenance Projects\16 RMC 6459-31-001 Base Repair with Sealcoat\1 - Pre-Letting\Design Files\Plan Set\3 - Roadway\SS407 Roadway BL Cl\w1.dgn



-  LIMITS OF 10" CEMENT TREAT (EXIST MATL)
-  LIMITS OF 2" MILL AND FILL (TYP)
2" HMAC
2" PLANE ACP
-  DIRECTION OF TRAFFIC

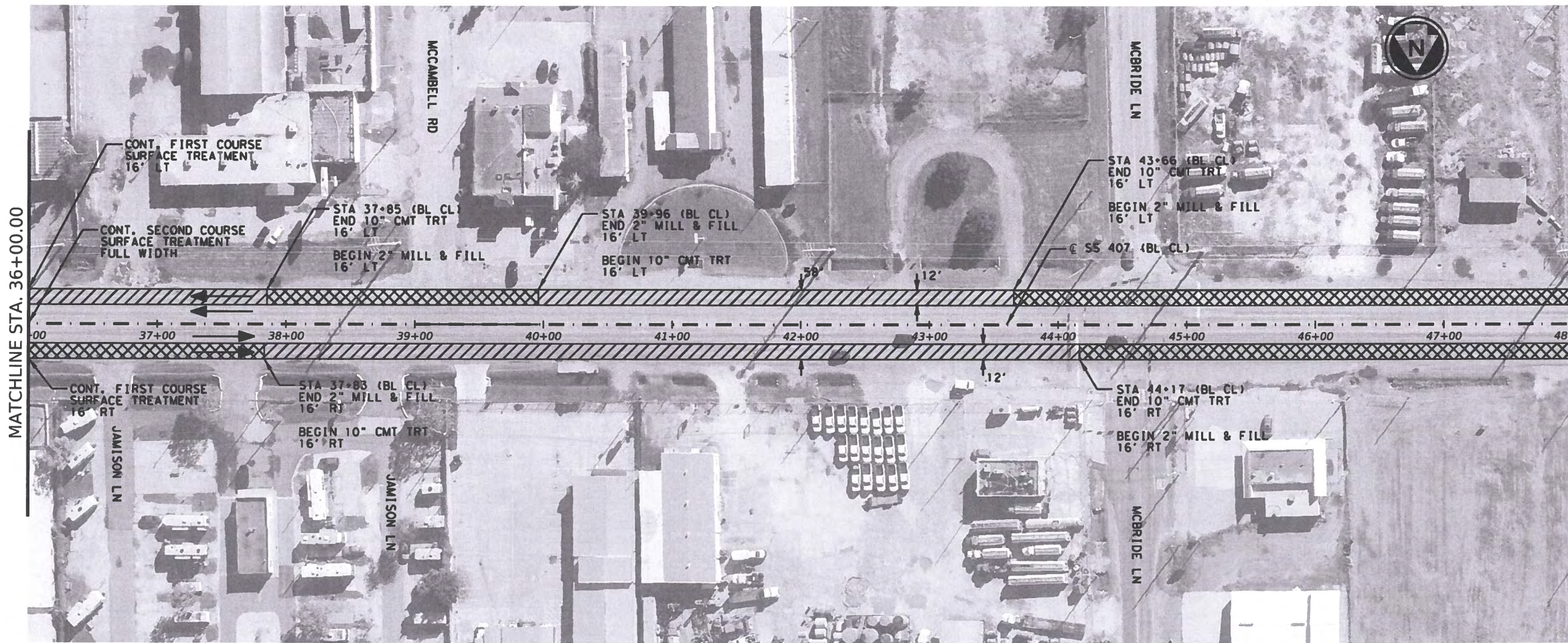
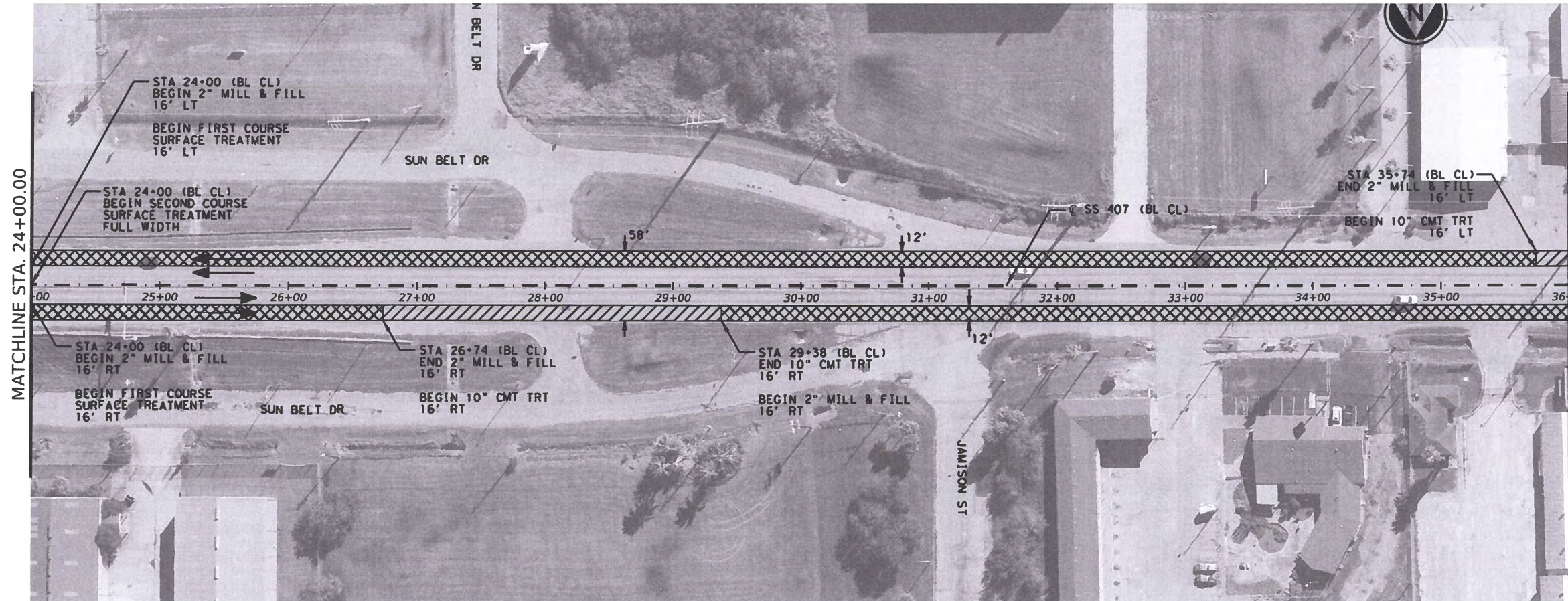
STATE OF TEXAS
 JAMES DOYLE HARRIS
 99290
 LICENSED PROFESSIONAL ENGINEER
James D Harris
 12-19-23

 Texas Department of Transportation




ROADWAY PLAN SHEETS
 SS 407
 ALIGN "BL CL"

© TXDOT 2023		SHEET 1 OF 15	
CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST		COUNTY	SHEET NO.
CRP		NUECES	41

DATE: 12/19/2023 10:48:55 AM
 FILE: p:\w\txdot\projectwiseonline.com\XDOT\4\Documents\16 - CRP\Maintenance Projects\16 RMC 6459-31-001 Base Repair with Sealcoat\1 - Pre-Letting\Design Files\Plan Set\3 - Roadway\SS407_Roadway_BL Cl\p2.dgn



LEGEND

-  LIMITS OF 10" CEMENT TREAT (EXIST MATL)
-  LIMITS OF 2" MILL AND FILL (TYP) 2" HMAC 2" PLANE ACP
-  DIRECTION OF TRAFFIC

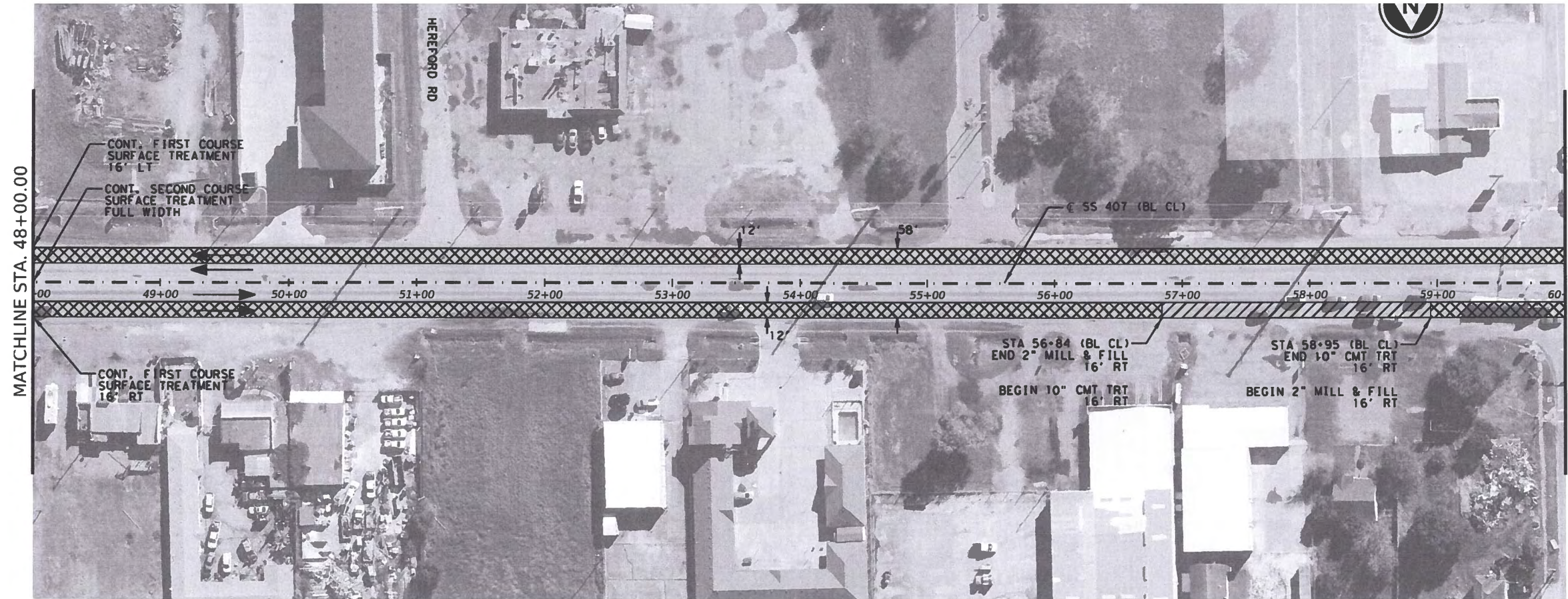
STATE OF TEXAS
 JAMES DOYLE HARRIS
 99290
 LICENSED PROFESSIONAL ENGINEER
James Harris
 12-19-23





ROADWAY PLAN SHEETS
 SS 407
 ALIGN "BL CL"


© TxDOT 2023		SHEET 2 OF 15	
CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST		COUNTY	SHEET NO.
CRP		NUECES	42

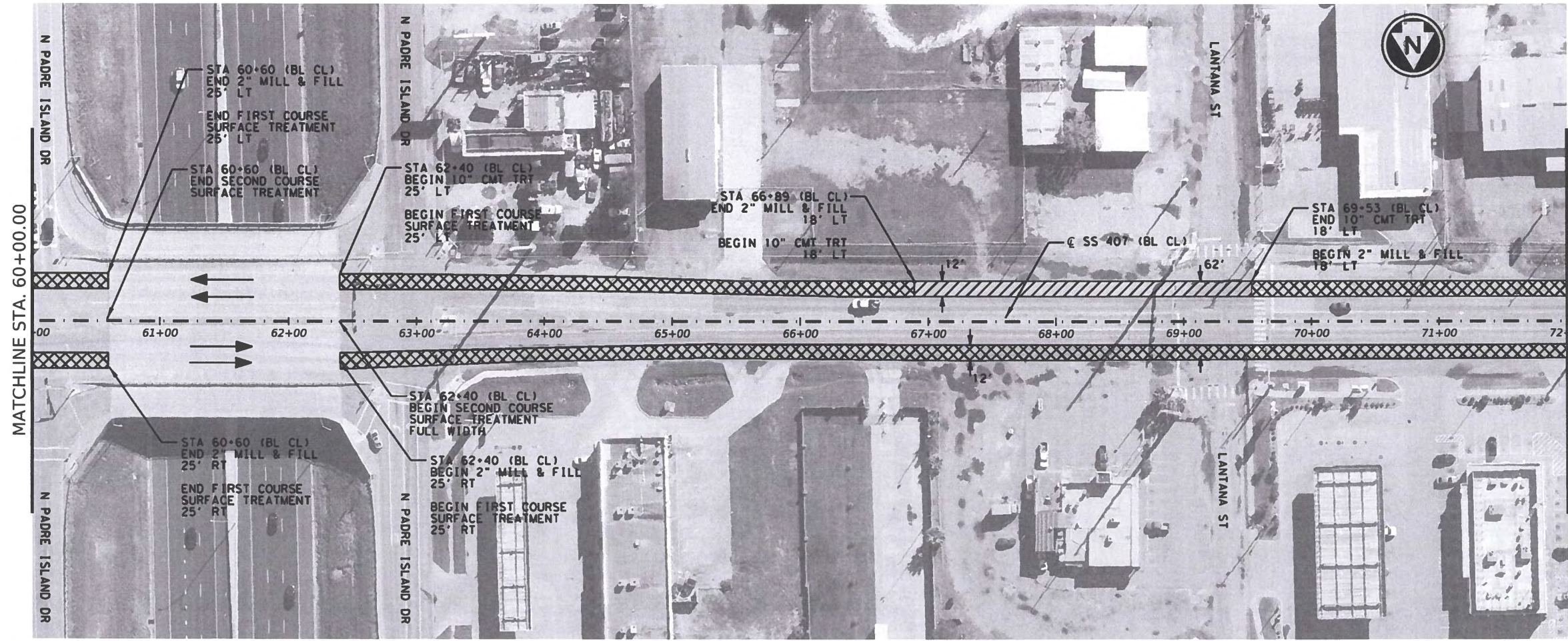
DATE: 12/19/2023 11:00:23 AM
 FILE: p:\w\txdot\projectwissonline.com\TXDOT\Documents\16 - CRP\Maintenance Projects\16 RMC 6459-31-001 Base Repair with Sealcoat\1 - Pre-Letting\Design Files\Plan_Sev3_Roadway\SS407 Roadway_BL Clp3.dgn



 LIMITS OF 10" CEMENT TREAT (EXIST MATL)

 LIMITS OF 2" MILL AND FILL (TYP) 2" HMAC 2" PLANE ACP

 DIRECTION OF TRAFFIC



STATE OF TEXAS
 JAMES DOYLE HARRIS
 99290
 LICENSED PROFESSIONAL ENGINEER
James D. Harris
 12-19-23



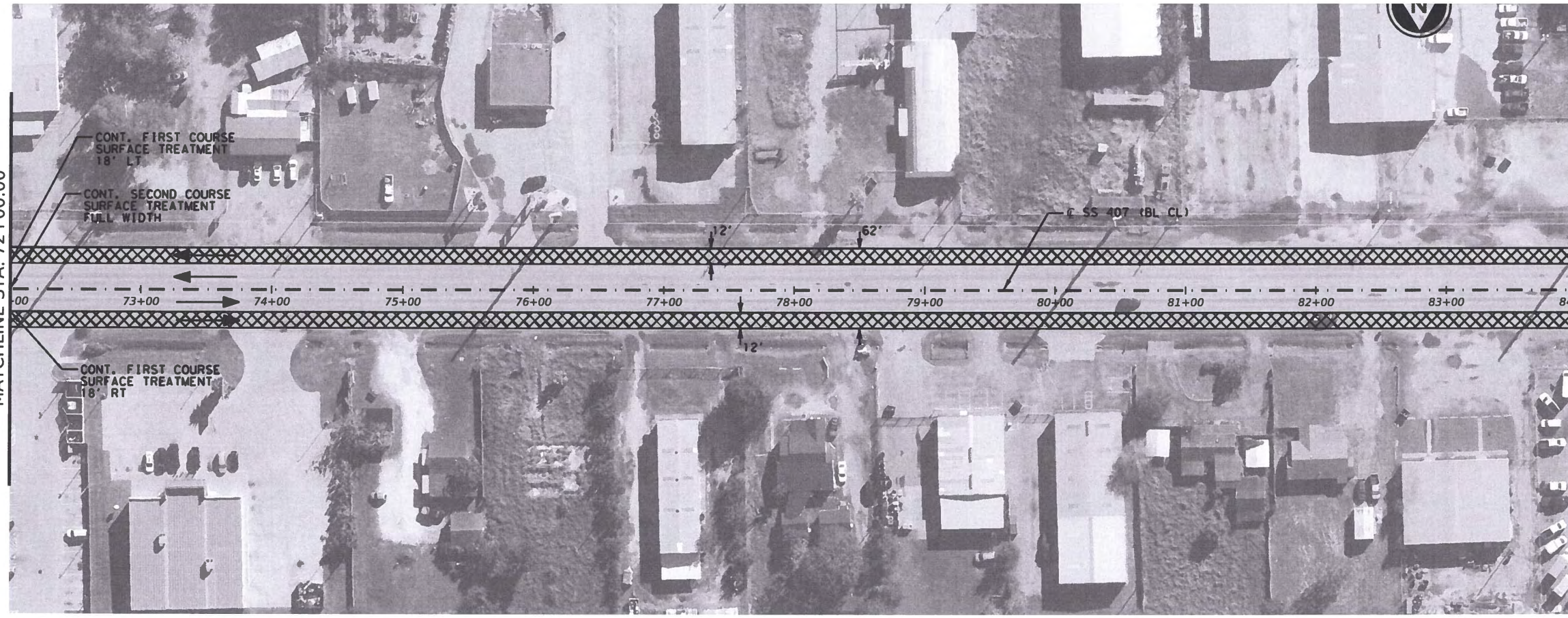
ROADWAY PLAN SHEETS
 SS 407
 ALIGN "BL CL"

©TxDOT 2023 SHEET 3 OF 15

CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST	COUNTY		SHEET NO.
CRP	NUECES		43




DATE: 12/19/2023 11:24:52 AM
 FILE: pw://txdot.projectwiseonline.com:TXDOT4/Documents/16 - CRP/Maintenance Projects/16 RMC 6459-31-001 Base Repair with Sealcoat/1 - Pre-Letting/Design Files/Plan Set/3 - Roadway/SS407_Roadway_BL_C1PW.dgn

MATCHLINE STA. 72+00.00

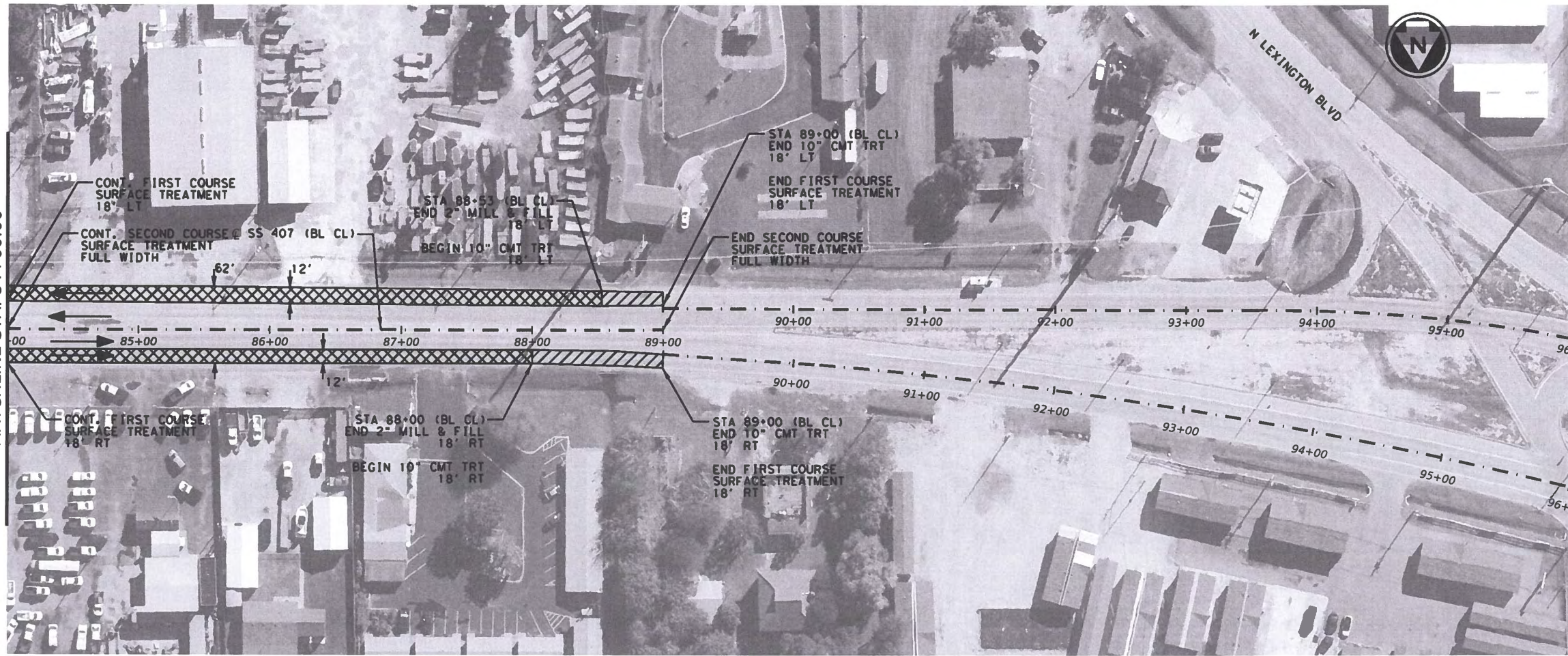


MATCHLINE STA. 84+00.00

LEGEND

-  LIMITS OF 10" CEMENT TREAT (EXIST MATL)
-  LIMITS OF 2" MILL AND FILL (TYP) 2" HMAc 2" PLANE ACP
-  DIRECTION OF TRAFFIC

MATCHLINE STA. 84+00.00



STATE OF TEXAS
 JAMES DOYLE HARRIS
 99290
 LICENSED PROFESSIONAL ENGINEER
James D. Harris
 12-19-23

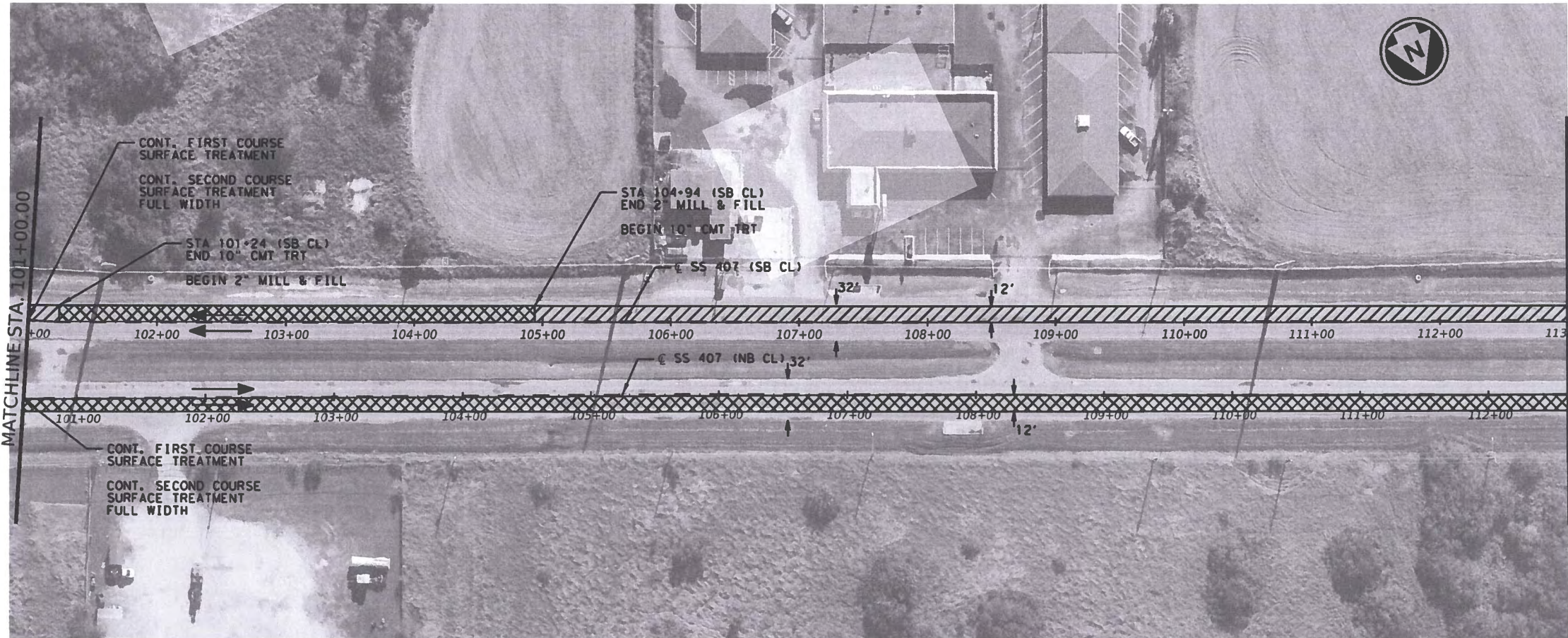
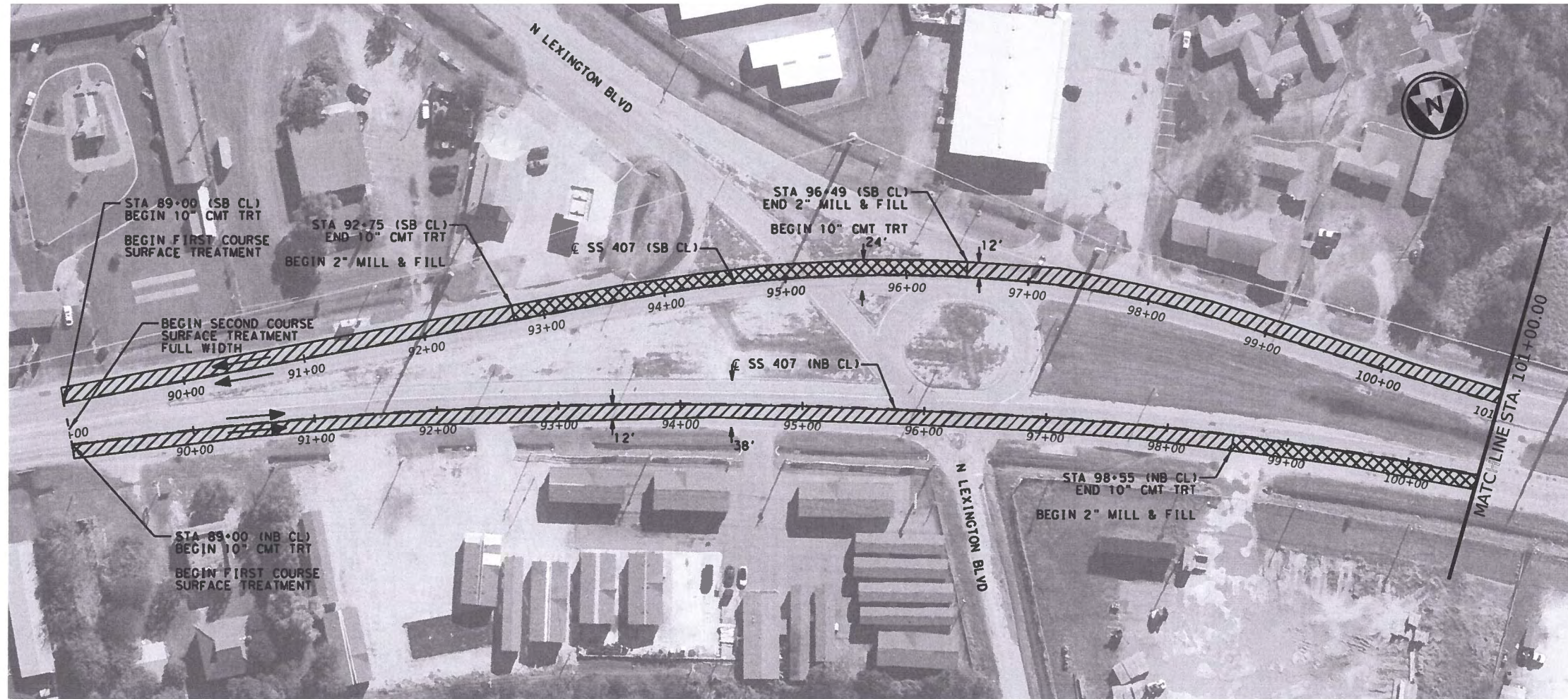


ROADWAY PLAN SHEETS
 SS 407
 ALIGN "BL CL"




©TxDOT 2023 SHEET 4 OF 15

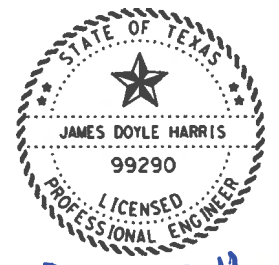
COMT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST		COUNTY	SHEET NO.
CRP		NUECES	43

DATE: 12/19/2023 11:38:51 AM
 FILE: pw://txdot.projectwiseonline.com:TXDOT4/Documents/16 - CRP/Maintenance Projects/16 RMC 6459-31-001 Base Repair with Sealcoat/1 - Pre-Letting/Design Files/Plan Set/3 - Roadway/SS407 Roadway_SBC.dwg



LEGEND

-  LIMITS OF 10" CEMENT TREAT (EXIST MATL)
-  LIMITS OF 2" MILL AND FILL (TYP) 2" HMAC 2" PLANE ACP
-  DIRECTION OF TRAFFIC



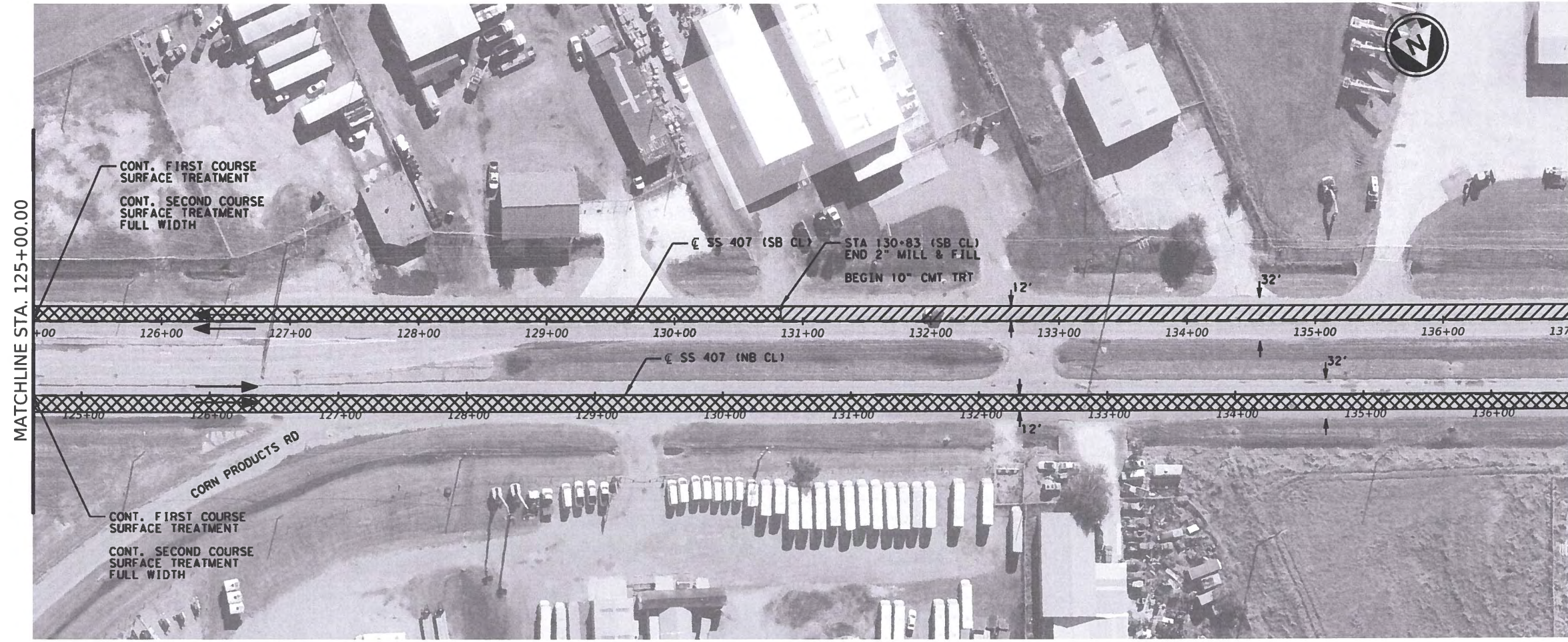
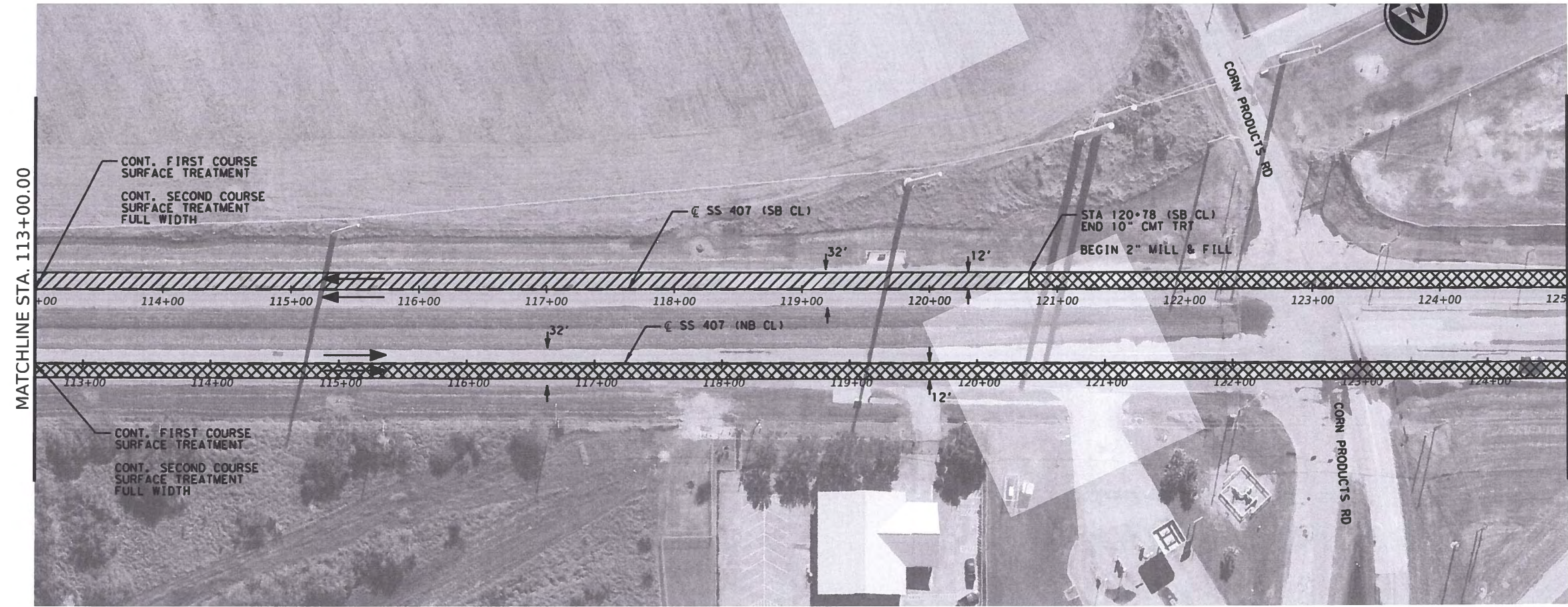
James D. Harris
 12-19-23



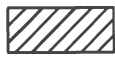


**ROADWAY PLAN SHEETS
 SS 407
 ALIGN "NB CL" & "SB CL"**

©TXDOT 2023		SHEET 5 OF 15	
CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST	COUNTY		SHEET NO.
CRP	NUECES		45


DATE: 12/19/2023 11:52:06 AM
 FILE: \\pww\txdot\project\online.com\TXDOT4\Documents\16 - CRP\Maintenance Projects\16 RMC 6459-31-001 Base Repair with Sealcoat\1 - Pre-Letting\Design Files\Plan Set\3. Roadway\SS407 Roadway SBC\1.dgn



LEGEND

-  LIMITS OF 10" CEMENT TREAT (EXIST MATL)
-  LIMITS OF 2" MILL AND FILL (TYP) 2" HMAC 2" PLANE ACP
-  DIRECTION OF TRAFFIC

