

STATE OF TEXAS DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED STATE HIGHWAY IMPROVEMENT

STATE PROJECT NO.
C 439-5-26
NET LENGTH OF PROJECT= 14,573.00 Feet = 2.760 Miles

DESIGN SPEED = 35 MPH
FUNCTIONAL CLASS = MINOR ARTERIAL
AVERAGE DAILY TRAFFIC
FM 3466 TO US 70
2024 ADT = 2800
2044 ADT = 3800
TRUCK = 24.4%
US 70 TO IH 27
2024 ADT = 6500
2044 ADT = 8800
TRUCK = 18.3%

FHWA TEXAS DIVISION		PROJECT NO. C 439-5-26	SHEET NO. 1
STATE	DISTRICT	COUNTY	
TEXAS	LBB	HALE	
CONTROL	SECTION	JOB	HIGHWAY NO.
0439	05	026	SH 194

HALE COUNTY SH 194

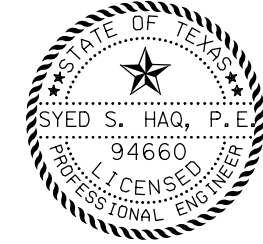
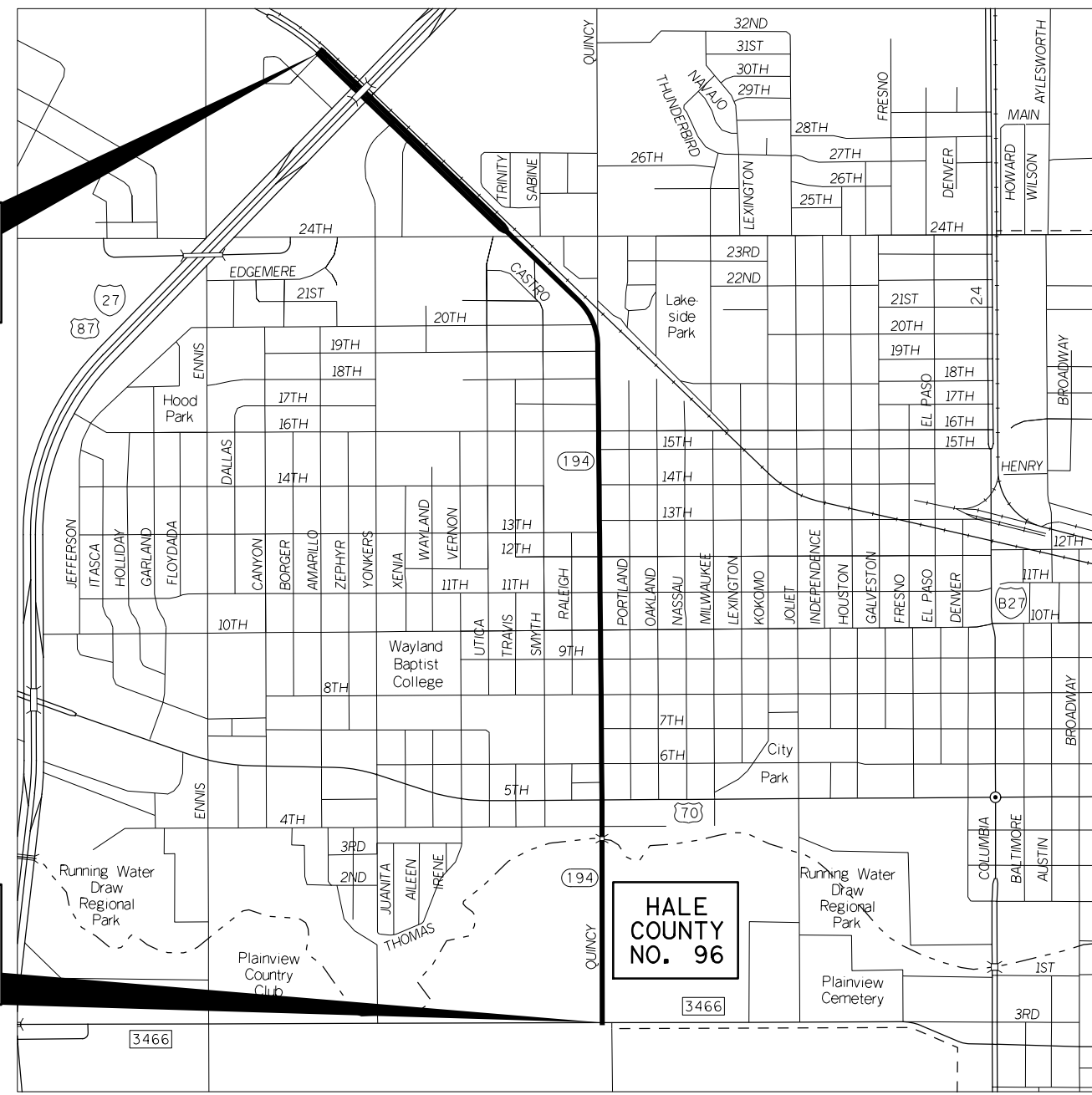
LIMITS: FROM NORTH OF IH 27 TO FM 3466
FOR THE REHABILITATION OF EXISTING ROAD

CONSISTING OF: GRADING, SUBGRADE TREATMENT, CONCRETE PAVING, ACP, SIDEWALK, ILLUMINATION, TRAFFIC SIGNALS, SIGNS, AND STRIPING

BEGIN PROJECT
CSJ: 439-05-026
STA: 146+06.00
TRM: 310+1.115

**REGISTERED ACCESSIBILITY
SPECIALIST (RAS)
INSPECTION REQUIRED**
TDLR NO. TABS2023012895

END PROJECT
CSJ: 439-05-026
STA: 0+33.00
TRM: 312+1.129



CONCURRENCE: 7/30/2024

DocuSigned by:
Charles Starnes
06D7F40EE34544B...
MAYOR, CITY OF PLAINVIEW

infraTECH
Engineers & Innovators, LLC
TBPE REGISTRATION NO. F-18368

SUBMITTED FOR LETTING: 7/29/2024

Syed Sajid Haq
PROJECT DESIGN ENGINEER



RECOMMENDED FOR LETTING: 7/30/2024

DocuSigned by:
Heath C. Bogeman, P.E.
A84DC312E64C4E3...
AREA ENGINEER

RECOMMENDED FOR LETTING: 7/29/2024

DocuSigned by:
Shelby C. Harris, P.E.
F9984108931347C...
DISTRICT DESIGN ENGINEER

APPROVED FOR LETTING: 7/30/2024

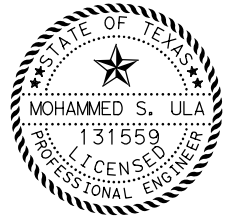
DocuSigned by:
Steph P. Warren, P.E.
642C865E4DD46A...
DISTRICT ENGINEER

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

NO SCALE
NO EXCEPTIONS
NO EQUATIONS
NO RR CROSSINGS

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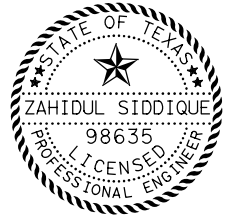
THE STANDARD SHEETS SPECIFICALLY IDENTIFIED BY AN "*" HAVE BEEN SELECTED BY MY OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

Mohammed S. Ula
MOHAMMED S. ULA, P.E. 9/6/2024
DATE



THE STANDARD SHEETS SPECIFICALLY IDENTIFIED BY AN "*" HAVE BEEN SELECTED BY MY OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

Syed S. Haq
SYED S. HAQ, P.E. 9/6/2024
DATE



THE STANDARD SHEETS SPECIFICALLY IDENTIFIED BY AN "*" HAVE BEEN SELECTED BY MY OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

Zahidul Siddique
ZAHIDUL SIDDIQUE, P.E. 9/6/2024
DATE

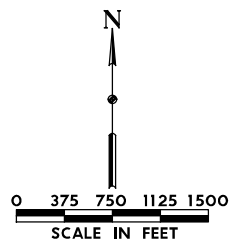
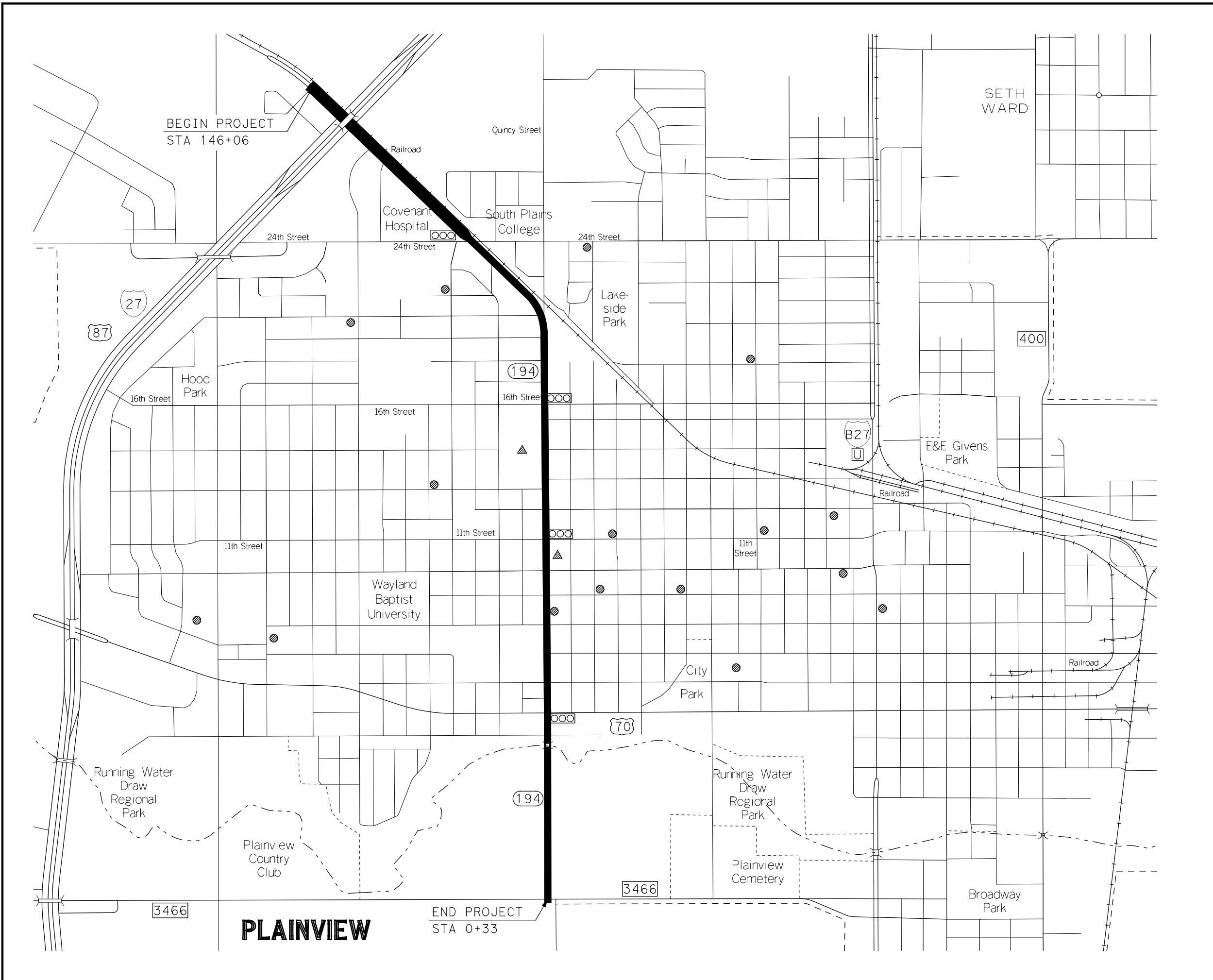


SH 194 FROM FM 3466 TO IH 27

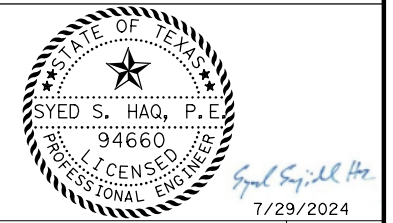
INDEX OF SHEETS

FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
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STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	2
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.plt
USER: Robinson DATE: 9/6/2024
FILE: SH194_SheetIndex.dgn



- LEGEND**
- PROJECT
 - HIGHWAY
 - STREET
 - RAILROAD
 - CITY LIMITS
 - BOUNDARY
 - WATERS OF THE U. S.
 - BRIDGE CLASS CULVERT
 - BRIDGE
 - SIGNALIZED INTERSECTION
 - CHURCH
 - SCHOOL



NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

LOCATION MAP

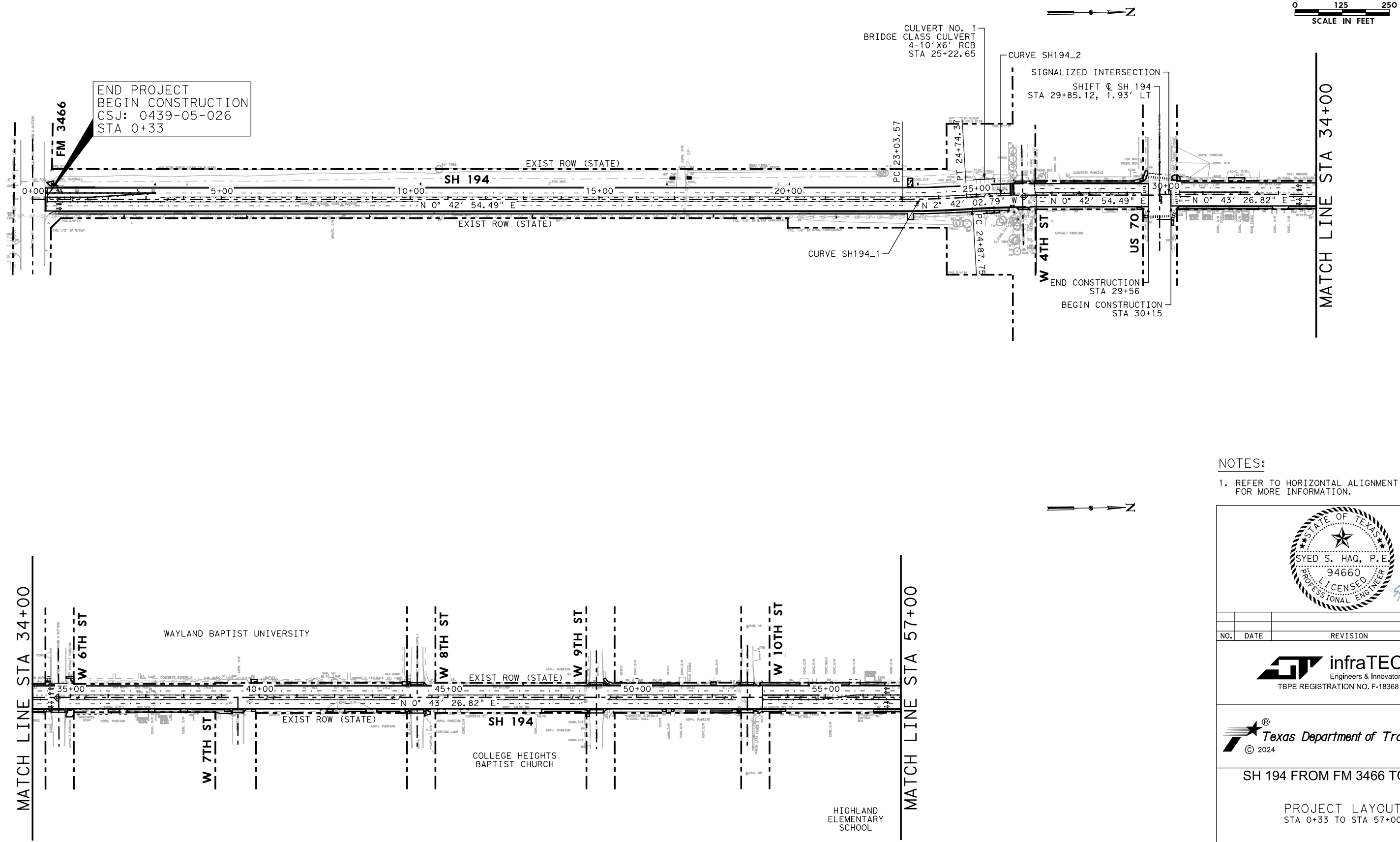
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FED. RD. DIV. NO:	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	3
CONTROL	SECTION	JOB	
0439	05	026	

PLAINVIEW

END PROJECT
STA 0+33

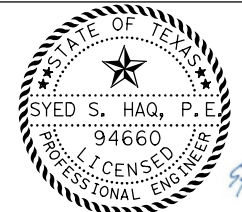
BEGIN PROJECT
STA 146+06

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NOTES:

1. REFER TO HORIZONTAL ALIGNMENT DATA SHEET FOR MORE INFORMATION.



NO.	DATE	REVISION	APPROVED

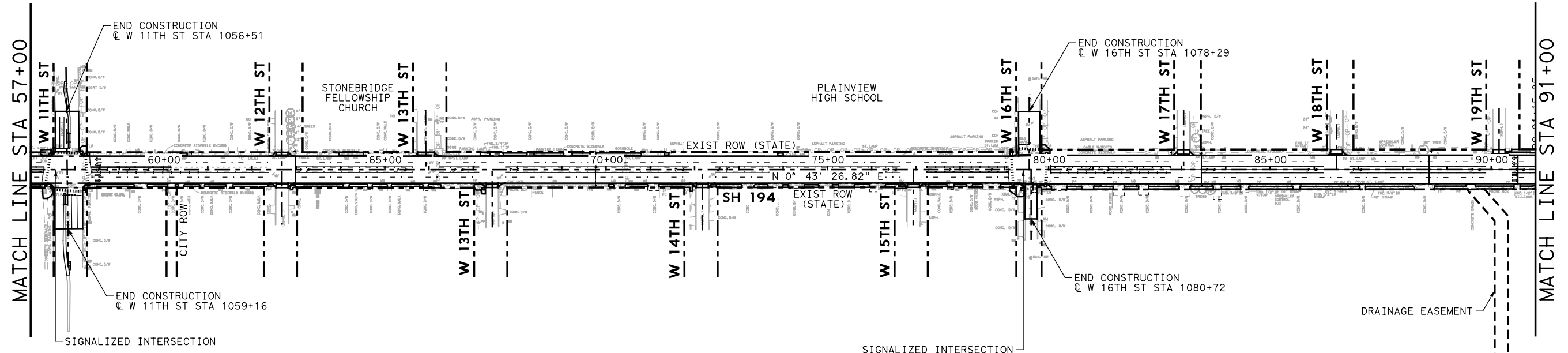
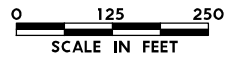
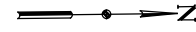


SH 194 FROM FM 3466 TO IH 27

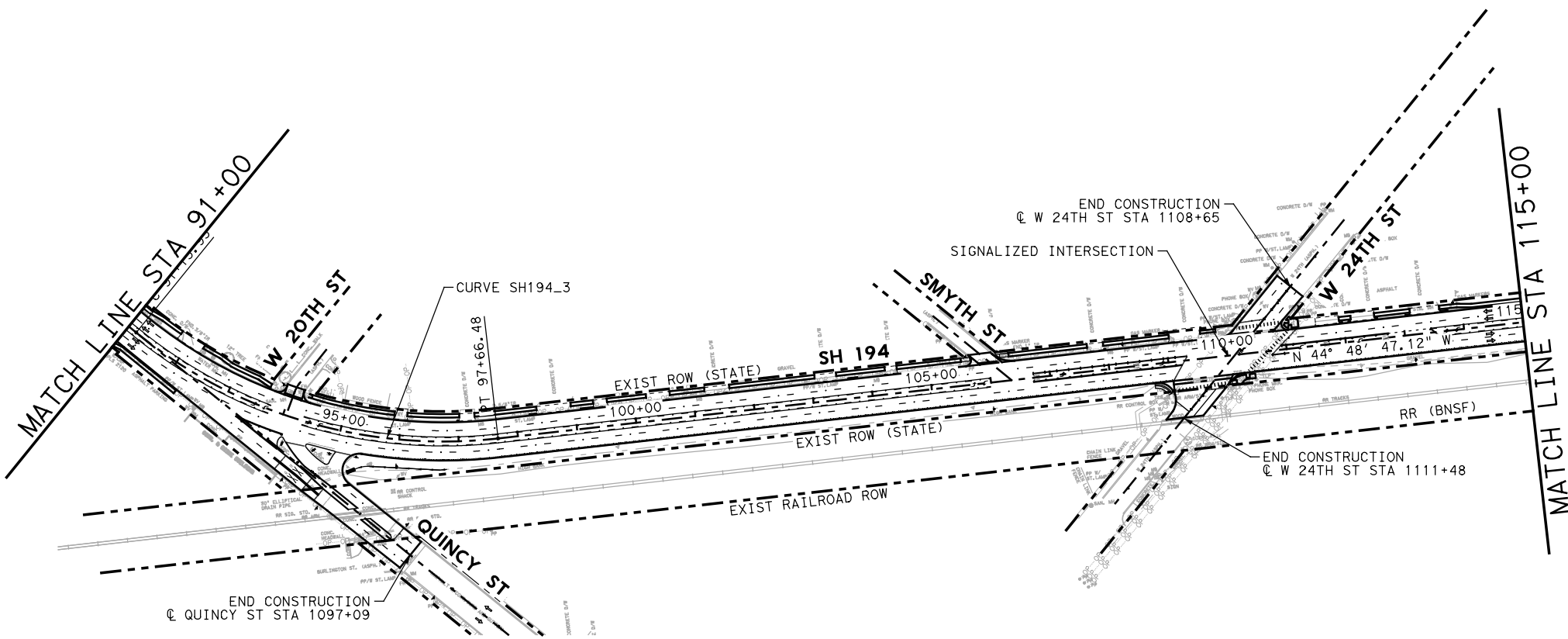
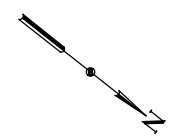
PROJECT LAYOUT
 STA 0+33 TO STA 57+00

HORZ SCALE: 1"=250'			SHEET 1 OF 3
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	4
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
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 FILE: SH194_ProjectLayout.dgn



NOTES:
 1. REFER TO HORIZONTAL ALIGNMENT DATA SHEET FOR MORE INFORMATION.



Professional Engineer Seal for Syed S. Haq, P.E., License No. 94660, State of Texas. The seal is circular with a star in the center and the text 'STATE OF TEXAS' around the top and 'SYED S. HAQ, P.E. 94660 LICENSED PROFESSIONAL ENGINEER' around the bottom. A signature and date '6/28/2024' are written next to the seal.

NO.	DATE	REVISION	APPROVED

infraTECH
 Engineers & Innovators, LLC
 TBPE REGISTRATION NO. F-18368

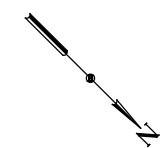
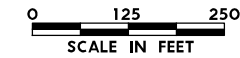
Texas Department of Transportation
 © 2024

SH 194 FROM FM 3466 TO IH 27
 PROJECT LAYOUT
 57+00 TO 115+00

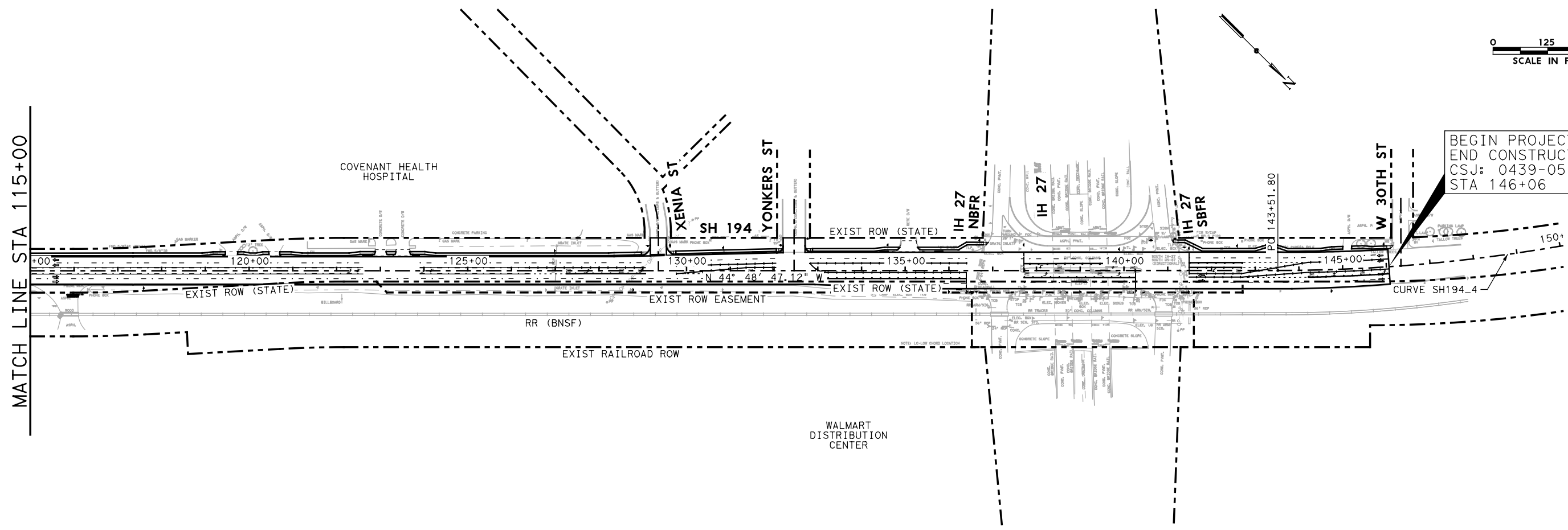
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FED. RD. DIV. NO.:	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	5
CONTROL	SECTION	JOB	
0439	05	026	

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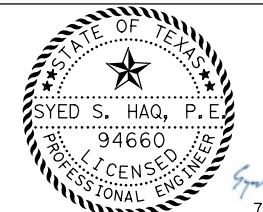
MATCH LINE STA 115+00



BEGIN PROJECT
 END CONSTRUCTION
 CSJ: 0439-05-026
 STA 146+06



- NOTES:
- REFER TO HORIZONTAL ALIGNMENT DATA SHEET FOR MORE INFORMATION.



NO.	DATE	REVISION	APPROVED

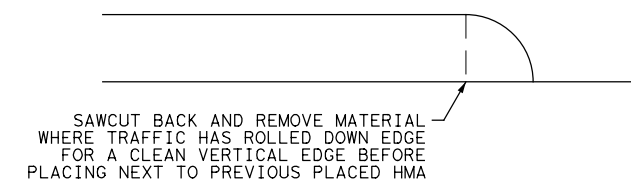
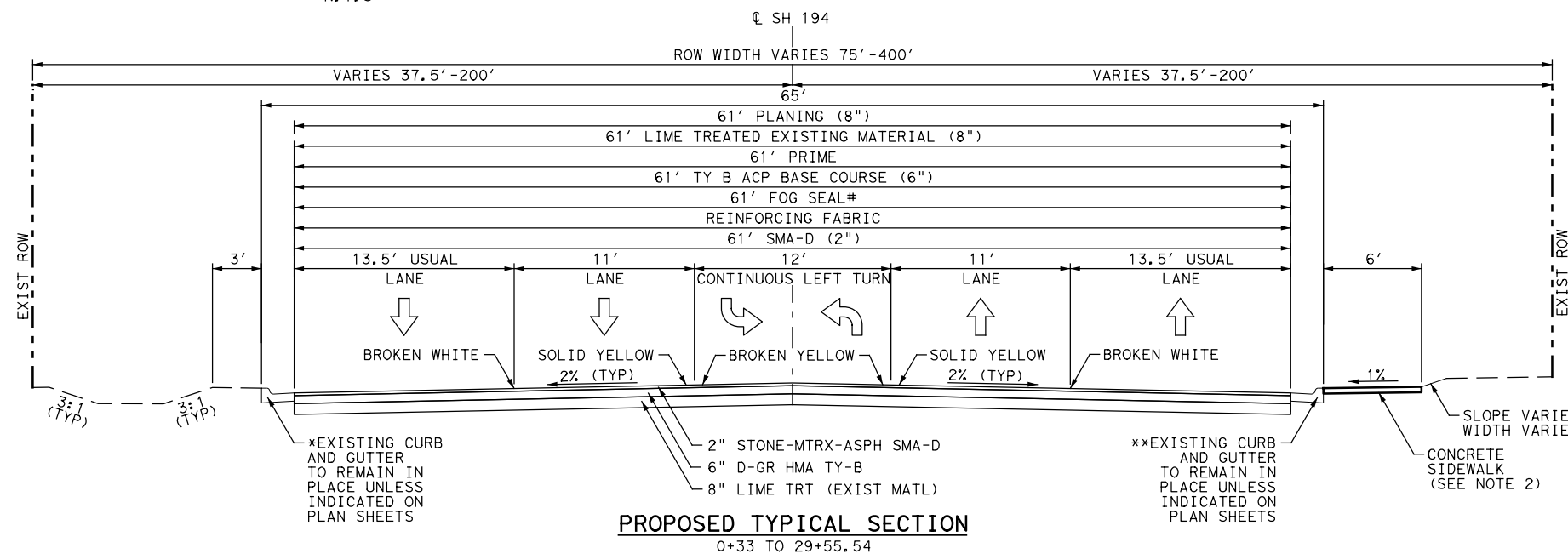
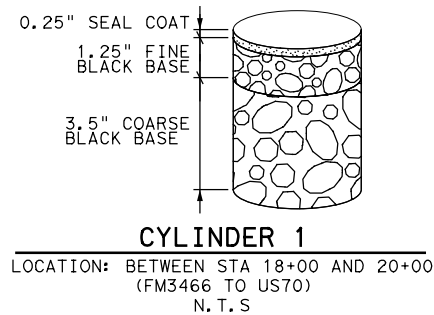
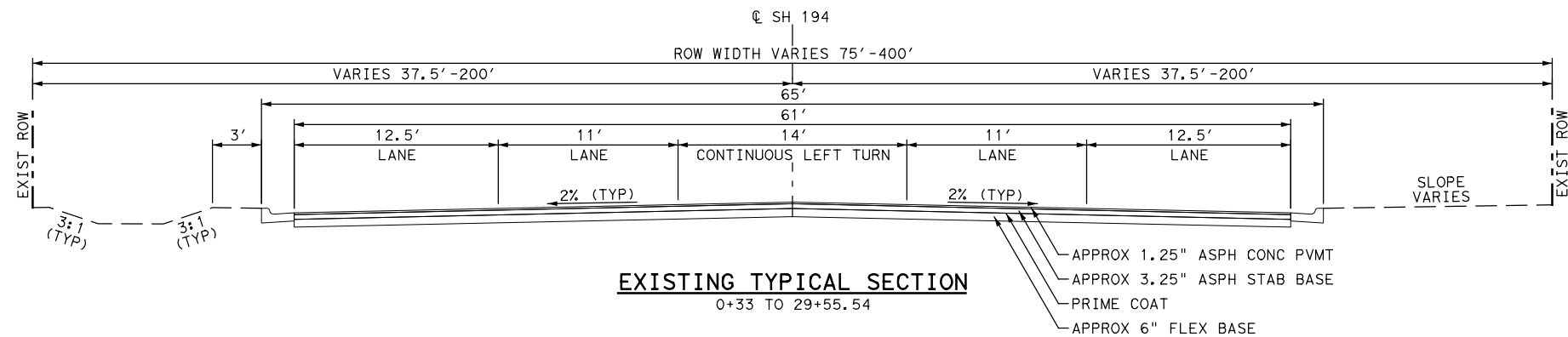


SH 194 FROM FM 3466 TO IH 27

PROJECT LAYOUT
 115+00 TO 146+06

HORZ SCALE: 1"=250'		SHEET 3 OF 3	
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	6
CONTROL	SECTION	JOB	
0439	05	026	

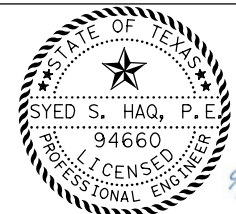
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 FILE: SH194_TypSec_Sheet.dgn



#ON TY B IF LAYER IS USED AS WINTER RIDING SURFACE AS DIRECTED BY ENGINEER
 *INSTALL CURB & GUTTER FROM STA 0+38 TO STA 1+64
 **INSTALL CURB & GUTTER FROM STA 1+23 TO STA 1+47 & STA 7+80 TO STA 8+12

NOTES

1. MAINTAIN EXISTING ROADWAY WIDTH AND CROSS SLOPES.
2. REFER TO ROADWAY PLAN AND PROFILE SHEETS FOR PROPOSED SIDEWALK LOCATIONS.
3. PLANING DEPTH VARIES. REMOVE MATERIALS 8" BELOW LIP OF GUTTER.
4. REMOVE BUILDUP OF ASPHALTIC MATERIAL TO THE SURFACE OF THE LIP OF GUTTER. REFERENCE EXISTING GRADE.
5. SOME MIXING OF SUBGRADE MATERIAL AND SALVAGE WILL BE NECESSARY TO ACHIEVE THE OVERALL 8" LIME TREAT DEPTH.
6. ASPHALT STABILIZED BASE COARSE BLACK BASE SHALL NOT BE USED AS RAP MATERIAL IN HOT MIX.
7. MILLING WITH PETROMAT WILL BE DISPOSED OF AND NOT USED IN THE RAP.
8. AFTER MILLING OPERATIONS, REMOVE ANY REMAINING ASPHALT MATERIAL ON TOP OF CURB AND GUTTER AND REMOVE ANY ASPHALT OR BASE MATERIAL REMAINING NEXT TO THE CURB AND GUTTER.



7/29/2024

NO.	DATE	REVISION	APPROVED

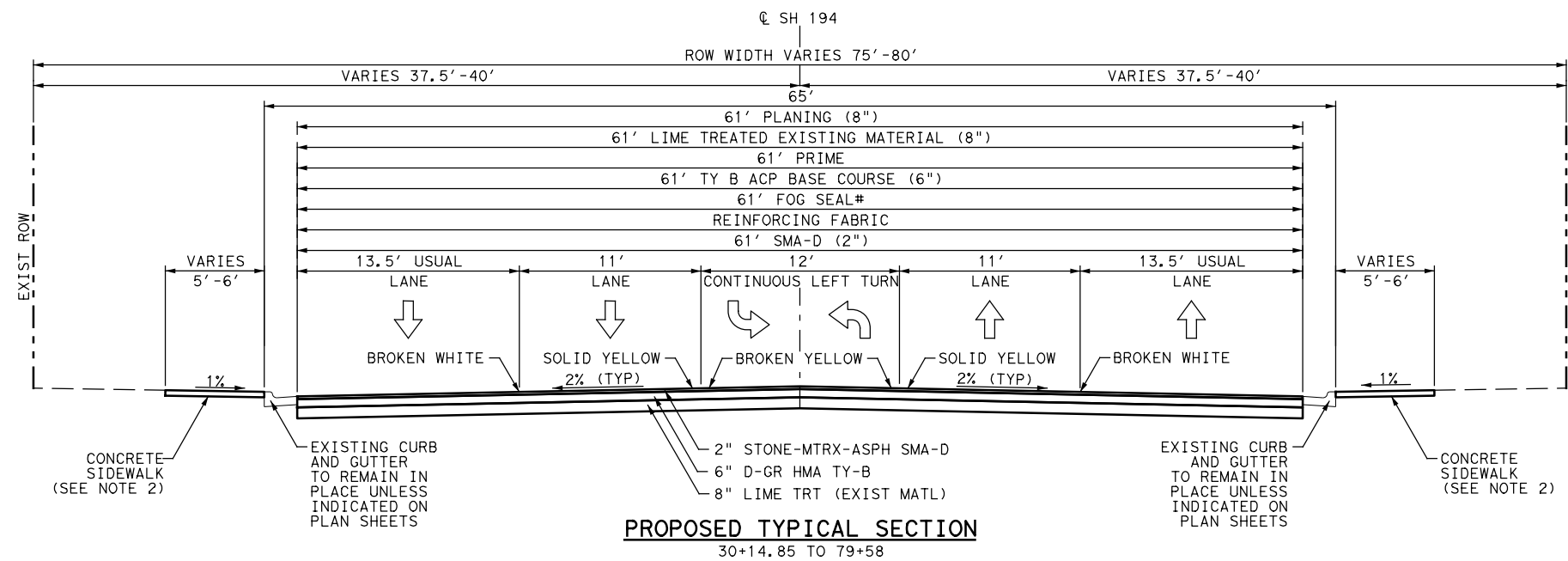
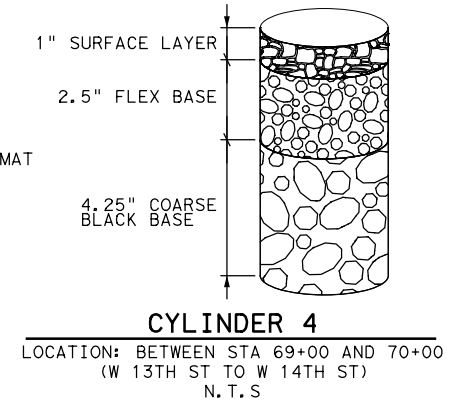
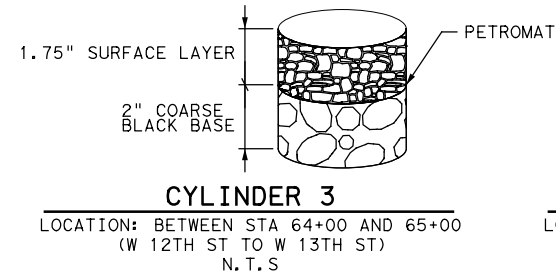
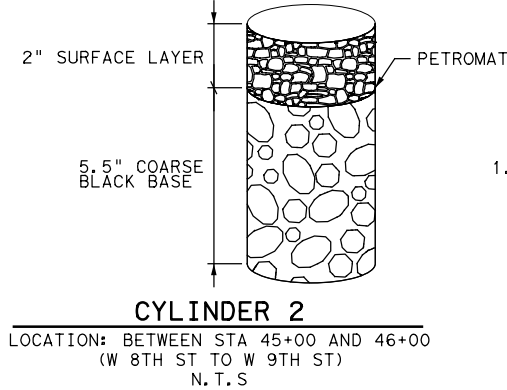
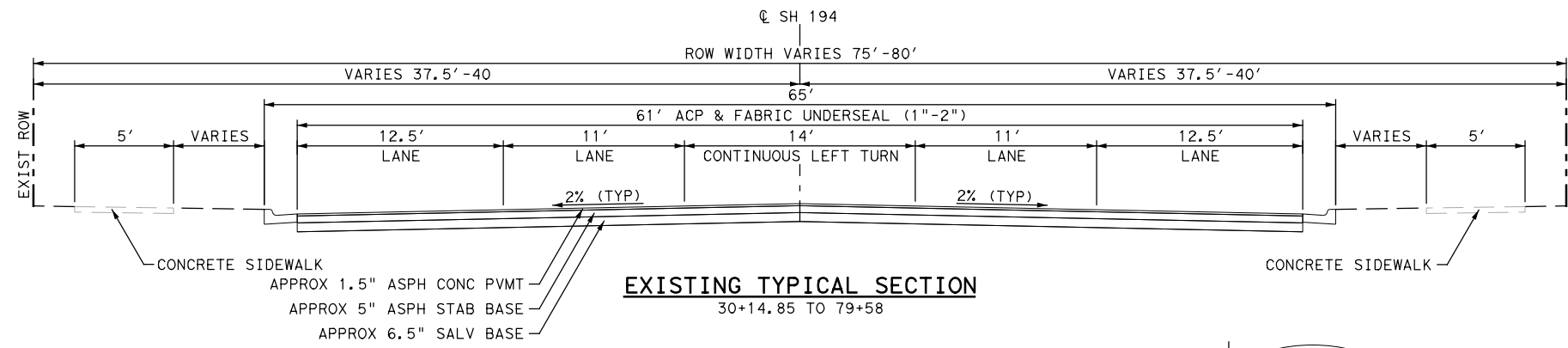


SH 194 FROM FM 3466 TO IH 27

TYPICAL SECTIONS

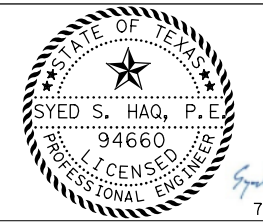
SHEET 1 OF 6			
FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	7
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:22:37 PM SCALE: 1/8"
 FILE: SH194_TypSec_Sheet.dgn



NOTES

1. MAINTAIN EXISTING ROADWAY WIDTH AND CROSS SLOPES.
2. REFER TO ROADWAY PLAN AND PROFILE SHEETS FOR PROPOSED SIDEWALK LOCATIONS.
3. PLANING DEPTH VARIES. REMOVE MATERIALS 8" BELOW LIP OF GUTTER.
4. REMOVE BUILDUP OF ASPHALTIC MATERIAL TO THE SURFACE OF THE LIP OF GUTTER. REFERENCE EXISTING GRADE.
5. SOME MIXING OF SUBGRADE MATERIAL AND SALVAGE WILL BE NECESSARY TO ACHIEVE THE OVERALL 8" LIME TREAT DEPTH.
6. ASPHALT STABILIZED BASE COARSE BLACK BASE SHALL NOT BE USED AS RAP MATERIAL IN HOT MIX.
7. MILLING WITH PETROMAT WILL BE DISPOSED OF AND NOT USED IN THE RAP.
8. AFTER MILLING OPERATIONS, REMOVE ANY REMAINING ASPHALT MATERIAL ON TOP OF CURB AND GUTTER AND REMOVE ANY ASPHALT OR BASE MATERIAL REMAINING NEXT TO THE CURB AND GUTTER.



NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

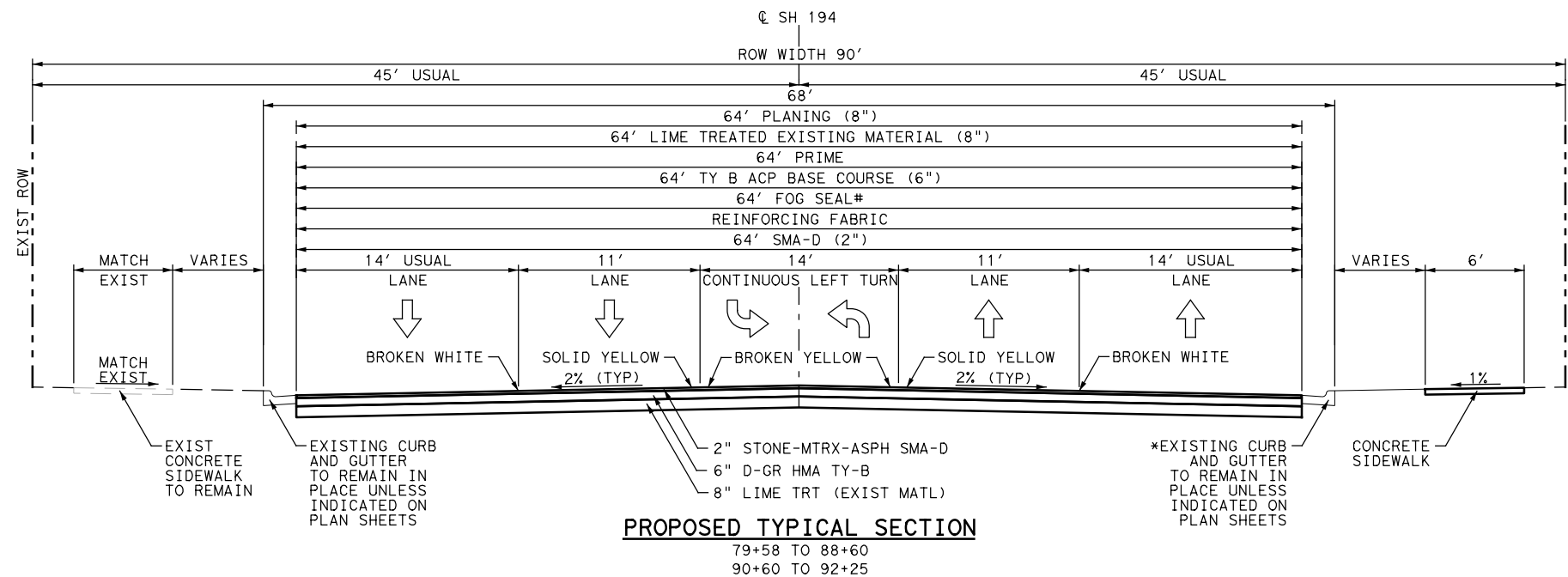
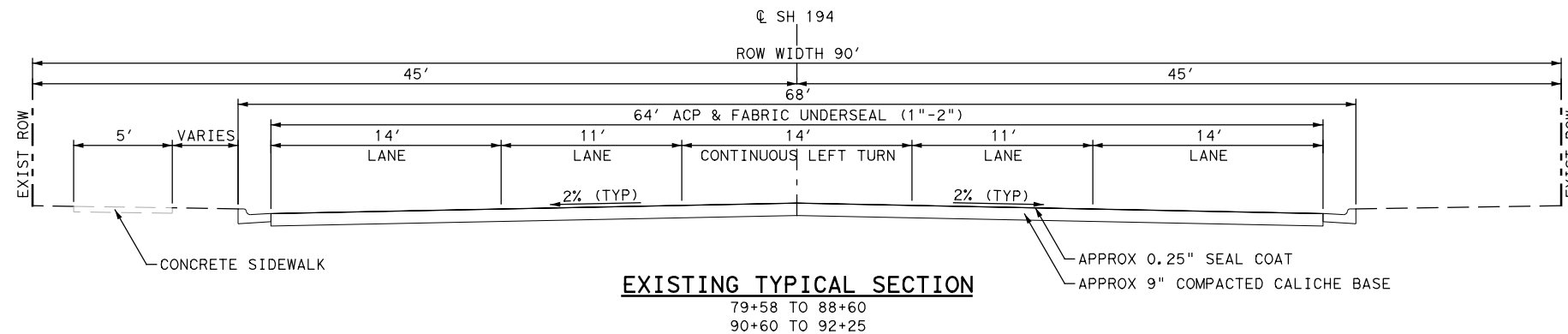
TYPICAL SECTIONS

SHEET 2 OF 6

FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	8
CONTROL	SECTION	JOB	
0439	05	026	

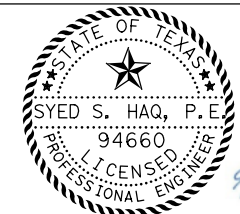
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NOTES

1. MAINTAIN EXISTING ROADWAY WIDTH AND CROSS SLOPES.
2. REFER TO ROADWAY PLAN AND PROFILE SHEETS FOR PROPOSED SIDEWALK LOCATIONS.
3. PLANING DEPTH VARIES. REMOVE MATERIALS 8" BELOW LIP OF GUTTER.
4. REMOVE BUILDUP OF ASPHALTIC MATERIAL TO THE SURFACE OF THE LIP OF GUTTER. REFERENCE EXISTING GRADE.
5. SOME MIXING OF SUBGRADE MATERIAL AND SALVAGE WILL BE NECESSARY TO ACHIEVE THE OVERALL 8" LIME TREAT DEPTH.
6. ASPHALT STABILIZED BASE COARSE BLACK BASE SHALL NOT BE USED AS RAP MATERIAL IN HOT MIX.
7. MILLING WITH PETROMAT WILL BE DISPOSED OF AND NOT USED IN THE RAP.
8. AFTER MILLING OPERATIONS, REMOVE ANY REMAINING ASPHALT MATERIAL ON TOP OF CURB AND GUTTER AND REMOVE ANY ASPHALT OR BASE MATERIAL REMAINING NEXT TO THE CURB AND GUTTER.



NO.	DATE	REVISION	APPROVED



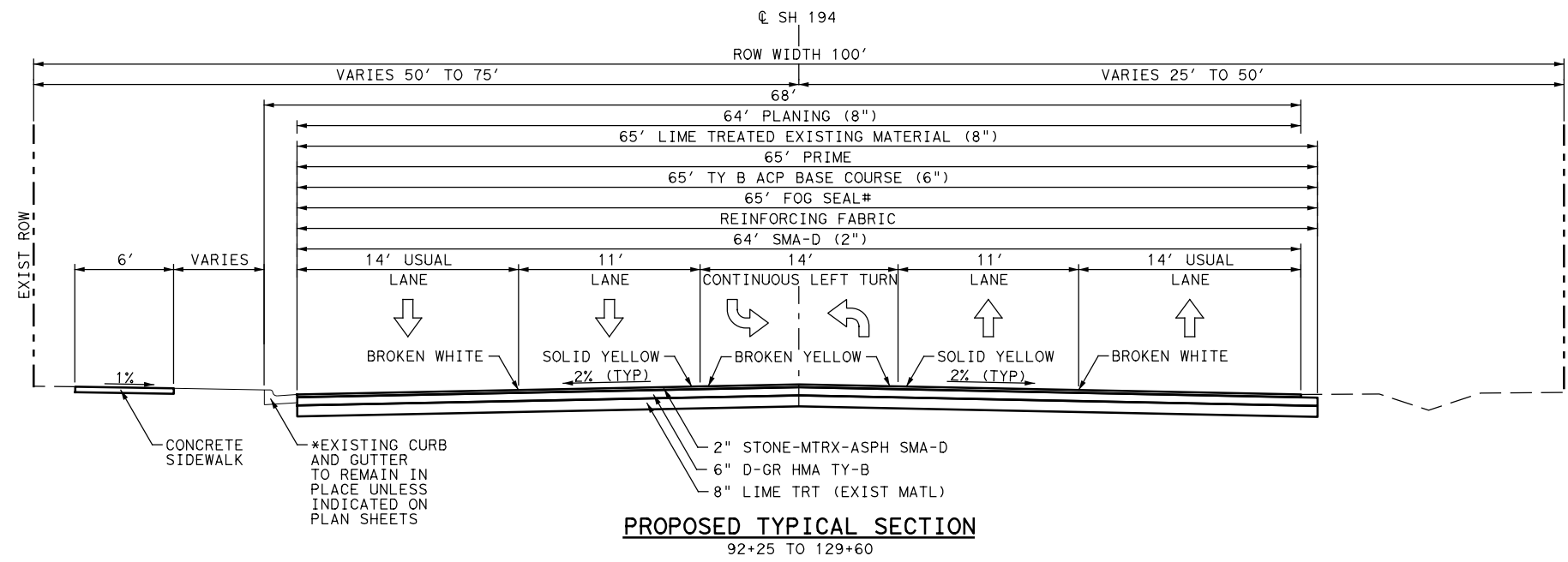
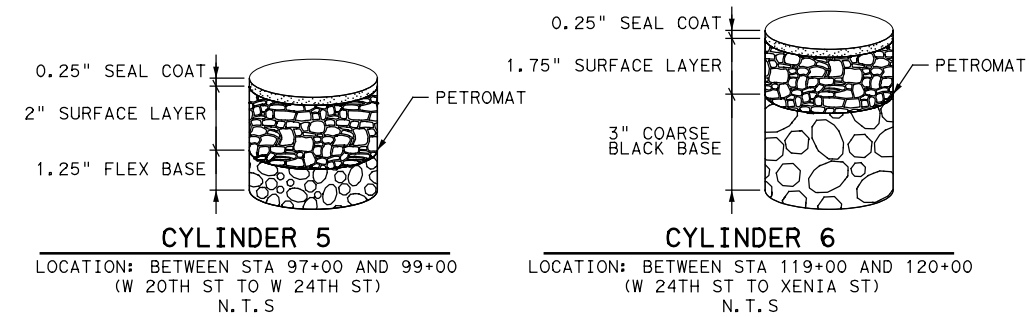
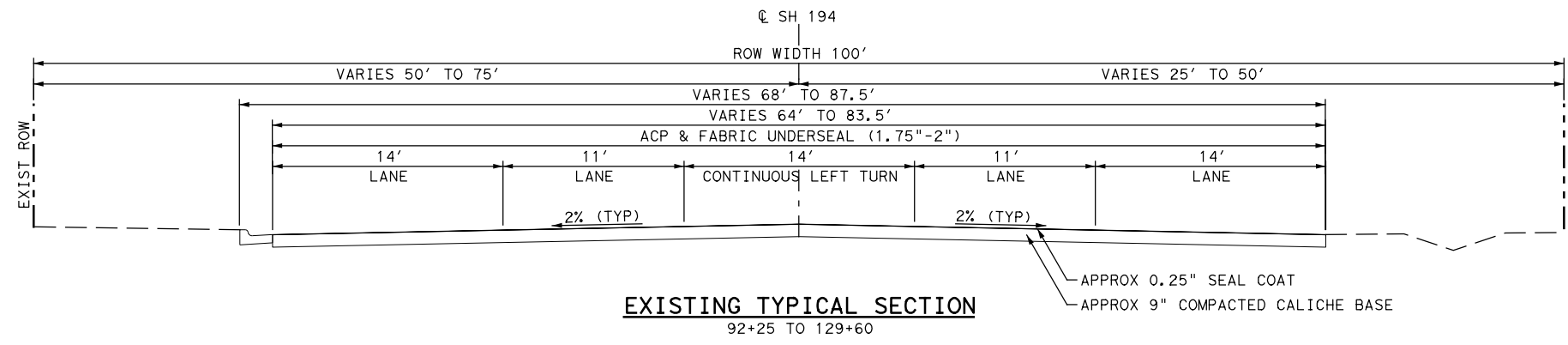
SH 194 FROM FM 3466 TO IH 27

TYPICAL SECTIONS

SHEET 3 OF 6

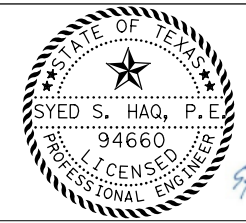
FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	9
CONTROL	SECTION	JOB	
0439	05	026	

#ON TY B IF LAYER IS USED AS WINTER RIDING SURFACE AS DIRECTED BY ENGINEER
 *REPLACE CURB & GUTTER FROM STA 91+50 TO STA 91+70



NOTES

1. MAINTAIN EXISTING ROADWAY WIDTH AND CROSS SLOPES.
2. REFER TO ROADWAY PLAN AND PROFILE SHEETS FOR PROPOSED SIDEWALK LOCATIONS.
3. PLANING DEPTH VARIES. REMOVE MATERIALS 8" BELOW LIP OF GUTTER.
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NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

TYPICAL SECTIONS

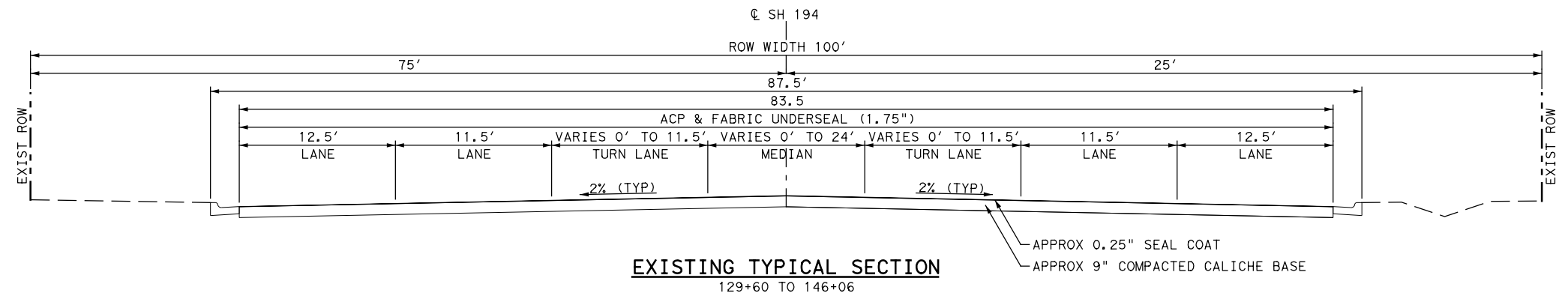
SHEET 4 OF 6

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	10
CONTROL	SECTION	JOB	
0439	05	026	

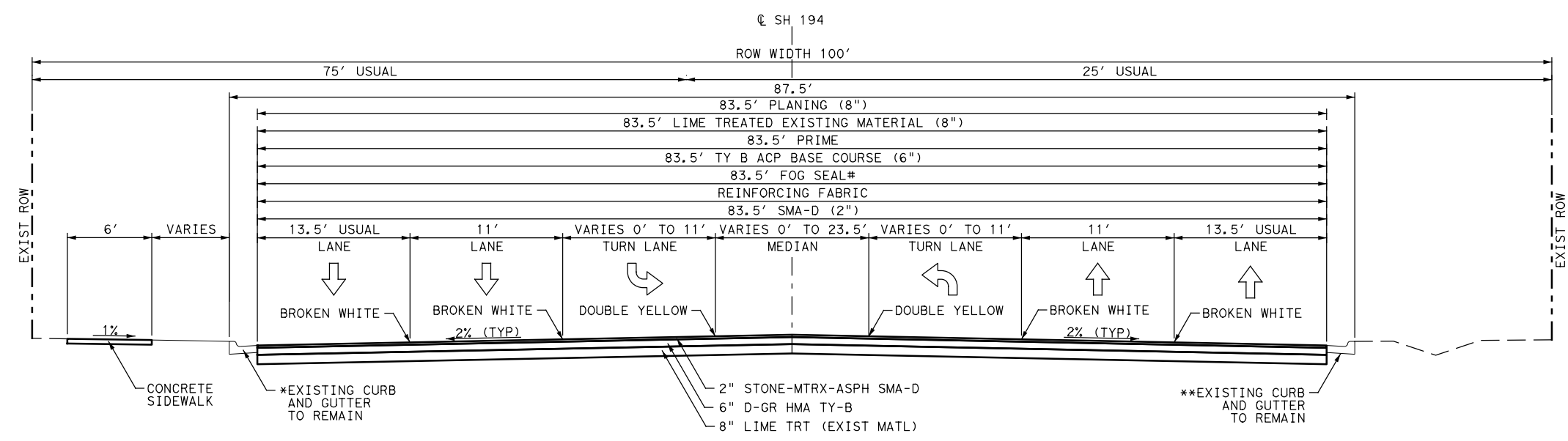
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*REPLACE CURB & GUTTER FROM STA 99+10 TO STA 99+32, STA 103+63 TO STA 103+78, & STA 131+51 TO STA 131+82

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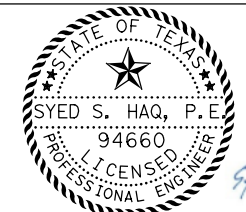
EXISTING TYPICAL SECTION
129+60 TO 146+06



PROPOSED TYPICAL SECTION
129+60 TO 146+06

NOTES

1. MAINTAIN EXISTING ROADWAY WIDTH AND CROSS SLOPES.
2. REFER TO ROADWAY PLAN AND PROFILE SHEETS FOR PROPOSED SIDEWALK LOCATIONS.
3. PLANING DEPTH VARIES. REMOVE MATERIALS 8" BELOW LIP OF GUTTER.
4. REMOVE BUILDUP OF ASPHALTIC MATERIAL TO THE SURFACE OF THE LIP OF GUTTER. REFERENCE EXISTING GRADE.
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Syed S. Haq
7/29/2024

NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

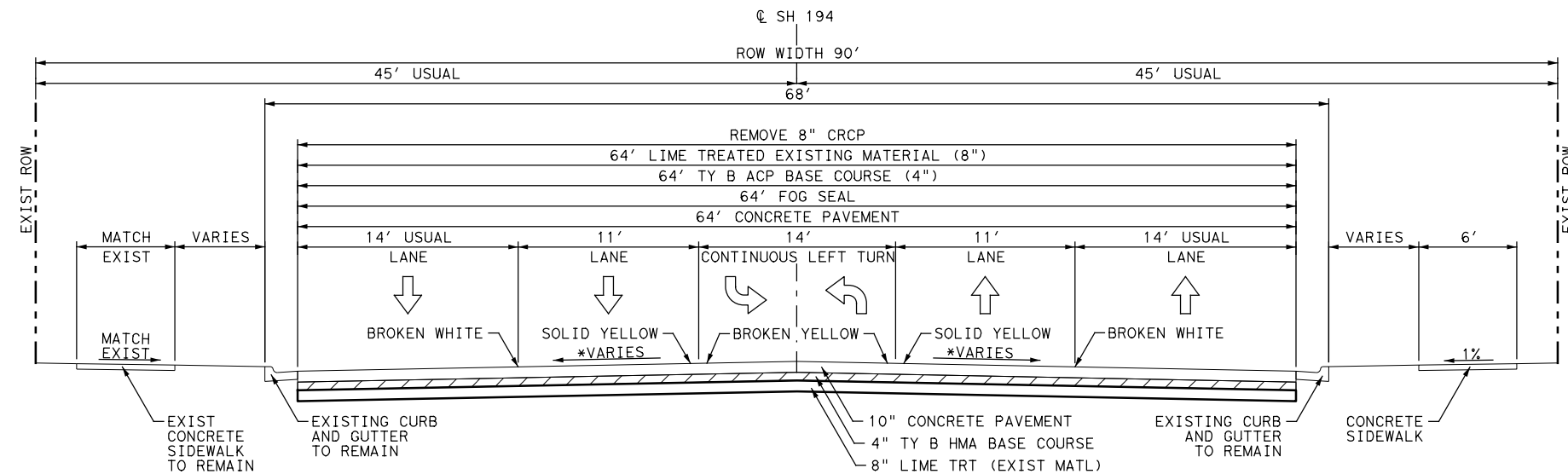
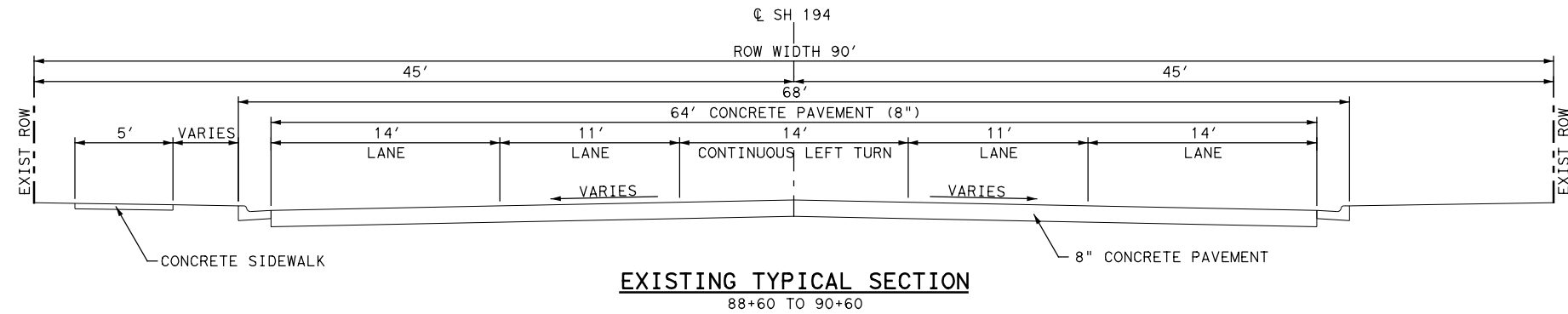
TYPICAL SECTIONS

SHEET 5 OF 6

FED. RD. DIV. NO:	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	11
CONTROL	SECTION	JOB	
0439	05	026	

#ON TY B IF LAYER IS USED AS WINTER RIDING SURFACE AS DIRECTED BY ENGINEER
 *REPLACE CURB & GUTTER FROM STA 134+42 TO STA 134+60 & STA 135+67 TO STA 135+86
 **REPLACE CURB & GUTTER FROM STA 136+18 TO STA 136+28

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PROPOSED TYPICAL SECTION
88+60 TO 90+60

*CROSS SLOPE INFORMATION		
STATION	LT CROSS SLOPE	RT CROSS SLOPE
88+60	1.53%	2.28%
88+80	1.13%	1.88%
89+00	1.03%	1.78%
89+20	1.03%	1.75%
89+40	0.97%	1.69%
89+60	0.97%	1.66%
89+80	0.94%	1.59%
90+00	0.91%	1.53%
90+20	1.00%	1.56%
90+40	1.41%	1.97%
90+60	1.78%	2.22%

NOTES

1. MAINTAIN EXISTING ROADWAY WIDTH AND CROSS SLOPES.
2. REFER TO ROADWAY PLAN AND PROFILE SHEETS FOR PROPOSED SIDEWALK LOCATIONS.
3. REMOVAL OF EXISTING DRAINAGE APPURTENANCES IS SUBSIDIARY.



NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

TYPICAL SECTIONS

SHEET 6 OF 6			
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET		HIGHWAY NO. SH 194
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO.
CONTROL 0439	SECTION 05	JOB 026	12

GENERAL NOTES:

Hot Mix Basis of Estimate

ITEM	DESCRIPTION	*RATE (approx.)
3080	2 IN, SMA-D PG76-28	236 LBS/SY
3076	6 IN. ACP (TYPE-B) PG76-28	690 LBS/SY

*Actual rates will be determined by Engineer in Field

Hot Mix Area (SY)

CSJ	MIX TYPE	SY
0439-05-026	2 IN. SMA-D PG76-28	12,759
0439-05-026	6 IN. D-GR HMA TY-B PG76-28	38,000

Surface Treatment Basis of Estimate

DESCRIPTION	EMUL (ERSN CONT)	PRIME COAT	TACK COAT	FOG SEAL	REINF. FABRIC
ASPH TYPE & GRADE	CSS-1H	MC-30	trackless	CSS-1H	PG76-28
ASPH RATE (GAL/SY)	**0.26	0.20	0.14	**0.18	0.15

**Rate shown is after dilution to 50% Asphalt Emulsion and 50% Water or as directed.

Surface Treatment Area (SY)

CSJ	EMUL (ERSN CONT)	PRIME COAT	FOG SEAL	REINF. FABRIC	SMA TACK COAT
0439-05-026	3,035	108,143	109,565	101,854	11,360

W.S.C.R.P.

Provide coarse aggregate for all surface hotmix and overlays meeting a minimum class of **A** as published in the *AGGREGATE QUALITY MONITORING PROGRAM RATED SOURCE QUALITY CATALOGUE*.

Provide coarse aggregate for all base hotmix and surface treatments meeting a minimum class of **B** as published in the *AGGREGATE QUALITY MONITORING PROGRAM RATED SOURCE QUALITY CATALOGUE*.

General Requirements and Covenants - Items 1 thru 9

Contractor's questions for this project will be submitted via the Letting Pre-Bid Q & A web page. Plainview Area Office can be contacted for guidance (806-293-5484, Heath Bozeman, P.E.) 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.

An ADA workshop is required for this project.

The railroad coordination for this design has been completed at time of letting.

Item 1 – Abbreviations and Definitions

Contract Prosecution – Each contract awarded by the Department stands on its own and as such, is separate from other contracts. A contractor awarded multiple contracts, must be capable and sufficiently staffed to concurrently process any and all contracts at the same time.

Item 2 – Instructions to Bidders

The following standard(s) have been modified:

- TRANS-20(MOD)
- NBIS(MOD)

The construction time determination schedule will be posted on the Letting Pre-Bid Q&A web page.

Cross-sections will be posted on the Letting Pre-Bid Q&A web page.

View the plans on-line or download from the web at:

<http://www.dot.state.tx.us/business/plansonline/agreement.htm>

Choose "I Agree" then, "Click here", then "State-Let-Construction", pick the letting month, then "Plans" and then choose the plans set.

Order plans from any of the plan reproduction companies shown on the web at:

http://www.dot.state.tx.us/business/contractors_consultants/repro_companies.htm

County: HALE

Control: 0439-05-026

Highway: SH 194

Sheet 13A

By signing this proposal, a bidder acknowledges that he/she has a copy of the "Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges", adopted by the Texas Department of Transportation, November 1, 2014. This specification book may be purchased from the Department or downloaded at:

<http://www.txdot.gov/business/resources/txdot-specifications.html>

Utilities

Overhead and underground utility installations exist within the project limits.

Call One Call to mark the locations of all utilities. Call the City and TxDOT separately to have their respective utilities marked.

If any lights, signals, or other systems not part of the project are disconnected by the contractor, the contractor must restore all affected systems to working condition.

Item 5 – Control of the Work

Perform construction surveying in accordance with Article 5.9.3, "Method C."

Replace all damaged ROW and USGS monuments at the contractor's expense.

When deviation from the plans is requested by the Contractor, but not required for installation, the Contractor will bear any additional costs associated with the deviation.

Alter the location of all ground boxes, foundations and structures shown on the plans only as approved by the Engineer in writing. Contact the Engineer 48 hours prior to installing ground boxes, foundations and structures in order that the Inspector may verify and approve the location.

Restore all disturbed areas due to trenching or any construction activity to a condition equivalent to the original condition within 14 working days from the time work began in the area including all necessary stabilization.

The construction, operation, and maintenance of the proposed project will be consistent with the state implementation plan as prepared by the Texas Commission on Environmental Quality.

At the end of each day remove from the ROW, inside or outside the project limits, any excess material and debris resulting from construction.

Correct any deficiencies identified during the final inspection including required paperwork.

Submit all required paperwork within 60 days of project acceptance.

All culverts, inlets, and low water crossings will be approved by the Engineer prior to installation.

County: HALE

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Sheet 13A

Allow 5 business days for subcontractor approval.

Item 6 – Control of Materials

Use materials from pre-qualified producers. A list of material producers pre-qualified by the Construction Division (CST) of the Texas Department of Transportation (TxDOT) can be found at the following website:

<http://www.txdot.gov/business/resources/producer-list.html>

In addition to the requirements of the plans and specifications, make all material and equipment furnished, installed, modified, tested, or otherwise used on this contract, and becoming the property of TxDOT, fully functional within the manufacturer normal specifications, warranties, and guarantees. Make any additional functions of the material and equipment normally supplied by the manufacturer, but not specified by TxDOT, completely functional.

Provide the State 30 days to test all materials and resolve any disputes.

Item 7 – Legal Relations and Responsibilities

Coordinate street closures with the local fire, police, and other emergency personnel.

Maintain access to adjacent property at all times.

Notify, in writing, each residence, business, and schools 10 days prior to beginning construction of the phase/phases that are expected to affect their ingress and egress. This notice may be hand delivered or mailed.

When applicable, comply with all requirements of the Environmental Permits Issues and Commitments (EPIC) sheets.

Provide a lidded dumpster to be used by Contractor's personnel on the job site. The lid or covering to the dumpsters needs to be able to stay closed in high winds for preventing trash from being blown out. This shall be considered subsidiary to the various bid items.

Dispose of all waste materials in compliance with local, state, and federal regulations. Submit a list of all approved waste sites to the Engineer for review.

Provide local, uniformed, licensed peace officers for traffic control during construction operations at and/or near the high volume intersections, and during critical changes in traffic control, as approved by the Engineer. This will be paid by a force account.

All vehicles in the work zone shall use flashing amber strobe lights visible 360 degrees.

No significant traffic generator events identified.

County: HALE

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Highway: SH 194

Sheet 13B

The Contractor is hereby made aware that the City of Plainview will have events throughout the year. Suspend work during these events for the safety of the traveling public as directed by the Engineer. **Roadway closures during these events will be prohibited.**

Prior to and during construction, Contractor shall remove empty barn swallow nests if found on the bridge structures. Payment for this work will be with the environmental force account. Contact the Lubbock District Environmental Coordinator Ayssa Trevino at 806-748-4417 prior to any nest removals.

Item 8 - Prosecution and Progress

This project is to be complete in 445 days and 28 months of barricades in accordance with the contract documents.

Liquidated damages as defined in SP000-1243 (\$1,718) will be increased by the calculated road user cost of \$2,169, for a total of \$3,887 per day.

Paving operations will only be allowed between the hours of 9PM and 6AM, Sunday thru Thursday. All other operations not requiring lane closures may be conducted during normal working hours.

Monthly schedule updates are a very important aspect of managing the progress of this project. The Engineer may withhold the monthly estimate if the schedule update has not been received.

A P6 Compatible Critical path method will be required on this project.

Perform any erosion control measures such as seeding or sodding before beginning the next phase, or land, unless otherwise authorized by the Engineer.

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

Work hours will be restricted to off-peak hours as defined in the following table during the school year and only in the vicinity of the schools:

Peak Hours		Off-Peak Hours	
7 to 9 AM Monday through Friday	4 to 6 PM Monday through Friday	9AM to 4PM and 6 PM to 7 AM Monday through Friday	All day Saturday and Sunday

County: HALE

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Sheet 13B

This contract is for daywork only. No work at night (after sunset) will be allowed without prior approval from the Engineer. If the contractor elects to work at night then all expenses for this will not be compensated.

Shut down operations the working day before the following major traffic generating holidays: January 1st (New Year's); Last Monday in May (Memorial Day); July 4th (Independence Day); First Monday in September (Labor Day); Fourth Thursday in November (Thanksgiving); and December 24th (Christmas Eve).

If the season for SMA is past, time and work on the project will not be suspended until all other work is complete. When this work is complete, the Engineer will suspend time and work until SMA season begins.

The work zone shall not exceed 2 miles unless otherwise directed by the Engineer.

Payment for final 3% mobilization will be made once all project signage has been removed and all other items according to Article 500.3. Timeliness for submittal of required paperwork and correction of deficiencies is a consideration in developing the final contractor evaluation score.

The 90-day delay start is for *material production, aggregate stockpiling, traffic signal pole fabrication, and light pole fabrication.*

Item 9 - Measurement and Payment

Submit material-on-hand payment requests by the monthly estimate cutoff date.

Material-on-hand will be paid item for item regardless of how the work was bid.

Item 100 - Preparing Right Of Way

Sprinkler systems shall be cut at the right-of-way line and restored to operating conditions using a licensed irrigator. Restoration is defined as notifying the adjacent property owner before capping the line to determine any adverse effect to the rest of sprinkler system. Payment for this work shall be considered subsidiary to the various items of work.

Items 110 And 132 - Excavation and Embankment

Provide Type C Embankment conforming to the following material specifications:

Liquid Limit (maximum)	45
Plasticity Index (maximum)	25
Bar Linear Shrinkage (minimum)	2

Consider all embankment to be Earth Embankment in accordance with Article 132.3.1.

Proof roll, as directed by the Engineer.

County: HALE

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Sheet 13C

An estimated 1100 CY of excavated material shall be disposed of by the contractor.

Excavation and embankment work shall be completed full width. There cannot be multiple joints in a lane.

Item 162 - Sodding for Erosion Control

Furnish and place sod, between the edge of the roadway and the edge of the ROW, of the same variety as existing in the adjacent property. No additional compensation will be given for different varieties.

Season for placing sod is April 15th – September 15th.

Item 164 - Seeding For Erosion Control

After drill seeding, apply SS-1 emulsified asphalt as a tacking agent, in accordance with Item 314, across the seeded area, as directed by the Engineer.

Notify the Engineer of scheduled seeding operations 24 hours prior to seeding applications. Do not begin seeding operations until the Engineer has approved seedbed preparations. Locate and flag all irrigation heads, valve covers, utility facility covers, etc. prior to commencing seed application operations.

Leave the seeded area lightly tracked in order to establish a better environment for seed germination.

Furnish seed tags from the seed supplier to the Engineer for verification of quantity and type.

Submit an available substitution to the Engineer, for approval, if a grass variety is not available.

Do not disturb or drive on newly seeded areas. Repair any damage to the seeded areas to the satisfaction of the Engineer.

A Cultipak planter may be used in lieu of drill seeding.

Item 168 - Vegetative Watering

Water newly seeded or sodded grass areas with a minimum of two-tenths (2/10) of an inch per day for 30 consecutive days and as directed.

Water from a tanked, spray-equipped vehicle capable of spraying water to all such areas without driving or trailering the vehicle on said areas.

County: HALE

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Sheet 13C

Furnish and apply water containing less than 10,000 parts per million solids (as determined by evaporation).

Items 162, 164, 166, And 168

Furnish and place hay mulch or cellulose fiber mulch, seed, fertilizer, and vegetative watering on all cut and fill slopes as soon as each construction sequence will allow, but within 14 days of the end of the construction phase and prior to beginning a new construction phase. Leave the seeded area lightly tracked in order to provide the seed a better environment for germination.

Reseed at contractor's expense if 70% growth hasn't been attained in 2 months.

Item 216 – Proof Rolling

Provide a 25 ton roller, or other equipment approved by the Engineer for proof rolling.

Proof roll as directed.

Item 260 - Lime Treatment (Road-Mixed)

Use lime, at the target rate of 3 percent by weight, based on an estimated unit weight of 125 pounds per cubic foot, unless otherwise directed by the Engineer.

Use a vane feeder system to distribute the lime.

Proof roll as directed by the Engineer.

A BOMAG or milling machine will not be allowed for initial scarifying of existing material. Use other means to scarify.

Allow 30 days for testing of material.

Item 310 - Prime Coat

Apply a prime coat to all finished treated base, new flexible and salvage base due to receive asphaltic concrete pavement or surface treatments. Remove all loose and scabbed material from the surface prior to prime coat application.

Allow the prime coat to penetrate and dry for a minimum of 72 hours before placing any asphaltic material on the primed surface, unless otherwise authorized by the Engineer.

Item 314 - Emulsified Asphalt Treatment

Apply the emulsified asphalt and water mixture, as directed by the Engineer.

County: HALE

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Sheet 13D

Item 315 - Fog Seal

Apply the emulsified asphalt and water mixture, as directed by the Engineer.

Item 320 – Equipment for Asphalt Concrete Pavement

Provide waterproof tarpaulins on all hauling equipment.

Item 354 – Planing and Texturing Pavement

Haul excess RAP to (approximately 6,700 tons) to Plainview-Hale County Airport. Entrance to stockpile area is from intersection of County Road 110/South West 20th Street and BI 27 (Lat: 34° 9’ 42” N, Long: 101° 42’ 42” W) Contact Ruben Ramirez, TxDOT Maintenance Superintendent for access (806-293-5101).

Item 360 - Concrete Pavement

Multiple piece tie bars will be required.

Reinforced with steel reinforcement using #6 bars.

Saw cut the perimeter of the concrete paving and seal with a class 5 or class 8 joint-sealant materials and fillers conforming to Item 438, “Cleaning and Sealing Joints.”

Use Method B, as shown on JS-14, to seal joints.

CRCP will be designed using the Optimized Aggregate Gradation (OAG) procedure, in accordance with Tex-470-A.

A pre-paving meeting will be required.

Submit a paving plan detailing the location of joints and the sequence of paving to the Engineer a minimum of seven days before paving begins.

The Engineer reserves the right to require fibrillated fibers in the mixture to mitigate dry shrinkage cracking. Dosage rate will be 5 lbs/CY. Payment will be subsidiary.

Concrete paving adjacent to existing Concrete Paving will require a neat saw cut edge and dowelling as per Item 361. This work will be considered subsidiary to Item 360.

The pay limits for concrete paving will not include curb and gutter sections, even when the curb and gutter is placed monolithically with the concrete paving. For measurement and payment purposes, curb and gutter sections are considered 24 inches wide.

County: HALE

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Highway: SH 194

Sheet 13D

Cold weather protection requirements within 72 hours of a concrete paving pour as per the following table:

PROJECTED LOW TEMP	PROTECTION REQUIRED
< 20 degrees	DO NOT POUR
20-27 degrees	cover with plastic, then an insulating blanket, and plastic on top
28-35 degrees	cover with plastic, then an insulating blanket
> 35 degrees	no protection required

All projected temperatures will be based on the NOAA website. None of the above actions releases the Contractor from the responsibility for freeze damaged concrete for whatever reason.

Stockpiling of earthen or rock materials on concrete paving will not be permitted.

Hotmix must be removed to within 6” of edge of concrete paving prior to placement of topsoil. This work shall be subsidiary.

Unless otherwise directed, use coarse aggregate to produce concrete, with a coefficient of thermal expansion (COTE) less than or equal to 5.5 microstrain/degree F when tested in accordance with Tex-428-A. Provide samples or test specimens as directed and allow 30 days for testing. TxDOT will perform the testing and test results are final. Testing is required for naturally occurring aggregates.

Place the evaporation retarder right after the finish float and before the curing compound.

Schedule the placement width in a manner such that all joints will coincide with proposed lane lines (+/- 6 inches).

Concrete test specimens will be cured under the same conditions as the pavement. Make 3 sets of cylinders. Cylinders will not be moved for 3 days and will not be stripped until out of their molds until testing.

Cure the transition slab with SS-1 emulsion. This is considered subsidiary.

Saw the contraction joints within 12 hours of concrete placement.

Provide good consolidation at the construction joints.

Item 400 - Excavation and Backfill for Structures

Furnish crushed caliche or sand and gravel as aggregate for cement stabilized backfill.

Deliver the cement stabilized backfill in a mixer truck in a flowable state and capable of filling all the voids.

Construct fill over structures to plan grade before hauling with heavy equipment over structures.

County: HALE

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Sheet 13E

Compact backfill used for structures, other than flowable backfill, to a minimum density of 95 percent.

Use a template in order to secure reasonably accurate Class C shaping of the foundation material outside of cement stabilized areas.

Contact the utility company and properly secure the utility poles prior to excavating next to the utility poles. The work and material used to secure the utility poles are subsidiary to the pertinent items.

Item 416 – Drilled Shaft Foundations

For large diameter drilled shafts, when water is encountered during drilling and slurry is not used, the shaft needs to be re-worked the next day to achieve proper skin friction capacity.

Reinforcement in drill shafts shall be epoxy coated or galvanized rebar. Uncoated steel will not be allowed.

Item 420 - Concrete Substructures

Consolidate concrete for bridge components reinforced with epoxy coated reinforcing steel with vibrators having rubber or non-metallic heads in order to prevent damage to the epoxy.

Tie galvanized reinforcing steel with galvanized tie wire.

Tie epoxy-coated reinforcing steel with epoxy-coated tie wire.

Furnish and place preformed fiber material, a minimum one-half (1/2)-inch thick, as shown on the plans or directed by the Engineer.

Furnish a temperature recorder with the minimum capabilities of a 7-day recording time, 2 degree F division, and 120 VAC with 9-volt backup, for each curing tank used on the project. Supply all charts, recording pins, and other equipment necessary for complete operation of the temperature recorder during the project. The temperature recorder and all associated equipment will not be paid directly, but will be subsidiary to the various bid items.

Use Grade 3 or Grade 4 coarse aggregate in all concrete structures.

The same cold weather protection requirements as specified in Item 360 shall apply to all concrete flatwork.

Coring of structural classes of concrete will not be allowed. All coring of miscellaneous concrete shall be at the Contractor's expense including all prep work. Coring must be completed within 3

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days of notice of failing 28-day samples; otherwise pay deductions apply using 28-day compressive strength.

Provide TY II curing compound for all curb and gutter, sidewalks, driveways, curb ramps, riprap, and cast-in-place SET's.

When doweling into concrete, clean out the hole, fill completely with epoxy, then place the dowel. Do not dip the dowel into epoxy first and shove it into the hole.

Do not place concrete when the wind gusts get to over 25 miles per hour.

Install the NBI number on bridges and bridge-class culverts per the NBIS standard.

Place the evaporation retarder right after the finish float and before the curing compound.

Vibrate all concrete.

Provide 48 hours notice for all concrete pours.

Item 421 - Hydraulic Cement Concrete

If fly ash is used, a maximum of 35% will be allowed.

Provide air entrainment in all concrete except for concrete used in drilled shafts and precast concrete members. Target an entrained air content of 4.0% +/- 1% for concrete pavement and 5.5% +/- 1% for all other concrete requiring air entrainment. Ensure the minimum entrained air content is at least 3.0% for all classes of concrete.

Air entrainment chemicals will not be allowed on-site.

The Engineer will perform all concrete job control testing.

The sulfate soundness of coarse aggregate used in drilled shaft concrete shall not exceed 18 percent.

Supply 2 – 4' x 8' sheets from a material that is flat, rigid, and non-absorbant, in order to perform required testing procedures at the location of concrete placements.

Use 4-inch by 8-inch cylinder molds for concrete with Grade 3 or smaller coarse aggregate. Supply new cylinder molds and lids subsidiary to the various bid items.

The Engineer will inspect concrete batch plants and trucks for approval.

For this project, the requirements of Article 421.4.8.1, "Certification of Testing Personnel" are waived, except that "Personnel performing these tests are subject to Departmental approval."

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Concrete plant must be capable of providing automated moisture content control for both coarse and fine aggregate.

Item 429 – Concrete Structure Repair

Utilize latest TxDOT Concrete Repair Manual for repairs.

Item 432 - Riprap

Provide 5-inch thick concrete riprap, unless otherwise indicated in the plans.

Reinforce with steel reinforcing using either #3 bars on 12"x12" spacing or #4 bars on 18"x18" spacing centered in the slab. Fiber reinforcement or welded wire will not be allowed.

In large areas of riprap, provide one-half (1/2)-inch thick expansion joint material at approximately 15-foot intervals, or as determined by the Engineer.

Place asphalt expansion joint material between proposed riprap and utility poles, guy wires, vent pipes, stand pipes, and as directed.

Place felt or filter fabric at open joints as required by the Engineer. This will be considered subsidiary.

Follow cold weather protection requirements listed under Item 420.

Seal between concrete boundaries.

Item 467 - Safety End Treatment

Install riprap around all precast SETs. The riprap shall be Class B and reinforced in accordance with Item 432.3.1. Precast riprap will not be allowed.

Item 502 - Barricades, Signs And Traffic Handling

Prior to beginning construction, the Engineer shall approve the routing of traffic and sequence of work.

Additional signs and barricades as directed by the Engineer shall be considered subsidiary to Item 502.

Provide flashing portable arrow panels for all lane closures.

Wash the channelizing devices and barricades following each rainfall or snowfall event and at times deemed necessary by the Engineer.

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To ensure the safety and convenience of traffic, flaggers may be required when construction machinery is being operated along, across, or adjacent to lanes carrying traffic. If considered necessary by the Engineer, supplemental signs and barricades may be required.

Fill any holes left by barricade or sign supports and restore the area to its original condition.

Barricades, Signs and Traffic Handling is a plan quantity item. If time is suspended, no additional compensation will be made.

Traffic switches will not be permitted on Fridays or any working day preceding a holiday unless authorized by the Engineer.

Cones or chevrons may be used in lieu of vertical panels at the discretion of the Engineer. Cones cannot be used to separate opposing traffic.

Construct temporary ramps to maintain access to driveways and city streets as directed by the Engineer. Temporary ramp construction is subsidiary to Item 502.

The Contractor shall bid the traffic control plan shown in the plans. Any proposed alterations to the TCP (combining work areas / phasing / etc.) shall be submitted to the Engineer at least 10 days prior to anticipated changes.

Even when not explicitly shown in the project TCP, vertical panels shall be used with an opposing lane divider every 5th panel in accordance with BC(9) for all opposing traffic conditions without a positive barrier.

Square tubing sign supports may be used for temporary construction signs. Aluminum and wood signs may be mounted if the vertical supports are embedded into the ground. Square tubing supports on skids which are typically held in place with sand bags can only support signs made of light weight fluted plastic.

Any trench or drop off over 2" and less than 10" will require a safety slope of at least 1:1 if drop off is going to be existing for more than 2 nights. For drop-offs greater than 10", a safety slope will be required at the end of operations for that day. This safety slope may be constructed with RAP, embankment, or other material approved by the Engineer. The placement, maintenance, and removal of this safety slope is the responsibility of the Contractor and will be considered subsidiary to the various bid items.

Provide an all-weather surface for all sections of the roadway prior to time suspension as directed by the Engineer. The all-weather surface shall be the original undisturbed asphalt pavement or a one course surface treatment on the constructed roadbed as shown in the typical sections.

The Contractor Force Account "Safety Contingency" that has been established for this project is intended to be utilized for work zone enhancements, to improve the effectiveness of the Traffic

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Control Plan, that could not be foreseen in the project planning and design stage. These enhancements will be mutually agreed upon by the Engineer and the Contractor's Responsible Person based on weekly or more frequent traffic management reviews on the project. The Engineer may choose to use existing bid items if it does not slow the implementation of enhancement.

Correct all noted deficiencies within 7 calendar days, otherwise, cease all operations until the noted deficiencies are corrected.

Stockpiles that meet the barricade requirements as shown on the BC(10) Standard are required to be erected at the time of material delivery in the Right-of-Way and maintained as long as the stockpile exists. Payment for Material-on-Hand will be withheld from the estimate for inadequate barricades or the failure to maintain barricades on a per stockpile basis as determined by the Engineer.

Like new traffic control devices will be required at the initial setup for all projects or as approved by the Engineer.

Provide flags and a CW8-15P "MOTORCYCLE WARNING" plaque on all CW20-1D "ROAD WORK AHEAD" signs except on side roads.

Use only the work zone speed limit and TCP signs that are relevant to the active work area and as directed. Reset signs for subsequent work phases as work progresses and approved by the Engineer. Reset normal speed limit signs at the ends of work areas.

Project limit signage is required on both sides of each roadbed on a divided highway.

All bid items and work requiring traffic control is the responsibility of the contractor, even when not explicitly detailed in the plans. Consider this work subsidiary to Item 502.

TMA's and Portable Changeable Message Boards will not be used as Arrow Boards.

When the roadway is open to traffic and final striping is completed, any subsequent work shall be done under daytime traffic control.

The contractor is to respond on-site within 30 minutes to any traffic control maintenance after wind events, storms, etc., and as directed by the Engineer.

Ground mount all signs if possible.

Any necessary detour signage shall be in place before work can begin.

All plaque signs such as Advisory Speed Limits, distances, etc. shall be 18"X18".

Item 504 - Facilities for Field Office and Laboratory

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Furnish one Type D structure. Field laboratory shall be located adjacent to the project site.

The Contractor will furnish a concrete cylinder breaker and cylinder bath, subsidiary to the furnished field laboratory. Provide calibration documentation for all supplied equipment.

Equip the Type D field lab with an eyewash facility capable of flushing the eyes for at least 15 minutes, connected to the main water supply or an approved stand-alone water supply.

Equip all field labs with a surge protector at the circuit breaker panel.

Item 506 - Temporary Erosion, Sedimentation, and Environmental Controls

Place a weatherproof bulletin board containing the TCEQ required information on the project at a site directed by the Engineer. Post the following documents: (1) "TCEQ TPDES Storm Water Program" Construction Site Notice and (2) TCEQ "TPDES Permit." Place rain gauge(s) at locations designated by the Engineer. At the completion of the contract, the bulletin board will become the property of the State and will remain in place until 70 percent vegetation coverage has been obtained.

Provide long-term, Type 1 construction exits, located at the Contractor's equipment storage area.

Silt fence, sandbags and other BMPs will be placed and relocated as directed by the Engineer in order to comply fully with the SWP3 requirements.

The soil area disturbed by this project, including all disturbed areas within the limits of this project as described in the Contract and at Contractor project specific locations (PSLs) within one mile of the project limits, contributes to the establishment of the Texas Commission on Environmental Quality (TCEQ) Construction General Permit (CGP) requirements for storm water discharges. The Department will obtain an authorization from the TCEQ to discharge storm water for construction activities shown on the plans. The Contractor shall obtain the required authorization from the TCEQ for Contractor project specific locations (PSLs) for construction support activities off the right-of-way. As directed by the Engineer, the Contractor shall obtain any required authorization from the TCEQ for on-site PSLs. When the total area disturbed within the project limits and at PSLs within one mile of the project limits exceeds five acres, the Contractor shall provide a copy of the Contractor's Notice of Intent (NOI) submission and Construction General Permit for PSLs on the right-of-way to the Engineer (and submit a copy of NOIs to appropriate MS4 operators).

Water pumped off the project must have sediment and any other solids in suspension removed before discharging.

Sediments removed from BMPs shall be paid for by force account. The Contractor shall submit an invoice for the work.

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Correct all noted deficiencies within 7 calendar days, otherwise, cease all operations until the noted deficiencies are corrected.

Maintain 100 feet of silt fence, 100 feet of erosion control logs, and 50 sandbags on site at all times for repairs/replacement as needed.

Item 508 - Constructing Detours

Provide detour sections consisting of three inches of Type B hot mix on three inches of prepared flexible base on prepared subgrade to lines and grades directed by the Engineer.

Any drainage pipe or SETs required for detours is subsidiary to this Item. The minimum pipe size is 18 inches.

Item 529 - Concrete Curb, Gutter and Combined Curb and Gutter

Place one-half (1/2)-inch pre-molded expansion joint material at 40-foot intervals and at the beginning and end of all radii. Place 3/25-inch grooved or sawed construction joints, as directed by the Engineer, spaced equally, with the spacing not to exceed ten feet between joints.

Monolithic curb will not be allowed.

All concrete curb and gutter shall be reinforced with four #4 bars.

The lip of gutter and back of curb shall be formed. The existing pavement edge shall not be used as the form.

Mortar will not be used to finish curb and gutter.

The joint between the lip of gutter and HMAC shall be sealed.

Item 530 – Intersections, Driveways, and Turnouts

Use Class A Concrete for all concrete driveways.

Reinforce concrete driveways with # 4 bars on 12"x12" grid spacing centered in the slab depth.

Item 531 - Sidewalks

Construct concrete sidewalks at least 6" inches thick, reinforced with # 3 bars on 18"x18" grid spacing centered in the slab depth. The locations and details shown on the plans may be field modified by the Engineer.

In areas where there is no curb fillet or concrete pavement, saw cut the existing curb and gutter and remove the curb.

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Construct curb ramps in conformance with details shown on the plans. The accessibility of the curb ramps shall be according to the "Americans with Disabilities Act (ADA)."

When lack of right of way width or obstructions creates insufficient space, the ramp may be relocated within the right of way when authorized by the Engineer. All deficient ramps will be removed and replaced at the Contractor's expense.

Form tooled joints on each side of the four-foot wide ramp section, and at each break in ramp slope or geometry, and at four-foot intervals as if it were sidewalk. Place asphalt expansion joint material between proposed ramps and existing concrete.

Form tooled joints in sidewalk at 6' intervals or as directed.

Place asphalt expansion joint material every 40 ft and between proposed sidewalk and utility poles, guide wires, vent pipes, stand pipes and as directed.

All curbs on curb ramps will not be paid for directly but are considered subsidiary to the various bid items.

Construct concrete steps adjacent to ramps, as shown in the plans or as directed by the Engineer, measured by the square yard and paid for as Item 531, "Sidewalks."

Schedule work such that two-way traffic is provided through all intersections and intersecting streets at all times, unless otherwise authorized by the Engineer.

Complete construction at curb ramp locations within ten working days. This includes concrete removal, concrete placement, backfilling, surface preparation for pavement markings, prefabricated pavement markings, and repair of existing pavement. Failure to finish within ten working days will result in restricting the number of ramp locations that may be under construction at any given time.

Chicago-brick-red truncated dome brick pavers or an approved equivalent are required for all curb ramps.

Removal and disposal of existing asphaltic concrete is considered subsidiary to this item.

Follow cold weather protection requirements listed under Item 420.

Replace any existing flag pole holders in the sidewalk. This is subsidiary work.

Item 560 - Mailbox Assemblies

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Move and replace all mailboxes within the project limits such that they may be served by the mail carrier from his car at all times during and after construction. This work will be considered subsidiary to the various bid items of this contract.

Final placement shall include new metal mailboxes of similar size to the original mailbox, unless the property owner wants to retain their old mailbox.

Item 585 - Ride Quality for Pavement Surfaces

“Pay Adjustment Schedule” number 1 will be used on this project.

Corrective action, when required, shall be diamond grinding, as approved and directed by the Engineer. This work is considered subsidiary.

Item 610 – Roadway Illumination Assemblies

For project specific shop drawings, furnish seven sets of drawings of the complete assembly in accordance with Item 441, “Steel Structures”. Deliver shop drawings to the Engineer at the project address.

Provide a schedule and notify the District Traffic Office a minimum of 3 days prior to any illumination installation. Contact via email at LBB-TRFOPS@TXDOT.GOV.

Item 618 - Conduit

The location of conduit is diagrammatic and may be varied to meet local conditions upon approval of the Engineer. Ensure all couplings and connectors are made wrench tight. Trenching depths shall provide a minimum of 2.5 feet (30 inches) of cover unless otherwise approved by the Engineer. The Contractor must ensure that conduit is not damaged during trench or bore pit backfilling operations. No conductors shall be pulled through conduit until all backfilling for the conduit run is complete and the template, having a diameter of not less than 75 percent of the inside diameter of the conduit, has been drawn through the conduit. Open ends of all conduit shall be fitted with temporary caps or plugs to prevent entry of dirt or debris during construction operations. A non-metallic pull rope shall be used to pull electrical conductors and traffic signal cables through non-metallic conduit. A flat, high tensile strength polyester fiber pull rope shall be pulled through each conduit run and shall remain in the conduit for future use. A minimum of three feet of pull rope shall be neatly left coiled in the ground boxes at each end of the conduit run. The pull rope will not be paid for directly but shall be considered subsidiary to Item 618, “Conduit.” After the work is completed, the Contractor shall restore any curbs, walks, driveways or raised concrete medians which have been damaged or disturbed to an equivalent original condition and to the satisfaction of the Engineer. This work shall not be paid for directly but shall be considered subsidiary to Item 618, “Conduit.”

Use Schedule 80 PVC conduit for all traffic and illumination portion of this project. Bored conduit runs placed under driveways and streets or highway approaches shall maintain a minimum of 30

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inches below the proposed natural ground elevation or 36 inches below the existing driveway or proposed top of pavement backfill and compact trenches the same day or erect plastic fencing to discourage entry into the trenched area by pedestrians or vehicles.

Item 620 – Electrical Conductors

Grounding conductors that share the same conduit, junction box, ground box or structure shall be bonded together at every accessible point in accordance with the electrical detail sheets (ED), and the latest edition of the National Electrical Code.

Use certified persons to perform electrical work. See Item 7 Section 18.1.3 “Electrical Requirements” for additional details.

Item 628 - Electrical Services

The STATE will be responsible for energy consumed and monthly telephone charges occurred by the new electrical service locations. These charges should be billed to the Texas Department of Transportation, 135 Slaton Highway, Lubbock, TX 79404-5201.

Provide circuit breaker and install when additional circuit from existing electrical service is called for in the plans.

Concrete for service pole foundations, when required, will be Class C and will be in accordance with Item 421: Hydraulic Cement Concrete, except that concrete will not be paid for directly but is to be considered subsidiary to Item 628: Electrical Services. Reinforcing steel for service pole foundations, when required, will be in accordance with Item 440: Reinforcing Steel, except that reinforcing steel will not be paid for directly but is to be considered subsidiary to Item 628: Electrical Services.

Item 644 - Small Roadside Sign Assemblies

All signs on this project, new or relocated, will require a retroreflective wrap on the sign support. This wrap shall be 12 inches in height, visible in all directions and shall be placed 3 ft. below the bottom of the sign. The color for YIELD, STOP, WRONG WAY, and DO NOT ENTER signs shall be red. The color for all other signs shall be yellow. This retroreflective wrap will not be paid for directly but considered subsidiary to Item 644.

Stake all sign locations, and receive approval from the Engineer, prior to sign placement.

The triangular slip bases will be the two bolt clamp type (Southern Plains Fabrication or equivalent). For more information refer to the approved materials producers list: <http://www.txdot.gov/business/resources/producer-list.html>

New sign studs and new sign posts will be necessary for relocating existing signs.

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Items 644 & 647

Perform the following work subsidiary to Items 644 and/or 647.

For all signs designated for removal:

- Salvage aluminum signs,
- Palletize and band salvaged aluminum signs,
- Stockpile signs at the following location as directed by the Engineer.

Contact Person: Ruben Ramirez, TxDOT Maintenance Superintendant (806-293-5101)

Address: Plainview Area Office Maintenance Warehouse, 3900 South BI 27,
Plainview Texas (Lat: 34° 8' 48" N, Long: 101° 43' 23" W)

Item 658 - Delineator and Object Marker Assemblies

Delineator and object marker assembly posts shall be driveable and composed of post-consumer recycled materials. Embedded stub shall be perforated square tubing.

Driveable posts shall be the three-piece Flexible Delineator Post System, utilizing a 2-3/8" round post with a square to round flexible joint. The Embedded Anchor shall be 2" x 12 gauge x 24" long steel perforated square tubing. The Posts shall be permanently sealed at the top and have a 3-1/2" wide x 13" flattened surface to accommodate up to a 3" x 12" reflective sheet on both sides.

Item 662 - Work Zone Pavement Markings

Use short-term removable striping as directed by the Engineer.

Water based paint may be used for all non-removable striping if not prohibited in the plans and authorized by the Engineer. If water based paint is used, there will be no payment for striping refresh.

The deviation rate in alignment shall not exceed one inch per 200 feet of roadway. The maximum deviation shall not exceed 2 inches nor shall any deviation be abrupt. Striping not in conformance shall be removed and replaced at the Contractor's expense.

All removable work zone pavement markings placed on CRCP shall consist of ceramic buttons and RPMs as shown on standard sheet BC(11). These shall be applied with a thermoplastic adhesive, unless otherwise directed by the Engineer.

No guide markers will be placed on a finished surface unless they fall on a proposed lane line. Stick-down markings will be removed by the Contractor prior to final marking.

Do not place guide markers on a finished surface unless they fall on a proposed lane line. Remove Stick-down markings prior to final marking. Remove tabs at the same time as the RPM placement.

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Type I markings must be at least one twenty-fifth (1/25) of an inch thick.

Remove ceramic buttons, RPMs, and Adhesives as directed by the Engineer. Payment for this work is subsidiary to Item 662.

Use thermoplastic adhesive to glue down work zone buttons and RPMs. Bituminous adhesive will not be allowed.

Dispose of the backing from tabs in an appropriate manner.

Any roadway opened to traffic shall be striped within 14 days.

Item 666 - Reflectorized Pavement Markings

Mark the location of standard pavement markings, including barrier lines, no passing zones, gores, and transitions adjusting to meet latest standards or as directed by the Engineer.

After completion of all work and removal of the barricades, time charges will be suspended. The performance period for the project will not begin until all the striping has been completed. Final acceptance will not be granted until the performance period for pavement markings is complete. If replacement markings are needed, traffic control for moving operations will be required. No payment will be made for traffic control during replacement striping work. All traffic control work shall be considered subsidiary to the project's replacement striping work.

The yellow or white long-line striping for re-striping operations will not lag one another by more than four (4) working days. The performance period for a roadway will not begin for a section of roadway or a project until all required striping for that section or project has been completed.

Provide a schedule and notify the District Traffic Office a minimum of 3 days prior to any striping operation. Contact via email at LBB-TRFOPS@TxDOT.GOV. If not notified, the time frame for testing and meeting the Retroreflectivity requirements in article 4.4 will start the day the department is made aware of that the markings have been applied.

Item 668 - Prefabricated Pavement Markings

Reference the "Standard Highway Sign Designs for Texas" manual for dimensions to words and symbols.

Manufacturer's sealer is subsidiary to this item. Surface preparation will be paid for separately under Item 678.

Item 677 - Eliminating Existing Pavement Markings and Markers

Eliminate existing pavement markings on asphalt surfaces by Blasting at the project limits that get the work zone seal coat and as directed. Otherwise, use the Surface Treatment Method.

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Eliminate existing pavement markings on concrete surfaces by the Water Blasting Method.

Payment for covering a solid yellow line with a broken yellow line next to it, parallel to the centerline of the highway, will be by the linear foot. This payment will be made only once for two stripes side-by-side.

Item 678 - Pavement Surface Preparation for Markings

Use dry sandblasting for asphalt surfaces.

Use water blasting for concrete surfaces.

Item 680 - Highway Traffic Signals

Provide a schedule and notify the District Traffic Office a minimum of 3 days prior to any signal installation. Contact via email at LBB-TRFOPS@TXDOT.GOV.

Turn all non-operational signal heads down facing the roadway surface, or completely cover the lenses with an opaque material. The location of signal poles, conduit, ground boxes and controllers may be adjusted to accommodate existing utilities or local conditions with prior approval of the Engineer. Verify the location of all existing utilities in the field prior to construction. Provide a technician on call in the city at all times during the required 30-day test period.

Cameras and monitors will be furnished by the State under a force account and installed in accordance to the manufacturer's recommendations.

Item 682 - Vehicle and Pedestrian Signal Heads

Provide pedestrian signal indications using symbol type and astro bracket mounted with CGB or galvanized pipe nipple.

Provide aluminum vehicle and pedestrian signal heads for this project. Furnish ABS formed black plastic back-plates with the vehicle signal heads. Attach back-plates to the vehicle signal heads and with a minimum of ½ inch of material from the edge of mounting holes to the near edge of the back plate. Furnish aluminum visors for vehicle signal heads.

Mount the signal head for horizontally mounted vehicle signal heads, at least 18 feet but no more than 20 feet, above the pavement grade measured from the center of the roadway to the bottom of the signal head.

Item 685 – Roadside Flashing Beacon Assemblies

Provide screw-in foundations.

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Provide a schedule and notify the District Traffic Office a minimum of 3 days prior to any flashing beacon installation. Contact via email at LBB-TRFOPS@TXDOT.GOV.

Item 686 - Traffic Signal Pole Assemblies (Steel)

Use bracket assembly Option C of the SMA-100 and DMA-100 Standard Sheets for signal head mounting for both horizontal and vertical mount signal heads. Check foundation elevations to assure compliance with mounting height requirements.

Attach dampening devices to mast arms 36 feet in length and longer. Dampening will not be paid for directly, but will be considered subsidiary to Item 686 – “Traffic Signal Pole Assemblies”.

Internally wire signal cable for the vehicular signal heads without drip loops. Thread the hole in the mast arm shaft leading into the astro-bracket mount for a CGB connector or a galvanized pipe nipple. Furnish and install CGB connectors or galvanized pipe nipples. The materials and work necessary will not be paid for separately but will be considered subsidiary to Item 686 – “Traffic Signal Pole Assemblies”.

Item 688 – Pedestrian Detectors and Vehicle Loop Detectors

Provide push buttons for pedestrian actuation meeting current ADA requirements.

Item 730 - Roadside Mowing

Mow full-width from pavement edge to Right-of-Way line 8 times. The Engineer shall dictate the times to mow and the areas in the project to mow.

Each mowing cycle is for the entire project and is approximately 6.33 acres.

Truck mounted attenuators shall be used while mowing.

Item 734 – Litter Removal

Perform litter removal prior to mowing and as directed by the Engineer.

Item 738 – Cleaning and Sweeping Highways

Cleaning and sweeping existing pavements will be once a month and as directed by the Engineer.

Items 666, 668 & 6038 – Pavement Markings

Mark the location of standard pavement markings, including barrier lines, no passing zones, gores, and transitions adjusting to meet latest standards or as directed by the Engineer.

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After completion of all work and removal of the barricades, time charges will be suspended. The performance period for the project will not begin until all the striping has been completed. Final acceptance will not be granted until the performance period for pavement markings is complete. If replacement markings are needed, traffic control for moving operations will be required. No payment will be made for traffic control during replacement striping work. All traffic control work shall be considered subsidiary to the project's replacement striping work.

The yellow or white long-line striping for re-striping operations will not lag one another by more than four (4) working days. The performance period for a roadway will not begin for a section of roadway or a project until all required striping for that section or project has been completed.

Provide a schedule and notify the District Traffic Office a minimum of 3 days prior to any striping operation. Contact via email at LBB-TRFOPS@TxDOT.GOV. If not notified, the time frame for testing and meeting the Retroreflectivity requirements in article 4.4 will start the day the department is made aware of that the markings have been applied.

Item 3032 – Reinforced Paving Mat for Asphalt Pavement Overlays

Provide a letter from the manufacturer that authorizes the installer to install the product.

Submerge a 2 in x 2 in of sample in D-Limonene or other approved solvent for 60 minutes. The result is passing if the solvent remains clear.

Don't install more reinforcing fabric that can't be covered that same day.

Provide PG76-28 binder at a rate of 0.15 gal/sy.

Items 3076, 3077, 3079, 3080, 3081, and 3082 – Hot Mix Asphalt Pavement

PG 76-28 asphalt is required for this project.

Provide a summary spreadsheet for each lot in accordance with Article 520.2 of the Standard Specifications.

Design the mixture with a Superpave Gyratory Compactor (SGC).

Aggregate will be subjected to five cycles of the magnesium sulfate soundness test in accordance with Test Method TEX-411-A. The loss shall not be greater than **20** percent.

The mix will be evaluated for stripping through the boil and hamburg wheel tests. If it is determined to be stripping then 1% lime, liquid anti-strip or a warm mix additive proven to prevent stripping will be required.

Schedule the placement width for the final hotmix surface in such a manner that all joints will coincide with proposed lane lines (+/- 6 inches).

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Provide emulsified trackless asphalt for tack coat at a rate of 0.10-0.14 gal/sy.

The Contractor will be required to tack 100% of the surfaces prior to the subsequent lift including all vertical joints.

Use a self-propelled, wheel-mounted material transfer vehicle (MTV) capable of receiving hot mix from the haul trucks separate from the paver on this project or provide the PaveIR. Minimum requirements for the MTV are a storage capacity of approximately 25 tons, a pivoting discharge conveyor, a means of completely remixing the ACP prior to placement, and a paver hopper equipped with a separate surge storage insert with a minimum capacity of approximately 20 tons.

Provide straight edges including the outside edge. Any edges not conforming to the typical sections will be cut and removed at the Contractor's expense.

No TxDOT RAP is available for this project.

There are paving widths less than 10 ft wide on this project.

Do not pave when temperatures get below 32 degrees F in a 12 hour period.

No substitute PG grade binders will be allowed.

Provide a square edge before laying the adjacent lane of hotmix as directed by the Engineer.

Do not place hotmix if the sustained wind speed gets to over 25 miles per hour.

All calibration pans will be mixed within the Lubbock District. Notify the Engineer two days prior to mixing pans to allow ample time for a TxDOT Level 2 technician to witness the calibration pans to be mixed.

Seal all joints between hotmix and curb and gutter.

Below is a quick attempt at setting required sample sizes for hot mix referee and performance tests. The table goes by number of sample boxes that everyone is familiar with. These are the 3 inch tall boxes that come white or brown. They can hold between 10,000g – 14,000g of mix.

Test	Number of Boxes
Lab molded density	2
Asphalt Content and Gradation	1
Hamburg	2
Overlay	3

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Control: 0439-05-026

Highway: SH 194

Sheet 13M

Notice that the performance tests take 5 boxes total if both Hamburg and Overlay tests are to be done. Please talk to your contractor 1A technicians about sampling enough mix to set aside in case there would be performance tests needed to make decisions later in the project.

Item 3076 – Dense-Graded Hot-Mix Asphalt

Asphalt stabilized base will not be allowed as RAP.

Fractionate the RAP if used in the mixture design.

Post-consumer RAS will not be allowed.

No exempt production on driving lanes and shoulder.

The TY B hotmix is considered a surface layer and is subject to the Minimum Pavement Surface Temperature requirements in Tables 14A and 14B.

Item 3080 – Stone-Matrix Asphalt

Place hot mix between May 15 and September 30.

Provide emulsified trackless asphalt for tack coat at a rate of 0.10-0.14 gal/sy.

Tack all vertical joints with trackless tack at an approximate rate of 0.10 – 0.14 gal/sy, unless otherwise directed.

Tack coat for the horizontal surface prior to SMA placement will not be required. The reinforcing fabric binder will perform as the tack coat.

Cement and kiln dust will not be allowed to be used as mineral fillers.

The percent passing the #200 sieve will be 6.0-12.0 in Section 4.4.1, Table 7 Master Gradation Limits for SMA-D Medium.

RAP will not be allowed.

Beginning with Lot 2, if the Contractor's requested referee test results come back with a failing lab molded density, the Contractor may request performance tests on the laboratory tested material be used as a basis for acceptance of the sub lot at maximum production penalty.

The contractor will have one day after receiving the referee testing results to request in writing that TxDOT consider acceptance of the material using performance testing.

If SMA fails performance tests then remove and replace the TY-D, Reinforcing Fabric/Grid, and SMA at the Contractor's expense.

County: HALE

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Sheet 13M

Item 6001 - Portable Changeable Message Sign

Provide messages as directed by the Engineer.

Provide 4 solar powered changeable message signs for the duration of this project.

Inform the public 2 weeks before construction begins.

Item 6185 – Truck Mounted Attenuator (TMA) and Trailer Attenuator (TA)

Provide 1 TMA for stationary use for the duration of the project. Stationary TMAs will be used during the various phases of work required for this project. Payment will be made by the day for each TMA used in stationary operations.

A TMA is considered stationary when the TMA is parked more than 15 minutes.

Provide 3 TMAs for mobile use. Mobile TMAs will be used for moving operations such as striping, RPM placement, and street sweeping. Payment will be made by the day for each TMA used in mobile operations.

Item 6307 – Temporary Speed Monitoring System

Provide 2 speed monitoring trailers for this project.

Provide a schedule and notify the District Traffic Office a minimum of 3 days prior to any LED installation. Contact via email at LBB-TRFOPS@TXDOT.GOV.



Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0439-05-026

DISTRICT Lubbock
HIGHWAY SH 194

COUNTY Hale

CONTROL SECTION JOB				0439-05-026		TOTAL EST.	TOTAL FINAL
PROJECT ID				A00128019			
COUNTY				Hale			
HIGHWAY				SH 194			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL		
	104-6001	REMOVING CONC (PAV)	SY	1,422.000		1,422.000	
	104-6009	REMOVING CONC (RIPRAP)	SY	72.000		72.000	
	104-6011	REMOVING CONC (MEDIANS)	SY	532.000		532.000	
	104-6015	REMOVING CONC (SIDEWALKS)	SY	587.000		587.000	
	104-6017	REMOVING CONC (DRIVEWAYS)	SY	2,272.000		2,272.000	
	104-6022	REMOVING CONC (CURB AND GUTTER)	LF	218.000		218.000	
	104-6026	REMOVE CONC (GUTTER)	LF	1,132.000		1,132.000	
	104-6028	REMOVING CONC (MISC)	SY	306.000		306.000	
	104-6032	REMOVING CONC (WHEELCHAIR RAMP)	SY	6.000		6.000	
	110-6001	EXCAVATION (ROADWAY)	CY	1,559.200		1,559.200	
	132-6006	EMBANKMENT (FINAL)(DENS CONT)(TY C)	CY	146.900		146.900	
	134-6001	BACKFILL (TY A)	STA	38.000		38.000	
	162-6002	BLOCK SODDING	SY	3,473.000		3,473.000	
	164-6066	DRILL SEEDING (PERM)(WARM OR COOL)	SY	3,035.000		3,035.000	
	168-6001	VEGETATIVE WATERING	MG	219.100		219.100	
	216-6001	PROOF ROLLING	HR	60.000		60.000	
	260-6002	LIME (HYDRATED LIME (SLURRY))	TON	1,156.000		1,156.000	
	260-6027	LIME TRT (EXST MATL)(8")	SY	102,310.000		102,310.000	
	310-6009	PRIME COAT (MC-30)	GAL	21,718.000		21,718.000	
	314-6013	EMULS ASPH (EROSN CONT)(CSS-1H)	GAL	668.000		668.000	
	315-6004	FOG SEAL (CSS-1H)	GAL	26,580.000		26,580.000	
	351-6036	FLEX PAVEMENT STRUCTURE REPAIR (2-8")	SY	1,026.000		1,026.000	
	354-6042	PLANE ASPH CONC PAV (8")	SY	107,921.000		107,921.000	
	360-6004	CONC PVMT (CONT REINF - CRCP) (10")	SY	1,422.000		1,422.000	
	360-6073	CONC PVMT (CRCP)(JCT TERMINAL)(10")	SY	185.000		185.000	
	416-6004	DRILL SHAFT (36 IN)	LF	206.000		206.000	
	416-6029	DRILL SHAFT (RDWY ILL POLE) (30 IN)	LF	1,070.000		1,070.000	
	420-6066	CL C CONC (RAIL FOUNDATION)	CY	5.000		5.000	
	429-6009	CONC STR REPAIR (STANDARD)	SF	27.000		27.000	
	432-6010	RIPRAP (CONC)(CL B)(5 IN)	CY	18.000		18.000	
	442-6035	STR STEEL (NBIS)	LB	56.000		56.000	
	450-6012	RAIL (TY T411)	LF	118.000		118.000	
	467-6423	SET (TY II) (30 IN) (RCP) (6: 1) (P)	EA	1.000		1.000	
	467-6494	SET (TY II) (60 IN) (CMP) (6: 1) (P)	EA	2.000		2.000	
	479-6004	ADJUSTING MANHOLES (SANITARY)	EA	4.000		4.000	
	479-6005	ADJUSTING MANHOLES (WATER VALVE BOX)	EA	44.000		44.000	
	479-6008	ADJUSTING MANHOLES (WATER METER)	EA	23.000		23.000	

DISTRICT	COUNTY	CCSJ	SHEET
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Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0439-05-026

DISTRICT Lubbock
HIGHWAY SH 194

COUNTY Hale

CONTROL SECTION JOB				0439-05-026		TOTAL EST.	TOTAL FINAL
PROJECT ID				A00128019			
COUNTY				Hale			
HIGHWAY				SH 194			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL		
	496-6004	REMOV STR (SET)	EA	2.000		2.000	
	496-6006	REMOV STR (HEADWALL)	EA	1.000		1.000	
	500-6001	MOBILIZATION	LS	1.000		1.000	
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	28.000		28.000	
	506-6020	CONSTRUCTION EXITS (INSTALL) (TY 1)	SY	156.000		156.000	
	506-6024	CONSTRUCTION EXITS (REMOVE)	SY	156.000		156.000	
	506-6035	SANDBAGS FOR EROSION CONTROL	EA	154.000		154.000	
	506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	10,222.000		10,222.000	
	506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	5,111.000		5,111.000	
	506-6041	BIODEG EROSN CONT LOGS (INSTL) (12")	LF	1,564.000		1,564.000	
	506-6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	782.000		782.000	
	508-6001	CONSTRUCTING DETOURS	SY	153.000		153.000	
	529-6008	CONC CURB & GUTTER (TY II)	LF	452.000		452.000	
	529-6030	CONC CURB & GUTTER (VALLEY GUTTER)	LF	1,258.000		1,258.000	
	530-6004	DRIVEWAYS (CONC)	SY	2,834.000		2,834.000	
	531-6003	CONC SIDEWALKS (6")	SY	7,775.000		7,775.000	
	531-6018	CURB RAMPS (TY 1)	SY	7.000		7.000	
	531-6019	CURB RAMPS (TY 2)	SY	14.000		14.000	
	531-6022	CURB RAMPS (TY 5)	SY	20.000		20.000	
	531-6024	CURB RAMPS (TY 7)	SY	84.000		84.000	
	531-6027	CURB RAMPS (TY 10)	SY	103.000		103.000	
	536-6002	CONC MEDIAN	SY	532.000		532.000	
	560-6001	MAILBOX INSTALL-S (TWG-POST) TY 1	EA	8.000		8.000	
	610-6009	REMOVE RD IL ASM (TRANS-BASE)	EA	10.000		10.000	
	610-6290	IN RD IL (TY SA) 50T-12 (400W EQ) LED	EA	107.000		107.000	
	618-6046	CONDT (PVC) (SCH 80) (2")	LF	7,260.000		7,260.000	
	618-6047	CONDT (PVC) (SCH 80) (2") (BORE)	LF	15,448.000		15,448.000	
	618-6053	CONDT (PVC) (SCH 80) (3")	LF	270.000		270.000	
	618-6054	CONDT (PVC) (SCH 80) (3") (BORE)	LF	35.000		35.000	
	618-6058	CONDT (PVC) (SCH 80) (4")	LF	175.000		175.000	
	618-6059	CONDT (PVC) (SCH 80) (4") (BORE)	LF	1,570.000		1,570.000	
	620-6007	ELEC CONDR (NO.8) BARE	LF	1,365.000		1,365.000	
	620-6008	ELEC CONDR (NO.8) INSULATED	LF	2,730.000		2,730.000	
	620-6009	ELEC CONDR (NO.6) BARE	LF	2,385.000		2,385.000	
	620-6011	ELEC CONDR (NO.4) BARE	LF	21,363.000		21,363.000	
	620-6012	ELEC CONDR (NO.4) INSULATED	LF	42,726.000		42,726.000	
	624-6002	GROUND BOX TY A (122311)W/APRON	EA	12.000		12.000	



DISTRICT	COUNTY	CCSJ	SHEET
Lubbock	Hale	0439-05-026	14A



Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0439-05-026

DISTRICT Lubbock
HIGHWAY SH 194

COUNTY Hale

CONTROL SECTION JOB				0439-05-026		TOTAL EST.	TOTAL FINAL
PROJECT ID				A00128019			
COUNTY				Hale			
HIGHWAY				SH 194			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL		
	624-6010	GROUND BOX TY D (162922)W/APRON	EA	25.000		25.000	
	628-6086	ELC SRV TY A 240/480 100(SS)SS(E)SP(O)	EA	4.000		4.000	
	628-6145	ELC SRV TY D 120/240 060(NS)SS(E)SP(O)	EA	4.000		4.000	
	636-6001	ALUMINUM SIGNS (TY A)	SF	72.000		72.000	
	644-6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	58.000		58.000	
	644-6004	IN SM RD SN SUP&AM TY10BWG(1)SA(T)	EA	4.000		4.000	
	644-6009	IN SM RD SN SUP&AM TY10BWG(1)SB(P)	EA	13.000		13.000	
	644-6012	IN SM RD SN SUP&AM TY10BWG(1)SB(T)	EA	1.000		1.000	
	644-6027	IN SM RD SN SUP&AM TYS80(1)SA(P)	EA	1.000		1.000	
	644-6028	IN SM RD SN SUP&AM TYS80(1)SA(P-BM)	EA	4.000		4.000	
	644-6030	IN SM RD SN SUP&AM TYS80(1)SA(T)	EA	4.000		4.000	
	644-6034	IN SM RD SN SUP&AM TYS80(1)SA(U-1EXT)	EA	2.000		2.000	
	644-6035	IN SM RD SN SUP&AM TYS80(1)SA(U-2EXT)	EA	2.000		2.000	
	644-6040	IN SM RD SN SUP&AM TYS80(1)SB(P-BM)	EA	1.000		1.000	
	644-6042	IN SM RD SN SUP&AM TYS80(1)SB(T)	EA	1.000		1.000	
	644-6044	IN SM RD SN SUP&AM TYS80(1)SB(U)	EA	1.000		1.000	
	644-6068	RELOCATE SM RD SN SUP&AM TY 10BWG	EA	1.000		1.000	
	644-6076	REMOVE SM RD SN SUP&AM	EA	109.000		109.000	
	658-6103	INSTL OM ASSM (OM-3L)(WFLX)GND) GND	EA	2.000		2.000	
	658-6106	INSTL OM ASSM (OM-3R)(WFLX)GND) GND	EA	2.000		2.000	
	662-6001	WK ZN PAV MRK NON-REMOV (W)4"(BRK)	LF	8,920.000		8,920.000	
	662-6002	WK ZN PAV MRK NON-REMOV (W)4"(DOT)	LF	130.000		130.000	
	662-6004	WK ZN PAV MRK NON-REMOV (W)4"(SLD)	LF	41,040.000		41,040.000	
	662-6012	WK ZN PAV MRK NON-REMOV (W)8"(SLD)	LF	3,975.000		3,975.000	
	662-6014	WK ZN PAV MRK NON-REMOV (W)12"(SLD)	LF	1,540.000		1,540.000	
	662-6016	WK ZN PAV MRK NON-REMOV (W)24"(SLD)	LF	1,529.000		1,529.000	
	662-6017	WK ZN PAV MRK NON-REMOV (W)(ARROW)	EA	8.000		8.000	
	662-6032	WK ZN PAV MRK NON-REMOV (Y)4"(BRK)	LF	5,610.000		5,610.000	
	662-6034	WK ZN PAV MRK NON-REMOV (Y)4"(SLD)	LF	169,410.000		169,410.000	
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA	20.000		20.000	
	662-6110	WK ZN PAV MRK SHT TERM (TAB)TY Y	EA	40.000		40.000	
	666-6030	REFL PAV MRK TY I (W)8"(DOT)(100MIL)	LF	350.000		350.000	
	666-6036	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF	3,454.000		3,454.000	
	666-6045	REFL PAV MRK TY I (W)18"(SLD)(100MIL)	LF	285.000		285.000	
	666-6156	REFL PAV MRK TY I(Y)(MED NOSE)(100MIL)	EA	8.000		8.000	
	666-6225	PAVEMENT SEALER 6"	LF	1,200.000		1,200.000	
	666-6231	PAVEMENT SEALER (ARROW)	EA	2.000		2.000	

DISTRICT	COUNTY	CCSJ	SHEET
Lubbock	Hale	0439-05-026	14B



CONTROLLING PROJECT ID 0439-05-026

DISTRICT Lubbock
HIGHWAY SH 194

COUNTY Hale

Estimate & Quantity Sheet

CONTROL SECTION JOB				0439-05-026		TOTAL EST.	TOTAL FINAL
PROJECT ID				A00128019			
COUNTY				Hale			
HIGHWAY				SH 194			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL		
	666-6231	PAVEMENT SEALER (ARROW)	EA	2.000		2.000	
	666-6306	RE PM W/RET REQ TY I (W)6"(BRK)(100MIL)	LF	6,670.000		6,670.000	
	666-6309	RE PM W/RET REQ TY I (W)6"(SLD)(100MIL)	LF	4,575.000		4,575.000	
	666-6318	RE PM W/RET REQ TY I (Y)6"(BRK)(100MIL)	LF	4,610.000		4,610.000	
	666-6321	RE PM W/RET REQ TY I (Y)6"(SLD)(100MIL)	LF	33,276.000		33,276.000	
	668-6074	PREFAB PAV MRK TY C (W) (12") (SLD)	LF	122.000		122.000	
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF	2,000.000		2,000.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA	87.000		87.000	
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA	29.000		29.000	
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA	2.000		2.000	
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA	8.000		8.000	
	672-6007	REFL PAV MRKR TY I-C	EA	547.000		547.000	
	672-6009	REFL PAV MRKR TY II-A-A	EA	1,046.000		1,046.000	
	677-6001	ELIM EXT PAV MRK & MRKS (4")	LF	64,440.000		64,440.000	
	677-6003	ELIM EXT PAV MRK & MRKS (8")	LF	2,360.000		2,360.000	
	677-6005	ELIM EXT PAV MRK & MRKS (12")	LF	260.000		260.000	
	677-6007	ELIM EXT PAV MRK & MRKS (24")	LF	674.000		674.000	
	677-6008	ELIM EXT PAV MRK & MRKS (ARROW)	EA	22.000		22.000	
	678-6002	PAV SURF PREP FOR MRK (6")	LF	1,200.000		1,200.000	
	678-6009	PAV SURF PREP FOR MRK (ARROW)	EA	2.000		2.000	
	680-6002	INSTALL HWY TRF SIG (ISOLATED)	EA	4.000		4.000	
	680-6004	REMOVING TRAFFIC SIGNALS	EA	4.000		4.000	
	681-6001	TEMP TRAF SIGNALS	EA	5.000		5.000	
	682-6001	VEH SIG SEC (12")LED(GRN)	EA	32.000		32.000	
	682-6002	VEH SIG SEC (12")LED(GRN ARW)	EA	12.000		12.000	
	682-6003	VEH SIG SEC (12")LED(YEL)	EA	32.000		32.000	
	682-6004	VEH SIG SEC (12")LED(YEL ARW)	EA	24.000		24.000	
	682-6005	VEH SIG SEC (12")LED(RED)	EA	32.000		32.000	
	682-6006	VEH SIG SEC (12")LED(RED ARW)	EA	12.000		12.000	
	682-6018	PED SIG SEC (LED)(COUNTDOWN)	EA	30.000		30.000	
	682-6048	VEH SIG SEC (12")(LED)(YEL)(SOLAR)	EA	12.000		12.000	
	682-6054	BACKPLATE W/REF BRDR(3 SEC)(VENT)ALUM	EA	32.000		32.000	
	682-6055	BACKPLATE W/REF BRDR(4 SEC)(VENT)ALUM	EA	12.000		12.000	
	684-6009	TRF SIG CBL (TY A)(12 AWG)(4 CONDR)	LF	4,100.000		4,100.000	
	684-6010	TRF SIG CBL (TY A)(12 AWG)(5 CONDR)	LF	736.000		736.000	
	684-6012	TRF SIG CBL (TY A)(12 AWG)(7 CONDR)	LF	4,918.000		4,918.000	
	684-6017	TRF SIG CBL (TY A)(12 AWG)(12 CONDR)	LF	2,225.000		2,225.000	



DISTRICT	COUNTY	CCSJ	SHEET
Lubbock	Hale	0439-05-026	14C



Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0439-05-026

DISTRICT Lubbock
HIGHWAY SH 194

COUNTY Hale

CONTROL SECTION JOB				0439-05-026		TOTAL EST.	TOTAL FINAL
PROJECT ID				A00128019			
COUNTY				Hale			
HIGHWAY				SH 194			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL		
	685-6004	INSTL RDS D FLSH BCN ASSM (SOLAR PWRD)	EA	4.000		4.000	
	685-6006	REMOV RDS D FLSH BCN AM (SOLAR PWRD)	EA	4.000		4.000	
	686-6025	INS TRF SIG PL AM (S)1 ARM(24')	EA	1.000		1.000	
	686-6033	INS TRF SIG PL AM(S)1 ARM(32')	EA	1.000		1.000	
	686-6037	INS TRF SIG PL AM(S)1 ARM(36')	EA	4.000		4.000	
	686-6039	INS TRF SIG PL AM(S)1 ARM(36')LUM	EA	6.000		6.000	
	686-6041	INS TRF SIG PL AM(S)1 ARM(40')	EA	1.000		1.000	
	686-6043	INS TRF SIG PL AM(S)1 ARM(40')LUM	EA	1.000		1.000	
	686-6045	INS TRF SIG PL AM(S)1 ARM(44')	EA	1.000		1.000	
	686-6047	INS TRF SIG PL AM(S)1 ARM(44')LUM	EA	1.000		1.000	
	687-6001	PED POLE ASSEMBLY	EA	17.000		17.000	
	688-6001	PED DETECT PUSH BUTTON (APS)	EA	30.000		30.000	
	730-6107	FULL - WIDTH MOWING	CYC	8.000		8.000	
	734-6002	LITTER REMOVAL	CYC	8.000		8.000	
	738-6003	CLEANING / SWEEPING (OUTSIDE MAIN LANE)	CYC	28.000		28.000	
	752-6005	TREE REMOVAL (4" - 12" DIA)	EA	1.000		1.000	
	752-6008	TREE REMOVAL (24" - 30" DIA)	EA	3.000		3.000	
	752-6018	STUMP REMOVAL (GREATER THAN 12")	EA	3.000		3.000	
	3032-6001	REINFORCED FAB FOR ASPH PVMNT OVERLAYS	SY	102,310.000		102,310.000	
	3032-6004	ASPH FOR REINF FAB (PG76-28)	GAL	15,347.000		15,347.000	
	3076-6066	TACK COAT	GAL	1,581.000		1,581.000	
	3076-6090	D-GR HMA TY-B SAC-B PG 76-28	TON	37,467.000		37,467.000	
	3080-6008	STONE-MTRX-ASPH SMA-D SAC-A PG76-28	TON	12,765.000		12,765.000	
	6001-6001	PORTABLE CHANGEABLE MESSAGE SIGN	DAY	3,360.000		3,360.000	
	6058-6001	BBU SYSTEM (EXTERNAL BATT CABINET)	EA	4.000		4.000	
	6185-6002	TMA (STATIONARY)	DAY	1,065.000		1,065.000	
	6185-6005	TMA (MOBILE OPERATION)	DAY	140.000		140.000	
	6292-6004	RVDS(PRESENCE DET ONLY)(INSTALL ONLY)	EA	16.000		16.000	
	6292-6005	RVDS(ADVANCE DET ONLY)(INSTALL ONLY)	EA	10.000		10.000	
	6307-6003	TEMP SPEED MONITOR SYS	EA	2.000		2.000	
	7012-6001	CURB INLET SEDIMENT PROTECTION	LF	260.000		260.000	
	01	STATE FORCE ACCOUNT WORK (NON-PARTICIPATING)	LS	1.000		1.000	
	02	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK (NON PARTICIPATING)	LS	1.000		1.000	
	04	PUBLIC UTILITY FORCE ACCT WORK (NON-PARTICIPATING)	LS	1.000		1.000	
	08	CONTRACTOR FORCE ACCOUNT EROSION CONTROL MAINTENANCE (NON-PARTICIPATING)	LS	1.000		1.000	

DISTRICT	COUNTY	CCSJ	SHEET
Lubbock	Hale	0439-05-026	14D



Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0439-05-026

DISTRICT Lubbock
HIGHWAY SH 194

COUNTY Hale

CONTROL SECTION JOB				0439-05-026		TOTAL EST.	TOTAL FINAL
PROJECT ID				A00128019			
COUNTY				Hale			
HIGHWAY				SH 194			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL		
	08	CONTRACTOR FORCE ACCOUNT SAFETY CONTINGENCY (NON-PARTICIPATING)	LS	1.000		1.000	


PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcfgr PENTABLE: 194050_SH194_Pentable.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 7:23:00 PM SCALE: 1:100
 FILE: SH194_Quantities_TCP.dgn

TRAFFIC CONTROL SUMMARY									
LOCATION	508 6001	662 6001	662 6002	662 6004	662 6012	662 6014	662 6016	662 6017	662 6032
	CONSTRUCTING DETOURS	WK ZN PAV MRK NON-REMOV (W) 4" (BRK)	WK ZN PAV MRK NON-REMOV (W) 4" (DOT)	WK ZN PAV MRK NON-REMOV (W) 4" (SLD)	WK ZN PAV MRK NON-REMOV (W) 8" (SLD)	WK ZN PAV MRK NON-REMOV (W) 12" (SLD)	WK ZN PAV MRK NON-REMOV (W) 24" (SLD)	WK ZN PAV MRK NON-REMOV (W) (ARROW)	WK ZN PAV MRK NON-REMOV (Y) 4" (BRK)
	SY	LF	LF	LF	LF	LF	LF	EA	LF
PHASE 1									
STEP 1	153			15600	480		195		
STEP 2		80		15990	275		181		
STEP 3		6640		460	1220	1130	300	7	5060
PHASE 2									
STEP 1				3950			50		
STEP 2		100	70	100	450		70		
STEP 3		370	60	3330			33		
STEP 4		480		460	80	410	310	1	270
PHASE 3									
STEP 1		970		670	740		210		280
STEP 2		280		480	730		180		
TOTALS:	153	8920	130	41040	3975	1540	1529	8	5610


* ANY MODIFICATION OF THE TEMPORARY SIGNALS IN SUBSEQUENT STEPS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE SUBSIDIARY TO ITEM 681-6001 "TEMPORARY TRAFFIC SIGNALS."

TRAFFIC CONTROL SUMMARY									
LOCATION	662 6034	662 6109	662 6110	677 6001	677 6003	677 6005	677 6007	677 6008	681 6001
	WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)	WK ZN PAV MRK SHT TERM (TAB) TY W	WK ZN PAV MRK SHT TERM (TAB) TY Y	ELIM EXT PAV MRK & MRKS (4")	ELIM EXT PAV MRK & MRKS (8")	ELIM EXT PAV MRK & MRKS (12")	ELIM EXT PAV MRK & MRKS (24")	ELIM EXT PAV MRK & MRKS (ARROW)	TEMP TRAF SIGNALS*
	LF	EA	EA	LF	LF	LF	LF	EA	EA
PHASE 1									
STEP 1	31840			9730	1000	180	85	8	3
STEP 2	30000			8110	480		40		
STEP 3	27040			28850	275		130		
PHASE 2									
STEP 1	9080				90		104	4	1
STEP 2	7080			5500					
STEP 3	6810			5700	50				
STEP 4	2100			5200			25	10	
PHASE 3									
STEP 1	27800				350	80	210		1
STEP 2	27660	20	40	1350	115		80		
TOTALS:	169410	20	40	64440	2360	260	674	22	5

LOCATION	662 6001		662 6002		662 6004		662 6032		662 6034	
	WK ZN PAV MRK NON-REMOV (W) 4" (BRK)	REPLACEMENT QUANTITY	WK ZN PAV MRK NON-REMOV (W) 4" (DOT)	REPLACEMENT QUANTITY	WK ZN PAV MRK NON-REMOV (W) 4" (SLD)	REPLACEMENT QUANTITY	WK ZN PAV MRK NON-REMOV (Y) 4" (BRK)	REPLACEMENT QUANTITY	WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)	REPLACEMENT QUANTITY
	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
PHASE 1										
STEP 1					7800	7800			15920	15920
STEP 2	40	40			7995	7995			15000	15000
STEP 3	3320	3320			230	230	2530	2530	13520	13520
PHASE 2										
STEP 1					1975	1975			4540	4540
STEP 2	50	50	35	35	50	50			3540	3540
STEP 3	185	185	30	30	1665	1665			3405	3405
STEP 4	240	240			230	230	135	135	1050	1050
PHASE 3										
STEP 1	485	485			335	335	140	140	13900	13900
STEP 2	140	140			240	240			13830	13830
TOTALS:		8920		130		41040		5610		169410



Engineers & Innovators, LLC
TBPE REGISTRATION NO. F-18368



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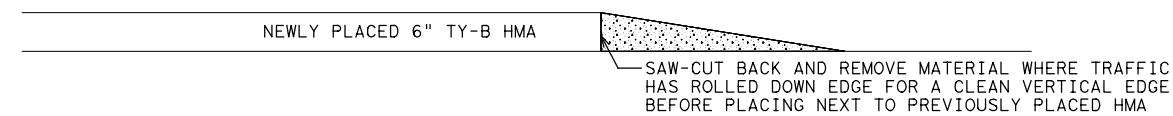
TCP SUMMARY

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026

15

GENERAL NOTES:

1. PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) PER TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) MUST BE PLACED 72 HOURS IN ADVANCE OF BEGINNING OF THE CONSTRUCTION. PROVIDE SIGNS AT THE BEGINNING AND END OF PROJECT IN ACCORDANCE WITH TRAFFIC CONTROL PLAN (TCP) STANDARD BC (2).
2. PLACE AND MAINTAIN ADVANCE WARNING SIGNS, TRAFFIC CONTROL DEVICES, WORK ZONE PAVEMENT MARKINGS AND SIGNS IN ACCORDANCE WITH TRAFFIC CONTROL PLAN, TRAFFIC CONTROL STANDARDS, TMUTCD AND GENERAL NOTES. THE SIGNS, TRAFFIC CONTROL AND WARNING DEVICES SHOWN ARE CONSIDERED MINIMUM AND ADDITIONAL SIGNS, TRAFFIC CONTROL OR WARNING DEVICES DEEMED NECESSARY BY THE ENGINEER OR DICTATED BY FIELD CONDITIONS SHALL BE PROVIDED ACCORDING TO ALL APPLICABLE STANDARDS AND TMUTCD. ADDITIONAL SIGNS OR TRAFFIC CONTROL DEVICES WILL NOT BE PAID DIRECTLY BUT WILL BE SUBSIDIARY TO ITEM 502-6001 "BARRICADES, SIGNS AND TRAFFIC HANDLING."
3. THE SEQUENCE OF CONSTRUCTION PROVIDED IS NOT TO BE CONSIDERED RESTRICTIVE. THE CONTRACTOR WITH WRITTEN APPROVAL OF THE ENGINEER, MAY ALTER THE SEQUENCE OF CONSTRUCTION PROVIDED THE TRAFFIC IS MAINTAINED AND THE CRITERIA ESTABLISHED HEREIN IS FOLLOWED.
4. MAINTAIN ACCESS TO ALL SIDE STREETS AND ADJOINING PROPERTIES AT ALL TIMES. THIS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO VARIOUS BID ITEMS.
5. USE DETOUR FOR THE SIDE STREETS CONSTRUCTION. NO TWO CONSECUTIVE SIDE STREETS SHALL BE CLOSED AT THE SAME TIME. SEE "TRAFFIC CONTROL PLAN SIDE STREET TYPICAL DETOUR LAYOUT" FOR ADDITIONAL INFORMATION.
6. THE CONTRACTOR SHALL LIMIT THE CONSTRUCTION AREA TO ONE BLOCK (BETWEEN TWO CONSECUTIVE SIDE STREETS) AT A TIME.
7. THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE THROUGHOUT THE DURATION OF THE PROJECT AND SHALL CORRECT ANY DRAINAGE DEFICIENCIES THAT MAY PRESENT A HAZARD TO THE TRAVELING PUBLIC OR PROPERTY. THIS WORK WILL NOT BE PAID FOR DIRECTLY BUT WILL BE SUBSIDIARY TO ITEM 502-6001 "BARRICADES, SIGNS AND TRAFFIC HANDLING."
8. THE CONTRACTOR SHALL REMOVE ALL EXISTING SIGNS AND PAVEMENT MARKINGS ARE IN CONFLICT WITH THE CONSTRUCTION SIGNS AND MARKINGS. EXISTING PAVEMENT MARKINGS SHALL BE REMOVED IN AREAS WHERE TRAFFIC IS DIRECTED TO CROSS THEM. THE SIGNS SHALL BE PROPERLY STORED IN A SAFE PLACE UNTIL THE CONSTRUCTION HAS BEEN COMPLETED.
9. NO WORK SHALL BE PERFORMED IN THE TRAVEL WAY, INCLUDING LOADING AND UNLOADING OF TRUCKS.
10. THE CONTRACTOR SHALL ENSURE THAT ALL BARRICADES, SIGNS, CHANNELIZING DEVICES, WARNING LIGHTS AND TRAFFIC CONTROL DEVICES ARE MAINTAINED IN A CLEAN FUNCTIONAL CONDITION AT ALL TIMES.
11. IT IS CONTRACTOR'S RESPONSIBILITY TO MAINTAIN TEMPORARY AND EXISTING PAVEMENT MARKINGS THROUGHOUT THE DURATION OF THE PROJECT.
12. IT IS CONTRACTOR'S RESPONSIBILITY TO MAINTAIN EXISTING MAILBOXES IN A CLEAN AND FUNCTIONAL CONDITION THROUGHOUT THE DURATION OF THE PROJECT.
13. THE CONTRACTOR SHALL MAINTAIN BARRICADES AND SAFETY FENCES AT EACH SITE WHERE PEDESTRIAN TRAFFIC IS EVIDENT.
14. THE CONTRACTOR SHALL COVER OPEN EXCAVATIONS IN APPLICABLE TRAVEL LANES WITH STEEL PLATES, ANCHORED PROPERLY DURING NON-WORKING HOURS, AND OPEN LANES FOR NORMAL TRAFFIC FLOW.
15. NOTIFY THE ENGINEER IN WRITING TWO WEEKS PRIOR TO SHIFTING TRAFFIC WITHIN EACH PHASE/STEP OF THE TRAFFIC CONTROL PLAN.
16. REMOVE SIGNS, BARRICADES, AND TRAFFIC CONTROL DEVICES NOT IN USE FOR 3 WORKING DAYS FROM THE RIGHT-OF-WAY.
17. CONTRACTOR TO UTILIZE FOLLOWING HOT-MIX ASPHALT TRANSITION DETAIL PRIOR TO PLACING HMA NEXT TO PREVIOUSLY PLACE HMA FOR A CLEAN VERTICAL EDGE.
18. CONTRACTOR TO UTILIZE FOLLOWING HOT-MIX ASPHALT RAMP DETAIL PRIOR TO OPENING TRAFFIC ON NEWLY PLACED TY-B HMA.
19. CONTRACTOR TO PLACE CW8-17 AND CW8-11 SIGNS AS DIRECTED BY THE ENGINEER.
20. THE SPEED LIMIT IN THE PROJECT AREA SHALL REMAIN AS EXISTING. ADVISORY SPEED LIMIT SIGNS SHALL BE PLACED AS DIRECTED BY THE ENGINEER.



HOT-MIX ASPHALT TRANSITION DETAIL

SEQUENCE OF CONSTRUCTION:

THE FOLLOWING NARRATIVE IS A SUPPLEMENT TO THE TRAFFIC CONTROL PLAN SHEETS.

PHASE 1:

1. INSTALL/ADJUST ADVANCED WARNING SIGNS AND TRAFFIC CONTROL DEVICES PRIOR TO COMMENCEMENT OF CONSTRUCTION AS SHOWN IN THE STANDARDS AND PLANS.
2. THE CONTRACTOR SHALL ADJUST THE LOCATION OF TRAFFIC CONTROL DEVICES AS NECESSARY TO MAINTAIN ACCESS TO RESIDENCES AND BUSINESSES AT ALL TIMES.
3. PLACE TEMPORARY EROSION CONTROL DEVICES AS SHOWN IN THE PLANS, AND AS DIRECTED BY THE ENGINEER, PRIOR TO BEGINNING OF ANY OTHER WORK.
4. CONSTRUCT PROPOSED PAVEMENT, BASE AND SUBGRADE FOR THE PROPOSED NORTHBOUND AND SOUTHBOUND LANES OF SH 194 TO THE LIMITS SHOWN ON THE PLANS.
5. PLACE ILLUMINATION CONDUIT, GROUND BOXES AND DRILL SHAFTS TO THE LIMITS SHOWN ON THE PLANS.

PHASE 1 MAJOR AND DETAILED ACTIVITIES:

SEE PHASE 1 TYPICAL SECTION SHEETS FOR MAJOR AND DETAILED ACTIVITIES.

PHASE 2:

1. INSTALL/ADJUST ADVANCED WARNING SIGNS AND TRAFFIC CONTROL DEVICES PRIOR TO COMMENCEMENT OF CONSTRUCTION AS SHOWN IN THE STANDARDS AND PLANS.
2. THE CONTRACTOR SHALL ADJUST THE LOCATION OF TRAFFIC CONTROL DEVICES AS NECESSARY TO MAINTAIN ACCESS TO RESIDENCES AND BUSINESSES AT ALL TIMES.
3. PLACE TEMPORARY EROSION CONTROL DEVICES AS SHOWN IN THE PLANS, AND AS DIRECTED BY THE ENGINEER, PRIOR TO BEGINNING OF ANY OTHER WORK.
4. CONSTRUCT PROPOSED PAVEMENT, BASE AND SUBGRADE FOR THE PROPOSED NORTHBOUND AND SOUTHBOUND LANES OF SH 194 TO THE LIMITS SHOWN ON THE PLANS.
5. PLACE ILLUMINATION CONDUIT, GROUND BOXES AND DRILL SHAFTS TO THE LIMITS SHOWN ON THE PLANS.

PHASE 2 MAJOR AND DETAILED ACTIVITIES:

SEE PHASE 2 TYPICAL SECTION SHEET FOR MAJOR AND DETAILED ACTIVITIES.

PHASE 3:

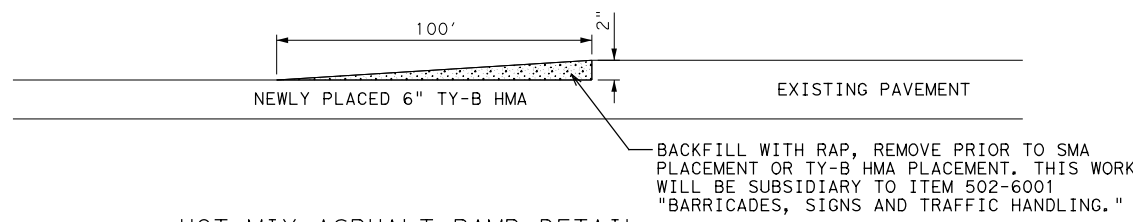
1. INSTALL/ADJUST ADVANCED WARNING SIGNS AND TRAFFIC CONTROL DEVICES PRIOR TO COMMENCEMENT OF CONSTRUCTION AS SHOWN IN THE STANDARDS AND PLANS.
2. THE CONTRACTOR SHALL ADJUST THE LOCATION OF TRAFFIC CONTROL DEVICES AS NECESSARY TO MAINTAIN ACCESS TO RESIDENCES AND BUSINESSES AT ALL TIMES.
3. PLACE TEMPORARY EROSION CONTROL DEVICES AS SHOWN IN THE PLANS, AND AS DIRECTED BY THE ENGINEER, PRIOR TO BEGINNING OF ANY OTHER WORK.
4. CONSTRUCT PROPOSED PAVEMENT, BASE AND SUBGRADE FOR THE PROPOSED EASTBOUND AND WESTBOUND LANES OF SH 194 TO THE LIMITS SHOWN ON THE PLANS.
5. PLACE ILLUMINATION CONDUIT, GROUND BOXES AND DRILL SHAFTS TO THE LIMITS SHOWN ON THE PLANS.

PHASE 3 MAJOR AND DETAILED ACTIVITIES:

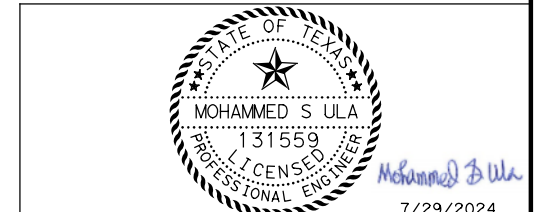
SEE PHASE 3 TYPICAL SECTION SHEET FOR MAJOR AND DETAILED ACTIVITIES.

PHASE 4:

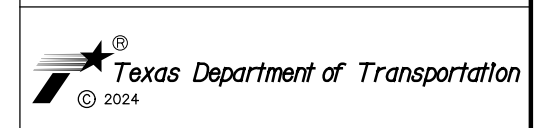
1. PLACE 2" SMA FOR ENTIRE LENGTH OF THE PROJECT. USE TCP (2-1), (2-2), (2-3), (2-5) STANDARDS FOR TRAFFIC CONTROL.
2. PLACE SIGNING, PERMANENT PAVEMENT MARKING AND RAISED PAVEMENT MARKERS AS SHOWN IN THE SIGNING AND PAVEMENT MARKING PLANS.
3. PLACE ILLUMINATION POLES, WIRING AND ALL OTHER APPURTENANCES TO THE FINAL CONFIGURATION AS SHOWN IN THE PLANS AND STANDARDS.
4. PERFORM FINAL CLEANUP OPERATIONS AND COMPLETE ALL PUNCH LIST ITEMS. REMOVE TRAFFIC CONTROL DEVICES.



HOT-MIX ASPHALT RAMP DETAIL



NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

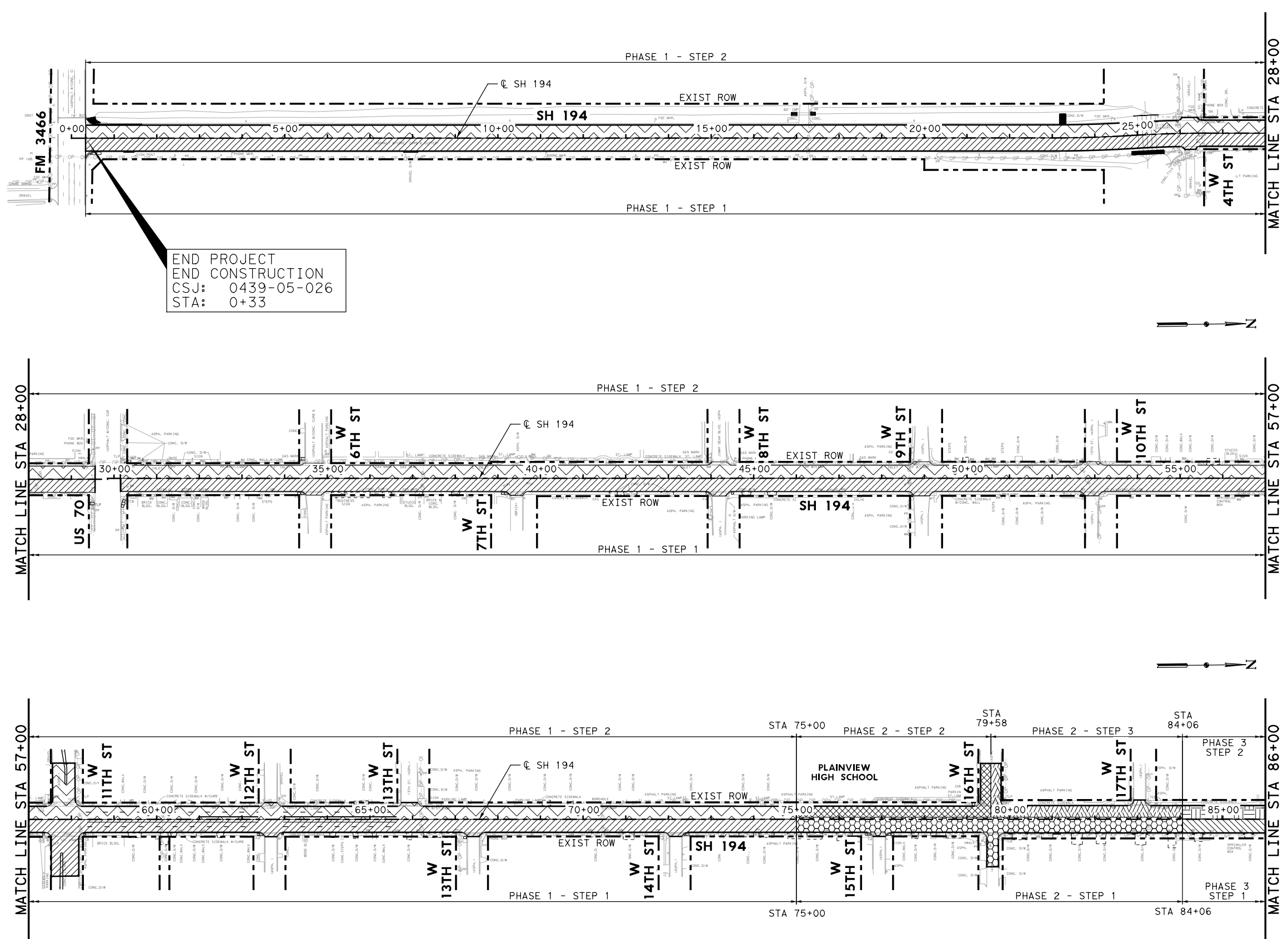
TRAFFIC CONTROL PLAN
GENERAL NOTES AND
SEQUENCE OF CONSTRUCTION

SHEET 1 OF 1

FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026
		SHEET NO. 16








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PLOT DRIVER: TXDOT_PDF_BM_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:23:46 PM SCALE: 1:250
 FILE: SH194_TCP_OverallConstructionSequenceLayout.dgn



END PROJECT
 END CONSTRUCTION
 CSJ: 0439-05-026
 STA: 0+33

LEGEND

-  PHASE 1 STEP 1
-  PHASE 1 STEP 2
-  PHASE 2 STEP 1
-  PHASE 2 STEP 2
-  PHASE 2 STEP 3
-  PHASE 3 STEP 1
-  PHASE 3 STEP 2

- NOTES**
- REFER TO TCP GENERAL NOTES AND SEQUENCE OF CONSTRUCTION FOR ADDITIONAL INFORMATION.
 - NO TWO CONSECUTIVE SIDE STREETS SHALL BE CLOSED AT THE SAME TIME.



7/29/2024

NO.	DATE	REVISION	APPROVED

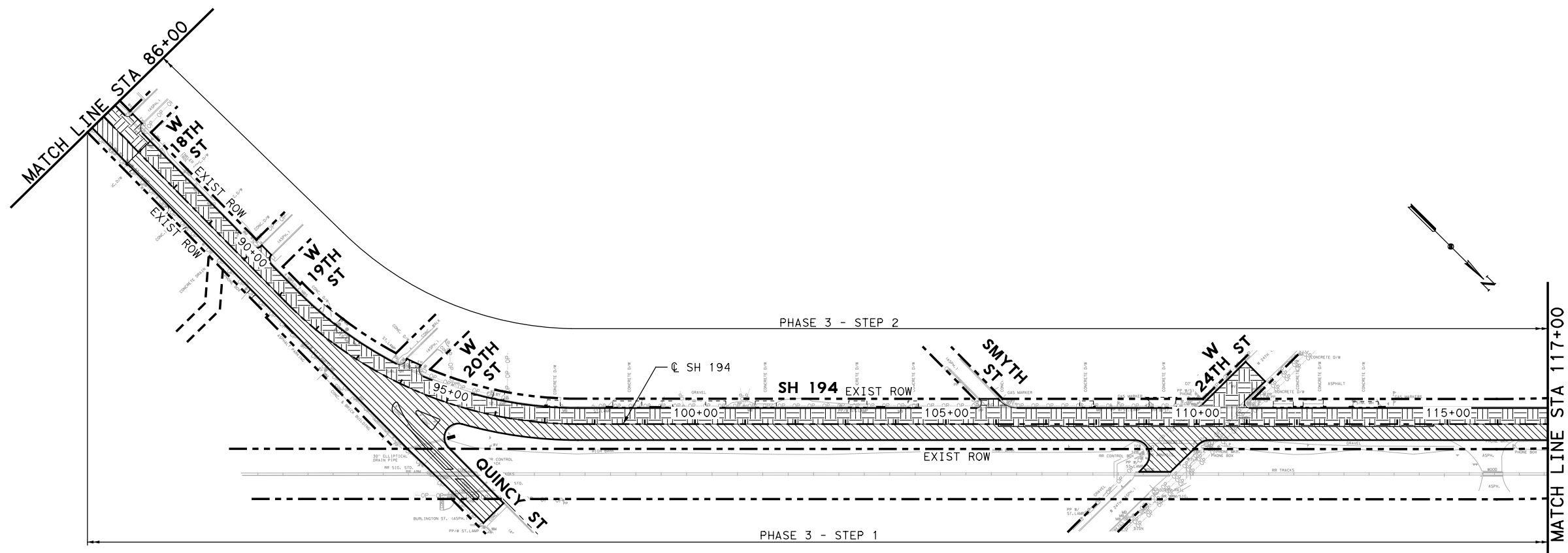
infraTECH
 Engineers & Innovators, LLC
 TBPE REGISTRATION NO. F-18368

Texas Department of Transportation
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SH 194 FROM FM 3466 TO IH 27
 TRAFFIC CONTROL PLAN
 OVERALL CONSTRUCTION SEQUENCE LAYOUT
 BEGIN TO STA 86+00

HORZ SCALE: 1"=250'			SHEET 1 OF 2
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	17
CONTROL	SECTION	JOB	
0439	05	026	

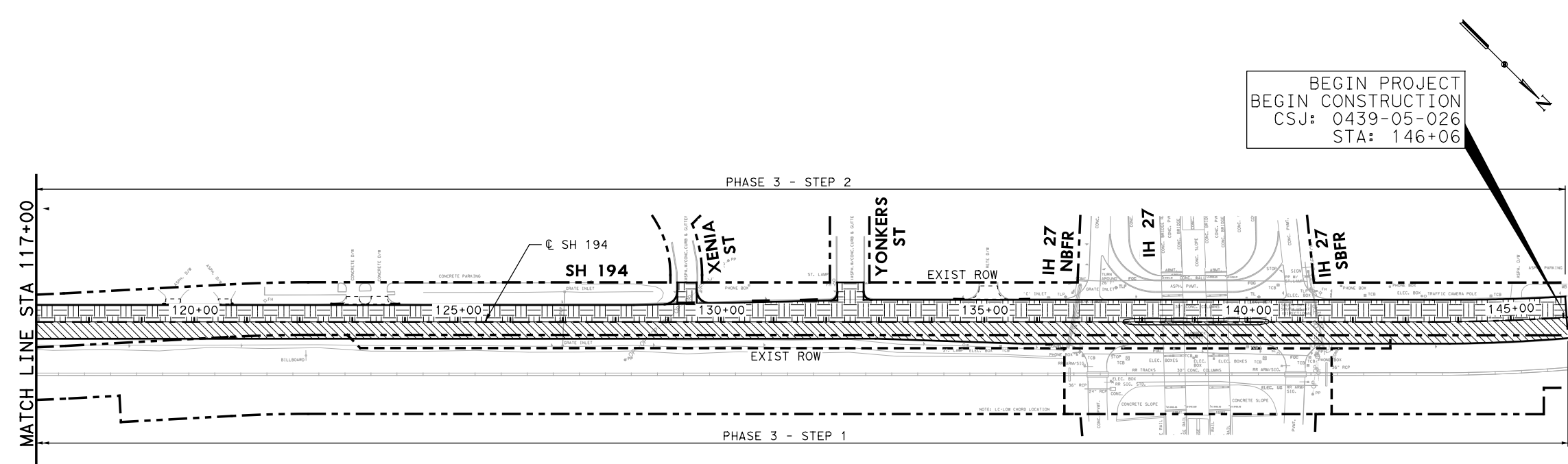
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 FILE: SH194_TCP_OverallConstructionSequenceLayout.dgn



LEGEND

- PHASE 1 STEP 1
- PHASE 1 STEP 2
- PHASE 2 STEP 1
- PHASE 2 STEP 2
- PHASE 2 STEP 3
- PHASE 3 STEP 1
- PHASE 3 STEP 2

- NOTES**
- REFER TO TCP GENERAL NOTES AND SEQUENCE OF CONSTRUCTION FOR ADDITIONAL INFORMATION.
 - NO TWO CONSECUTIVE SIDE STREETS SHALL BE CLOSED AT THE SAME TIME.



BEGIN PROJECT
 BEGIN CONSTRUCTION
 CSJ: 0439-05-026
 STA: 146+06



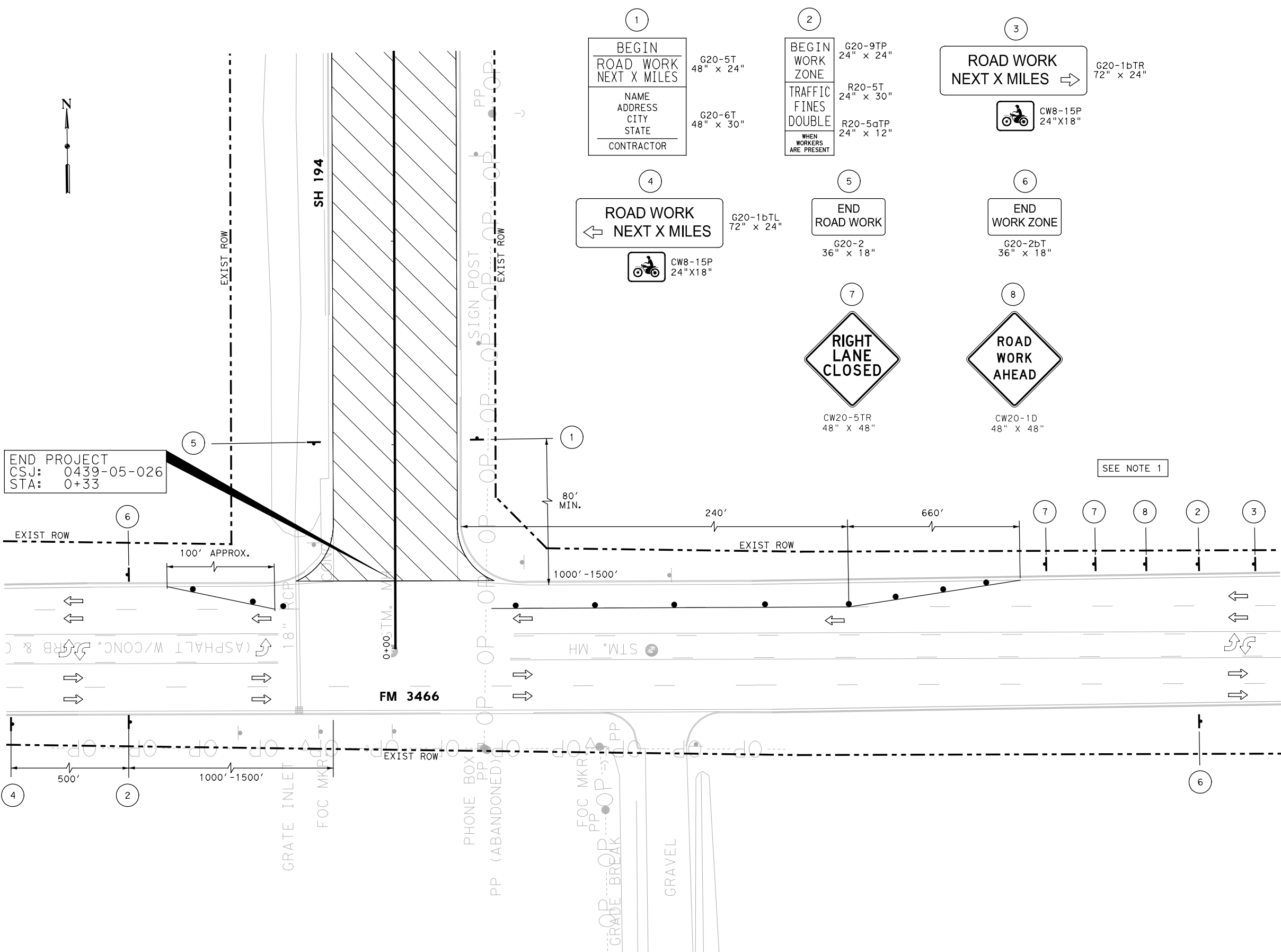
NO.	DATE	REVISION	APPROVED

SH 194 FROM FM 3466 TO IH 27

TRAFFIC CONTROL PLAN
 OVERALL CONSTRUCTION SEQUENCE LAYOUT
 STA 86+00 TO END

HORZ SCALE: 1"=250' SHEET 2 OF 2

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	18
CONTROL	SECTION	JOB	
0439	05	026	



END PROJECT
CSJ: 0439-05-026
STA: 0+33

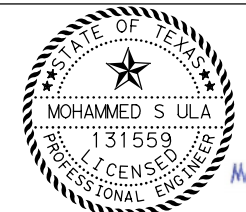
SEE NOTE 1

LEGEND

- WORK ZONE
- TRAFFIC DIRECTION
- TRAFFIC SIGN
- CHANNELIZING DEVICE

NOTES

1. REFER TO TXDOT STANDARDS BC(2)-21 AND TCP (2-5)-18 FOR TAPER LENGTHS, SIGN SPACING AND CHANNELIZING DEVICE SPACING.
2. DROP OUTSIDE WESTBOUND FM 3466 LANE AT THE TIME OF WORK AT THE INTERSECTION.



NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

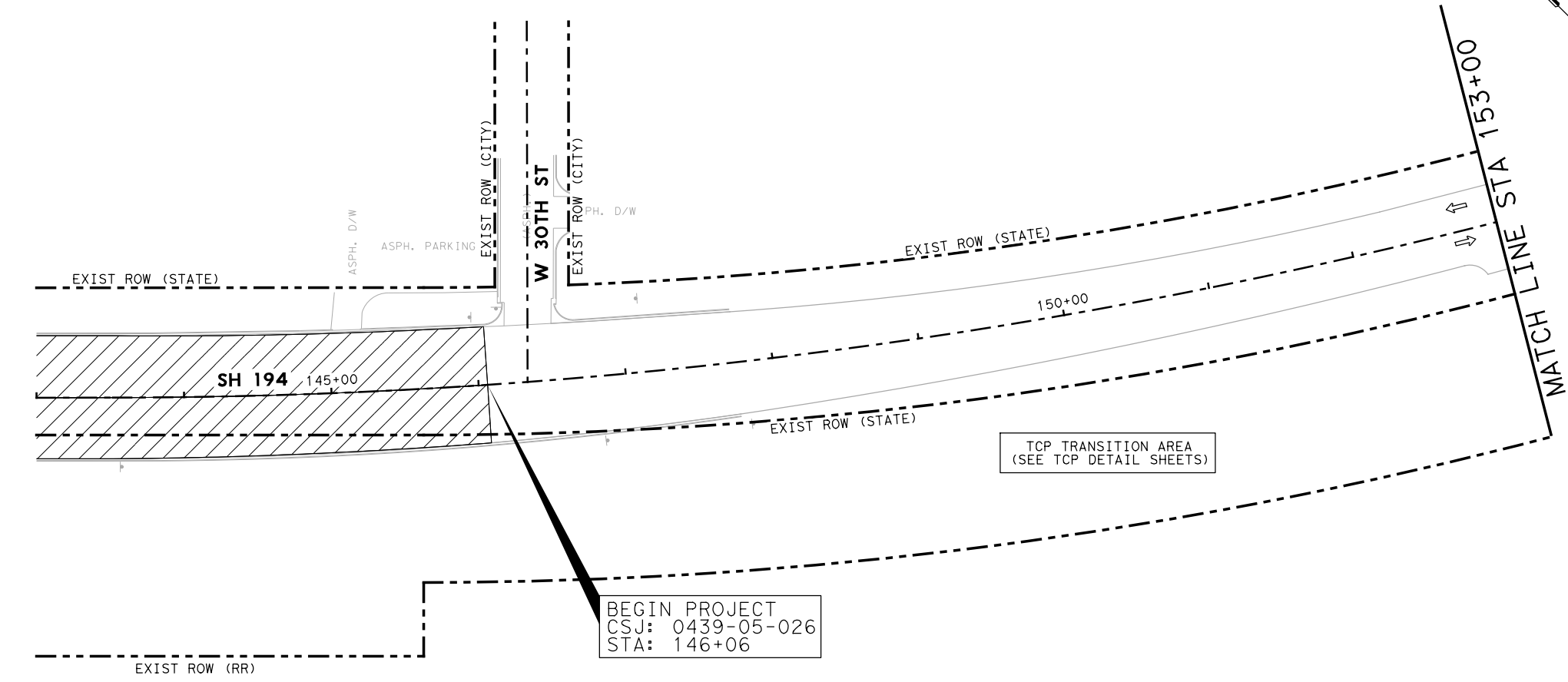
TRAFFIC CONTROL PLAN
ADVANCE WARNING SIGNS

HORZ SCALE: 1"=50'			SHEET 1 OF 2
FED. RD. DIV. NO:	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	19
CONTROL	SECTION	JOB	
0439	05	026	

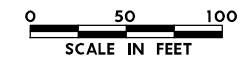
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LEGEND

- WORK ZONE
- TRAFFIC DIRECTION
- TRAFFIC SIGN



BEGIN PROJECT
 CSJ: 0439-05-026
 STA: 146+06



7/29/2024

NO.	DATE	REVISION	APPROVED

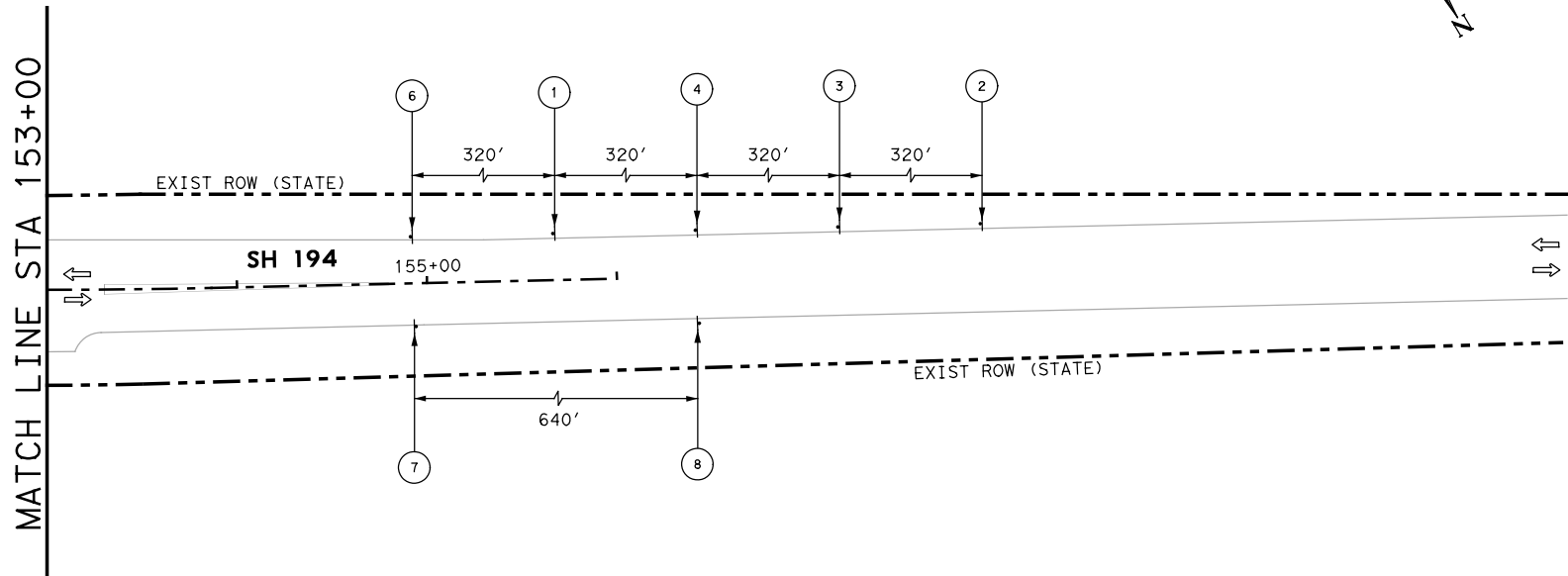
SH 194 FROM FM 3466 TO IH 27

TRAFFIC CONTROL PLAN
 ADVANCE WARNING SIGNS

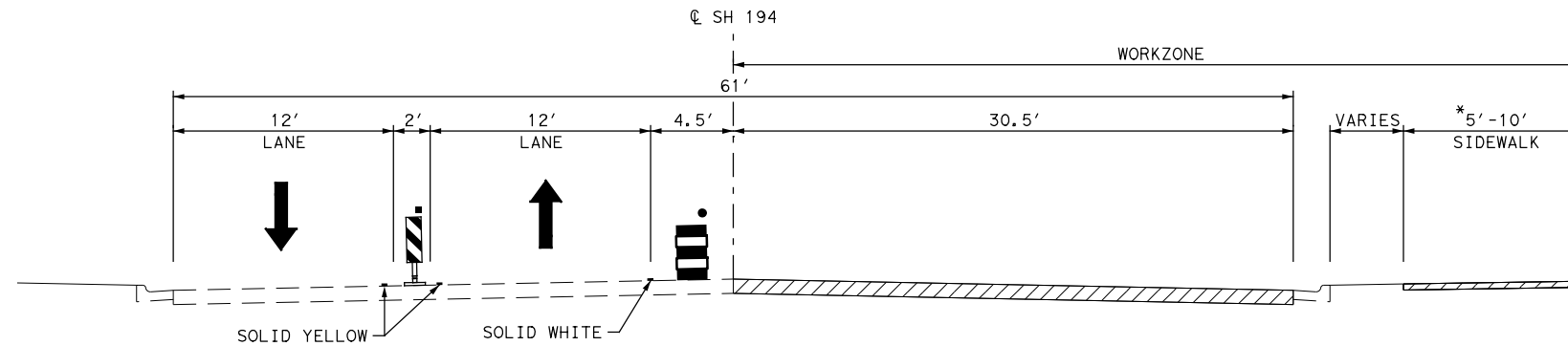
HORZ SCALE: 1"=100' SHEET 2 OF 2

FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	20
CONTROL	SECTION	JOB	
0439	05	026	

USE TXDOT STANDARD
 BC (2) -21







PHASE 1 WORK ZONE LAYOUT



PHASE 1 - STEP 1 AND 2
STA 0+33 TO STA 75+00

CONSTRUCTION ON NORTHBOUND SIDE, MIRROR SET-UP FOR CONSTRUCTION ON SOUTHBOUND SIDE.

LEGEND

-  CONSTRUCTION PHASE/STEP
-  COMPLETED PHASE/STEP
-  PLASTIC DRUM
-  VERTICAL PANEL

NOTES

1. SEE ROADWAY PLAN & PROFILE SHEETS FOR NEW SIDEWALK LOCATIONS.

- PORTABLE VERTICAL PANEL - SEE STANDARD BC(9) - 21
- PLASTIC DRUMS - SEE STANDARD BC(8) - 21
- * REFER TO ROADWAY PLANS FOR SIDEWALK LOCATION AND WIDTH

MAJOR ACTIVITIES:

STEP 1:

1. SHIFT NORTHBOUND TRAFFIC TO THE INNERMOST SOUTHBOUND TRAVEL LANE WHILE MAINTAINING SOUTHBOUND TRAFFIC TO THE OUTERMOST SOUTHBOUND TRAVEL LANE.
2. CLOSE NORTHBOUND TRAVEL LANES FOR CONSTRUCTION FROM STA 0+33 TO STA 75+00.
3. CONSTRUCT PROPOSED NORTHBOUND SIDEWALKS AND DRIVEWAYS FROM STA 0+33 TO STA 75+00.
4. CONSTRUCT PROPOSED NORTHBOUND PAVEMENT FROM STA 0+33 TO STA 75+00.
5. CONSTRUCT EAST SIDE OF W 11TH ST INTERSECTION PER W 11TH ST (EAST) INTERSECTION DETAIL.

STEP 2:

1. SHIFT SOUTHBOUND TRAFFIC TO THE NEWLY CONSTRUCTED INNERMOST NORTHBOUND TRAVEL LANE WHILE MAINTAINING NORTHBOUND TRAFFIC TO THE OUTERMOST NORTHBOUND TRAVEL LANE.
2. CLOSE SOUTHBOUND TRAVEL LANES FOR CONSTRUCTION FROM STA 0+33 TO STA 75+00.
3. CONSTRUCT PROPOSED SOUTHBOUND SIDEWALKS AND DRIVEWAYS FROM STA 0+33 TO STA 75+00.
4. CONSTRUCT PROPOSED SOUTHBOUND PAVEMENT FROM STA 0+33 TO STA 75+00.
5. CONSTRUCT WEST SIDE OF W 11TH ST INTERSECTION PER W 11TH ST (WEST) INTERSECTION DETAIL.

DETAILED ACTIVITIES:

STEP 1:

1. REMOVE EXISTING ACP AND BASE LAYERS FROM STA 0+33 TO STA 75+00. SEE TYPICAL SECTIONS AND PLAN SHEETS FOR VARYING WIDTHS OF ROADWAY.
2. RESHAPE AND LIME STABILIZE 8" OF EXISTING SUBGRADE. PRIME THE BASE FROM STA 0+33 TO STA 75+00.
3. PLACE 6" ACP BASE COURSE FROM STA 0+33 TO STA 75+00. SAFETY WEDGE MUST BE PLACED ON EDGES THAT AFFECT TRAFFIC. APPLY FOG SEAL.

STEP 2:

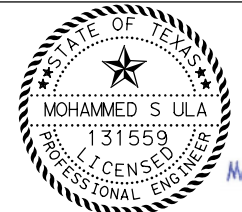
1. REMOVE EXISTING ACP AND BASE LAYERS FROM STA 0+33 TO STA 75+00. SEE TYPICAL SECTIONS AND PLAN SHEETS FOR VARYING WIDTHS OF ROADWAY.
2. RESHAPE AND LIME STABILIZE 8" OF EXISTING SUBGRADE. PRIME THE BASE FROM STA 0+33 TO STA 75+00.
3. PLACE 6" ACP BASE COURSE FROM STA 0+33 TO STA 75+00. SAFETY WEDGE MUST BE PLACED ON EDGES THAT AFFECT TRAFFIC. APPLY FOG SEAL.

STEP 3:

1. REMOVE EXISTING TEMPORARY PAVEMENT MARKINGS AND PLACE NEW TEMPORARY PAVEMENT MARKINGS FOR RECONSTRUCTED PAVEMENT FOLLOWING PERMANENT PAVEMENT MARKING PLANS FROM STA 0+33 TO STA 75+00.

NOTES:

1. THE PROPOSED SEQUENCE OF WORK MAY BE VARIED WITH APPROVAL BY THE ENGINEER TO MEET CONDITIONS ENCOUNTERED IN THE FIELD.
2. ALL DRIVEWAYS TO BUSINESSES ARE TO REMAIN ACCESSIBLE TO THE PUBLIC. PLACE RAMPS WHEN THERE IS MORE THAN A 2" DIFFERENCE IN GRADE. SEE CONSTRUCTION DRIVEWAY DETAIL.
3. CONSTRUCT ITEM 506-2016, CONSTRUCTION EXIT (TYPE 1), AT THE BEGINNING AND ENDING OF EACH PHASE, IF APPLICABLE OR AS DIRECTED BY THE ENGINEER.
4. IT IS CONTRACTOR'S RESPONSIBILITY TO MAINTAIN EXISTING MAILBOXES IN A CLEAN AND FUNCTIONAL CONDITION THROUGHOUT THE DURATION OF THE PROJECT.



Mohammed S. Ula
7/29/2024

NO.	DATE	REVISION	APPROVED

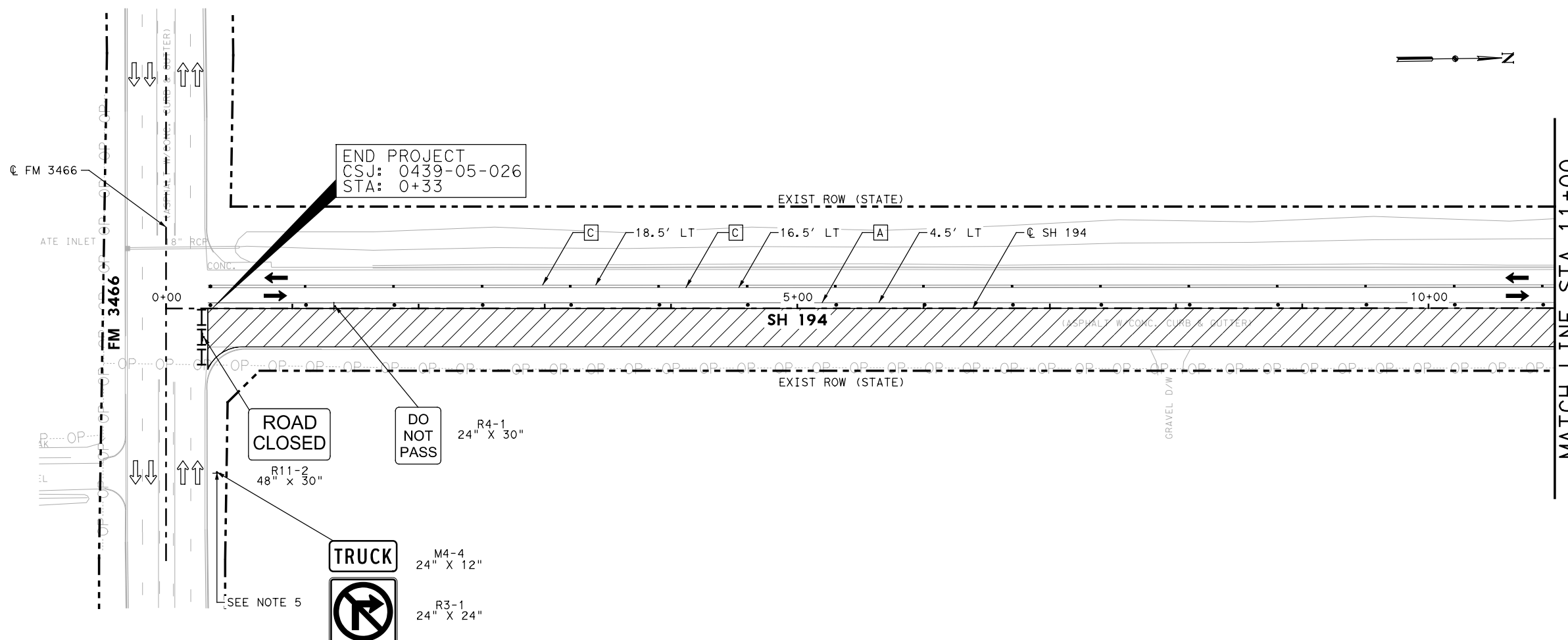


SH 194 FROM FM 3466 TO IH 27

TRAFFIC CONTROL PLAN
TYPICAL SECTION
PHASE 1 - STEP 1, 2 AND 3

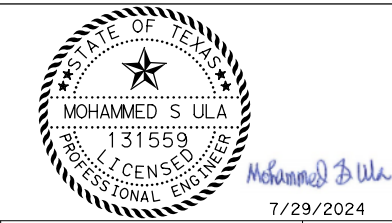
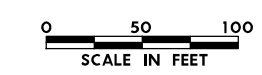
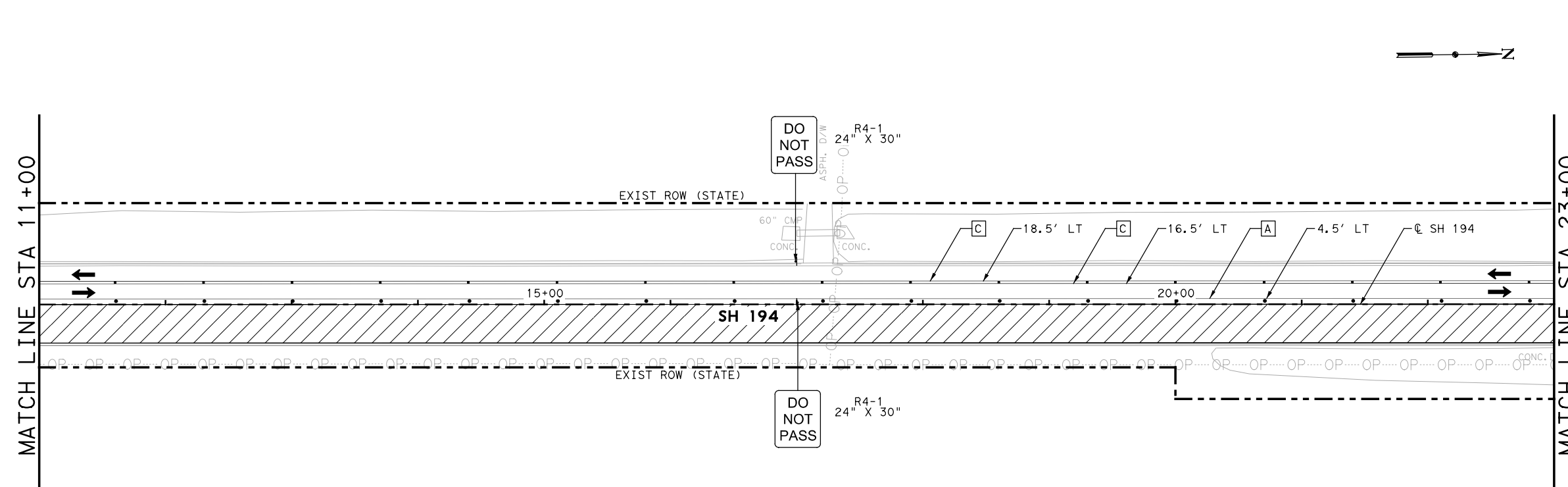
SCALE: N. T. S. SHEET 1 OF 1

FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	21
CONTROL	SECTION	JOB	
0439	05	026	



- LEGEND**
- CONSTRUCTION PHASE
 - COMPLETED PHASE
 - EXIST DIRECTION OF TRAFFIC
 - PROP DIRECTION OF TRAFFIC
 - CHANNELIZING DEVICE
 - VERTICAL PANEL
 - CONSTRUCTION SIGN
 - TYPE III BARRICADE
 - TRAILER MOUNTED FLASHING ARROW BOARD
 - WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
 - WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)

- NOTES**
1. REFERENCE STANDARDS BC (1) THRU (12) AND TCP STANDARDS FOR LENGTHS, SIGN SPACING AND MORE INFORMATION.
 2. ELIMINATE ALL PAVEMENT MARKING AND SIGNS THAT ARE IN CONFLICT WITH TRAFFIC MOVEMENTS.
 3. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES. CONSTRUCT PAVEMENT ALONG DRIVEWAYS IN CONJUNCTION WITH WORK PROGRESS.
 4. SEE SIDE STREET TYPICAL DETOUR LAYOUT FOR ADDITIONAL INFORMATION.
 5. CONTRACTOR TO USE OPPOSING TRAFFIC LANE DIVIDERS (OTLD) AT EVERY 5TH VERTICAL PANEL.
 6. REFER TO TRUCK DETOUR LAYOUT FOR ADDITIONAL INFORMATION.



NO.	DATE	REVISION	APPROVED

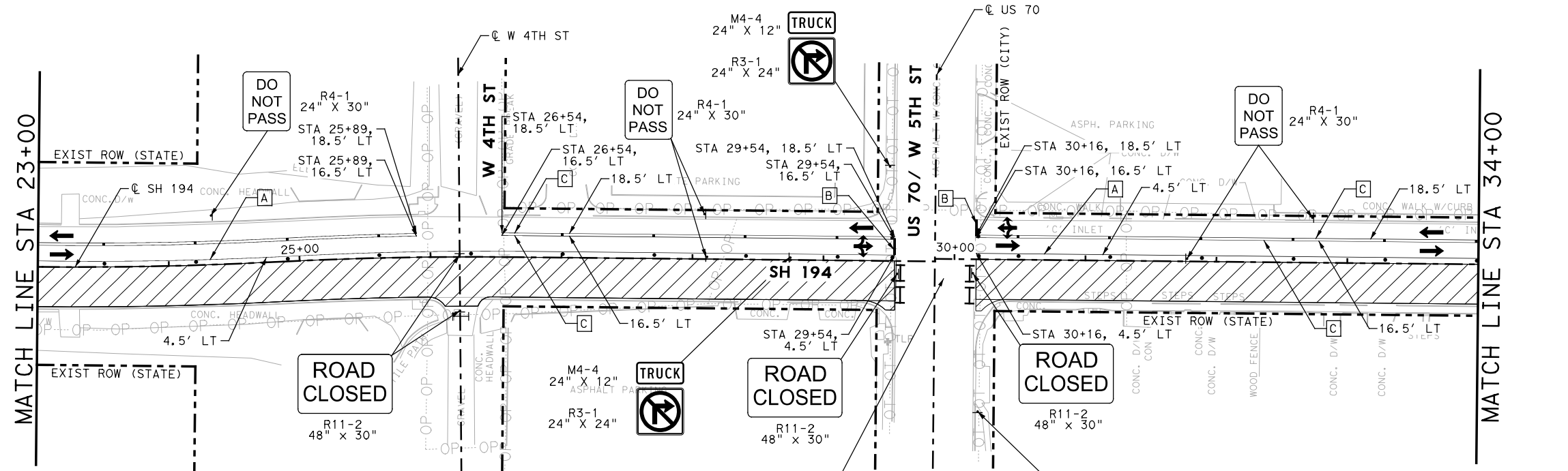


SH 194 FROM FM 3466 TO IH 27
 TRAFFIC CONTROL PLAN
 PHASE 1 STEP 1 PHASING PLAN
 BEGIN TO STA 23+00

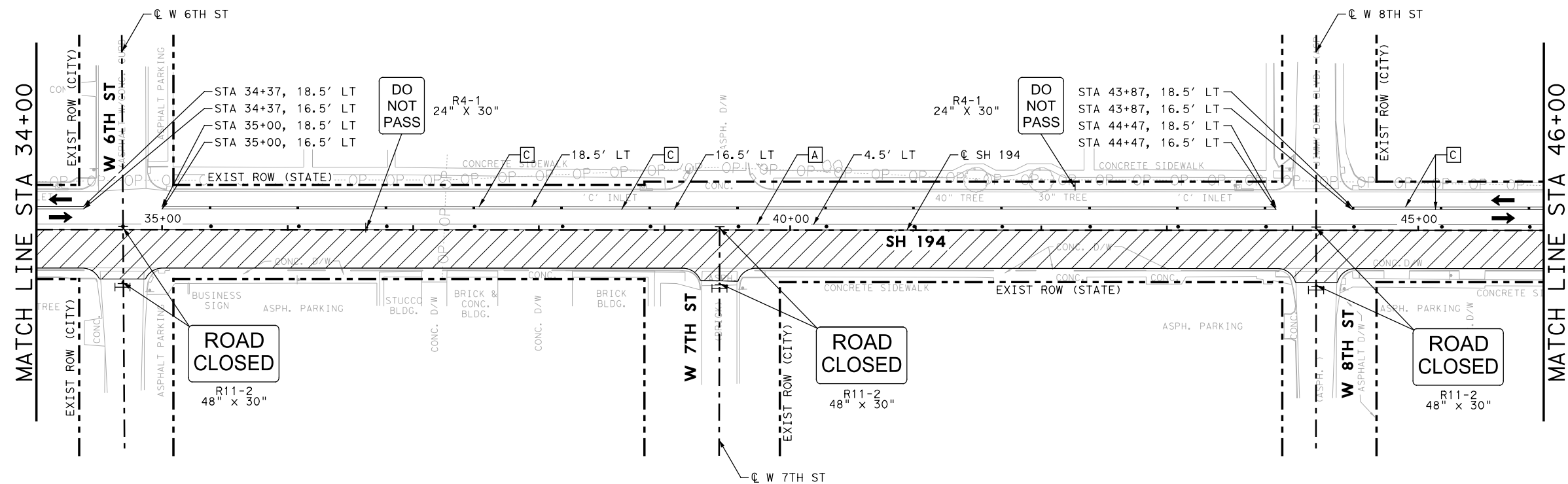
HORZ SCALE: 1"=100' SHEET 1 OF 4

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:		HIGHWAY NO.:
6	SEE TITLE SHEET		SH 194
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	22
CONTROL:	SECTION:	JOB:	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: I94050_SH194_Pentable.tbl
 USER: Arabinson DATE: 7/29/2024 TIME: 7:23:52 PM SCALE: 1:100
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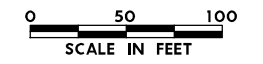


REFER TO TXDOT STANDARD TCP (2-4)-18 FOR
 OUTSIDE EASTBOUND AND WESTBOUND US 70 LANE
 DROP AT THE TIME OF WORK AT THE INTERSECTION.
 SEE NOTE 5 AND 6 FOR ADDITIONAL INFORMATION.



- LEGEND**
- CONSTRUCTION PHASE
 - COMPLETED PHASE
 - EXIST DIRECTION OF TRAFFIC
 - PROP DIRECTION OF TRAFFIC
 - CHANNELIZING DEVICE
 - VERTICAL PANEL
 - CONSTRUCTION SIGN
 - TYPE III BARRICADE
 - TRAILER MOUNTED FLASHING ARROW BOARD
 - WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
 - WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)

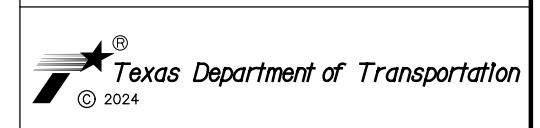
- NOTES**
1. REFERENCE STANDARDS BC (1) THRU (12) AND TCP STANDARDS FOR LENGTHS, SIGN SPACING AND MORE INFORMATION.
 2. ELIMINATE ALL PAVEMENT MARKING AND SIGNS THAT ARE IN CONFLICT WITH TRAFFIC MOVEMENTS.
 3. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES. CONSTRUCT PAVEMENT ALONG DRIVEWAYS IN CONJUNCTION WITH WORK PROGRESS.
 4. SEE SIDE STREET TYPICAL DETOUR LAYOUT FOR ADDITIONAL INFORMATION.
 5. CONTRACTOR TO USE OPPOSING TRAFFIC LANE DIVIDERS (OTLD) AT EVERY 5TH VERTICAL PANEL.
 6. US 70/ W 5TH ST INTERSECTION TO REMAIN AS IS.
 7. REFER TO TEMPORARY SIGNAL PLANS FOR ADDITIONAL INFORMATION. THE CONTRACTOR WILL BE REQUIRED TO HAVE ON SITE FOUR R1-1 SIGNS WITH FOUR R1-3P WITH FLAGS IN THE EVENT THE ELECTRICAL SYSTEM FOR THE SIGNAL LIGHTS ARE DAMAGED DURING CONSTRUCTION.



MOHAMMED S. ULA
 131559
 LICENSED PROFESSIONAL ENGINEER
 7/29/2024

NO.	DATE	REVISION	APPROVED

infraTECH
 Engineers & Innovators, LLC
 TBPE REGISTRATION NO. F-18368

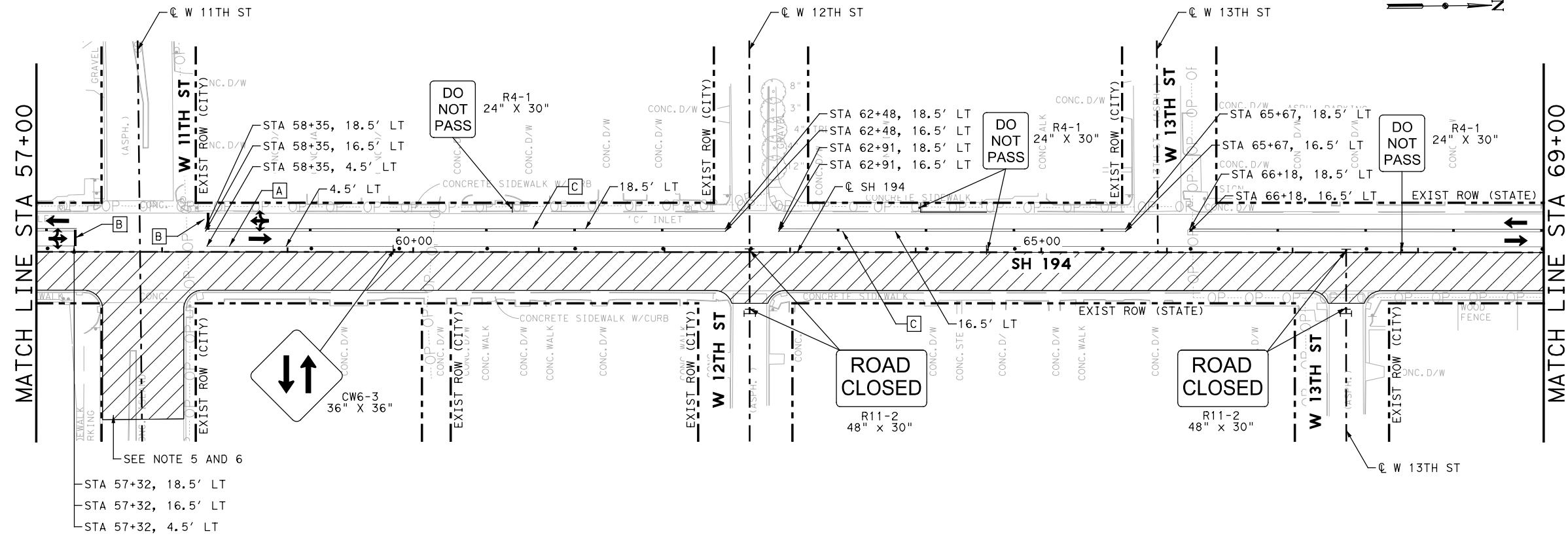
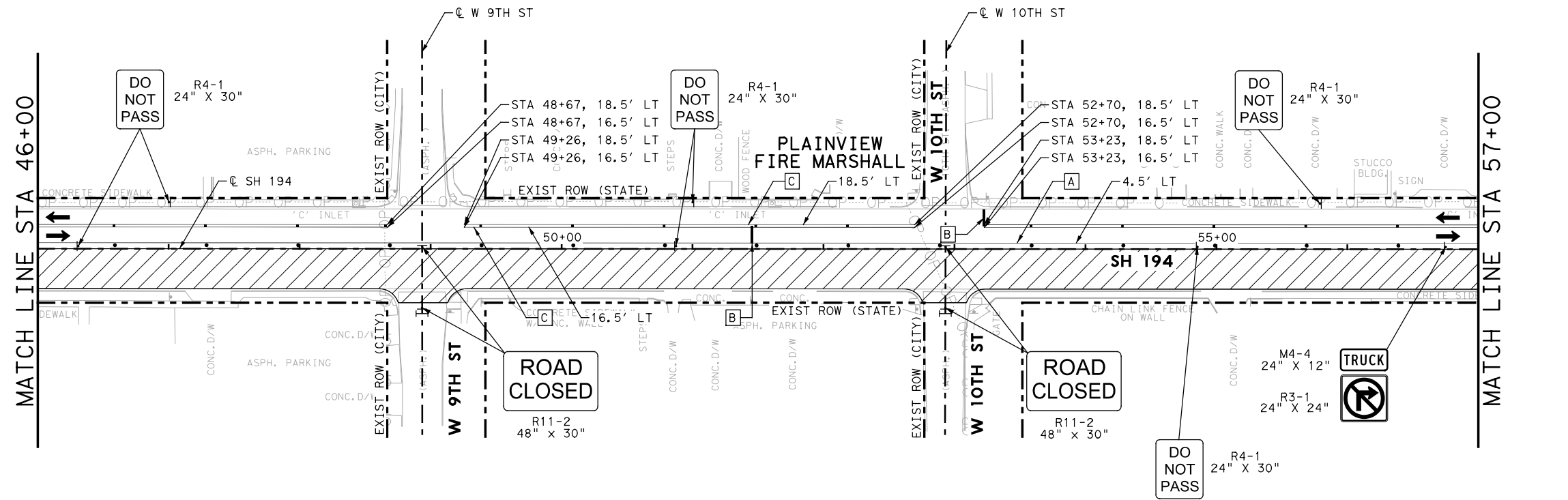


SH 194 FROM FM 3466 TO IH 27
TRAFFIC CONTROL PLAN
 PHASE 1 STEP 1 PHASING PLAN
 STA 23+00 TO STA 46+00

HORZ SCALE: 1"=100' SHEET 2 OF 4

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:		HIGHWAY NO.:
6	SEE TITLE SHEET		SH 194
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	23
CONTROL:	SECTION:	JOB:	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
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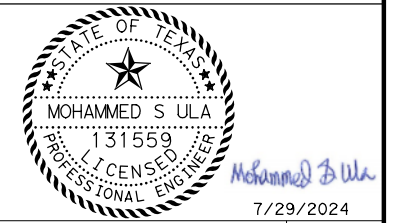
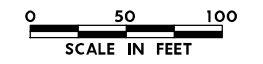


LEGEND

- CONSTRUCTION PHASE
- COMPLETED PHASE
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- CHANNELIZING DEVICE
- VERTICAL PANEL
- CONSTRUCTION SIGN
- TYPE III BARRICADE
- TRAILER MOUNTED FLASHING ARROW BOARD
- WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
- WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
- WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
- WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)

NOTES

1. REFERENCE STANDARDS BC (1) THRU (12) AND TCP STANDARDS FOR LENGTHS, SIGN SPACING AND MORE INFORMATION.
2. ELIMINATE ALL PAVEMENT MARKING AND SIGNS THAT ARE IN CONFLICT WITH TRAFFIC MOVEMENTS.
3. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES. CONSTRUCT PAVEMENT ALONG DRIVEWAYS IN CONJUNCTION WITH WORK PROGRESS.
4. SEE SIDE STREET TYPICAL DETOUR LAYOUT FOR ADDITIONAL INFORMATION.
5. CONTRACTOR TO USE OPPOSING TRAFFIC LANE DIVIDERS (OTLD) AT EVERY 5TH VERTICAL PANEL.
6. REFER TO TEMPORARY SIGNAL PLANS FOR ADDITIONAL INFORMATION. THE CONTRACTOR WILL BE REQUIRED TO HAVE ON SITE FOUR R1-1 SIGNS WITH FOUR R1-3P WITH FLAGS IN THE EVENT THE ELECTRICAL SYSTEM FOR THE SIGNAL LIGHTS ARE DAMAGED DURING CONSTRUCTION.
7. REFER TO W 11TH ST (EAST) INTERSECTION DETAILS FOR ADDITIONAL INFORMATION.



NO.	DATE	REVISION	APPROVED



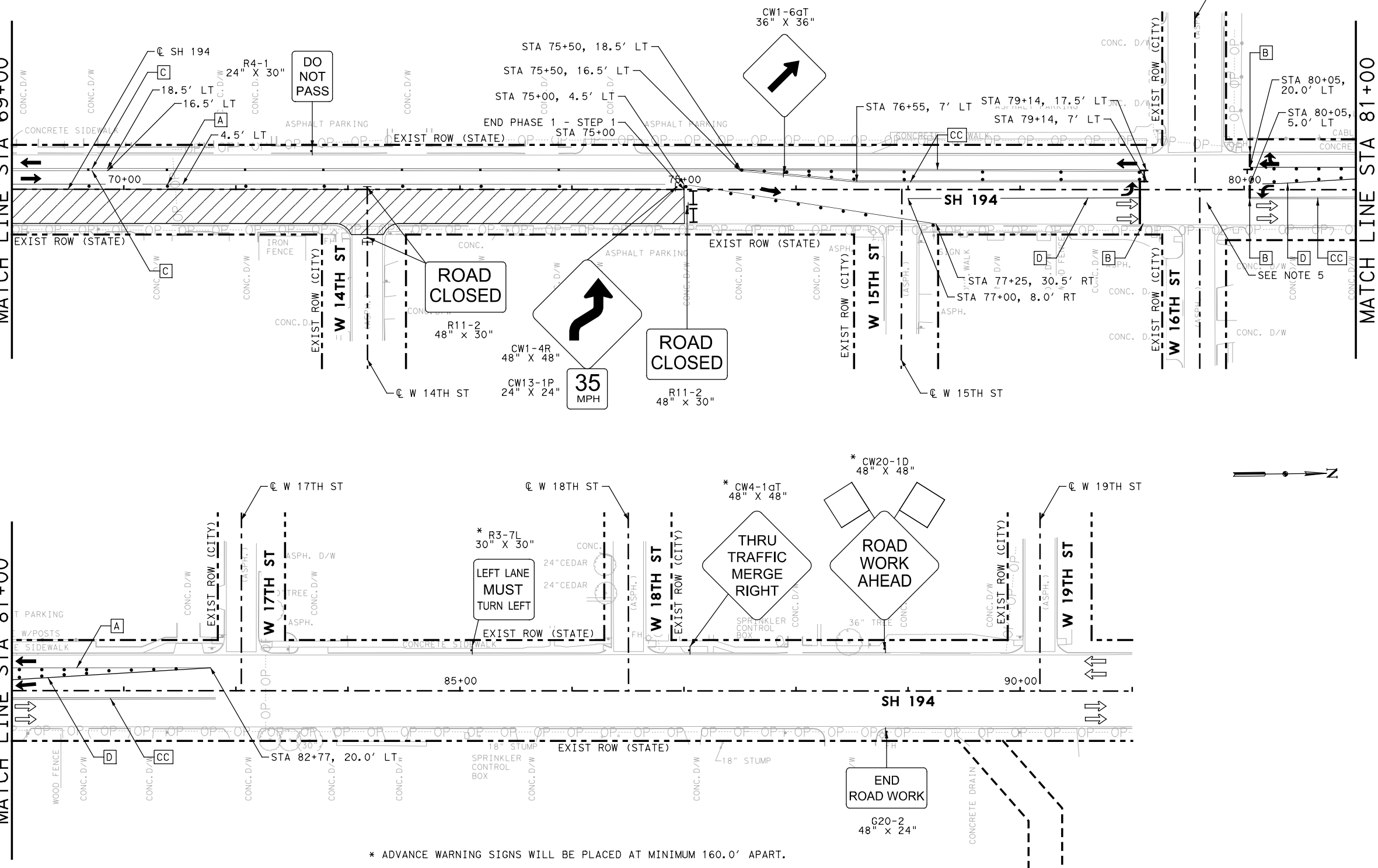
SH 194 FROM FM 3466 TO IH 27

TRAFFIC CONTROL PLAN
 PHASE 1 STEP 1 PHASING PLAN
 STA 46+00 TO STA 69+00

HORZ SCALE: 1"=100'			SHEET 3 OF 4
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:	
6	SEE TITLE SHEET	SH 194	
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	24
CONTROL:	SECTION:	JOB:	
0439	05	026	

MATCH LINE STA 69+00

MATCH LINE STA 81+00



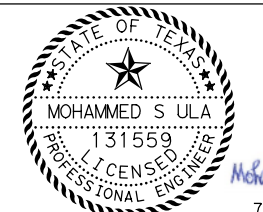
* ADVANCE WARNING SIGNS WILL BE PLACED AT MINIMUM 160.0' APART.

LEGEND

- CONSTRUCTION PHASE
- COMPLETED PHASE
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- CHANNELIZING DEVICE
- VERTICAL PANEL
- CONSTRUCTION SIGN
- TYPE III BARRICADE
- TRAILER MOUNTED FLASHING ARROW BOARD
- WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
- WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
- WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
- WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)
- WK ZN PAV MRK NON-REMOV (W) 8" (SLD)

NOTES

1. REFERENCE STANDARDS BC (1) THRU (12) AND TCP STANDARDS FOR LENGTHS, SIGN SPACING AND MORE INFORMATION.
2. ELIMINATE ALL PAVEMENT MARKING AND SIGNS THAT ARE IN CONFLICT WITH TRAFFIC MOVEMENTS.
3. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES. CONSTRUCT PAVEMENT ALONG DRIVEWAYS IN CONJUNCTION WITH WORK PROGRESS.
4. SEE SIDE STREET TYPICAL DETOUR LAYOUT FOR ADDITIONAL INFORMATION.
5. REFER TO TEMPORARY SIGNAL PLANS FOR ADDITIONAL INFORMATION. THE CONTRACTOR WILL BE REQUIRED TO HAVE ON SITE FOUR R1-1 SIGNS WITH FOUR R1-3P WITH FLAGS IN THE EVENT THE ELECTRICAL SYSTEM FOR THE SIGNAL LIGHTS ARE DAMAGED DURING CONSTRUCTION



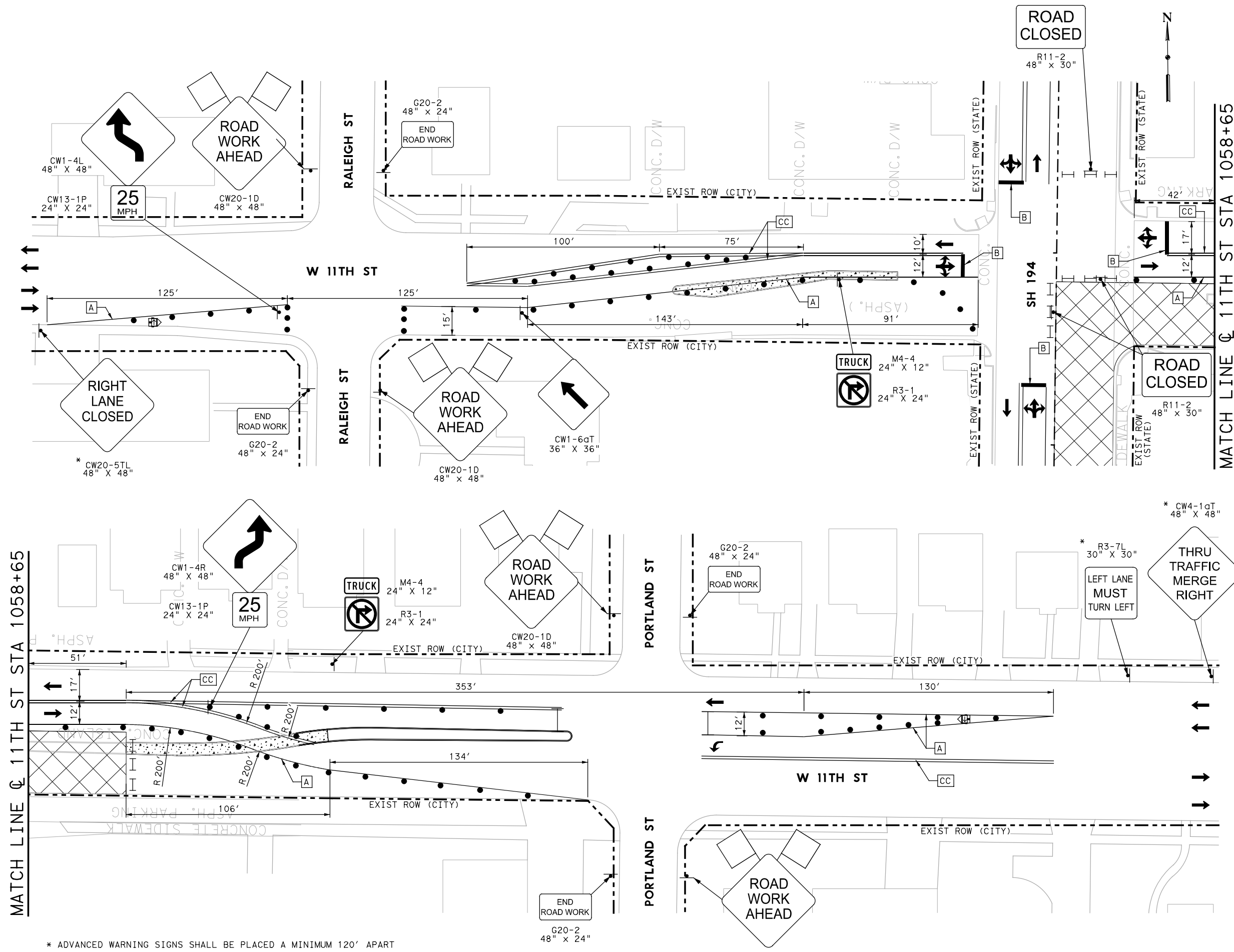
NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

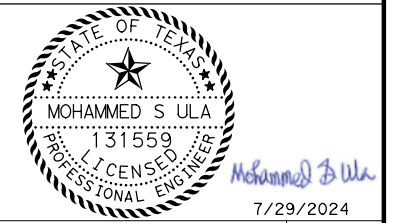
TRAFFIC CONTROL PLAN
PHASE 1 STEP 1 PHASING PLAN
STA 69+00 TO STA 91+00

HORZ SCALE: 1"=100'			SHEET 4 OF 4
FED. RD. DIV. NO:	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	25
CONTROL	SECTION	JOB	
0439	05	026	



- LEGEND**
- CONSTRUCTION STEP
 - COMPLETED STEP
 - TEMPORARY PAVEMENT
 - [A]** WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
 - [B]** WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
 - [C]** WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
 - [CC]** WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)
 - [E]** WK ZN PAV MRK NON-REMOV (W) 4" (BRK)
 - TRAILER MOUNTED FLASHING ARROW
 - CONSTRUCTION SIGN
 - TRAFFIC DIRECTION
 - TYPE III BARRICADE
 - CHANNELIZING DEVICE

- NOTES:**
1. INSTALL/ADJUST TEMPORARY TRAFFIC SIGNAL AT INTERSECTION PRIOR TO BEGINNING ANY WORK.
 2. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENCE AND BUSINESSES AT ALL TIMES.
 3. REMOVE STRIPING AS NECESSARY DURING THIS PHASE.
 4. CLOSE AND CONSTRUCT SOUTH SIDE OF W 11TH ST (EAST APPROACH) WHILE MAINTAINING TWO-WAY TRAFFIC ON NORTH SIDE.
 5. THE CONTRACTOR SHALL REMOVE THE CONCRETE MEDIAN ONLY UP TO THE LIMITS SHOWN, WITHOUT DISTURBING THE HMA UNDERNEATH AT W 11TH ST.



NO.	DATE	REVISION	APPROVED

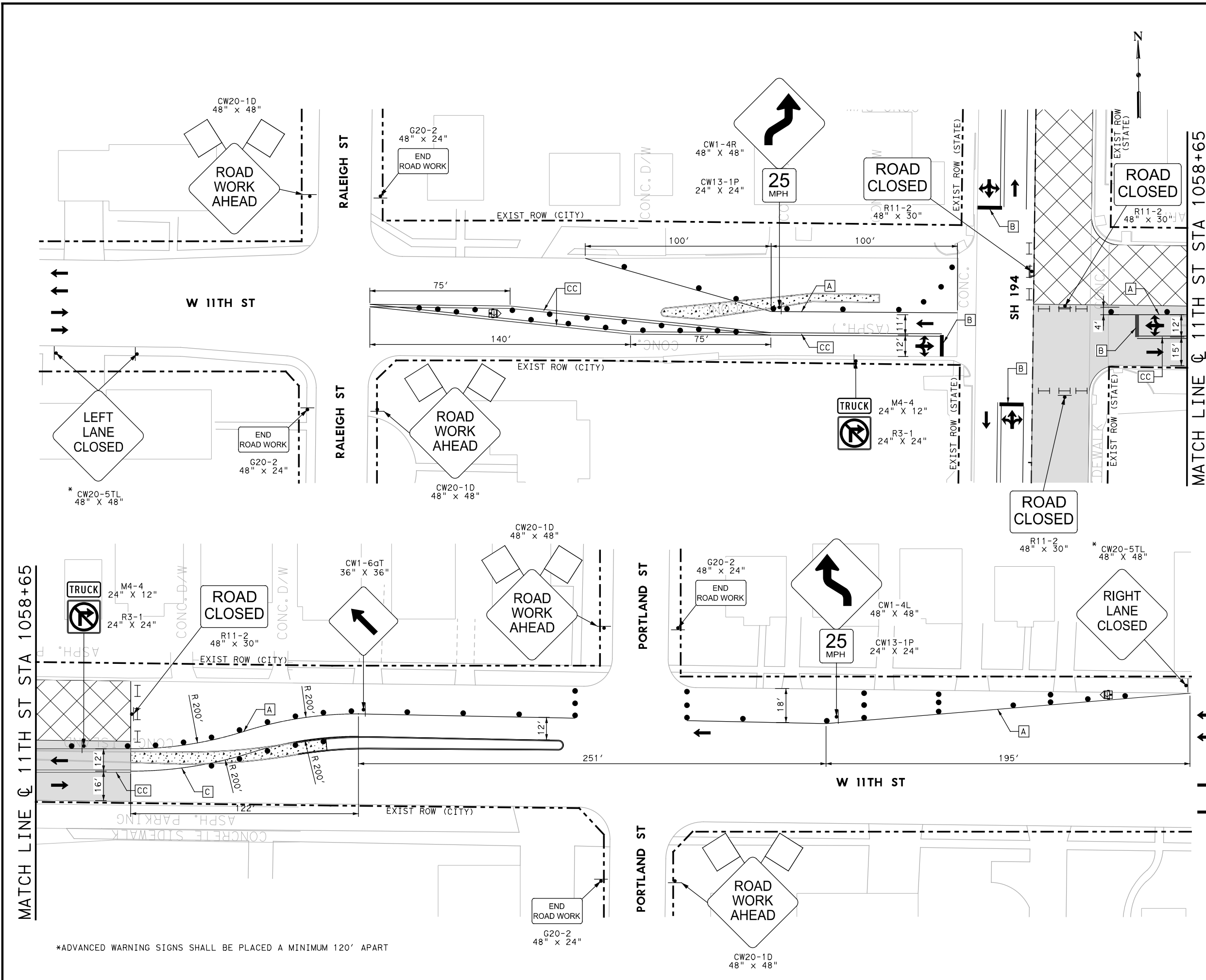


SH 194 FROM FM 3466 TO IH 27

TRAFFIC CONTROL PLAN
 PHASE 1 STEP 1 INTERSECTION DETAILS
 W 11TH ST (EAST) - STAGE 1

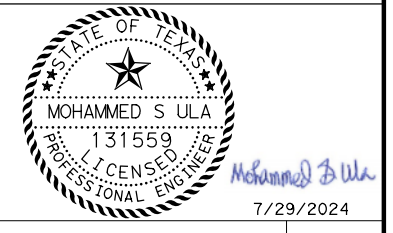
HORZ SCALE: 1"=50'			SHEET 1 OF 2
FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	26
CONTROL	SECTION	JOB	
0439	05	026	

* ADVANCED WARNING SIGNS SHALL BE PLACED A MINIMUM 120' APART



- LEGEND**
- CONSTRUCTION STEP
 - COMPLETED STEP
 - TEMPORARY PAVEMENT
 - WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
 - WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV (W) 4" (BRK)
 - TRAILER MOUNTED FLASHING ARROW
 - CONSTRUCTION SIGN
 - TRAFFIC DIRECTION
 - TYPE III BARRICADE
 - CHANNELIZING DEVICE

- NOTES:**
1. INSTALL/ADJUST TEMPORARY TRAFFIC SIGNAL AT INTERSECTION PRIOR TO BEGINNING ANY WORK.
 2. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENCE AND BUSINESSES AT ALL TIMES.
 3. REMOVE STRIPING AS NECESSARY DURING THIS PHASE.
 4. CLOSE AND CONSTRUCT NORTH SIDE OF W 11TH ST (EAST APPROACH) WHILE MAINTAINING TWO-WAY TRAFFIC ON SOUTH SIDE.
 5. THE CONTRACTOR SHALL REMOVE THE CONCRETE MEDIAN ONLY UP TO THE LIMITS SHOWN, WITHOUT DISTURBING THE HMA UNDERNEATH AT W 11TH ST.



NO.	DATE	REVISION	APPROVED
















SH 194 FROM FM 3466 TO IH 27

TRAFFIC CONTROL PLAN
 PHASE 1 STEP 1 INTERSECTION DETAILS
 W 11TH ST (EAST) - STAGE 2

HORZ SCALE: 1"=50'			SHEET 2 OF 2
FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	27
CONTROL	SECTION	JOB	
0439	05	026	

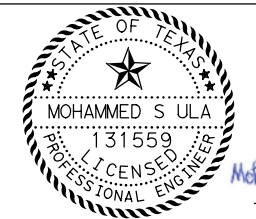
*ADVANCED WARNING SIGNS SHALL BE PLACED A MINIMUM 120' APART

LEGEND

-  CONSTRUCTION PHASE
-  COMPLETED PHASE
-  EXIST DIRECTION OF TRAFFIC
-  PROP DIRECTION OF TRAFFIC
-  CHANNELIZING DEVICE
-  VERTICAL PANEL
-  CONSTRUCTION SIGN
-  TYPE III BARRICADE
-  TRAILER MOUNTED FLASHING ARROW BOARD
-  WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
-  WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
-  WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
-  WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)

NOTES

1. REFERENCE STANDARDS BC (1) THRU (12) AND TCP STANDARDS FOR LENGTHS, SIGN SPACING AND MORE INFORMATION.
2. ELIMINATE ALL PAVEMENT MARKING AND SIGNS THAT ARE IN CONFLICT WITH TRAFFIC MOVEMENTS.
3. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES. CONSTRUCT PAVEMENT ALONG DRIVEWAYS IN CONJUNCTION WITH WORK PROGRESS.
4. SEE SIDE STREET TYPICAL DETOUR LAYOUT FOR ADDITIONAL INFORMATION.
5. CONTRACTOR TO USE OPPOSING TRAFFIC LANE DIVIDERS (OTLD) AT EVERY 5TH VERTICAL PANEL.
6. REFER TO TRUCK DETOUR LAYOUT FOR ADDITIONAL INFORMATION.



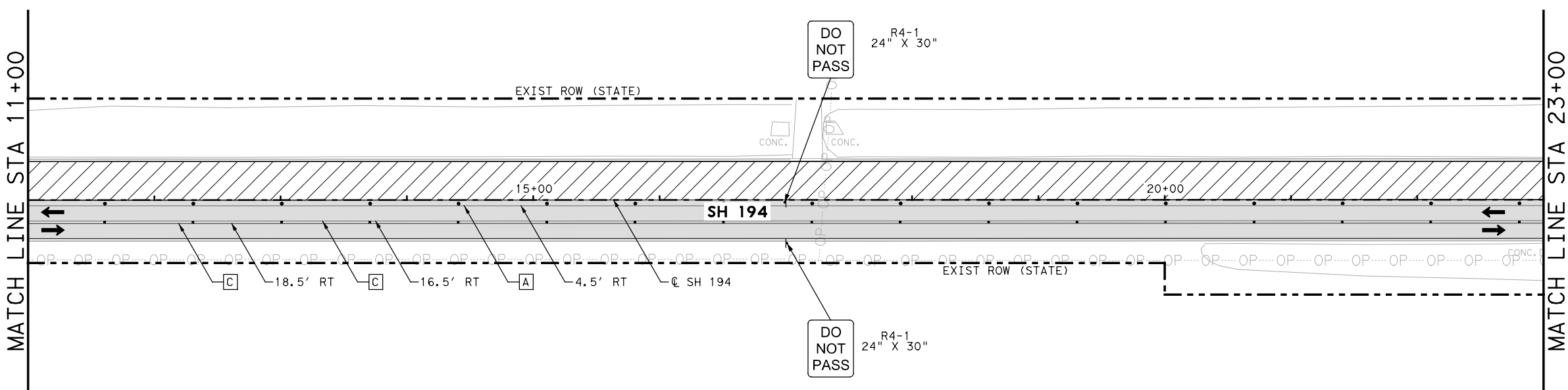
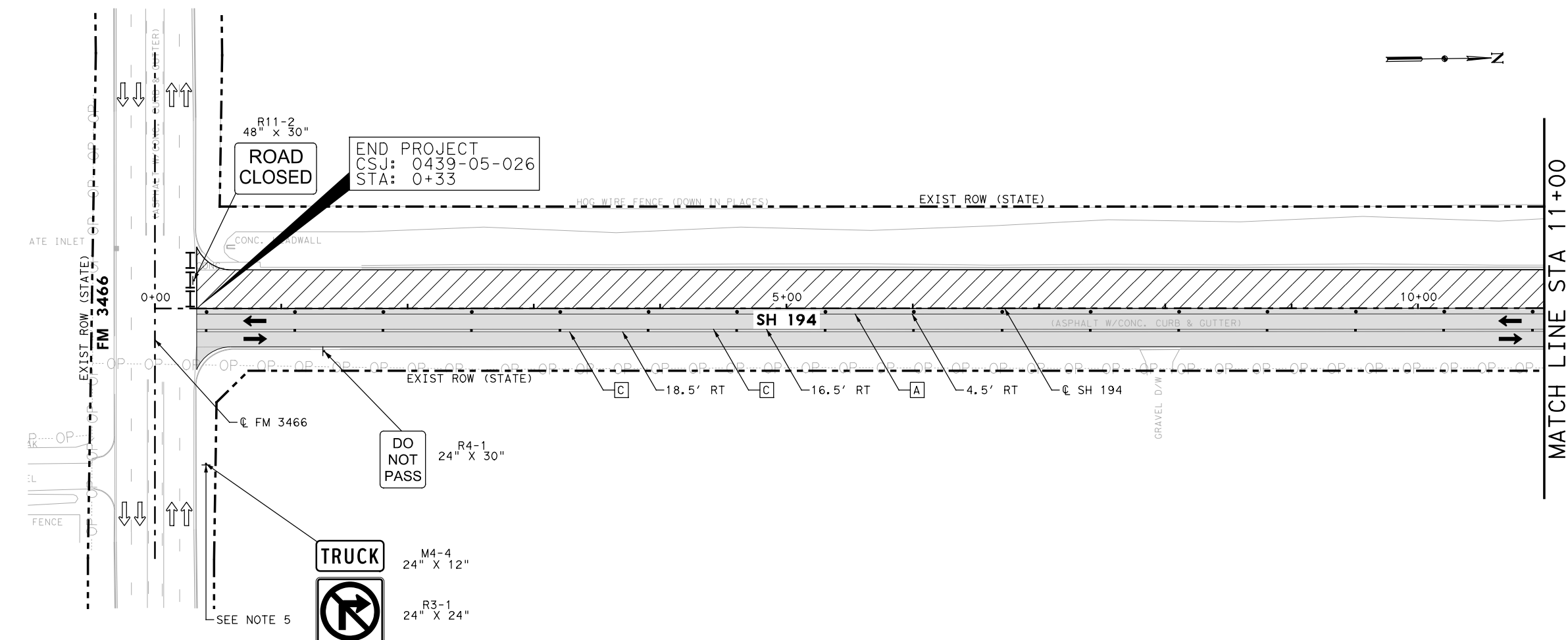
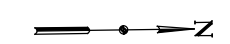
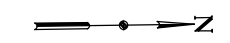
NO.	DATE	REVISION	APPROVED

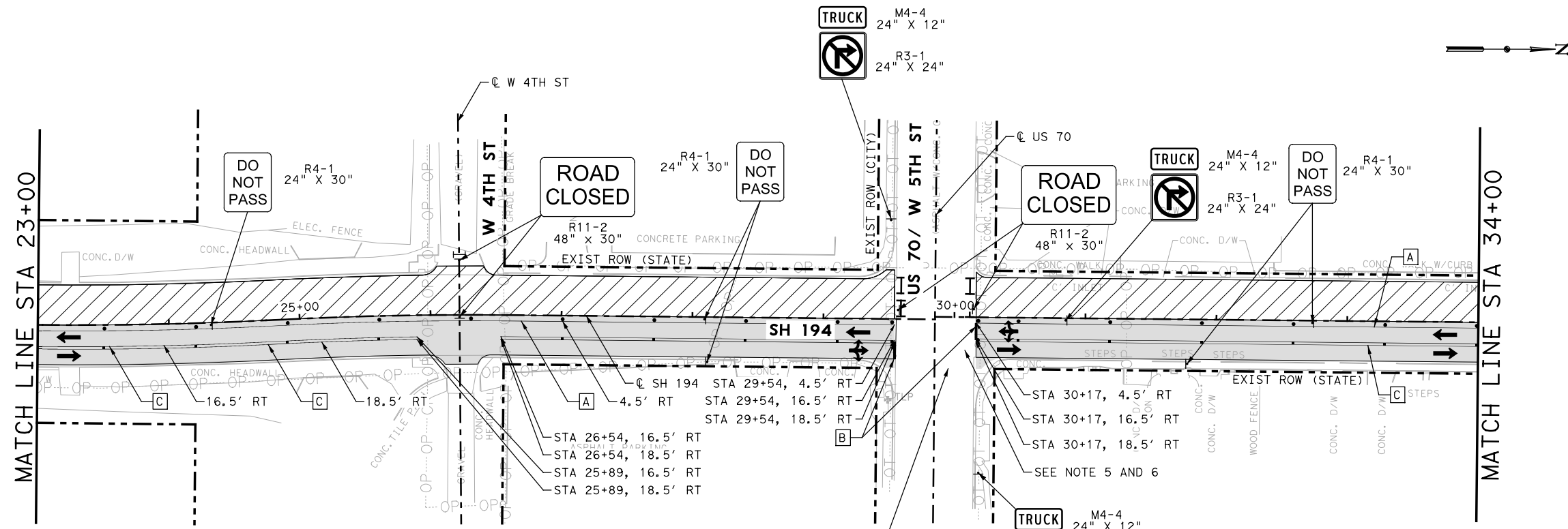


SH 194 FROM FM 3466 TO IH 27

TRAFFIC CONTROL PLAN
PHASE 1 STEP 2 PHASING PLAN
BEGIN TO STA 23+00

HORZ SCALE: 1"=100'			SHEET 1 OF 4
FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	28
CONTROL	SECTION	JOB	
0439	05	026	

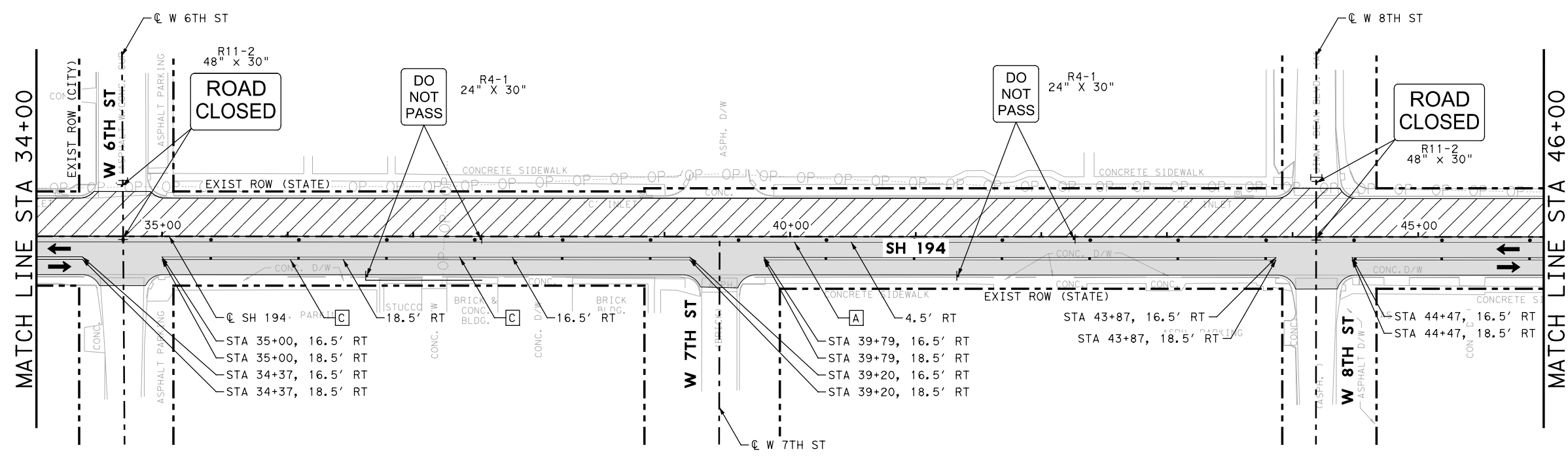
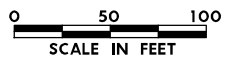




REFER TO TXDOT STANDARD TCP(2-4)-18 FOR OUTSIDE EASTBOUND AND WESTBOUND US 70 LANE DROP AT THE TIME OF WORK AT THE INTERSECTION. SEE NOTE 5 AND 6 FOR ADDITIONAL INFORMATION.

- LEGEND**
- CONSTRUCTION PHASE
 - COMPLETED PHASE
 - EXIST DIRECTION OF TRAFFIC
 - PROP DIRECTION OF TRAFFIC
 - CHANNELIZING DEVICE
 - VERTICAL PANEL
 - CONSTRUCTION SIGN
 - TYPE III BARRICADE
 - TRAILER MOUNTED FLASHING ARROW BOARD
 - WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
 - WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)

- NOTES**
1. REFERENCE STANDARDS BC (1) THRU (12) AND TCP STANDARDS FOR LENGTHS, SIGN SPACING AND MORE INFORMATION.
 2. ELIMINATE ALL PAVEMENT MARKING AND SIGNS THAT ARE IN CONFLICT WITH TRAFFIC MOVEMENTS.
 3. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES. CONSTRUCT PAVEMENT ALONG DRIVEWAYS IN CONJUNCTION WITH WORK PROGRESS.
 4. SEE SIDE STREET TYPICAL DETOUR LAYOUT FOR ADDITIONAL INFORMATION.
 5. CONTRACTOR TO USE OPPOSING TRAFFIC LANE DIVIDERS (OTLD) AT EVERY 5TH VERTICAL PANEL.
 6. US 70/ W 5TH ST INTERSECTION TO REMAIN AS IS.
 7. REFER TO TEMPORARY SIGNAL PLANS FOR ADDITIONAL INFORMATION. THE CONTRACTOR WILL BE REQUIRED TO HAVE ON SITE FOUR R1-1 SIGNS WITH FOUR R1-3P WITH FLAGS IN THE EVENT THE ELECTRICAL SYSTEM FOR THE SIGNAL LIGHTS ARE DAMAGED DURING CONSTRUCTION.



STATE OF TEXAS
 MOHAMMED S ULA
 131559
 LICENSED PROFESSIONAL ENGINEER
 Mohammed S Ula
 7/29/2024

NO.	DATE	REVISION	APPROVED

infraTECH
 Engineers & Innovators, LLC
 TBPE REGISTRATION NO. F-18368

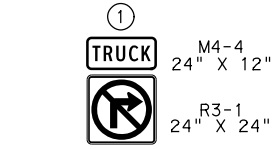
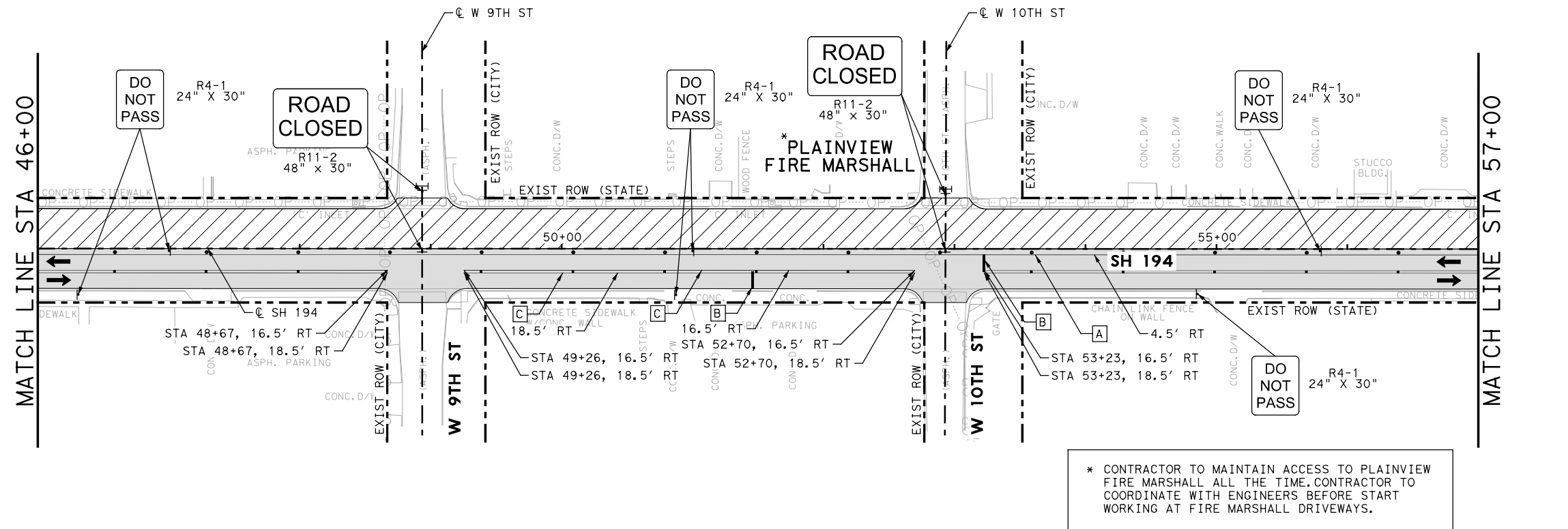
Texas Department of Transportation
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SH 194 FROM FM 3466 TO IH 27
 TRAFFIC CONTROL PLAN
 PHASE 1 STEP 2 PHASING PLAN
 STA 23+00 TO STA 46+00

HORZ SCALE: 1"=100' SHEET 2 OF 4

FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026
SHEET NO. 29		

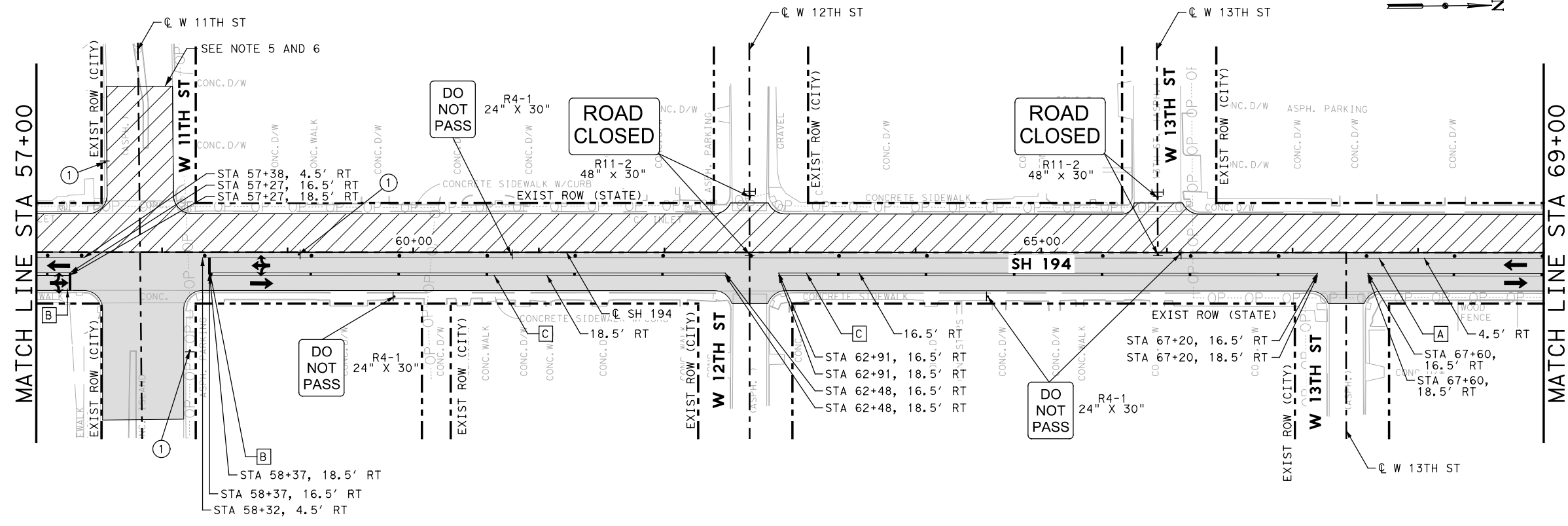
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- LEGEND**
- CONSTRUCTION PHASE
 - COMPLETED PHASE
 - EXIST DIRECTION OF TRAFFIC
 - PROP DIRECTION OF TRAFFIC
 - CHANNELIZING DEVICE
 - VERTICAL PANEL
 - CONSTRUCTION SIGN
 - TYPE III BARRICADE
 - TRAILER MOUNTED FLASHING ARROW BOARD
 - WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
 - WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)

- NOTES**
1. REFERENCE STANDARDS BC (1) THRU (12) AND TCP STANDARDS FOR LENGTHS, SIGN SPACING AND MORE INFORMATION.
 2. ELIMINATE ALL PAVEMENT MARKING AND SIGNS THAT ARE IN CONFLICT WITH TRAFFIC MOVEMENTS.
 3. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES. CONSTRUCT PAVEMENT ALONG DRIVEWAYS IN CONJUNCTION WITH WORK PROGRESS.
 4. SEE SIDE STREET TYPICAL DETOUR LAYOUT FOR ADDITIONAL INFORMATION.
 5. CONTRACTOR TO USE OPPOSING TRAFFIC LANE DIVIDERS (OTLD) AT EVERY 5TH VERTICAL PANEL.
 6. REFER TO TEMPORARY SIGNAL PLANS FOR ADDITIONAL INFORMATION. THE CONTRACTOR WILL BE REQUIRED TO HAVE ON SITE FOUR R1-1 SIGNS WITH FOUR R1-3P WITH FLAGS IN THE EVENT THE ELECTRICAL SYSTEM FOR THE SIGNAL LIGHTS ARE DAMAGED DURING CONSTRUCTION.
 7. REFER TO W 11TH ST (WEST) INTERSECTION DETAILS FOR ADDITIONAL INFORMATION.

* CONTRACTOR TO MAINTAIN ACCESS TO PLAINVIEW FIRE MARSHALL ALL THE TIME. CONTRACTOR TO COORDINATE WITH ENGINEERS BEFORE START WORKING AT FIRE MARSHALL DRIVEWAYS.



STATE OF TEXAS
 MOHAMMED S ULA
 131559
 LICENSED PROFESSIONAL ENGINEER
 Mohammed S Ula
 7/29/2024

NO.	DATE	REVISION	APPROVED

infraTECH
 Engineers & Innovators, LLC
 TBPE REGISTRATION NO. F-18368

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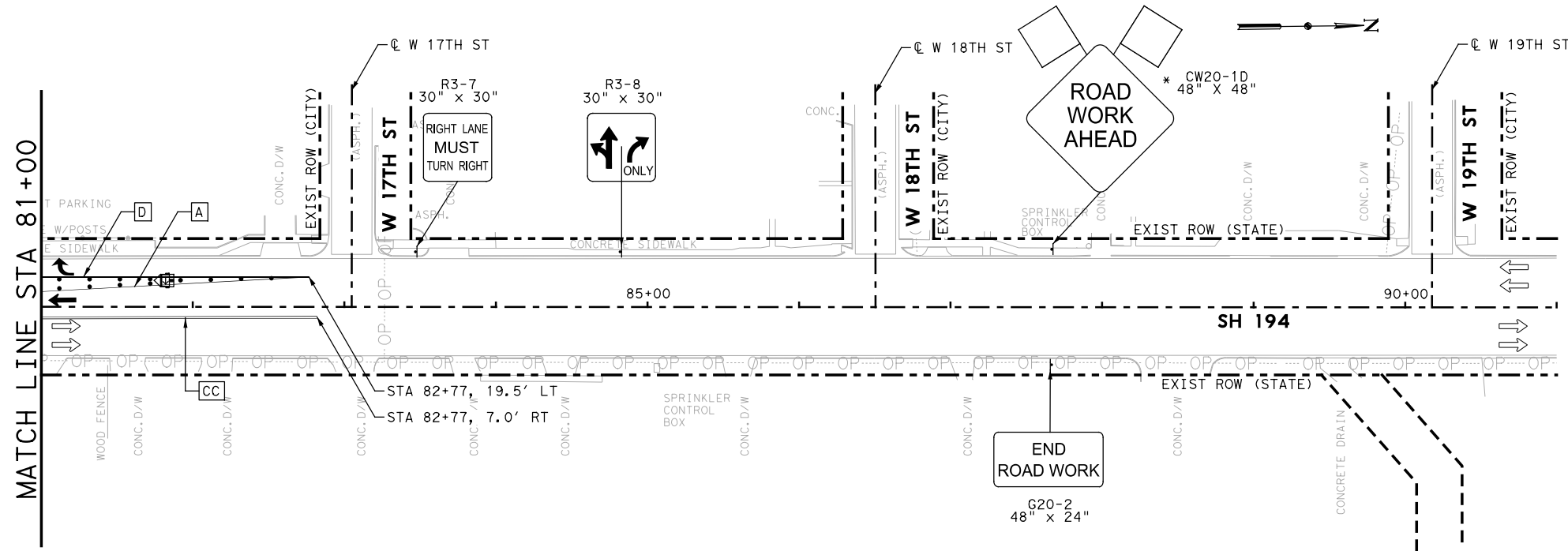
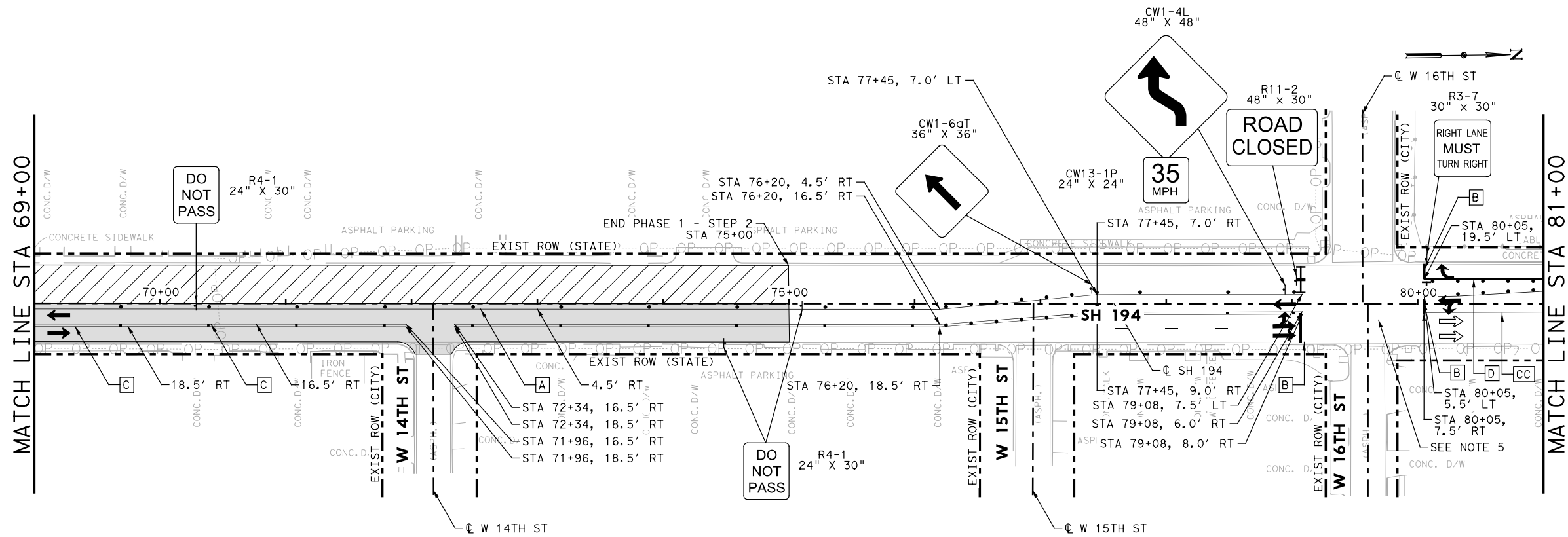
SH 194 FROM FM 3466 TO IH 27
 TRAFFIC CONTROL PLAN
 PHASE 1 STEP 2 PHASING PLAN
 STA 46+00 TO STA 69+00

HORZ SCALE: 1"=100' SHEET 3 OF 4

FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026

30

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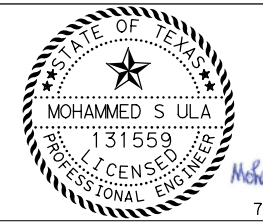
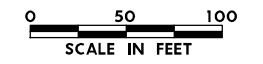


LEGEND

- CONSTRUCTION PHASE
- COMPLETED PHASE
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- CHANNELIZING DEVICE
- VERTICAL PANEL
- CONSTRUCTION SIGN
- TYPE III BARRICADE
- TRAILER MOUNTED FLASHING ARROW BOARD
- WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
- WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
- WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
- WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)
- WK ZN PAV MRK NON-REMOV (W) 8" (SLD)
- WK ZN PAV MRK NON-REMOV (W) 4" (BRK)

NOTES

1. REFERENCE STANDARDS BC (1) THRU (12) AND TCP STANDARDS FOR LENGTHS, SIGN SPACING AND MORE INFORMATION.
2. ELIMINATE ALL PAVEMENT MARKING AND SIGNS THAT ARE IN CONFLICT WITH TRAFFIC MOVEMENTS.
3. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES. CONSTRUCT PAVEMENT ALONG DRIVEWAYS IN CONJUNCTION WITH WORK PROGRESS.
4. SEE SIDE STREET TYPICAL DETOUR LAYOUT FOR ADDITIONAL INFORMATION.
5. REFER TO TEMPORARY SIGNAL PLANS FOR ADDITIONAL INFORMATION. THE CONTRACTOR WILL BE REQUIRED TO HAVE ON SITE FOUR R1-1 SIGNS WITH FOUR R1-3P WITH FLAGS IN THE EVENT THE ELECTRICAL SYSTEM FOR THE SIGNAL LIGHTS ARE DAMAGED DURING CONSTRUCTION.



NO.	DATE	REVISION	APPROVED

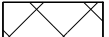
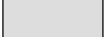
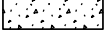












SH 194 FROM FM 3466 TO IH 27

TRAFFIC CONTROL PLAN
 PHASE 1 STEP 2 PHASING PLAN
 STA 69+00 TO STA 91+00

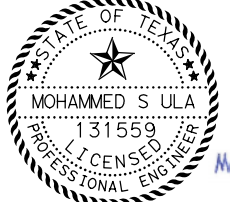
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6	SEE TITLE SHEET	SH 194	
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	31
CONTROL:	SECTION:	JOB:	
0439	05	026	

LEGEND

-  CONSTRUCTION STEP
-  COMPLETED STEP
-  TEMPORARY PAVEMENT
-  WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
-  WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
-  WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
-  WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)
-  WK ZN PAV MRK NON-REMOV (W) 4" (BRK)
-  TRAILER MOUNTED FLASHING ARROW
-  CONSTRUCTION SIGN
-  TRAFFIC DIRECTION
-  TYPE III BARRICADE
-  CHANNELIZING DEVICE

NOTES:

1. INSTALL/ADJUST TEMPORARY TRAFFIC SIGNAL AT INTERSECTION PRIOR TO BEGINNING ANY WORK.
2. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENCE AND BUSINESSES AT ALL TIMES.
3. REMOVE STRIPING AS NECESSARY DURING THIS PHASE.
4. CLOSE AND CONSTRUCT SOUTH SIDE OF W 11TH ST (WEST APPROACH) WHILE MAINTAINING TWO-WAY TRAFFIC ON NORTH SIDE.
5. THE CONTRACTOR SHALL REMOVE THE CONCRETE MEDIAN ONLY UP TO THE LIMITS SHOWN, WITHOUT DISTURBING THE HMA UNDERNEATH AT W 11TH ST.



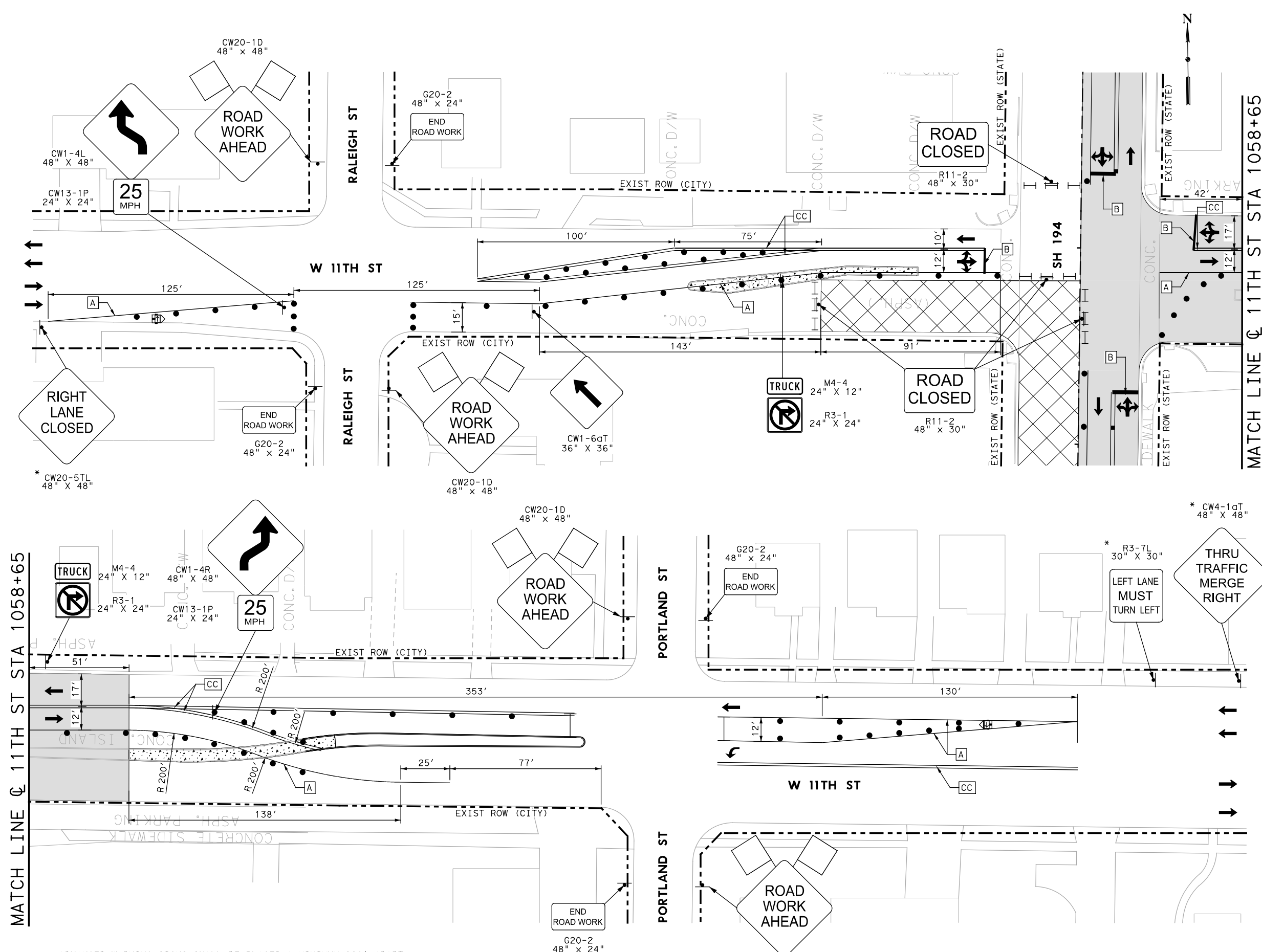
NO.	DATE	REVISION	APPROVED



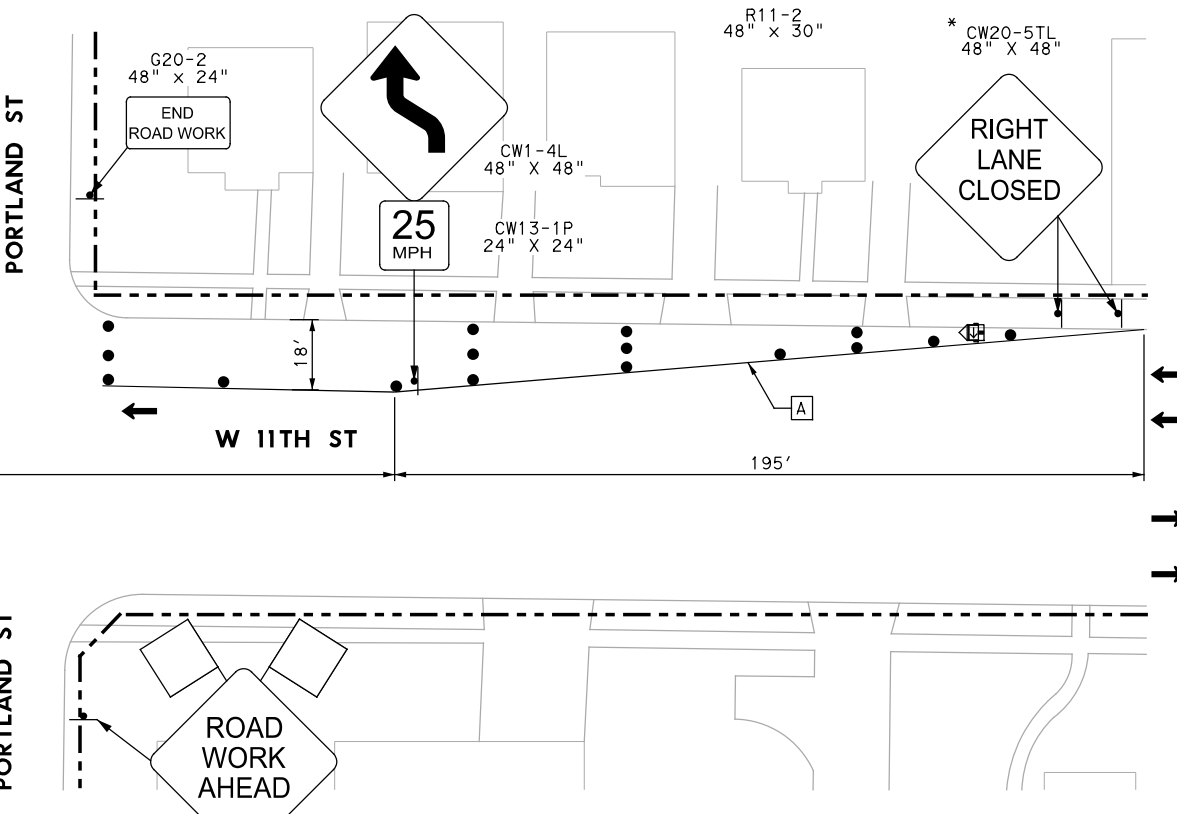
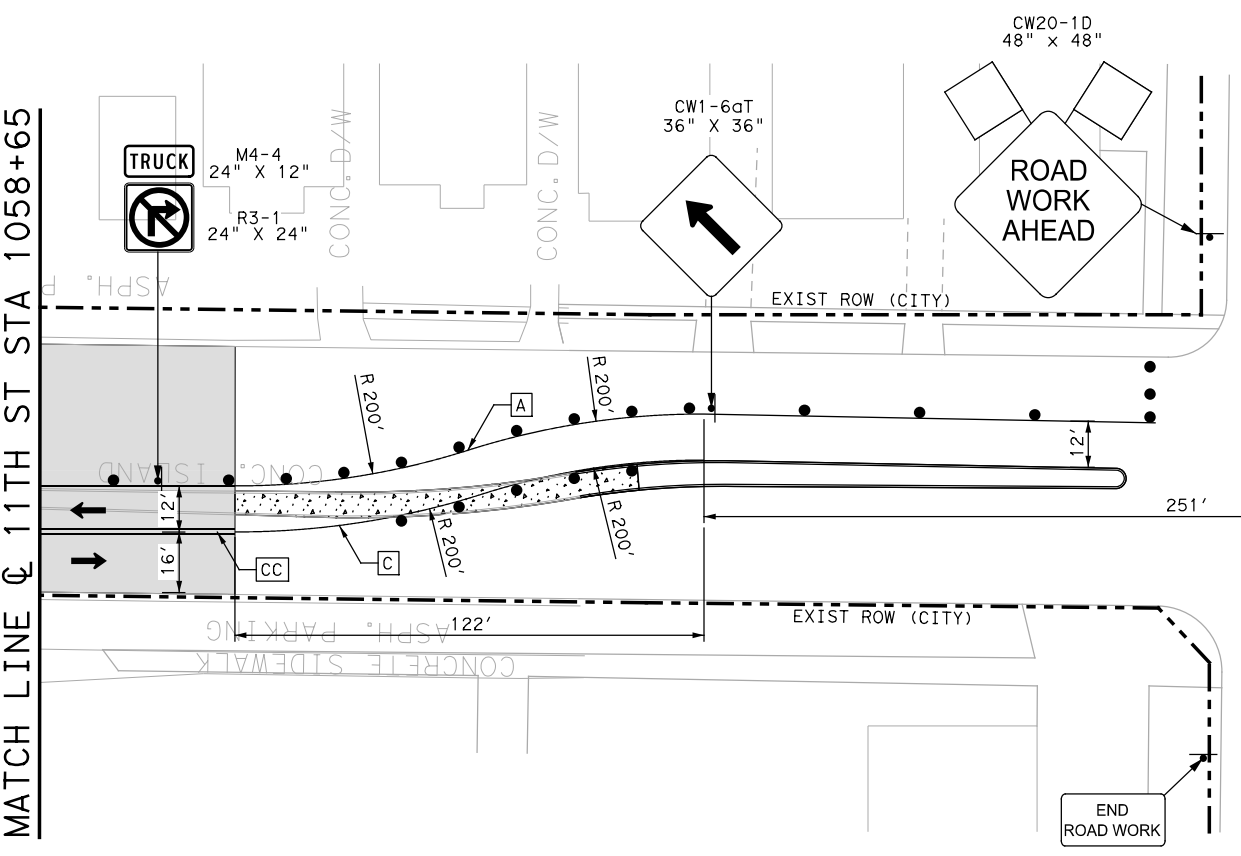
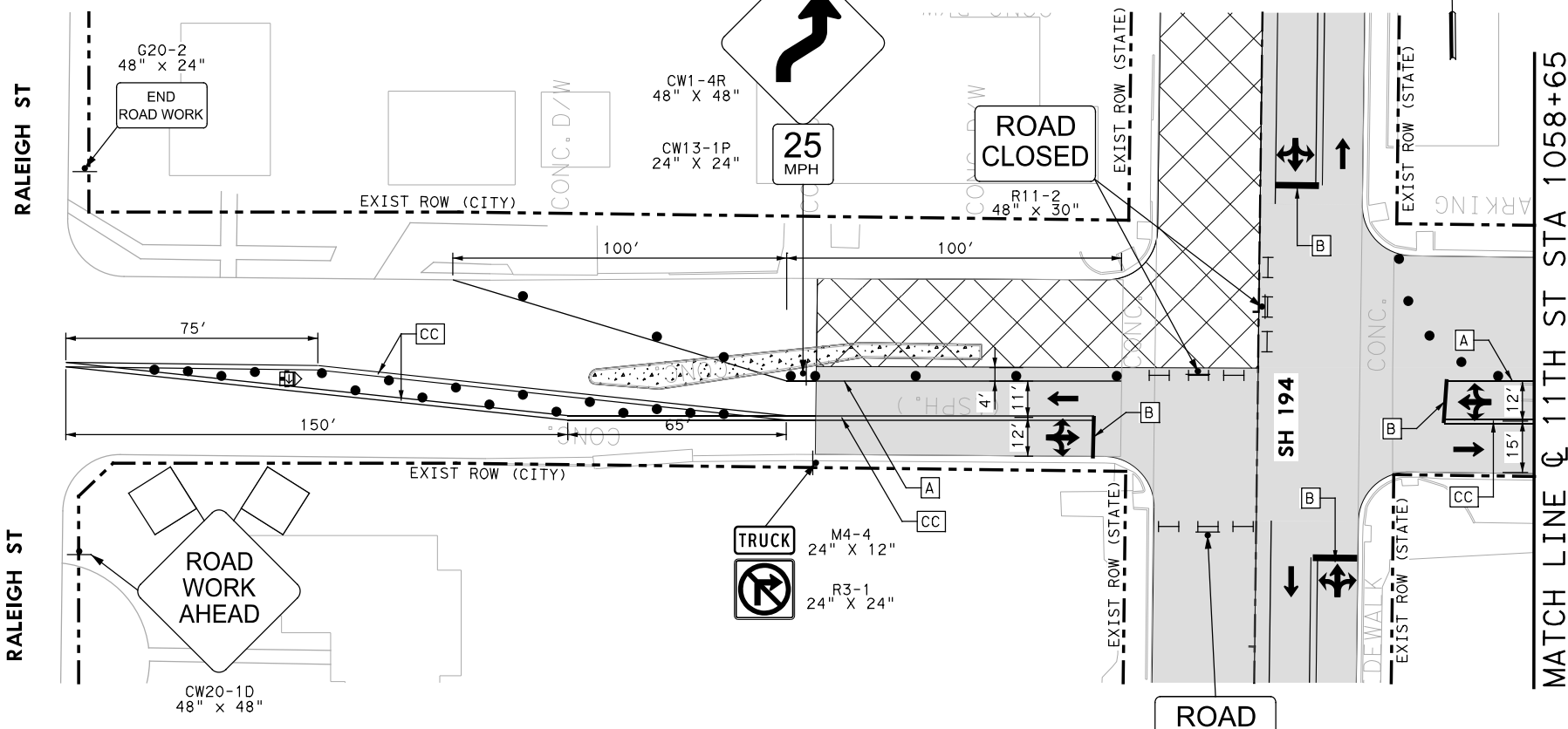
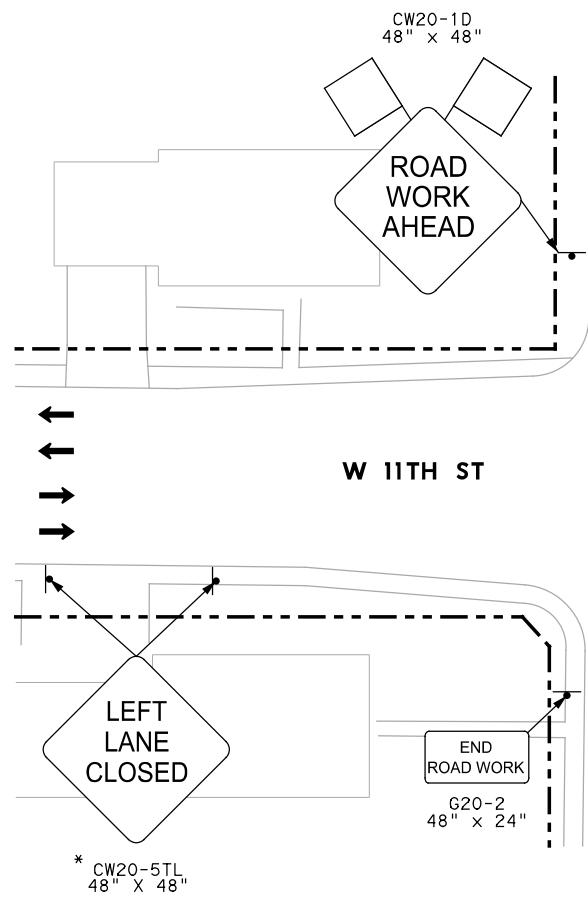
SH 194 FROM FM 3466 TO IH 27

TRAFFIC CONTROL PLAN
PHASE 1 STEP 2 INTERSECTION DETAILS
W 11TH ST (WEST) - STAGE 1

HORZ SCALE: 1"=50'			SHEET 1 OF 2
FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	32
CONTROL	SECTION	JOB	
0439	05	026	

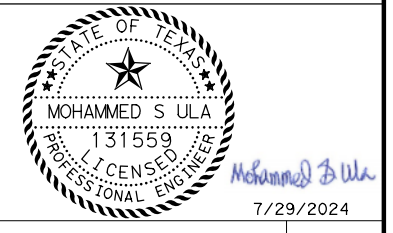
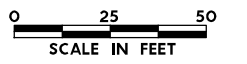


* ADVANCED WARNING SIGNS SHALL BE PLACED A MINIMUM 120' APART



- LEGEND**
- CONSTRUCTION STEP
 - COMPLETED STEP
 - TEMPORARY PAVEMENT
 - A** WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
 - B** WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
 - C** WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
 - CC** WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)
 - E** WK ZN PAV MRK NON-REMOV (W) 4" (BRK)
 - TRAILER MOUNTED FLASHING ARROW
 - CONSTRUCTION SIGN
 - TRAFFIC DIRECTION
 - TYPE III BARRICADE
 - CHANNELIZING DEVICE

- NOTES:**
1. INSTALL/ADJUST TEMPORARY TRAFFIC SIGNAL AT INTERSECTION PRIOR TO BEGINNING ANY WORK.
 2. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENCE AND BUSINESSES AT ALL TIMES.
 3. REMOVE STRIPING AS NECESSARY DURING THIS PHASE.
 4. CLOSE AND CONSTRUCT NORTH SIDE OF W 11TH ST (WEST APPROACH) WHILE MAINTAINING TWO-WAY TRAFFIC ON SOUTH SIDE.
 5. THE CONTRACTOR SHALL REMOVE THE CONCRETE MEDIAN ONLY UP TO THE LIMITS SHOWN, WITHOUT DISTURBING THE HMA UNDERNEATH AT W 11TH ST.



NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27



TRAFFIC CONTROL PLAN
PHASE 1 STEP 2 INTERSECTION DETAILS
W 11TH ST (WEST) - STAGE 2

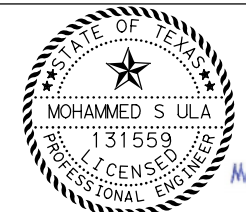
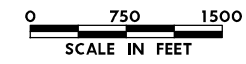
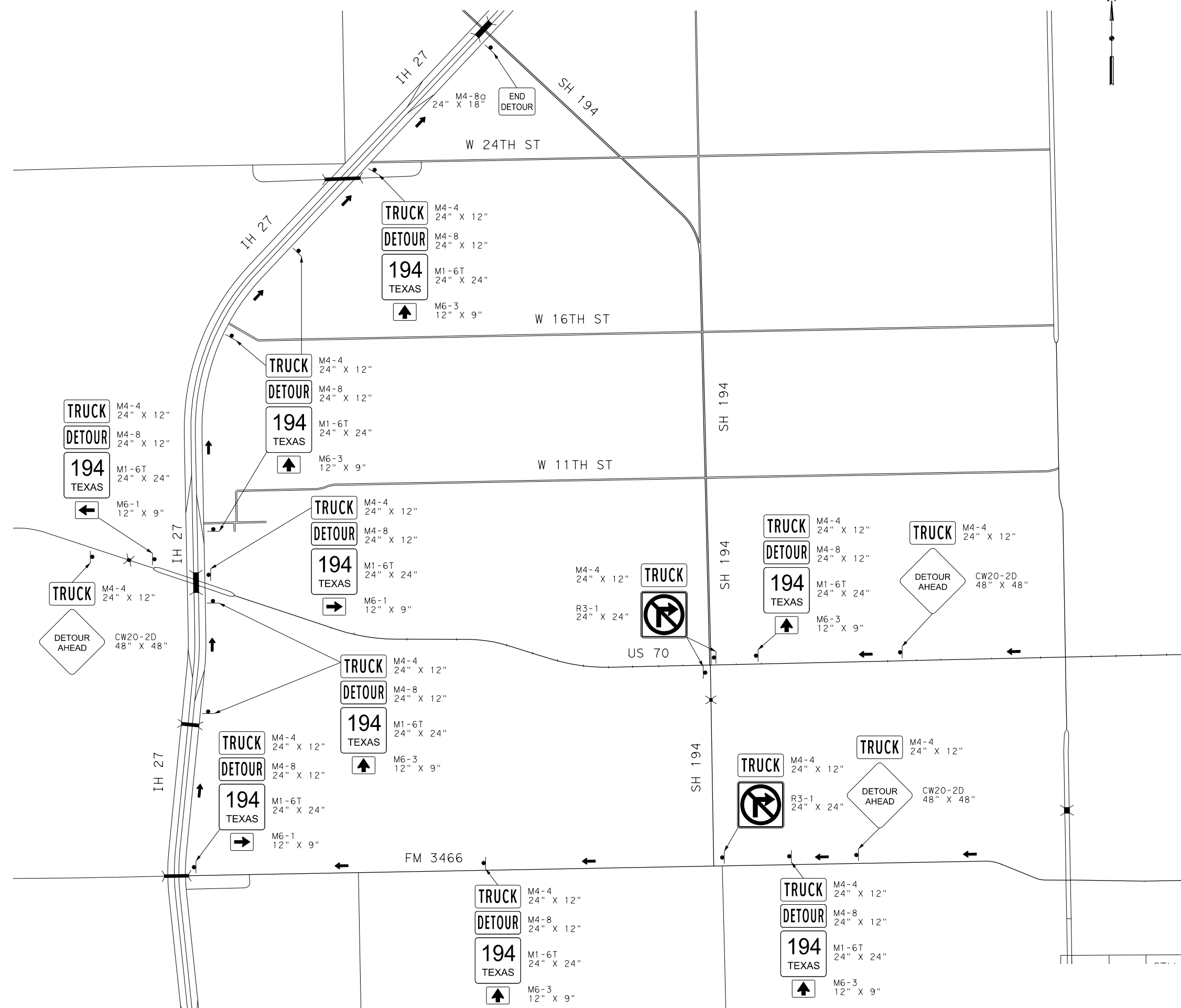
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FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	33
CONTROL	SECTION	JOB	
0439	05	026	

*ADVANCED WARNING SIGNS SHALL BE PLACED A MINIMUM 120' APART

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LEGEND

-  CONSTRUCTION SIGN
-  DETOUR TRAFFIC DIRECTION



NO.	DATE	REVISION	APPROVED

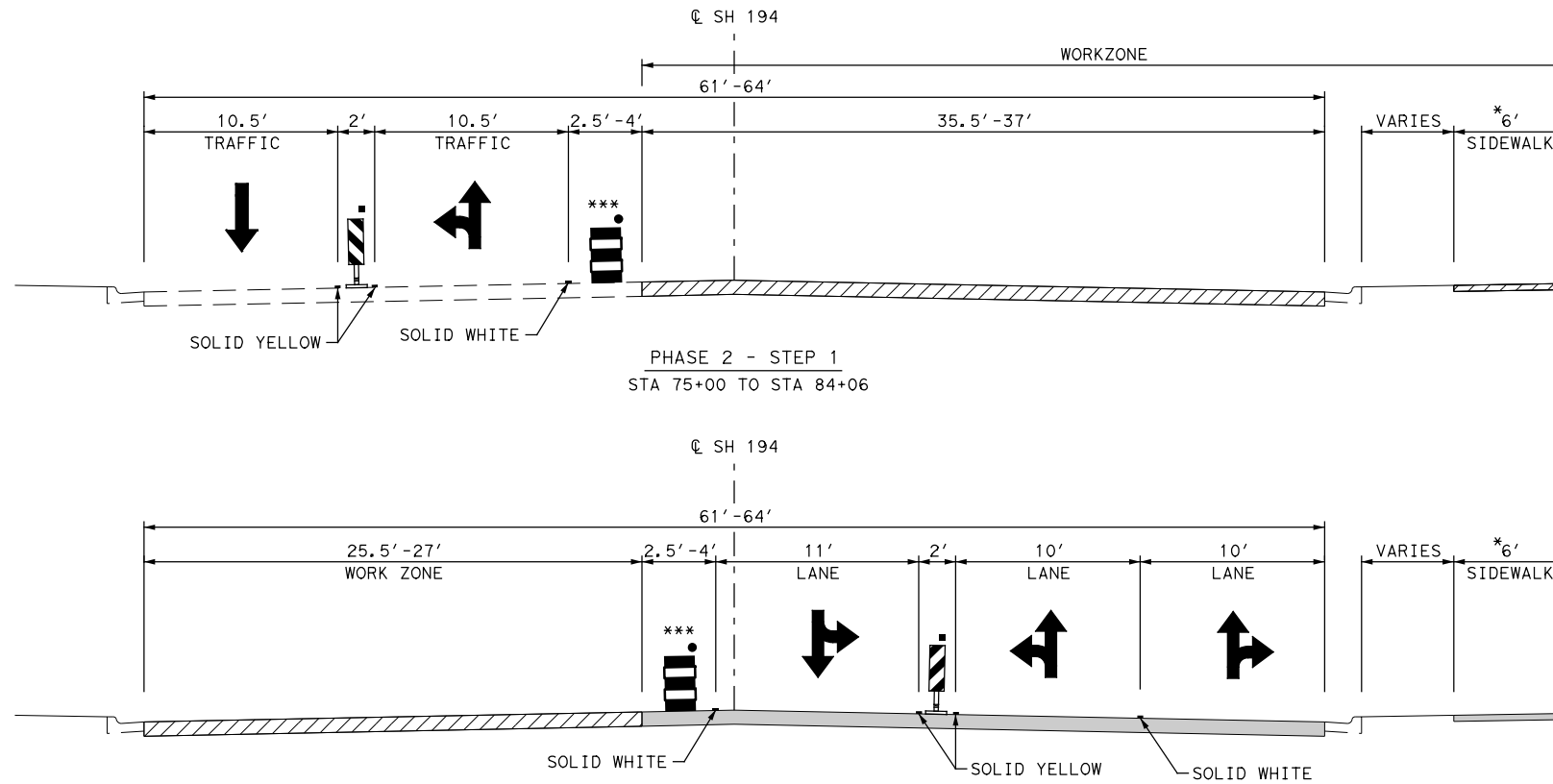


SH 194 FROM FM 3466 TO IH 27

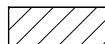



TRAFFIC CONTROL PLAN
 DETOUR LAYOUT
 PHASE 1 - TRUCKS

HORZ SCALE: 1"=1500'			SHEET 1 OF 1
FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	34
CONTROL	SECTION	JOB	
0439	05	026	

PHASE 2 WORK ZONE LAYOUT



LEGEND

-  CONSTRUCTION PHASE/STEP
-  COMPLETED PHASE/STEP
-  PLASTIC DRUM
-  VERTICAL PANEL

- PORTABLE VERTICAL PANEL - SEE STANDARD BC(9) - 21
- PLASTIC DRUMS - SEE STANDARD BC(8) - 21
- * REFER TO ROADWAY PLANS FOR SIDEWALK LOCATION AND WIDTH
- *** USE PLASTIC CONES IF BUFFER SPACE IS LESS THAN 3.0' - SEE STANDARD BC(10) - 21

MAJOR ACTIVITIES:

STEP 1:

1. SHIFT NORTHBOUND TRAFFIC TO THE INNERMOST SOUTHBOUND TRAVEL LANE WHILE MAINTAINING SOUTHBOUND TRAFFIC TO THE OUTERMOST SOUTHBOUND TRAVEL LANE.
2. CLOSE NORTHBOUND TRAVEL LANES FOR CONSTRUCTION FROM STA 75+00 TO STA 84+06.
3. CONSTRUCT PROPOSED NORTHBOUND SIDEWALKS AND DRIVEWAYS FROM STA 75+00 TO STA 84+06.
4. CONSTRUCT PROPOSED NORTHBOUND PAVEMENT FROM STA 75+00 TO STA 84+06.
5. CLOSE AND CONSTRUCT W 16TH ST (EAST) INTERSECTION. SEE SIDE STREET DETOUR LAYOUT TO DETOUR W 16TH ST (EAST) TRAFFIC.

STEP 2:

1. SHIFT SOUTHBOUND TRAFFIC TO THE NEWLY CONSTRUCTED INNERMOST NORTHBOUND TRAVEL LANE WHILE MAINTAINING NORTHBOUND TRAFFIC TO THE OUTERMOST NORTHBOUND TRAVEL LANE.
2. CLOSE SOUTHBOUND TRAVEL LANES FOR CONSTRUCTION FROM STA 75+00 TO STA 79+58.
3. CONSTRUCT PROPOSED SOUTHBOUND SIDEWALKS AND DRIVEWAYS FROM STA 75+00 TO STA 79+58.
4. CONSTRUCT PROPOSED SOUTHBOUND PAVEMENT FROM STA 75+00 TO STA 79+58.
5. CONSTRUCT SOUTH SIDE OF W 16TH ST (WEST) INTERSECTION WHILE MAINTAINING TWO-WAY TRAFFIC ON NORTH SIDE.

STEP 3:

1. SHIFT SOUTHBOUND TRAFFIC TO THE NEWLY CONSTRUCTED INNERMOST NORTHBOUND TRAVEL LANE WHILE MAINTAINING NORTHBOUND TRAFFIC TO THE OUTERMOST NORTHBOUND TRAVEL LANE.
2. CLOSE SOUTHBOUND TRAVEL LANES FOR CONSTRUCTION FROM STA 79+58 TO STA 84+06.
3. CONSTRUCT PROPOSED SOUTHBOUND SIDEWALKS AND DRIVEWAYS FROM 79+58 TO STA 84+06.
4. CONSTRUCT PROPOSED SOUTHBOUND PAVEMENT FROM 79+58 TO STA 84+06.
5. CONSTRUCT NORTH SIDE OF W 16TH ST (WEST) INTERSECTION WHILE MAINTAINING TWO-WAY TRAFFIC ON SOUTH SIDE.

DETAILED ACTIVITIES:

STEP 1:

1. REMOVE EXISTING ACP AND BASE LAYERS FROM STA 75+00 TO STA 84+06. SEE TYPICAL SECTIONS AND PLAN SHEETS FOR VARYING WIDTHS OF ROADWAY.
2. RESHAPE AND LIME STABILIZE 8" OF EXISTING BASE. PRIME THE BASE FROM STA 75+00 TO STA 84+06.
3. PLACE 6" ACP BASE COURSE FROM STA 75+00 TO STA 84+06. SAFETY WEDGE MUST BE PLACED ON EDGES THAT AFFECT TRAFFIC. APPLY FOG SEAL.

STEP 2:

1. REMOVE EXISTING ACP AND BASE LAYERS FROM 75+00 TO STA 79+58. SEE TYPICAL SECTIONS AND PLAN SHEETS FOR VARYING WIDTHS OF ROADWAY.
2. RESHAPE AND LIME STABILIZE 8" OF EXISTING BASE. PRIME THE BASE FROM STA 75+00 TO STA 79+58.
3. PLACE 6" ACP BASE COURSE FROM STA 75+00 TO STA 79+58. SAFETY WEDGE MUST BE PLACED ON EDGES THAT AFFECT TRAFFIC. APPLY FOG SEAL.

STEP 3:

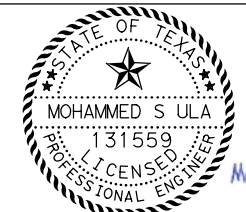
1. REMOVE EXISTING ACP AND BASE LAYERS FROM STA 79+58 TO STA 84+06. SEE TYPICAL SECTIONS AND PLAN SHEETS FOR VARYING WIDTHS OF ROADWAY.
2. RESHAPE AND LIME STABILIZE 8" OF EXISTING BASE. PRIME THE BASE FROM STA 79+58 TO STA 84+06.
3. PLACE 6" ACP BASE COURSE FROM STA 79+58 TO STA 84+06. SAFETY WEDGE MUST BE PLACED ON EDGES THAT AFFECT TRAFFIC. APPLY FOG SEAL.

STEP 4:

1. REMOVE EXISTING TEMPORARY PAVEMENT MARKINGS AND PLACE NEW TEMPORARY PAVEMENT MARKINGS FOR RECONSTRUCTED PAVEMENT FOLLOWING PERMANENT PAVEMENT MARKING PLANS FROM 75+00 TO STA 84+06.

NOTES:

1. THE PROPOSED SEQUENCE OF WORK MAY BE VARIED WITH APPROVAL BY THE ENGINEER TO MEET CONDITIONS ENCOUNTERED IN THE FIELD.
2. ALL DRIVEWAYS TO BUSINESSES ARE TO REMAIN ACCESSIBLE TO THE PUBLIC. PLACE RAMPS WHEN THERE IS MORE THAN A 2" DIFFERENCE IN GRADE. SEE CONSTRUCTION DRIVEWAY DETAIL.
3. CONSTRUCT ITEM 506-2016, CONSTRUCTION EXIT (TYPE 1), AT THE BEGINNING AND ENDING OF EACH PHASE, IF APPLICABLE OR AS DIRECTED BY THE ENGINEER.
4. IT IS CONTRACTOR'S RESPONSIBILITY TO MAINTAIN EXISTING MAILBOXES IN A CLEAN AND FUNCTIONAL CONDITION THROUGHOUT THE DURATION OF THE PROJECT.



2/27/2023

NO.	DATE	REVISION	APPROVED



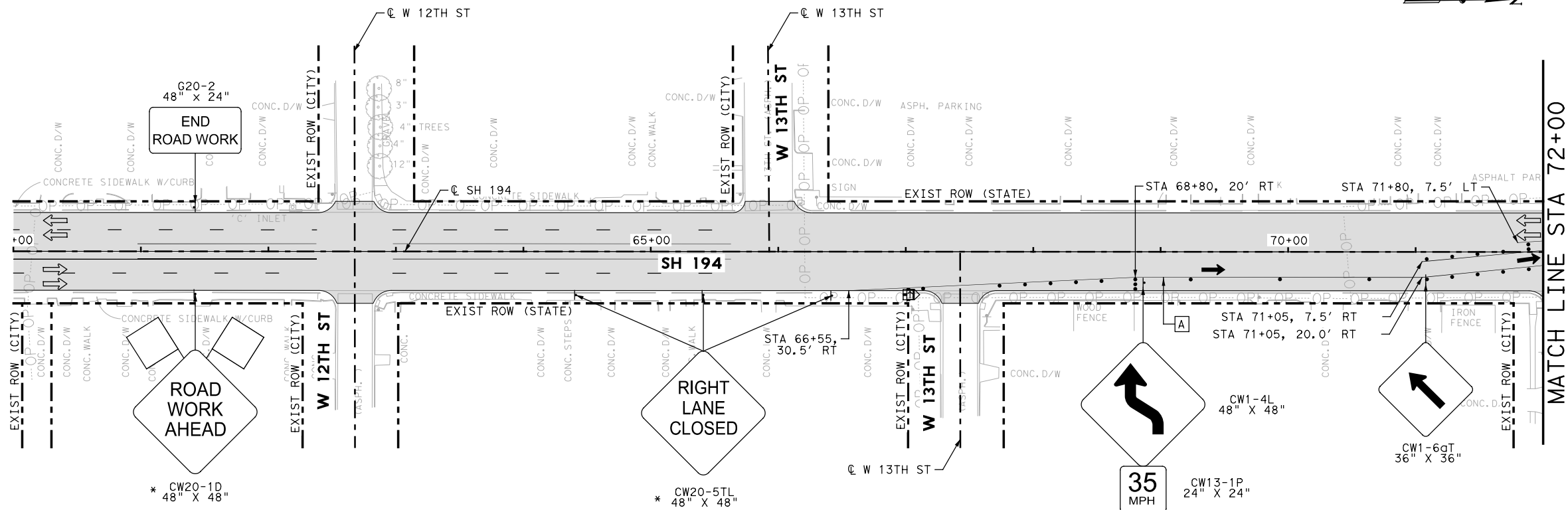
SH 194 FROM FM 3466 TO IH 27

TRAFFIC CONTROL PLAN
TYPICAL SECTION
PHASE 2 - STEP 1, 2, 3 AND 4

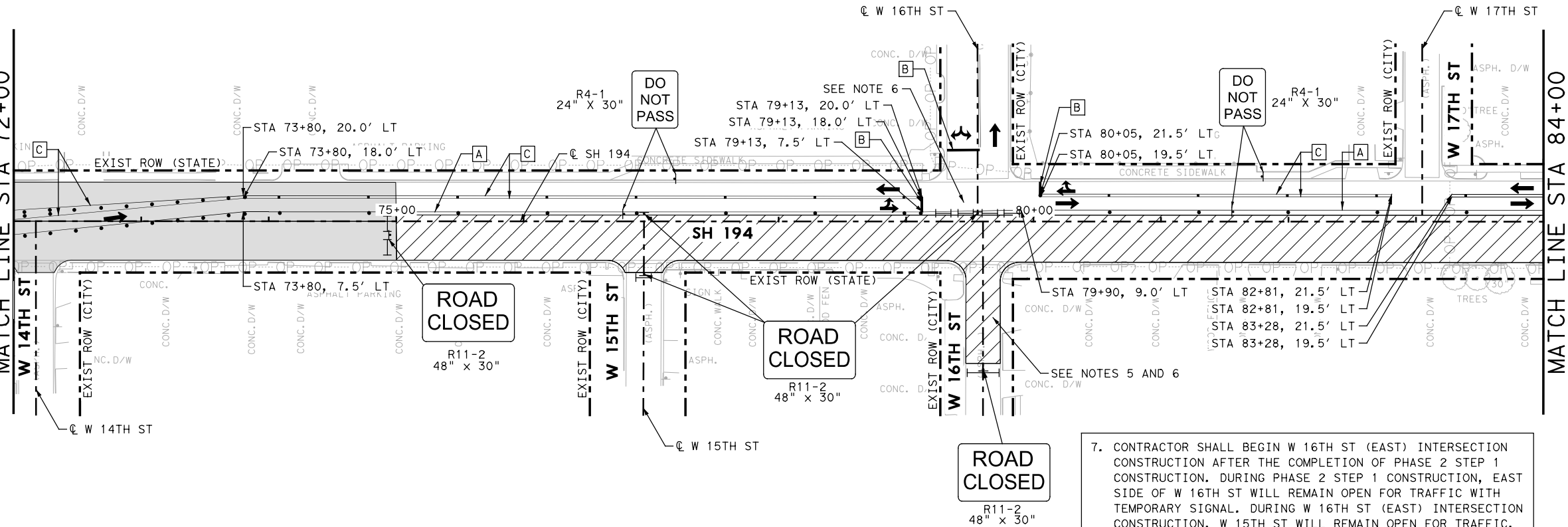
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STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 35
CONTROL 0439	SECTION 05	JOB 026	

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 USER: Robinson DATE: 2/27/2023
 FILE: SH194_TCP_TypSec_Sheet.dgn

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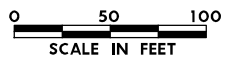
* ADVANCE WARNING SIGNS WILL BE PLACED AT MINIMUM 160.0' APART.



7. CONTRACTOR SHALL BEGIN W 16TH ST (EAST) INTERSECTION CONSTRUCTION AFTER THE COMPLETION OF PHASE 2 STEP 1 CONSTRUCTION. DURING PHASE 2 STEP 1 CONSTRUCTION, EAST SIDE OF W 16TH ST WILL REMAIN OPEN FOR TRAFFIC WITH TEMPORARY SIGNAL. DURING W 16TH ST (EAST) INTERSECTION CONSTRUCTION, W 15TH ST WILL REMAIN OPEN FOR TRAFFIC.

- LEGEND**
- CONSTRUCTION PHASE
 - COMPLETED PHASE
 - EXIST DIRECTION OF TRAFFIC
 - PROP DIRECTION OF TRAFFIC
 - CHANNELIZING DEVICE
 - VERTICAL PANEL
 - CONSTRUCTION SIGN
 - TYPE III BARRICADE
 - TRAILER MOUNTED FLASHING ARROW BOARD
 - WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
 - WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)

- NOTES**
1. REFERENCE STANDARDS BC (1) THRU (12) AND TCP STANDARDS FOR LENGTHS, SIGN SPACING AND MORE INFORMATION.
 2. ELIMINATE ALL PAVEMENT MARKING AND SIGNS THAT ARE IN CONFLICT WITH TRAFFIC MOVEMENTS.
 3. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES. CONSTRUCT PAVEMENT ALONG DRIVEWAYS IN CONJUNCTION WITH WORK PROGRESS.
 4. SEE SIDE STREET TYPICAL DETOUR LAYOUT FOR ADDITIONAL INFORMATION.
 5. CONTRACTOR TO USE OPPOSING TRAFFIC LANE DIVIDERS (OTLD) AT EVERY 5TH VERTICAL PANEL.
 6. REFER TO TEMPORARY SIGNAL PLANS FOR ADDITIONAL INFORMATION. THE CONTRACTOR WILL BE REQUIRED TO HAVE ON SITE FOUR R1-1 SIGNS WITH FOUR R1-3P WITH FLAGS IN THE EVENT THE ELECTRICAL SYSTEM FOR THE SIGNAL LIGHTS ARE DAMAGED DURING CONSTRUCTION.



STATE OF TEXAS
 MOHAMMED S ULA
 131559
 LICENSED PROFESSIONAL ENGINEER
 Mohammed S Ula
 7/29/2024

NO.	DATE	REVISION	APPROVED

infraTECH
 Engineers & Innovators, LLC
 TBPE REGISTRATION NO. F-18368

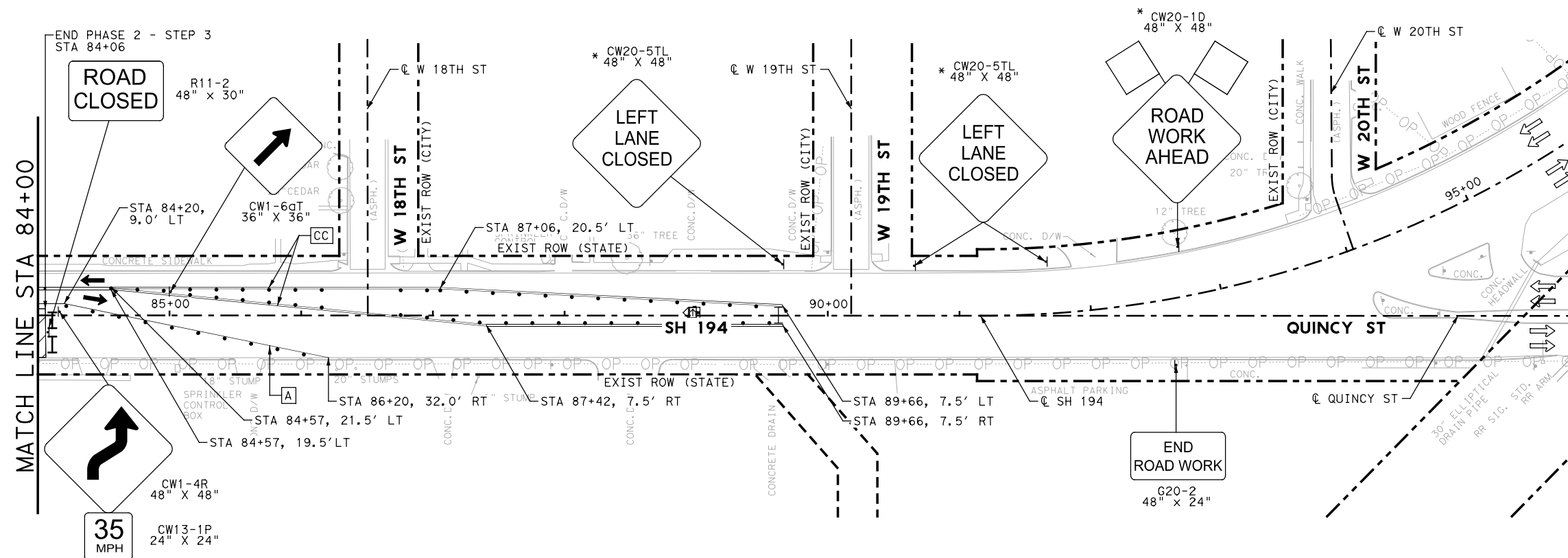
Texas Department of Transportation
 © 2024

SH 194 FROM FM 3466 TO IH 27
 TRAFFIC CONTROL PLAN
 PHASE 2 STEP 1 PHASING PLAN
 STA 60+00 TO STA 84+00

HORZ SCALE: 1"=100' SHEET 1 OF 2

FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	36
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:25:21 PM
 FILE: SH194_TCP_Phase2_Step1_Sheet2.dgn



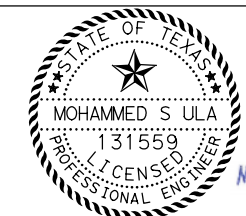
* ADVANCE WARNING SIGNS WILL BE PLACED AT MINIMUM 160.0' APART.

LEGEND

- CONSTRUCTION PHASE
- COMPLETED PHASE
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- CHANNELIZING DEVICE
- VERTICAL PANEL
- CONSTRUCTION SIGN
- TYPE III BARRICADE
- TRAILER MOUNTED FLASHING ARROW BOARD
- WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
- WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
- WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
- WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)

NOTES

1. REFERENCE STANDARDS BC (1) THRU (12) AND TCP STANDARDS FOR LENGTHS, SIGN SPACING AND MORE INFORMATION.
2. ELIMINATE ALL PAVEMENT MARKING AND SIGNS THAT ARE IN CONFLICT WITH TRAFFIC MOVEMENTS.
3. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES. CONSTRUCT PAVEMENT ALONG DRIVEWAYS IN CONJUNCTION WITH WORK PROGRESS.
4. SEE SIDE STREET TYPICAL DETOUR LAYOUT FOR ADDITIONAL INFORMATION.
5. CONTRACTOR TO USE OPPOSING TRAFFIC LANE DIVIDERS (OTLD) AT EVERY 5TH VERTICAL PANEL.



NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

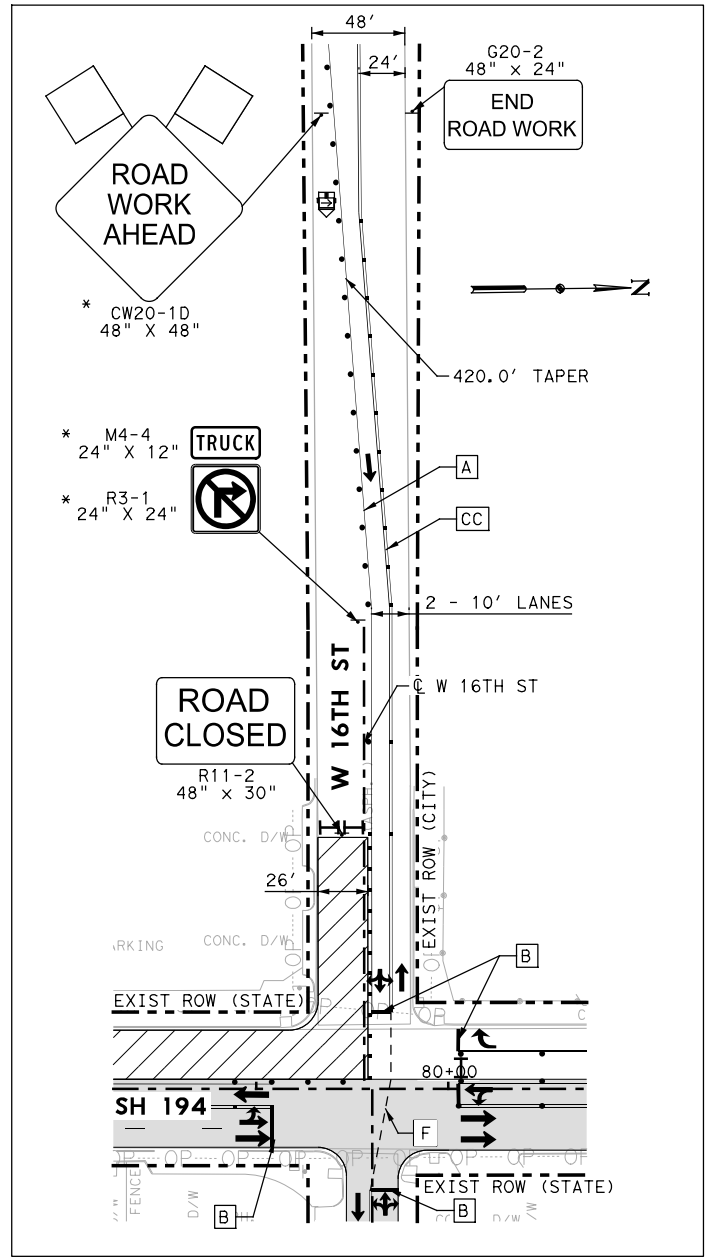
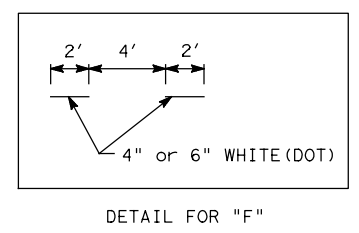
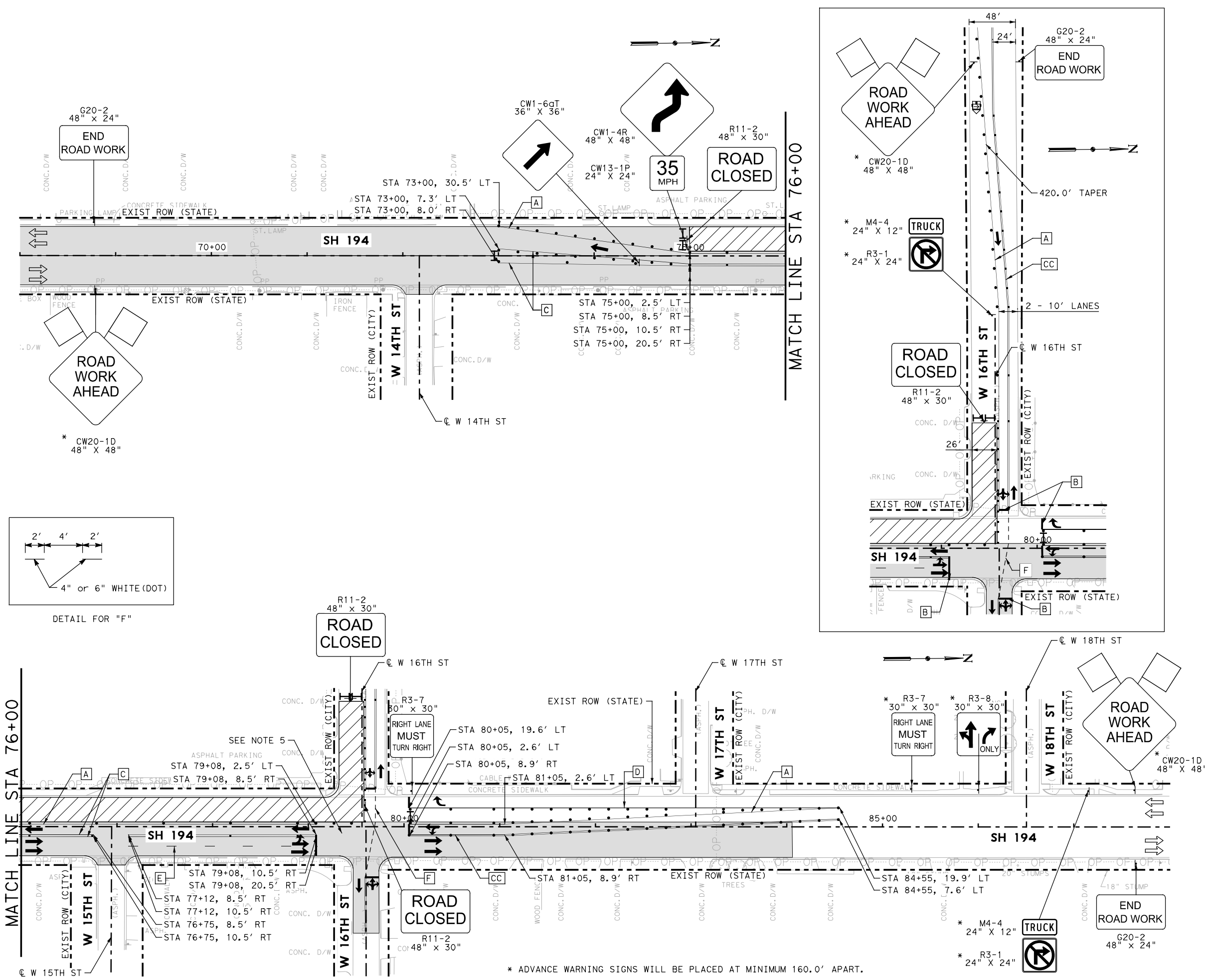
TRAFFIC CONTROL PLAN
 PHASE 2 STEP 1 PHASING PLAN
 STA 84+00 TO STA 96+00

HORZ SCALE: 1"=100' SHEET 2 OF 2

FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026

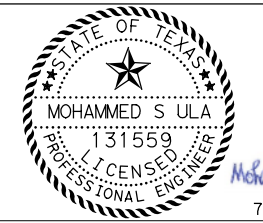
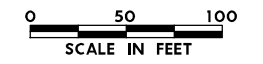
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PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:25:25 PM SCALE: 1:100
 FILE: SH194_TCP_Phase2_Step2_Sheet1.dgn



- LEGEND**
- CONSTRUCTION PHASE
 - COMPLETED PHASE
 - EXIST DIRECTION OF TRAFFIC
 - PROP DIRECTION OF TRAFFIC
 - CHANNELIZING DEVICE
 - VERTICAL PANEL
 - CONSTRUCTION SIGN
 - TYPE III BARRICADE
 - TRAILER MOUNTED FLASHING ARROW BOARD
 - WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
 - WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV (W) 8" (SLD)
 - WK ZN PAV MRK NON-REMOV (W) 4" (BRK)
 - WK ZN PAV MRK NON-REMOV (W) 4" (DOT)

- NOTES**
1. REFERENCE STANDARDS BC (1) THRU (12) AND TCP STANDARDS FOR LENGTHS, SIGN SPACING AND MORE INFORMATION.
 2. ELIMINATE ALL PAVEMENT MARKING AND SIGNS THAT ARE IN CONFLICT WITH TRAFFIC MOVEMENTS.
 3. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES. CONSTRUCT PAVEMENT ALONG DRIVEWAYS IN CONJUNCTION WITH WORK PROGRESS.
 4. SEE SIDE STREET TYPICAL DETOUR LAYOUT FOR ADDITIONAL INFORMATION.
 5. REFER TO TEMPORARY SIGNAL PLANS FOR ADDITIONAL INFORMATION. THE CONTRACTOR WILL BE REQUIRED TO HAVE ON SITE FOUR R1-1 SIGNS WITH FOUR R1-3P WITH FLAGS IN THE EVENT THE ELECTRICAL SYSTEM FOR THE SIGNAL LIGHTS ARE DAMAGED DURING CONSTRUCTION.



NO.	DATE	REVISION	APPROVED



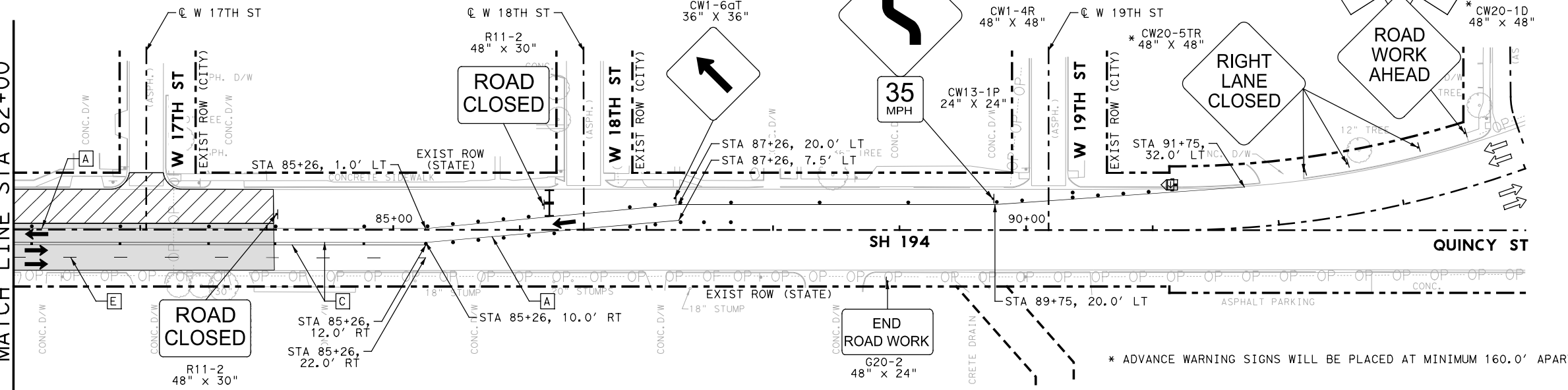
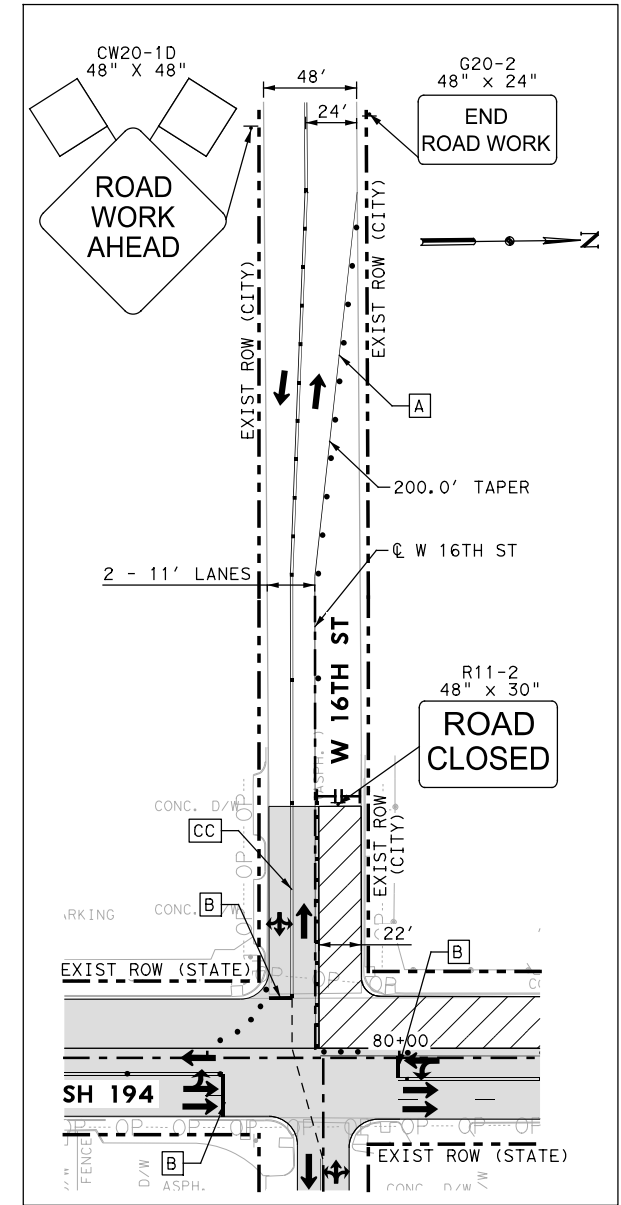
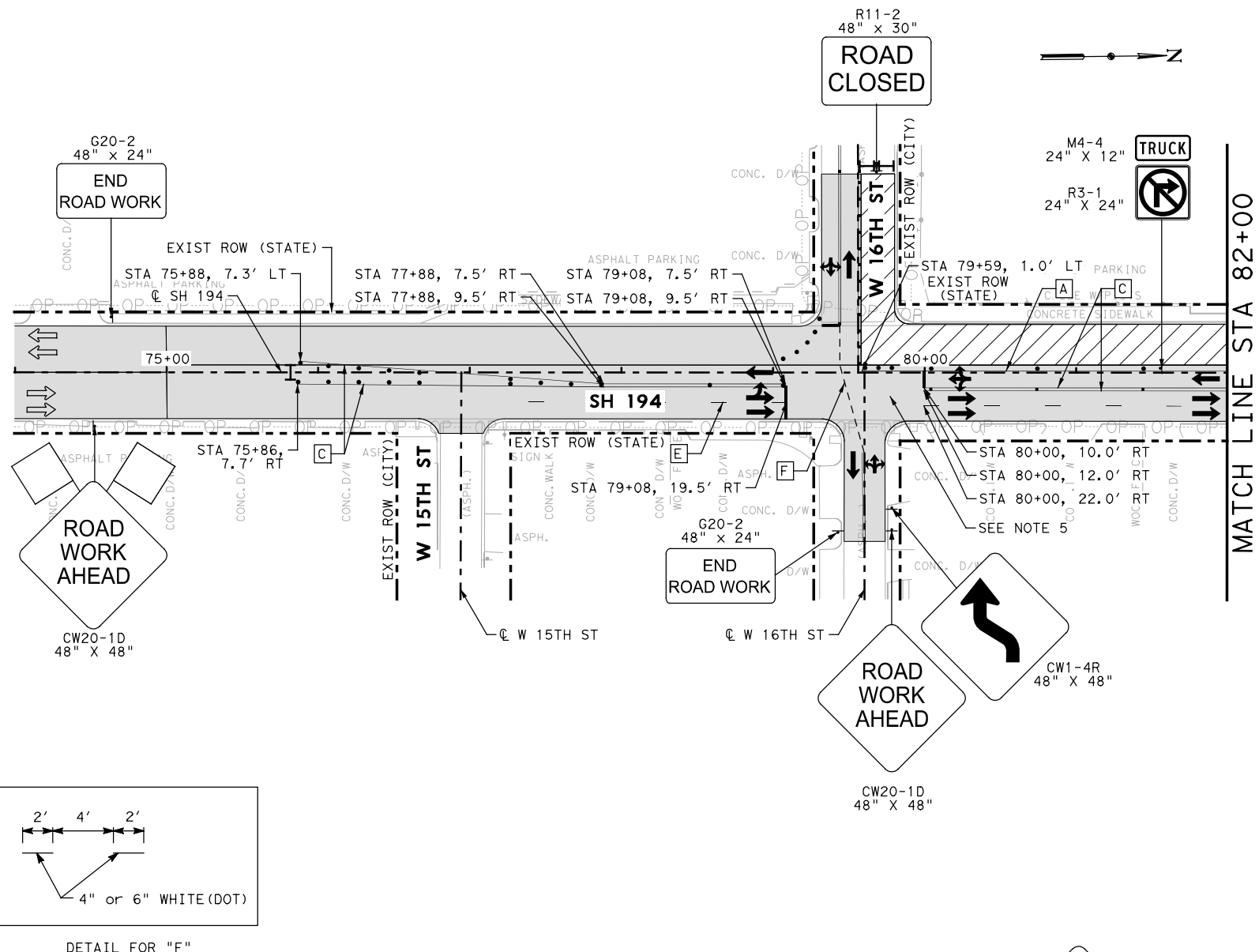
SH 194 FROM FM 3466 TO IH 27

TRAFFIC CONTROL PLAN
 PHASE 2 STEP 2 PHASING PLAN
 STA 69+00 TO STA 91+00

HORZ SCALE: 1"=100'			SHEET 1 OF 1
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET		HIGHWAY NO. SH 194
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 38
CONTROL 0439	SECTION 05	JOB 026	

* ADVANCE WARNING SIGNS WILL BE PLACED AT MINIMUM 160.0' APART.

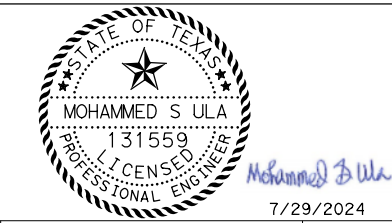
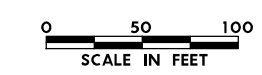
PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
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 FILE: SH194_TCP_Phase2_Step3_Sheel.dgn



* ADVANCE WARNING SIGNS WILL BE PLACED AT MINIMUM 160.0' APART.

- ### LEGEND
- CONSTRUCTION PHASE
 - COMPLETED PHASE
 - EXIST DIRECTION OF TRAFFIC
 - PROP DIRECTION OF TRAFFIC
 - CHANNELIZING DEVICE
 - VERTICAL PANEL
 - CONSTRUCTION SIGN
 - TYPE III BARRICADE
 - TRAILER MOUNTED FLASHING ARROW BOARD
 - WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
 - WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV (W) 4" (BRK)
 - WK ZN PAV MRK NON-REMOV (W) 4" (DOT)

- ### NOTES
1. REFERENCE STANDARDS BC (1) THRU (12) AND TCP STANDARDS FOR LENGTHS, SIGN SPACING AND MORE INFORMATION.
 2. ELIMINATE ALL PAVEMENT MARKING AND SIGNS THAT ARE IN CONFLICT WITH TRAFFIC MOVEMENTS.
 3. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES. RESTRICT PAVEMENT ALONG DRIVEWAYS IN CONJUNCTION WITH WORK PROGRESS.
 4. SEE SIDE STREET TYPICAL DETOUR LAYOUT FOR ADDITIONAL INFORMATION.
 5. REFER TO TEMPORARY SIGNAL PLANS FOR ADDITIONAL INFORMATION. THE CONTRACTOR WILL BE REQUIRED TO HAVE ON SITE FOUR R1-1 SIGNS WITH FOUR R1-3P WITH FLAGS IN THE EVENT THE ELECTRICAL SYSTEM FOR THE SIGNAL LIGHTS ARE DAMAGED DURING CONSTRUCTION.



NO.	DATE	REVISION	APPROVED

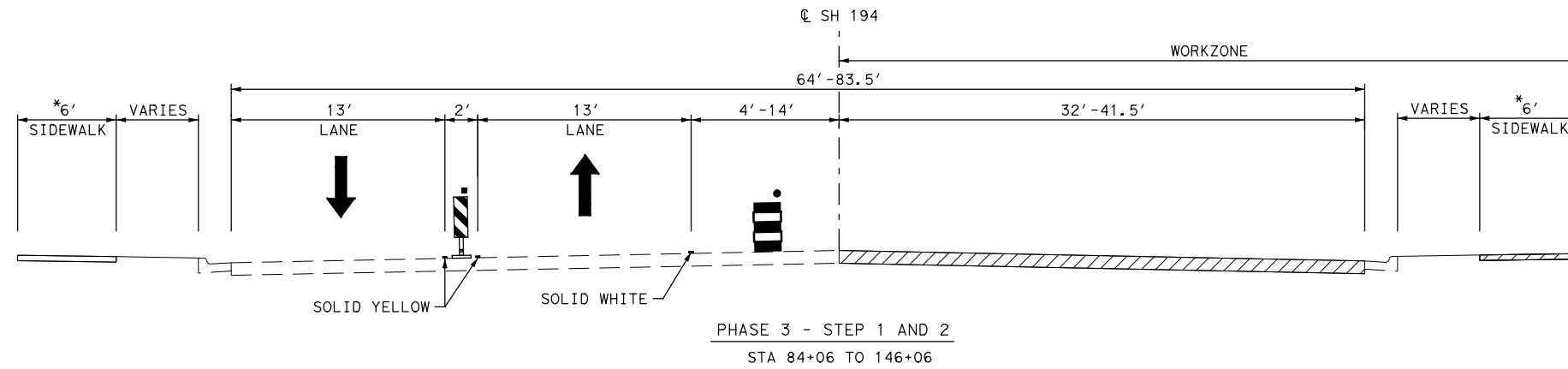


SH 194 FROM FM 3466 TO IH 27

TRAFFIC CONTROL PLAN
 PHASE 2 STEP 3 PHASING PLAN
 STA 74+00 TO STA 94+00

HORZ SCALE: 1"=100'		SHEET 1 OF 1	
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET	HIGHWAY NO. SH 194	
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 39
CONTROL 0439	SECTION 05	JOB 026	

PHASE 3 WORK ZONE LAYOUT



CONSTRUCTION ON RIGHT SIDE, MIRROR SET-UP FOR CONSTRUCTION ON LEFT SIDE.

- PORTABLE VERTICAL PANEL - SEE STANDARD BC(9) - 21
- PLASTIC DRUMS - SEE STANDARD BC(8) - 21
- * REFER TO ROADWAY PLAN FOR SIDEWALK LOCATION AND WIDTH

MAJOR ACTIVITIES:

STEP 1:

1. SHIFT NORTHBOUND TRAFFIC TO THE INNERMOST SOUTHBOUND TRAVEL LANE WHILE MAINTAINING SOUTHBOUND TRAFFIC TO THE OUTERMOST SOUTHBOUND TRAVEL LANE.
2. CLOSE NORTHBOUND TRAVEL LANES FOR CONSTRUCTION FROM STA 84+06 TO STA 146+06.
3. CONSTRUCT PROPOSED NORTHBOUND SIDEWALKS AND DRIVEWAYS FROM STA 84+06 TO STA 146+06.
4. CONSTRUCT PROPOSED NORTHBOUND PAVEMENT FROM STA 84+06 TO STA 146+06.
5. CONSTRUCT QUINCY ST INTERSECTION PER QUINCY ST INTERSECTION DETAIL WHILE DETOUR QUINCY ST TRAFFIC FOLLOWING QUINCY ST DETOUR LAYOUT.
6. CONSTRUCT EAST SIDE OF W 24TH ST INTERSECTION PER W 24TH ST (EAST) INTERSECTION DETAIL.
7. CLOSE EAST SIDE OF IH 27 FRONTAGE RD WHILE DETOUR TRAFFIC UTILIZING IH 27 SERVICE RD. SEE IH 27 FRONTAGE RD DETOUR LAYOUT FOR ADDITIONAL INFORMATION.
8. CLOSE EAST SIDE OF IH 27 SERVICE RD WHILE DETOUR TRAFFIC UTILIZING IH 27 FRONTAGE RD. SEE IH 27 SERVICE RD DETOUR LAYOUT FOR ADDITIONAL INFORMATION.

STEP 2:

1. SHIFT SOUTHBOUND TRAFFIC TO THE INNERMOST NORTHBOUND TRAVEL LANE WHILE MAINTAINING NORTHBOUND TRAFFIC TO THE OUTERMOST NORTHBOUND TRAVEL LANE.
2. CLOSE SOUTHBOUND TRAVEL LANES FOR CONSTRUCTION FROM STA 84+06 TO STA 146+06.
3. CONSTRUCT PROPOSED SOUTHBOUND SIDEWALKS AND DRIVEWAYS FROM STA 84+06 TO STA 146+06.
4. CONSTRUCT PROPOSED SOUTHBOUND PAVEMENT FROM STA 84+06 TO STA 146+06.
5. CONSTRUCT WEST SIDE OF W 24TH ST INTERSECTION PER W 24TH ST (WEST) INTERSECTION DETAIL. FOLLOW W 24TH ST DETOUR LAYOUT TO DETOUR W 24TH ST TRAFFIC.
6. CONSTRUCT WEST SIDE OF IH 27 FRONTAGE RD PER IH 27 FRONTAGE RD INTERSECTION DETAIL.
7. CONSTRUCT WEST SIDE OF IH 27 SERVICE RD PER IH 27 SERVICE RD INTERSECTION DETAIL.

DETAILED ACTIVITIES:

STEP 1:

1. REMOVE EXISTING ACP AND BASE LAYERS FROM STA 84+06 TO STA 146+06. SEE TYPICAL SECTIONS AND PLAN SHEETS FOR VARYING WIDTHS OF ROADWAY.
2. RESHAPE AND LIME STABILIZE 8" OF EXISTING BASE. PRIME THE BASE FROM STA 84+06 TO STA 146+06.
3. PLACE 6" ACP BASE COURSE FROM STA 84+06 TO STA 146+06. SAFETY WEDGE MUST BE PLACED ON EDGES THAT AFFECT TRAFFIC. APPLY FOG SEAL.

STEP 2:

1. REMOVE EXISTING ACP AND BASE LAYERS FROM STA 84+06 TO STA 146+06. SEE TYPICAL SECTIONS AND PLAN SHEETS FOR VARYING WIDTHS OF ROADWAY.
2. RESHAPE AND LIME STABILIZE 8" OF EXISTING BASE. PRIME THE BASE FROM STA 84+06 TO STA 146+06.
3. PLACE 6" ACP BASE COURSE FROM STA 84+06 TO STA 146+06. SAFETY WEDGE MUST BE PLACED ON EDGES THAT AFFECT TRAFFIC. APPLY FOG SEAL.

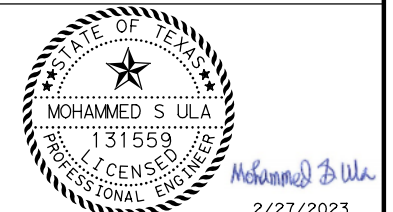
NOTES:

1. THE PROPOSED SEQUENCE OF WORK MAY BE VARIED WITH APPROVAL BY THE ENGINEER TO MEET CONDITIONS ENCOUNTERED IN THE FIELD.
2. ALL DRIVEWAYS TO BUSINESSES ARE TO REMAIN ACCESSIBLE TO THE PUBLIC. PLACE RAMPS WHEN THERE IS MORE THAN A 2" DIFFERENCE IN GRADE. SEE CONSTRUCTION DRIVEWAY DETAIL.
3. CONSTRUCT ITEM 506-2016, CONSTRUCTION EXIT (TYPE 1), AT THE BEGINNING AND ENDING OF EACH PHASE, IF APPLICABLE OR AS DIRECTED BY THE ENGINEER.
4. IT IS CONTRACTOR'S RESPONSIBILITY TO MAINTAIN EXISTING MAILBOXES IN A CLEAN AND FUNCTIONAL CONDITION THROUGHOUT THE DURATION OF THE PROJECT.

LEGEND

- CONSTRUCTION PHASE/STEP
- COMPLETED PHASE/STEP
- PLASTIC DRUM
- VERTICAL PANEL

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcfp PENTABLE: SH194.tbl
 USER: Robinson DATE: 2/27/2023 TIME: 10:09:37 AM SCALE: 1/8"
 FILE: SH194_TCP_TypSec_Sheet.dgn



NO.	DATE	REVISION	APPROVED

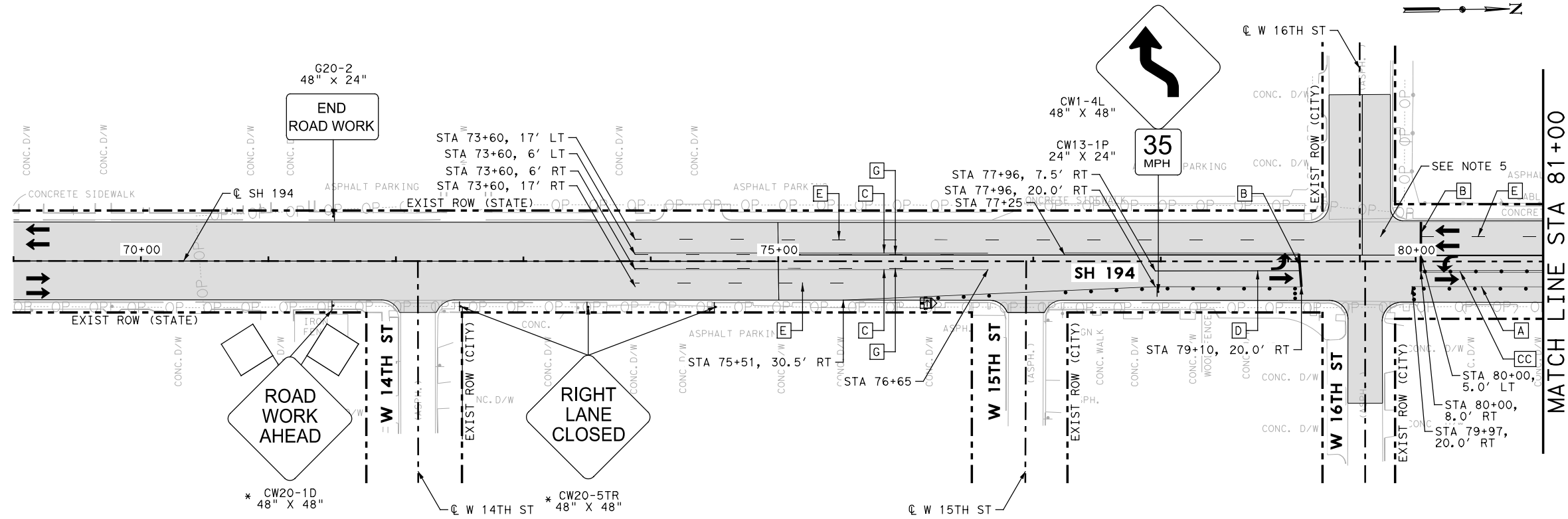


SH 194 FROM FM 3466 TO IH 27

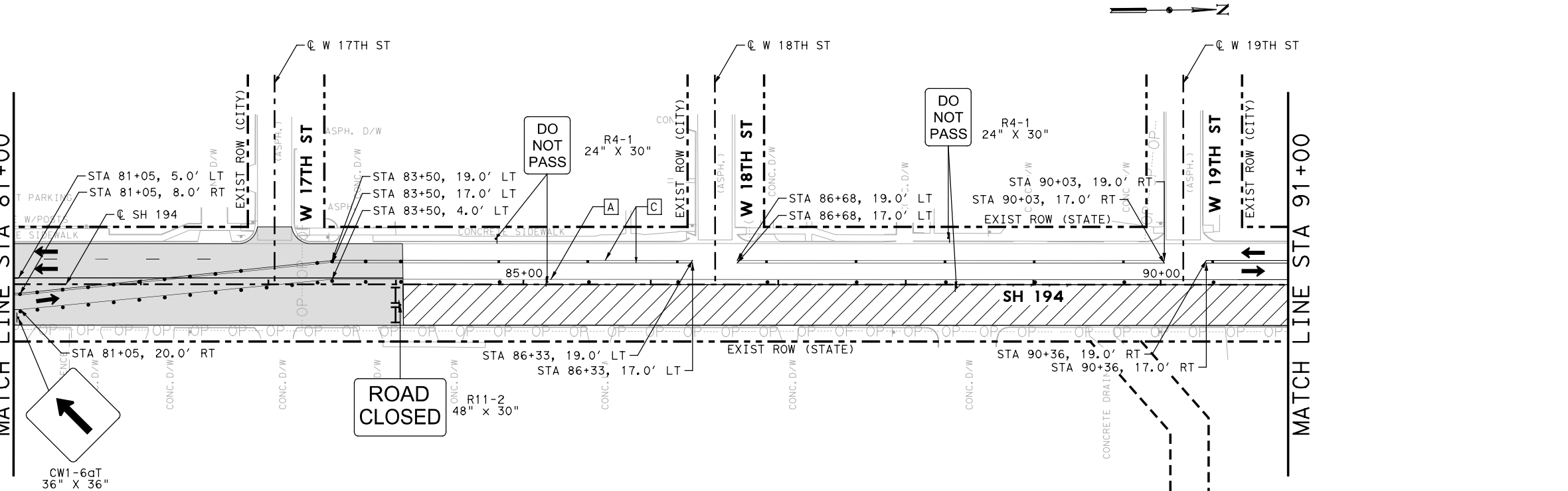
TRAFFIC CONTROL PLAN
TYPICAL SECTION
PHASE 3 - STEP 1 AND 2

SCALE: N. T. S.			SHEET 1 OF 1
FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	40
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:25:44 PM SCALE: 1/800
 FILE: SH194_TCP_Phase3_Step1_Sheet1.dgn



* ADVANCE WARNING SIGNS WILL BE PLACED AT MINIMUM 160.0' APART.

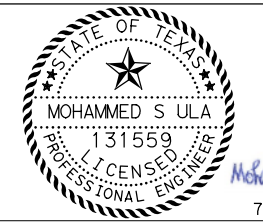
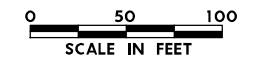


LEGEND

- CONSTRUCTION PHASE
- COMPLETED PHASE
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- CHANNELIZING DEVICE
- VERTICAL PANEL
- CONSTRUCTION SIGN
- TYPE III BARRICADE
- TRAILER MOUNTED FLASHING ARROW BOARD
- WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
- WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
- WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
- WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)
- WK ZN PAV MRK NON-REMOV (W) 8" (SLD)
- WK ZN PAV MRK NON-REMOV (W) 4" (BRK)
- WK ZN PAV MRK NON-REMOV (Y) 4" (BRK)

NOTES

1. REFERENCE STANDARDS BC (1) THRU (12) AND TCP STANDARDS FOR LENGTHS, SIGN SPACING AND MORE INFORMATION.
2. ELIMINATE ALL PAVEMENT MARKING AND SIGNS THAT ARE IN CONFLICT WITH TRAFFIC MOVEMENTS.
3. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES. CONSTRUCT PAVEMENT ALONG DRIVEWAYS IN CONJUNCTION WITH WORK PROGRESS.
4. SEE SIDE STREET TYPICAL DETOUR LAYOUT FOR ADDITIONAL INFORMATION.
5. REFER TO TEMPORARY SIGNAL PLANS FOR ADDITIONAL INFORMATION. THE CONTRACTOR WILL BE REQUIRED TO HAVE ON SITE FOUR R1-1 SIGNS WITH FOUR R1-3P WITH FLAGS IN THE EVENT THE ELECTRICAL SYSTEM FOR THE SIGNAL LIGHTS ARE DAMAGED DURING CONSTRUCTION.



NO.	DATE	REVISION	APPROVED

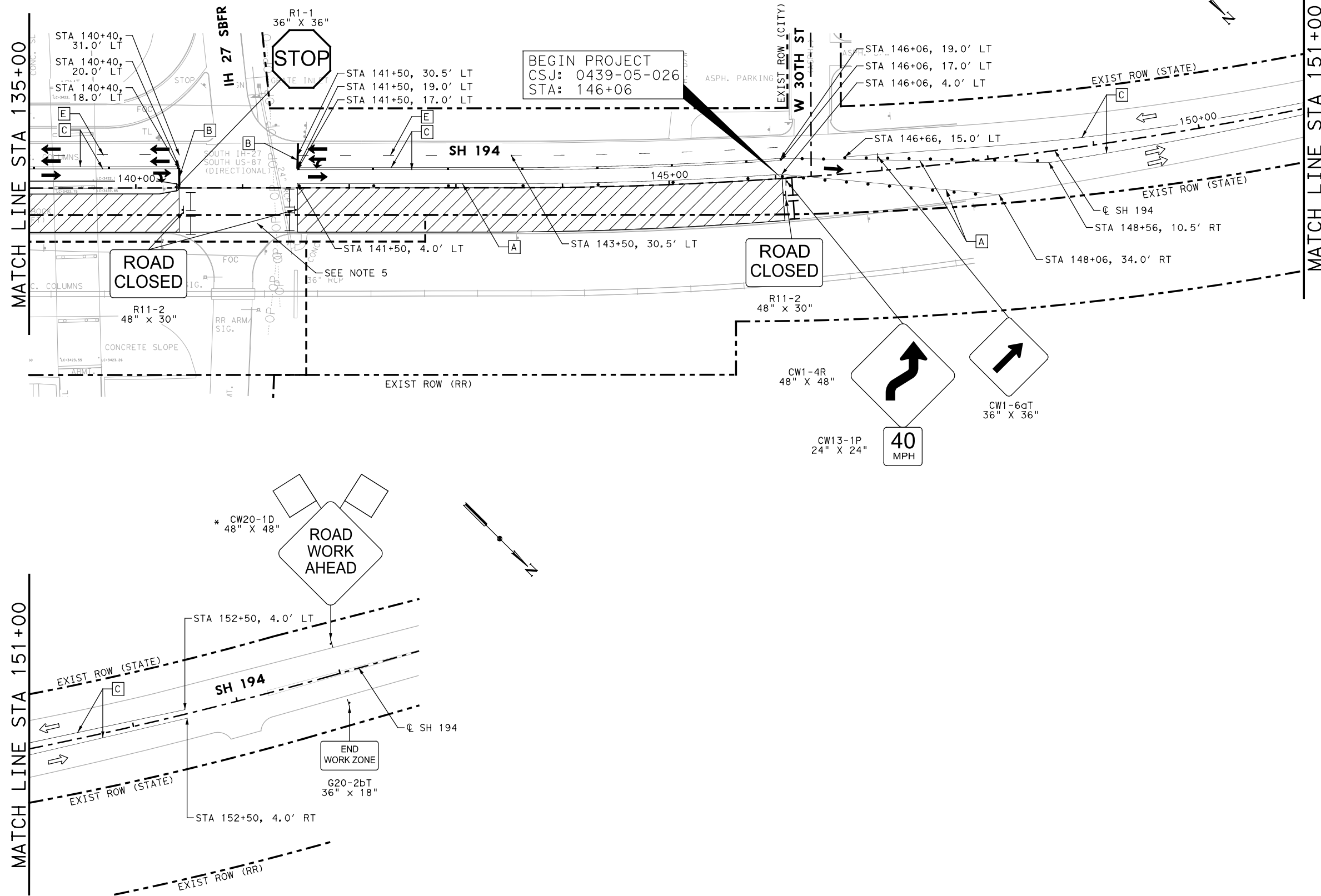


SH 194 FROM FM 3466 TO IH 27

TRAFFIC CONTROL PLAN
 PHASE 3 STEP 1 PHASING PLAN
 STA 69+00 TO STA 91+00

HORZ SCALE: 1"=100'			SHEET 1 OF 4
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET		HIGHWAY NO. SH 194
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 41
CONTROL 0439	SECTION 05	JOB 026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcfgr PENTABLE: I94050_SH194_Pentable.tbl
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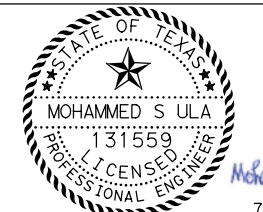


LEGEND

- CONSTRUCTION PHASE
- COMPLETED PHASE
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- CHANNELIZING DEVICE
- VERTICAL PANEL
- CONSTRUCTION SIGN
- TYPE III BARRICADE
- TRAILER MOUNTED FLASHING ARROW BOARD
- WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
- WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
- WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
- WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)
- WK ZN PAV MRK NON-REMOV (W) 4" (BRK)

NOTES

1. REFERENCE STANDARDS BC (1) THRU (12) AND TCP STANDARDS FOR LENGTHS, SIGN SPACING AND MORE INFORMATION.
2. ELIMINATE ALL PAVEMENT MARKING AND SIGNS THAT ARE IN CONFLICT WITH TRAFFIC MOVEMENTS.
3. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES. CONSTRUCT PAVEMENT ALONG DRIVEWAYS IN CONJUNCTION WITH WORK PROGRESS.
4. SEE SIDE STREET TYPICAL DETOUR LAYOUT FOR ADDITIONAL INFORMATION.
5. CLOSE EAST SIDE OF IH 27 SERVICE RD WHILE DETOUR TRAFFIC UTILIZING IH 27 FRONTAGE RD. SEE IH 27 SERVICE RD DETOUR LAYOUT FOR ADDITIONAL INFORMATION.