STATE OF TEXAS
 JAMES DOYLE HARRIS
 99290
 LICENSED PROFESSIONAL ENGINEER
Jamal Harris
 12-19-23

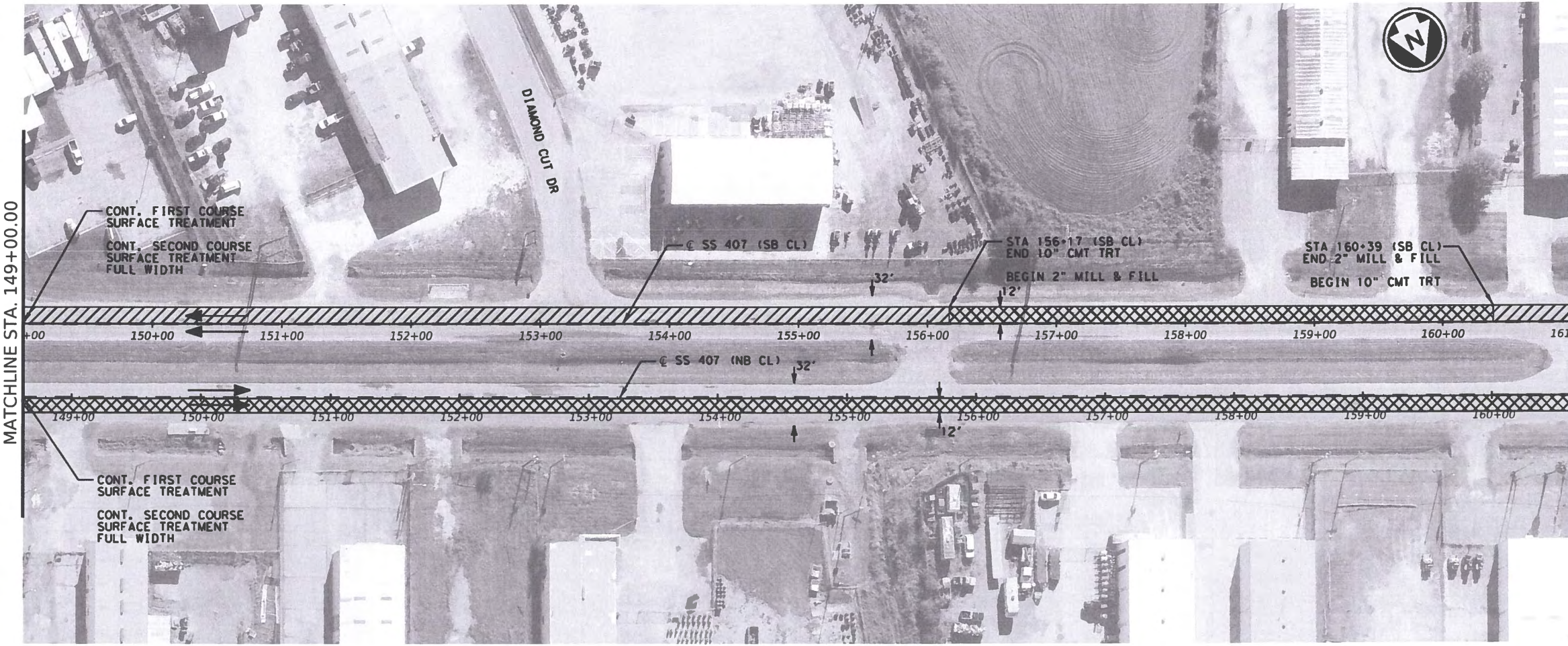
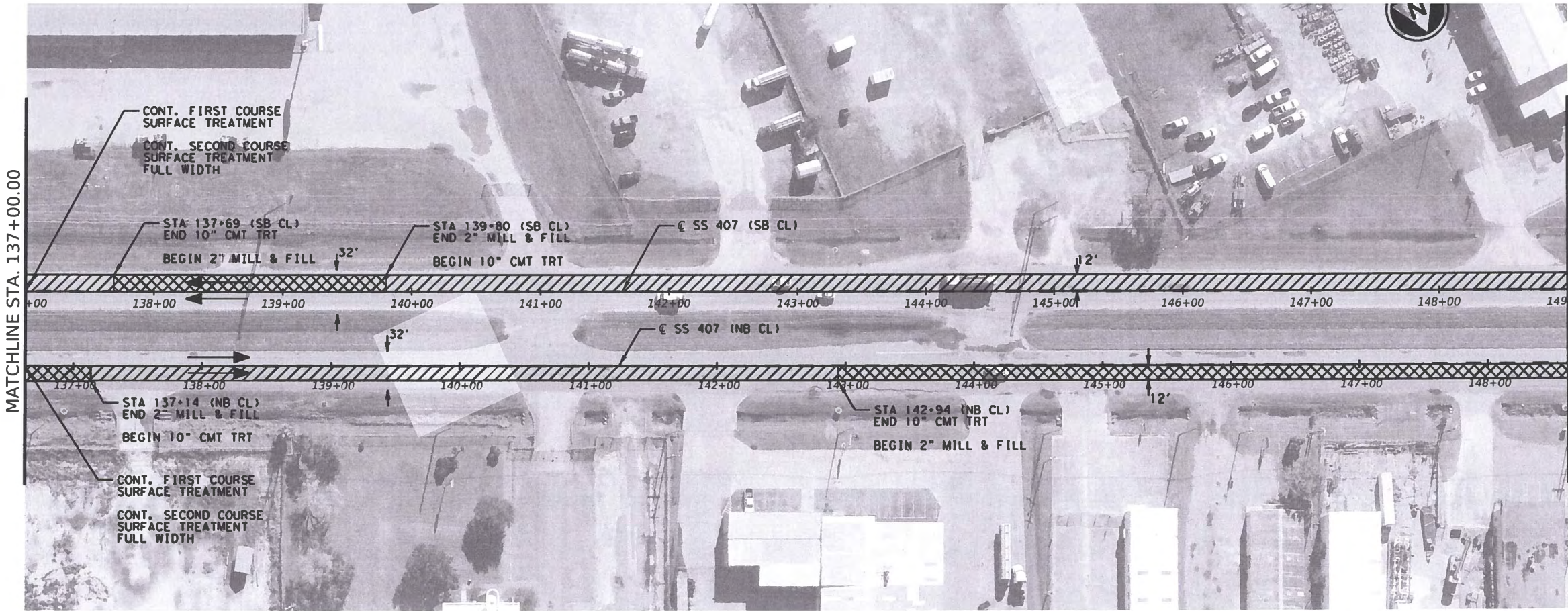
 Texas Department of Transportation

ROADWAY PLAN SHEETS
SS 407
ALIGN "NB CL" & "SB CL"




©TXDOT 2023 SHEET 6 OF 15

CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST		COUNTY	SHEET NO.
CRP		NUECES	46

DATE: 12/19/2023 12:13:51 PM
 FILE: \\pww\txdot\project\wisconsin.com\TXDOT4\Documents\16 - CRP\Maintenance Projects\16 RMC 6459-31-001 Base Repair with Sealcoat\1 - Pre-Letting\Design Files\Plan Set\3. Roadway\SS407 Roadway 58CL.dwg



LEGEND

-  LIMITS OF 10" CEMENT TREAT (EXIST MATL)
-  LIMITS OF 2" MILL AND FILL (TYP)
2" HMAC
2" PLANE ACP
-  DIRECTION OF TRAFFIC

STATE OF TEXAS
 JAMES DOYLE HARRIS
 99290
 LICENSED PROFESSIONAL ENGINEER
James D Harris
 12-19-23



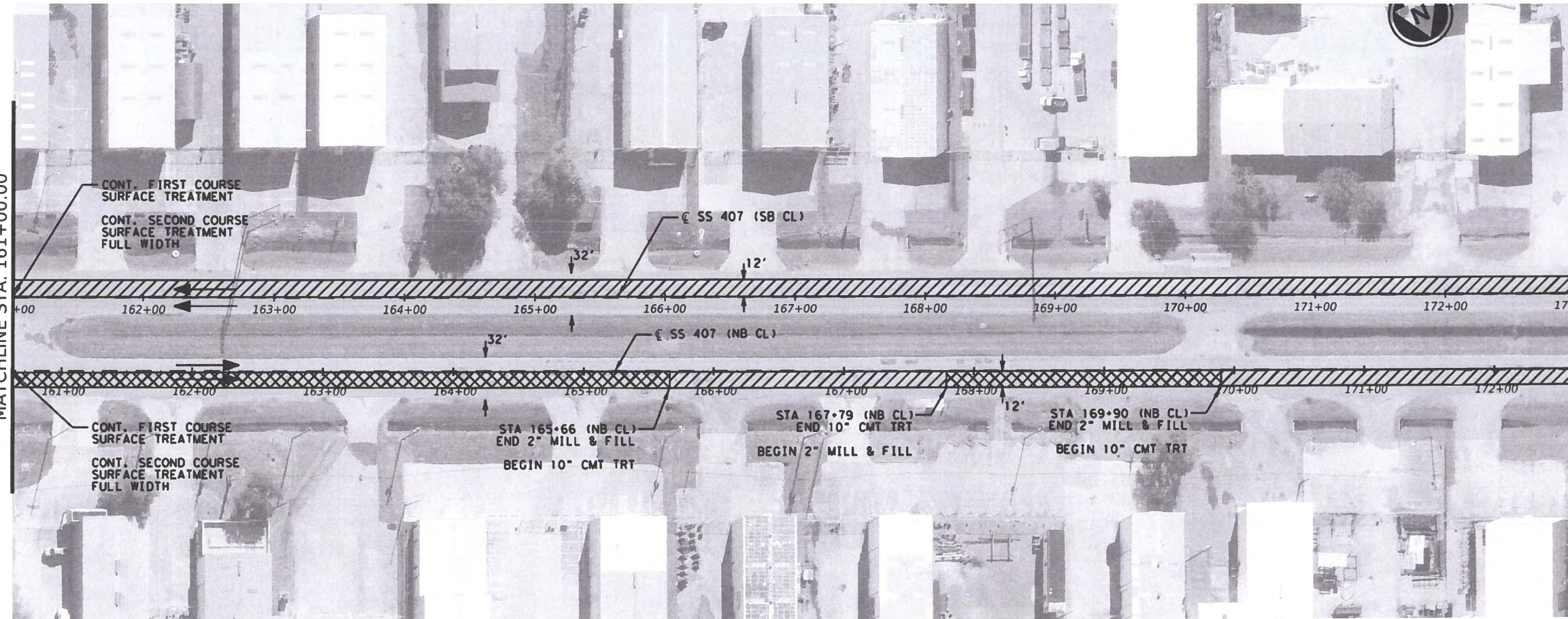
ROADWAY PLAN SHEETS
SS 407
ALIGN "NB CL" & "SB CL"

© TXDOT 2023		SHEET 7 OF 15	
CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST	COUNTY		SHEET NO.
CRP	NUECES		47

DATE: 12/19/2023 12:29:47 PM

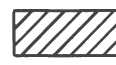


FILE: \\twdot\project\wisconsinline.com\TXDOT4\Documents\16 - CRP\Maintenance\Projects\16 RMC 6459-31-001 Base Repair with Sealcoat\1 - Pre-Letting\Design Files\Plan Set\3. Roadway\SS407 Roadway_SBC\1.dgn

MATCHLINE STA. 161+00.00

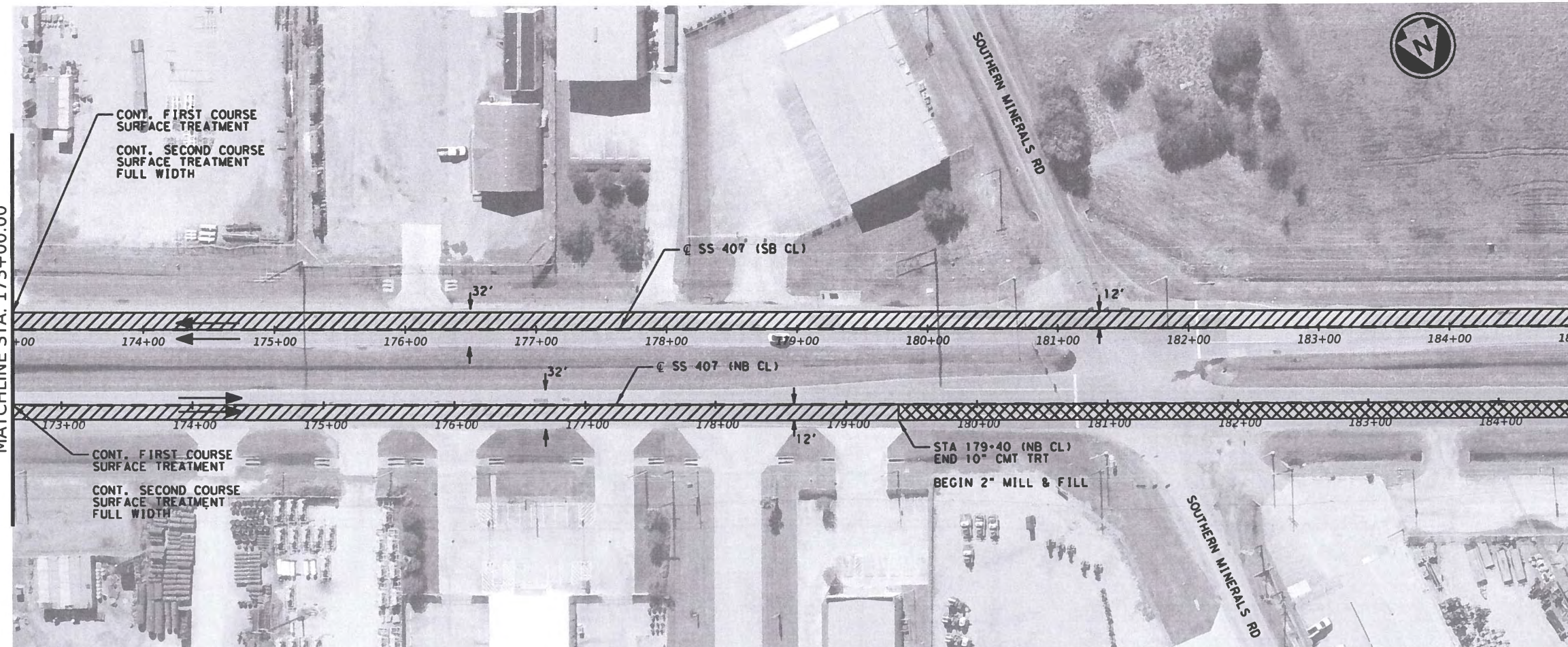


MATCHLINE STA. 173+00.00

LEGEND

-  LIMITS OF 10" CEMENT TREAT (EXIST MATL)
-  LIMITS OF 2" MILL AND FILL (TYP)
2" HMAC
2" PLANE ACP
-  DIRECTION OF TRAFFIC

MATCHLINE STA. 173+00.00



MATCHLINE STA. 185+00.00

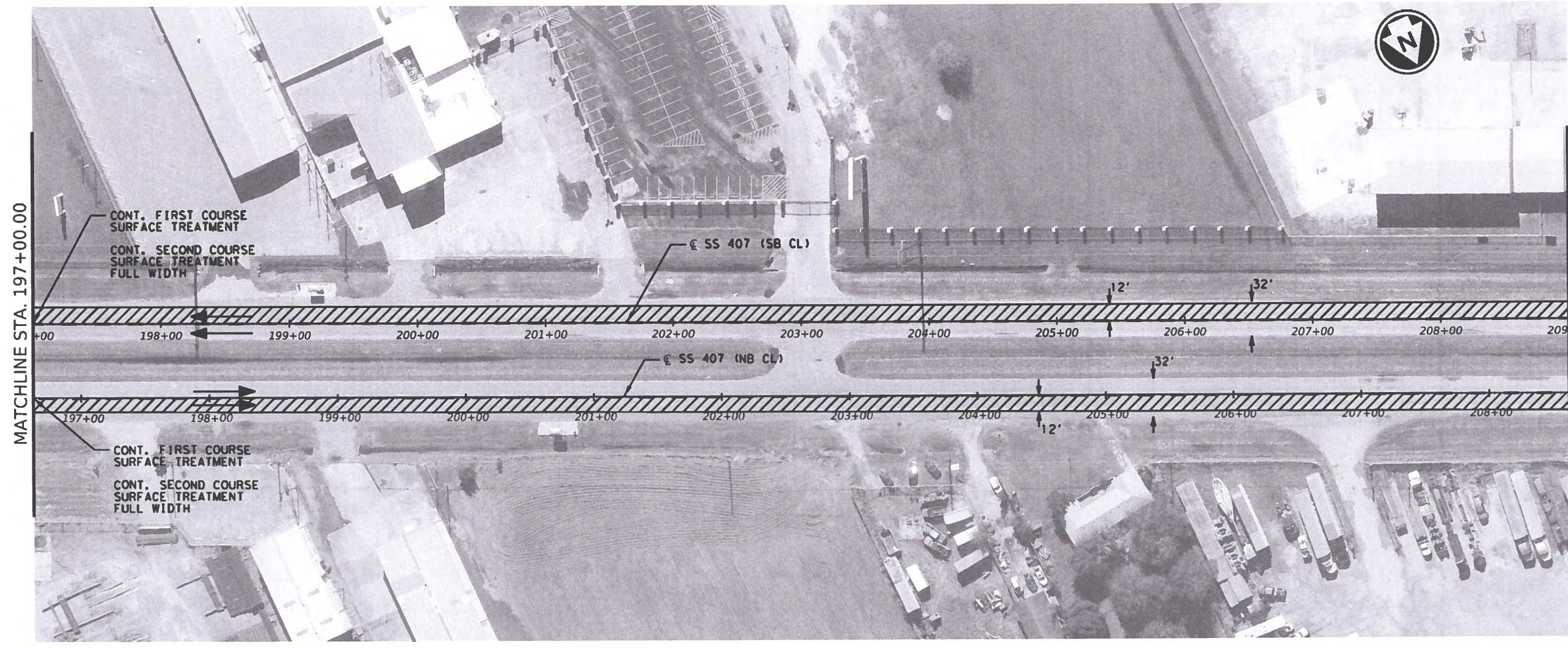
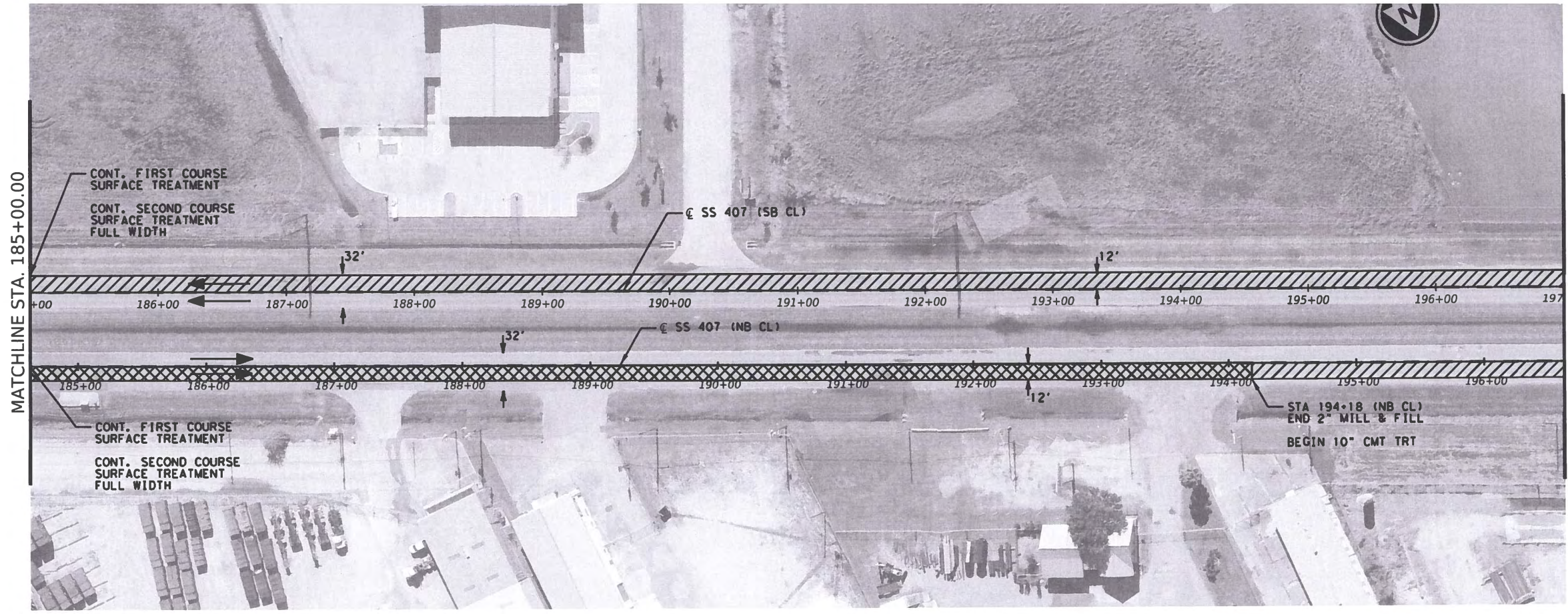
STATE OF TEXAS
 JAMES DOYLE HARRIS
 99290
 LICENSED PROFESSIONAL ENGINEER
James Harris
 12-19-23



ROADWAY PLAN SHEETS
 SS 407
 ALIGN "NB CL" & "SB CL"

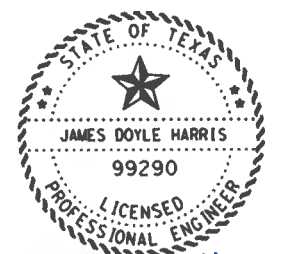
© TXDOT 2023		SHEET 8 OF 15	
CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST	COUNTY		SHEET NO.
CRP	NUECES		48

DATE: 12/19/2023 12:43:41 PM
 FILE: p:\txdot\project\wisconsin.com\TXDOT4\Documents\16 - CRP\Maintenance Projects\16 RMC 6459-31-001 Base Repair with Sealcoat\1 - Pre-Letting\Design Files\Plan Set\3. Roadway\SS407 Roadway_SBC\16.dgn



LEGEND

- LIMITS OF 10" CEMENT TREAT (EXIST MATL)
- LIMITS OF 2" MILL AND FILL (TYP) 2" HMA 2" PLANE ACP
- DIRECTION OF TRAFFIC

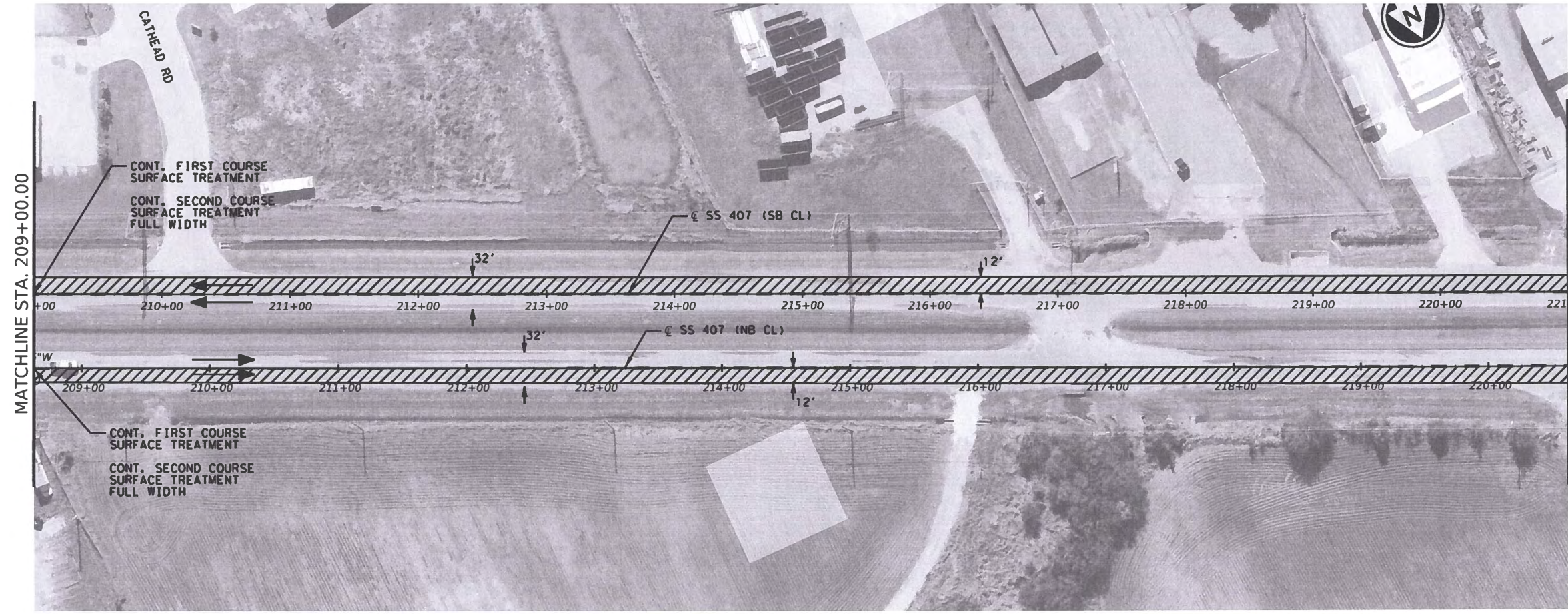

 JAMES DOYLE HARRIS
 99290
 LICENSED PROFESSIONAL ENGINEER
James Harris
 12-19-23

Texas Department of Transportation

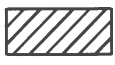


**ROADWAY PLAN SHEETS
 SS 407
 ALIGN "NB CL" & "SB CL"**

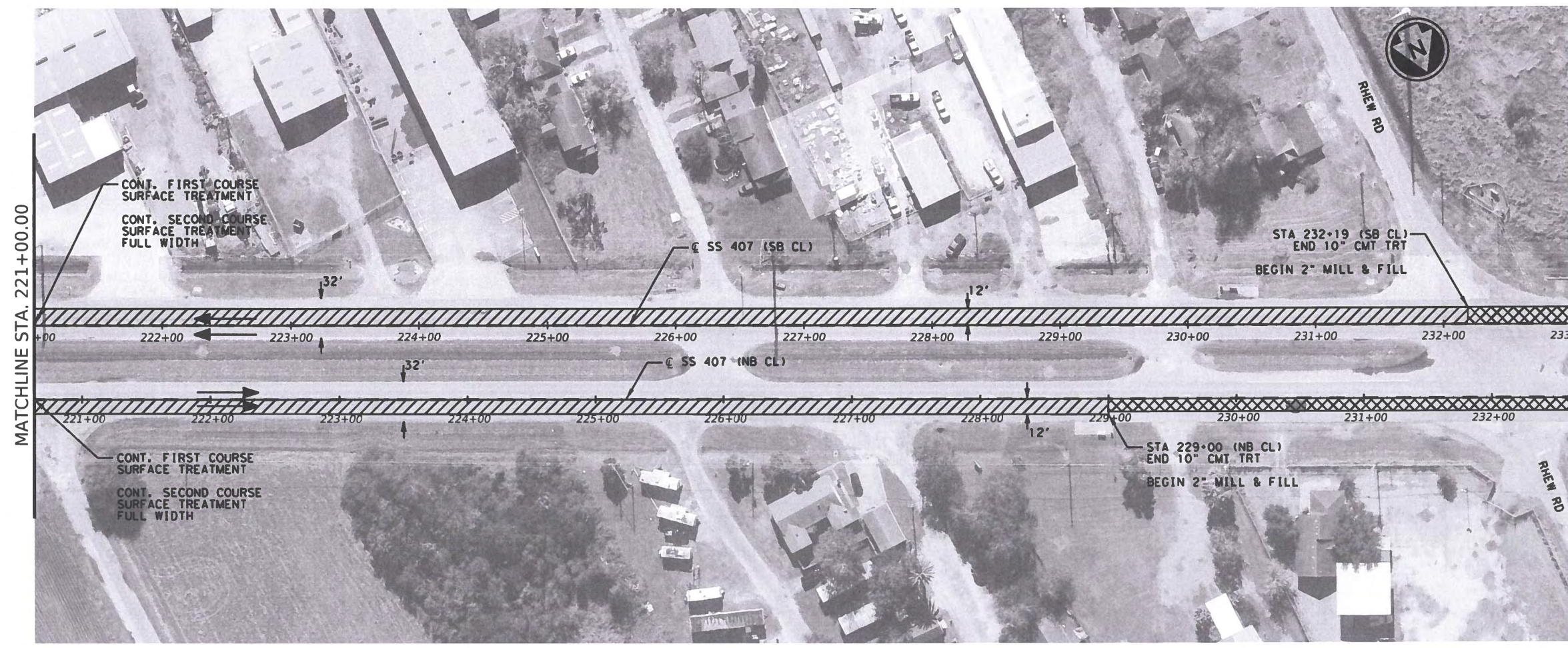
© TXDOT 2023		SHEET 9 OF 15	
CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST		COUNTY	SHEET NO.
CRP		NUECES	49

DATE: 12/19/2023 1:05:11 PM
 FILE: pw://txdot.projectwiseonline.com:TXDOT4/Documents/16 - CRP/Maintenance Projects/16 RMC 6459-31-001 Base Repair with Sealcoat/1 - Pre-Letting/Design Files/Plan Set/3 - Roadway/SS407_Roadway_SBC16.dgn



LEGEND

-  LIMITS OF 10" CEMENT TREAT (EXIST MATL)
-  LIMITS OF 2" MILL AND FILL (TYP) 2" HMAC 2" PLANE ACP
-  DIRECTION OF TRAFFIC



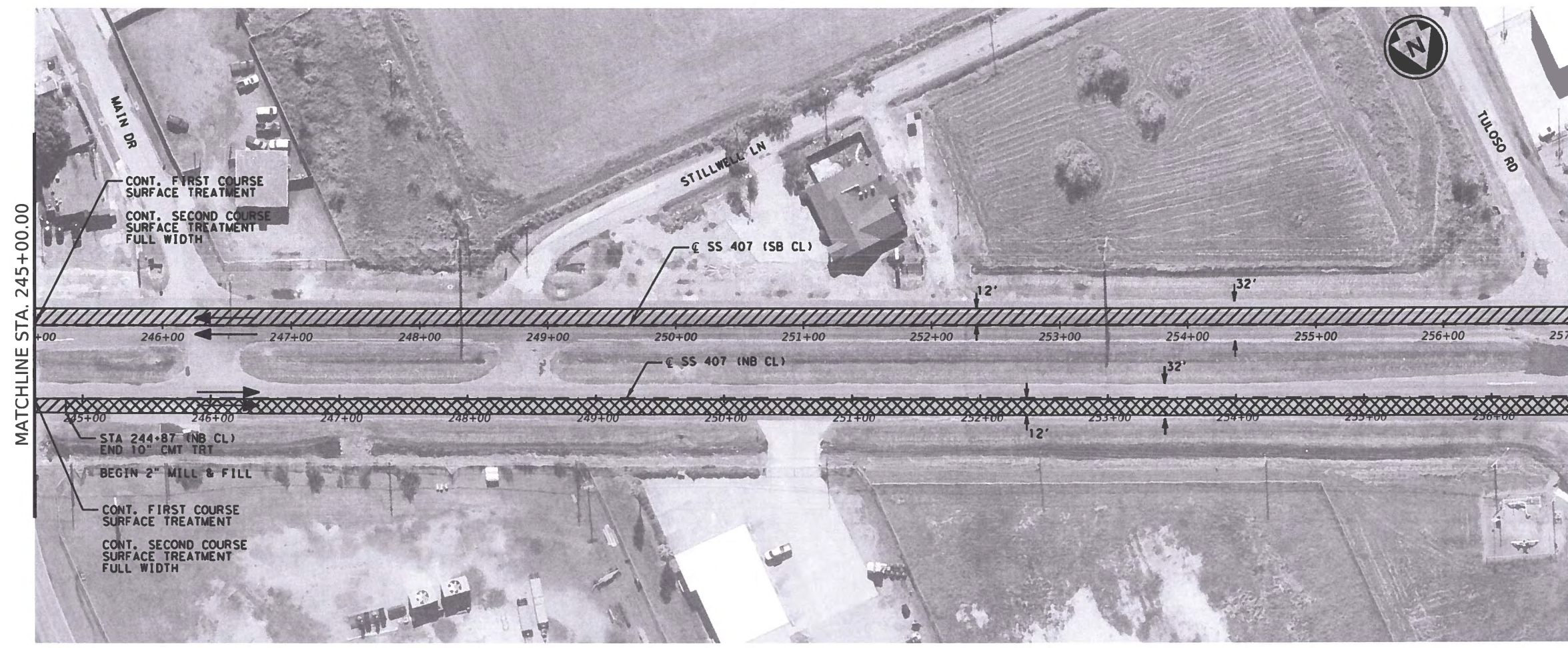
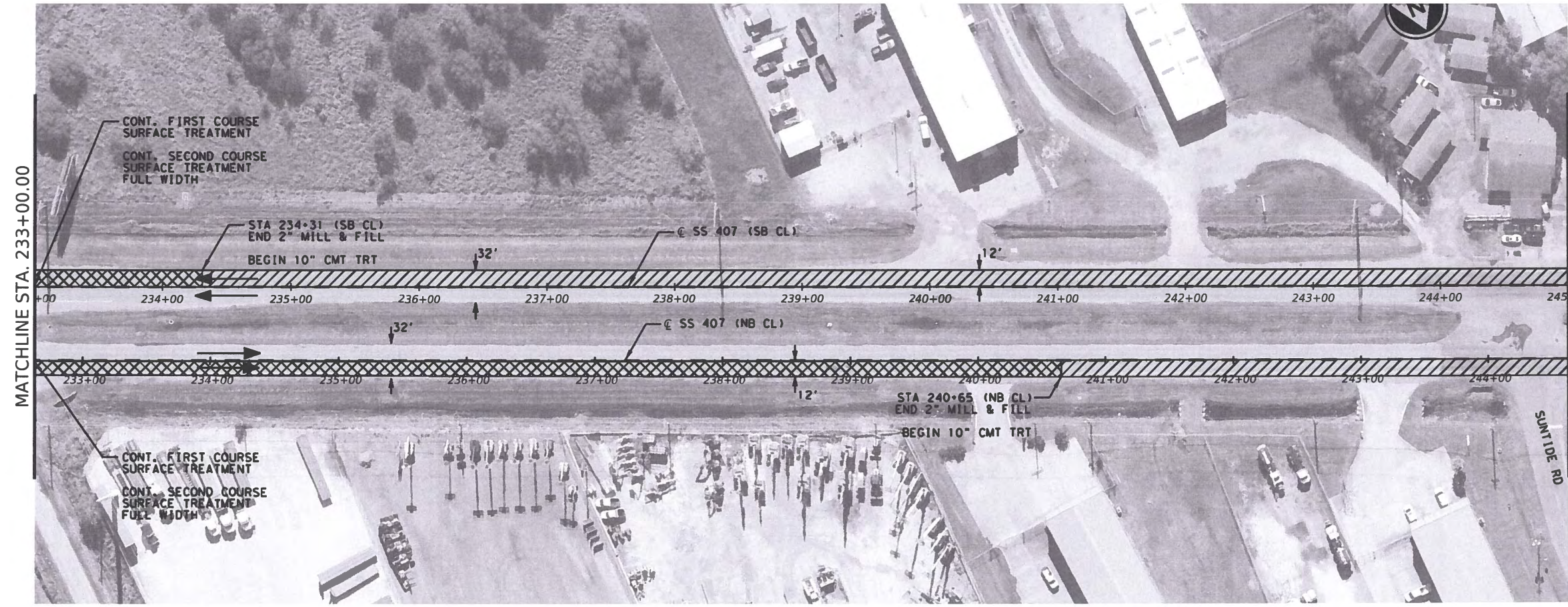
STATE OF TEXAS
 JAMES DOYLE HARRIS
 99290
 LICENSED PROFESSIONAL ENGINEER
James D. Harris
 12-19-23

 Texas Department of Transportation




ROADWAY PLAN SHEETS
 SS 407
 ALIGN "NB CL" & "SB CL"

© TxDOT 2023		SHEET 10 OF 15	
CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST	COUNTY		SHEET NO.
CRP	NUECES		50


DATE: 12/19/2023 12:05:28 PM
 FILE: p:\w\bdot\projectwiseonline.com\TXDOT4\Documents\16 - CRP\Maintenance Projects\16 RMC 6459-31-001 Base Repair with Sealcoat\1 - Pre-Letting\Design Files\Plan Set\3. Roadway\SS407 Roadway SBC\17.dgn



LEGEND

-  LIMITS OF 10" CEMENT TREAT (EXIST MATL)
-  LIMITS OF 2" MILL AND FILL (TYP)
2" HMAC
2" PLANE ACP
-  DIRECTION OF TRAFFIC

STATE OF TEXAS
 JAMES DOYLE HARRIS
 99290
 LICENSED PROFESSIONAL ENGINEER
James Harris
 12-14-23

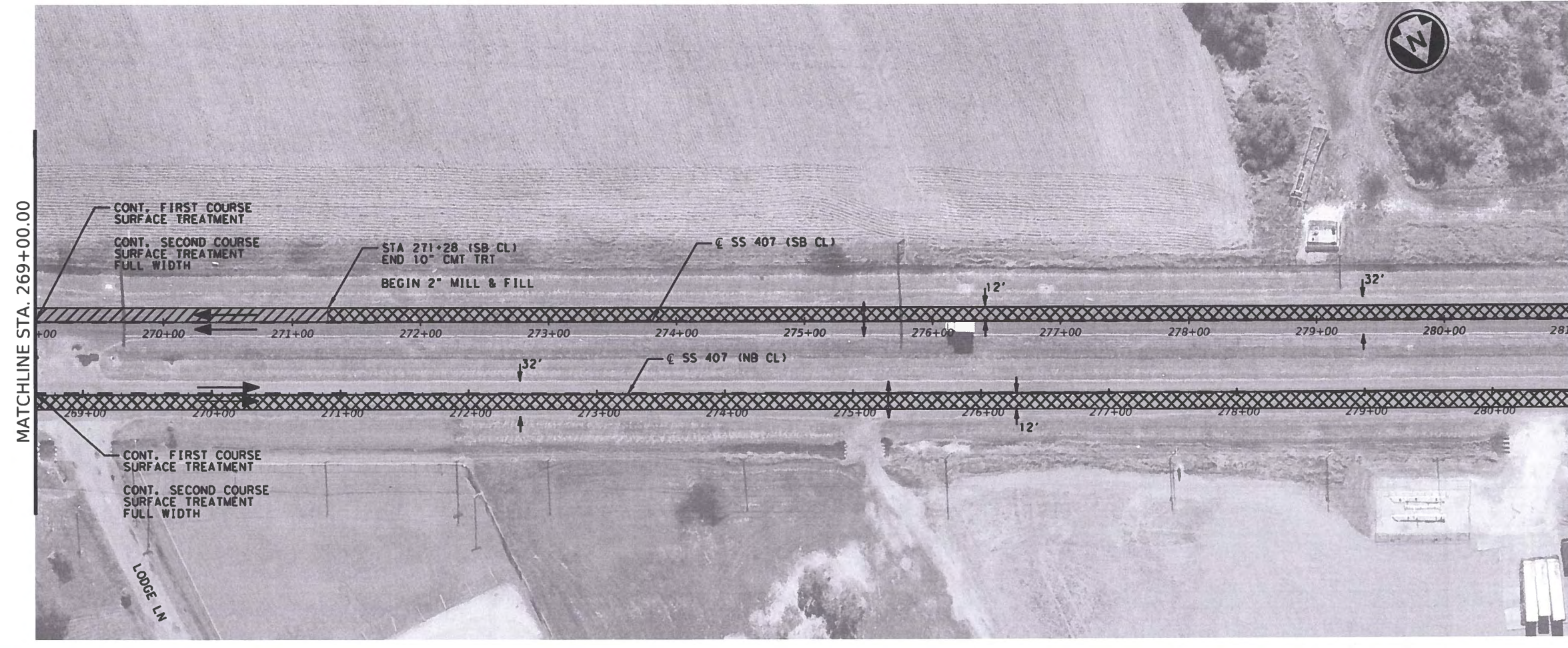
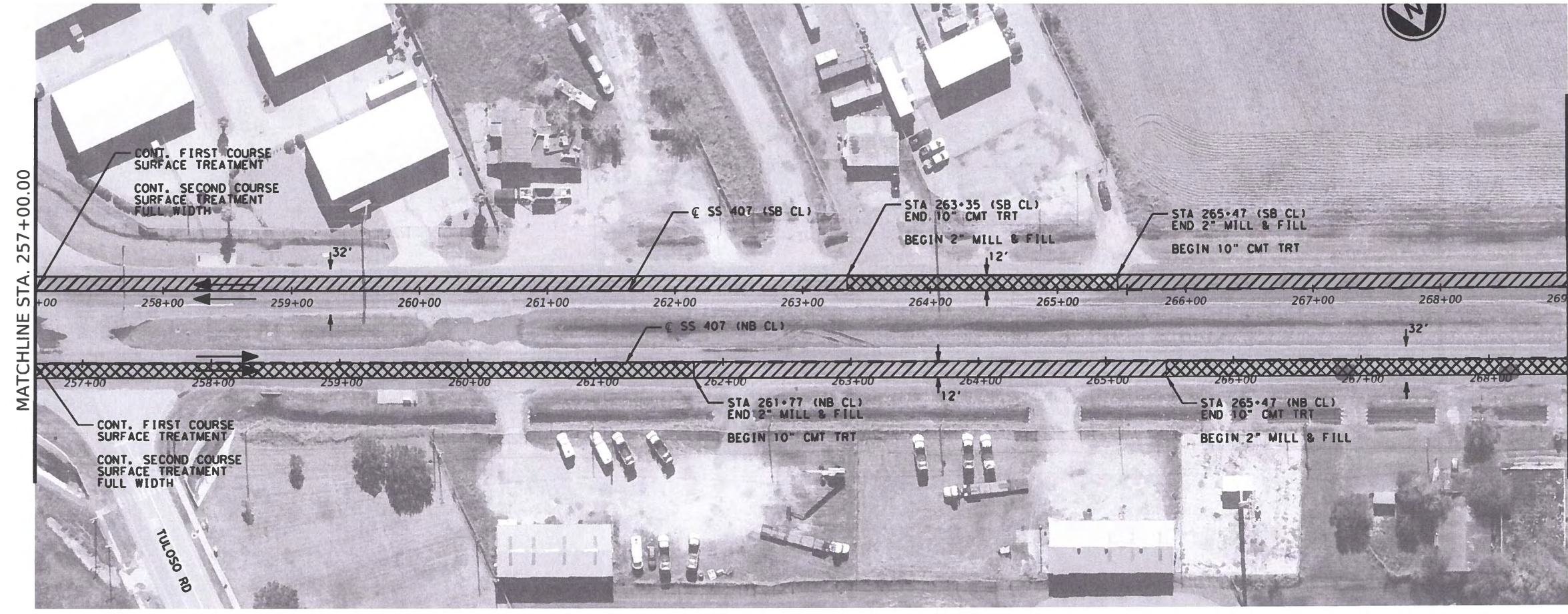
 Texas Department of Transportation