NO.	DATE	REVISION	APPROVED

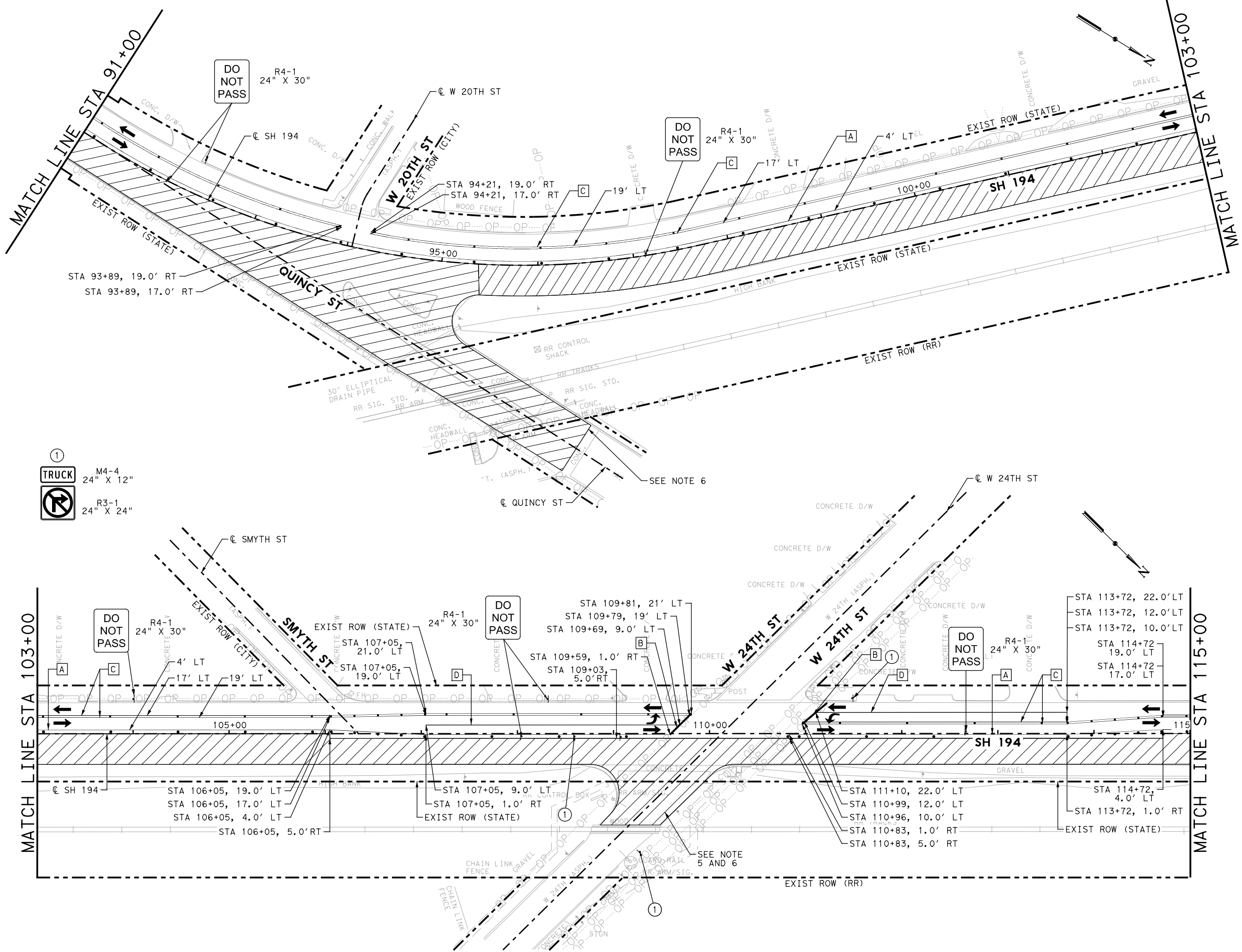


SH 194 FROM FM 3466 TO IH 27

TRAFFIC CONTROL PLAN
 PHASE 3 STEP 1 PHASING PLAN
 STA 135+00 TO END

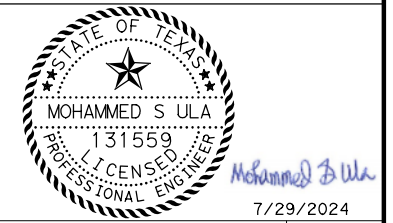
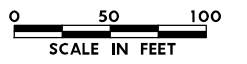
HORZ SCALE: 1"=100'		SHEET 4 OF 4	
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:	
6	SEE TITLE SHEET	SH 194	
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	44
CONTROL:	SECTION:	JOB:	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.plt
 USER: Arabinson DATE: 7/29/2024 TIME: 7:25:50 PM SCALE: 1:100
 FILE: SH194_TCP_Phase3_Step1_Sheet2.dgn



- LEGEND**
- CONSTRUCTION PHASE
 - COMPLETED PHASE
 - EXIST DIRECTION OF TRAFFIC
 - PROP DIRECTION OF TRAFFIC
 - CHANNELIZING DEVICE
 - VERTICAL PANEL
 - CONSTRUCTION SIGN
 - TYPE III BARRICADE
 - TRAILER MOUNTED FLASHING ARROW BOARD
 - WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
 - WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV (W) 8" (SLD)

- NOTES**
1. REFERENCE STANDARDS BC (1) THRU (12) AND TCP STANDARDS FOR LENGTHS, SIGN SPACING AND MORE INFORMATION.
 2. ELIMINATE ALL PAVEMENT MARKING AND SIGNS THAT ARE IN CONFLICT WITH TRAFFIC MOVEMENTS.
 3. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES. CONSTRUCT PAVEMENT ALONG DRIVEWAYS IN CONJUNCTION WITH WORK PROGRESS.
 4. SEE SIDE STREET TYPICAL DETOUR LAYOUT FOR ADDITIONAL INFORMATION.
 5. REFER TO TEMPORARY SIGNAL PLANS FOR ADDITIONAL INFORMATION. THE CONTRACTOR WILL BE REQUIRED TO HAVE ON SITE FOUR R1-1 SIGNS WITH FOUR R1-3P WITH FLAGS IN THE EVENT THE ELECTRICAL SYSTEM FOR THE SIGNAL LIGHTS ARE DAMAGED DURING CONSTRUCTION.
 6. REFER TO QUINCY ST AND W 24TH ST (EAST) INTERSECTION DETAILS AND QUINCY ST DETOUR LAYOUTS FOR ADDITIONAL INFORMATION.



NO.	DATE	REVISION	APPROVED

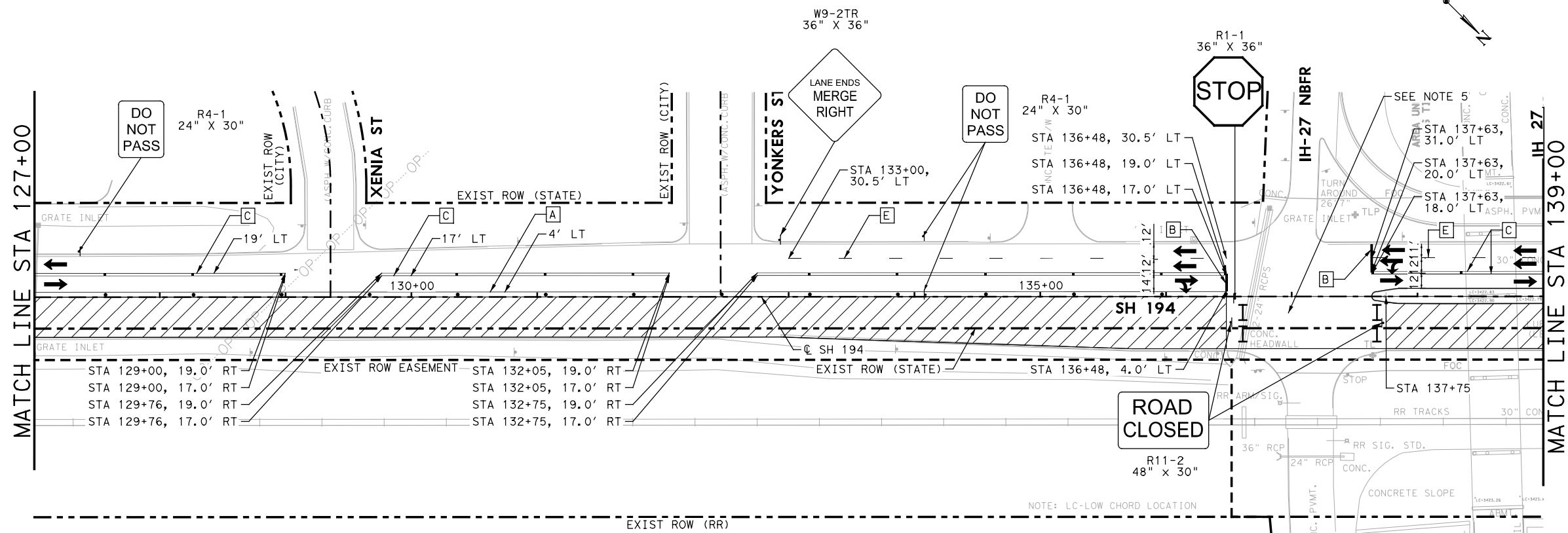
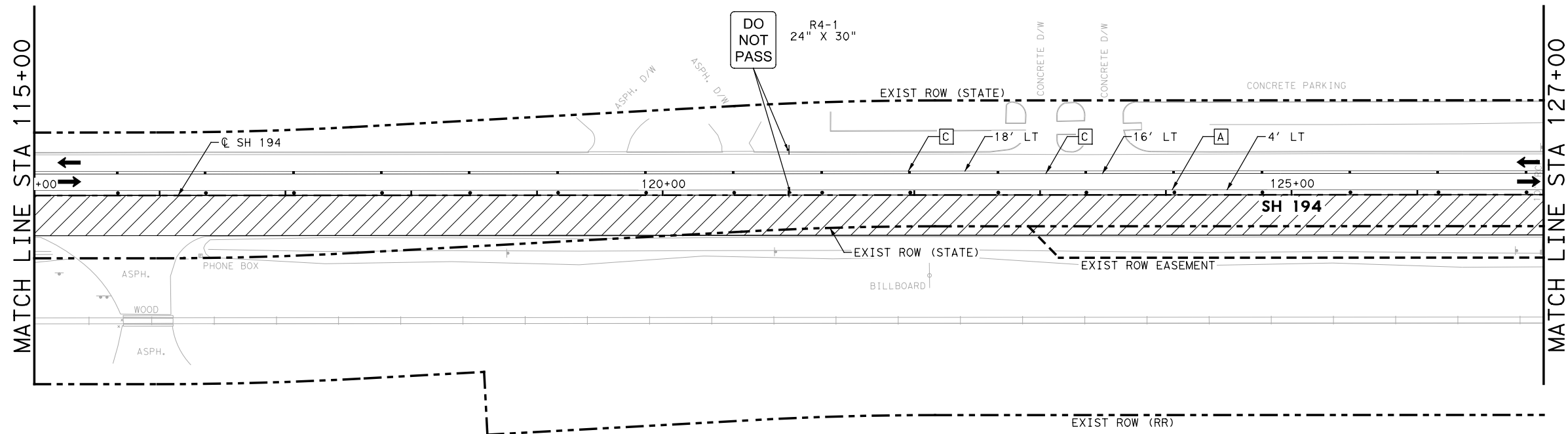


SH 194 FROM FM 3466 TO IH 27

**TRAFFIC CONTROL PLAN
 PHASE 3 STEP 1 PHASING PLAN
 STA 91+00 TO STA 115+00**

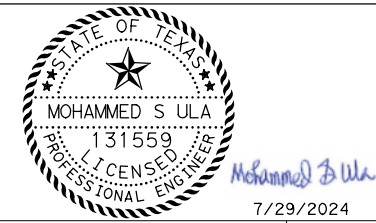
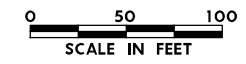
HORZ SCALE: 1"=100'			SHEET 2 OF 4
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET	HIGHWAY NO. SH 194	
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 42
CONTROL 0439	SECTION 05	JOB 026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcfgr
 USER: Robinson DATE: 7/29/2024 TIME: 7:25:55 PM SCALE: 1:100
 FILE: SH194_TCP_Phase3_Step1_Sheet3.dgn



- LEGEND**
- CONSTRUCTION PHASE
 - COMPLETED PHASE
 - EXIST DIRECTION OF TRAFFIC
 - PROP DIRECTION OF TRAFFIC
 - CHANNELIZING DEVICE
 - VERTICAL PANEL
 - CONSTRUCTION SIGN
 - TYPE III BARRICADE
 - TRAILER MOUNTED FLASHING ARROW BOARD
 - WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
 - WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV (W) 4" (BRK)

- NOTES**
1. REFERENCE STANDARDS BC (1) THRU (12) AND TCP STANDARDS FOR LENGTHS, SIGN SPACING AND MORE INFORMATION.
 2. ELIMINATE ALL PAVEMENT MARKING AND SIGNS THAT ARE IN CONFLICT WITH TRAFFIC MOVEMENTS.
 3. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES. CONSTRUCT PAVEMENT ALONG DRIVEWAYS IN CONJUNCTION WITH WORK PROGRESS.
 4. SEE SIDE STREET TYPICAL DETOUR LAYOUT FOR ADDITIONAL INFORMATION.
 5. CLOSE EAST SIDE OF IH 27 FRONTAGE RD WHILE DETOUR TRAFFIC UTILIZING IH 27 SERVICE RD. SEE IH 27 FRONTAGE RD DETOUR LAYOUT FOR ADDITIONAL INFORMATION.



NO.	DATE	REVISION	APPROVED

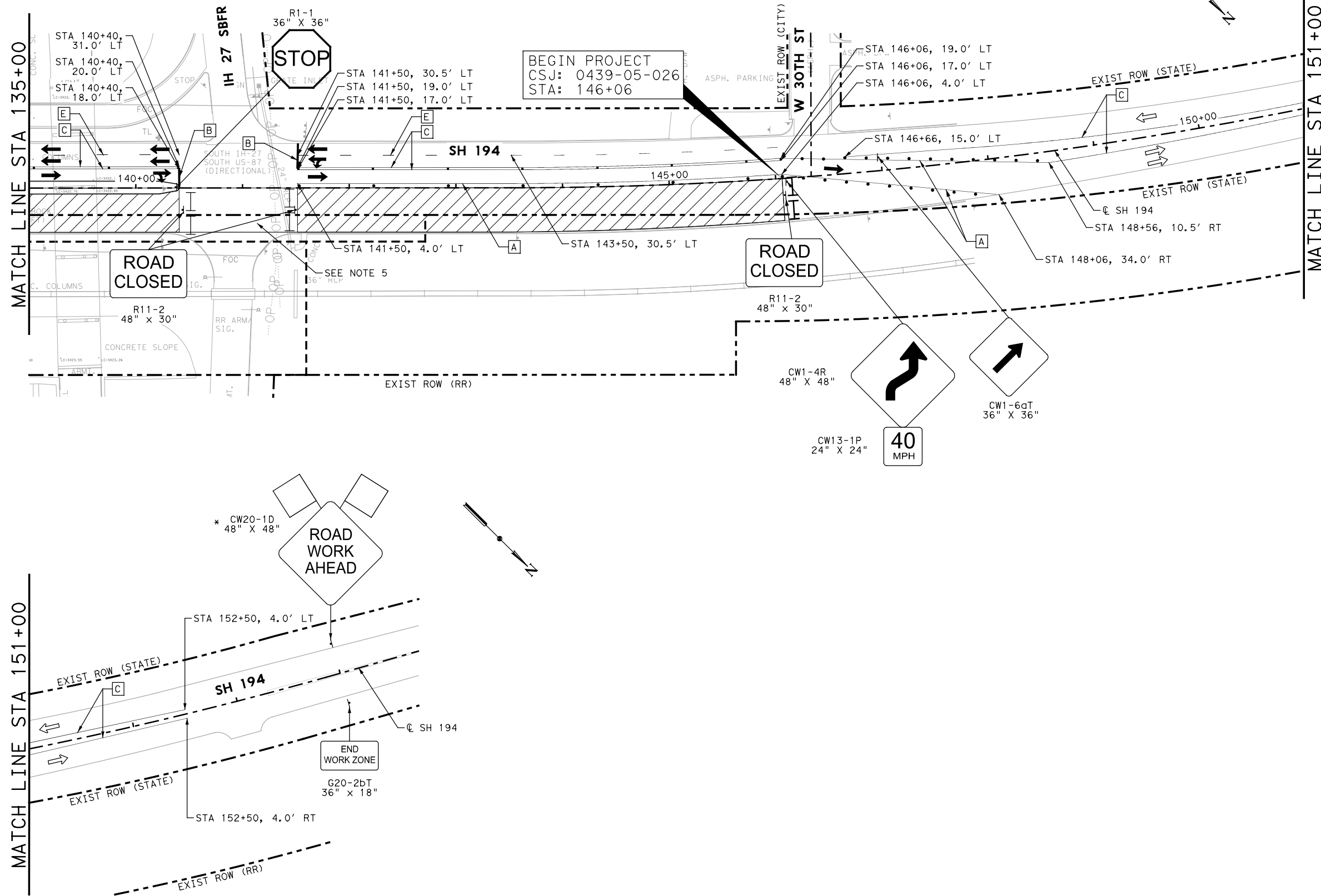


SH 194 FROM FM 3466 TO IH 27

**TRAFFIC CONTROL PLAN
 PHASE 3 STEP 1 PHASING PLAN
 STA 115+00 TO STA 139+00**

HORZ SCALE: 1"=100'			SHEET 3 OF 4
FED. RD. DIV. NO.: 6	FEDERAL PROJECT NO.: SEE TITLE SHEET		HIGHWAY NO.: SH 194
STATE: TEXAS	DISTRICT: LBB	COUNTY: HALE	SHEET NO.: 43
CONTROL: 0439	SECTION: 05	JOB: 026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcfgr PENTABLE: I94050_SH194_Pentable.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 7:26:01 PM SCALE: 1:100
 FILE: SH194_TCP_Phase3_Step1_Sheet4.dgn

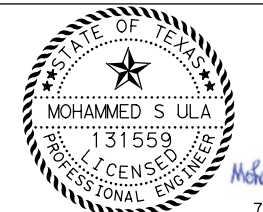


LEGEND

- CONSTRUCTION PHASE
- COMPLETED PHASE
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- CHANNELIZING DEVICE
- VERTICAL PANEL
- CONSTRUCTION SIGN
- TYPE III BARRICADE
- TRAILER MOUNTED FLASHING ARROW BOARD
- WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
- WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
- WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
- WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)
- WK ZN PAV MRK NON-REMOV (W) 4" (BRK)

NOTES

1. REFERENCE STANDARDS BC (1) THRU (12) AND TCP STANDARDS FOR LENGTHS, SIGN SPACING AND MORE INFORMATION.
2. ELIMINATE ALL PAVEMENT MARKING AND SIGNS THAT ARE IN CONFLICT WITH TRAFFIC MOVEMENTS.
3. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES. CONSTRUCT PAVEMENT ALONG DRIVEWAYS IN CONJUNCTION WITH WORK PROGRESS.
4. SEE SIDE STREET TYPICAL DETOUR LAYOUT FOR ADDITIONAL INFORMATION.
5. CLOSE EAST SIDE OF IH 27 SERVICE RD WHILE DETOUR TRAFFIC UTILIZING IH 27 FRONTAGE RD. SEE IH 27 SERVICE RD DETOUR LAYOUT FOR ADDITIONAL INFORMATION.



NO.	DATE	REVISION	APPROVED

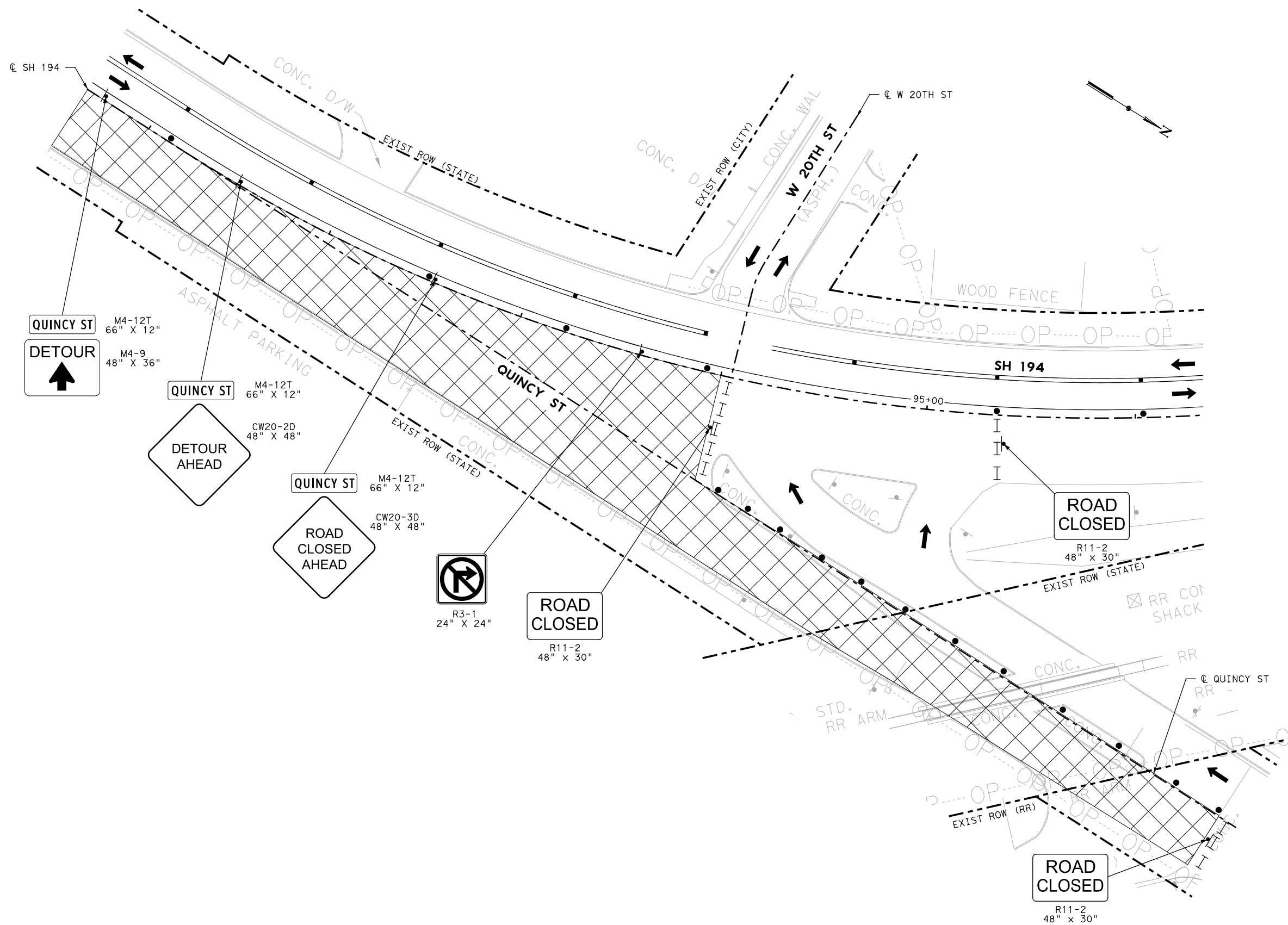


SH 194 FROM FM 3466 TO IH 27

TRAFFIC CONTROL PLAN
 PHASE 3 STEP 1 PHASING PLAN
 STA 135+00 TO END

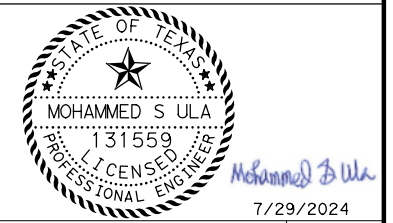
HORZ SCALE: 1"=100'			SHEET 4 OF 4
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:	
6	SEE TITLE SHEET	SH 194	
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	44
CONTROL:	SECTION:	JOB:	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:26:08 PM
 FILE: SH194_TCP_Quincy St_Intersection_Detail_P1.dgn



- LEGEND**
- CONSTRUCTION STEP
 - COMPLETED STEP
 - TEMPORARY PAVEMENT
 - WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
 - WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV (W) 4" (BRK)
 - TRAILER MOUNTED FLASHING ARROW
 - CONSTRUCTION SIGN
 - TRAFFIC DIRECTION
 - TYPE III BARRICADE
 - CHANNELIZING DEVICE

- NOTES:**
1. INSTALL TRAFFIC CONTROL DEVICES AT INTERSECTION PRIOR TO BEGIN ANY WORK.
 2. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENCE AND BUSINESSES AT ALL TIMES.
 3. REMOVE STRIPING AS NECESSARY DURING THIS PHASE.
 4. CLOSE NORTH BOUND TRAFFIC ON QUINCY ST. CONSTRUCT EAST SIDE OF QUINCY ST. DETOUR NORTH BOUND TRAFFIC THRU W 24TH ST (NORTH).
 5. REFER TO QUINCY ST DETOUR LAYOUTS FOR ADDITIONAL INFORMATIONS.



NO.	DATE	REVISION	APPROVED



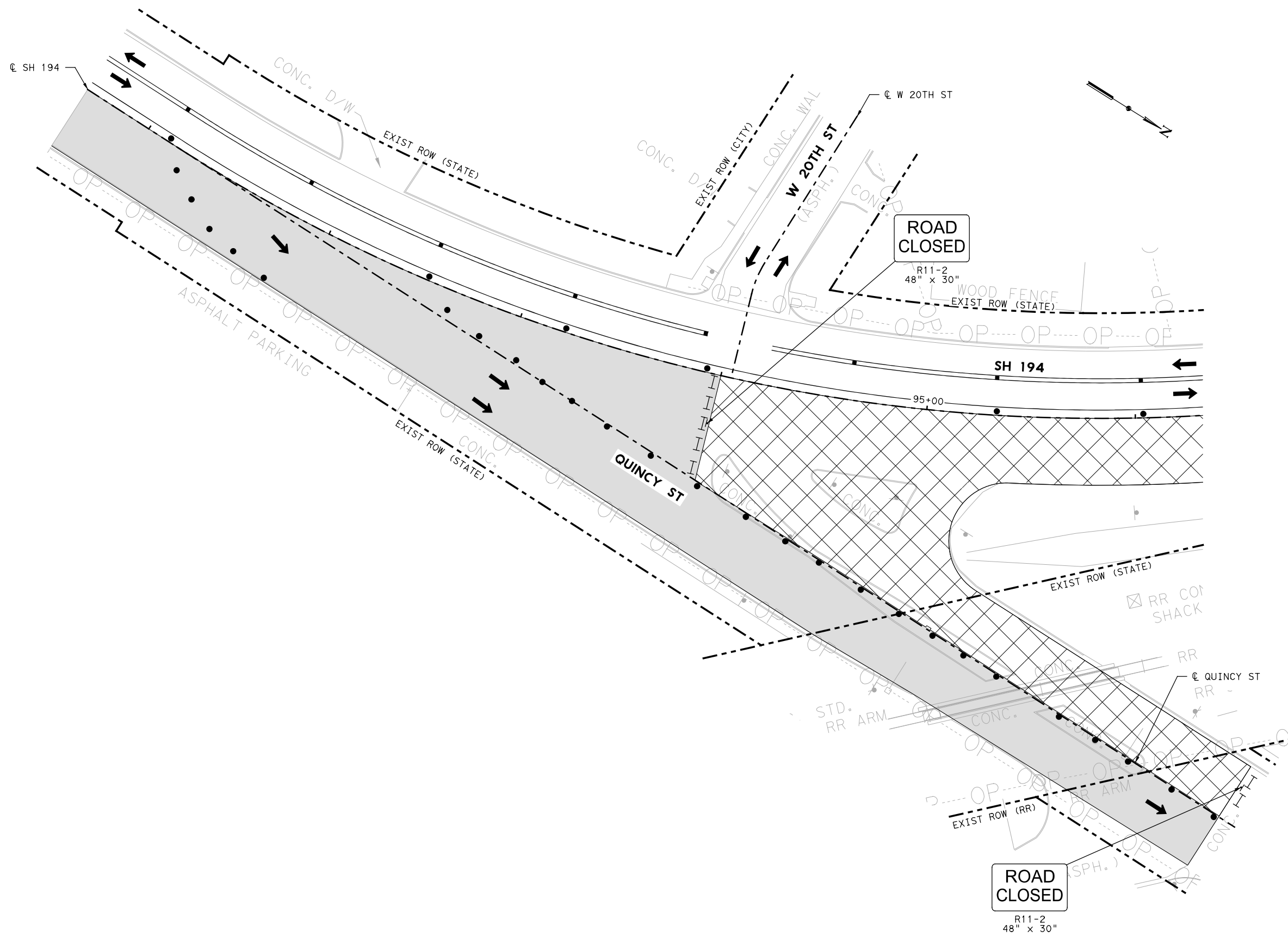
SH 194 FROM FM 3466 TO IH 27

TRAFFIC CONTROL PLAN
 PHASE 3 STEP 1 INTERSECTION DETAILS
 QUINCY ST - STAGE 1














HORZ SCALE: 1"=50' SHEET 1 OF 4

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:
6	SEE TITLE SHEET	SH 194
STATE:	DISTRICT:	COUNTY:
TEXAS	LBB	HALE
CONTROL:	SECTION:	JOB:
0439	05	026
45		

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:26:15 PM
 FILE: SH194_TCP_Quincy St_Intersection_Detail_P2.dgn

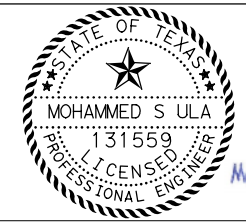
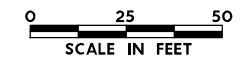


LEGEND

-  CONSTRUCTION STEP
-  COMPLETED STEP
-  TEMPORARY PAVEMENT
-  WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
-  WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
-  WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
-  WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)
-  WK ZN PAV MRK NON-REMOV (W) 4" (BRK)
-  TRAILER MOUNTED FLASHING ARROW
-  CONSTRUCTION SIGN
-  TRAFFIC DIRECTION
-  TYPE III BARRICADE
-  CHANNELIZING DEVICE

NOTES:

1. INSTALL TRAFFIC CONTROL DEVICES AT INTERSECTION PRIOR TO BEGIN ANY WORK.
2. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENCE AND BUSINESSES AT ALL TIMES.
3. REMOVE STRIPING AS NECESSARY DURING THIS PHASE.
4. CLOSE SOUTH BOUND TRAFFIC ON QUINCY ST. CONSTRUCT WEST SIDE OF QUINCY ST. DETOUR SOUTH BOUND TRAFFIC THRU W 24TH ST (NORTH).
5. REFER TO QUINCY ST DETOUR LAYOUTS FOR ADDITIONAL INFORMATIONS.

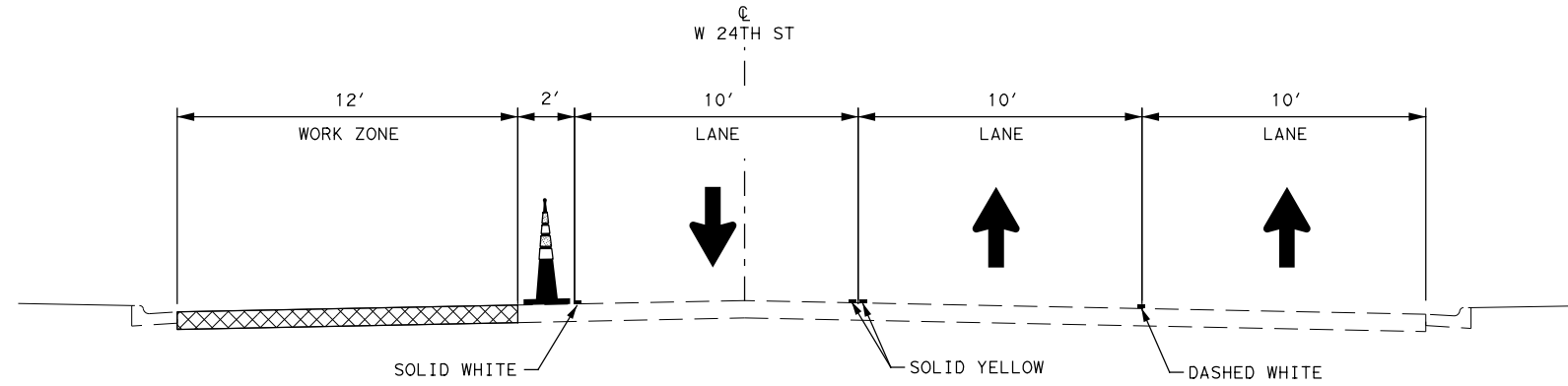


NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27
TRAFFIC CONTROL PLAN
 PHASE 3 STEP 1 INTERSECTION DETAILS
 QUINCY ST - STAGE 2

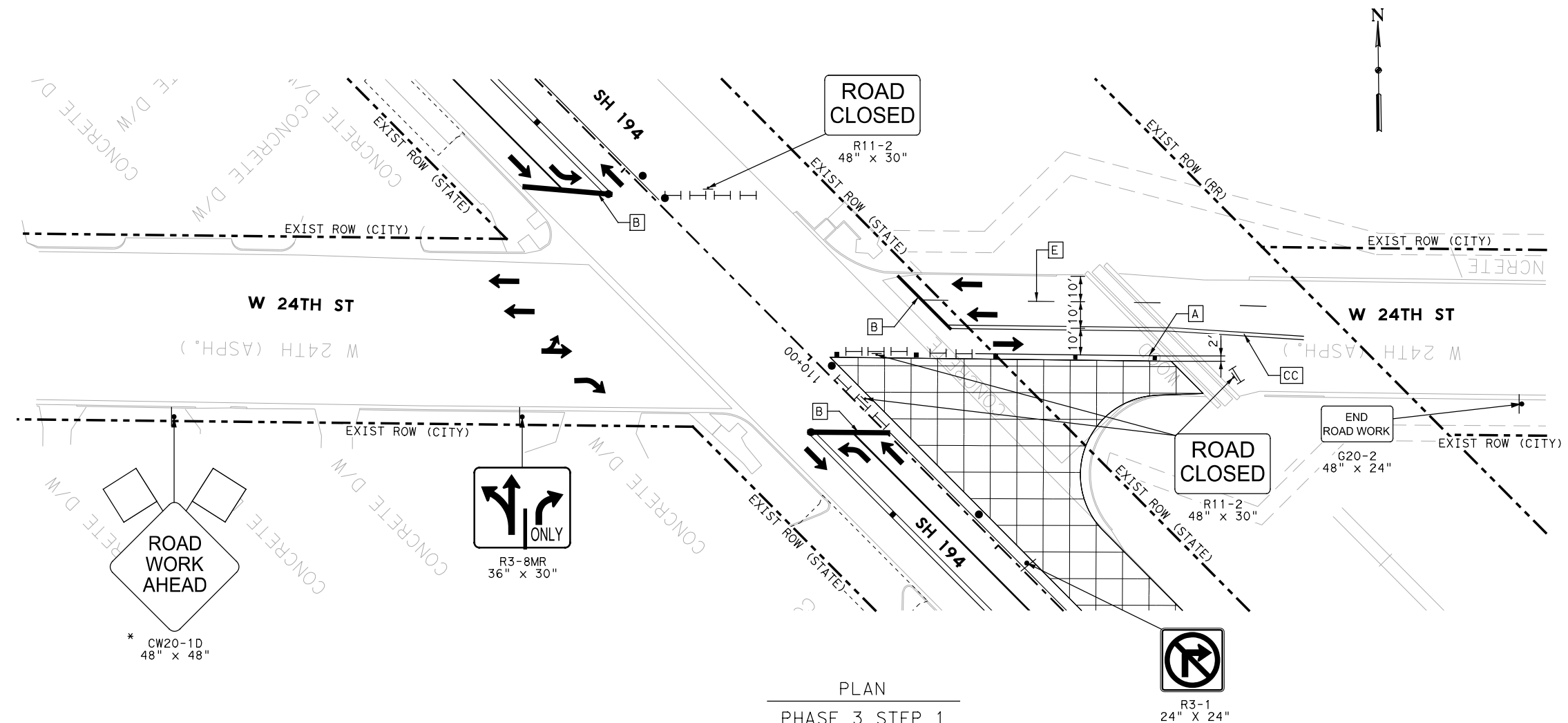
HORZ SCALE: 1"=50'			SHEET 2 OF 4
FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	46
CONTROL	SECTION	JOB	
0439	05	026	



TYPICAL SECTION
 PHASE 3 STEP 1
 W 24TH ST (EAST) - STAGE 1

- LEGEND**
- CONSTRUCTION STEP
 - COMPLETED STEP
 - TEMPORARY PAVEMENT
 - [A]** WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
 - [B]** WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
 - [C]** WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
 - [CC]** WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)
 - [E]** WK ZN PAV MRK NON-REMOV (W) 4" (BRK)
 - TRAILER MOUNTED FLASHING ARROW
 - CONSTRUCTION SIGN
 - TRAFFIC DIRECTION
 - TYPE III BARRICADE
 - CHANNELIZING DEVICE

- NOTES:**
- INSTALL TEMPORARY TRAFFIC SIGNAL AT INTERSECTION PRIOR TO BEGIN ANY WORK.
 - CONTRACTOR TO MAINTAIN ACCESS TO RESIDENCE AND BUSINESSES AT ALL TIMES.
 - REMOVE STRIPING AS NECESSARY DURING THIS PHASE.
 - ALIGN TEMP SIGNALS AS NEEDED FOR LANE CONFIGURATIONS.
 - CLOSE EAST BOUND LANE ON W 24TH ST WHILE MAINTAIN ONE LANE EAST BOUND TRAFFIC. USE TCP (2-4)-18 ONE LANE CLOSED FOR LANE DROP AND TAPER LENGTHS. CONSTRUCT SOUTH SIDE OF W 24TH ST (EAST).



PLAN
 PHASE 3 STEP 1
 W 24TH ST (EAST) - STAGE 1

* ADVANCED WARNING SIGNS SHALL BE PLACED A MINIMUM 160' APART

0 25 50
 SCALE IN FEET

STATE OF TEXAS
 MOHAMMED S ULA
 131559
 LICENSED PROFESSIONAL ENGINEER
 Mohammed S Ula
 7/29/2024

NO.	DATE	REVISION	APPROVED

infraTECH
 Engineers & Innovators, LLC
 TBPE REGISTRATION NO. F-18368

Texas Department of Transportation
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SH 194 FROM FM 3466 TO IH 27









TRAFFIC CONTROL PLAN
 PHASE 3 STEP 1 INTERSECTION DETAILS
 W 24TH ST (EAST) - STAGE 1

HORZ SCALE: 1"=50' SHEET 3 OF 4

FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026

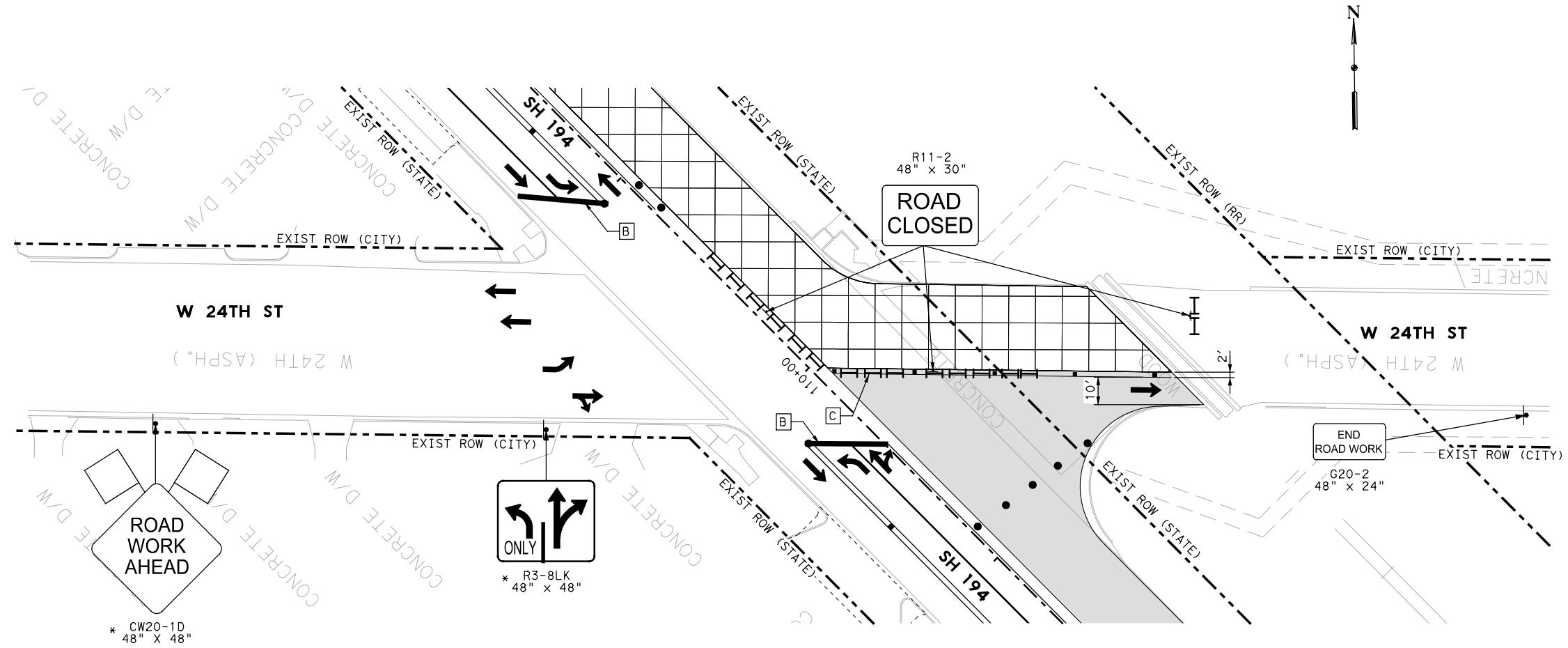
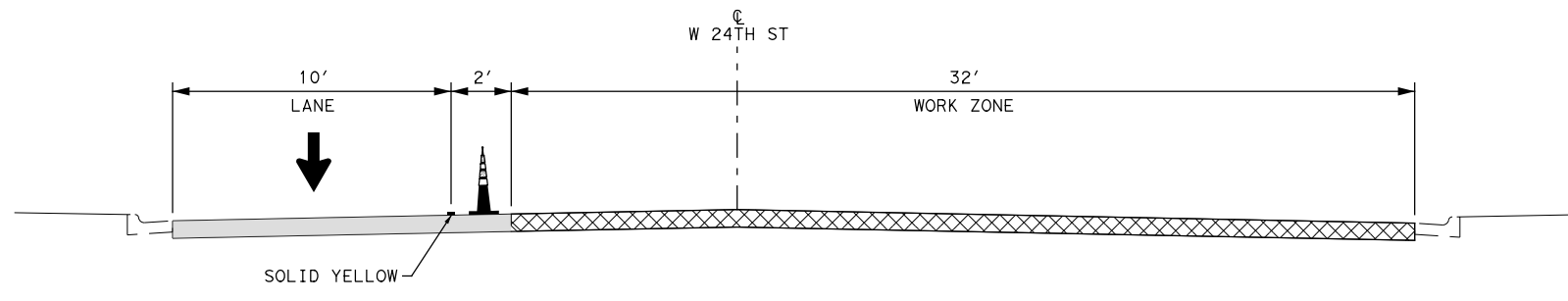
47

LEGEND

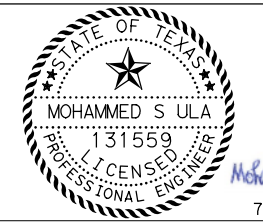
-  CONSTRUCTION STEP
-  COMPLETED STEP
-  TEMPORARY PAVEMENT
- [A]** WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
- [B]** WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
- [C]** WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
- [CC]** WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)
- [E]** WK ZN PAV MRK NON-REMOV (W) 4" (BRK)
-  TRAILER MOUNTED FLASHING ARROW
-  CONSTRUCTION SIGN
-  TRAFFIC DIRECTION
-  TYPE III BARRICADE
-  CHANNELIZING DEVICE

NOTES:

1. INSTALL TEMPORARY TRAFFIC SIGNAL AT INTERSECTION PRIOR TO BEGIN ANY WORK.
2. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENCE AND BUSINESSES AT ALL TIMES.
3. REMOVE STRIPING AS NECESSARY DURING THIS PHASE.
4. ALIGN TEMP SIGNALS AS NEEDED FOR LANE CONFIGURATIONS.
5. CLOSE WEST BOUND TRAFFIC ON W 24TH ST. CONSTRUCT NORTH SIDE OF W 24TH ST (EAST). DETOUR WEST BOUND TRAFFIC THRU QUINCY ST. WHILE MAINTAIN ONE LANE EAST BOUND TRAFFIC THRU W 24TH ST.



* ADVANCED WARNING SIGNS SHALL BE PLACED A MINIMUM 160' APART



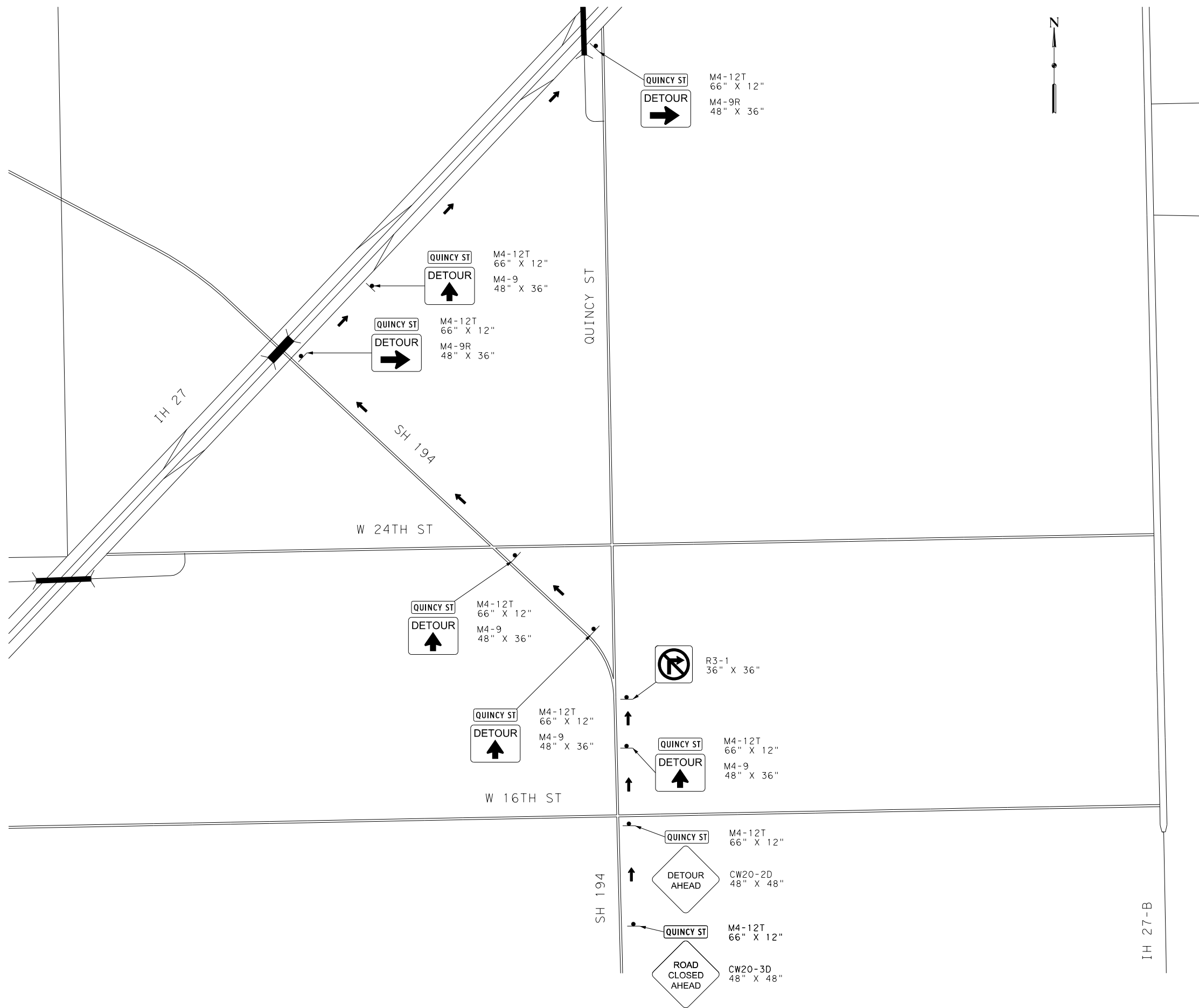
NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27
TRAFFIC CONTROL PLAN
PHASE 3 STEP 1 INTERSECTION DETAILS
W 24TH ST (EAST) - STAGE 2

HORZ SCALE: 1"=50'			SHEET 4 OF 4
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	48
CONTROL	SECTION	JOB	
0439	05	026	

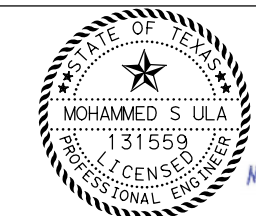
PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:26:31 PM SCALE: 1:1000
 FILE: SH194_TCP_Detour_Quincy_St_Srgeal.dgn



LEGEND

- CONSTRUCTION SIGN
- DETOUR TRAFFIC DIRECTION
- BARRICADE

0 500 1000
SCALE IN FEET



NO.	DATE	REVISION	APPROVED






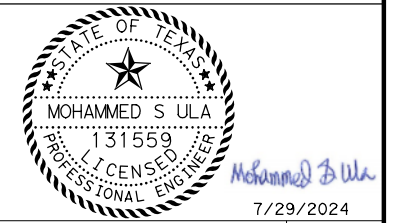
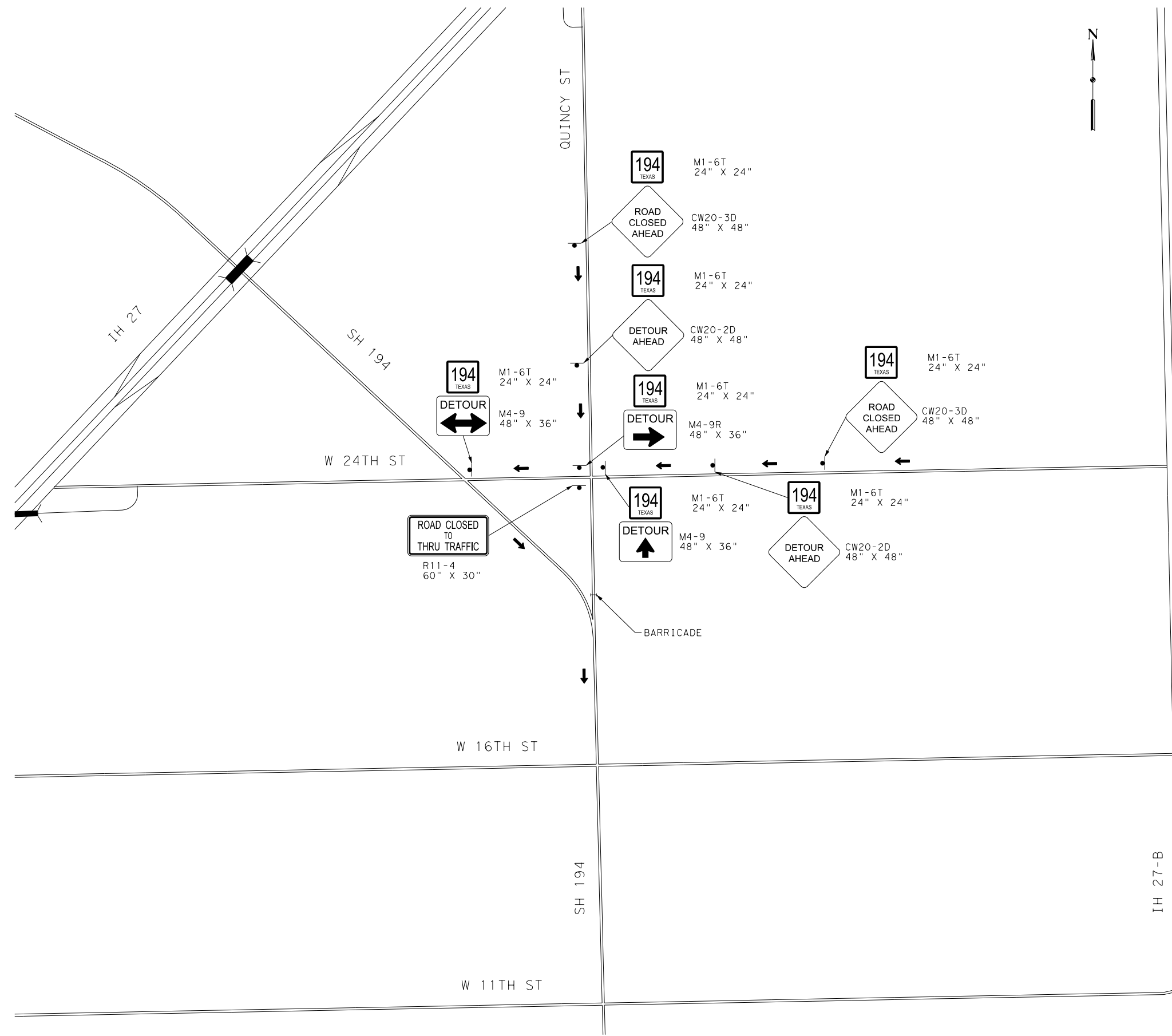
SH 194 FROM FM 3466 TO IH 27
 TRAFFIC CONTROL PLAN
 PHASE 3 STEP 1 DETOUR LAYOUT
 QUINCY ST - STAGE 1

HORZ SCALE: 1"=1000'			SHEET 1 OF 4
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	49
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:26:35 PM SCALE: 1:1000
 FILE: SH194_TCP_Detour_Quincy_St_Stage2.dgn

LEGEND

-  CONSTRUCTION SIGN
-  DETOUR TRAFFIC DIRECTION
-  BARRICADE



NO.	DATE	REVISION	APPROVED

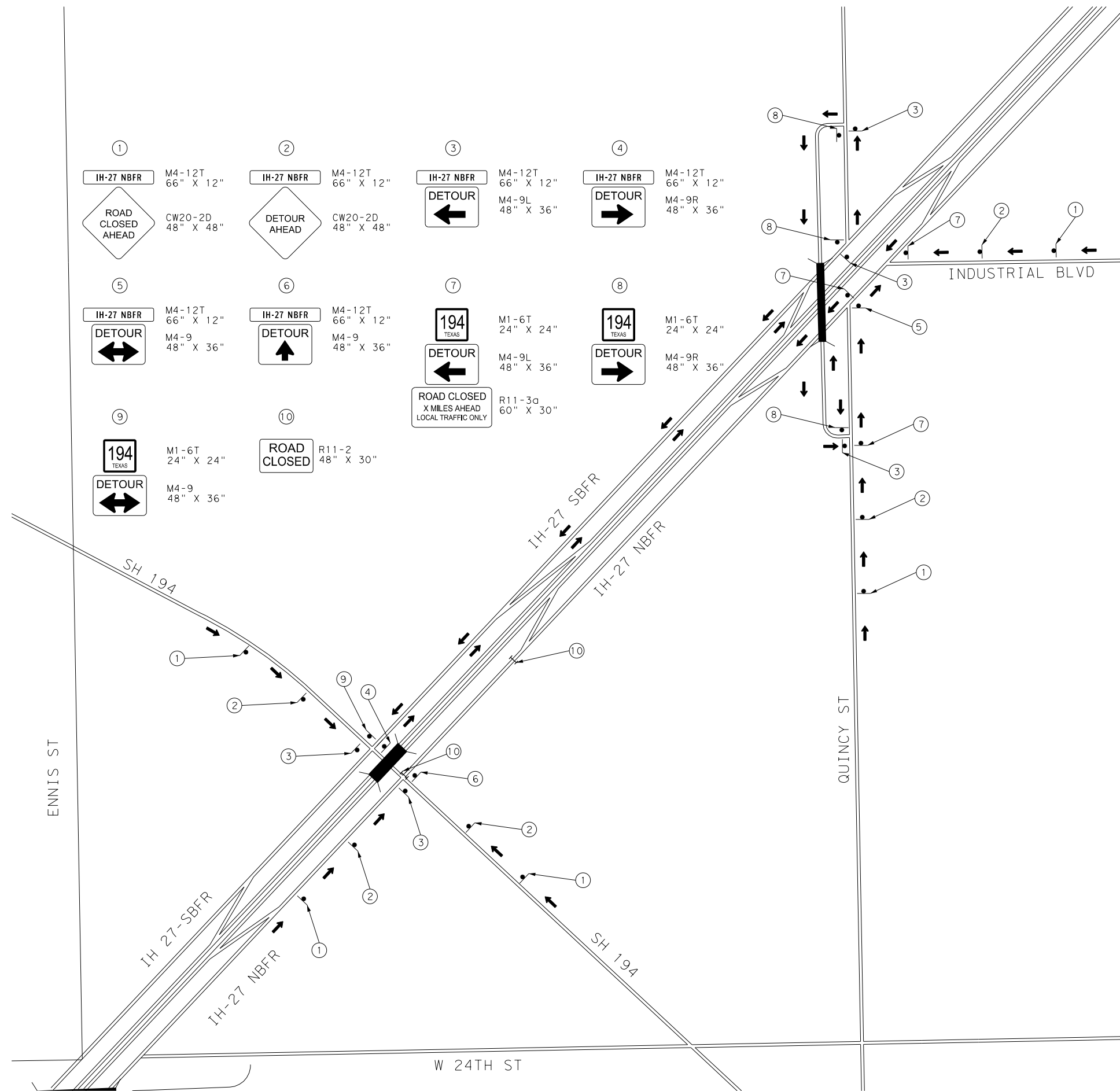


SH 194 FROM FM 3466 TO IH 27




TRAFFIC CONTROL PLAN
 PHASE 3 STEP 1 DETOUR LAYOUT
 QUINCY ST - STAGE 2

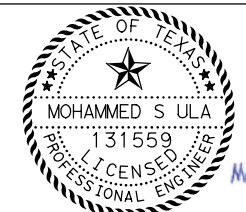
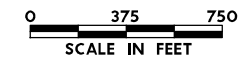
HORZ SCALE: 1"=1000'			SHEET 2 OF 4
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET		HIGHWAY NO. SH 194
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 50
CONTROL 0439	SECTION 05	JOB 026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcfgr PENTABLE: I94050_SH194_Pentable.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 7:26:42 PM SCALE: 1:750
 FILE: SH194_TCP_Detour_IH27_FR.dgn



LEGEND

-  CONSTRUCTION SIGN
-  DETOUR TRAFFIC DIRECTION
-  BARRICADE



NO.	DATE	REVISION	APPROVED

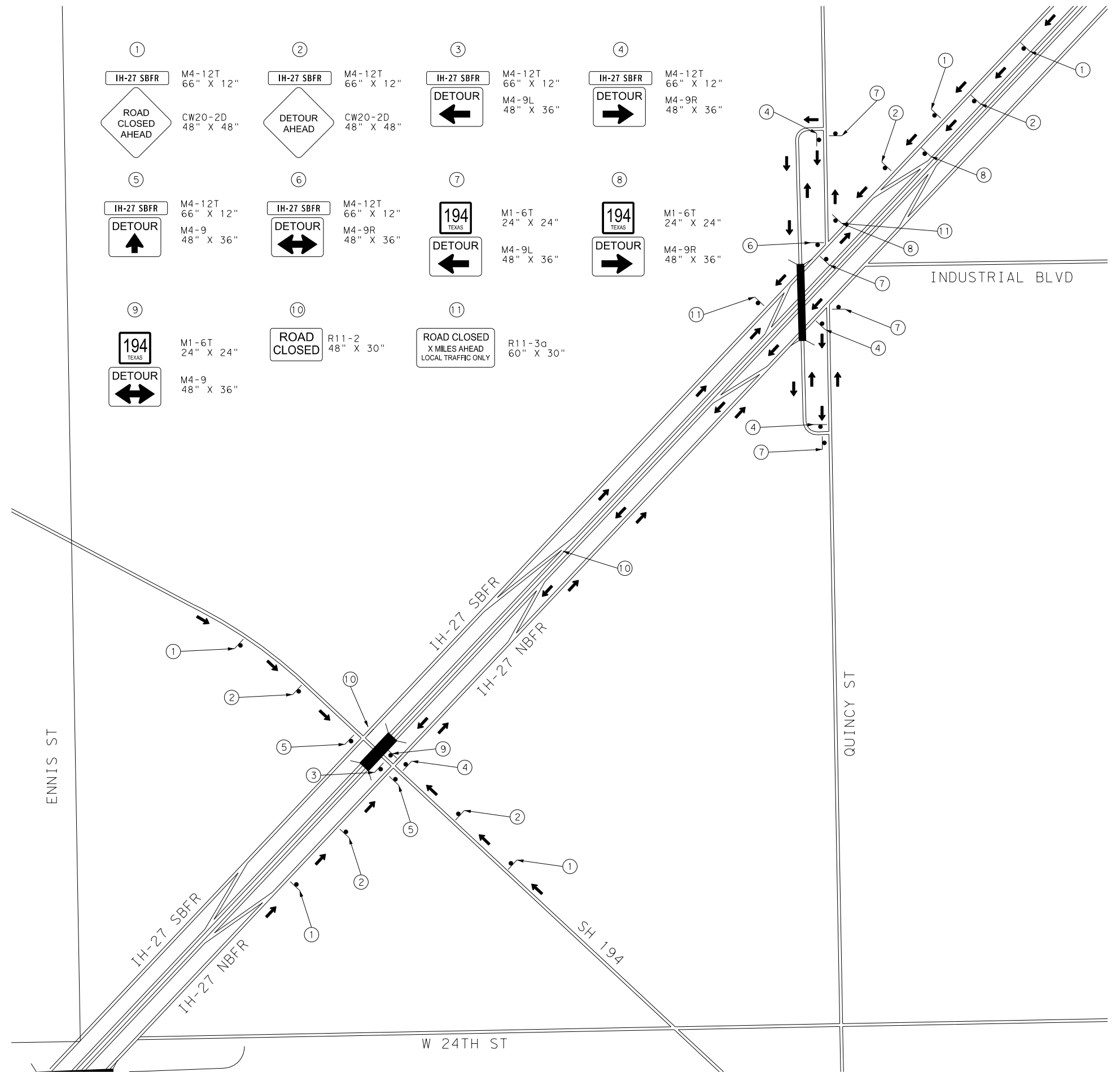


SH 194 FROM FM 3466 TO IH 27

TRAFFIC CONTROL PLAN
 PHASE 3 STEP 1 DETOUR LAYOUT
 IH-27 NBFR

HORZ SCALE: 1"=750'			SHEET 3 OF 4
FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	51
CONTROL	SECTION	JOB	
0439	05	026	

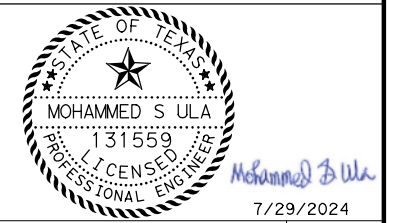
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 USER: Robinson DATE: 7/29/2024 TIME: 7:26:50 PM SCALE: 1/250
 FILE: SH194_TCP_Detour_IH27_SR.dgn



- ① IH-27 SBFR M4-12T 66" X 12"
ROAD CLOSED AHEAD CW20-2D 48" X 48"
- ② IH-27 SBFR M4-12T 66" X 12"
DETOUR AHEAD CW20-2D 48" X 48"
- ③ IH-27 SBFR M4-12T 66" X 12"
DETOUR M4-9L 48" X 36"
- ④ IH-27 SBFR M4-12T 66" X 12"
DETOUR M4-9R 48" X 36"
- ⑤ IH-27 SBFR M4-12T 66" X 12"
DETOUR M4-9 48" X 36"
- ⑥ IH-27 SBFR M4-12T 66" X 12"
DETOUR M4-9R 48" X 36"
- ⑦ 194 TEXAS M1-6T 24" X 24"
DETOUR M4-9L 48" X 36"
- ⑧ 194 TEXAS M1-6T 24" X 24"
DETOUR M4-9R 48" X 36"
- ⑨ 194 TEXAS M1-6T 24" X 24"
DETOUR M4-9 48" X 36"
- ⑩ ROAD CLOSED R11-2 48" X 30"
- ⑪ ROAD CLOSED X MILES AHEAD LOCAL TRAFFIC ONLY R11-3a 60" X 30"

- LEGEND**
- ▲ CONSTRUCTION SIGN
 - ➔ DETOUR TRAFFIC DIRECTION
 - ⊥ BARRICADE

0 375 750
SCALE IN FEET



NO.	DATE	REVISION	APPROVED

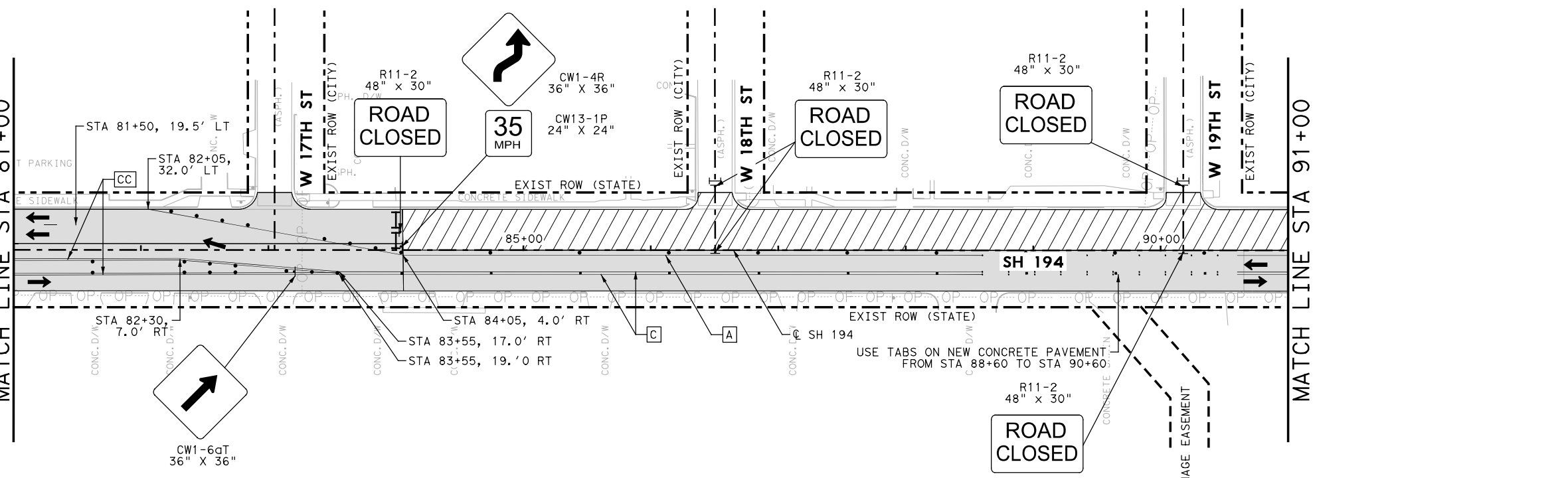
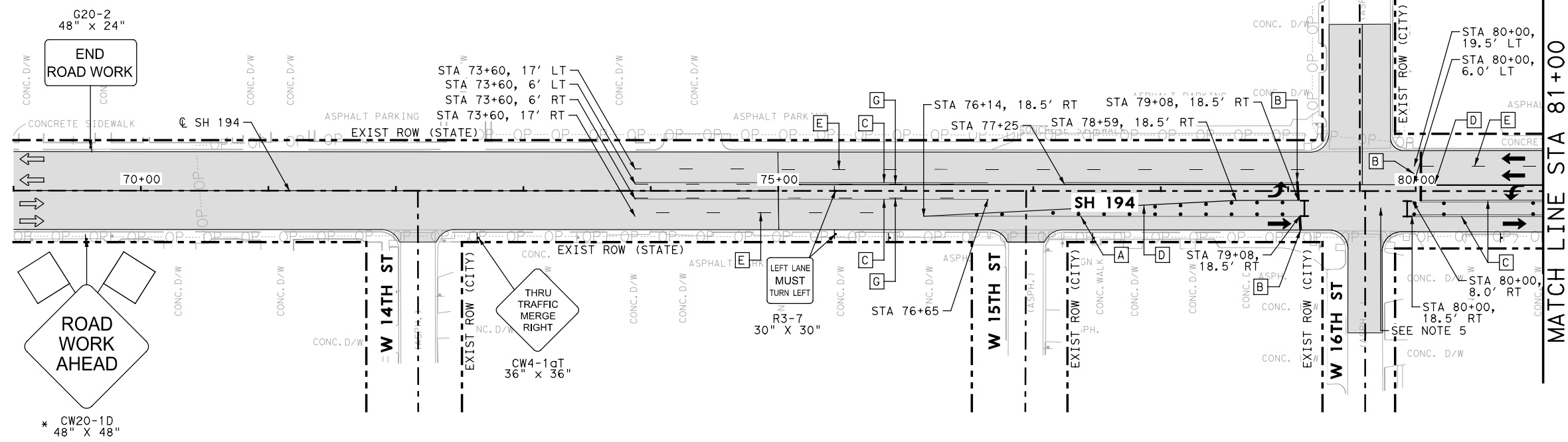


SH 194 FROM FM 3466 TO IH 27

TRAFFIC CONTROL PLAN
 PHASE 3 STEP 1 DETOUR LAYOUT
 IH-27 SBFR

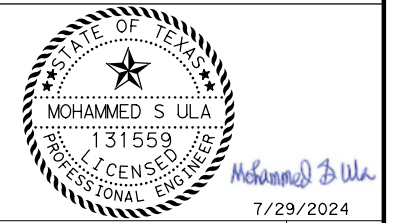
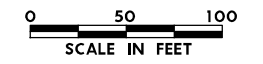
HORZ SCALE" 1"=750'			SHEET 4 OF 4
FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	52
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Arabinson DATE: 7/29/2024 TIME: 7:26:58 PM SCALE: 1:100
 FILE: SH194_TCP_Phase3_Step2_Sheef1.dgn



- ### LEGEND
- CONSTRUCTION PHASE
 - COMPLETED PHASE
 - EXIST DIRECTION OF TRAFFIC
 - PROP DIRECTION OF TRAFFIC
 - CHANNELIZING DEVICE
 - VERTICAL PANEL
 - CONSTRUCTION SIGN
 - TYPE III BARRICADE
 - TRAILER MOUNTED FLASHING ARROW BOARD
 - WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
 - WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV (Y) 8" (SLD)
 - WK ZN PAV MRK NON-REMOV (W) 4" (BRK)
 - WK ZN PAV MRK NON-REMOV (Y) 4" (BRK)

- ### NOTES
1. REFERENCE STANDARDS BC (1) THRU (12) AND TCP STANDARDS FOR LENGTHS, SIGN SPACING AND MORE INFORMATION.
 2. ELIMINATE ALL PAVEMENT MARKING AND SIGNS THAT ARE IN CONFLICT WITH TRAFFIC MOVEMENTS.
 3. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES. CONSTRUCT PAVEMENT ALONG DRIVEWAYS IN CONJUNCTION WITH WORK PROGRESS.
 4. SEE SIDE STREET DETOUR LAYOUT FOR ADDITIONAL INFORMATION.
 5. REFER TO TEMPORARY SIGNAL PLANS FOR ADDITIONAL INFORMATION. THE CONTRACTOR WILL BE REQUIRED TO HAVE ON SITE FOUR R1-1 SIGNS WITH FOUR R1-3P WITH FLAGS IN THE EVENT THE ELECTRICAL SYSTEM FOR THE SIGNAL LIGHTS ARE DAMAGED DURING CONSTRUCTION.



NO.	DATE	REVISION	APPROVED

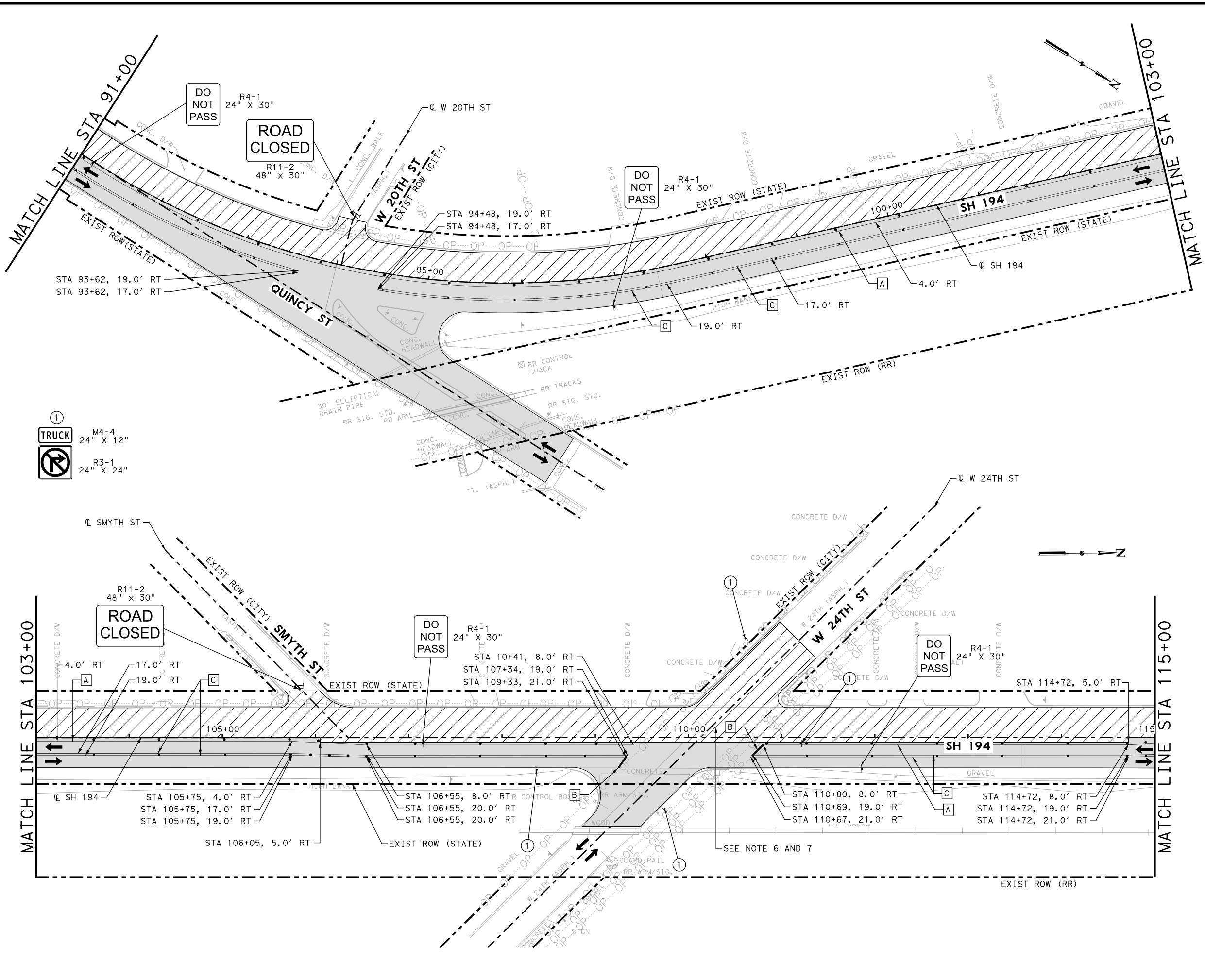


SH 194 FROM FM 3466 TO IH 27

TRAFFIC CONTROL PLAN
 PHASE 3 STEP 2 PHASING PLAN
 STA 69+00 TO STA 91+00

HORZ SCALE: 1"=100'			SHEET 1 OF 4
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:	
6	SEE TITLE SHEET	SH 194	
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	53
CONTROL:	SECTION:	JOB:	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:27:05 PM SCALE: 1:100
 FILE: SH194_TCP_Phase3_Step2_Sheet2.dgn



- LEGEND**
- CONSTRUCTION PHASE
 - COMPLETED PHASE
 - EXIST DIRECTION OF TRAFFIC
 - PROP DIRECTION OF TRAFFIC
 - CHANNELIZING DEVICE
 - VERTICAL PANEL
 - CONSTRUCTION SIGN
 - TYPE III BARRICADE
 - TRAILER MOUNTED FLASHING ARROW BOARD
 - WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
 - WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
 - WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)

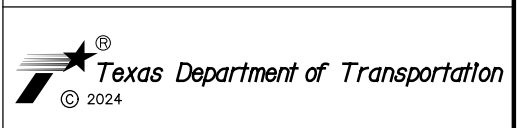
- NOTES**
1. REFERENCE STANDARDS BC (1) THRU (12) AND TCP STANDARDS FOR LENGTHS, SIGN SPACING AND MORE INFORMATION.
 2. ELIMINATE ALL PAVEMENT MARKING AND SIGNS THAT ARE IN CONFLICT WITH TRAFFIC MOVEMENTS.
 3. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES. CONSTRUCT PAVEMENT ALONG DRIVEWAYS IN CONJUNCTION WITH WORK PROGRESS.
 4. SEE SIDE STREET TYPICAL DETOUR LAYOUT FOR ADDITIONAL INFORMATION.
 5. CONTRACTOR TO MAINTAIN EXISTING MAILBOXES IN A CLEAN AND FUNCTIONAL CONDITION.
 6. REFER TO TEMPORARY SIGNAL PLANS FOR ADDITIONAL INFORMATION. THE CONTRACTOR WILL BE REQUIRED TO HAVE ON SITE FOUR R1-1 SIGNS WITH FOUR R1-3P WITH FLAGS IN THE EVENT THE ELECTRICAL SYSTEM FOR THE SIGNAL LIGHTS ARE DAMAGED DURING CONSTRUCTION.
 7. REFER TO W 24TH ST (WEST) INTERSECTION DETAILS FOR ADDITIONAL INFORMATION.

0 50 100
SCALE IN FEET

Mohammed S. Ula
7/29/2024

NO.	DATE	REVISION	APPROVED

infraTECH
Engineers & Innovators, LLC
TBPE REGISTRATION NO. F-18368



SH 194 FROM FM 3466 TO IH 27

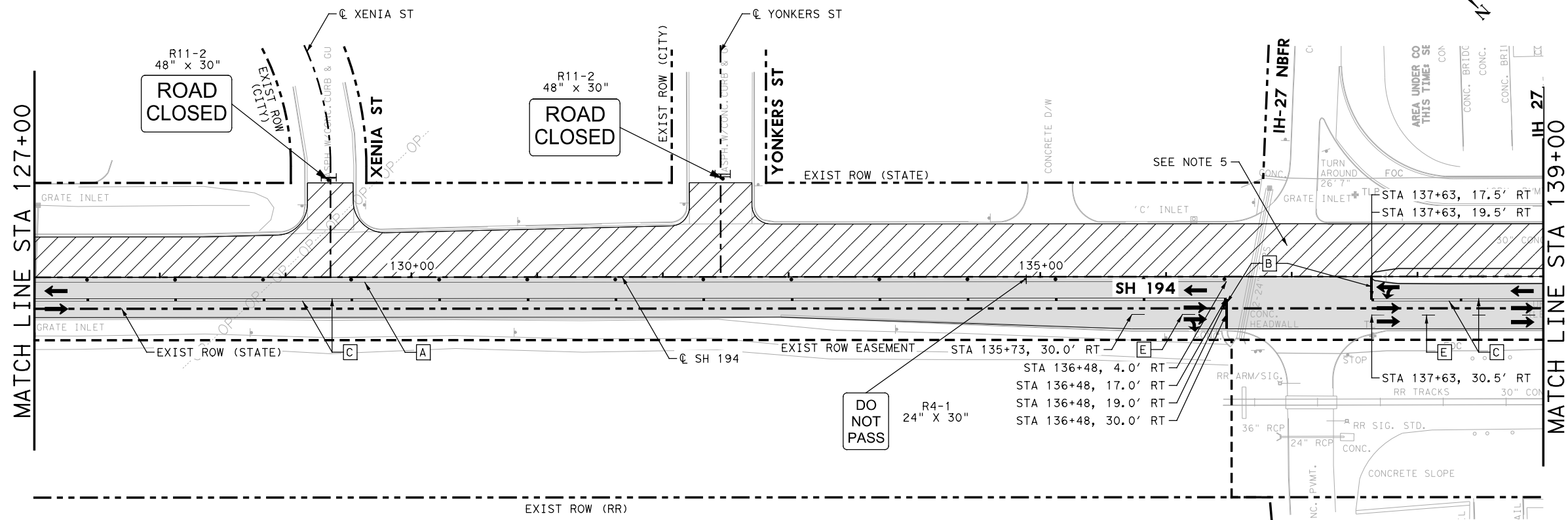
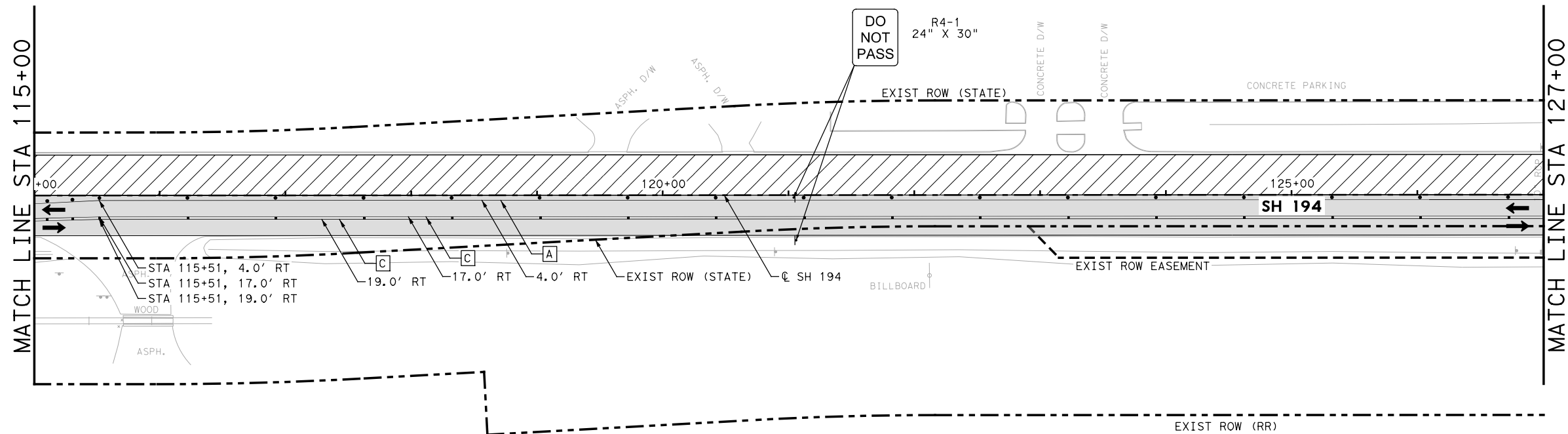
TRAFFIC CONTROL PLAN
PHASE 3 STEP 2 PHASING PLAN
STA 91+00 TO STA 115+00

HORZ SCALE: 1"=100' SHEET 2 OF 4

FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026

54

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:27:09 PM SCALE: 1/80
 FILE: SH194_TCP_Phase3_Step2_Sheet3.dgn

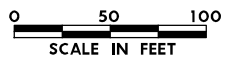


LEGEND

- CONSTRUCTION PHASE
- COMPLETED PHASE
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- CHANNELIZING DEVICE
- VERTICAL PANEL
- CONSTRUCTION SIGN
- TYPE III BARRICADE
- TRAILER MOUNTED FLASHING ARROW BOARD
- WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
- WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
- WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
- WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)
- WK ZN PAV MRK NON-REMOV (W) 4" (BRK)

NOTES

1. REFERENCE STANDARDS BC (1) THRU (12) AND TCP STANDARDS FOR LENGTHS, SIGN SPACING AND MORE INFORMATION.
2. ELIMINATE ALL PAVEMENT MARKING AND SIGNS THAT ARE IN CONFLICT WITH TRAFFIC MOVEMENTS.
3. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES. CONSTRUCT PAVEMENT ALONG DRIVEWAYS IN CONJUNCTION WITH WORK PROGRESS.
4. SEE SIDE STREET TYPICAL DETOUR LAYOUT FOR ADDITIONAL INFORMATION.
5. REFER TO IH-27 FRONTAGE RD INTERSECTION DETAILS FOR ADDITIONAL INFORMATION.



NO.	DATE	REVISION	APPROVED

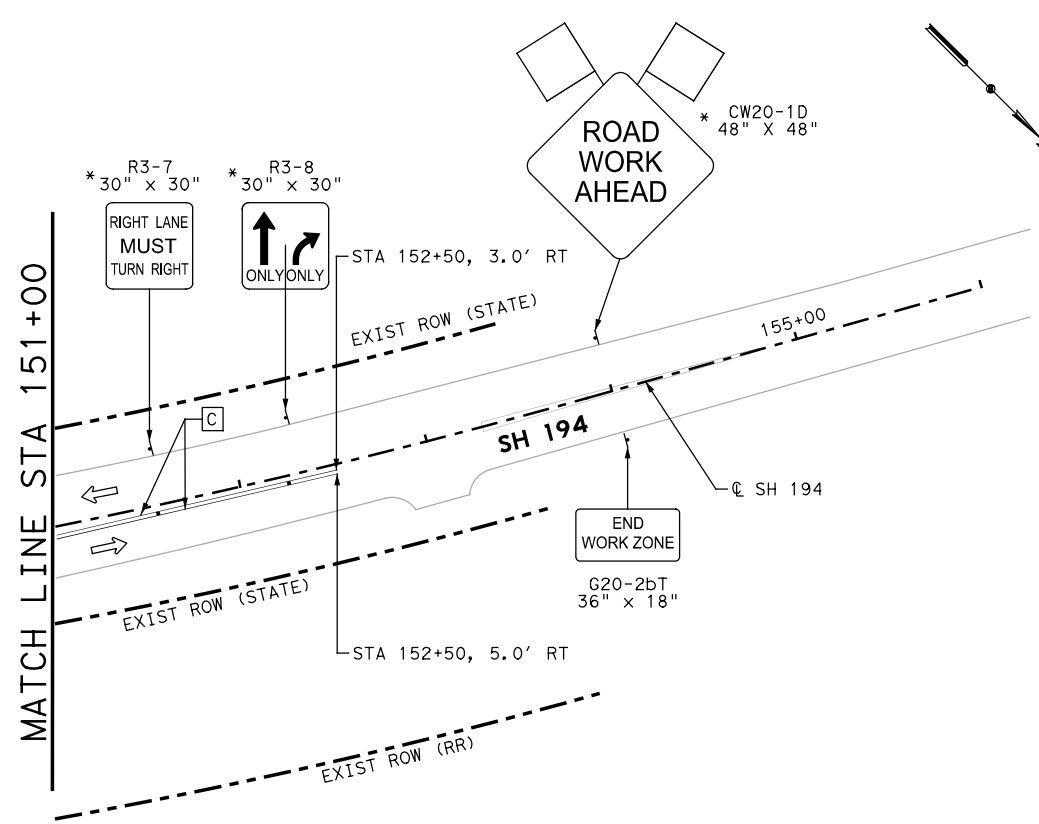
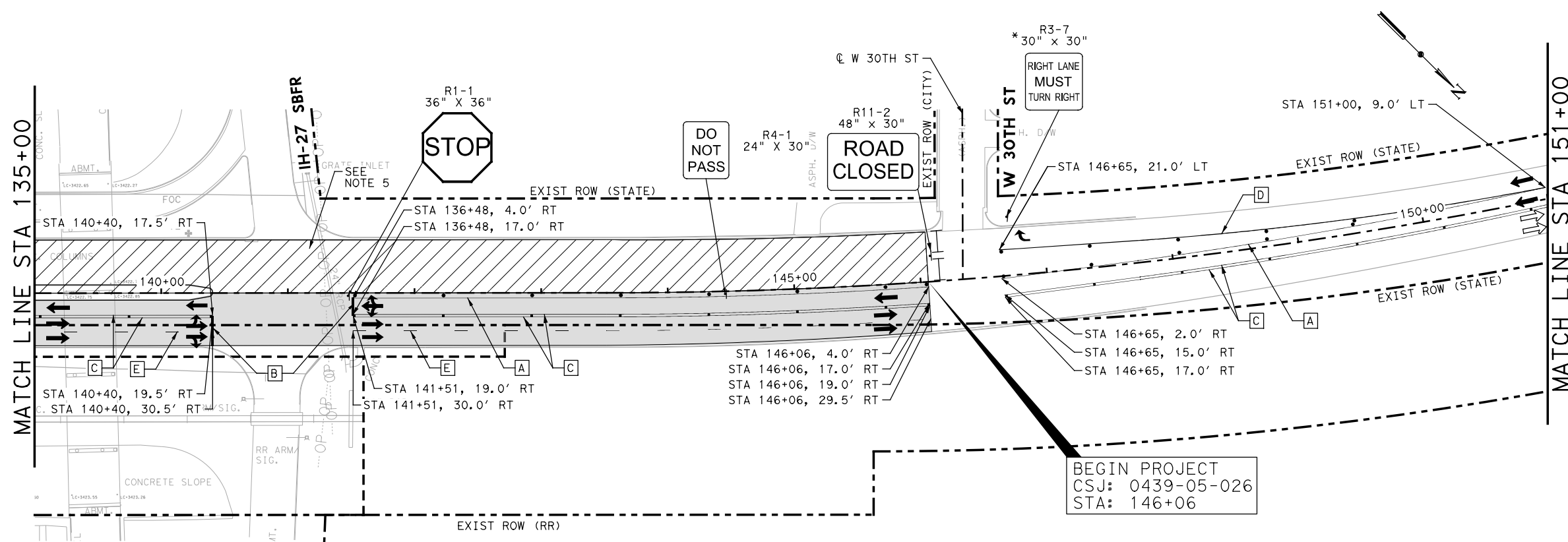
Engineers & Innovators, LLC
 TBPE REGISTRATION NO. F-18368

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SH 194 FROM FM 3466 TO IH 27
TRAFFIC CONTROL PLAN
 PHASE 3 STEP 2 PHASING PLAN
 STA 115+00 TO STA 139+00

HORZ SCALE: 1"=100'			SHEET 3 OF 4
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:	
6	SEE TITLE SHEET	SH 194	
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	55
CONTROL:	SECTION:	JOB:	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcfgr PENTABLE: I94050_SH194_Pentable.tbl
 USER: Arabinson DATE: 7/29/2024 TIME: 7:27:17 PM SCALE: 1:100
 FILE: SH194_TCP_Phase3_Step2_Sheet4.dgn

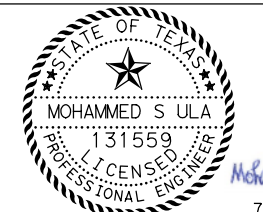
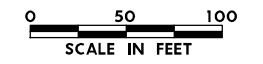


LEGEND

- CONSTRUCTION PHASE
- COMPLETED PHASE
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- CHANNELIZING DEVICE
- VERTICAL PANEL
- CONSTRUCTION SIGN
- TYPE III BARRICADE
- TRAILER MOUNTED FLASHING ARROW BOARD
- WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
- WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
- WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
- WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)
- WK ZN PAV MRK NON-REMOV (W) 8" (SLD)
- WK ZN PAV MRK NON-REMOV (W) 4" (BRK)

NOTES

1. REFERENCE STANDARDS BC (1) THRU (12) AND TCP STANDARDS FOR LENGTHS, SIGN SPACING AND MORE INFORMATION.
2. ELIMINATE ALL PAVEMENT MARKING AND SIGNS THAT ARE IN CONFLICT WITH TRAFFIC MOVEMENTS.
3. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES. CONSTRUCT PAVEMENT ALONG DRIVEWAYS IN CONJUNCTION WITH WORK PROGRESS.
4. SEE SIDE STREET TYPICAL DETOUR LAYOUT FOR ADDITIONAL INFORMATION.
5. REFER TO IH-27 SERVICE RD INTERSECTION DETAILS FOR ADDITIONAL INFORMATION.



NO.	DATE	REVISION	APPROVED



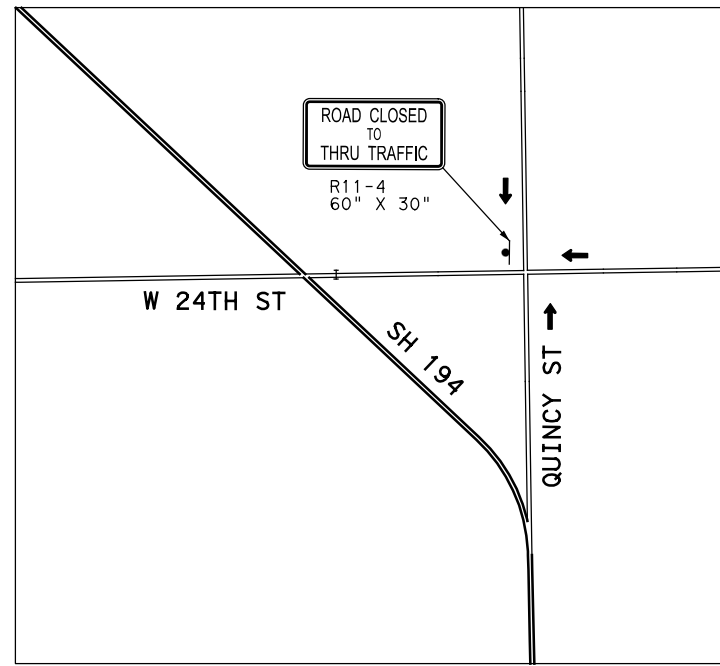
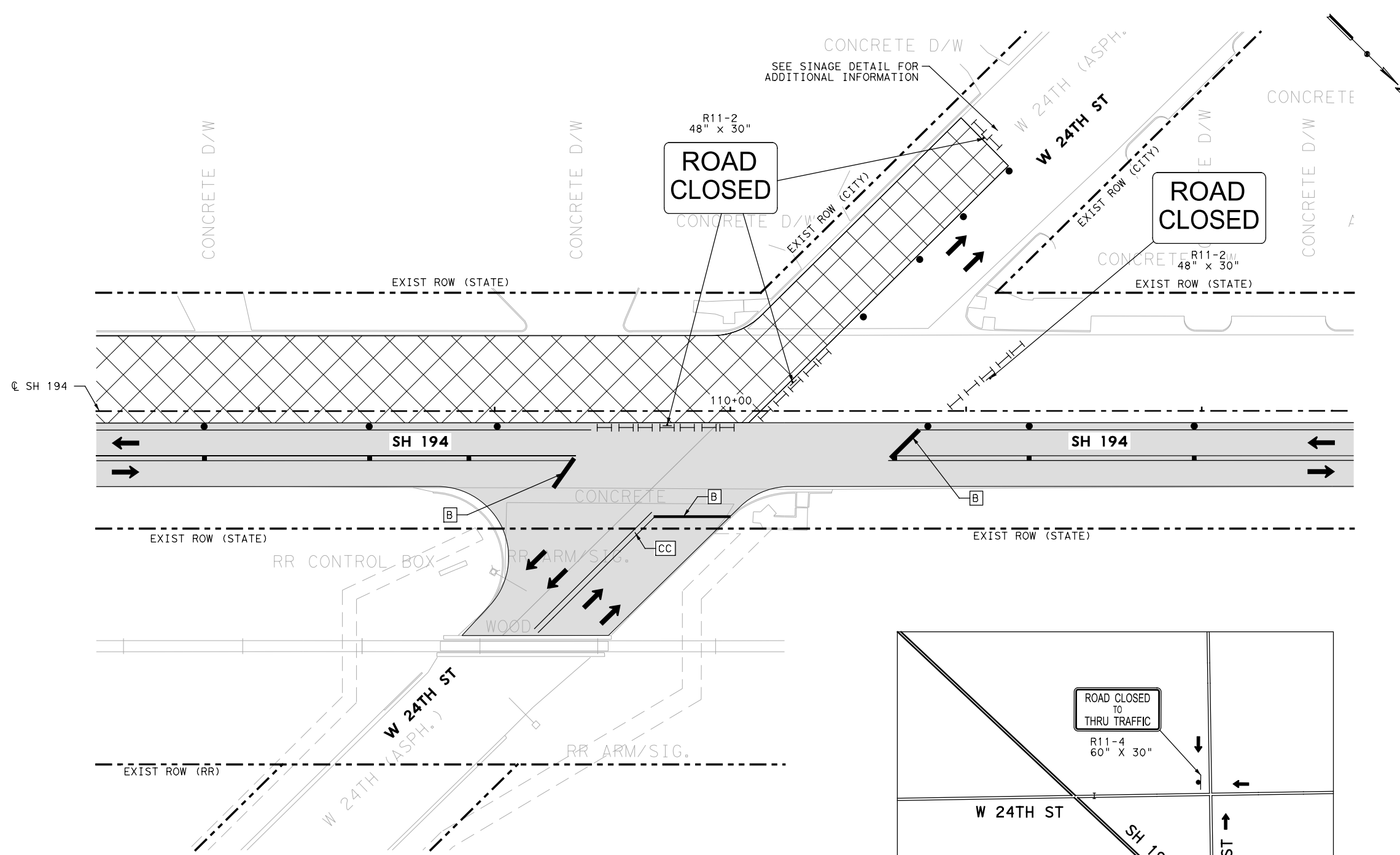
SH 194 FROM FM 3466 TO IH 27

TRAFFIC CONTROL PLAN
 PHASE 3 STEP 2 PHASING PLAN
 STA 135+00 TO END

HORZ SCALE: 1"=100'			SHEET 4 OF 4
FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	56
CONTROL	SECTION	JOB	
0439	05	026	














* ADVANCE WARNING SIGNS WILL BE PLACED AT MINIMUM 160.0' APART.

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:27:25 PM SCALE: 1:50
 FILE: SH194_TCP_24th St_Intersection_Detail_P1.dgn



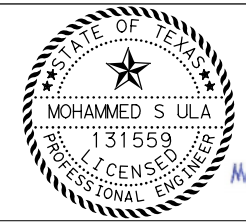
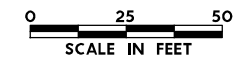
SIGNAGE DETAIL

LEGEND

-  CONSTRUCTION STEP
-  COMPLETED STEP
-  TEMPORARY PAVEMENT
-  WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
-  WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
-  WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
-  WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)
-  WK ZN PAV MRK NON-REMOV (W) 4" (BRK)
-  TRAILER MOUNTED FLASHING ARROW
-  CONSTRUCTION SIGN
-  TRAFFIC DIRECTION
-  TYPE III BARRICADE
-  CHANNELIZING DEVICE

NOTES:

1. INSTALL TEMPORARY TRAFFIC SIGNAL AT INTERSECTION PRIOR TO BEGIN ANY WORK.
2. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENCE AND BUSINESSES AT ALL TIMES.
3. CONSTRUCT PAVEMENT ALONG DRIVEWAYS IN CONJUNCTION WITH WORK PROGRESS.
4. REMOVE STRIPING AS NECESSARY DURING THIS PHASE.
5. ALIGN TEMP SIGNAL HEADS AS NEEDED FOR LANE CONFIGURATIONS.
6. CLOSE EASTBOUND TRAFFIC ON W 24TH ST. (WEST). CONSTRUCT SOUTH SIDE OF W 24TH ST. (WEST).



NO.	DATE	REVISION	APPROVED

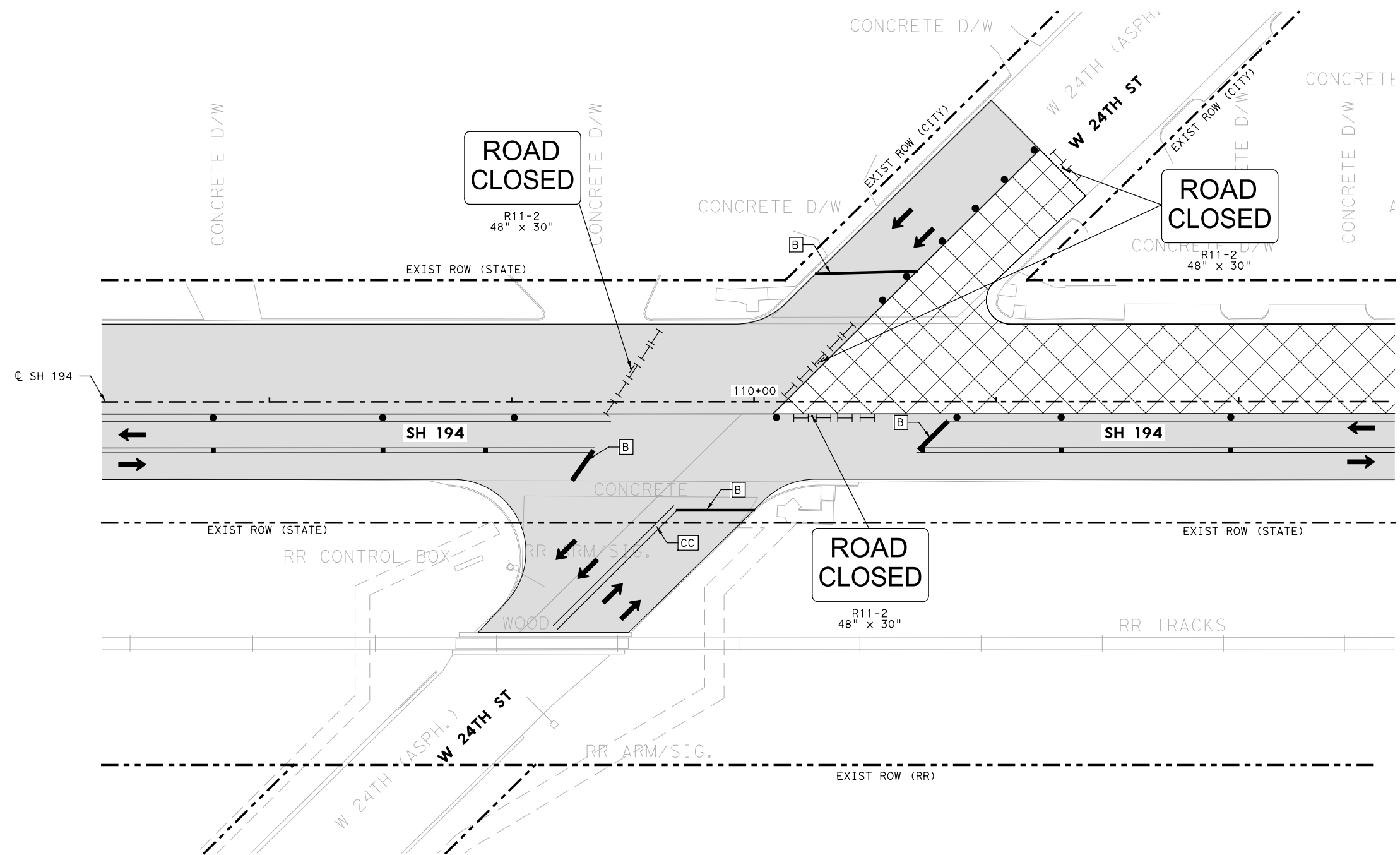


SH 194 FROM FM 3466 TO IH 27









TRAFFIC CONTROL PLAN
 PHASE 3 STEP 2 INTERSECTION DETAILS
 W 24TH ST (WEST) - STAGE 1

HORZ SCALE: 1"=50'			SHEET 1 OF 5
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:		HIGHWAY NO.:
6	SEE TITLE SHEET		SH 194
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	57
CONTROL:	SECTION:	JOB:	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:27:30 PM SCALE: 1:50
 FILE: SH194_TCP_24th St_Intersection_Detail_P2.dgn

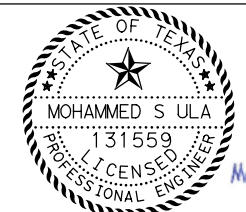
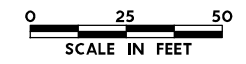


LEGEND

-  CONSTRUCTION STEP
-  COMPLETED STEP
-  TEMPORARY PAVEMENT
- [A] WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
- [B] WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
- [C] WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
- [CC] WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)
- [E] WK ZN PAV MRK NON-REMOV (W) 4" (BRK)
-  TRAILER MOUNTED FLASHING ARROW
-  CONSTRUCTION SIGN
-  TRAFFIC DIRECTION
-  TYPE III BARRICADE
-  CHANNELIZING DEVICE

NOTES:

1. INSTALL TEMPORARY TRAFFIC SIGNAL AT INTERSECTION PRIOR TO BEGIN ANY WORK.
2. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENCE AND BUSINESSES AT ALL TIMES.
3. CONSTRUCT PAVEMENT ALONG DRIVEWAYS IN CONJUNCTION WITH WORK PROGRESS.
4. REMOVE STRIPING AS NECESSARY DURING THIS PHASE.
5. ALIGN TEMP SIGNAL HEADS AS NEEDED FOR LANE CONFIGURATIONS.
6. CLOSE WESTBOUND TRAFFIC ON W 24TH ST. (WEST). CONSTRUCT NORTH SIDE OF W 24TH ST. (WEST).



NO.	DATE	REVISION	APPROVED

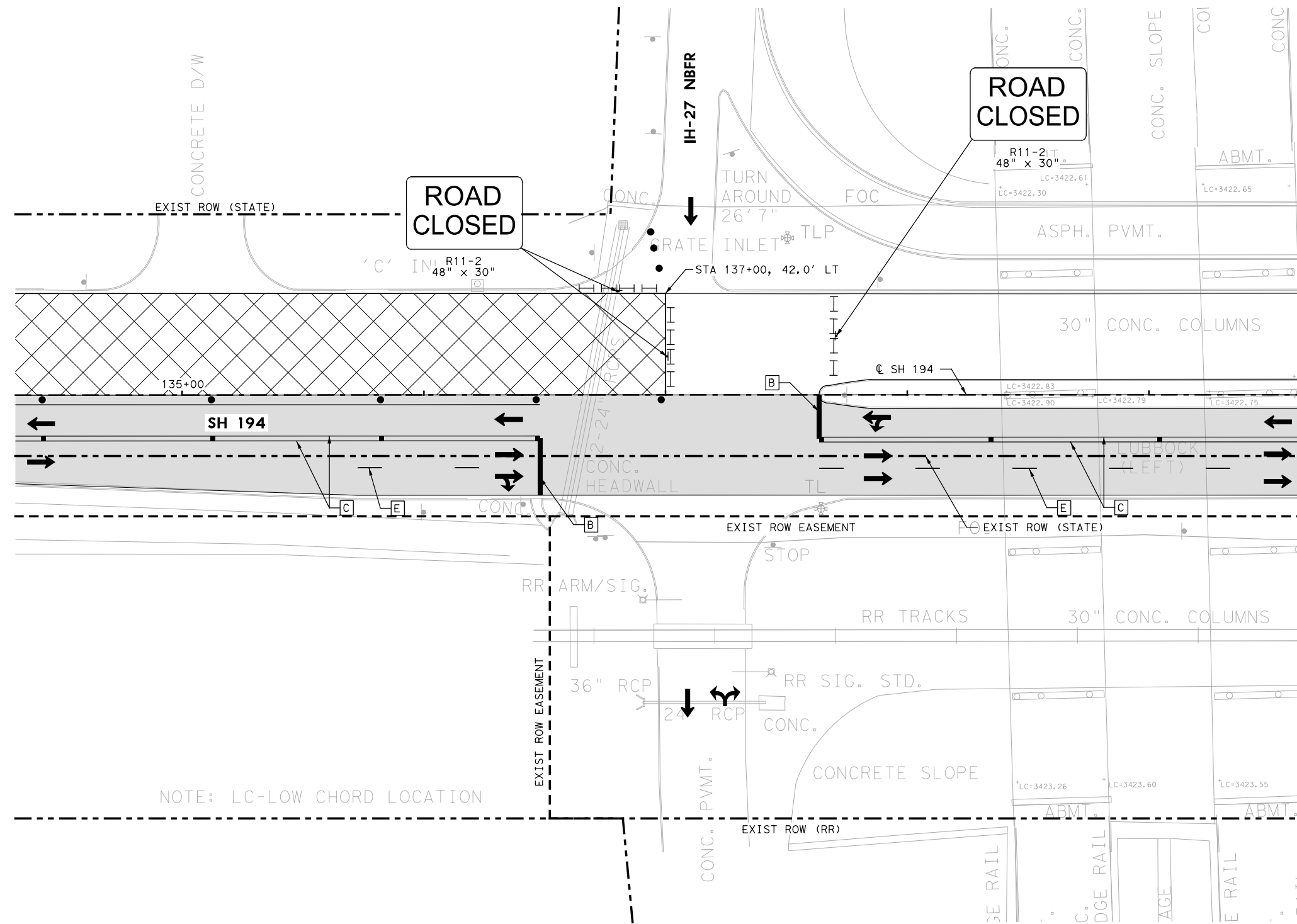


SH 194 FROM FM 3466 TO IH 27

TRAFFIC CONTROL PLAN
 PHASE 3 STEP 2 INTERSECTION DETAILS
 W 24TH ST (WEST) - STAGE 2














HORZ SCALE: 1"=50'			SHEET 2 OF 5
FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	58
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:27:34 PM SCALE: 1:50
 FILE: SH194_TCP_IH27_Intersection_Detail_PI.dgn



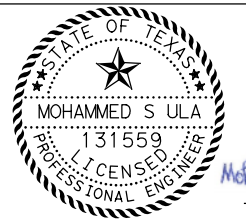
NOTE: LC-LOW CHORD LOCATION

LEGEND

-  CONSTRUCTION STEP
-  COMPLETED STEP
-  TEMPORARY PAVEMENT
-  WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
-  WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
-  WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
-  WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)
-  WK ZN PAV MRK NON-REMOV (W) 4" (BRK)
-  TRAILER MOUNTED FLASHING ARROW
-  CONSTRUCTION SIGN
-  TRAFFIC DIRECTION
-  TYPE III BARRICADE
-  CHANNELIZING DEVICE

NOTES:

1. INSTALL TRAFFIC CONTROL DEVICES AT INTERSECTION PRIOR TO BEGIN ANY WORK.
2. REMOVE STRIPING AS NECESSARY DURING THIS PHASE.
3. USE TCP (2-4)-18 FOR LANE DROPS AND TAPER LENGTHS.
4. CONSTRUCT EAST SIDE OF IH-27 FRONTAGE ROAD INTERSECTION WHILE MAINTAINING ACCESS TO THE FRONTAGE ROAD UTILIZING WEST SIDE.



NO.	DATE	REVISION	APPROVED

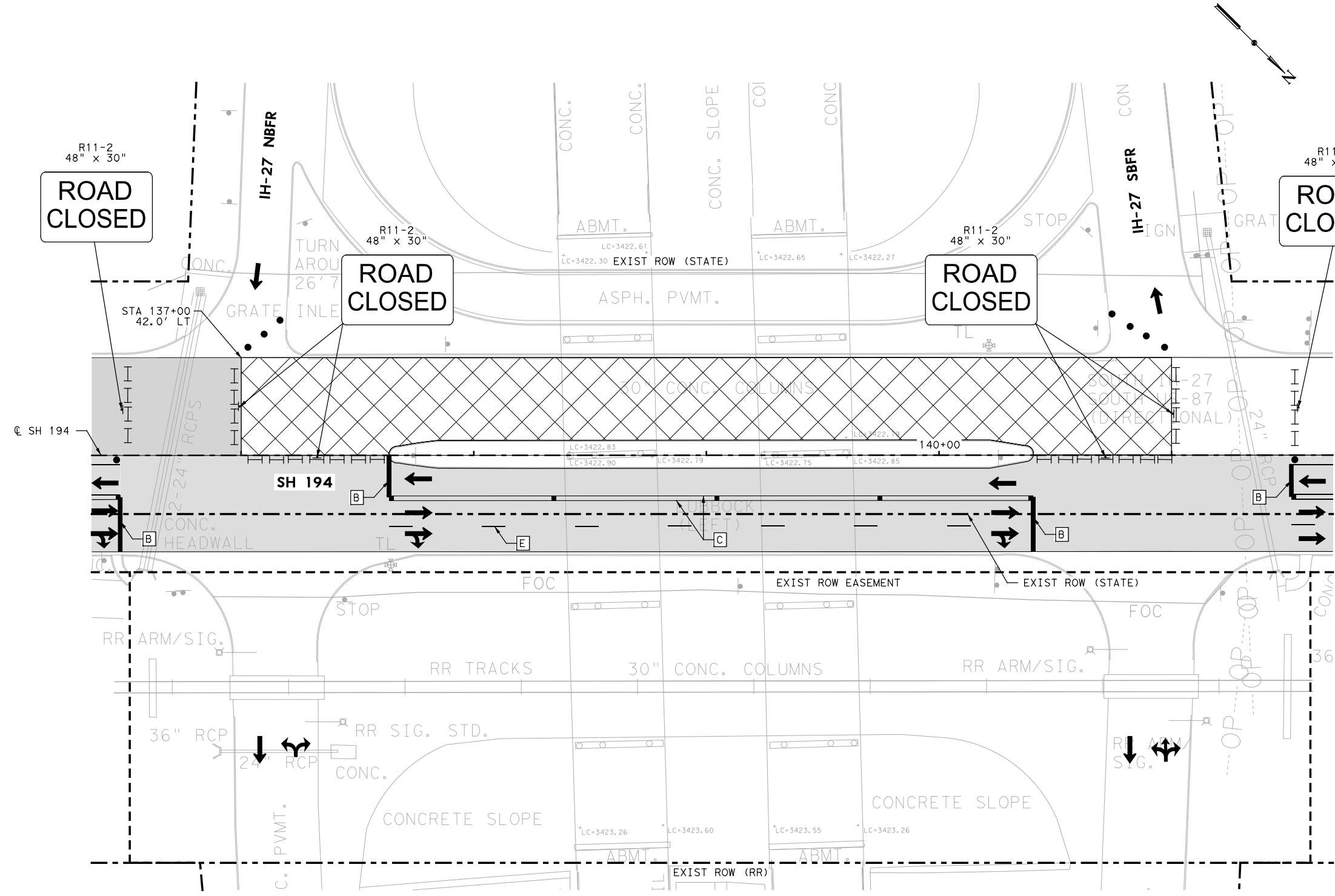


SH 194 FROM FM 3466 TO IH 27














TRAFFIC CONTROL PLAN
 PHASE 3 STEP 2 INTERSECTION DETAILS
 IH-27 FRONTAGE ROADS - STAGE 1

HORZ SCALE: 1"=50'			SHEET 3 OF 5
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	59
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:27:39 PM SCALE: 1:50
 FILE: SH194_TCP_IH27_Intersection_Detail_LP2.dgn

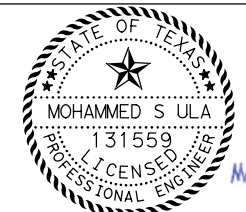
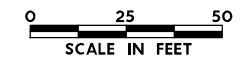


LEGEND

-  CONSTRUCTION STEP
-  COMPLETED STEP
-  TEMPORARY PAVEMENT
-  WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
-  WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
-  WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
-  WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)
-  WK ZN PAV MRK NON-REMOV (W) 4" (BRK)
-  TRAILER MOUNTED FLASHING ARROW
-  CONSTRUCTION SIGN
-  TRAFFIC DIRECTION
-  TYPE III BARRICADE
-  CHANNELIZING DEVICE

NOTES:

1. INSTALL TRAFFIC CONTROL DEVICES AT INTERSECTION PRIOR TO BEGIN ANY WORK.
2. REMOVE STRIPING AS NECESSARY DURING THIS PHASE.
3. USE TCP (2-4)-18 FOR LANE DROPS AND TAPER LENGTHS.
4. CONSTRUCT RIGHT SIDE OF IH-27 FRONTAGE ROAD INTERSECTION WHILE MAINTAINING ACCESS TO THE FRONTAGE ROAD UTILIZING LEFT SIDE.
5. CONSTRUCT LEFT SIDE OF IH-27 SERVICE ROAD INTERSECTION WHILE MAINTAINING ACCESS TO THE SERVICE ROAD UTILIZING RIGHT SIDE.



7/29/2024

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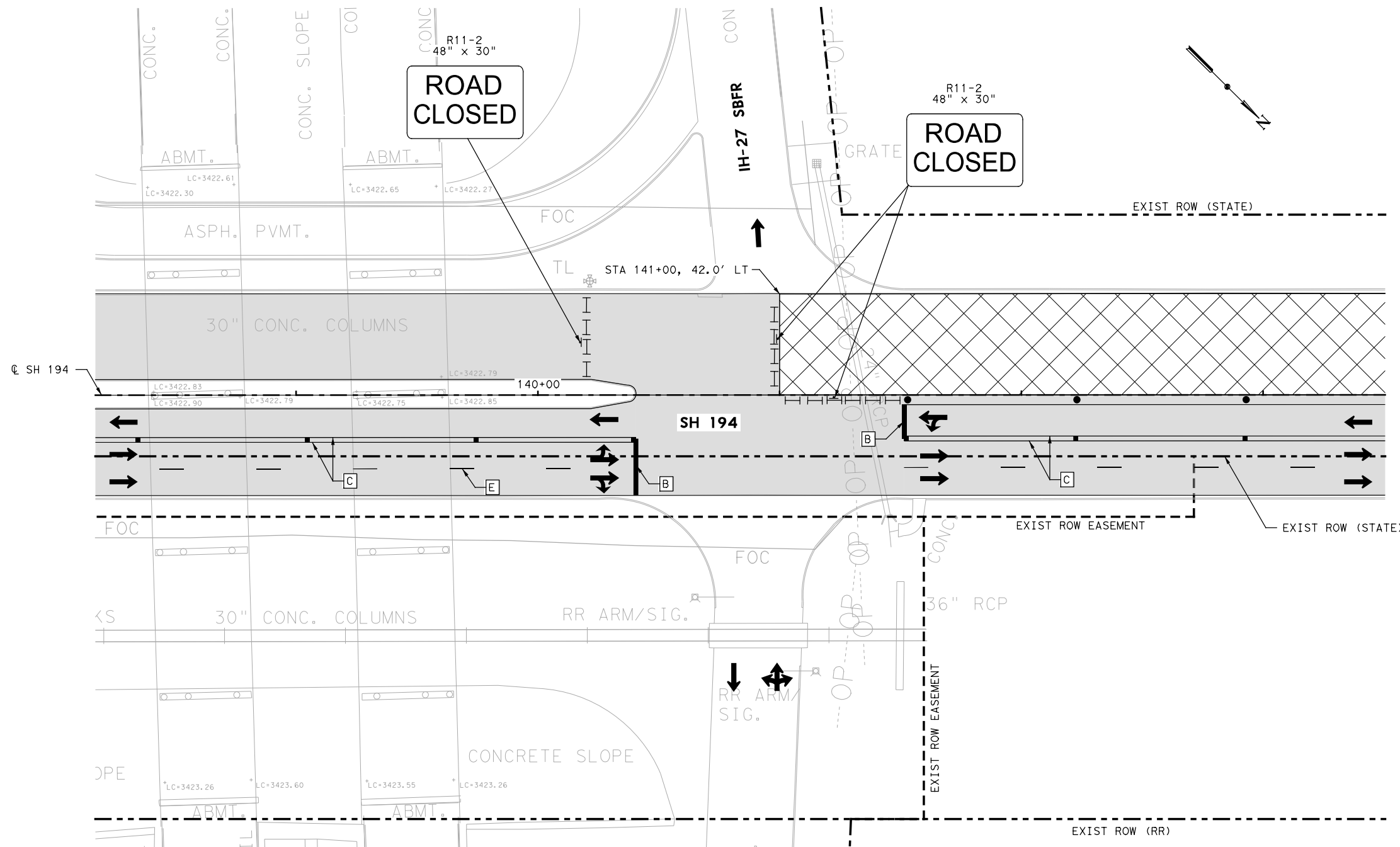


SH 194 FROM FM 3466 TO IH 27














TRAFFIC CONTROL PLAN
 PHASE 3 STEP 2 INTERSECTION DETAILS
 IH-27 FRONTAGE ROADS - STAGE 2

HORZ SCALE: 1"=50'			SHEET 4 OF 5
FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	60
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:27:44 PM SCALE: 1:50
 FILE: SH194_TCP_IH27_Intersection_Detail_P3.dgn



LEGEND

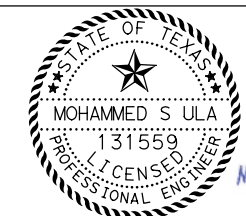
-  CONSTRUCTION STEP
-  COMPLETED STEP
-  TEMPORARY PAVEMENT
-  WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
-  WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
-  WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
-  WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)
-  WK ZN PAV MRK NON-REMOV (W) 4" (BRK)
-  TRAILER MOUNTED FLASHING ARROW
-  CONSTRUCTION SIGN
-  TRAFFIC DIRECTION
-  TYPE III BARRICADE
-  CHANNELIZING DEVICE

NOTES:

1. INSTALL TRAFFIC CONTROL DEVICES AT INTERSECTION PRIOR TO BEGIN ANY WORK.
2. REMOVE STRIPING AS NECESSARY DURING THIS PHASE.
3. USE TCP (2-4)-18 FOR LANE DROPS AND TAPER LENGTHS.
4. CONSTRUCT RIGHT SIDE OF IH-27 SERVICE ROAD INTERSECTION WHILE MAINTAINING ACCESS TO THE SERVICE ROAD UTILIZING LEFT SIDE.



SCALE IN FEET



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SH 194 FROM FM 3466 TO IH 27

TRAFFIC CONTROL PLAN
 PHASE 3 STEP 2 INTERSECTION DETAILS
 IH-27 FRONTAGE ROADS - STAGE 3

HORZ SCALE: 1"=50' SHEET 5 OF 5

FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	61
CONTROL	SECTION	JOB	
0439	05	026	

TYPE 1 - TYPICAL CITY STREET CLOSURE

R11-2
48" X 30"

**ROAD
CLOSED**

①

R11-4
60" X 30"

**ROAD CLOSED
TO
THRU TRAFFIC**

②

INTERSECTION TYPES:

TYPE 1: CITY STREET INTERSECTION CLOSED DURING CONSTRUCTION.

TYPE 2: MINOR CITY STREET INTERSECTION ONLY CLOSED FOR PERIODIC DAILY CONSTRUCTION. INTERSECTIONS WITH SIGNALS WILL BE CONVERTED TO A FOUR-WAY STOP CONDITION. CONSTRUCTION OF INTERSECTION IS CONCURRENT WITH ROADWAY CONSTRUCTION. CONTRACTOR WILL PROVIDE RAMPS TO ALLOW TRAFFIC THRU THE CONSTRUCTION AREA.

TYPE 3: MAJOR STREET INTERSECTION THAT WILL BE BUILT WITH STEPS.

LEGEND

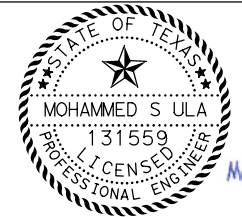
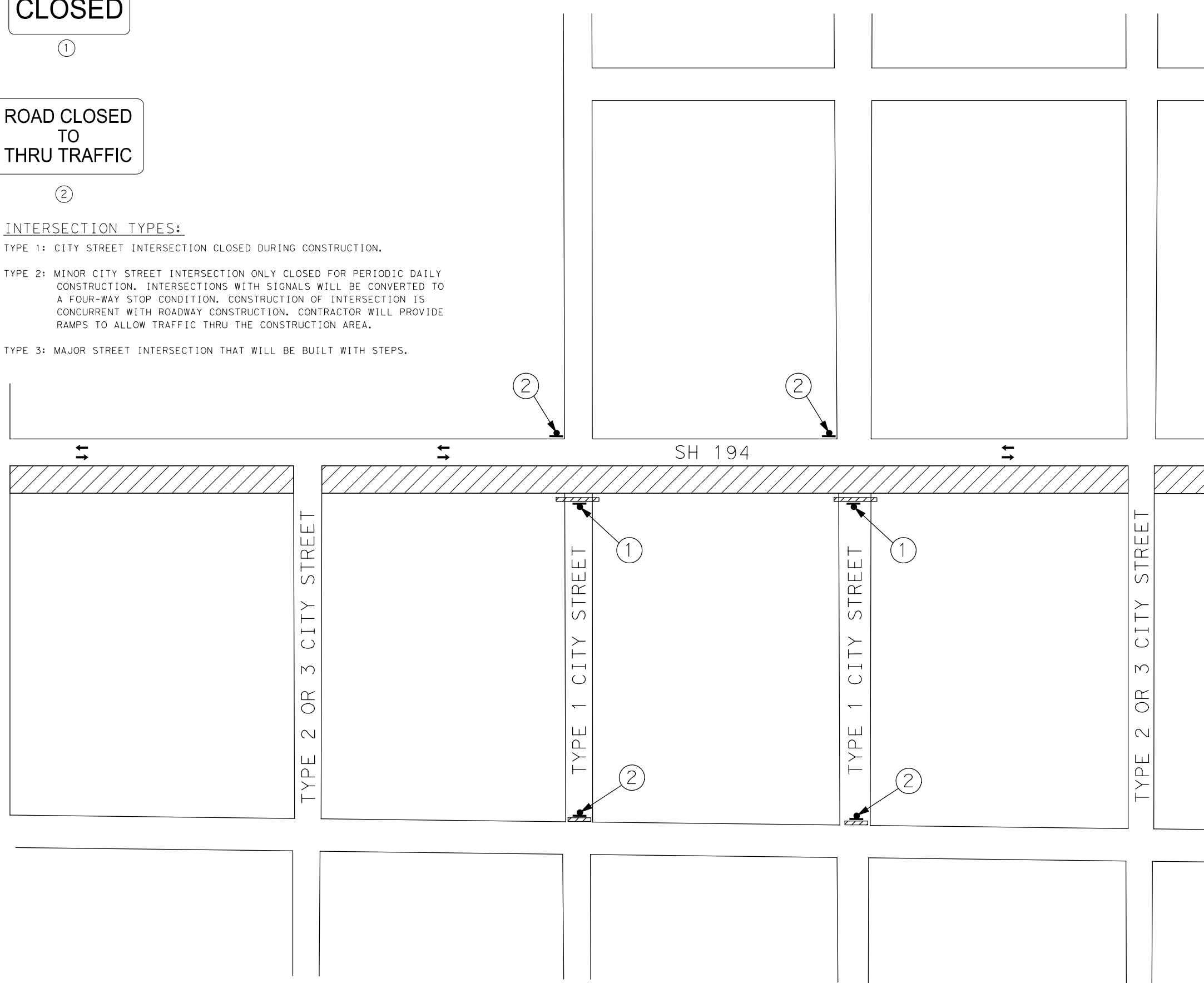
 WORK ZONE

 CONSTRUCTION SIGN

 TYPE III BARRICADE

NOTES

1. CONTRACTOR TO ADJUST DETOUR SIGNS AS APPROPRIATE.
2. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES. CONSTRUCT PAVEMENT ALONG DRIVEWAYS IN CONJUNCTION WITH WORK PROGRESS.
3. INSTALL TEMP PAVEMENT AS NEEDED, PRIOR TO COMMENCING WORK.



Mohammed S. Ula
7/30/2024

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SH 194 FROM FM 3466 TO IH 27

TRAFFIC CONTROL PLAN
SIDE STREET
TYPICAL DETOUR LAYOUT

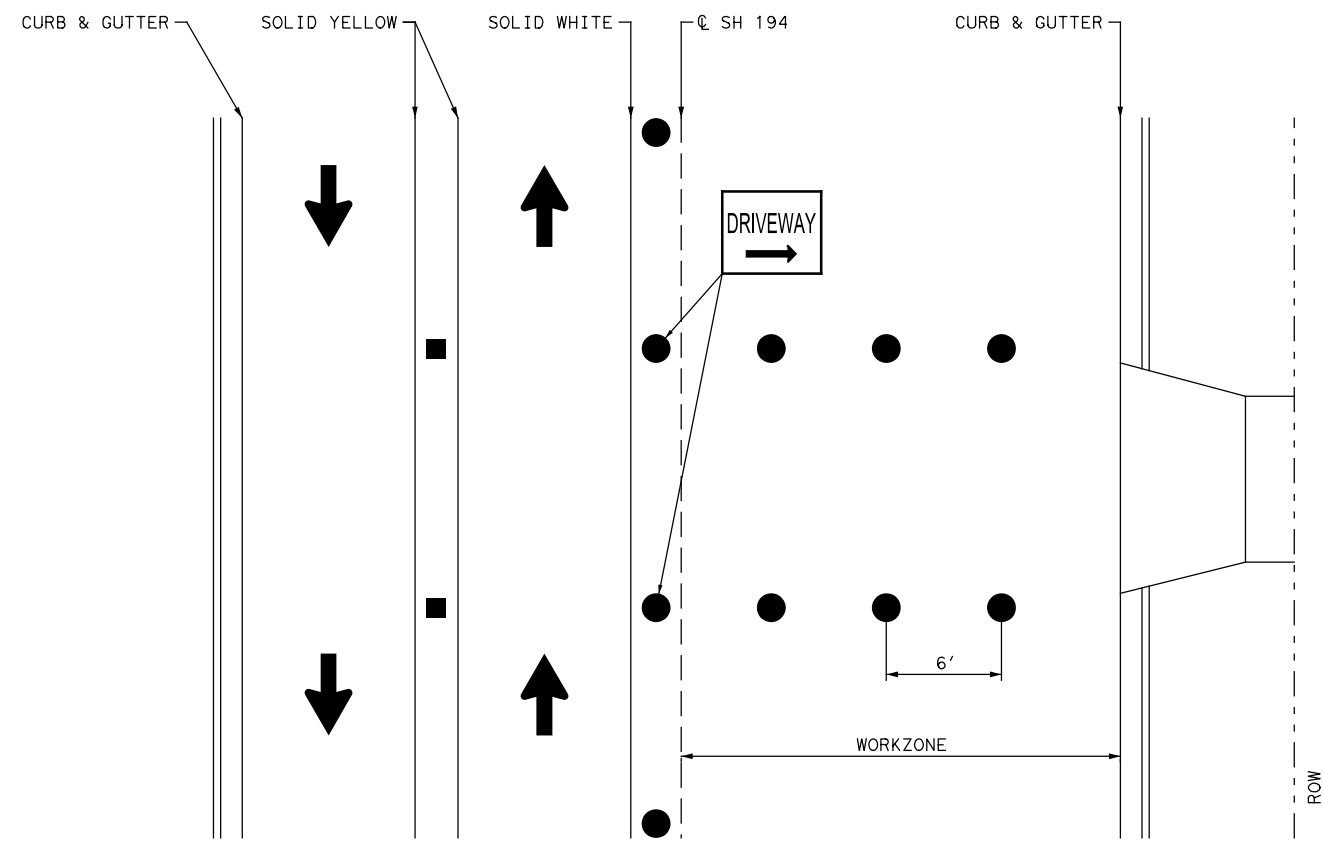
SCALE: N. T. S. SHEET 1 OF 1

FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	62
CONTROL	SECTION	JOB	
0439	05	026	

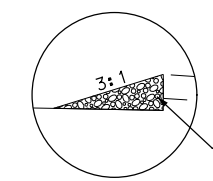
PLOT DRIVER: TXDOT_PDF_BW_LEVELS.plt
 USER: Robinson DATE: 2/27/2023 TIME: 10:11:55 AM SCALE: 1/8"
 FILE: SH194_TCP_Driveway_Detail.dgn

LEGEND

- PORTABLE VERTICAL PANEL
- PLASTIC DRUMS

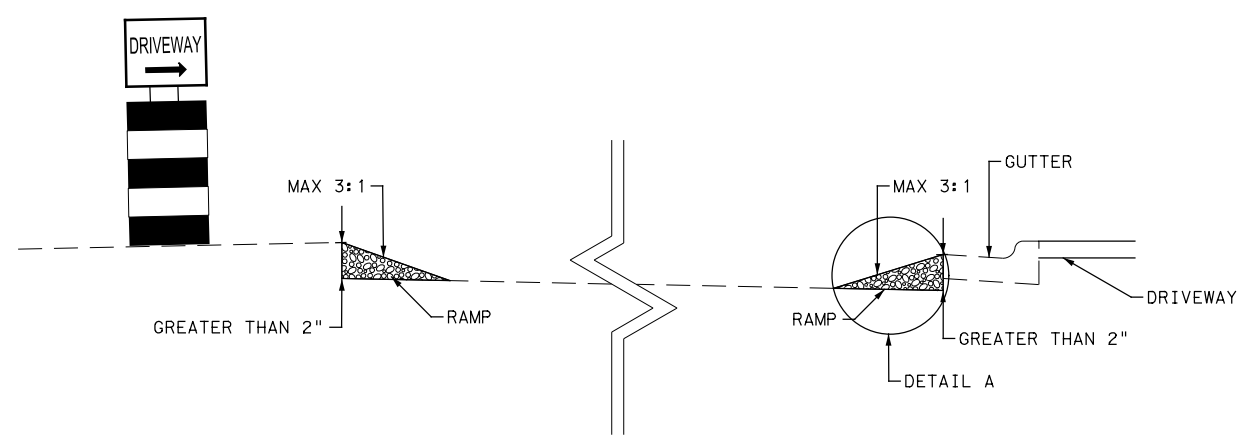


PLAN VIEW

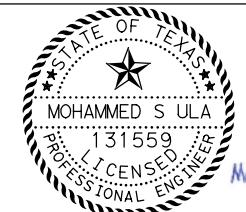


BACKFILL EDGE WITH RAP AFTER PLANING, REMOVE RAP PRIOR TO HOTMIX PLACEMENT. THIS WORK WILL NOT BE PAID FOR DIRECTLY BUT WILL BE SUBSIDIARY TO ITEM 502-6001 "BARRICADES, SIGNS AND TRAFFIC HANDLING."

DETAIL A



CROSS-SECTION VIEW



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 2/27/2023

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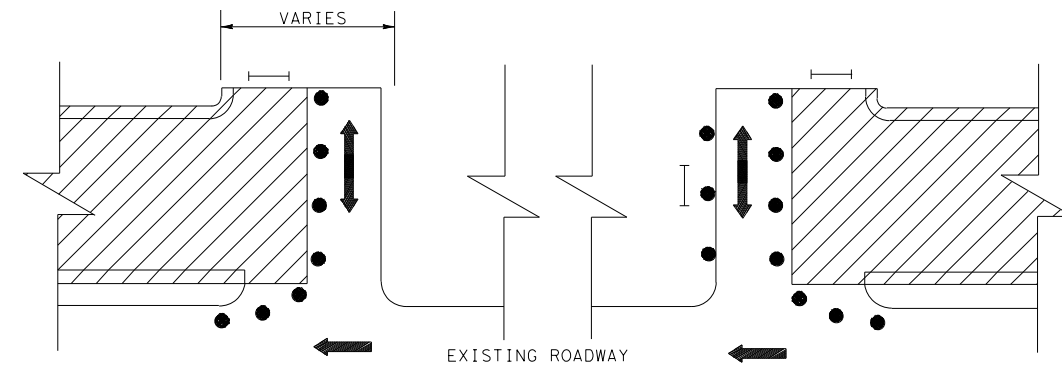


SH 194 FROM FM 3466 TO IH 27

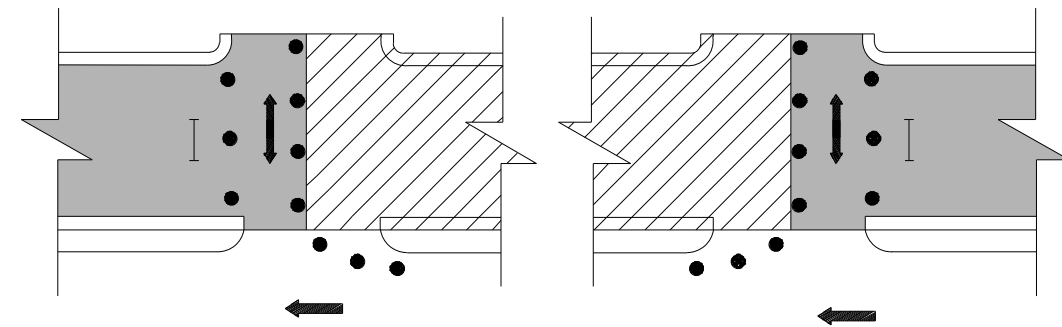
TRAFFIC CONTROL PLAN
 DRIVEWAY CONSTRUCTION DETAIL

SCALE: N. T. S.			SHEET 1 OF 1
FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	63
CONTROL	SECTION	JOB	
0439	05	026	

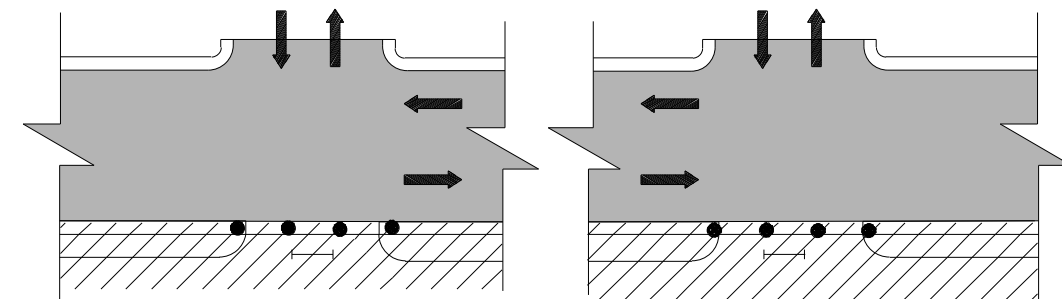
PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 2/27/2023 TIME: 10:20:01 AM
 FILE: CONST_SEQUENCE_OF_MISC_DRIVEWAYS.dgn



1. WITH TRAFFIC ON EXISTING
 BUILD ONE-HALF OF DRIVEWAY.



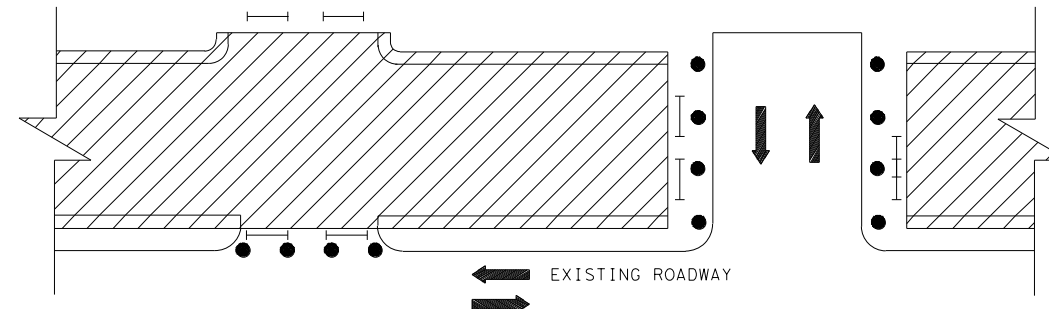
2. BUILD OTHER HALF OF DRIVEWAY.



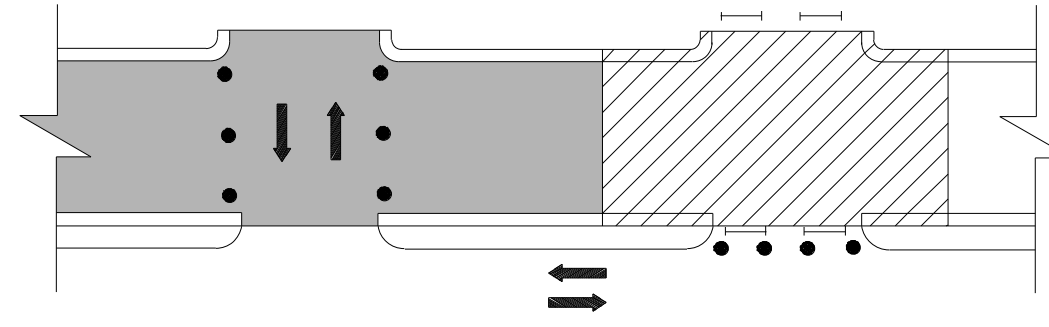
3. OPEN DRIVEWAY.

4. AFTER TRAFFIC MOVES TO NEW ROADWAY,
 BUILD REMAINING CURB.

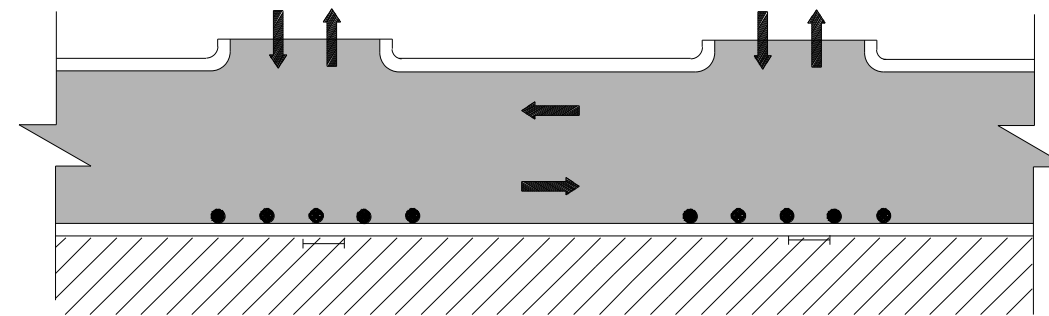
SINGLE ACCESS DRIVEWAY



1. WITH TRAFFIC ON EXISTING, BUILD ONE DRIVE.



2. OPEN COMPLETED DRIVEWAY AND BUILD NEXT DRIVEWAY.



3. AFTER TRAFFIC MOVES TO NEW ROADWAY
 BUILD REMAINING CURBS.

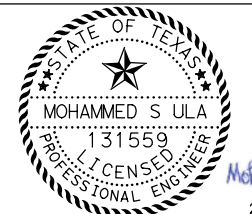
MULTIPLE ACCESS DRIVES

LEGEND

- CONSTRUCTION PHASE
- COMPLETED PHASE
- DIRECTION OF TRAFFIC
- CHANNELIZING DEVICE
- TYPE III BARRICADE

NOTES

1. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES. CONSTRUCT PAVEMENT ALONG DRIVEWAYS IN CONJUNCTION WITH WORK PROGRESS.



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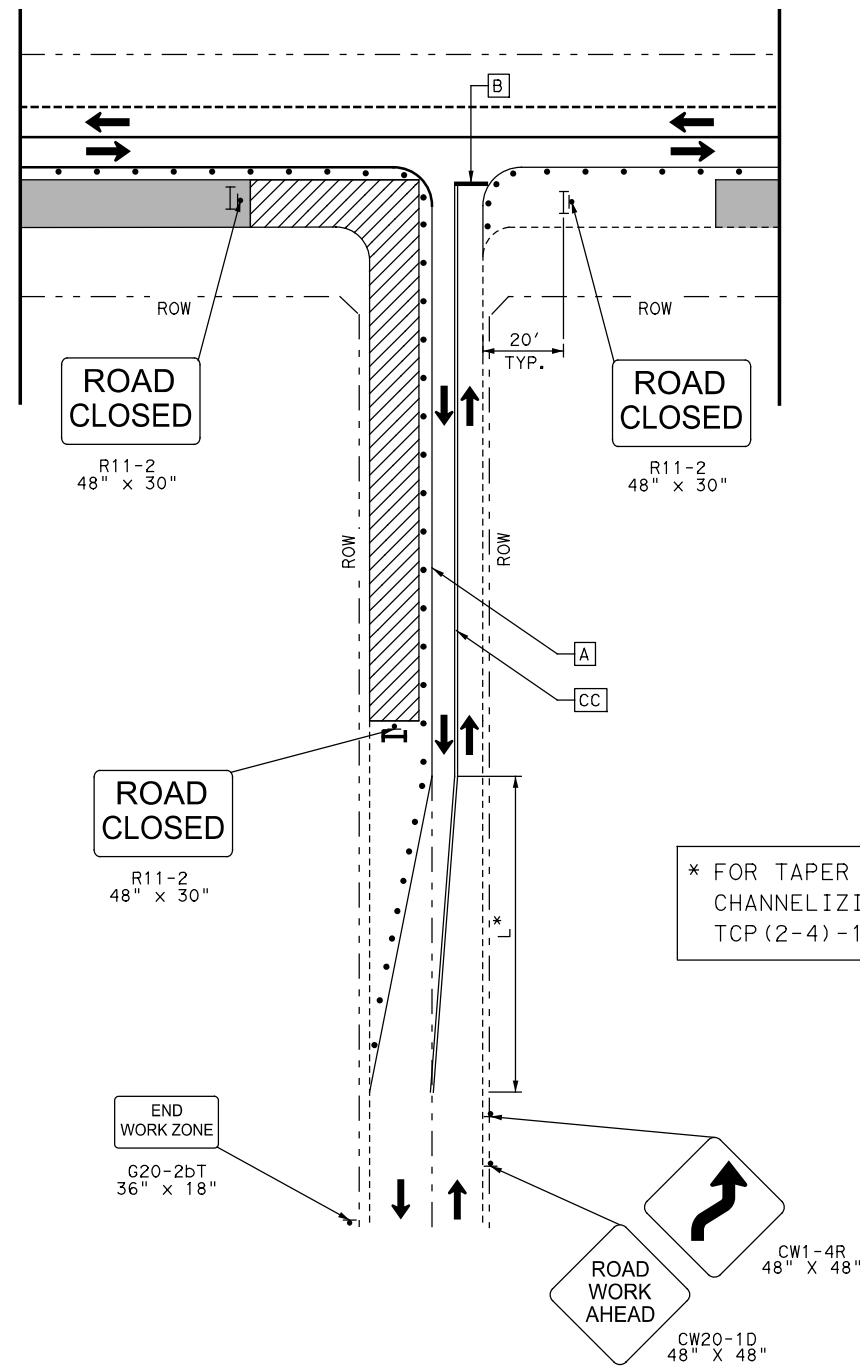


SH 194 FROM FM 3466 TO IH 27

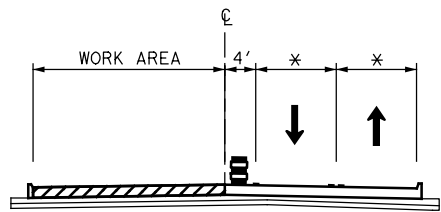
TRAFFIC CONTROL PLAN
 CONSTRUCTION SEQUENCE OF
 MISCELLANEOUS DRIVEWAYS

SCALE: N. T. S.			SHEET 1 OF 1
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	64
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:28:07 PM SCALE: 1:200
 FILE: TWO WAY ROADWAY INTERSECTION PHASING DETAIL.dgn

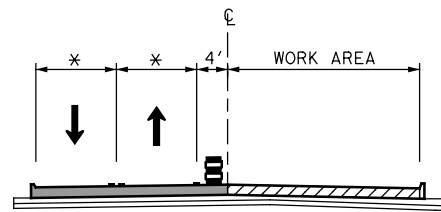
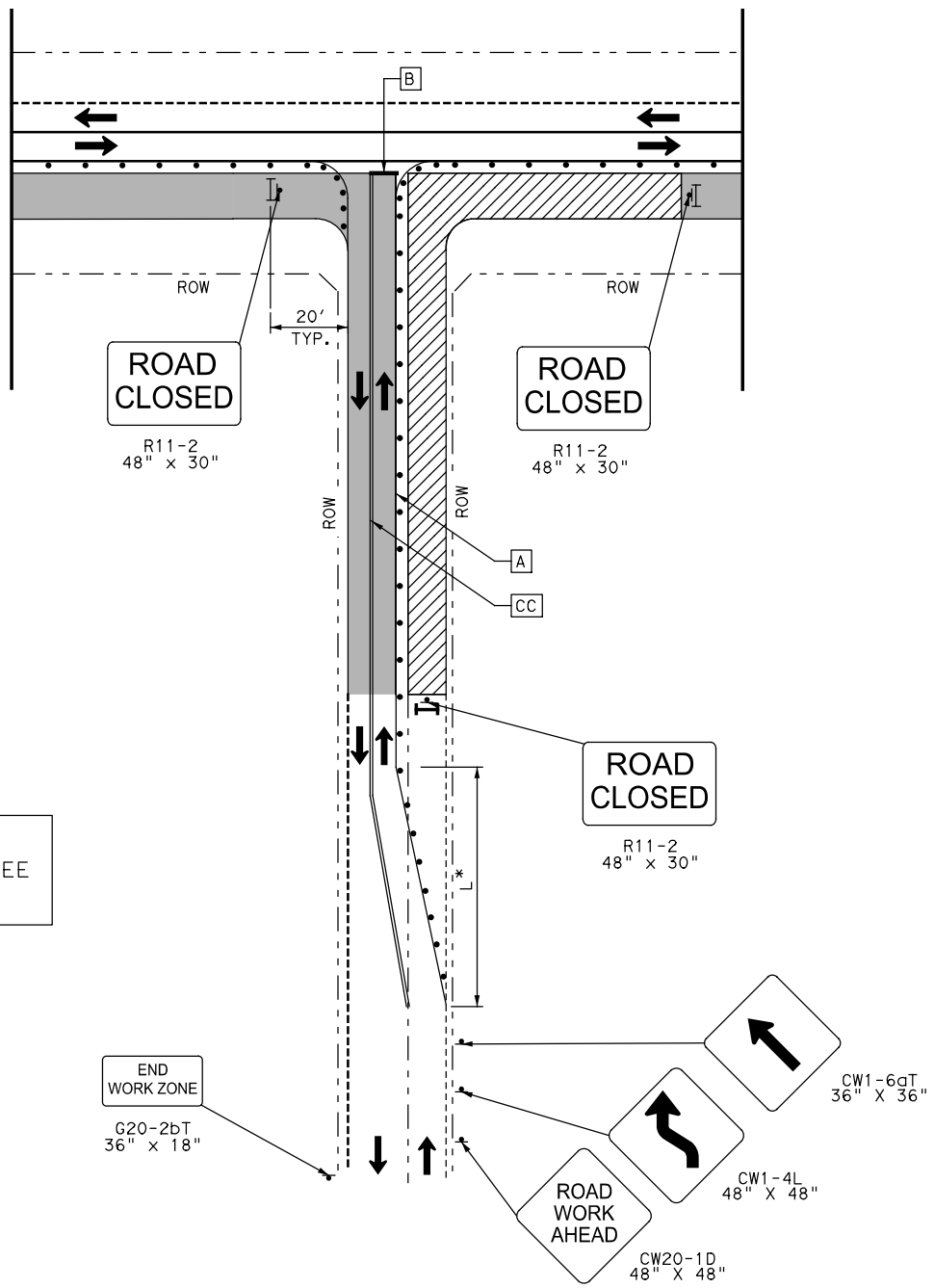


* FOR TAPER LENGTH(S) & CHANNELIZING DEVICE SPACING, SEE TCP (2-4)-18 STANDARD DRAWING.



STEP 1

* 10 FT. MIN.
 12 FT. DESIRABLE IF SPACE AVAILABLE.



STEP 2

* 10 FT. MIN.
 12 FT. DESIRABLE IF SPACE AVAILABLE.

LEGEND

- CONSTRUCTION PHASE
- COMPLETED PHASE
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- CHANNELIZING DEVICE
- VERTICAL PANEL
- CONSTRUCTION SIGN
- TYPE III BARRICADE
- TRAILER MOUNTED FLASHING ARROW BOARD
- WK ZN PAV MRK NON-REMOV (W) 4" (SLD)
- WK ZN PAV MRK NON-REMOV (W) 24" (SLD)
- WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)
- WK ZN PAV MRK NON-REMOV DBL (Y) 4" (SLD)

- NOTES**
- REFERENCE STANDARDS BC (1) THRU (12) AND TCP STANDARDS FOR LENGTHS, SIGN SPACING AND MORE INFORMATION.
 - ELIMINATE ALL PAVEMENT MARKING AND SIGNS THAT ARE IN CONFLICT WITH TRAFFIC MOVEMENTS.
 - CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES. CONSTRUCT PAVEMENT ALONG DRIVEWAYS IN CONJUNCTION WITH WORK PROGRESS.
 - SEE SIDE STREET TYPICAL DETOUR LAYOUT FOR ADDITIONAL INFORMATION.
 - CONTRACTOR TO USE OPPOSING TRAFFIC LANE DIVIDERS (OTLD) AT EVERY 5TH VERTICAL PANEL.

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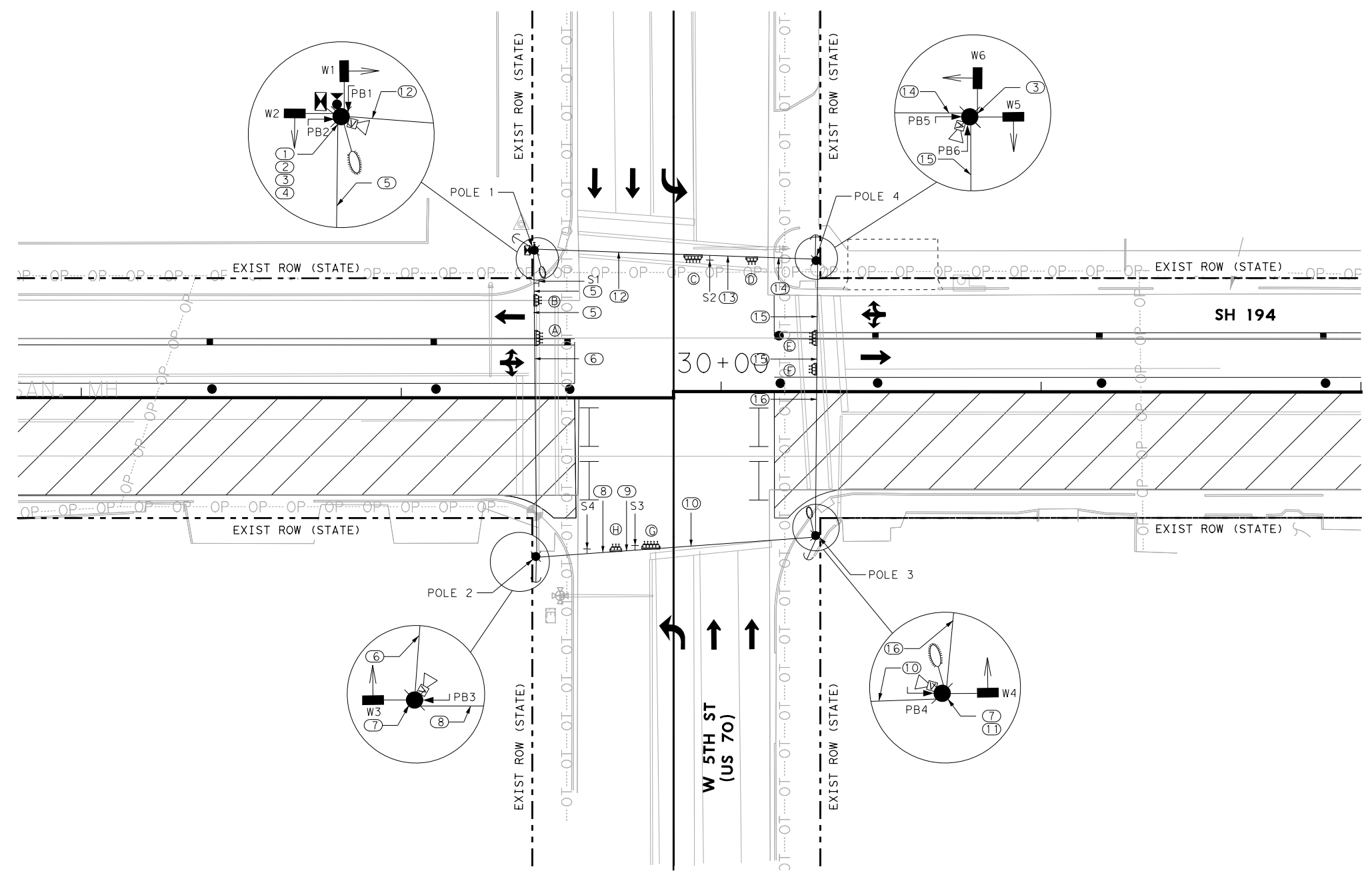
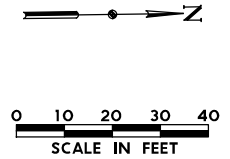
SH 194 FROM FM 3466 TO IH 27

TRAFFIC CONTROL PLAN
 TWO-WAY ROADWAY
 INTERSECTION PHASING

SCALE: N. T. S. SHEET 1 OF 1

FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	65
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.plt
 USER: Arabinson DATE: 7/29/2024 TIME: 8:11:19 PM
 FILE: SH194_Temp Signal_I-5TH_P1S1.dgn

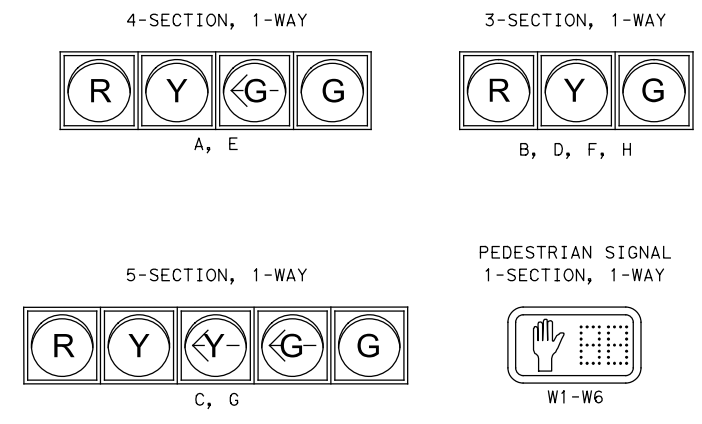


LEGEND

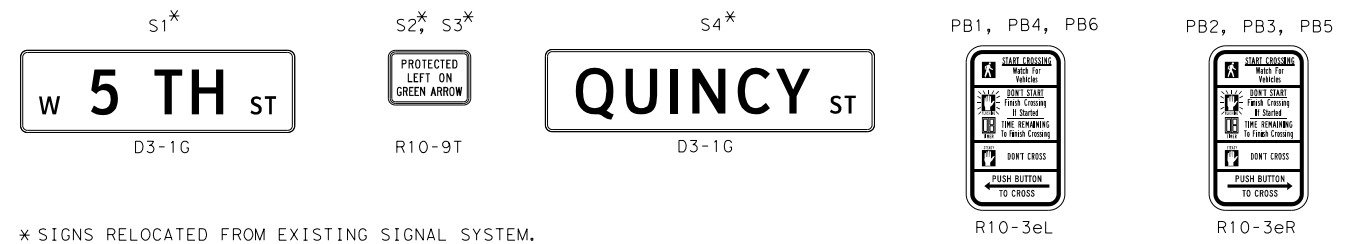
- ← DIRECTION OF TRAFFIC
- COMPLETED PAVEMENT
- ▨ PERMANENT ROADWAY CONSTRUCTION THIS PHASE
- ▤ TEMPORARY PAVEMENT
- EXIST MAST ARM
- EXIST SIGNAL CONTROLLER
- PROP GUY WIRE
- PROP TEMP SERVICE METER
- PROP TEMP TIMBER POLE
- PROP TEMP POLE MOUNTED SIGNAL CONTROLLER
- PROP TEMP SIGNAL HEAD
- ⊥ RELOCATED EXISTING SIGN
- ◻ PROP TEMP VIVDS CAMERA
- ◻ PROP TEMP LUMINAIRE W/ ARM
- ◻ PROP TEMP PEDESTRIAN SIGNAL HEAD
- ◻ PROP TEMP PEDESTRIAN PUSH BUTTON
- Ⓜ PROP RUN NUMBER

NOTE:
 REFER TO SHEET 3 FOR RUNS SCHEDULE AND NOTES.

PROPOSED SIGNAL HEADS



PROPOSED SIGNS



* SIGNS RELOCATED FROM EXISTING SIGNAL SYSTEM.

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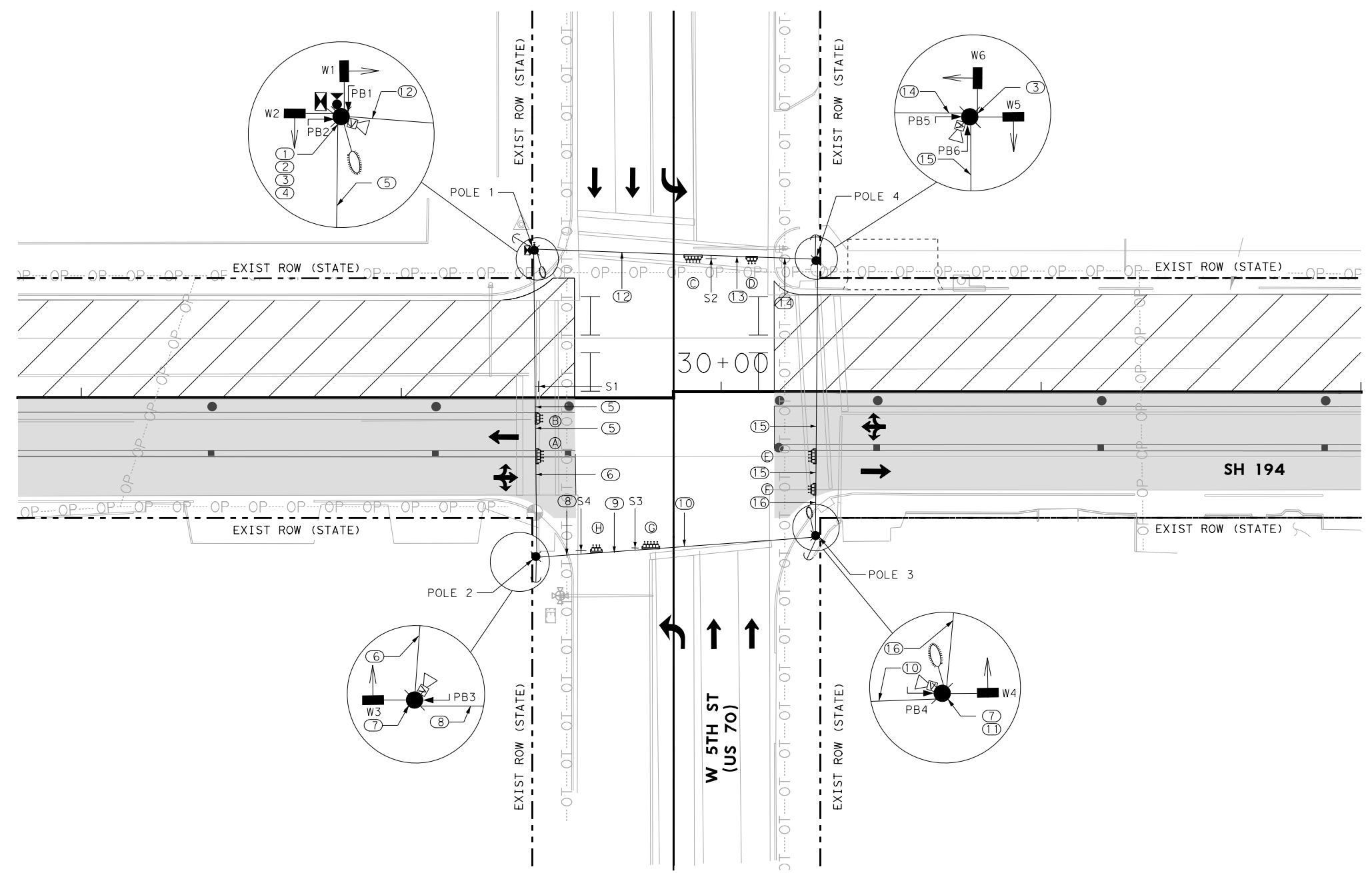
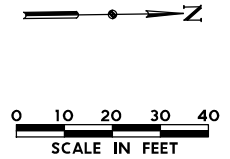
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SH 194 FROM FM 3466 TO IH 27

TEMPORARY SIGNAL LAYOUTS
 SH 194 AT W 5TH ST/ US 70
 PHASE 1 STEP 1

SCALE: 1"=40'		SHEET 1 OF 3	
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET	HIGHWAY NO. SH 194	
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 66
CONTROL 0439	SECTION 05	JOB 026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Arabinson
 DATE: 7/29/2024
 TIME: 8:11:25 PM
 FILE: SH194_Temp Signal_2-5TH_P1S2.dgn

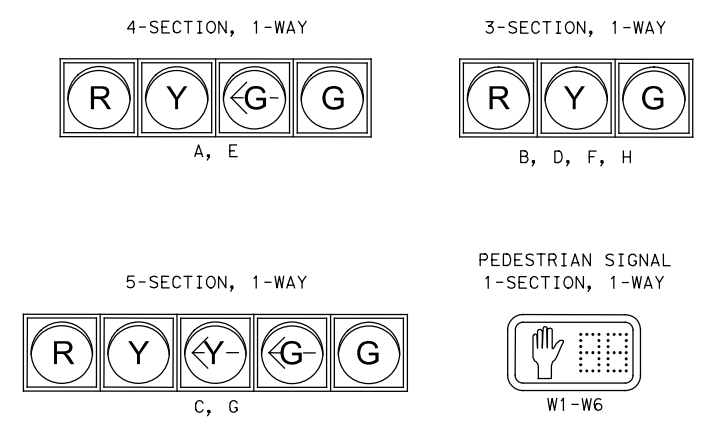


LEGEND

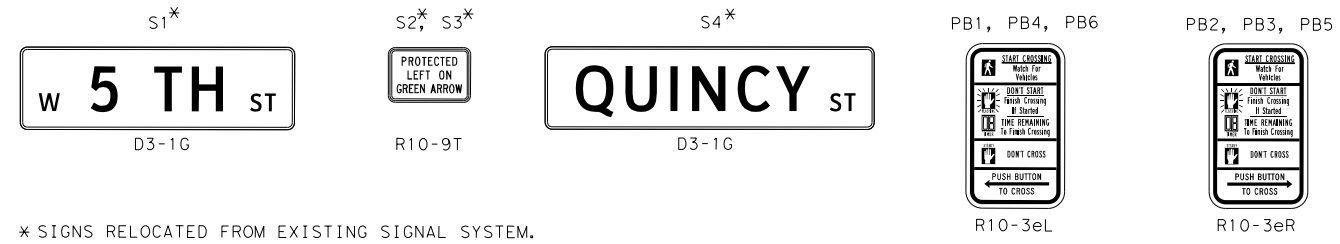
- DIRECTION OF TRAFFIC
- COMPLETED PAVEMENT
- PERMANENT ROADWAY CONSTRUCTION THIS PHASE
- TEMPORARY PAVEMENT
- EXIST MAST ARM
- EXIST SIGNAL CONTROLLER
- PROP GUY WIRE
- PROP TEMP SERVICE METER
- PROP TEMP TIMBER POLE
- PROP TEMP POLE MOUNTED SIGNAL CONTROLLER
- PROP TEMP SIGNAL HEAD
- RELOCATED EXISTING SIGN
- PROP TEMP VIVDS CAMERA
- PROP TEMP LUMINAIRE W/ ARM
- PROP TEMP PEDESTRIAN SIGNAL HEAD
- PROP TEMP PEDESTRIAN PUSH BUTTON
- PROP RUN NUMBER

NOTE:
REFER TO SHEET 3 FOR RUNS SCHEDULE AND NOTES.

PROPOSED SIGNAL HEADS



PROPOSED SIGNS



* SIGNS RELOCATED FROM EXISTING SIGNAL SYSTEM.