**ROADWAY PLAN SHEETS
 SS 407
 ALIGN "NB CL" & "SB CL"**




© TXDOT 2023 SHEET 11 OF 15

CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST	COUNTY	SHEET NO.	
CRP	NUECES	51	

DATE: 12/19/2023 11:52:18 AM
 FILE: \\pwr\txdot\project\wisomline.com\TXDOT4\Documents\16 - CRP\Maintenance Projects\16 RMC 6459-31-001 Base Repair with Sealcoat\1 - Pre-Letting\Design Files\Plan_Sev3_Roadway\SS407 Roadway_SBC\16.dgn



LEGEND

-  LIMITS OF 10" CEMENT TREAT (EXIST MATL)
-  LIMITS OF 2" MILL AND FILL (TYP) 2" HMAC 2" PLANE ACP
-  DIRECTION OF TRAFFIC

STATE OF TEXAS
 JAMES DOYLE HARRIS
 99290
 LICENSED PROFESSIONAL ENGINEER
James D. Harris
 12-19-23

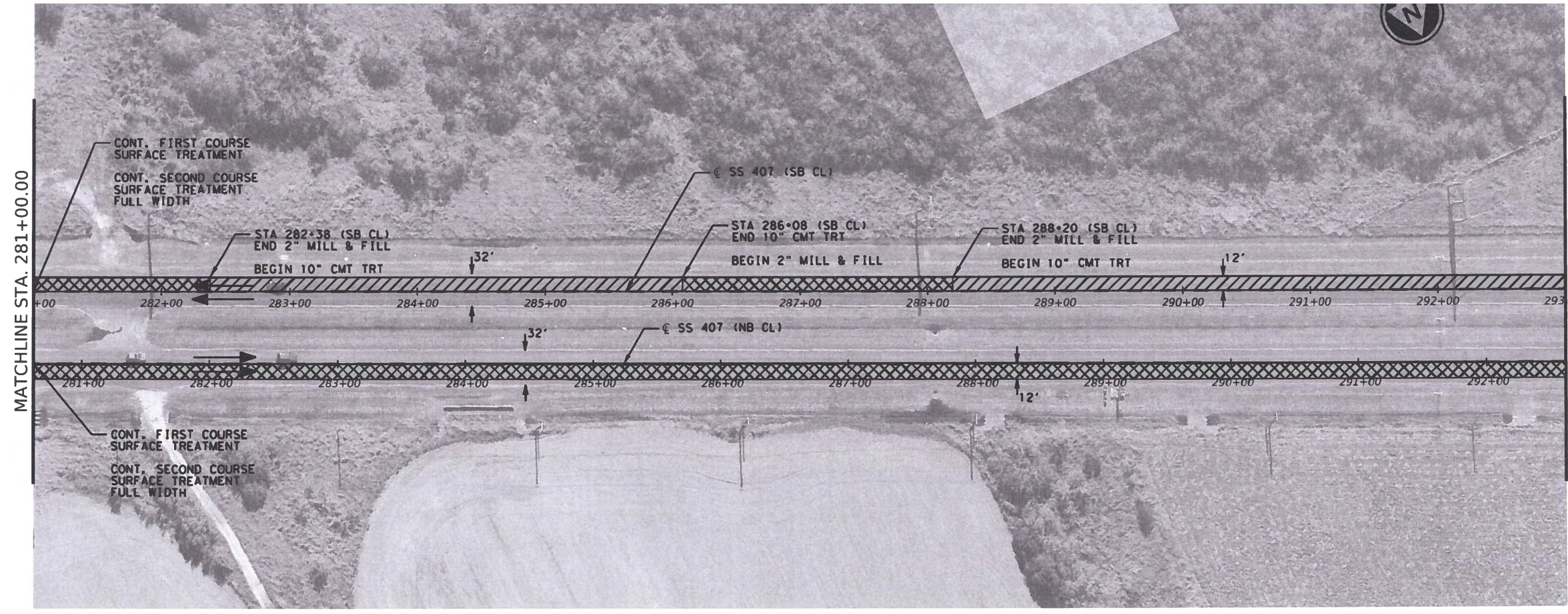


ROADWAY PLAN SHEETS
 SS 407
 ALIGN "NB CL" & "SB CL"




©TxDOT 2023 SHEET 12 OF 15

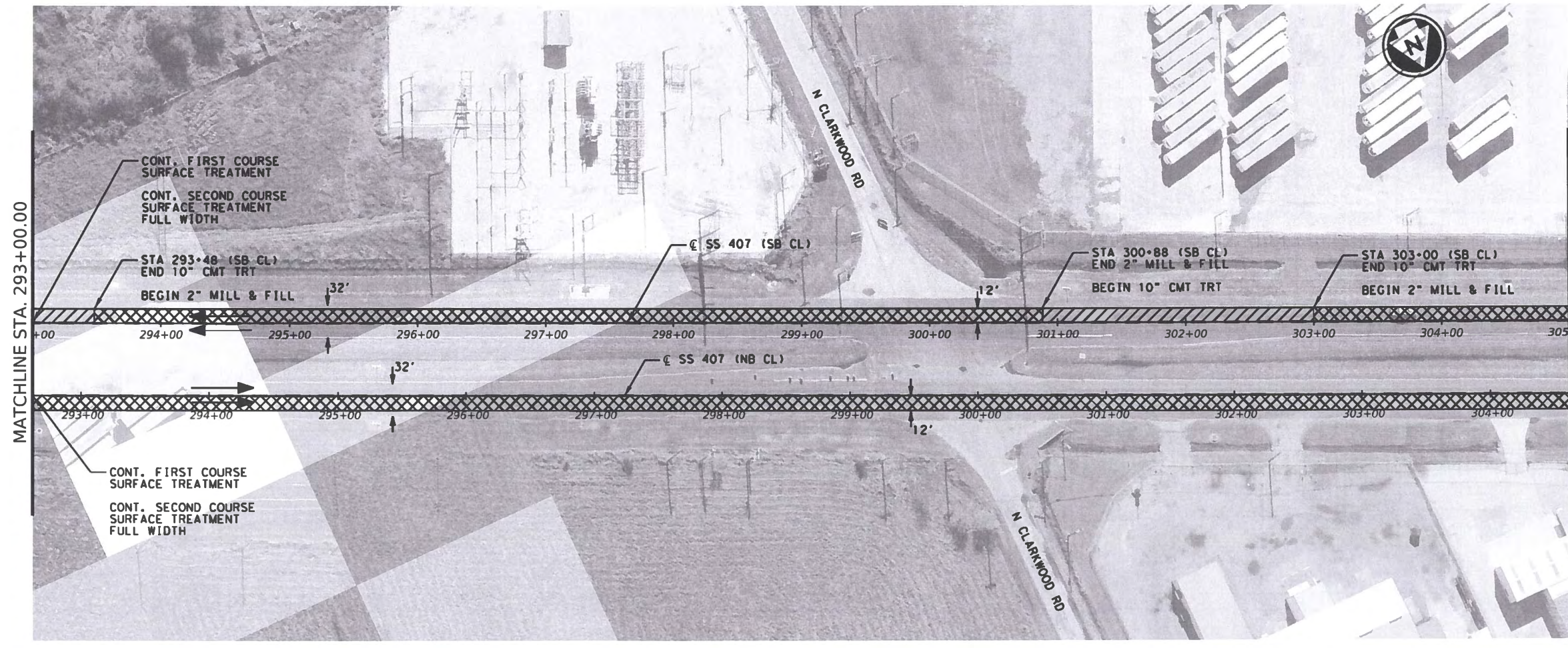
CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST	COUNTY	SHEET NO.	
CRP	NUECES	52	

DATE: 12/19/2023 11:33:36 AM
 FILE: pw://txdot.projectwiseonline.com:TXDOT4/Documents/16 - CRP/Maintenance Projects/16 RMC 6459-31-001 Base Repair with Sealcoat/1 - Pre-Letting/Design Files/Plan Set/3. Roadway/SS407 Roadway SBC1.dwg



LEGEND

-  LIMITS OF 10" CEMENT TREAT (EXIST MATL)
-  LIMITS OF 2" MILL AND FILL (TYP) 2" HMAC 2" PLANE ACP
-  DIRECTION OF TRAFFIC



STATE OF TEXAS
 JAMES DOYLE HARRIS
 99290
 LICENSED PROFESSIONAL ENGINEER
James D. Harris
 12-19-23

 Texas Department of Transportation

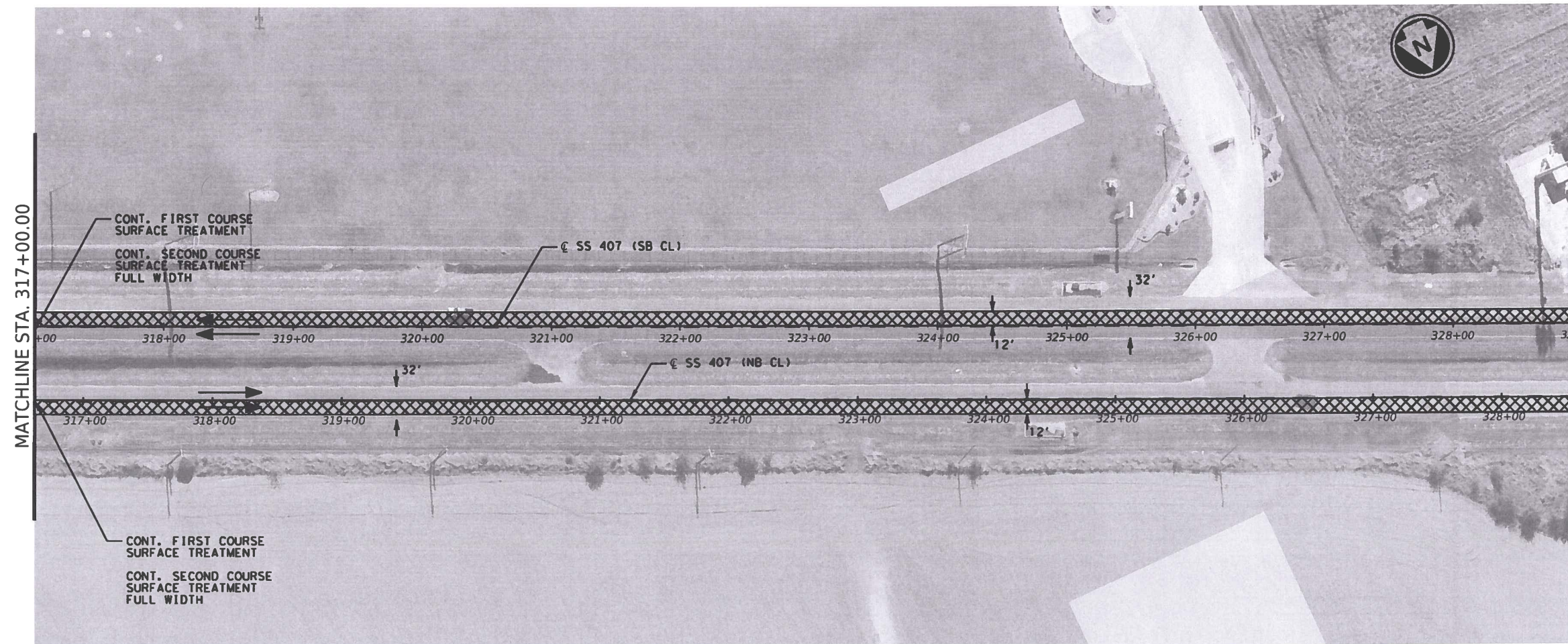
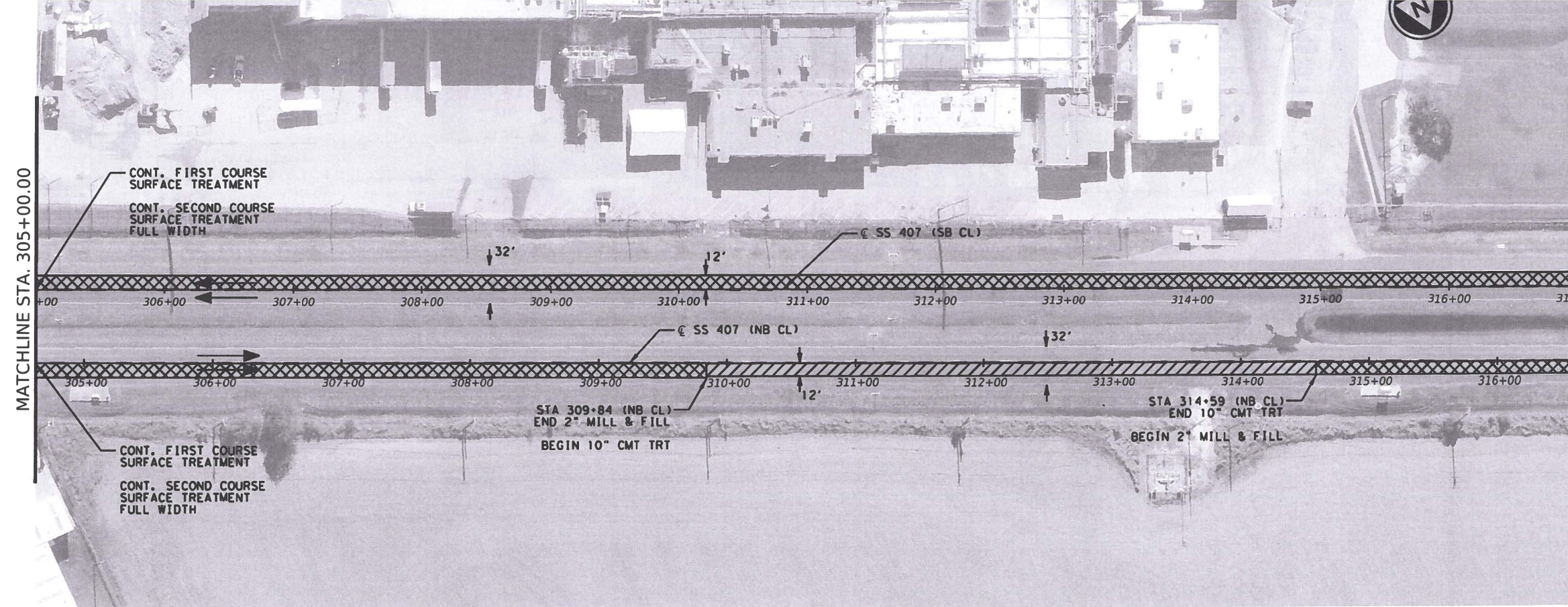
**ROADWAY PLAN SHEETS
 SS 407
 ALIGN "NB CL" & "SB CL"**

© TXDOT 2023 SHEET 13 OF 15




CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST		COUNTY	SHEET NO.
CRP		NUECES	53

DATE: 12/19/2023 11:12:43 AM

FILE: pw://txdot.projectwiseonline.com:TXDOT4/Documents/16 - CRP/Maintenance Projects/16 RMC 6459-31-001 Base Repair with Sealcoat/1 - Pre-Letting/Design Files/Plan Set/3. Roadway/SS407 Roadway_SBC/00.dgn



LEGEND

-  LIMITS OF 10" CEMENT TREAT (EXIST MATL)
-  LIMITS OF 2" MILL AND FILL (TYP) 2" HMAC 2" PLANE ACP
-  DIRECTION OF TRAFFIC

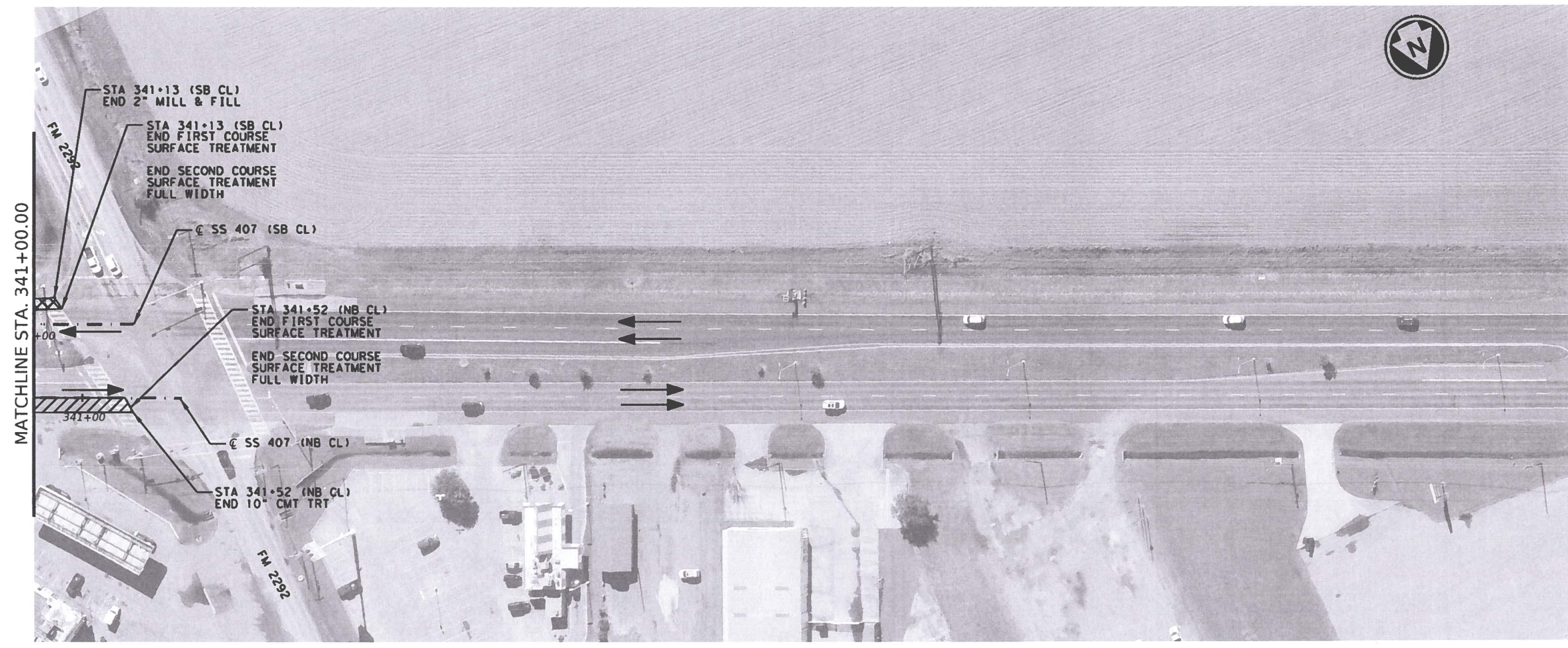
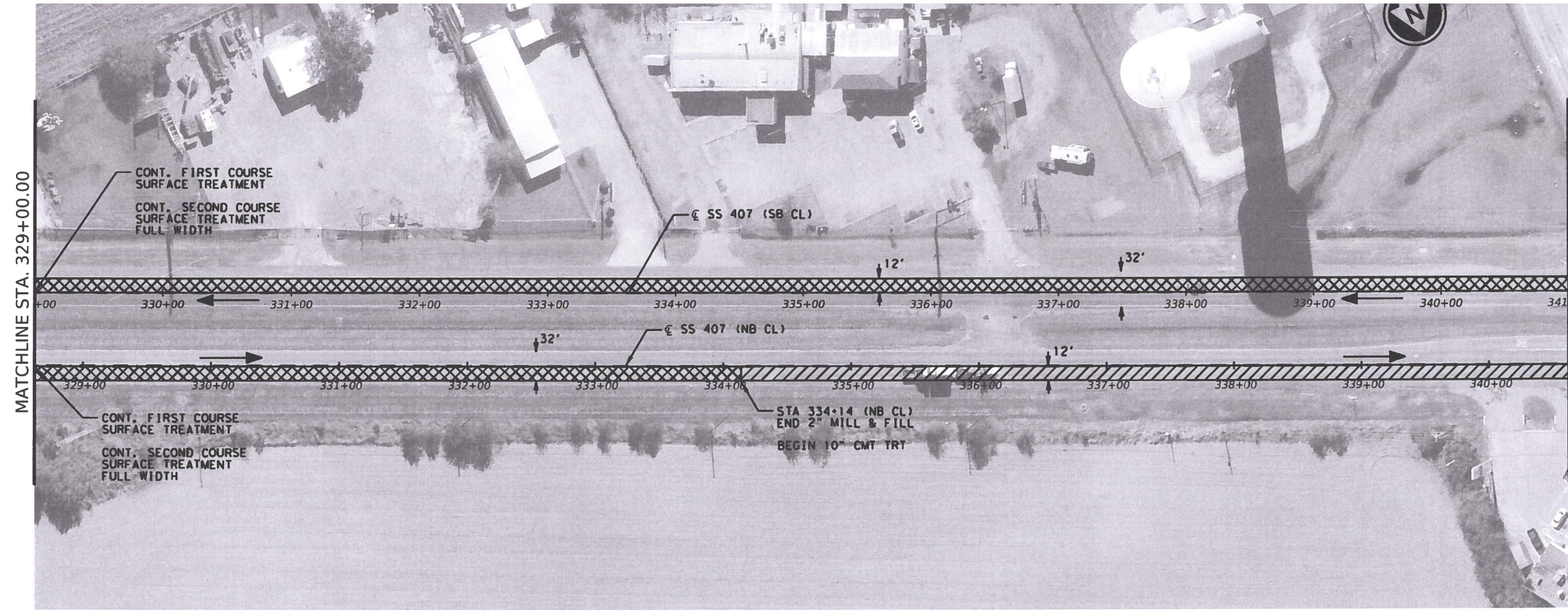
STATE OF TEXAS
 JAMES DOYLE HARRIS
 99290
 LICENSED PROFESSIONAL ENGINEER
James Harris
 12-19-23






ROADWAY PLAN SHEETS
 SS 407
 ALIGN "NB CL" & "SB CL"

© TXDOT 2023		SHEET 14 OF 15	
CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST	COUNTY		SHEET NO.
CRP	NUECES		54

DATE: 12/19/2023 10:58:06 AM
 FILE: p:\txdot\projectwiseonline.com\TXDOT\Documents\16 - CRP\Maintenance Projects\16 RMC 6459-31-001 Base Repair with Sealcoat\1 - Pre-Letting\Design Files\Plan Set\3. Roadway\SS407 Roadway_SBC\01.dgn



LEGEND

-  LIMITS OF 10" CEMENT TREAT (EXIST MATL)
-  LIMITS OF 2" MILL AND FILL (TYP) 2" HMAC 2" PLANE ACP
-  DIRECTION OF TRAFFIC

STATE OF TEXAS
 JAMES DOYLE HARRIS
 99290
 LICENSED PROFESSIONAL ENGINEER
James Harris
 12-19-23

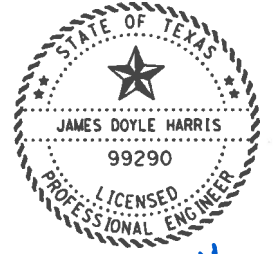
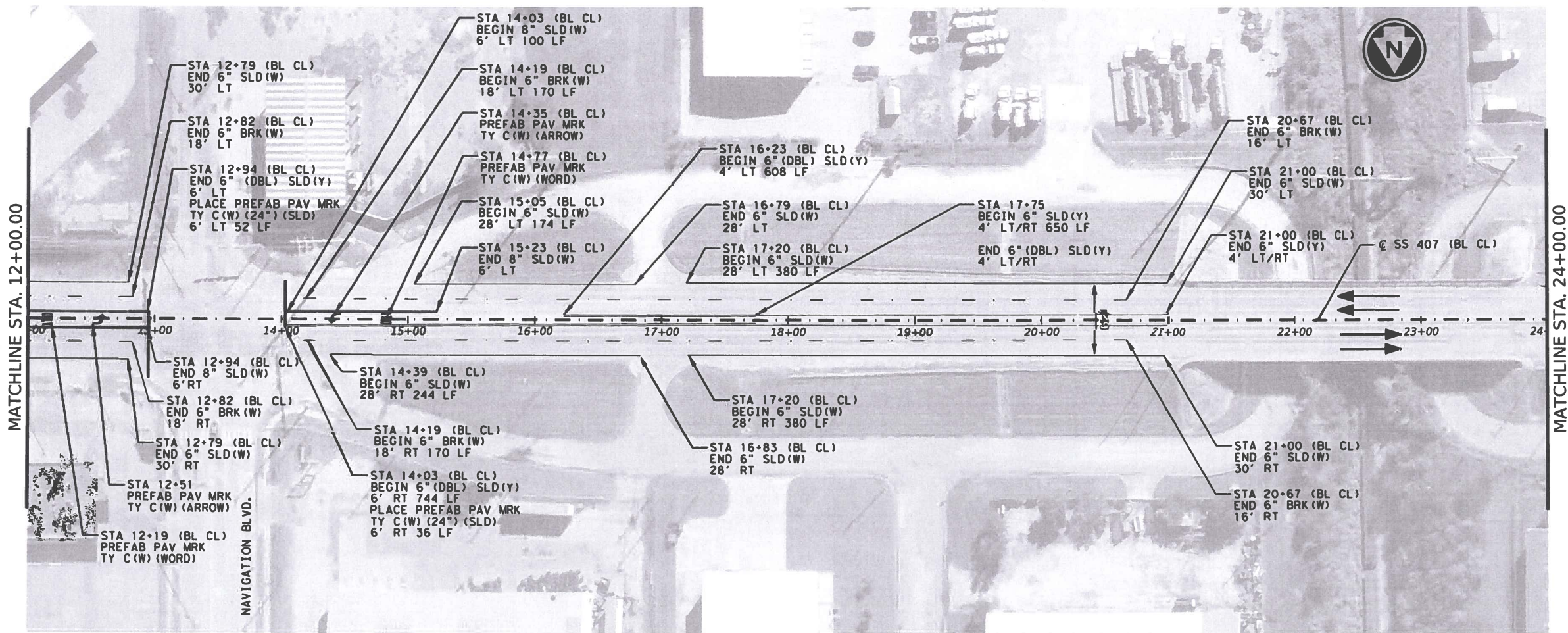
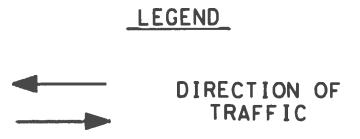
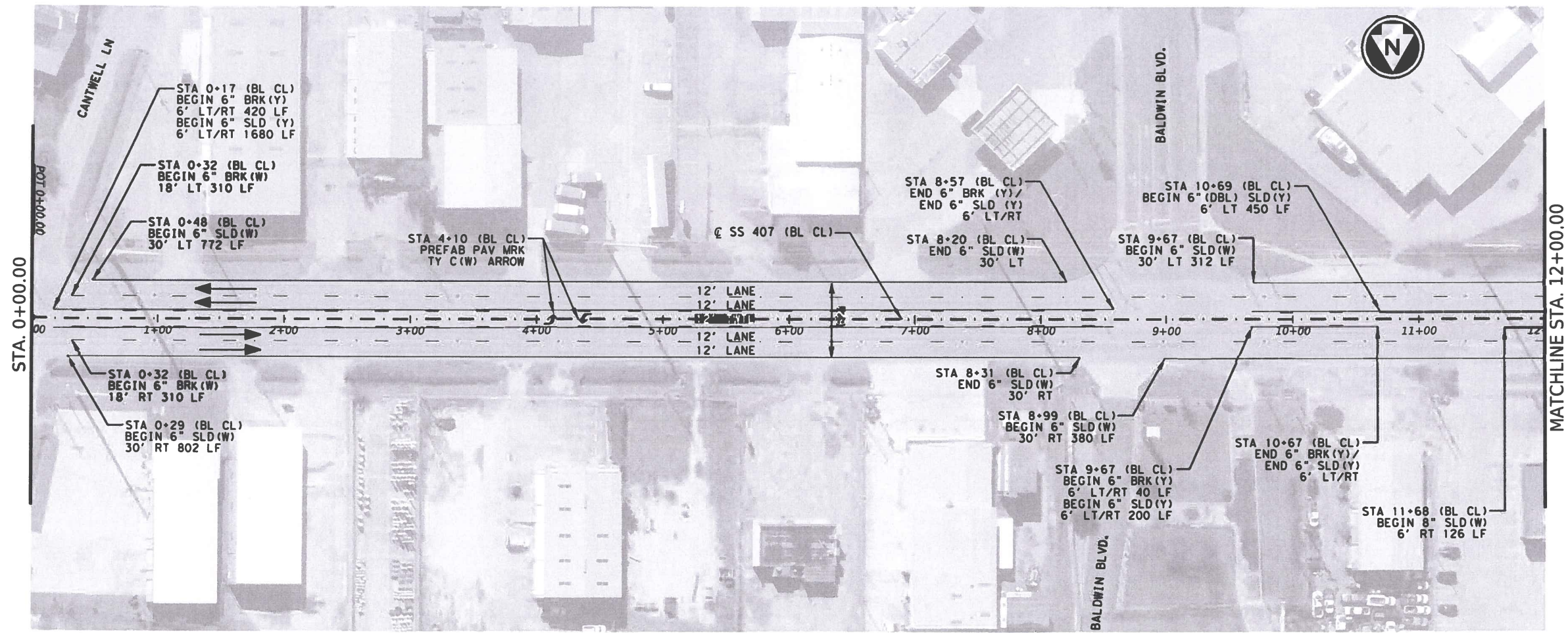


ROADWAY PLAN SHEETS
 SS 407
 ALIGN "NB CL" & "SB CL"

© TXDOT 2023 SHEET 15 OF 15

CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST	COUNTY		SHEET NO
CRP	NUECES		55

DATE: 11/16/2023 11:04:54 AM
 FILE: p:\t\dot\project\wisconsin\line.com\TXDOT4\Documents\16 - CRP\Maintenance Projects\16 RMC 6459-31-001 Base Repair with Sealcoat\1 - Pre-Letting\Design Files\Plan Set\4. Traffic\SS407_BL Traffic 1.dgn

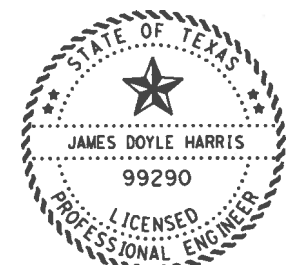
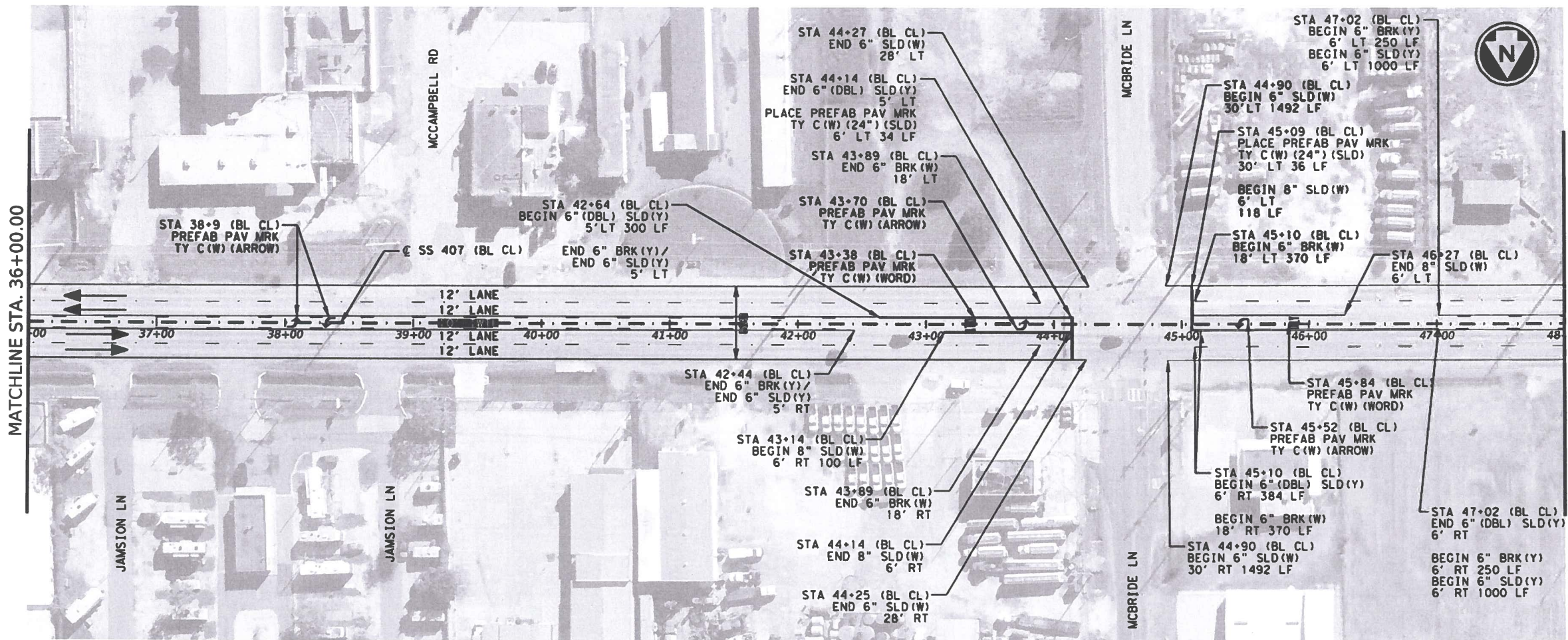
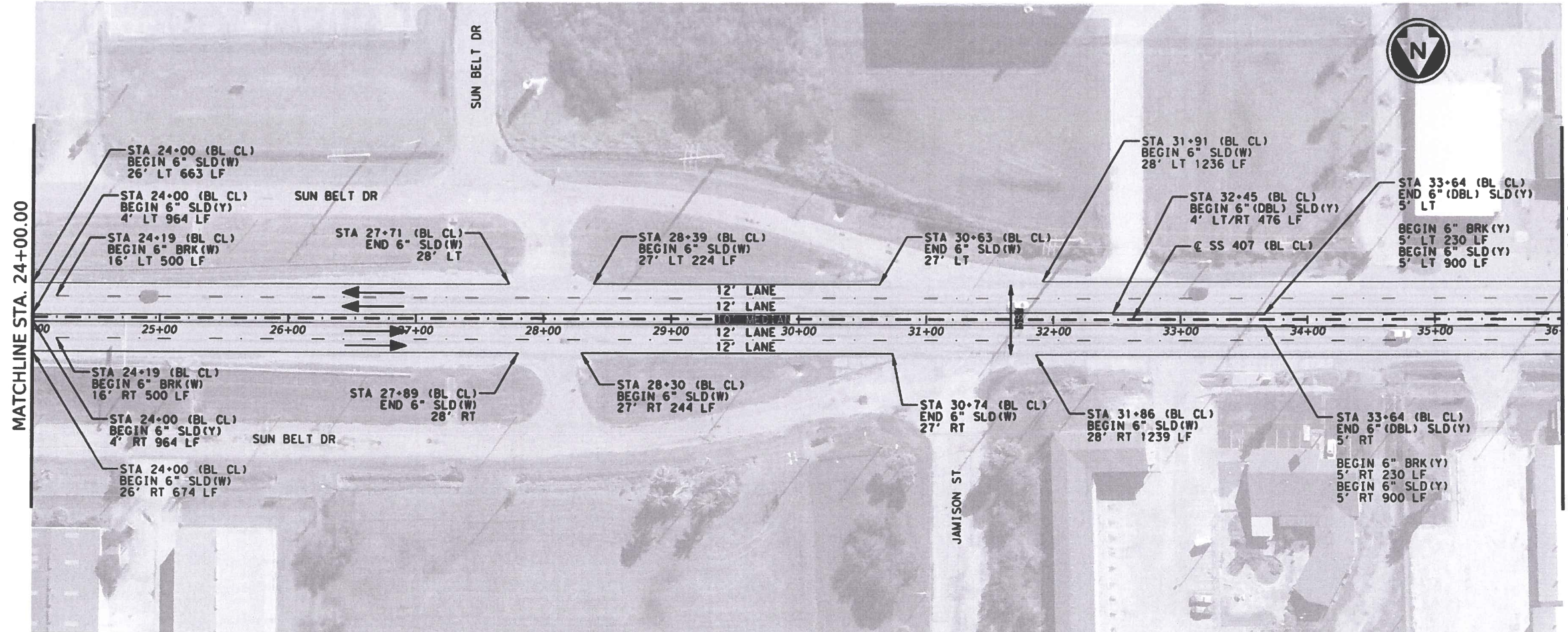


James O. Harris
12-18-23

Texas Department of Transportation

**SS 407
SURFACE DETAIL SHEETS
ALIGN "BL CL"**

© TXDOT 2023		SHEET 1 OF 15	
CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST		COUNTY	SHEET NO.
CRP		NUECES	56



James D. Harris
12-18-23

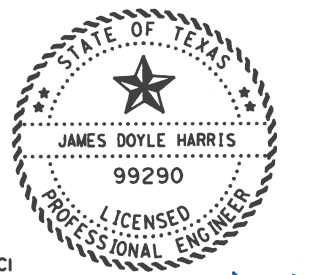
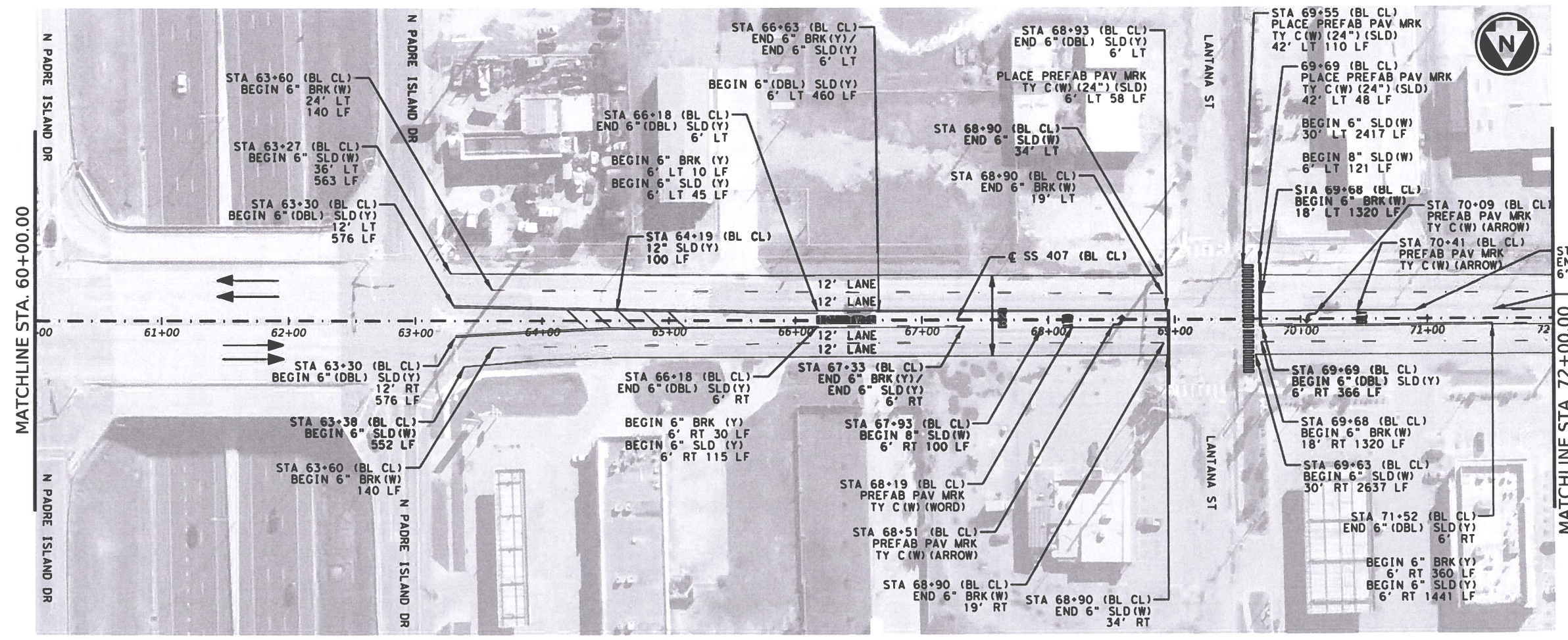
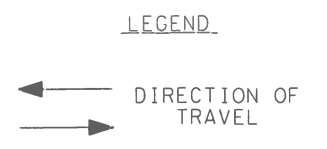
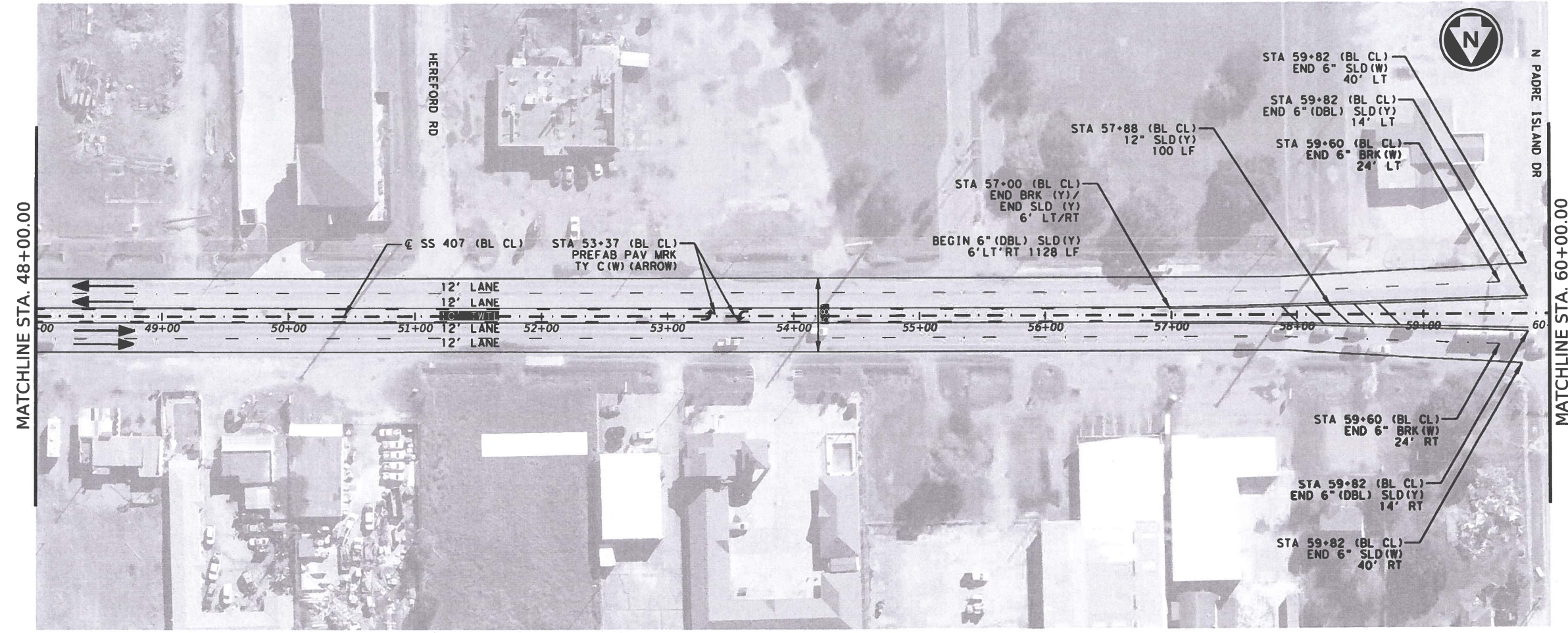
Texas Department of Transportation

**SS 407
SURFACE DETAIL SHEETS
ALIGN "BL CL"**

© TXDOT 2023 SHEET 2 OF 15

CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST		COUNTY	SHEET NO.
CRP		NUECES	57

DATE: 11/16/2023 11:20:37 AM
 FILE: p:\w\dot\project\wiseonline.com:TXDOT\4\Documents\16 - CRP\Maintenance Projects\16 RMC 6459-31-001 Base Repair with Sealcoat\1 - Pre-Letting\Design Files\Plan Set\4. Traffic\SS407 BL Traffic 3.dgn



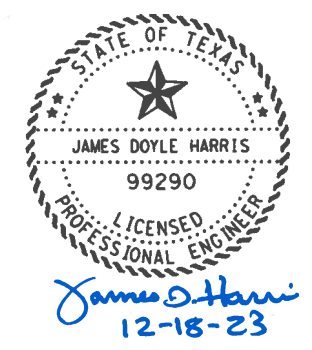
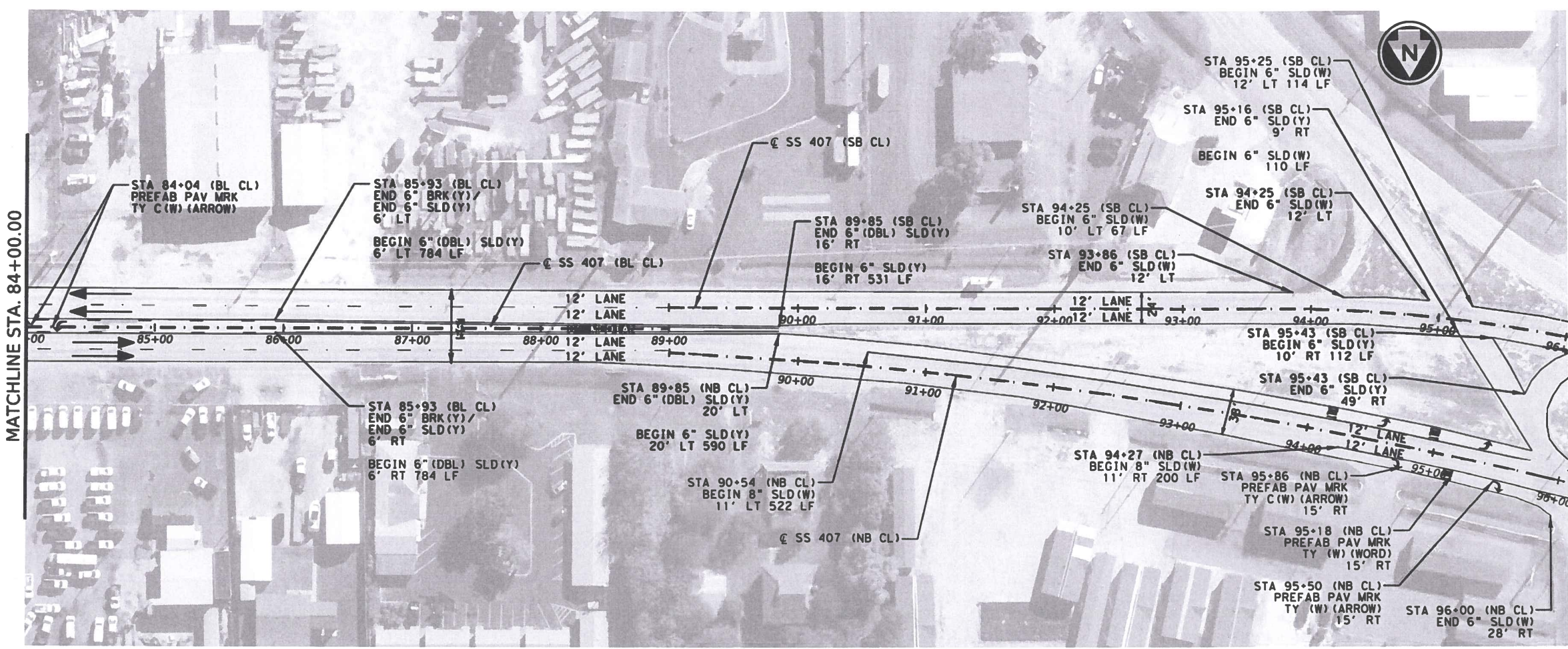
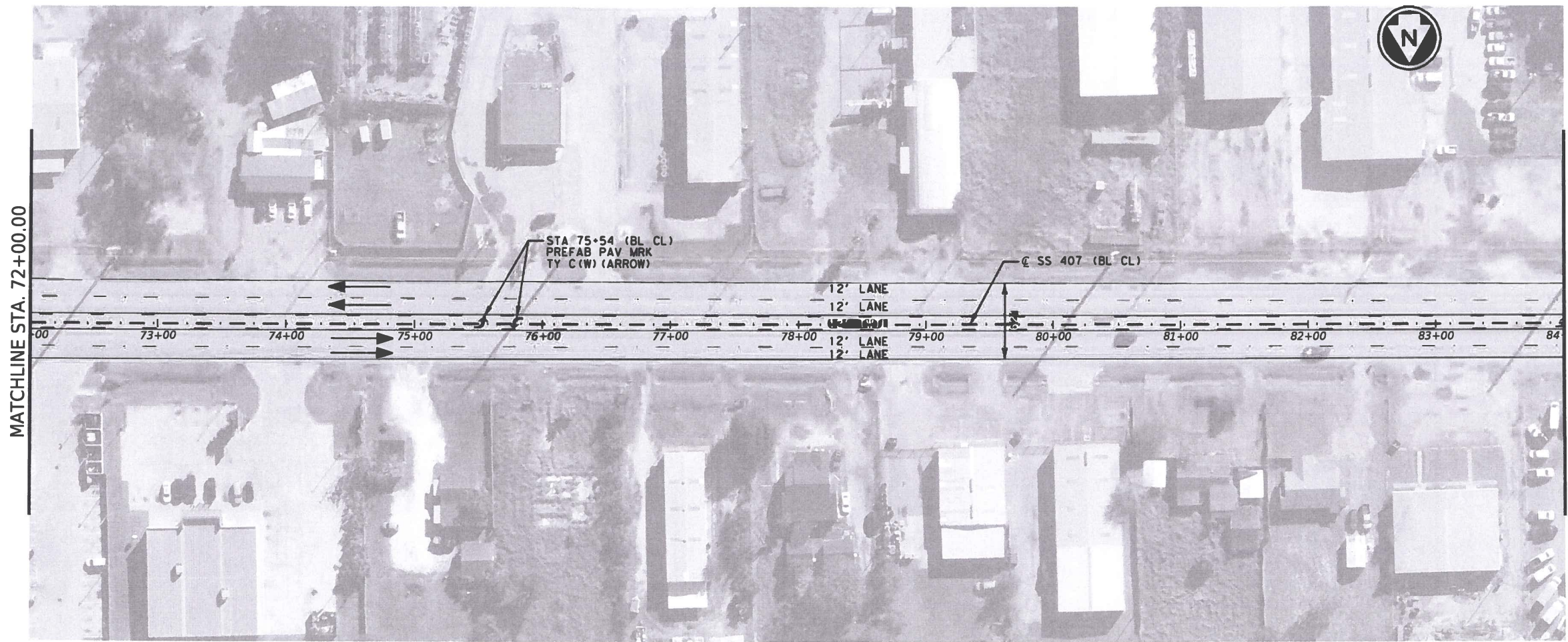
James O'Hara
12-18-23

Texas Department of Transportation

**SS 407
SURFACE DETAIL SHEETS
ALIGN "BL CL"**

© TXDOT 2023				SHEET 3 OF 15	
CONT	SECT	JOB	HIGHWAY		
6459	31	001	SS 407		
DIST		COUNTY	SHEET NO.		
CRP		MUECES	58		

DATE: 11/16/2023 1:46:03 PM
 FILE: p:\w\bxdot\projectwiseonline.com\TXDOT\Documents\16 - CRP\Maintenance Projects\16 RMC 6459-31-001 Base Repair with Sealcoat\1 - Pre-Letting\Design Files\Plan Set\4. Traffic\SS407 BL Traffic 4.dgn



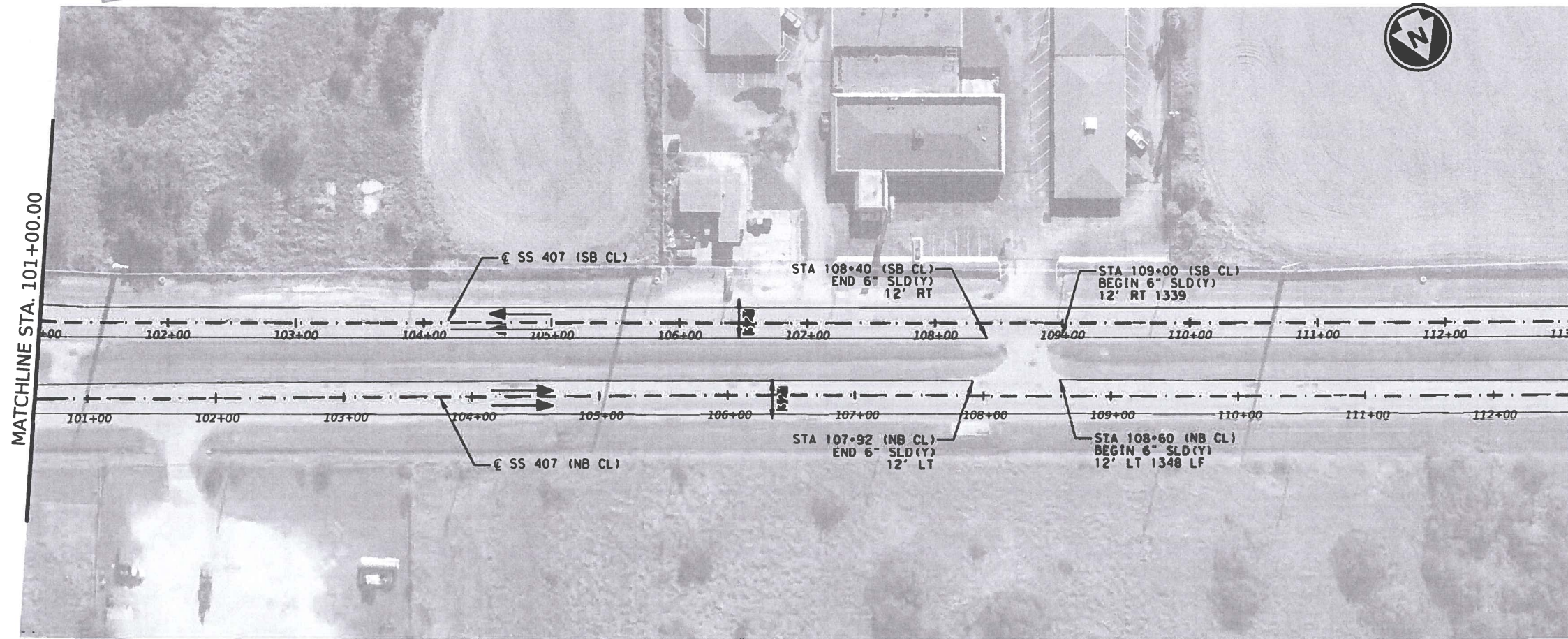
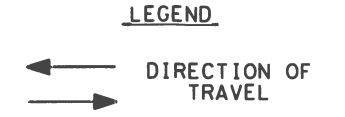
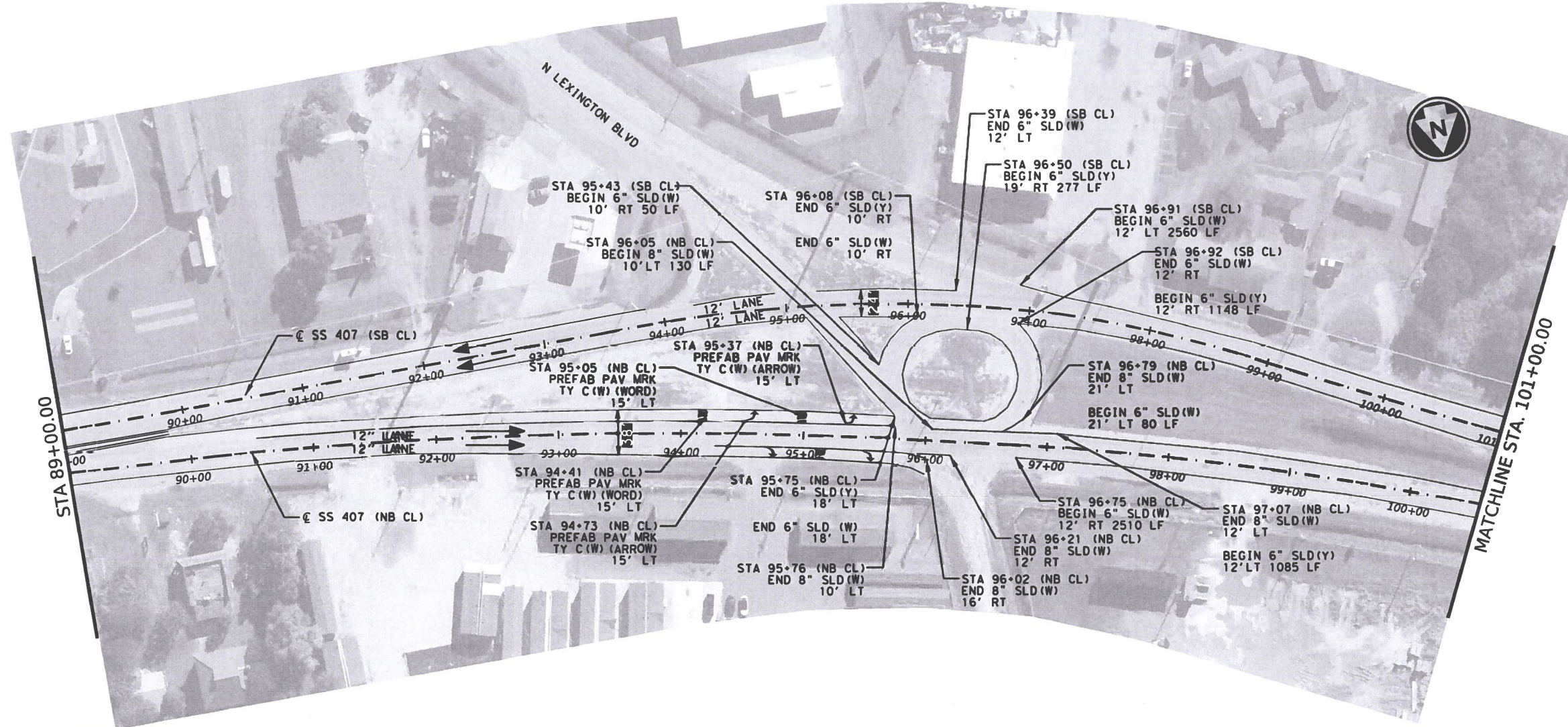
Texas Department of Transportation

**SS 407
 SURFACE DETAIL SHEETS
 ALIGN "BL CL", "NB CL",
 & "SB CL"**

© TXDOT 2023 SHEET 4 OF 15

CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST	COUNTY		SHEET NO.
CRP	NUECES		59

DATE: 11/16/2023 2:03:44 PM
 FILE: pw://ttdot.projectwiseonline.com:TXDOT/4/Documents/16 - CRP/Maintenance Projects/16 RMC 6459-31-001 Base Repair with Sealcoat/1 - Pre-Letting/Design Files/Plan Set/4 - Traffic/SS407 SBCL Traffic 1.dwg



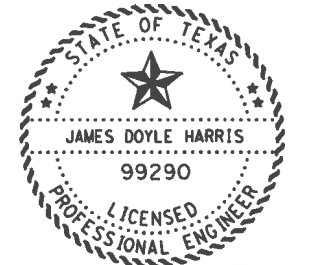
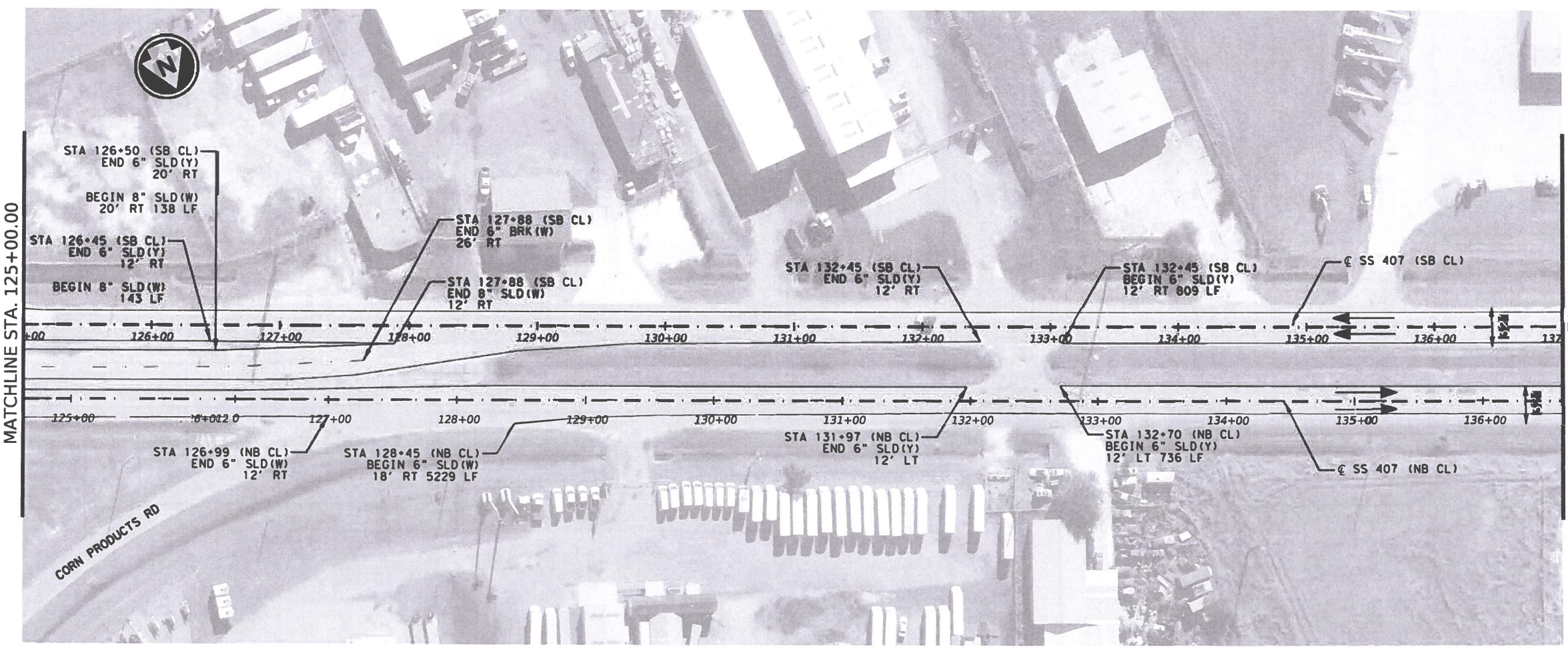
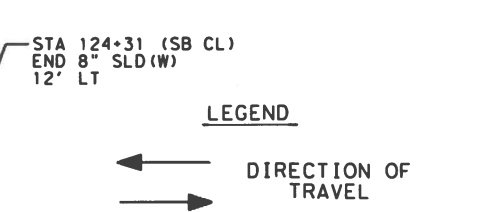
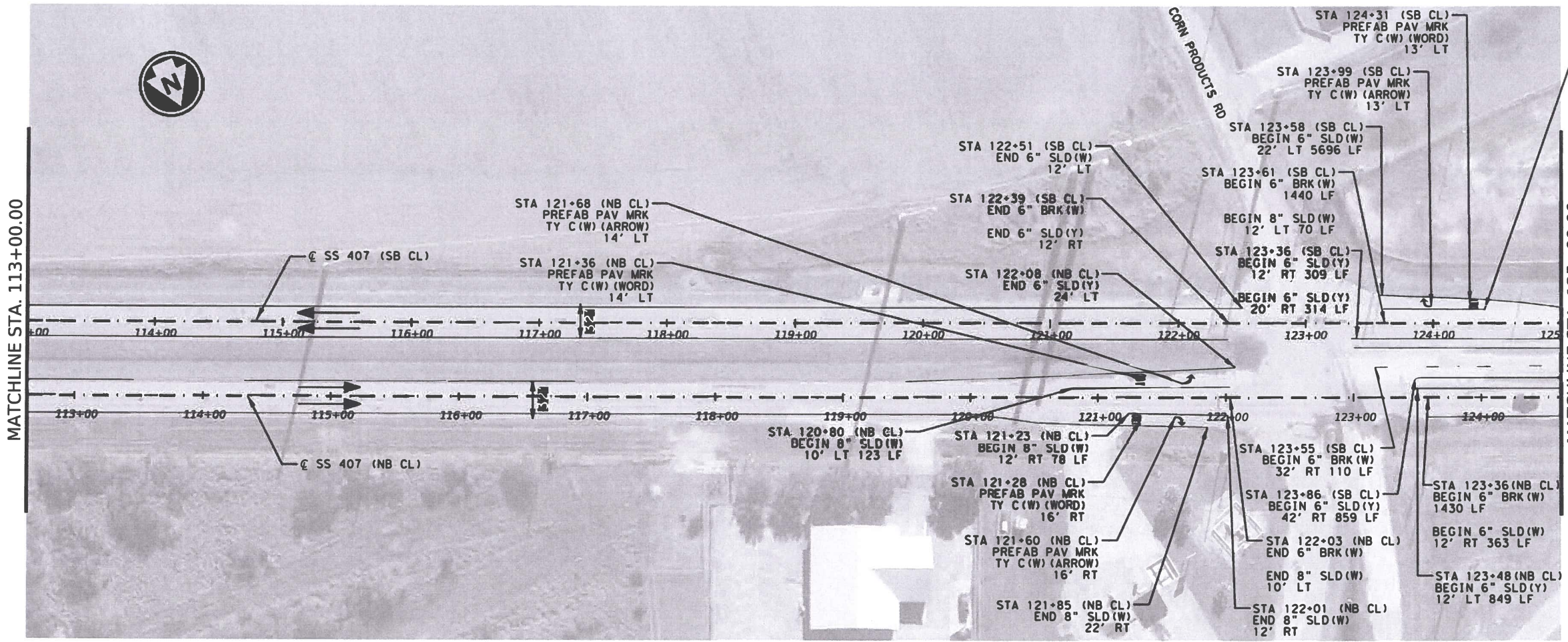
STATE OF TEXAS
 JAMES DOYLE HARRIS
 99290
 LICENSED PROFESSIONAL ENGINEER
James D. Harris
 12-18-23



**SS 407
 SURFACE DETAIL SHEETS
 ALIGN "NB CL" & "SB CL"**

© TxDOT 2023		SHEET 5 OF 15	
CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST	COUNTY	SHEET NO.	
CRP	NUECES	60	

DATE: 11/16/2023 2:29:50 PM
 FILE: pw://bdot.projectwiseonline.com:TXDOT4/Documents/16 - CRP/Maintenance Projects/16 RMC 6459-31-001 Base Repair with Sealcoat/1 - Pre-Letting/Design Files/Plan Set/4. Traffic/SS407 SBCL Traffic 2.dwg



James D. Harris
 12-18-23

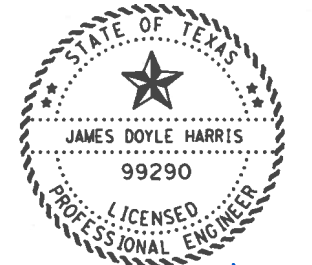
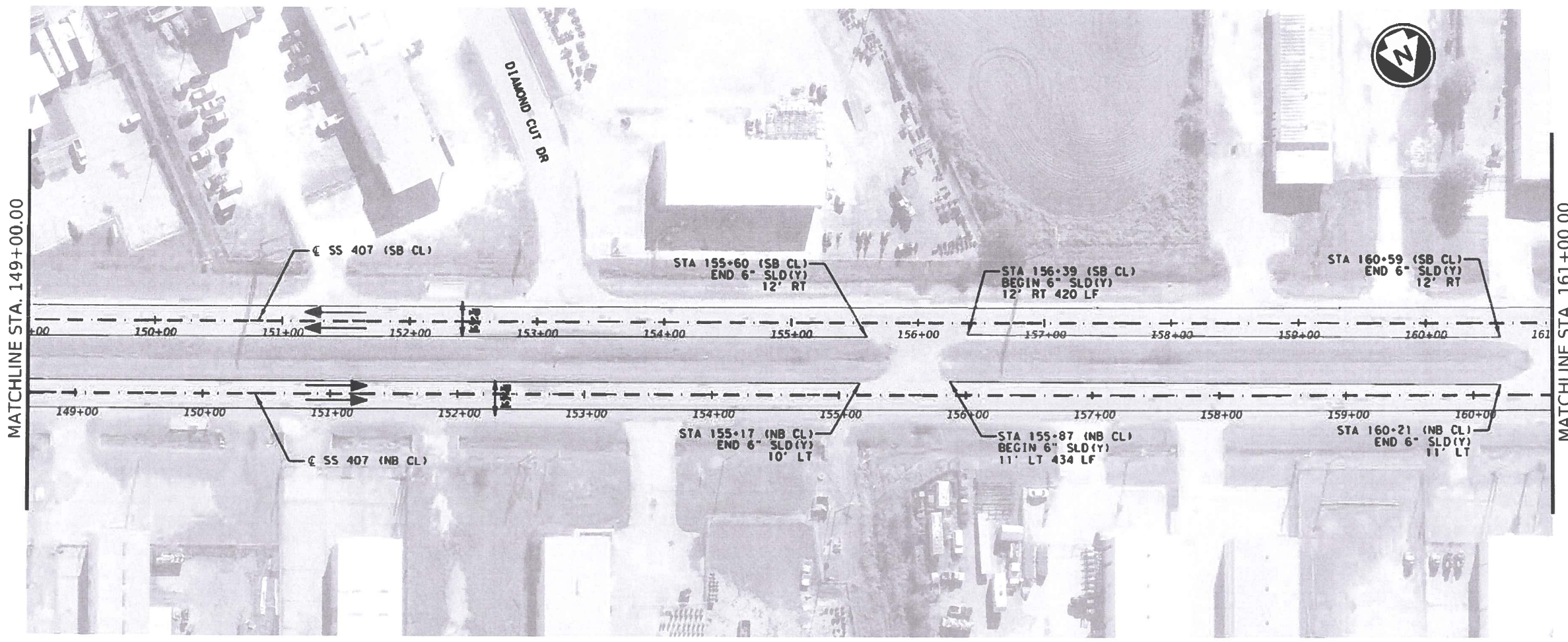
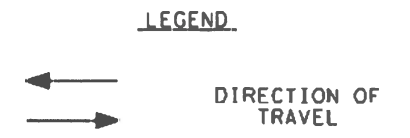
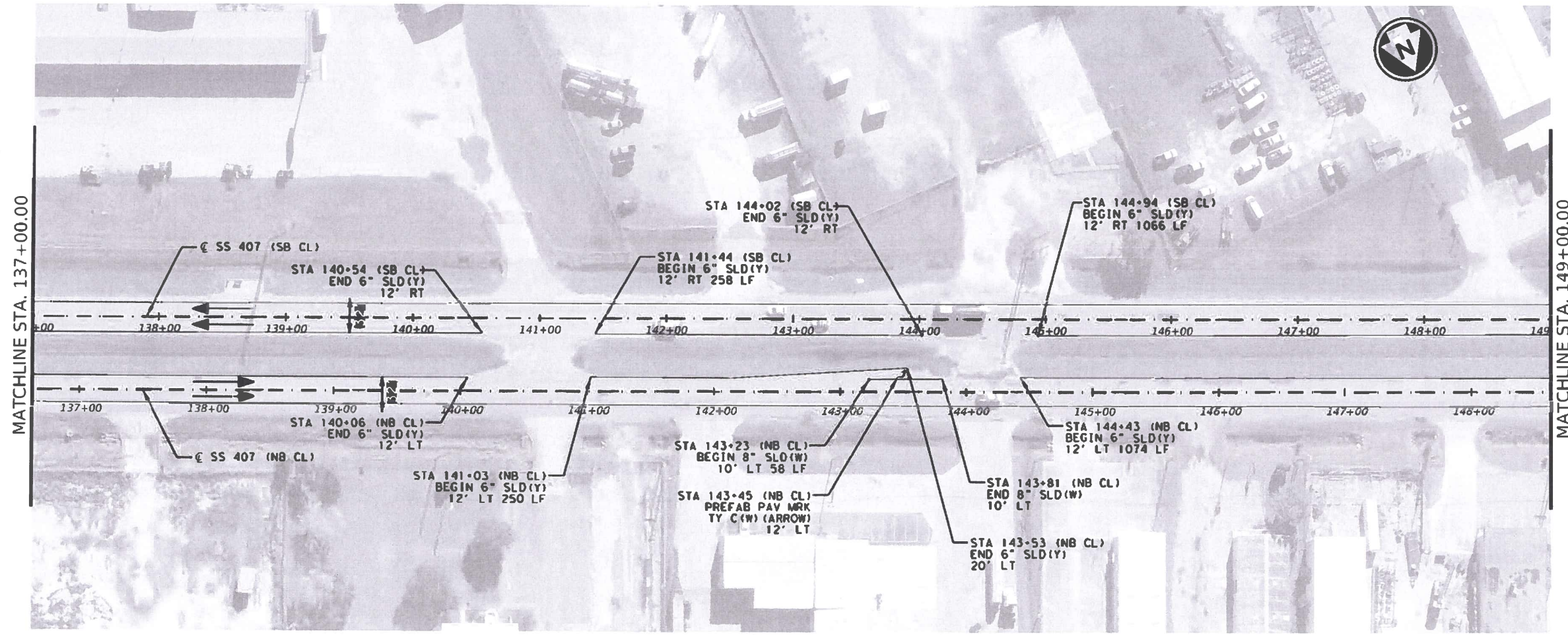


**SS 407
 SURFACE DETAIL SHEETS
 ALIGN "NB CL" & "SB CL"**

© TxDOT 2023 SHEET 6 OF 15

CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST		COUNTY	SHEET NO.
CRP		NUECES	61

DATE: 11/16/2023 2:53:32 PM
 FILE: pw://ttdot.projectwiseonline.com:TXDOT4/Documents/16 - CRP/Maintenance Projects/16 RMC 6459-31-001 Base Repair with Sealcoat/1 - Pre-Letting/Design Files/Plan Set/4 - Traffic/SS407_SBC/ Traffic/SS407_SBC.dgn



James D. Harris
 12-18-23

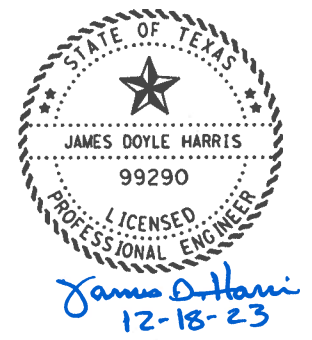
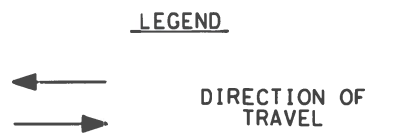
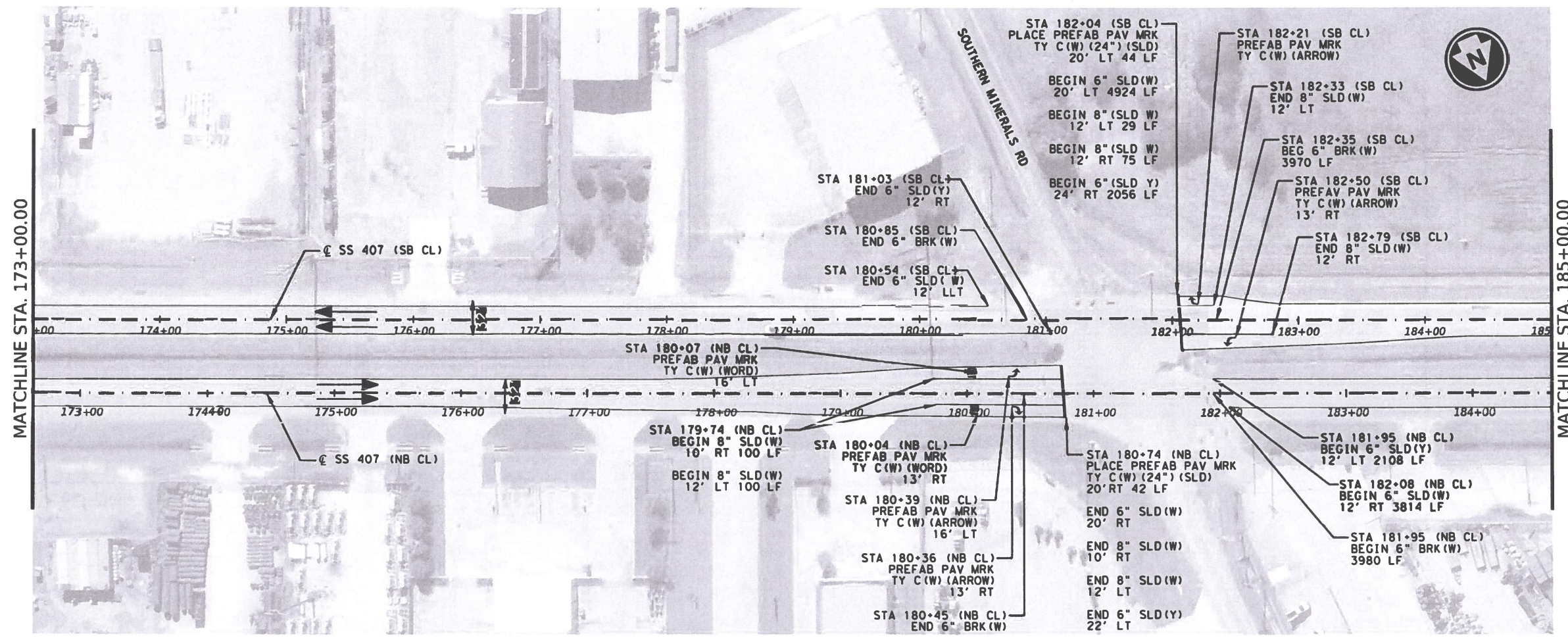
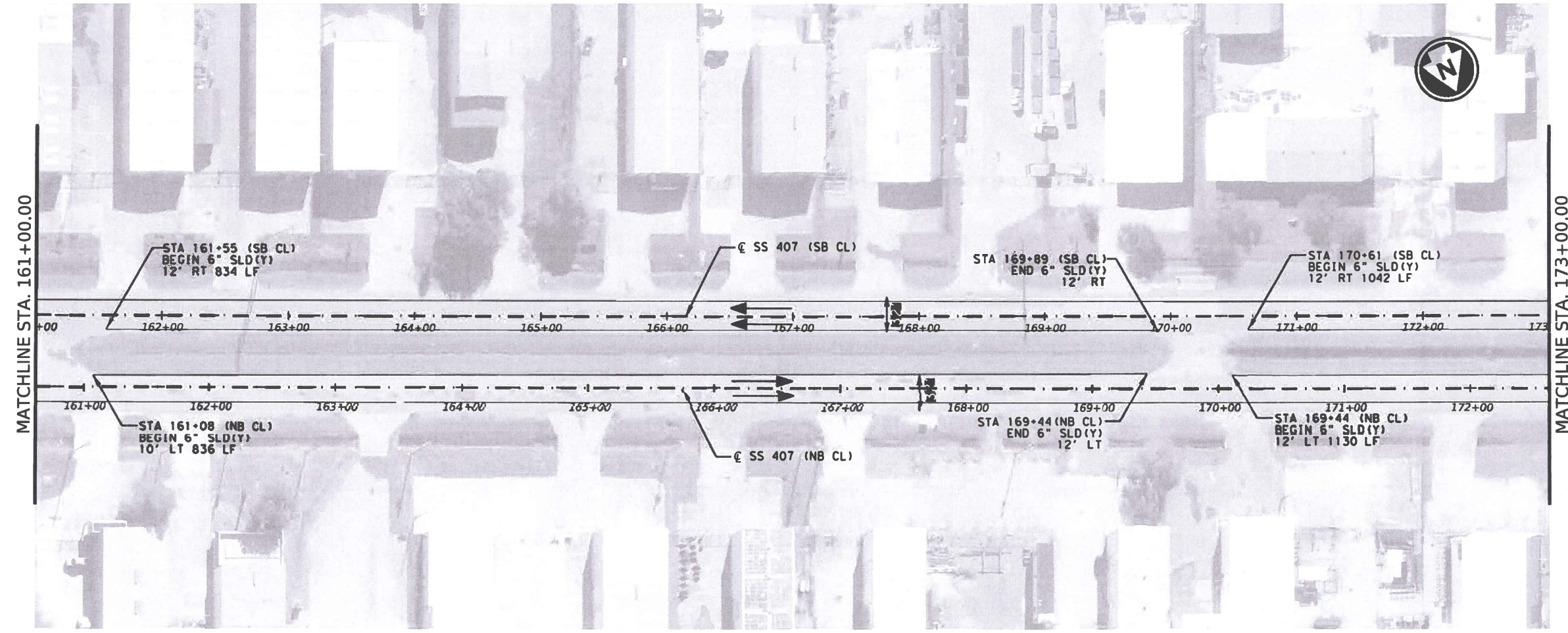