Zahidul Q. Siddique
7/29/2024

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infraTECH
Engineers & Innovators, LLC
TBPE REGISTRATION NO. F-18368

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SH 194 FROM FM 3466 TO IH 27

TEMPORARY SIGNAL LAYOUTS
SH 194 AT W 5TH ST/ US 70
PHASE 1 STEP 2

SCALE: 1"=40'		SHEET 2 OF 3	
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET	HIGHWAY NO. SH 194	
STATE: TEXAS	DISTRICT: LBB	COUNTY: HALE	SHEET NO. 67
CONTROL: 0439	SECTION: 05	JOB: 026	

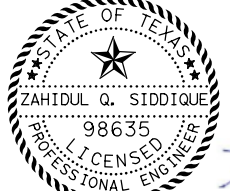
CABLE TYPE	WIRE	CONDUIT/SPAN WIRE RUN															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
POWER	#4 XHHW	2															
GROUND	#4 BARE	1															
	#6 BARE		1	1	1				1				1				
VEHICLE SIGNAL	#12/12C		6			3	2		2	1			3	2	1	1	
PED PUSH BUTTON	#12/2C		4	2		2	2	1	1	1	1		2	2	2		
PED SIGNAL	#12/4C		4	2		2	2	1	1	1	1		2	2	2		
VIVDS	VIVDS POWER & COAX		3	1		2	2	1	1	1	1		1	1	1		
ILLUMINATION	TRAY #12/4C				2	1	1	1	1	1	1						
CONDUIT	2" RMC	1	1	1	1				1				1				
SPAN WIRE	WIRE STRAND					1	1	1	1	1	1		1	1	1	1	1

POLE CHART	
POLE #	DESCRIPTION
POLE 1	40' TIMBER POLE W/ POLE MOUNTED CONTROLLER, LUMINAIRE, AND VIVDS
POLE 2	40' TIMBER POLE W/ VIVDS
POLE 3	40' TIMBER POLE W/ LUMINAIRE AND VIVDS
POLE 4	40' TIMBER POLE W/ VIVDS

TEMPORARY SIGNAL NOTES:


- INSTALL 40' TIMBER POLES WITH ANCHORS.
- INSTALL SPAN WIRE WITH SIGNAL HEADS AND PROVIDE ENOUGH SLACK AT EACH SIGNAL.
- INSTALL TEMPORARY TRAFFIC SIGNAL AT INTERSECTION PRIOR TO BEGINNING ANY WORK. REMOVE ALL EXISTING SIGNAL APPURTENANCES AND MAST ARM AFTER THE INSTALLATION OF TEMPORARY SIGNAL. RELOCATE EXISTING SIGNS AS SHOWN.
- TEMPORARY SIGNAL FOR SH 194 WILL RUN AS SPLIT PHASES DURING CONSTRUCTION.
- ADJUST SIGNAL HEADS, VIDEO CAMERA & DETECTION ZONES DURING DIFFERENT PHASES OF CONSTRUCTION AS DIRECTED BY THE FIELD ENGINEER. THE COST TO RELOCATE SIGNAL HEADS DURING DIFFERENT PHASES AND STEPS WILL BE INCIDENTAL TO THE PAY ITEM NO. 0681 6001 (TEMP TRAF SIGNALS).
- REUSE EXISTING ELECTRICAL SERVICE, GROUND BOX AND CONDUITS WHERE POSSIBLE.
- EXISTING PAVEMENT MARKING TO BE USED IF NOT MENTIONED. SEE TRAFFIC CONTROL PLAN FOR TEMPORARY PAVEMENT MARKING LAYOUTS.
- COIL SUFFICIENT SIGNAL AND VIVDS CABLES TO ACCOMMODATE SIGNAL HEAD ADJUSTMENTS DURING THE VARIOUS PHASES OF CONSTRUCTION.
- LOCATIONS SHOWN FOR ALL TEMPORARY SIGNAL APPURTENANCES ARE SUBJECT TO ADJUSTMENT DUE TO FIELD CONDITIONS WITH THE APPROVAL OF THE FIELD ENGINEER.
- LOCATIONS OF ALL EXISTING UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES PRIOR TO COMMENCING WORK. CONTRACTOR SHOULD CONTACT ALL PRIVATE AND PUBLIC UTILITIES FOR LOCATION OF UNDERGROUND FACILITIES AT LEAST 48 HOURS PRIOR TO ANY DRILLING, BORING, TRENCHING, OR EXCAVATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES CAUSED BY CONTRACTOR'S FAILURE TO LOCATE AND PRESERVE ALL UTILITIES.

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcfgr PENTABLE: SH194 TempSignal - Copy.tbl
 USER: Robinson DATE: 2/24/2023 TIME: 11:43:44 AM SCALE: 1/40
 FILE: SH194_Temp Signal_3_5TH_SCHEDULE.dgn




ZAHIDUL Q. SIDDIQUE
98635
PROFESSIONAL ENGINEER
2/24/2023

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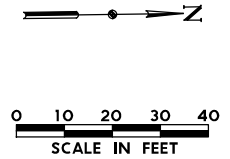
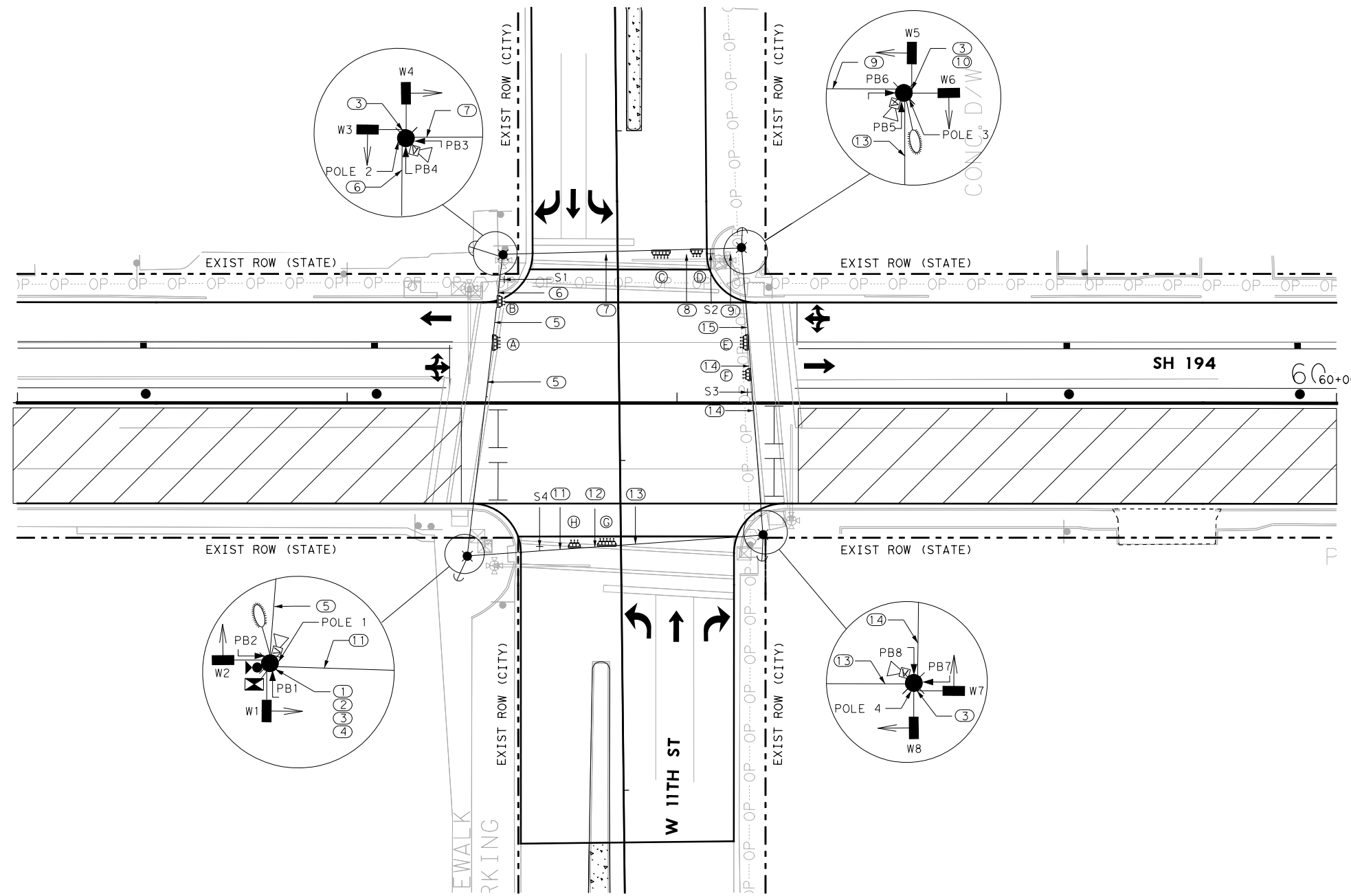
SH 194 FROM FM 3466 TO IH 27

TEMPORARY SIGNAL LAYOUTS
SH 194 AT W 5TH ST/ US 70
SIGNAL LAYOUT DETAILS

SHEET 3 OF 3		
FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026

68

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Arabinson DATE: 7/29/2024 TIME: 8:11:35 PM
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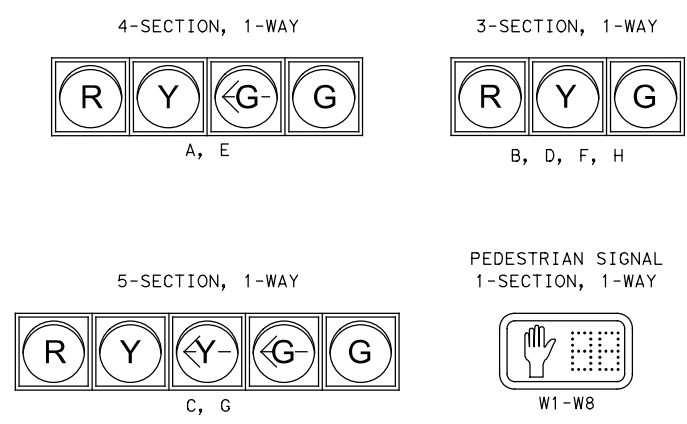


LEGEND

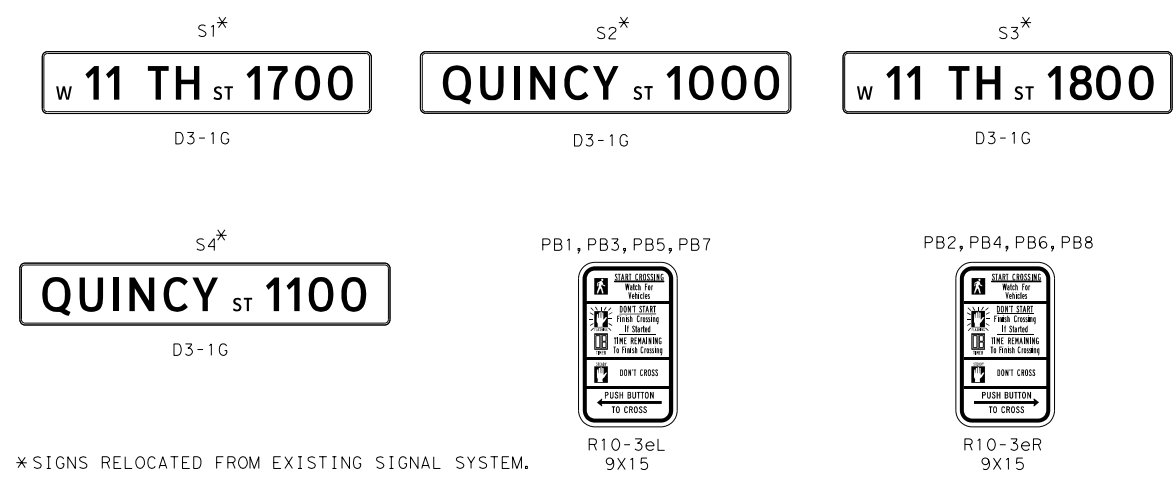
- ← DIRECTION OF TRAFFIC
- ▨ COMPLETED PAVEMENT
- ▨ PERMANENT ROADWAY CONSTRUCTION THIS PHASE
- ▨ TEMPORARY PAVEMENT
- EXIST MAST ARM
- EXIST SIGNAL CONTROLLER
- PROP GUY WIRE
- ⊙ PROP TEMP SERVICE METER
- ⊙ PROP TEMP TIMBER POLE
- ⊙ PROP TEMP POLE MOUNTED SIGNAL CONTROLLER
- ⊙ PROP TEMP SIGNAL HEAD
- ⊙ RELOCATED EXISTING SIGN
- ⊙ PROP TEMP VIVDS CAMERA
- ⊙ PROP TEMP LUMINAIRE W/ ARM
- ⊙ PROP TEMP PEDESTRIAN SIGNAL HEAD
- ⊙ PROP TEMP PEDESTRIAN PUSH BUTTON
- ⊙ PROP RUN NUMBER

NOTE:
 REFER TO SHEET 5 FOR RUNS SCHEDULE AND NOTES.

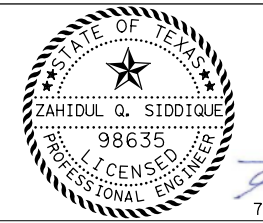
PROPOSED SIGNAL HEADS



PROPOSED SIGNS



*SIGNS RELOCATED FROM EXISTING SIGNAL SYSTEM.



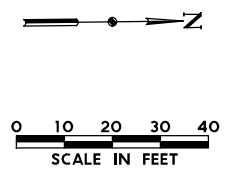
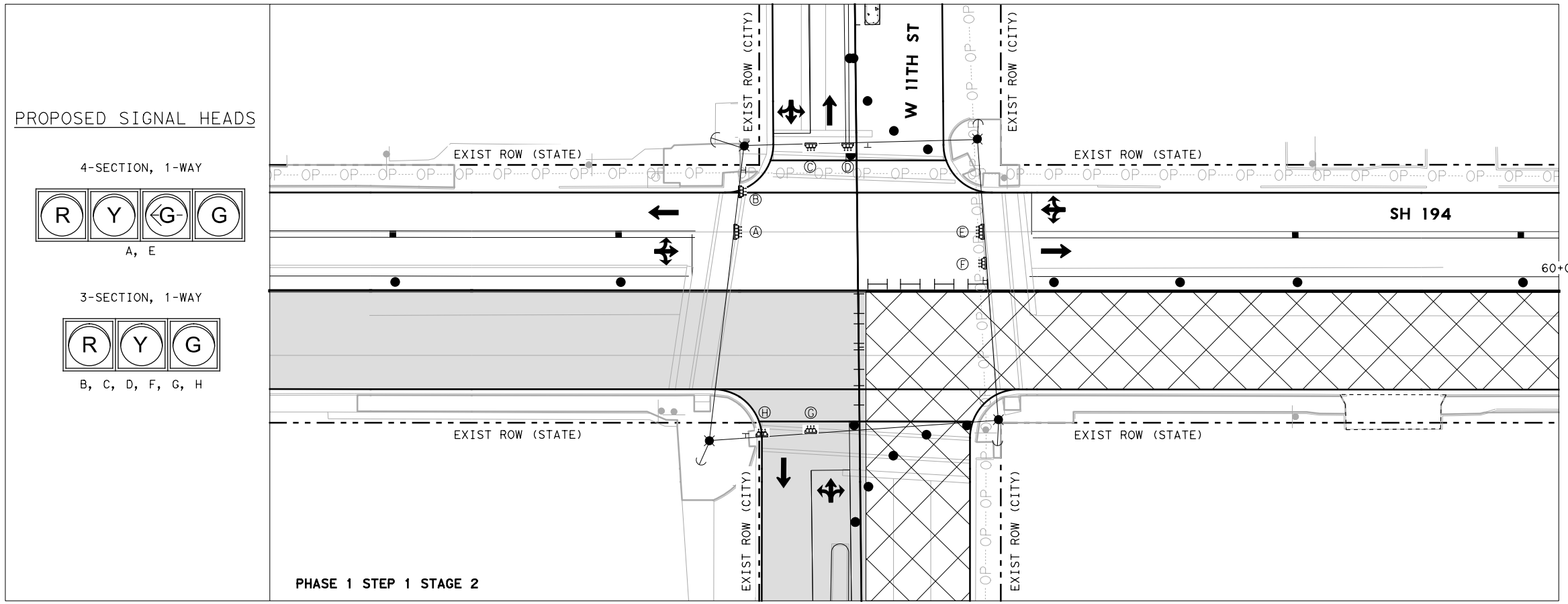
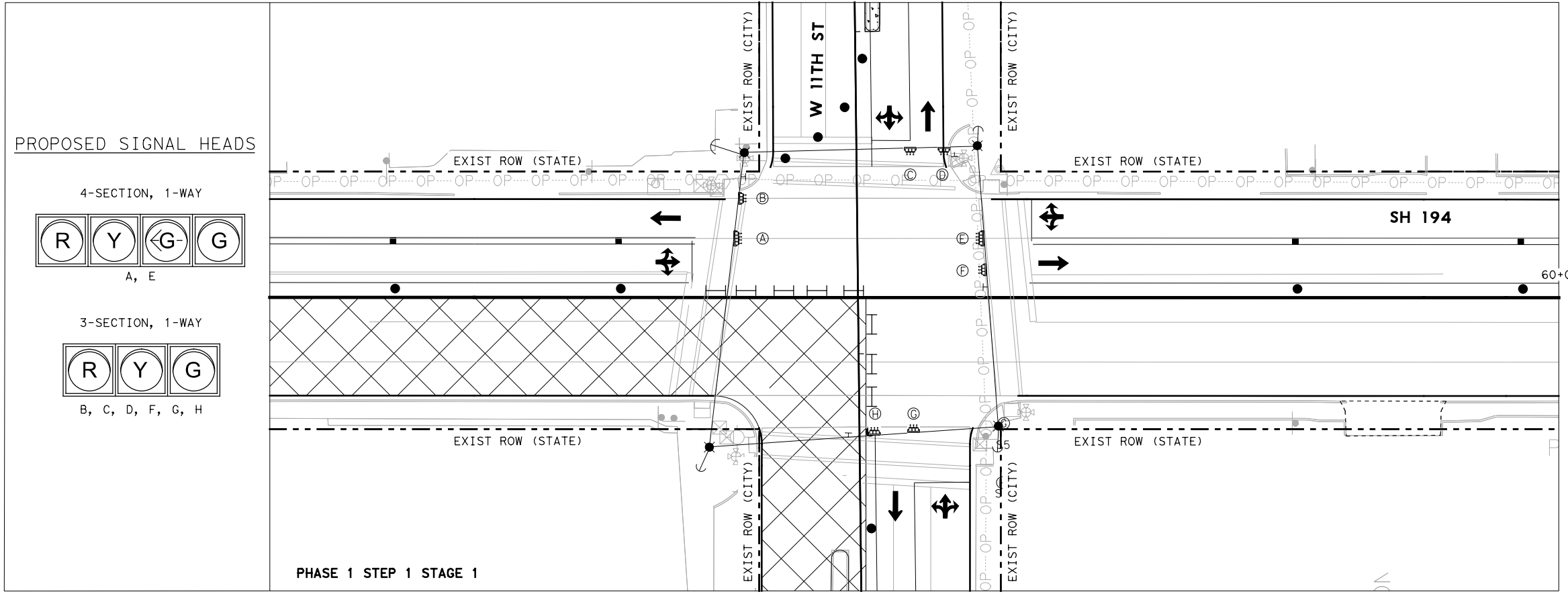
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SH 194 FROM FM 3466 TO IH 27
 TEMPORARY SIGNAL LAYOUTS
 SH 194 AT W 11TH ST
 PHASE 1 STEP 1

SCALE: 1"=40'		SHEET 1 OF 5	
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET		HIGHWAY NO. SH 194
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 69
CONTROL 0439	SECTION 05	JOB 026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.plt
 USER: Robinson DATE: 7/29/2024 TIME: 8:11:40 PM
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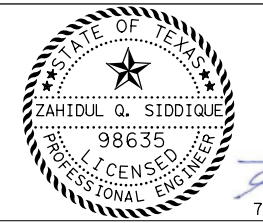


LEGEND

- ← DIRECTION OF TRAFFIC
- COMPLETED PAVEMENT
- ▨ CONSTRUCTION STEP
- ▤ TEMPORARY PAVEMENT
- ⊕ CONSTRUCT INTERSECTION STAGE 1
- ⊖ CONSTRUCT INTERSECTION STAGE 2
- ⊗ EXIST MAST ARM
- ⊠ EXIST SIGNAL CONTROLLER
- ⊡ PROP GUY WIRE
- PROP TEMP TIMBER POLE
- ⊞ PROP TEMP SIGNAL HEAD
- ⊣ RELOCATED EXISTING SIGN

NOTES:

1. REFER TO SHEET 1 FOR TEMPORARY SIGNAL DETAILS.
2. REFER TO SHEET 5 FOR RUNS SCHEDULE AND NOTES.
3. CHANGE/COVER SIGNAL HEADS AS SHOWN.



NO.	DATE	REVISION	APPROVED

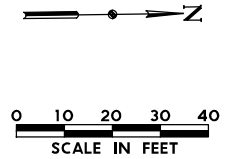
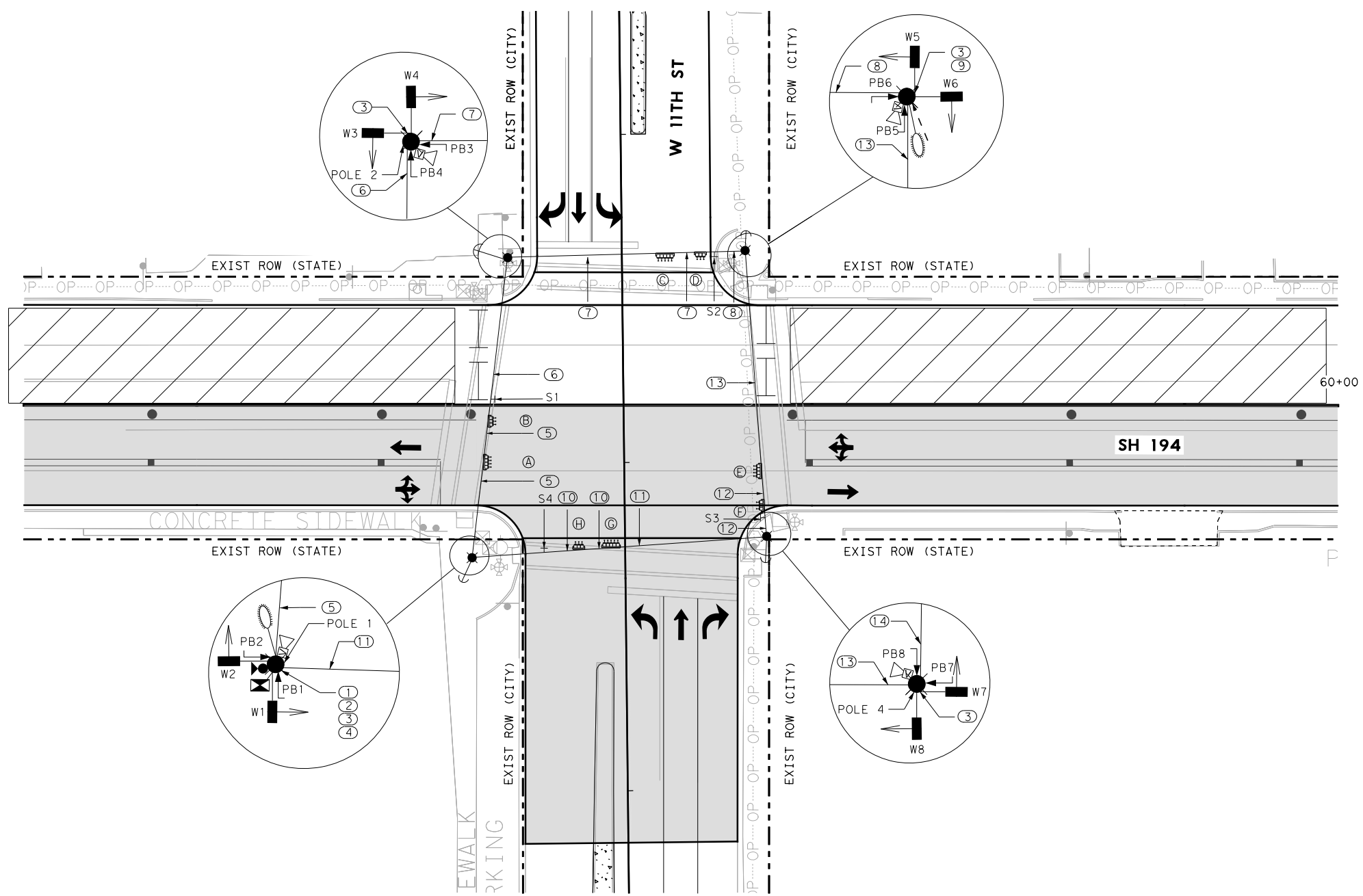


SH 194 FROM FM 3466 TO IH 27

TEMPORARY SIGNAL LAYOUTS
 SH 194 AT W 11TH ST
 PHASE 1 STEP 1 INTERSECTION DETAILS

SCALE: 1"=40'			SHEET 2 OF 5
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET		HIGHWAY NO. SH 194
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 70
CONTROL 0439	SECTION 05	JOB 026	

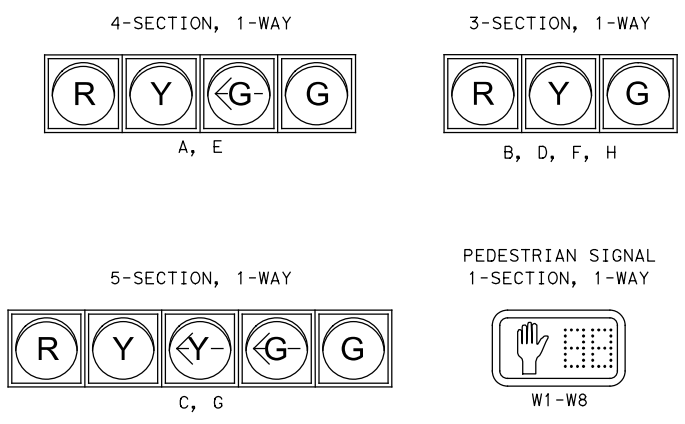
PLOT DRIVER: TXDOT_PDF_BW_LEVELS.plt
 USER: Robinson DATE: 7/29/2024 TIME: 8:11:46 PM
 FILE: SH194_Temp Signal_8_11TH_P1S2.dgn



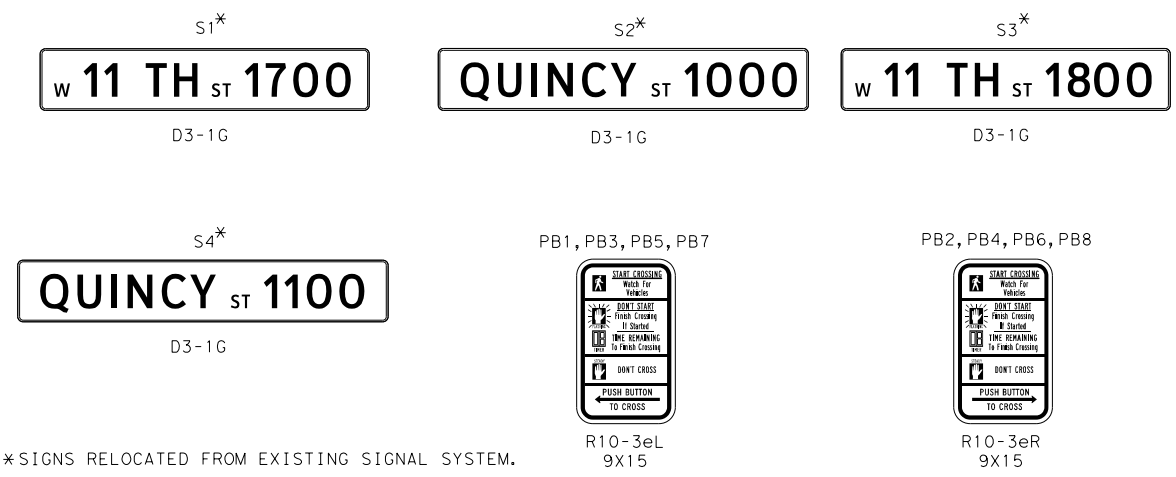
- LEGEND**
- ← DIRECTION OF TRAFFIC
 - ▨ COMPLETED PAVEMENT
 - ▨ PERMANENT ROADWAY CONSTRUCTION THIS PHASE
 - ▨ TEMPORARY PAVEMENT
 - EXIST MAST ARM
 - ☐ EXIST SIGNAL CONTROLLER
 - PROP GUY WIRE
 - ⊙ PROP TEMP SERVICE METER
 - ⊙ PROP TEMP TIMBER POLE
 - ☐ PROP TEMP POLE MOUNTED SIGNAL CONTROLLER
 - ☐ PROP TEMP SIGNAL HEAD
 - ⊕ RELOCATED EXISTING SIGN
 - ☐ PROP TEMP VIVDS CAMERA
 - ☐ PROP TEMP LUMINAIRE W/ ARM
 - ☐ PROP TEMP PEDESTRIAN SIGNAL HEAD
 - ☐ PROP TEMP PEDESTRIAN PUSH BUTTON
 - ⊙# PROP RUN NUMBER

NOTE:
 REFER TO SHEET 5 FOR RUNS SCHEDULE AND NOTES.

PROPOSED SIGNAL HEADS



PROPOSED SIGNS



*SIGNS RELOCATED FROM EXISTING SIGNAL SYSTEM.

Zahidul Q. Siddique
 98635
 LICENSED PROFESSIONAL ENGINEER
 7/29/2024

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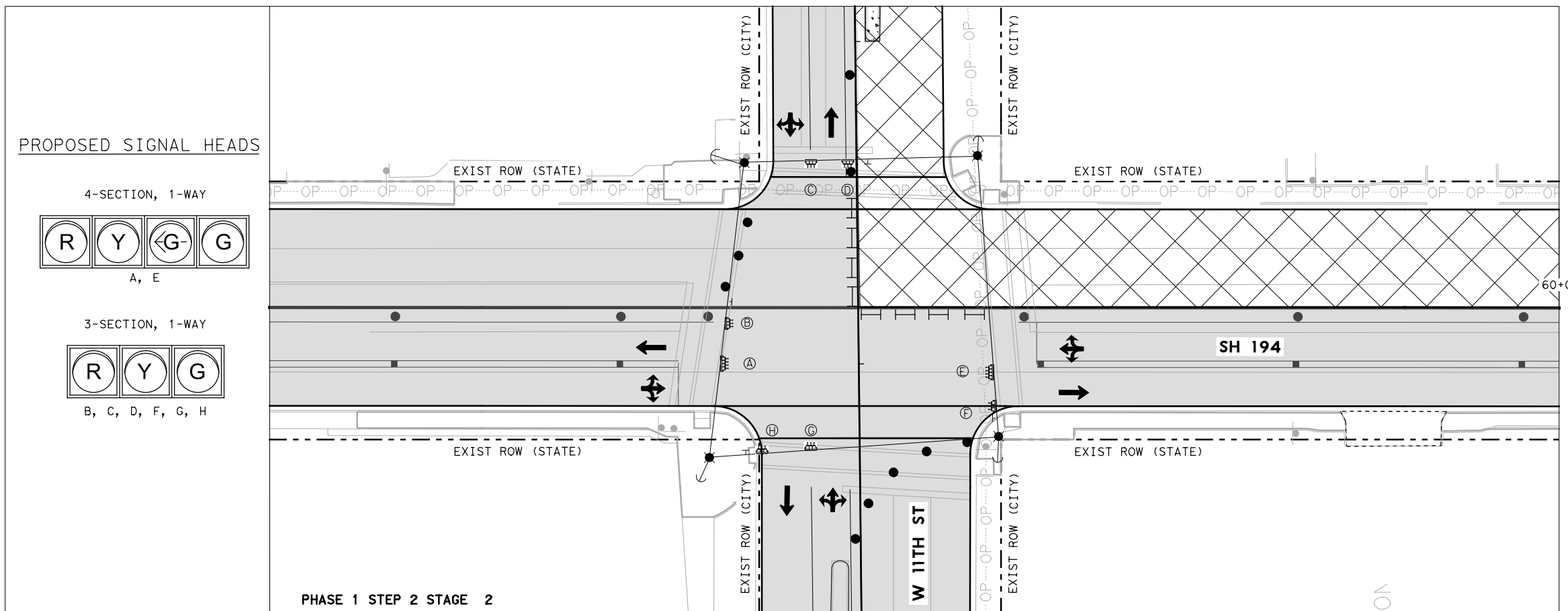
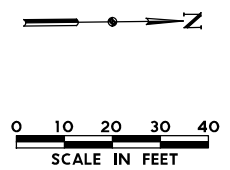
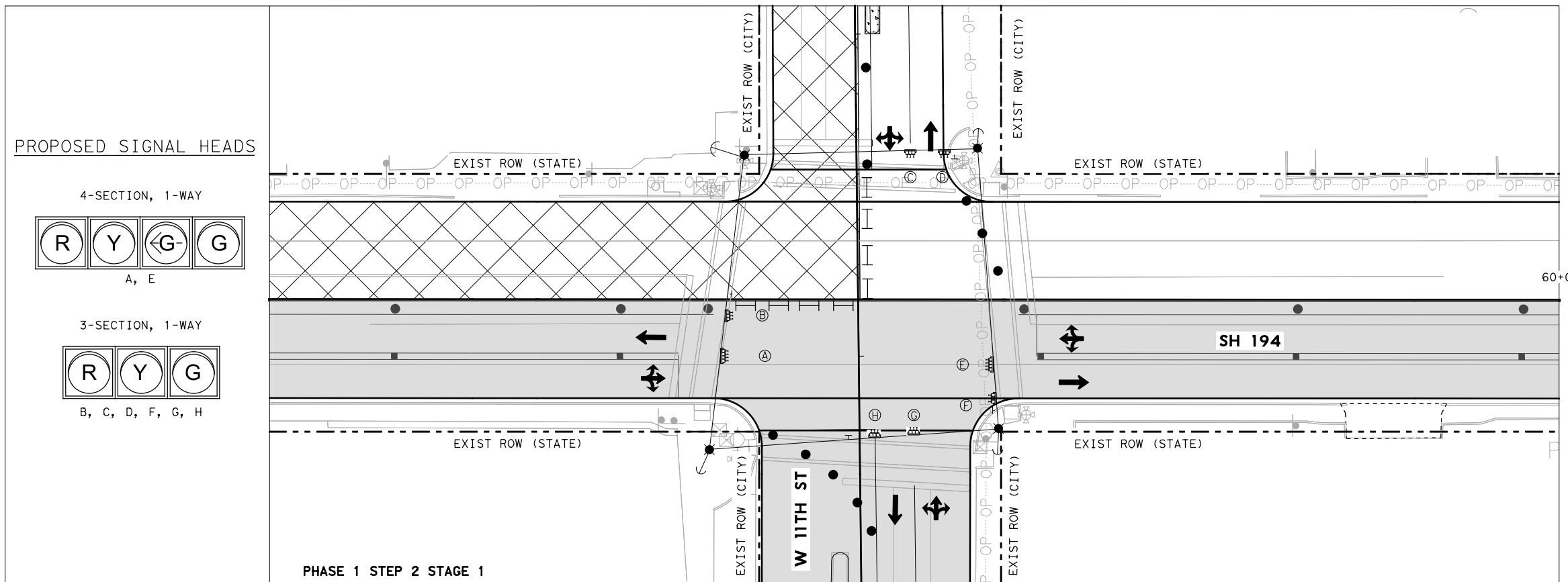
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SH 194 FROM FM 3466 TO IH 27

TEMPORARY SIGNAL LAYOUTS
 SH 194 AT W 11TH ST
 PHASE 1 STEP 2

SCALE: 1"=40'		SHEET 3 OF 5	
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET	HIGHWAY NO. SH 194	
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 71
CONTROL 0439	SECTION 05	JOB 026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Arabinson DATE: 7/29/2024 TIME: 8:15:51 PM
 FILE: SH194_Temp_Signal_9_JITH_PIS2_ID.dgn



- NOTES:**
- REFER TO SHEET 1 FOR TEMPORARY SIGNAL DETAILS.
 - REFER TO SHEET 5 FOR RUNS SCHEDULE AND NOTES.
 - CHANGE/COVER SIGNAL HEADS AS SHOWN.

NO.	DATE	REVISION	APPROVED

SH 194 FROM FM 3466 TO IH 27

TEMPORARY SIGNAL LAYOUTS
 SH 194 AT W 11TH ST
 PHASE 1 STEP 2 INTERSECTION DETAILS

SCALE: 1"=40' SHEET 4 OF 5

FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	72
CONTROL	SECTION	JOB	
0439	05	026	

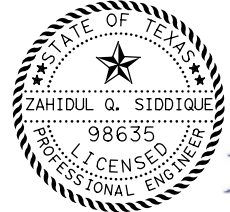
CABLE TYPE	WIRE	CONDUIT/SPAN WIRE RUN												
		1	2	3	4	5	6	7	8	9	10	11	12	13
POWER	#4 XHHW	2												
GROUND	#4 BARE	1												
	#6 BARE		1	1	1									
VEHICLE SIGNAL	#12/12C		4			2	1	1		1	2	1	1	
PED PUSH BUTTON	#12/2C		6	2		4	4	2	2		2	2		
PED SIGNAL	#12/4C		6	2		4	4	2	2		2	2		
VIVDS	VIVDS POWER & COAX		3	1		2	2	1	1		1	1		
ILLUMINATION	TRAY #12/4C				2	1	1	1	1	1				
CONDUIT	2" RMC	1	1	1	1					1				
SPAN WIRE	WIRE STRAND					1	1	1	1		1	1	1	1

POLE CHART	
POLE #	DESCRIPTION
POLE 1	40' TIMBER POLE W/ POLE MOUNTED CONTROLLER, LUMINAIRE, AND VIVDS
POLE 2	40' TIMBER POLE W/ VIVDS
POLE 3	40' TIMBER POLE W/ LUMINAIRE AND VIVDS
POLE 4	40' TIMBER POLE W/ VIVDS

TEMPORARY SIGNAL NOTES:


- INSTALL 40' TIMBER POLES WITH ANCHORS.
- INSTALL SPAN WIRE WITH SIGNAL HEADS AND PROVIDE ENOUGH SLACK AT EACH SIGNAL.
- INSTALL TEMPORARY TRAFFIC SIGNAL AT INTERSECTION PRIOR TO BEGINNING ANY WORK. REMOVE ALL EXISTING SIGNAL APPURTENANCES AND MAST ARM AFTER THE INSTALLATION OF TEMPORARY SIGNAL. RELOCATE EXISTING SIGNS AS SHOWN.
- TEMPORARY SIGNAL FOR SH 194 WILL RUN AS SPLIT PHASES DURING CONSTRUCTION.
- ADJUST SIGNAL HEADS, VIDEO CAMERA & DETECTION ZONES DURING DIFFERENT PHASES OF CONSTRUCTION AS DIRECTED BY THE FIELD ENGINEER. THE COST TO RELOCATE SIGNAL HEADS DURING DIFFERENT PHASES AND STEPS WILL BE INCIDENTAL TO THE PAY ITEM NO. 0681 6001 (TEMP TRAF SIGNALS).
- REUSE EXISTING ELECTRICAL SERVICE, GROUND BOX AND CONDUITS WHERE POSSIBLE.
- EXISTING PAVEMENT MARKING TO BE USED IF NOT MENTIONED. SEE TRAFFIC CONTROL PLAN FOR TEMPORARY PAVEMENT MARKING LAYOUTS.
- COIL SUFFICIENT SIGNAL AND VIVDS CABLES TO ACCOMMODATE SIGNAL HEAD ADJUSTMENTS DURING THE VARIOUS PHASES OF CONSTRUCTION.
- LOCATIONS SHOWN FOR ALL TEMPORARY SIGNAL APPURTENANCES ARE SUBJECT TO ADJUSTMENT DUE TO FIELD CONDITIONS WITH THE APPROVAL OF THE FIELD ENGINEER.
- LOCATIONS OF ALL EXISTING UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES PRIOR TO COMMENCING WORK. CONTRACTOR SHOULD CONTACT ALL PRIVATE AND PUBLIC UTILITIES FOR LOCATION OF UNDERGROUND FACILITIES AT LEAST 48 HOURS PRIOR TO ANY DRILLING, BORING, TRENCHING, OR EXCAVATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES CAUSED BY CONTRACTOR'S FAILURE TO LOCATE AND PRESERVE ALL UTILITIES.

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: SH194 TempSignal - Copy.tbl
 USER: Robinson DATE: 2/24/2023 TIME: 11:44:22 AM SCALE: 1:40
 FILE: SH194_Temp Signal_JO_IITH_SCHDULE.dgn




Zahidul Q. Siddique
2/24/2023

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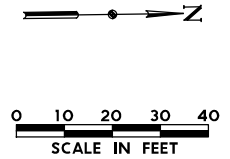
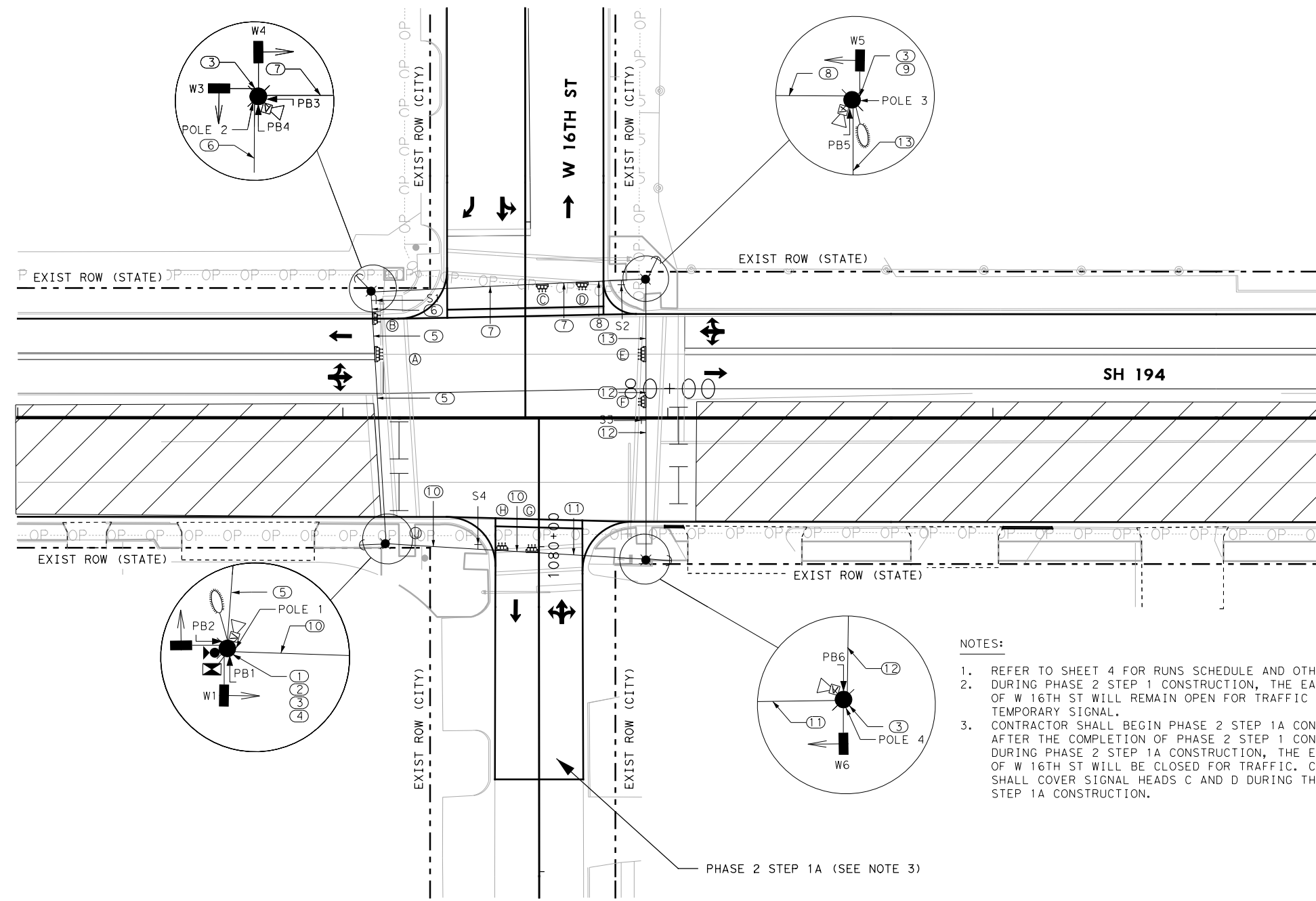
SH 194 FROM FM 3466 TO IH 27

TEMPORARY SIGNAL LAYOUTS
SH 194 AT W 11TH ST
SIGNAL LAYOUT DETAILS

SHEET 5 OF 5		
FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026

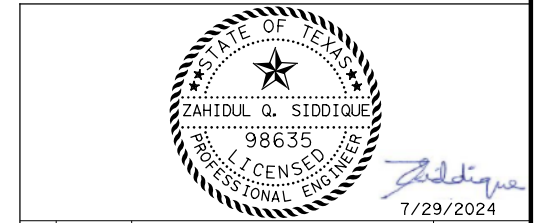
73

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 8:11:59 PM
 FILE: SH194_Temp Signal_IL16TH_P2S1.dgn



- LEGEND**
- ← DIRECTION OF TRAFFIC
 - COMPLETED PAVEMENT
 - ▨ PERMANENT ROADWAY CONSTRUCTION THIS PHASE
 - ▩ CONSTRUCTION STEP
 - TEMPORARY PAVEMENT
 - EXIST MAST ARM
 - ⊞ EXIST SIGNAL CONTROLLER
 - PROP GUY WIRE
 - ⊙ PROP TEMP SERVICE METER
 - ⊙ PROP TEMP TIMBER POLE
 - ⊞ PROP TEMP POLE MOUNTED SIGNAL CONTROLLER
 - ⊞ PROP TEMP SIGNAL HEAD
 - ⊞ RELOCATED EXISTING SIGNAL
 - ⊞ PROP TEMP VIVDS CAMERA
 - ⊞ PROP TEMP LUMINAIRE W/ ARM
 - ⊞ PROP TEMP PEDESTRIAN SIGNAL HEAD
 - ⊞ PROP TEMP PEDESTRIAN PUSH BUTTON
 - ⊞ PROP RUN NUMBER

- NOTES:**
- REFER TO SHEET 4 FOR RUNS SCHEDULE AND OTHER NOTES.
 - DURING PHASE 2 STEP 1 CONSTRUCTION, THE EAST SIDE OF W 16TH ST WILL REMAIN OPEN FOR TRAFFIC WITH TEMPORARY SIGNAL.
 - CONTRACTOR SHALL BEGIN PHASE 2 STEP 1A CONSTRUCTION AFTER THE COMPLETION OF PHASE 2 STEP 1 CONSTRUCTION. DURING PHASE 2 STEP 1A CONSTRUCTION, THE EAST SIDE OF W 16TH ST WILL BE CLOSED FOR TRAFFIC. CONTRACTOR SHALL COVER SIGNAL HEADS C AND D DURING THE PHASE 2 STEP 1A CONSTRUCTION.



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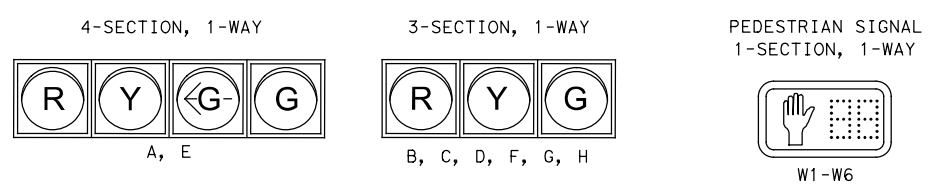


SH 194 FROM FM 3466 TO IH 27

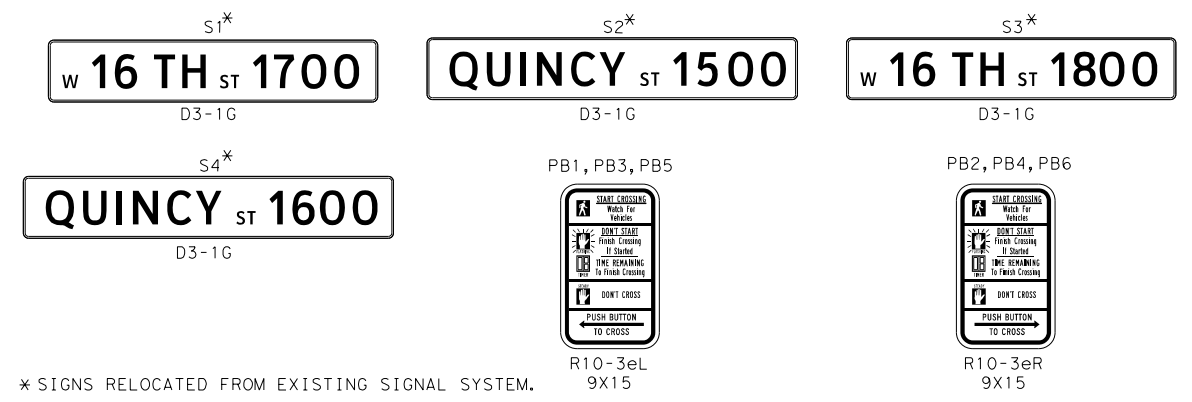
TEMPORARY SIGNAL LAYOUTS
 SH 194 AT W 16TH ST
 PHASE 2 STEP 1

SCALE: 1"=40'		SHEET 1 OF 4	
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET		HIGHWAY NO. SH 194
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 74
CONTROL 0439	SECTION 05	JOB 026	

PROPOSED SIGNAL HEADS

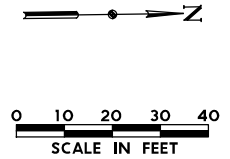
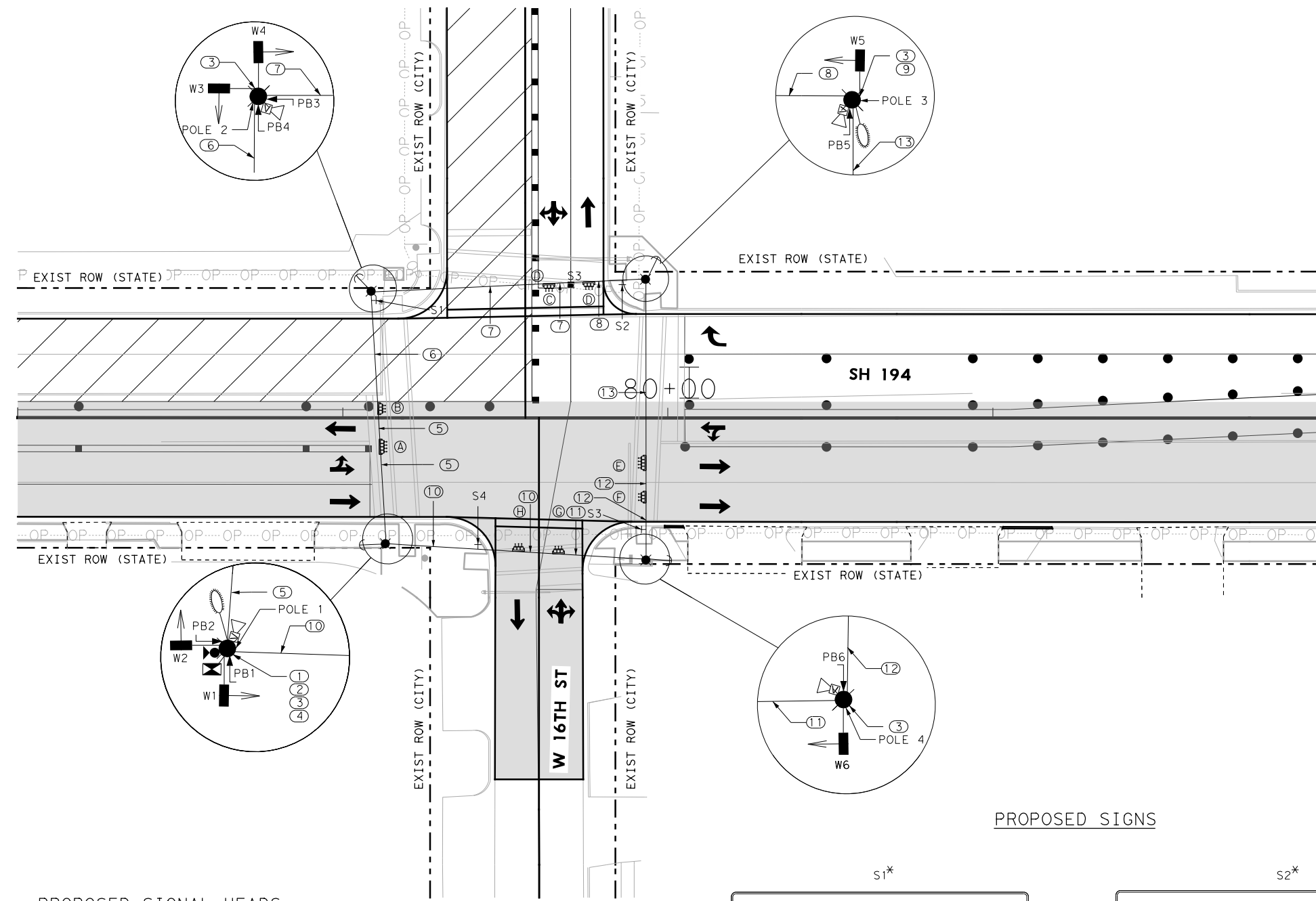


PROPOSED SIGNS



* SIGNS RELOCATED FROM EXISTING SIGNAL SYSTEM.

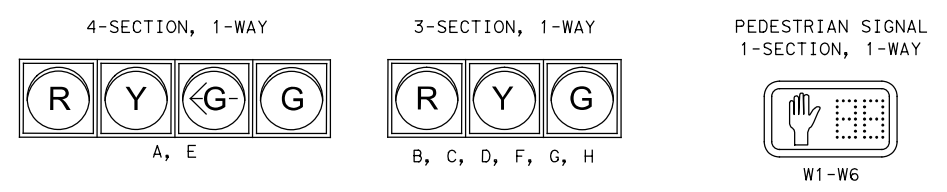
PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 8:20:03 PM
 FILE: SH194_Temp Signal_I2_16TH_P2S2.dgn



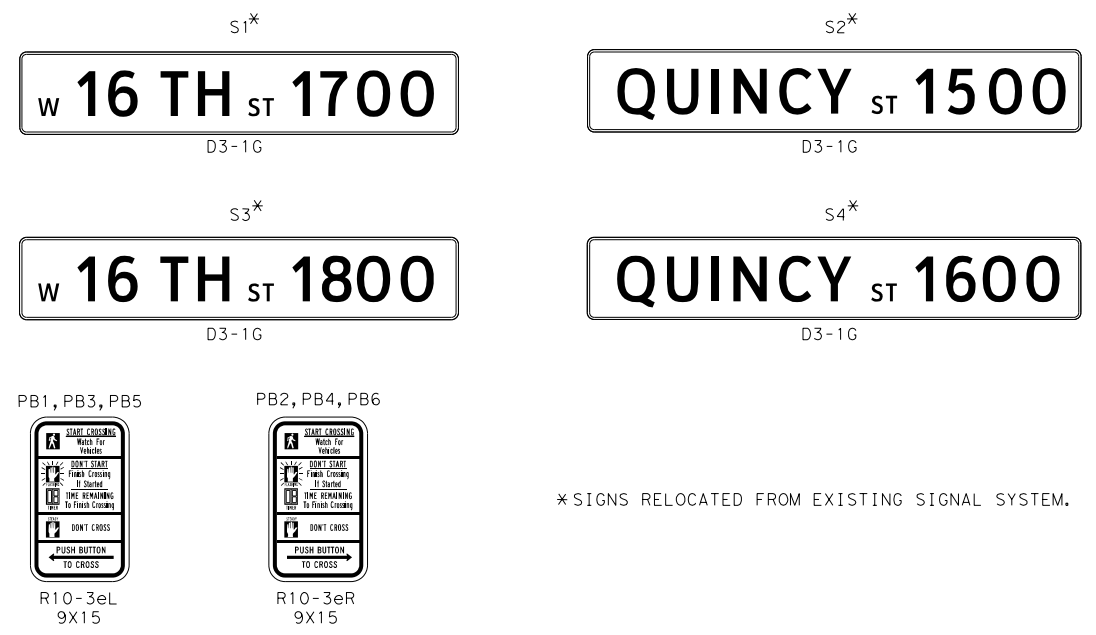
- LEGEND**
- ← DIRECTION OF TRAFFIC
 - ▨ COMPLETED PAVEMENT
 - ▨ PERMANENT ROADWAY CONSTRUCTION THIS PHASE
 - ▨ TEMPORARY PAVEMENT
 - EXIST MAST ARM
 - ☐ EXIST SIGNAL CONTROLLER
 - PROP GUY WIRE
 - ⊙ PROP TEMP SERVICE METER
 - ⊙ PROP TEMP TIMBER POLE
 - ☐ PROP TEMP POLE MOUNTED SIGNAL CONTROLLER
 - ☐ PROP TEMP SIGNAL HEAD
 - ☐ RELOCATED EXISTING SIGN
 - ☐ PROP TEMP VIVDS CAMERA
 - ☐ PROP TEMP LUMINAIRE W/ ARM
 - ☐ PROP TEMP PEDESTRIAN SIGNAL HEAD
 - ☐ PROP TEMP PEDESTRIAN PUSH BUTTON
 - ⊙# PROP RUN NUMBER

NOTE:
 REFER TO SHEET 4 FOR RUNS SCHEDULE AND NOTES.

PROPOSED SIGNAL HEADS



PROPOSED SIGNS



* SIGNS RELOCATED FROM EXISTING SIGNAL SYSTEM.

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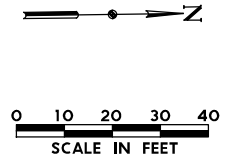
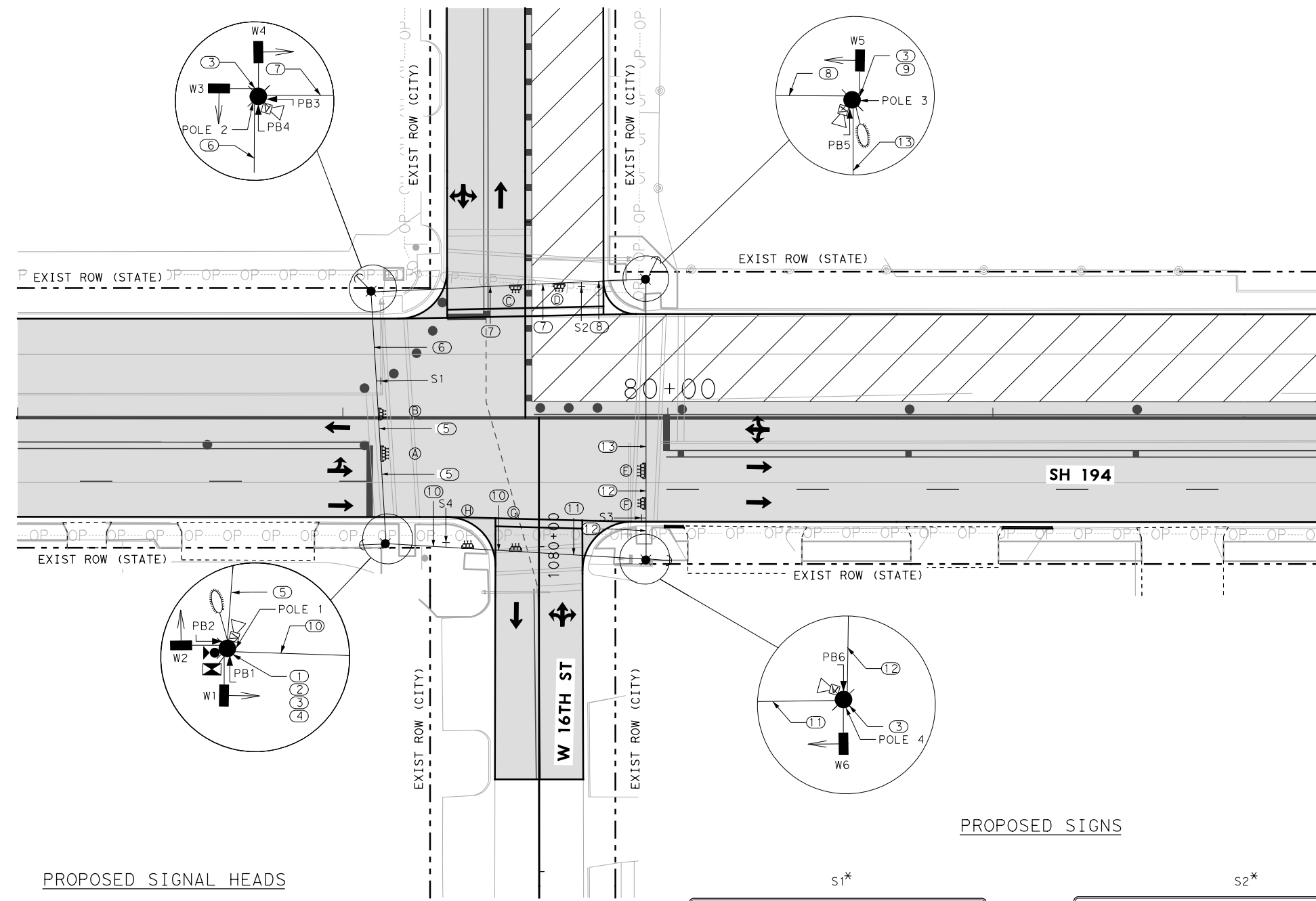
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SH 194 FROM FM 3466 TO IH 27

TEMPORARY SIGNAL LAYOUTS
 SH 194 AT W 16TH ST
 PHASE 2 STEP 2

SCALE: 1"=40'		SHEET 2 OF 4	
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET	HIGHWAY NO. SH 194	
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 75
CONTROL 0439	SECTION 05	JOB 026	

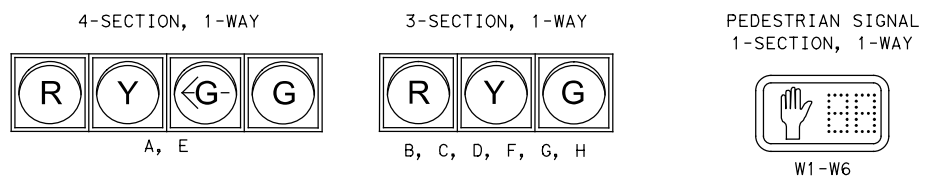
PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 8:20:07 PM
 FILE: SH194_Temp_Signal_13_16TH_P2S3.dgn



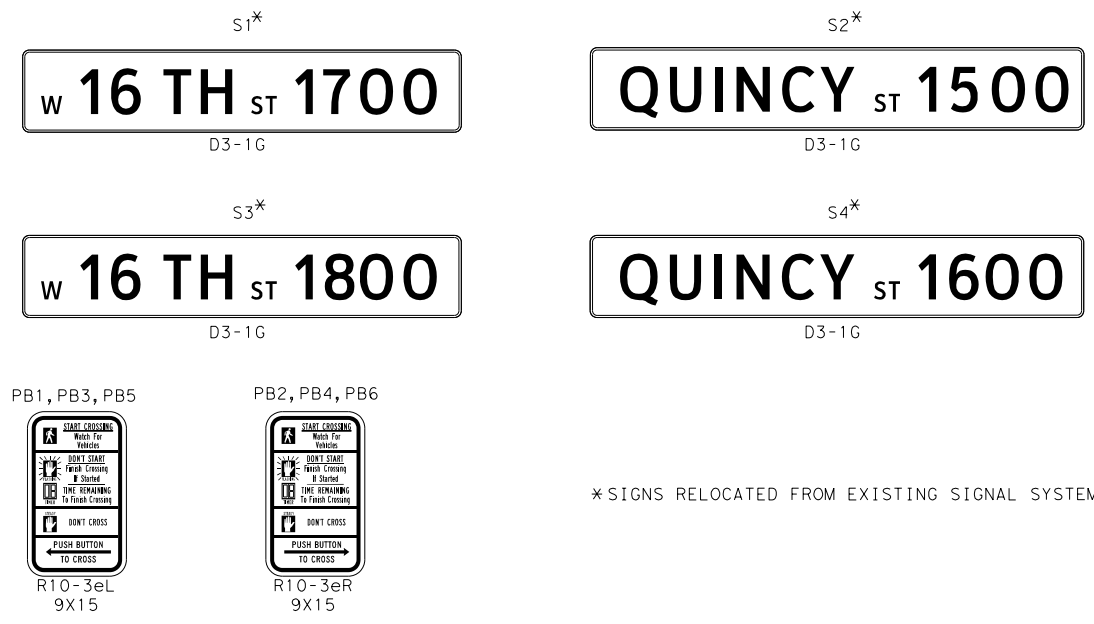
- LEGEND**
- ← DIRECTION OF TRAFFIC
 - COMPLETED PAVEMENT
 - ▨ PERMANENT ROADWAY CONSTRUCTION THIS PHASE
 - ▤ TEMPORARY PAVEMENT
 - EXIST MAST ARM
 - EXIST SIGNAL CONTROLLER
 - PROP GUY WIRE
 - PROP TEMP SERVICE METER
 - PROP TEMP TIMBER POLE
 - PROP TEMP POLE MOUNTED SIGNAL CONTROLLER
 - PROP TEMP SIGNAL HEAD
 - RELOCATED EXISTING SIGN
 - PROP TEMP VIVDS CAMERA
 - PROP TEMP LUMINAIRE W/ ARM
 - PROP TEMP PEDESTRIAN SIGNAL HEAD
 - PROP TEMP PEDESTRIAN PUSH BUTTON
 - ① PROP RUN NUMBER

NOTE:
 REFER TO SHEET 4 FOR RUNS SCHEDULE AND NOTES.

PROPOSED SIGNAL HEADS



PROPOSED SIGNS



*SIGNS RELOCATED FROM EXISTING SIGNAL SYSTEM.

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SH 194 FROM FM 3466 TO IH 27

TEMPORARY SIGNAL LAYOUTS
 SH 194 AT W 16TH ST
 PHASE 2 STEP 3

SCALE: 1"=40'		SHEET 3 OF 4	
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET	HIGHWAY NO. SH 194	
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 76
CONTROL 0439	SECTION 05	JOB 026	

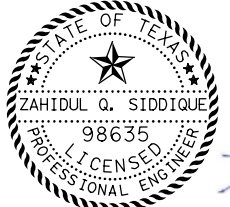
CABLE TYPE	WIRE	CONDUIT/SPAN WIRE RUN												
		1	2	3	4	5	6	7	8	9	10	11	12	13
POWER	#4 XHHW	2												
GROUND	#4 BARE	1												
	#6 BARE		1	1	1									
VEHICLE SIGNAL	#12/12C		4			2	1	1		1	2	1	1	
PED PUSH BUTTON	#12/2C		6	2		4	4	2	2		2	2		
PED SIGNAL	#12/4C		6	2		4	4	2	2		2	2		
VIVDS	VIVDS POWER & COAX		3	1		2	2	1	1		1	1		
ILLUMINATION	TRAY #12/4C				2	1	1	1	1	1				
CONDUIT	2" RMC	1	1	1	1					1				
SPAN WIRE	WIRE STRAND					1	1	1	1		1	1	1	1

POLE CHART	
POLE #	DESCRIPTION
POLE 1	40' TIMBER POLE W/ POLE MOUNTED CONTROLLER, LUMINAIRE, AND VIVDS
POLE 2	40' TIMBER POLE W/ VIVDS
POLE 3	40' TIMBER POLE W/ LUMINAIRE AND VIVDS
POLE 4	40' TIMBER POLE W/ VIVDS

TEMPORARY SIGNAL NOTES:


- INSTALL 40' TIMBER POLES WITH ANCHORS.
- INSTALL SPAN WIRE WITH SIGNAL HEADS AND PROVIDE ENOUGH SLACK AT EACH SIGNAL.
- INSTALL TEMPORARY TRAFFIC SIGNAL AT INTERSECTION PRIOR TO BEGINNING ANY WORK. REMOVE ALL EXISTING SIGNAL APPURTENANCES AND MAST ARM AFTER THE INSTALLATION OF TEMPORARY SIGNAL. RELOCATE EXISTING SIGNS AS SHOWN.
- TEMPORARY SIGNAL FOR SH 194 WILL RUN AS SPLIT PHASES DURING CONSTRUCTION.
- ADJUST SIGNAL HEADS, VIDEO CAMERA & DETECTION ZONES DURING DIFFERENT PHASES OF CONSTRUCTION AS DIRECTED BY THE FIELD ENGINEER. THE COST TO RELOCATE SIGNAL HEADS DURING DIFFERENT PHASES AND STEPS WILL BE INCIDENTAL TO THE PAY ITEM NO. 0681 6001 (TEMP TRAF SIGNALS).
- REUSE EXISTING ELECTRICAL SERVICE, GROUND BOX AND CONDUITS WHERE POSSIBLE.
- EXISTING PAVEMENT MARKING TO BE USED IF NOT MENTIONED. SEE TRAFFIC CONTROL PLAN FOR TEMPORARY PAVEMENT MARKING LAYOUTS.
- COIL SUFFICIENT SIGNAL AND VIVDS CABLES TO ACCOMMODATE SIGNAL HEAD ADJUSTMENTS DURING THE VARIOUS PHASES OF CONSTRUCTION.
- LOCATIONS SHOWN FOR ALL TEMPORARY SIGNAL APPURTENANCES ARE SUBJECT TO ADJUSTMENT DUE TO FIELD CONDITIONS WITH THE APPROVAL OF THE FIELD ENGINEER.
- LOCATIONS OF ALL EXISTING UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES PRIOR TO COMMENCING WORK. CONTRACTOR SHOULD CONTACT ALL PRIVATE AND PUBLIC UTILITIES FOR LOCATION OF UNDERGROUND FACILITIES AT LEAST 48 HOURS PRIOR TO ANY DRILLING, BORING, TRENCHING, OR EXCAVATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES CAUSED BY CONTRACTOR'S FAILURE TO LOCATE AND PRESERVE ALL UTILITIES.

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: SH194 TempSignal - Copy.tbl
 USER: Robinson DATE: 2/24/2023 TIME: 11:44:53 AM SCALE: 1:40.0025
 FILE: SH194_Temp Signal_I4_16TH_SCHEDULE .dgn




ZAHIDUL Q. SIDDIQUE
98635
LICENSED PROFESSIONAL ENGINEER
2/24/2023

NO.	DATE	REVISION	APPROVED



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TBPE REGISTRATION NO. F-18368



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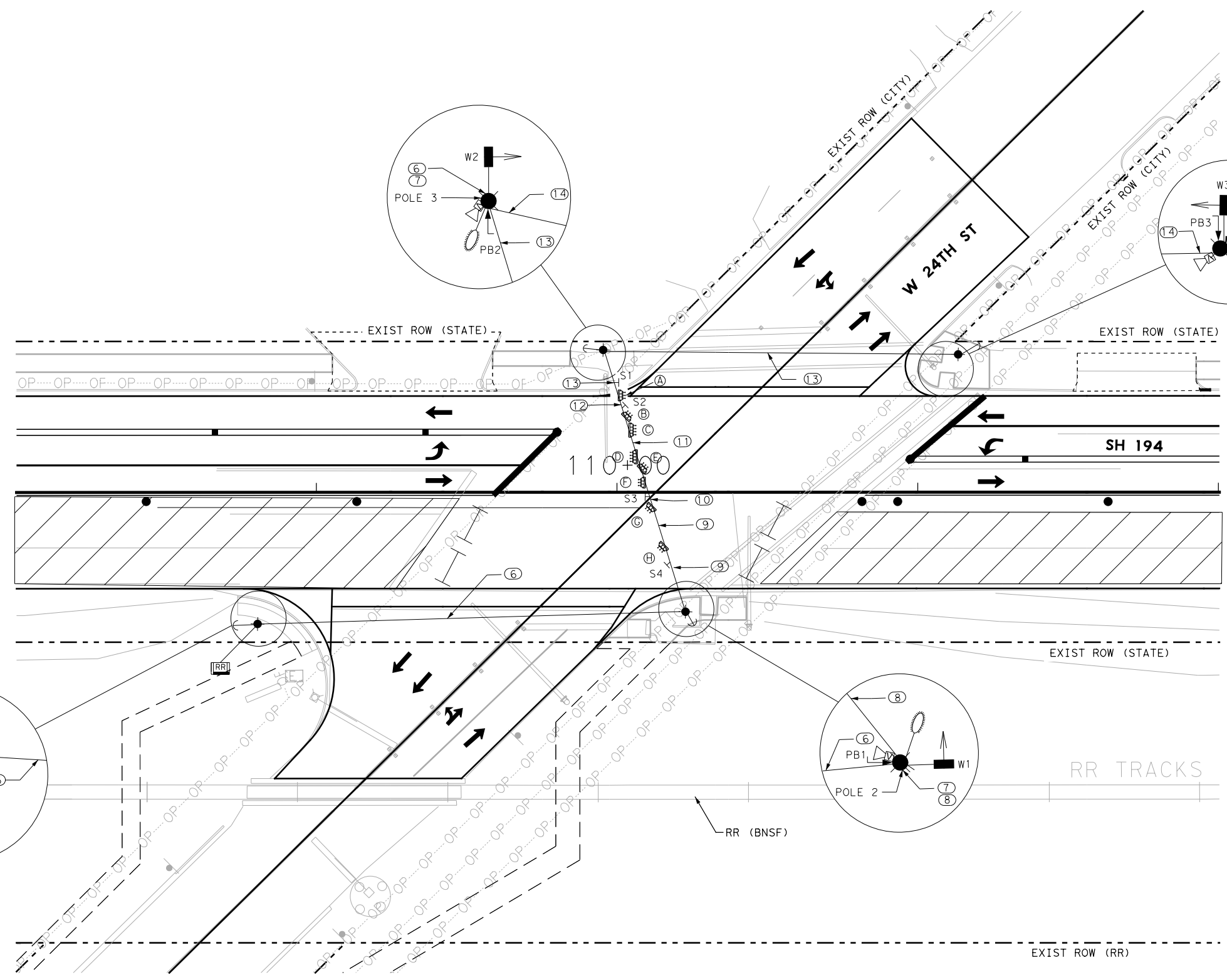
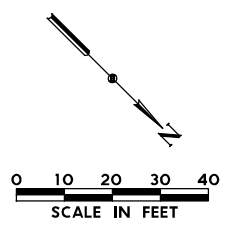
SH 194 FROM FM 3466 TO IH 27

TEMPORARY SIGNAL LAYOUTS
SH 194 AT W 16TH ST

SHEET 4 OF 4		
FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026

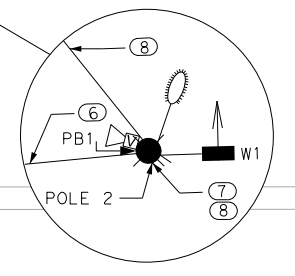
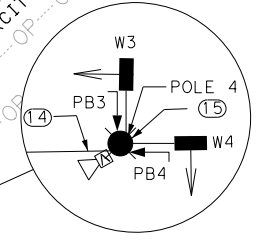
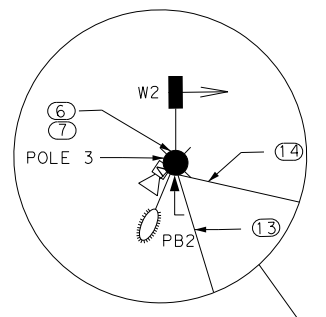
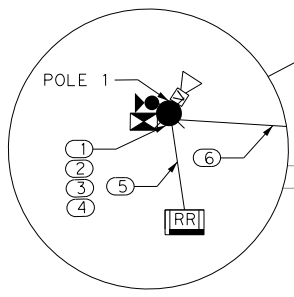
77

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.plt
 USER: Acobinson DATE: 7/29/2024 TIME: 8:42:15 PM
 FILE: SH194_Temp Signal_J5_24TH_P3SI.dgn



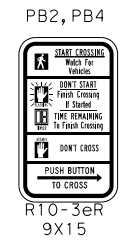
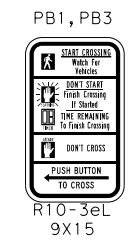
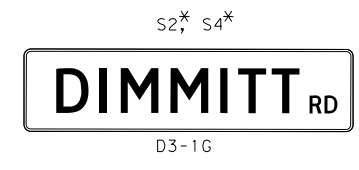
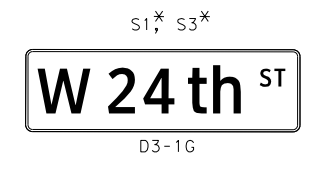
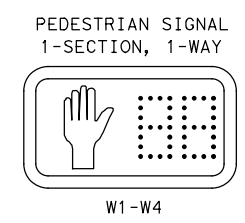
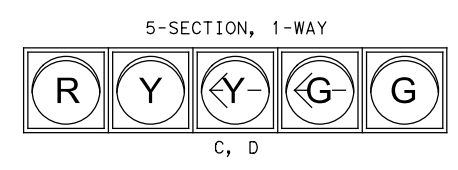
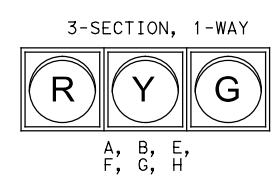
- LEGEND**
- ← DIRECTION OF TRAFFIC
 - ▨ COMPLETED PAVEMENT
 - ▨ PERMANENT ROADWAY CONSTRUCTION THIS PHASE
 - ▨ TEMPORARY PAVEMENT
 - EXIST MAST ARM
 - EXIST SIGNAL CONTROLLER
 - PROP GUY WIRE
 - PROP TEMP SERVICE METER
 - PROP TEMP TIMBER POLE
 - PROP TEMP POLE MOUNTED SIGNAL CONTROLLER
 - PROP TEMP SIGNAL HEAD
 - RELOCATED EXISTING SIGN
 - PROP TEMP VIVDS CAMERA
 - PROP TEMP LUMINAIRE W/ ARM
 - PROP TEMP PEDESTRIAN SIGNAL HEAD
 - PROP TEMP PEDESTRIAN PUSH BUTTON
 - ## PROP RUN NUMBER
 - RR EXIST RAILROAD CONTROLLER

NOTE:
 REFER TO SHEET 5 FOR RUNS SCHEDULE AND NOTES.

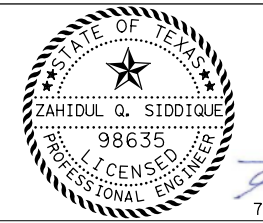


PROPOSED SIGNAL HEADS

PROPOSED SIGNS



*SIGNS RELOCATED FROM EXISTING SIGNAL SYSTEM.



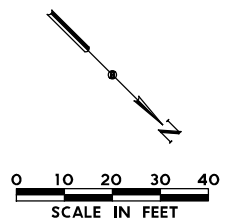
NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27
 TEMPORARY SIGNAL LAYOUTS
 SH 194 AT W 24TH ST
 PHASE 3 STEP 1

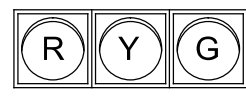
SCALE: 1"=40' SHEET 1 OF 5

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:		HIGHWAY NO.:
6	SEE TITLE SHEET		SH 194
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	78
CONTROL:	SECTION:	JOB:	
0439	05	026	



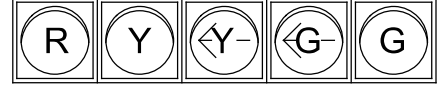
PROPOSED SIGNAL HEADS

3-SECTION, 1-WAY

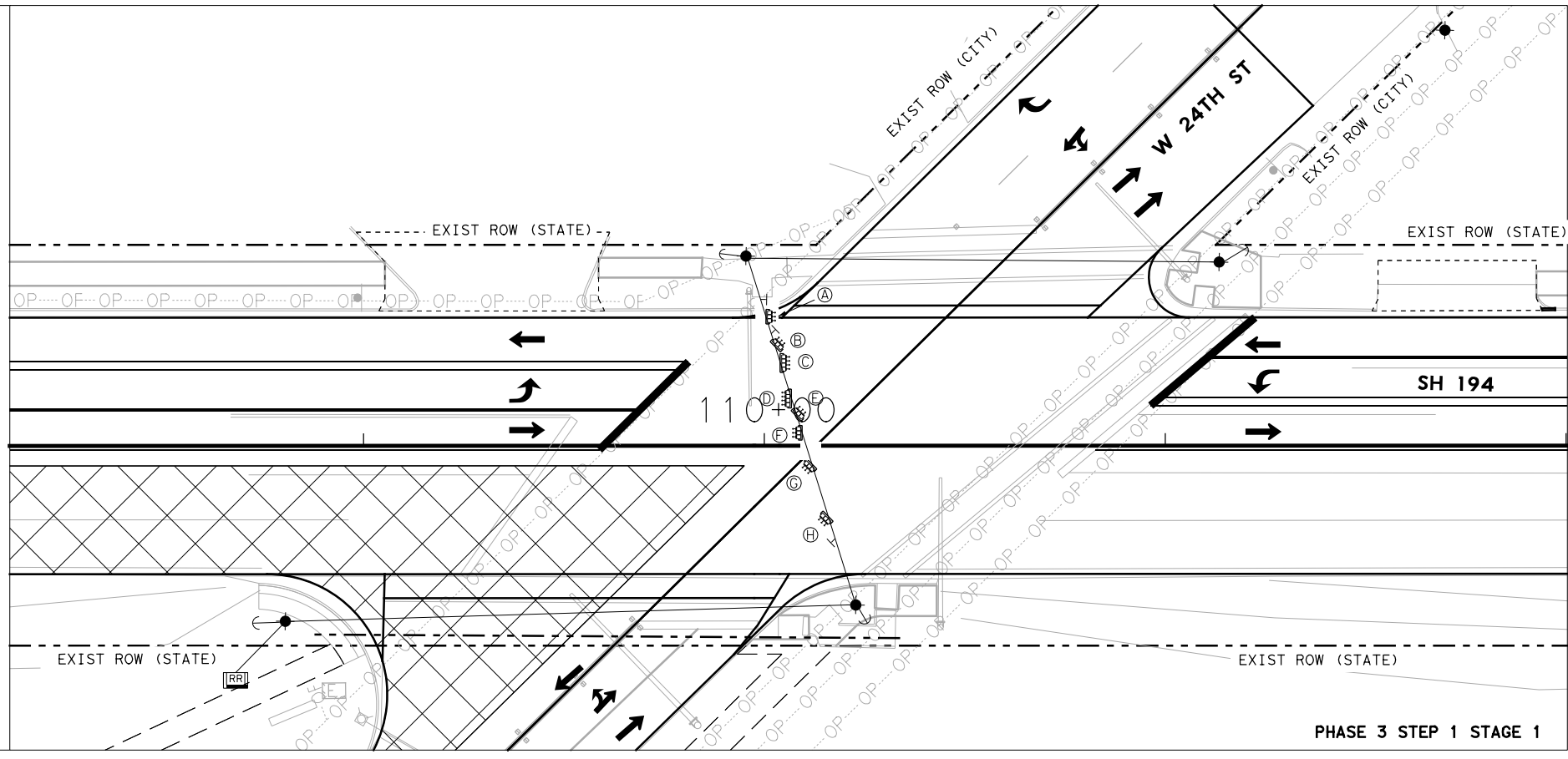


A, B, E, F, G, H

5-SECTION, 1-WAY



C, D



PHASE 3 STEP 1 STAGE 1

LEGEND

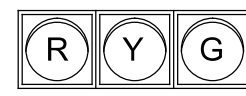
- ← DIRECTION OF TRAFFIC
- ▨ COMPLETED PAVEMENT
- ⊠ CONSTRUCTION STEP
- ⊞ TEMPORARY PAVEMENT
- ⊞ CONSTRUCT INTERSECTION STAGE 1
- ⊞ CONSTRUCT INTERSECTION STAGE 2
- EXIST MAST ARM
- ⊞ EXIST SIGNAL CONTROLLER
- PROP GUY WIRE
- PROP TEMP TIMBER POLE
- ⊞ PROP TEMP SIGNAL HEAD
- ⊞ EXIST RAILROAD CONTROLLER
- ⊞ RELOCACTED EXISTING SIGN

NOTES:

1. REFER TO SHEET 1 FOR TEMPORARY SIGNAL DETAILS.
2. REFER TO SHEET 5 FOR RUNS SCHEDULE AND NOTES.
3. CHANGE/COVER SIGNAL HEADS AS SHOWN.

PROPOSED SIGNAL HEADS

3-SECTION, 1-WAY

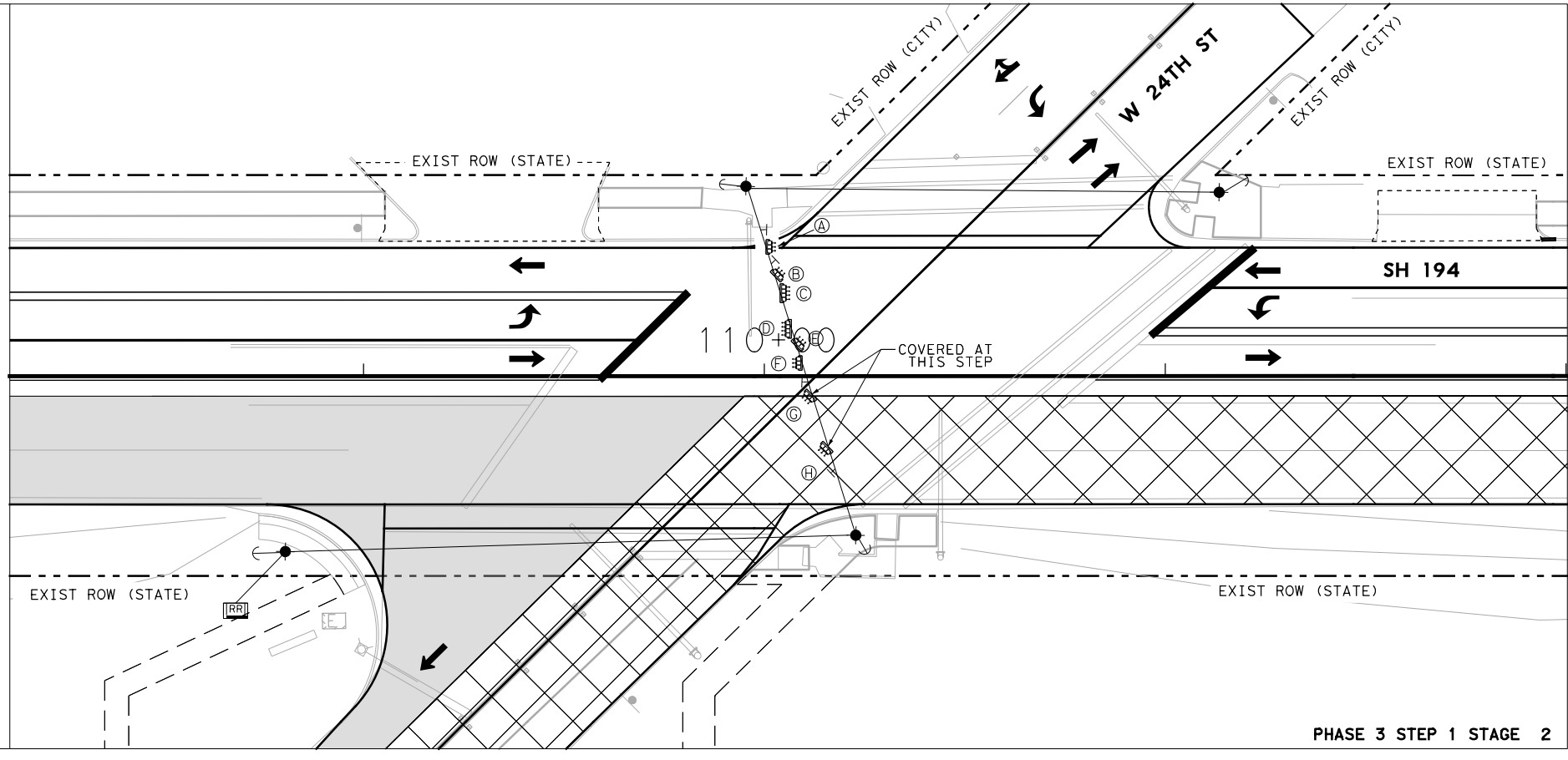


A, B, E, F, G, H

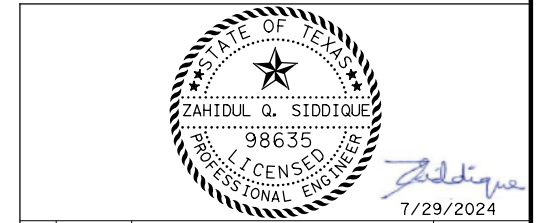
5-SECTION, 1-WAY



C, D



PHASE 3 STEP 1 STAGE 2



NO.	DATE	REVISION	APPROVED

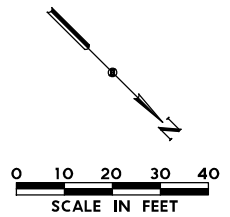


SH 194 FROM FM 3466 TO IH 27

TEMPORARY SIGNAL LAYOUTS
SH 194 AT W 24TH ST
PHASE 3 STEP 1 INTERSECTION DETAILS

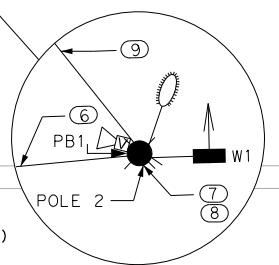
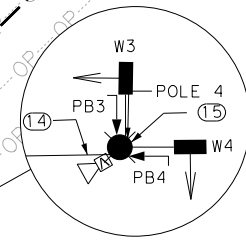
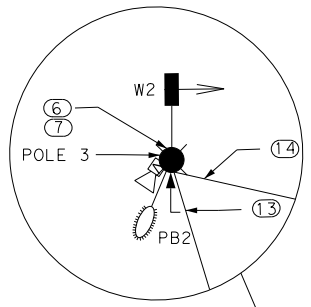
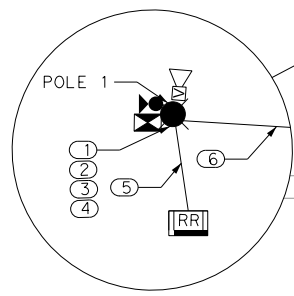
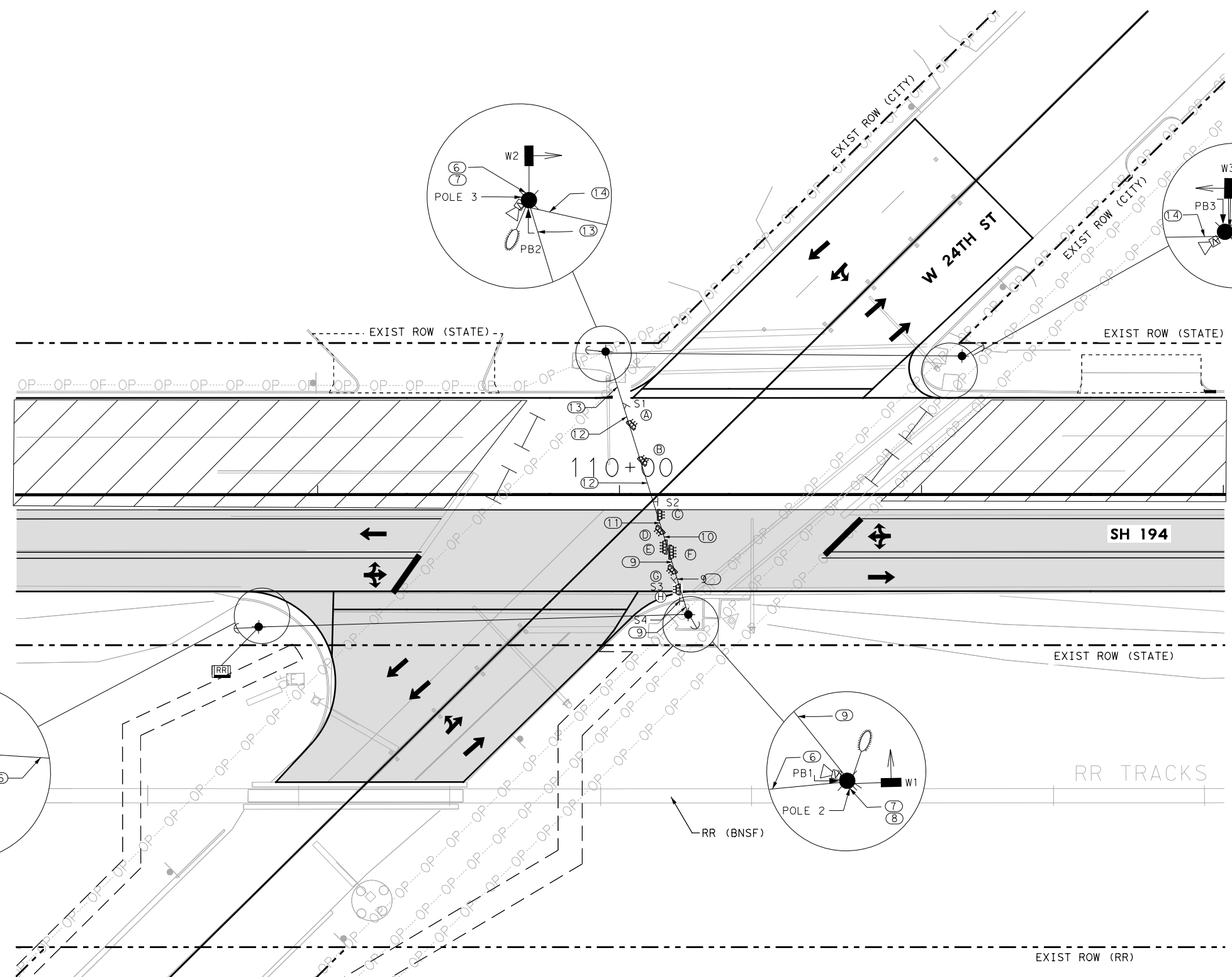
SCALE: 1"=40'			SHEET 2 OF 5
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	79
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 8:29:19 PM
 FILE: SH194_Temp_Signal_I6_24TH_P3SI_ID.dgn



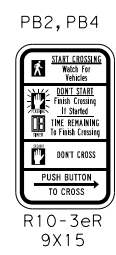
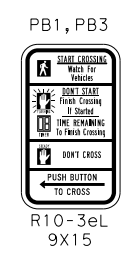
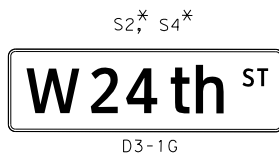
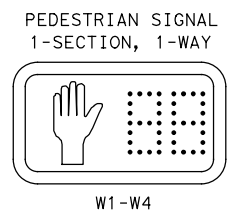
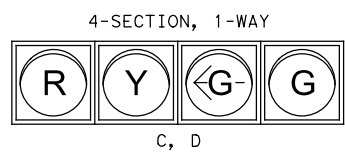
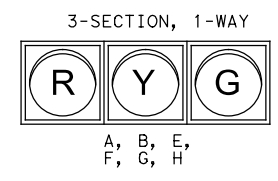
- LEGEND**
- ← DIRECTION OF TRAFFIC
 - ▨ COMPLETED PAVEMENT
 - ▨ PERMANENT ROADWAY CONSTRUCTION THIS PHASE
 - ▨ TEMPORARY PAVEMENT
 - EXIST MAST ARM
 - EXIST SIGNAL CONTROLLER
 - PROP GUY WIRE
 - ⊙ PROP TEMP SERVICE METER
 - ⊙ PROP TEMP TIMBER POLE
 - ⊙ PROP TEMP POLE MOUNTED SIGNAL CONTROLLER
 - ⊙ PROP TEMP SIGNAL HEAD
 - ⊙ RELOCATED EXISTING SIGN
 - ⊙ PROP TEMP VIVDS CAMERA
 - ⊙ PROP TEMP LUMINAIRE W/ ARM
 - ⊙ PROP TEMP PEDESTRIAN SIGNAL HEAD
 - ⊙ PROP TEMP PEDESTRIAN PUSH BUTTON
 - ⊙ PROP RUN NUMBER
 - ⊙ EXIST RAILROAD CONTROLLER

NOTE:
REFER TO SHEET 5 FOR RUNS SCHEDULE AND NOTES.



PROPOSED SIGNAL HEADS

PROPOSED SIGNS



*SIGNS RELOCATED FROM EXISTING SIGNAL SYSTEM.

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: SH194 TempSignal - Copy.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 8:23 PM SCALE: 1/40
 FILE: SH194_Temp_Signal_IT_24TH_P3S2.dgn

Zahidul Q. Siddique
7/29/2024

NO.	DATE	REVISION	APPROVED

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SH 194 FROM FM 3466 TO IH 27

TEMPORARY SIGNAL LAYOUTS
SH 194 AT W 24TH ST
PHASE 3 STEP 2

SCALE: 1"=40' SHEET 3 OF 5

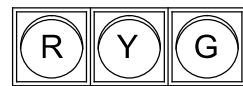
FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026

80

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 8:27 PM
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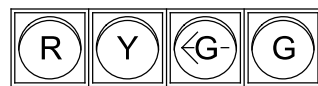
PROPOSED SIGNAL HEADS

3-SECTION, 1-WAY

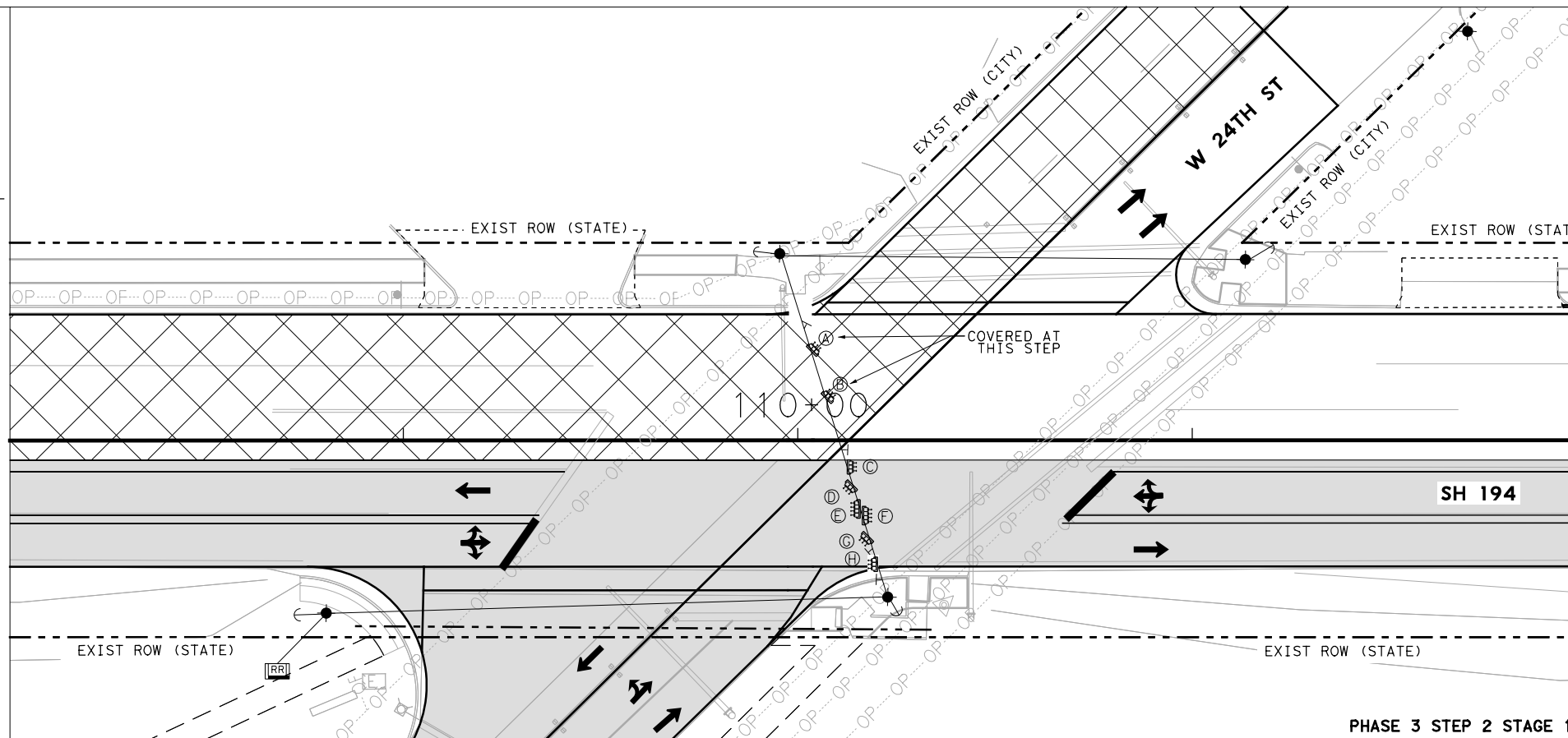


A, B, C, D, G, H

4-SECTION, 1-WAY



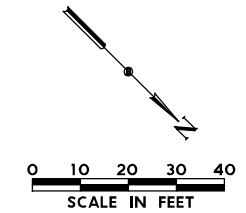
E, F



PHASE 3 STEP 2 STAGE 1

LEGEND

- ← DIRECTION OF TRAFFIC
- ▨ COMPLETED PAVEMENT
- ▩ CONSTRUCTION STEP
- ▤ TEMPORARY PAVEMENT
- ▧ CONSTRUCT INTERSECTION STAGE 1
- ▨ CONSTRUCT INTERSECTION STAGE 2
- ▩ EXIST MAST ARM
- ⊞ EXIST SIGNAL CONTROLLER
- ⊞ PROP GUY WIRE
- ⊞ PROP TEMP TIMBER POLE
- ⊞ PROP TEMP SIGNAL HEAD
- ⊞ EXIST RAILROAD CONTROLLER
- ⊞ RELOCACTED EXISTING SIGN

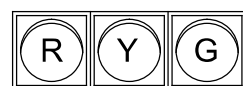


NOTES:

1. REFER TO SHEET 1 FOR TEMPORARY SIGNAL DETAILS.
2. REFER TO SHEET 5 FOR RUNS SCHEDULE AND NOTES.
3. CHANGE/COVER SIGNAL HEADS AS SHOWN.

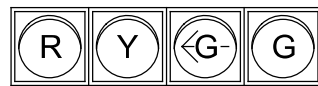
PROPOSED SIGNAL HEADS

3-SECTION, 1-WAY

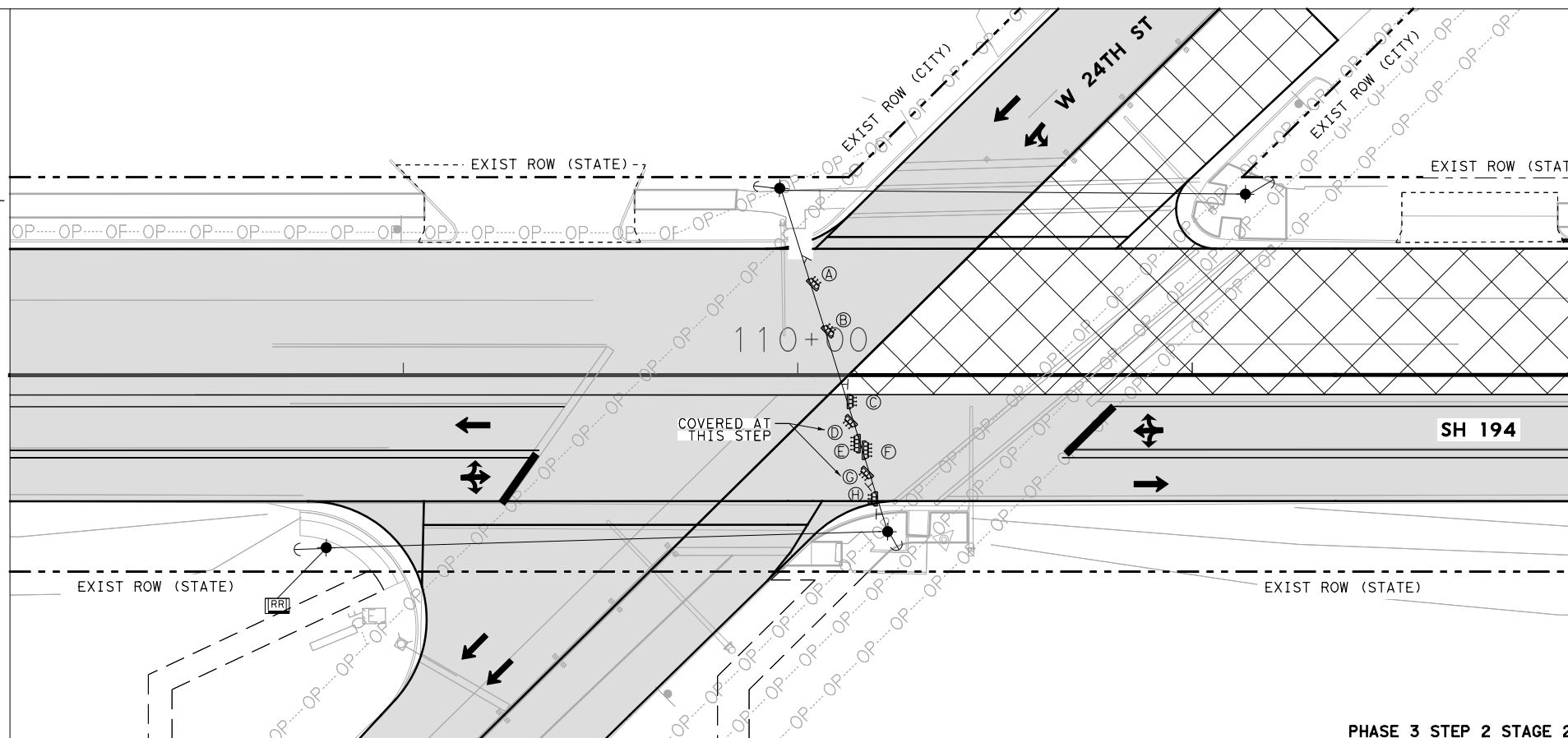


A, B, C, D, G, H

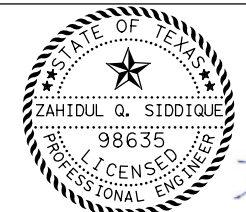
4-SECTION, 1-WAY



E, F



PHASE 3 STEP 2 STAGE 2



NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

TEMPORARY SIGNAL LAYOUTS
 SH 194 AT W 24TH ST
 PHASE 3 STEP 2 INTERSECTION DETAILS

SCALE: 1"=40'			SHEET 4 OF 5
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	81
CONTROL	SECTION	JOB	
0439	05	026	

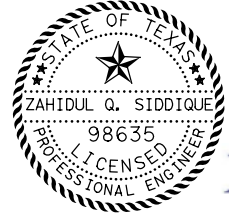
CABLE TYPE	WIRE	CONDUIT/SPAN WIRE RUN														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
POWER	#4 XHHW	2														
GROUND	#4 BARE	1														
	#6 BARE		1	1	1	1		1	1							1
VEHICLE SIGNAL	#12/12C		4			1	4			4	3	2	1			
PED PUSH BUTTON	#12/2C		4				4	1		3	3	3	3	3	2	2
PED SIGNAL	#12/4C		4				4	1		3	3	3	3	3	2	2
VIVDS	VIVDS POWER & COAX		3	1			3	1		2	2	2	2	2	1	1
ILLUMINATION	TRAY #12/4C				2		2		1	1	1	1	1			
CONDUIT	TRENCH					1										
	2" RMC	1	2	1				1	1							1
SPAN WIRE	WIRE STRAND						1			1	1	1	1	1		

POLE CHART	
POLE #	DESCRIPTION
POLE 1	40' TIMBER POLE W/ POLE MOUNTED CONTROLLER, AND VIVDS
POLE 2	40' TIMBER POLE W/ LUMINAIRE AND VIVDS
POLE 3	40' TIMBER POLE W/ LUMINAIRE AND VIVDS
POLE 4	40' TIMBER POLE W/ VIVDS

TEMPORARY SIGNAL NOTES:


- INSTALL 40' TIMBER POLES WITH ANCHORS.
- INSTALL SPAN WIRE WITH SIGNAL HEADS AND PROVIDE ENOUGH SLACK AT EACH SIGNAL.
- INSTALL TEMPORARY TRAFFIC SIGNAL AT INTERSECTION PRIOR TO BEGINNING ANY WORK. REMOVE ALL EXISTING SIGNAL APPURTENANCES AND MAST ARM AFTER THE INSTALLATION OF TEMPORARY SIGNAL. RELOCATE EXISTING SIGNS AS SHOWN.
- TEMPORARY SIGNAL FOR SH 194 WILL RUN AS SPLIT PHASES DURING CONSTRUCTION.
- ADJUST SIGNAL HEADS, VIDEO CAMERA & DETECTION ZONES DURING DIFFERENT PHASES OF CONSTRUCTION AS DIRECTED BY THE FIELD ENGINEER. THE COST TO RELOCATE SIGNAL HEADS DURING DIFFERENT PHASES AND STEPS WILL BE INCIDENTAL TO THE PAY ITEM NO. 0681 6001 (TEMP TRAF SIGNALS).
- REUSE EXISTING ELECTRICAL SERVICE, GROUND BOX AND CONDUITS WHERE POSSIBLE.
- EXISTING PAVEMENT MARKING TO BE USED IF NOT MENTIONED. SEE TRAFFIC CONTROL PLAN FOR TEMPORARY PAVEMENT MARKING LAYOUTS.
- COIL SUFFICIENT SIGNAL AND VIVDS CABLES TO ACCOMMODATE SIGNAL HEAD ADJUSTMENTS DURING THE VARIOUS PHASES OF CONSTRUCTION.
- LOCATIONS SHOWN FOR ALL TEMPORARY SIGNAL APPURTENANCES ARE SUBJECT TO ADJUSTMENT DUE TO FIELD CONDITIONS WITH THE APPROVAL OF THE FIELD ENGINEER.
- LOCATIONS OF ALL EXISTING UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES PRIOR TO COMMENCING WORK. CONTRACTOR SHOULD CONTACT ALL PRIVATE AND PUBLIC UTILITIES FOR LOCATION OF UNDERGROUND FACILITIES AT LEAST 48 HOURS PRIOR TO ANY DRILLING, BORING, TRENCHING, OR EXCAVATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES CAUSED BY CONTRACTOR'S FAILURE TO LOCATE AND PRESERVE ALL UTILITIES.

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcfgr PENTABLE: SH194 TempSignal - Copy.tbl
 USER: Robinson DATE: 2/24/2023 TIME: 11:45:19 AM SCALE: 1/40.0025
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ZAHIDUL Q. SIDDIQUE
98635
LICENSED PROFESSIONAL ENGINEER
2/24/2023

NO.	DATE	REVISION	APPROVED



infraTECH
Engineers & Innovators, LLC
TBPE REGISTRATION NO. F-18368



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SH 194 FROM FM 3466 TO IH 27

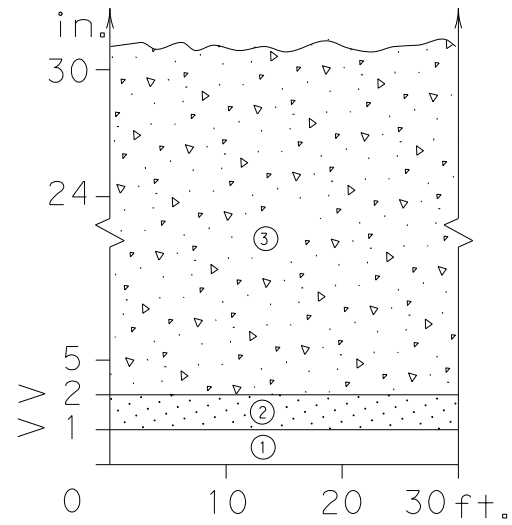
TEMPORARY SIGNAL LAYOUTS
SH 194 AT W 24TH ST

SHEET 5 OF 5		
FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
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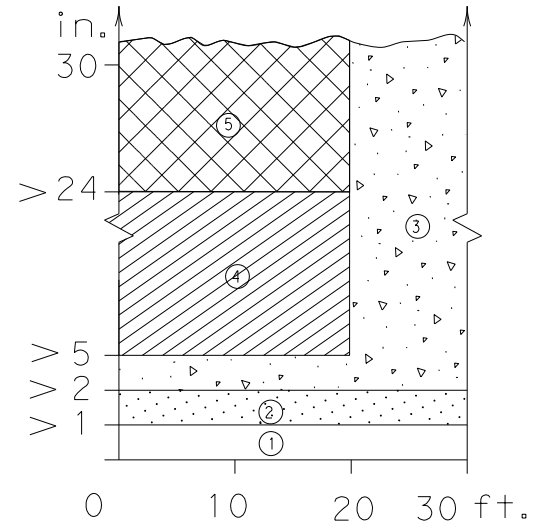
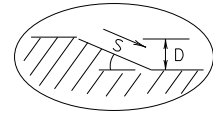
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DEFINITION OF TREATMENT ZONES
FOR VARIOUS EDGE CONDITIONS

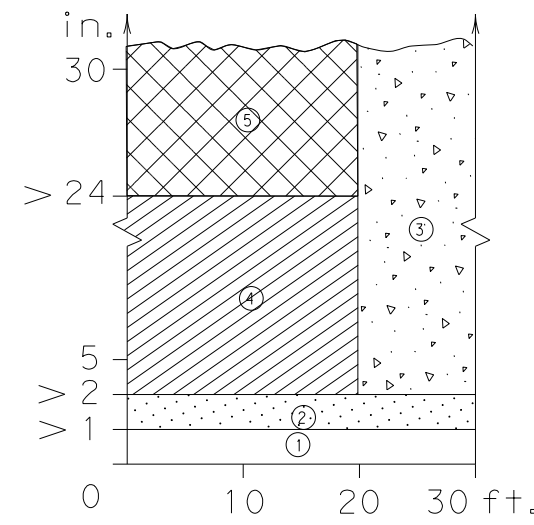
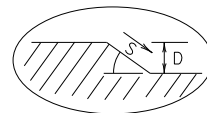
Edge Height (D) in Inches versus Lateral Clearance (Y) in Feet



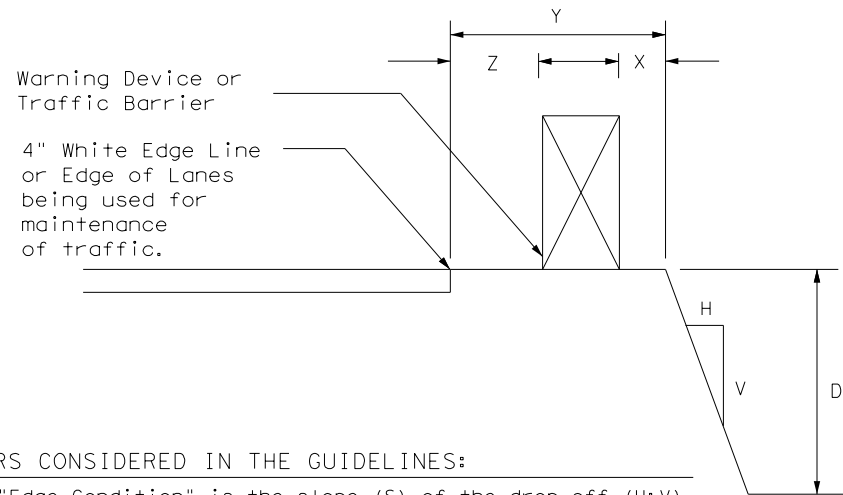
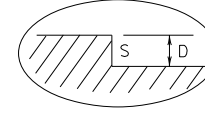
Edge Condition I
S = (3:1) (or flatter)



Edge Condition II
S = ((2.99):1) to (1:1)



Edge Condition III
S is steeper than (1:1)

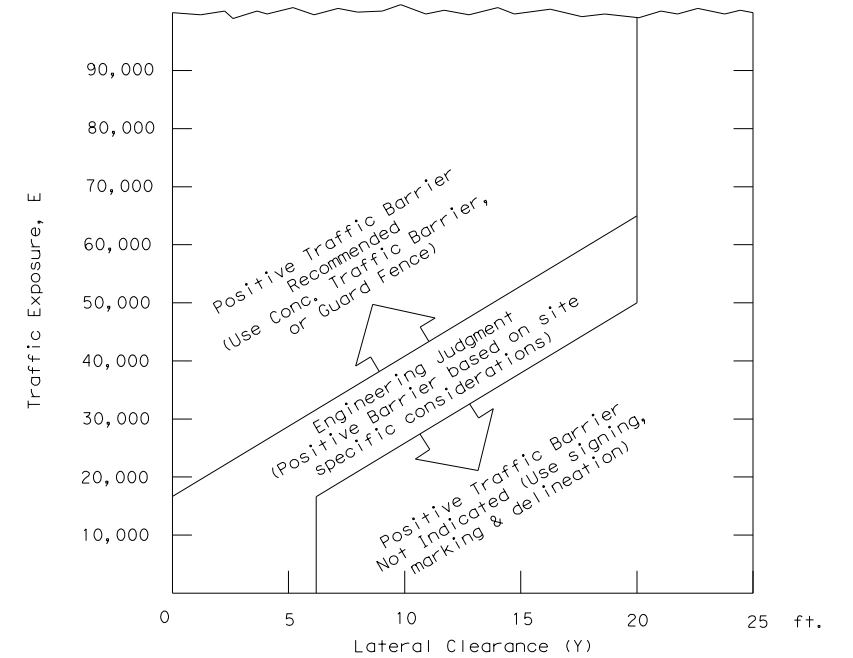


Zone	Treatment Types Guidelines:
①	No treatment
②	CW 8-11 "Uneven Lanes" signs.
③	CW 8-9a Shoulder Drop-Off" or CW 8-11 signs plus vertical panels.
④	CW8-9a or CW 8-11, signs plus drums. Where restricted space precludes the use of drums, use vertical panels. An edge slope to that of the proferred Edge Condition I.
⑤	Check indications (Figure-1) for positive barrier. Where positive barrier is not indicated, the treatment shown above for Zone-4 may be used after consideration of other applicable factors.

Edge Condition Notes:

- Edge Condition I: Most vehicles are able to traverse an edge condition with a slope rate of (3 to 1) or flatter. The slope must be constructed with a compacted material capable of supporting vehicles.
- Edge Condition II: Most vehicles are able to traverse an edge condition with a slope between (2.99 to 1) and (1 to 1) so long as "D" does not exceed 5 inches. Under-carriage drag on most automobiles will occur when "D" exceeds 6 inches. As "D" exceeds 24 inches, the possibility for rollover is greater in most vehicles.
- Edge Condition III: When slopes are greater than (1 to 1) and where "D" is greater than 2 inches, a more difficult control factor may exist for some vehicles, if not properly treated. For example, where "D" is greater than 2 inches and up to 24 inches different types of vehicles may experience different steering control at different edge heights. Automobiles might experience more steering control differential when "D" is greater than 2 inches and up to 5 inches. Trucks, particularly those with high loads, have more steering control differential when "D" is greater than 5 inches and up to 24 inches. When "D" exceeds 24 inches, the possibility of rollover is greater for most vehicles.
- Milling or overlay operations that result in Edge Condition III should not be in place without appropriate warning treatments, and these conditions should not be left in place for extended periods of time.

FIGURE-1: CONDITIONS INDICATING USE OF POSITIVE BARRIER FOR ZONE 5 ([hatched box])



- $E = ADT \times T$
Where ADT is that portion of the average daily traffic volume traveling within 20 feet (generally two adjacent lanes) of the edge dropoff condition; and, T is the duration time in years of the dropoff condition.
- Figure-1 provides a practical approach to the use of positive barriers for the protection of vehicles from pavement drop-offs. Other factors, such as the presence of heavy machinery, construction workers, or the mix and volume of traffic may make the use of positive barriers appropriate, even when the edge condition alone may not justify the use of a barrier.
- An approved end treatment should be provided for any positive barrier end located within the clear zone.

These guidelines apply to temporary traffic control areas or work zones where continuous pavement edges or drop-offs exists parallel and adjacent to a lane used by traffic. The edge conditions may be present between shoulders and travel lanes, between adjacent or opposing travel lanes, or at intermediate points across the width of the paved surface. Due to the variability in construction operations, tolerances in the variables may be allowed by the engineer. These guidelines do not apply to short term operations. These guidelines do not constitute a rigid standard or policy; rather, they are guidance to be used in conjunction with engineering judgement. These guidelines may be updated on the Design Division's on-line manuals.

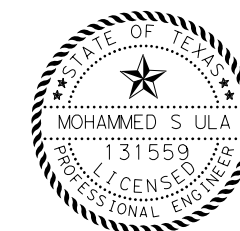
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FACTORS CONSIDERED IN THE GUIDELINES:

- The "Edge Condition" is the slope (S) of the drop-off (H:V). The "Edge Height" is the depth of the drop-off "D".
- Distance "X" is to be the maximum practical under job conditions. Two feet minimum for high speed conditions. Distance "Y" is the lateral clearance from edge of travel lane to edge of dropoff. Distance "Z" does not have a minimum.
- In addition to the factors considered in the guidelines, each construction zone drop-off situation should be analyzed individually, taking into account other variables, such as: traffic mix, posted speed in the construction zone, horizontal curvature, and the practicality of the treatment options.
- The conditions for indicating the use of positive or protective barriers are given by Zone-5 and Figure-1. Traffic barriers are primarily applicable for high speed conditions. Urban areas with speeds of 30 mph or less may have a lesser need for signing, delineation, and barriers. Right-angled edges, however, with "D" greater than 2 inches and located within a lateral offset of 6 feet, may indicate a higher level of treatment.
- If the distance "Y" must be less than 3 feet, the use of a positive barrier may not be feasible. In such a case, consider either: 1) narrowing the lanes to a desired 11 to 12 feet or 10 foot minimum (see CW20-8 sign), or 2) provide an edge slope such as Edge Condition I.

Engineer's Seal



Date 2/27/2023

Mohammed S. Ula



Traffic Safety Division Standard

TREATMENT FOR VARIOUS EDGE CONDITIONS

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© TxDOT August 2000	CONT	SECT	JOB	HIGHWAY
REVISIONS	0439	05	026	SH 194
03-01	DIST	COUNTY	SHEET NO.	
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9-21				

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BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

1. The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
2. The development and design of the Traffic Control Plan (TCP) is the responsibility of the Engineer.
3. The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.
4. The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.
5. Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets," the TxDOT "Roadway Design Manual" or engineering judgment.
6. When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.
7. The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.
8. All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.
9. The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.
10. Where highway construction or maintenance work is being undertaken, other than mobile operations as defined by the Texas Manual on Uniform Traffic Control Devices, CSJ limit signs are required. CSJ limit signs are shown on BC(2). The OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits. For mobile operations, CSJ limit signs are not required.
11. Traffic control devices should be in place only while work is actually in progress or a definite need exists.
12. The Engineer has the final decision on the location of all traffic control devices.
13. Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

WORKER SAFETY NOTES:



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

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

1. Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources.
2. Work zone traffic control devices shall be compliant with the Manual for Assessing safety Hardware (MASH).

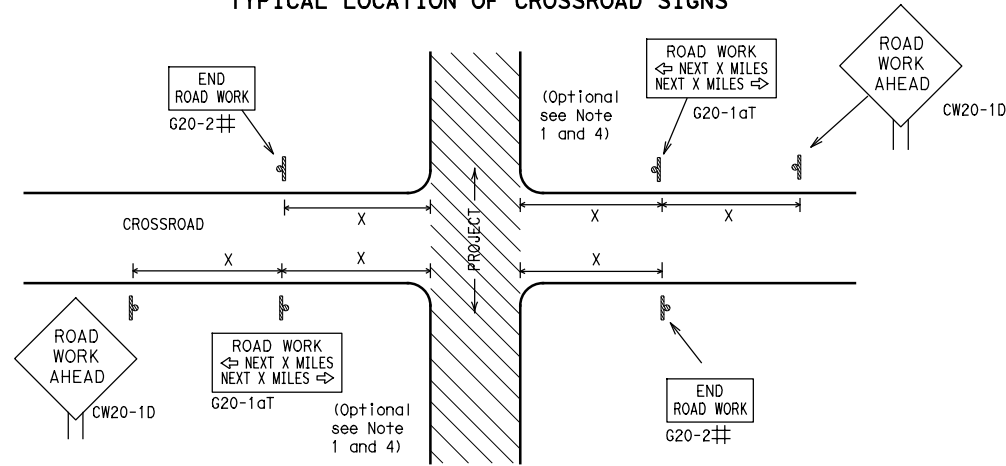
<p>THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT http://www.txdot.gov</p>
COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD)
DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS)
MATERIAL PRODUCER LIST (MPL)
ROADWAY DESIGN MANUAL - SEE "MANUALS (ONLINE MANUALS)"
STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD)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

SHEET 1 OF 12

			
<p>BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS</p> <p>BC (1) -21</p>			
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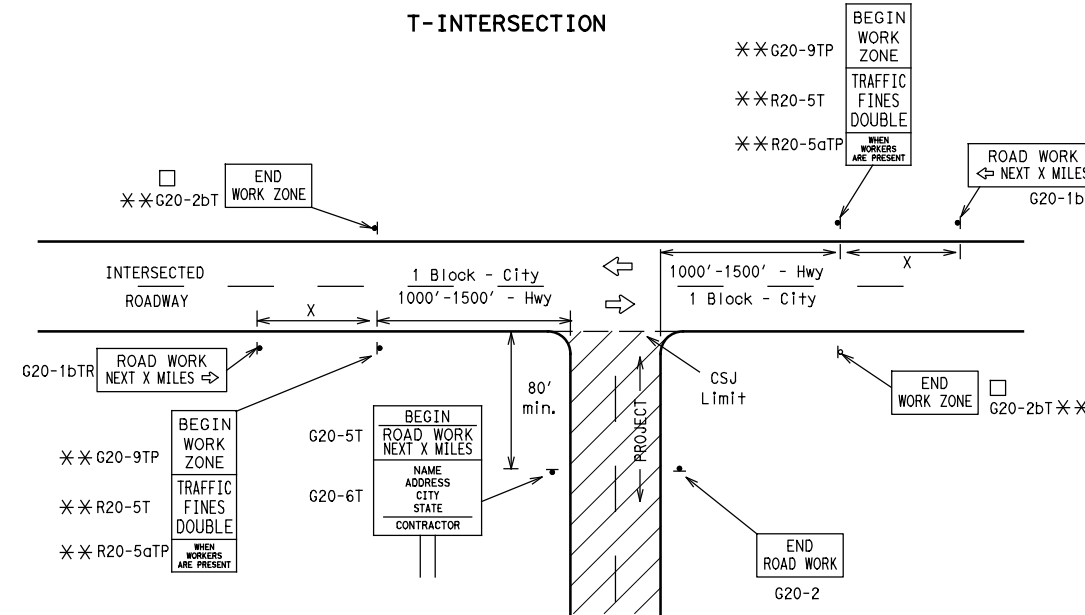
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TYPICAL LOCATION OF CROSSROAD SIGNS



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

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

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

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

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

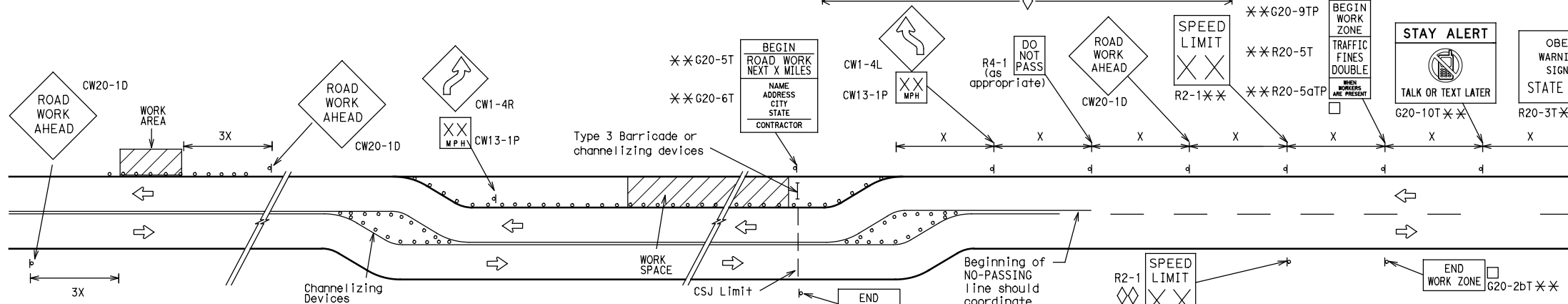
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

GENERAL NOTES

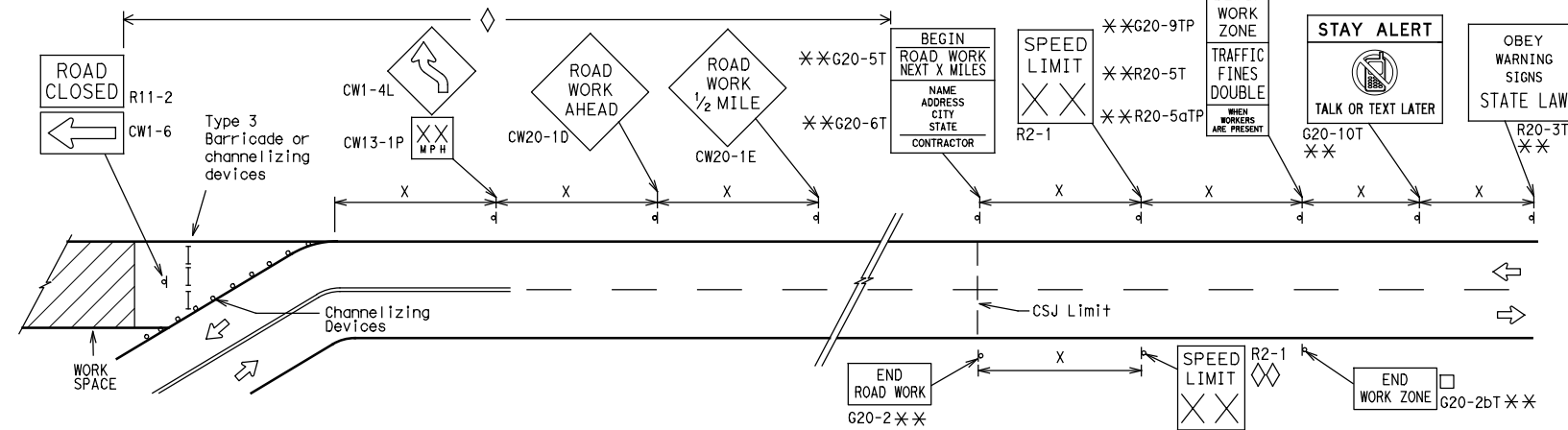
- Special or larger size signs may be used as necessary.
- Distance between signs should be increased as required to have 1500 feet advance warning.
- Distance between signs should be increased as required to have 1/2 mile or more advance warning.
- 36" x 36" "ROAD WORK AHEAD" (CW20-1D) signs may be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



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

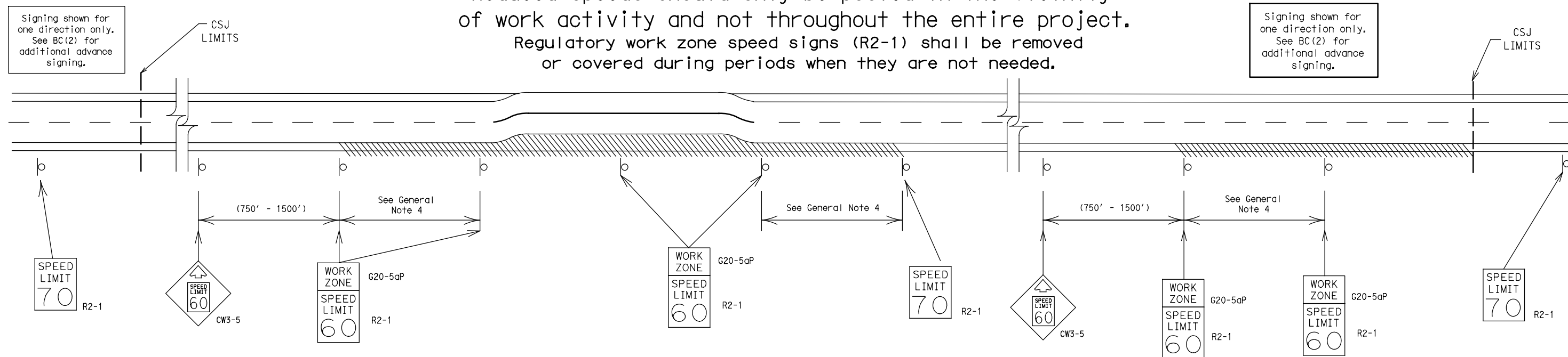
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© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
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TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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

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



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

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

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

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

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

SHORT TERM WORK ZONE SPEED LIMITS

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

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

GENERAL NOTES

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

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

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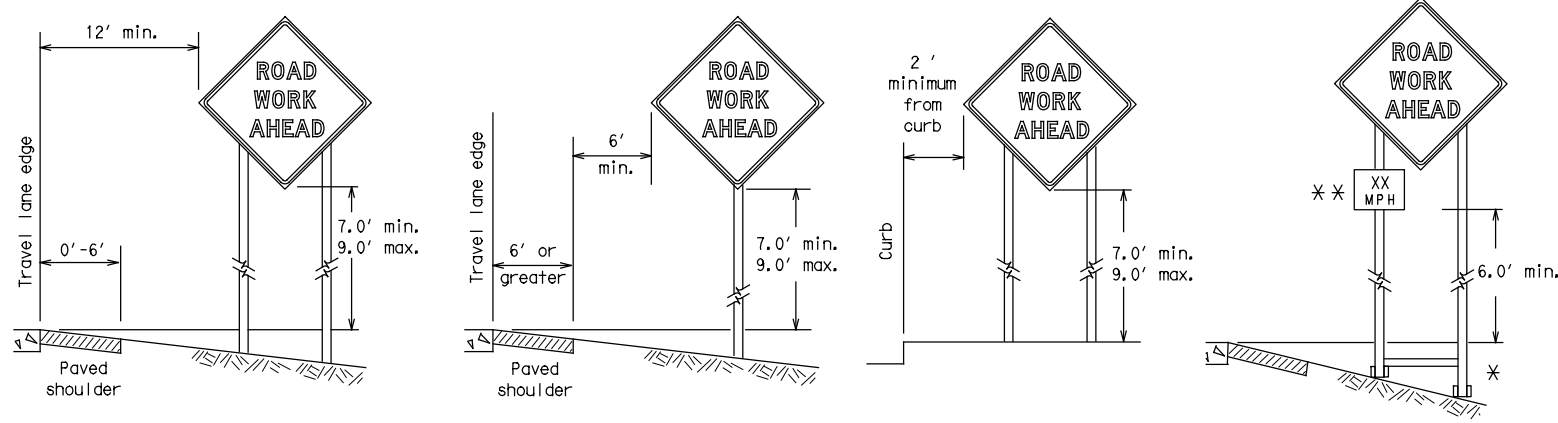
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SHEET 3 OF 12

		Traffic Safety Division Standard	
BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT			
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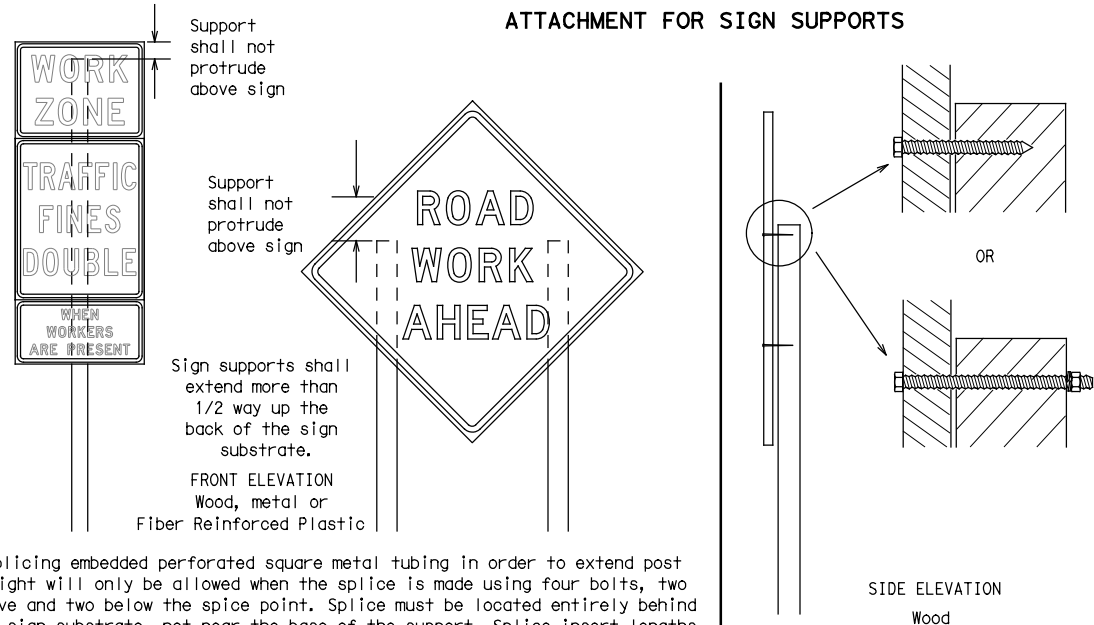
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



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

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

ATTACHMENT FOR SIGN SUPPORTS



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.

GENERAL NOTES FOR WORK ZONE SIGNS

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

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

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

SIGN MOUNTING HEIGHT

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

SIZE OF SIGNS

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

SIGN SUBSTRATES

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

REFLECTIVE SHEETING

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

SIGN LETTERS

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

REMOVING OR COVERING

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

SIGN SUPPORT WEIGHTS

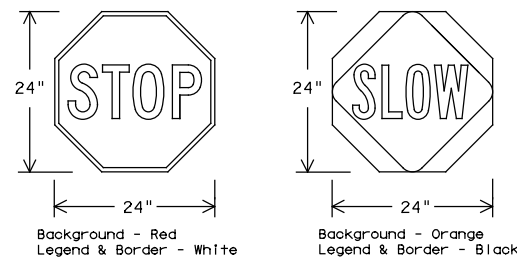
- Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
- The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
- Rock, concrete, iron, steel or other solid objects shall not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

FLAGS ON SIGNS

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

STOP/SLOW PADDLES

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



SHEETING REQUIREMENTS (WHEN USED AT NIGHT)		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	RED	TYPE B OR C SHEETING
BACKGROUND	ORANGE	TYPE B _{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

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

SHEET 4 OF 12

Texas Department of Transportation

Traffic Safety Division Standard

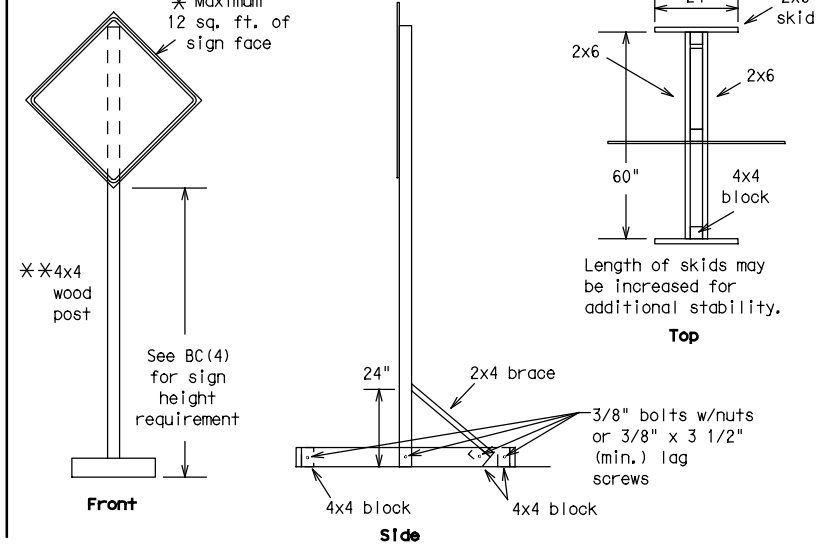
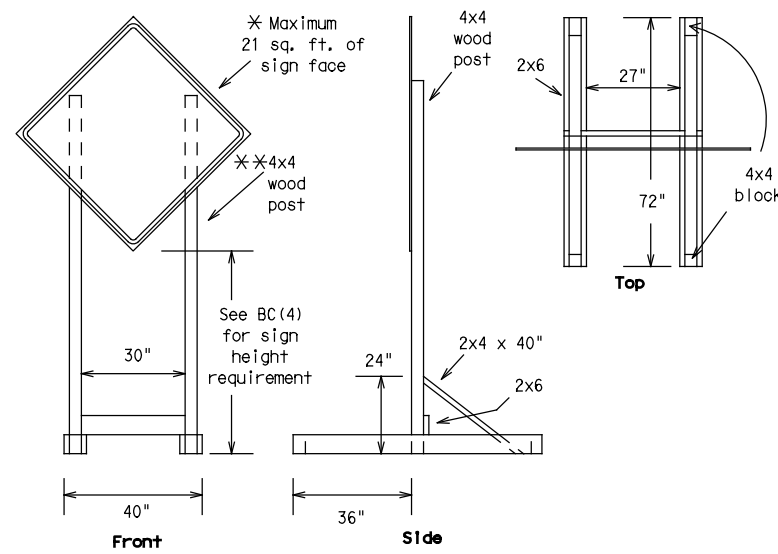
BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC (4) -21

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© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0439	05	026	SH 194
9-07 8-14	DIST	COUNTY	SHEET NO.	
7-13 5-21	LBB	HALE	87	

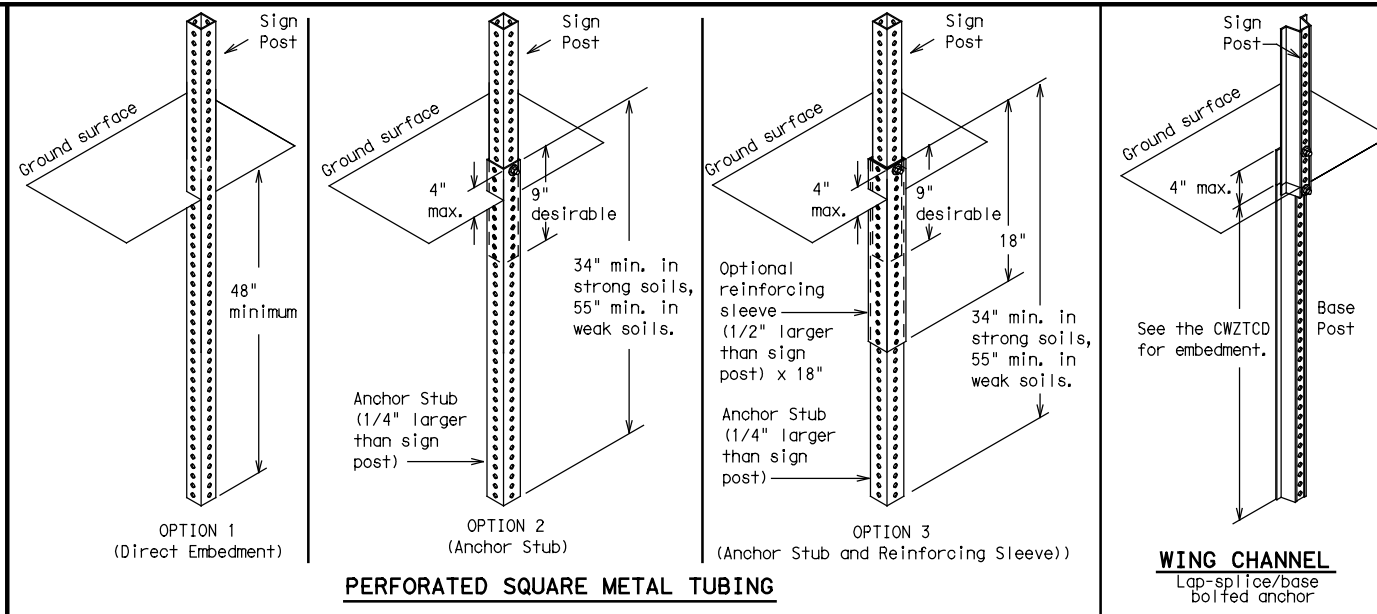
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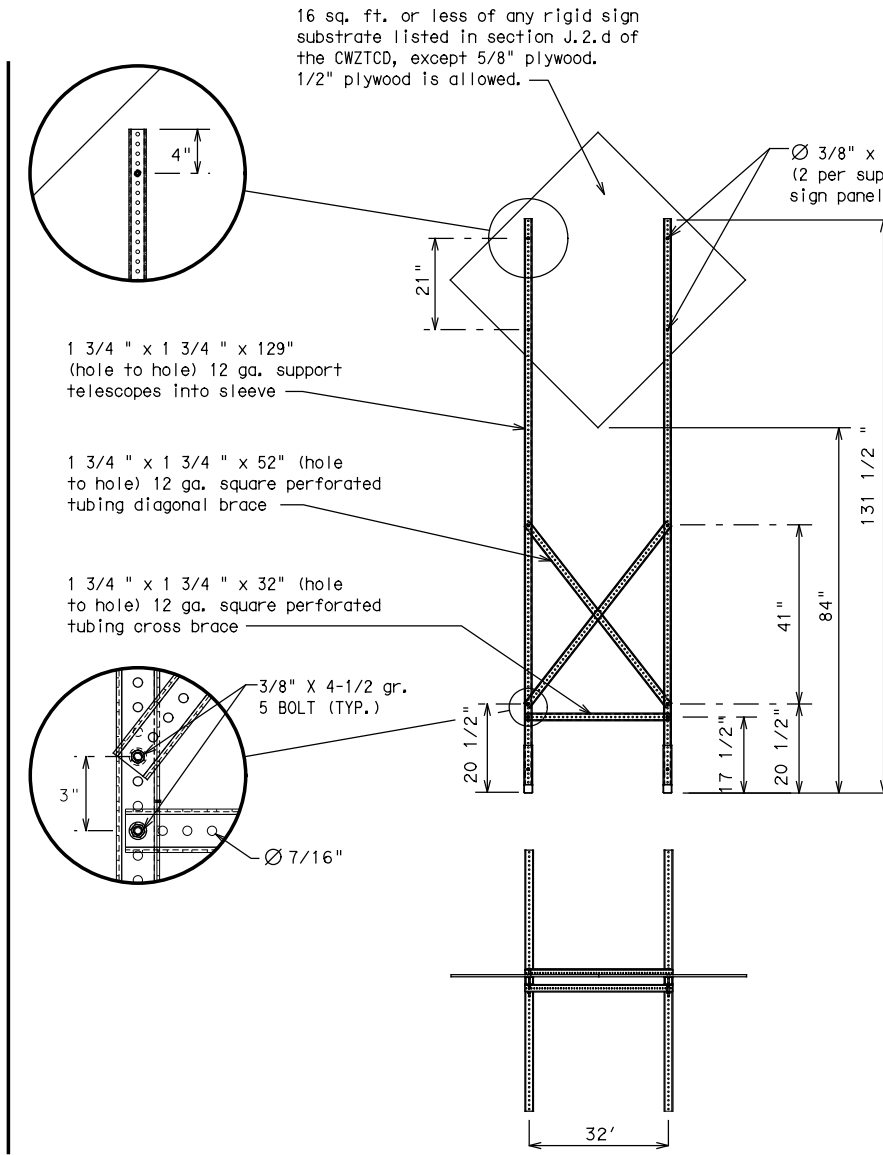
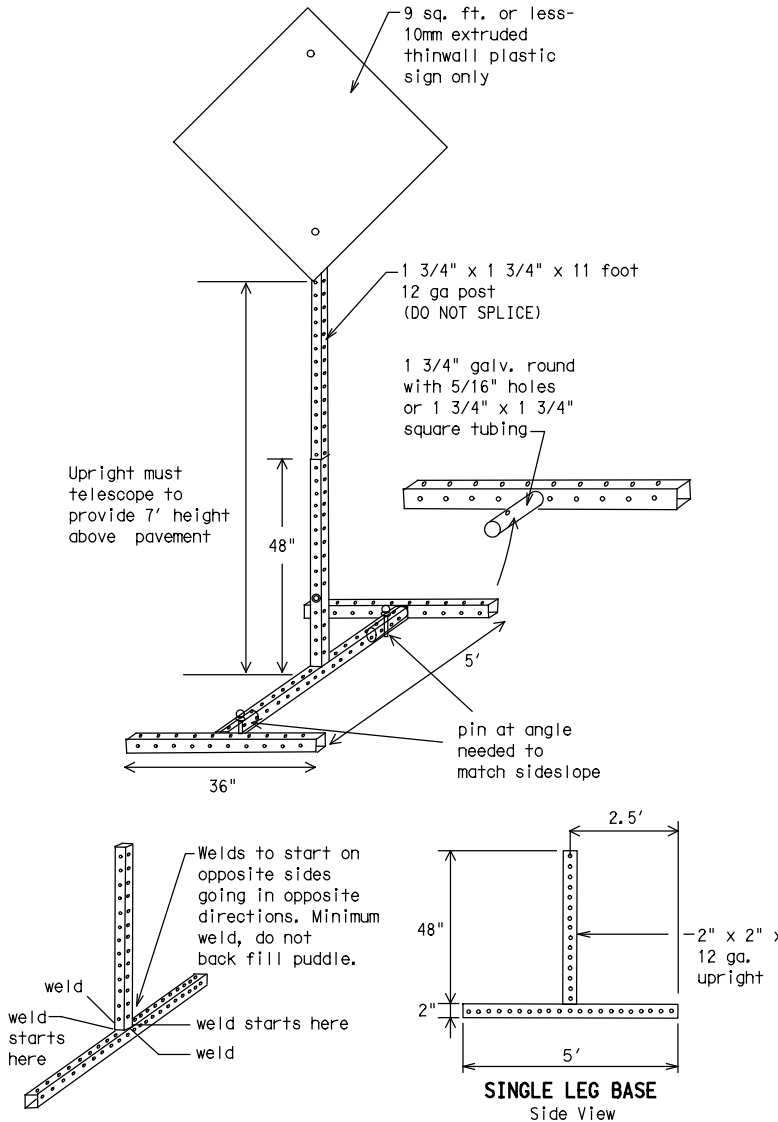
SKID MOUNTED WOOD SIGN SUPPORTS

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



GROUND MOUNTED SIGN SUPPORTS

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



SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

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

WEDGE ANCHORS

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

OTHER DESIGNS

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

GENERAL NOTES

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

SHEET 5 OF 12



BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

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9-07 8-14	DIST	COUNTY	SHEET NO.	
7-13 5-21	LBB	HALE	88	

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

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

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

PORTABLE CHANGEABLE MESSAGE SIGNS

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

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

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

Other Condition List

FRONTAGE ROAD CLOSED
SHOULDER CLOSED XXX FT
RIGHT LN CLOSED XXX FT
RIGHT X LANES OPEN
DAYTIME LANE CLOSURES
I-XX SOUTH EXIT CLOSED
EXIT XXX CLOSED X MILE
RIGHT LN TO BE CLOSED
X LANES CLOSED TUE - FRI
ROADWORK XXX FT
FLAGGER XXXX FT
RIGHT LN NARROWS XXXX FT
MERGING TRAFFIC XXXX FT
LOOSE GRAVEL XXXX FT
DETOUR X MILE
ROADWORK PAST SH XXXX
BUMP XXXX FT
TRAFFIC SIGNAL XXXX FT

ROAD REPAIRS XXXX FT
LANE NARROWS XXXX FT
TWO-WAY TRAFFIC XX MILE
CONST TRAFFIC XXX FT
UNEVEN LANES XXXX FT
ROUGH ROAD XXXX FT
ROADWORK NEXT FRI-SUN
US XXX EXIT X MILES
LANES SHIFT *

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

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

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

FORM X LINES RIGHT
USE XXXXX RD EXIT
USE EXIT I-XX NORTH
USE I-XX E TO I-XX N
WATCH FOR TRUCKS
EXPECT DELAYS
PREPARE TO STOP
END SHOULDER USE
WATCH FOR WORKERS

Location List

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

Warning List

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

** Advance Notice List

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

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

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

WORDING ALTERNATIVES

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

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

FULL MATRIX PCMS SIGNS

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

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	TRVLRS
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

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BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC (6) -21

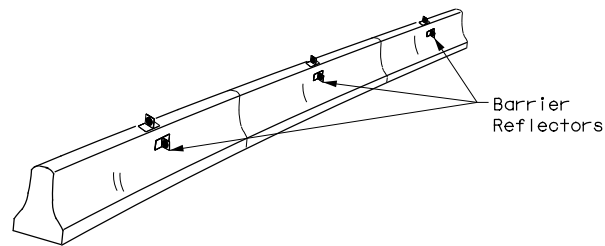
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9-07 8-14	DIST	COUNTY	SHEET NO.	
7-13 5-21	LBB	HALE	89	

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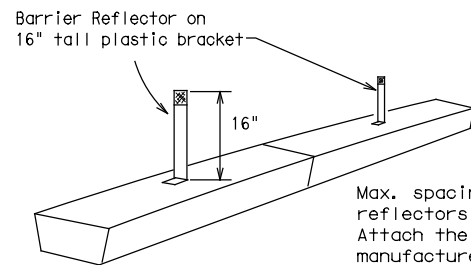
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- Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
- Color of Barrier Reflectors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



CONCRETE TRAFFIC BARRIER (CTB)

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

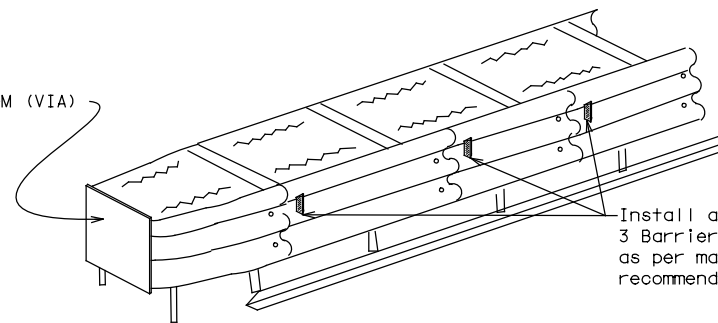


LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES

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

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

LOW PROFILE CONCRETE BARRIER (LPCB)



DELINEATION OF END TREATMENTS

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

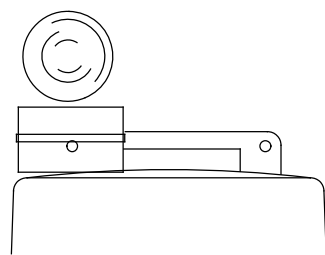
- Warning lights shall meet the requirements of the TMUTCD.
- Warning lights shall NOT be installed on barricades.
- Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet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

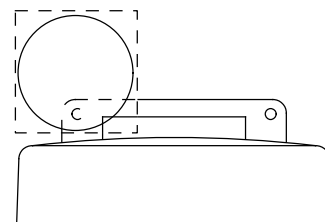
- Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
- Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
- A series of sequential flashing warning lights placed on channelizing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



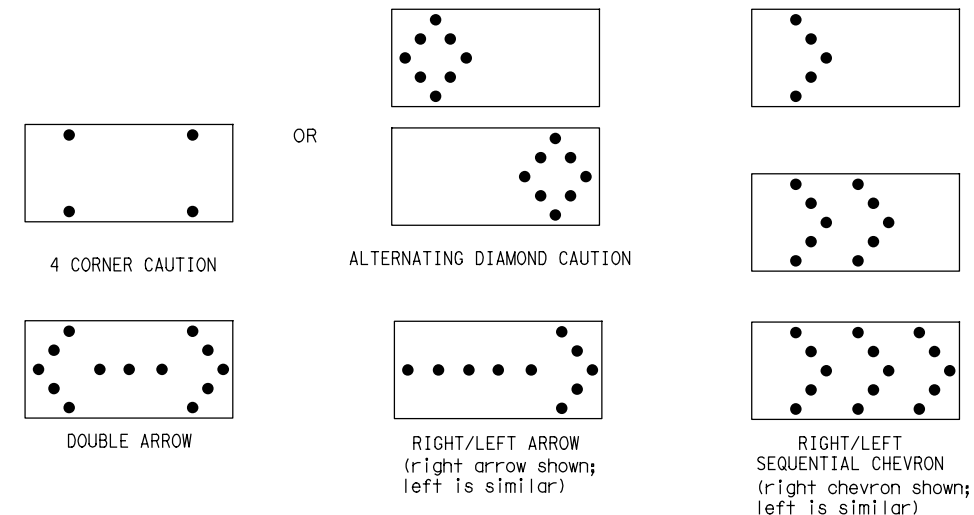
Type C Warning Light or approved substitute mounted on a drum adjacent to the travel way.



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	CK:	TxDOT	DW:	TxDOT	CK:	TxDOT
©TxDOT	November 2002	CONT	SECT	JOB	HIGHWAY				
REVISIONS		0439	05	026	SH 194				
9-07	8-14	DIST	COUNTY		SHEET NO.				
7-13	5-21	LBB	HALE		90				

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GENERAL NOTES

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

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

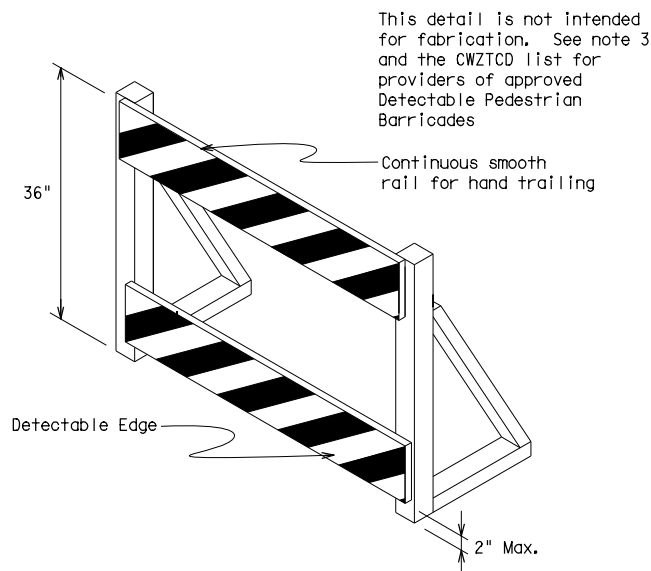
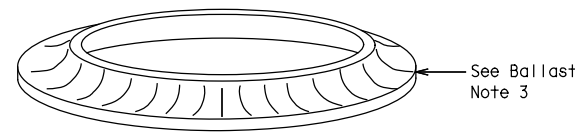
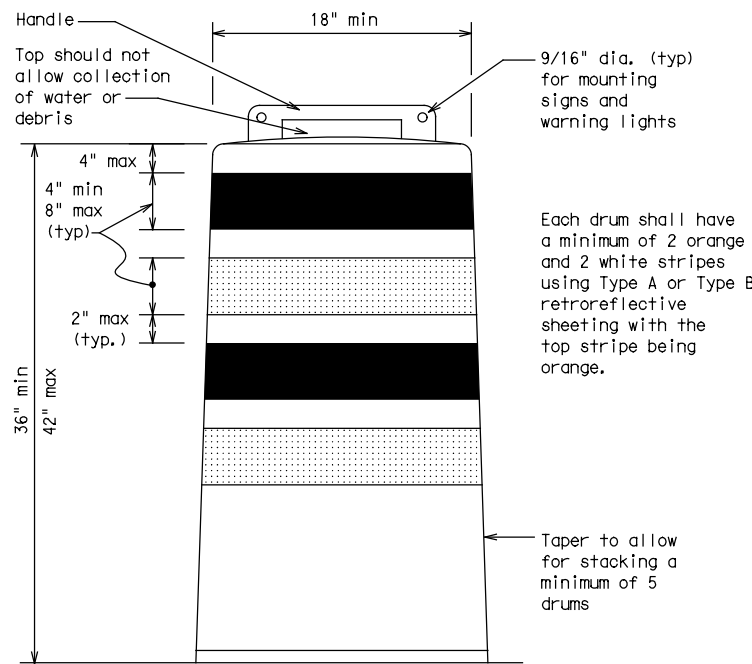
- Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
- The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents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

RETROREFLECTIVE SHEETING

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

BALLAST

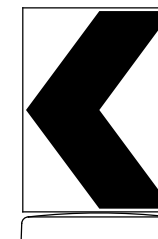
- Unballasted bases shall be large enough to hold up to 50 lbs. of sand. This base, when filled with the ballast material, should weigh between 35 lbs (minimum) and 50 lbs (maximum). The ballast may be sand in one to three sandbags separate from the base, sand in a sand-filled plastic base, or other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



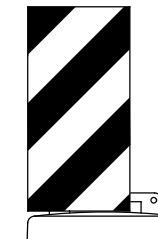
This detail is not intended for fabrication. See note 3 and the CWZTCD list for providers of approved Detectable Pedestrian Barricades

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

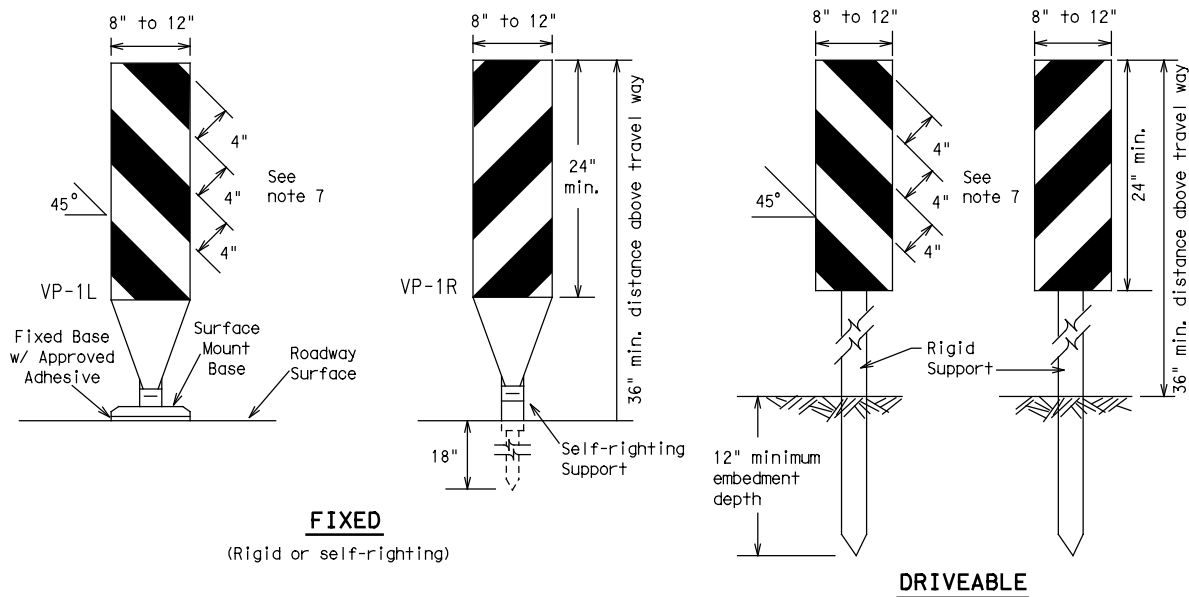


BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

FILE:	bc-21.dgn	DN:	TxDOT	CK:	TxDOT	DW:	TxDOT	CK:	TxDOT
© TxDOT	November 2002	CONT	SECT	JOB	HIGHWAY				
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4-03	8-14	DIST	COUNTY	SHEET NO.					
9-07	5-21	LBB	HALE	91					
7-13									

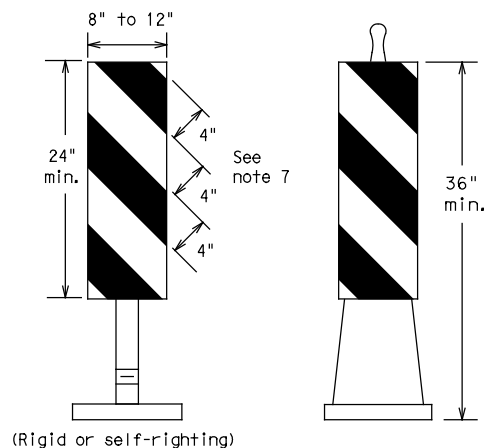
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FIXED
(Rigid or self-righting)

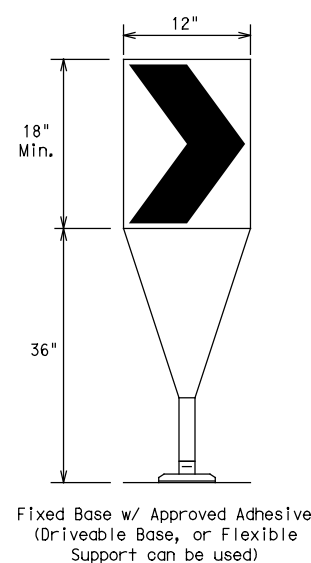
DRIVEABLE

- 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.



PORTABLE

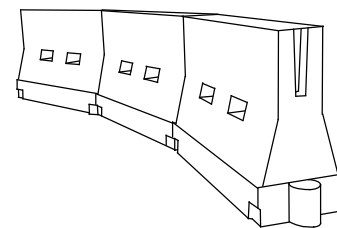
VERTICAL PANELS (VPs)



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

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 * X			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'

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

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

SHEET 9 OF 12



BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC (9) - 21

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© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
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9-07 8-14	DIST	COUNTY	SHEET NO.	
7-13 5-21	LBB	HALE	92	

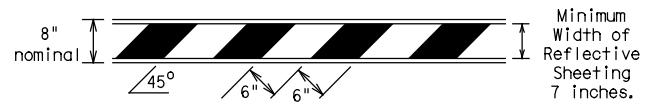
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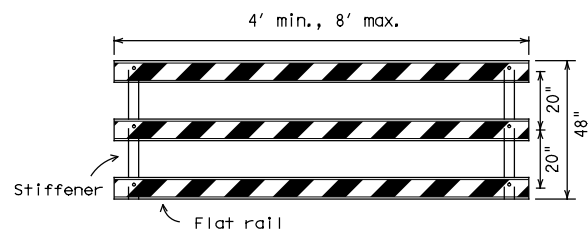
TYPE 3 BARRICADES

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

Barricades shall NOT be used as a sign support.

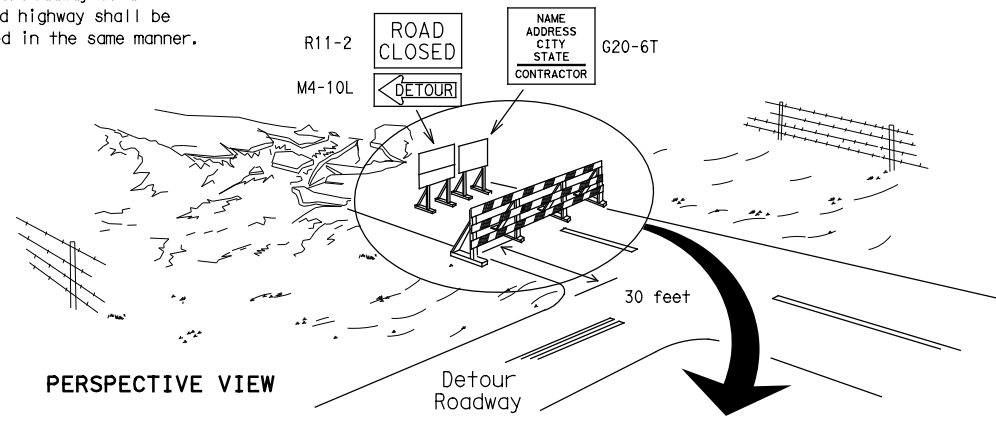


TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



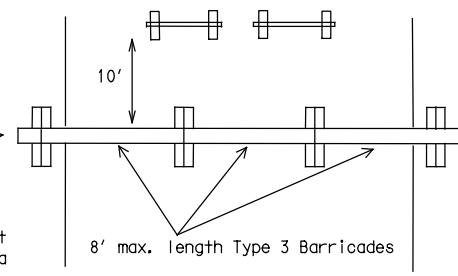
TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

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



PERSPECTIVE VIEW

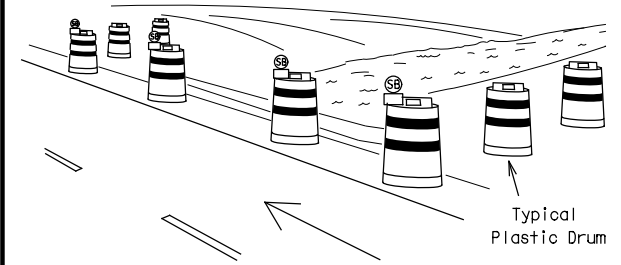
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic. Barricade striping should slant downward in the direction of detour.



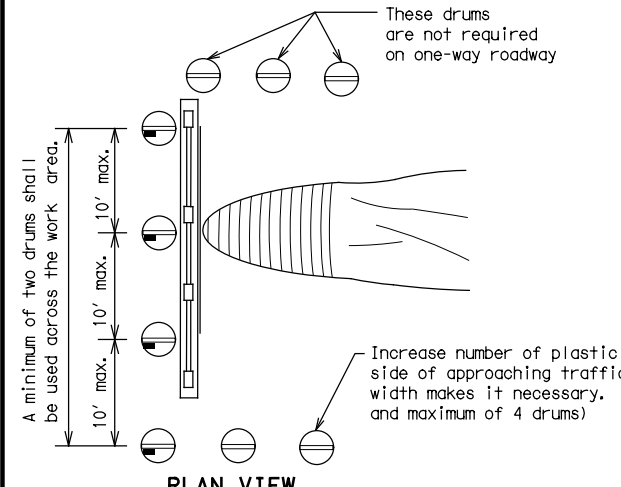
PLAN VIEW

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

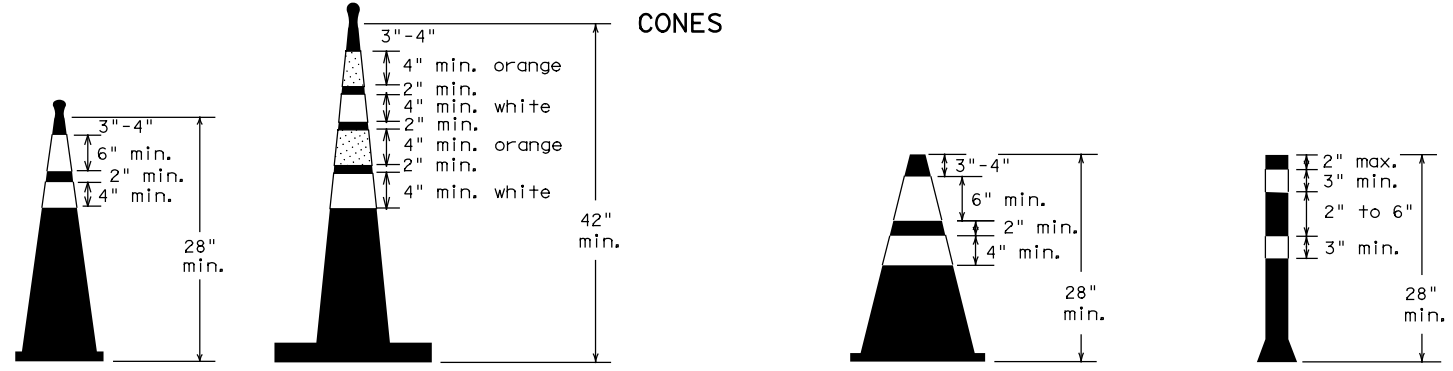


PLAN VIEW

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.