**SS 407
 SURFACE DETAIL SHEETS
 ALIGN "NB CL" & "SB CL"**

© TXDOT 2023 SHEET 7 OF 15

CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST		COUNTY	SHEET NO.
CRP		NUECES	62

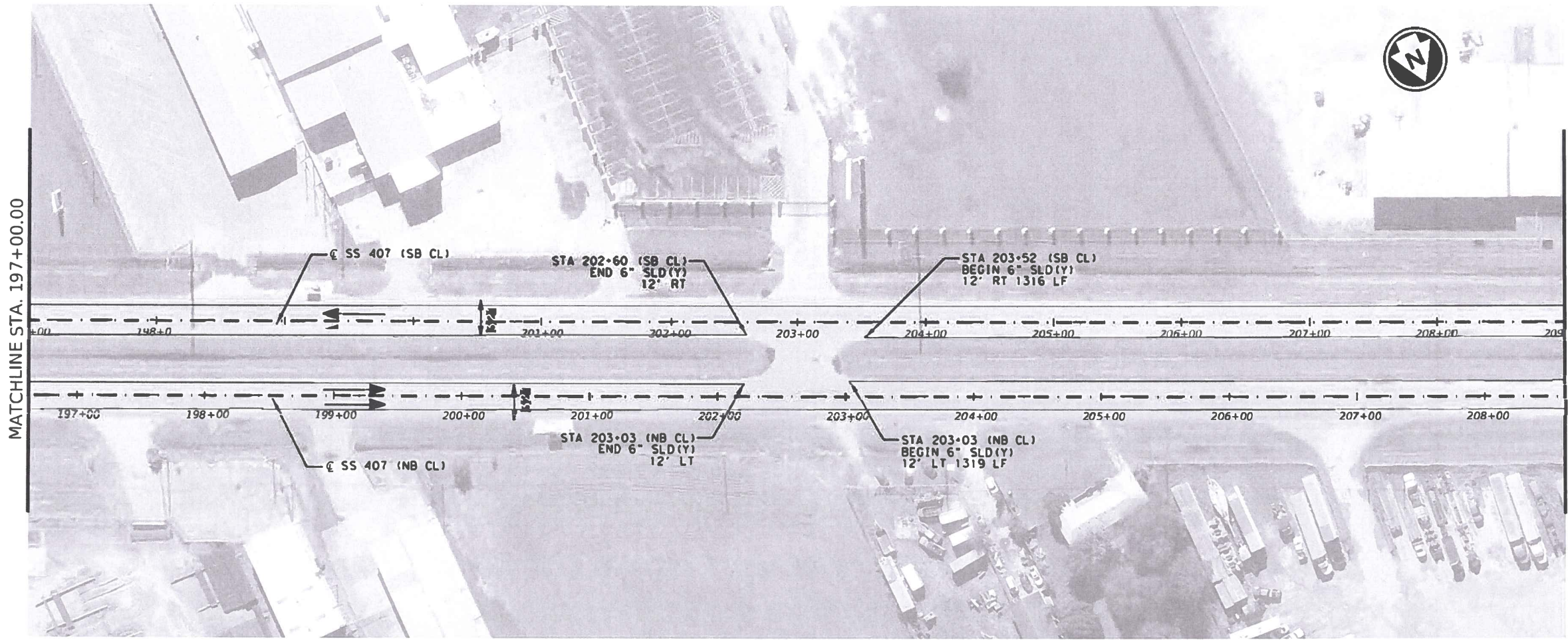
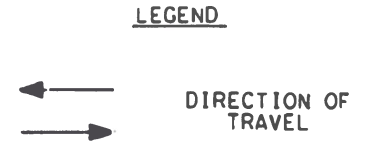
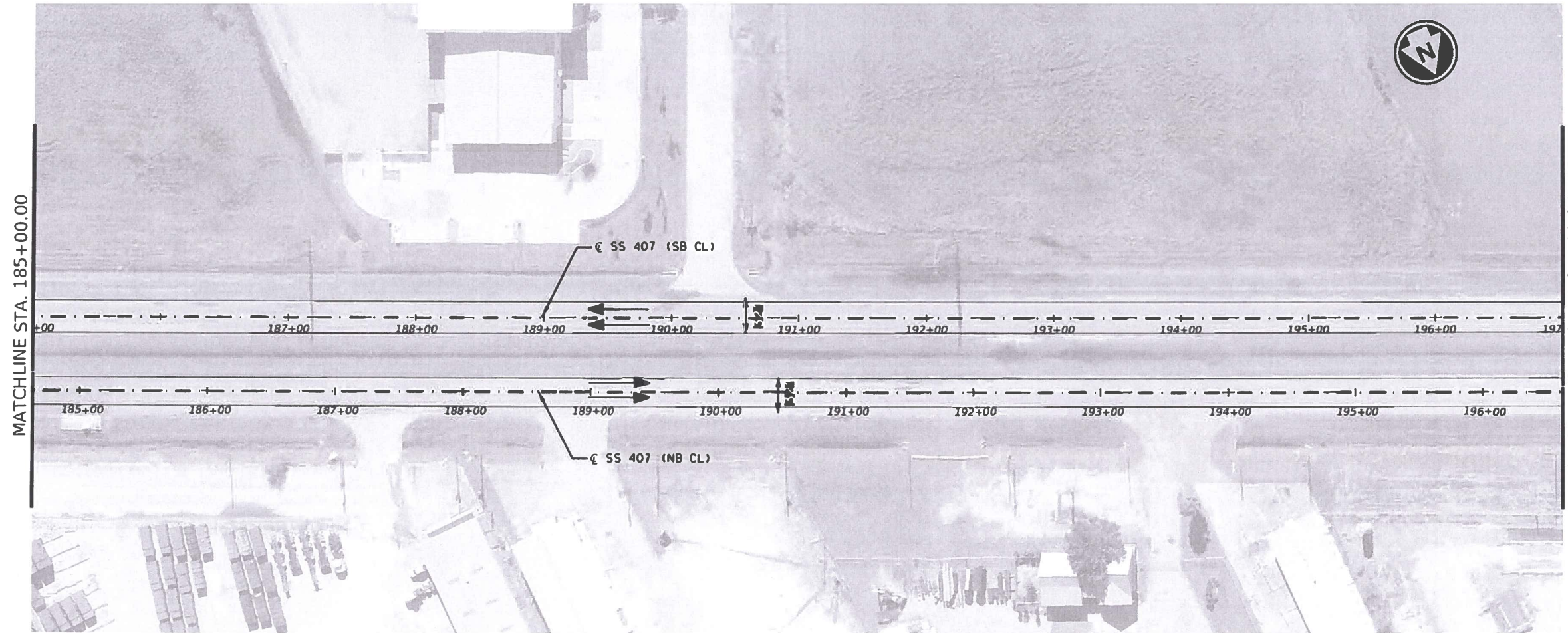
DATE: 11/16/2023 2:57:46 PM
 FILE: pw:/tbdot/projectwiseonline.com:TXDOT4/Documents/16 - CRP/Maintenance Projects/16 RMC 6459-31-001 Base Repair with Sealcoat/1 - Pre-Letting/Design Files/Plan Set/4 - Traffic/SS407 SBCL Traffic 4.dgn



Texas Department of Transportation

**SS 407
 SURFACE DETAIL SHEETS
 ALIGN "NB CL" & "SB CL"**

© TxDOT 2023		SHEET 8 OF 15	
CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST	COUNTY	SHEET NO.	
CRP	NUECES	63	



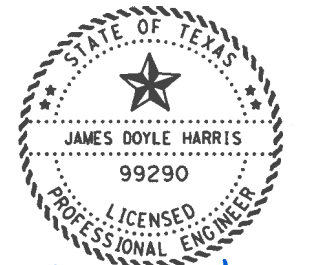
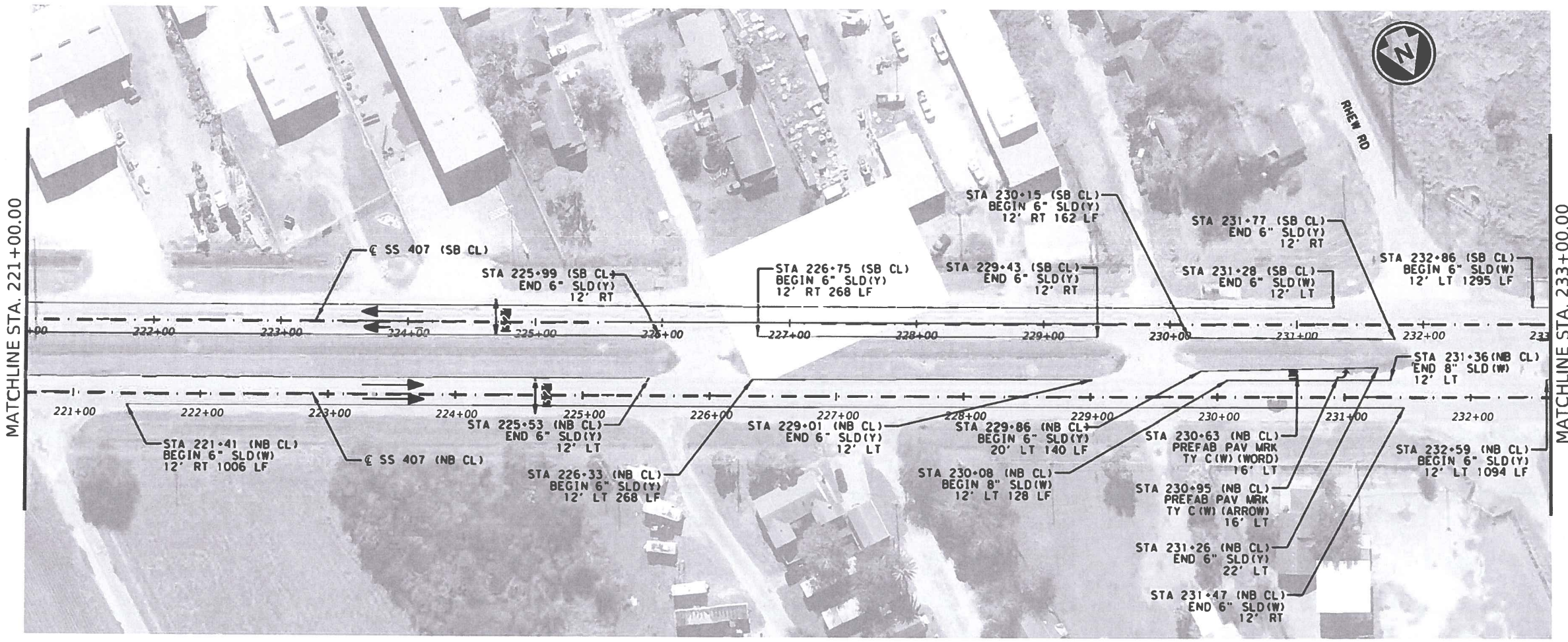
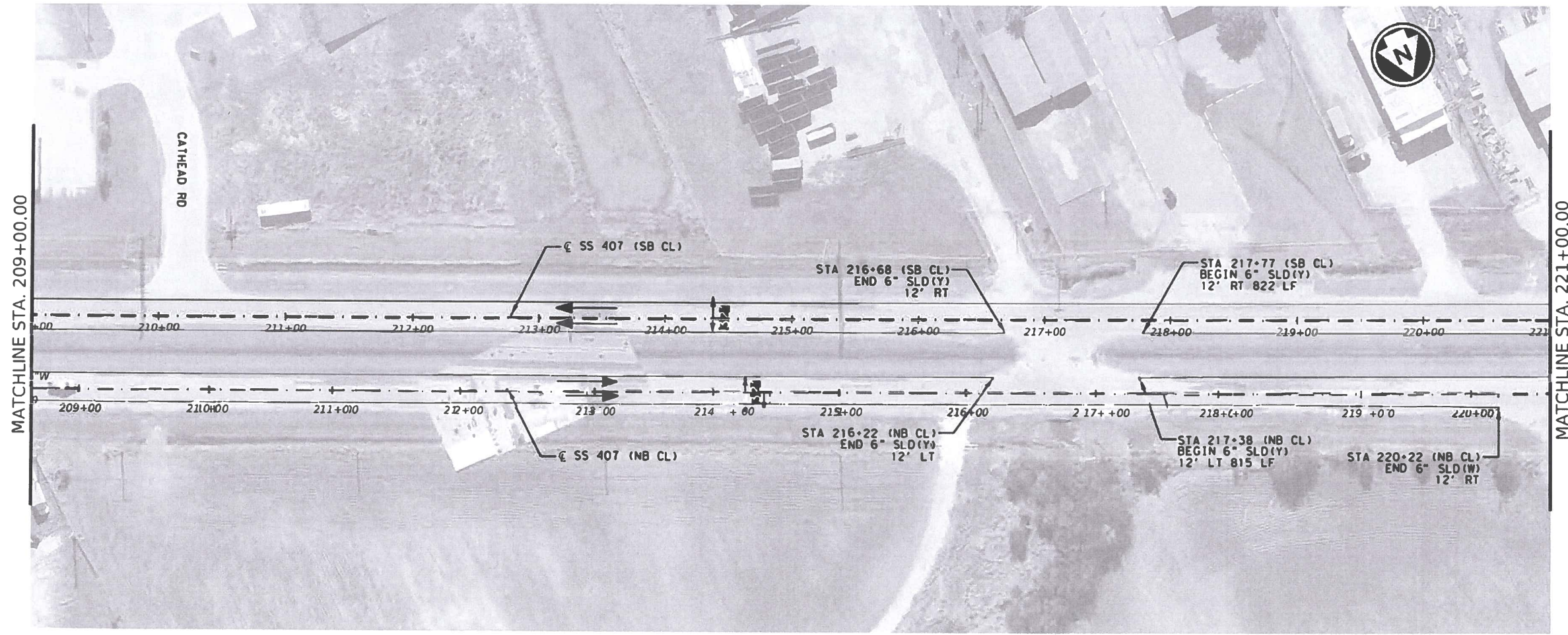
STATE OF TEXAS
 JAMES DOYLE HARRIS
 99290
 LICENSED PROFESSIONAL ENGINEER
James D. Harris
 12-18-23

Texas Department of Transportation

**SS 407
 SURFACE DETAIL SHEETS
 ALIGN "NB CL" & "SB CL"**

© TxDOT 2023		SHEET 9 OF 15	
CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIS1	COUNTY		SHEET NO.
CRP	NUECES		64

DATE: 11/16/2023 3:25:23 PM
 FILE: pw://txdot.projectwiseonline.com:TXDOT/4/Documents/16 - CRP/Maintenance Projects/16 RMC 6459-31-001 Base Repair with Sealcoat/1 - Pre-Letting/Design Files/Plan Set/4. Traffic/SS407 SBCL Traffic 6.dwg



James D. Harris
 12-18-23

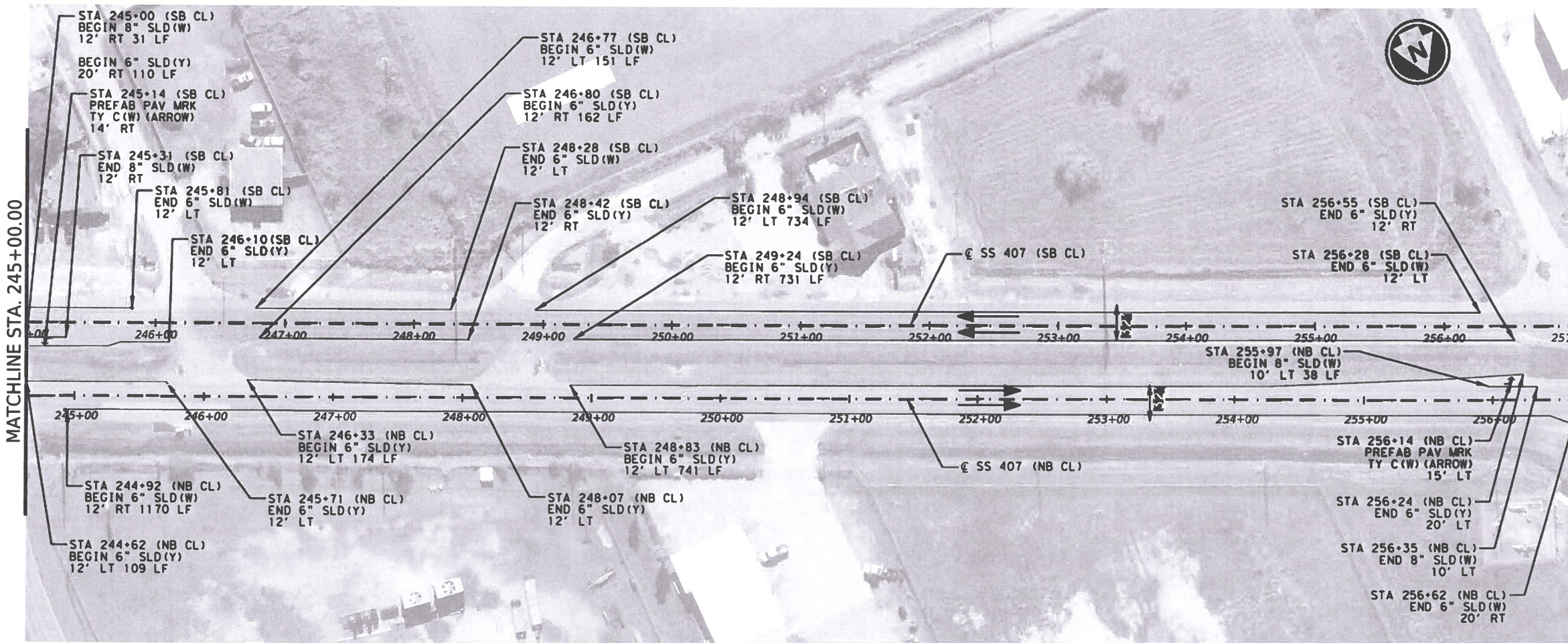
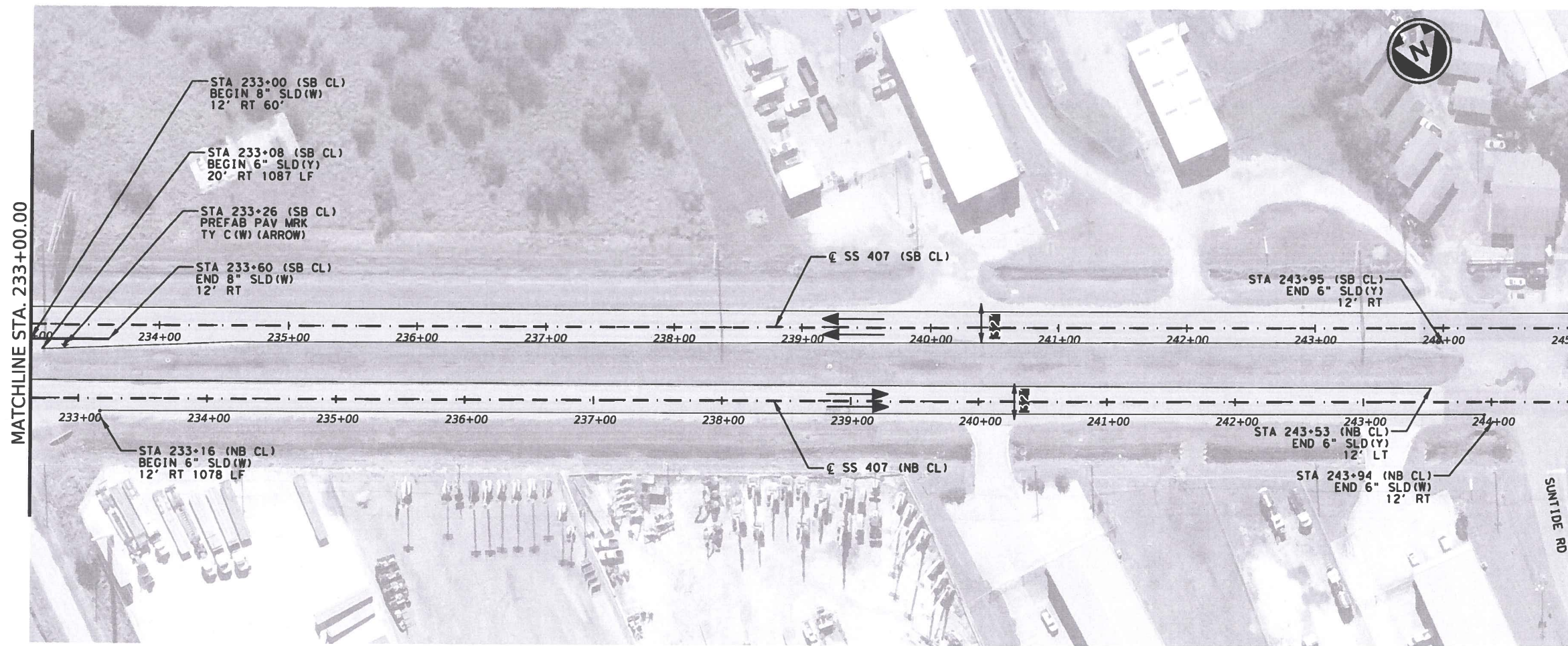
Texas Department of Transportation

**SS 407
 SURFACE DETAIL SHEETS
 ALIGN "NB CL" & "SB CL"**

© TxDOT 2023 SHEET 10 OF 15

CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST	COUNTY	SHEET NO.	
CRP	NEUCES	65	

DATE: 11/17/2023 7:56:11 AM
 FILE: pw://txdot.projectwiseonline.com:TXDOT4/Documents/16 - CRP/Maintenance Projects/16 RMC 6459-31-001 Base Repair with Sealcoat/1 - Pre-Letting/Design Files/Plan Set/4. Traffic/SS407 SBCL Traffic 7.dgn

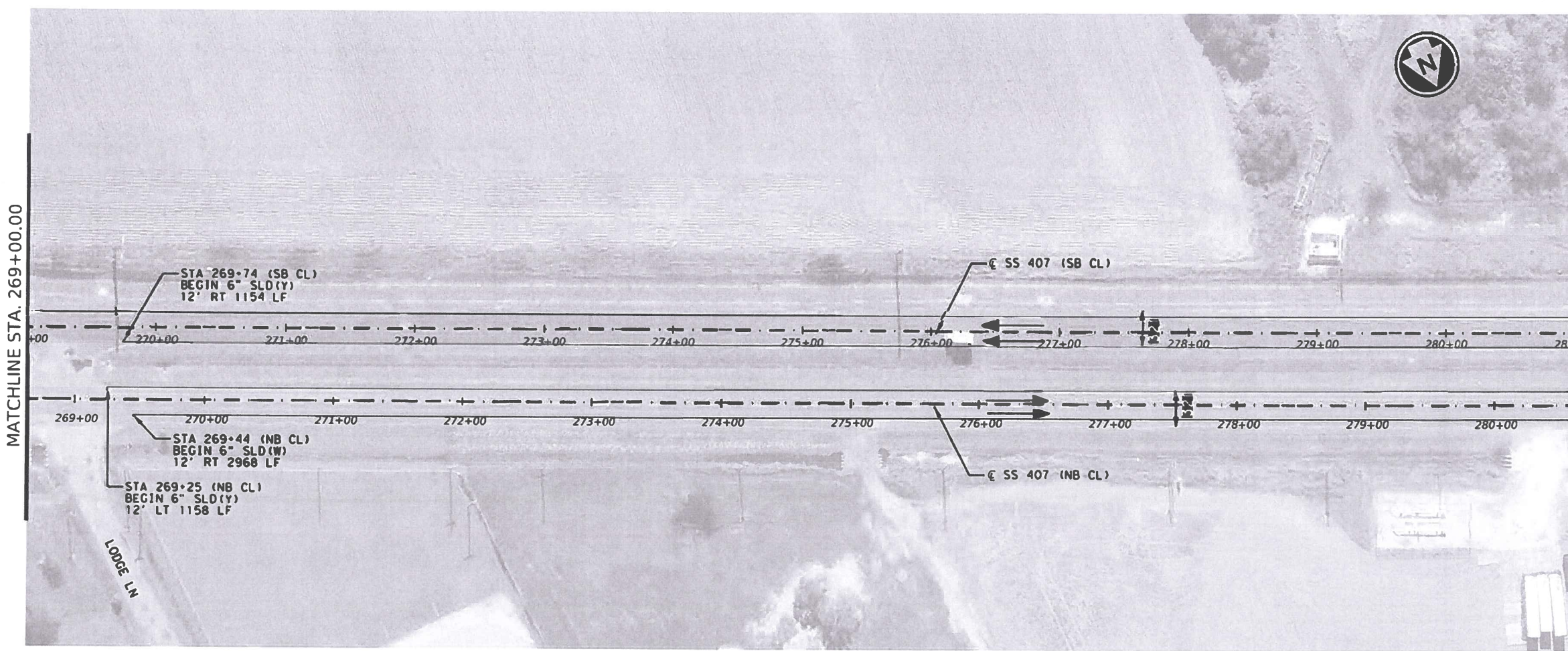
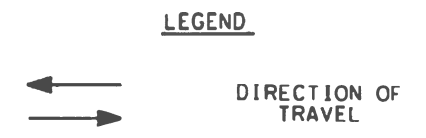
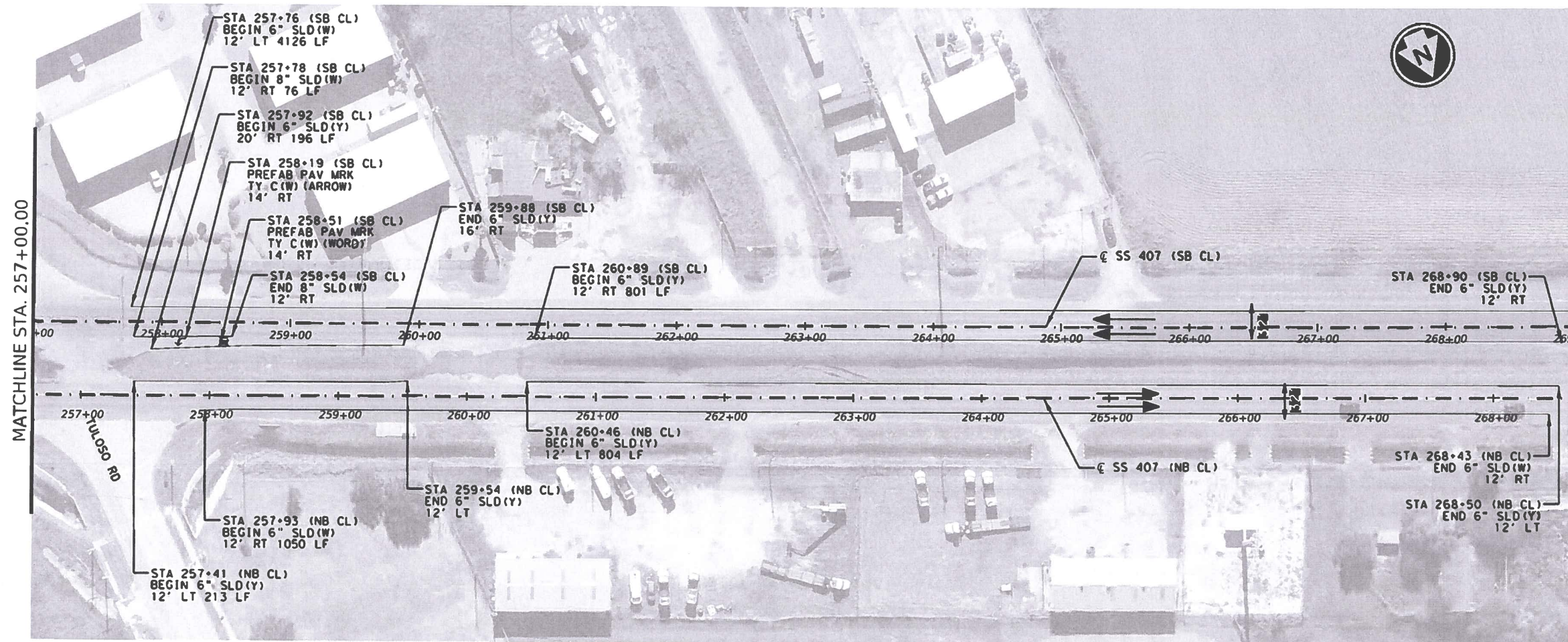


STATE OF TEXAS
 JAMES DOYLE HARRIS
 99290
 LICENSED PROFESSIONAL ENGINEER
James D Harris
 12-18-23



**SS 407
 SURFACE DETAIL SHEETS
 ALIGN "NB CL" & "SB CL"**

© TxDOT 2023		SHEET 11 OF 15	
CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST	COUNTY		SHEET NO.
CRP	NUECES		66

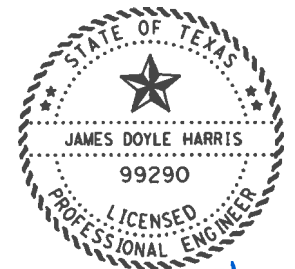
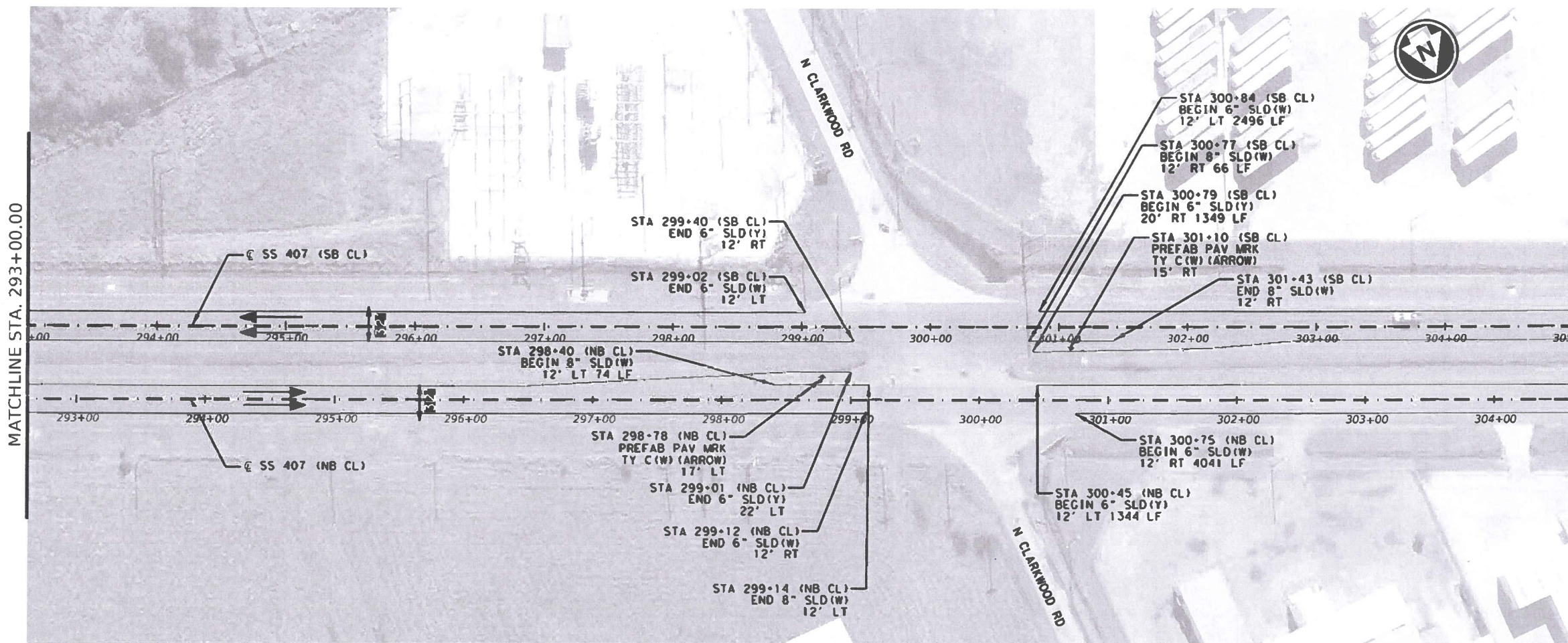
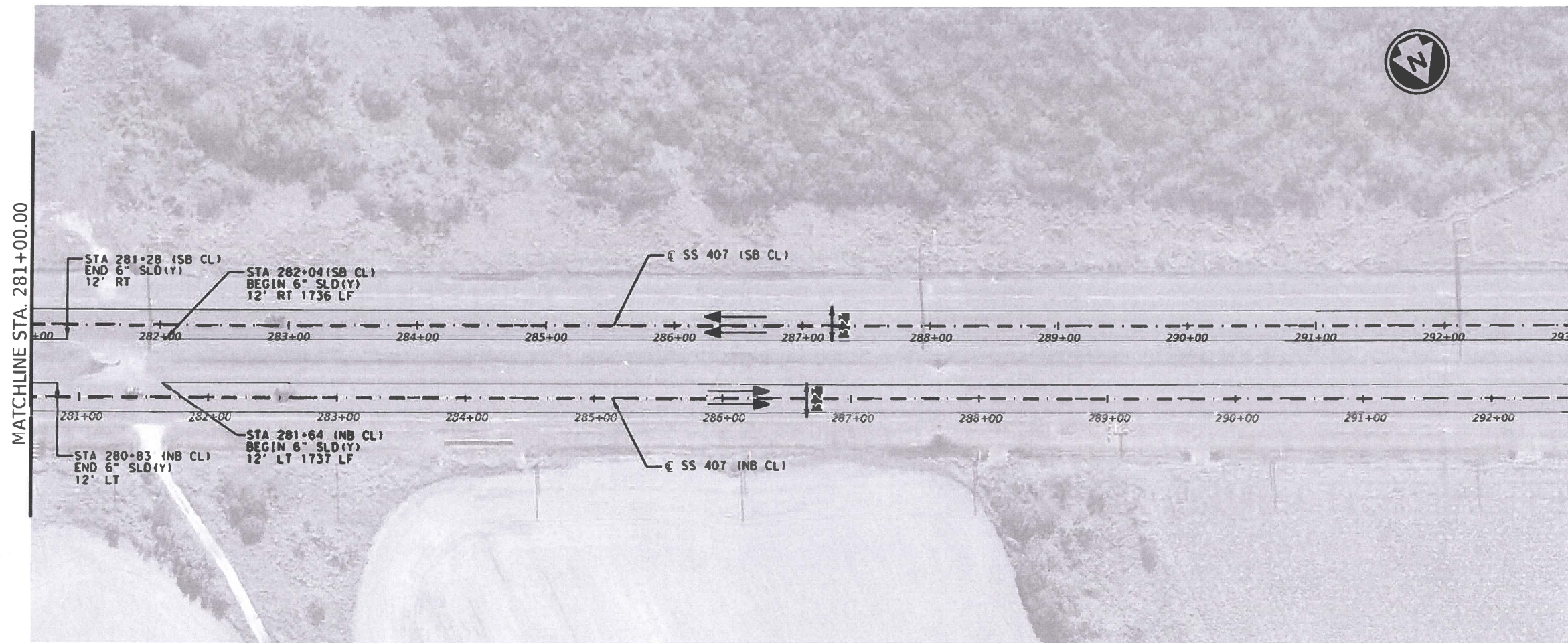


STATE OF TEXAS
JAMES DOYLE HARRIS
99290
LICENSED PROFESSIONAL ENGINEER
James D. Harris
12-18-23



**SS 407
SURFACE DETAIL SHEETS
ALIGN "NB CL" & "SB CL"**

© TxDOT 2023		SHEET 12 OF 15	
CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DSI	COUNTY	SHEET NO.	
CRP	NUECES	67	



James D. Harris
 12-18-23



**SS 407
 SURFACE DETAIL SHEETS
 ALIGN "NB CL" & "SB CL"**

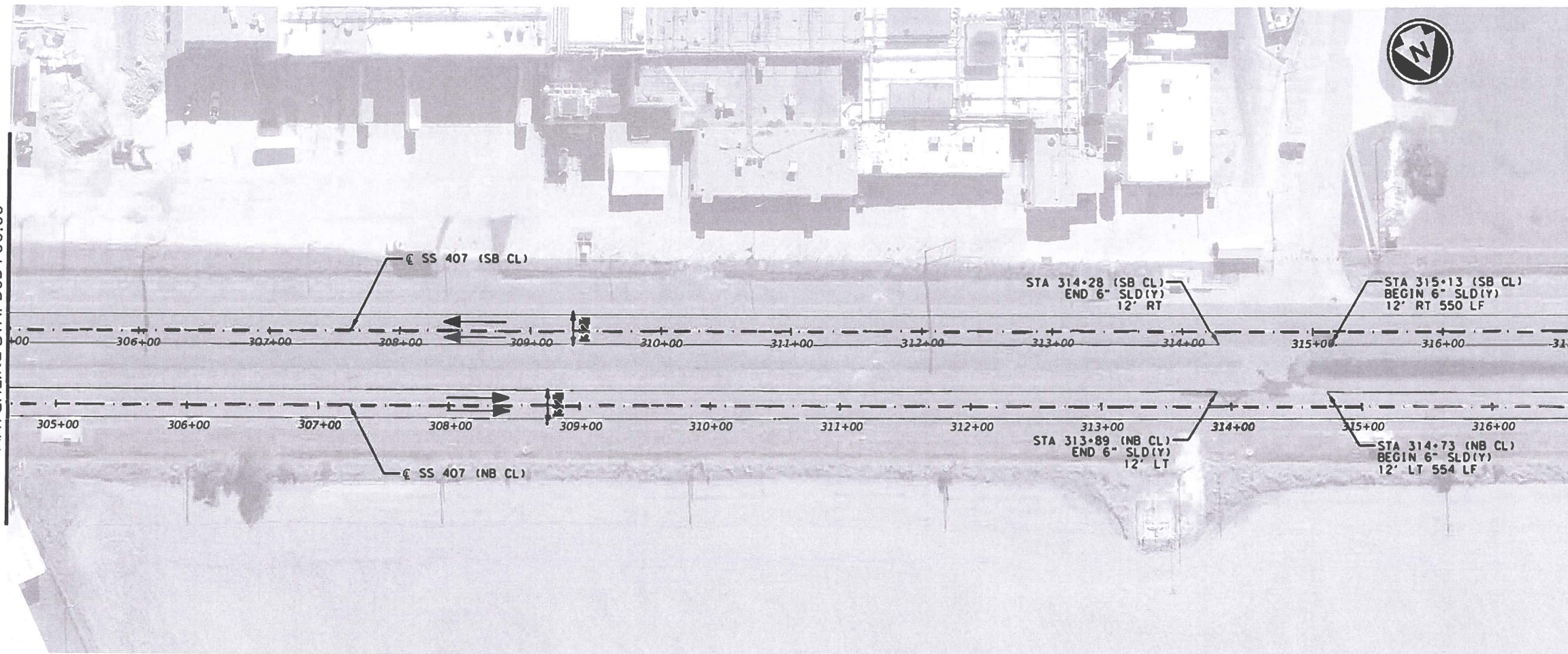
© TXDOT 2023		SHEET 13 OF 15	
CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST	COUNTY	SHEET NO.	
CRP	NUECES	68	