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

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



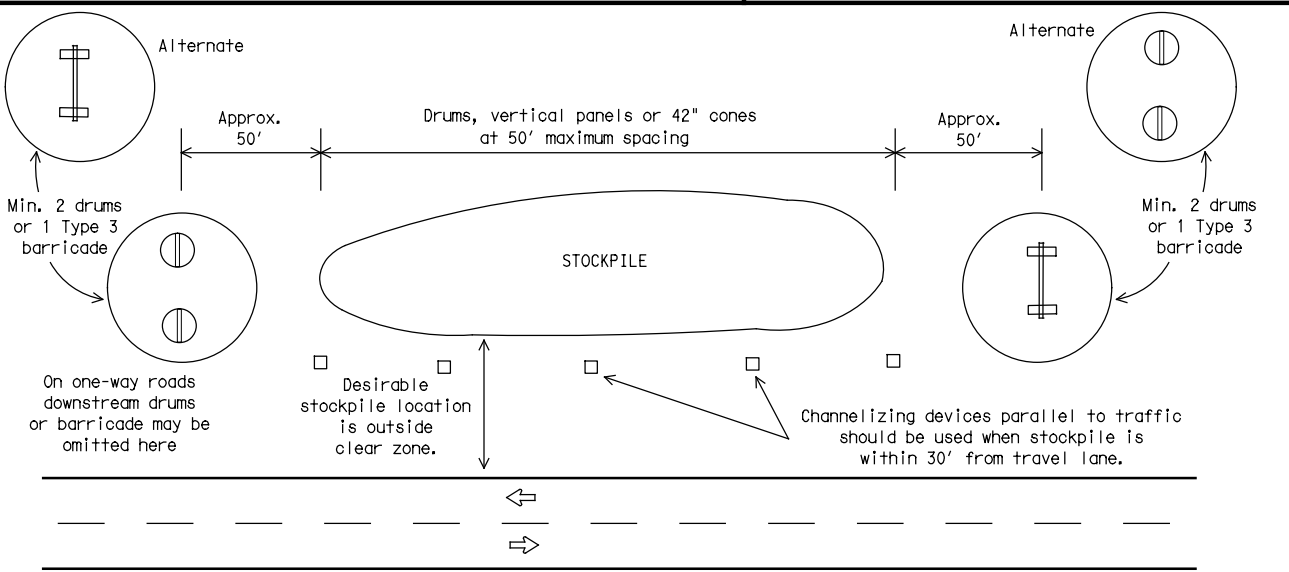
Two-Piece cones

One-Piece cones

Tubular Marker

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

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	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0439	05	026	SH 194
9-07 8-14	DIST	COUNTY	SHEET NO.	
7-13 5-21	LBB	HALE	93	

WORK ZONE PAVEMENT MARKINGS

GENERAL

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

RAISED PAVEMENT MARKERS

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

PREFABRICATED PAVEMENT MARKINGS

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

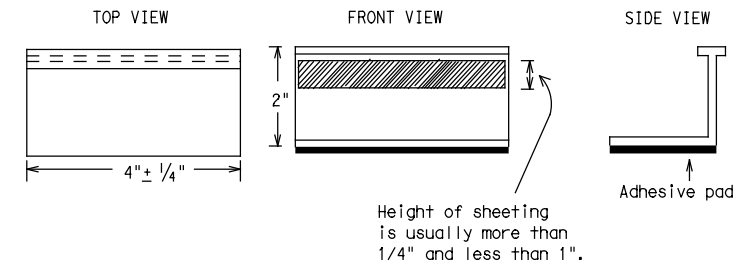
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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

REMOVAL OF PAVEMENT MARKINGS

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

Temporary Flexible-Reflective Roadway Marker Tabs



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

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

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

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

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

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

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

SHEET 11 OF 12



BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

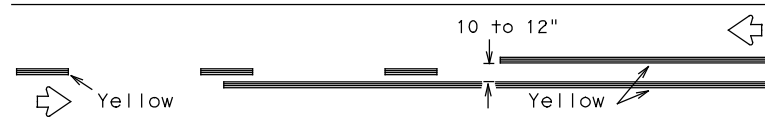
BC(11)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS	0439	05	026	SH 194
2-98 9-07 5-21	DIST	COUNTY	SHEET NO.	
1-02 7-13	LBB	HALE	94	
11-02 8-14				

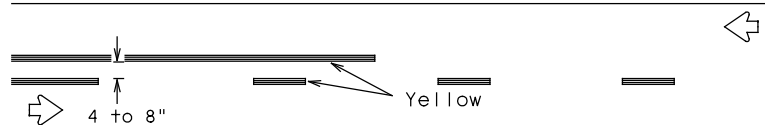
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PAVEMENT MARKING PATTERNS

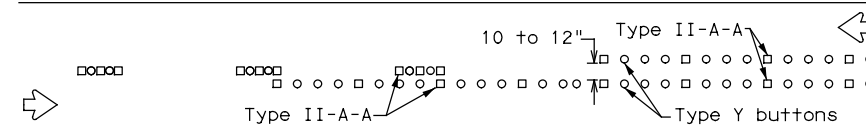


REFLECTORIZED PAVEMENT MARKINGS - PATTERN A

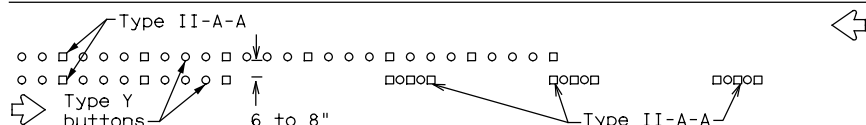


REFLECTORIZED PAVEMENT MARKINGS - PATTERN B

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

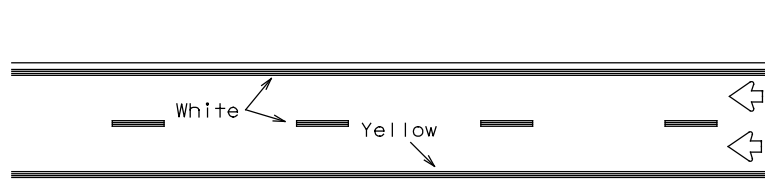


RAISED PAVEMENT MARKERS - PATTERN A



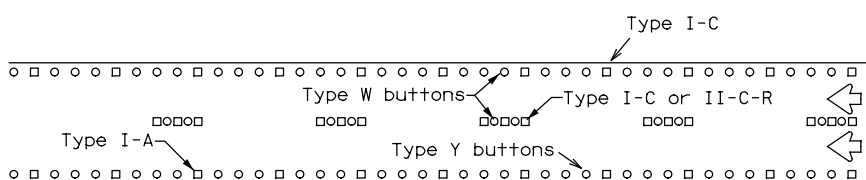
RAISED PAVEMENT MARKERS - PATTERN B

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



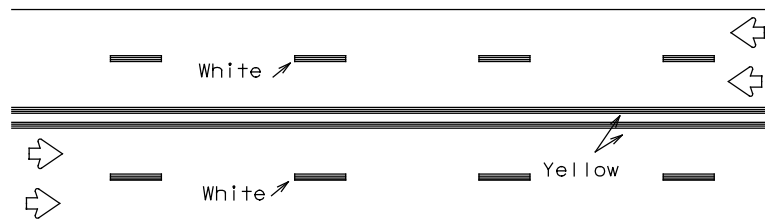
REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectORIZED pavement markings.



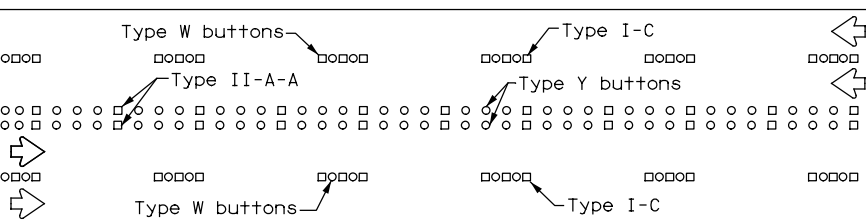
RAISED PAVEMENT MARKERS

EDGE & LANE LINES FOR DIVIDED HIGHWAY



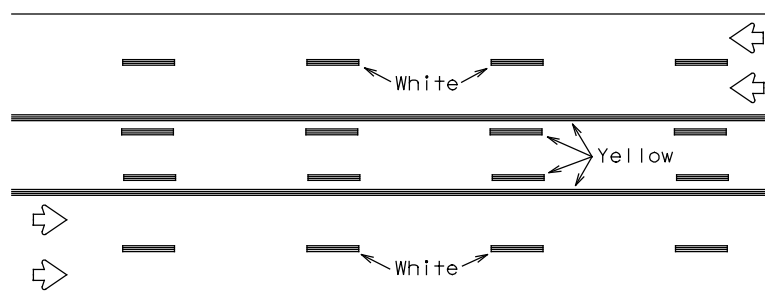
REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectORIZED pavement markings.



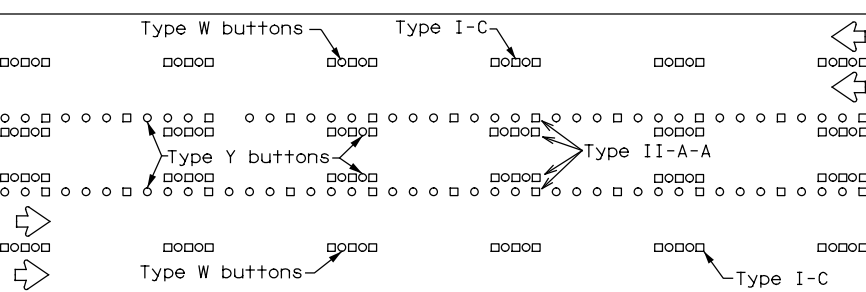
RAISED PAVEMENT MARKERS

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS

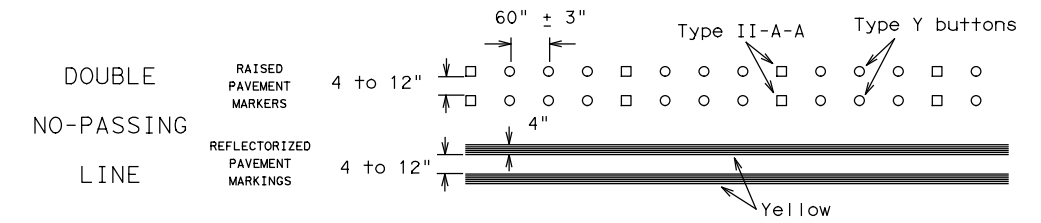
Prefabricated markings may be substituted for reflectORIZED pavement markings.



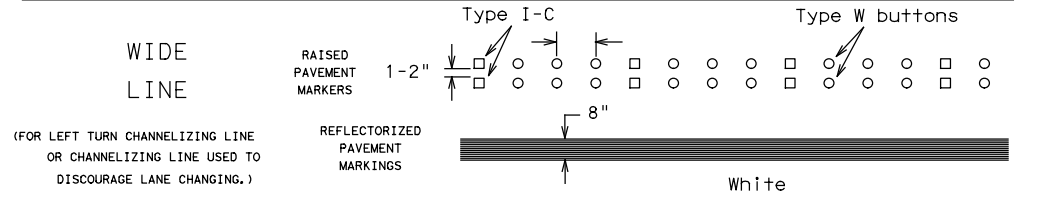
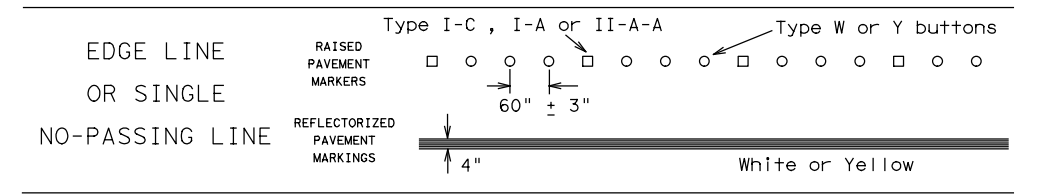
RAISED PAVEMENT MARKERS

TWO-WAY LEFT TURN LANE

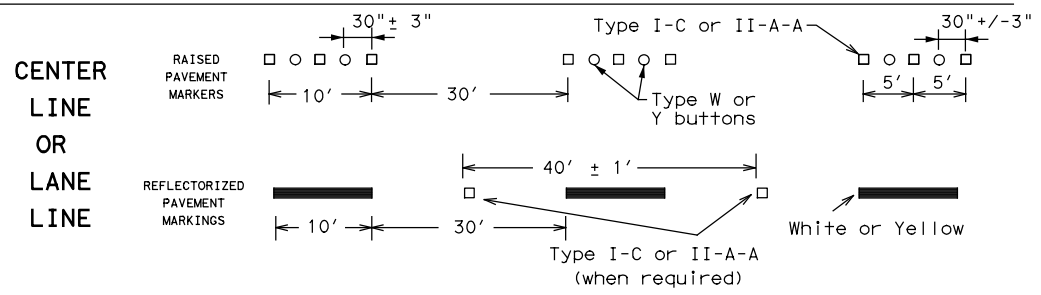
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS



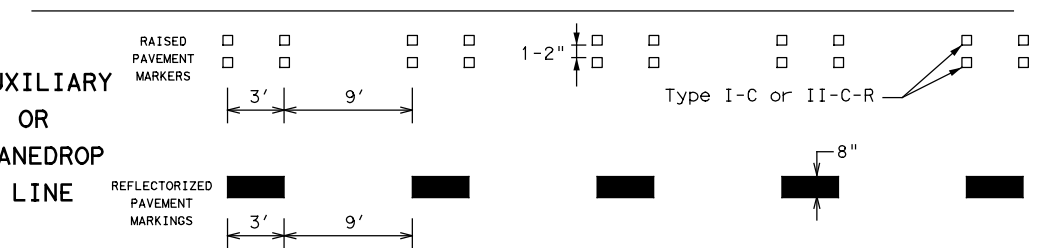
SOLID LINES



BROKEN LINES

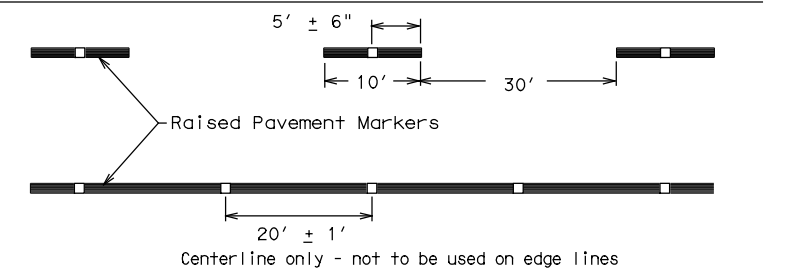


AUXILIARY OR LANEDROP LINE



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

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS	0439	05	026	SH 194
1-97 9-07 5-21	DIST	COUNTY	SHEET NO.	
2-98 7-13	LBB	HALE	95	
11-02 8-14				

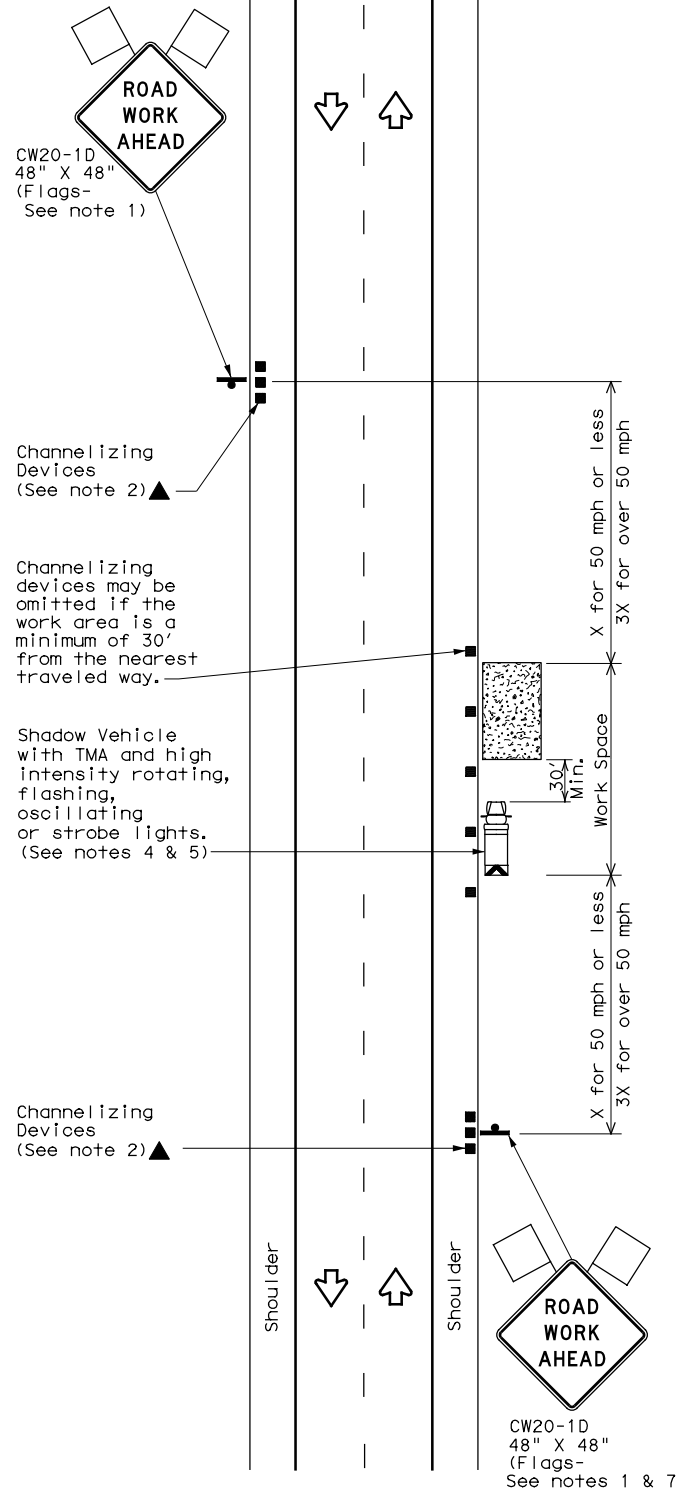
Raised pavement markers used as standard pavement markings shall be from the approved products list and meet the requirements of Item 672 "RAISED PAVEMENT MARKERS."

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DATE: 2/27/2023 10:13:57 AM
FILE: 01_bc-21.dgn

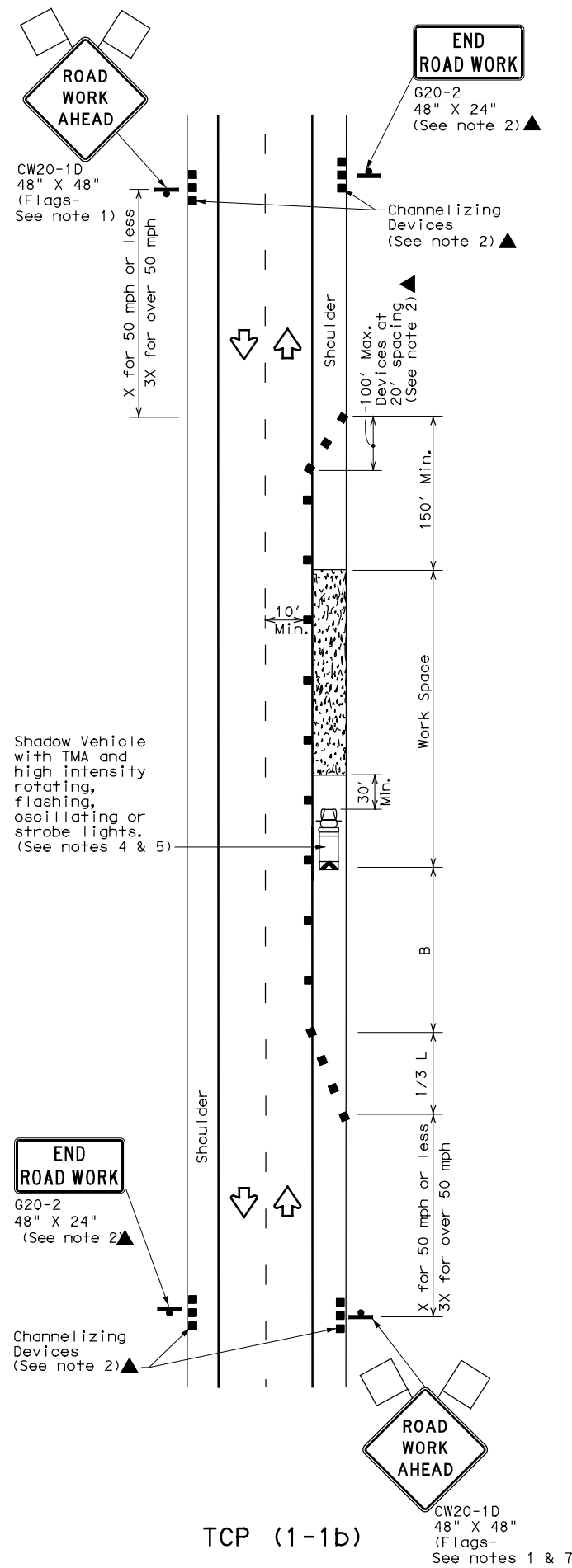
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DATE: 2/27/2023 10:14:01 AM
FILE: 02_top1-1-18.dgn



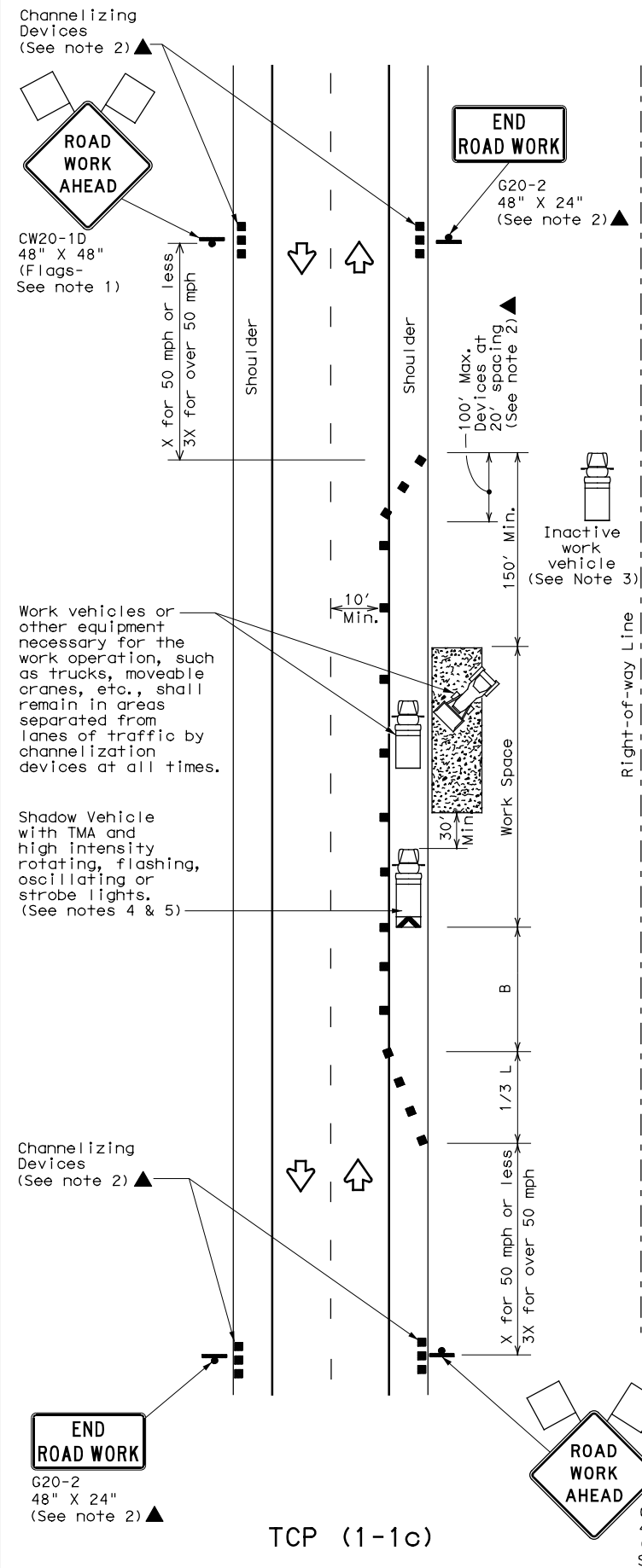
TCP (1-1a)

WORK SPACE NEAR SHOULDER
Conventional Roads



TCP (1-1b)

WORK SPACE ON SHOULDER
Conventional Roads



TCP (1-1c)

WORK VEHICLES ON SHOULDER
Conventional Roads

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		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 / 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.
 - Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
 - 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.
 - See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
 - CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.



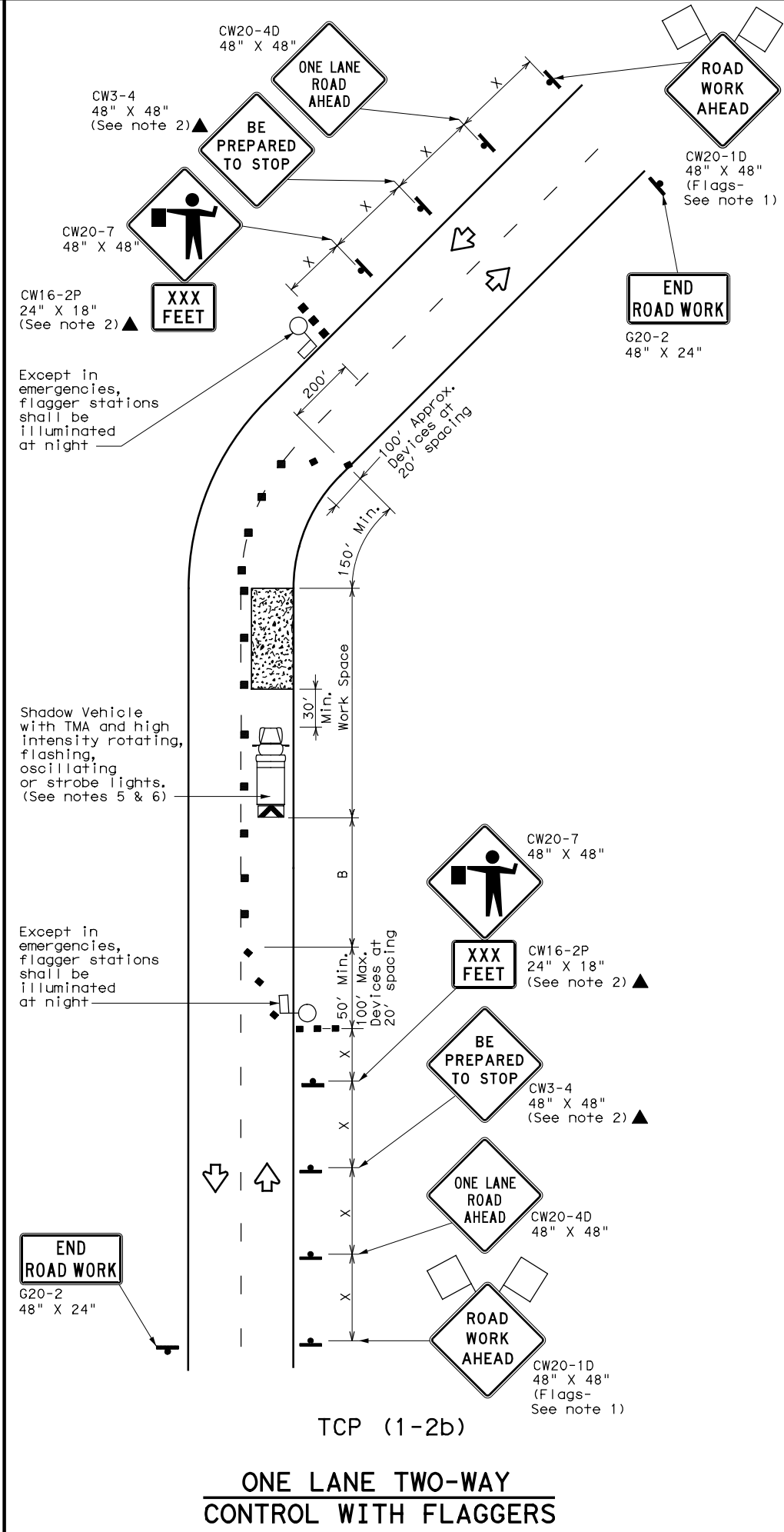
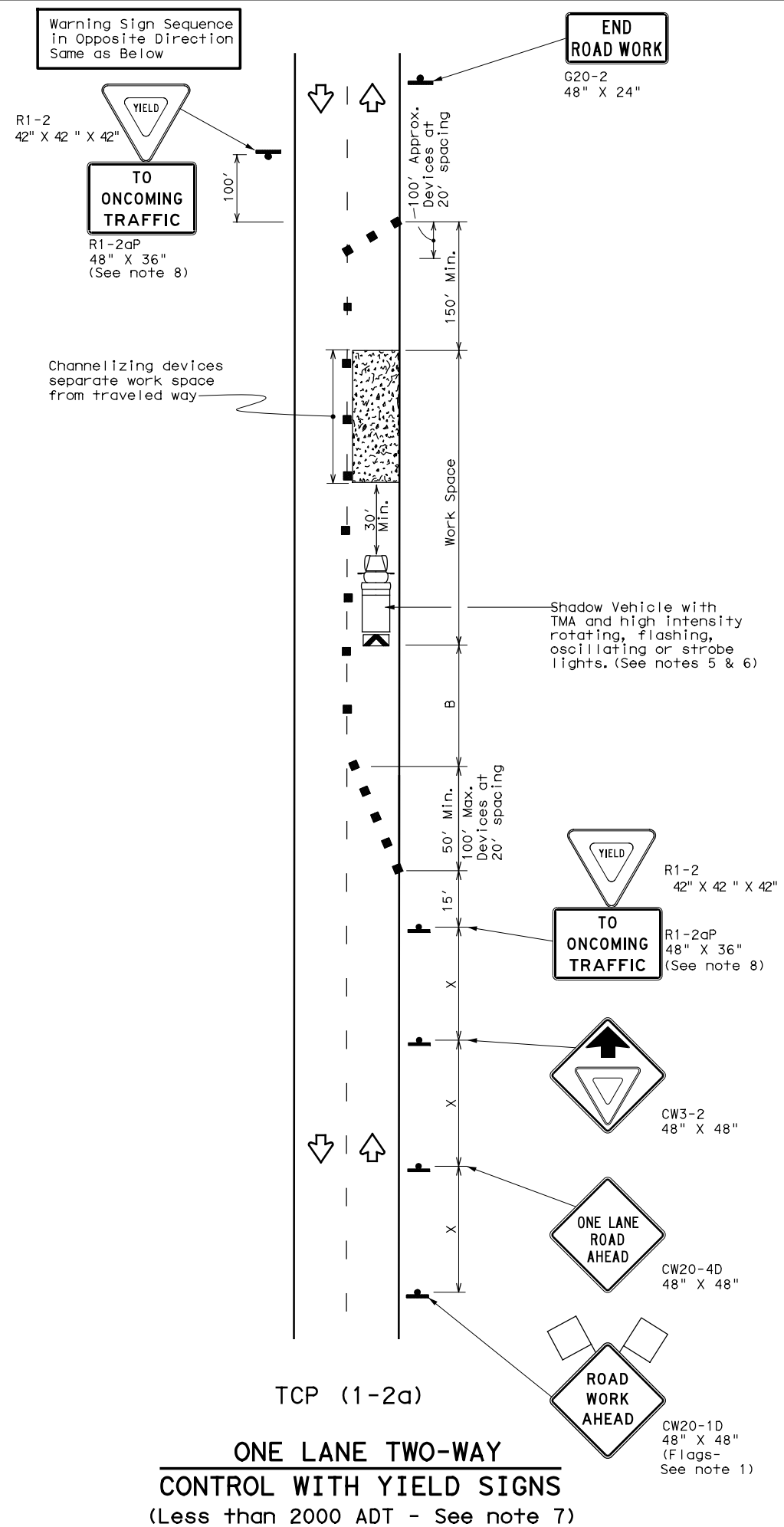
TRAFFIC CONTROL PLAN
CONVENTIONAL ROAD
SHOULDER WORK

TCP (1-1) - 18

FILE: tcp1-1-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CON:	SECT:	JOB:	HIGHWAY:
REVISIONS	0439	05	026	SH 194
2-94 4-98	DIST:	COUNTY:	SHEET NO.:	
8-95 2-12	LBB	HALE	96	
1-97 2-18				

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DATE: 2/27/2023 10:14:06 AM
FILE: 03_top1-2-18.dgn



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

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

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

GENERAL NOTES

- Flags attached to signs where shown are REQUIRED.
- All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
- The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4D "ONE LANE ROAD AHEAD" sign, but proper sign spacing shall be maintained.
- Sign spacing may be increased or an additional CW20-1D "ROAD WORK AHEAD" sign may be used if advance warning ahead of the flagger or R1-2 "YIELD" sign 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 (1-2a)

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

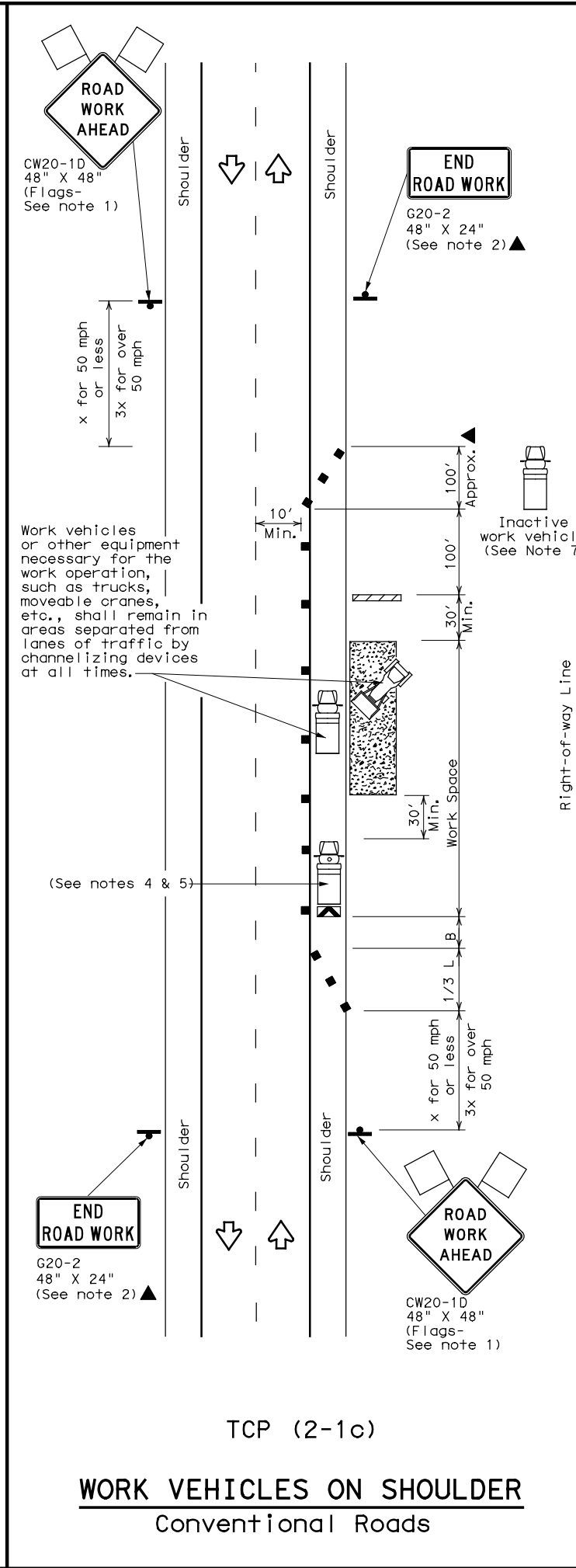
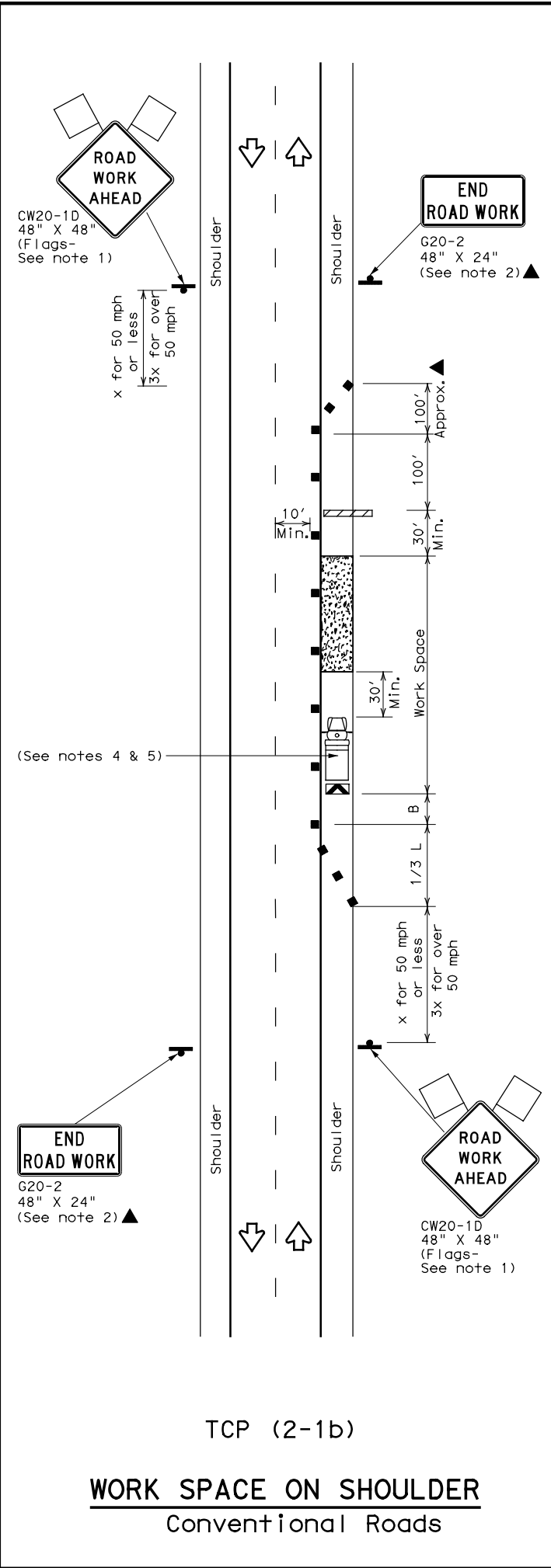
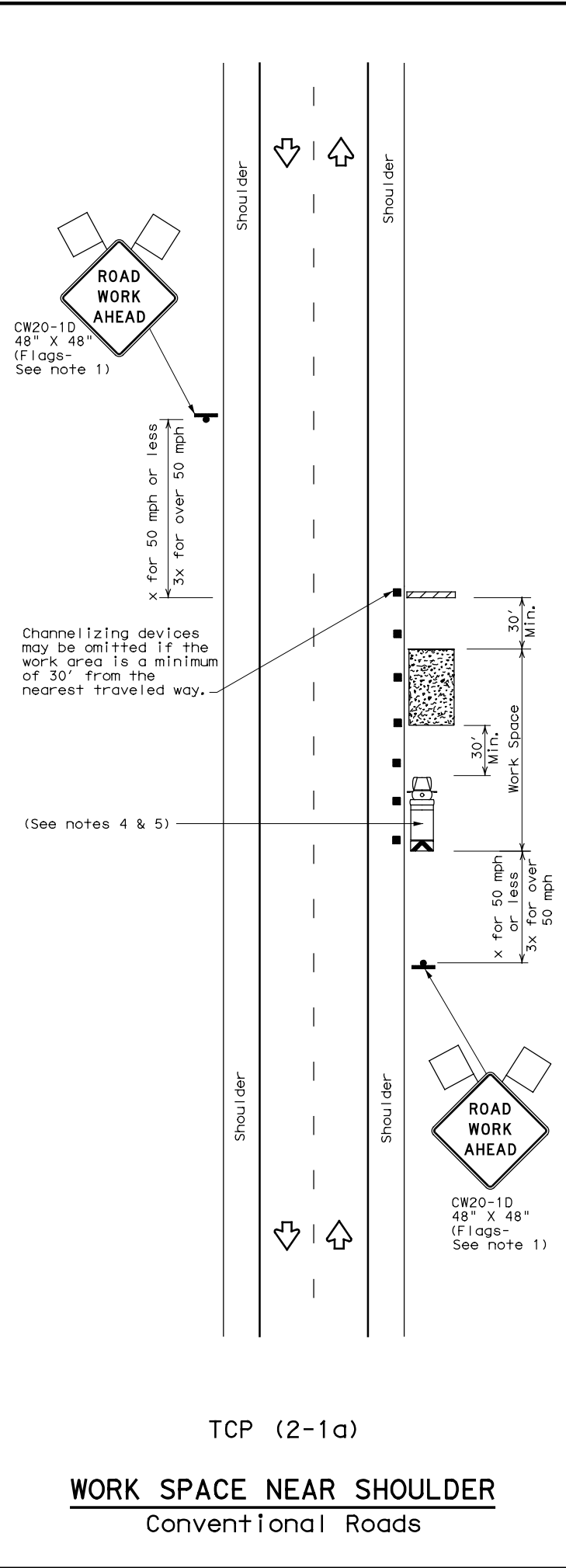
TCP (1-2b)

- Flaggers should use two-way radios or other methods of communication to control traffic.
- Length of work space should be based on the ability of flaggers to communicate.
- If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain adequate stopping sight distance to the flagger and a queue of stopped vehicles (see table above).
- Channelizing devices on the center-line may be omitted when a pilot car is leading traffic and approved by the Engineer.
- Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.

		Traffic Operations Division Standard	
TRAFFIC CONTROL PLAN			
ONE-LANE TWO-WAY			
TRAFFIC CONTROL			
TCP (1-2) - 18			
FILE: tcp1-2-18.dgn	DN:	CK:	DW: CK:
© TxDOT December 1985	CON: 0439	SECT: 05	JOB: 026 HIGHWAY: SH 194
4-90 4-98	REVISIONS		SHEET NO.
2-94 2-12	DIST: LBB	COUNTY: HALE	97
1-97 2-18			

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DATE: 2/27/2023 10:14:11 AM
FILE: 04_tcp2-1-18.dgn



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 in the plans, or for routine maintenance work, when approved by the Engineer.
 - Stockpiled material should be placed a minimum of 30 feet from nearest traveled way.
 - 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 off the paved surface, next to those shown in order to protect a wider work space.
 - See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
 - Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
 - CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

Texas Department of Transportation
Traffic Operations Division Standard

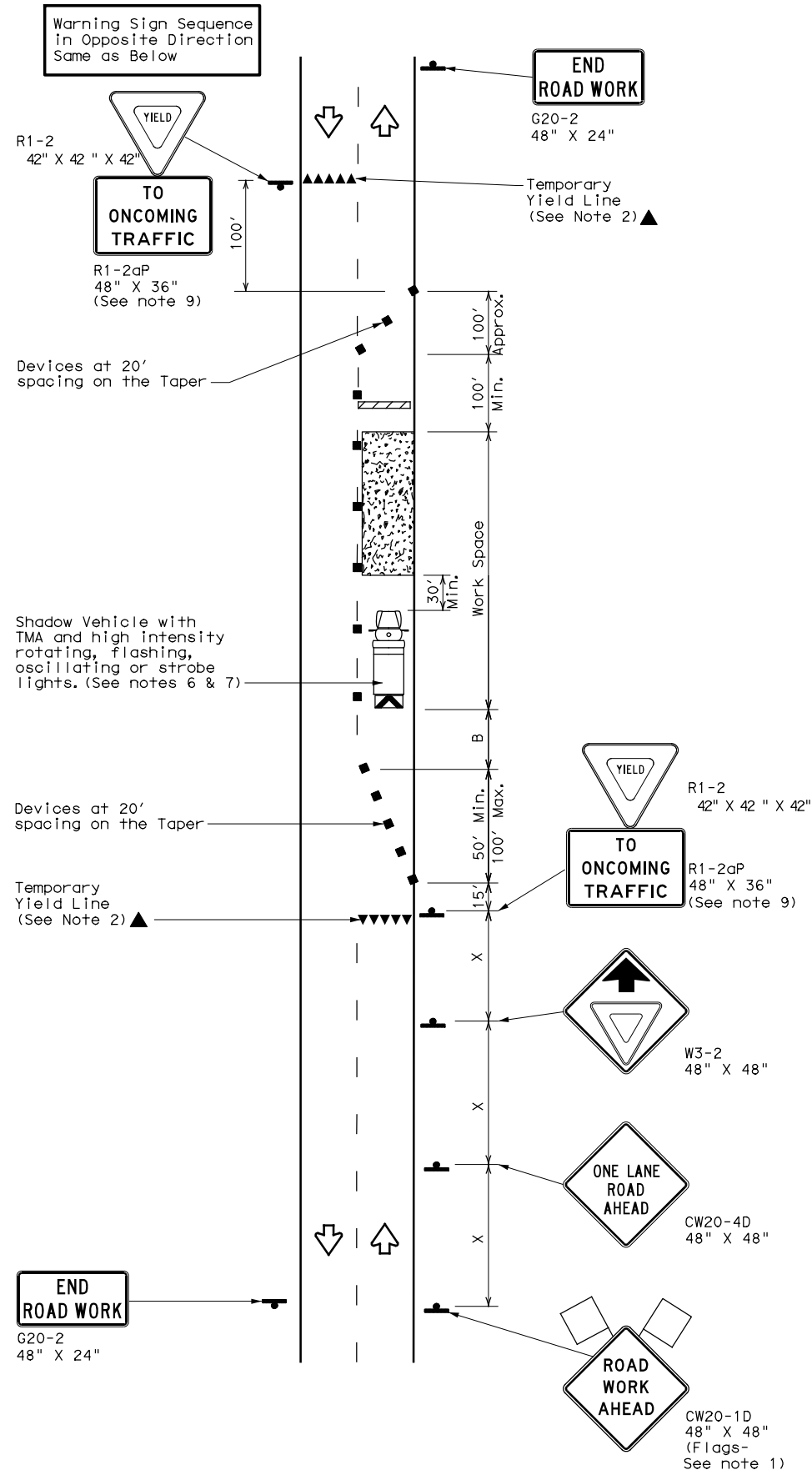
TRAFFIC CONTROL PLAN
CONVENTIONAL ROAD
SHOULDER WORK

TCP (2-1) - 18

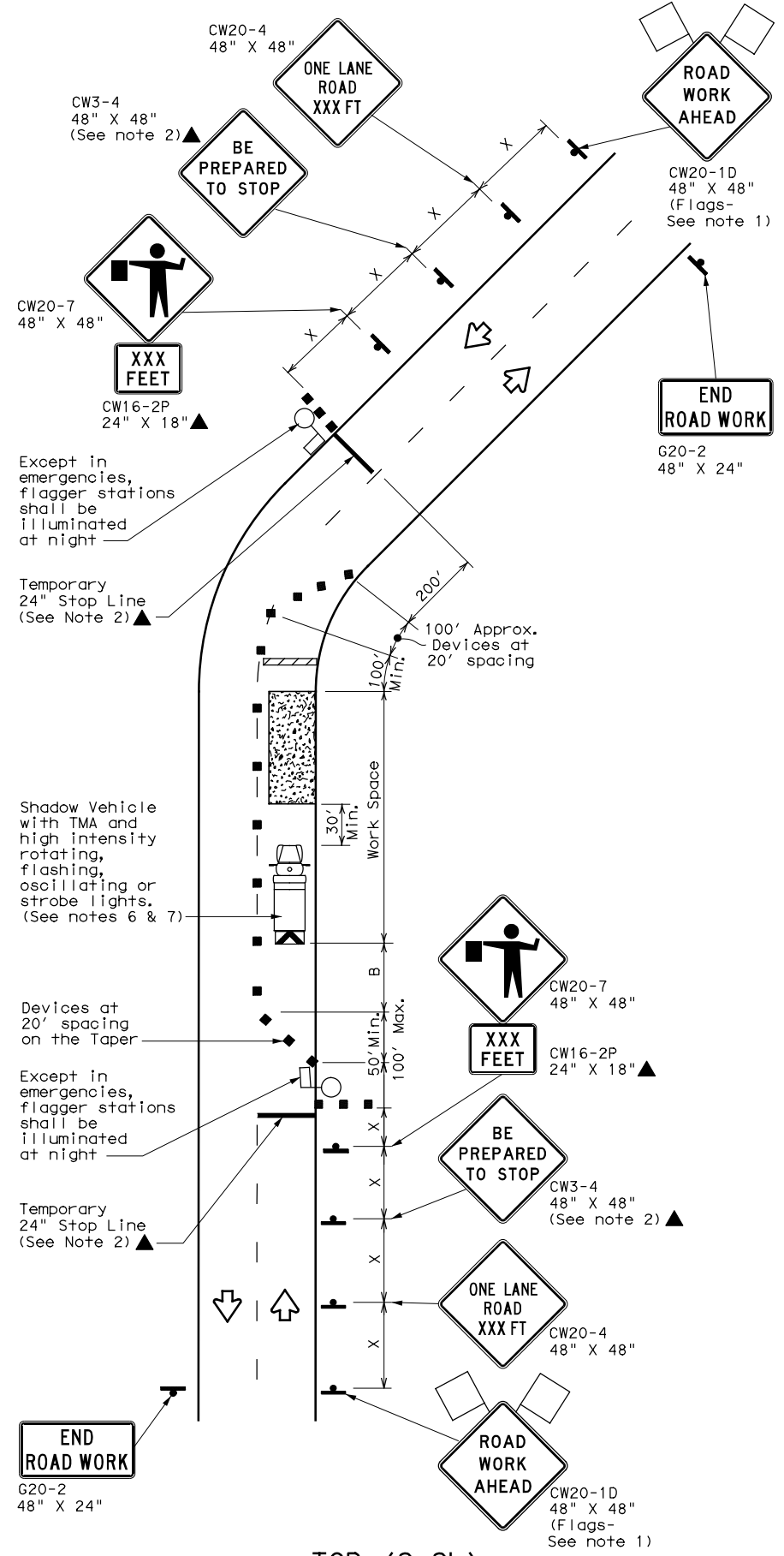
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© TxDOT December 1985	CON:	SECT:	JOB:	HIGHWAY:
REVISIONS	0439	05	026	SH 194
2-94 4-98	DIST:	COUNTY:	SHEET NO.:	
8-95 2-12	LBB	HALE	98	
1-97 2-18				

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DATE: 2/27/2023 10:14:16 AM
FILE: 05_top2-2-18.dgn



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



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

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

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent			
30	L = WS ² / 60	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45	L = WS	450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	575'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

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

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

GENERAL NOTES

- Flags attached to signs where shown, are REQUIRED.
 - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
 - The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4 "ONE LANE ROAD XXX FT" sign, but proper sign spacing shall be maintained.
 - Flaggers should use two-way radios or other methods of communication to control traffic.
 - Length of work space should be based on the ability of flaggers to communicate.
 - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
 - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
- TCP (2-2a)**
- The R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work space should be no longer than one half city block. In rural areas, roadways with less than 2000 ADT, work space should be no longer than 400 feet.
 - The R1-2aP "YIELD TO ONCOMING TRAFFIC" sign shall be placed on a support at a 7 foot minimum mounting height.
- TCP (2-2b)**
- Channelizing devices on the center line may be omitted when a pilot car is leading traffic and approved by the Engineer.
 - If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain stopping sight distance to the flagger and a queue of stopped vehicles. (See table above).
 - Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.



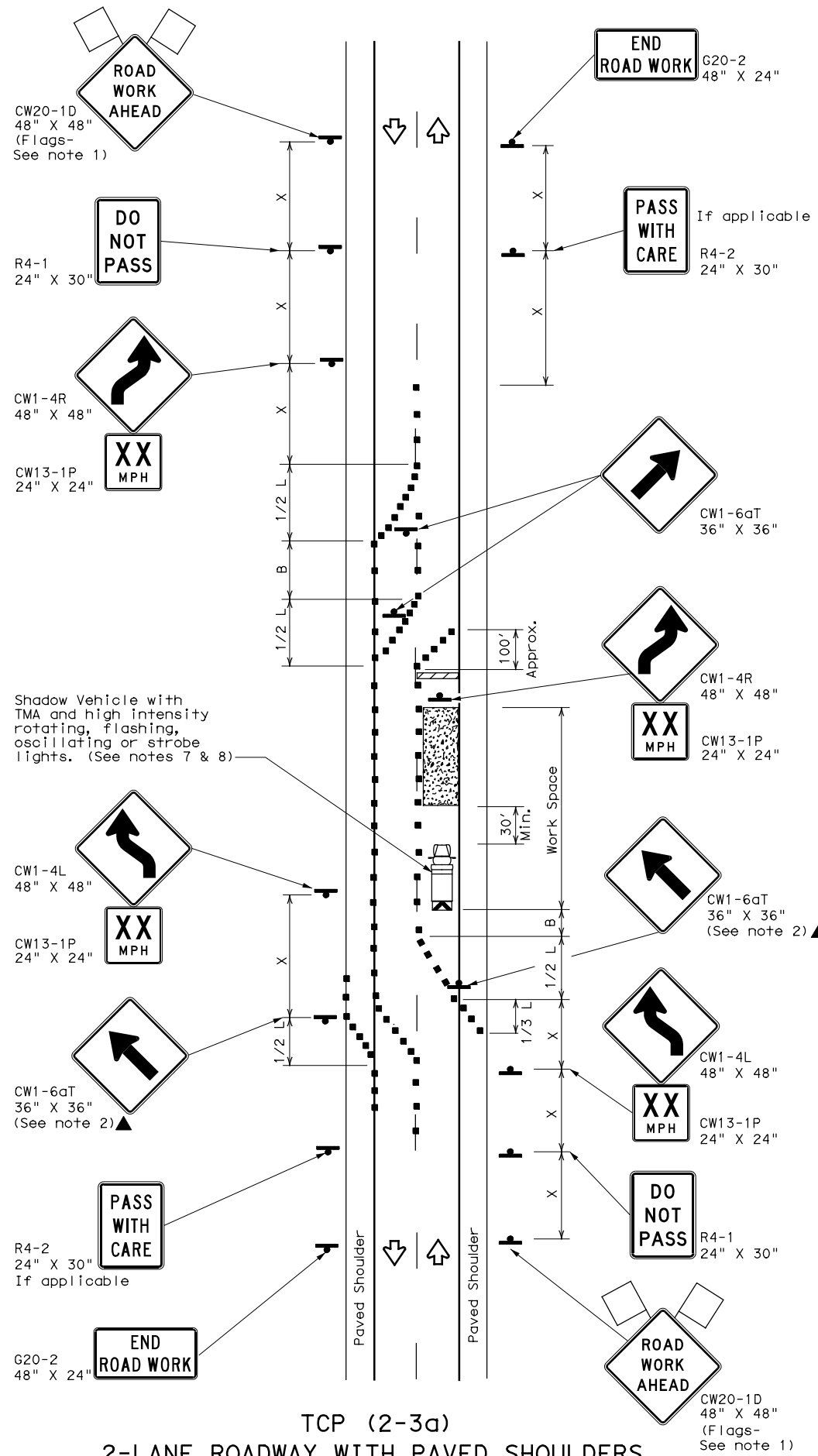
TRAFFIC CONTROL PLAN
ONE-LANE TWO-WAY
TRAFFIC CONTROL

TCP (2-2) - 18

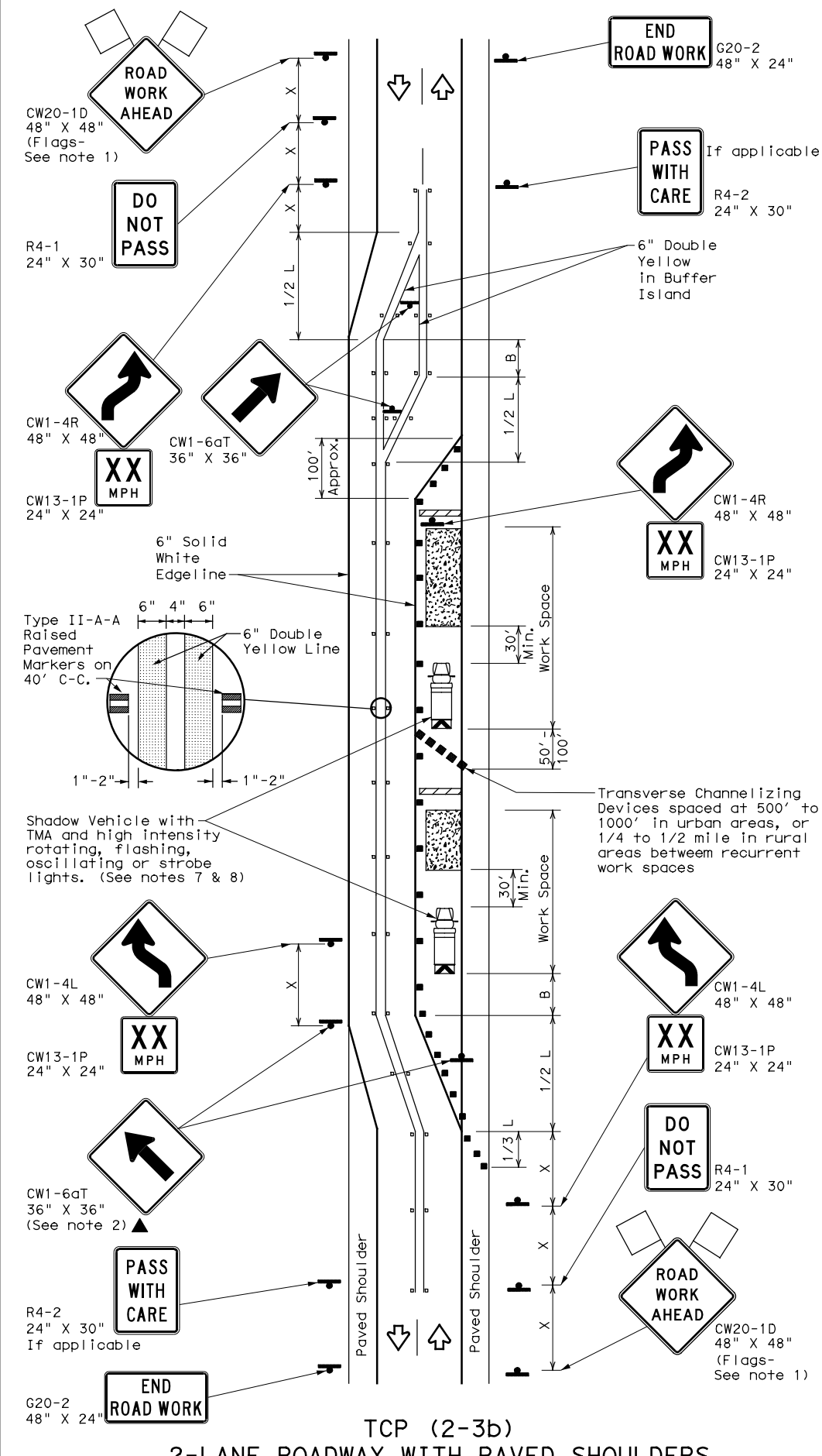
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© TxDOT December 1985	CON:	SECT:	JOB:	HIGHWAY:
REVISIONS	0439	05	026	SH 194
8-95 3-03	DIST:	COUNTY:	SHEET NO.:	
1-97 2-12	LBB	HALE	99	
4-98 2-18				

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DATE: 6/28/2024 10:18:43 AM
FILE: 06_top2-3-23.dgn



TCP (2-3a)
2-LANE ROADWAY WITH PAVED SHOULDERS
ONE LANE CLOSED
ADEQUATE FIELD OF VIEW



TCP (2-3b)
2-LANE ROADWAY WITH PAVED SHOULDERS
ONE LANE CLOSED
INADEQUATE FIELD OF VIEW

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Raised Pavement Markers Ty II-AA
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L=WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		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
			✓	✓
				TCP (2-3b) ONLY

- GENERAL NOTES**
- Flags attached to signs where shown, are REQUIRED.
 - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
 - When work space will be in place less than three days existing pavement markings may remain in place. Channelizing devices shall be used to separate traffic.
 - Flagger control should NOT be used unless roadway conditions or heavy traffic volume require additional emphasis to safely control traffic. Flagger should be positioned at end of traffic queue.
 - The R4-1 "DO NOT PASS," R4-2 "PASS WITH CARE" and construction regulatory speed zone signs may be installed within CW20-1D "ROAD WORK AHEAD" signs. Proper spacing of signs shall be maintained.
 - Conflicting pavement marking shall be removed for long term projects.
 - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted.
 - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.

- TCP (2-3a)**
- Conflicting pavement markings shall be removed for long-term projects. For shorter durations where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20' or 15' if posted speeds are 35 mph or slower, and for tangent sections, at 1/2(S) where S is the speed in mph. This tighter device spacing is intended for the area of the conflicting markings, not the entire work zone.



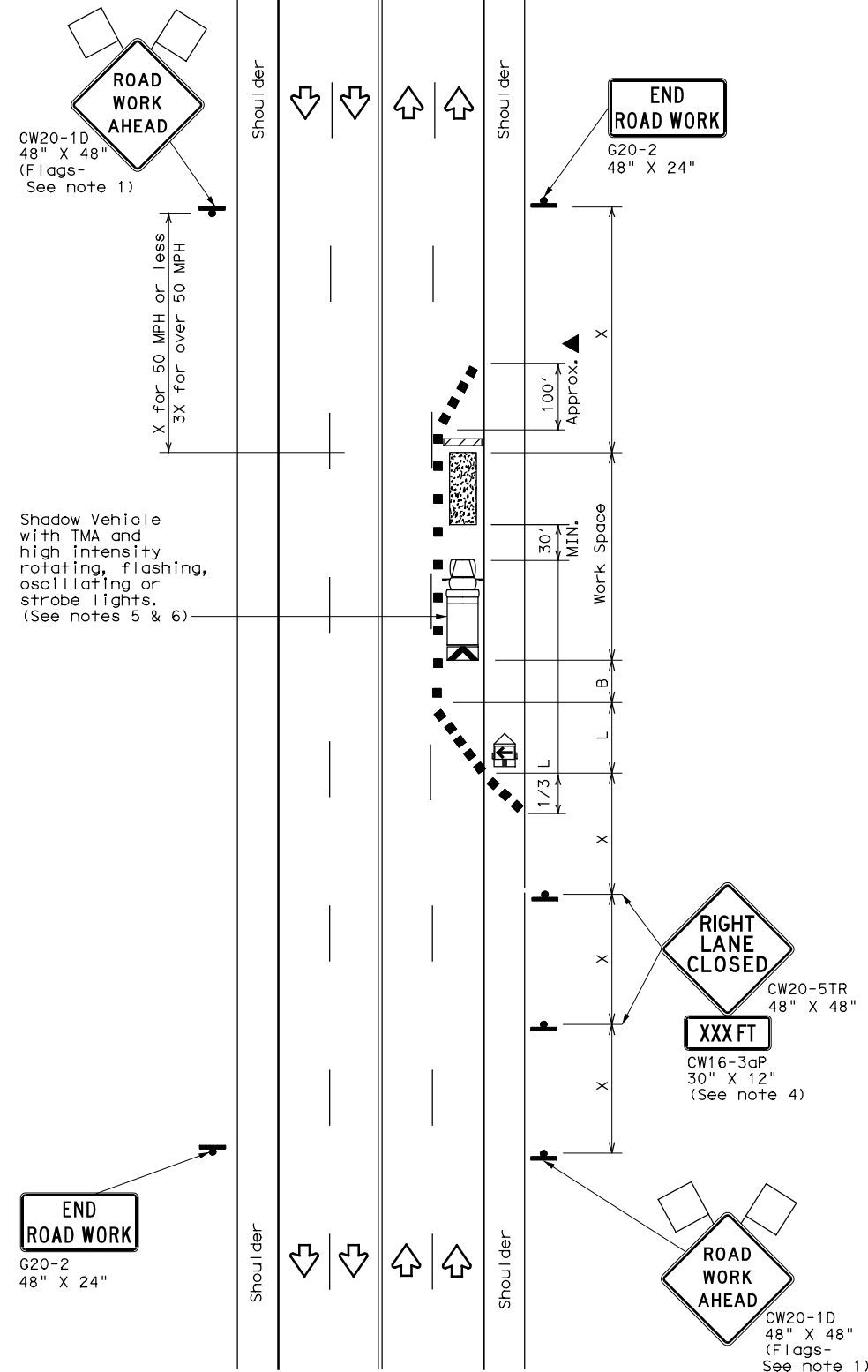
**TRAFFIC CONTROL PLAN
TRAFFIC SHIFTS ON
TWO-LANE ROADS**

TCP (2-3) -23

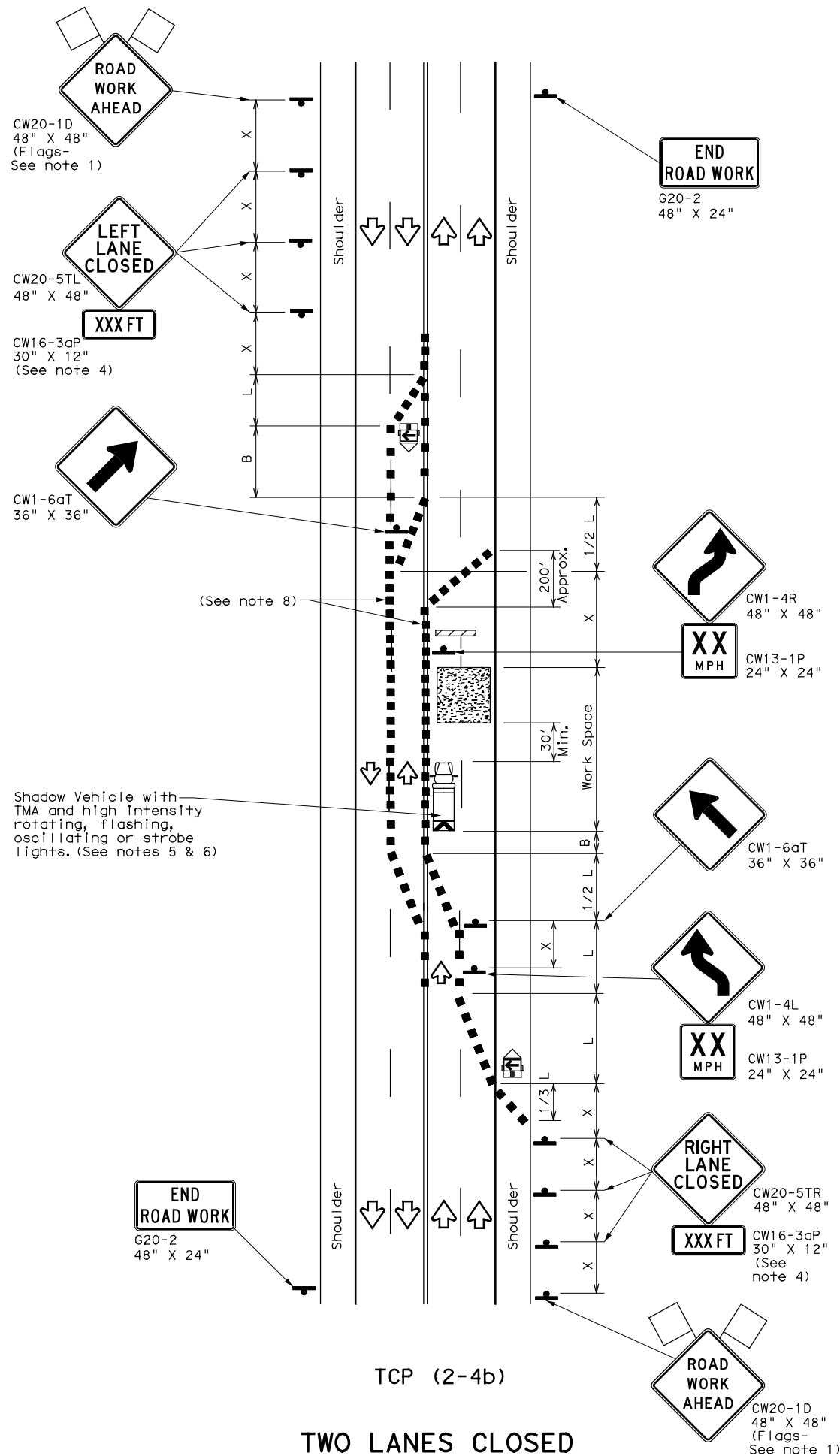
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© TxDOT	April 2023	CON:	SECT:	JOB:	HIGHWAY:
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8-95	3-03	DIST:	COUNTY:	SHEET NO.	
1-97	2-12	LBB	HALE	100	

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DATE: 2/27/2023 10:14:26 AM
FILE: 07_top2-4-18.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	$L = \frac{WS^2}{60}$	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 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.



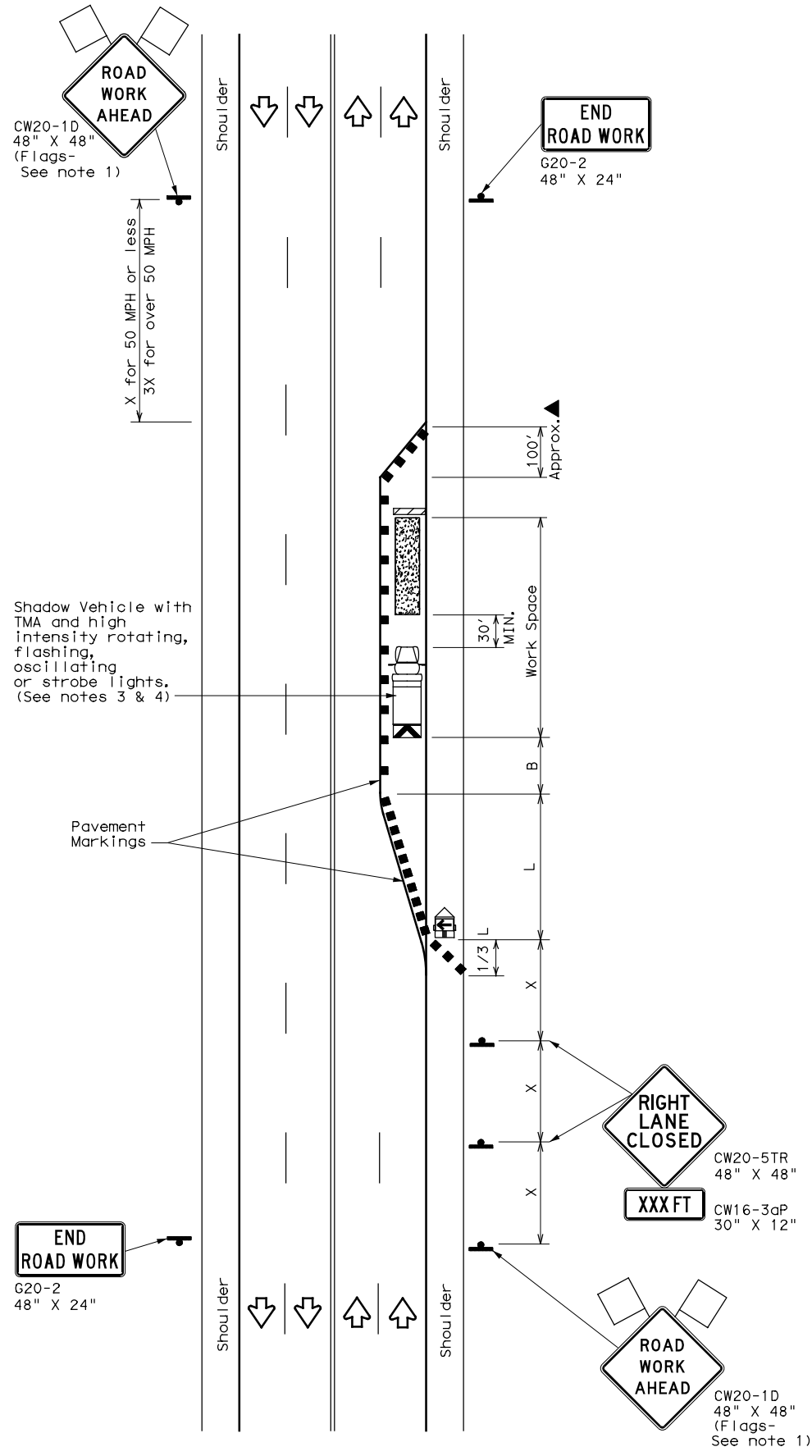
**TRAFFIC CONTROL PLAN
LANE CLOSURES ON MULTILANE
CONVENTIONAL ROADS**

TCP (2-4) - 18

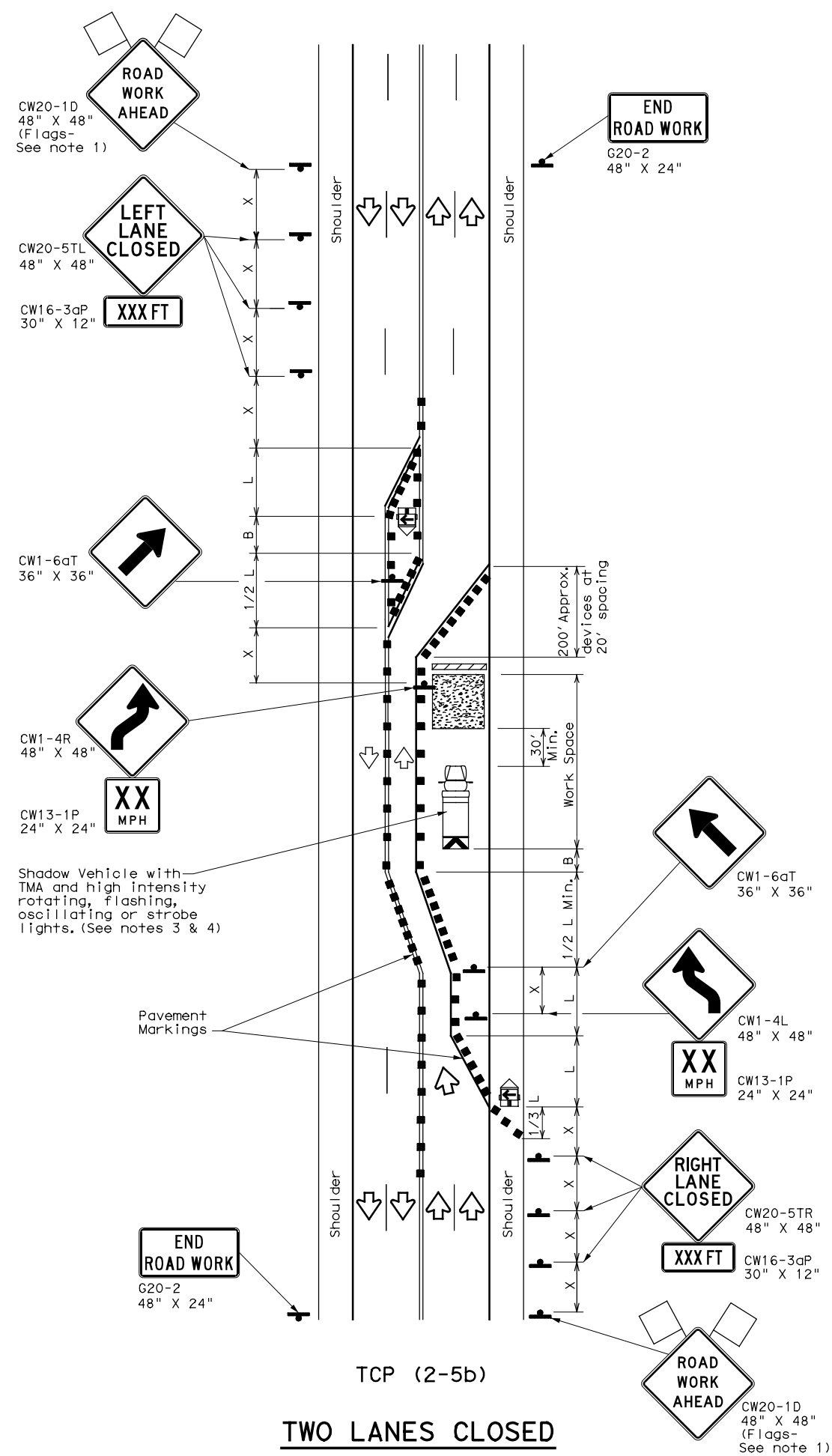
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© TxDOT December 1985	CON:	SECT:	JOB:	HIGHWAY:
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8-95 3-03	DIST:	COUNTY:	SHEET NO.:	
1-97 2-12	LBB	HALE	101	
4-98 2-18				

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DATE: 2/27/2023 10:14:37 AM
FILE: 08_top2-5-18.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 * X	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	$L = \frac{WS^2}{60}$	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.
 - 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.**

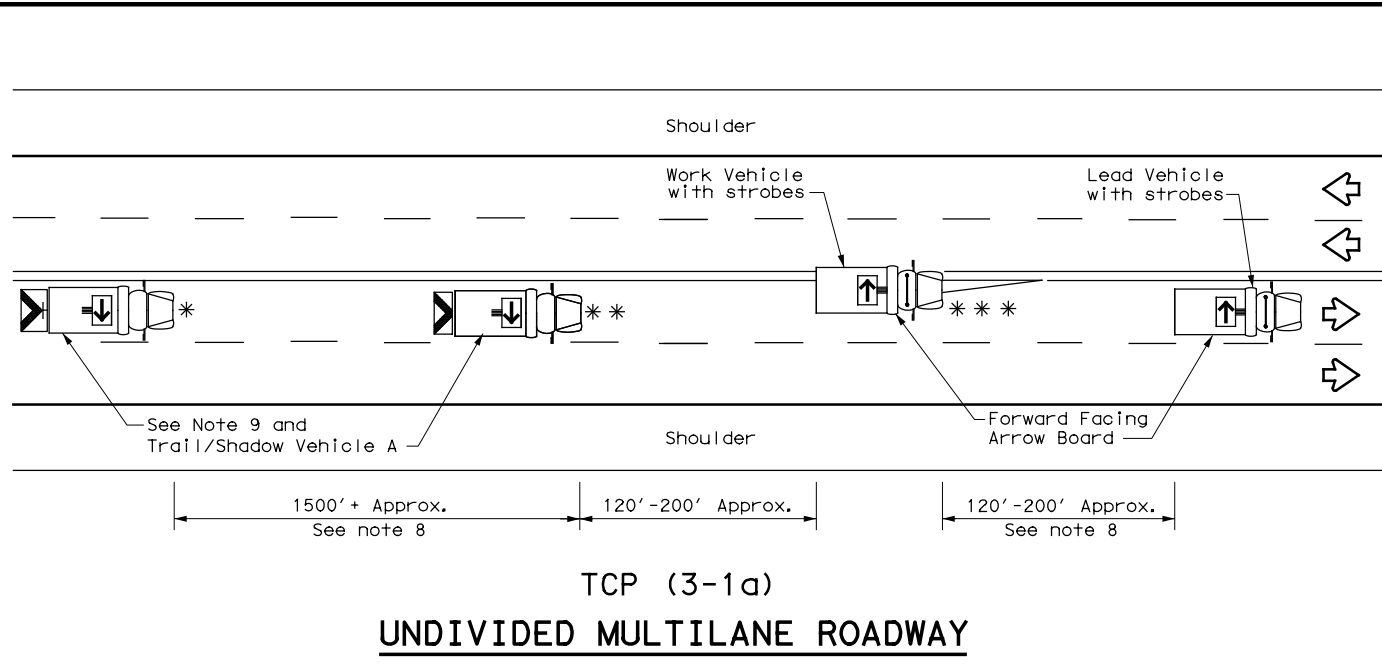
TCP (2-5) - 18

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1-97 3-03	DIST:	COUNTY:	SHEET NO.	
4-98 2-18	LBB	HALE	102	

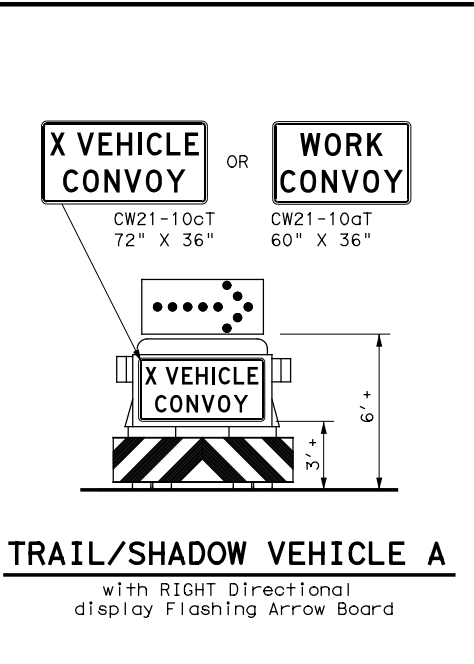
165

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DATE: 2/27/2023 10:14:41 AM
FILE: 09_top3-1-13.dgn



TCP (3-1a)
UNDIVIDED MULTILANE ROADWAY



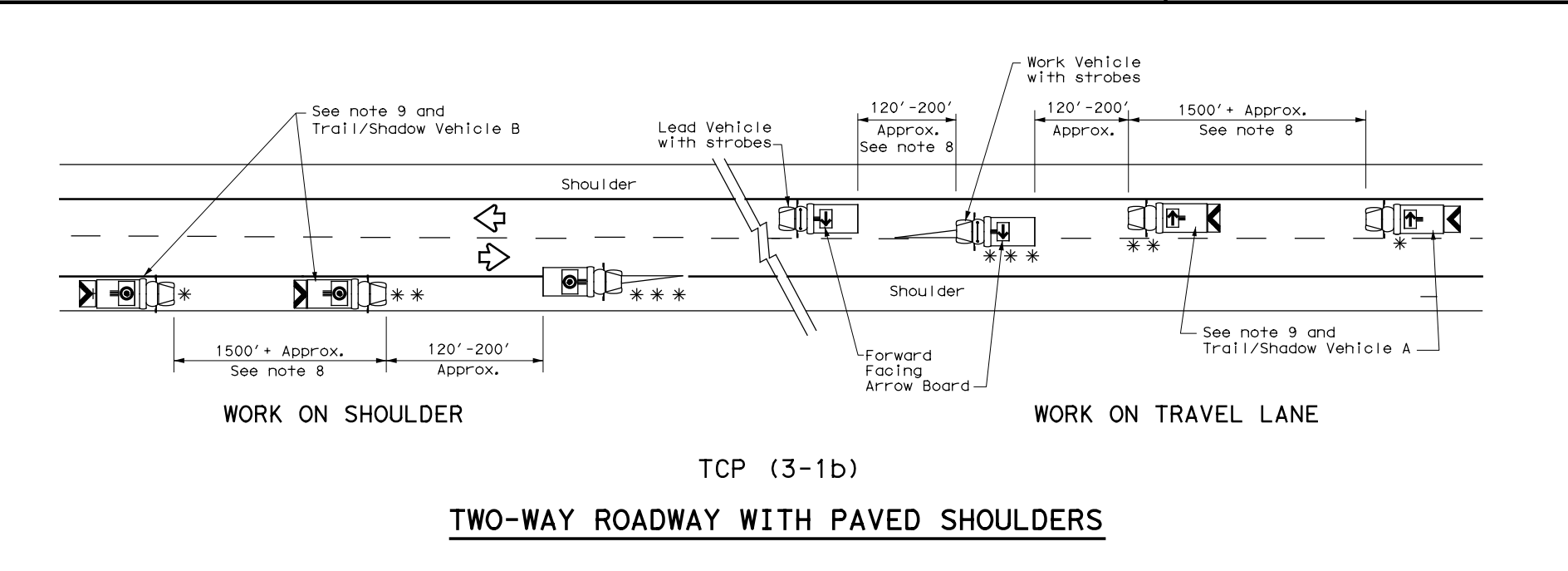
TRAIL/SHADOW VEHICLE A
with RIGHT Directional display Flashing Arrow Board

LEGEND			
*	Trail Vehicle	ARROW BOARD DISPLAY	
**	Shadow Vehicle		
***	Work Vehicle		RIGHT Directional
	Heavy Work Vehicle		LEFT Directional
	Truck Mounted Attenuator (TMA)		Double Arrow
	Traffic Flow		CAUTION (Alternating Diamond or 4 Corner Flash)

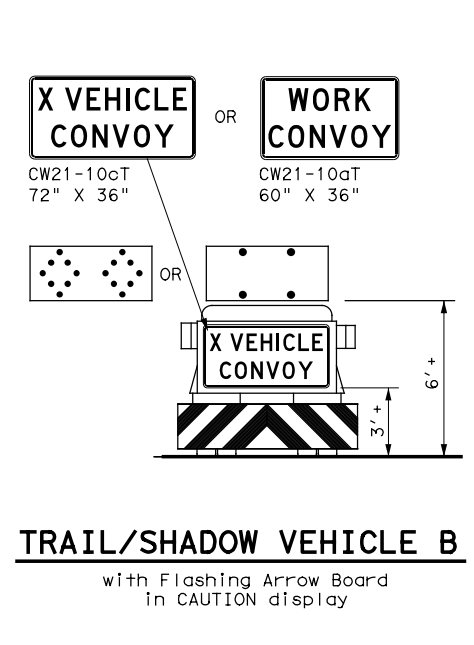
TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
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GENERAL NOTES

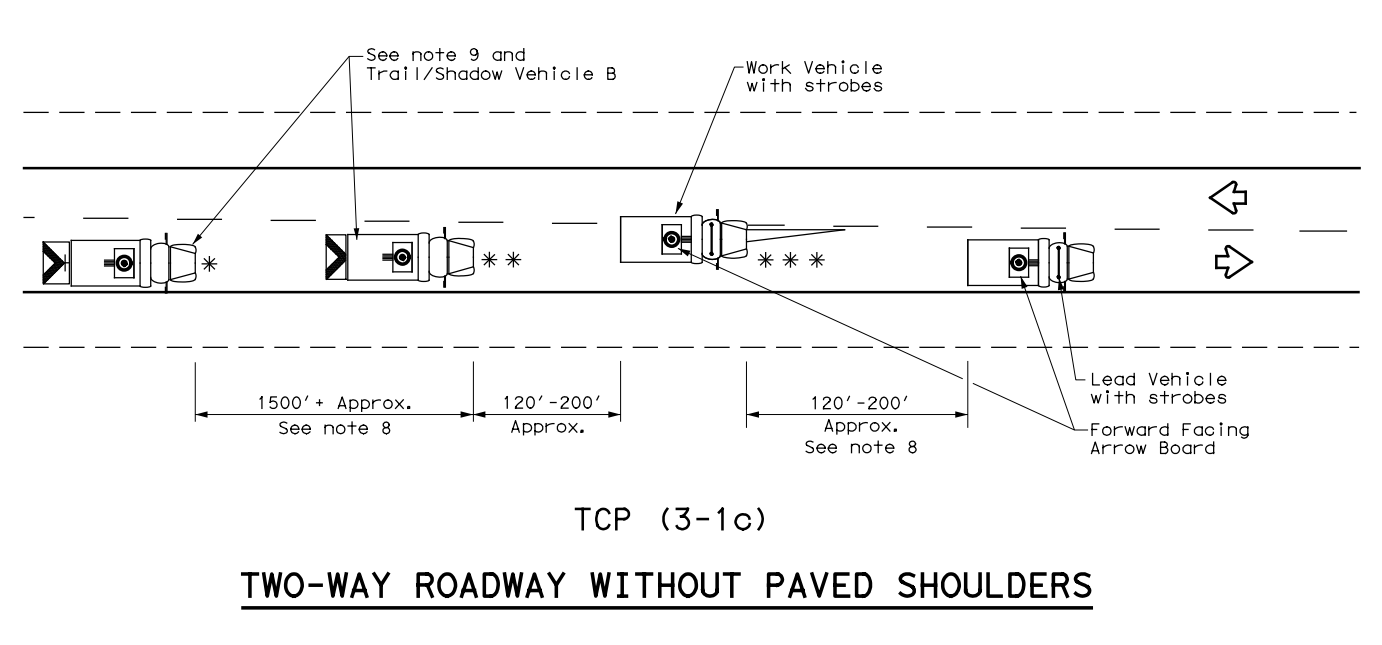
1. TRAIL, SHADOW, and LEAD vehicles shall be equipped with arrow boards as illustrated. When a LEAD vehicle is not used the WORK vehicle must be equipped with an arrow board. The Engineer will determine if the LEAD VEHICLE and/or TRAIL VEHICLE are required based on prevailing roadway conditions, traffic volume, and sight distance restrictions.
2. 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.
3. The use of truck mounted attenuators (TMA) on the SHADOW VEHICLE and TRAIL VEHICLE are required.
4. 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.
5. 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.
6. Each vehicle shall have two-way radio communication capability.
7. When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
8. Vehicle spacing between the TRAIL VEHICLE and the SHADOW VEHICLE will vary depending on sight distance restrictions. Motorists approaching the work convoy should be able to see the TRAIL VEHICLE in time to slow down and/or change lanes as they approach the TRAIL VEHICLE. Vehicle spacing between the WORK VEHICLE and SHADOW VEHICLE and vehicle spacing between WORK VEHICLE and LEAD VEHICLE may vary according to terrain, work activity and other factors.
9. "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.
10. 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.



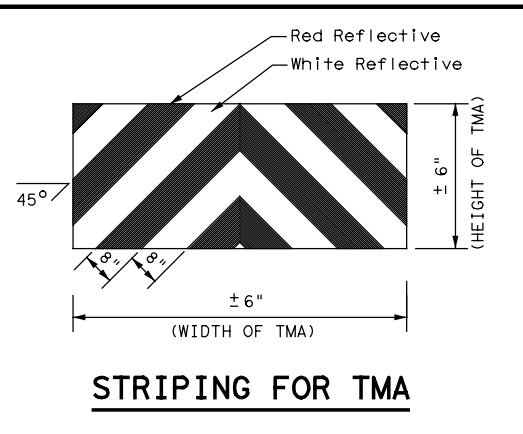
TCP (3-1b)
TWO-WAY ROADWAY WITH PAVED SHOULDERS



TRAIL/SHADOW VEHICLE B
with Flashing Arrow Board in CAUTION display



TCP (3-1c)
TWO-WAY ROADWAY WITHOUT PAVED SHOULDERS



STRIPING FOR TMA

Texas Department of Transportation Traffic Operations Division Standard

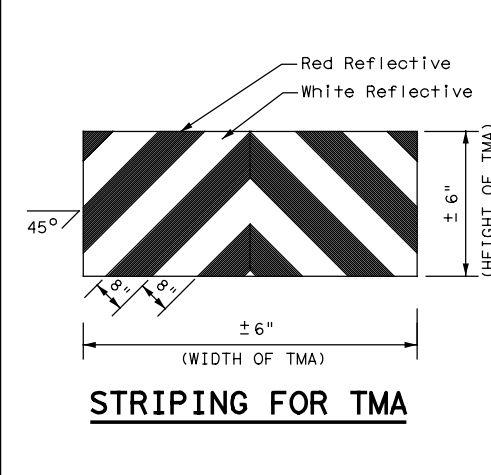
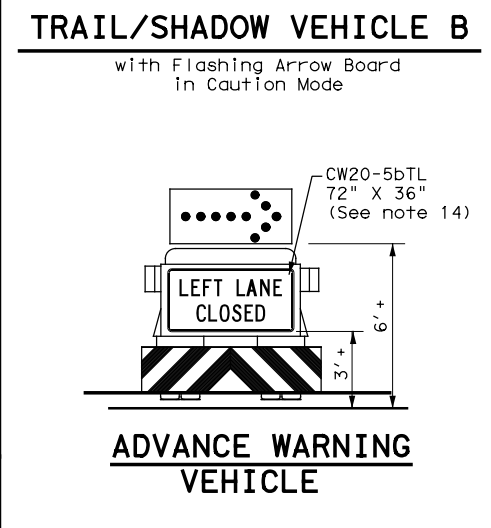
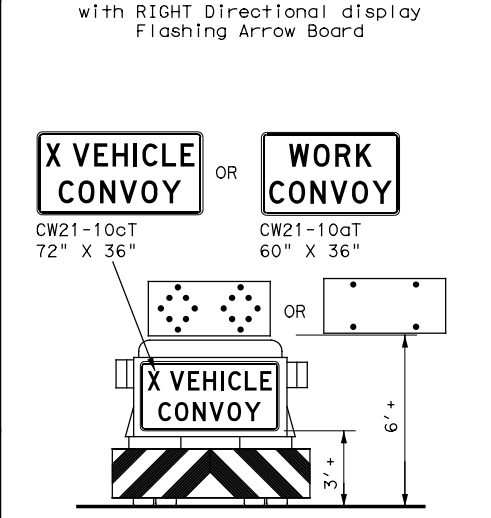
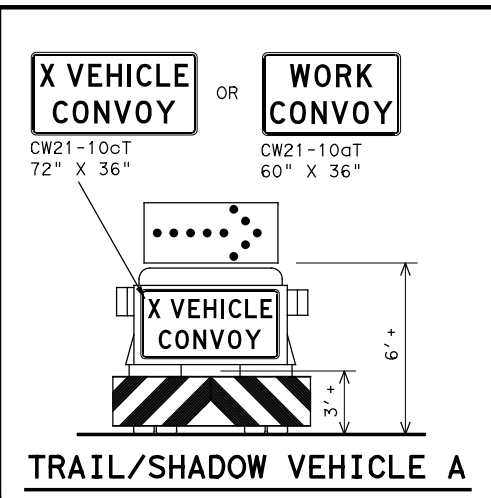
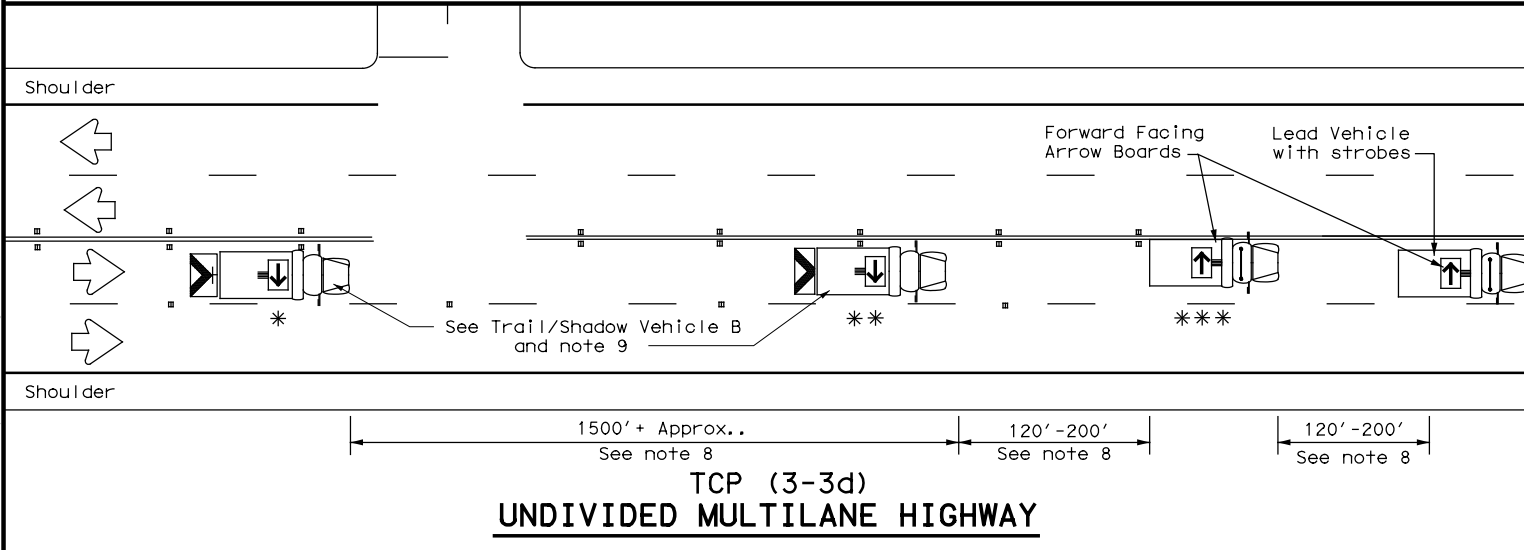
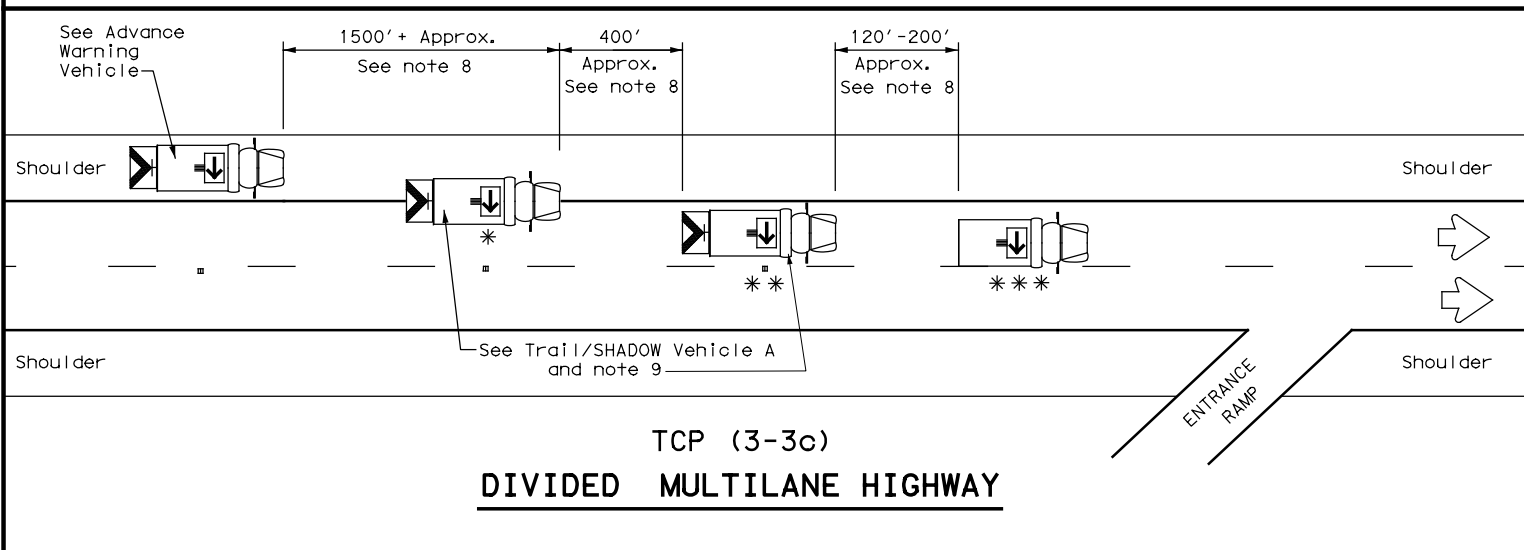
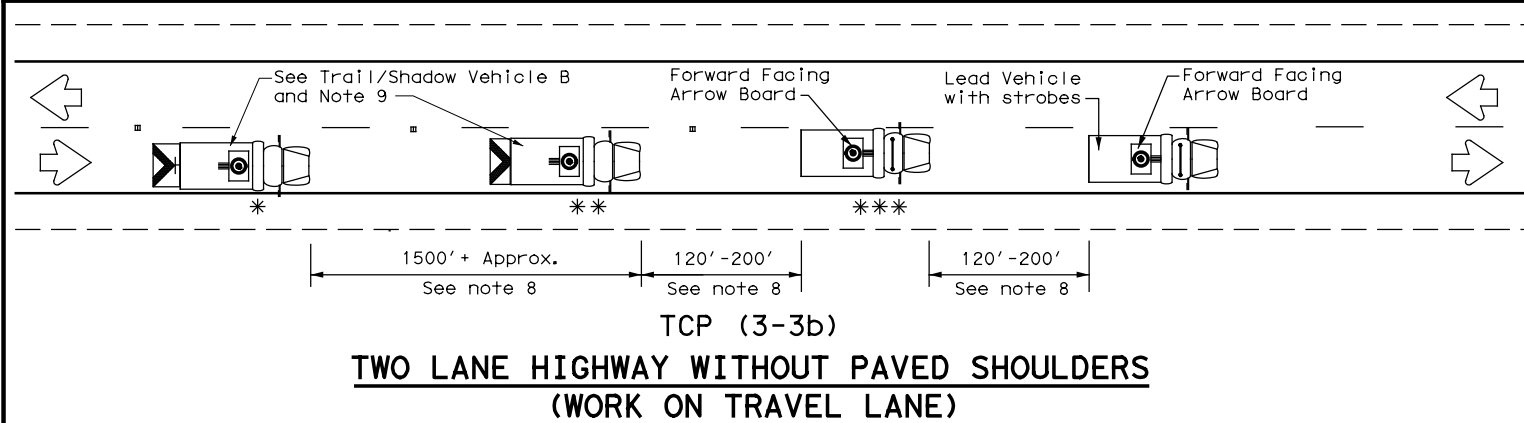
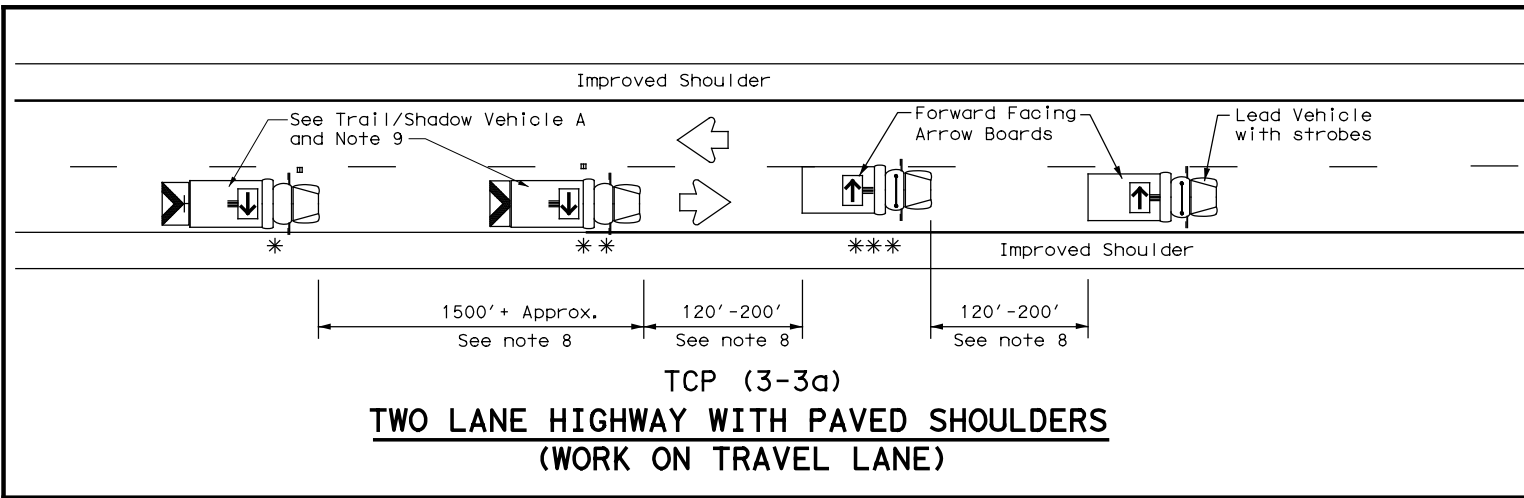
**TRAFFIC CONTROL PLAN
MOBILE OPERATIONS
UNDIVIDED HIGHWAYS**

TCP (3-1) - 13

FILE:	tcp3-1.dgn	DN:	TxDOT	CK:	TxDOT	DW:	TxDOT	CK:	TxDOT
© TxDOT	December 1985	CONT	SECT	JOB	HIGHWAY				
REVISIONS		0439	05	026	SH 194				
2-94	4-98	DIST	COUNTY	SHEET NO.					
8-95	7-13	LBB	HALE	103					
1-97									

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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.

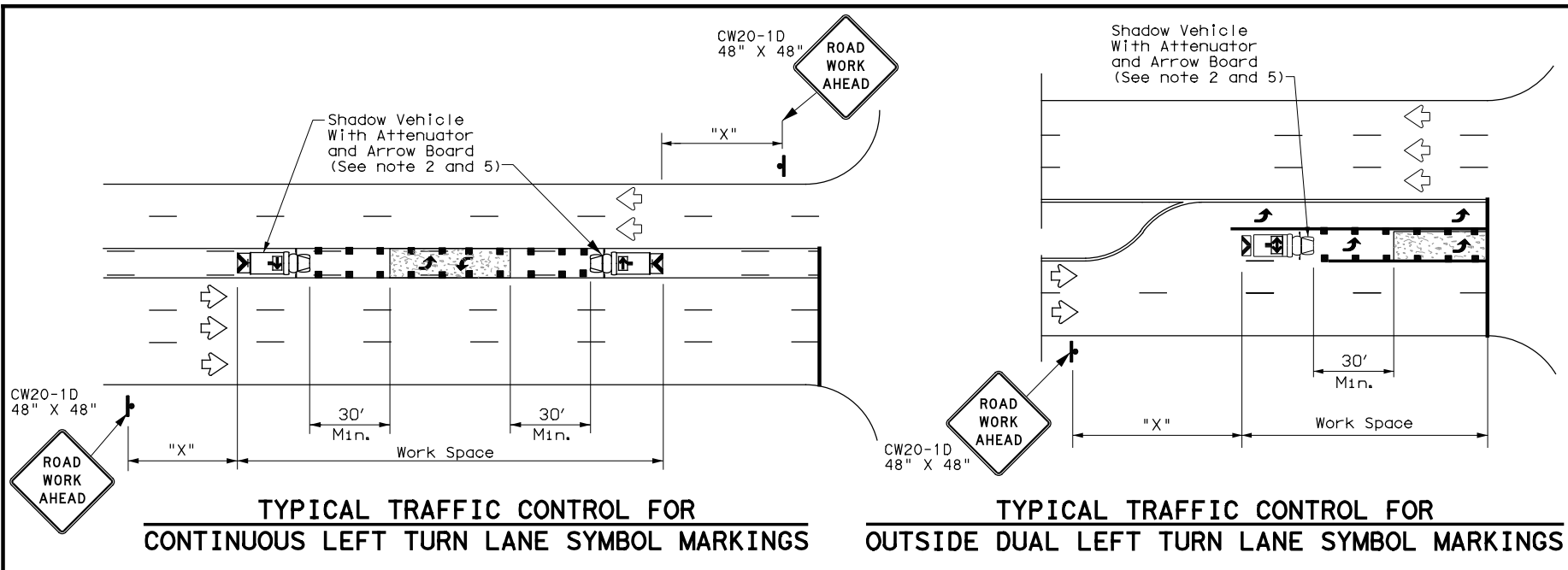
Texas Department of Transportation
Traffic Operations Division Standard

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

FILE: tcp3-3.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT September 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS	0439	05	026	SH 194
2-94 4-98	DIST	COUNTY	SHEET NO.	
8-95 7-13	LBB	HALE	104	
1-97 7-14				

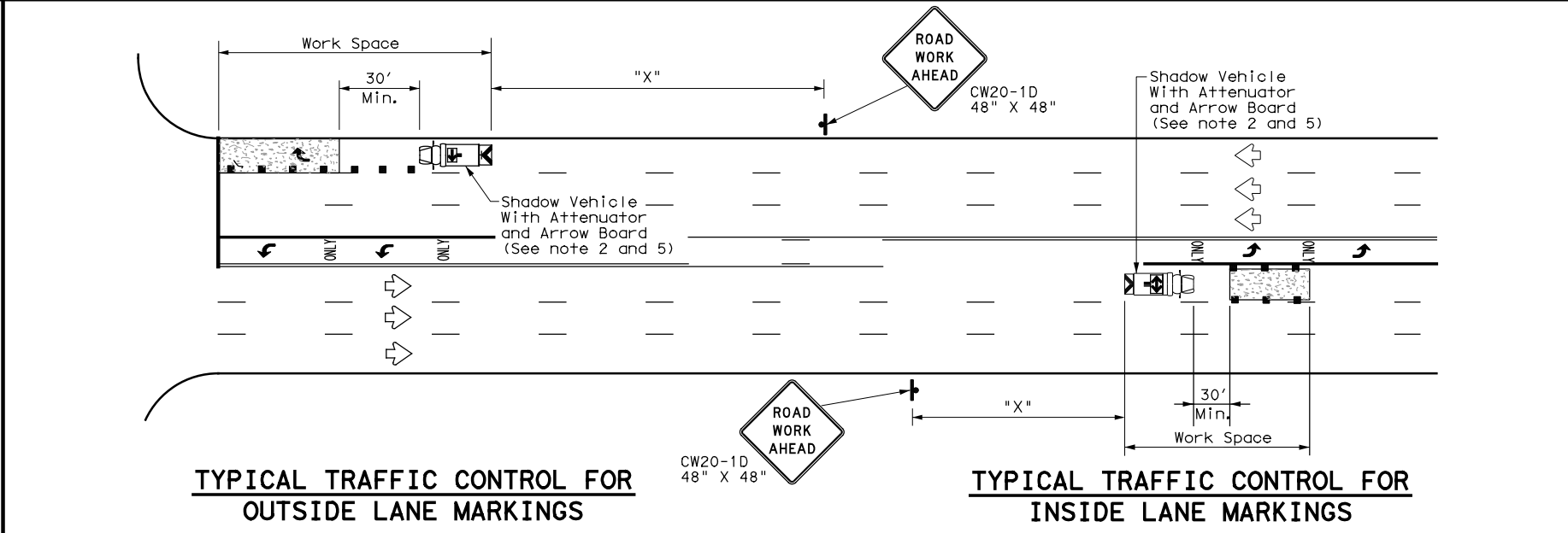
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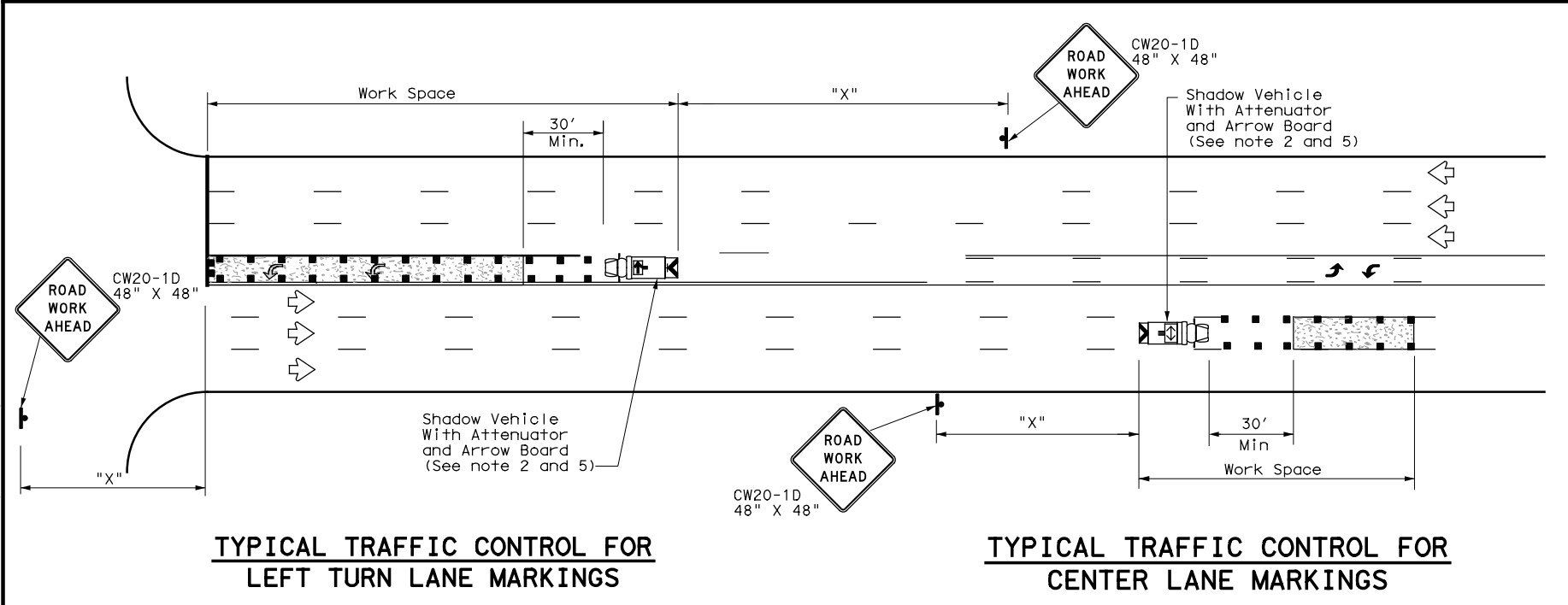
TYPICAL TRAFFIC CONTROL FOR CONTINUOUS LEFT TURN LANE SYMBOL MARKINGS

TYPICAL TRAFFIC CONTROL FOR OUTSIDE DUAL LEFT TURN LANE SYMBOL MARKINGS



TYPICAL TRAFFIC CONTROL FOR OUTSIDE LANE MARKINGS

TYPICAL TRAFFIC CONTROL FOR INSIDE LANE MARKINGS



TYPICAL TRAFFIC CONTROL FOR LEFT TURN LANE MARKINGS

TYPICAL TRAFFIC CONTROL FOR CENTER LANE MARKINGS

LEGEND		
*	Trail Vehicle	ARROW BOARD DISPLAY
**	Shadow Vehicle	
** *	Work Vehicle	RIGHT Directional
	Heavy Work Vehicle	LEFT Directional
	Truck Mounted Attenuator (TMA)	Double Arrow
	Traffic Flow	Channelizing Devices

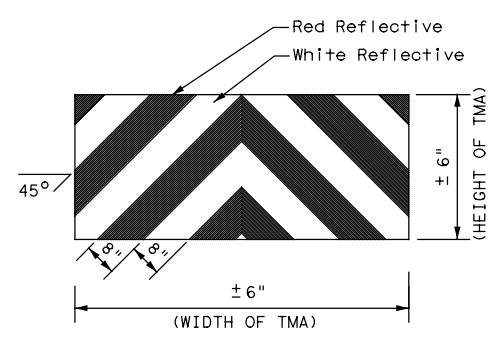
Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	L = WS ² / 60	150'	165'	180'	30'	60'	120'	90'
35		205'	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

1. This traffic control plan is for use on conventional roads posted at 45 mph or less and is intended for mobile operations that move continuously or intermittently (stopping up to approximately 15 minutes) such as short-line striping and in-lane rumble strips. When activities are anticipated to take longer amounts of time or traffic conditions warrant, a short duration or short-term stationary traffic control plan should be used.
2. A Truck Mounted Attenuator shall be used on Shadow Vehicle. Striping on the back panel of all truck mounted attenuators shall be 8" red and white reflective sheeting placed in an inverted "V" design. Reflective sheeting shall meet or exceed the reflectivity and color requirements of departmental material specification DMS-8300, Type A.
3. All traffic control devices shall be in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD), latest edition.
4. The use of yellow rotating beacons or strobe lights on vehicles are required. Blue high intensity rotating, flashing, oscillating or strobe lights when mounted on the drivers side of the vehicle may be operated simultaneously with the amber beacons or strobe lights.
5. Flashing arrow board shall be used on Shadow Vehicle. Flashing arrow board shall be Type B or Type C as per BC Standards. The arrow board operation shall be controlled from inside the truck.



STRIPING FOR TMA

Texas Department of Transportation
 Traffic Operations Division Standard

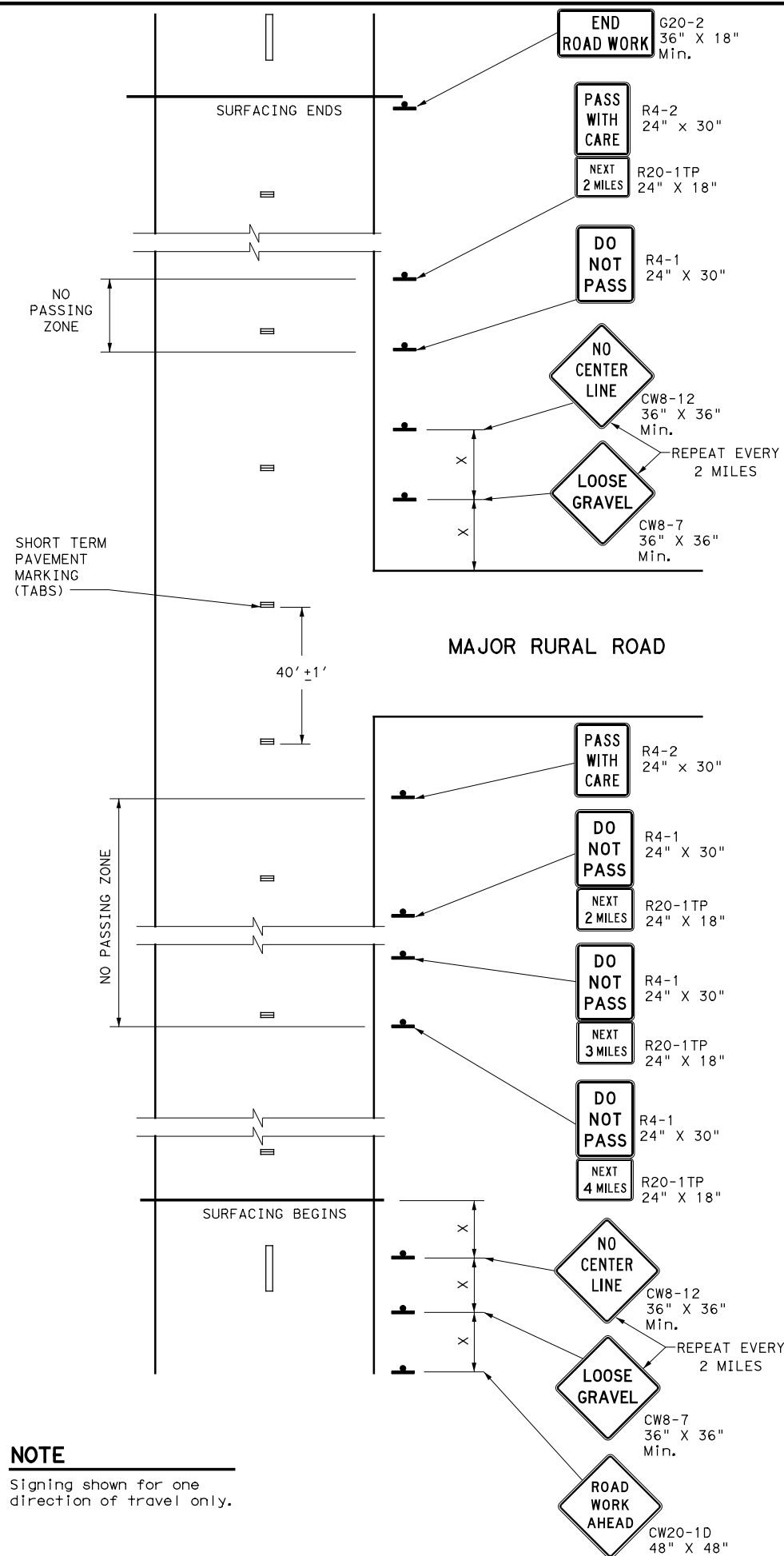
**TRAFFIC CONTROL PLAN
 MOBILE OPERATIONS FOR
 ISOLATED WORK AREAS
 UNDIVIDED HIGHWAYS**

TCP (3-4) - 13

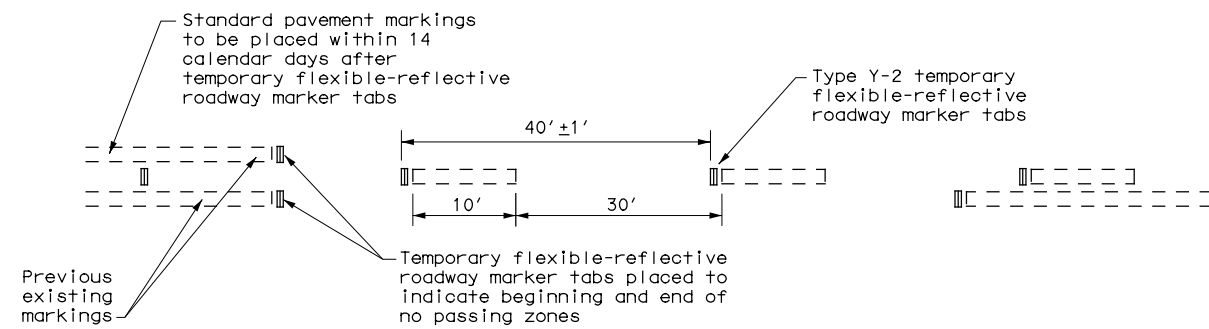
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© TxDOT July, 2013	CONT	SECT	JOB	HIGHWAY
REVISIONS	0439	05	026	SH 194
	DIST	COUNTY	SHEET NO.	
	LBB	HALE	105	

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NOTE
Signing shown for one direction of travel only.



"DO NOT PASS" SIGN (R4-1) and NO-PASSING ZONES

- Prior to the beginning of construction, all currently striped no-passing zones shall be signed with the DO NOT PASS (R4-1) signs and PASS WITH CARE (R4-2) signs placed at the beginning and end of each zone for each direction of travel except as otherwise provided herein. Signs marking these individual no-passing zones need not be covered prior to construction if the signs supplement the existing pavement markings.
- At the discretion of the Engineer, in areas of numerous no-passing zones, several zones may be combined as a single zone. If passing is to be prohibited over one or more lengthy sections, a DO NOT PASS sign and a NEXT XX MILES (R20-1TP) plaque may be used at the beginning of such zones. The DO NOT PASS sign and the NEXT XX MILES plaque should be repeated every mile to the end of the no-passing zone. In areas where there is considerable distance between no-passing zones, the end of the no-passing zone may be signed with a PASS WITH CARE sign and a NEXT XX MILES plaque.
- Depending on traffic volumes and length of sections, it may be desirable to prohibit passing throughout the project to prevent damage to windshield and lights. The DO NOT PASS sign and NEXT XX MILES plaque should be used and repeated as often as necessary for this purpose. Where several existing zones are to be combined into one individual no-passing zone, the sign at the beginning of the zone should be covered until the surfacing operation has passed this location so as not to have the DO NOT PASS sign conflict with the existing pavement markings. Also, unless one days operation completes the entire length of such combined zones, appropriate DO NOT PASS and PASS WITH CARE signs should be placed at the beginning and end of the no-passing zones where the surfacing operation has stopped for the day.
- R4-1 and R4-2 are to remain in place until standard pavement markings are installed.

"NO CENTER LINE" SIGN (CW8-12)

- Center line markings are yellow pavement markings that delineate the separation of travel lanes that have opposite directions of travel on a roadway. Divided highways do not typically have center line markings.
- At the time construction activity obliterates the existing center line markings (low volume roads may not have an existing centerline), a NO CENTER LINE (CW8-12) sign should be erected at the beginning of the work area, at approximately 2 mile intervals within the work area, beyond major intersections and other locations deemed necessary by the Engineer.
- The NO CENTER LINE signs are to remain in place until standard pavement markings are installed.

"LOOSE GRAVEL" SIGN (CW8-7)

- When construction begins, a LOOSE GRAVEL (CW8-7) sign should be erected at each end of the work area and repeated at intervals of approximately 2 miles in rural areas and closer in urban areas.
- The LOOSE GRAVEL signs are to remain in place until the condition no longer exists.

PAVEMENT MARKINGS

- Temporary markings for surfacing projects shall be Temporary Flexible-reflective Roadway Marker Tabs unless otherwise approved by the Engineer. Tabs are to be installed to provide true alignment for striping crews or as directed by the Engineer. Tabs will be placed at the spacing indicated. Tabs should be applied to the pavement no more than two (2) days before the surfacing is applied. After the surfacing is rolled and swept, the cover over the reflective strip shall be removed.
- Tabs shall not be used to simulate edge lines.
- Tab placement for overlay/inlay operations shall be as shown on the WZ(STPM) standard sheet.

COORDINATION OF SIGN LOCATIONS

- The location of warning signs at the beginning and end of a work area are to be coordinated with other signing typically shown on the Barricade and Construction Standards for project limits to ensure adequate sign spacing.
- Where possible the ROAD WORK AHEAD (CW20-1D), LOOSE GRAVEL (CW8-7), and NO CENTER LINE (CW8-12) signs should be placed in the sequence shown following the OBEY WARNING SIGNS STATE LAW (R20-3T) and the TRAFFIC FINES DOUBLE (R20-5T) sign, and one "X" sign spacing prior to the CONTRACTOR (G20-6T) sign typically located at or near the limits of surfacing. LOOSE GRAVEL and NO CENTER LINE signs will then be repeated as described above.

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

* Conventional Roads Only

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

GENERAL NOTES

- The traffic control devices detailed on this sheet will be furnished and erected as directed by the Engineer on sections of roadway where tabs must be placed prior to the surfacing operation which will cover or obliterate the existing pavement markings.
- The devices shown on this sheet are to be used to supplement those required by the BC Standards or others required elsewhere in the plans.
- Signs shall be erected as detailed on the BC Standards or the Compliant Work Zone Traffic Control Devices List (CWZTCD) on supports approved for Long-Term / Intermediate-Term Work Zone Sign Supports.
- When surfacing operations take place on divided highways, freeways or expressways, the size of diamond shaped construction warning signs shall be 48" x 48".
- Signs on divided highways, freeways and expressways will be placed on both right and left sides of the roadway based on roadway conditions as directed by the Engineer.

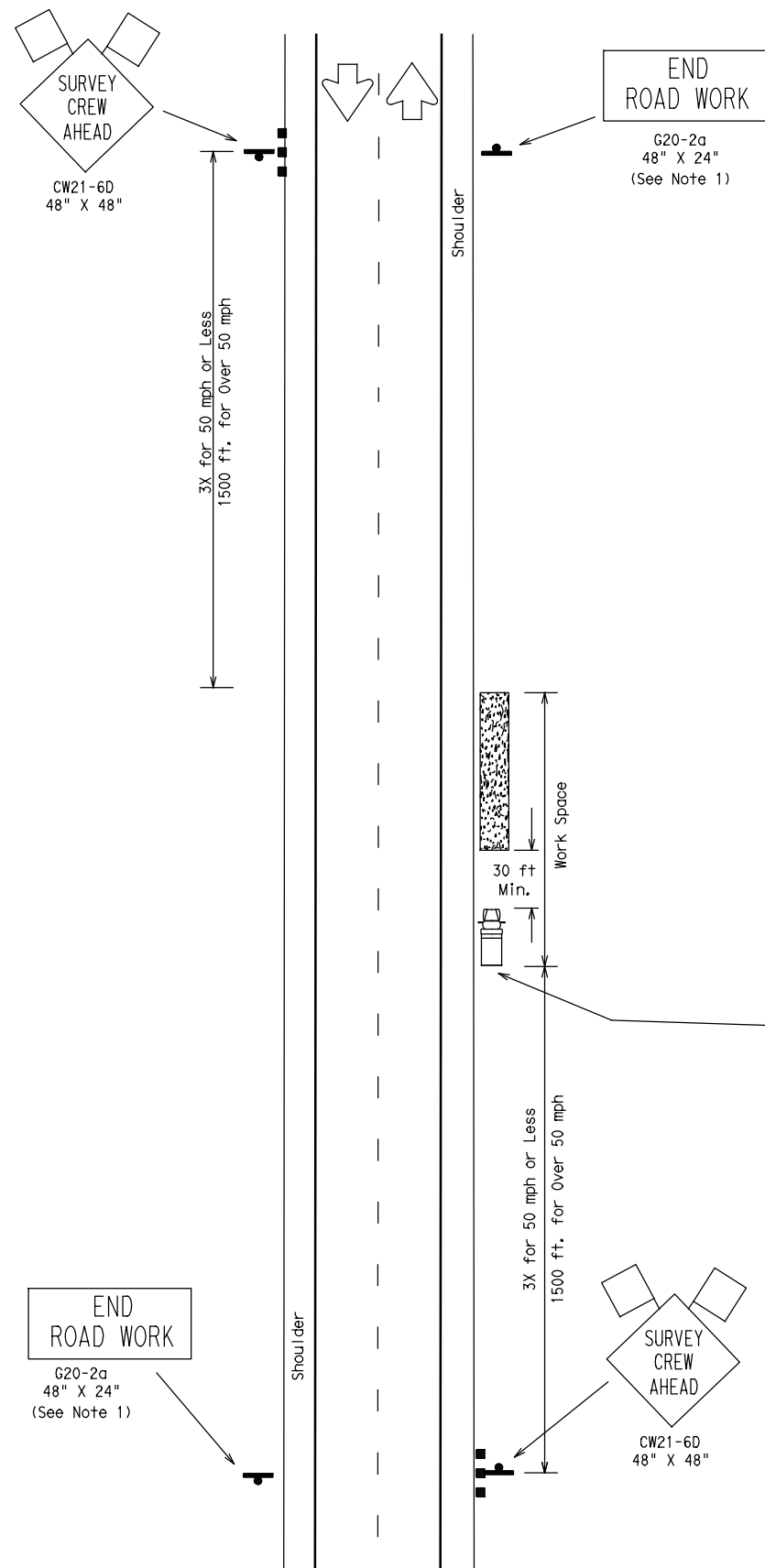


TRAFFIC CONTROL DETAILS FOR SURFACING OPERATIONS
TCP (7-1) - 13

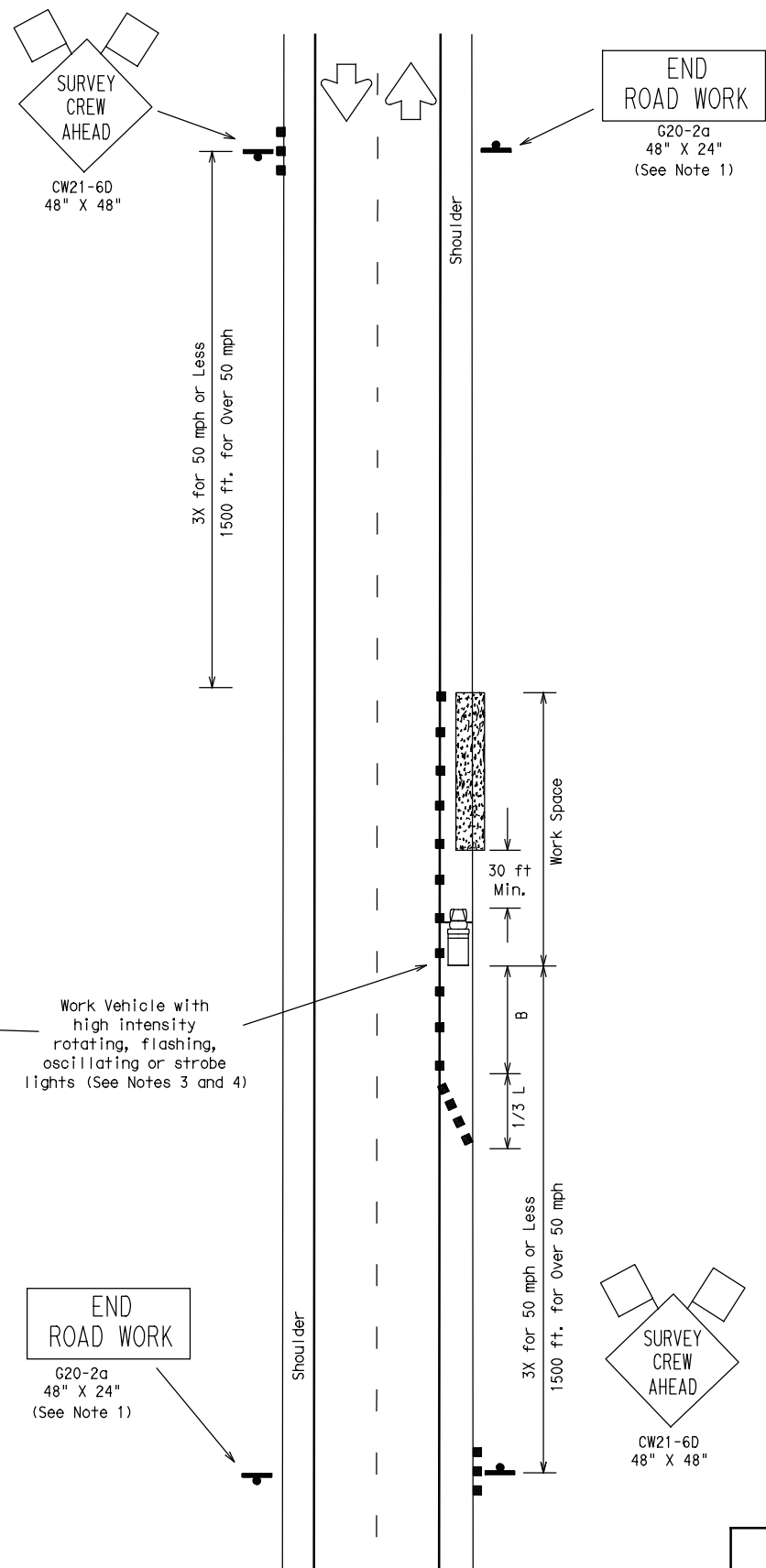
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REVISIONS		0439	05	026	SH 194				
4-92	4-98	DIST	COUNTY		SHEET NO.				
1-97	7-13	LBB	HALE		106				

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FILE: 13*topS-1-08A.dgn



TCP (S-1a)
WORK OFF SHOULDER
OR PAVED SURFACE



TCP (S-1b)
WORK ON SHOULDER

WHENEVER POSSIBLE, SURVEY PARTIES SHOULD AVOID, BY THE USE OF OFFSET LINES, ANY UNNECESSARY PERIODS OF TIME ON THE ROAD SURFACE.

8-18-08 Revision
Corrected misspelling.

LEGEND

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

Posted Speed \times	Formula	Minimum Desirable Taper Lengths $\times \times$			Suggested Maximum Spacing of Device		Min. Sign Spacing "X" Distance	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' - 75'	120'	90'
35		205'	225'	245'	35'	70' - 90'	160'	120'
40		265'	295'	320'	40'	80' - 100'	240'	155'
45		450'	495'	540'	45'	90' - 110'	320'	195'
50		500'	550'	600'	50'	100' - 125'	400'	240'
55		550'	605'	660'	55'	110' - 140'	500'	295'
60		600'	660'	720'	60'	120' - 150'	600'	350'
65	$L = WS$	650'	715'	780'	65'	130' - 165'	700'	410'
70		700'	770'	840'	70'	140' - 175'	800'	475'
75		750'	825'	900'	75'	150' - 185'	900'	540'

\times Conventional Roads Only
 $\times \times$ 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
	✓	✓		

DEFINITIONS:
 SHORT DURATION - work that occupies a location up to 1 hour.
 SHORT TERM STATIONARY - daytime work that occupies a location for more than 1 hour within a single daylight period.

- GENERAL NOTES:
- The G20-2a "END ROAD WORK" sign may be placed on the back of the CW21-6D "SURVEY CREW AHEAD" sign or may be omitted for short duration (less than 1 hour) work.
 - Channelizing devices on the shoulder taper and tangent section may be omitted for short duration (less than 1 hour) work.
 - If line-of-sight requirements for surveying operations will preclude the placement of the Work Vehicle to protect workers, the channelizing devices mentioned in Note 2 are required.
 - A Shadow Vehicle with a Truck Mounted Attenuator and flashing warning lights/arrow panel in caution mode may be used in lieu of the Work Vehicle to protect the work space.
 - The CW20-1D "ROAD WORK AHEAD" sign may be substituted for the CW21-6D "SURVEY CREW AHEAD" sign.
 - This plan may also be used for shoulder work or off shoulder work for multilane undivided roadways.
 - The CW21-6D "SURVEY CREW AHEAD" sign for low volume intersecting side roads is desirable, but is not required when working less than 15 minutes in area of the side road, as determined by the Engineer.
- TCP (S-1a)
- Cones may be placed at edge of pavement adjacent to the work space to enhance safety.

Texas Department of Transportation
Traffic Operations Division

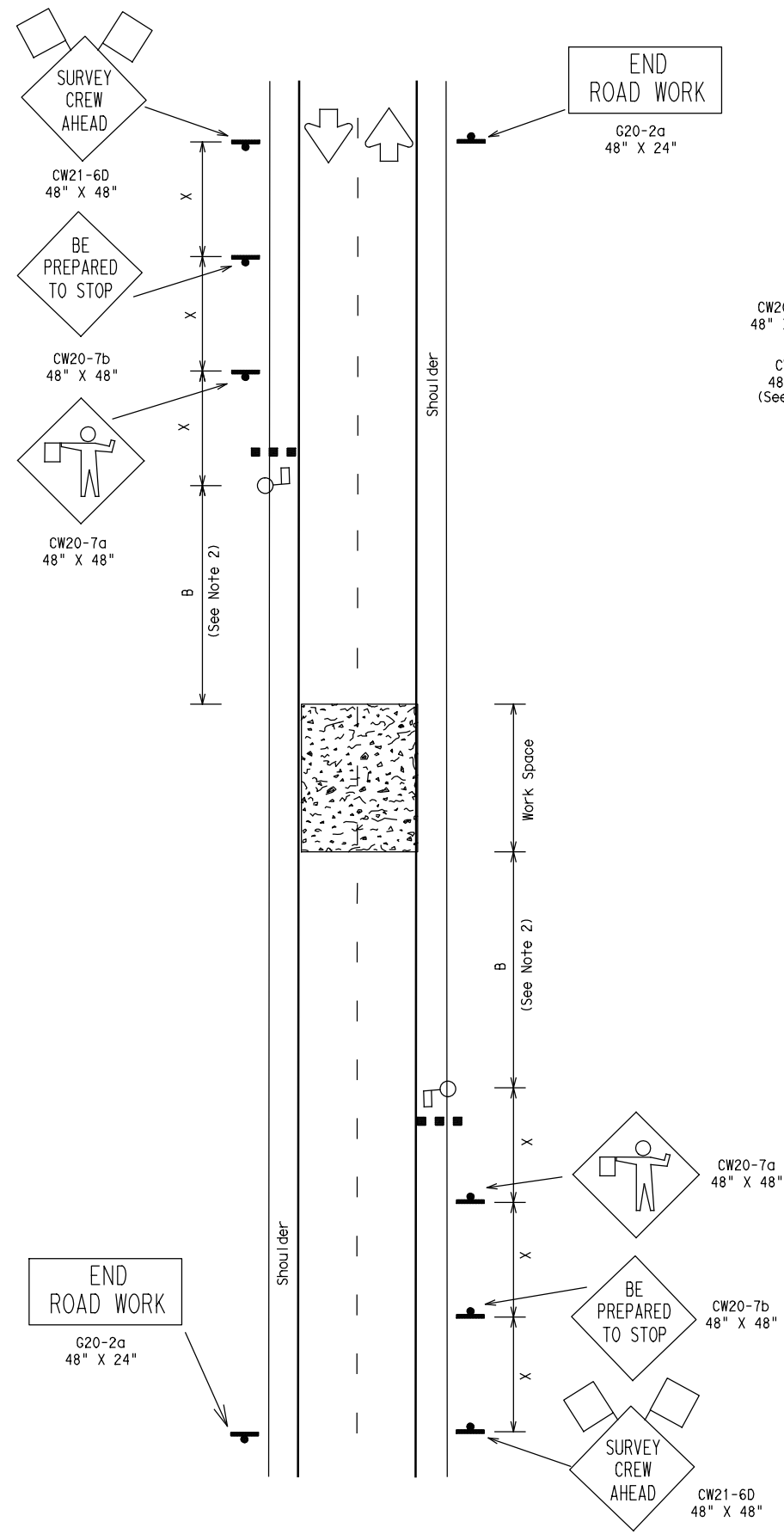
TRAFFIC CONTROL PLAN FOR SURVEYING OPERATIONS

TCP (S-1) - 08A

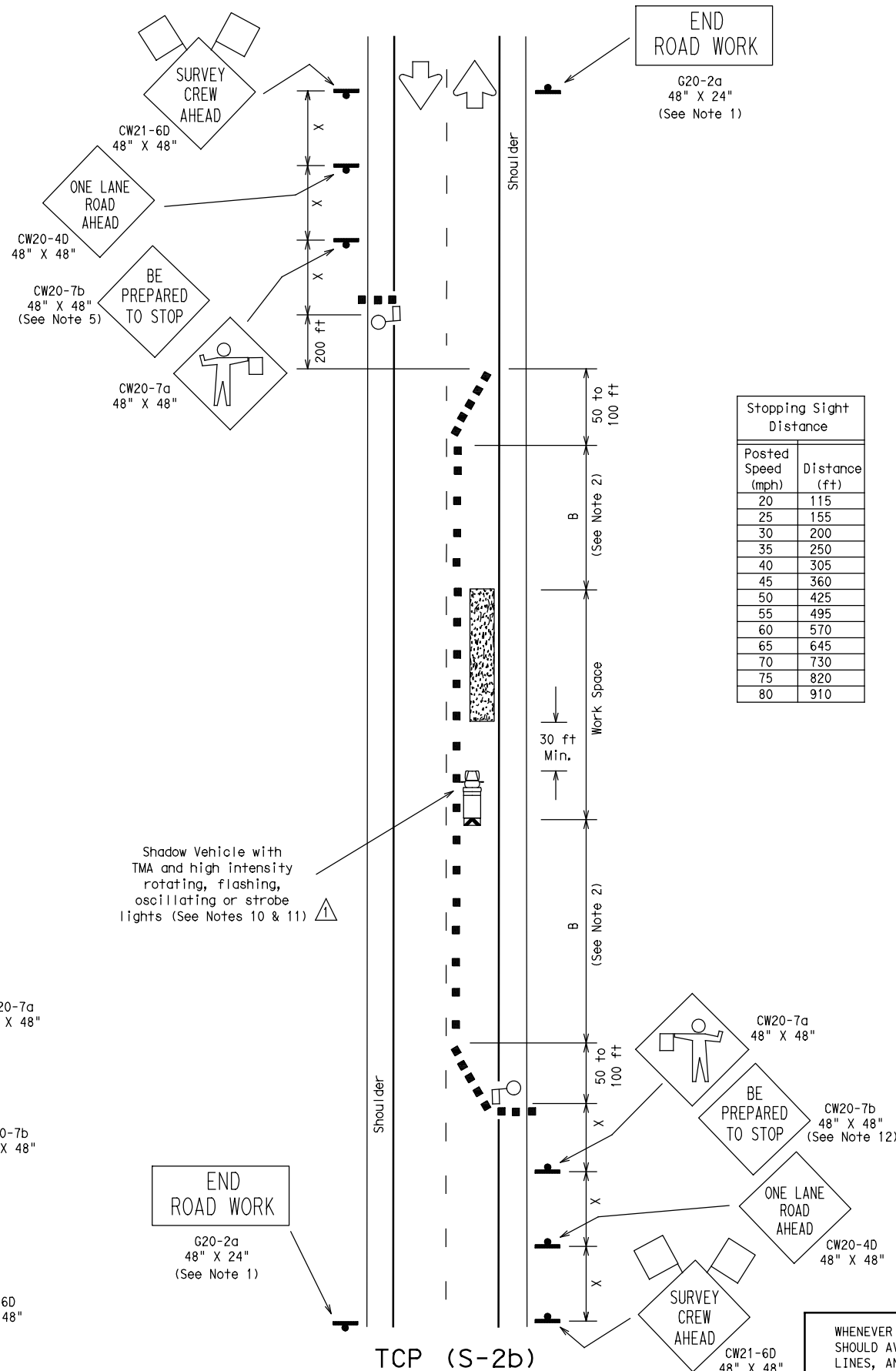
© TxDOT August 2008		DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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		DIST	COUNTY	SHEET NO.	
		LBB	HALE	107	

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FILE: 14*topS-2-08A.dgn



TCP (S-2a)
ROAD CLOSED FOR LESS THAN 20 MINUTES -
OFF PEAK TRAFFIC HOURS
WITH OR WITHOUT SHOULDERS



TCP (S-2b)
WORK IN ROADWAY
OFF PEAK TRAFFIC HOURS
WITH OR WITHOUT SHOULDERS

Stopping Sight Distance	
Posted Speed (mph)	Distance (ft)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820
80	910

WHENEVER POSSIBLE, SURVEY PARTIES SHOULD AVOID, BY THE USE OF OFFSET LINES, ANY UNNECESSARY PERIODS OF TIME ON THE ROAD SURFACE.

8-18-08 Revision
⚠ Corrected reference to notes.

LEGEND

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

Posted Speed \times	Formula	Minimum Desirable Taper Lengths $\times \times$			Suggested Maximum Spacing of Device		Min. Sign Spacing "X" Distance	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'-75'	120'	90'
35		205'	225'	245'	35'	70'-90'	160'	120'
40		265'	295'	320'	40'	80'-100'	240'	155'
45		450'	495'	540'	45'	90'-110'	320'	195'
50		500'	550'	600'	50'	100'-125'	400'	240'
55		550'	605'	660'	55'	110'-140'	500'	295'
60		600'	660'	720'	60'	120'-150'	600'	350'
65	650'	715'	780'	65'	130'-165'	700'	410'	
70	700'	770'	840'	70'	140'-175'	800'	475'	
75	750'	825'	900'	75'	150'-185'	900'	540'	

\times Conventional Roads Only
 $\times \times$ 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
	✓	✓		

DEFINITIONS:
SHORT DURATION - work that occupies a location up to 1 hour.
SHORT TERM STATIONARY - daytime work that occupies a location for more than 1 hour within a single daylight period.

- GENERAL NOTES:
- The G20-2a "END ROAD WORK" sign may be placed on the back of the CW21-6D "SURVEY CREW AHEAD" sign or may be omitted for short duration (less than 1 hour) work.
 - Adequate Stopping Sight Distance (see Stopping Sight Distance table) should be maintained from approaching traffic to the flagger or a queue of stopped vehicles. The Buffer Space "B" should be extended around curves or other obstacles, when necessary, to have adequate Stopping Sight Distance to the flagger station.
 - Flaggers should use two-way radios or other means of communication while flagging.
 - The length of the work space should be based on the ability of the flaggers to communicate.
 - CW20-1D "ROAD WORK AHEAD" signs may be substituted for CW21-6D "SURVEY CREW AHEAD" signs.
 - The CW21-6D "SURVEY CREW AHEAD" sign for low volume intersecting side roads is desirable, but is not required when working less than 15 minutes in area of the side road, as determined by the Engineer.
- TCP (S-2a)
- Road closures shall be less than 20 minutes. Closures less than 5 minutes are desirable.
 - Sign spacing should be increased if traffic repeatedly queues past the CW20-7b "BE PREPARED TO STOP" sign.
 - The surveying instrument should not be located on the paved surface.
- TCP (S-2b)
- For short duration work the Shadow Vehicle with a TMA may be replaced by another Work Vehicle with high intensity rotating, flashing or strobe lights.
 - Shadow Vehicles with a TMA are desirable when workers or equipment are in the work space. When approved by the engineer, Type III barricades or other channelizing devices may be substituted for the Shadow Vehicle.
 - The CW20-7b "BE PREPARED TO STOP" sign is optional. When used, it should be installed after the CW20-4D "ONE LANE ROAD AHEAD" sign.

Texas Department of Transportation
Traffic Operations Division

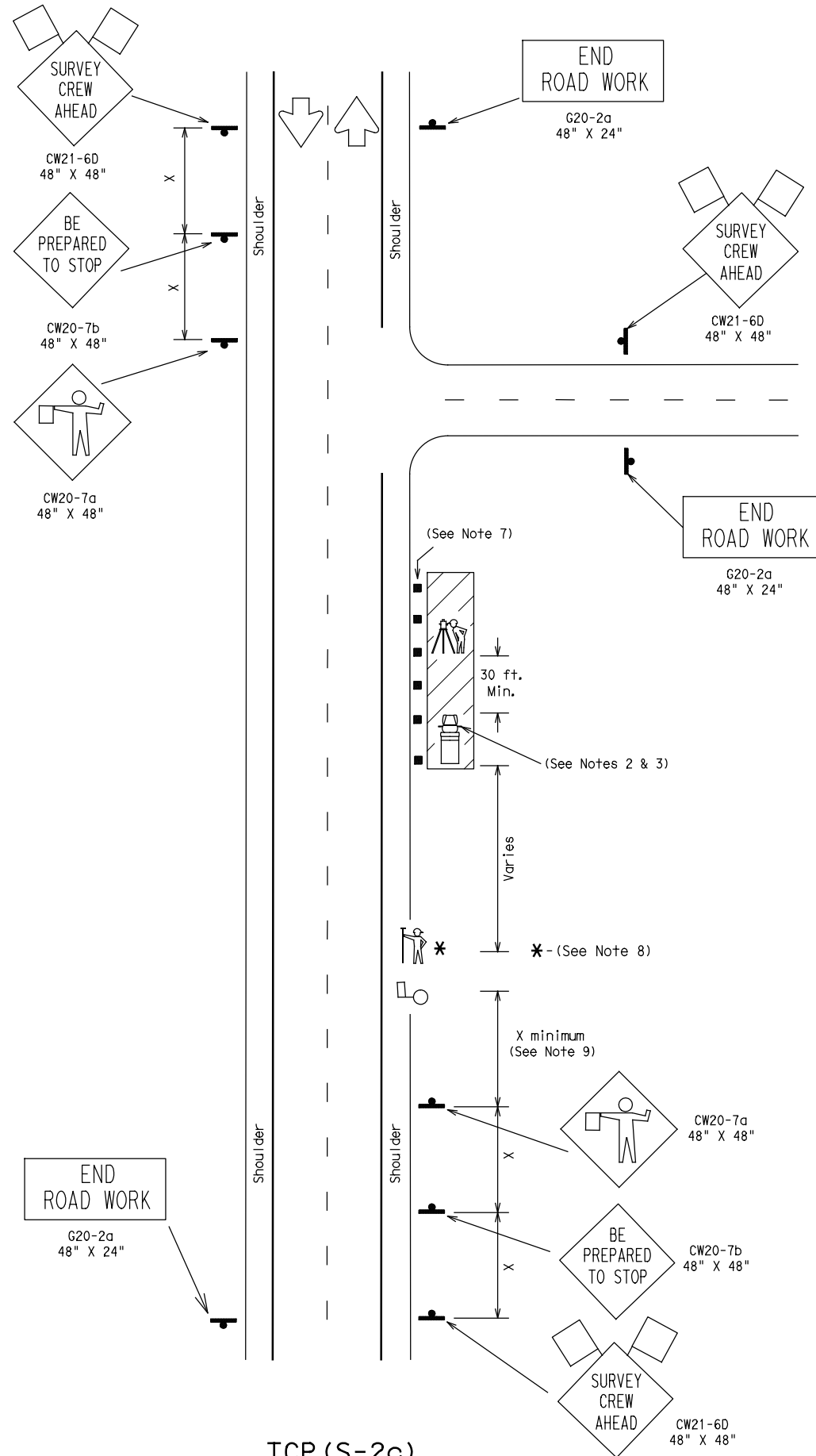
TRAFFIC CONTROL PLAN
FOR SURVEYING
OPERATIONS

TCP (S-2) -08A

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8-08	REVISIONS	CONT	SECT	JOB	HIGHWAY
		0439	05	026	SH 194
		DIST	COUNTY	SHEET NO.	
		LBB	HALE	108	

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TCP (S-2c)

Posted Speed (mph)	Distance (ft)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820
80	910

LEGEND

- Type III Barricade
- Channelizing Devices
- Flag
- Work Vehicle
- Truck Mounted Attenuator (TMA)
- Flagger
- Sign Post
- Survey Rodman
- Instrument Person

Posted Speed \times	Formula	Minimum Desirable Taper Lengths $\times \times$			Suggested Maximum Spacing of Device		Min. Sign Spacing "X" Distance	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' - 75'	120'	90'
35		205'	225'	245'	35'	70' - 90'	160'	120'
40		265'	295'	320'	40'	80' - 100'	240'	155'
45	L=WS	450'	495'	540'	45'	90' - 110'	320'	195'
50		500'	550'	600'	50'	100' - 125'	400'	240'
55		550'	605'	660'	55'	110' - 140'	500'	295'
60		600'	660'	720'	60'	120' - 150'	600'	350'
65		650'	715'	780'	65'	130' - 165'	700'	410'
70		700'	770'	840'	70'	140' - 175'	800'	475'
75		750'	825'	900'	75'	150' - 185'	900'	540'

\times Conventional Roads Only

$\times \times$ 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
	✓	✓		

DEFINITIONS:

MOBILE - work that moves continuously or intermittently (stopping up to approximately 15 minutes).

SHORT DURATION - work that occupies a location up to 1 hour.

SHORT TERM STATIONARY - daytime work that occupies a location for more than 1 hour within a single daylight period.

GENERAL NOTES:

- The G20-2a "END ROAD WORK" sign may be placed on the back of the CW21-6D "SURVEY CREW AHEAD" sign or may be omitted for short duration (less than 1 hour) work.
- Work Vehicle with high intensity rotating, flashing, oscillating or strobe lights should be used to protect work space.
- When approved by the engineer, Type III barricades or other channelizing devices may be substituted for the Heavy Work Vehicle.
- CW20-1D "ROAD WORK AHEAD" signs may be substituted for CW21-6D "SURVEY CREW AHEAD" SIGNS.
- The CW21-6D "SURVEY CREW AHEAD" sign for low volume intersecting side roads may be omitted when approved by the Engineer.
- The Surveying Instrument shall not be located on the paved surface.
- Cones at edge of pavement adjacent to instrument person may be omitted when approved by the Engineer.
- Rodman may only enter roadway when accompanied by flagger and as traffic allows.
- The distance between the advance warning signs and the work should not exceed a two mile maximum.
- Flaggers and Survey Crew should use two-way radios or other means of communication.
- Survey Crew and Flaggers shall wear high-visibility apparel meeting the ANSI 107-2007 standard performance for Class 2 or Class 3 risk exposure.
- Additional traffic control devices may be required to address local site conditions.
- Stopping Sight Distance shall be maintained from approaching traffic to the flagger. See "Stopping Sight Distance" table.

SURVEY PARTIES SHOULD AVOID ANY UNNECESSARY PERIODS OF TIME ON THE ROAD SURFACE.

This TCP is to cover two lane rural type roadways as determined by the Engineer. All other type roadways will be covered by other established Survey TCP'S.



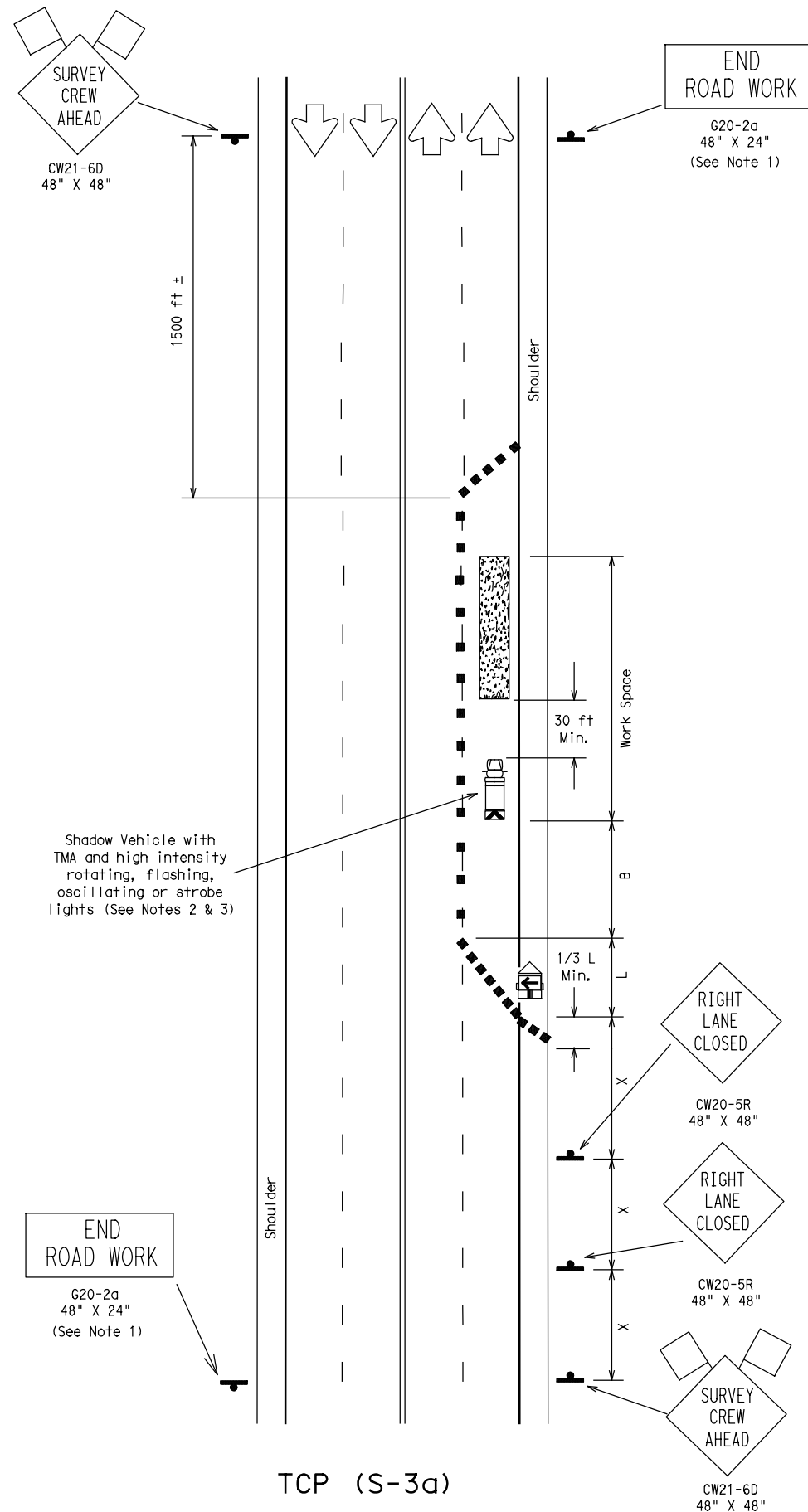
TRAFFIC CONTROL PLAN FOR SURVEYING OPERATIONS

TCP (S-2c) -10

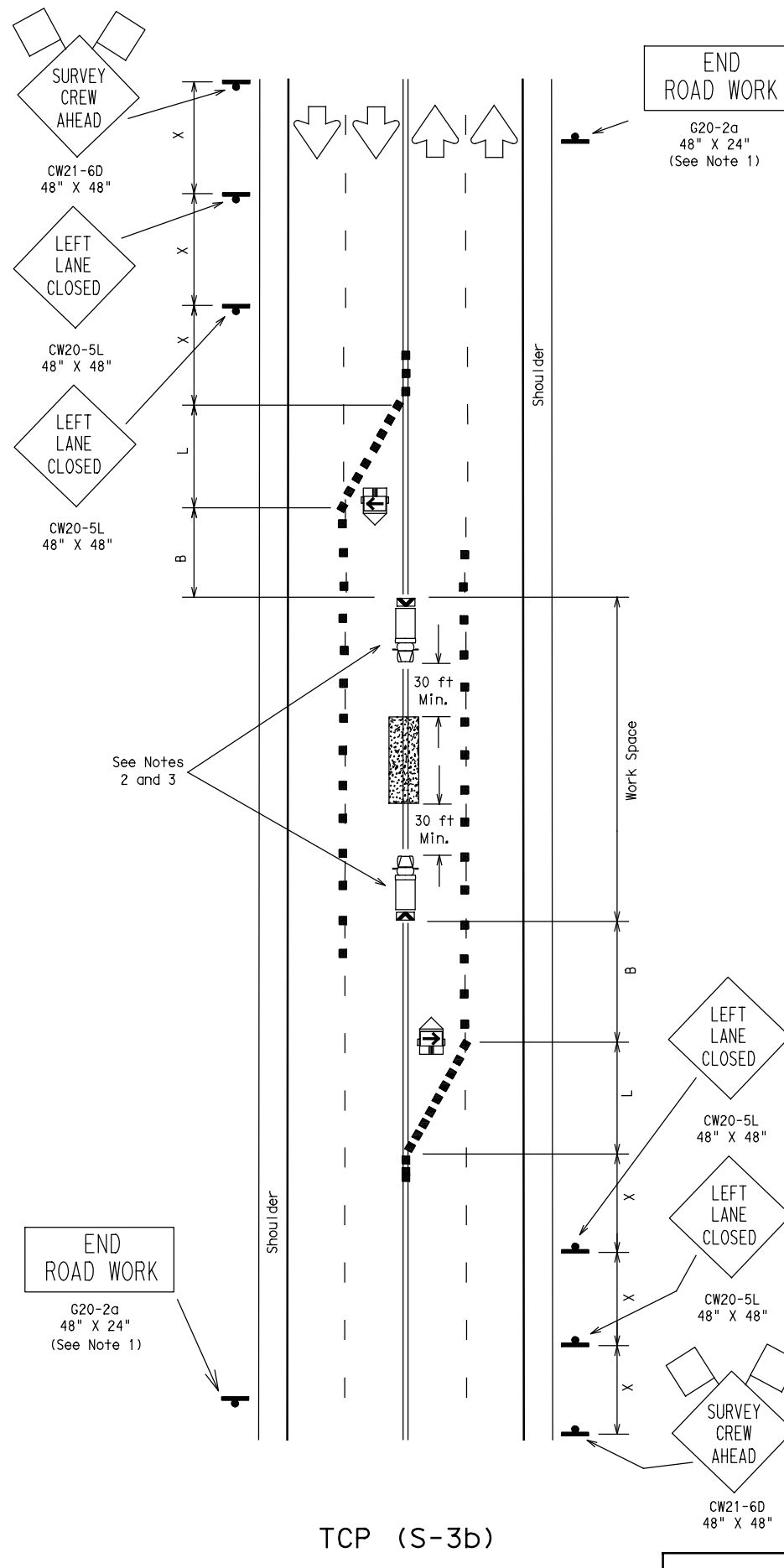
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REVISIONS		CONT	SECT	JOB	HIGHWAY
		0439	05	026	SH 194
		DIST	COUNTY		SHEET NO.
		LBB	HALE		109

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TCP (S-3a)
 RIGHT LANE CLOSED
 WITH OR WITHOUT SHOULDERS



TCP (S-3b)
 WORK ON CENTERLINE

WHENEVER POSSIBLE, SURVEY PARTIES SHOULD AVOID, BY THE USE OF OFFSET LINES, ANY UNNECESSARY PERIODS OF TIME ON THE ROAD SURFACE.

LEGEND

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

Posted Speed \times	Formula	Minimum Desirable Taper Lengths $\times \times$			Suggested Maximum Spacing of Device		Min. Sign Spacing "X" Distance	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' - 75'	120'	90'
35		205'	225'	245'	35'	70' - 90'	160'	120'
40		265'	295'	320'	40'	80' - 100'	240'	155'
45		450'	495'	540'	45'	90' - 110'	320'	195'
50		500'	550'	600'	50'	100' - 125'	400'	240'
55		550'	605'	660'	55'	110' - 140'	500'	295'
60		600'	660'	720'	60'	120' - 150'	600'	350'
65	$L = WS$	650'	715'	780'	65'	130' - 165'	700'	410'
70		700'	770'	840'	70'	140' - 175'	800'	475'
75		750'	825'	900'	75'	150' - 185'	900'	540'

\times Conventional Roads Only
 $\times \times$ 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
	✓	✓		

DEFINITIONS:
 SHORT DURATION - work that occupies a location up to 1 hour.
 SHORT TERM STATIONARY - daytime work that occupies a location for more than 1 hour within a single daylight period.

- GENERAL NOTES:
- The G20-2a "END ROAD WORK" sign may be placed on the back of the CW21-6D "SURVEY CREW AHEAD" sign or may be omitted for short duration (less than 1 hour) work.
 - For short duration work the Shadow Vehicle with TMA may be replaced by another Work Vehicle with high intensity rotating, flashing or strobe lights.
 - Shadow Vehicles with a TMA are desirable when workers or equipment are in the work space. When approved by the engineer, Type III barricades or other channelizing devices may be substituted for the Shadow Vehicle.
 - CW20-1D "ROAD WORK AHEAD" signs may be substituted for CW21-6D "SURVEY CREW AHEAD" signs.
 - The CW21-6D "SURVEY CREW AHEAD" sign for low volume intersecting side roads is desirable, but is not required when working less than 15 minutes in area of the side road, as determined by the Engineer.

TCP (S-3a)
 6. If shoulders are not present, the 1/3L shoulder taper is to be omitted and four channelizing devices shall be placed in front of the arrow panel, perpendicular to traffic.

TCP (S-3b)
 7. One CW20-5L "LEFT LANE CLOSED" sign in each direction may be omitted when the posted speed is less than 45mph and volume is less than 2000 ADT.



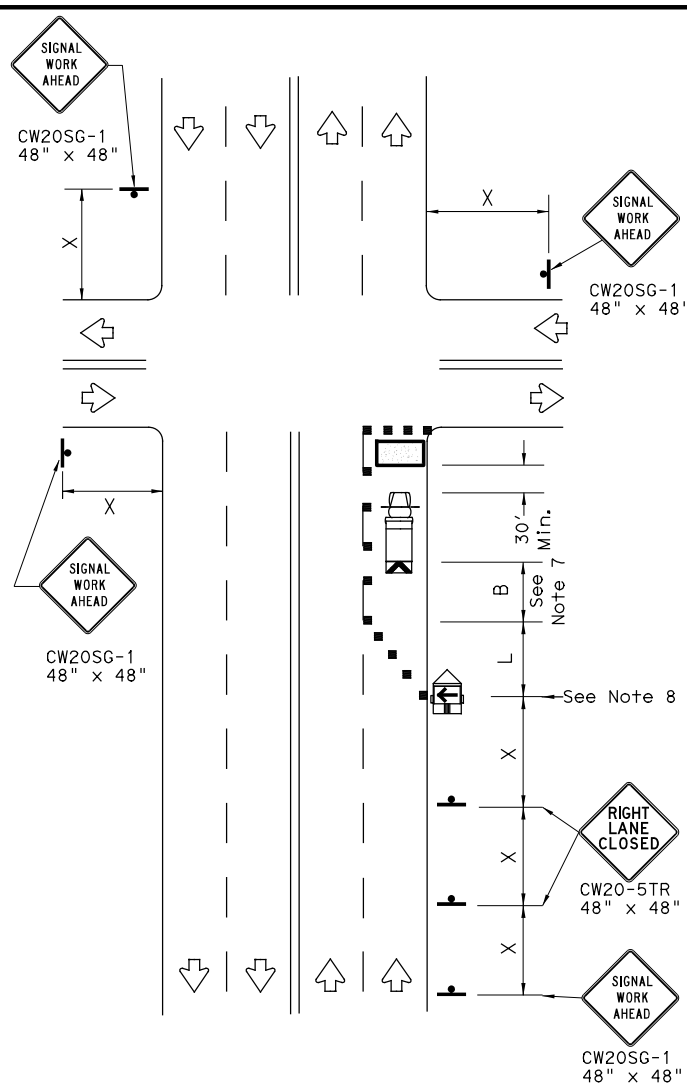
TRAFFIC CONTROL PLAN FOR SURVEYING OPERATIONS

TCP (S-3) - 08

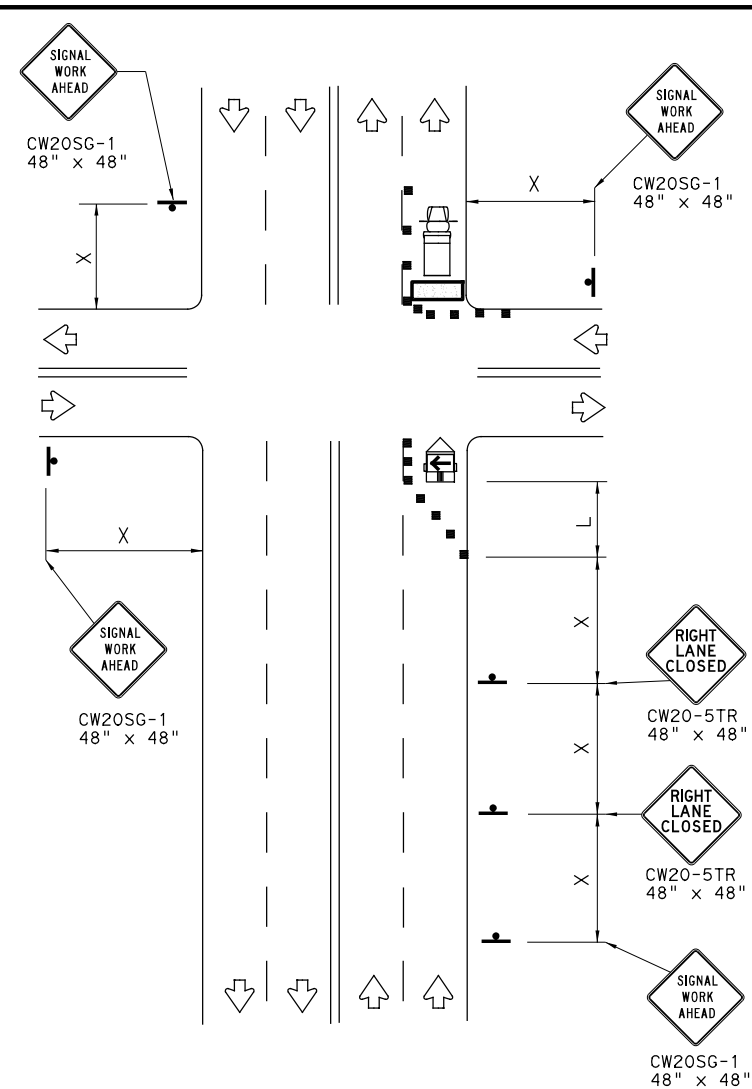
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		0439	05	026	SH 194
		DIST	COUNTY	SHEET NO.	
		LBB	HALE	110	

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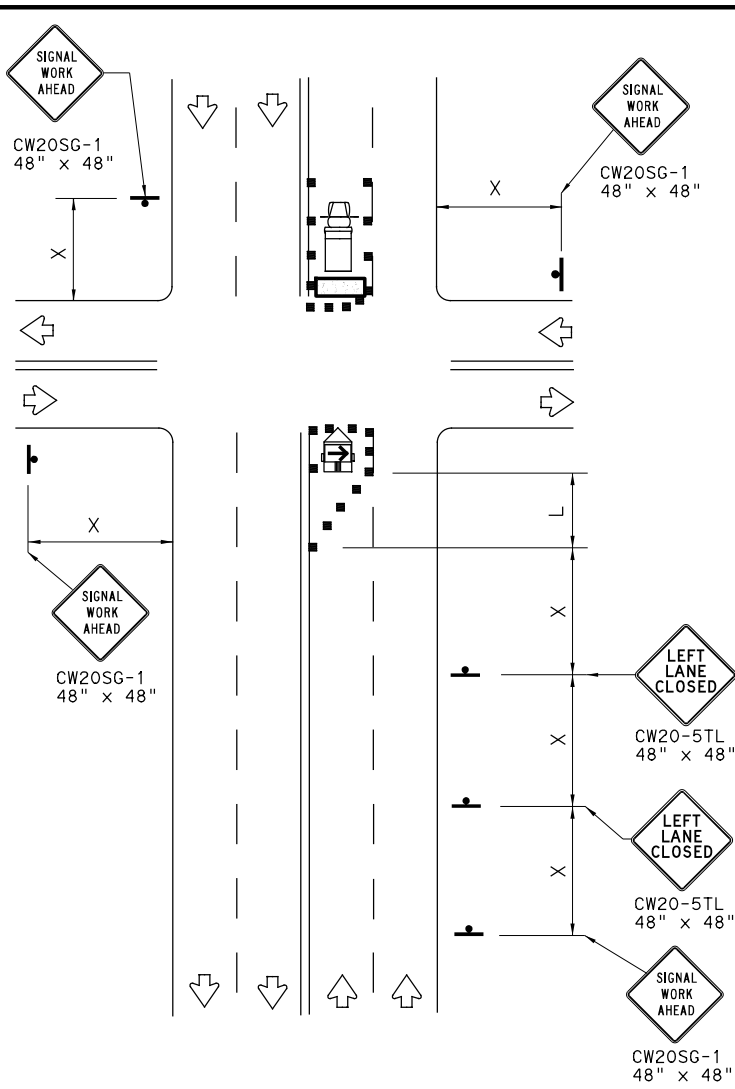
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NEAR SIDE LANE CLOSURE
SHORT DURATION OR SHORT TERM STATIONARY



FAR SIDE RIGHT LANE CLOSURE
SHORT DURATION OR SHORT TERM STATIONARY



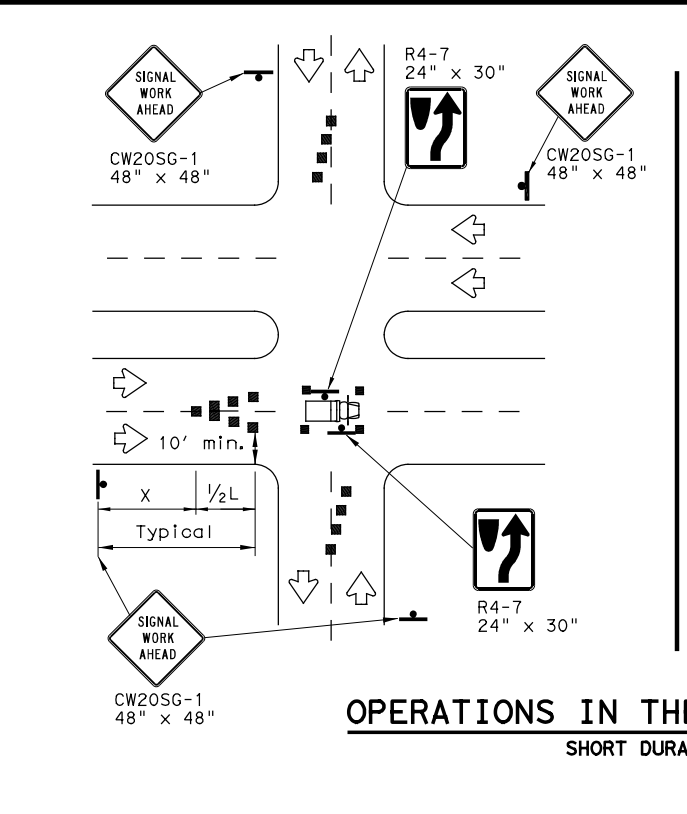
FAR SIDE LEFT LANE CLOSURE
SHORT DURATION OR SHORT TERM STATIONARY

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

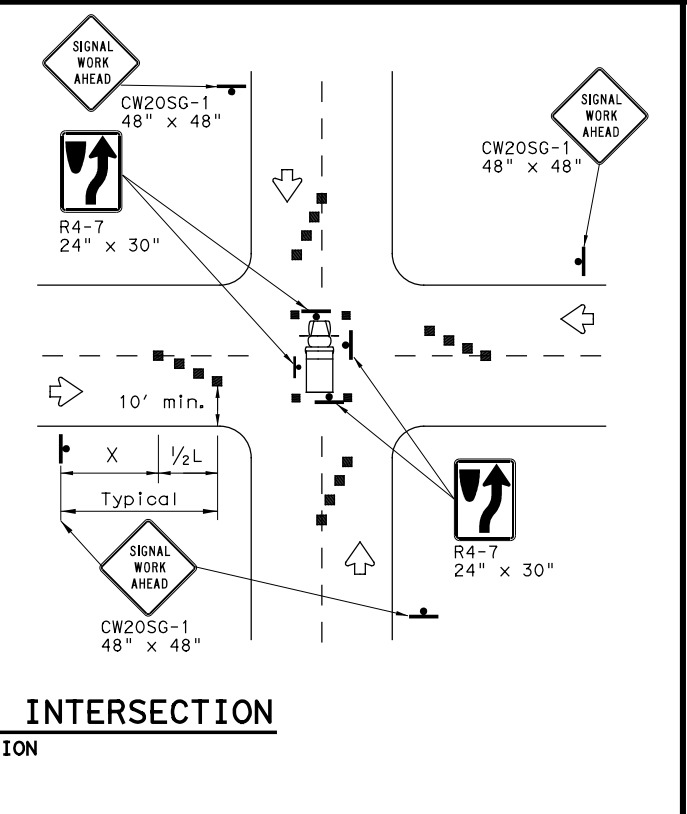
Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
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)

WORKERS IN BUCKET TRUCKS SHALL NOT WORK ABOVE OPEN LANES OF TRAFFIC.



OPERATIONS IN THE INTERSECTION
SHORT DURATION



GENERAL NOTES

- The minimum size channelizing device is the 28" cone. 42" Two-piece cones, drums, vertical panels or barricades will be required when the device must be left unattended at night.
- Obstructions or hazards at the work area shall be clearly marked and delineated at all times.
- Flaggers and Flagger Symbol (CW20-7) signs may be required according to field conditions.
- Vehicles parked in roadway shall be equipped with at least two high intensity rotating, flashing, oscillating or strobe type lights.
- High level warning devices (flag trees) may be used at corners of the vehicle.
- When work operations are performed on existing signals, the signals may be placed in flashing red mode when approved by the engineer. If existing signals do not have power, All-Way Stop (R1-1 and R1-3P) signs may be implemented when approved by the engineer.
- For Short-Term Stationary work the buffer space "B" from the above table should be used if field conditions permit. For Short Duration (less than 1 hour) any buffer space provided will enhance the safety of the setup.
- The arrow board at this location may be omitted for Short Duration work if the work vehicle has an arrow board in operation. As an option, the arrow board may be placed at the end of the taper in the closed lane if space is not available at the beginning of the taper.
- Signs and devices for the NEAR SIDE LANE CLOSURE may be altered for a left lane closure by using a LEFT LANE CLOSED (CW20-5TL) and adding channelizing devices on the centerline to protect the work space from opposing traffic.



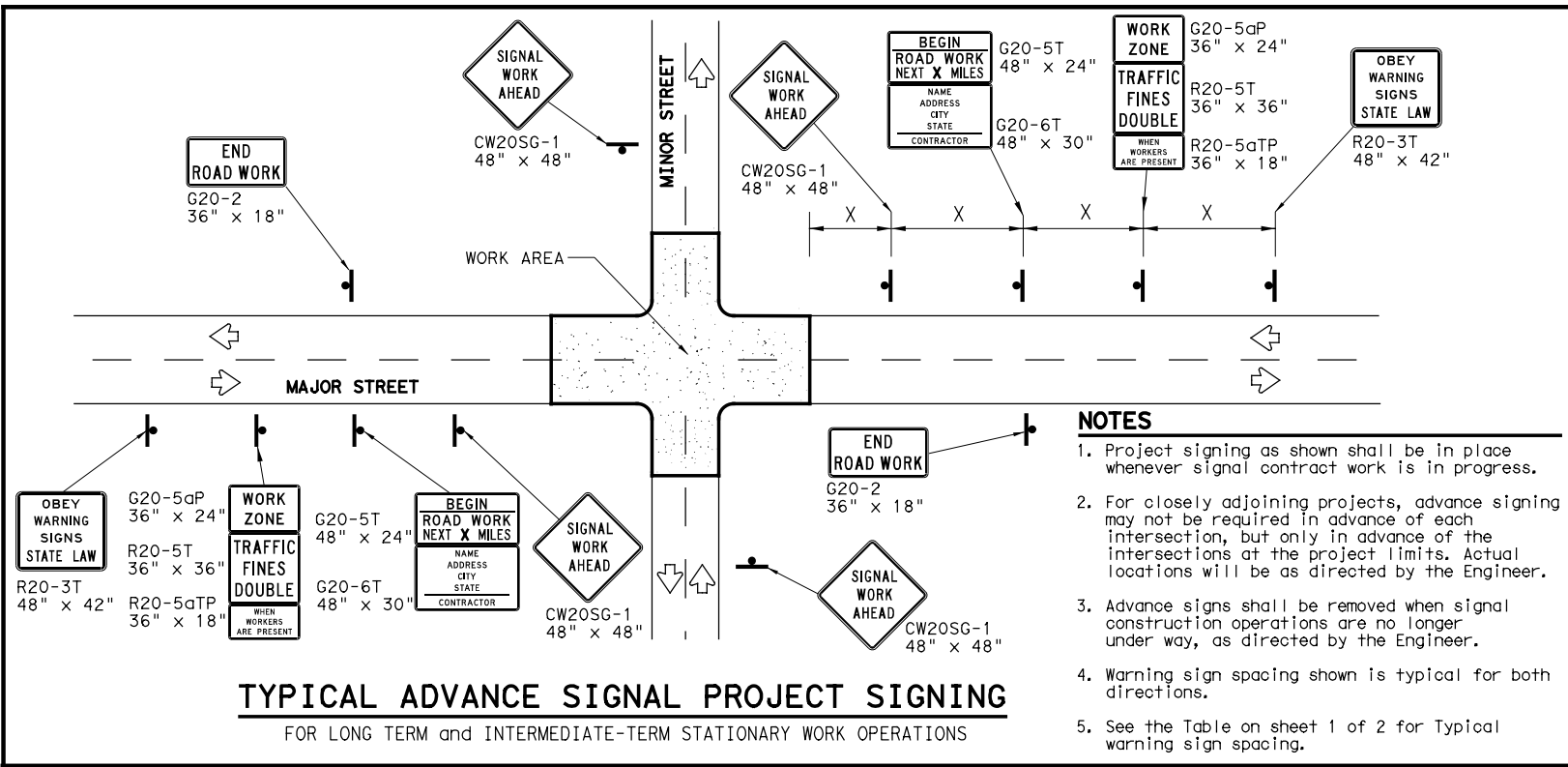
TRAFFIC SIGNAL WORK TYPICAL DETAILS

WZ (BTS-1) -13

FILE: wzbt-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	0439	05	026	SH 194
2-98 10-99 7-13	DIST	COUNTY	SHEET NO.	
4-98 3-03	LBB	HALE	111	

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GENERAL NOTES FOR WORK ZONE SIGNS

1. Signs shall be installed and maintained in a straight and plumb condition.
2. Wooden sign posts shall be painted white.
3. Barricades shall NOT be used as sign supports.
4. Nails shall NOT be used to attach signs to any support.
5. All signs shall be installed in accordance with the plans or as directed by the Engineer.
6. The Contractor shall furnish the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD).
7. The Contractor shall furnish sign supports and substrates listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD), installed as per the manufacturer's recommendations.
8. Temporary signs that have damaged or cracked substrates and/or damaged or marred reflective sheeting shall be replaced as directed by the Engineer.
9. 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".
10. Damaged wood posts shall be replaced. Splicing wood posts will not be allowed.

DURATION OF WORK

1. Work zone durations are defined in Part 6, Section 66.02 of the Texas Manual on Uniform Traffic Control Devices (TMUTCD).

SIGN MOUNTING HEIGHT

1. Sign height of Long-term/Intermediate-term warning signs shall be as shown on Figure 6F-1 of the TMUTCD.
2. Sign height of Short-term/Short Duration warning signs shall be as shown on Figure 6F-2 of the TMUTCD.
3. Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

REMOVING OR COVERING

1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered, unless otherwise approved by the Engineer.
2. When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night without damaging the sign sheeting. Burlap, or heavy materials such as plywood or aluminum shall not be used to cover signs.
3. Duct tape or other adhesive material shall NOT be affixed to a sign face.
4. Signs and anchor stubs shall be removed and holes back filled upon completion of the work.

REFLECTIVE SHEETING

1. All signs shall be retroreflective and constructed of sheeting meeting the requirements of the DMS and color usage table shown on this sheet.

SIGN SUPPORT WEIGHTS

1. Weights used to keep signs from turning over should be sandbags filled with dry, cohesionless material.
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 will 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.

LEGEND

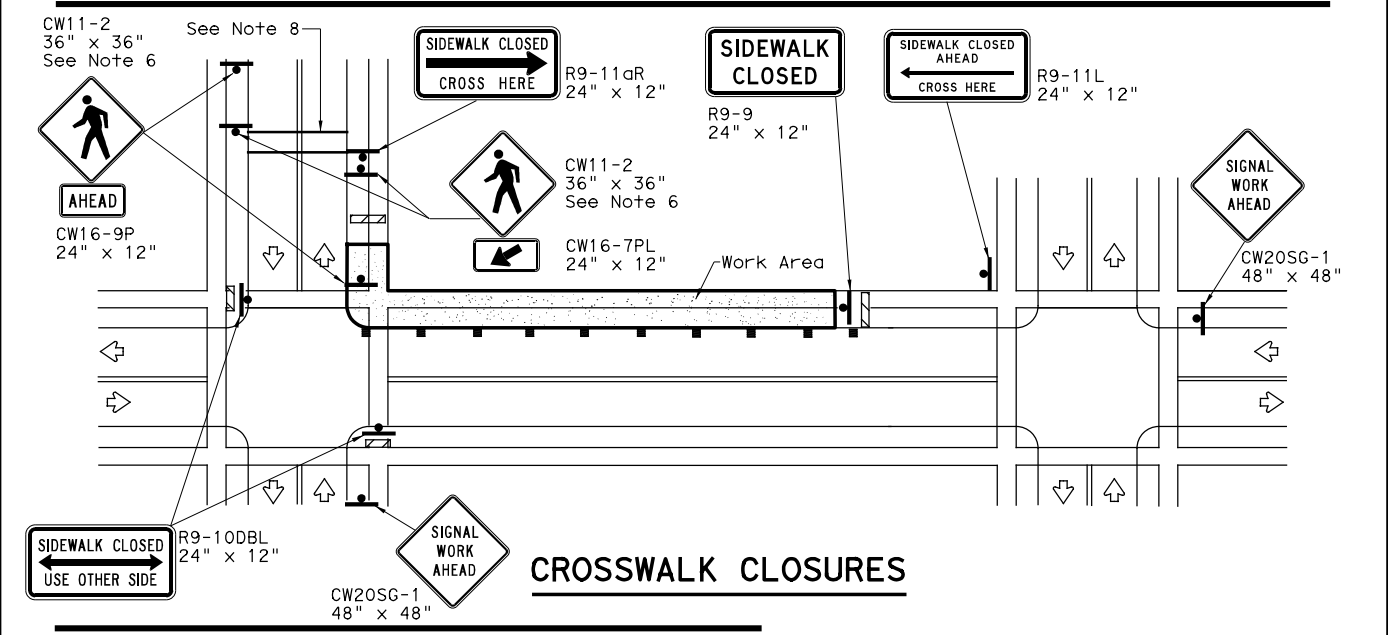
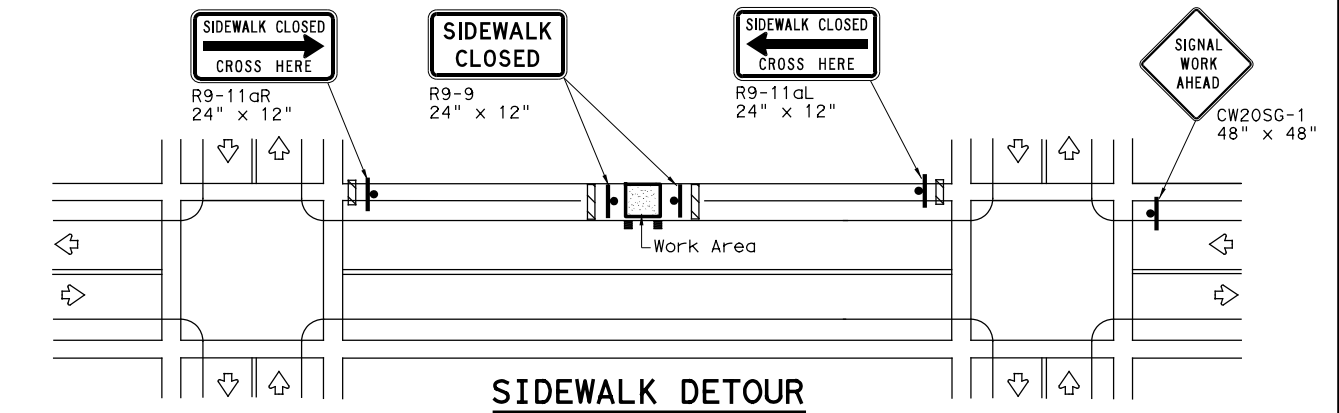
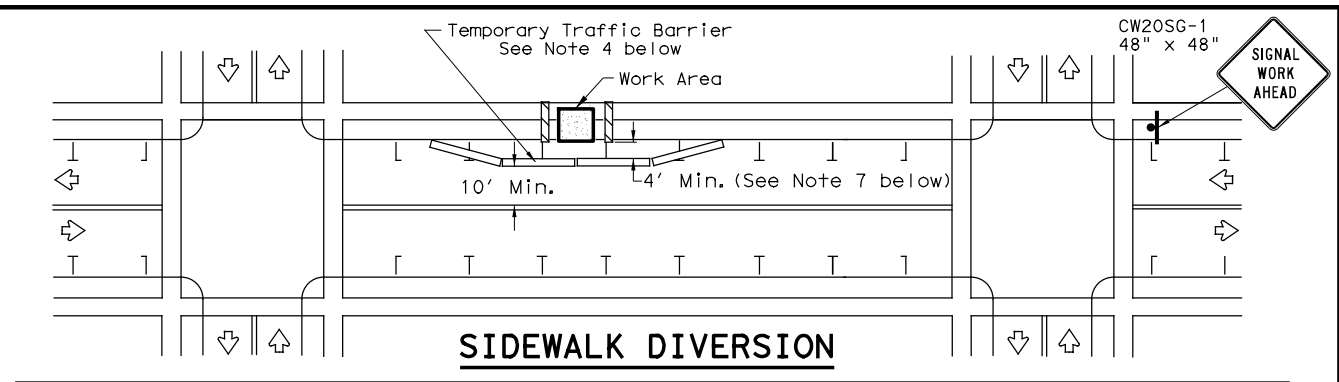
	Sign
	Channelizing Devices
	Type 3 Barricade

DEPARTMENTAL MATERIAL SPECIFICATIONS

SIGN FACE MATERIALS	DMS-8300
FLEXIBLE ROLL-UP REFLECTIVE SIGNS	DMS-8310

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

Only pre-qualified products shall be used. A copy of the "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be found at the following web address:
http://www.txdot.gov/txdot_library/publications/construction.htm



PEDESTRIAN CONTROL

1. Holes, trenches or other hazards shall be adequately protected by covering, delineating or surrounding the hazard with orange plastic pedestrian fencing or longitudinal channelizing devices, or as directed by the Engineer.
2. "CROSSWALK CLOSURES" as detailed above will require the Engineer's approval prior to installation.
3. R9 series signs shown may be placed on supports detailed on the BC standards or CWZTCD list, or when fabricated from approved lightweight plastic substrates, they may be mounted on top of a plastic drum at or near the location shown.
4. For speeds less than 45 mph longitudinal channelizing devices may be used instead of traffic barriers when approved by the Engineer. Attenuation of blunt ends and installation of water filled devices shall be as per BC(9) and manufacturer's recommendations.
5. Location of devices are for general guidance. Actual device spacing and location must be field adjusted to meet actual conditions.
6. Where pedestrians with visual disabilities normally use the closed sidewalk Detectable Pedestrian Barricades should be used instead of the Type 3 Barricades shown.
7. The width of existing sidewalk should be maintained if practical.
8. Pavement markings for mid-block crosswalks shall be paid for under the appropriate bid items.
9. When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility.

SHEET 2 OF 2



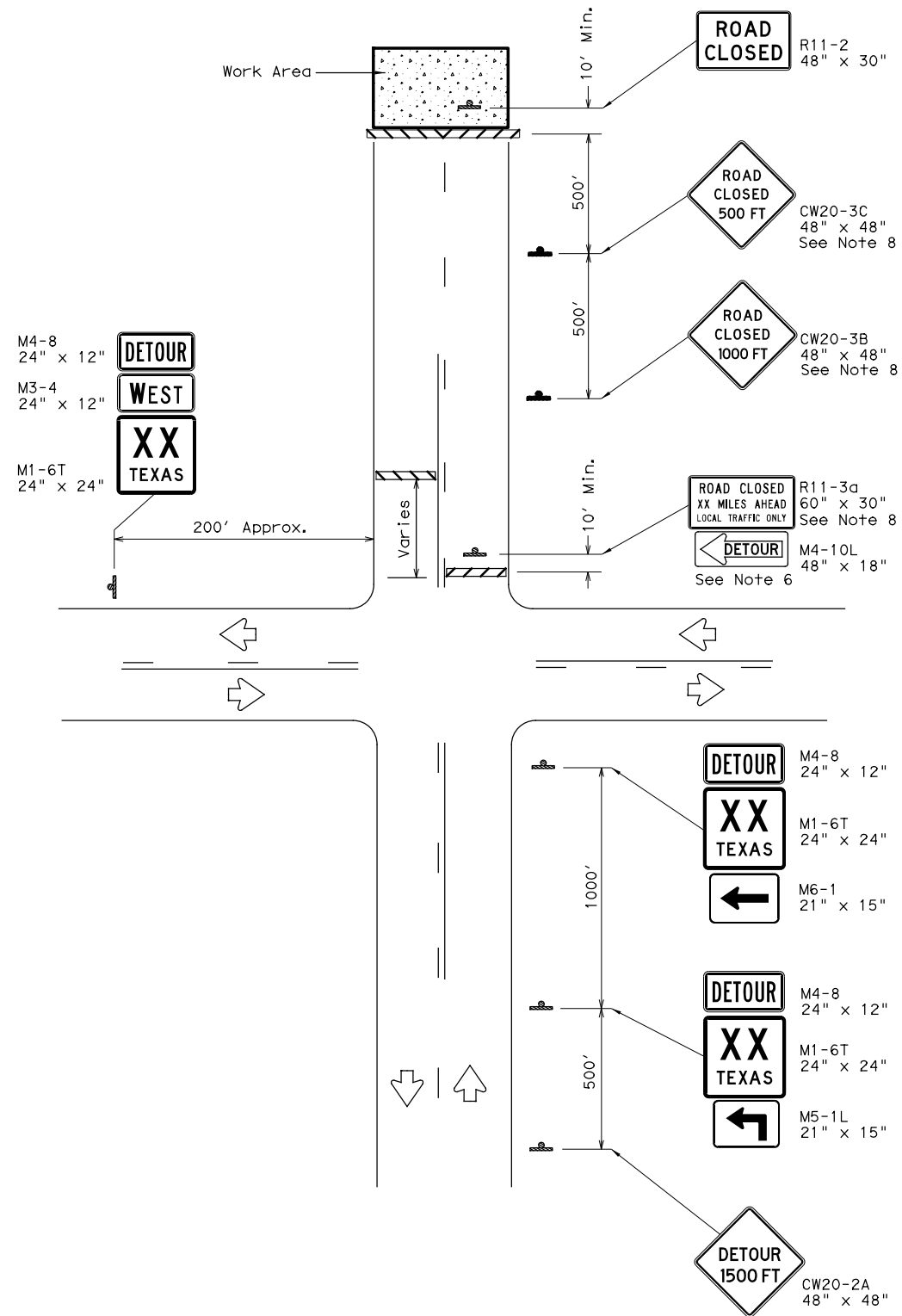
TRAFFIC SIGNAL WORK BARRICADES AND SIGNS

WZ (BTS-2) - 13

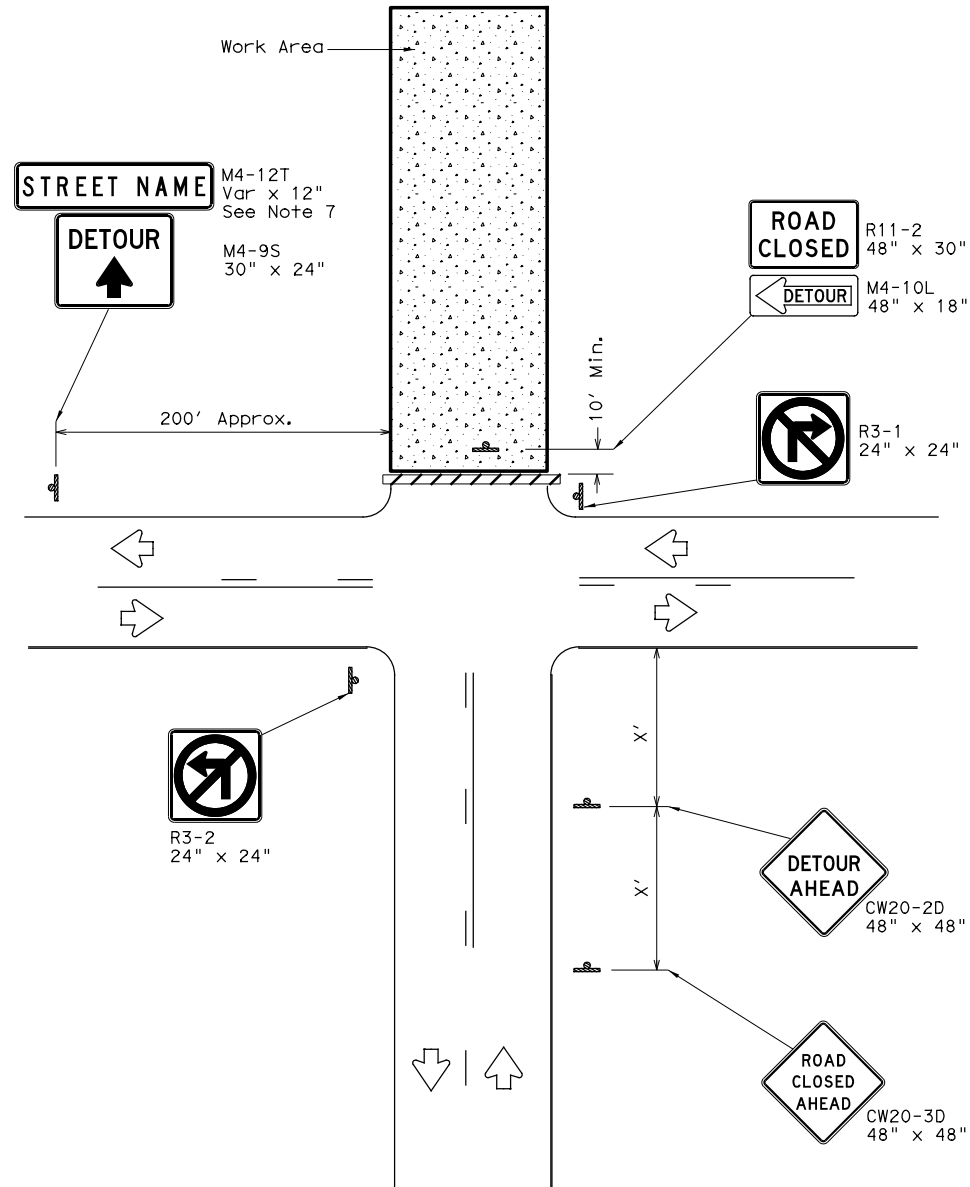
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REVISIONS		0439	05	026	SH 194				
2-98	10-99	7-13	DIST	COUNTY	SHEET NO.				
4-98	3-03	LBB	HALE	112					

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ROAD CLOSURE BEYOND THE INTERSECTION
Signing for a Numbered Route with an Off-Site Detour



ROAD CLOSURE AT THE INTERSECTION
Signing for an Un-numbered Route with an Off-Site Detour

LEGEND	
	Type 3 Barricade
	Sign

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

* Conventional Roads Only

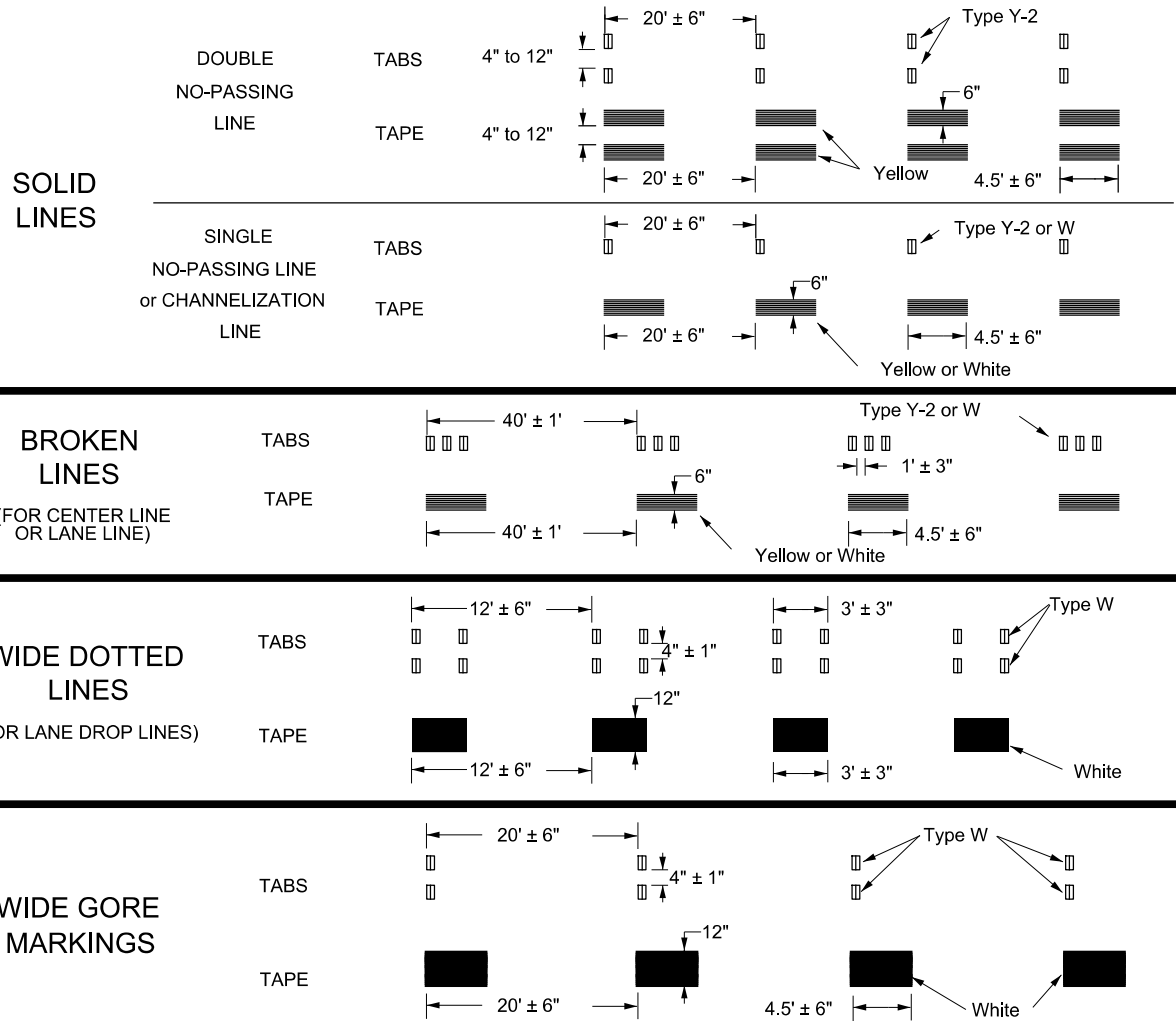
GENERAL NOTES

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

		Traffic Operations Division Standard	
WORK ZONE ROAD CLOSURE DETAILS			
WZ (RCD) - 13			
FILE: wzrcd-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT
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REVISIONS	0439	05	026
1-97 4-98 7-13	DIST	COUNTY	SHEET NO.
2-98 3-03	LBB	HALE	113

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WORK ZONE SHORT TERM PAVEMENT MARKINGS DETAILS



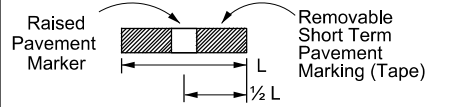
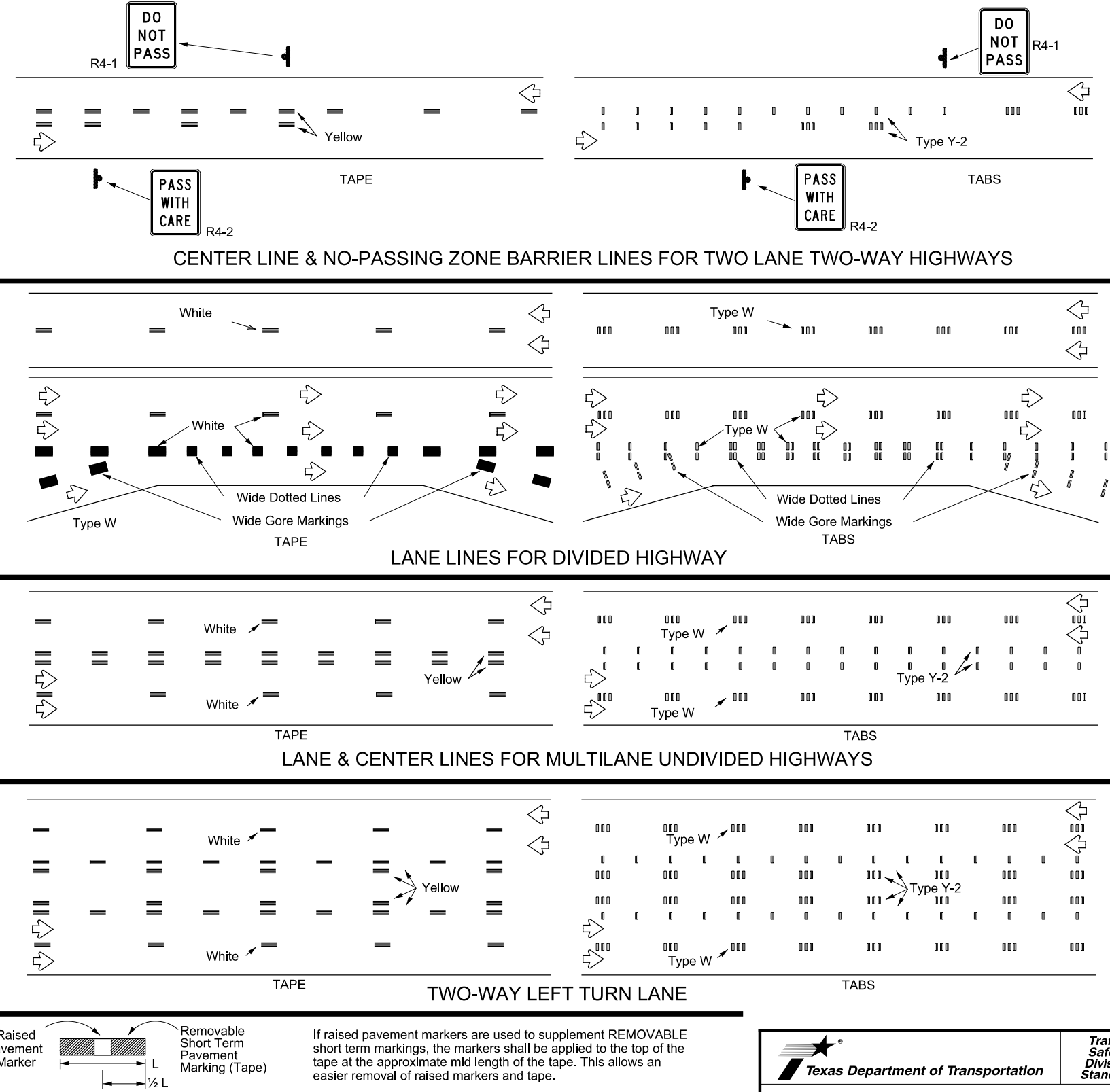
NOTES:

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

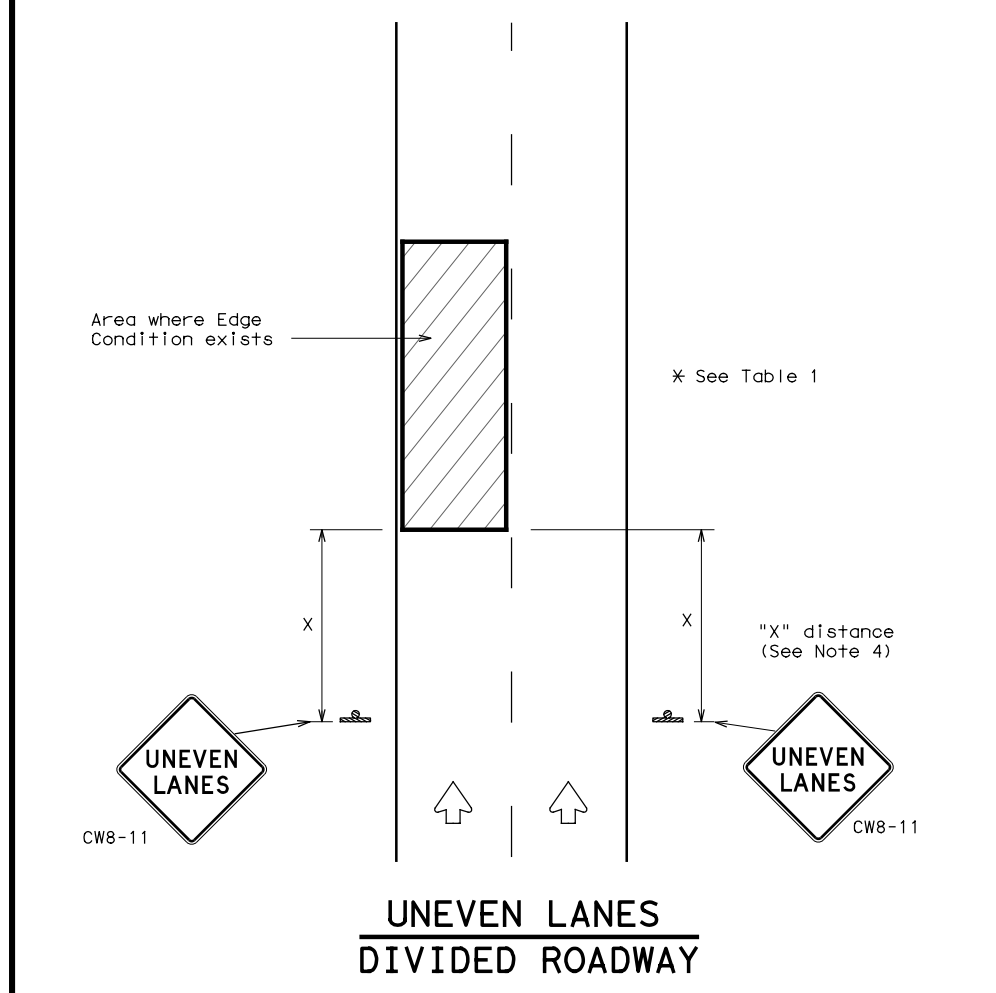
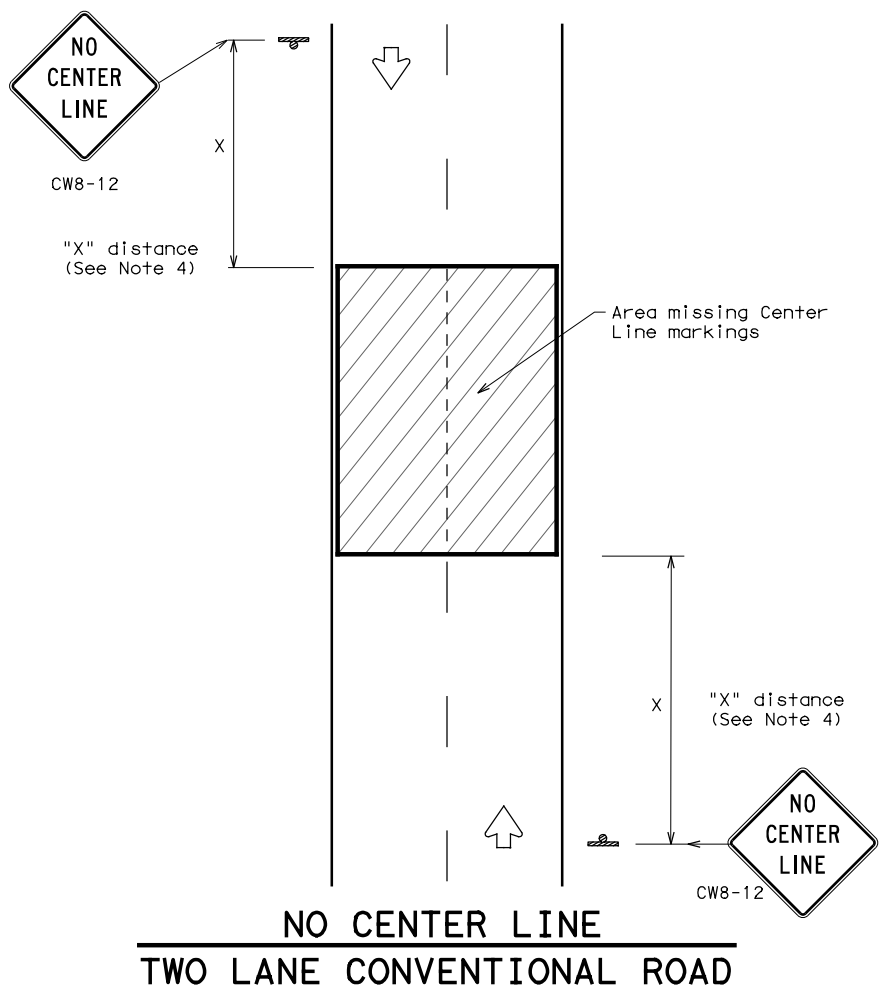
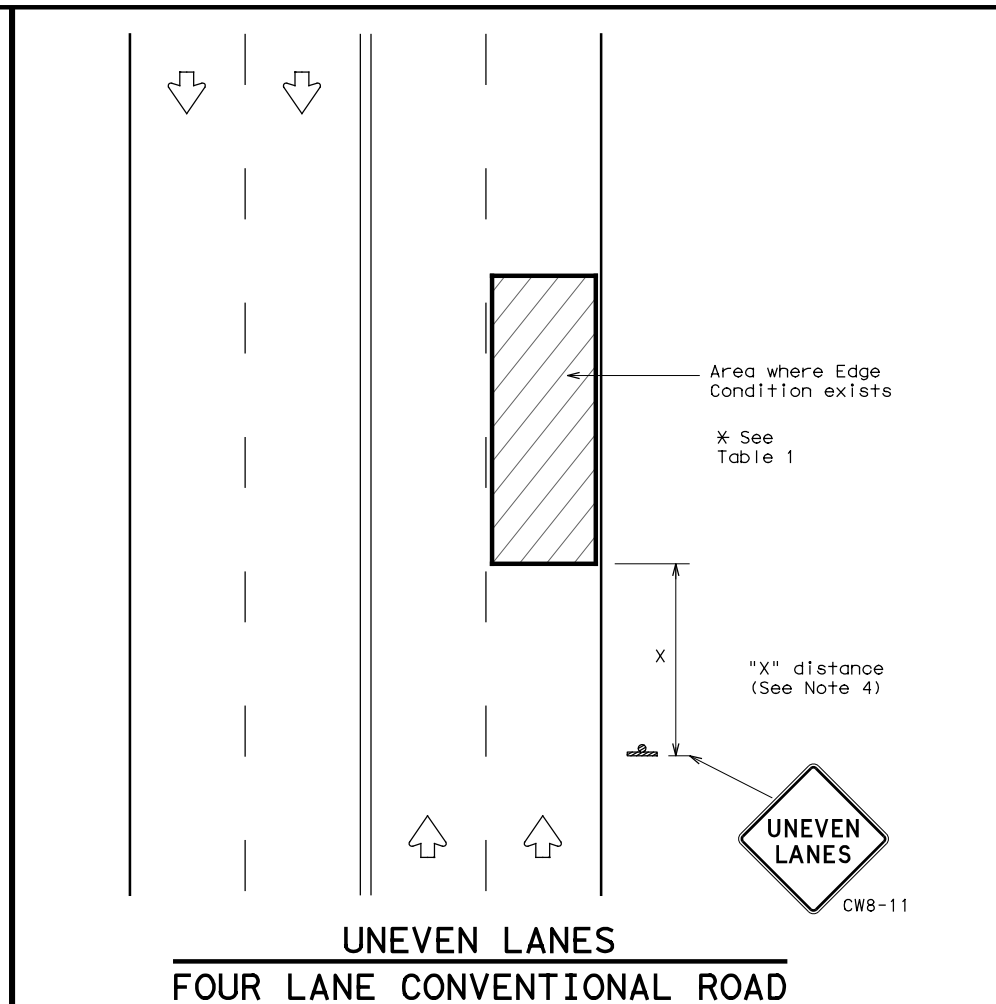
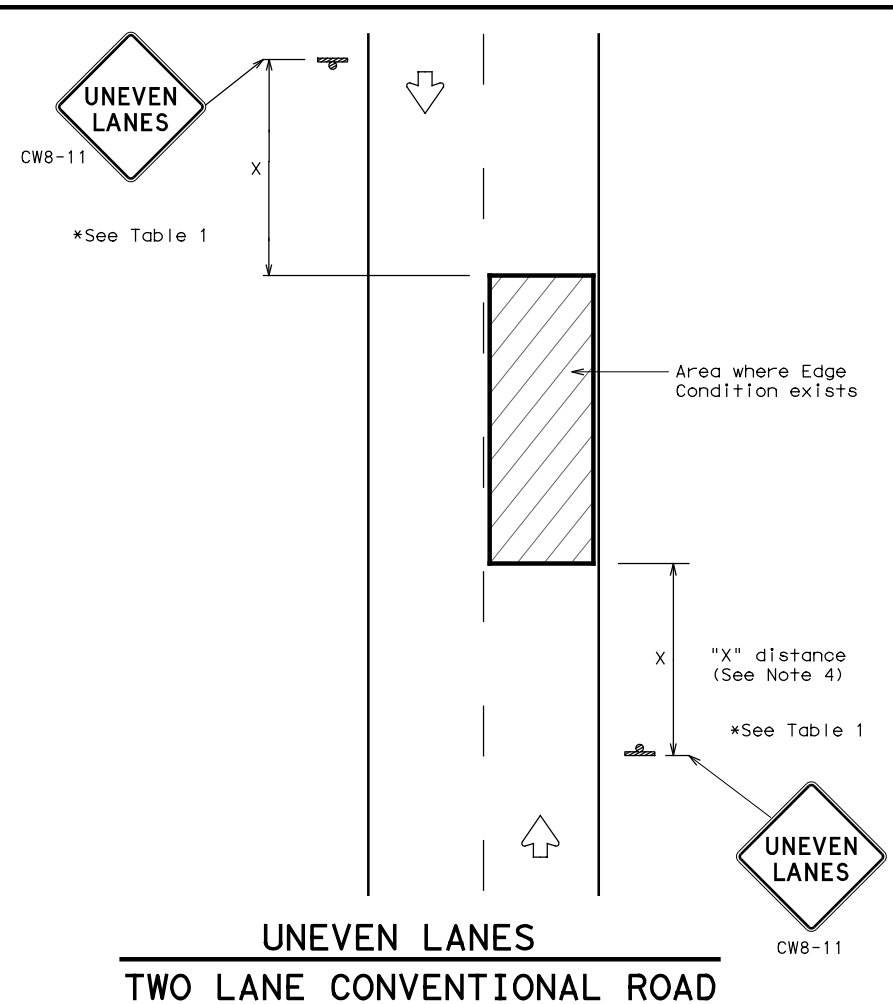
WZ(STPM)-23

FILE:	wzstpm-23.dgn	DNE	CK:	DWC:	CK:
© TxDOT	February 2023	CONT	SECT	JOB	HIGHWAY
REVISIONS		0439	05	026	SH 194
4-92	7-13	DIST	COUNTY	SHEET NO.	
1-97	2-23	LBB	HALE	114	
3-03					

DATE: 2/27/2023 10:15:32 AM
 FILE: 19_wz(stpm)-23.dgn

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DATE: 2/27/2023 10:15:37 AM
 FILE: 20_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

- 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.
- 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.
- 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.
- Signs shall be spaced at the distances recommended as per BC standards.
- 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."
- 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.
- Short term markings shall not be used to simulate edge lines.
- All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition.

TABLE 1		
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"



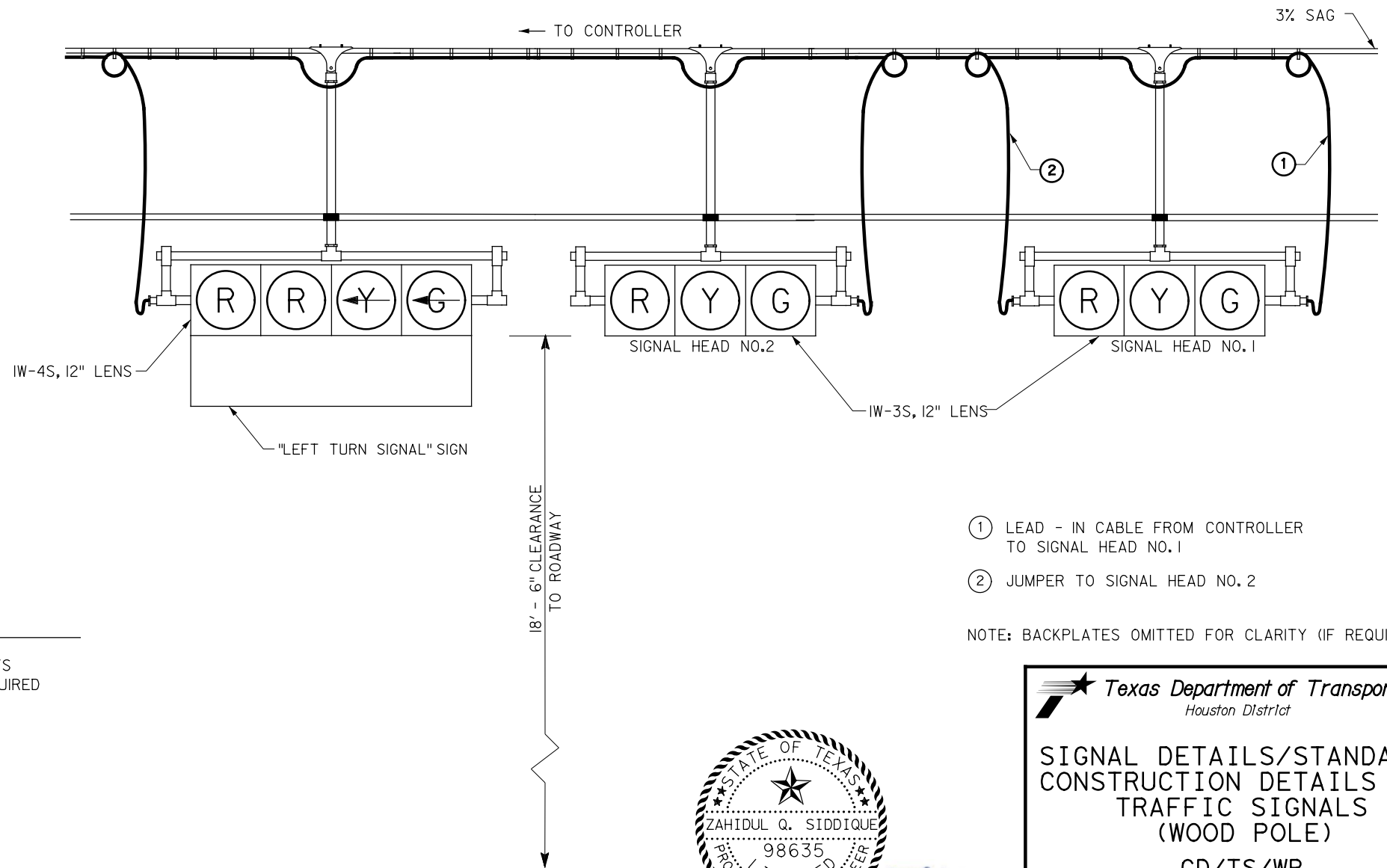
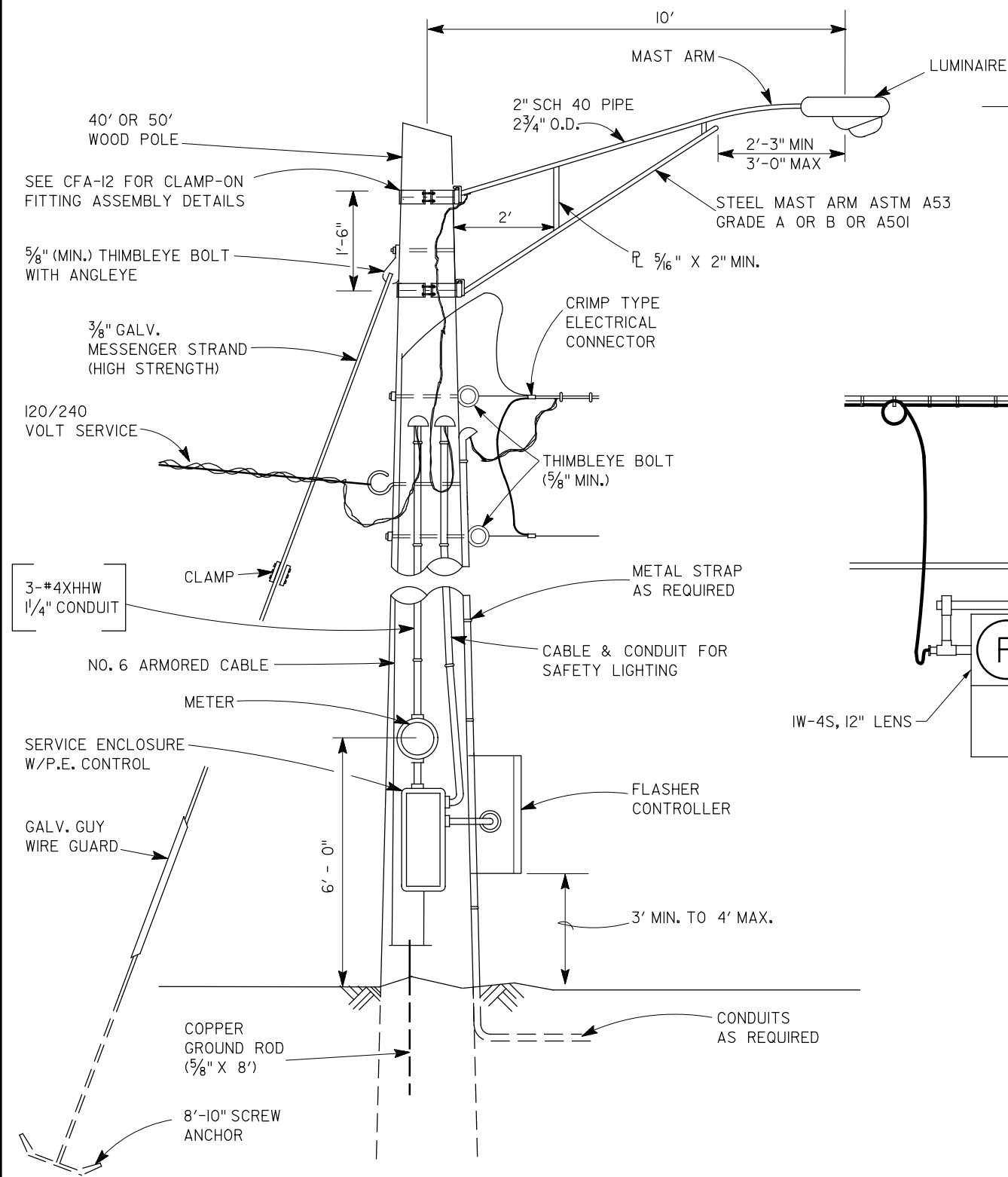
SIGNING FOR UNEVEN LANES

WZ (UL) - 13

FILE: wzul-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT April 1992	CONT	SECT	JOB	HIGHWAY
REVISIONS	0439	05	026	SH 194
8-95 2-98 7-13	DIST	COUNTY	SHEET NO.	
1-97 3-03	LBB	HALE	115	

NOTES:

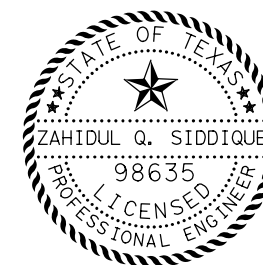
1. WRAP SIGNAL HEADS WITH DARK PLASTIC OR SUITABLE MATERIAL TO CONCEAL THE SIGNAL FACES FROM THE TIME OF INSTALLATION UNTIL PLACING INTO OPERATION.
2. INSTALL GROUNDING BUSHINGS ON THE ENDS OF UNDERGROUND RIGID METAL CONDUITS, GROUND AND BOND CONDUITS, POLES, AND CONTROLLERS TO THE NEAREST GROUND ROD USING SOFT BARE NO. 6 COPPER WIRE.
3. FURNISH HIGH STRENGTH GALVANIZED SPAN WIRE.
4. FURNISH MINIMUM 2 SIGNAL HEADS PER APPROACH.
5. FURNISH LEFT TURN SIGNAL HEAD WHEN REQUIRED.
6. FOR TEMPORARY SIGNAL INSTALLATION, INSTALL A SEPARATE POWER SOURCE, IF REQUIRED.
7. FOR TEMPORARY SIGNAL INSTALLATION, INSTALL LUMINAIRES ON WOOD SIGNAL POLES, IF REQUIRED. CONSTRUCT STEEL UPSWEEP MAST ARM FOR WOOD POLE MOUNTING OF 2 IN. PIPE WITH SLIPFITTER MOUNTING OF THE LUMINAIRE.
8. FOR TEMPORARY SIGNAL INSTALLATION, COIL A SUFFICIENT LENGTH OF SIGNAL CABLE ON THE SPAN WIRE FOR ADJUSTING SIGNAL HEADS DURING THE VARIOUS PHASES OF CONSTRUCTION.



- ① LEAD - IN CABLE FROM CONTROLLER TO SIGNAL HEAD NO. 1
- ② JUMPER TO SIGNAL HEAD NO. 2

NOTE: BACKPLATES OMITTED FOR CLARITY (IF REQUIRED)

NOTE: THE CONTRACTOR SHALL COIL ON THE SPAN WIRE A SUFFICIENT LENGTH OF SIGNAL CABLE FOR ADJUSTING SIGNAL HEADS DURING THE VARIOUS PHASES OF CONSTRUCTION.



Zahidul Q. Siddique
6/28/2024

Texas Department of Transportation
Houston District

**SIGNAL DETAILS/STANDARDS
CONSTRUCTION DETAILS FOR
TRAFFIC SIGNALS
(WOOD POLE)**

CD/TS/WP

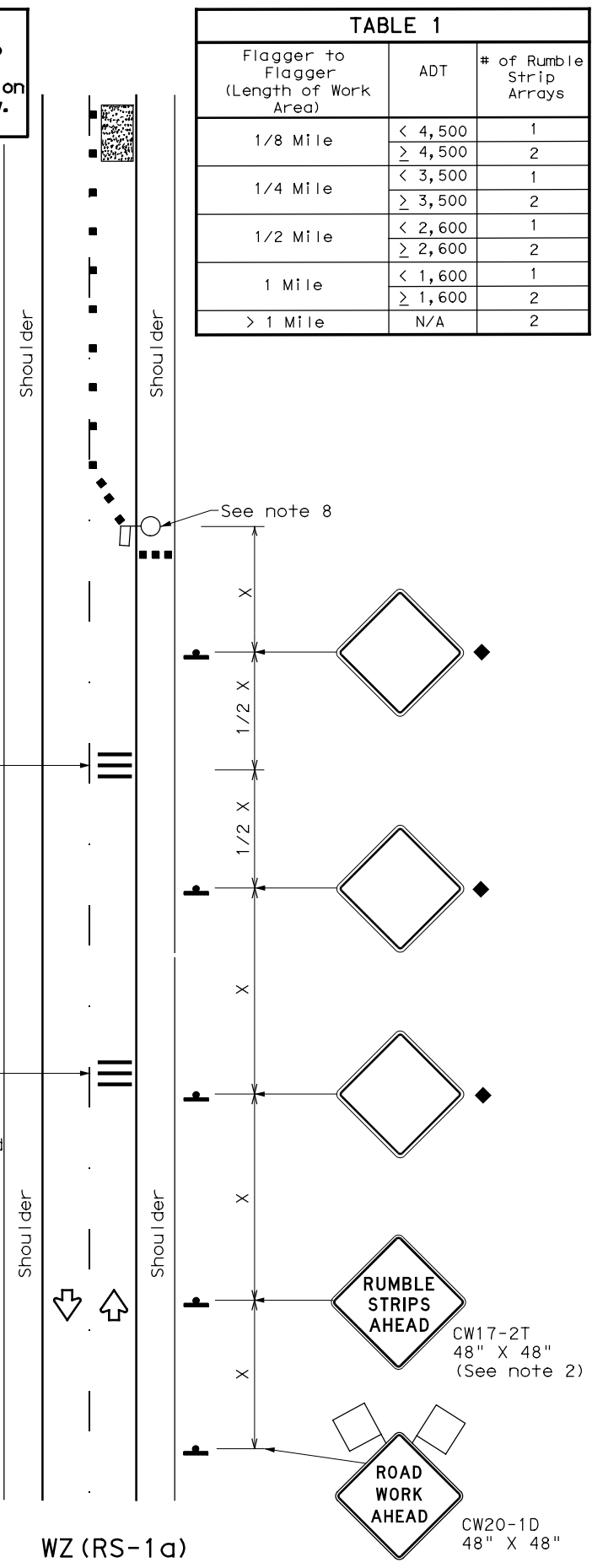
FILE:	DN:	CK:	DW:	CK:
© TxDOT 2008	DIST	FED REG	PROJECT NO.	SHEET
REVISIONS	LBB	6	SEE TITLE SHEET	116
03-07	COUNTY	CONTROL	SECT	JOB
05-08	HALE	0439	05	026
8-12				SH 194

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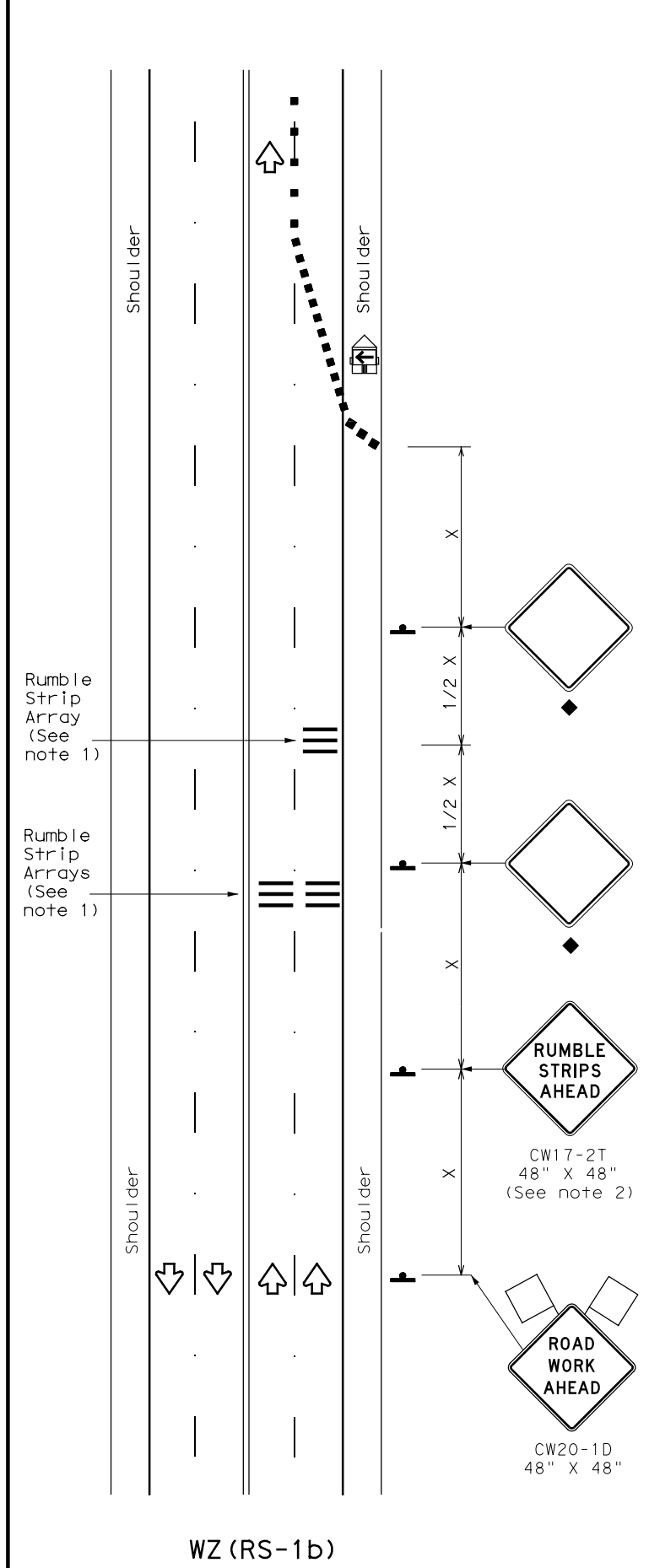
DATE: 7/3/2024 3:05:50 PM
FILE: wzrs22.dgn

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	0439	05	026	SH 194
2-14 1-22	DIST	COUNTY	SHEET NO.	
4-16	LBB	HALE	116A	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: I94050_SH194_Pentable.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 7:32:41 PM SCALE: 1:1
 FILE: SH194_Quantities_Removal.dgn

REMOVAL SUMMARY															
REMOVAL SHEET NUMBER	104 6001	104 6009	104 6011	104 6015	104 6017	104 6022	104 6026	104 6028	104 6032	354 6042	496 6004	496 6006	752 6005	752 6008	752 6018
	REMOVING CONC (PAV)	REMOVING CONC (RIPRAP)	REMOVING CONC (MEDIANS)	REMOVING CONC (SIDEWALKS)	REMOVING CONC (DRIVEWAYS)	REMOVING CONC (CURB AND GUTTER)	REMOVE CONC (GUTTER)	REMOVING CONC (MISC)	REMOVING CONC (WHEELCHAIR RAMP)	PLANE ASPH CONC PAV (8")	REMOVE STR (SET)	REMOVE STR (HEADWALL)	TREE REMOVAL (4" - 12" DIA)	TREE REMOVAL (24" - 30" DIA)	STUMP REMOVAL (GREATER THAN 12")
	SY	SY	SY	SY	SY	LF	LF	SY	SY	SY	EA	EA	EA	EA	EA
SHEET 1 OF 7										15,365	2				
SHEET 2 OF 7		72		341	303	26	252	47	2	15,332					
SHEET 3 OF 7			187	132	365		390	78		16,929					
SHEET 4 OF 7	1,422			72	803	15	210	65	4	14,759				3	3
SHEET 5 OF 7			345	42	506	99	243	76		20,568		1	1		
SHEET 6 OF 7					295	68	37	40		16,057					
SHEET 7 OF 7						10				8,911					
TOTAL:	1,422	72	532	587	2,272	218	1,132	306	6	107,921	2	1	1	3	3



Engineers & Innovators, LLC
TBPE REGISTRATION NO. F-18368



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REMOVAL SUMMARY

FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026


117

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf PENTABLE: I94050_SH194_Pentable.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 7:32:48 PM SCALE: 1:1
 FILE: SH194_Quantities_Earthwork.dgn


EARTHWORK SUMMARY		
STATION	110 6001	132 6006
	EXCAVATION (ROADWAY)	EMBANKMENT (FINAL) (DENS. CONT) (TY C)
	CY	CY
1+00	4.5	8.5
2+00	14.4	8.1
3+00	16.8	
4+00	20.9	
5+00	28.4	
6+00	31.8	
7+00	26.7	
8+00	19.3	
9+00	26.9	
10+00	34.9	
11+00	27.7	
12+00	20.3	
13+00	15.0	
14+00	12.0	
15+00	9.9	
16+00	9.1	
17+00	9.5	
18+00	10.1	
19+00	10.0	
20+00	8.7	0.3
21+00	7.4	1.9
22+00	7.8	2.9
23+00	8.2	5.8
24+00	5.9	8.3
25+00	3.5	8.3
26+00	1.6	4.5
27+00		
28+00		
29+00		
30+00		
31+00		
32+00		
33+00		
34+00		
35+00		
36+00		
37+00	8.0	
38+00	8.0	
39+00	11.3	
40+00	11.3	
41+00		
42+00		
43+00		
44+00		
45+00		
46+00		
47+00		
48+00		
49+00		
50+00		
SUBTOTAL:	429.9	48.6

EARTHWORK SUMMARY		
STATION	110 6001	132 6006
	EXCAVATION (ROADWAY)	EMBANKMENT (FINAL) (DENS. CONT) (TY C)
	CY	CY
51+00		
52+00		
53+00		
54+00	5.4	
55+00	13.9	
56+00	11.5	
57+00	6.7	
58+00	3.6	
59+00	4.5	
60+00	9.8	
61+00	11.6	
62+00	14.5	
63+00	14.3	
64+00	11.2	
65+00	10.5	
66+00	5.4	
67+00		
68+00		
69+00		
70+00		
71+00		
72+00		
73+00		
74+00		
75+00		
76+00		
77+00		
78+00		
79+00		
80+00		
81+00		
82+00	5.6	
83+00	11.1	
84+00	13.4	
85+00	15.0	
86+00	11.7	
87+00	7.0	
88+00	8.7	
89+00	10.8	
90+00	8.5	
91+00	3.9	
92+00	5.6	
93+00	11.1	
94+00	11.1	
95+00	11.1	
96+00	11.1	
97+00	11.1	
98+00	11.1	
99+00	11.1	
100+00	11.1	
SUBTOTAL:	313.0	0.0

EARTHWORK SUMMARY		
STATION	110 6001	132 6006
	EXCAVATION (ROADWAY)	EMBANKMENT (FINAL) (DENS. CONT) (TY C)
	CY	CY
101+00	11.1	
102+00	11.1	
103+00	11.1	
104+00	11.1	
105+00	11.1	
106+00	11.1	
107+00	11.1	
108+00	11.1	
109+00	11.1	
110+00	5.6	
111+00		
112+00	5.6	
113+00	11.1	
114+00	5.6	3.8
115+00	2.8	5.6
116+00	5.6	3.9
117+00	5.1	4.9
118+00	5.1	4.0
119+00	5.8	3.0
120+00		3.7
121+00	8.8	3.2
122+00	9.7	1.9
123+00	5.1	0.5
124+00	0.5	5.6
125+00	3.8	10.4
126+00	6.9	8.8
127+00	8.1	7.1
128+00	6.9	9.6
129+00	2.5	6.3
130+00	4.0	0.6
131+00	8.4	0.9
132+00	9.9	0.2
133+00	11.1	
134+00	11.1	
135+00	5.6	
136+00	5.6	
137+00	5.6	
138+00		
139+00		
140+00		
141+00		
142+00	6.5	
143+00	9.6	3.0
144+00	9.1	3.0
145+00	7.3	2.8
146+00	6.9	3.9
147+00	11.1	1.6
EXTRA	500.0	
SUBTOTAL:	316.3	98.3
TOTAL:	1,559.2	146.9



Engineers & Innovators, LLC
TBPE REGISTRATION NO. F-18368



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EARTHWORK SUMMARY

FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026


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PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: I94050_SH194_Pentable.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 7:32:55 PM SCALE: 1:1
 FILE: SH194_Quantities_Pavement.dgn


PAVEMENT SUMMARY													
P&P SHEET NUMBER	134 6001	260 6002	260 6027	310 6009	315 6004	351 6036	360 6004	360 6073	3032 6001	3032 6004	*3076 6066	3076 6090	3080 6008
	BACKFILL (TY A)	LIME (HYDRATED LIME (SLURRY))	LIME TRT (EXIST MATL) (8")	PRIME COAT (MC-30)	FOG SEAL (CSS-1H)	FLEX PAVEMENT STRUCTURE REPAIR (2-8")	CONC PVMT (CONT REINF-CRCP) (10")	CONC PVMT (CRCP) (JCT TERMINAL 10")	REINFORCED FAB FOR ASPH PVMNT OVERLAYS	ASPH FOR REINF FAB (PG76-28)	TACK COAT	D-GR HMA TY-B SAC-B PG 76-28	STONE-MTRX-ASPH SMA-D SAC-A PG76-28
	STA	TON	SY	GAL	GAL	SY	SY	SY	SY	GAL	GAL	TON	TON
SHEET 1 OF 26		36	3,165	633	570	32			3,165	475	54	1,092	373
SHEET 2 OF 26		46	4,067	813	732	41			4,067	610	65	1,403	480
SHEET 3 OF 26		46	4,067	813	732	41			4,067	610	65	1,403	480
SHEET 4 OF 26		46	4,067	813	732	41			4,067	610	65	1,403	480
SHEET 5 OF 26		38	3,389	684	616	34			3,389	508	54	1,181	404
SHEET 6 OF 26		41	3,665	733	660	37			3,665	550	65	1,264	432
SHEET 7 OF 26		46	4,067	825	743	41			4,067	610	65	1,423	487
SHEET 8 OF 26		46	4,067	824	742	41			4,067	610	65	1,421	486
SHEET 9 OF 26		46	4,067	825	742	41			4,067	610	65	1,422	486
SHEET 10 OF 26		38	3,389	688	619	34			3,389	508	54	1,187	406
SHEET 11 OF 26		46	4,067	1,050	5,842	41			4,067	610	65	1,811	620
SHEET 12 OF 26		46	4,067	823	741	41			4,067	610	65	1,420	486
SHEET 13 OF 26		46	4,067	818	736	41			4,067	610	65	1,411	482
SHEET 14 OF 26		46	4,114	977	3,014	41			4,114	617	65	1,686	577
SHEET 15 OF 26		48	4,267	866	779	43			4,267	640	65	1,493	511
SHEET 16 OF 26	1	30	2,668	570	513	27	1,422	185	2,668	400	65	984	336
SHEET 17 OF 26	5	41	3,611	1,178	1,060	36			3,611	542	54	2,032	689
SHEET 18 OF 26	5	41	3,611	722	650	36			3,611	542	54	1,246	420
SHEET 19 OF 26	5	41	3,611	735	662	36			3,611	542	54	1,268	427
SHEET 20 OF 26	6	49	4,333	1,083	975	43			4,333	650	65	1,869	631
SHEET 21 OF 26	6	49	4,333	867	780	43			4,333	650	65	1,495	503
SHEET 22 OF 26	6	49	4,333	867	780	43			4,333	650	65	1,495	503
SHEET 23 OF 26	4	42	3,685	768	691	36			3,685	553	54	1,325	448
SHEET 24 OF 26		48	4,250	887	798	43			4,250	638	54	1,530	523
SHEET 25 OF 26		63	5,567	1,113	1,002	56			5,567	835	65	1,921	657
SHEET 26 OF 26		42	3,716	743	669	37			3,716	557	44	1,282	438
TOTAL#	38	1,156	102,310	21,718	26,580	1,026	1,422	185	102,310	15,347	1,581	37,467	12,765

*ASSUMED 7 JOINTS.

BASIS OF ESTIMATE				
ITEM NUMBER	ITEM DESCRIPTION	RATE	AREA (SY)	UNIT
260 6002	LIME (HYDRATED LIME (SLURRY))	22.6 LB/SY	108,603	TON
260 6027	LIME TRT (EXIST MATL) (8")		108,603	SY
310 6009	PRIME COAT (MC-30)	0.2 GAL/SY	108,603	GAL
315 6004	FOG SEAL (CSS-1H)	0.18 GAL/SY	108,603	GAL
360 6004	CONC PVMT (CONT REINF-CRCP) (10")		1,422	SY
360 6073	CONC PVMT (CRCP) (JCT TERMINAL 10")		185	SY
3032 6001	REINFORCED FAB FOR ASPH PVMNT OVERLAYS		108,603	SY
3032 6004	ASPH FOR REINF FAB (PG76-28)	0.15 GAL/SY	108,603	GAL
3076 6066	TACK COAT	0.14 GAL/SY	11,360	GAL
3076 6090	D-GR HMA TY-B SAC-B PG 76-28	690 LB/SY	108,603	TON
3080 6008	STONE-MTRX-ASPH SMA-D SAC-A PG76-28	236 LB/SY	108,188	TON



Engineers & Innovators, LLC
TBPE REGISTRATION NO. F-18368



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PAVEMENT SUMMARY

FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026


119

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 8/27/2024 TIME: 10:27:39 AM SCALE: 1:1
 FILE: SH194_Quantities_Roadway.dgn

ROADWAY SUMMARY													
P&P SHEET NUMBER	479 6004	479 6005	479 6008	529 6008	529 6030	530 6004	531 6003	531 6018	531 6019	531 6022	531 6024	531 6027	536 6002
	ADJUSTING MANHOLES (SANITARY)	ADJUSTING MANHOLES (WATER VALVE BOX)	ADJUSTING MANHOLES (WATER METER)	CONC CURB & GUTTER (TY II)	CONC CURB & GUTTER (VALLEY GUTTER)	DRIVEWAYS (CONC)	CONC SIDEWALKS (6")	CURB RAMPS (TY 1)	CURB RAMPS (TY 2)	CURB RAMPS (TY 5)	CURB RAMPS (TY 7)	CURB RAMPS (TY 10)	CONC MEDIAN
	EA	EA	EA	LF	LF	SY	SY	SY	SY	SY	SY	SY	SY
SHEET 1 OF 26				154	61		287					14	
SHEET 2 OF 26				32			400						
SHEET 3 OF 26							400						
SHEET 4 OF 26							400						
SHEET 5 OF 26	2				105		277					6	
SHEET 6 OF 26	1		1			50	416	4	14		7		
SHEET 7 OF 26	1		4		101	190	305				9	16	
SHEET 8 OF 26			2		68	128	129				3	4	
SHEET 9 OF 26			1		72	27	229				2		
SHEET 10 OF 26			3		68	57	314				3		
SHEET 11 OF 26					231	132	362	3			4	7	187
SHEET 12 OF 26			2		64	189	354				4		
SHEET 13 OF 26			5		27	241	297					6	
SHEET 14 OF 26			2	6	100	325	304				7	14	
SHEET 15 OF 26			2	21	53	333	313						
SHEET 16 OF 26			1	23	27	164	452						
SHEET 17 OF 26				2	30	80	240						345
SHEET 18 OF 26				31		226	224						
SHEET 19 OF 26				16	37	117	223				23		
SHEET 20 OF 26				26	177	301	230			20	7		
SHEET 21 OF 26				3		31	382						
SHEET 22 OF 26				31		126	345						
SHEET 23 OF 26				30	37		281					14	
SHEET 24 OF 26				67		117	248					14	
SHEET 25 OF 26				10			108				15		
SHEET 26 OF 26							255					8	
TOTAL#	4	44	23	452	1,258	2,834	7,775	7	14	20	84	103	532



Engineers & Innovators, LLC
TBPE REGISTRATION NO. F-18368

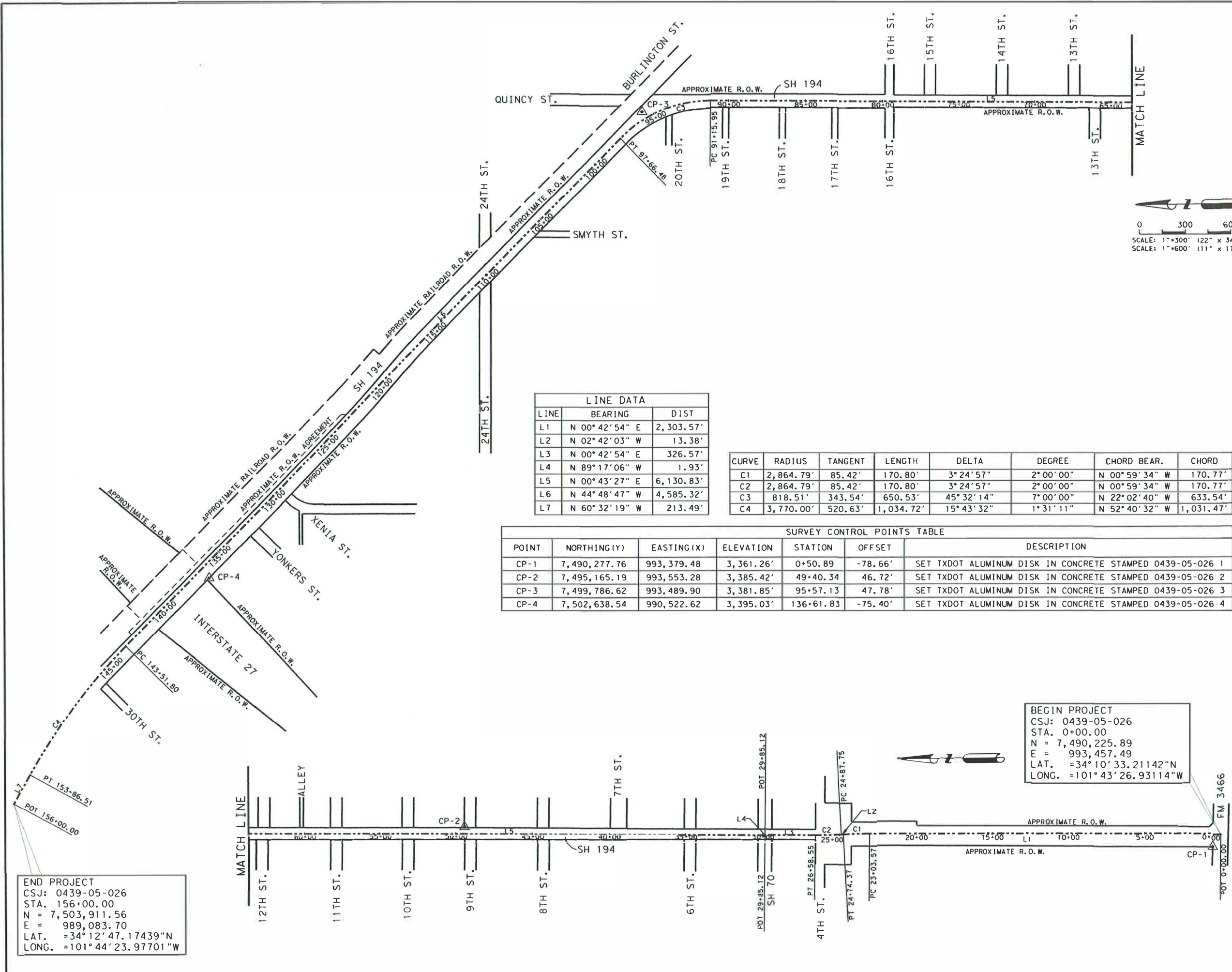


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ROADWAY SUMMARY

FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026

120



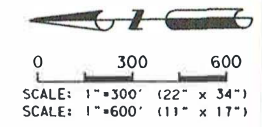
NOTES

ALL COORDINATES AND BEARINGS ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM OF 1983 (NAD83) (2011 ADJUSTMENT, 2010 EPOCH), NORTH CENTRAL ZONE (4202), AS ESTABLISHED BY GPS OBSERVATIONS ON BASED ON TXDOT_VRS_MOUNT POINT NORTH-RTCM

ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) (2011 ADJUSTMENT, 2010 EPOCH) GEOID 12A, AS ESTABLISHED BY GPS OBSERVATIONS OR BASED ON TXDOT_VRS_MOUNT POINT NORTH-RTCM

THE UNIT OF MEASURE IS THE U.S. SURVEY FOOT.

ALL COORDINATES AND DISTANCES ARE SURFACE VALUES AND CAN BE CONVERTED TO GRID VALUES BY DIVIDING BY THE PROJECT SURFACE ADJUSTMENT FACTOR OF 1.00008578735 FROM CSJ 0067-04-039.



LINE	BEARING	DIST
L1	N 00° 42' 54" E	2,303.57'
L2	N 02° 42' 03" W	13.38'
L3	N 00° 42' 54" E	326.57'
L4	N 89° 17' 06" W	1.93'
L5	N 00° 43' 27" E	6,130.83'
L6	N 44° 48' 47" W	4,585.32'
L7	N 60° 32' 19" W	213.49'

CURVE	RADIUS	TANGENT	LENGTH	DELTA	DEGREE	CHORD BEAR.	CHORD
C1	2,864.79'	85.42'	170.80'	3° 24' 57"	2° 00' 00"	N 00° 59' 34" W	170.77'
C2	2,864.79'	85.42'	170.80'	3° 24' 57"	2° 00' 00"	N 00° 59' 34" W	170.77'
C3	818.51'	343.54'	650.53'	45° 32' 14"	7° 00' 00"	N 22° 02' 40" W	633.54'
C4	3,770.00'	520.63'	1,034.72'	15° 43' 32"	1° 31' 11"	N 52° 40' 32" W	1,031.47'

POINT	NORTHING (Y)	EASTING (X)	ELEVATION	STATION	OFFSET	DESCRIPTION
CP-1	7,490,277.76	993,379.48	3,361.26'	0+50.89	-78.66'	SET TXDOT ALUMINUM DISK IN CONCRETE STAMPED 0439-05-026 1
CP-2	7,495,165.19	993,553.28	3,385.42'	49+40.34	46.72'	SET TXDOT ALUMINUM DISK IN CONCRETE STAMPED 0439-05-026 2
CP-3	7,499,786.62	993,489.90	3,381.85'	95+57.13	47.78'	SET TXDOT ALUMINUM DISK IN CONCRETE STAMPED 0439-05-026 3
CP-4	7,502,638.54	990,522.62	3,395.03'	136+61.83	-75.40'	SET TXDOT ALUMINUM DISK IN CONCRETE STAMPED 0439-05-026 4

BEGIN PROJECT
 CSJ: 0439-05-026
 STA. 0+00.00
 N = 7,490,225.89
 E = 993,457.49
 LAT. = 34° 10' 33.21142"N
 LONG. = 101° 43' 26.93114"W

END PROJECT
 CSJ: 0439-05-026
 STA. 156+00.00
 N = 7,503,911.56
 E = 989,083.70
 LAT. = 34° 12' 47.17439"N
 LONG. = 101° 44' 23.97701"W

THIS SURVEY CONTROL INFORMATION HAS BEEN ACCEPTED AND INCORPORATED INTO THIS PS&E



THE CONTROL POINTS HEREIN WERE DETERMINED BY A SURVEY MADE ON THE GROUND UNDER MY SUPERVISION.

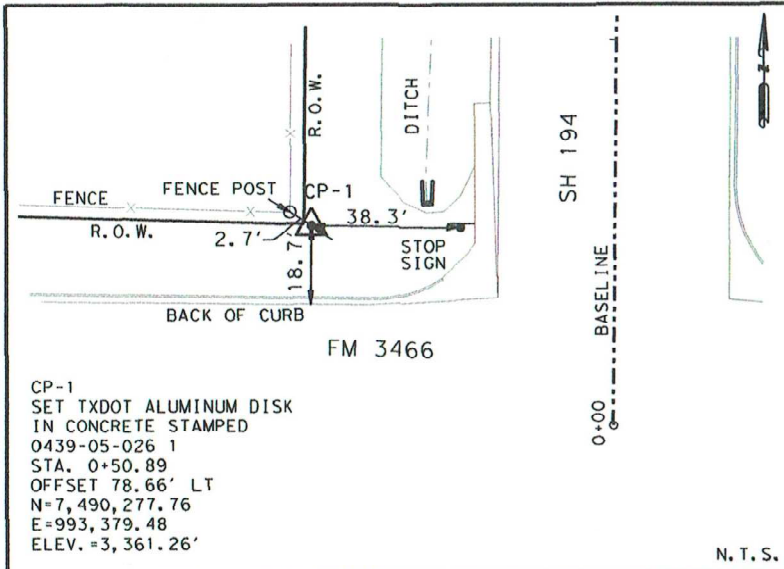
Darcy B. Weillnau 15 July 2019
 Darcy B. Weillnau
 REGISTERED PROFESSIONAL LAND SURVEYOR
 NO. 5607



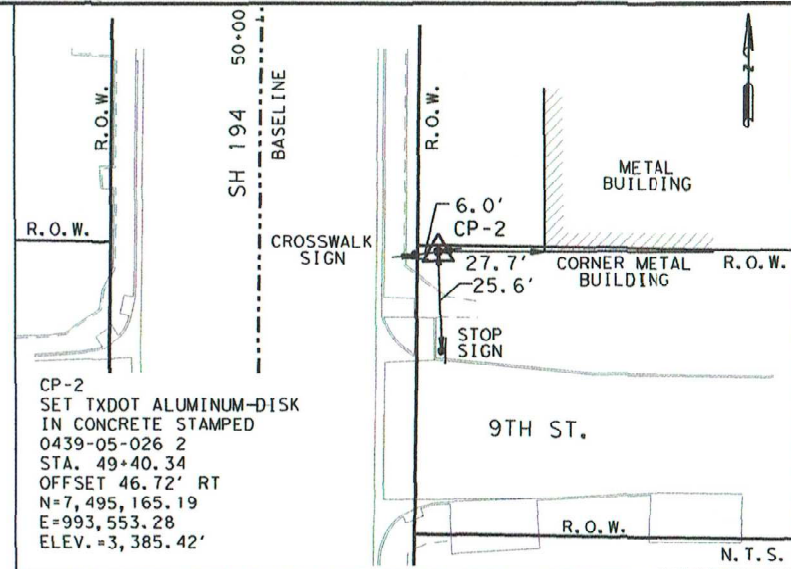
LANDTECH
 2525 North Loop West, Suite 300,
 Houston, Texas 77008
 T: 713-861-7068 F: 713-861-4131
 TBPE Registration No. F-1364; TBPLS Registration No. 10019100

SH 194
 SURVEY CONTROL INDEX SHEET

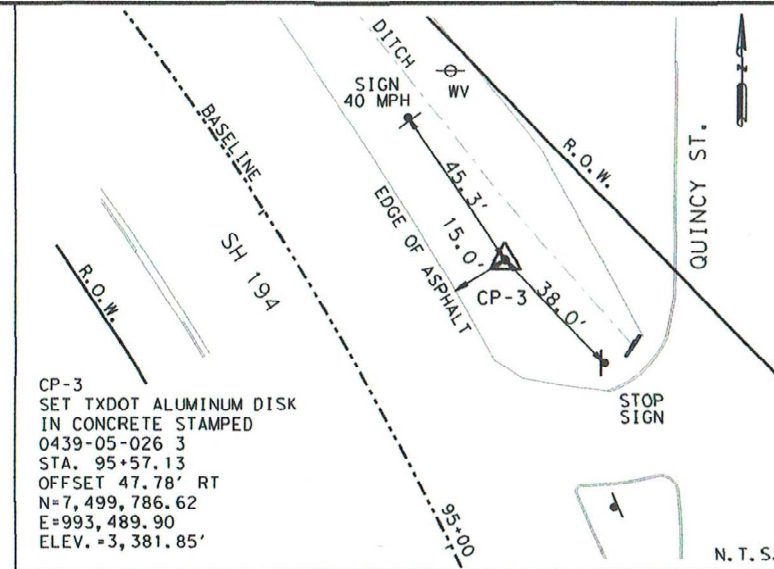
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	TX		SH 194
STATE DIST. NO.	COUNTY	CONTROL NO.	SECTION NO.
5	HALE	0439	05
JOB NO.	SHEET NO.		
026	121		



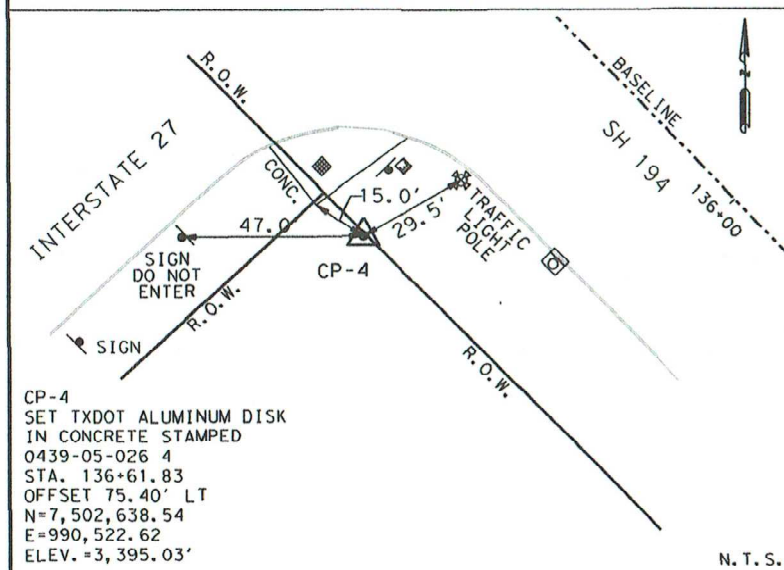
CP-1: LOCATED AT THE NORTHWEST CORNER OF FM 3466 AND SH 194.



CP-2: LOCATED AT THE NORTHEAST CORNER OF SH 194 AND 9TH ST.



CP-3: LOCATED AT THE INTERSECTION CORNER OF SH 194 AND QUINCY.



CP-4: LOCATED AT THE SOUTH CORNER OF INTERSTATE 27 AND SH 194.

NOTES

ALL COORDINATES AND BEARINGS ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM OF 1983 (NAD83) (2011 ADJUSTMENT, 2010 EPOCH), NORTH CENTRAL ZONE (4202), AS ESTABLISHED BY GPS OBSERVATIONS ON BASED ON TXDOT_VRS_MOUNT POINT NORTH-RTCM

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ALL COORDINATES AND DISTANCES ARE SURFACE VALUES AND CAN BE CONVERTED TO GRID VALUES BY DIVIDING BY THE PROJECT SURFACE ADJUSTMENT FACTOR OF 1.00008578735 FROM CSJ 0067-04-039.

THIS SURVEY CONTROL INFORMATION HAS BEEN ACCEPTED AND INCORPORATED INTO THIS PS&E



THE CONTROL POINTS HEREIN WERE DETERMINED BY A SURVEY MADE ON THE GROUND UNDER MY SUPERVISION.

Darcy B. Weilnau 15 July 2019
DARCY B. WEILNAU
REGISTERED PROFESSIONAL LAND SURVEYOR
NO. 5607



LANDTECH
2525 North Loop West, Suite 300,
Houston, Texas 77008
T: 713-861-7068 F: 713-861-4131
TBPE Registration No. F-1364; TBPLS Registration No. 10019100

SH 194
HORZ/VERT CONTROL SHEET

SHEET 1 OF 1

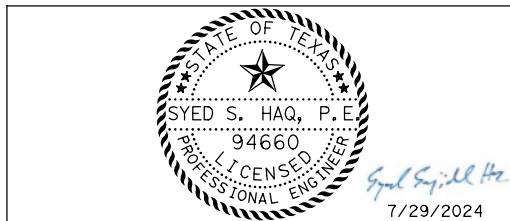
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
6	TX		SH 194		
STATE DIST. NO.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
5	HALE	0439	05	026	122

HORIZONTAL ALIGNMENT CHECK																			
PROPOSED DESIGN											RADIUS AND SUPERELEVATION CHECK						DEFLECTION CHECK		
PI NO.	DIRECTION	PC	PI	PT	DEFLECTION ANGLE	RADIUS	E _{max} PLANS	E NORMAL	W LANE	L PLANS	SPEED	R MIN	E _{max} ROADWAY DESIGN MANUAL	% CHANGE X-SLOPE (CS)	MAX REL GRAD (G)	L _{ET} CALC.	MEETS	MAX DEFLECTION	MEETS
	(IN/OUT/BOTH)			(FORWARD)	(DEG)	(FT)	(FT/FT)	(FT/FT)	(FT)	(FT)	(MPH)	(FT)	(FT)	(%)	(%)	(FT)			
1	BOTH	23+03.57	23+89.00	24+74.37	3.42	2,865	-0.020	-0.020	11 TO 13.5	0	45	1039	-0.020	0.0	0.62	0	YES	N/A	N/A
2	BOTH	24+87.75	25+73.18	26+58.55	3.42	2,865	-0.020	-0.020	11 TO 13.5	0	45	1039	-0.020	0.0	0.62	0	YES	N/A	N/A
3	BOTH	91+15.95	94+59.49	97+66.48	45.54	819	-0.020	-0.020	11 TO 14	0	35	510	-0.020	0.0	0.62	0	YES	N/A	N/A
4	IN	143+51.80	148+72.43	153+86.51	15.73	3,770	-0.020	-0.020	11 TO 14	0	35	510	-0.020	0.0	0.62	0	YES	N/A	N/A

SH 194 EXISTING VERTICAL ALIGNMENT DATA STA 0+33 TO STA 146+06								
PI	LENGTH	SPEED	G1	G2	K VALUE CALCULATED	K VALUE MINIMUM	CREST OR SAG	MEETS?
STATION	FT	MPH	%	%				
0+33.00		55		0.2500				
8+00.00	310.0	55	0.2500	-0.2000	689	84	C	YES
24+70.00	370.0	45	-0.2000	4.0000	88	79	S	YES
29+30.00	550.0	45	4.0000	0.4000	153	61	C	YES
42+40.00	100.0	35	0.4000	0.3000	1000	29	C	YES
50+15.00	100.0	35	0.3000	0.1100	526	29	C	YES
74+70.00	295.0	35	0.1100	-0.4000	578	29	C	YES
92+90.00	1950.0	35	-0.4000	0.7500	1696	49	S	YES
115+15.00	1350.0	35	0.7500	-0.0500	1688	29	C	YES
138+80.00	740.0	35	-0.0500	0.7000	987	49	S	YES
145+90.00	100.0	35	0.7000	0.5000	500	29	C	YES
147+70.00		35	0.5000					

NOTES

- ALIGNMENT MEETS 35 MPH DESIGN SPEED FOR MINOR ARTERIAL.
- LIMITS APPROXIMATE FROM FM 3466 TO IH 27.
- THIS PROJECT MEETS THE BASIC SAFETY REQUIREMENT OF THE 3R DESIGN CRITERIA FOR 35 MPH FOR MINOR ARTERIAL.
- DATA PREPARED FROM:
CSJ 0439-05-016
CSJ 0439-05-012
CSJ 0439-05-006
CSJ 0439-05-001 AND
SURVEY INFORMATION, COMPLETED ON 10-07-19
- BRIDGE STRUCTURES MEET HS-20 LOADING.
- VERTICAL ALIGNMENT DATA IS APPROXIMATED BASED ON EXISTING GROUND DATA.



NO.	DATE	REVISION	APPROVED

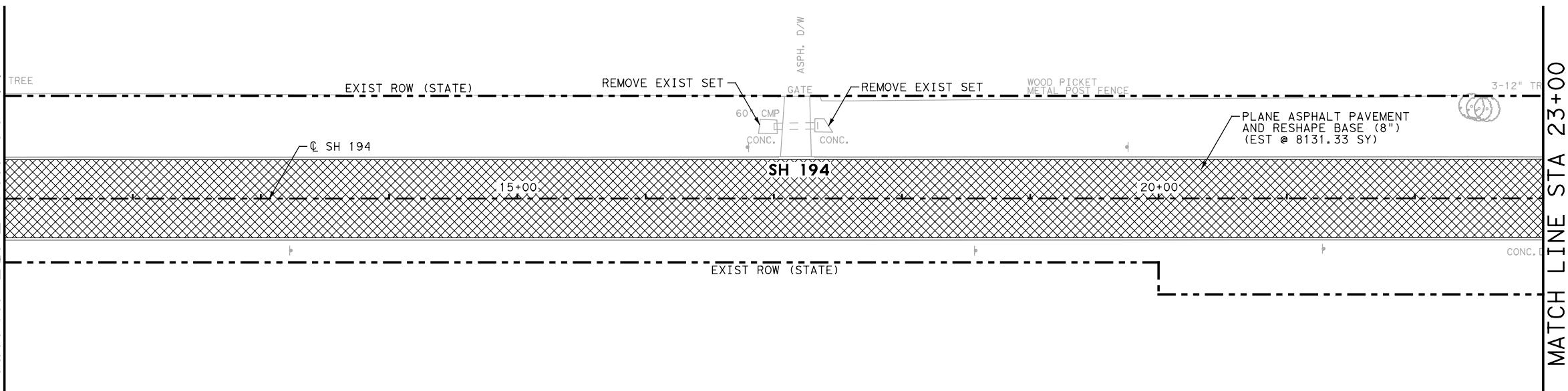
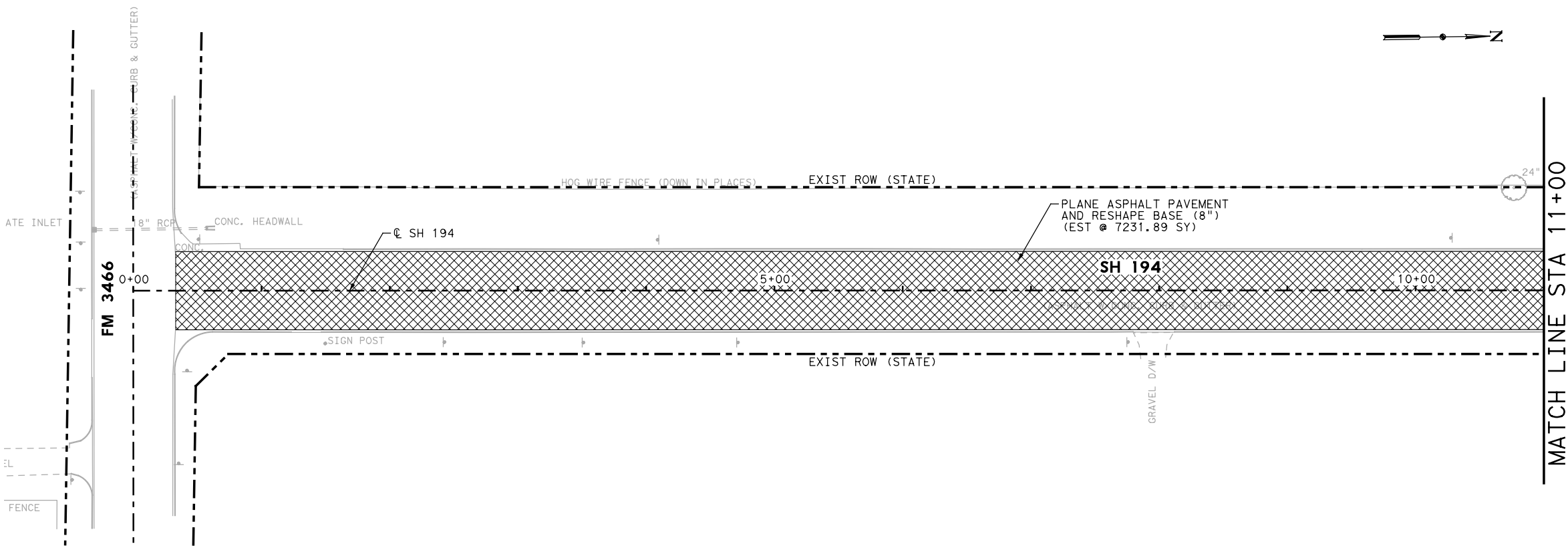


SH 194 FROM FM 3466 TO IH 27

ALIGNMENT CHECK

FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	123
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: I94050_SH194_Pentable.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 7:33:07 PM SCALE: 1:1
 FILE: SH194_AlignmentCheck.dgn

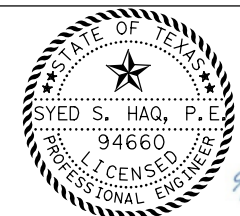


LEGEND

- PLANE ASPHALT PAVEMENT AND RESHAPE BASE (8")
- REMOVE CONCRETE GUTTER
- REMOVE CONCRETE FILLET
- REMOVE CONCRETE DRIVEWAY
- REMOVE GRAVEL DRIVEWAY
- REMOVE CONCRETE PAVEMENT
- REMOVE CONCRETE MEDIAN
- REMOVE CURB RAMP
- REMOVE SIDEWALK
- REMOVE CONC RIPRAP

NOTES

1. REMOVAL OF EXISTING DRAINAGE APPURTENANCES WILL BE SUBSIDIARY TO ITEM 100.
2. REMOVAL AND REPLACEMENT OF EXIST GUTTER AT DRIVEWAY LOCATIONS SHALL BE SUBSIDIARY TO DRIVEWAY REMOVAL.
3. REMOVAL OF PAVEMENT AND BASE FOR ACP DRIVEWAYS WILL BE SUBSIDIARY TO ITEM 530.



NO.	DATE	REVISION	APPROVED



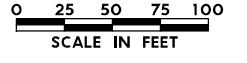
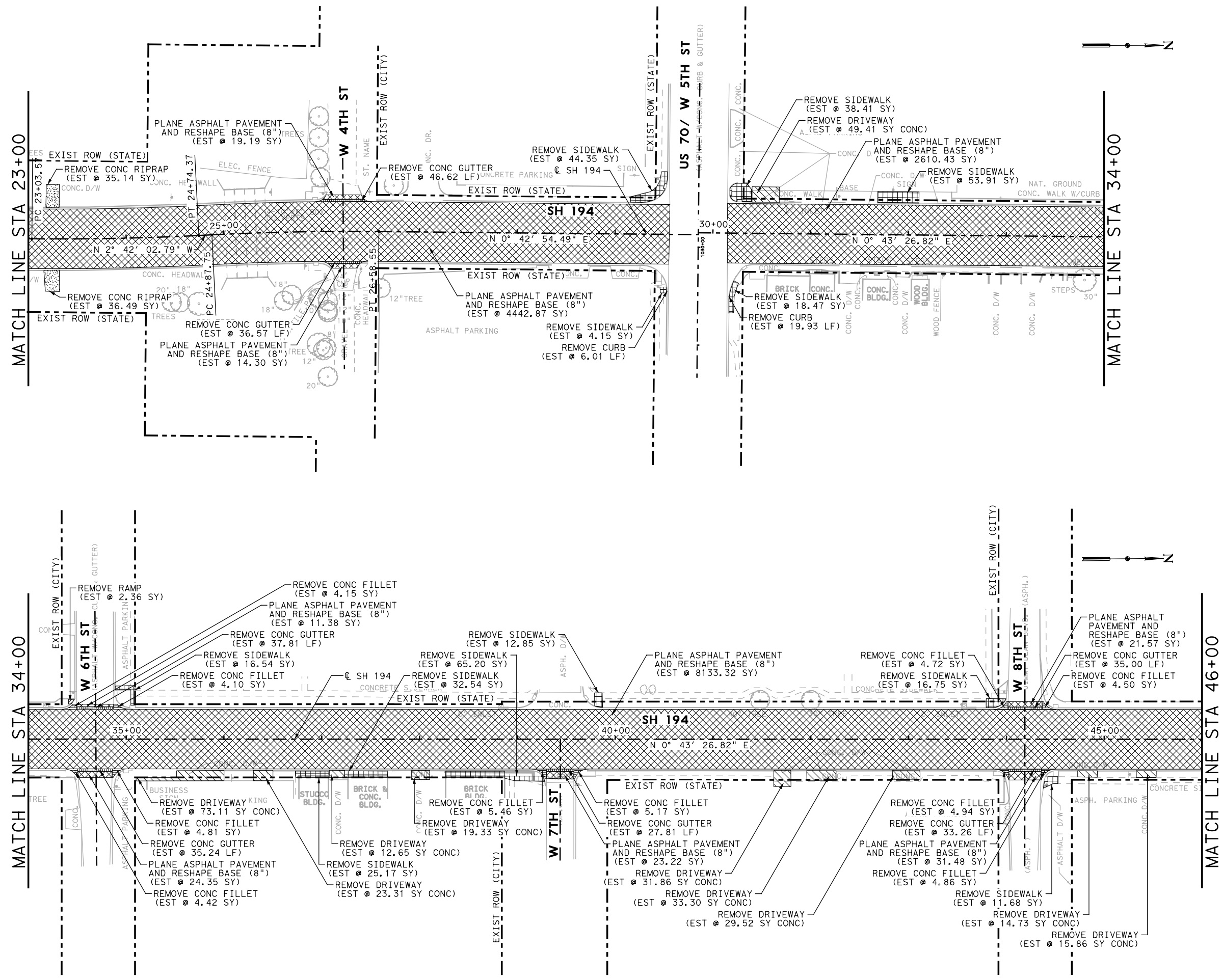
SH 194 FROM FM 3466 TO IH 27

REMOVAL PLAN
BEGIN TO STA 23+00

HORZ SCALE: 1"=100' SHEET 1 OF 7

FED. RD. DIV. NO:	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	124
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Arabinson DATE: 6/28/2024 TIME: 10:34:29 AM SCALE: 1:100
 FILE: SH194_Removal_Sheet2.dgn



- LEGEND**
- PLANE ASPHALT PAVEMENT AND RESHAPE BASE (8")
 - REMOVE CONCRETE GUTTER
 - REMOVE CONCRETE FILLET
 - REMOVE CONCRETE DRIVEWAY
 - REMOVE GRAVEL DRIVEWAY
 - REMOVE CONCRETE PAVEMENT
 - REMOVE CONCRETE MEDIAN
 - REMOVE CURB RAMP
 - REMOVE SIDEWALK
 - REMOVE CONC RIPRAP

- NOTES**
1. REMOVAL OF EXISTING DRAINAGE APPURTENANCES WILL BE SUBSIDIARY TO ITEM 100.
 2. REMOVAL AND REPLACEMENT OF EXIST GUTTER AT DRIVEWAY LOCATIONS SHALL BE SUBSIDIARY TO DRIVEWAY REMOVAL.
 3. REMOVAL OF PAVEMENT AND BASE FOR ACP DRIVEWAYS WILL BE SUBSIDIARY TO ITEM 530.



NO.	DATE	REVISION	APPROVED

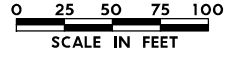
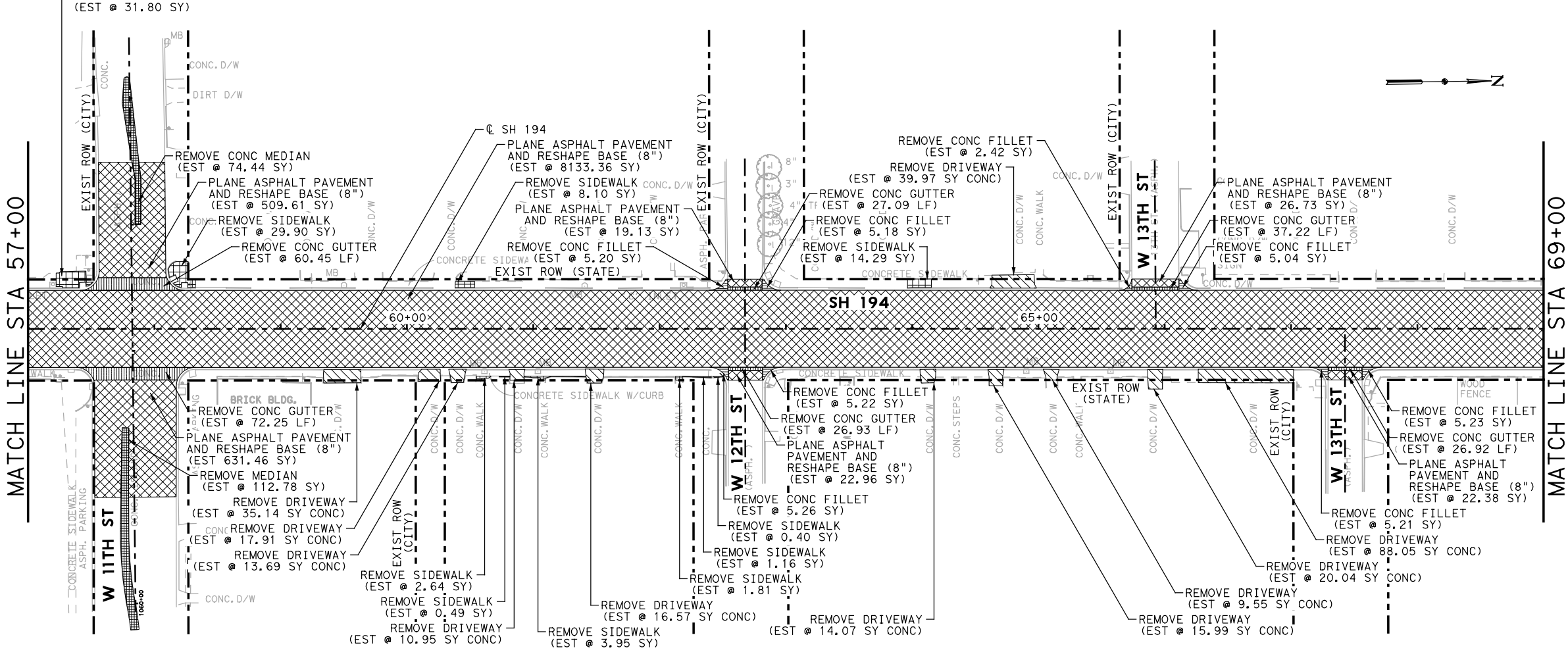
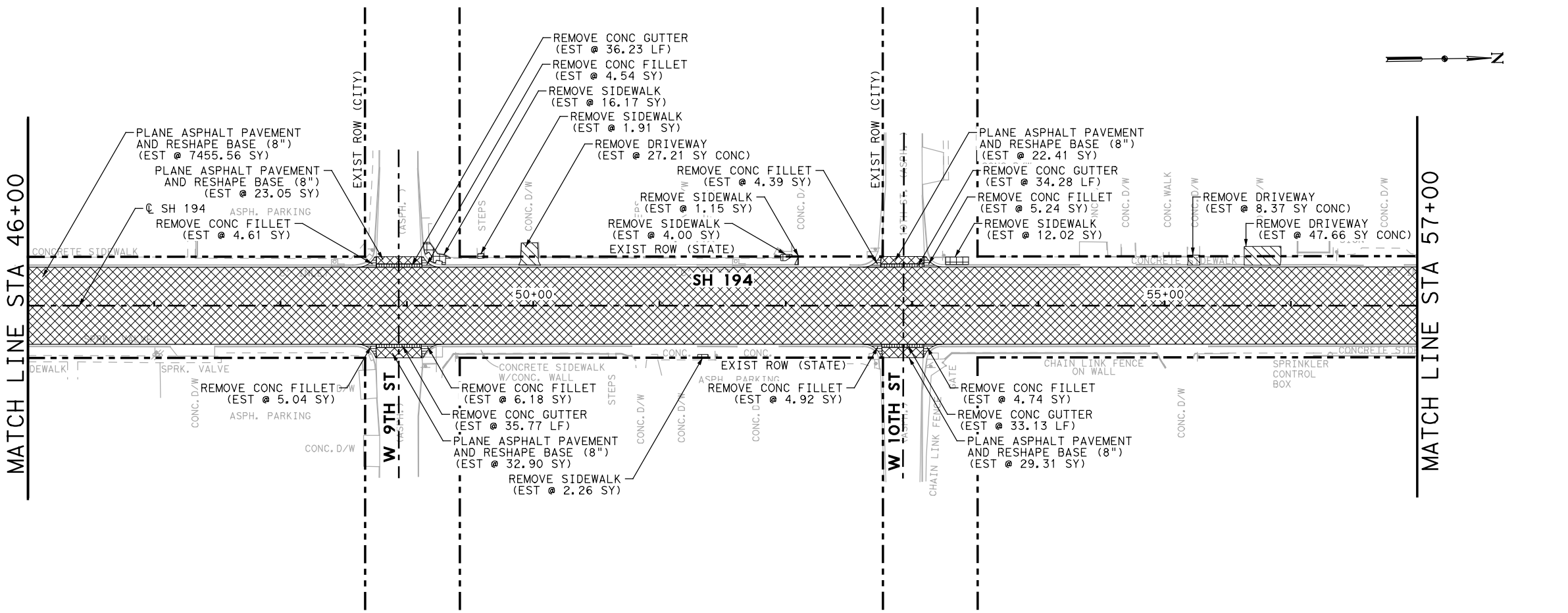


SH 194 FROM FM 3466 TO IH 27

REMOVAL PLAN
 STA 23+00 TO STA 46+00

HORZ SCALE: 1"=100'			SHEET 2 OF 7
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	125
CONTROL	SECTION	JOB	
0439	05	026	

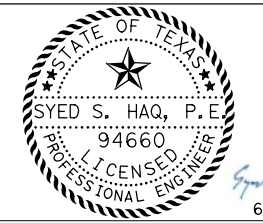
PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Arabinson DATE: 6/28/2024 TIME: 10:34:35 AM SCALE: 1:100
 FILE: SH194_Removal_Sheet3.dgn



LEGEND

	PLANE ASPHALT PAVEMENT AND RESHAPE BASE (8")
	REMOVE CONCRETE GUTTER
	REMOVE CONCRETE FILLET
	REMOVE CONCRETE DRIVEWAY
	REMOVE GRAVEL DRIVEWAY
	REMOVE CONCRETE PAVEMENT
	REMOVE CONCRETE MEDIAN
	REMOVE CURB RAMP
	REMOVE SIDEWALK
	REMOVE CONC RIPRAP

- NOTES**
1. REMOVAL OF EXISTING DRAINAGE APPURTENANCES WILL BE SUBSIDIARY TO ITEM 100.
 2. REMOVAL AND REPLACEMENT OF EXIST GUTTER AT DRIVEWAY LOCATIONS SHALL BE SUBSIDIARY TO DRIVEWAY REMOVAL.
 3. REMOVAL OF PAVEMENT AND BASE FOR ACP DRIVEWAYS WILL BE SUBSIDIARY TO ITEM 530.



NO.	DATE	REVISION	APPROVED

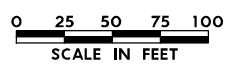
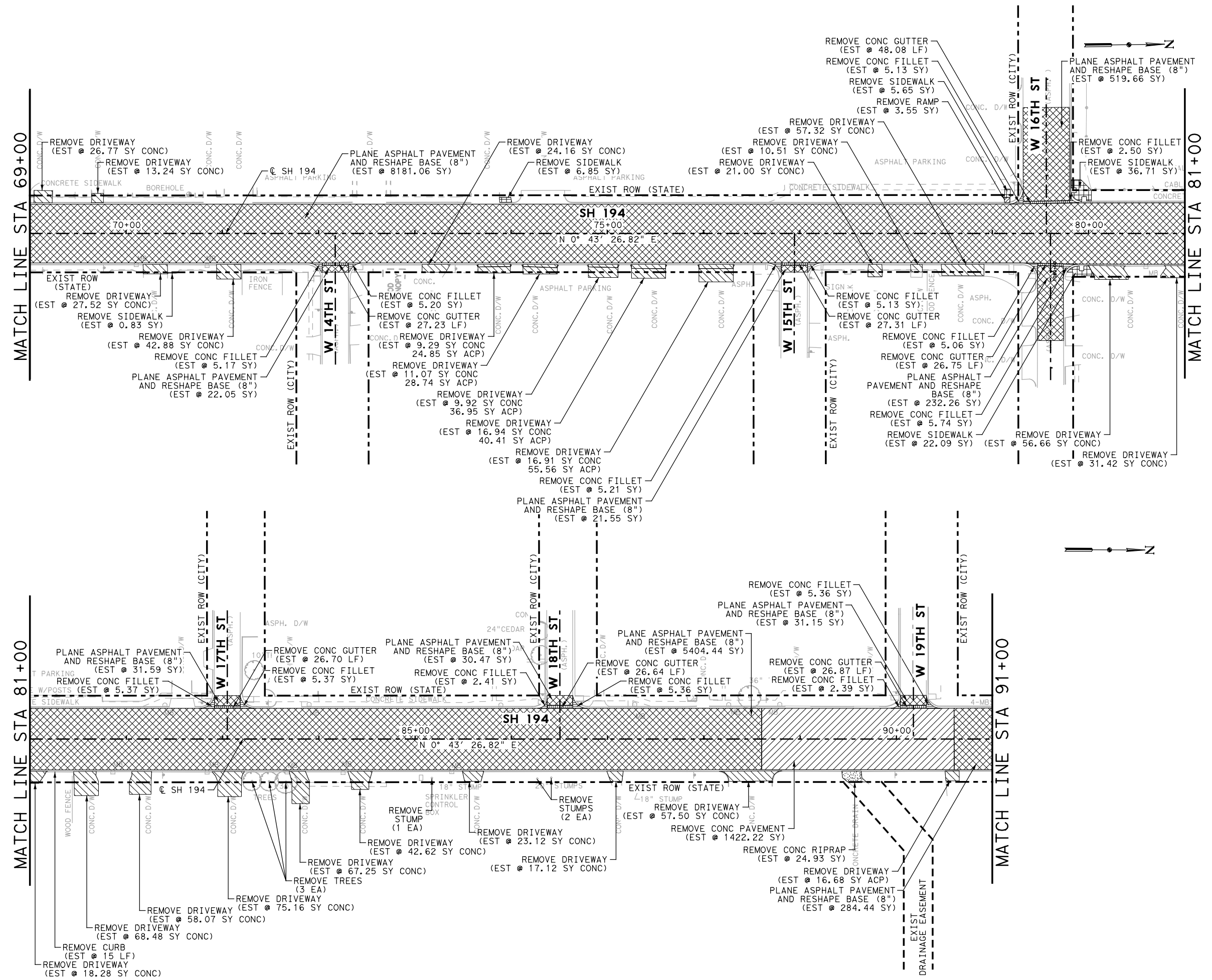


SH 194 FROM FM 3466 TO IH 27

**REMOVAL PLAN
 STA 46+00 TO STA 69+00**

HORZ SCALE: 1"=100'			SHEET 3 OF 7
FED. RD. DIV. NO.: 6	FEDERAL PROJECT NO.: SEE TITLE SHEET		HIGHWAY NO.: SH 194
STATE: TEXAS	DISTRICT: LBB	COUNTY: HALE	SHEET NO.: 126
CONTROL: 0439	SECTION: 05	JOB: 026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Arabinson DATE: 7/30/2024 TIME: 9:44:45 AM SCALE: 1:100
 FILE: SH194_Removal_Sheet4.dgn



- LEGEND**
- PLANE ASPHALT PAVEMENT AND RESHAPE BASE (8")
 - REMOVE CONCRETE GUTTER
 - REMOVE CONCRETE FILLET
 - REMOVE CONCRETE DRIVEWAY
 - REMOVE GRAVEL DRIVEWAY
 - REMOVE CONCRETE PAVEMENT
 - REMOVE CONCRETE MEDIAN
 - REMOVE CURB RAMP
 - REMOVE SIDEWALK
 - REMOVE CONC RIPRAP

- NOTES**
1. REMOVAL OF EXISTING DRAINAGE APPURTENANCES WILL BE SUBSIDIARY TO ITEM 100.
 2. REMOVAL AND REPLACEMENT OF EXIST GUTTER AT DRIVEWAY LOCATIONS SHALL BE SUBSIDIARY TO DRIVEWAY REMOVAL.
 3. REMOVAL OF PAVEMENT AND BASE FOR ACP DRIVEWAYS WILL BE SUBSIDIARY TO ITEM 530.

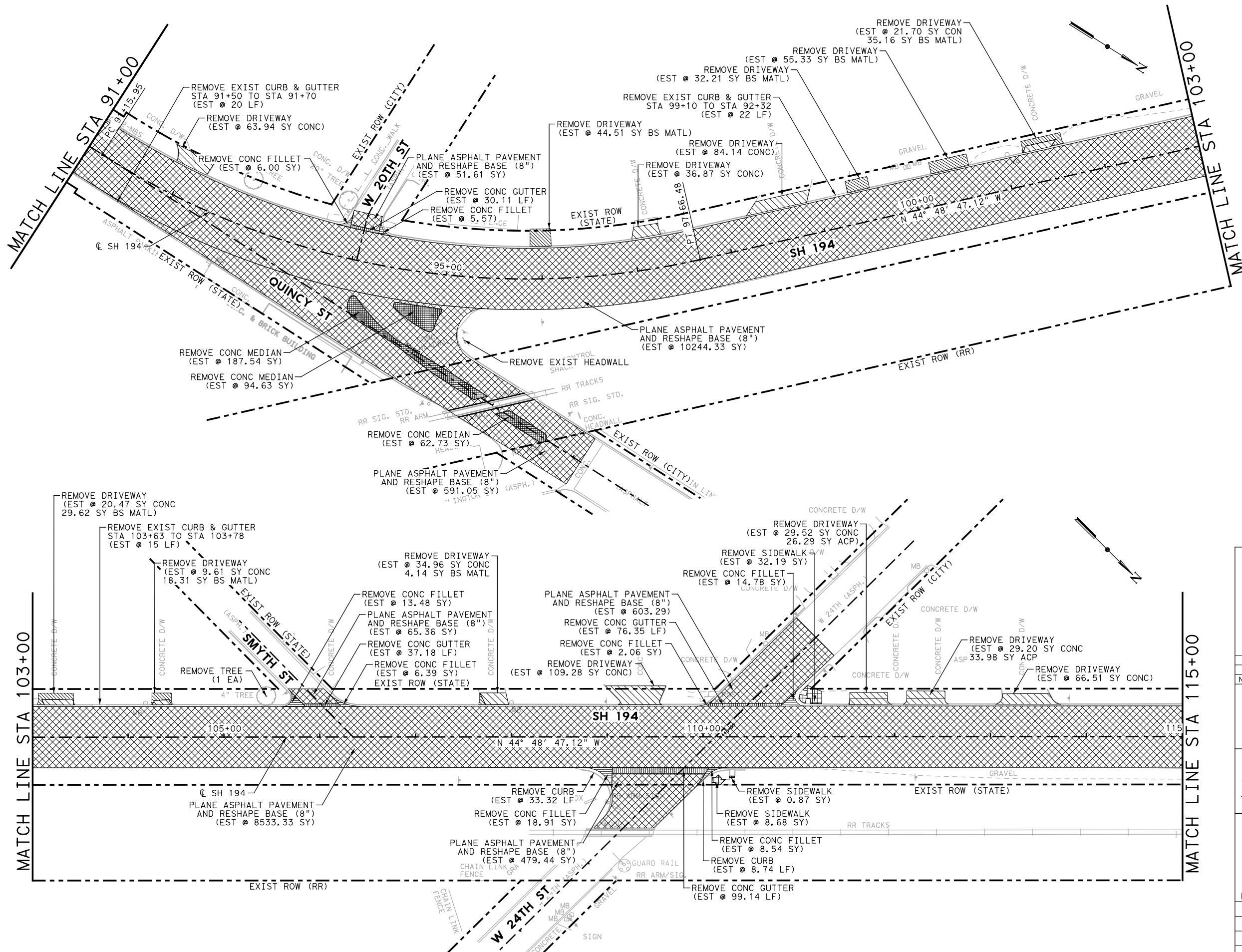
NO.	DATE	REVISION	APPROVED

SH 194 FROM FM 3466 TO IH 27

REMOVAL PLAN
 STA 69+00 TO STA 91+00

HORZ SCALE: 1"=100'			SHEET 4 OF 7
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	127
CONTROL	SECTION	JOB	
0439	05	026	

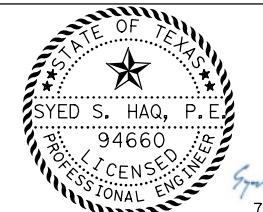
PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Arabinson DATE: 7/30/2024 TIME: 9:44:56 AM SCALE: 1:100
 FILE: SH194_Removal_Sheet5.dgn



LEGEND

	PLANE ASPHALT PAVEMENT AND RESHAPE BASE (8")
	REMOVE CONCRETE GUTTER
	REMOVE CONCRETE FILLET
	REMOVE CONCRETE DRIVEWAY
	REMOVE GRAVEL DRIVEWAY
	REMOVE CONCRETE PAVEMENT
	REMOVE CONCRETE MEDIAN
	REMOVE CURB RAMP
	REMOVE SIDEWALK
	REMOVE CONC RIPRAP

- NOTES**
1. REMOVAL OF EXISTING DRAINAGE APPURTENANCES WILL BE SUBSIDIARY TO ITEM 100.
 2. REMOVAL AND REPLACEMENT OF EXIST GUTTER AT DRIVEWAY LOCATIONS SHALL BE SUBSIDIARY TO DRIVEWAY REMOVAL.
 3. REMOVAL OF PAVEMENT AND BASE FOR ACP DRIVEWAYS WILL BE SUBSIDIARY TO ITEM 530.



NO.	DATE	REVISION	APPROVED

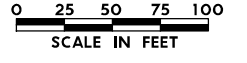
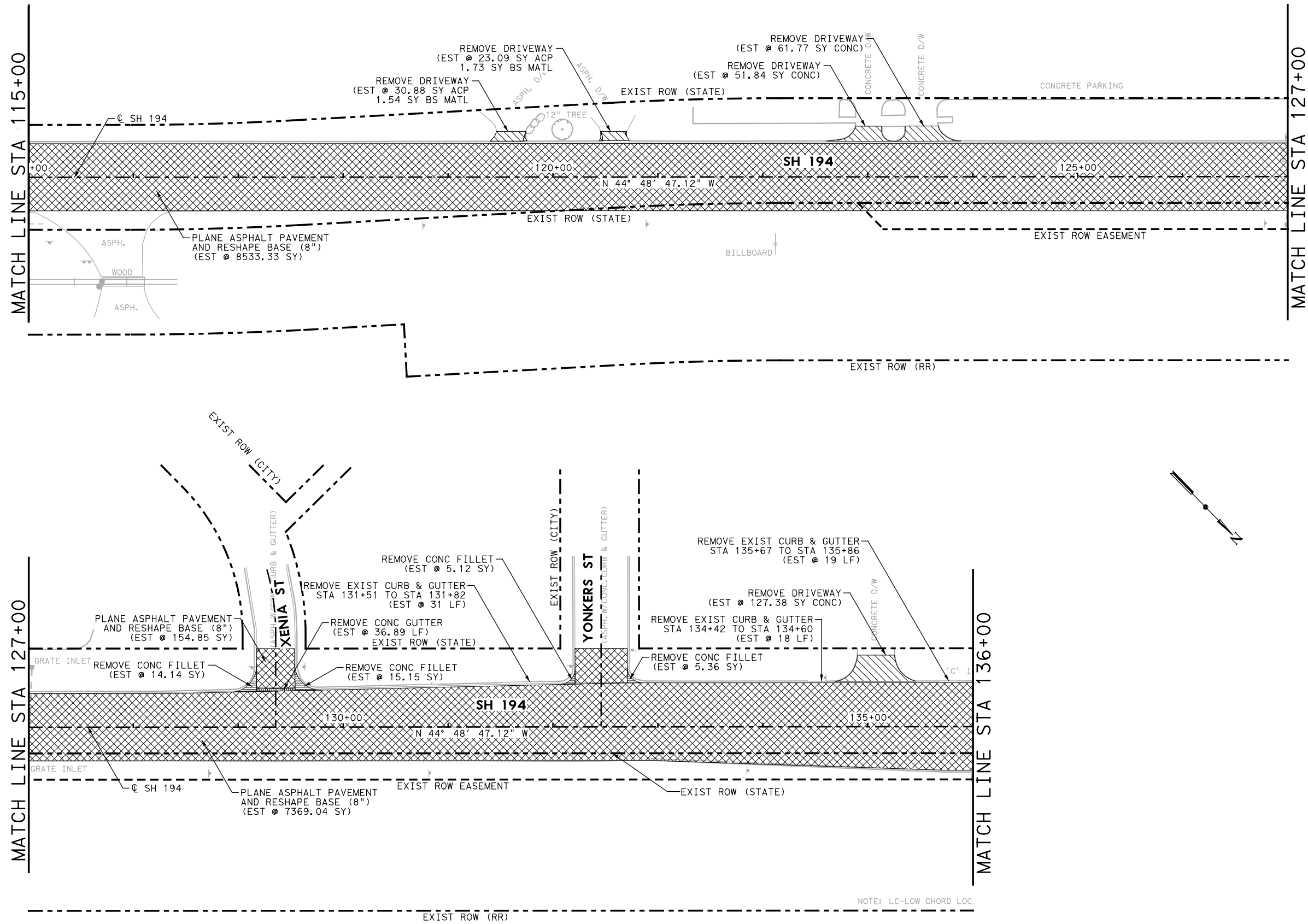


SH 194 FROM FM 3466 TO IH 27

REMOVAL PLAN
 STA 91+00 TO STA 115+00

HORZ SCALE: 1"=100'			SHEET 5 OF 7
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET		HIGHWAY NO. SH 194
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 128
CONTROL 0439	SECTION 05	JOB 026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 2/28/2023 TIME: 2:37:24 PM SCALE: H00
 FILE: SH194_Removal_Sheet6.dgn



LEGEND

	PLANE ASPHALT PAVEMENT AND RESHAPE BASE (8")
	REMOVE CONCRETE GUTTER
	REMOVE CONCRETE FILLET
	REMOVE CONCRETE DRIVEWAY
	REMOVE GRAVEL DRIVEWAY
	REMOVE CONCRETE PAVEMENT
	REMOVE CONCRETE MEDIAN
	REMOVE CURB RAMP
	REMOVE SIDEWALK
	REMOVE CONC RIPRAP

- NOTES**
1. REMOVAL OF EXISTING DRAINAGE APPURTENANCES WILL BE SUBSIDIARY TO ITEM 100.
 2. REMOVAL AND REPLACEMENT OF EXIST GUTTER AT DRIVEWAY LOCATIONS SHALL BE SUBSIDIARY TO DRIVEWAY REMOVAL.
 3. REMOVAL OF PAVEMENT AND BASE FOR ACP DRIVEWAYS WILL BE SUBSIDIARY TO ITEM 530.



NO.	DATE	REVISION	APPROVED



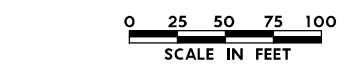
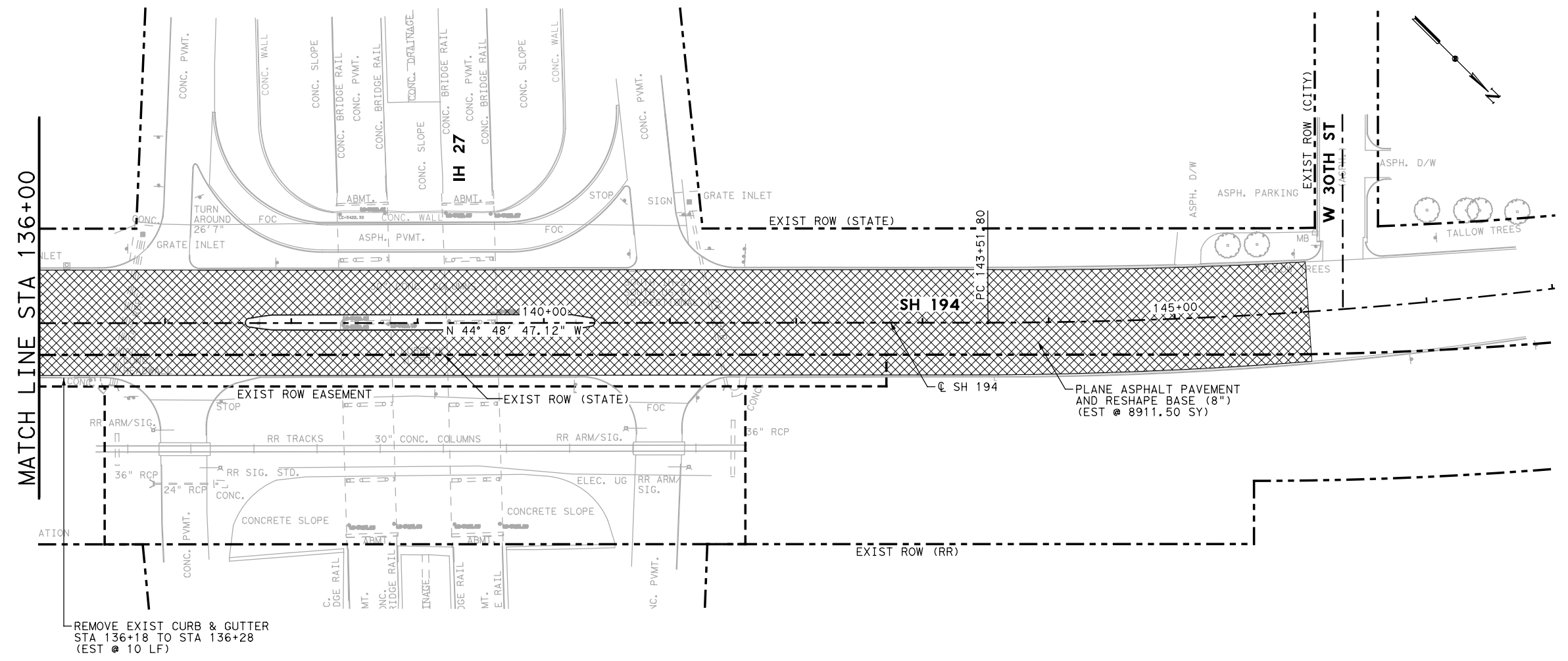
SH 194 FROM FM 3466 TO IH 27

REMOVAL PLAN
 STA 115+00 TO STA 136+00

HORZ SCALE: 1"=100'		SHEET 6 OF 7	
FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	129
CONTROL	SECTION	JOB	
0439	05	026	

NOTE: LC-LOW CHORD LOC.

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 2/28/2023 TIME: 2:37:29 PM SCALE: 1/100
 FILE: SH194_Removal_Sheet7.dgn



- LEGEND**
- PLANE ASPHALT PAVEMENT AND RESHAPE BASE (8")
 - REMOVE CONCRETE GUTTER
 - REMOVE CONCRETE FILLET
 - REMOVE CONCRETE DRIVEWAY
 - REMOVE GRAVEL DRIVEWAY
 - REMOVE CONCRETE PAVEMENT
 - REMOVE CONCRETE MEDIAN
 - REMOVE CURB RAMP
 - REMOVE SIDEWALK
 - REMOVE CONC RIPRAP

- NOTES**
1. REMOVAL OF EXISTING DRAINAGE APPURTENANCES WILL BE SUBSIDIARY TO ITEM 100.
 2. REMOVAL AND REPLACEMENT OF EXIST GUTTER AT DRIVEWAY LOCATIONS SHALL BE SUBSIDIARY TO DRIVEWAY REMOVAL.
 3. REMOVAL OF PAVEMENT AND BASE FOR ACP DRIVEWAYS WILL BE SUBSIDIARY TO ITEM 530.



NO.	DATE	REVISION	APPROVED



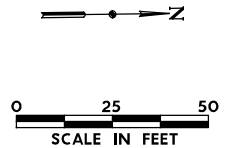
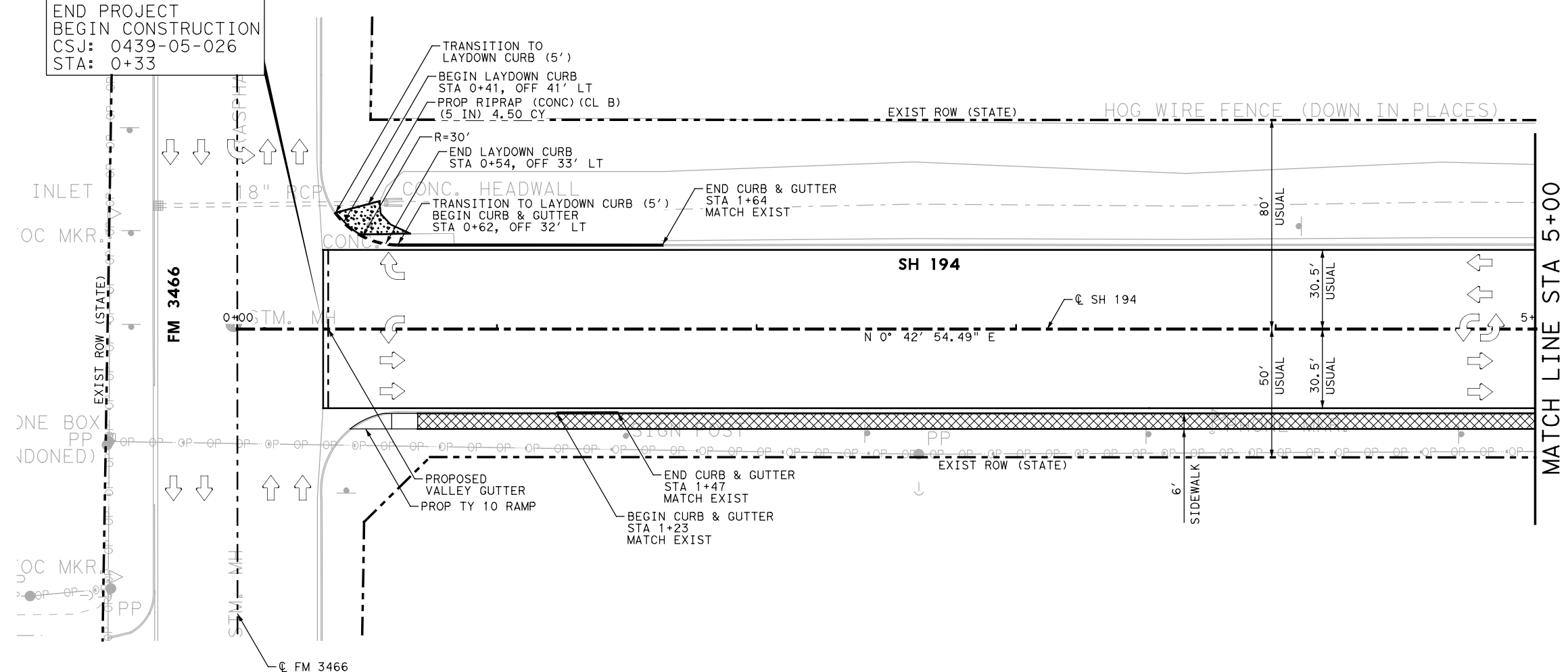
SH 194 FROM FM 3466 TO IH 27

REMOVAL PLAN
 STA 136+00 TO END

HORZ SCALE: 1"=100' SHEET 7 OF 7

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	130
CONTROL	SECTION	JOB	
0439	05	026	

END PROJECT
 BEGIN CONSTRUCTION
 CSJ: 0439-05-026
 STA: 0+33

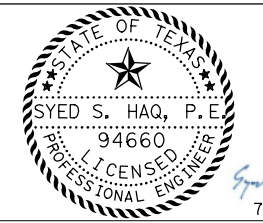
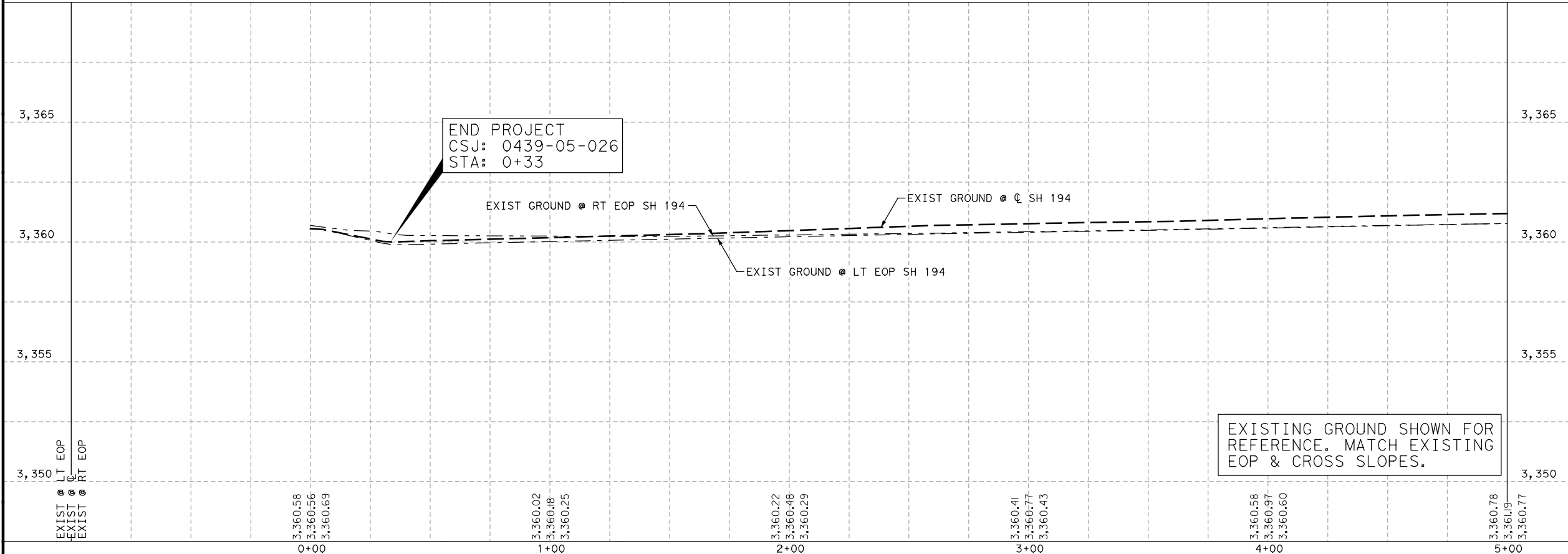


LEGEND

	EXISTING DRIVEWAY
	PROPOSED DRIVEWAY
	EXISTING SIDERWALK
	PROPOSED SIDERWALK
	PROPOSED DRIVEWAY ID LABEL
	MANHOLE

- NOTES**
1. ALL STATIONING IS BASED ON C SH 194 UNLESS OTHERWISE STATED.
 2. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 3. PROPOSED SIDERWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
 4. REFER TO SIGNING & PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
 5. REFER TO EXISTING UTILITIES SHEETS FOR ADDITIONAL INFORMATION.
 6. COORDINATE ALL REINFORCED CONCRETE PROTECTIVE CAP WORK WITH THE CITY OF PLAINVIEW PUBLIC WORKS DEPARTMENT.
 7. REFER TO MANHOLE APRON DETAIL SHEET FOR ADDITIONAL INFORMATION.
 8. REFER TO INTERSECTION DETAILS SHEET FOR CONC. VALLEY GUTTER INFORMATION.

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:34:03 PM SCALE: 1:50
 FILE: SH194_PP_1.dgn



Syed S. Haq
 7/29/2024

NO.	DATE	REVISION	APPROVED

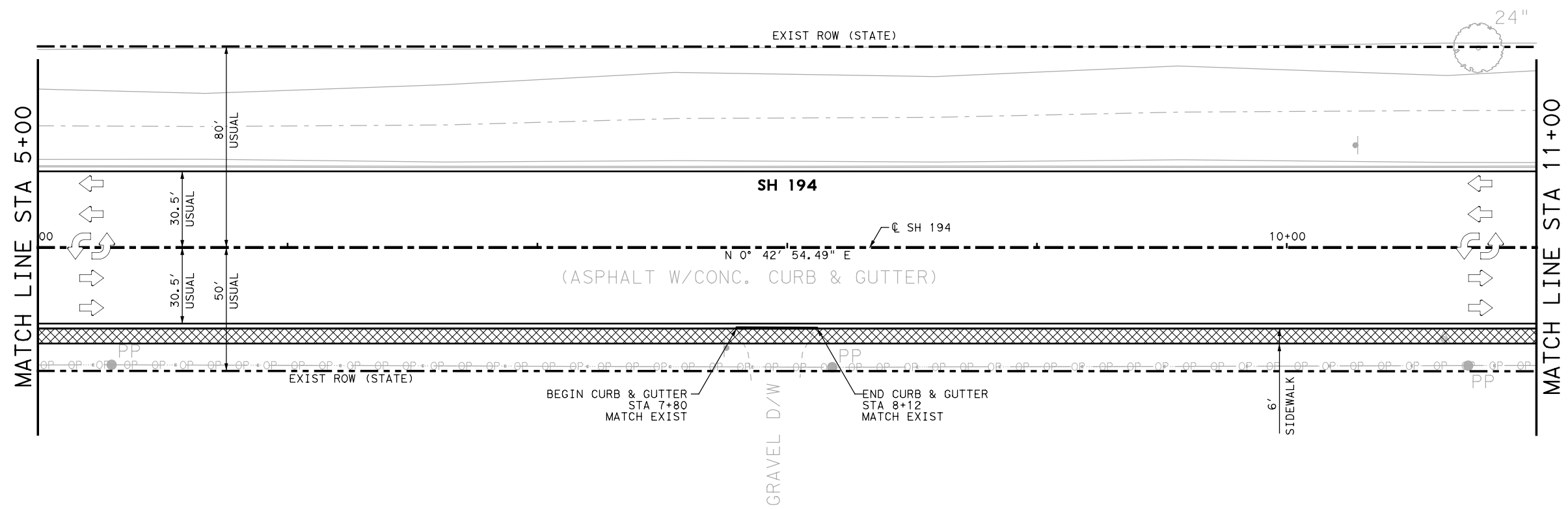


SH 194 FROM FM 3466 TO IH 27

PLAN AND PROFILE
 BEGIN TO STA 5+00

HORZ SCALE: 1"=50'		SHEET 1 OF 26	
VERT SCALE: 1"=5'			
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:	
6	SEE TITLE SHEET	SH 194	
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	131
CONTROL:	SECTION:	JOB:	
0439	05	026	

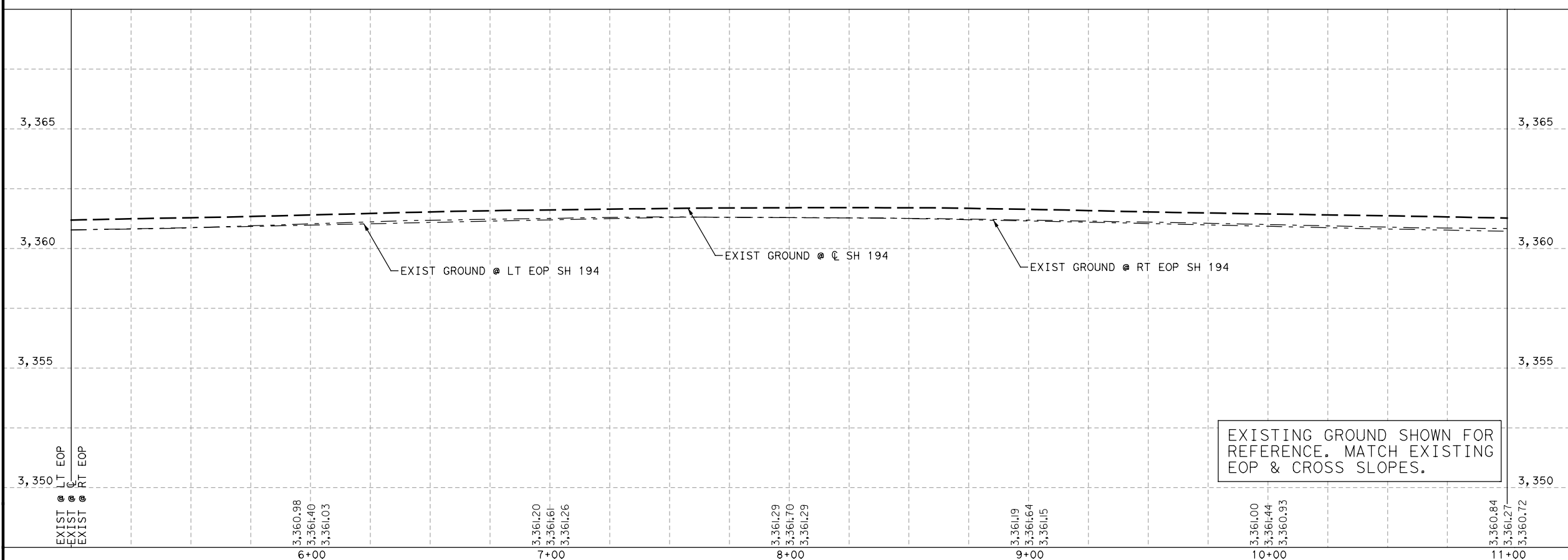
PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:34:10 PM SCALE: 1:50
 FILE: SH194_PP_2.dgn



LEGEND

- EXISTING DRIVEWAY
- PROPOSED DRIVEWAY
- EXISTING SIDEWALK
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY ID LABEL
- MANHOLE

- NOTES**
1. ALL STATIONING IS BASED ON CL SH 194 UNLESS OTHERWISE STATED.
 2. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 3. PROPOSED SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
 4. REFER TO SIGNING & PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
 5. REFER TO EXISTING UTILITIES SHEETS FOR ADDITIONAL INFORMATION.
 6. COORDINATE ALL REINFORCED CONCRETE PROTECTIVE CAP WORK WITH THE CITY OF PLAINVIEW PUBLIC WORKS DEPARTMENT.
 7. REFER TO MANHOLE APRON DETAIL SHEET FOR ADDITIONAL INFORMATION.
 8. REFER TO INTERSECTION DETAILS SHEET FOR CONC. VALLEY GUTTER INFORMATION.



NO.	DATE	REVISION	APPROVED

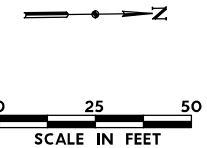
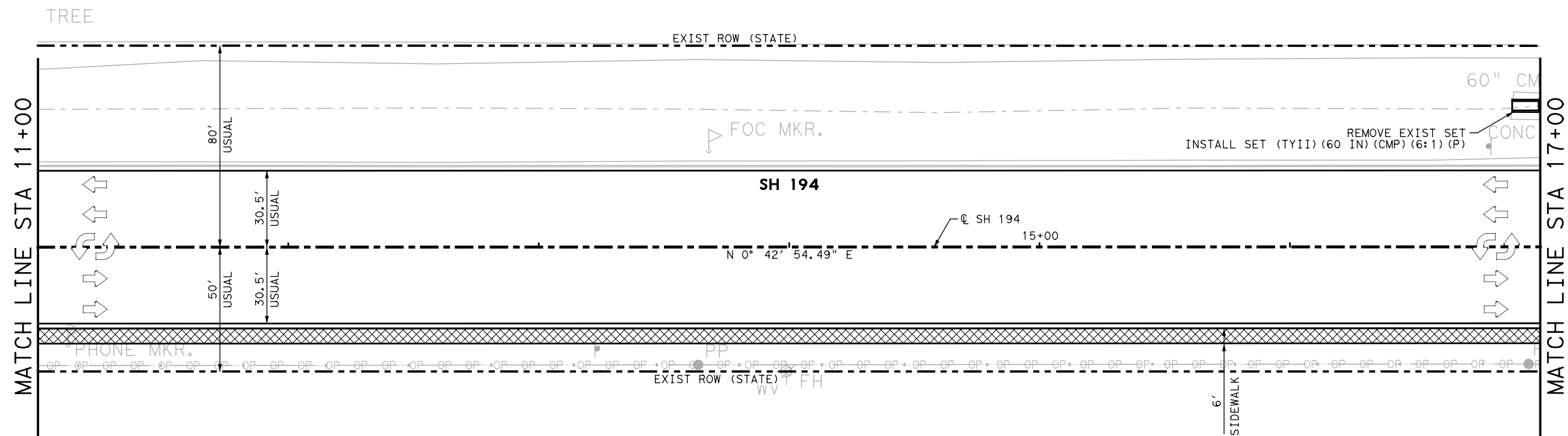


SH 194 FROM FM 3466 TO IH 27

PLAN AND PROFILE
 STA 5+00 TO STA 11+00

HORZ SCALE: 1"=50'		SHEET 2 OF 26	
VERT SCALE: 1"=5'			
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:	
6	SEE TITLE SHEET	SH 194	
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	132
CONTROL:	SECTION:	JOB:	
0439	05	026	

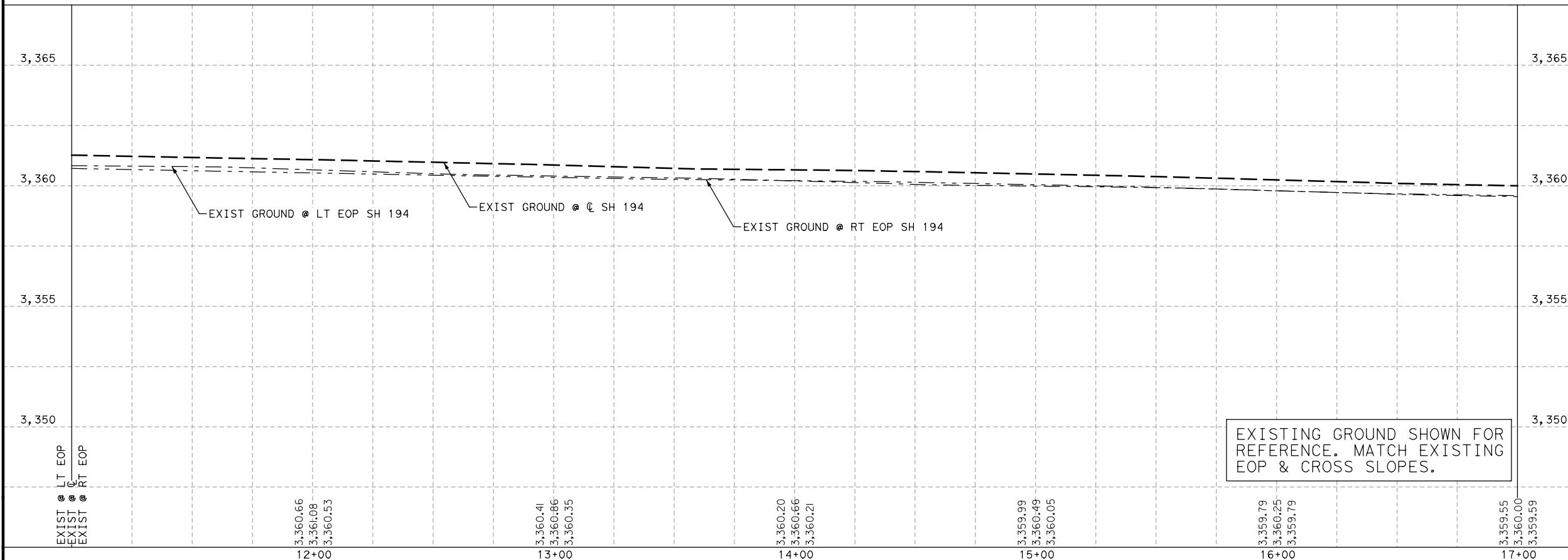
PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:34:15 PM SCALE: 1:50
 FILE: SH194_PP_3.dgn



LEGEND

	EXISTING DRIVEWAY
	PROPOSED DRIVEWAY
	EXISTING SIDEWALK
	PROPOSED SIDEWALK
	PROPOSED DRIVEWAY ID LABEL
	MANHOLE

- NOTES**
1. ALL STATIONING IS BASED ON C SH 194 UNLESS OTHERWISE STATED.
 2. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 3. PROPOSED SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
 4. REFER TO SIGNING & PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
 5. REFER TO EXISTING UTILITIES SHEETS FOR ADDITIONAL INFORMATION.
 6. COORDINATE ALL REINFORCED CONCRETE PROTECTIVE CAP WORK WITH THE CITY OF PLAINVIEW PUBLIC WORKS DEPARTMENT.
 7. REFER TO MANHOLE APRON DETAIL SHEET FOR ADDITIONAL INFORMATION.
 8. REFER TO INTERSECTION DETAILS SHEET FOR CONC. VALLEY GUTTER INFORMATION.



NO.	DATE	REVISION	APPROVED

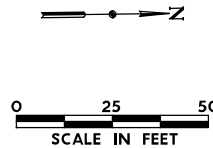
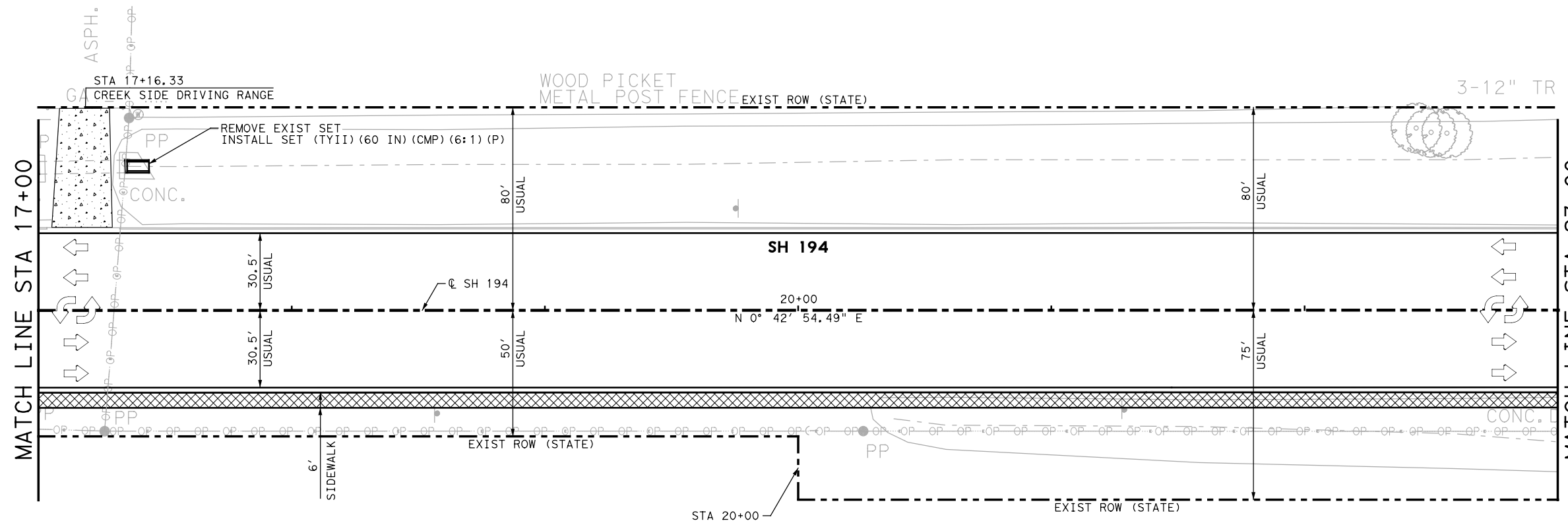


SH 194 FROM FM 3466 TO IH 27

PLAN AND PROFILE
 STA 11+00 TO STA 17+00

HORZ SCALE: 1"=50'		SHEET 3 OF 26	
VERT SCALE: 1"=5'		HIGHWAY NO.	
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	SH 194	
6	SEE TITLE SHEET		
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	133
CONTROL	SECTION	JOB	
0439	05	026	

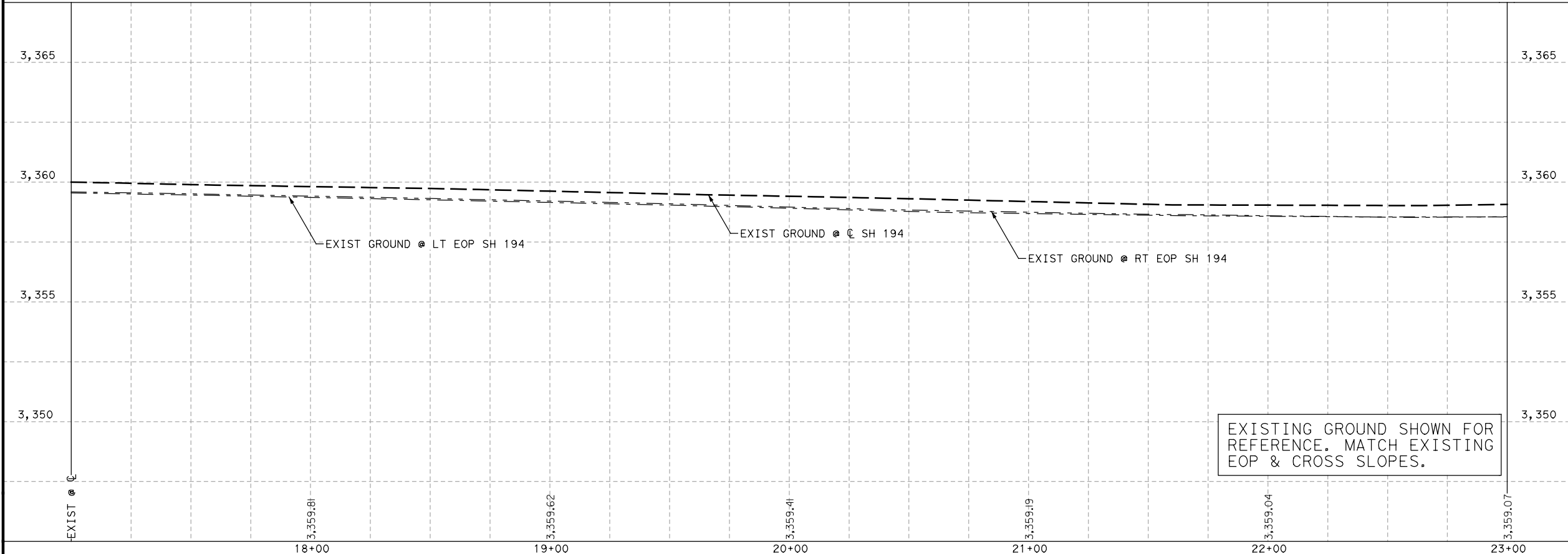
PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:34:20 PM SCALE: 1:50
 FILE: SH194_PP_4.dgn



LEGEND

	EXISTING DRIVEWAY
	PROPOSED DRIVEWAY
	EXISTING SIDEWALK
	PROPOSED SIDEWALK
	PROPOSED DRIVEWAY ID LABEL
	MANHOLE

- NOTES**
1. ALL STATIONING IS BASED ON C SH 194 UNLESS OTHERWISE STATED.
 2. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 3. PROPOSED SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
 4. REFER TO SIGNING & PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
 5. REFER TO EXISTING UTILITIES SHEETS FOR ADDITIONAL INFORMATION.
 6. COORDINATE ALL REINFORCED CONCRETE PROTECTIVE CAP WORK WITH THE CITY OF PLAINVIEW PUBLIC WORKS DEPARTMENT.
 7. REFER TO MANHOLE APRON DETAIL SHEET FOR ADDITIONAL INFORMATION.
 8. REFER TO INTERSECTION DETAILS SHEET FOR CONC. VALLEY GUTTER INFORMATION.