DATE: 11/17/2023 8:30:15 AM

FILE: \\txdot\projectwiseonline.com\TXDOT4\Documents\16 - CRP\Maintenance Projects\16 RMC 6459-31-001 Base Repair with Sealcoat\1 - Pre-Letting\Design Files\Plan Set\4. Traffic\SS407 SBCL Traffic_10.dwg

CC DW

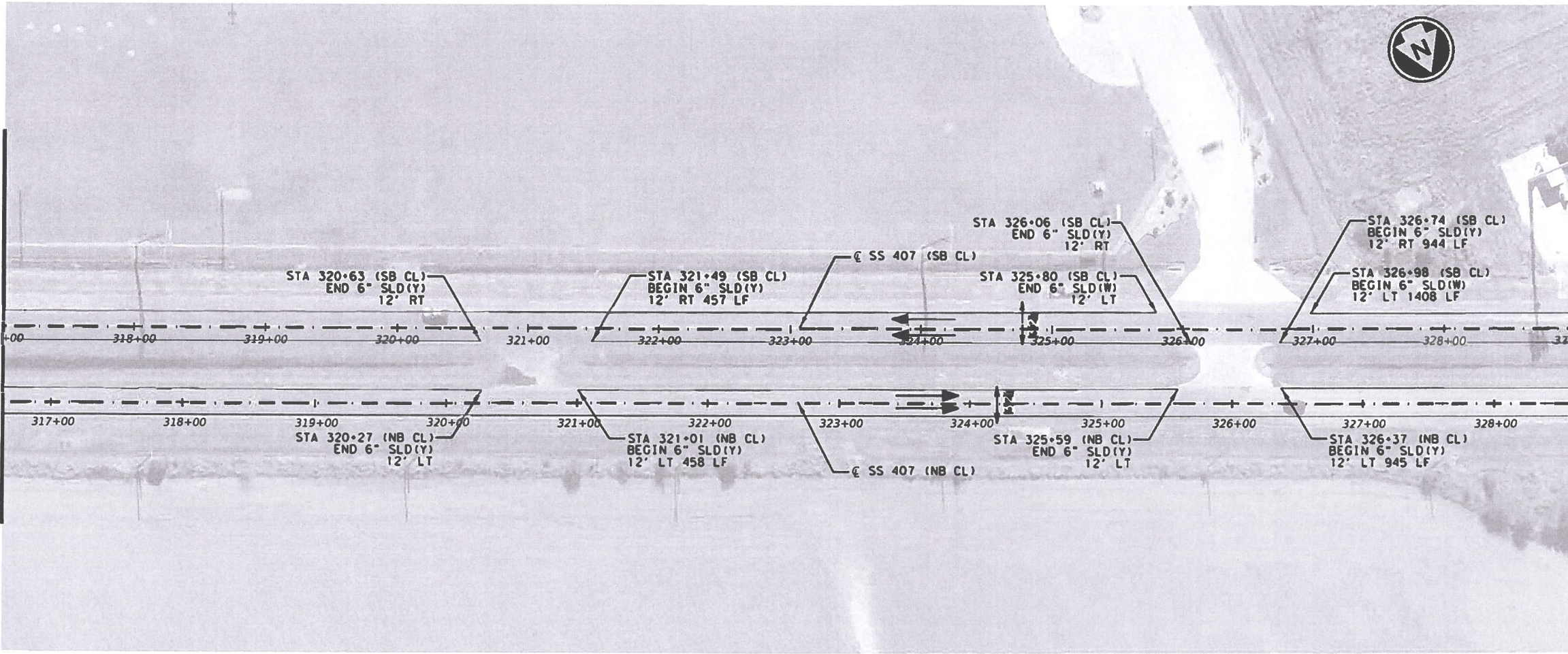
MATCHLINE STA. 305+00.00



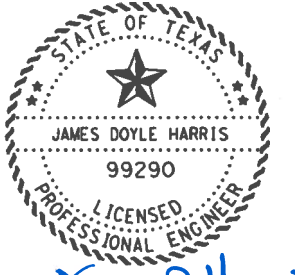
MATCHLINE STA. 317+00.00



MATCHLINE STA. 317+00.00



MATCHLINE STA. 329+00.00



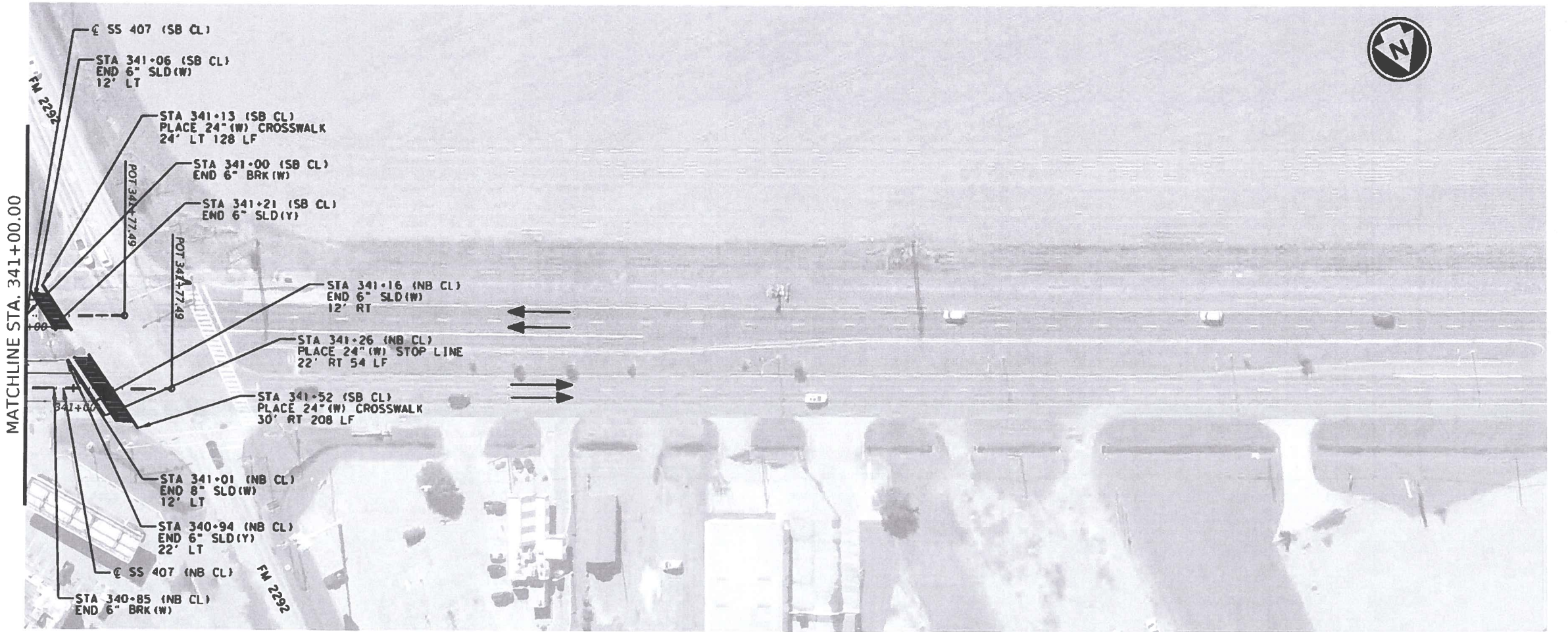
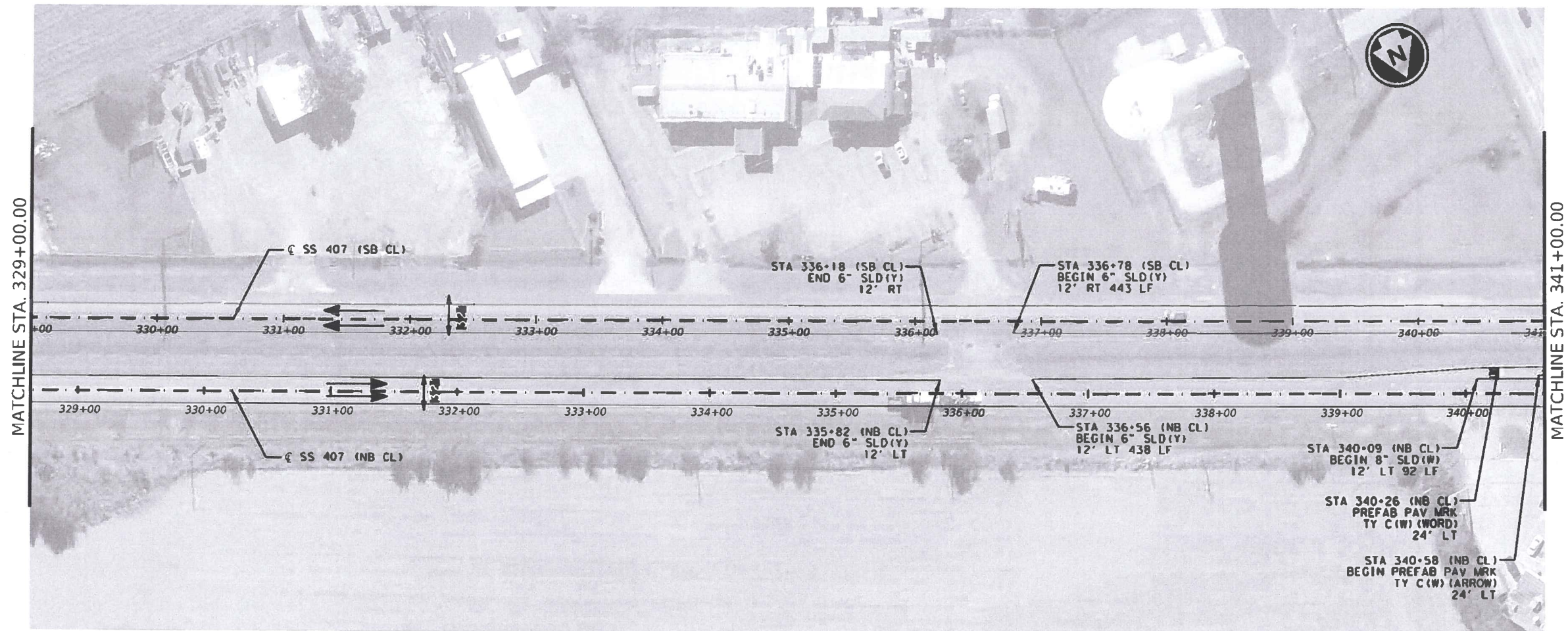
James D Harris
12-18-23



SS 407
SURFACE DETAIL SHEETS
ALIGN "NB CL" & "SB CL"

© TXDOT 2023		SHEET 14 OF 15	
CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIS1	COUNTY		SHEET NO.
CRP	NUECES		69

DATE: 11/17/2023 8:36:31 AM
 FILE: pw://txdot.projectwiseonline.com:TXDOT4/Documents/16 - CRP/Maintenance Projects/16 RMC 6459-31-001 Base Repair with Sealcoat/1 - Pre-Letting/Design Files/Plan Set/4. Traffic/SS407_SBC_L Traffic 11.dgn



STATE OF TEXAS
 JAMES DOYLE HARRIS
 99290
 LICENSED PROFESSIONAL ENGINEER
James Harris
 12-18-23



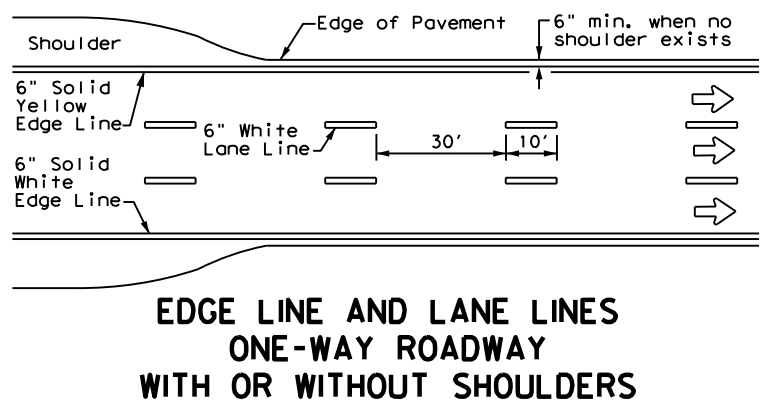
**SS 407
 SURFACE DETAIL SHEETS
 ALIGN "NB CL" & "SB CL"**

© TxDOT 2023 SHEET 15 OF 15

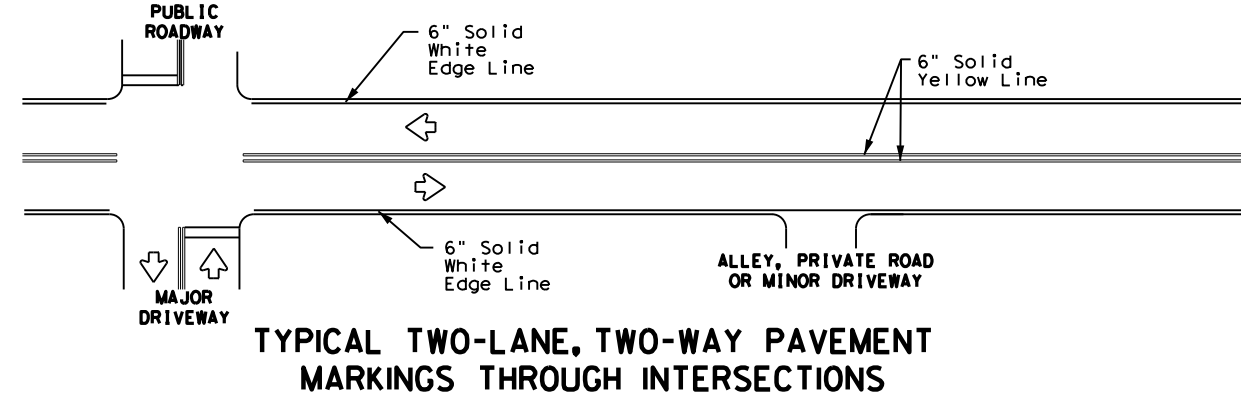
CONT	SECT	JOB	HIGHWAY
6459	31	001	SS 407
DIST	COUNTY	SHEET NO.	
CRP	NUECES	70	

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

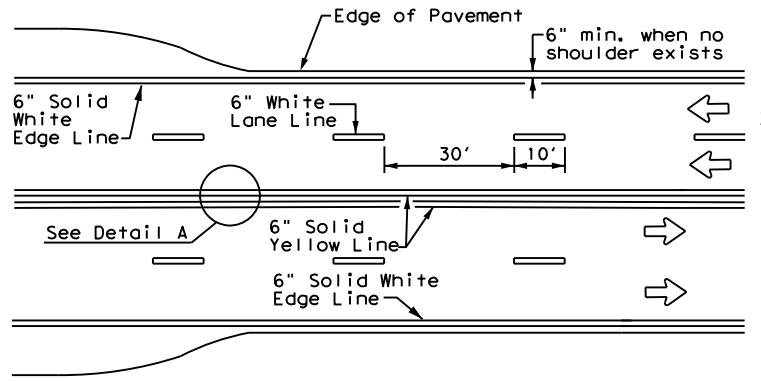
DATE: 11/17/2023 9:01:21 AM
 FILE: C:\Users\VAHERNA12\Desktop\Leopard_St\pml-22.dgn



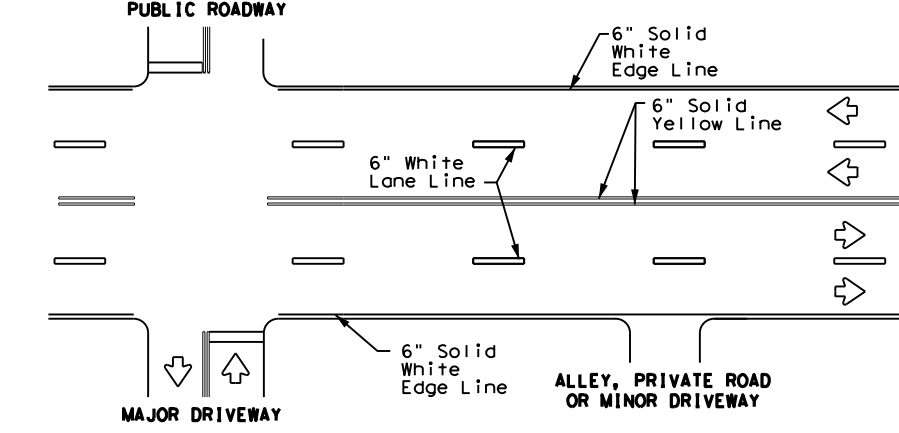
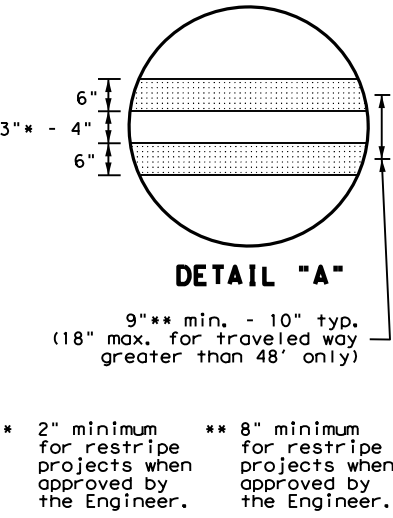
**EDGE LINE AND LANE LINES
ONE-WAY ROADWAY
WITH OR WITHOUT SHOULDERS**



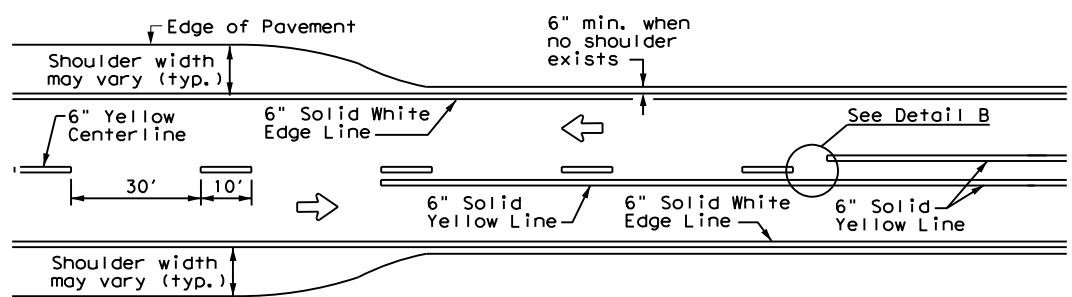
**TYPICAL TWO-LANE, TWO-WAY PAVEMENT
MARKINGS THROUGH INTERSECTIONS**



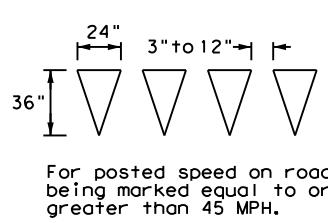
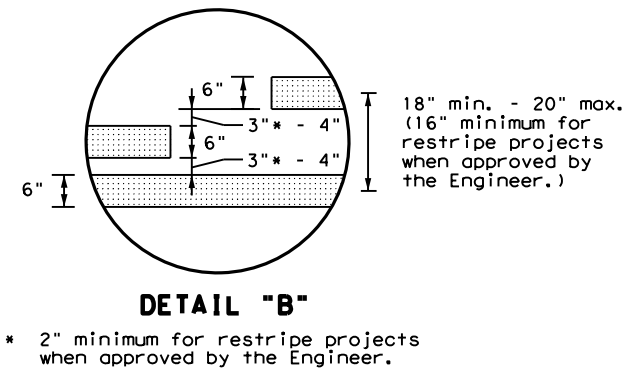
**CENTERLINE AND LANE LINES
FOUR LANE TWO-WAY ROADWAY
WITH OR WITHOUT SHOULDERS**



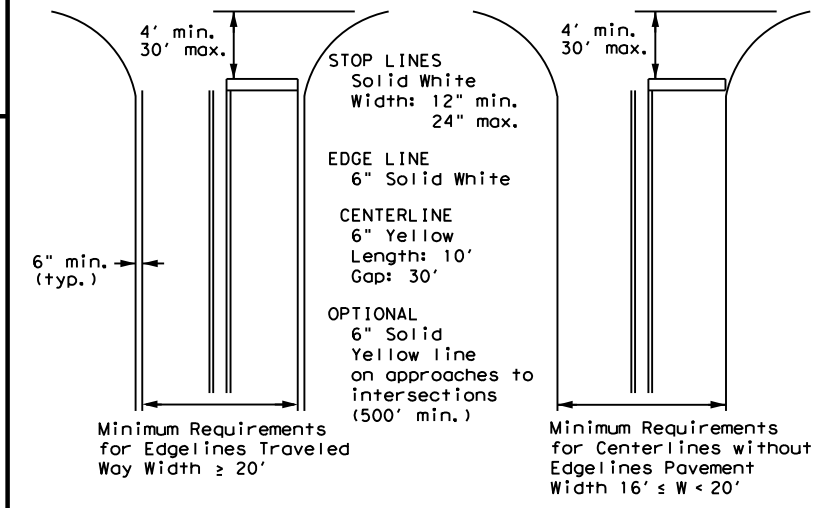
**TYPICAL MULTI-LANE, TWO-WAY PAVEMENT
MARKINGS THROUGH INTERSECTIONS**



**TWO LANE TWO-WAY ROADWAY
WITH OR WITHOUT SHOULDERS**

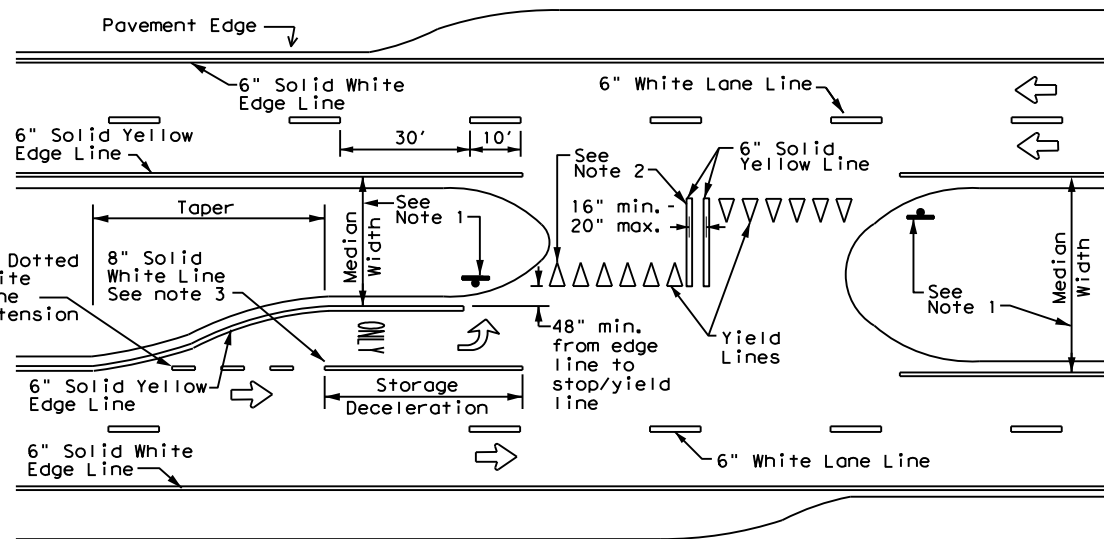


YIELD LINES



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

**GUIDE FOR PLACEMENT OF STOP LINES,
EDGE LINE & CENTERLINE**
 Based on Traveled Way and Pavement Widths for Undivided Roadways



FOUR LANE DIVIDED ROADWAY CROSSOVERS

NOTES

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

GENERAL NOTES

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

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

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

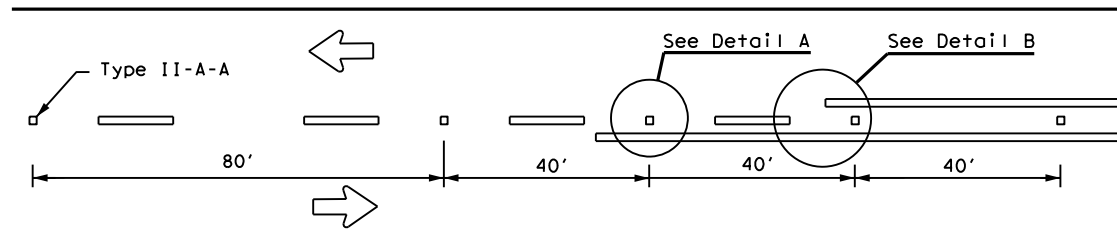
**TYPICAL STANDARD
PAVEMENT MARKINGS**

PM(1) - 22

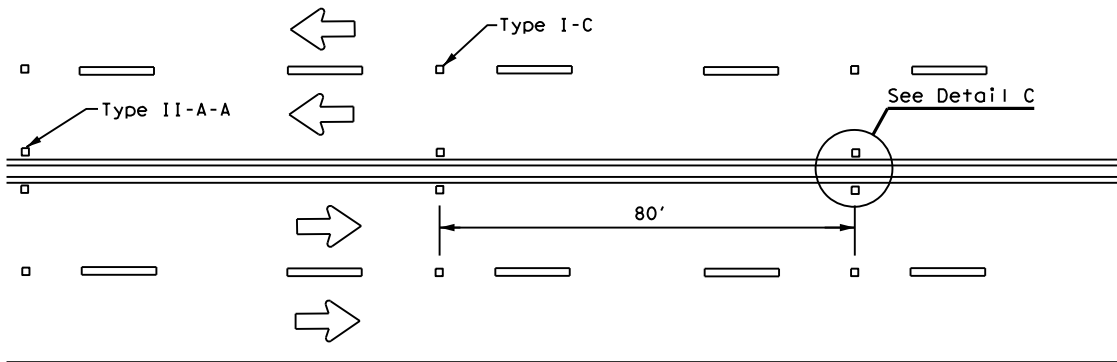
FILE:	pml-22.dgn	DN:	CK:	DW:	CK:
© TxDOT	December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS		6459	31	001	SS 407
11-78	8-00 6-20	DIST	COUNTY	SHEET NO.	
8-95	3-03 12-22	CRP	NUECES	71	
5-00	2-12				

REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE

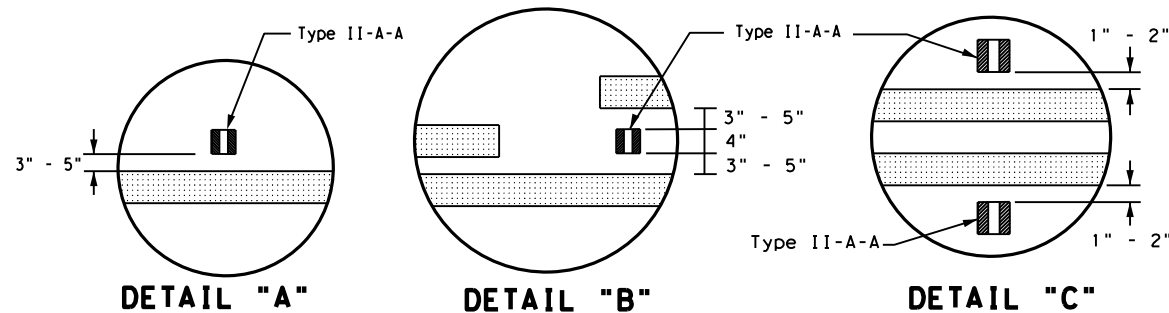
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



CENTERLINE FOR ALL TWO LANE TWO-WAY ROADWAYS



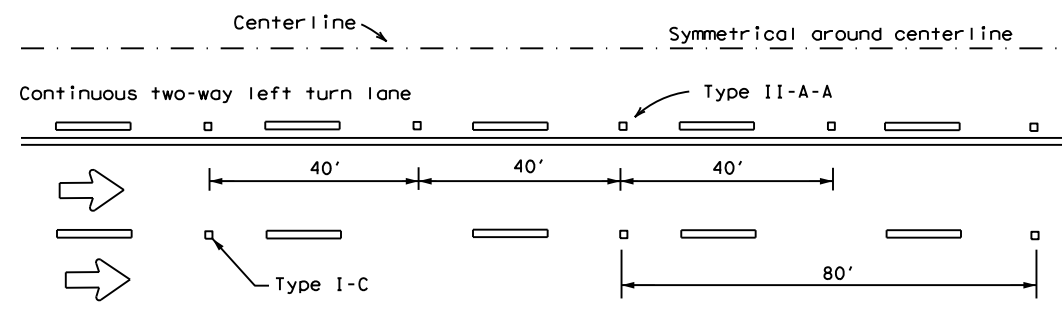
**CENTERLINE & LANE LINES
FOR FOUR LANE TWO-WAY ROADWAYS**



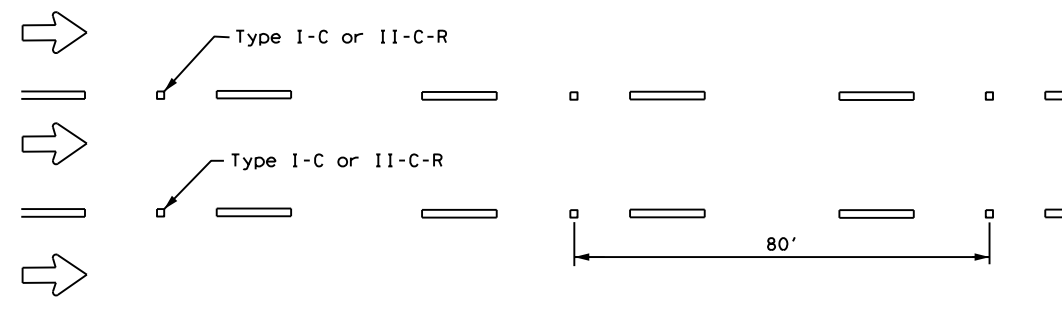
DETAIL "A"

DETAIL "B"

DETAIL "C"



CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE

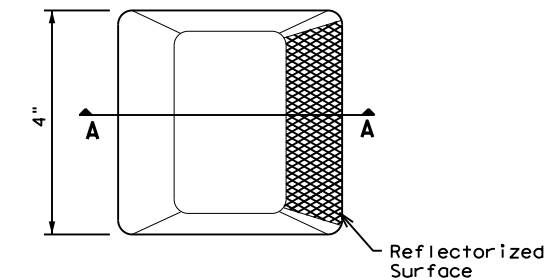


LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)

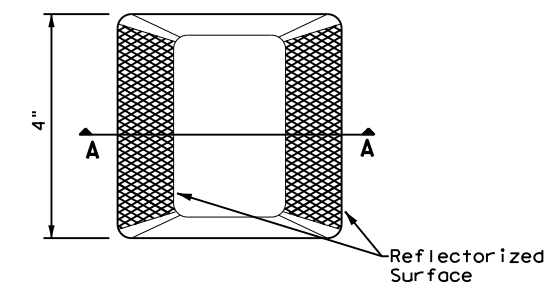
Raised pavement markers Type II-C-R shall have clear face toward normal traffic and red face toward wrong-way traffic.
 See Note 3.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

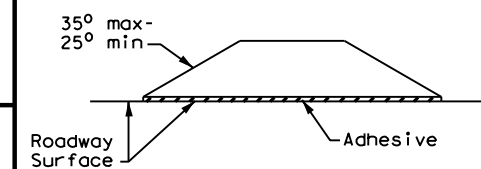
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



Type I (Top View)



Type II (Top View)



SECTION A

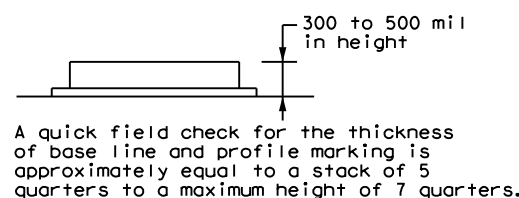
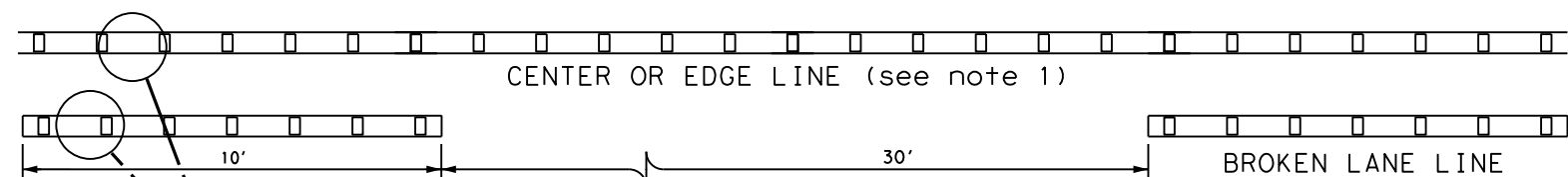
RAISED PAVEMENT MARKERS



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

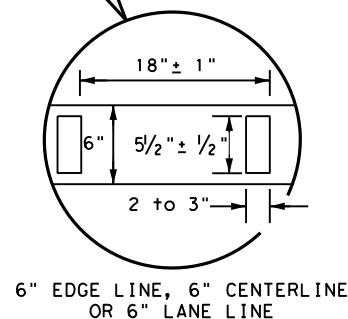
FILE: pm2-22.dgn	DN:	CK:	DW:	CK:
© TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	6459	31	001	SS 407
4-77 8-00 6-20	DIST	COUNTY	SHEET NO.	
4-92 2-10 12-22	CRP	NUECES	72	
5-00 2-12				

22B



REFLECTORIZED PROFILE PATTERN DETAIL

USING REFLECTIVE PROFILE PAVEMENT MARKINGS



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

NOTES

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

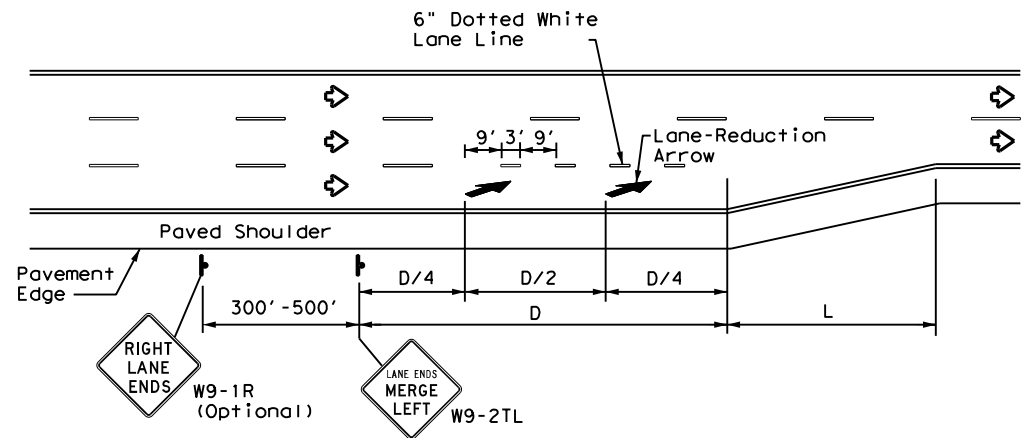
GENERAL NOTES

- All raised pavement markers placed along broken lines shall be placed in line with and midway between the stripes.
- On concrete pavements the raised pavement markers should be placed to one side of the longitudinal joints.
- Use raised pavement marker Type I-C with undivided roadways, flush medians and two way left turn lanes. Use raised pavement marker Type II-C-R with divided highways and raised medians.

DATE: 11/17/2023 9:01:22 AM
 FILE: C:\Users\AHERNA12\Desktop\Leopard_St\pm2-22.dgn

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

DATE: 11/17/2023 9:01:23 AM
 FILE: C:\Users\AHERNA12\Desktop\Leopard_St\pm3-22.dgn



LANE REDUCTION

NOTES

- Lane reduction pavement markings are used where the number of through lanes is reduced because of narrowing of the roadway or because of a section of on-street parking in what would otherwise be a through lane. For Texas Super 2 Passing Lanes, see TS2(PL) standard sheets.
- On divided highways, an additional RIGHT LANE ENDS (W9-1R) sign may be installed in the median aligned with the W9-1R sign on the right side of the highway.
- Lane reduction arrows are required for speeds of 45 mph or greater. An optional third lane reduction arrow may be added based on engineering judgement. If used, the optional third lane reduction arrow should be centered between the first and last lane reduction arrows.
- For lane reductions on Freeways and Expressways, signing shall conform to the TxDOT Freeway Signing Handbook.