NO.	DATE	REVISION	APPROVED

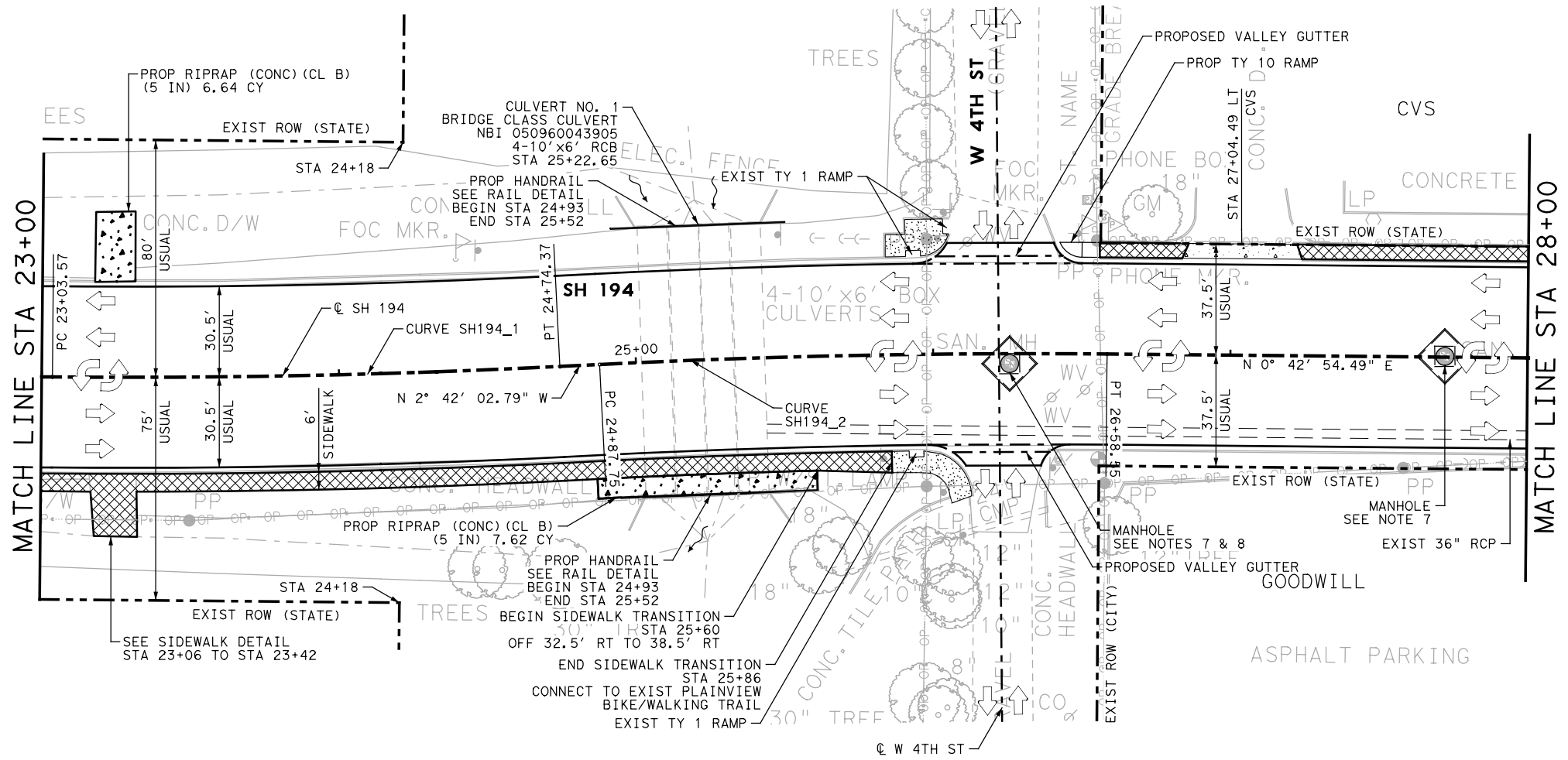


SH 194 FROM FM 3466 TO IH 27

PLAN AND PROFILE
 STA 17+00 TO STA 23+00

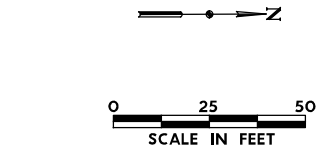
HORZ SCALE: 1"=50'		SHEET 4 OF 26	
VERT SCALE: 1"=5'		HIGHWAY NO.	
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	SH 194	
6	SEE TITLE SHEET	SHEET NO.	
STATE:	DISTRICT:	COUNTY:	134
TEXAS	LBB	HALE	
CONTROL:	SECTION:	JOB:	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:34:28 PM SCALE: 1:50
 FILE: SH194_PP_5.dgn



CURVE SH194_1
 PI STATION = 23+89.00
 DELTA = 3° 24' 57.28" (LT)
 DEGREE OF CURVE = 2° 00' 00.00"
 TANGENT = 85.42
 LENGTH = 170.80
 RADIUS = 2,864.79
 PC STATION = 23+03.57
 PT STATION = 24+74.37

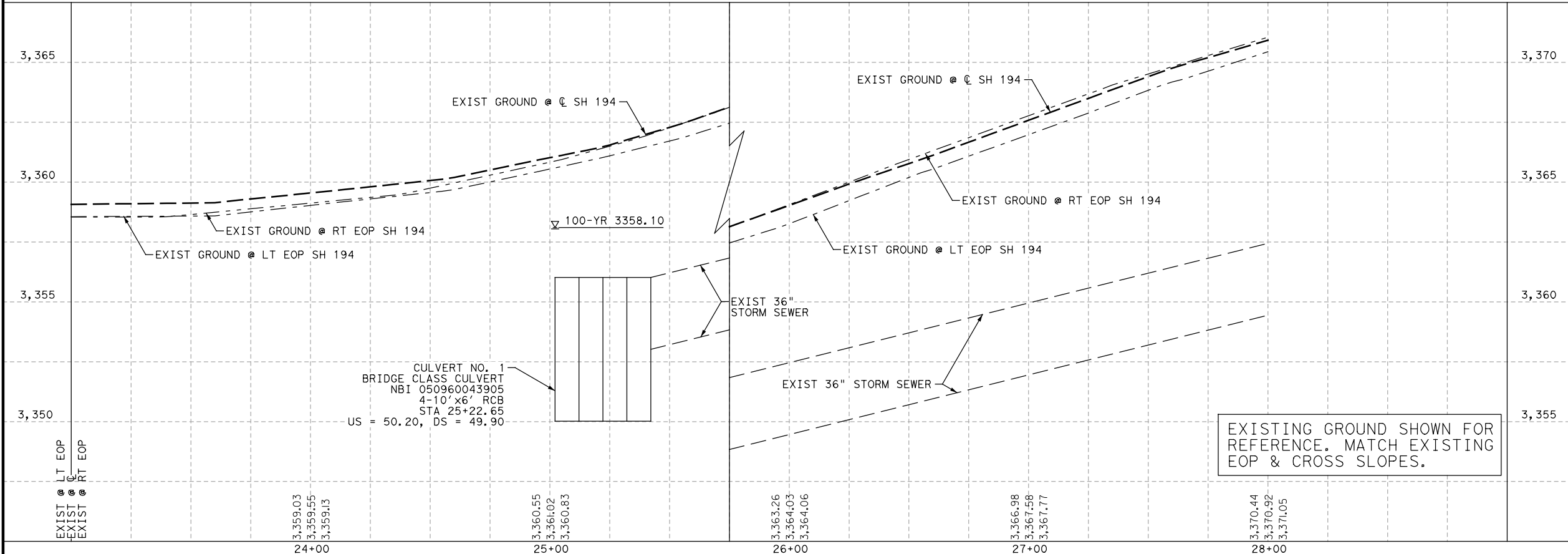
CURVE SH194_2
 PI STATION = 25+73.18
 DELTA = 3° 24' 57.28" (RT)
 DEGREE OF CURVE = 2° 00' 00.00"
 TANGENT = 85.42
 LENGTH = 170.80
 RADIUS = 2,864.79
 PC STATION = 24+87.75
 PT STATION = 26+58.55



LEGEND

	EXISTING DRIVEWAY
	PROPOSED DRIVEWAY
	EXISTING SIDEWALK
	PROPOSED SIDEWALK
	PROPOSED DRIVEWAY ID LABEL
	MANHOLE

- NOTES**
1. ALL STATIONING IS BASED ON C SH 194 UNLESS OTHERWISE STATED.
 2. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 3. PROPOSED SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
 4. REFER TO SIGNING & PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
 5. REFER TO EXISTING UTILITIES SHEETS FOR ADDITIONAL INFORMATION.
 6. COORDINATE ALL REINFORCED CONCRETE PROTECTIVE CAP WORK WITH THE CITY OF PLAINVIEW PUBLIC WORKS DEPARTMENT.
 7. REFER TO MANHOLE APRON DETAIL SHEET FOR ADDITIONAL INFORMATION.
 8. REFER TO INTERSECTION DETAILS SHEET FOR CONC. VALLEY GUTTER INFORMATION.



EXISTING GROUND SHOWN FOR REFERENCE. MATCH EXISTING EOP & CROSS SLOPES.

NO.	DATE	REVISION	APPROVED

SH 194 FROM FM 3466 TO IH 27

PLAN AND PROFILE
STA 23+00 TO STA 28+00

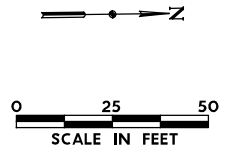
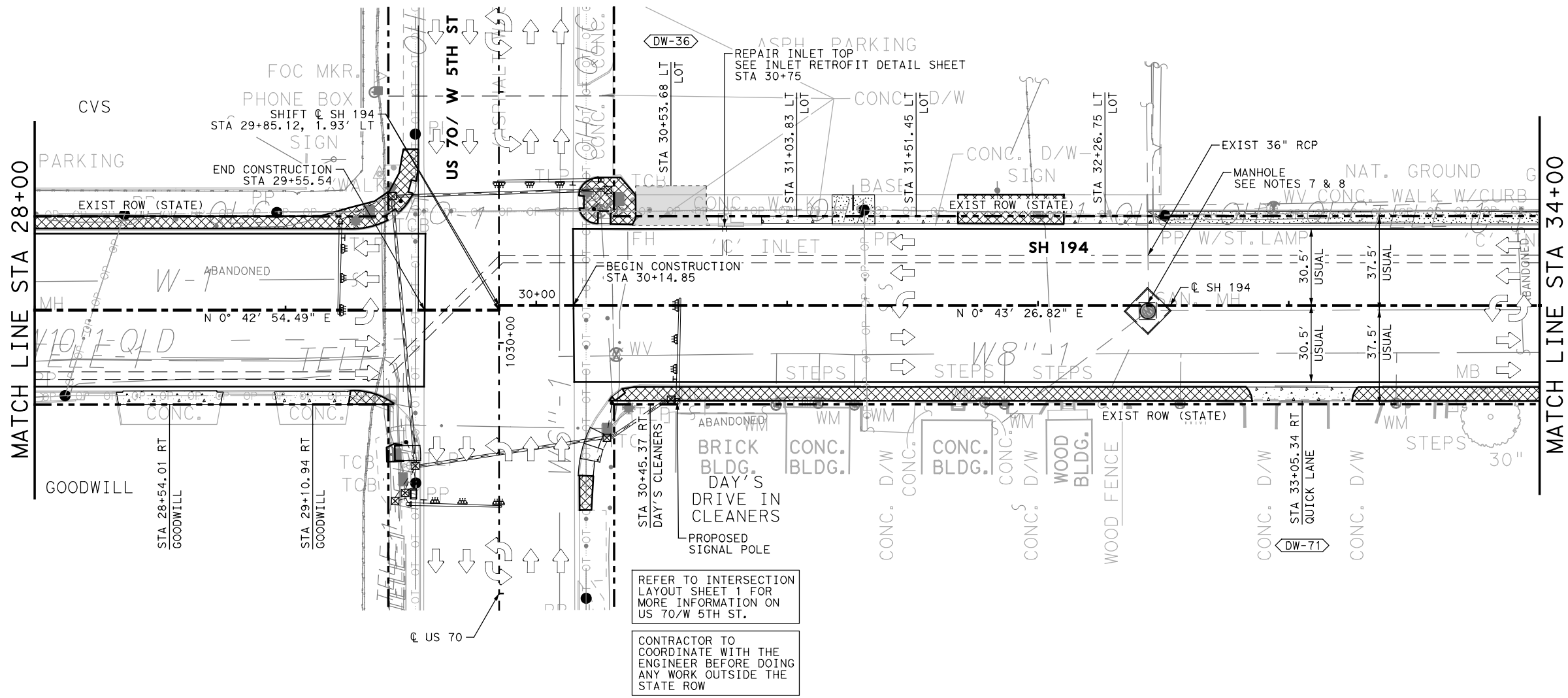
HORZ SCALE: 1"=50'
 VERT SCALE: 1"=5'

FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET	HIGHWAY NO. SH 194
STATE TEXAS	DISTRICT LBB	COUNTY HALE
CONTROL 0439	SECTION 05	JOB 026

135

SHEET 5 OF 26

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:34:34 PM SCALE: 1:50
 FILE: SH194_PP_6.dgn



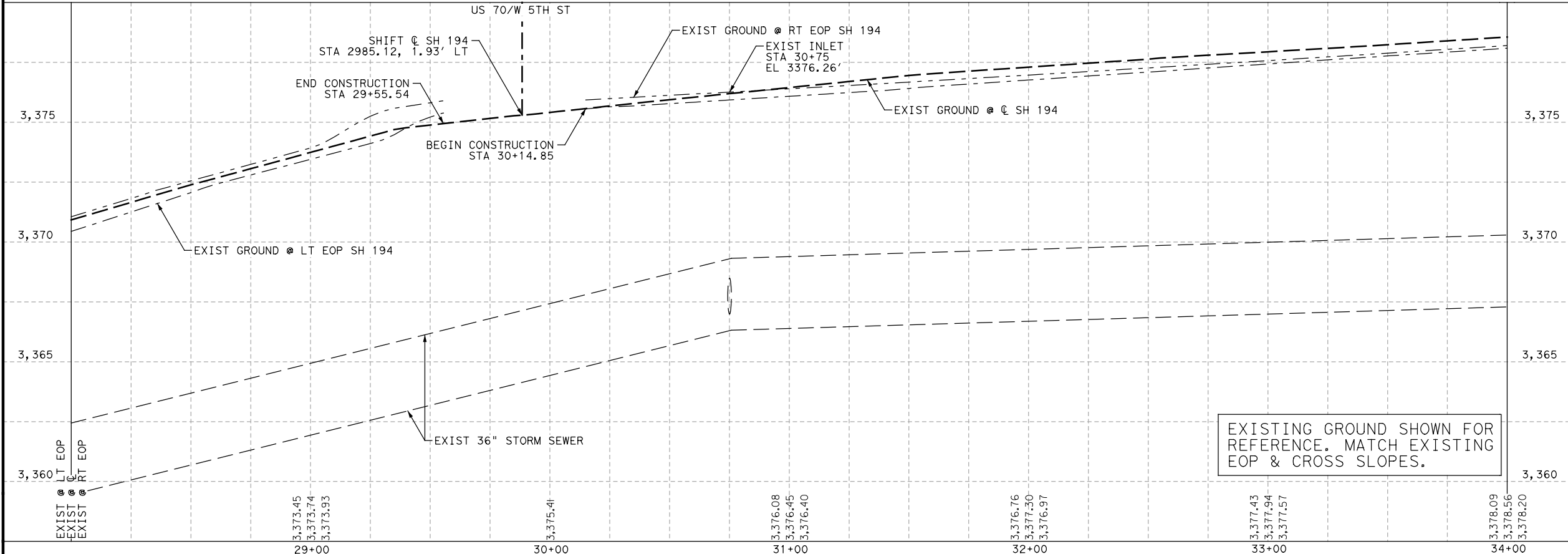
LEGEND

	EXISTING DRIVEWAY
	PROPOSED DRIVEWAY
	EXISTING SIDEWALK
	PROPOSED SIDEWALK
	PROPOSED DRIVEWAY ID LABEL
	MANHOLE

- NOTES**
1. ALL STATIONING IS BASED ON C SH 194 UNLESS OTHERWISE STATED.
 2. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 3. PROPOSED SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
 4. REFER TO SIGNING & PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
 5. REFER TO EXISTING UTILITIES SHEETS FOR ADDITIONAL INFORMATION.
 6. COORDINATE ALL REINFORCED CONCRETE PROTECTIVE CAP WORK WITH THE CITY OF PLAINVIEW PUBLIC WORKS DEPARTMENT.
 7. REFER TO MANHOLE APRON DETAIL SHEET FOR ADDITIONAL INFORMATION.
 8. REFER TO INTERSECTION DETAILS SHEET FOR CONC. VALLEY GUTTER INFORMATION.

REFER TO INTERSECTION LAYOUT SHEET 1 FOR MORE INFORMATION ON US 70/W 5TH ST.

CONTRACTOR TO COORDINATE WITH THE ENGINEER BEFORE DOING ANY WORK OUTSIDE THE STATE ROW



EXISTING GROUND SHOWN FOR REFERENCE. MATCH EXISTING EOP & CROSS SLOPES.



7/29/2024

NO.	DATE	REVISION	APPROVED

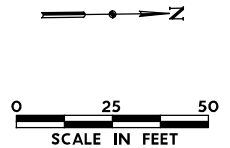
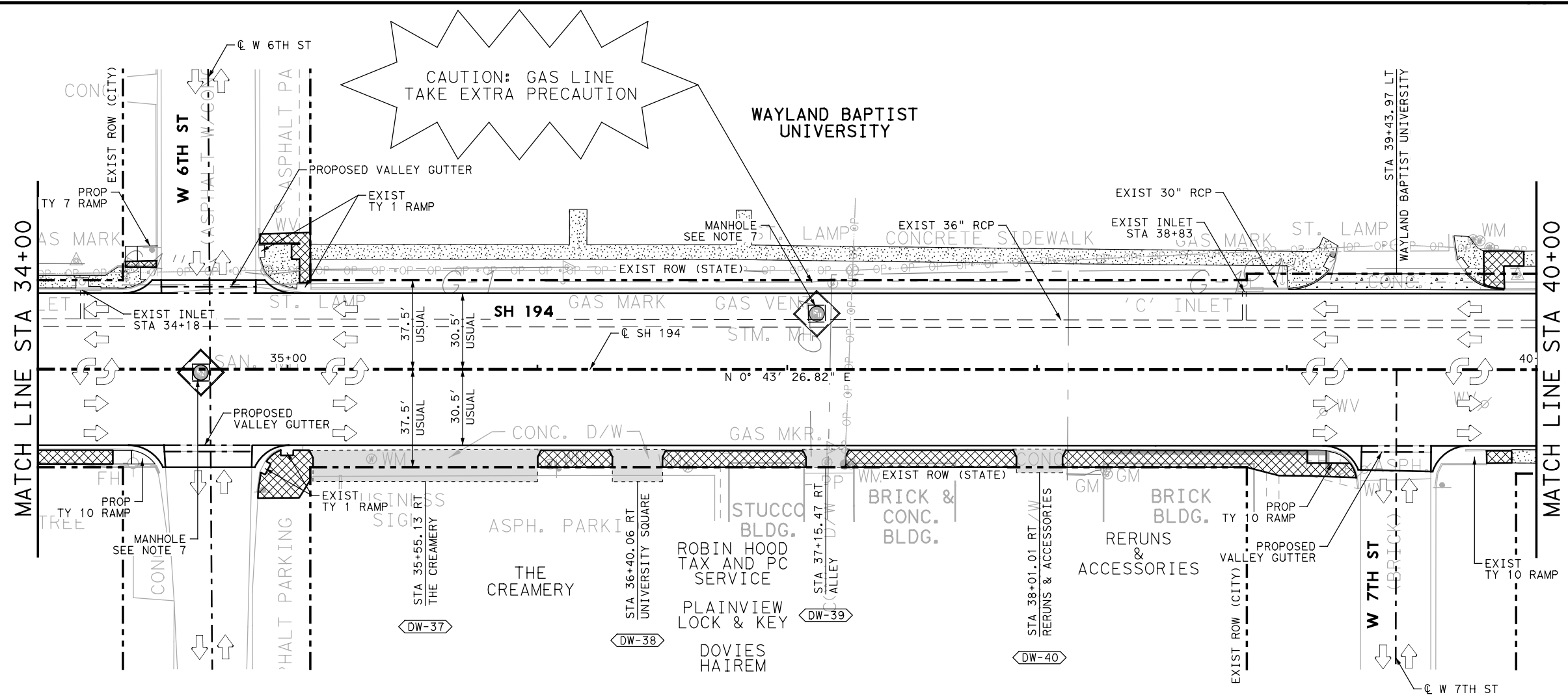


SH 194 FROM FM 3466 TO IH 27

PLAN AND PROFILE
STA 28+00 TO STA 34+00

HORZ SCALE: 1"=50'		SHEET 6 OF 26	
VERT SCALE: 1"=5'			
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:	
6	SEE TITLE SHEET	SH 194	
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	136
CONTROL:	SECTION:	JOB:	
0439	05	026	

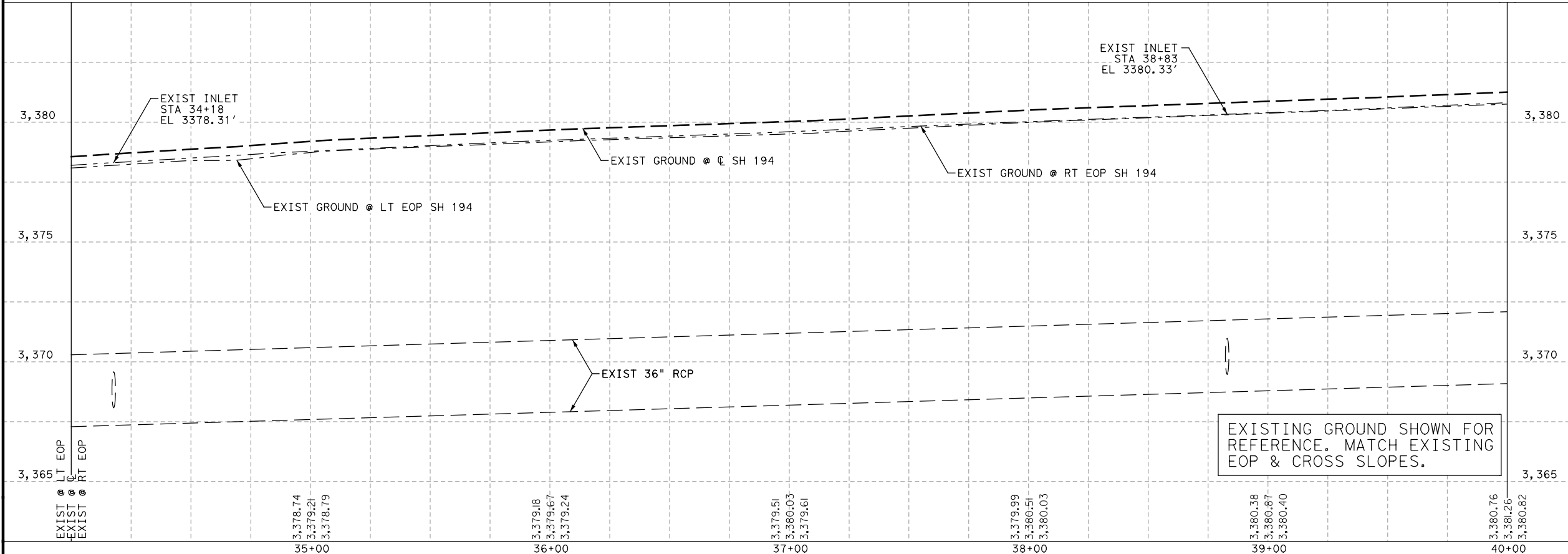
PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Arabinson DATE: 7/29/2024 TIME: 7:34:44 PM SCALE: 1:50
 FILE: SH194_PP_7.dgn



LEGEND

	EXISTING DRIVEWAY
	PROPOSED DRIVEWAY
	EXISTING SIDEWALK
	PROPOSED SIDEWALK
	PROPOSED DRIVEWAY ID LABEL
	MANHOLE

- NOTES**
1. ALL STATIONING IS BASED ON @ SH 194 UNLESS OTHERWISE STATED.
 2. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 3. PROPOSED SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
 4. REFER TO SIGNING & PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
 5. REFER TO EXISTING UTILITIES SHEETS FOR ADDITIONAL INFORMATION.
 6. COORDINATE ALL REINFORCED CONCRETE PROTECTIVE CAP WORK WITH THE CITY OF PLAINVIEW PUBLIC WORKS DEPARTMENT.
 7. REFER TO MANHOLE APRON DETAIL SHEET FOR ADDITIONAL INFORMATION.
 8. REFER TO INTERSECTION DETAILS SHEET FOR CONC. VALLEY GUTTER INFORMATION.



EXISTING GROUND SHOWN FOR REFERENCE. MATCH EXISTING EOP & CROSS SLOPES.



NO.	DATE	REVISION	APPROVED



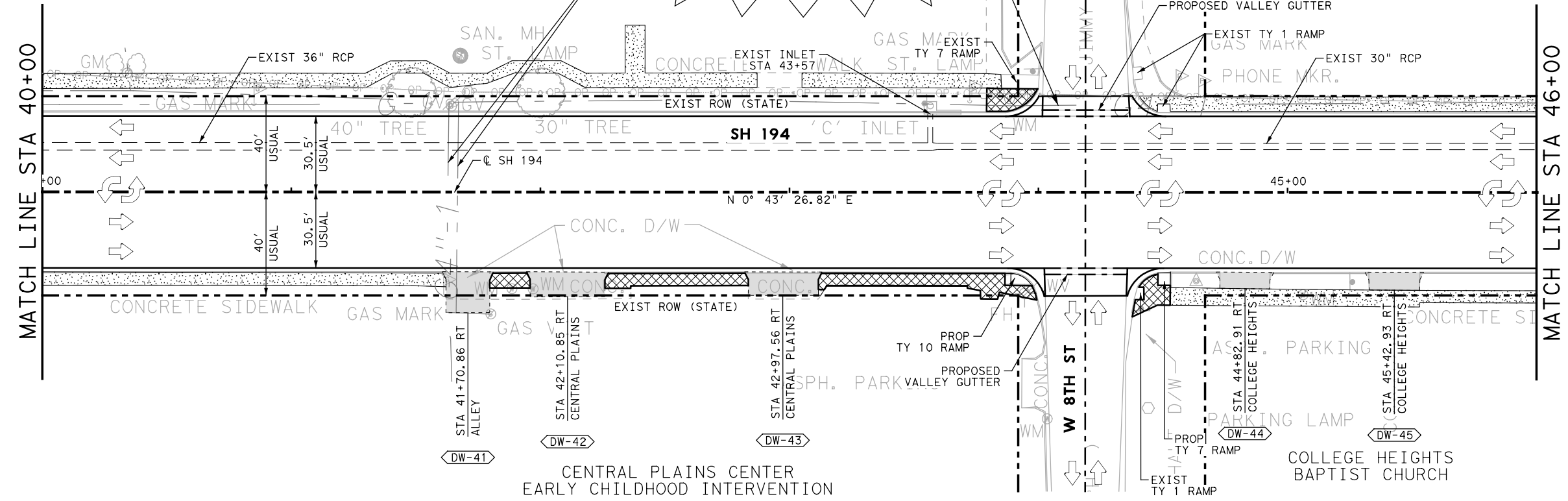
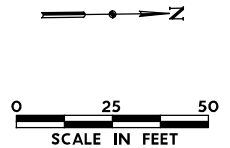
SH 194 FROM FM 3466 TO IH 27

PLAN AND PROFILE
 STA 34+00 TO STA 40+00

HORZ SCALE: 1"=50'		SHEET 7 OF 26	
VERT SCALE: 1"=5'		DIV. NO.	
6	SEE TITLE SHEET	HIGHWAY NO. SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	137
CONTROL	SECTION	JOB	
0439	05	026	

WAYLAND BAPTIST UNIVERSITY

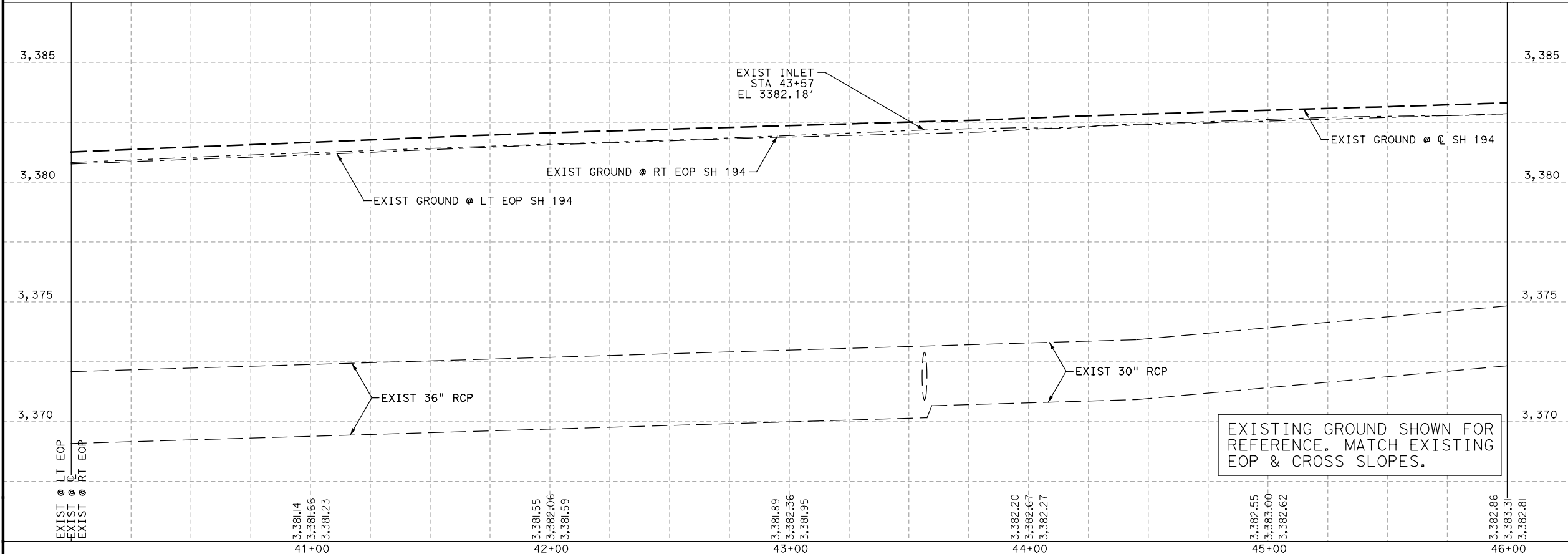
CAUTION: GAS LINE TAKE EXTRA PRECAUTION



LEGEND

- EXISTING DRIVEWAY
- PROPOSED DRIVEWAY
- EXISTING SIDEWALK
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY ID LABEL
- MANHOLE

- NOTES**
1. ALL STATIONING IS BASED ON C SH 194 UNLESS OTHERWISE STATED.
 2. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 3. PROPOSED SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
 4. REFER TO SIGNING & PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
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 6. COORDINATE ALL REINFORCED CONCRETE PROTECTIVE CAP WORK WITH THE CITY OF PLAINVIEW PUBLIC WORKS DEPARTMENT.
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 8. REFER TO INTERSECTION DETAILS SHEET FOR CONC. VALLEY GUTTER INFORMATION.



EXISTING GROUND SHOWN FOR REFERENCE. MATCH EXISTING EOP & CROSS SLOPES.



NO.	DATE	REVISION	APPROVED



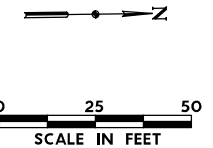
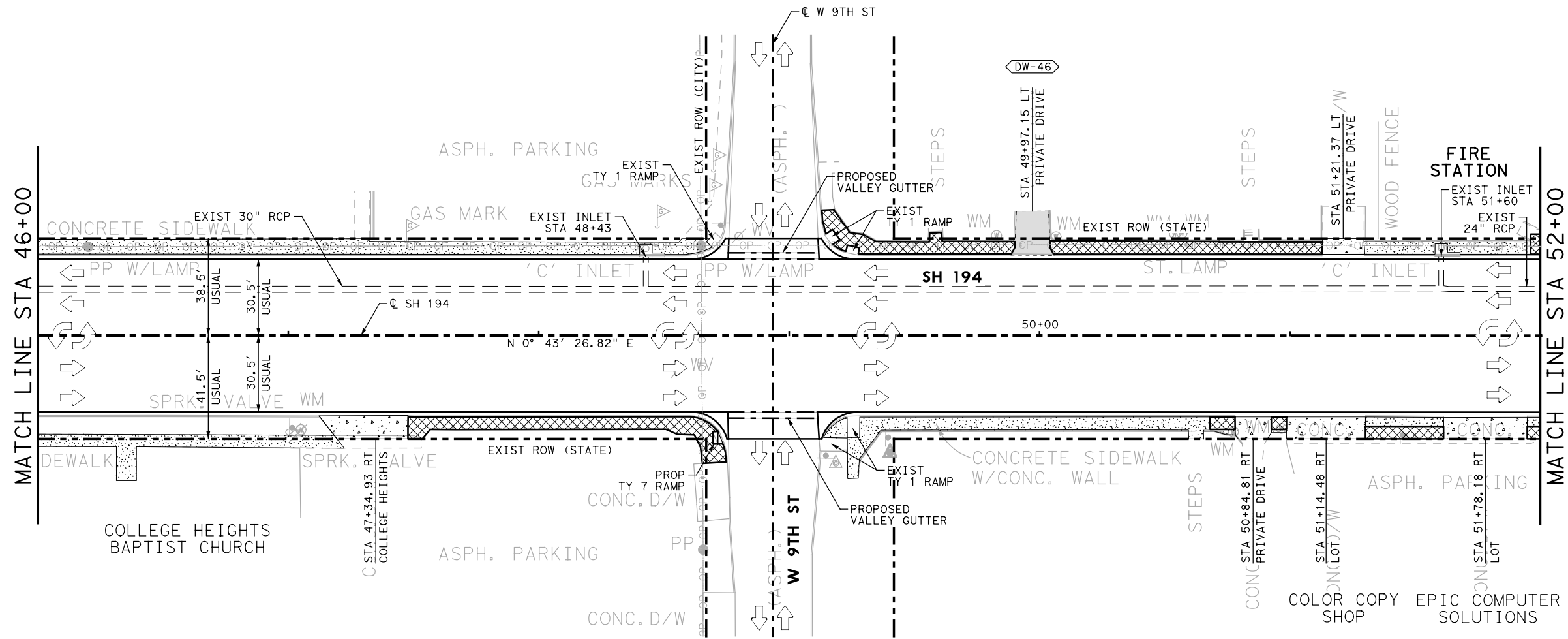
SH 194 FROM FM 3466 TO IH 27

PLAN AND PROFILE
STA 40+00 TO STA 46+00

HORZ SCALE: 1"=50'		SHEET 8 OF 26	
VERT SCALE: 1"=5'		HIGHWAY NO.	
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET		SH 194
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 138
CONTROL 0439	SECTION 05	JOB 026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:34:50 PM SCALE: 1:50
 FILE: SH194_PP_8.dgn

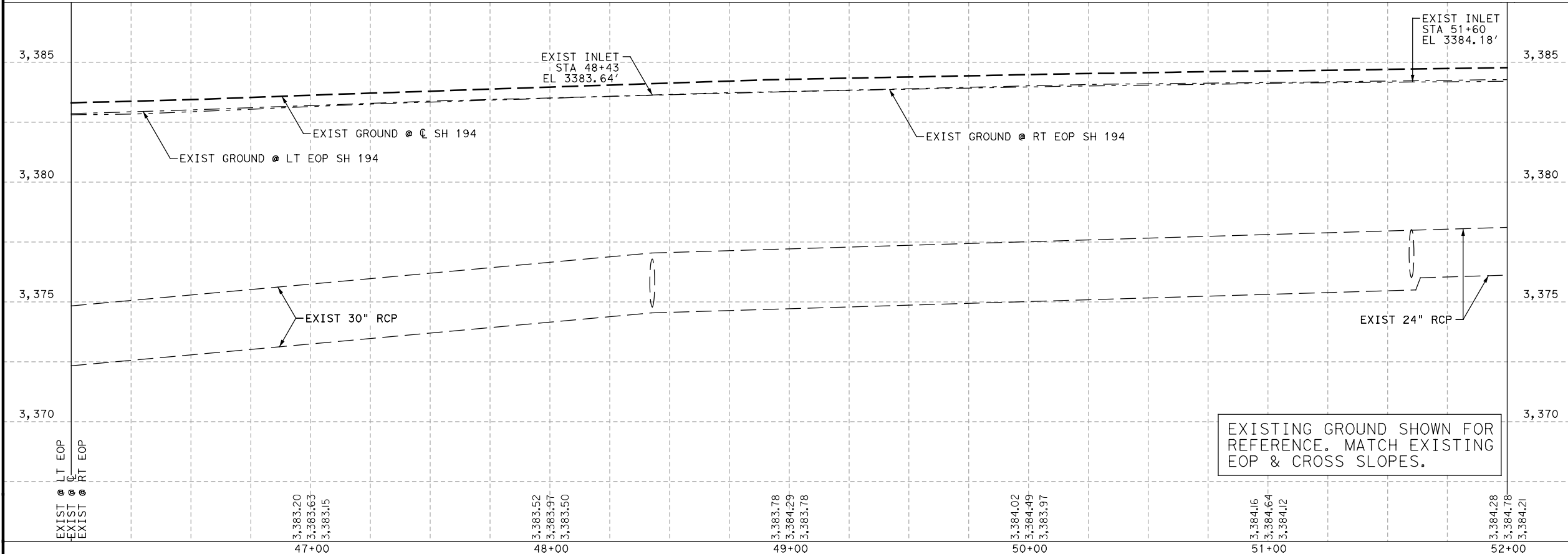
PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:34:55 PM SCALE: 1:50
 FILE: SH194_PP_9.dgn



LEGEND

- EXISTING DRIVEWAY
- PROPOSED DRIVEWAY
- EXISTING SIDEWALK
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY ID LABEL
- MANHOLE

- NOTES**
1. ALL STATIONING IS BASED ON $\text{\textcircled{C}}$ SH 194 UNLESS OTHERWISE STATED.
 2. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 3. PROPOSED SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
 4. REFER TO SIGNING & PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
 5. REFER TO EXISTING UTILITIES SHEETS FOR ADDITIONAL INFORMATION.
 6. COORDINATE ALL REINFORCED CONCRETE PROTECTIVE CAP WORK WITH THE CITY OF PLAINVIEW PUBLIC WORKS DEPARTMENT.
 7. REFER TO MANHOLE APRON DETAIL SHEET FOR ADDITIONAL INFORMATION.
 8. REFER TO INTERSECTION DETAILS SHEET FOR CONC. VALLEY GUTTER INFORMATION.



EXISTING GROUND SHOWN FOR REFERENCE. MATCH EXISTING EOP & CROSS SLOPES.

NO.	DATE	REVISION	APPROVED

SH 194 FROM FM 3466 TO IH 27

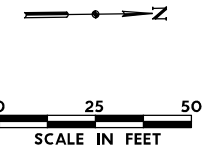
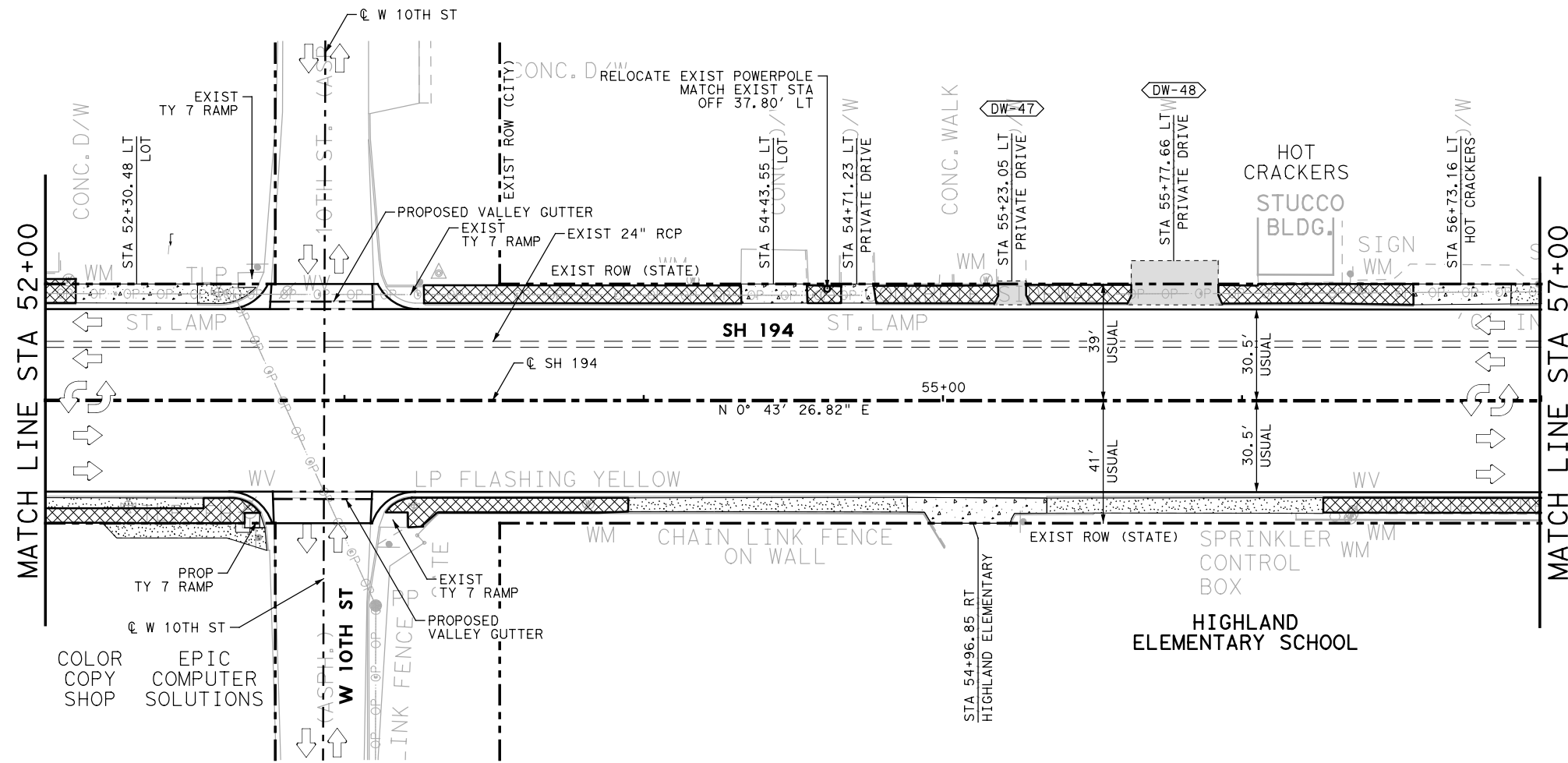
PLAN AND PROFILE
STA 46+00 TO STA 52+00

HORZ SCALE: 1"=50'
VERT SCALE: 1"=5'

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:
6	SEE TITLE SHEET	SH 194
STATE:	DISTRICT:	COUNTY:
TEXAS	LBB	HALE
CONTROL:	SECTION:	JOB:
0439	05	026

SHEET 9 OF 26
139

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: 194050_SH194_Pentable.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 7:35:03 PM SCALE: 1:50
 FILE: SH194_PP_10.dgn

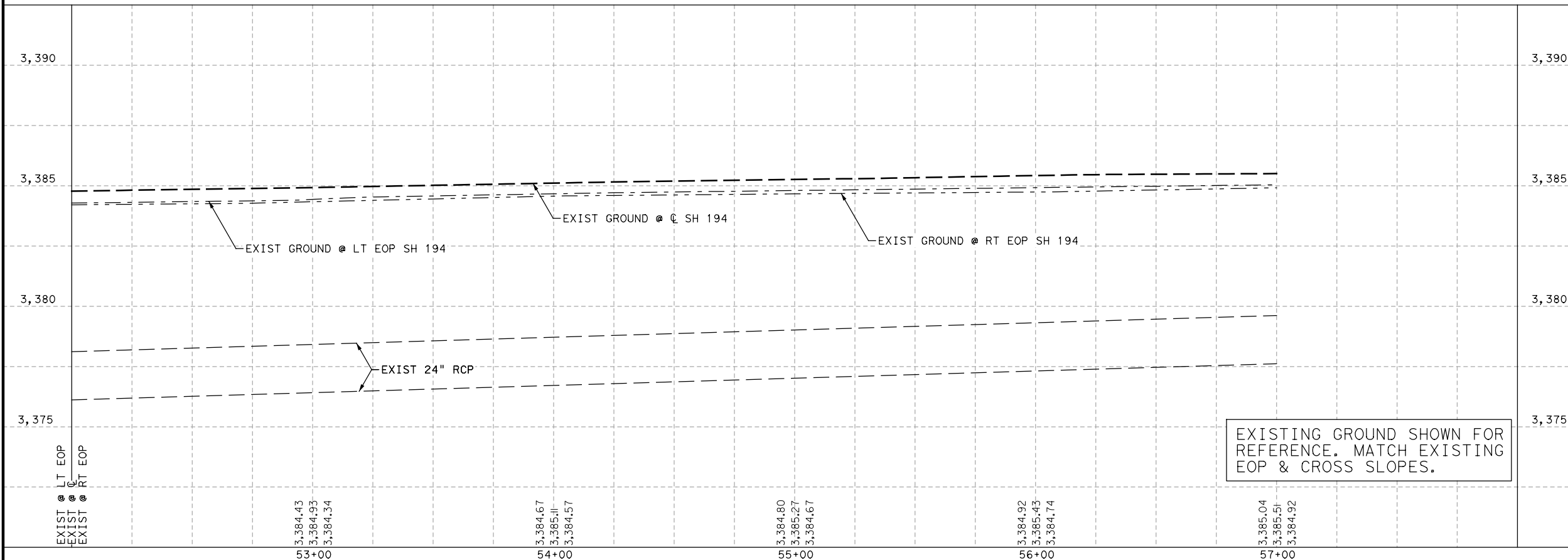


LEGEND

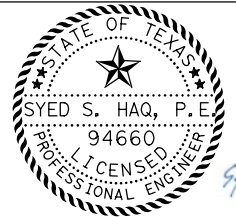
	EXISTING DRIVEWAY
	PROPOSED DRIVEWAY
	EXISTING SIDEWALK
	PROPOSED SIDEWALK
	PROPOSED DRIVEWAY ID LABEL
	MANHOLE

NOTES

1. ALL STATIONING IS BASED ON C SH 194 UNLESS OTHERWISE STATED.
2. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
3. PROPOSED SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
4. REFER TO SIGNING & PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
5. REFER TO EXISTING UTILITIES SHEETS FOR ADDITIONAL INFORMATION.
6. COORDINATE ALL REINFORCED CONCRETE PROTECTIVE CAP WORK WITH THE CITY OF PLAINVIEW PUBLIC WORKS DEPARTMENT.
7. REFER TO MANHOLE APRON DETAIL SHEET FOR ADDITIONAL INFORMATION.
8. REFER TO INTERSECTION DETAILS SHEET FOR CONC. VALLEY GUTTER INFORMATION.



EXISTING GROUND SHOWN FOR REFERENCE. MATCH EXISTING EOP & CROSS SLOPES.



Syed S. Haq
7/29/2024

NO.	DATE	REVISION	APPROVED



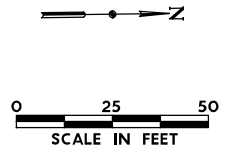
SH 194 FROM FM 3466 TO IH 27

PLAN AND PROFILE
STA 52+00 TO STA 57+00

HORZ SCALE: 1"=50'		SHEET 10 OF 26	
VERT SCALE: 1"=5'			
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:	
6	SEE TITLE SHEET	SH 194	
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	140
CONTROL:	SECTION:	JOB:	
0439	05	026	

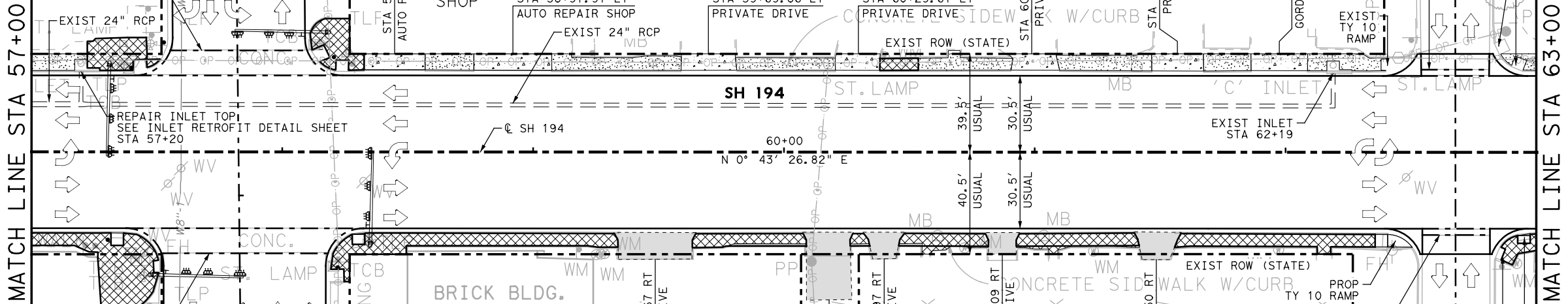
REFER TO INTERSECTION LAYOUT SHEET 2 FOR MORE INFORMATION ON W 11TH ST.

CAUTION: EXISTING WATER LINE IS AT A DEPTH OF 18" FROM SURFACE. LINE IS TO REMAIN IN PLACE.

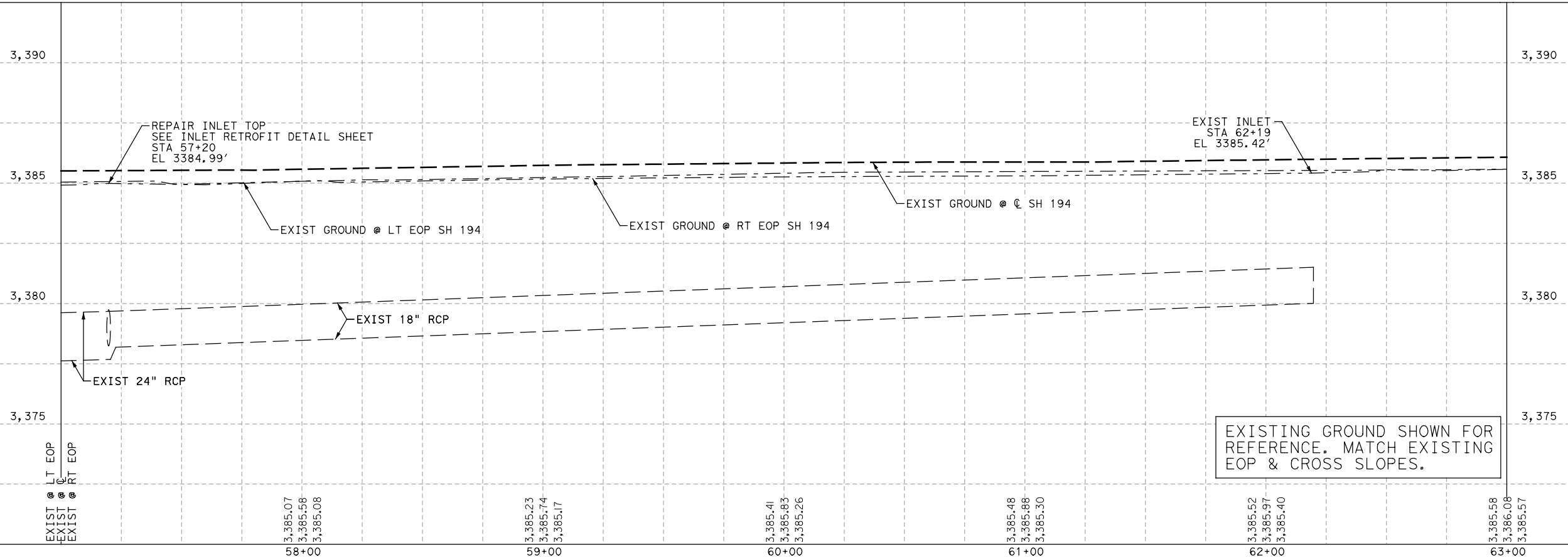


- LEGEND**
- EXISTING DRIVEWAY
 - PROPOSED DRIVEWAY
 - EXISTING SIDEWALK
 - PROPOSED SIDEWALK
 - PROPOSED DRIVEWAY ID LABEL
 - MANHOLE

- NOTES**
1. ALL STATIONING IS BASED ON $\text{\textcircled{C}}$ SH 194 UNLESS OTHERWISE STATED.
 2. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 3. PROPOSED SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
 4. REFER TO SIGNING & PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
 5. REFER TO EXISTING UTILITIES SHEETS FOR ADDITIONAL INFORMATION.
 6. COORDINATE ALL REINFORCED CONCRETE PROTECTIVE CAP WORK WITH THE CITY OF PLAINVIEW PUBLIC WORKS DEPARTMENT.
 7. REFER TO MANHOLE APRON DETAIL SHEET FOR ADDITIONAL INFORMATION.
 8. REFER TO INTERSECTION DETAILS SHEET FOR CONC. VALLEY GUTTER INFORMATION.



CONTRACTOR TO COORDINATE WITH THE ENGINEER BEFORE DOING ANY WORK OUTSIDE THE STATE ROW



EXISTING GROUND SHOWN FOR REFERENCE. MATCH EXISTING EOP & CROSS SLOPES.



NO.	DATE	REVISION	APPROVED



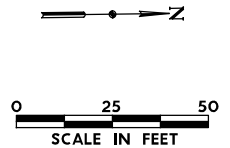
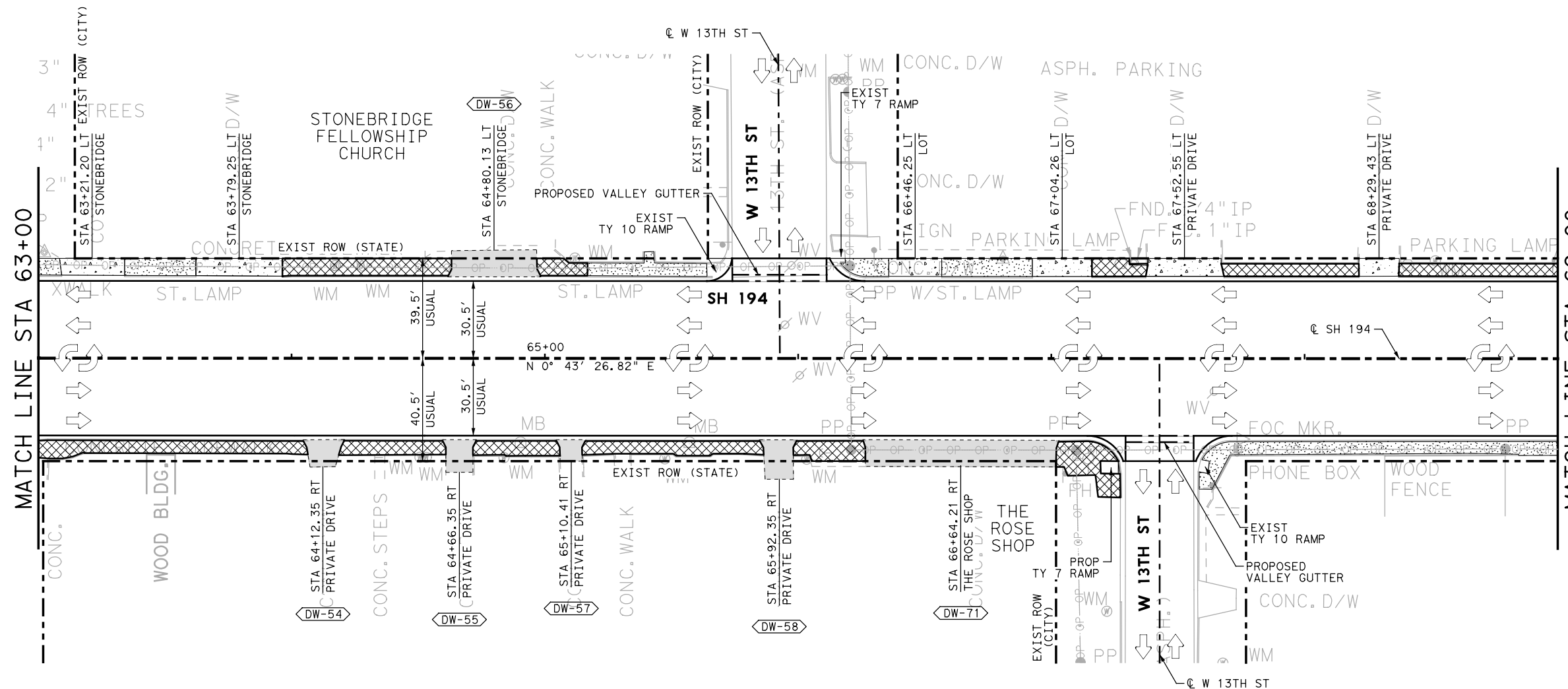
SH 194 FROM FM 3466 TO IH 27

PLAN AND PROFILE
STA 57+00 TO STA 63+00

HORZ SCALE: 1"=50'		VERT SCALE: 1"=5'		SHEET 11 OF 26
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:		HIGHWAY NO.:	
6	SEE TITLE SHEET		SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.	
TEXAS	LBB	HALE	141	
CONTROL	SECTION	JOB		
0439	05	026		

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: I94050_SH194_Pentable.tbl
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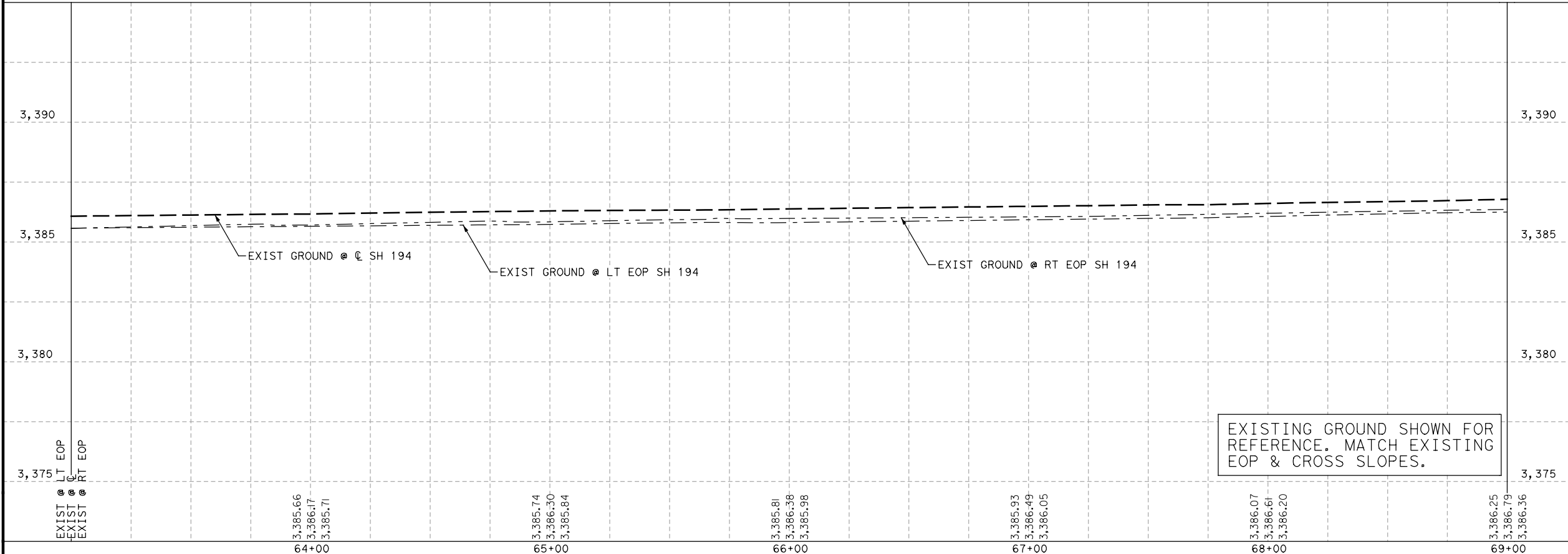
PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: I94050_SH194_Pentable.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 7:35:42 PM SCALE: 1:50
 FILE: SH194_PP_12.dgn



LEGEND

	EXISTING DRIVEWAY
	PROPOSED DRIVEWAY
	EXISTING SIDEWALK
	PROPOSED SIDEWALK
	PROPOSED DRIVEWAY ID LABEL
	MANHOLE

- NOTES**
1. ALL STATIONING IS BASED ON @ SH 194 UNLESS OTHERWISE STATED.
 2. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 3. PROPOSED SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
 4. REFER TO SIGNING & PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
 5. REFER TO EXISTING UTILITIES SHEETS FOR ADDITIONAL INFORMATION.
 6. COORDINATE ALL REINFORCED CONCRETE PROTECTIVE CAP WORK WITH THE CITY OF PLAINVIEW PUBLIC WORKS DEPARTMENT.
 7. REFER TO MANHOLE APRON DETAIL SHEET FOR ADDITIONAL INFORMATION.
 8. REFER TO INTERSECTION DETAILS SHEET FOR CONC. VALLEY GUTTER INFORMATION.



EXISTING GROUND SHOWN FOR REFERENCE. MATCH EXISTING EOP & CROSS SLOPES.



7/29/2024

NO.	DATE	REVISION	APPROVED

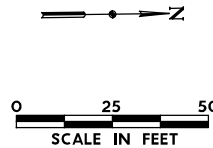
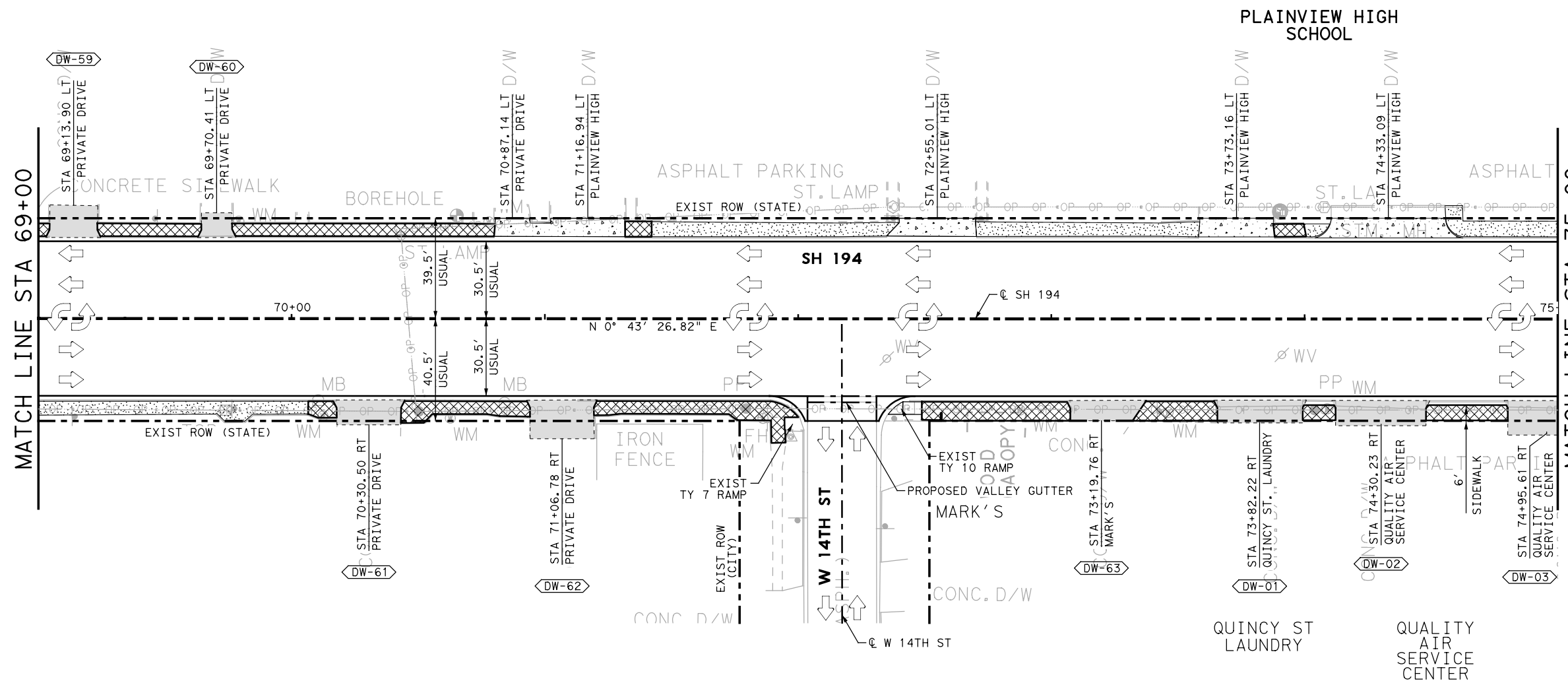


SH 194 FROM FM 3466 TO IH 27

PLAN AND PROFILE
 STA 63+00 TO STA 69+00

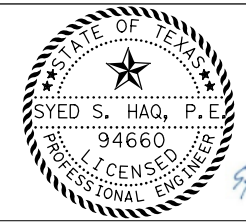
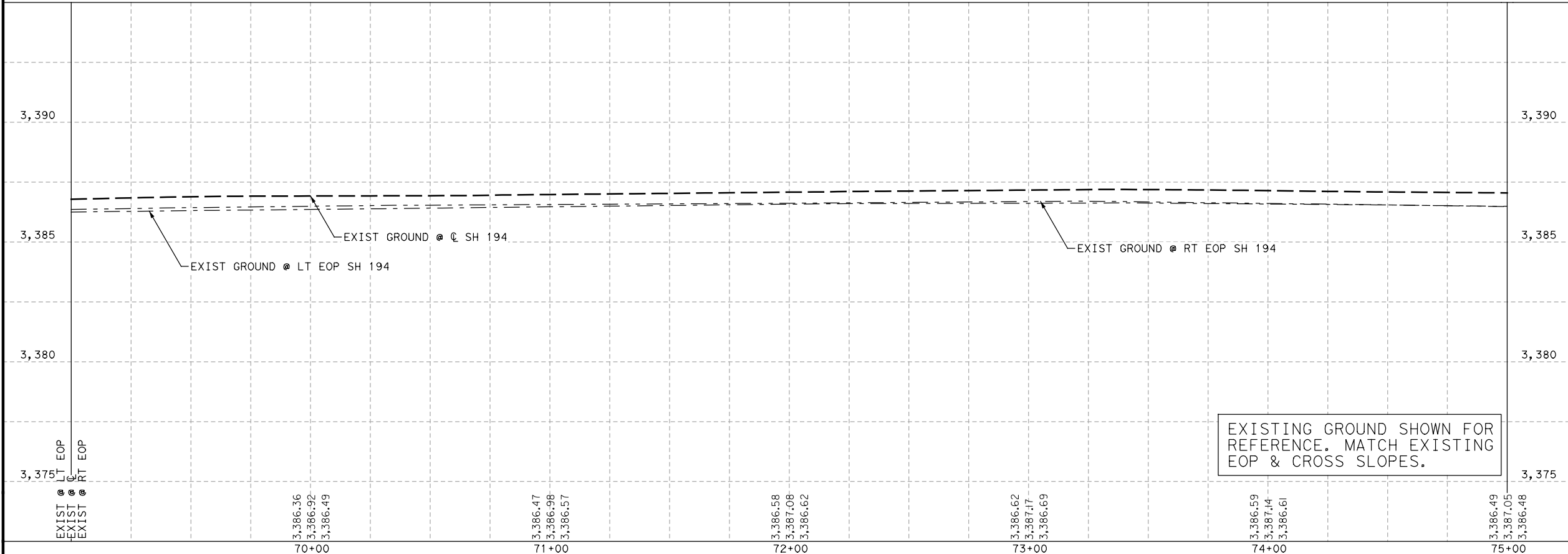
HORZ SCALE: 1"=50'		SHEET 12 OF 26	
VERT SCALE: 1"=5'			
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:	
6	SEE TITLE SHEET	SH 194	
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	142
CONTROL:	SECTION:	JOB:	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:35:09 PM SCALE: 1:50
 FILE: SH194_PP_I3.dgn



- LEGEND**
- EXISTING DRIVEWAY
 - PROPOSED DRIVEWAY
 - EXISTING SIDEWALK
 - PROPOSED SIDEWALK
 - PROPOSED DRIVEWAY ID LABEL
 - MANHOLE

- NOTES**
1. ALL STATIONING IS BASED ON C SH 194 UNLESS OTHERWISE STATED.
 2. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 3. PROPOSED SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
 4. REFER TO SIGNING & PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
 5. REFER TO EXISTING UTILITIES SHEETS FOR ADDITIONAL INFORMATION.
 6. COORDINATE ALL REINFORCED CONCRETE PROTECTIVE CAP WORK WITH THE CITY OF PLAINVIEW PUBLIC WORKS DEPARTMENT.
 7. REFER TO MANHOLE APRON DETAIL SHEET FOR ADDITIONAL INFORMATION.
 8. REFER TO INTERSECTION DETAILS SHEET FOR CONC. VALLEY GUTTER INFORMATION.



NO.	DATE	REVISION	APPROVED

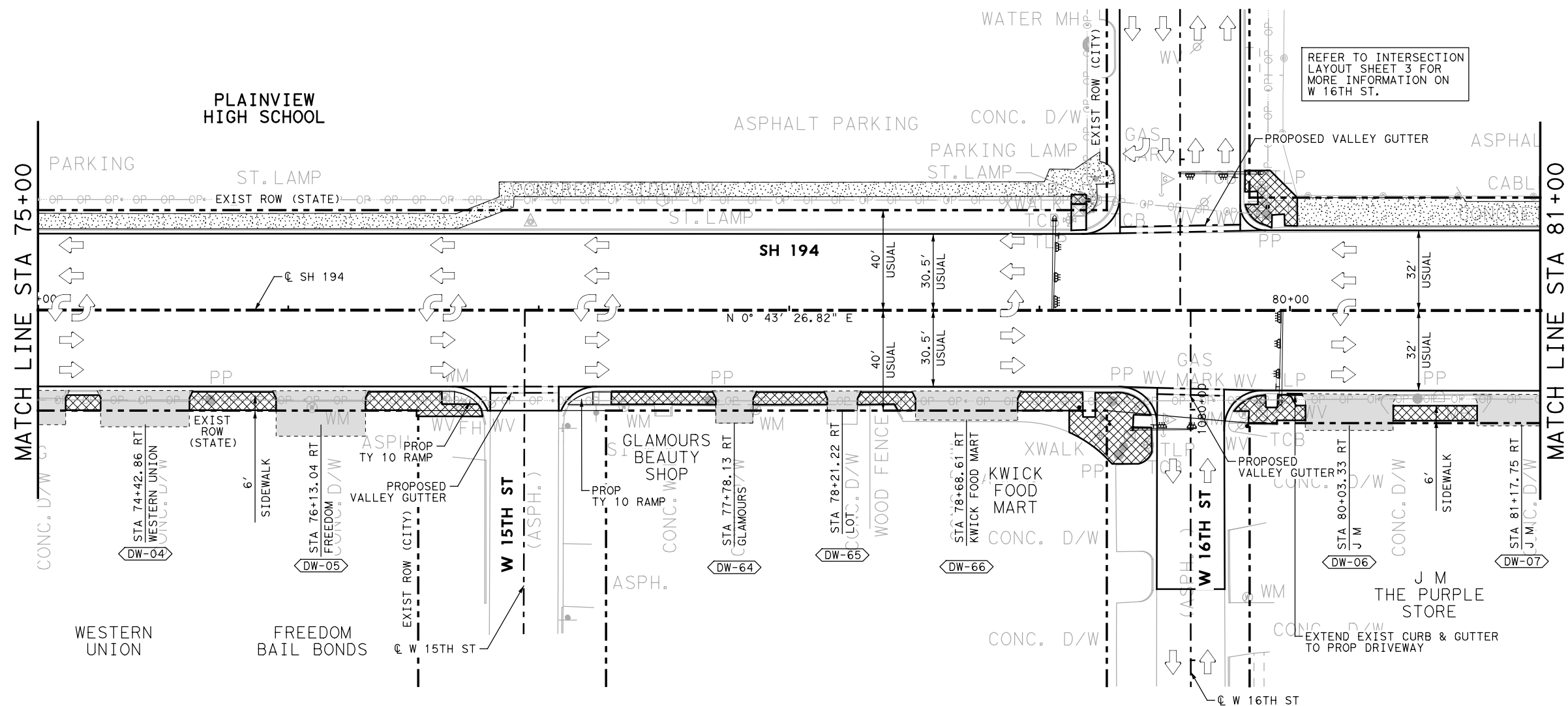


SH 194 FROM FM 3466 TO IH 27

PLAN AND PROFILE
 STA 69+00 TO STA 75+00

HORZ SCALE: 1"=50'		SHEET 13 OF 26	
VERT SCALE: 1"=5'			
FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	143
CONTROL	SECTION	JOB	
0439	05	026	

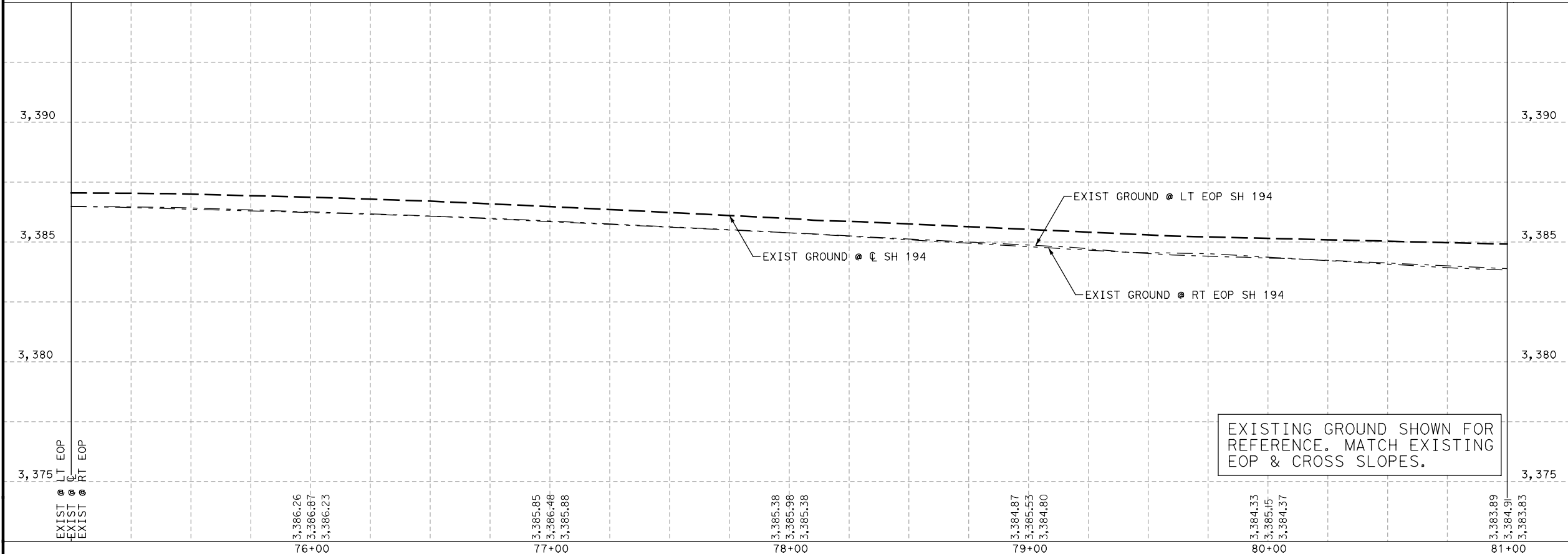
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 USER: Robinson DATE: 7/29/2024 TIME: 7:35:28 PM SCALE: 1:50
 FILE: SH194_PP_14.dgn



LEGEND

- EXISTING DRIVEWAY
- PROPOSED DRIVEWAY
- EXISTING SIDEWALK
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY ID LABEL
- MANHOLE

- NOTES**
1. ALL STATIONING IS BASED ON @ SH 194 UNLESS OTHERWISE STATED.
 2. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 3. PROPOSED SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
 4. REFER TO SIGNING & PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
 5. REFER TO EXISTING UTILITIES SHEETS FOR ADDITIONAL INFORMATION.
 6. COORDINATE ALL REINFORCED CONCRETE PROTECTIVE CAP WORK WITH THE CITY OF PLAINVIEW PUBLIC WORKS DEPARTMENT.
 7. REFER TO MANHOLE APRON DETAIL SHEET FOR ADDITIONAL INFORMATION.
 8. REFER TO INTERSECTION DETAILS SHEET FOR CONC. VALLEY GUTTER INFORMATION.



NO.	DATE	REVISION	APPROVED

SH 194 FROM FM 3466 TO IH 27

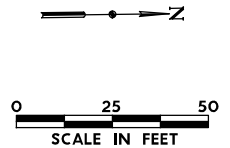
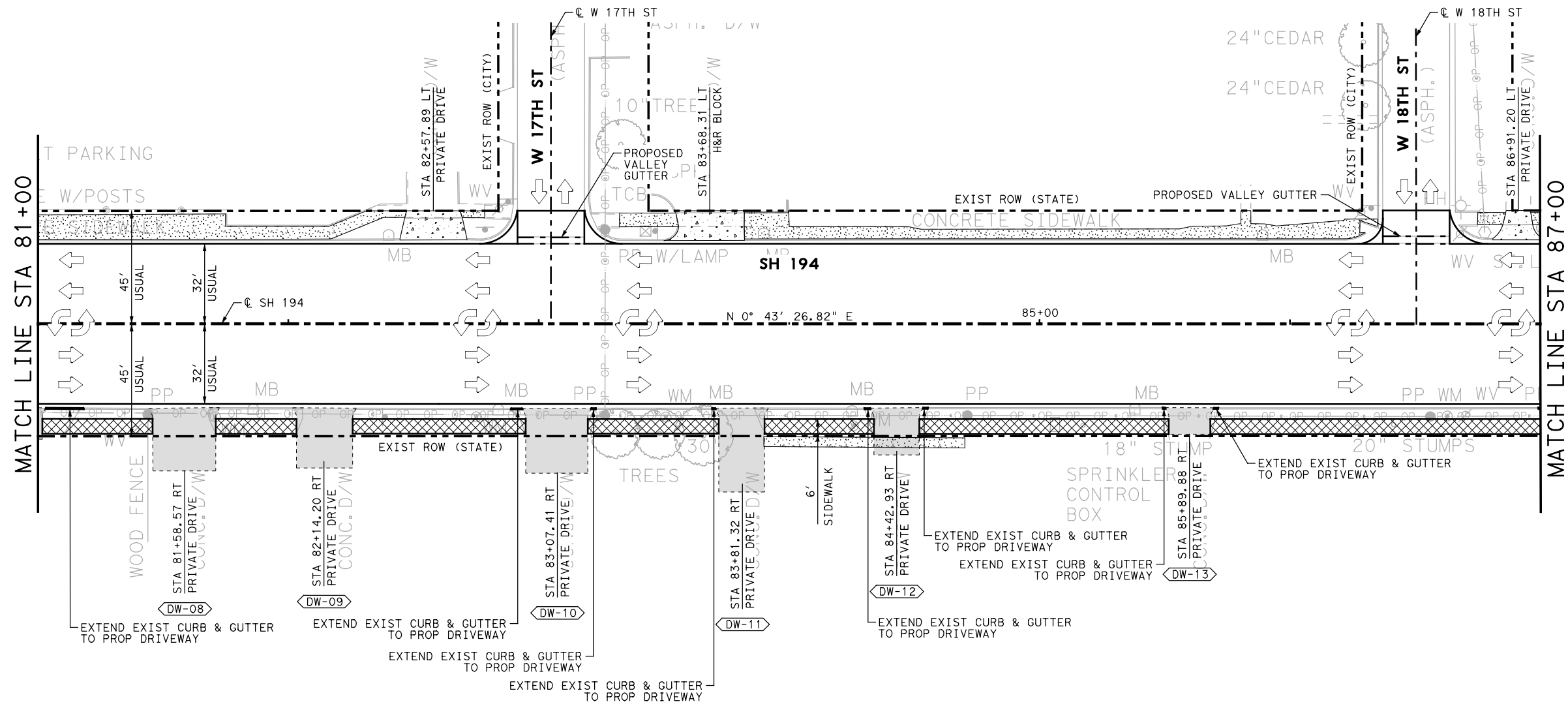
PLAN AND PROFILE
STA 75+00 TO STA 81+00

HORZ SCALE: 1"=50'
VERT SCALE: 1"=5'

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:
6	SEE TITLE SHEET	SH 194
STATE:	DISTRICT:	COUNTY:
TEXAS	LBB	HALE
CONTROL:	SECTION:	JOB:
0439	05	026

SHEET 14 OF 26
144

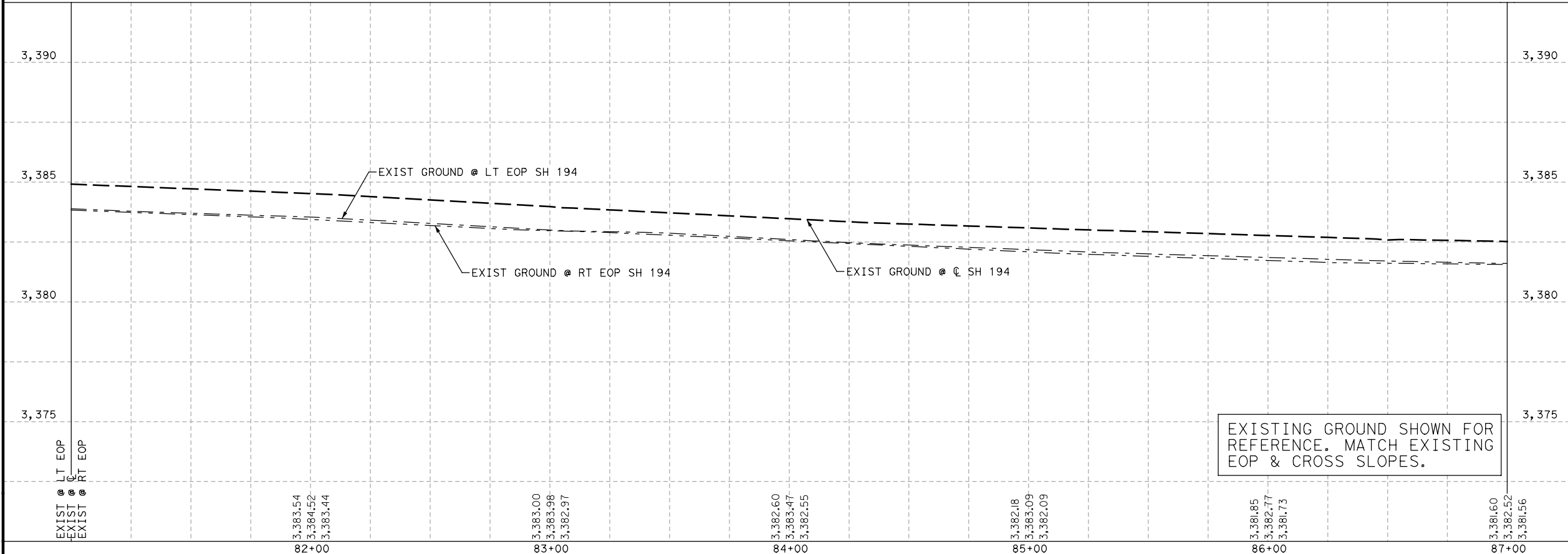
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 USER: Robinson DATE: 7/29/2024 TIME: 7:35:34 PM SCALE: 1:50
 FILE: SH194_PP_I5.dgn



LEGEND

	EXISTING DRIVEWAY
	PROPOSED DRIVEWAY
	EXISTING SIDEWALK
	PROPOSED SIDEWALK
	PROPOSED DRIVEWAY ID LABEL
	MANHOLE

- NOTES**
1. ALL STATIONING IS BASED ON $\text{\textcircled{C}}$ SH 194 UNLESS OTHERWISE STATED.
 2. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 3. PROPOSED SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
 4. REFER TO SIGNING & PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
 5. REFER TO EXISTING UTILITIES SHEETS FOR ADDITIONAL INFORMATION.
 6. COORDINATE ALL REINFORCED CONCRETE PROTECTIVE CAP WORK WITH THE CITY OF PLAINVIEW PUBLIC WORKS DEPARTMENT.
 7. REFER TO MANHOLE APRON DETAIL SHEET FOR ADDITIONAL INFORMATION.
 8. REFER TO INTERSECTION DETAILS SHEET FOR CONC. VALLEY GUTTER INFORMATION.



NO.	DATE	REVISION	APPROVED

SH 194 FROM FM 3466 TO IH 27

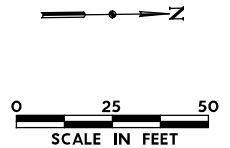
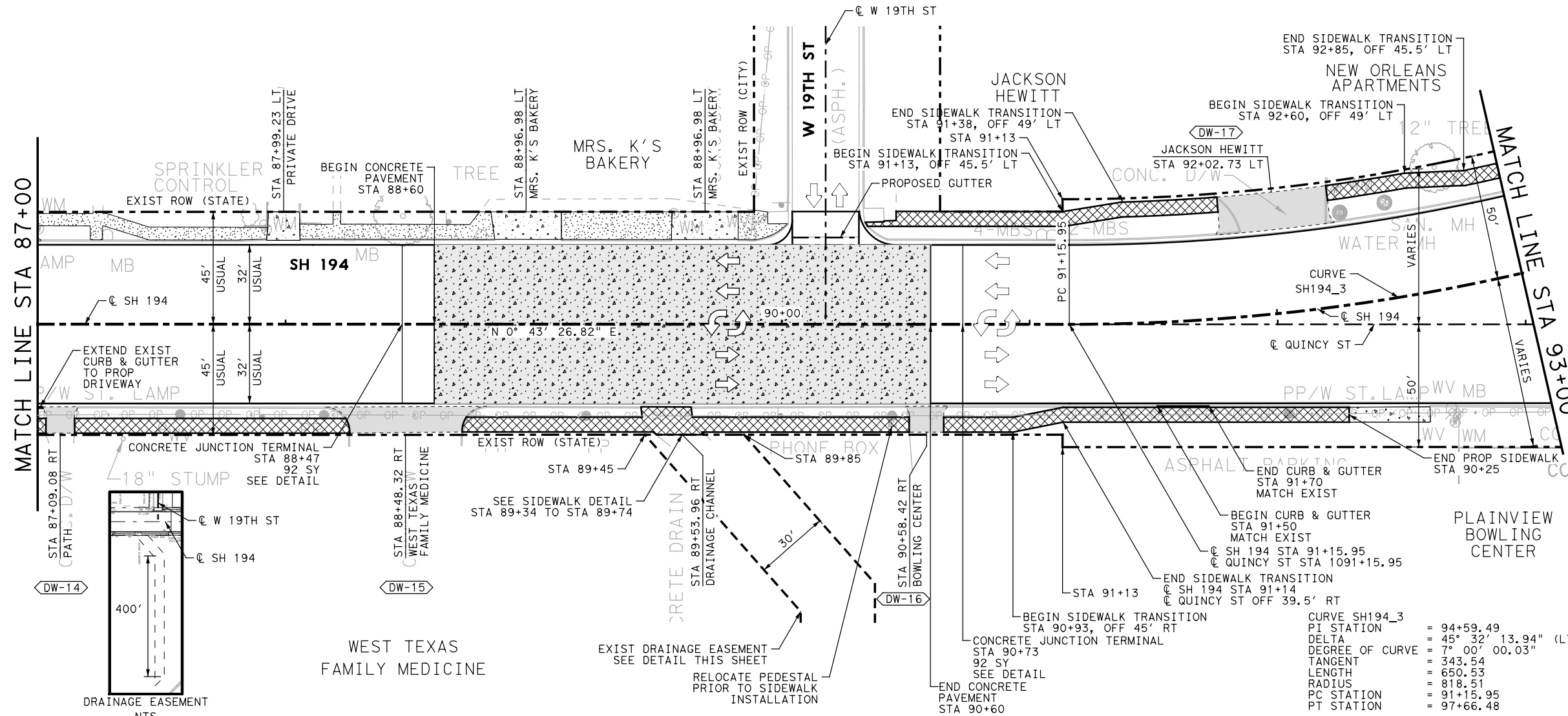
PLAN AND PROFILE
STA 81+00 TO STA 87+00

HORZ SCALE: 1"=50'
VERT SCALE: 1"=5'

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:
6	SEE TITLE SHEET	SH 194
STATE:	DISTRICT:	COUNTY:
TEXAS	LBB	HALE
CONTROL:	SECTION:	JOB:
0439	05	026

SHEET 15 OF 26
145

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:35:43 PM SCALE: 1:50
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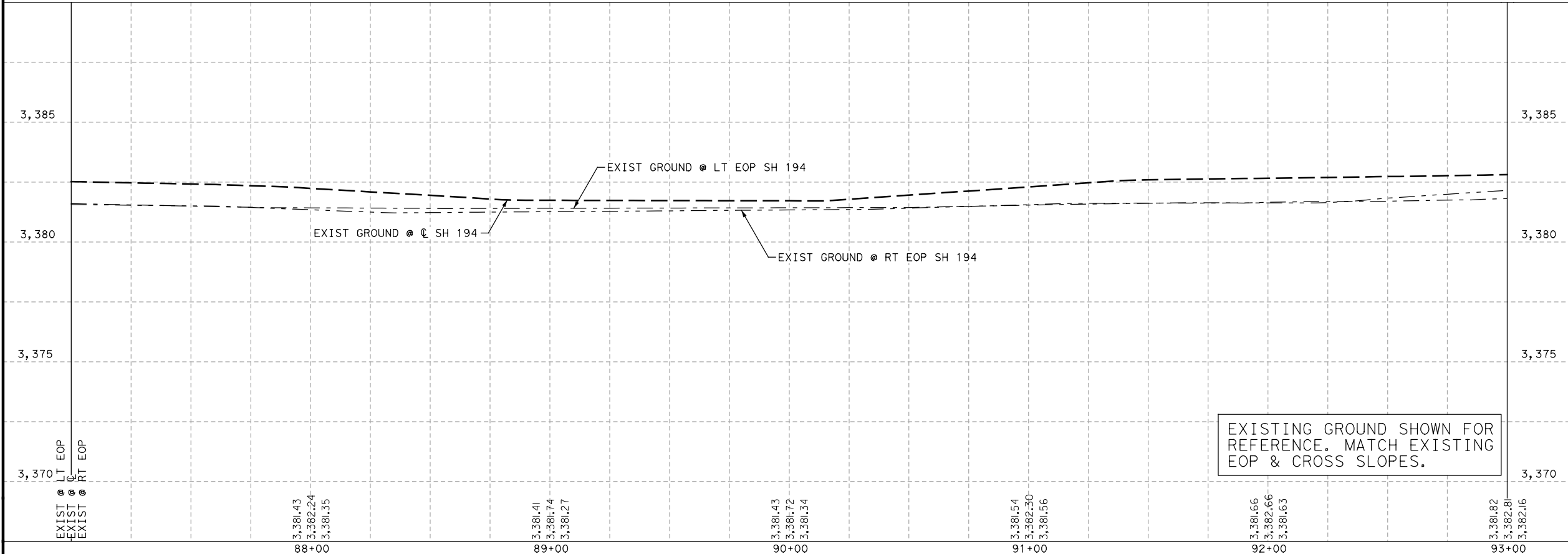
LEGEND

- EXISTING DRIVEWAY
- PROPOSED DRIVEWAY
- EXISTING SIDEWALK
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY ID LABEL
- MANHOLE
- PROPOSED CONCRETE PAVEMENT

- NOTES**
- ALL STATIONING IS BASED ON C SH 194 UNLESS OTHERWISE STATED.
 - OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 - PROPOSED SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
 - REFER TO SIGNING & PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
 - REFER TO EXISTING UTILITIES SHEETS FOR ADDITIONAL INFORMATION.
 - COORDINATE ALL REINFORCED CONCRETE PROTECTIVE CAP WORK WITH THE CITY OF PLAINVIEW PUBLIC WORKS DEPARTMENT.
 - REFER TO MANHOLE APRON DETAIL SHEET FOR ADDITIONAL INFORMATION.
 - REFER TO INTERSECTION DETAILS SHEET FOR CONC. VALLEY GUTTER INFORMATION.

CURVE DATA

PI STATION	=	94+59.49
DELTA	=	45° 32' 13.94" (LT)
DEGREE OF CURVE	=	7° 00' 00.03"
TANGENT	=	343.54
LENGTH	=	650.53
RADIUS	=	818.51
PC STATION	=	91+15.95
PT STATION	=	97+66.48



Syed S. Haq
 7/29/2024

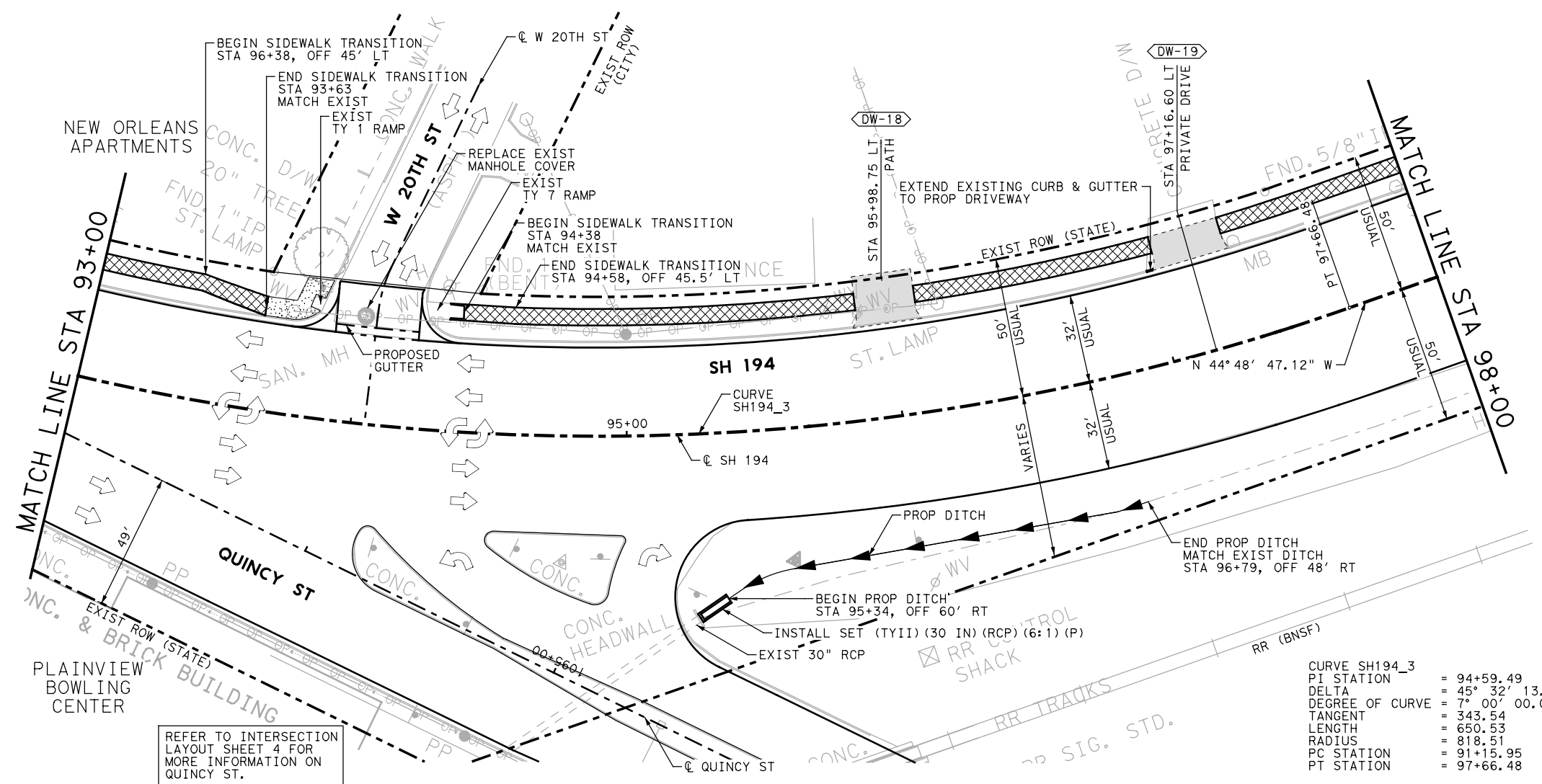
NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

PLAN AND PROFILE
 STA 87+00 TO STA 93+00

HORZ SCALE: 1"=50'		SHEET 16 OF 26	
VERT SCALE: 1"=5'			
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:	
6	SEE TITLE SHEET	SH 194	
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	146
CONTROL:	SECTION:	JOB:	
0439	05	026	



LEGEND

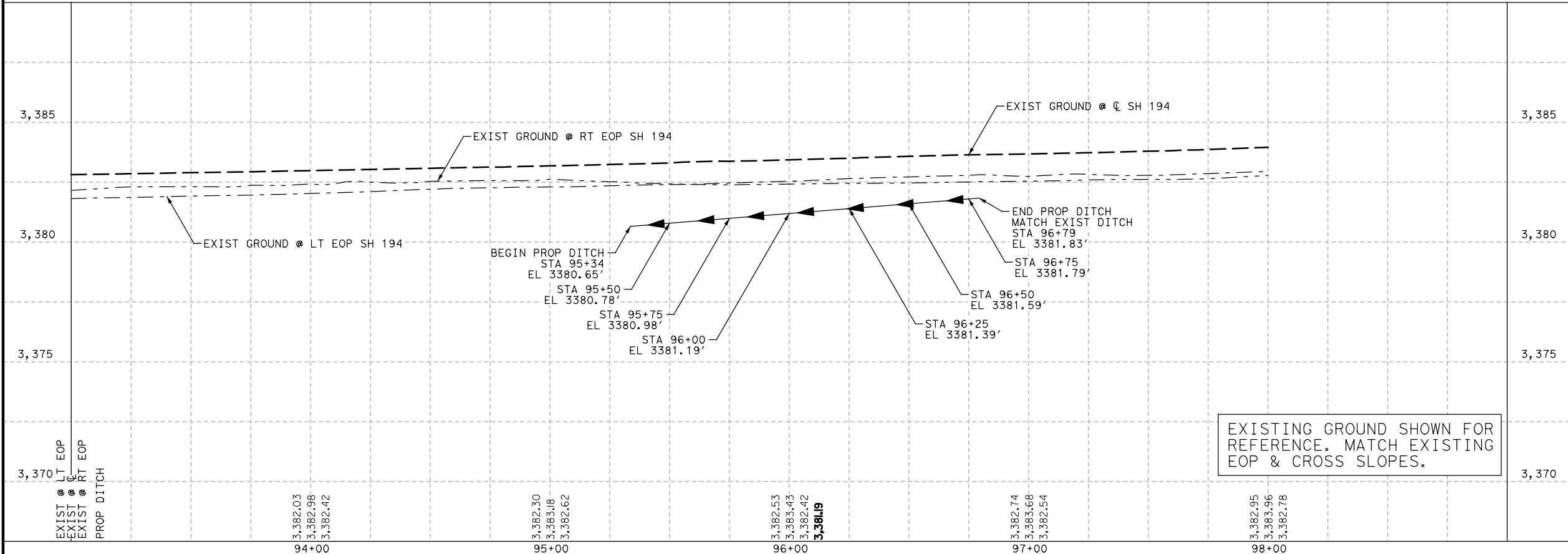
	EXISTING DRIVEWAY
	PROPOSED DRIVEWAY
	EXISTING SIDEWALK
	PROPOSED SIDEWALK
	PROPOSED DRIVEWAY ID LABEL
	MANHOLE

- NOTES**
1. ALL STATIONING IS BASED ON $\text{\textcircled{C}}$ SH 194 UNLESS OTHERWISE STATED.
 2. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 3. PROPOSED SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
 4. REFER TO SIGNING & PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
 5. REFER TO EXISTING UTILITIES SHEETS FOR ADDITIONAL INFORMATION.
 6. COORDINATE ALL REINFORCED CONCRETE PROTECTIVE CAP WORK WITH THE CITY OF PLAINVIEW PUBLIC WORKS DEPARTMENT.
 7. REFER TO MANHOLE APRON DETAIL SHEET FOR ADDITIONAL INFORMATION.
 8. REFER TO INTERSECTION DETAILS SHEET FOR CONC. VALLEY GUTTER INFORMATION.

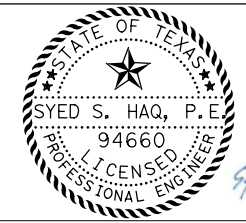
CURVE SH194_3

PI STATION	= 94+59.49
DELTA	= 45° 32' 13.94" (LT)
DEGREE OF CURVE	= 7° 00' 00.03"
TANGENT	= 343.54
LENGTH	= 650.53
RADIUS	= 818.51
PC STATION	= 91+15.95
PT STATION	= 97+66.48

REFER TO INTERSECTION LAYOUT SHEET 4 FOR MORE INFORMATION ON QUINCY ST.



EXISTING GROUND SHOWN FOR REFERENCE. MATCH EXISTING EOP & CROSS SLOPES.



NO.	DATE	REVISION	APPROVED



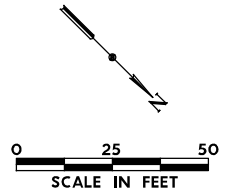
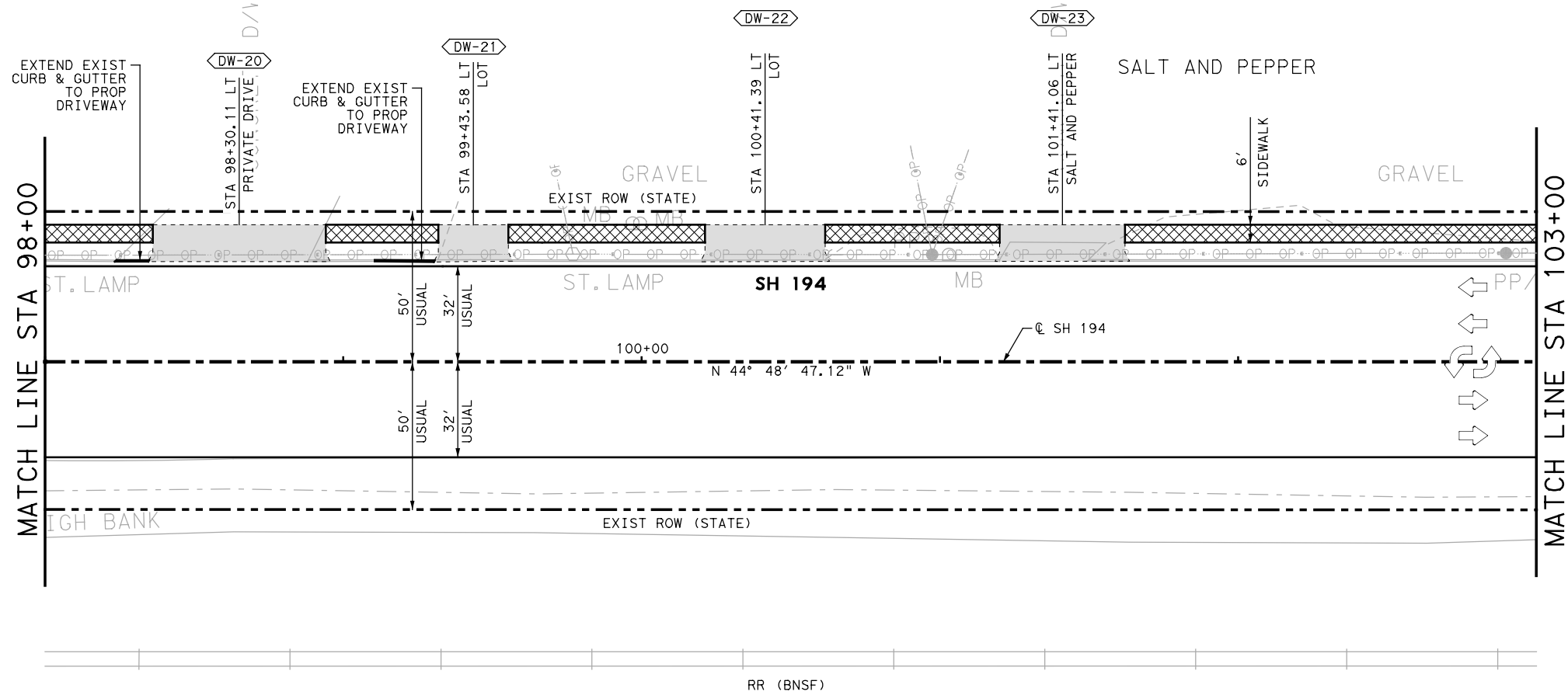
SH 194 FROM FM 3466 TO IH 27

PLAN AND PROFILE
STA 93+00 TO STA 98+00

HORZ SCALE: 1"=50'		SHEET 17 OF 26	
VERT SCALE: 1"=5'			
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:	
6	SEE TITLE SHEET	SH 194	
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	147
CONTROL:	SECTION:	JOB:	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: I94050_SH194_Pentable.tbl
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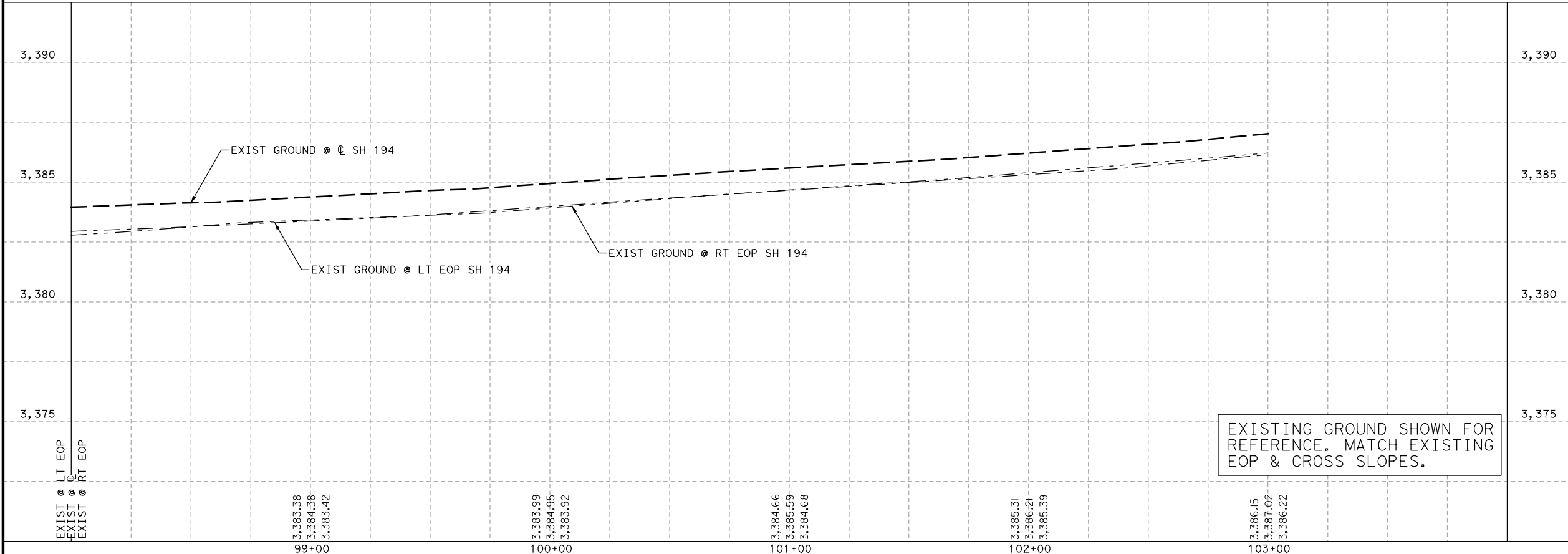
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 USER: Robinson DATE: 7/29/2024 TIME: 7:36:02 PM SCALE: 1:50
 FILE: SH194_PP_18.dgn



LEGEND

	EXISTING DRIVEWAY
	PROPOSED DRIVEWAY
	EXISTING SIDEWALK
	PROPOSED SIDEWALK
	PROPOSED DRIVEWAY ID LABEL
	MANHOLE

- NOTES**
1. ALL STATIONING IS BASED ON C SH 194 UNLESS OTHERWISE STATED.
 2. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 3. PROPOSED SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
 4. REFER TO SIGNING & PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
 5. REFER TO EXISTING UTILITIES SHEETS FOR ADDITIONAL INFORMATION.
 6. COORDINATE ALL REINFORCED CONCRETE PROTECTIVE CAP WORK WITH THE CITY OF PLAINVIEW PUBLIC WORKS DEPARTMENT.
 7. REFER TO MANHOLE APRON DETAIL SHEET FOR ADDITIONAL INFORMATION.
 8. REFER TO INTERSECTION DETAILS SHEET FOR CONC. VALLEY GUTTER INFORMATION.



NO.	DATE	REVISION	APPROVED

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TBPE REGISTRATION NO. F-18368

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SH 194 FROM FM 3466 TO IH 27

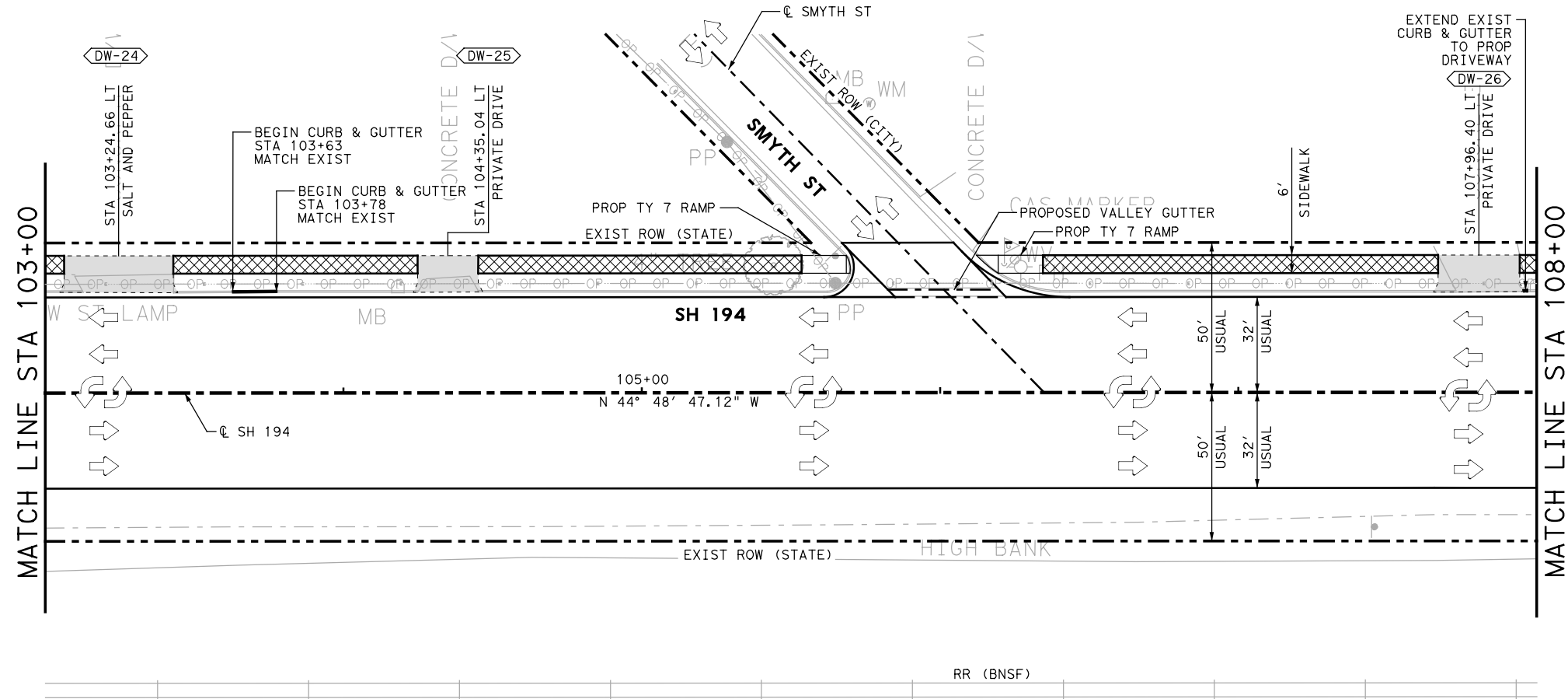
PLAN AND PROFILE
STA 98+00 TO STA 103+00

HORZ SCALE: 1"=50'
 VERT SCALE: 1"=5'

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:
6	SEE TITLE SHEET	SH 194
STATE:	DISTRICT:	COUNTY:
TEXAS	LBB	HALE
CONTROL:	SECTION:	JOB:
0439	05	026

SHEET 18 OF 26
148

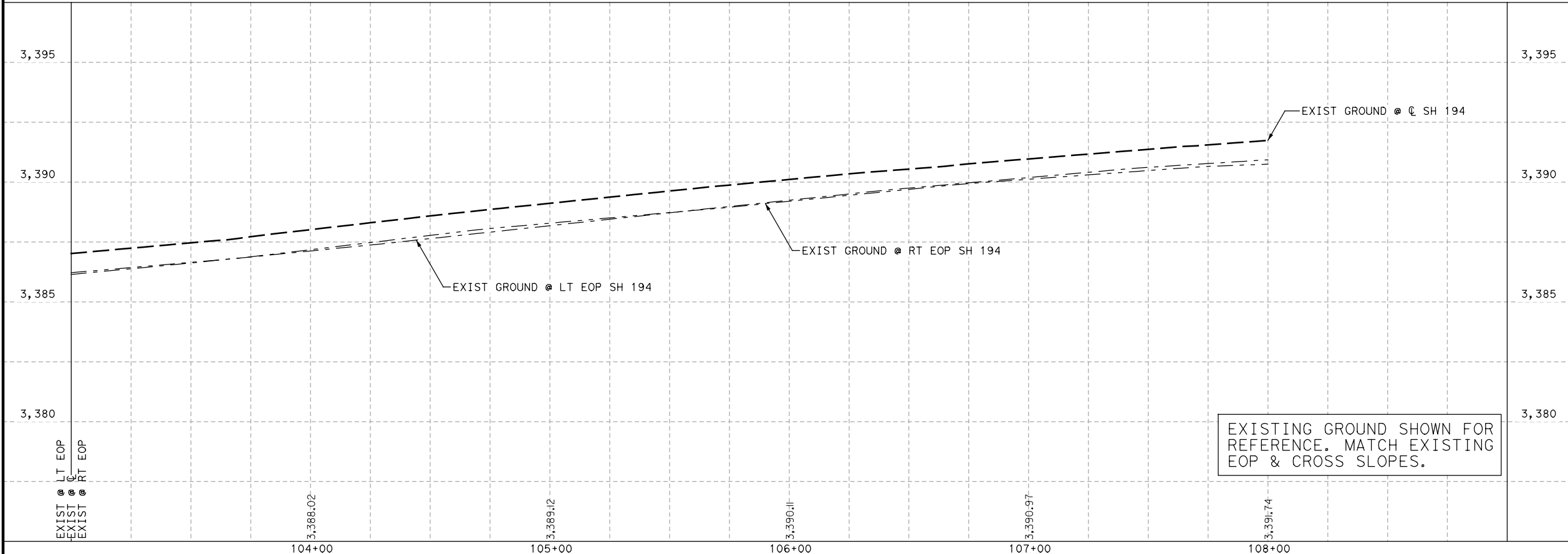
PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:36:08 PM SCALE: 1:50
 FILE: SH194_PP_19.dgn



LEGEND

- EXISTING DRIVEWAY
- PROPOSED DRIVEWAY
- EXISTING SIDEWALK
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY ID LABEL
- MANHOLE

- NOTES**
1. ALL STATIONING IS BASED ON C SH 194 UNLESS OTHERWISE STATED.
 2. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 3. PROPOSED SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
 4. REFER TO SIGNING & PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
 5. REFER TO EXISTING UTILITIES SHEETS FOR ADDITIONAL INFORMATION.
 6. COORDINATE ALL REINFORCED CONCRETE PROTECTIVE CAP WORK WITH THE CITY OF PLAINVIEW PUBLIC WORKS DEPARTMENT.
 7. REFER TO MANHOLE APRON DETAIL SHEET FOR ADDITIONAL INFORMATION.
 8. REFER TO INTERSECTION DETAILS SHEET FOR CONC. VALLEY GUTTER INFORMATION.



NO.	DATE	REVISION	APPROVED

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SH 194 FROM FM 3466 TO IH 27

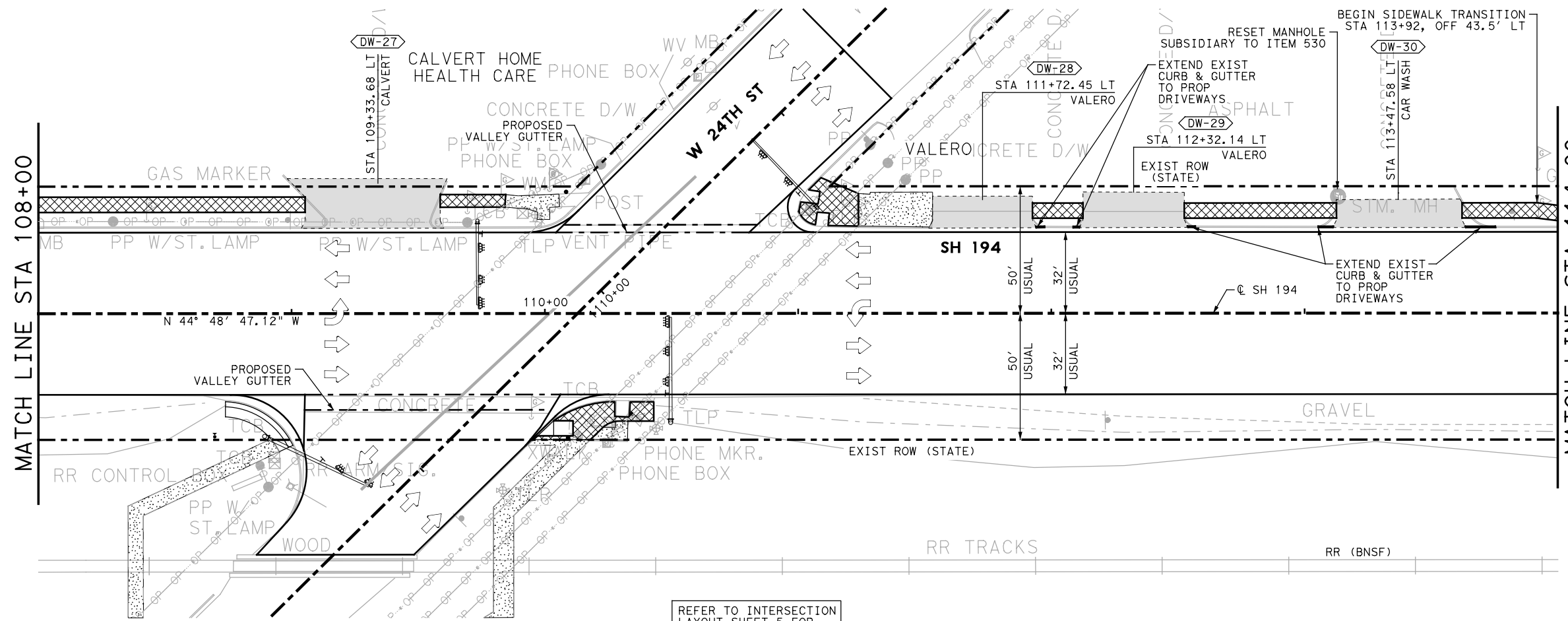
PLAN AND PROFILE
STA 103+00 TO STA 108+00

HORZ SCALE: 1"=50'
 VERT SCALE: 1"=5'

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:
6	SEE TITLE SHEET	SH 194
STATE:	DISTRICT:	COUNTY:
TEXAS	LBB	HALE
CONTROL:	SECTION:	JOB:
0439	05	026

SHEET 19 OF 26
149

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:36:13 PM SCALE: 1:50
 FILE: SH194_PP_20.dgn

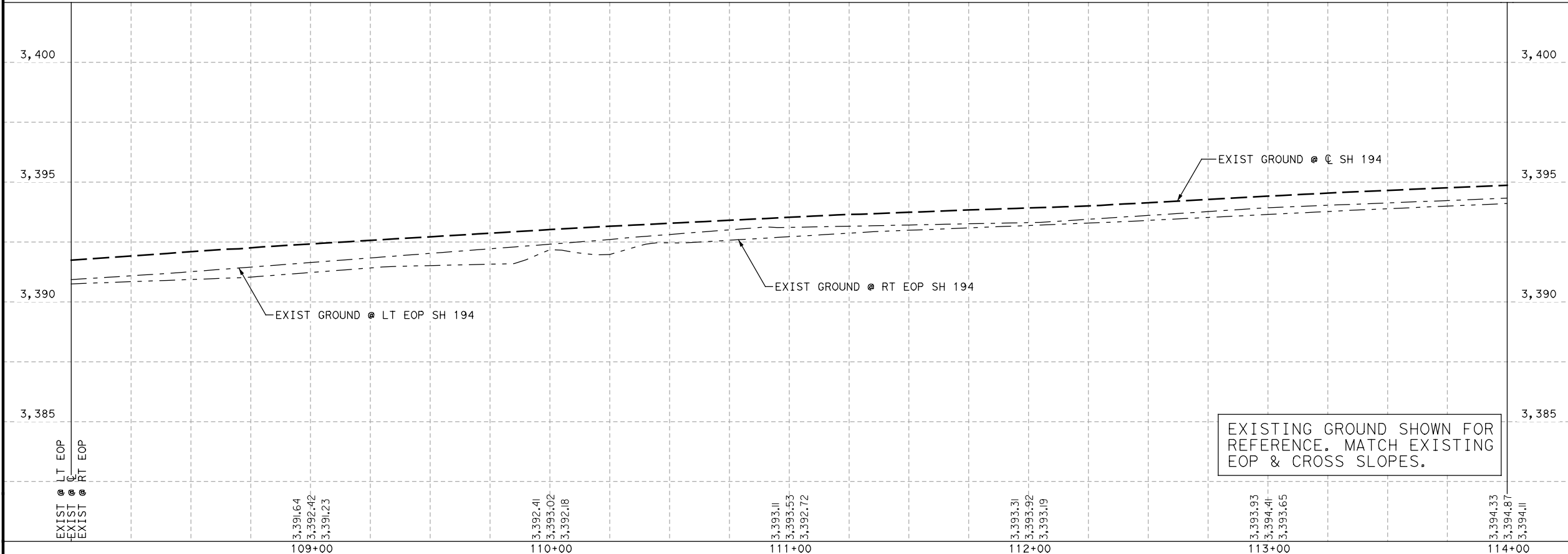


LEGEND

- EXISTING DRIVEWAY
- PROPOSED DRIVEWAY
- EXISTING SIDEWALK
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY ID LABEL
- MANHOLE

- NOTES**
1. ALL STATIONING IS BASED ON C SH 194 UNLESS OTHERWISE STATED.
 2. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 3. PROPOSED SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
 4. REFER TO SIGNING & PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
 5. REFER TO EXISTING UTILITIES SHEETS FOR ADDITIONAL INFORMATION.
 6. COORDINATE ALL REINFORCED CONCRETE PROTECTIVE APRON DETAIL SHEET WITH THE CITY OF PLAINVIEW PUBLIC WORKS DEPARTMENT.
 7. REFER TO MANHOLE APRON DETAIL SHEET FOR ADDITIONAL INFORMATION.
 8. REFER TO INTERSECTION DETAILS SHEET FOR CONC. VALLEY GUTTER INFORMATION.

REFER TO INTERSECTION LAYOUT SHEET 5 FOR MORE INFORMATION ON W 24TH ST.



NO.	DATE	REVISION	APPROVED

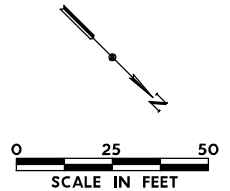
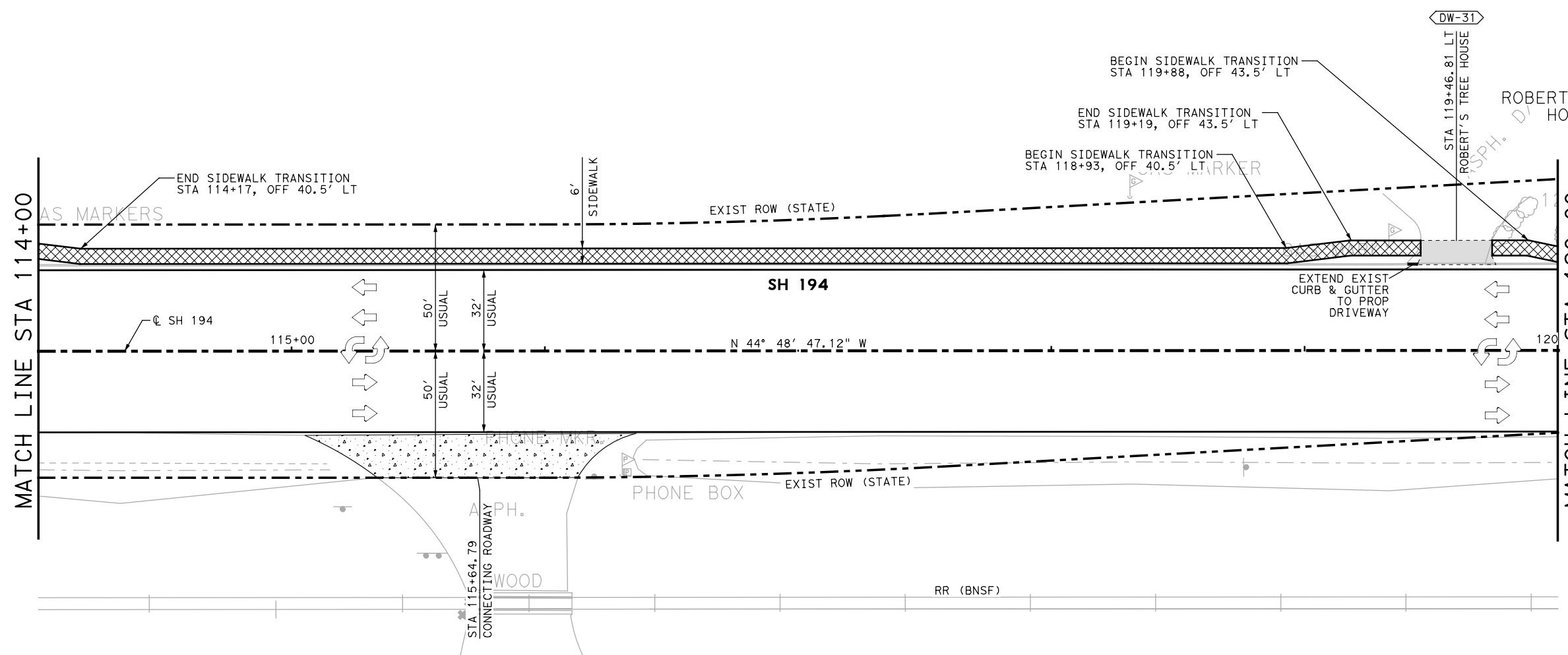


SH 194 FROM FM 3466 TO IH 27

PLAN AND PROFILE
 STA 108+00 TO STA 114+00

HORZ SCALE: 1"=50'		VERT SCALE: 1"=5'		SHEET 20 OF 26
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:		HIGHWAY NO.:	
6	SEE TITLE SHEET		SH 194	
STATE:	DISTRICT:	COUNTY:	SHEET NO.:	
TEXAS	LBB	HALE	150	
CONTROL:	SECTION:	JOB:		
0439	05	026		

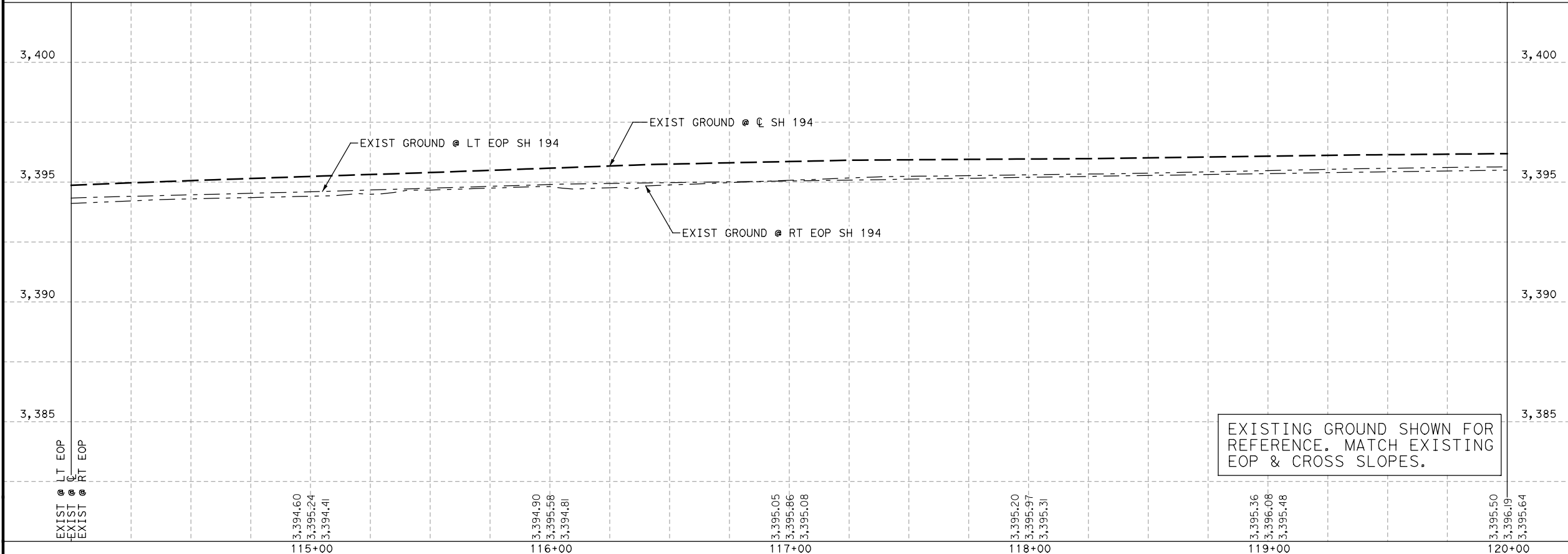
PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:36:20 PM SCALE: 1:50
 FILE: SH194_PP_21.dgn



LEGEND

	EXISTING DRIVEWAY
	PROPOSED DRIVEWAY
	EXISTING SIDEWALK
	PROPOSED SIDEWALK
	PROPOSED DRIVEWAY ID LABEL
	MANHOLE

- NOTES**
1. ALL STATIONING IS BASED ON $\text{\textcircled{C}}$ SH 194 UNLESS OTHERWISE STATED.
 2. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 3. PROPOSED SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
 4. REFER TO SIGNING & PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
 5. REFER TO EXISTING UTILITIES SHEETS FOR ADDITIONAL INFORMATION.
 6. COORDINATE ALL REINFORCED CONCRETE PROTECTIVE CAP WORK WITH THE CITY OF PLAINVIEW PUBLIC WORKS DEPARTMENT.
 7. REFER TO MANHOLE APRON DETAIL SHEET FOR ADDITIONAL INFORMATION.
 8. REFER TO INTERSECTION DETAILS SHEET FOR CONC. VALLEY GUTTER INFORMATION.



NO.	DATE	REVISION	APPROVED

SH 194 FROM FM 3466 TO IH 27

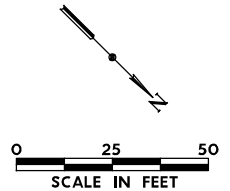
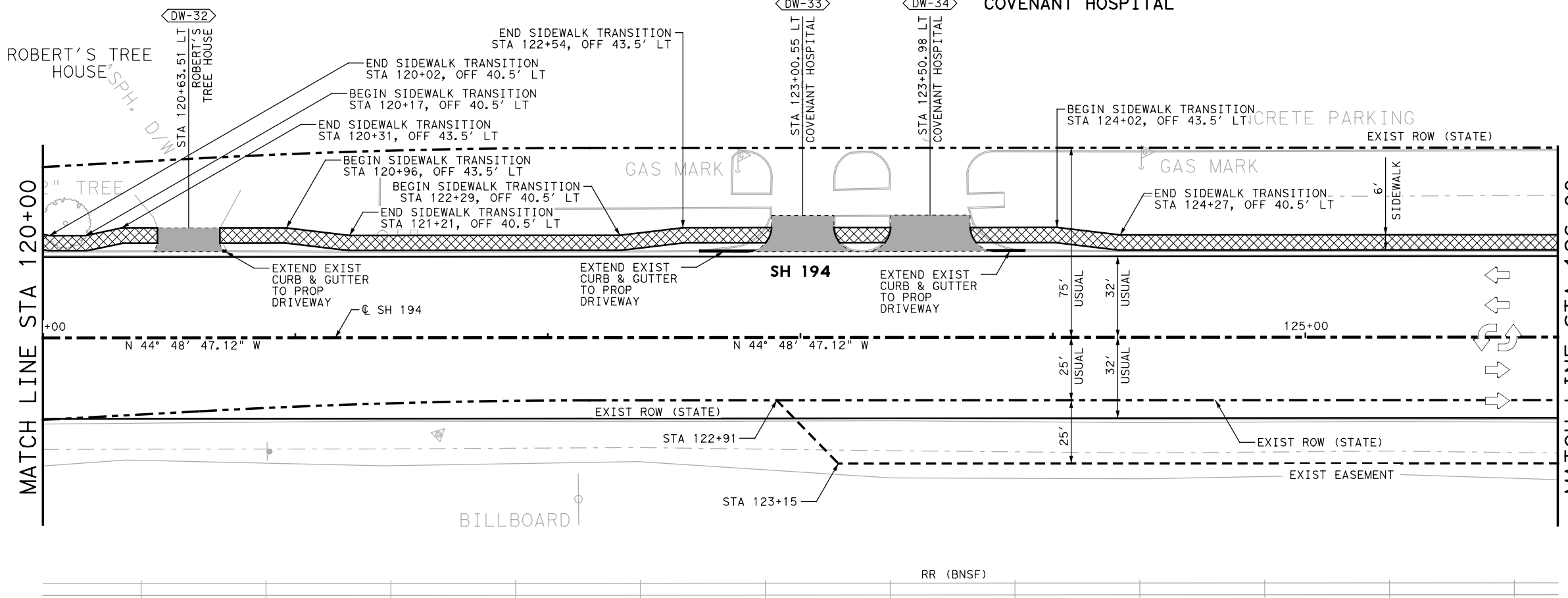
PLAN AND PROFILE
STA 114+00 TO STA 120+00

HORZ SCALE: 1"=50'
VERT SCALE: 1"=5'

FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026

SHEET 21 OF 26
151

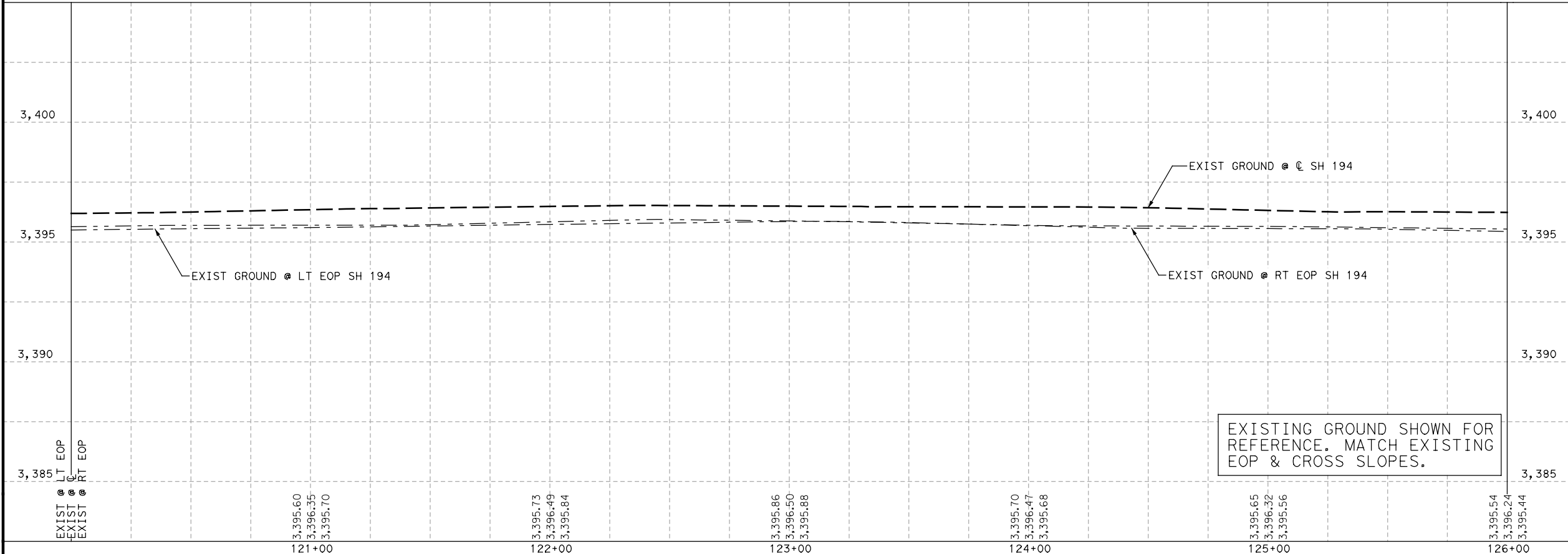
COVENANT HOSPITAL



LEGEND

- EXISTING DRIVEWAY
- PROPOSED DRIVEWAY
- EXISTING SIDEWALK
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY ID LABEL
- MANHOLE

- NOTES**
- ALL STATIONING IS BASED ON @ SH 194 UNLESS OTHERWISE STATED.
 - OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 - PROPOSED SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
 - REFER TO SIGNING & PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
 - REFER TO EXISTING UTILITIES SHEETS FOR ADDITIONAL INFORMATION.
 - COORDINATE ALL REINFORCED CONCRETE PROTECTIVE CAP WORK WITH THE CITY OF PLAINVIEW PUBLIC WORKS DEPARTMENT.
 - REFER TO MANHOLE APRON DETAIL SHEET FOR ADDITIONAL INFORMATION.
 - REFER TO INTERSECTION DETAILS SHEET FOR CONC. VALLEY GUTTER INFORMATION.



EXISTING GROUND SHOWN FOR REFERENCE. MATCH EXISTING EOP & CROSS SLOPES.



NO.	DATE	REVISION	APPROVED



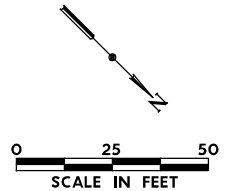
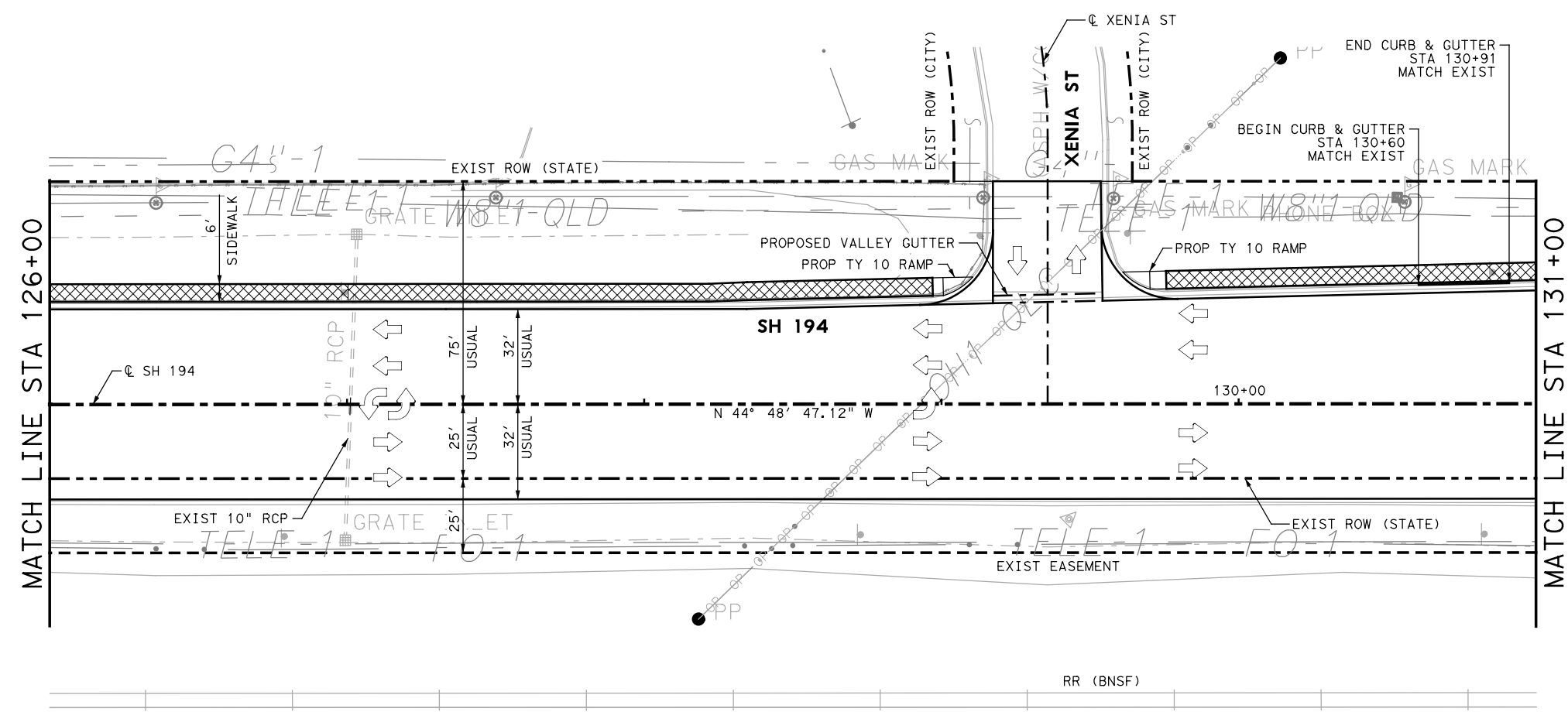
SH 194 FROM FM 3466 TO IH 27

PLAN AND PROFILE
STA 120+00 TO STA 126+00

HORZ SCALE: 1"=50'		SHEET 22 OF 26	
VERT SCALE: 1"=5'			
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:	
6	SEE TITLE SHEET	SH 194	
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	152
CONTROL:	SECTION:	JOB:	
0439	05	026	

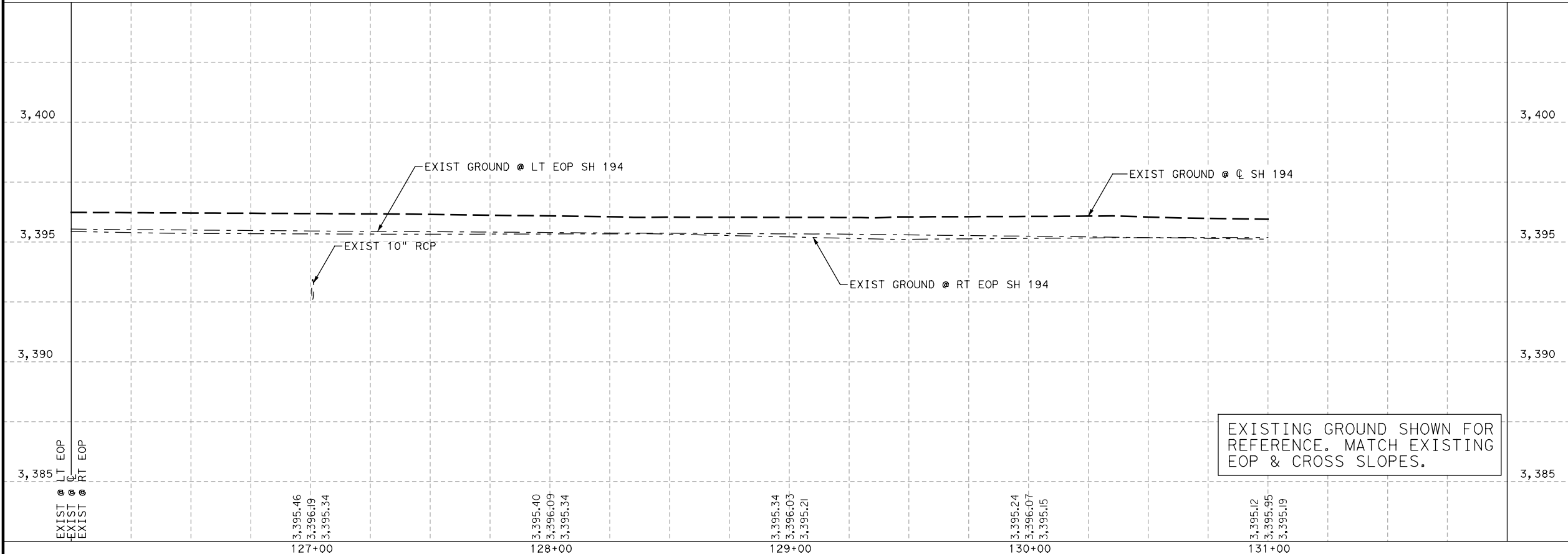
PLOT DRIVER: TXDOT_PDF_BW_LEVELS.plt
USER: Robinson DATE: 2/28/2023 TIME: 8:03:40 AM SCALE: 1:50
FILE: SH194_PP_22.dgn

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:36:32 PM SCALE: 1:50
 FILE: SH194_PP_23.dgn



- LEGEND**
- EXISTING DRIVEWAY
 - PROPOSED DRIVEWAY
 - EXISTING SIDEWALK
 - PROPOSED SIDEWALK
 - PROPOSED DRIVEWAY ID LABEL
 - MANHOLE

- NOTES**
1. ALL STATIONING IS BASED ON C SH 194 UNLESS OTHERWISE STATED.
 2. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 3. PROPOSED SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
 4. REFER TO SIGNING & PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
 5. REFER TO EXISTING UTILITIES SHEETS FOR ADDITIONAL INFORMATION.
 6. COORDINATE ALL REINFORCED CONCRETE PROTECTIVE CAP WORK WITH THE CITY OF PLAINVIEW PUBLIC WORKS DEPARTMENT.
 7. REFER TO MANHOLE APRON DETAIL SHEET FOR ADDITIONAL INFORMATION.
 8. REFER TO INTERSECTION DETAILS SHEET FOR CONC. VALLEY GUTTER INFORMATION.



EXISTING GROUND SHOWN FOR REFERENCE. MATCH EXISTING EOP & CROSS SLOPES.

NO.	DATE	REVISION	APPROVED

Engineers & Innovators, LLC
 TBPE REGISTRATION NO. F-18368

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SH 194 FROM FM 3466 TO IH 27

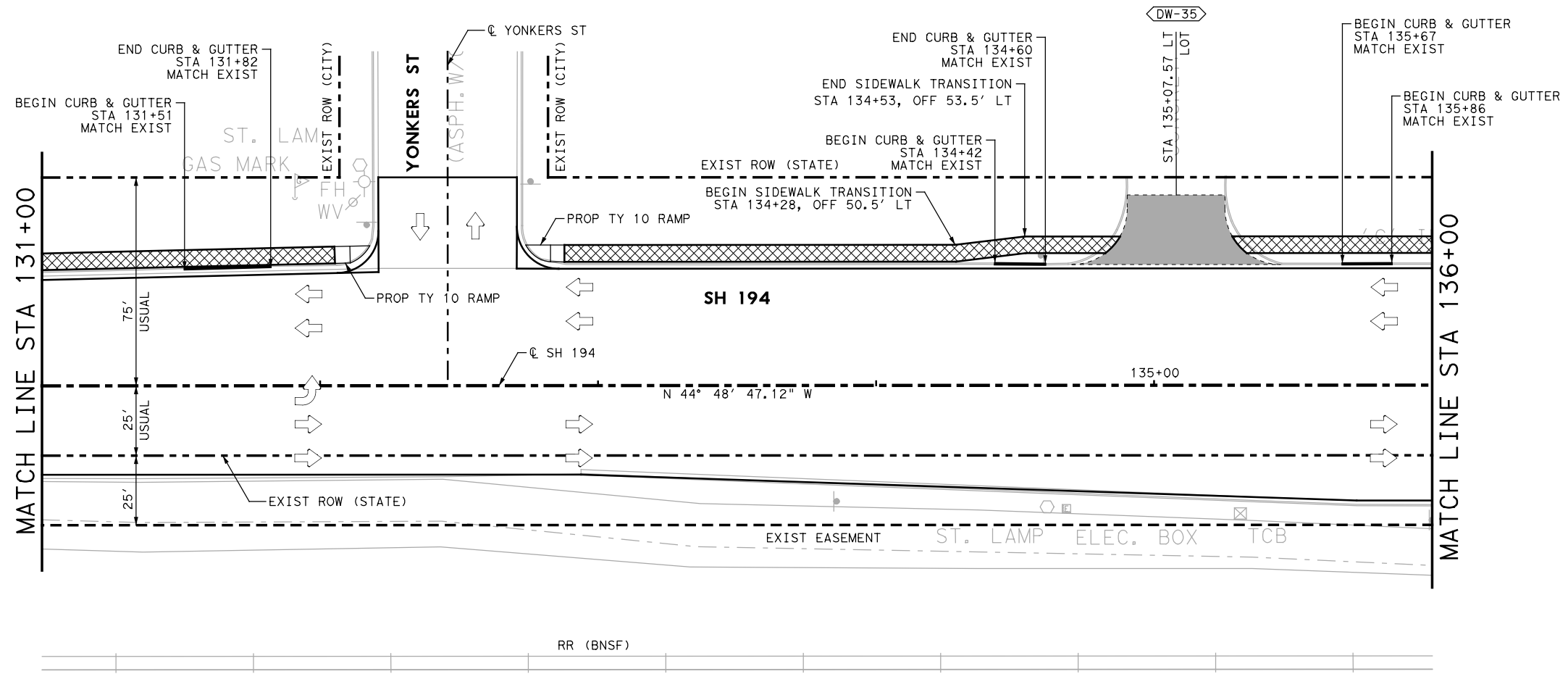
PLAN AND PROFILE
 STA 126+00 TO STA 131+00

HORZ SCALE: 1"=50'
 VERT SCALE: 1"=5'

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:
6	SEE TITLE SHEET	SH 194
STATE:	DISTRICT:	COUNTY:
TEXAS	LBB	HALE
CONTROL:	SECTION:	JOB:
0439	05	026

153

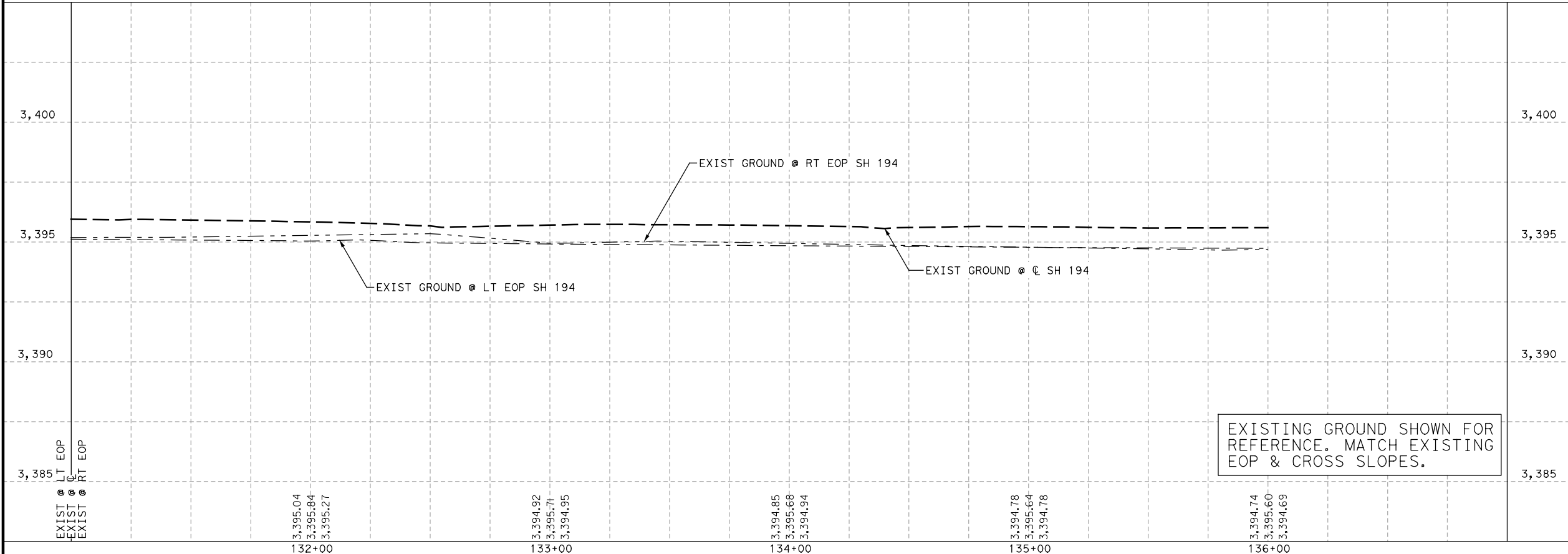
SHEET 23 OF 26



LEGEND

- EXISTING DRIVEWAY
- PROPOSED DRIVEWAY
- EXISTING SIDEWALK
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY ID LABEL
- MANHOLE

- NOTES**
1. ALL STATIONING IS BASED ON $\text{\textcircled{C}}$ SH 194 UNLESS OTHERWISE STATED.
 2. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 3. PROPOSED SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
 4. REFER TO SIGNING & PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
 5. REFER TO EXISTING UTILITIES SHEETS FOR ADDITIONAL INFORMATION.
 6. COORDINATE ALL REINFORCED CONCRETE PROTECTIVE APRON DETAIL SHEET WITH THE CITY OF PLAINVIEW PUBLIC WORKS DEPARTMENT.
 7. REFER TO MANHOLE APRON DETAIL SHEET FOR ADDITIONAL INFORMATION.
 8. REFER TO INTERSECTION DETAILS SHEET FOR CONC. VALLEY GUTTER INFORMATION.



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SH 194 FROM FM 3466 TO IH 27

PLAN AND PROFILE
STA 131+00 TO STA 136+00

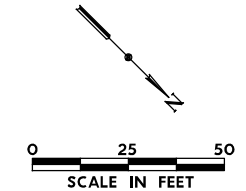
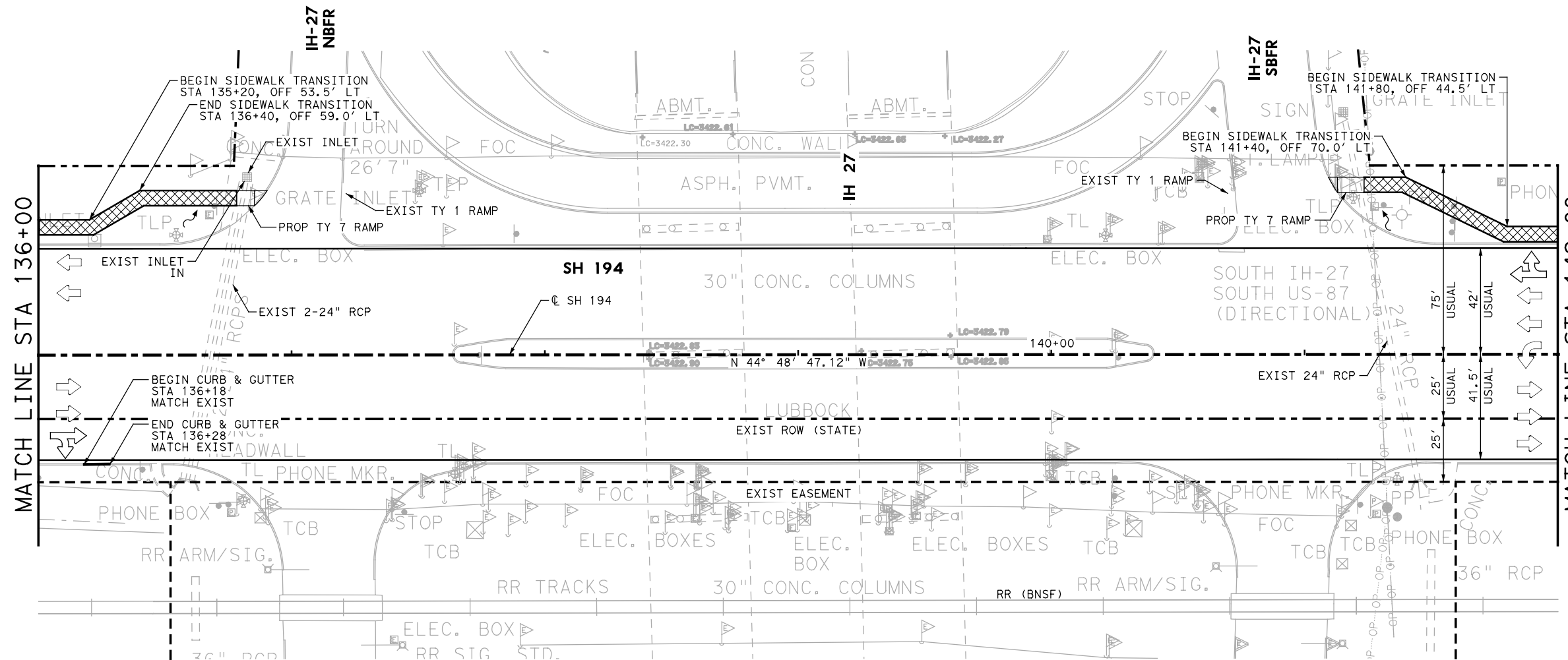
HORZ SCALE: 1"=50'
VERT SCALE: 1"=5'

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:
6	SEE TITLE SHEET	SH 194
STATE:	DISTRICT:	COUNTY:
TEXAS	LBB	HALE
CONTROL:	SECTION:	JOB:
0439	05	026

SHEET 24 OF 26
154

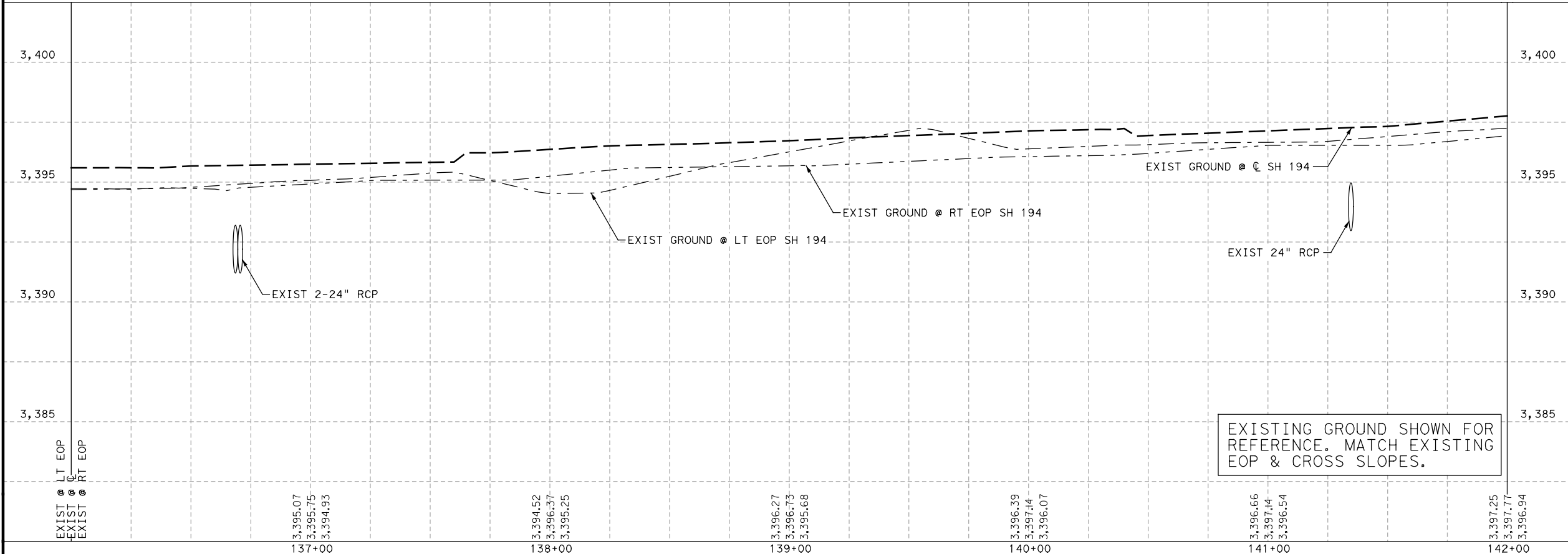
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 USER: Robinson DATE: 2/28/2023 TIME: 8:03:50 AM SCALE: 1:50
 FILE: SH194_PP_24.dgn

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.plt
 USER: Archibson DATE: 7/30/2024 TIME: 8:51:35 AM SCALE: 1:50
 FILE: SH194_PP_25.dgn

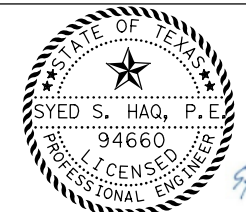


- LEGEND**
- EXISTING DRIVEWAY
 - PROPOSED DRIVEWAY
 - EXISTING SIDEWALK
 - PROPOSED SIDEWALK
 - PROPOSED DRIVEWAY ID LABEL
 - MANHOLE
 - DIRECTION OF DRAINAGE FLOW

- NOTES**
1. ALL STATIONING IS BASED ON $\text{\textcircled{C}}$ SH 194 UNLESS OTHERWISE STATED.
 2. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 3. PROPOSED SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
 4. REFER TO SIGNING & PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
 5. REFER TO EXISTING UTILITIES SHEETS FOR ADDITIONAL INFORMATION.
 6. COORDINATE ALL REINFORCED CONCRETE PROTECTIVE CAP WORK WITH THE CITY OF PLAINVIEW PUBLIC WORKS DEPARTMENT.
 7. REFER TO MANHOLE APRON DETAIL SHEET FOR ADDITIONAL INFORMATION.
 8. REFER TO INTERSECTION DETAILS SHEET FOR CONC. VALLEY GUTTER INFORMATION.



EXISTING GROUND SHOWN FOR REFERENCE. MATCH EXISTING EOP & CROSS SLOPES.



NO.	DATE	REVISION	APPROVED

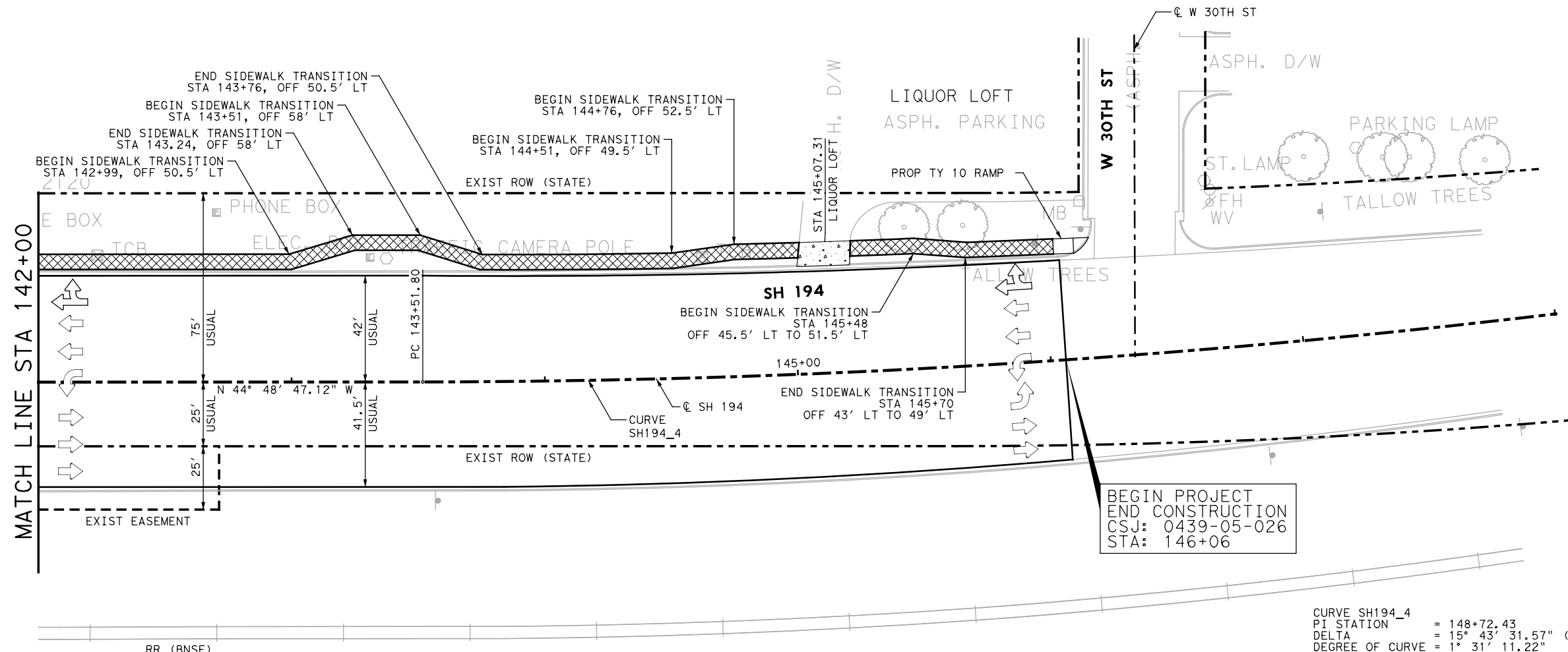


SH 194 FROM FM 3466 TO IH 27

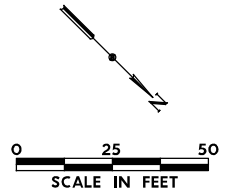
PLAN AND PROFILE
 STA 136+00 TO STA 142+00

HORZ SCALE: 1"=50'		VERT SCALE: 1"=5'		SHEET 25 OF 26
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:		HIGHWAY NO.:	
6	SEE TITLE SHEET		SH 194	
STATE:	DISTRICT:	COUNTY:	SHEET NO.:	
TEXAS	LBB	HALE	155	
CONTROL:	SECTION:	JOB:		
0439	05	026		

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:36:51 PM
 FILE: SH194_PP_26.dgn



CURVE SH194_4
 PI STATION = 148+72.43
 DELTA = 15° 43' 31.57" (LT)
 DEGREE OF CURVE = 1° 31' 11.22"
 TANGENT = 520.63
 LENGTH = 1,034.72
 RADIUS = 3,770.00
 PC STATION = 143+51.80
 PT STATION = 153+86.51



LEGEND

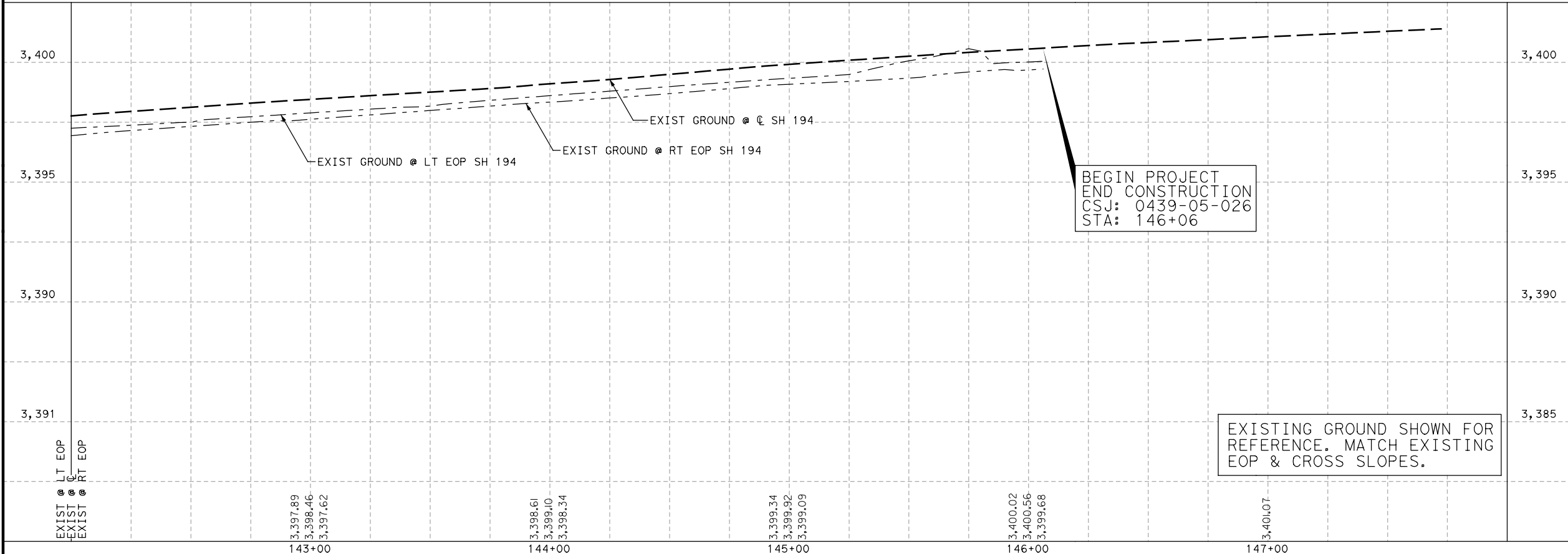
- EXISTING DRIVEWAY
- PROPOSED DRIVEWAY
- EXISTING SIDEWALK
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY ID LABEL
- MANHOLE

- NOTES**
- ALL STATIONING IS BASED ON C SH 194 UNLESS OTHERWISE STATED.
 - OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 - PROPOSED SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
 - REFER TO SIGNING & PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
 - REFER TO EXISTING UTILITIES SHEETS FOR ADDITIONAL INFORMATION.
 - COORDINATE ALL REINFORCED CONCRETE PROTECTIVE CAP WORK WITH THE CITY OF PLAINVIEW PUBLIC WORKS DEPARTMENT.
 - REFER TO MANHOLE APRON DETAIL SHEET FOR ADDITIONAL INFORMATION.
 - REFER TO INTERSECTION DETAILS SHEET FOR CONC. VALLEY GUTTER INFORMATION.