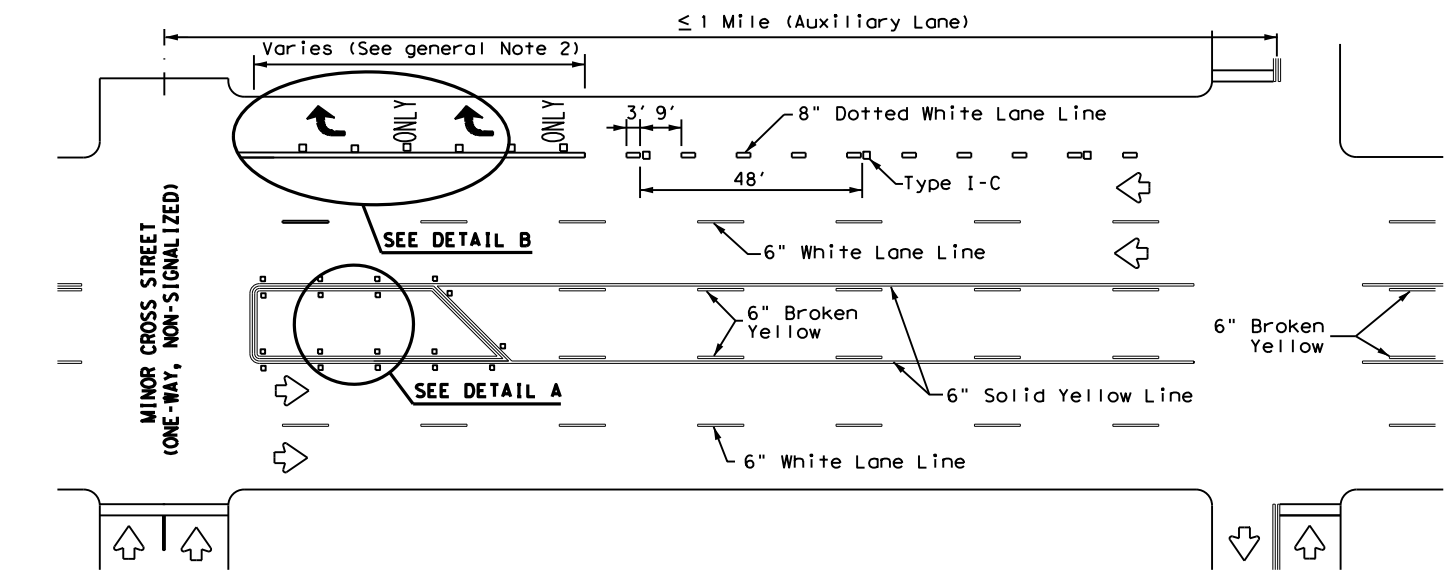
ADVANCED WARNING SIGN DISTANCE (D)		
Posted Speed	D (ft)	L (ft)
30 MPH	460	$L = \frac{WS^2}{60}$
35 MPH	565	
40 MPH	670	
45 MPH	775	L=WS
50 MPH	885	
55 MPH	990	
60 MPH	1,100	
65 MPH	1,200	
70 MPH	1,250	
75 MPH	1,350	

GENERAL NOTES

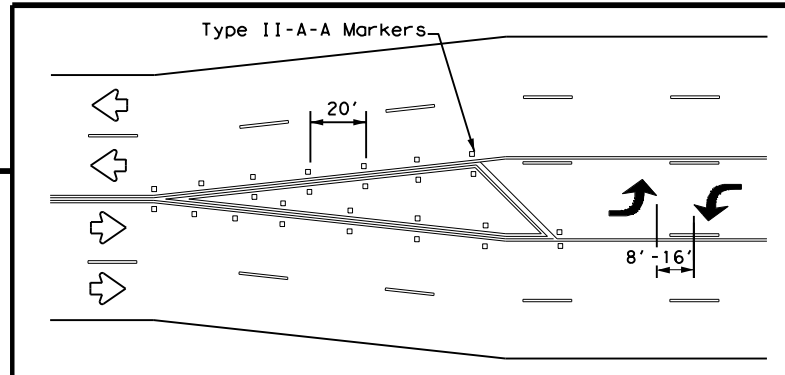
- Lane use word and arrow markings shall be used where through lanes approaching an intersection become mandatory turn lanes. Lane use word and arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings or word and arrow markings may be used in other lanes and turn bays for emphasis. Details for words and arrows are as shown in the Standard Highway Sign Designs for Texas.
- When lane-use words and arrow markings are used, two sets of arrows should be used if the length of the bay is greater than 180 feet. When a single lane use arrow or word and arrow marking is used for a short turn lane, it should be located at or near the upstream end of the full-width turn lane.
- Use raised pavement marker Type I-C with undivided highways, flush medians and two way left turn lanes. Use raised pavement marker Type II-C-R with divided highways and raised medians.
- Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer. See Chapter 3 of the Roadway Design Manual for additional information on turning lanes or storage lengths.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

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

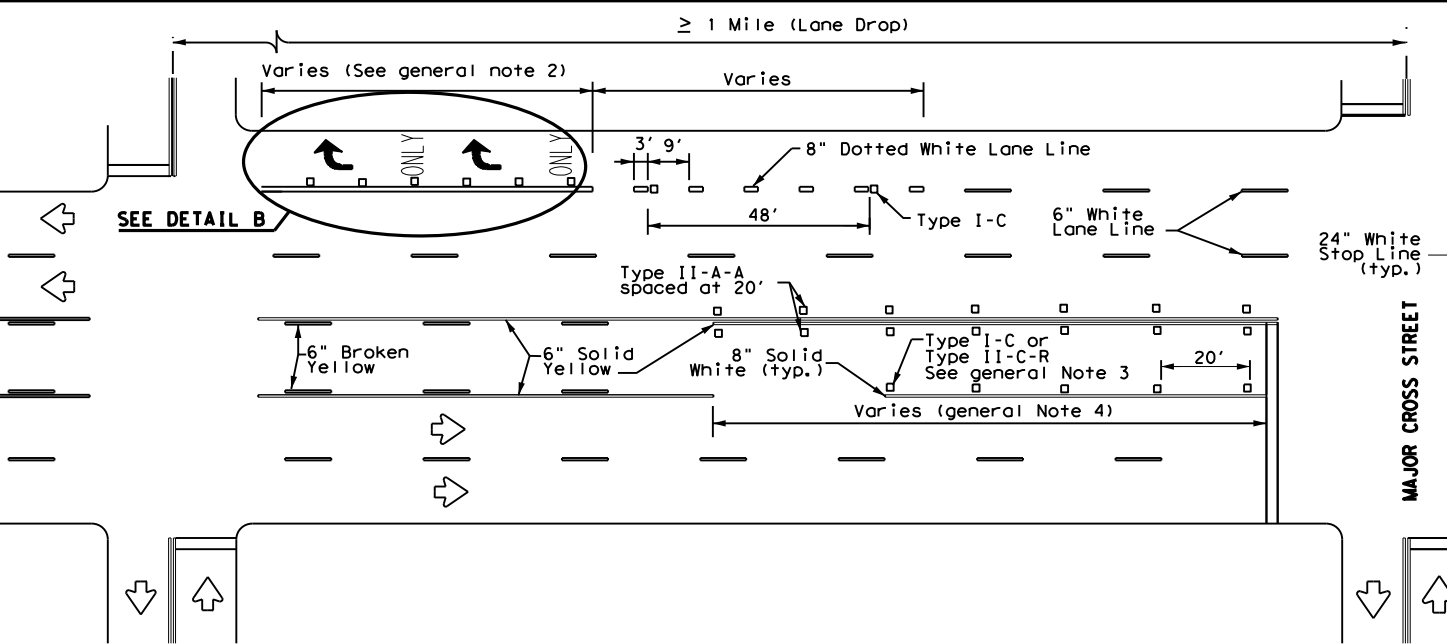


TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE

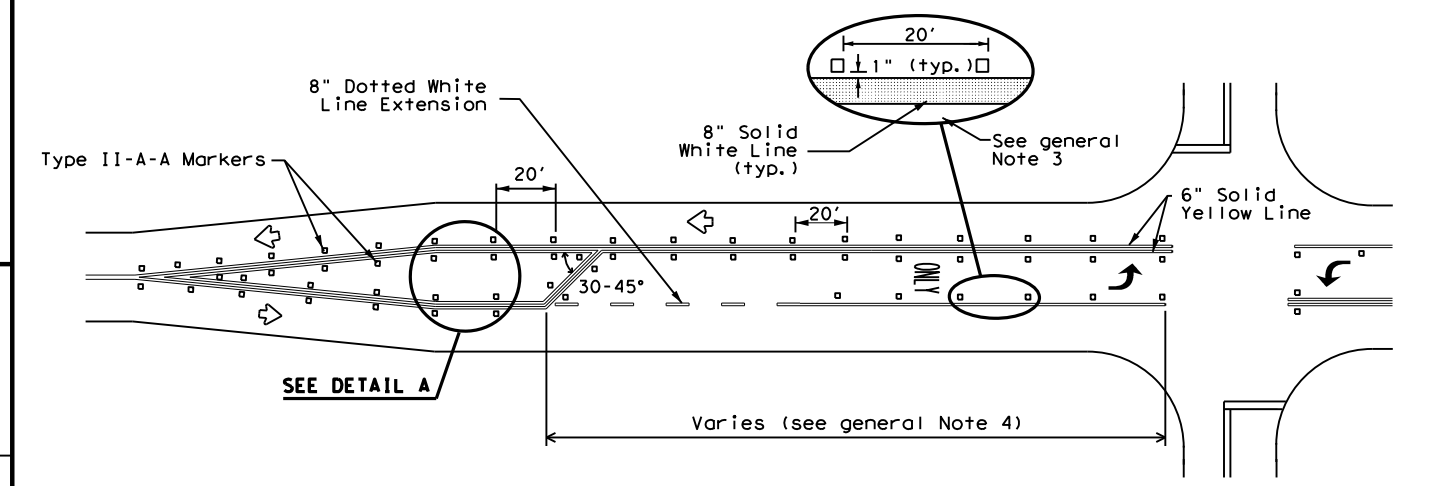


A two-way left-turn (TWLTL) lane-use arrow pavement marking should be used at or just downstream from the beginning of a two-way left-turn lane within a corridor. Repeating the marking after each intersection or dedicated turn bay is not required unless stated elsewhere in the plans.

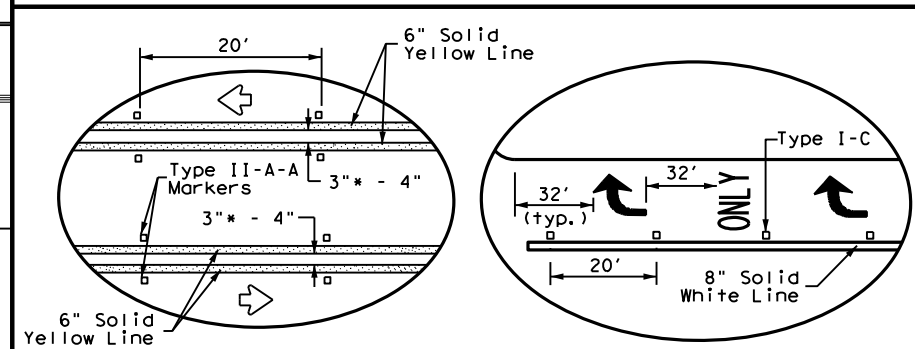
TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY



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



TYPICAL TWO-LANE ROADWAY INTERSECTION WITH LEFT TURN BAYS



DETAIL A

DETAIL B

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

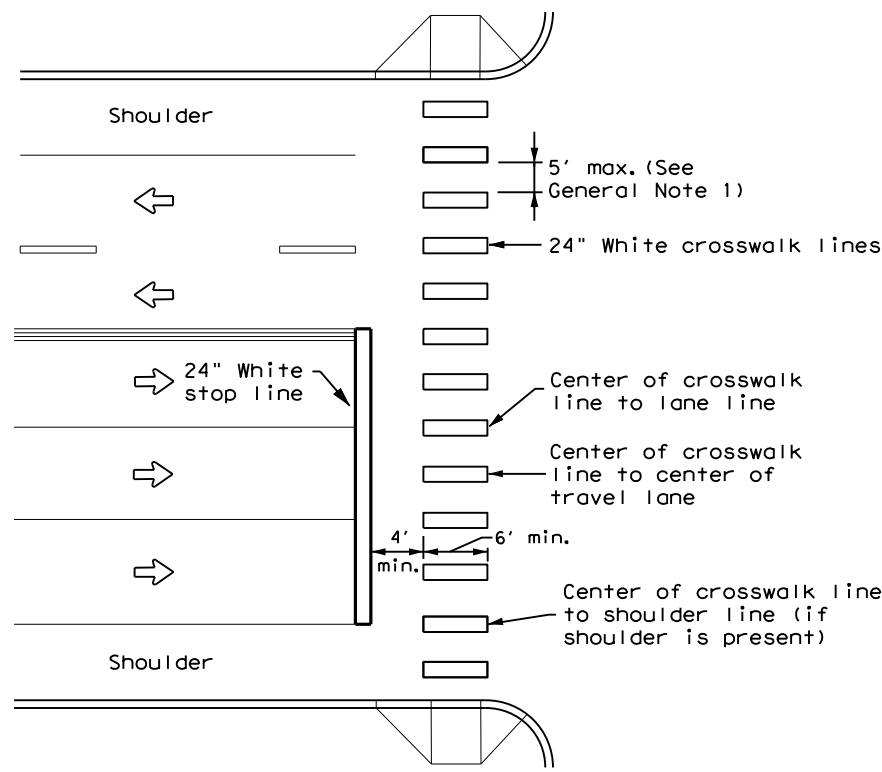
Texas Department of Transportation
 Traffic Safety Division Standard

TWO-WAY LEFT TURN LANES, RURAL LEFT TURN BAYS, AND LANE REDUCTION PAVEMENT MARKINGS PM(3) - 22

FILE: pm3-22.dgn	DN:	CK:	DW:	CK:
© TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	6459	31	001	SS 407
4-98 3-03 6-20	DIST	COUNTY	SHEET NO.	
5-00 2-10 12-22	CRP	NUECES	73	
8-00 2-12				

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

DATE: 11/17/2023 9:01:24 AM
 FILE: C:\Users\AHERNA12\Desktop\Leopard_St\pm4-22a.dgn



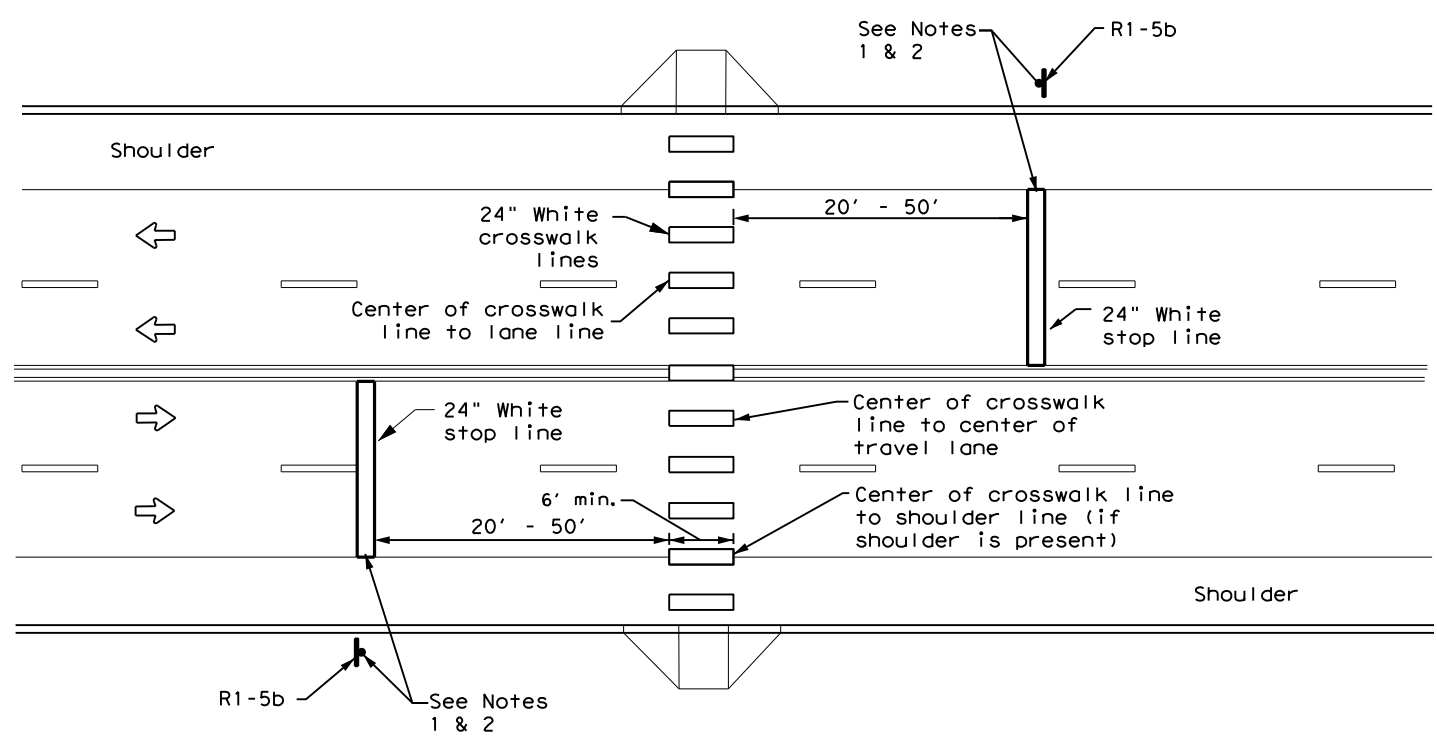
HIGH-VISIBILITY LONGITUDINAL CROSSWALK AT CONTROLLED APPROACH

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 crosswalks.
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.

<p>CROSSWALK PAVEMENT MARKINGS</p> <p>PM(4) - 22A</p>				
FILE: pm4-22a.dgn	DN:	CK:	DW:	CK:
© TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	6459	31	001	SS 407
6-20	DIST	COUNTY	SHEET NO.	
6-22	CRP	NUECES	74	
12-22				22D

SITE DESCRIPTION

PROJECT LIMITS: *From the Intersection of Cantwell Dr. and Leopard St. to the Intersection of FM 2292 and Leopard St.*

PROJECT DESCRIPTION: *FOR THE CONSTRUCTION OF A 2 COURSE SEAL COAT, CEMENT TREATED BASE, MILL & INLAY, AND PAVEMENT MARKINGS.*

MAJOR SOIL DISTURBING ACTIVITIES: *2 COURSE SEAL COAT; CEMENT TREATED BASE; MILL & INLAY*

TOTAL PROJECT AREA: *Total - 78.28 Acres*

TOTAL AREA TO BE DISTURBED: *18.79 Acres*

WEIGHTED RUNOFF COEFFICIENT (AFTER CONSTRUCTION): *0.68*

EXISTING CONDITION OF SOIL & VEGETATIVE COVER AND % OF EXISTING VEGETATIVE COVER: *The existing soil type is 84.2% Victoria clay, 1 to 3 percent slopes; 5.9% clareville loam, 0 to 1 percent slopes; 3.7% Victoria clay, 1 to 3 percent slopes; 3.1% Urban land; 2.6% Victoria clay, 0 to 1 percent slopes, low.*

NAME OF RECEIVING WATERS: *Drainage from this project flows into Corpus Christi Inner Harbor (2484) to Corpus Christi Bay (Oyster Waters) (24810W).*

IMPACTS TO ENDANGERED SPECIES OR HABITAT: *There will be no impacts to endangered species or habitat by the permitted storm water discharges.*

EROSION AND SEDIMENT CONTROLS

SOIL STABILIZATION PRACTICES:

- TEMPORARY SEEDING
- PERMANENT SEEDING
- MULCHING
- SOIL RETENTION BLANKET
- BUFFER ZONES
- PRESERVATION OF NATURAL RESOURCES

LEGEND:
T- TEMPORARY
P- PERMANENT

GENERAL :

Disturbed areas on which construction activity has ceased (temporarily or permanently) shall be stabilized within 14 days unless activities are scheduled to resume or be performed within 21 days.

STRUCTURAL PRACTICES:

- SILT FENCES
- HAY BALES
- ROCK BERMS
- DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
- DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
- DIVERSION DIKE AND SWALE COMBINATIONS
- PIPE SLOPE DRAINS
- PAVED FLUMES
- ROCK BEDDING AT CONSTRUCTION EXIT
- TIMBER MATTING AT CONSTRUCTION EXIT
- CHANNEL LINERS
- SEDIMENT TRAPS
- SEDIMENT BASINS
- STORM INLET SEDIMENT TRAP
- STORM OUTLET STRUCTURES
- CURBS AND GUTTERS
- STORM SEWERS
- VELOCITY CONTROL DEVICES
- CONCRETE RIPRAP
- BIODEGRADABLE EROSION CONTROL LOGS

LEGEND:
T- TEMPORARY
P- PERMANENT

OTHER :

STORM WATER MANAGEMENT : *Biodegradable Erosion Control Logs shall be placed in position before construction begins on the project.*

POST-CONSTRUCTION STORM WATER MANAGEMENT : *There will be no devices installed during construction to control storm water discharges that will remain after construction operations have been completed.*

OTHER CONTROLS:

MAINTENANCE: *All erosion and sediment controls will be maintained in good working order. If a repair is necessary, it will be done at the earliest date possible, but no later than 7 calendar days after the surrounding exposed ground has dried sufficiently to prevent further damage from heavy equipment. The areas adjacent to creeks and drainageways shall have priority.*

INSPECTION: *An inspection will be performed by a TxDOT Inspector every 7 calendar days, as well as within 24 hours after every 1/2 in or more of rain (as recorded on a rain gauge to be located at the Project Site). An Inspection and Maintenance Report will be made per each inspection, and controls shall be revised as indicated by this inspection report.*

WASTE MATERIALS: *All waste materials will be collected and stored in a securely lidded metal dumpster. The dumpster will meet all State & local city solid waste management regulations. All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied as necessary or as required by local regulations and the trash will be hauled to a local dump. No construction waste material will be buried on site or any other unauthorized site. Washout areas shall be restored upon project completion.*

HAZARDOUS WASTE (INCLUDING SPILL REPORTING): *At a minimum, any products in the following categories are considered to be hazardous: paints, acids for cleaning masonry surfaces, cleaning solvents, asphalt products, chemical additives for soil stabilization, or concrete curing compounds and additives. In the event of a spill which may be hazardous, the spill coordinator shall be contacted immediately (1-800-633-9363). Clean up procedures shall be clearly posted as well as names of spill response personnel. Hazardous materials shall be handled in accordance with applicable federal, state, county, city and Texas Water Commission rules.*

SANITARY WASTE: *All sanitary waste will be collected from the portable units as necessary or as required by local regulation, by a licensed sanitary waste management contractor, in accordance with all state laws and Texas Water Commission rules.*

OFFSITE VEHICLE TRACKING:

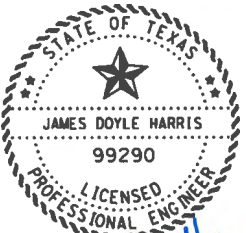
- HAUL ROADS DAMPENED FOR DUST CONTROL
- LOADED HAUL TRUCKS TO BE COVERED WITH TARPULIN
- EXCESS DIRT ON ROAD REMOVED DAILY
- STABILIZED CONSTRUCTION ENTRANCE

POLLUTANT SOURCES FROM AREAS OTHER THAN CONSTRUCTION: *Portable Sanitary Waste Units*


REMARKS: *Disposal areas, stockpiles, and haul roads shall be constructed in a manner that will minimize and control the amount of sediment that may enter receiving waters. Disposal areas shall not be located in any wetland, waterbody or streambed.*

Construction staging and vehicle maintenance areas shall be constructed by the Contractor. Construction should be accomplished in a manner to minimize the runoff of pollutants.

All waterways shall be cleared of temporary embankment, temporary matting, false work, or other obstructions placed during construction operations that are not part of the finished work. No construction waste will be allowed to be buried within the limits of the right of way.



James D. Harris
12-16-23
Texas Department of Transportation



Texas Department of Transportation
ROADWAY
STORM WATER POLLUTION PREVENTION PLAN
SHEET 1 OF 1

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
6	6459-31-001	75
STATE	STATE DISTRICT	COUNTY
TEXAS	CRP	NUECES
CONT.	SECT.	JOB
6459	31	001
		HIGHWAY NO.
		SS 407

©2023

pw://ttdot-projtechwiseonline.com:TXDOT4/ Documents/16 - CRP/ Maintenance Projects/16 RMC 6459-31-001 Base Repair with Sealcoat/1 - Pre-Letting/Design Files/Plan Set/5. Miscellaneous/SW3P.dgn

DATE: 11/15/2023 3:50:35 PM
 FILE: pw://txdot.projectwiseonline.com:TXDOT4/Documents/16 - CRP/Maintenance Projects/16 RMC_6459-31-001 Base/epic.dgn
 The use of this standard is governed by the "Texas Engineering Practice Act".
 No warranty of any kind is made by TxDOT for any purpose whatsoever.
 TxDOT assumes no responsibility for the conversion of this standard to other formats or for which the original design was intended.

I. STORMWATER POLLUTION PREVENTION-CLEAN WATER ACT SECTION 402

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

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

- 1.
 - 2.
- No Action Required Required Action

Action No.

- 1. Prevent stormwater pollution by controlling erosion and sedimentation in accordance with TPDES Permit TXR 150000
- 2. Comply with the SW3P and revise when necessary to control pollution or required by the Engineer.
- 3. Post Construction Site Notice (CSN) with SW3P information on or near the site, accessible to the public and TCEQ, EPA or other inspectors.
- 4. When Contractor project specific locations (PSL's) increase disturbed soil area to 5 acres or more, submit NOI to TCEQ and the Engineer.

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

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

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

- No Permit Required
- Nationwide Permit 14 - PCN not Required (less than 1/10th acre waters or wetlands affected)
- Nationwide Permit 14 - PCN Required (1/10 to <1/2 acre, 1/3 in tidal waters)
- Individual 404 Permit Required
- Other Nationwide Permit Required: NWP# _____

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

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

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

Best Management Practices:

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

III. CULTURAL RESOURCES

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

- No Action Required Required Action

Action No.

- 1.
- 2.
- 3.

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.

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. The Federal Migratory Bird Treaty Act (MBTA) states that it is unlawful to kill, capture, collect, possess, buy, sell, trade or transport any migratory bird, nest, young, feather, or egg, in part or in whole, without a federal permit. In accordance with this regulation, the Contractor shall avoid disturbing, destroying, removing, or relocating active nests found in trees, culverts, bridges, on the ground, etc. Typical breeding season occurs from March through August; therefore, tree trimming and other activities that may disturb breeding birds should be done in the non-breeding season (September-February), when possible. If work must be performed during the breeding season, the Contractor shall have a qualified biologist conduct a survey of the right of way to determine if bird nests are present. In the event that active nests are encountered on-site during construction, the Contractor shall notify the Engineer and measures shall be taken to avoid disturbance of these birds, their occupied nests, eggs, and/or young, in accordance with MBTA. Phasing of work during construction may be necessary to stay in compliance with Project Engineer and/or District Environmental Staff.

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

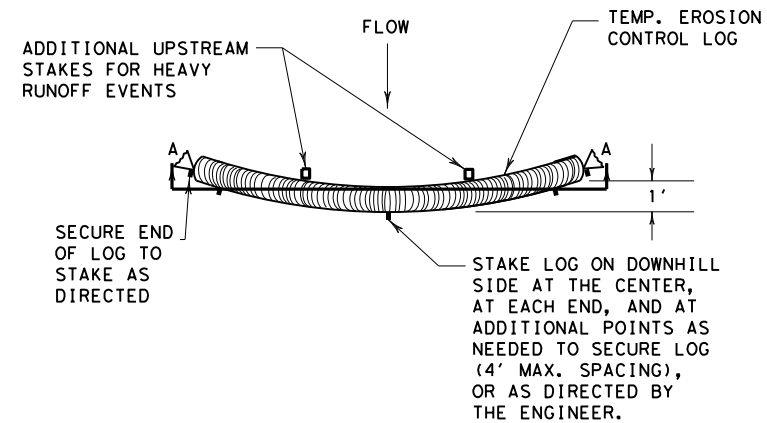
Action No.

- 1.
- 2.
- 3.

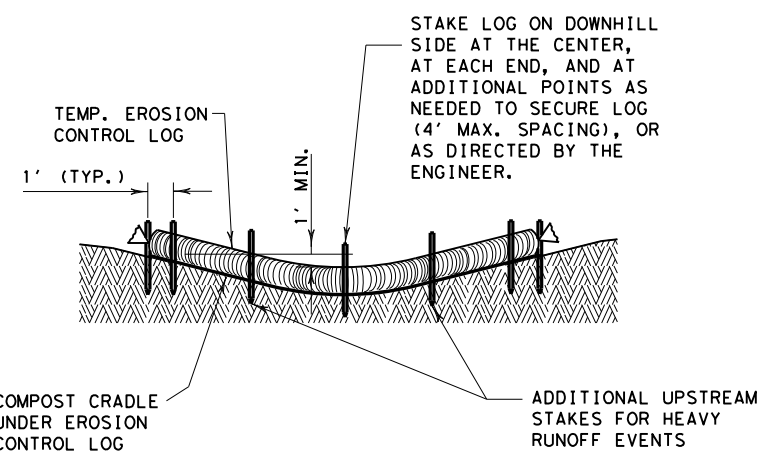
		Design Division Standard		
ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS EPIC				
FILE: epic.dgn	DN: TxDOT	CR: RG	DW: VP	CK: AR
©TxDOT: February 2015	CONT	SECT	JOB	HIGHWAY
12-12-2011 (DS) REVISIONS	6459	31	001	SS 407
05-07-14 ADDED NOTE SECTION IV.	DIST	COUNTY	SHEET NO.	
01-23-2015 SECTION I (CHANGED ITEM 1122 TO ITEM 506, ADDED GRASSY SWALES.	CRP	NUECES	76	

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

DATE: 11/17/2023
 FILE: C:\Users\VAHERNA12\Desktop\Leopard St\ec916.dgn

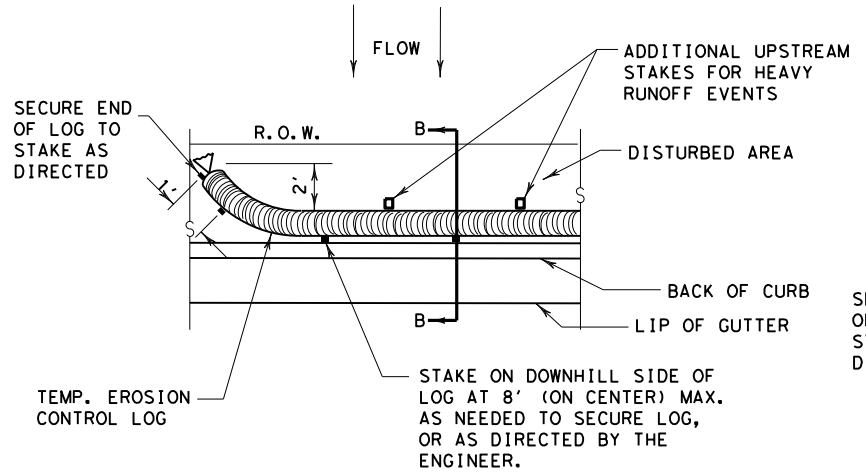


PLAN VIEW

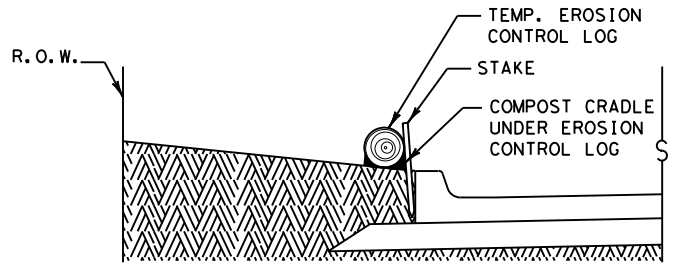


SECTION A-A
EROSION CONTROL LOG DAM

CL-D

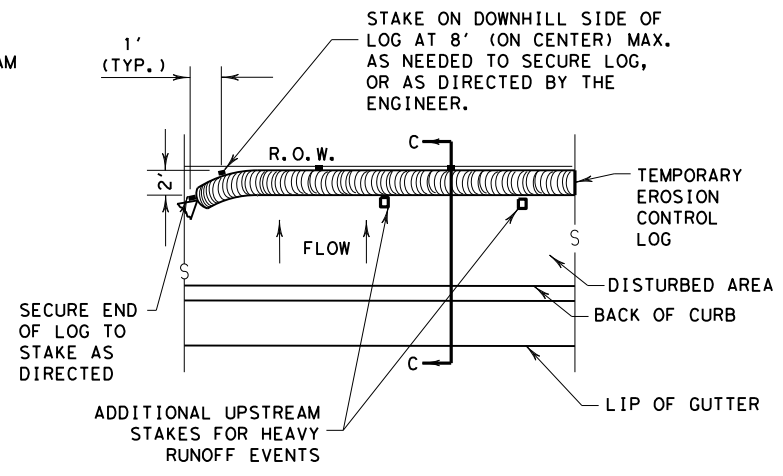


PLAN VIEW

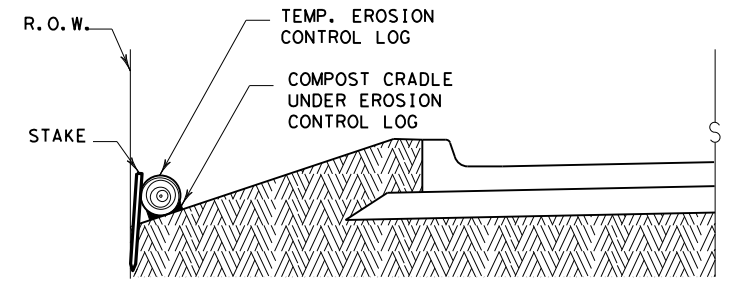


SECTION B-B
EROSION CONTROL LOG AT BACK OF CURB

CL-BOC



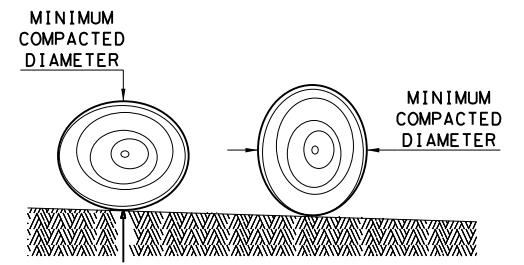
PLAN VIEW



SECTION C-C

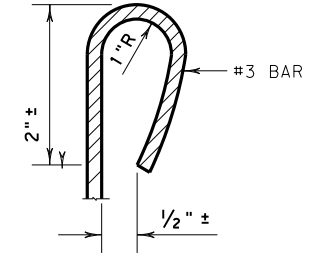
EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY

CL-ROW



DIAMETER MEASUREMENTS OF EROSION CONTROL LOGS SPECIFIED IN PLANS

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



REBAR STAKE DETAIL

SEDIMENT BASIN & TRAP USAGE GUIDELINES

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

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

Control logs should be placed in the following locations:

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

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

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

GENERAL NOTES:

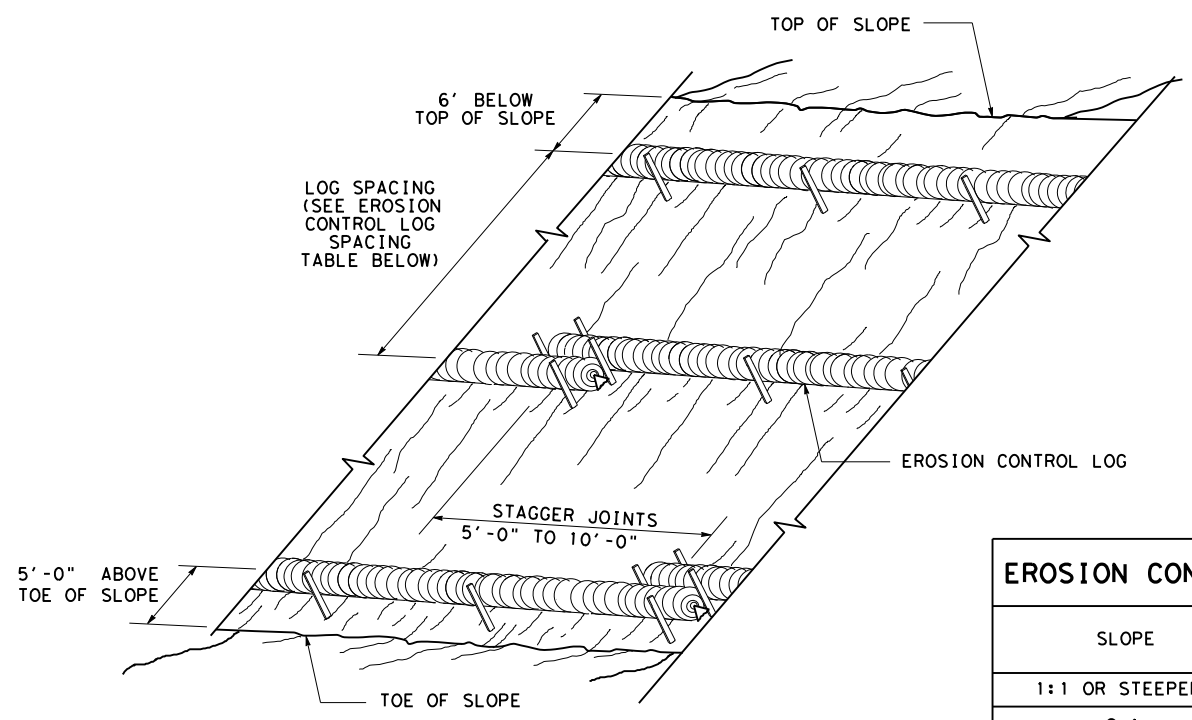
1. EROSION CONTROL LOGS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, OR AS DIRECTED BY THE ENGINEER.
2. LENGTHS OF EROSION CONTROL LOGS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED FOR THE PURPOSE INTENDED.
3. UNLESS OTHERWISE DIRECTED, USE BIODEGRADABLE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

SHEET 1 OF 3

		Design Division Standard	
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES EROSION CONTROL LOG EC (9) - 16			
FILE: ec916	DN: TxDOT	CK: KM	DW: LS/PT
© TxDOT: JULY 2016	CONT	SECT	JOB
REVISIONS	6459	31	001
	DIST	COUNTY	SHEET NO.
	CRP	NUECES	77

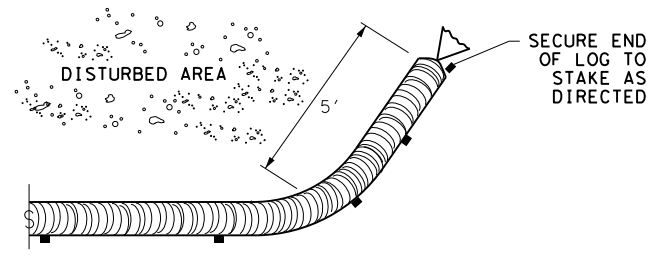
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: 11/17/2023
 FILE: C:\Users\VAHERNA12\Desktop\Leopard St\ec916.dgn



**EROSION CONTROL LOGS ON SLOPES
 STAKE AND TRENCHING ANCHORING**

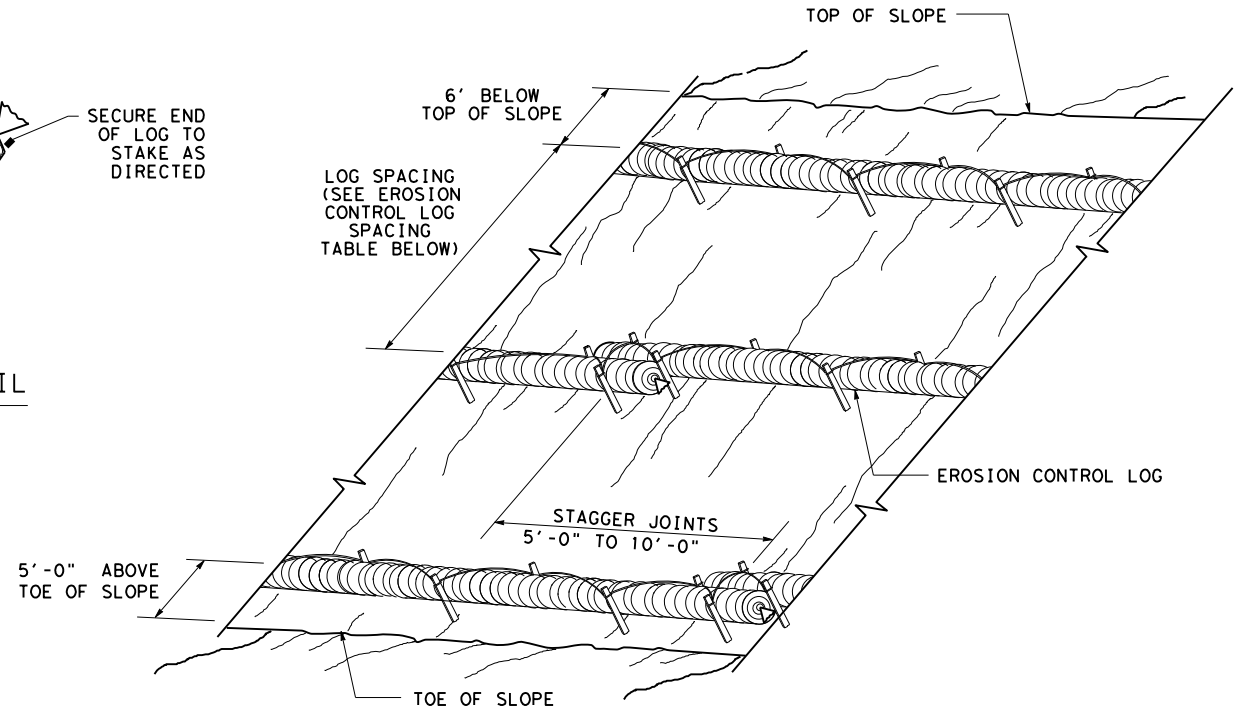
CL-SST



END SECTION RAP DETAIL

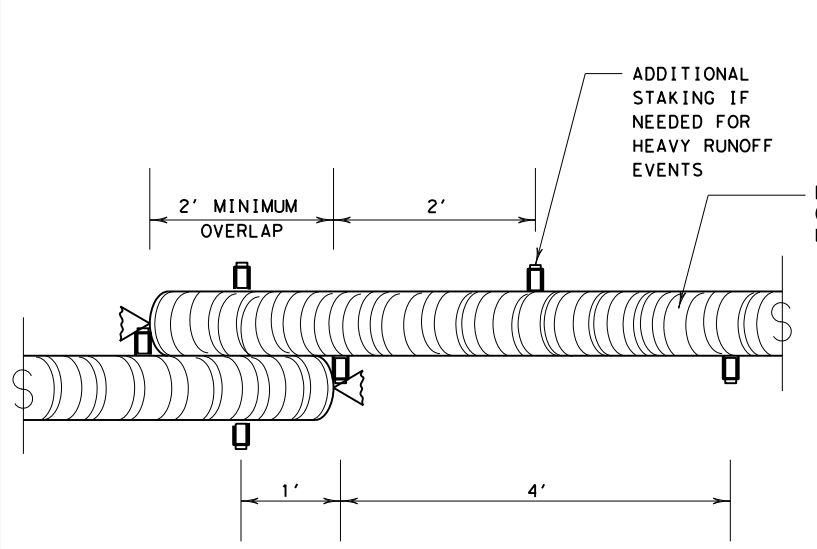
SLOPE	LOG DIAMETER			
	6"	8"	12"	18"
1:1 OR STEEPER	5'	10'	15'	20'
2:1	10'	20'	30'	40'
3:1	15'	30'	45'	60'
4:1 OR FLATTER	20'	40'	60'	80'

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



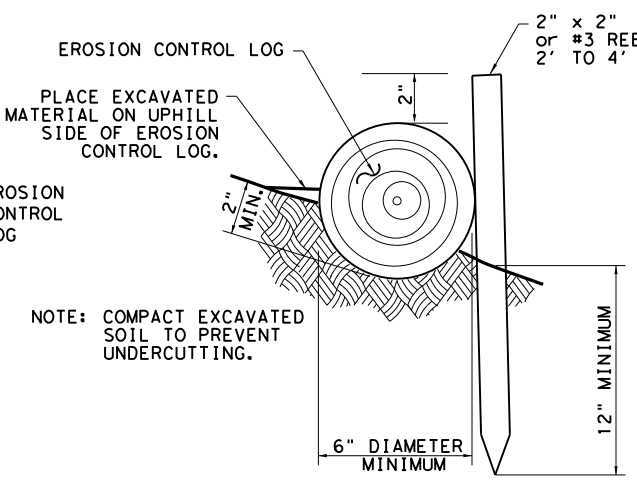
**EROSION CONTROL LOGS ON SLOPES
 STAKE AND LASHING ANCHORING**

CL-SSL

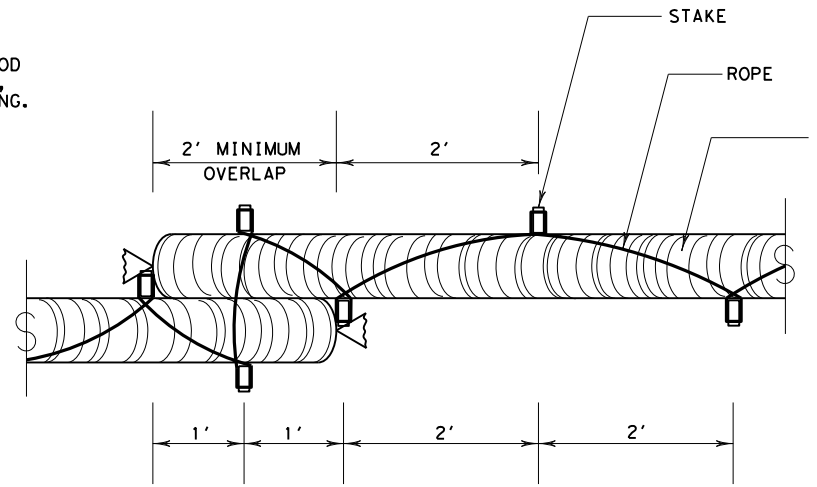


STAKE AND TRENCHING ANCHORING DETAIL

CL-SST

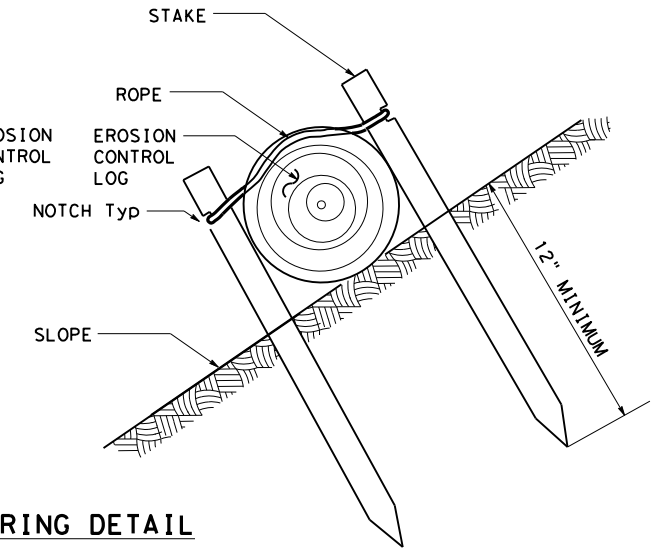


NOTE: COMPACT EXCAVATED SOIL TO PREVENT UNDERCUTTING.



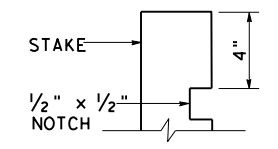
STAKE AND LASHING ANCHORING DETAIL

CL-SSL



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

TRENCH DEPTH TABLE



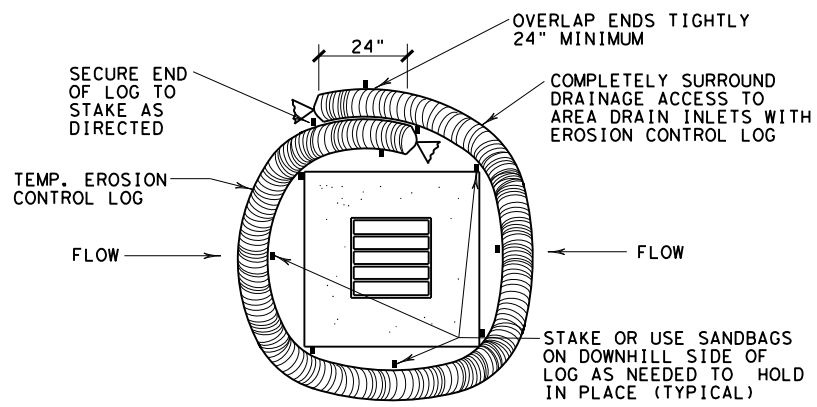
STAKE NOTCH DETAIL

SHEET 2 OF 3

		Design Division Standard	
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES EROSION CONTROL LOG EC(9) - 16			
FILE: ec116	DN: TxDOT	CK: KM	DW: LS/PT
© TxDOT: JULY 2016	CONT: 31	SECT: 001	JOB: SS 407
REVISIONS	6459	COUNTY: NUECES	SHEET NO. 78

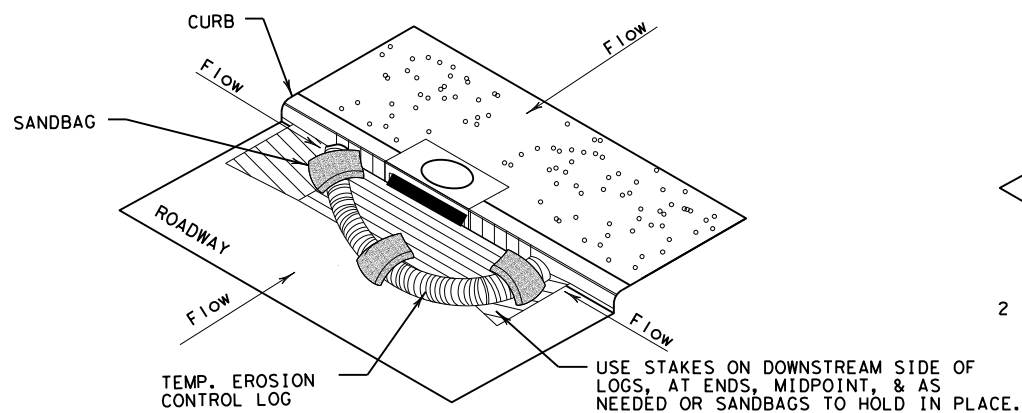
DISCLAIMER:
 The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: 11/17/2023
 FILE: C:\Users\VAHERNA12\Desktop\Leopard St\ec916.dgn



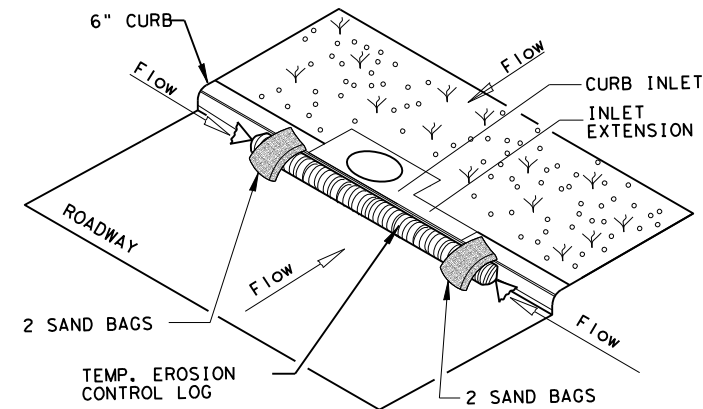
EROSION CONTROL LOG AT DROP INLET

CL-DI



EROSION CONTROL LOG AT CURB INLET

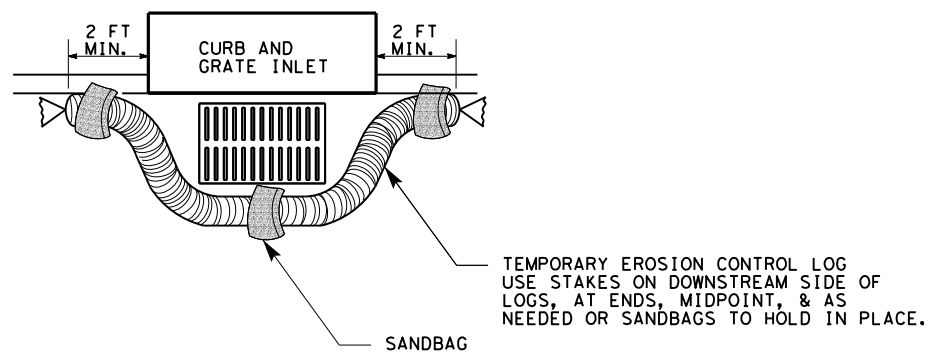
CL-CI



EROSION CONTROL LOG AT CURB INLET

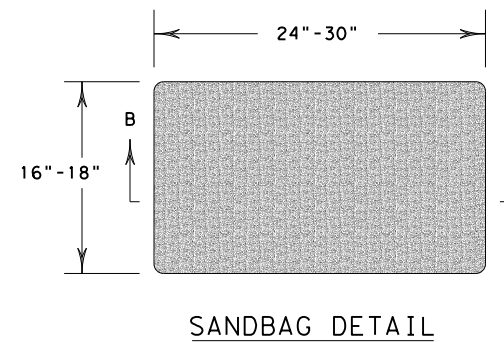
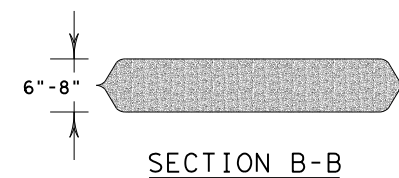
CL-CI

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



EROSION CONTROL LOG AT CURB & GRADE INLET

CL-GI



SHEET 3 OF 3



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

FILE: ec916	DN: TxDOT	CK: KM	DW: LS/PT	CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY
REVISIONS	6459	31	001	SS 407
DIST	COUNTY		SHEET NO.	
CRP	NUECES		79	

DATE: 11/15/2023 3:52:20 PM
FILE: pw://txdot.projectwiseonline.com:TXDOT4/Documents/16 - CRP/Maintenance Projects/16 RMC 6459-31-001 Base Repair with Sealcoat/1 - Pre-Letting/Design Files/Plan Set/5_Miscellaneous

PART 1 - GENERAL

1.01 DESCRIPTION

This project includes construction work within the right of way and/or properties of the Railroad and adjacent to its tracks, wire lines and other facilities. These sheets describe the minimum special requirements for coordination with the Railroad when working upon, over or under Railroad Right of Way or when impacting current or future Railroad operations. Coordinate with the Railroad while performing the work outlined herein, and afford the same cooperation with the Railroad as with TxDOT. Complete all submittals and work in accordance with TxDOT Standard Specifications, Railroad Guidelines and AREMA recommendations as modified by these minimum special requirements or as directed in writing by the Railroad Designated Representative.

For purposes of this project, the Railroad Designated Representative is the person or persons designated by the Railroad Manager of Industry and Public Projects to handle specific tasks related to the project.

1.02 REQUEST FOR INFORMATION / CLARIFICATION

Submit Requests for Information ("RFI") involving work within any Railroad Right of Way to the TxDOT Engineer. The TxDOT Engineer will submit the RFI to the Railroad Designated Representative for review and approval for RFI's corresponding to work within Railroad Right of Way. Allow six (6) weeks total time for review and approval, which includes four (4) weeks for review and approval by the Railroad.

1.03 PLANS / SPECIFICATIONS

TxDOT has received written Railroad approval of the plans and specifications for this project. Any revisions or changes in the plans after award of the Contract must have the approval of TxDOT and the Railroad.

PART 2 - UTILITIES AND FIBER OPTIC

Construct all utility installations in accordance with current AREMA recommendations, Railroad, TxDOT and owning utility specifications and requirements. Railroad general guidelines can be found on the Railroad website or by contacting the Railroad Designated Representative.

PART 3 - CONSTRUCTION

3.01 GENERAL

- A. Perform all work in compliance with all applicable Railroad, Federal Railroad Administration (FRA), and TxDOT rules and regulations. Arrange and conduct work in a manner that does not endanger or interfere with the safe operation of the tracks and property of the Railroad and the traffic moving on such tracks, or the wires, signals and other property of the Railroad, its tenants or licensees, at or in the vicinity of the Work. The safe operation of railroad train movements takes precedence over any work to be performed by the Contractor. The Contractor is responsible for train delay cost and lost revenue claims due to any delays or interruption of train operations resulting from Contractor's construction or other activities.
- B. Construction activities within 15 feet of the operational tracks will only be allowed if absolutely necessary and the Railroad's Designated Representative grants approval. Construction activities within 15 feet of the operational track(s) preferably allow the tracks to stay operational. In such cases, coordination and approval by the Railroad Track Manager is required with regard to schedule, flagging, and slow orders. See Sections 3.07 and 3.08 for additional information.
- C. Provide track protection for all work equipment (including rubber tired equipment) operating within 25 feet from nearest rail. When not in use, keep Contractor machinery and materials at least 50 feet from the Railroad's nearest track.
- D. Vehicular crossings of railroad track are allowed only at existing crossings, or haul road crossings developed with Railroad approval.
- E. The Contractor is also advised that new railroad facilities within the project may be built by the Railroad. If applicable, these facilities are delineated in the plans. Be aware of the limits of responsibilities and coordinate efforts with the Railroad and TxDOT.
- F. Railroad requirements do not allow work within 50 feet of track centers when a train passes the work site and all personnel must clear the area within 50 feet of the track centerline and secure all equipment. Additional allowances may be pursued as outlined in 3.02 and 3.03.
- G. All permanent clearances shall be verified before project closing.

3.02 RAILROAD OPERATIONS

- A. Trains and/or equipment are expected on any track, at any time, in either direction. Become familiar with the train schedules in this location and structure bid assuming intermittent track windows in this period, as defined in Paragraph B that follows.
- B. All railroad tracks within and adjacent to the contract site are active, and rail traffic over these facilities shall be maintained throughout the Project. Activities may include both through moves and switching moves to local customers. Railroad traffic and operations will occur continuously throughout the day and night on these tracks and shall be maintained at all times as defined herein. Coordinate and schedule the work so that construction activities do not interfere with railroad operations.
- C. Coordinate work windows with TxDOT and the Railroad's Designated Representative. Types of work windows include Conditional Work Windows and Absolute Work Windows, as defined below:
 - 1. Conditional Work Window: A Conditional Work Window is a period of time that railroad operations have priority over construction activities. When construction activities may occur on and/or adjacent to the railroad tracks within 25 feet of the nearest track, a railroad flag person will be required. At the direction of the railroad flag person, upon approach of a train, and when trains are present on the tracks, the tracks must be cleared (i.e., no construction equipment, materials or personnel within 25 feet, or as directed by the Railroad Designated Representative, from the tracks). Conditional Work Windows are available for the Project.
 - 2. Absolute Work Window: An Absolute Work Window is a period of time that construction activities are given priority over railroad operations. During this time frame, the designated railroad track(s) will be inactive for train movements and may be fouled by the Contractor. At the end of an Absolute Work Window, the railroad tracks and/or signals must be completely operational for train operations and all Railroad, Public Utilities Commission (PUC) and FRA requirements, codes and regulations for operational tracks must be satisfied. In the situation where the operating tracks and/or signals have been affected, the Railroad will perform inspections of the work prior to placing that track back into service. Railroad flag persons will be required for construction activities requiring an Absolute Work Window. Absolute Work Windows will not generally be granted. Any request will require a detailed explanation for Railroad review.

3.03 RIGHT OF ENTRY, ADVANCE NOTICE AND WORK STOPPAGES

- A. Do not perform any work within Railroad Right of Way without a valid executed Right of Entry Agreement if required on this project.
- B. Give advance notice to the Railroad as required in the "Contractor's Right of Entry Agreement" before commencing work in connection with construction upon or over Railroad Right of Way and observe the Railroad's rules and regulations with respect thereto.
- C. Perform all work upon Railroad Right of Way in a manner to avoid interference with or endanger the operations of the Railroad. Whenever work may affect the operations or safety of trains, submit the work method to the Railroad Designated Representative for approval. Approval does not relieve the Contractor from liability. Do not commence any work which requires flagging service or inspection service until the flagging protection required by the Railroad is available at the job site. See Section 3.15 for railroad flagging requirements.
- D. Make requests in writing for both Absolute and Conditional Work Windows, at least 30 days in advance of any work. Include in the written request:
 - 1. Exactly what the work entails.
 - 2. The days and hours that work will be performed.
 - 3. The exact location of work, and proximity to the tracks.
 - 4. The type of window requested and the amount of time requested.
 - 5. The designated contact person.Provide a written confirmation notice to the Railroad at least 48 hours before commencing work in connection with approved work windows when work is within 25 feet of nearest rail. Perform all work in accordance with previously approved work plans.
- E. Make provisions to protect operations and property of the Railroad should a condition arising from, or in connection with the work, require immediate and unusual action. If in the judgment of the Railroad Designated Representative such provisions are insufficient, the Railroad Designated Representative may require or provide such provisions as deemed necessary. In any event, such provisions shall be at the Contractor's expense and without cost to the Railroad or TxDOT. The Railroad or TxDOT shall have the right to order the Contractor to temporarily cease operations in the event of an emergency or, if in the opinion of the Railroad Designated Representative, the Contractor's operations could endanger railroad operations. In the event of such an order, immediately notify TxDOT of the order.

3.04 INSURANCE

Do not begin work upon or over Railroad Right of Way until furnishing the Railroad with the insurance policies, binders, certificates and endorsements required by the "Contractor's Right of Entry Agreement", and until the Railroad Designated Representative has advised TxDOT that such insurance is in accordance with the Agreement.

3.05 RAILROAD SAFETY ORIENTATION

- A. Complete the railroad course "Orientation for Contractor's Safety", and maintain current registration prior to working on railroad property. This course is required to be completed annually by Contractor and Subcontractor personnel working on site.

"UPRR, BNSF, KCS/TEXMEX will not accept on-track safety training certificates from other railroads. Refer to Railroad specific contractor right of entry for training information."
- B. Know and follow the "Contractor's Right of Entry Agreement" EXHIBIT D, MINIMUM SAFETY REQUIREMENTS regarding clothing, personal protective equipment, and general safety requirements.

3.06 COOPERATION

The Railroad will cooperate with Contractor so that work may be conducted in an efficient manner, and will cooperate with Contractor in enabling use of Railroad Right of Way in performing the work.


3.07 MINIMUM CONSTRUCTION CLEARANCES FOR FALSEWORK AND OTHER TEMPORARY STRUCTURES

Abide by the following minimum temporary clearances during the course of construction:
A. 15' - 0" (BNSF) (UPRR) and 14' - 0" (KCS) horizontal from centerline of track
B. 22' (KCS) and 21' - 6" (UPRR & BNSF) vertically above top of rail.

For construction clearance less than listed above, obtain local Railroad Operating Unit review and approval.

3.08 APPROVAL OF REDUCED CLEARANCES

- A. Maintain minimum track clearances during construction as specified in Section 3.07.
- B. Submit any proposed infringement on the specified minimum clearances to the Railroad Designated Representative through TxDOT at least 30 days in advance of the work. Do not proceed with such infringement without written approval by the Railroad Designated Representative.
- C. Do not commence work involving an approved infringement without receiving written assurance from the Railroad Designated Representative that arrangements have been made for any necessary flagging service.

 Texas Department of Transportation				Rail Division	
RAILROAD REQUIREMENTS FOR NON-BRIDGE CONSTRUCTION PROJECTS					
FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CR: TxDOT	
© TxDOT October 2018	CONT	SECT	JOB	HIGHWAY	
REVISIONS March 2020	6459	31	001	SS 407	
	DIST	COUNTY	SHEET NO.		
CRP	NUECES		80		

DATE: 11/15/2023 3:52:35 PM
 FILE: \\txdot.projectwiseonline.com:TXDOT4\Documents\16 - CRP\Maintenance Projects\16 RMC_6459-31-001 Base Repair with Sealcoat\1 - Pre-Letting\Design Files\Plan Set\5_Miscellion

3.09 MAINTENANCE OF RAILROAD FACILITIES

- A. Maintain all ditches and drainage structures free of silt or other obstructions resulting from Contractor's operations. Repair eroded areas and any other damage within Railroad Right of Way and repair any other damage to the property of the Railroad, or its tenants.
- B. Perform all such maintenance and repair of damages due to the Contractor's operations at Contractor's expense.
- C. Submit a proposed method of erosion control for review by the Railroad prior to beginning any grading on the project site. Comply with all applicable local, state and federal regulations when developing and implementing such erosion control.

3.10 SITE INSPECTIONS BY RAILROAD'S DESIGNATED REPRESENTATIVE

- A. In addition to the office reviews of construction submittals, site inspections may be performed by the Railroad Designated Representative at significant points during construction, including the following if applicable:
 - 1. Pre-construction meetings.
 - 2. Pile driving/drilling of caissons or drilled shafts.
 - 3. Reinforcement and concrete placement for railroad bridge substructure and/or superstructure.
 - 4. Erection of precast concrete or steel bridge superstructure.
 - 5. Placement of waterproofing (prior to placing ballast on bridge deck).
 - 6. Completion of the bridge structure.
- B. Site inspection is not limited to the milestone events listed above. Site visits to check progress of the work may be performed at any time throughout the construction as deemed necessary by the Railroad.
- C. Provide a detailed construction schedule, including the proposed temporary horizontal and vertical clearances and construction sequence for all work to TxDOT for submittal to the Railroad Designated Representative for review prior to commencement of work. Include the anticipated dates when the above listed events will occur. Update this schedule for the above listed events as necessary and each month at a minimum to allow the Railroad to schedule site inspections.

3.11 RAILROAD REPRESENTATIVES

Railroad representatives, conductors, flag person or watch person will be provided by the Railroad at expense of TxDOT to protect Railroad facilities, property and movements of its trains or engines. In general, the Railroad will furnish such personnel or other protective services as follows:

- A. When any part of any equipment is standing or being operated within 25 feet, measured horizontally, from nearest rail of any track on which trains may operate, or when any object is off the ground and any dimension thereof could extend inside the 25 foot limit, or when any erection or construction activities are in progress within such limits, regardless of elevation above or below track.
- B. For any excavation below elevation of track subgrade if, in the opinion of the Railroad Designated Representative, track or other railroad facilities may be subject to settlement or movement.
- C. During any clearing, grubbing, excavation or grading in proximity to railroad facilities, which, in the opinion of the Railroad Designated Representative, may endanger railroad facilities or operations.
- D. During any Contractor's operations when, in the opinion of the Railroad Designated Representative, railroad facilities, including, but not limited to, tracks, buildings, signals, wire lines, or pipe lines, may be endangered.
- E. Arrange with the Railroad Designated Representative to provide the adequate number of flag persons to accomplish the work.

3.12 COMMUNICATIONS AND SIGNAL LINES

If required, the Railroad will rearrange its communications and signal lines, its grade crossing warning devices, train signals and tracks, and facilities that are in use and maintained by the Railroad's forces in connection with its operation at expense of TxDOT. This work by the Railroad will be done by its own forces and it is not a part of the Work under this Contract.

3.13 TRAFFIC CONTROL

Coordinate any operations that control traffic across or around railroad facilities with the Railroad Designated Representative.

3.14 CONSTRUCTION EXCAVATIONS AND BORING ACTIVITIES UNDER TRACK

- A. Take special precaution and care in connection with excavating and shoring. Excavations for construction of footings, piers, columns, walls or other facilities that require shoring shall comply with requirements of TxDOT, OSHA, AREMA and Railroad "Guidelines for Temporary Shoring".
- B. The project plans indicate whether there are fiber optic lines or other such telecommunications systems that require consideration. Regardless, contact the necessary call center to determine if such cable systems are present:

UPRR 1-800-336-9193
 7:00 AM to 9:00 PM CST Monday-Friday except holidays,
 staffed 24 hrs/day for emergencies
 48 hrs notice required

BNSF 1-800-533-2891
 24 hour number
 5 working days notice required

KCS 1-800-344-8377
 Texas One Call, a 24 hour number
 48 hrs notice required, excluding weekends and holidays

If a telecommunications system is buried anywhere on or near railroad property, coordinate with TxDOT, the Railroad and the Telecommunication Company(ies) to arrange for relocation or protective measures prior to beginning work on or near railroad property. Refer to the project General Notes for additional information.


- C. Projects involving a boring or jack and bore operation under track such as drainage pipes or culverts and utilities require an installation plan reviewed and approved by the Railroad and TxDOT prior to proceeding with such construction. A railroad inspector and contractor assisted monitoring of ground and track movement is required to maintain safe passage of rail traffic. Stop installation and do not allow passage of trains if movements in excess of 1/4 inch vertical or horizontal is detected in the tracks. Immediately repair the damage to the satisfaction of TxDOT and the Railroad before proceeding.

3.15 RAILROAD FLAGGING

Per the Right of Entry Agreement for flagging, notify the Railroad Representative at least 10 working days in advance of Contractor's work and at least 30 working days in advance of any Contractor's work in which any person or equipment will be within 25 feet of nearest rail or as specified in the Contractor Right of Entry (CROE).

3.16 CLEANING OF RIGHT-OF-WAY

When work is complete, remove all tools, implements, and other materials brought into Railroad Right of Way and leave the right of Way in a clean and presentable condition to the satisfaction of TxDOT and the Railroad.

 Texas Department of Transportation				Rail Division	
RAILROAD REQUIREMENTS FOR NON-BRIDGE CONSTRUCTION PROJECTS					
FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT	
©TxDOT October 2018	CONT	SECT	JOB	HIGHWAY	
REVISIONS March 2020	6459	31	001	SS 407	
DIST	COUNTY			SHEET NO.	
CRP	NUECES			81	

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

I. WORK AT CROSSING LOCATIONS (AT GRADE, HIGHWAY OVERPASS, HIGHWAY UNDERPASS, PEDESTRIAN, OR CLOSED/ABANDONED)

This project is adjacent or parallel work, not within RR ROW:
 DOT No.: 900191X
 Crossing Type: RR under NB SS 407 (Leopard St)
 RR Company Operating Track at Crossing: Texas Mexican Railway
 RR Company Owning Track at Crossing: Canadian Pacific Kansas City Railroad
 RR MP: 0.000
 RR Subdivision: Laredo
 City: Corpus Christi
 County: Nueces
 CSJ at this Crossing: 6459-31-001
 Latitude: 27.7974008
 Longitude: -97.4557804

Scope of Work, including any TCP, to be performed by State Contractor:

The state's Contractor will be performing seal coat and base repair operations on the approaches up to the structure that carries SS 407 northbound traffic above the RR tracks within about 135 feet of the centerline of the tracks. Traffic control will be implemented through railroad ROW with TCP channelizers on the structure above the railroad tracks. RR flagging to be provided for the entire duration of TCP through railroad ROW.

Scope of Work to be performed by Railroad Company:

None

II. FLAGGING & INSPECTION

No. of Days of Railroad Flagging Expected: 1
 On this project, night or weekend flagging is:
 Expected
 Not Expected

Flagging services will be provided by:

Railroad Company: 1) Txdot will pay flagging invoices. Flagging Agreement with railroad will be needed or, 2) Permitted crossing. Railroad company to provide flagging.
 Outside Party: Contractor will pay flagging invoices to be reimbursed by TxDOT

Contractor must incorporate flaggers into anticipated construction schedule. The Railroad requires a 30-day notice if their flaggers are to be utilized. If Contractor falls behind schedule due to their own negligence and is not ready for scheduled flaggers, any flagging charges will be paid by Contractor.

Contact Information for Flagging:

UPRR UP.info@railpros.com
 Call Center 877-315-0513, Select #1 for flagging
 UP.request@nrssinc.net
 Call Center 877-984-6777
 BNSF BNSFinfo@railprofs.com
 Call Center 877-315-0513, Select #1 for flagging
 CPKCR KCS.info@railpros.com
 Call Center 877-315-0513, Select #1 for flagging
 Bottom Line On-Track Safety Services
 bottomline076@aol.com, 903-767-7630

OTHERS:

Contractor must incorporate railroad construction inspection into anticipated construction schedule.

Not Required
 Required. Contact Information for Construction Inspection:

III. CONSTRUCTION WORK TO BE PERFORMED BY THE RAILROAD

Required.
 Not Required
 Railroad Point of Contact: _____

Coordinate with TxDOT for any work to be performed by the Railroad Company. TxDOT must issue a work order for any work done by the Railroad Company prior to the work being performed.

IV. RAILROAD INSURANCE REQUIREMENTS

The Contractor shall confirm the insurance requirements with the Railroad as the insurance limits are subject to change without notice.

Insurance policies and corresponding certificates of insurance must be issued by the contractor on behalf of the Railroad. Separate insurance policies and certificates are required when more than one Railroad Company is operating on the same right of way, or when several Railroad Companies are involved and operate on their own separate right of ways.

No direct compensation will be made to the Contractor for providing the insurance coverages shown below or any deductibles. These costs are incidental to the various bid items.

Escalated Limits	
Type of Insurance	Amount of Coverage (Minimum)
Workers Compensation	\$500,000 / \$500,000 / \$500,000
Commercial General Liability	\$2,000,000 / \$4,000,000
Business Automobile	\$2,000,000

Railroad Protective Liability Limits	
<input type="checkbox"/> Not Required	
<input checked="" type="checkbox"/> Non - Bridge/Typical Maintenance Projects. Includes repairs to overpass/underpass and culvert structures	\$2,000,000 / \$6,000,000
<input type="checkbox"/> Bridge Structure Projects. Includes new construction or replacement of overpass/underpass structures	\$5,000,000 / \$10,000,000
<input type="checkbox"/> Other: _____	

V. CONTRACTOR'S RIGHT OF ENTRY (CROE)

Not Required
 Required: UPRR Maintenance Consent Letter. TxDOT to assist
 Required: TxDOT to assist in obtaining the UPRR CROE
 Required: Contractor to obtain

- BNSF: _____
https://bnsf.railpermitting.com
- CPKCR
https://jllrpg.360works.com/fmi/webd/rpo_web_kcs.fmp12
- Other Railroads: _____

To view previously approved CROE templates agreed upon between the State and Railroad, see: <https://www.txdot.gov/business/resources/railroad-highway-crossing/sample-right-of-entry-agreements.html>

Approved CROE templates are not to be modified by the Contractor.

Contractor shall not operate within Railroad Right of Way without an executed Construction & Maintenance Agreement between the State and the Railroad and an executed CROE between the Contractor and the Railroad if required on project.

VI. RAILROAD COORDINATION MEETING

A Railroad Coordination Meeting is required. See item 5, Article 8.1, of the Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges Manual for more details.

VII. RAILROAD SAFETY ORIENTATION

A. Complete the Railroad's course "Orientation for Contractor's Safety," and maintain registration prior to working on the Railroad's property. This course is required to be completed annually by Contractor and Subcontractor personnel working on site.

UPRR, BNSF, CPKCR will not accept on-track safety training certificates from other Railroads. Refer to each Railroad's specific contractor right of entry for training information.

Know and follow the Contractor's Right of Entry Agreement EXHIBIT D, MINIMUM SAFETY REQUIREMENTS regarding clothing, personal protective equipment, and general safety requirements.

VIII. SUBCONTRACTORS

Contractor shall not subcontract work without written consent of TxDOT. Subcontractors are subject to the same insurance requirements as the Prime Contractor.

IX. EMERGENCY NOTIFICATION

In Case of Railroad Emergency
 Call: Canadian Pacific Kansas City Railroad
 Railroad Emergency Line at: 877-527-9464
 Location: DOT 900191X
 RR Milepost: 0.000
 Subdivision: Laredo

RRD Review Only
 Initials: _____
 Date: 12/05/2023

Rail Division

RAILROAD SCOPE OF WORK

PROJECT SPECIFIC DETAILS

FILE: rr-scope-of-work.pdf	DN: TxDOT	CK:	DW:	CK:
© TxDOT June 2014	CONT	SECT	JOB	HIGHWAY
6/2023	6459	31	001	SS0407
	DIST	COUNTY		SHEET NO.
	CRP	NUECES		82

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

I. WORK AT CROSSING LOCATIONS (AT GRADE, HIGHWAY OVERPASS, HIGHWAY UNDERPASS, PEDESTRIAN, OR CLOSED/ABANDONED)

This project is adjacent or parallel work, not within RR ROW:
 DOT No.: 923781J
 Crossing Type: RR under SB SS 407 (Leopard St)
 RR Company Operating Track at Crossing: Texas Mexican Railway
 RR Company Owning Track at Crossing: Canadian Pacific Kansas City Railroad
 RR MP: 158.100
 RR Subdivision: Laredo
 City: Corpus Christi
 County: Nueces
 CSJ at this Crossing: 6459-31-001
 Latitude: 27.7973137
 Longitude: -97.4557872

Scope of Work, including any TCP, to be performed by State Contractor:

The state's Contractor will be performing seal coat and base repair operations on the approaches up to the structure that carries SS 407 southbound traffic above the RR tracks within about 144 feet of the centerline of the tracks. Traffic control will be implemented through railroad ROW with TCP channelizers on the structure above the railroad tracks. RR flagging to be provided for the entire duration of TCP through railroad ROW.

Scope of Work to be performed by Railroad Company:

None

II. FLAGGING & INSPECTION

No. of Days of Railroad Flagging Expected: 1
 On this project, night or weekend flagging is:
 Expected
 Not Expected

Flagging services will be provided by:

Railroad Company: 1) Txdot will pay flagging invoices. Flagging Agreement with railroad will be needed or, 2) Permitted crossing. Railroad company to provide flagging.
 Outside Party: Contractor will pay flagging invoices to be reimbursed by TxDOT

Contractor must incorporate flaggers into anticipated construction schedule. The Railroad requires a 30-day notice if their flaggers are to be utilized. If Contractor falls behind schedule due to their own negligence and is not ready for scheduled flaggers, any flagging charges will be paid by Contractor.

Contact Information for Flagging:

UPRR UP.info@railpros.com
 Call Center 877-315-0513, Select #1 for flagging
 UP.request@nrssinc.net
 Call Center 877-984-6777
 BNSF BNSFinfo@railprofs.com
 Call Center 877-315-0513, Select #1 for flagging
 CPKCR KCS.info@railpros.com
 Call Center 877-315-0513, Select #1 for flagging
 Bottom Line On-Track Safety Services
 bottomline076@aol.com, 903-767-7630

OTHERS:

Contractor must incorporate railroad construction inspection into anticipated construction schedule.

Not Required
 Required. Contact Information for Construction Inspection:

III. CONSTRUCTION WORK TO BE PERFORMED BY THE RAILROAD

Required.
 Not Required
 Railroad Point of Contact: _____

Coordinate with TxDOT for any work to be performed by the Railroad Company. TxDOT must issue a work order for any work done by the Railroad Company prior to the work being performed.

IV. RAILROAD INSURANCE REQUIREMENTS

The Contractor shall confirm the insurance requirements with the Railroad as the insurance limits are subject to change without notice.

Insurance policies and corresponding certificates of insurance must be issued by the contractor on behalf of the Railroad. Separate insurance policies and certificates are required when more than one Railroad Company is operating on the same right of way, or when several Railroad Companies are involved and operate on their own separate right of ways.

No direct compensation will be made to the Contractor for providing the insurance coverages shown below or any deductibles. These costs are incidental to the various bid items.

Escalated Limits	
Type of Insurance	Amount of Coverage (Minimum)
Workers Compensation	\$500,000 / \$500,000 / \$500,000
Commercial General Liability	\$2,000,000 / \$4,000,000
Business Automobile	\$2,000,000

Railroad Protective Liability Limits	
<input type="checkbox"/> Not Required	
<input checked="" type="checkbox"/> Non - Bridge/Typical Maintenance Projects. Includes repairs to overpass/underpass and culvert structures	\$2,000,000 / \$6,000,000
<input type="checkbox"/> Bridge Structure Projects. Includes new construction or replacement of overpass/underpass structures	\$5,000,000 / \$10,000,000
<input type="checkbox"/> Other: _____	

V. CONTRACTOR'S RIGHT OF ENTRY (CROE)

Not Required
 Required: UPRR Maintenance Consent Letter. TxDOT to assist
 Required: TxDOT to assist in obtaining the UPRR CROE
 Required: Contractor to obtain

- BNSF: _____
https://bnsf.railpermitting.com
- CPKCR
https://jllrpg.360works.com/fmi/webd/rpo_web_kcs.fmp12
- Other Railroads: _____

To view previously approved CROE templates agreed upon between the State and Railroad, see: <https://www.txdot.gov/business/resources/railroad-highway-crossing/sample-right-of-entry-agreements.html>

Approved CROE templates are not to be modified by the Contractor.

Contractor shall not operate within Railroad Right of Way without an executed Construction & Maintenance Agreement between the State and the Railroad and an executed CROE between the Contractor and the Railroad if required on project.

VI. RAILROAD COORDINATION MEETING

A Railroad Coordination Meeting is required. See item 5, Article 8.1, of the Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges Manual for more details.

VII. RAILROAD SAFETY ORIENTATION

A. Complete the Railroad's course "Orientation for Contractor's Safety," and maintain registration prior to working on the Railroad's property. This course is required to be completed annually by Contractor and Subcontractor personnel working on site.

UPRR, BNSF, CPKCR will not accept on-track safety training certificates from other Railroads. Refer to each Railroad's specific contractor right of entry for training information.

Know and follow the Contractor's Right of Entry Agreement EXHIBIT D, MINIMUM SAFETY REQUIREMENTS regarding clothing, personal protective equipment, and general safety requirements.

VIII. SUBCONTRACTORS

Contractor shall not subcontract work without written consent of TxDOT. Subcontractors are subject to the same insurance requirements as the Prime Contractor.

IX. EMERGENCY NOTIFICATION

In Case of Railroad Emergency
 Call: Canadian Pacific Kansas City Railroad
 Railroad Emergency Line at: 877-527-9464
 Location: DOT 923781J
 RR Milepost: 158.100
 Subdivision: Laredo

RRD Review Only
 Initials: [Signature]
 Date: 12/05/2023

Rail Division

RAILROAD SCOPE OF WORK
 PROJECT SPECIFIC DETAILS

FILE: rr-scope-of-work.pdf	DN: TxDOT	CK:	DW:	CK:
© TxDOT June 2014	CONT	SECT	JOB	HIGHWAY
6/2023	6459	31	001	SS0407
	DIST	COUNTY		SHEET NO.
	CRP	NUECES		83