BEGIN PROJECT
 END CONSTRUCTION
 CSJ: 0439-05-026
 STA: 146+06

BEGIN PROJECT
 END CONSTRUCTION
 CSJ: 0439-05-026
 STA: 146+06

EXISTING GROUND SHOWN FOR REFERENCE. MATCH EXISTING EOP & CROSS SLOPES.



7/29/2024

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SH 194 FROM FM 3466 TO IH 27

PLAN AND PROFILE
 STA 142+00 TO END

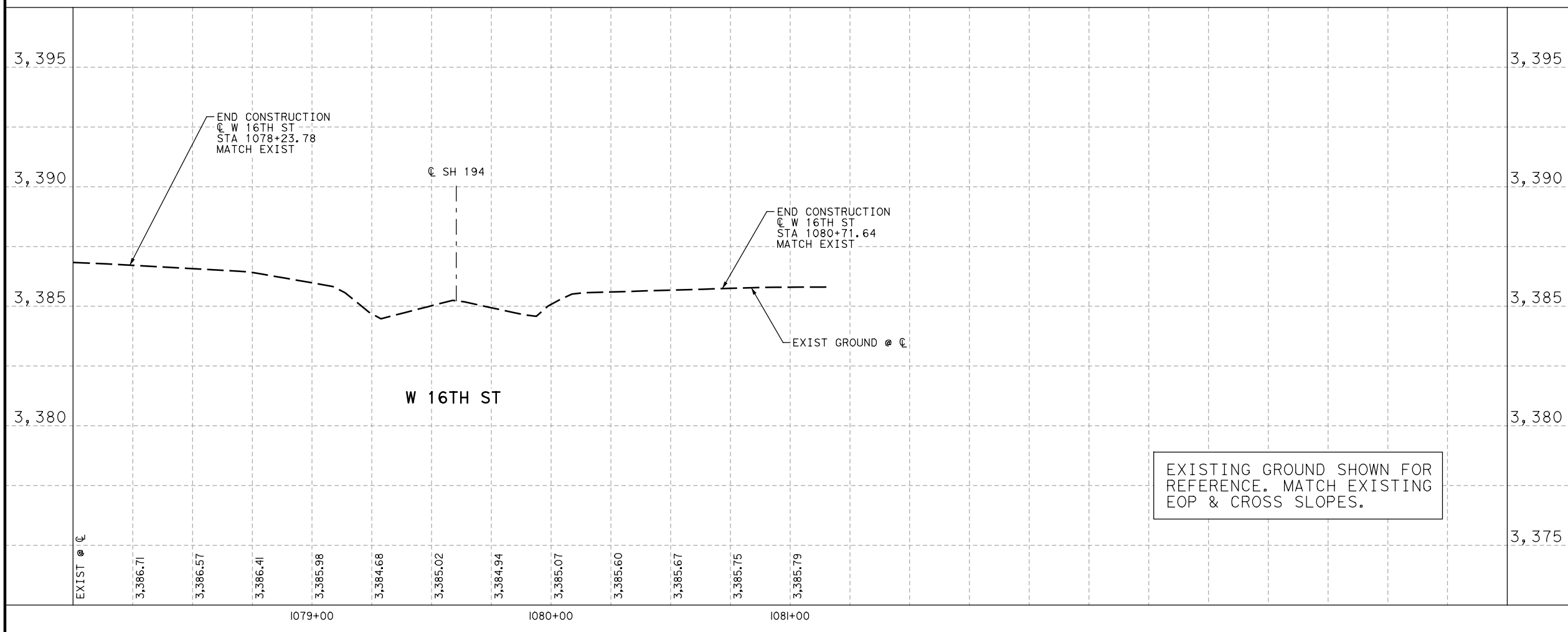
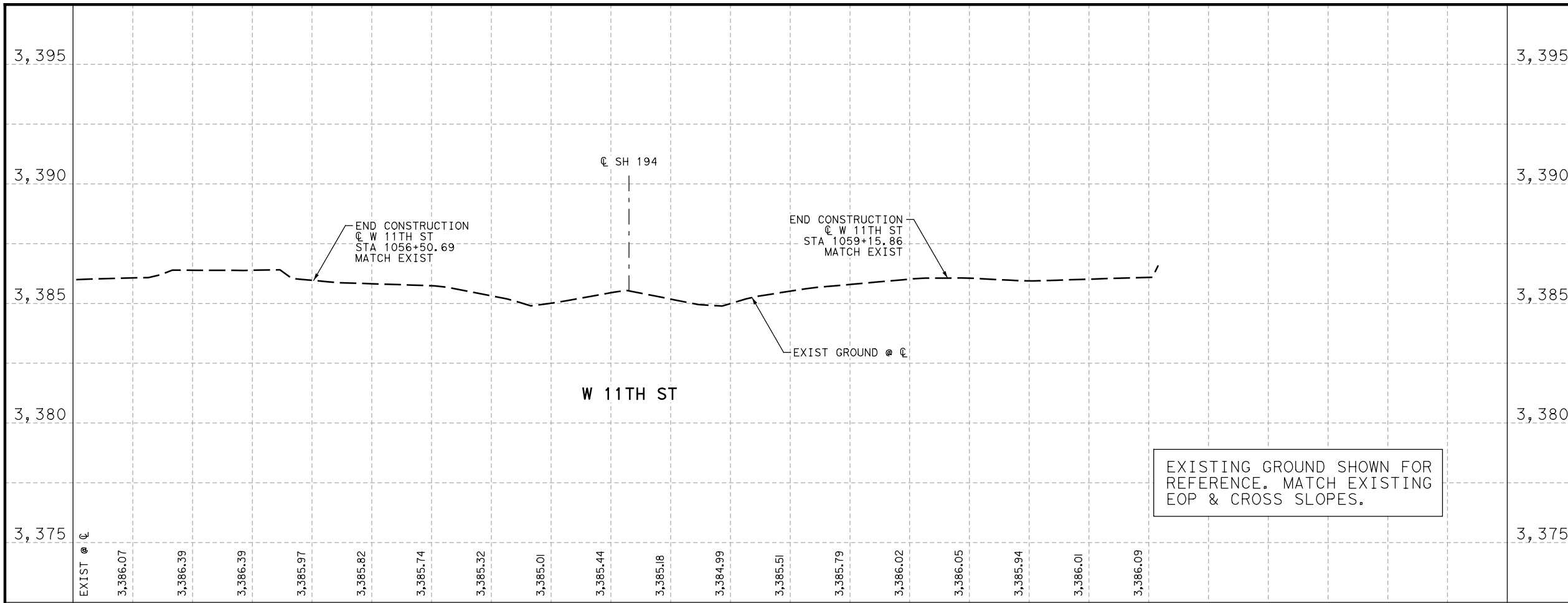
HORZ SCALE: 1"=50'
 VERT SCALE: 1"=5'

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:
6	SEE TITLE SHEET	SH 194
STATE:	DISTRICT:	COUNTY:
TEXAS	LBB	HALE
CONTROL:	SECTION:	JOB:
0439	05	026

156

SHEET 26 OF 26

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:36:55 PM SCALE: 1:50
 FILE: SH194_SSPProfile.dgn



3,395	3,395
3,390	3,390
3,385	3,385
3,380	3,380
3,375	3,375

3,395	3,395
3,390	3,390
3,385	3,385
3,380	3,380
3,375	3,375

NO.	DATE	REVISION	APPROVED

SH 194 FROM FM 3466 TO IH 27

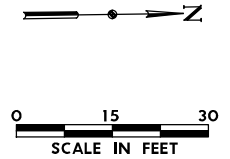
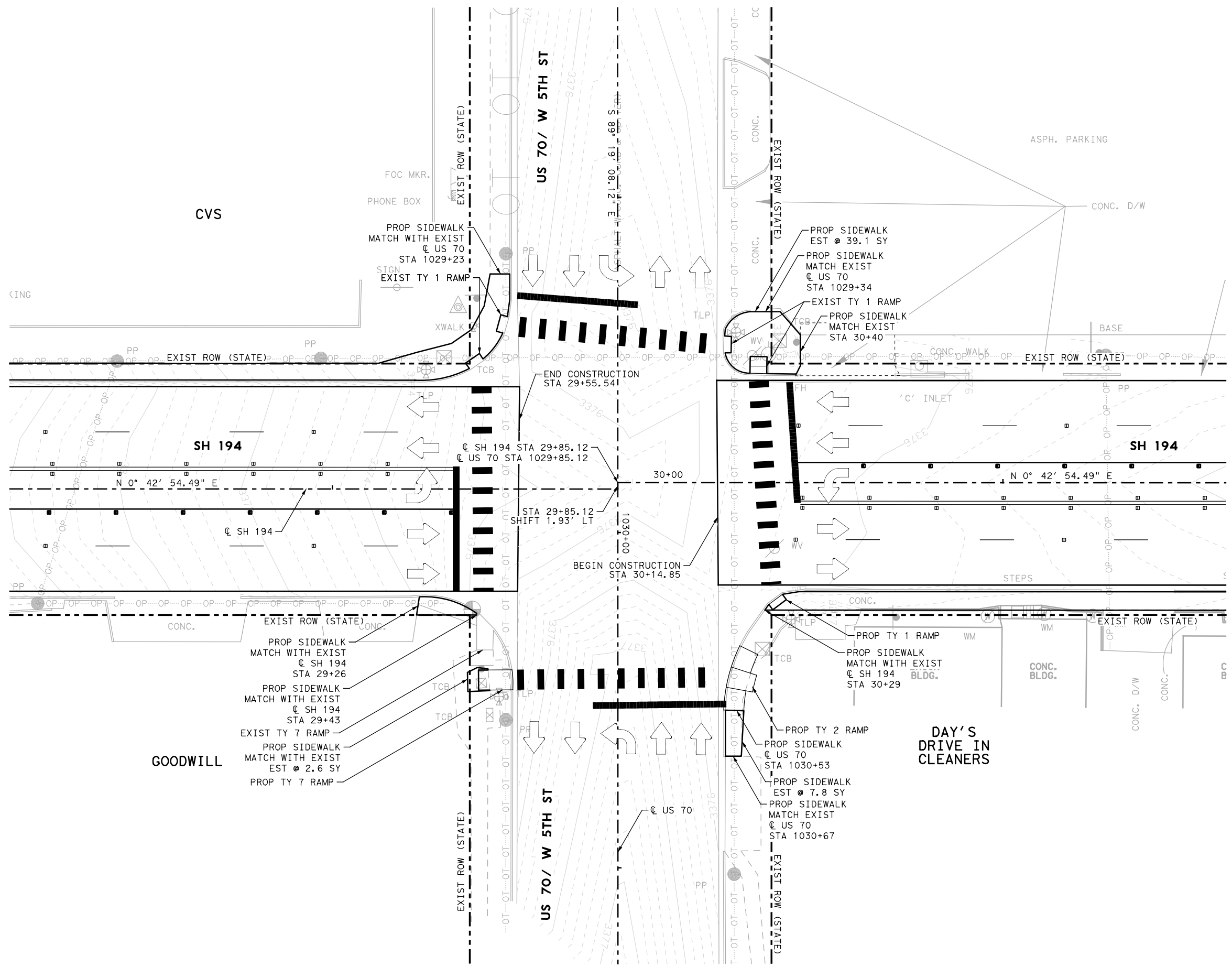
SIDE STREET PROFILE
 W 11TH ST
 W 16TH ST

HORZ SCALE: 1"=50'
 VERT SCALE: 1"=5'

FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026

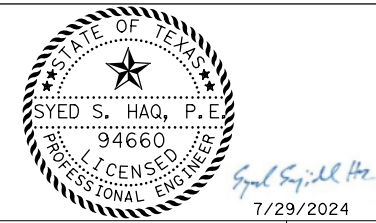
SHEET 1 OF 1
157

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: I94050_SH194_Pentable.tbl
 USER: Aronson DATE: 7/29/2024 TIME: 7:37:01 PM SCALE: 1:30.0018
 FILE: SH194_Inter-sectionLayout1.dgn



LEGEND
 ← DIRECTION OF TRAFFIC

- NOTES**
1. ALL STATIONING IS BASED ON C SH 194 UNLESS OTHERWISE STATED.
 2. OUTSIDE LANE WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 3. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 4. REFER TO TRAFFIC SIGNAL SHEETS FOR ADDITIONAL INFORMATION.
 5. MATCH EXISTING ELEVATION AT EDGE OF PAVEMENT.



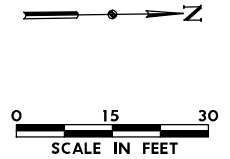
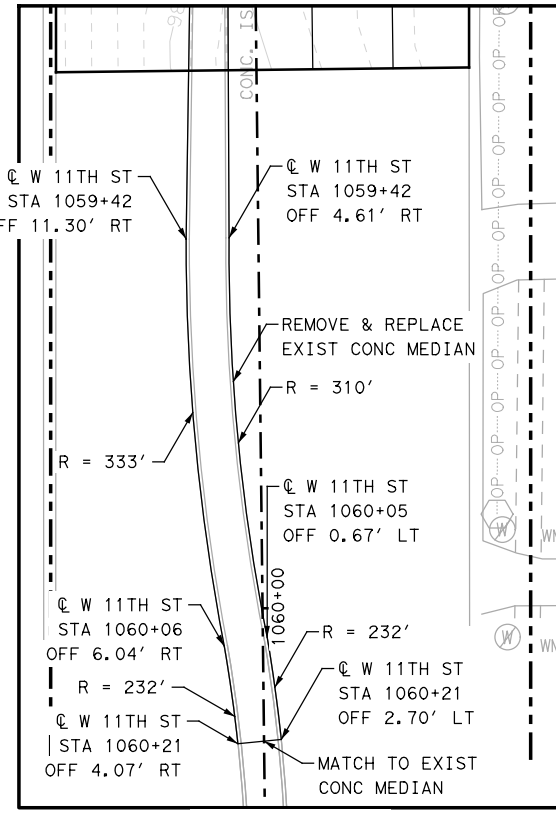
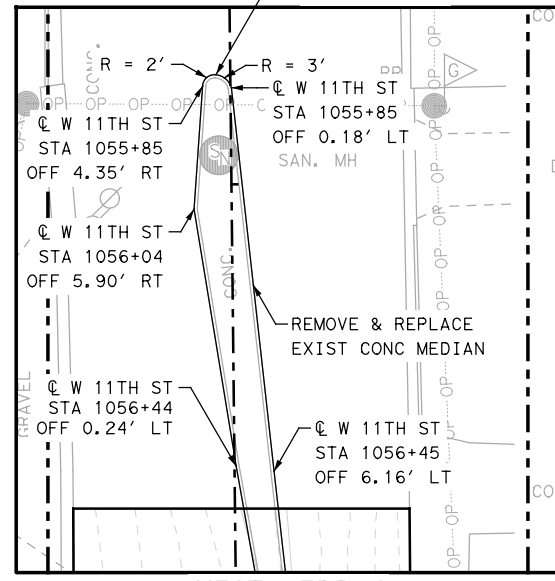
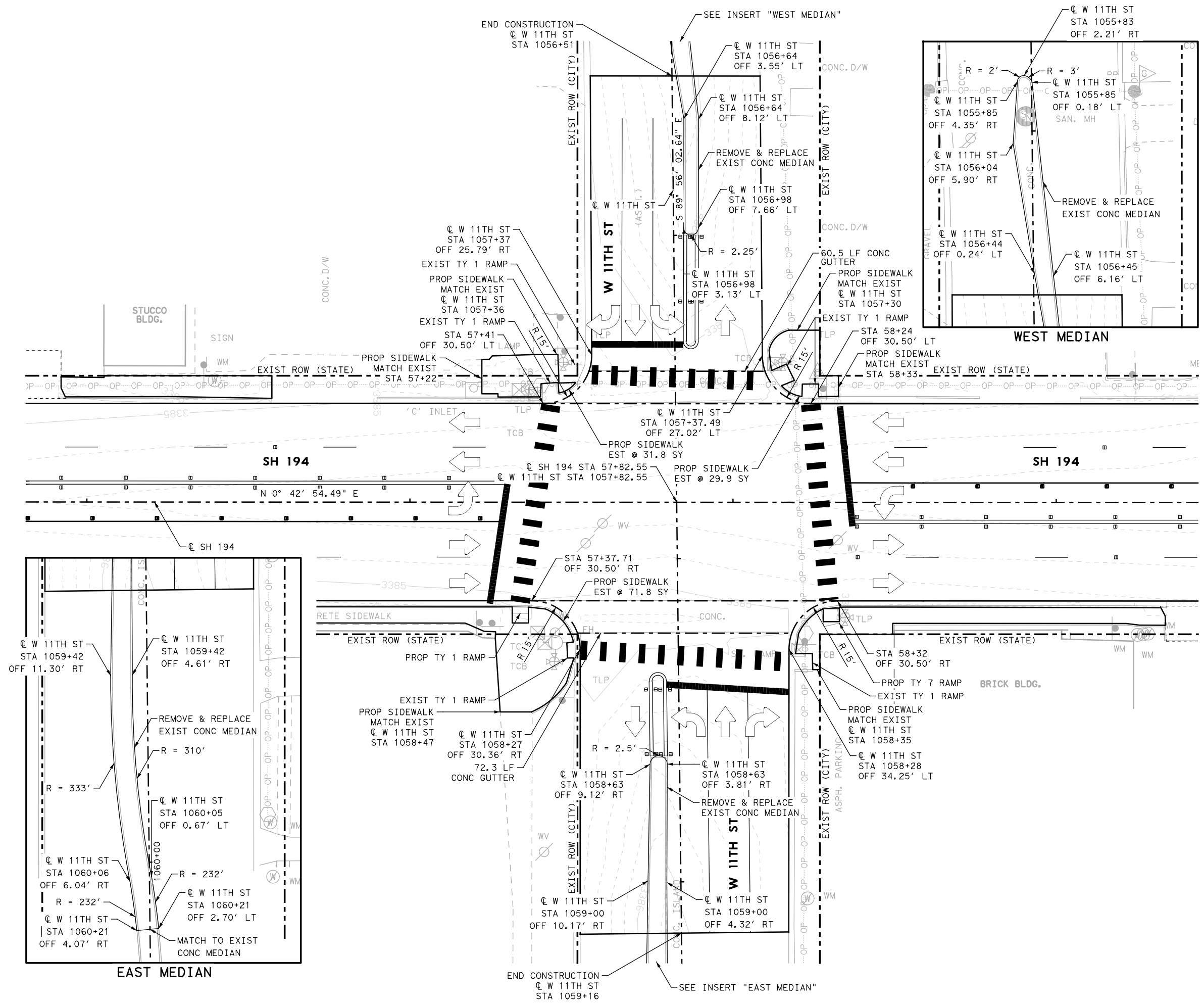
NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27
 INTERSECTION LAYOUT
 SH 194 AT US 70

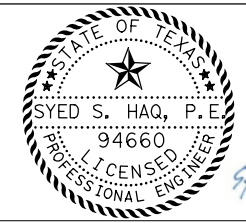
HORZ SCALE: 1"=30'			SHEET 1 OF 5
FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	158
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: I94050_SH194_Pentable.tbl
 USER: Aronson DATE: 7/29/2024 TIME: 7:37:06 PM SCALE: 1:30.0018
 FILE: SH194_IntersectionLayout2.dgn



LEGEND
 ← DIRECTION OF TRAFFIC

- NOTES**
1. ALL STATIONING IS BASED ON \odot SH 194 UNLESS OTHERWISE STATED.
 2. OUTSIDE LANE WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 3. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 4. REFER TO TRAFFIC SIGNAL SHEETS FOR ADDITIONAL INFORMATION.
 5. MATCH EXISTING ELEVATION AT EDGE OF PAVEMENT.
 6. CONTRACTOR TO RECONSTRUCT MEDIAN CONCRETE BARRIER TO THE ORIGINAL LOCATION ALONG W 11TH STREET.



7/29/2024

NO.	DATE	REVISION	APPROVED

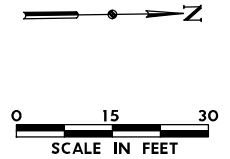
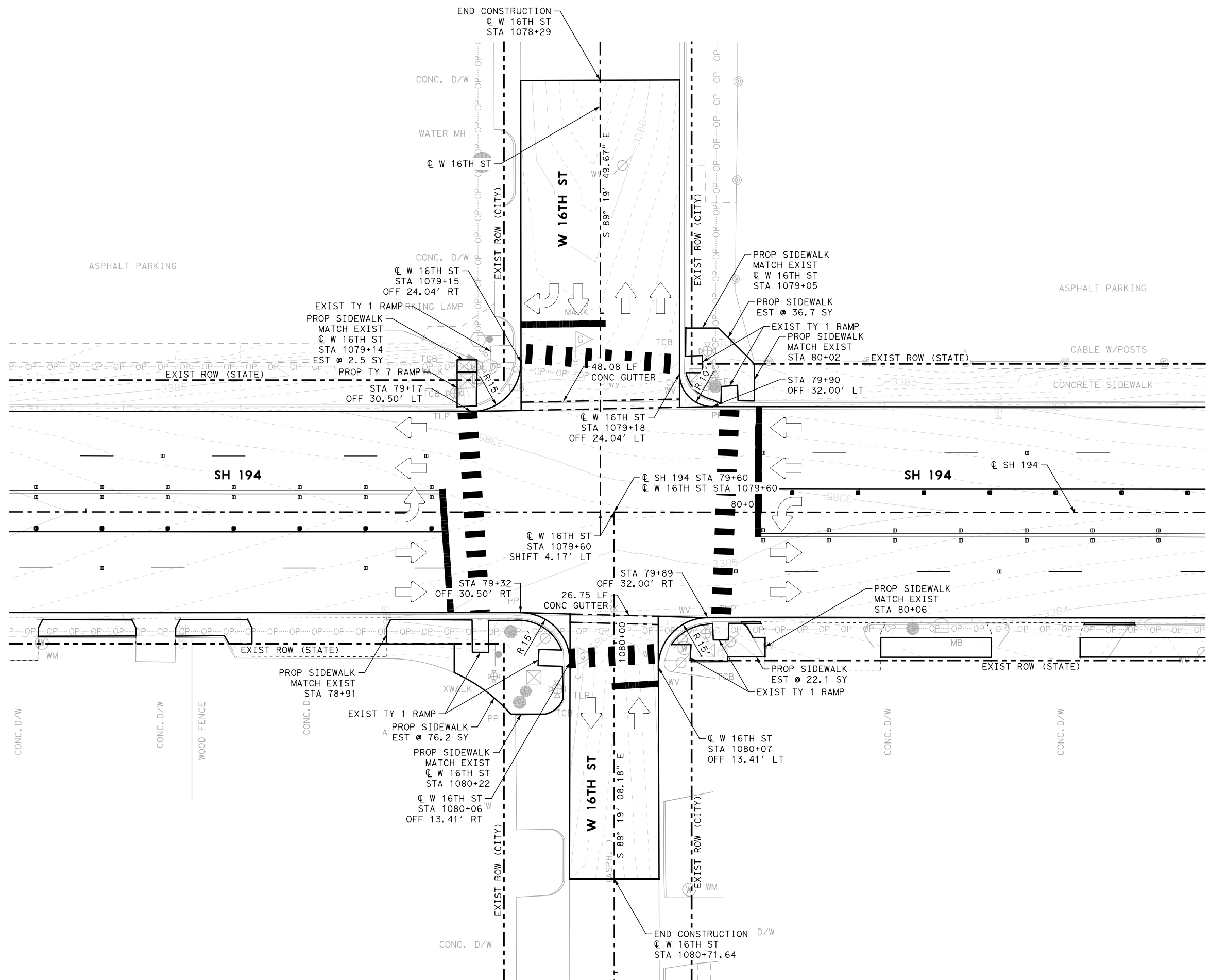


SH 194 FROM FM 3466 TO IH 27

INTERSECTION LAYOUT
 SH 194 AT W 11TH ST

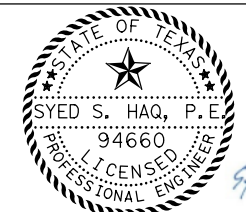
HORZ SCALE: 1"=30'			SHEET 2 OF 5
FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	159
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024
 FILE: SH194_IntersectionLayout3.dgn



LEGEND
 ← DIRECTION OF TRAFFIC

- NOTES**
1. ALL STATIONING IS BASED ON C SH 194 UNLESS OTHERWISE STATED.
 2. OUTSIDE LANE WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 3. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 4. REFER TO TRAFFIC SIGNAL SHEETS FOR ADDITIONAL INFORMATION.
 5. MATCH EXISTING ELEVATION AT EDGE OF PAVEMENT.



7/29/2024

NO.	DATE	REVISION	APPROVED

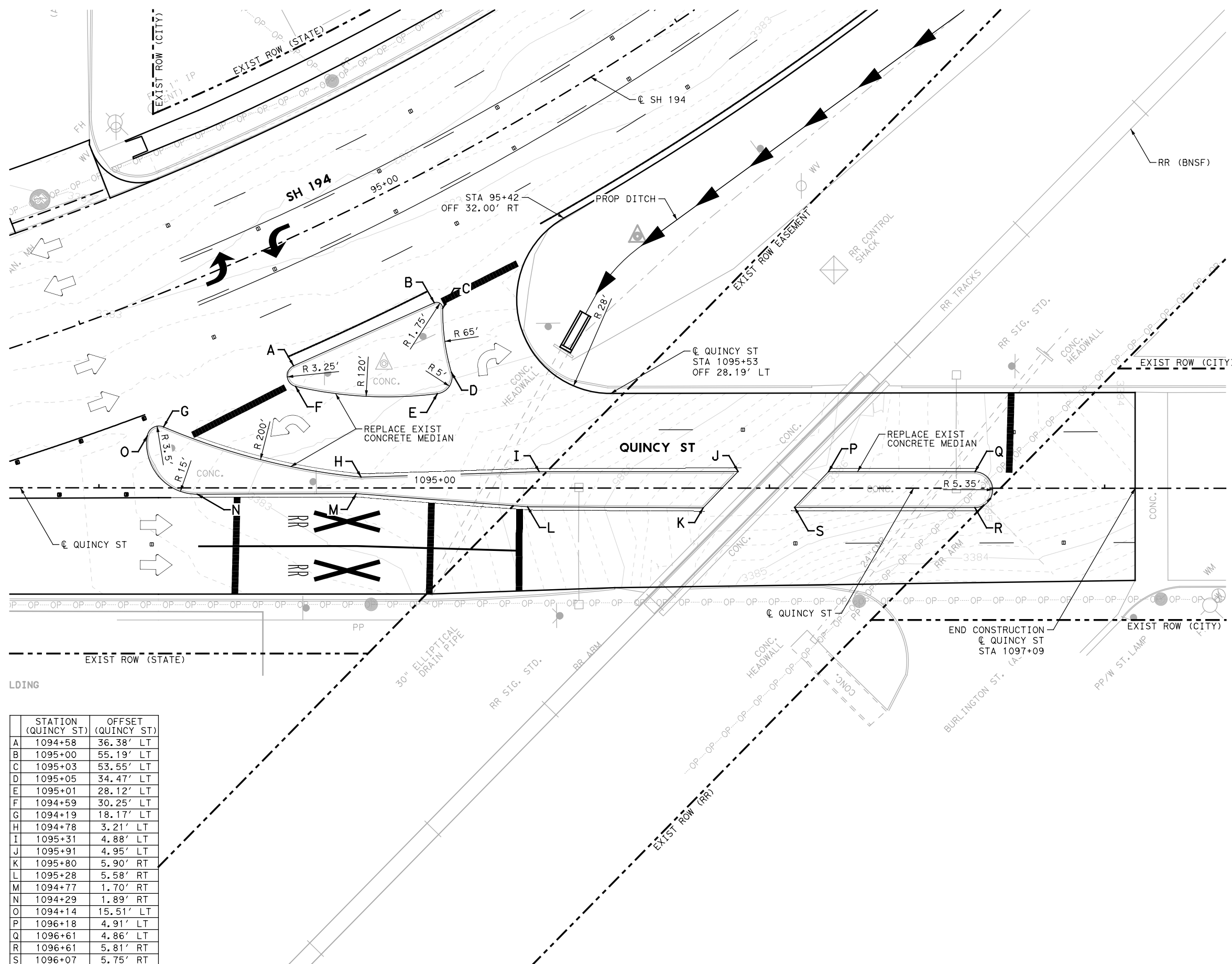


SH 194 FROM FM 3466 TO IH 27

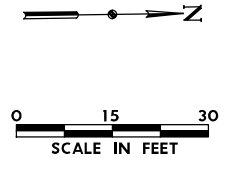
INTERSECTION LAYOUT
 SH 194 AT W 16TH ST

HORZ SCALE: 1"=30'			SHEET 3 OF 5
FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	160
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: I94050_SH194_Pentable.tbl
 USER: Arabinson DATE: 7/29/2024 TIME: 7:37:16 PM SCALE: 1:30.0018
 FILE: SH194_IntersectionLayout4.dgn

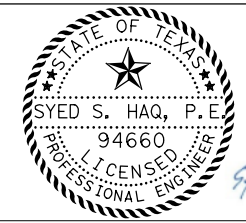


	STATION (QUINCY ST)	OFFSET (QUINCY ST)
A	1094+58	36.38' LT
B	1095+00	55.19' LT
C	1095+03	53.55' LT
D	1095+05	34.47' LT
E	1095+01	28.12' LT
F	1094+59	30.25' LT
G	1094+19	18.17' LT
H	1094+78	3.21' LT
I	1095+31	4.88' LT
J	1095+91	4.95' LT
K	1095+80	5.90' RT
L	1095+28	5.58' RT
M	1094+77	1.70' RT
N	1094+29	1.89' RT
O	1094+14	15.51' LT
P	1096+18	4.91' LT
Q	1096+61	4.86' LT
R	1096+61	5.81' RT
S	1096+07	5.75' RT



LEGEND
 ← DIRECTION OF TRAFFIC

- NOTES**
1. ALL STATIONING IS BASED ON C SH 194 UNLESS OTHERWISE STATED.
 2. OUTSIDE LANE WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 3. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
 4. REFER TO TRAFFIC SIGNAL SHEETS FOR ADDITIONAL INFORMATION.
 5. MATCH EXISTING ELEVATION AT EDGE OF PAVEMENT.

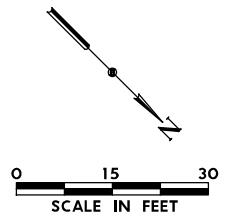


NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27
 INTERSECTION LAYOUT
 SH 194 AT QUINCY ST

HORZ SCALE: 1"=30'		SHEET 4 OF 5	
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET	HIGHWAY NO. SH 194	
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 161
CONTROL 0439	SECTION 05	JOB 026	

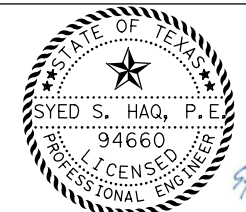
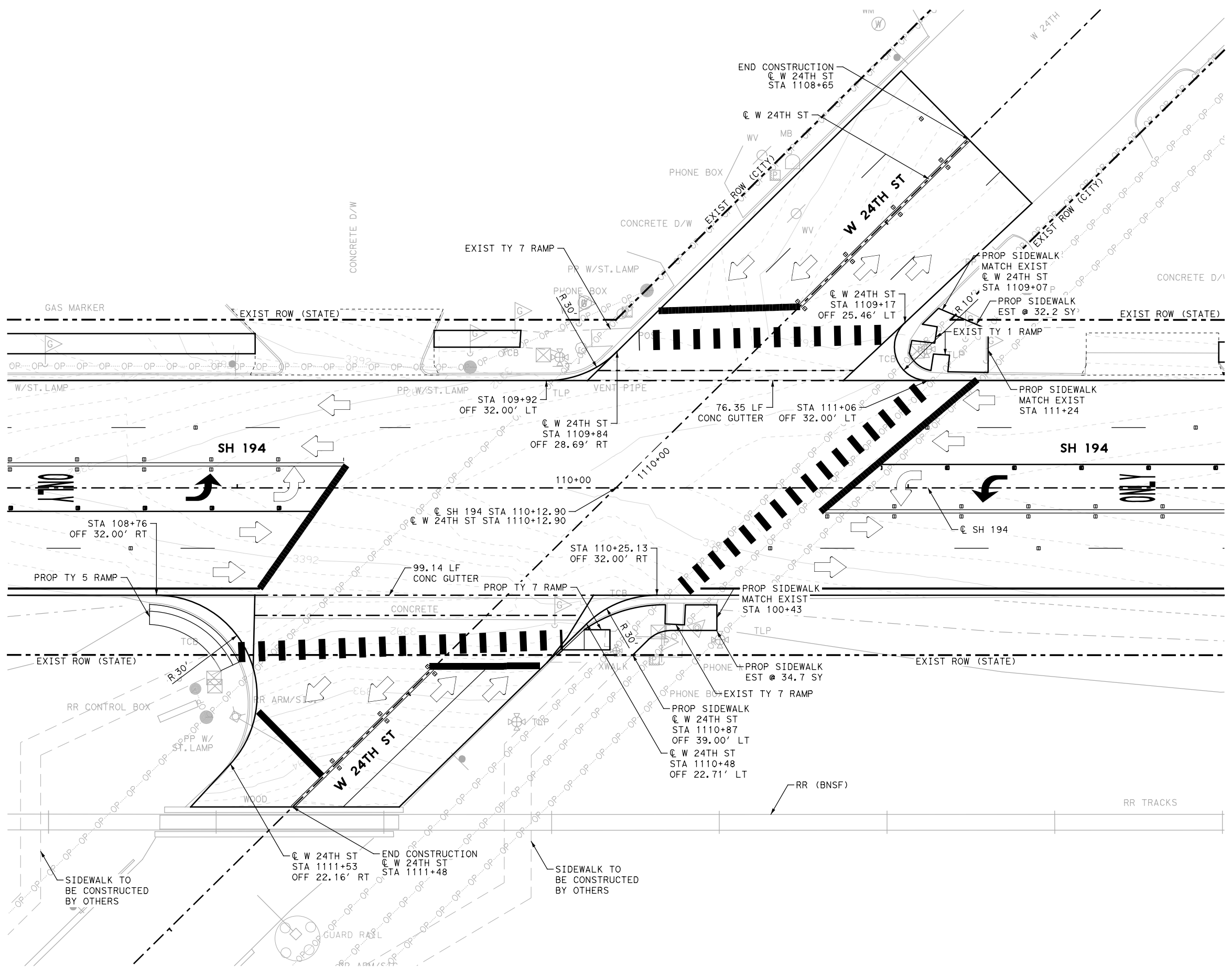


LEGEND



NOTES

1. ALL STATIONING IS BASED ON C SH 194 UNLESS OTHERWISE STATED.
2. OUTSIDE LANE WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
3. OVERALL ROADWAY WIDTH VARIES. MATCH EXISTING EDGE OF PAVEMENT.
4. REFER TO TRAFFIC SIGNAL SHEETS FOR ADDITIONAL INFORMATION.
5. MATCH EXISTING ELEVATION AT EDGE OF PAVEMENT.



7/29/2024

NO.	DATE	REVISION	APPROVED



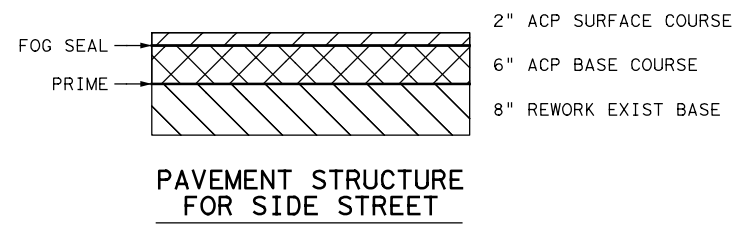
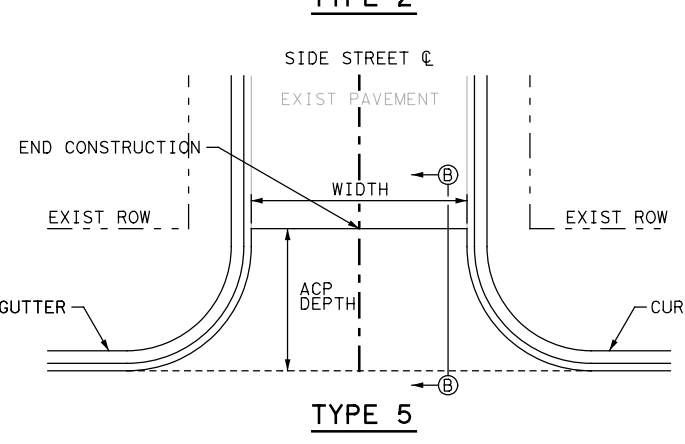
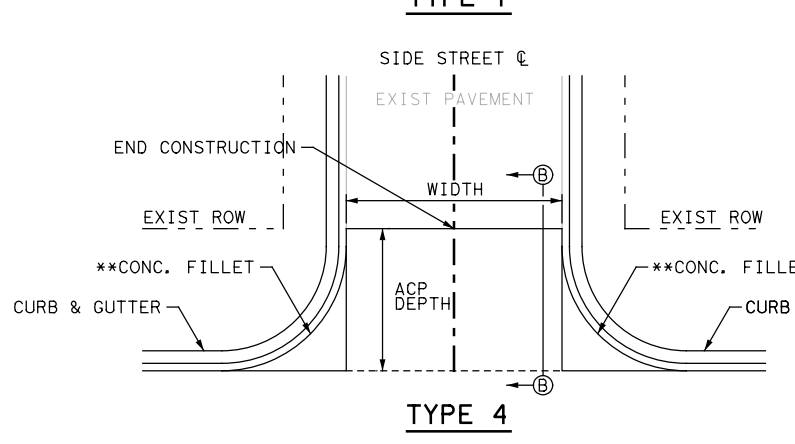
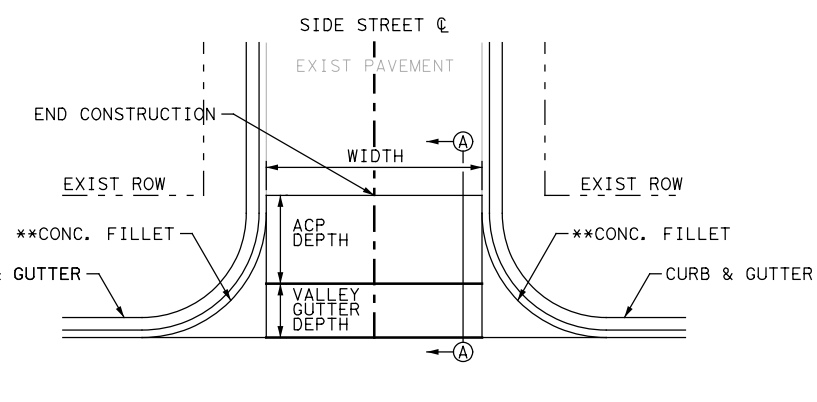
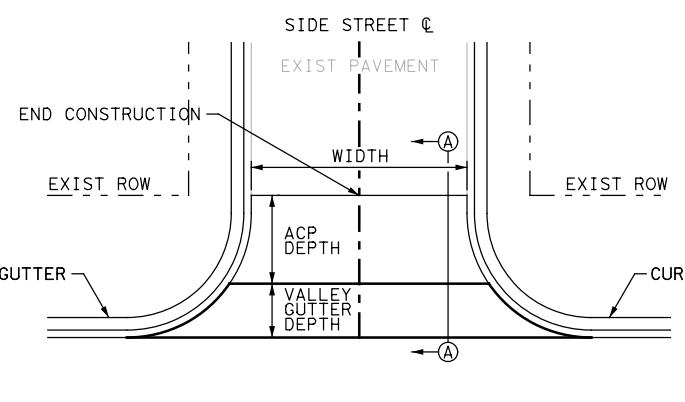
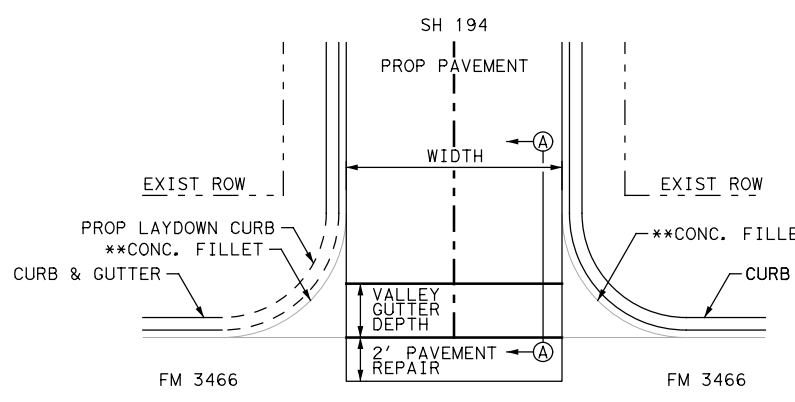
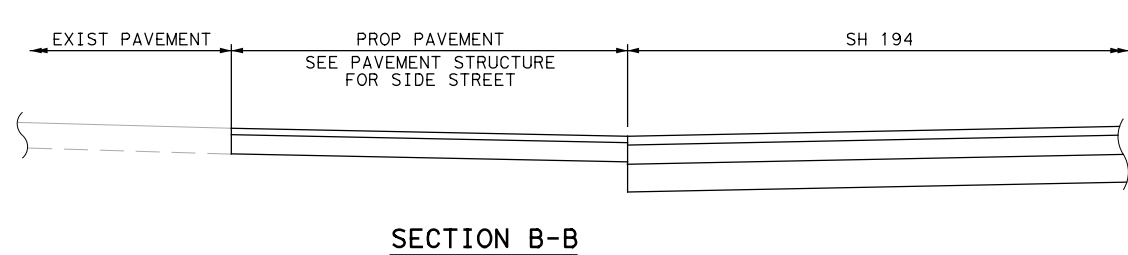
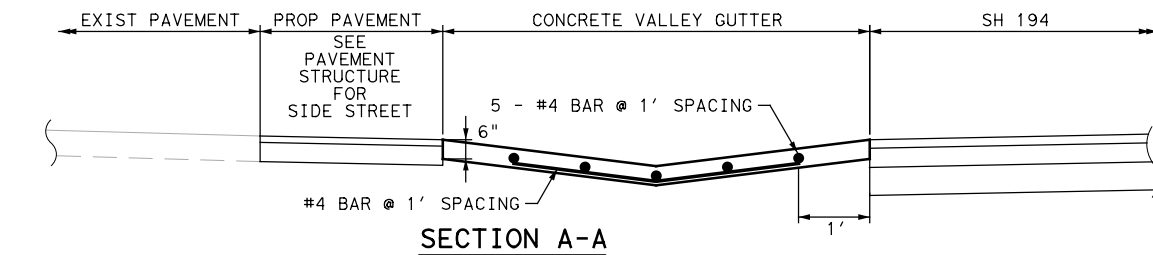
SH 194 FROM FM 3466 TO IH 27

INTERSECTION LAYOUT
SH 194 AT W 24TH ST

HORZ SCALE: 1"=30'			SHEET 5 OF 5
FED. RD. DIV. NO:	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	162
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: I94050_SH194_Pentable.tbl
 USER: Arabinson DATE: 7/29/2024 TIME: 7:37:23 PM SCALE: 1:30
 FILE: SH194_IntersectionLayout5.dgn

INTERSECTION	STATION	TYPE		WIDTH (FT)		VALLEY GUTTER DEPTH (FT)		ACP DEPTH (FT)		CONC (SY)		ACP (SY)		251 6018	310 6009	315 6004	529 6030	536 6002	3076 6014	3080 6008
		LT	RT	LT	RT	LT	RT	LT	RT	LT	RT	LT	RT	REWORK BS MTL (TY D) (8") (ORD COMP)	PRIME COAT (MC-30)	FOG SEAL (CSS-1H)	CONC CURB & GUTTER (VALLEY GUTTER)	CONC MEDIAN	D-GR HMA TY-B PG76-28	STONE-MTRX-ASP H SMA-D SAC-A PG76-28
														STA	GAL	GAL	LF	SY	TON	TON
FM 3466	0+33	1		61		2.5				17										
W 4TH ST	26+22	2	2	36	25	2.5	2.5	4.5	4.6	13	10	19	14	0.090	7	5	104		12	4
US 70/W 5TH ST	29+85																			
W 6TH ST	34+69	3	3	38	35	2.5	2.5	2.7	6.3	19	19	11	24	0.090	7	5	73		12	4
W 7TH ST	39+44		3		28		2.5		7.4		18		23	0.075	5	3	28		8	3
W 8TH ST	44+19	3	3	35	33	2.5	2.5	5.6	8.6	19	19	22	31	0.142	11	8	68		18	6
W 9TH ST	48+94	3	3	36	36	2.5	2.5	5.8	10.7	19	21	23	33	0.140	11	8	72		19	7
W 10TH ST	52+93	3	3	34	32	2.5	2.5	5.9	8.1	19	19	22	29	0.140	10	8	68		18	6
W 11TH ST*	57+83	2	2	55	66	10.0	10.0	91.4	92.8	69	82	535	666	1.841	228	171	177	187	394	135
W 12TH ST	62+68	3	3	27	27	2.5	2.5	6.3		18	18	19	23	0.140	8	6	54		15	5
W 13TH ST (LT)	65+93	3		37		2.5		6.5	7.7	18		27		0.065	5	4	37		9	3
W 13TH ST (RT)	67+43		3		27		2.5		7.5		18		22	0.075	4	3	27		8	3
W 14TH ST	72+17		3		27		2.5		7.3		18		22	0.073	4	3	27		8	3
W 15TH ST	76+94		3		27		2.5		7.1		18		22	0.071	4	3	27		7	3
W 16TH ST*	79+60	3	3	48	27	2.5	2.5	97.3	96.1	21	18	520	288	1.747	150	113	75		259	89
W 17TH ST	83+05	3		27		2.5		10.6		18		32		0.106	6	5	27		11	4
W 18TH ST	86+51	3		27		3.0		10.3		17		30		0.103	6	5	27		11	4
W 19TH ST	90+18	3		27		3.0		10.4		17		31		0.104	6	5	27		11	4
QUINCY ST*	91+16		5		56				323.3				2417	3.604	446	334		345	769	263
W 20TH ST	94+05	3		30		3.0		15.4		22		52		0.154	10	8	30		18	6
SMYTH ST	106+35	3		37		2.5		15.7		30		65		0.220	13	10	37		23	8
W 24TH ST*	110+13	3	3	55	62	3.0	6.0	145.2	135.6	42	94	603	479	1.817	217	162	177		374	128
XENIA ST	129+36	3		36		2.5		38.1		40		155		0.381	31	23	37		53	18
YONKERS ST	132+46	4		50				33.2		10		185		0.334	37	28			64	22
I-27 FRONTAGE RD (SOUTH)	137+11																			
I-27 FRONTAGE RD (NORTH)	140+90																			
SUBTOTALS										428	372	2351	4093							
TOTALS										800		6444		11.512	1,226	920	1,260	532	2,121	728



STATE OF TEXAS
 SYED S. HAQ, P.E.
 94660
 LICENSED PROFESSIONAL ENGINEER
 7/29/2024

NO. DATE REVISION APPROVED

infraTECH
 Engineers & Innovators, LLC
 TBPE REGISTRATION NO. F-18368

Texas Department of Transportation
 © 2024

SH 194 FROM FM 3466 TO IH 27
 SIDE STREET DETAIL

FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	163
CONTROL	SECTION	JOB	
0439	05	026	

*CONSTRUCTION EXTENDS BEYOND ROW
 **ITEM SUBSIDIARY TO PAVEMENT QUANTITIES.

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: I94050_SH194_Pentable.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 7:37:28 PM SCALE: 1/1
 FILE: SH194_IntersectionDetail.dgn

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcfp PENTABLE: I94050_SH194_Pentable.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 7:37:35 PM SCALE: 1:1
 FILE: SH194_DrivewayDetail.dgn

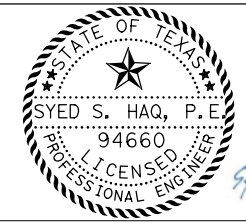
DRIVEWAY SUMMARY

DRIVEWAY NUMBER	RESIDENTIAL (R) COMMERCIAL (C)	STATION	RIGHT/LEFT	RADIUS (R = FT) FLARE (F)	DRIVEWAY WIDTH	V	W	X	Y	Z	TEMP CONSTRUCTION EASEMENT NEEDED YES/NO	104 6017	530 6004
						FT	FT	FT	FT	%		%	REMOVING CONC (DRIVEWAYS) SY
DW-36	C	30+53.68	LT	F		28	15.7	0.4	3.6	8.0	8.0	49.4	49.9
DW-37	C	35+55.13	RT	F		90	13.0	0.5	5.8	3.5	6.0	107.3	127.9
DW-38	C	36+40.06	RT	F		26	13.0	0.5	5.8	6.7	6.7	23.3	29.3
DW-39	C	37+15.47	RT	F		16	7.2	0.5		1.5		12.6	13.1
DW-40	C	38+01.01	RT	F		18	9.4	0.5	2.2	6.0	6.0	19.3	19.8
DW-41	C	41+70.86	RT	F		18	13.4	0.5	7.1	6.0	6.0	31.9	32.4
DW-42	C	42+10.85	RT	F		30	10.0	0.5	3.5	6.0	6.0	33.3	33.8
DW-43	C	42+97.56	RT	F		28	9.5	0.5	4.2	3.5	3.5	29.5	30.0
DW-44	C	44+82.91	RT	F		20	6.6	6.6		7.8		14.7	15.2
DW-45	C	45+42.93	RT	F		20	7.2	7.2		9.8		15.9	16.8
DW-46	R	49+97.15	LT	F		13	17.6	0.5	12.0	6.0	9.5	27.6	27.2
DW-47	R	55+23.05	LT	F		9	8.0	0.5	1.4	6.0	6.1	8.5	8.8
DW-48	R	55+77.66	LT	F		29	14.8	0.5	9.1	6.0	6.0	47.5	48.3
DW-49	R	59+48.67	RT	F		29	10.8	0.5	5.2	6.0	8.1	35.0	35.8
DW-50	C	60+17.74	RT	F		18	27.0	0.5	20.5	6.0	6.0	17.6	53.7
DW-51	R	60+39.97	RT	F		9	10.6	0.5	6.0	6.0	11.8	13.7	14.2
DW-52	R	60+87.09	RT	F		11	7.0	0.5	0.4	3.0	3.5	11.1	11.2
DW-53	R	61+48.50	RT	F		11	10.9	0.5	4.3	6.0	14.1	16.6	17.7
DW-54	R	64+12.35	RT	F		10	10.8	0.5	4.1	6.0	11.1	14.1	15.2
DW-55	R	64+66.35	RT	F		11	12.9	0.5	6.9	6.0	7.0	16.0	15.8
DW-56	C	64+80.13	LT	F		34	10.7	0.6	4.5	6.0	6.9	39.3	40.0
DW-57	R	65+10.41	RT	F		9	8.6	0.5	2.6	5.7	5.7	9.7	8.8
DW-58	R	65+92.35	RT	F		11	15.8	0.5	9.6	6.0	7.9	20.0	20.6
DW-71	C	66+64.21	RT	F		75	10.5	0.5	4.0	6.0	6.4	88.2	88.4
DW-59	R	69+13.90	LT	F		19	12.6	0.5	5.3	6.0	8.9	26.8	27.2
DW-60	R	69+70.41	LT	F		12	9.8	0.5	4.3	6.0	6.0	13.3	13.7
DW-61	R	70+30.50	RT	F		25	9.8	0.5	1.8	6.0	6.0	27.5	28.2
DW-62	R	71+06.78	RT	F		25	15.3	0.5	9.0	6.0	10.1	40.6	43.2
DW-63	C	73+19.76	RT	F		25	8.3	0.5		1.8		24.3	24.8
DW-01	C	73+82.44	RT	F		34	9.7	2.0	1.0	4.3	-0.8	9.3	34.2
DW-02	C	74+30.12	RT	F		36	9.7	1.8	2.1	6.0	6.0	11.0	40.0
DW-03	C	74+95.68	RT	F		31	9.7	1.8	5.8	6.0	6.0	9.9	47.0
DW-04	C	75+42.76	RT	F		35	9.7	1.9	6.6	6.0	6.0	16.9	57.5
DW-05	C	76+12.98	RT	F		36	9.6	1.9	10.3	6.0	4.7	16.9	72.6
DW-64	C	77+78.13	RT	F		15	12.9	0.5	7.3	6.0	9.7	21.0	21.8
DW-65	C	78+21.22	RT	F		12	7.9	0.5	2.4	6.0	9.8	10.5	11.0
DW-66	C	78+68.61	RT	F		41	11.7	0.5	3.8	6.0	7.8	58.4	53.6
DW-06	C	80+23.73	RT	F		35	13.0	4.6	3.9	6.0	-1.5	56.7	56.9
DW-07	C	80+88.25	RT	F		27	12.9	4.5	2.1	6.0	5.6	49.7	38.2
DW-08	R	81+58.24	RT	F		25	12.9	4.4	14.7	6.0	6.0	68.5	70.7
DW-09	R	82+14.43	RT	F		22	12.9	4.4	13.6	6.0	6.0	58.1	60.2
DW-10	R	83+07.18	RT	F		25	12.9	4.3	15.8	6.0	6.0	75.2	72.0
DW-11	R	83+81.05	RT	F		18	12.8	4.4	23.1	6.0	6.0	67.3	68.6
DW-12	R	84+42.93	RT	F		18	12.8	4.5	8.3	6.0	6.0	42.6	38.3
DW-13	R	85+59.89	RT	F		17	12.8	4.6		2.7		23.1	20.1
DW-14	R	87+09.10	RT	F		12	12.7	4.7		0.3		17.1	14.1
DW-15	C	88+48.28	RT	R = 10		45	12.6	4.3		6.0		57.5	57.5
DW-16	C	90+58.40	RT	F		14	12.6	4.5	6.4	6.0	6.0		16.7
DW-17	C	92+02.76	LT	F		44	18.5	9.5		4.7		64.0	75.7
DW-18	R	95+98.96	LT	F		22	17.5	6.3	6.2	6.0	6.0		44.9
DW-19	R	97+15.99	LT	F		26	18.3	6.0		5.1		36.9	34.8
DW-20	R	98+65.11	LT	F		58	18.4	6.4		4.0		84.1	80.1
DW-21	C	99+43.60	LT	F		23	16.8	6.4		3.3			32.8
DW-22	C	100+41.39	LT	F		40	18.4	6.4		2.3			55.8
DW-23	C	101+41.05	LT	F		42	18.4	6.3		3.5		21.7	57.8
DW-24	C	103+24.66	LT	F		37	18.3	6.3		0.8		20.5	50.6
DW-25	R	104+35.04	LT	F		20	18.3	6.2		2.8		9.6	28.1
DW-26	R	107+80.63	LT	F		27	18.2	6.3		4.7		35.0	37.9
DW-27	C	109+32.00	LT	F		53	18.2	3.8	7.3	6.0	6.0	109.3	120.7
DW-28	C	111+72.86	LT	F		40	18.1	3.8	2.7	6.0	6.0	29.5	55.5
DW-29	C	112+32.54	LT	F		40	18.1	3.7	0.5	6.0	6.0	29.2	62.7
DW-30	C	113+37.43	LT	F		50	18.1	5.5	1.5	6.0	6.0	66.5	61.6
DW-31	C	119+60.01	LT	F		28	33.5	3.6		1.2		30.9	30.5
DW-32	C	120+57.75	LT	F		25	38.8	3.4		3.1		23.1	26.4
DW-33	C	123+00.91	LT	R = 10		25	43.1	3.6	4.8	-2.4	-2.4	51.8	44.2
DW-34	C	123+51.63	LT	R = 10		31	43.1	3.5	4.9	-1.8	-1.8	61.8	55.2
DW-35	C	135+07.95	LT	R = 20		35	32.8	4.1	14.9	6.0	2.3	127.4	116.7

REMOVAL AND REPLACEMENT OF EXIST GUTTER AT DRIVEWAY LOCATIONS SHALL BE SUBSIDIARY TO DRIVEWAY REPLACEMENT.

NOTES:

1. REINFORCED LAYDOWN GUTTER ON DRIVEWAYS SHALL BE SUBSIDIARY TO ITEM 530.
2. CONTRACTOR TO FIELD VERIFY SLOPE OF EXISTING DRIVEWAY AND MAKE ADJUSTMENTS AS NEEDED.
3. ACP DRIVEWAY REMOVAL NOT PAID FOR DIRECTLY BUT WILL BE SUBSIDIARY TO ITEM 530.



7/29/2024

NO.	DATE	REVISION	APPROVED

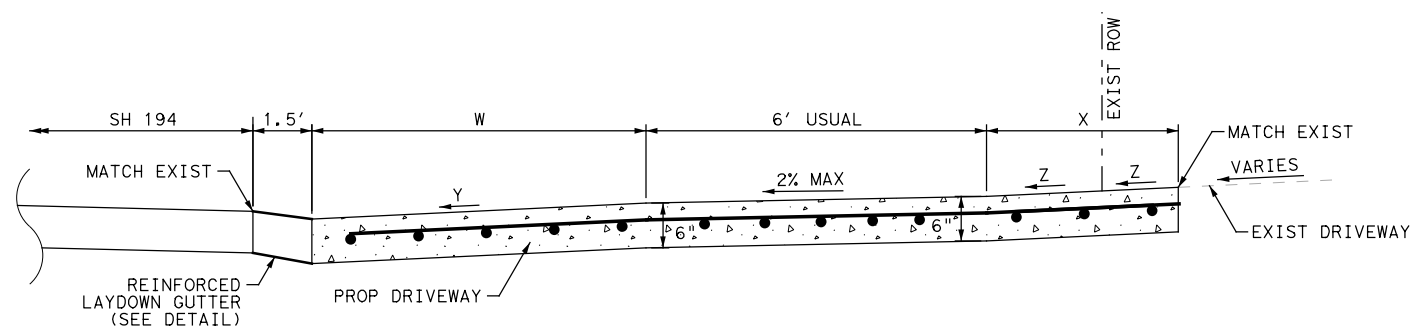


SH 194 FROM FM 3466 TO IH 27

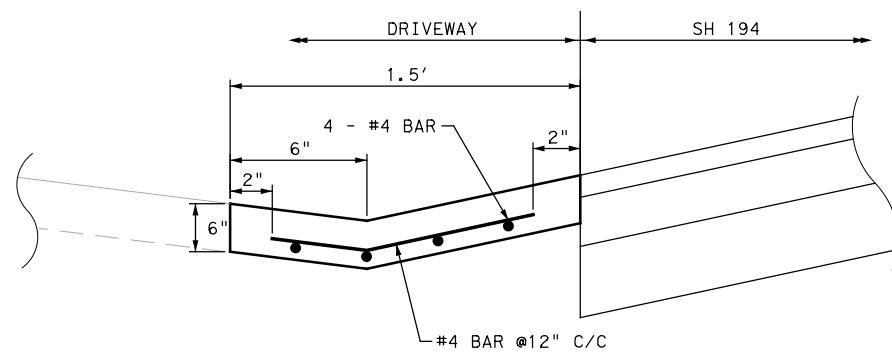
DRIVEWAY DETAIL

FED. RD. DIV. NO. 6			FEDERAL PROJECT NO. SEE TITLE SHEET			HIGHWAY NO. SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.		164		
TEXAS	LBB	HALE	CONTROL	SECTION	JOB		
0439	05	026					

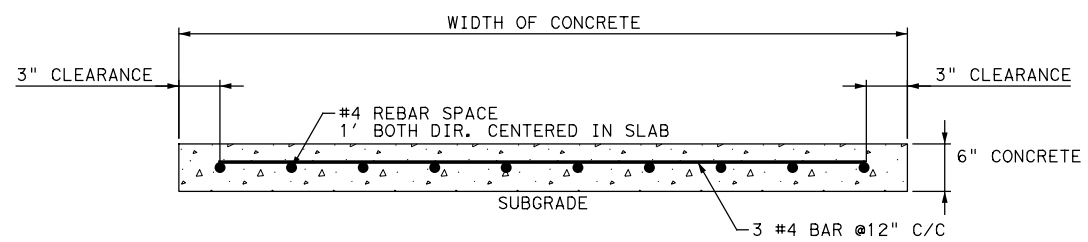
SHEET 1 OF 2



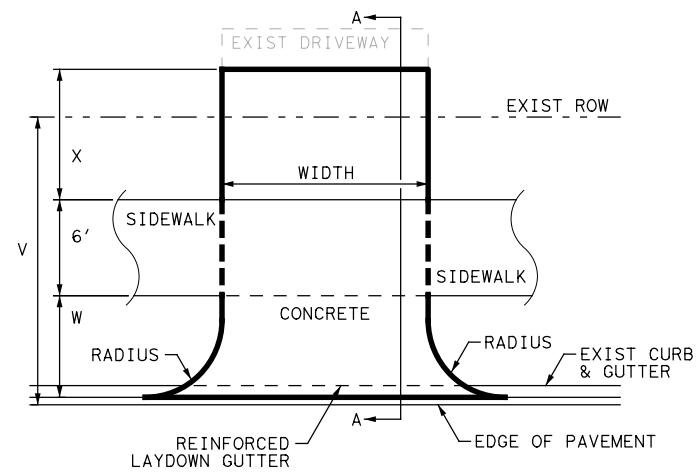
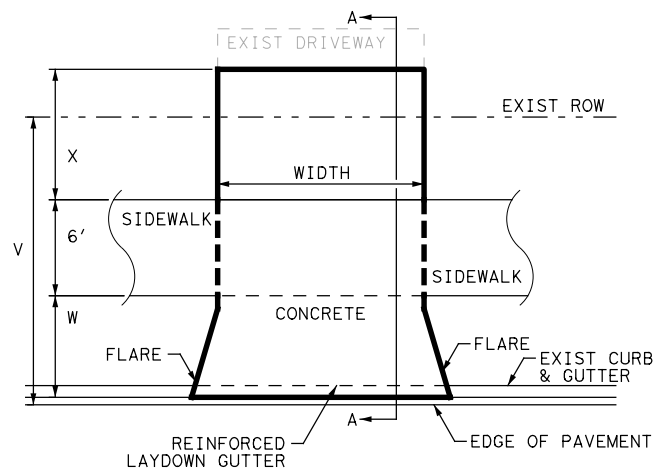
SECTION A-A
NTS



REINFORCED LAYDOWN GUTTER
NTS



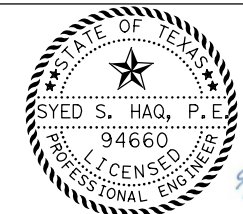
CONCRETE CROSS-SECTION
NTS



TYPICAL DRIVEWAY
NTS

NOTES:

1. REINFORCED LAYDOWN GUTTER ON DRIVEWAYS SHALL BE SUBSIDIARY TO ITEM 530.
2. CONTRACTOR TO FIELD VERIFY SLOPE OF EXISTING DRIVEWAY AND MAKE ADJUSTMENTS AS NEEDED.
3. ACP DRIVEWAY REMOVAL NOT PAID FOR DIRECTLY BUT WILL BE SUBSIDIARY TO ITEM 530.



NO.	DATE	REVISION	APPROVED

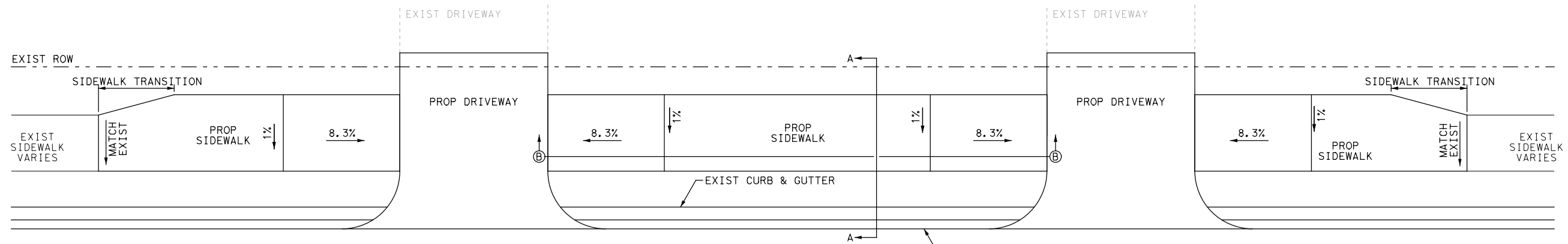


SH 194 FROM FM 3466 TO IH 27

DRIVEWAY DETAIL

SHEET 2 OF 2

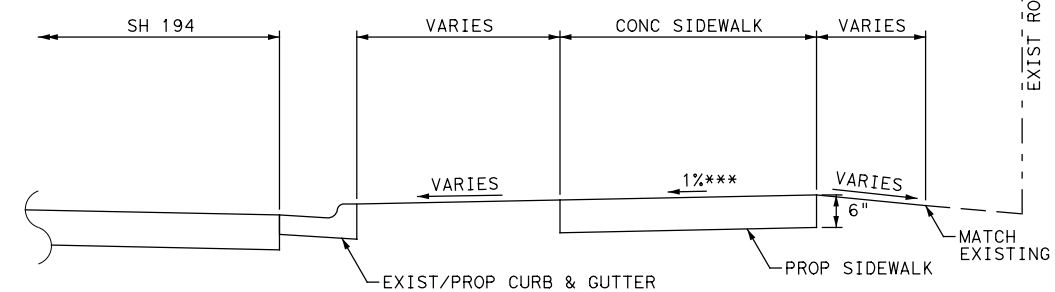
FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	165
CONTROL	SECTION	JOB	
0439	05	026	



QUANTITIES OF SIDEWALK ITEMS				
BEGIN STATION	END STATION	RIGHT/LEFT	WIDTH	531 6003
				CONC SIDEWALKS (6")
SY				
0+42	25+86	RT	6.0	1,704.9
26+56	26+86	LT	5.0	16.0
27+22*	29+53	LT	5.0	151.2
29+25*	29+43	RT	5.5	7.9
29+40*	29+47	RT	N/A	2.6
30+17*	30+40	LT	11.5	37.2
30+17*	30+23	RT	N/A	7.8
30+29*	32+85	RT	5.5	153.2
31+68	32+10	LT	11.5	53.9
33+25	34+30	RT	5.5	63.5
34+35	34+47	LT	N/A	3.3
34+88	35+10	RT	N/A	36.6
34+89	35+09	LT	N/A	18.7
36+00	36+30	RT	6.5	22.0
36+50	37+08	RT	6.5	41.6
37+23	37+92	RT	6.5	50.9
38+10	39+28	RT	6.5	90.3
39+79	39+95	LT	N/A	18.3
39+80	39+90	RT	5.0	5.5
41+80	41+96	RT	6.0	10.4
42+26	42+83	RT	5.0	32.8
43+12	43+99	RT	5.0	53.6
43+79	44+00	LT	9.5	16.7
44+38	44+53	RT	N/A	15.1
47+48	48+75	RT	5.0	84.2
49+13	49+90	LT	5.0	50.7
50+04	51+13	LT	5.0	61.8
50+68	50+78	RT	5.0	5.6
50+93	50+99	RT	5.0	3.4
51+30	51+61	RT	5.0	17.3
51+95	52+72	RT	5.0	46.0
51+96	52+10	LT	8.0	12.4
53+14	53+95	RT	5.0	46.9
53+26	54+33	LT	6.0	70.4
54+55	54+66	LT	5.5	7.3
54+77	55+18	LT	5.5	26.6
55+28	55+63	LT	6.0	23.7
55+92	56+57	LT	7.0	47.0
56+27*	57+51	RT	5.0	127.1
57+22*	57+51	LT	10.5	31.8
58+11*	58+33	LT	N/A	29.9
58+19*	59+34	RT	5.0	74.9
59+63	60+09	RT	5.0	25.6
60+26	60+34	RT	5.0	3.7
60+38	60+54	LT	5.0	8.1
60+46	60+82	RT	5.0	19.3
60+93	61+42	RT	5.0	26.6
61+56	62+36	RT	5.0	45.7
62+86	64+06	RT	5.0	72.0
63+96	64+63	LT	7.0	50.3
64+19	64+61	RT	5.5	25.4
64+72	65+06	RT	5.5	21.6
64+97	65+17	LT	5.0	13.2
65+15	65+86	RT	5.0	41.4
65+98	66+27	RT	5.5	22.9
67+02	67+27	RT	N/A	37.0
67+16	67+38	LT	5.0	15.5
67+67	68+21	LT	5.0	29.9
68+37	69+04	LT	5.0	37.2

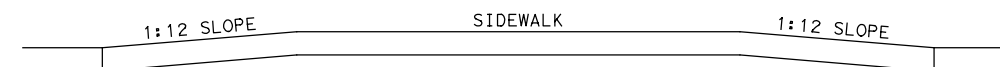
QUANTITIES OF SIDEWALK ITEMS				
BEGIN STATION	END STATION	RIGHT/LEFT	WIDTH	531 6003
				CONC SIDEWALKS (6")
SY				
69+23	69+64	LT	5.0	22.6
69+76	70+80	LT	5.0	57.3
70+07	70+18	RT	5.0	7.6
70+43	70+94	RT	5.0	33.8
71+19	72+00	RT	5.0	54.9
71+32	71+42	LT	6.0	7.0
72+49	73+07	RT	7.0	48.2
73+32	73+66	RT	7.5	26.2
73+88	74+01	LT	5.0	6.9
73+99	74+12	RT	6.0	8.6
74+48	74+80	RT	6.0	21.5
75+11	75+25	RT	6.0	9.3
75+61	75+95	RT	7.5	27.9
76+31	76+78	RT	7.5	36.2
77+86	78+15	RT	6.0	16.0
78+27	78+50	RT	6.0	14.4
78+91*	79+45	RT	6.0	92.8
79+13*	79+19	LT	6.0	2.5
79+78*	80+06	RT	6.0	23.4
79+82*	80+03	LT	6.0	36.7
80+40	80+76	RT	6.0	22.3
81+12	81+46	RT	6.0	29.0
81+70	82+04	RT	6.0	21.5
82+26	82+94	RT	6.0	45.1
83+20	83+71	RT	6.0	34.0
83+89	84+33	RT	6.0	29.1
84+53	85+51	RT	6.0	66.4
85+69	87+02	RT	6.0	90.1
87+15	88+26	RT	6.0	73.7
88+74	90+51	RT	6.0	131.5
90+34	91+85	LT	6.0	89.2
90+65	92+23	RT	6.0	109.2
92+25	93+64	LT	6.0	88.2
94+33	95+88	LT	6.0	94.6
96+11	97+01	LT	6.0	58.1
97+29	98+33	LT	6.0	69.8
98+93	99+35	LT	6.0	25.2
99+55	100+21	LT	6.0	44.0
100+62	101+20	LT	6.0	39.0
101+59	103+08	LT	6.0	96.2
103+43	104+31	LT	6.0	54.6
104+45	105+54	LT	6.0	72.3
106+35	107+68	LT	6.0	88.3
107+95	109+08	LT	6.0	74.0
109+58	109+84	LT	6.0	14.2
109+95*	110+43	RT	6.0	34.7
111+00*	111+24	LT	6.0	32.2
111+93	112+12	LT	6.0	13.3
112+53	113+11	LT	6.0	40.1
113+66	119+43	LT	6.0	389.4
119+72	120+47	LT	6.0	47.9
120+71	122+77	LT	6.0	145.4
123+16	123+33	LT	6.0	13.9
123+77	128+97	LT	6.0	352.8
129+76	132+05	LT	6.0	153.2
132+88	134+79	LT	6.0	131.8
135+37	136+78	LT	6.0	100.7
141+23	145+02	LT	6.0	255.8
145+23	146+06	LT	6.0	53.5

TYPICAL SIDEWALK**
NTS

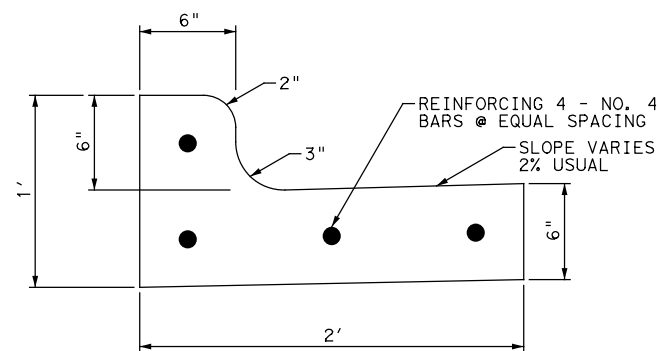


SECTION A-A
NTS

***REVERSE SLOPE DIRECTION FROM STA 136+40 TO STA 136+80 AND FROM STA 141+20 TO STA 141+40



SECTION B-B
NTS



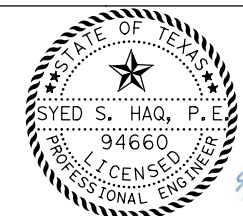
TYPE II
SECTION OF CONC. CURB & GUTTER

NOTES: (FOR CURB AND GUTTER):

CONTRACTION JOINTS SHALL BE 1/8 INCH AT EQUAL SPACINGS NOT TO EXCEED 10 FEET.

EXPANSION JOINTS SHALL BE 1/2 INCH, PREMOLDED JOINT MATERIAL AT 40 FOOT SPACINGS.

PAY LENGTH FOR CURB & GUTTER WILL BE MEASURED ALONG THE TOE OF THE CURB.



7/29/2024

NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

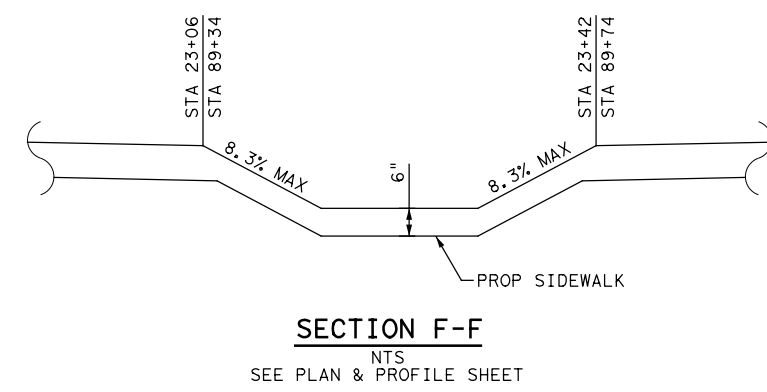
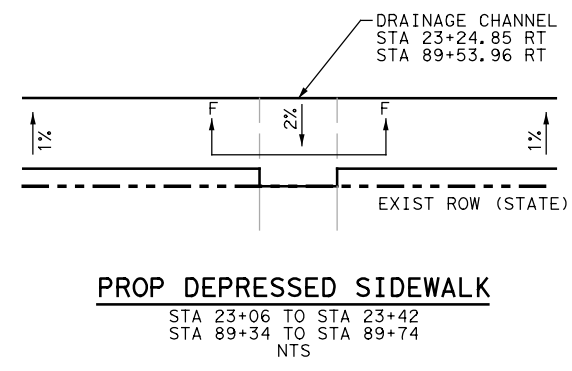
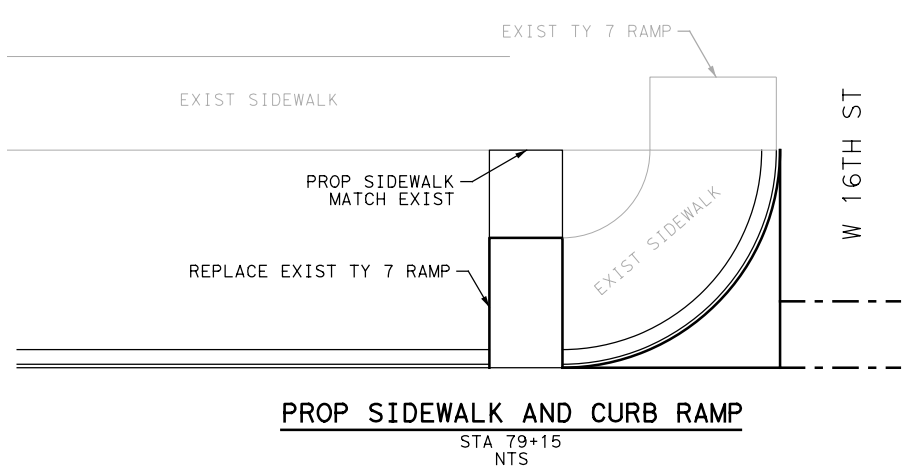
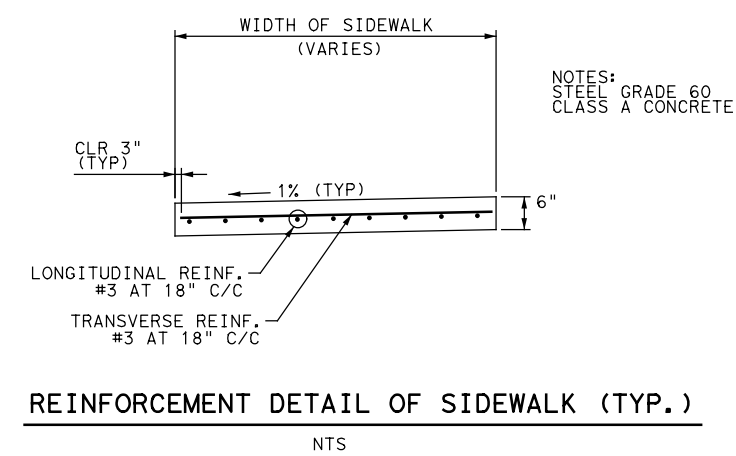
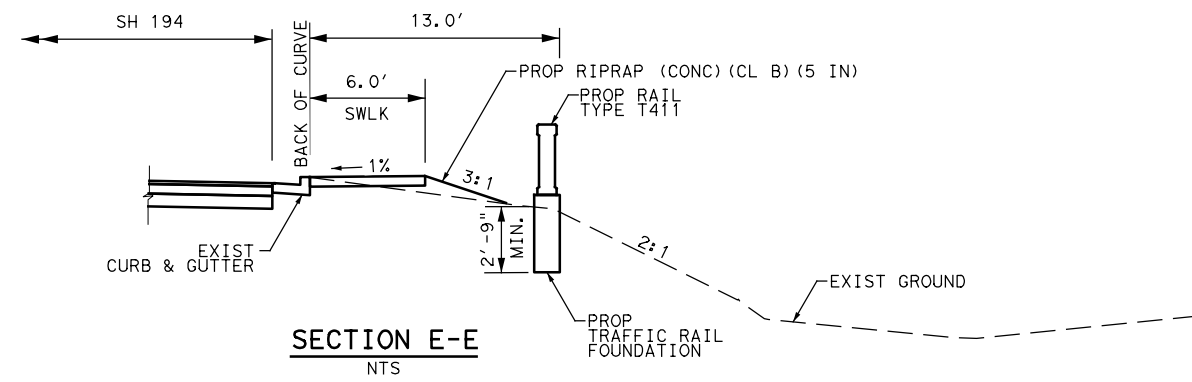
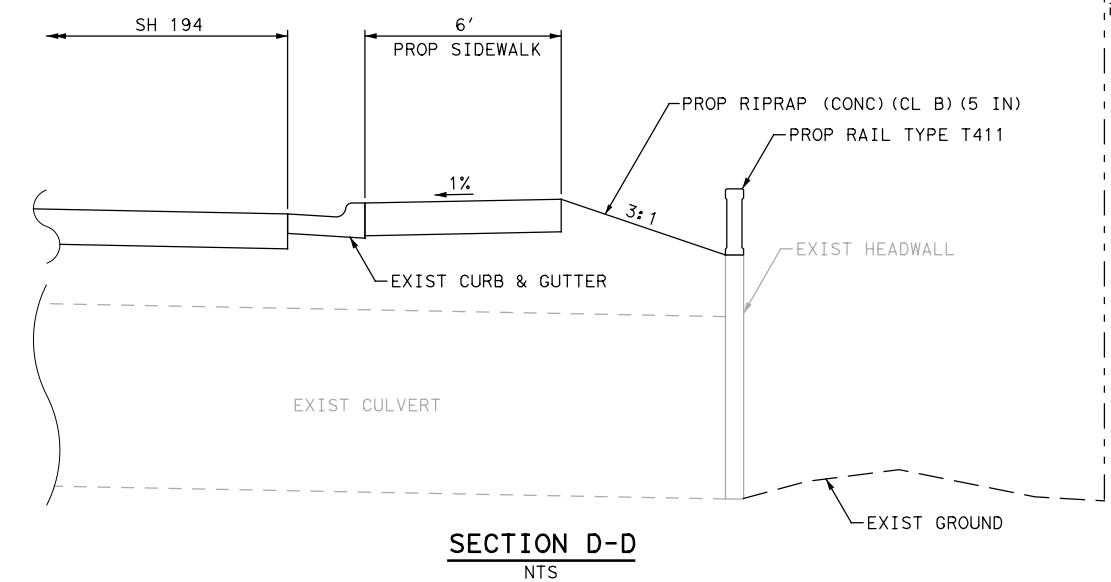
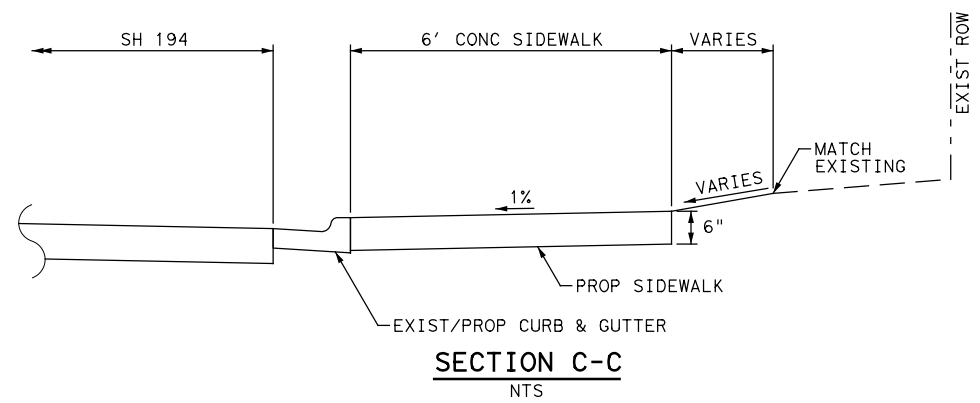
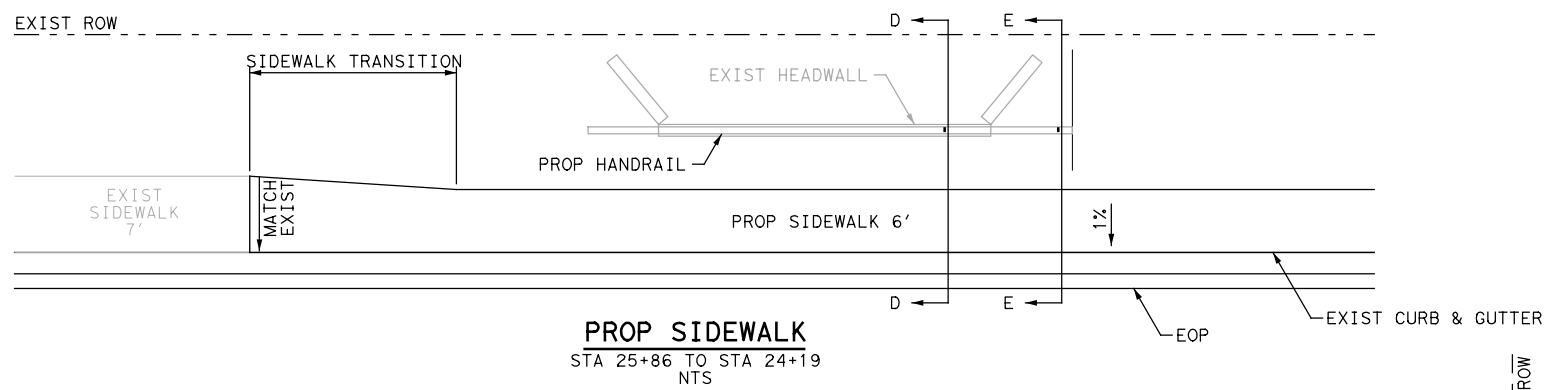
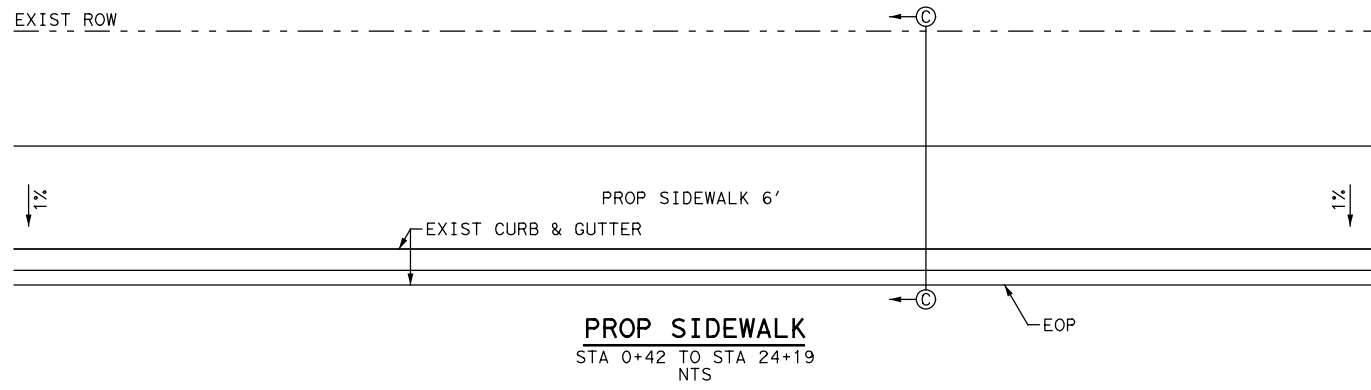
SIDEWALK DETAIL

SHEET 1 OF 2

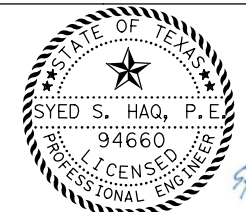
FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	166
CONTROL	SECTION	JOB	
0439	05	026	

*SEE INTERSECTION DETAIL SHEETS FOR MORE INFORMATION
**EXCLUDES SIDEWALK AT STA 0+42 TO 25+86

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 2/27/2023 TIME: 10:21:42 AM SCALE: 1:1
 FILE: SH194_SidewalkDetail.dgn



NOTES:
STEEL GRADE 60
CLASS A CONCRETE



2/27/2023

NO.	DATE	REVISION	APPROVED

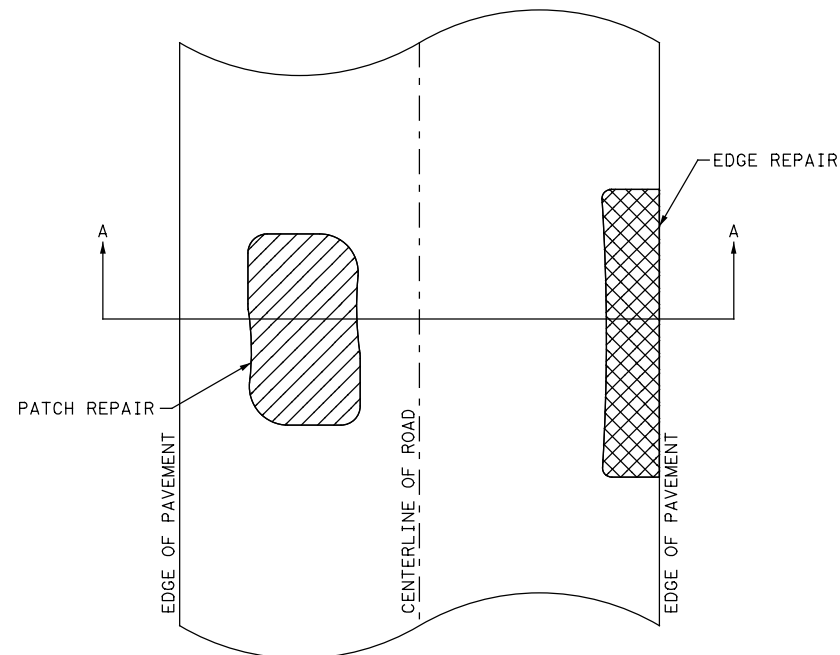


SH 194 FROM FM 3466 TO IH 27

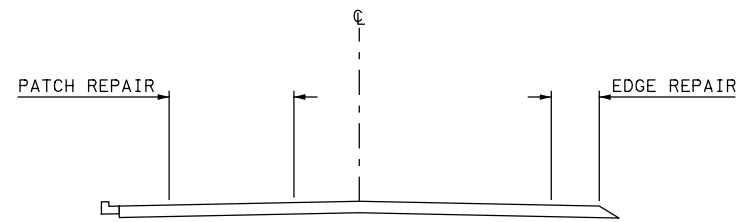
SIDEWALK DETAIL

SHEET 2 OF 2			
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET		HIGHWAY NO. SH 194
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 167
CONTROL 0439	SECTION 05	JOB 026	

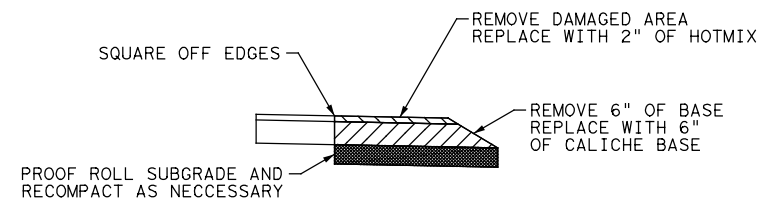
PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/30/2024 TIME: 12:34:43 PM SCALE: 1:1
 FILE: SH194_PAVT-REPAIR-DET.dgn



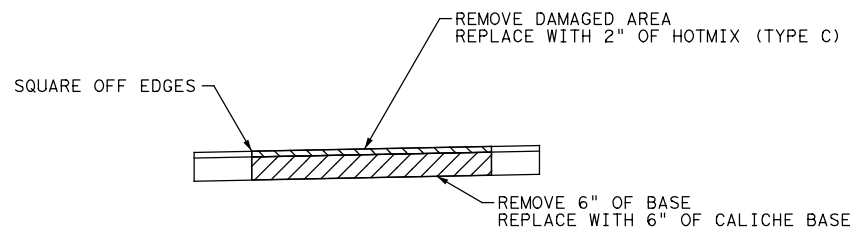
PLAN VIEW



SECTION A-A

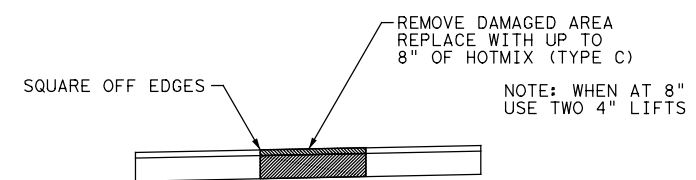


EDGE REPAIR DETAIL (WITHOUT CURB & GUTTER)



LARGE ROADWAY PATCH REPAIR DETAIL
 GREATER THAN 8' WIDE AND 20' IN LENGTH

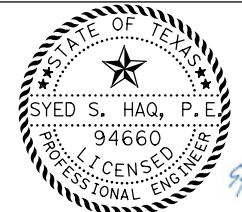
NOTE: REMOVE EXISTING BASE AS NECESSARY. IF PAVEMENT FAILURE IS IN ASPHALT LAYER ONLY, BASE CAN REMAIN IF COMPACTED AND FIRM. IF BASE IS REMOVED, SUBGRADE WILL NEED TO BE PROOF ROLLED BEFORE PLACING NEW BASE BACK.



SMALL ROADWAY PATCH REPAIR DETAIL
 EQUAL TO OR LESS THAN 8' WIDE AND 20' IN LENGTH

NOTES

1. CONTRACTOR TO GET APPROVAL FROM ENGINEER BEFORE BEGINNING ANY PAVEMENT REPAIR WORK.
2. ROADWAY PATCH REPAIR WORK AND ROADWAY EDGE REPAIR WORK WILL BE PAID UNDER ITEM 351. ANY REPAIR WORK NOT SHOWN IN THE DETAIL WILL BE INCIDENTAL TO ITEM 351. ANY WORK RELATED TO PAVEMENT REPAIR WORK NOT SHOWN IN THE DETAILS WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE INCIDENTAL TO ITEM 351.



NO.	DATE	REVISION	APPROVED

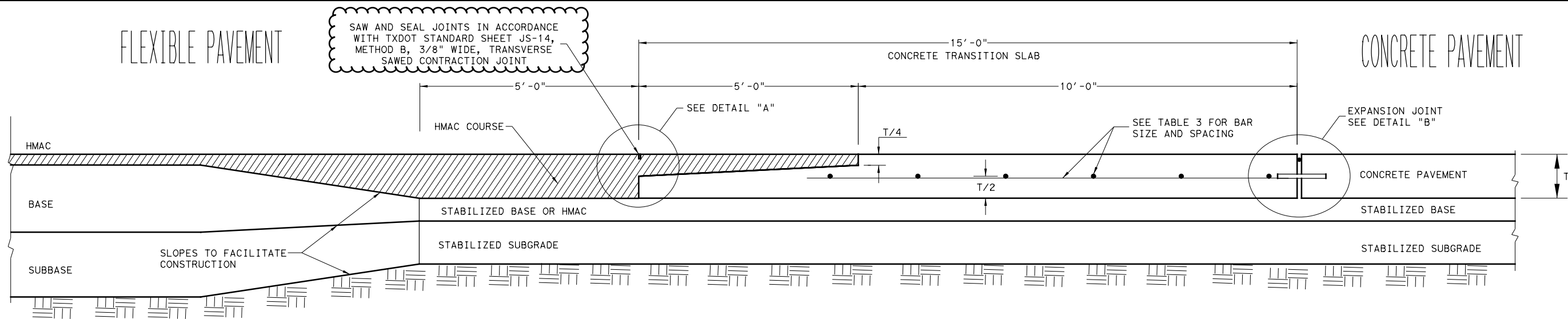


SH 194 FROM FM 3466 TO IH 27
 PAVEMENT REPAIR DETAIL

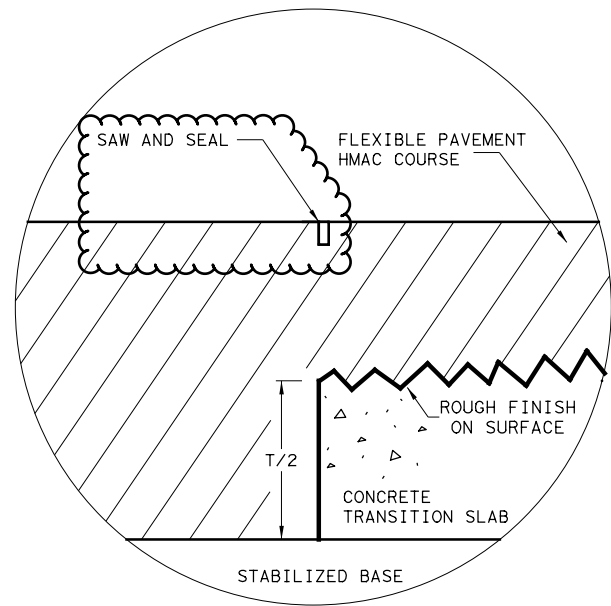
SHEET 1 OF 1			
FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	167A
CONTROL	SECTION	JOB	
0439	05	026	

DISCLAIMER: THIS STANDARD IS GOVERNED BY THE "TEXAS ENGINEERING PRACTICE ACT". NO WARRANTY OF ANY KIND IS MADE BY TXDOT FOR ANY PURPOSE WHATSOEVER. THE USE OF THIS STANDARD FOR THE CONVERSION OF THIS STANDARD TO OTHER FORMATS OR FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE, TXDOT ASSUMES NO RESPONSIBILITY FOR THE CONVERSION OF THIS STANDARD TO OTHER FORMATS OR FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.

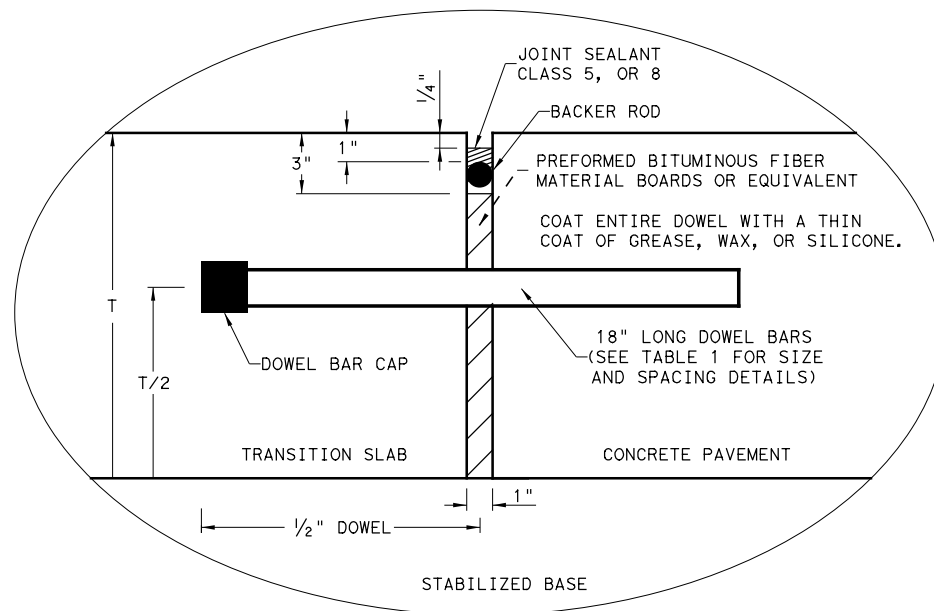
DATE: 2/27/2023
FILE: 01_transitslab20(MOD).dgn



TYPICAL JUNCTION OF CONCRETE PAVEMENT WITH FLEXIBLE PAVEMENT
(NOT TO SCALE)



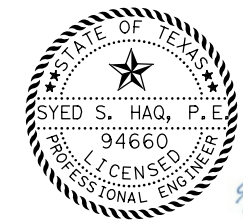
DETAIL "A"



DETAIL "B"

GENERAL NOTES

1. FOR FURTHER INFORMATION REGARDING THE PLACEMENT OF CONCRETE AND LOAD TRANSFER DEVICES REFER TO THE GOVERNING SPECIFICATIONS FOR "CONCRETE PAVEMENT" AND "REINFORCING STEEL."
2. DETAILS FOR PAVEMENT WIDTH AND THE CROWN CROSS-SLOPE SHALL BE SHOWN ELSEWHERE IN THE PLANS.
3. MATCH THE LONGITUDINAL JOINTS OF THE CONCRETE TRANSITION SLAB WITH ADJOINING CONCRETE PAVEMENT. PROVIDE EQUIVALENT TIEBARS OR TRANSVERSE BARS AT THESE LONGITUDINAL JOINTS, SEE TABLE NO. 2.
4. REFER TO DMS-6310, "JOINT SEALANTS AND FILLERS" FOR THE CLASSIFICATIONS.
5. TRANSITION SLABS WILL BE PAID UNDER ITEM 360, "CONCRETE PAVEMENTS."
6. CURE TRANSITION SLAB WITH SS-1 EMULSION.



2/27/2023

SLAB THICKNESS T (IN.)	BAR DIA. AND LENGTH	SPACING (IN.)
7 TO 7.5	1" X 18"	12
8 TO 10	1 1/4" X 18"	12
10 TO 13	1 1/2" X 18"	12

SLAB THICKNESS T (IN.)	BAR SIZE	SPACING (IN.)
7 TO 7.5	#5	24
8 TO 13	#6	24

SLAB THICKNESS T (IN.)	BAR SIZE	SPACING (IN.) TRANSVERSE DIRECTION	SPACING (IN.) LONGITUDINAL DIRECTION
7 TO 7.5	#5	24	12
8 TO 13	#6	24	12

ADJUST SPACING OF LONGITUDINAL BARS AS NEEDED TO ACCOMDATE DOWEL BAR SPACING.

Texas Department of Transportation

Design Division Standard

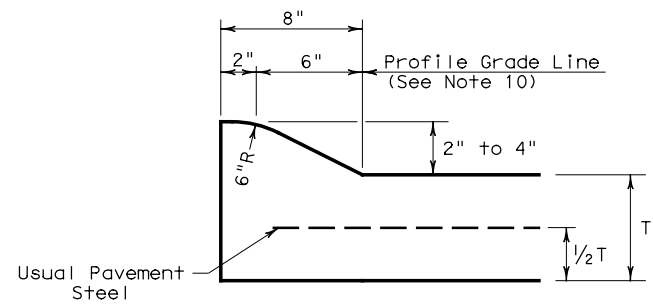
CONCRETE PAVEMENT DETAILS TRANSITION SLAB T-7 to 13 INCHES

TRANS-20 (MOD)

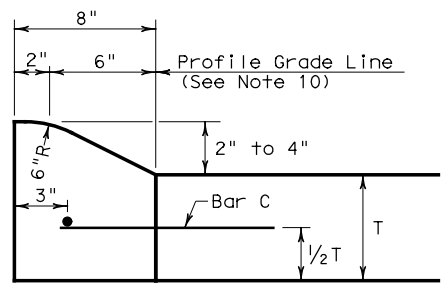
FILE: transitslab20.dgn	DN: TxDOT	DN: TxDOT	DW: AN	CK: KM
© TXDOT: NOVEMBER 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	0439	05	026	SH 194
	DIST	COUNTY		SHEET NO.
	LBB	HALE		168

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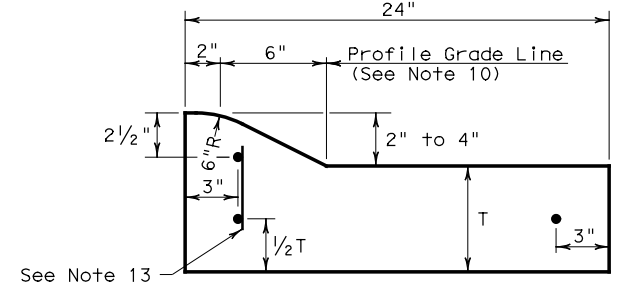
DATE: 2/27/2023
FILE: 02_cccg22.dgn



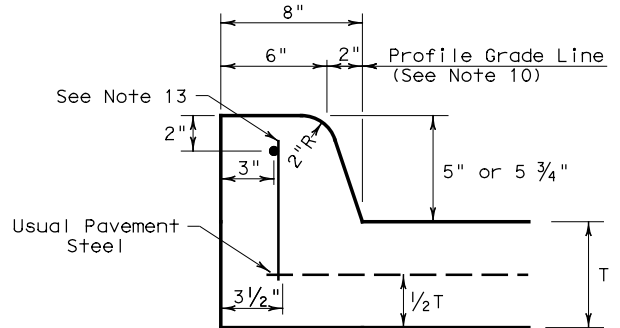
TYPE I CURB (MONOLITHIC)
2" - 4" HEIGHT



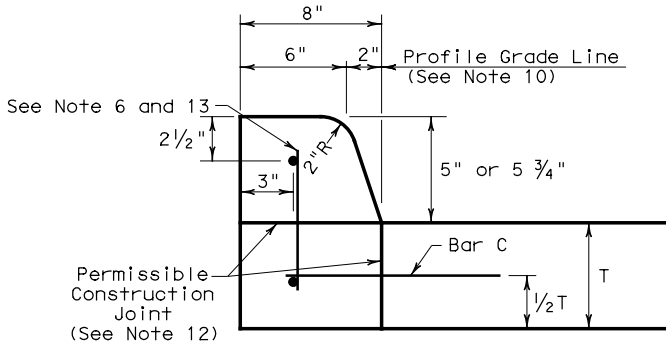
TYPE I CURB
2" - 4" HEIGHT



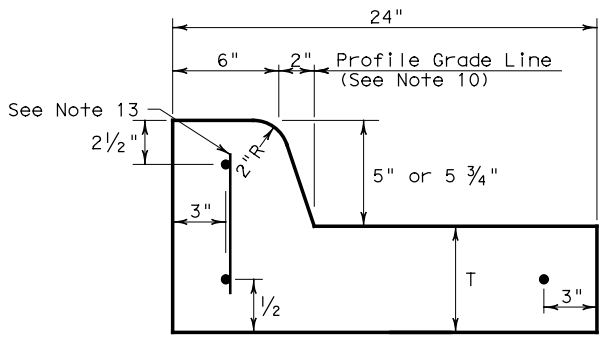
TYPE I CURB AND GUTTER
2" - 4" HEIGHT



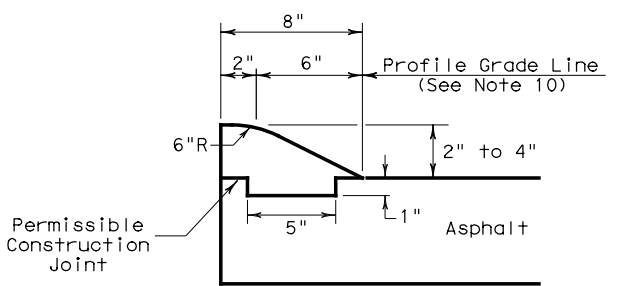
TYPE II CURB (MONOLITHIC)
5" - 5 3/4" HEIGHT



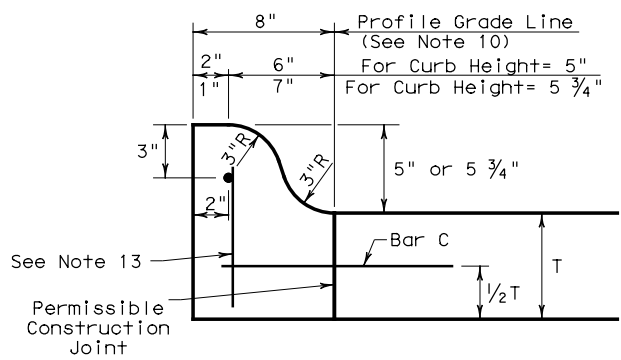
TYPE II CURB
5" - 5 3/4" HEIGHT



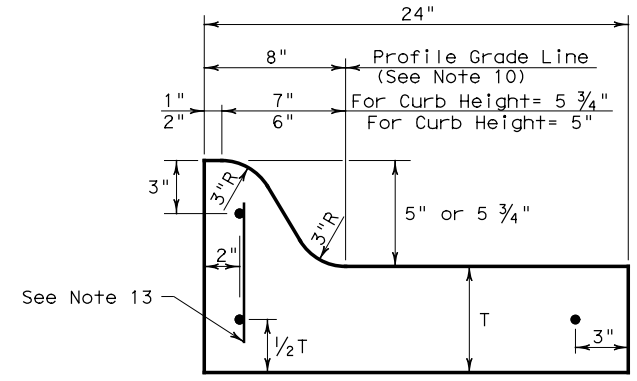
TYPE II CURB AND GUTTER
5" - 5 3/4" HEIGHT



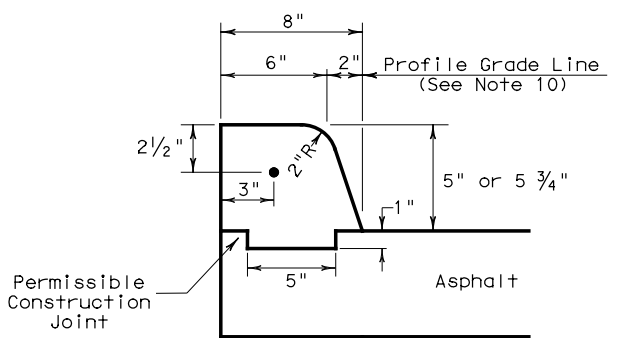
TYPE III CURB (KEYED)
2" - 4" HEIGHT



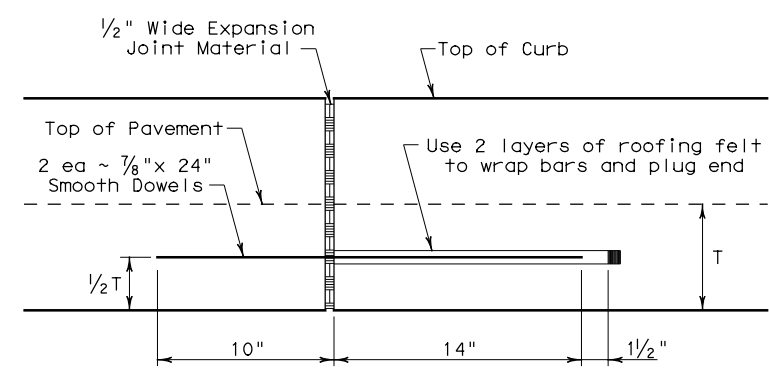
TYPE IIa CURB
5" - 5 3/4" HEIGHT



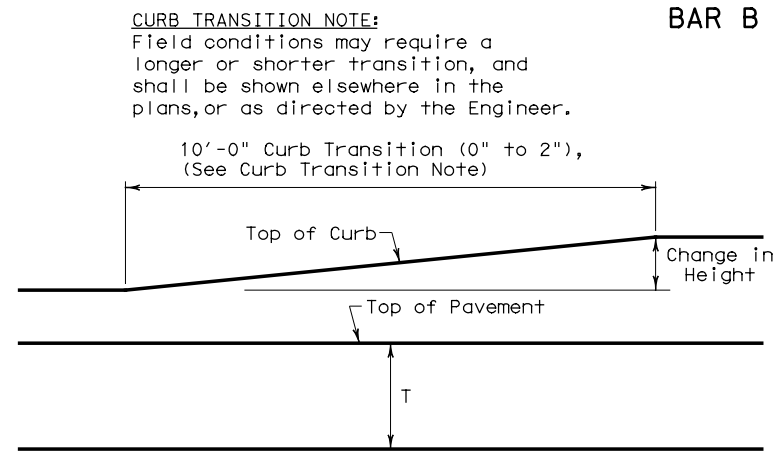
TYPE IIa CURB AND GUTTER
5" - 5 3/4" HEIGHT



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



EXPANSION JOINT DETAIL

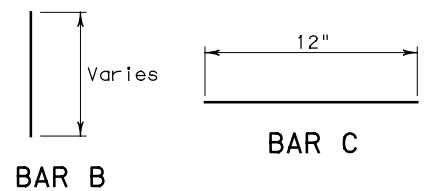


CURB TRANSITION

Note: To be paid for as Highest Curb

GENERAL NOTES

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



BAR B

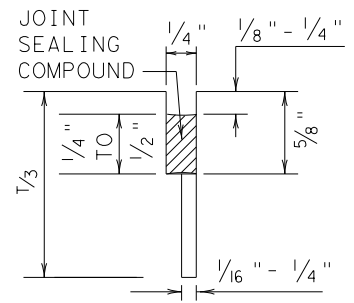
BAR C

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

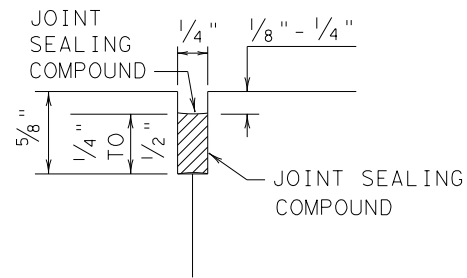
				Design Division Standard	
CONCRETE CURB AND GUTTER					
CCCG-22					
FILE: cccg21.dgn	DN: TxDOT	CK: AN	DW: CS	CK: KM	
© TxDOT: JUNE 2022	CONT	SECT	JOB	HIGHWAY	
REVISIONS	0439	05	026	SH 194	
	DIST	COUNTY		SHEET NO.	
	LBB	HALE		169	

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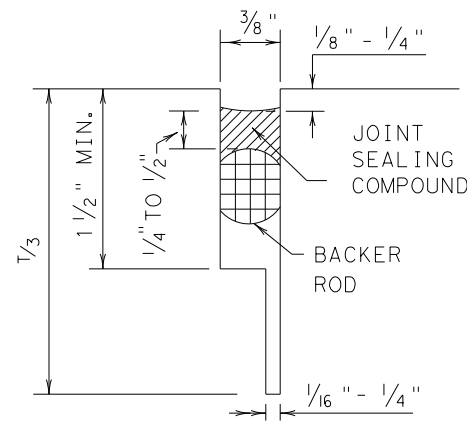
METHOD B: JOINT SEALING COMPOUND



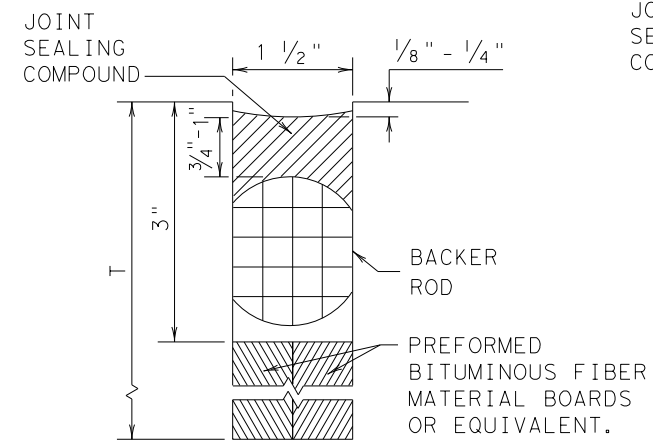
LONGITUDINAL SAWED CONTRACTION JOINT



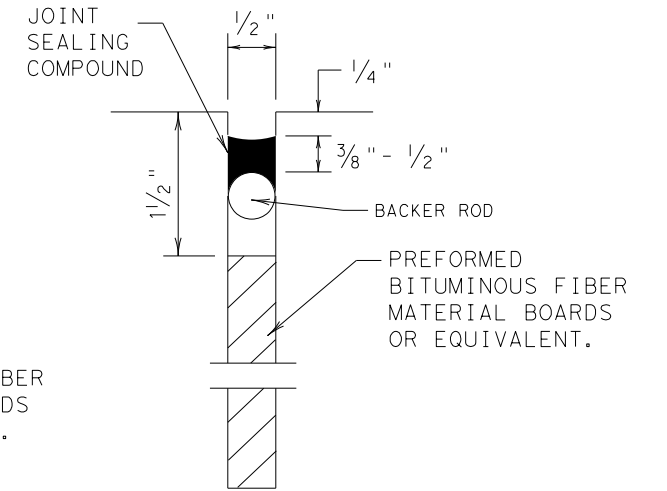
LONGITUDINAL OR TRANSVERSE CONSTRUCTION JOINT



TRANSVERSE SAWED CONTRACTION JOINT

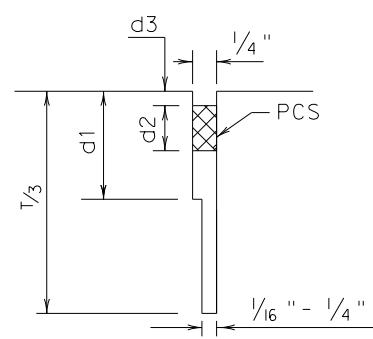


TRANSVERSE FORMED EXPANSION JOINT

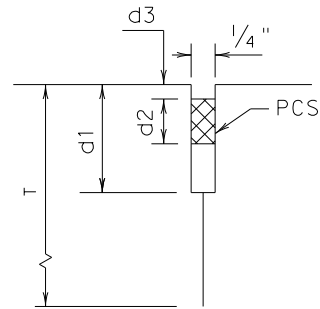


FORMED ISOLATION JOINT

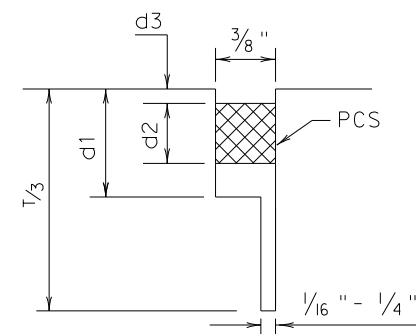
METHOD A: PREFORMED COMPRESSION SEALS (PCS) (DMS-6310 CLASS 6)



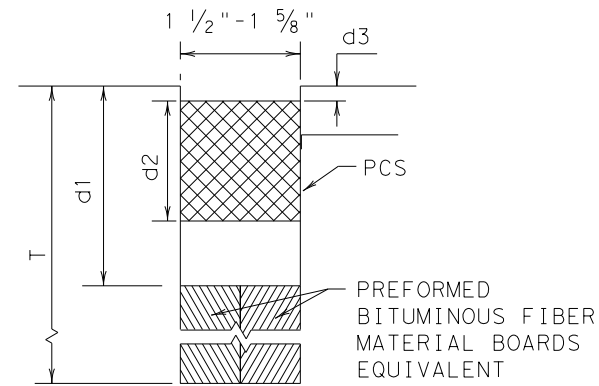
LONGITUDINAL SAWED CONTRACTION JOINT



LONGITUDINAL CONSTRUCTION JOINT



TRANSVERSE SAWED CONTRACTION JOINT



TRANSVERSE FORMED EXPANSION JOINT

GENERAL NOTES

1. UNLESS OTHERWISE SHOWN IN THE PLANS, EITHER METHOD "A" OR METHOD "B" MAY BE USED.
2. THE LOCATION OF JOINTS SHALL BE AS SHOWN ELSEWHERE IN THE PLANS.
3. THE JOINT RESERVOIR FOR SEALANT OR PCS SHALL BE SAWED UNLESS OTHERWISE SHOWN ON THE PLANS FOR THE LONGITUDINAL AND TRANSVERSE CONSTRUCTION JOINTS AND THE SAWED JOINTS.
4. DIMENSIONS d1, d2, AND d3 SHOWN IN METHOD A SHALL BE IN ACCORDANCE WITH THE PREFORMED COMPRESSION SEAL MANUFACTURER'S RECOMMENDATION.
5. REFER TO DMS-6310 "JOINT SEALANTS AND FILLERS" FOR THE CLASSIFICATIONS.
6. FOR SAWED LONGITUDINAL JOINT, LONGITUDINAL OR TRANSVERSE CONSTRUCTION JOINT, USE JOINT SEALANT CLASS 5 OR 8 UNLESS OTHERWISE SHOWN ON THE PLAN OR APPROVED.
7. FOR TRANSVERSE SAWED CONTRACTION, TRANSVERSE FORMED EXPANSION JOINT, AND ISOLATION JOINT USE JOINT SEALANT CLASS 5 OR 8 AT NEW JOINTS. USE JOINT SEALANT CLASS 4, 5, 7, OR 8 FOR MAINTAINING EXISTING JOINTS.
8. THE JOINTS SHALL BE CLEANED IN ACCORDANCE WITH THE ITEM 438 "CLEANING AND SEALING JOINTS" OR ITEM 713 "CLEANING AND SEALING JOINTS AND CRACKS (CONCRETE PAVEMENT)".
9. ISOLATION JOINTS ACCOMMODATE HORIZONTAL AND VERTICAL MOVEMENTS THAT OCCUR BETWEEN A PAVEMENT AND A STRUCTURE. ISOLATION JOINTS MAY BE USED FOR BRIDGE ABUTMENTS, INTERSECTIONS, CURB AND GUTTER, OLD AND NEW PAVEMENTS, OR AROUND DRAINAGE INLETS, MANHOLES, FOOTINGS AND LIGHTING STRUCTURES.

DATE: 2/27/2023
FILE: 03_js14.dgn

				Design Division Standard	
CONCRETE PAVING DETAILS JOINT SEALS JS-14					
FILE: js14.dgn	DN: TxDOT	DN: HC	DN: HC	CK: AN	
© TxDOT: DECEMBER 2014	CONT	SECT	JOB	HIGHWAY	
REVISIONS		0439	05	026	SH 194
DIST	COUNTY	SHEET NO.			
LBB	HALE	170			

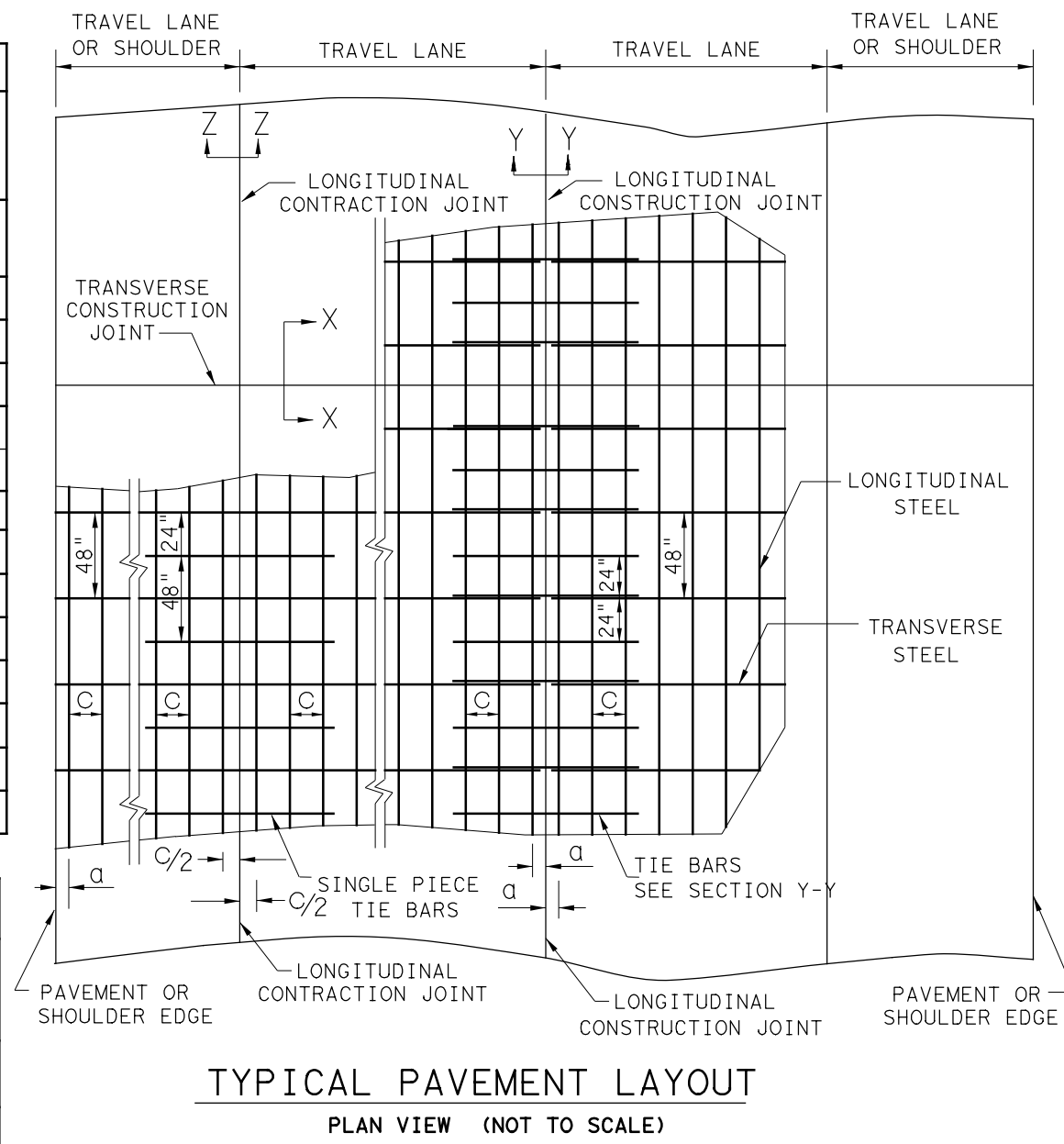
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DATE: 6/28/2024 10:46:33 AM
FILE: 04_crcp123.dgn

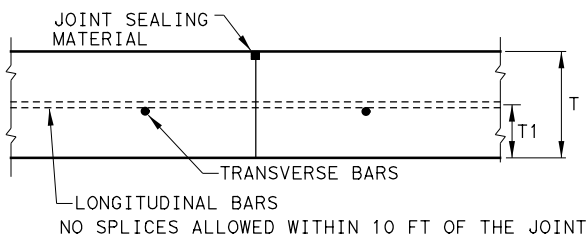
SLAB THICKNESS AND BAR SIZE		LONGITUDINAL STEEL BARS	FIRST SPACING AT EDGE OR JOINT	LONG. STEEL VERTICAL POSITION FROM BOTTOM OF PAVEMENT
T (IN.)	BAR SIZE	SPACING C (IN.)	SPACING a (IN.)	T1 (IN.)
7.0	#5	6.5	3 TO 4	3.5
7.5	#5	6.0	3 TO 4	3.75
8.0	#6	9.0	3 TO 4	4.0
8.5	#6	8.5	3 TO 4	4.25
9.0	#6	8.0	3 TO 4	4.5
9.5	#6	7.5	3 TO 4	4.75
10.0	#6	7.0	3 TO 4	5.0
10.5	#6	6.75	3 TO 4	5.5
11.0	#6	6.5	3 TO 4	6.0
11.5	#6	6.25	3 TO 4	6.5
12.0	#6	6.0	3 TO 4	7.0
12.5	#6	5.75	3 TO 4	7.5
13.0	#6	5.5	3 TO 4	8.0

SLAB THICKNESS (IN.)	TRANSVERSE STEEL		TIE BARS AT LONGITUDINAL CONTRACTION JOINT (SECTION Z-Z)		TIE BARS AT LONGITUDINAL CONTRACTION JOINT (SECTION Y-Y)	
	BAR SIZE	SPACING (IN.)	BAR SIZE	SPACING (IN.)	BAR SIZE	SPACING (IN.)
7.0 - 7.5	#5*	48	#5*	48	#5*	24
8.0 - 13.0	#5*	48	#6	48	#6	24

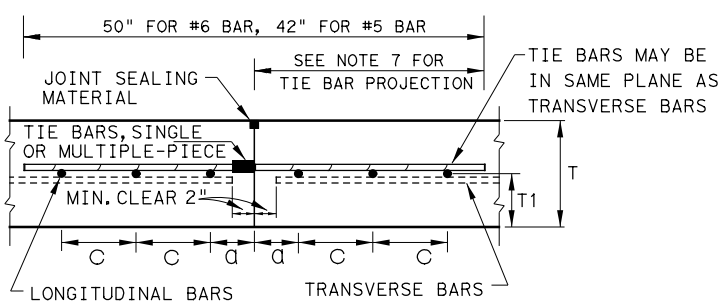
*CONTRACTOR MAY USE #6 REINFORCING STEEL INSTEAD OF #5 REINFORCING STEEL OR COMBINATION OF EACH SIZE



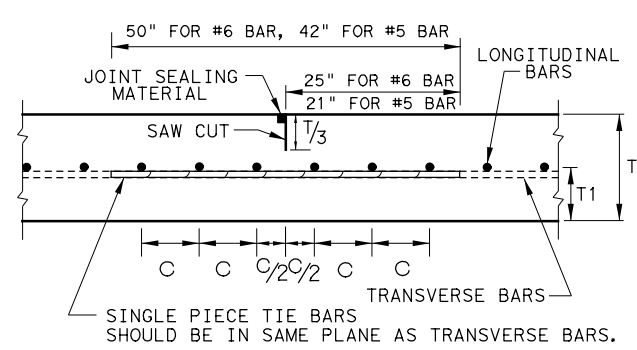
- GENERAL NOTES**
1. DETAILS FOR PAVEMENT WIDTH, PAVEMENT THICKNESS AND THE CROWN CROSS-SLOPE SHALL BE SHOWN ELSEWHERE IN THE PLANS. FOR PAVEMENTS WIDER THAN 100 FT. WITHOUT A FREE LONGITUDINAL JOINT, ADDITIONAL DETAIL MAY BE SHOWN ELSEWHERE IN THE PLANS.
 2. USE COARSE AGGREGATES WITH A RATED COEFFICIENT OF THERMAL EXPANSION (COTE) OF NOT MORE THAN 5.5×10^{-6} IN/IN/°F AS LISTED IN THE CONCRETE RATED SOURCE QUALITY CATALOG (CRSQC).
 3. ALL THE REINFORCING STEEL AND TIE BARS SHALL BE DEFORMED STEEL BARS CONFORMING TO ASTM A 615 (GRADE 60) OR ASTM A 996 (GRADE 60) OR ABOVE. STEEL BAR SIZES AND SPACINGS SHALL CONFORM TO TABLE NO.1 AND TABLE NO.2.
 4. STEEL BAR PLACEMENT TOLERANCE SHALL BE +/- 1 IN. HORIZONTALLY AND +/- 0.5 IN. VERTICALLY. CALCULATED AVERAGE BAR SPACING (CONCRETE PLACEMENT WIDTH / NUMBER OF LONGITUDINAL BARS) SHALL CONFORM TO TABLE NO.1.
 5. ADJUST REINFORCING STEEL VERTICALLY USING SHIMS OR OTHER METHODS, AS APPROVED, TO MEET VERTICAL TOLERANCES PRIOR TO CONCRETE PLACEMENT.
 6. PAVEMENT WIDTHS OF MORE THAN 15 FT. SHALL HAVE A LONGITUDINAL JOINT (SECTION Z-Z OR SECTION Y-Y). THESE JOINTS SHALL BE LOCATED WITHIN 6 IN. OF THE LANE LINE UNLESS THE JOINT LOCATION IS SHOWN ELSEWHERE ON THE PLANS.
 7. THE MINIMUM PROJECTION OF TIE BARS INTO THE ADJACENT PLACEMENT IS 22.5 IN. FOR #6 BARS AND 18.5 IN. FOR #5 BARS.
 8. SEE STANDARD SHEET "CONCRETE CURB AND CURB AND GUTTER," FOR DETAILS WHEN TYING CONCRETE CURB OR CURB GUTTER AT A LONGITUDINAL JOINT.
 9. REPLACE MISSING OR DAMAGED TIE BARS WITHOUT ADDITIONAL COMPENSATION BY DRILLING MIN.10 IN. DEEP AND GROUTING TIE BARS WITH TYPE III, CLASS C EPOXY. MEET THE PULL-OUT TEST REQUIREMENTS IN ITEM 361.
 10. OMIT TIE BARS LOCATED WITHIN 18-IN. OF THE TRANSVERSE CONSTRUCTION JOINTS (SECTION X-X). USE HAND-OPERATED IMMERSION VIBRATORS TO CONSOLIDATE THE CONCRETE ADJACENT TO ALL FORMED JOINTS.
 11. THE DETAIL FOR THE JOINT SEALANT AND RESERVOIR IS SHOWN ON STANDARD SHEET "CONCRETE PAVING DETAILS, JOINT SEALS."



TRANSVERSE CONSTRUCTION JOINT
SECTION X - X



LONGITUDINAL CONSTRUCTION JOINT
SECTION Y - Y

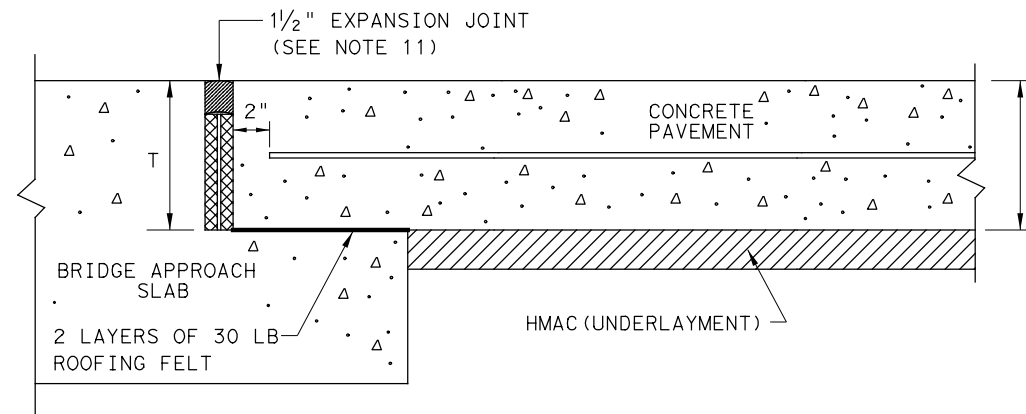


LONGITUDINAL CONTRACTION JOINT
SECTION Z - Z

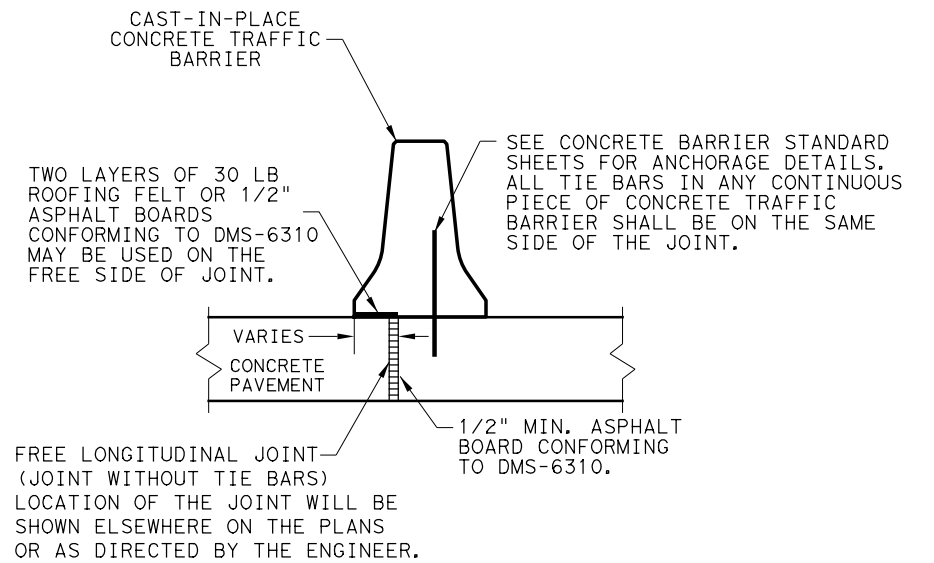
		Design Division Standard	
CONTINUOUSLY REINFORCED CONCRETE PAVEMENT ONE LAYER STEEL BAR PLACEMENT T - 7 TO 13 INCHES CRCP (1) - 23			
FILE: crcp123.dgn	DN: TxDOT	CK: KM	DW: CES
© TxDOT: APRIL 2023	CONT	SECT	JOB
APRIL 2023	0439	05	026
REVISED LONG. STEEL VERTICAL LOCATION	DIST	COUNTY	SHEET NO.
REMOVED FROM JOINTS	LBB	HALE	171

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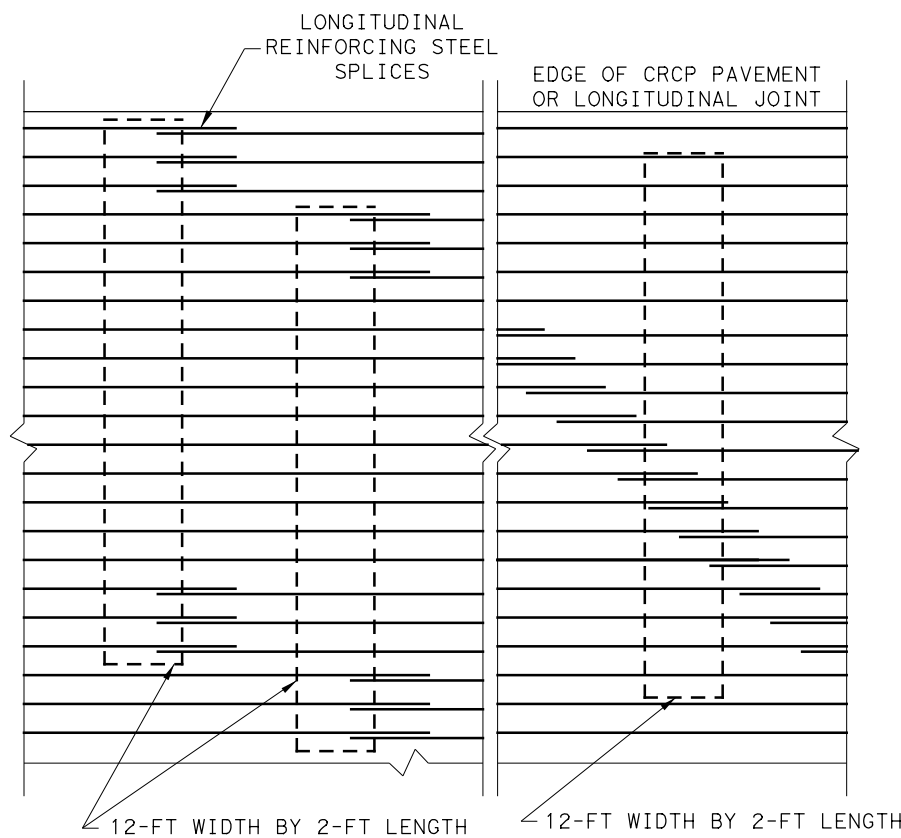
DATE: 6/28/2024 10:46:34 AM
FILE: 04_crcp123.dgn



**TRANSVERSE EXPANSION JOINT DETAIL
AT BRIDGE APPROACH**

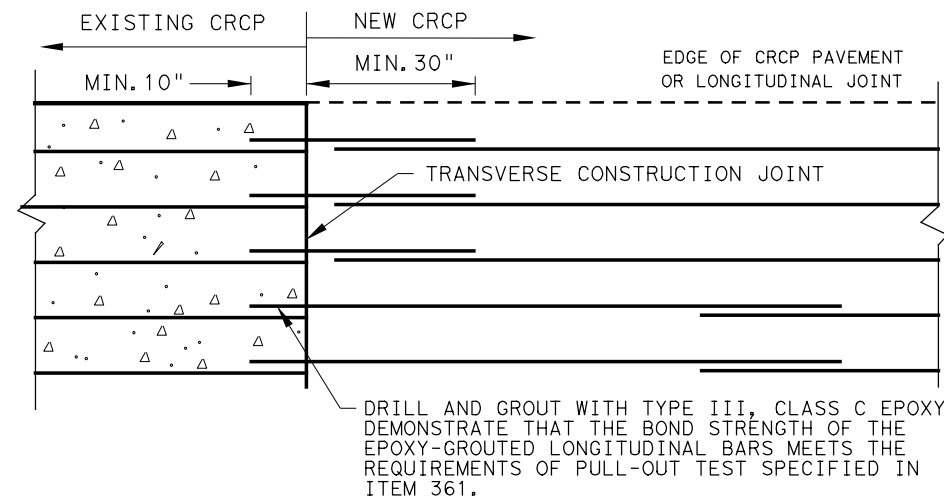


CENTERLINE FREE LONGITUDINAL JOINT DETAIL

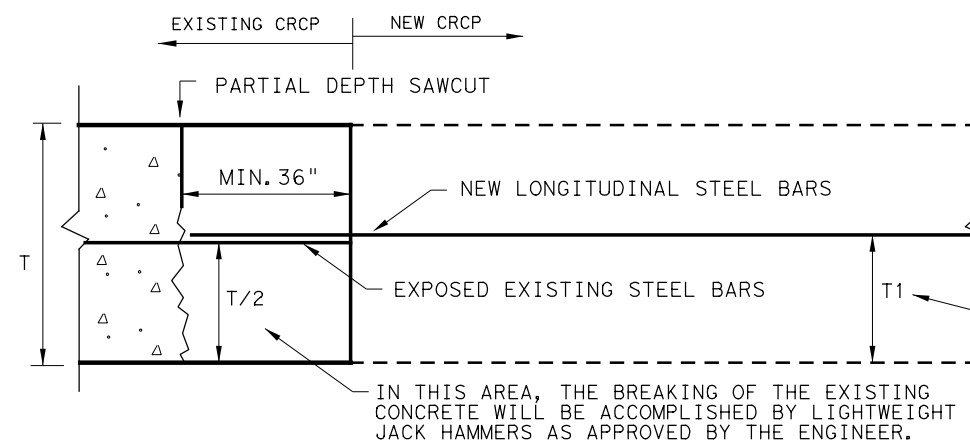


STAGGER THE LAP LOCATIONS SO THAT NO MORE THAN 1/3 OF THE LONGITUDINAL STEEL IS SPLICED IN ANY GIVEN 12-FT. WIDTH AND 2-FT. LENGTH OF THE PAVEMENT. ANY OTHER LAP CONFIGURATION MEETING THIS REQUIREMENT WILL BE ALLOWED.

**EXAMPLES OF LAP CONFIGURATION
PLAN VIEW (NOT TO SCALE)**

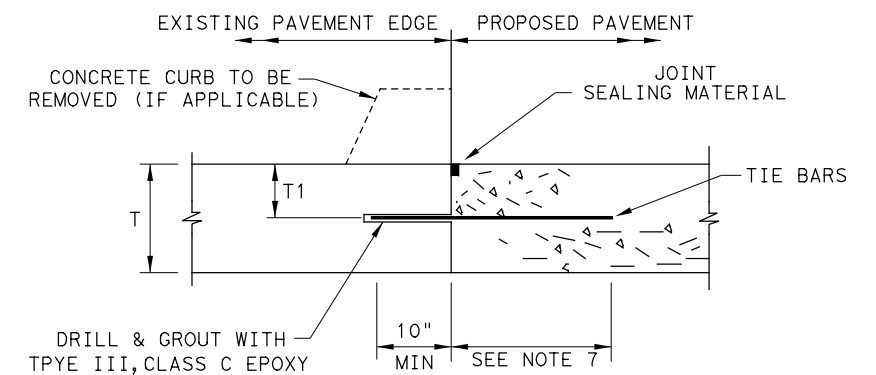


**OPTION A: DRILL AND EPOXY
PLAN VIEW (NOT TO SCALE)**



OPTION B: BREAKBACK AND LAP

**TRANSVERSE TIE JOINT DETAIL
NEW CRCP TO EXISTING CRCP**



- BEFORE CONCRETE PLACEMENT, PERFORM PULL-OUT TESTS ON EPOXY-GROUTED TIE BARS IN ACCORDANCE WITH ITEM 360.
- SPACE TIE BARS AT 24" SPACING. USE #6 TIE BARS FOR 8" AND THICKER PAVEMENTS, USE #5 TIE BARS FOR LESS THAN 8" THICK PAVEMENTS.

LONGITUDINAL WIDENING JOINT DETAIL

SHEET 2 OF 2

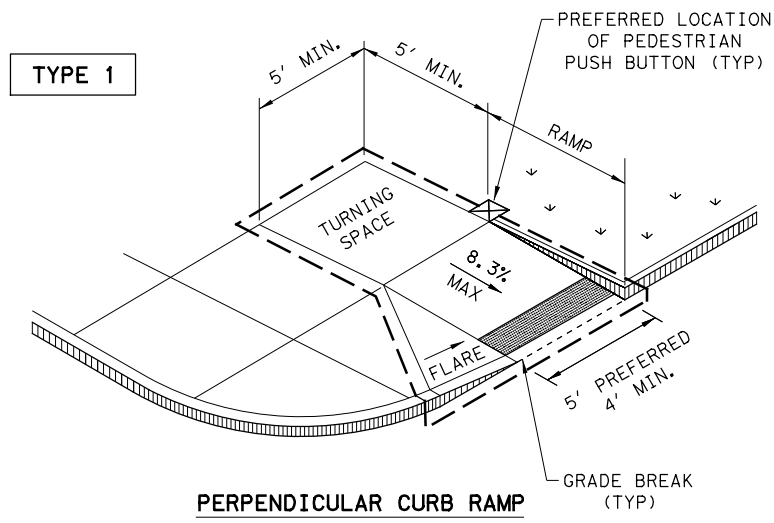


**CONTINUOUSLY REINFORCED
CONCRETE PAVEMENT
ONE LAYER STEEL BAR PLACEMENT
T - 7 TO 13 INCHES
CRCP (1) - 23**

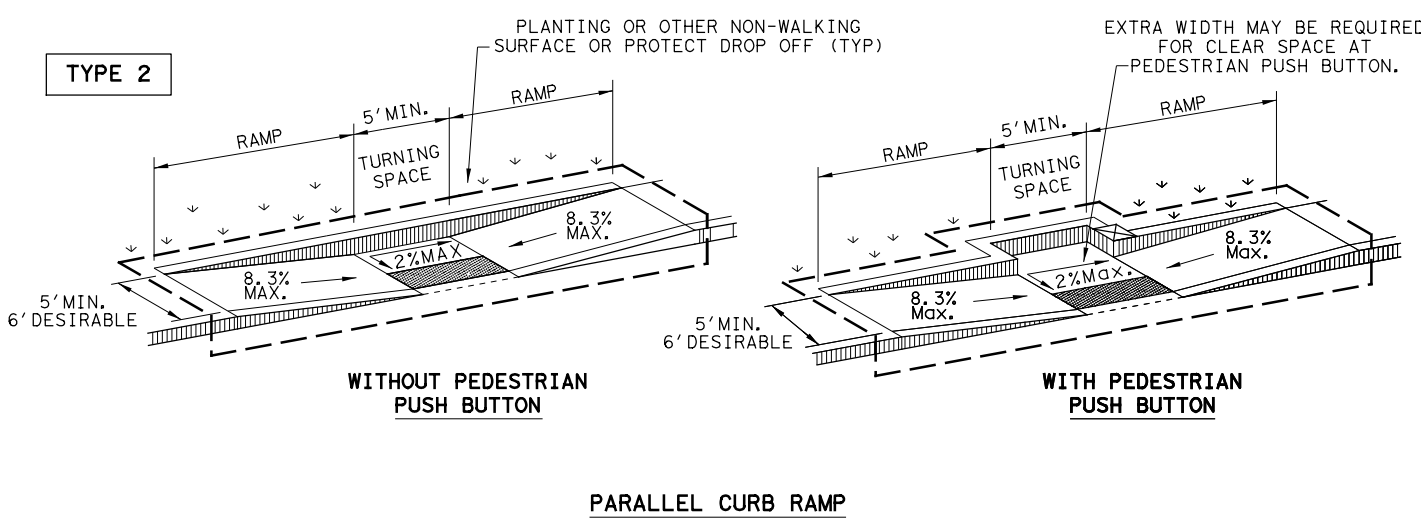
FILE: crcp123.dgn	DN: TxDOT	CK: KM	DW: CES	CK:
© TxDOT: APRIL 2023	CONT	SECT	JOB	HIGHWAY
REVISIONS	0439	05	026	SH 194
APRIL 2023: MODIFIED EXPANSION JOINT DETAIL AT BRIDGE APPROACH	DIST	COUNTY	SHEET NO.	
LBB	HALE		172	

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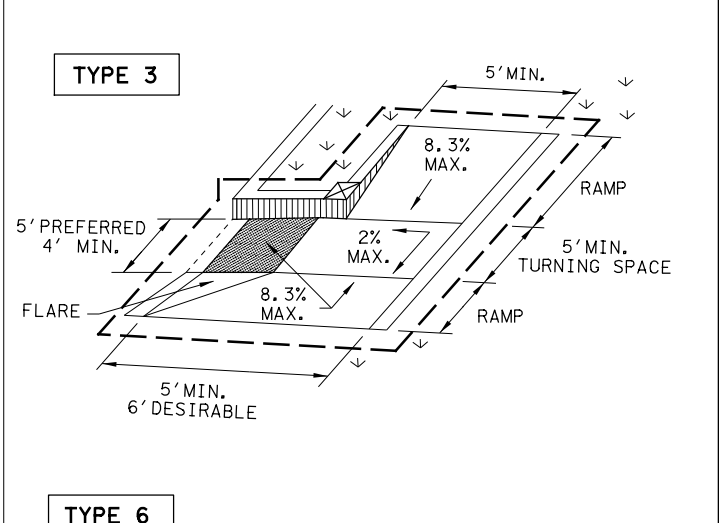
DATE: 2/27/2023
FILE: 05_ped18.dgn



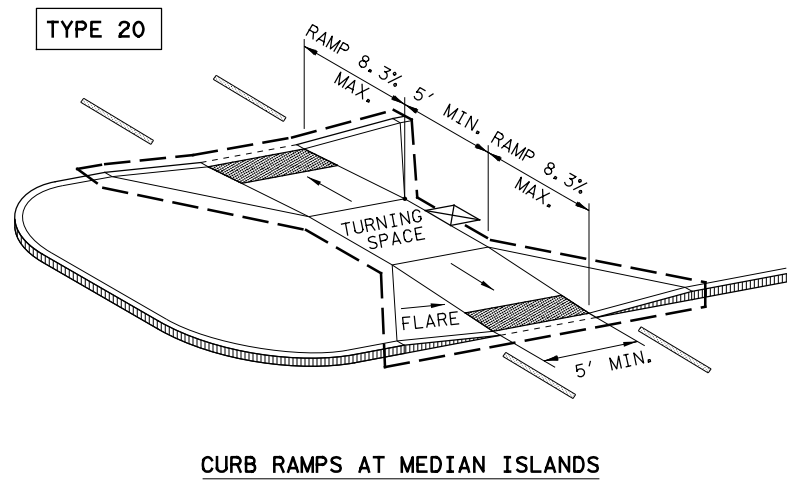
PERPENDICULAR CURB RAMP



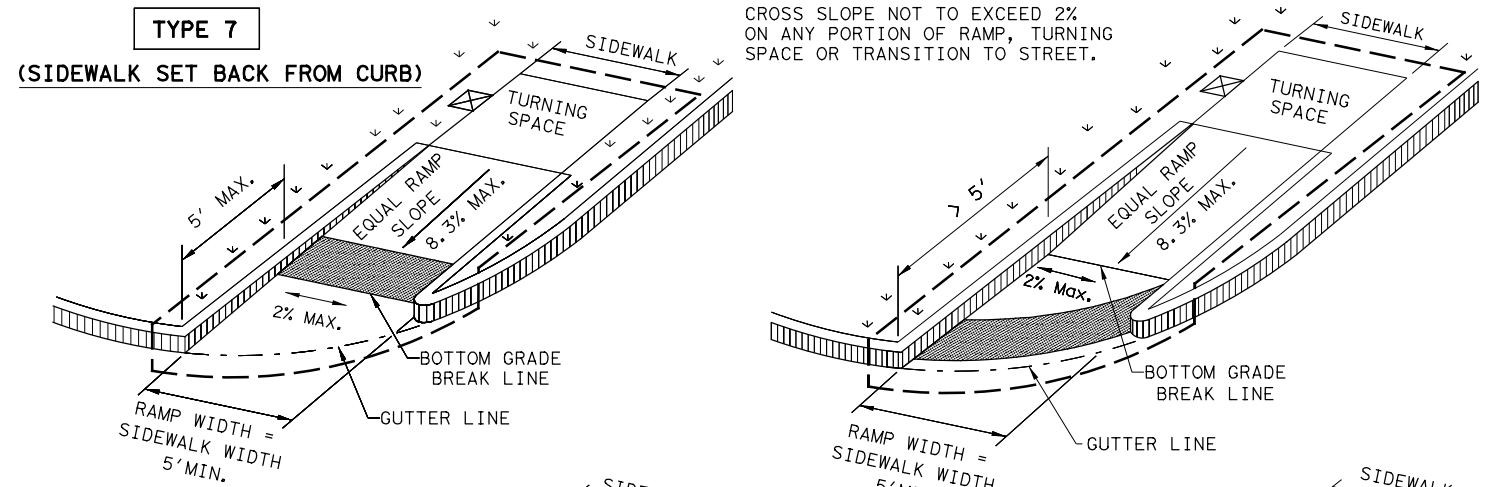
PARALLEL CURB RAMP



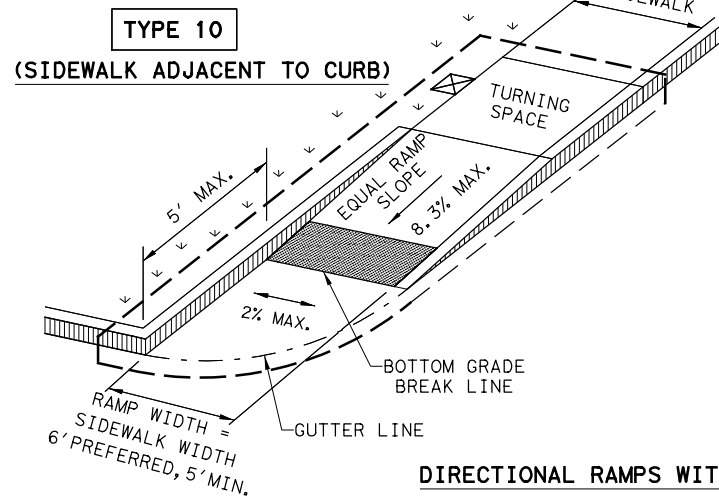
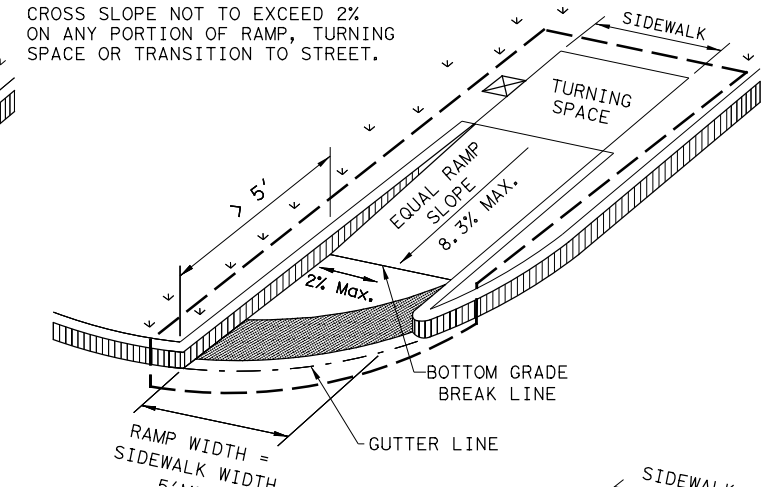
TYPE 3



CURB RAMPS AT MEDIAN ISLANDS

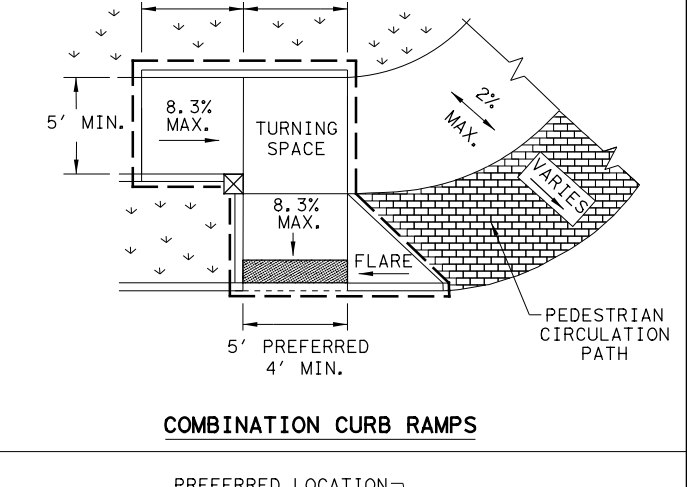
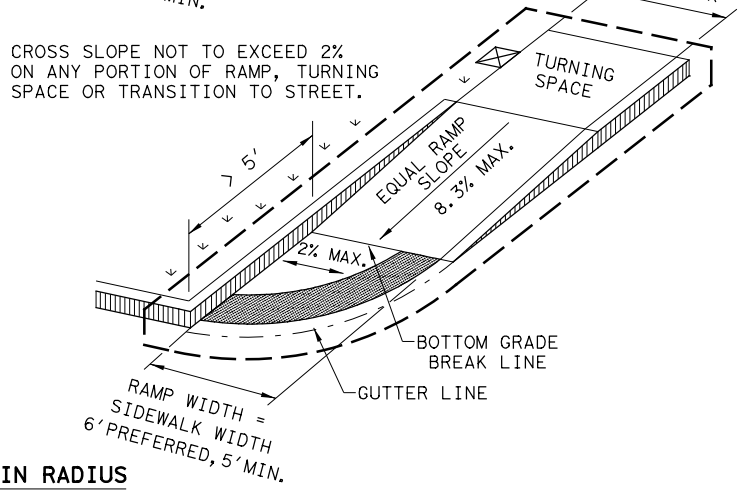


TYPE 7 (SIDEWALK SET BACK FROM CURB)



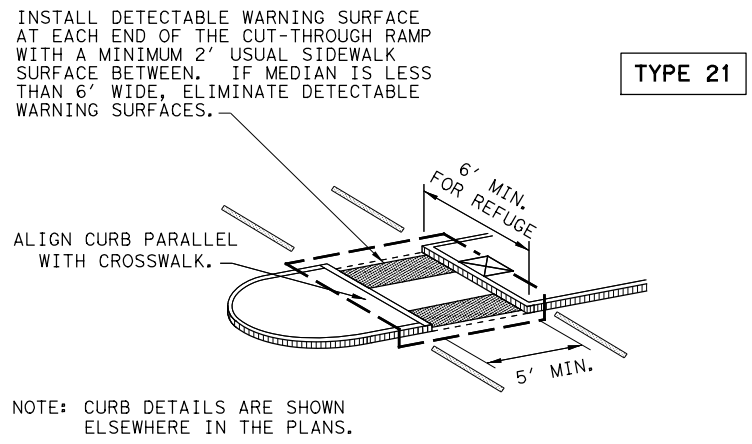
TYPE 10 (SIDEWALK ADJACENT TO CURB)

DIRECTIONAL RAMPS WITHIN RADIUS



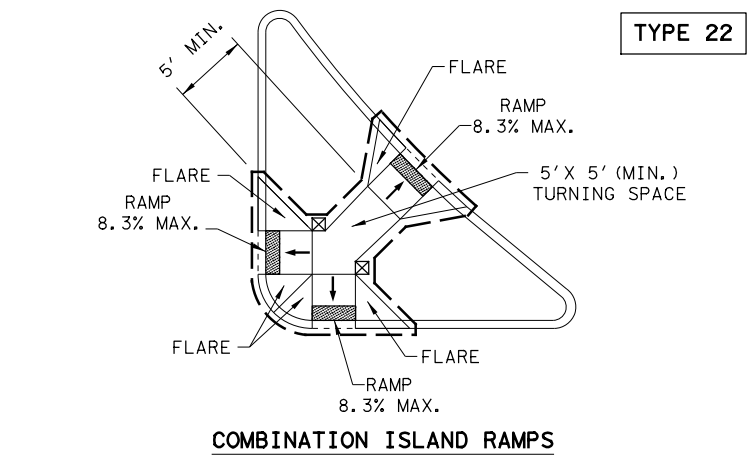
TYPE 6

COMBINATION CURB RAMPS



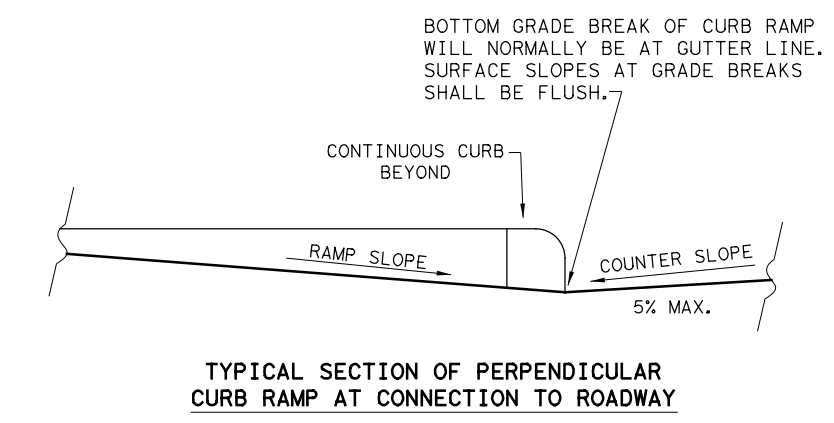
TYPE 21

NOTE: CURB DETAILS ARE SHOWN ELSEWHERE IN THE PLANS.



TYPE 22

COMBINATION ISLAND RAMPS



TYPICAL SECTION OF PERPENDICULAR CURB RAMP AT CONNECTION TO ROADWAY

NOTES / LEGEND:

SEE GENERAL NOTES ON SHEET 2 OF 4 FOR MORE INFORMATION.

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.



GUTTER LINE



DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON IF APPLICABLE.



GRADE BREAK



RAMP LIMITS OF PAYMENT



**PEDESTRIAN FACILITIES
CURB RAMPS
PED-18**

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0439	05	026	SH 194
REVISED 08, 2009	DIST	COUNTY	SHEET NO.	
REVISED 06, 2012	LBB	HALE	173	
REVISED 01, 2018				

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GENERAL NOTES

CURB RAMPS

1. Install a curb ramp or blended transition at each pedestrian street crossing.
2. All slopes shown are maximum allowable. Cross slopes of 1.5% and lesser running should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
3. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
4. The minimum sidewalk width is 5'. Where the sidewalk is adjacent to the back of curb, a 6' sidewalk width is desirable. Where a 5' sidewalk cannot be provided due to site constraints, sidewalk width may be reduced to 4' for short distances. 5' x 5' passing areas at intervals not to exceed 200' are required.
5. Turning Spaces shall be 5' x 5' minimum. Cross slope shall be maximum 2%.
6. Clear space at the bottom of curb ramps shall be a minimum of 4' x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
7. Provide flared sides where the pedestrian circulation path crosses the curb ramp. Flared sides shall be sloped at 10% maximum, measured parallel to the curb. Returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planted, substantially obstructed, or otherwise protected.
8. Additional information on curb ramp location, design, light reflective value and texture may be found in the latest draft of the Proposed Guidelines for Pedestrian Facilities in the Public Right of Way (PROWAG) as published by the U.S. Architectural and Transportation Barriers Compliance Board (Access Board).
9. To serve as a pedestrian refuge area, the median should be a minimum of 6' wide, measured from back of curbs. Medians should be designed to provide accessible passage over or through them.
10. Small channelization islands, which do not provide a minimum 5' x 5' landing at the top of curb ramps, shall be out through level with the surface of the street.
11. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps shall align with theoretical crosswalks unless otherwise directed.
12. Provide curb ramps to connect the pedestrian access route at each pedestrian street crossing. Handrails are not required on curb ramps.
13. Curb ramps and landings shall be constructed and paid for in accordance with Item 531 "Sidewalks".
14. Place concrete at a minimum depth of 5" for ramps, flares and landings, unless otherwise directed.
15. Furnish and install No. 3 reinforcing steel bars at 18" o.c. both ways, unless otherwise directed.
16. Provide a smooth transition where the curb ramps connect to the street.
17. Curbs shown on sheet 1 within the limits of payment are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.
18. Existing features that comply with applicable standards may remain in place unless otherwise shown on the plans.

DETECTABLE WARNING MATERIAL

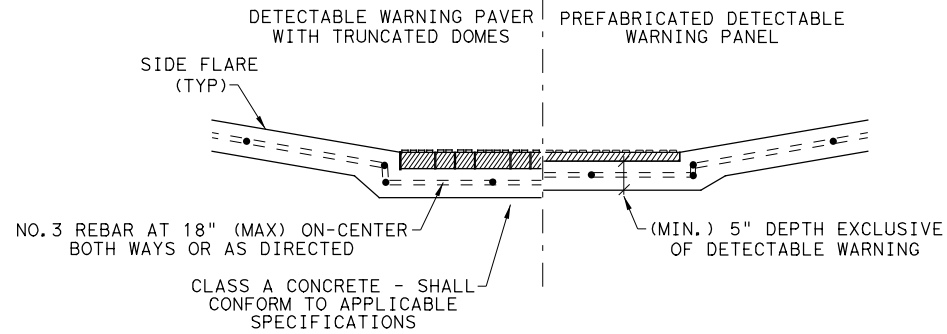
19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
20. Detectable Warning Materials must meet TxDOT Departmental Materials Specification DMS 4350 and be listed on the Material Producer List. Install products in accordance with manufacturer's specifications.
21. Detectable warning surfaces must be firm, stable and slip resistant.
22. Detectable warning surfaces shall be a minimum of 24 inches in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
23. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb and neither end of that edge is greater than 5 feet from the back of curb. Detectable warning surfaces may be curved along the corner radius.
24. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.

DETECTABLE WARNING PAVERS (IF USED)

25. Furnish detectable warning paver units meeting all requirements of ASTM C-936, C-33. Lay in a two by two unit basket weave pattern or as directed.
26. Lay full-size units first followed by closure units consisting of at least 25 percent (25%) of a full unit. Cut detectable warning paver units using a power saw.

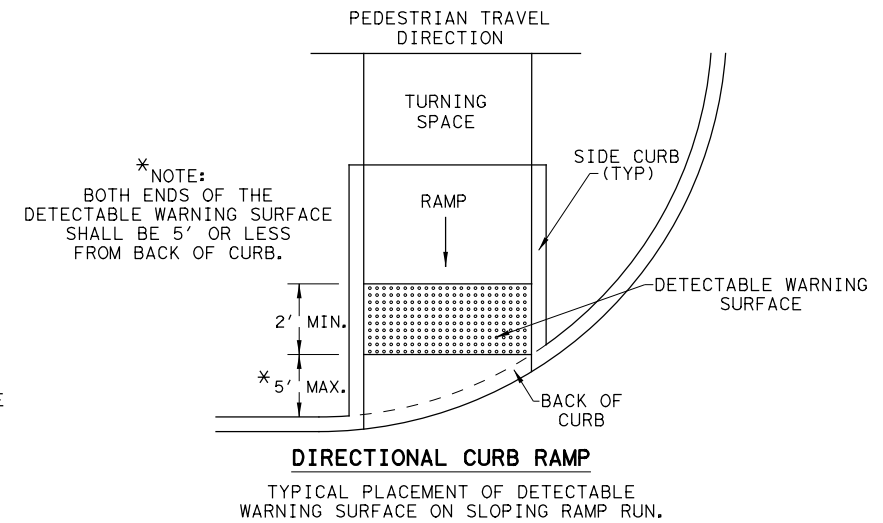
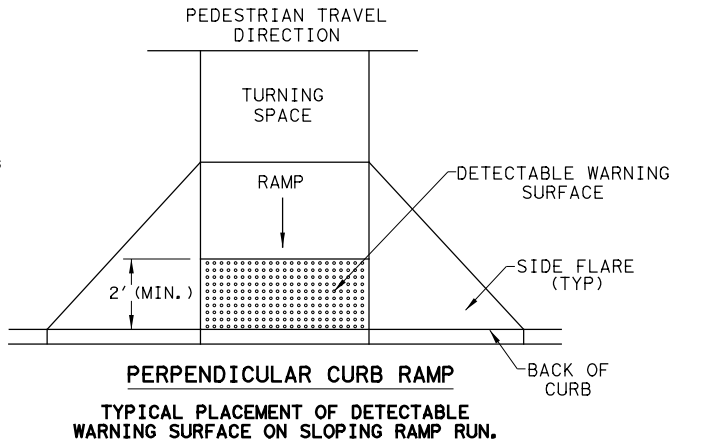
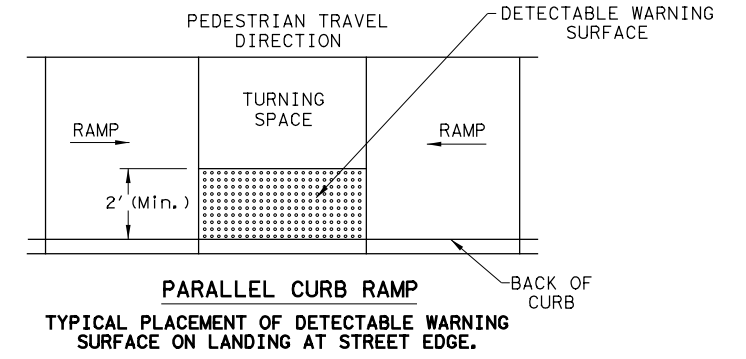
SIDEWALKS

27. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within unobstructed reach range specified in PROWAG section R406.
28. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items so as not to obstruct the pedestrian access route or clear ground space.
29. Street grades and cross slopes shall be as shown elsewhere in the plans.
30. Changes in level greater than 1/4 inch are not permitted.
31. The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway. Where a continuous grade greater than five percent (5%) must be provided, handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with PROWAG R409.
32. Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.
33. Driveways and turnouts shall be constructed and paid for in accordance with Item "Intersections, Driveways and Turnouts". Sidewalks shall be constructed and paid for in accordance with Item, "Sidewalks".
34. Sidewalk details are shown elsewhere in the plans.



**SECTION VIEW DETAIL
CURB RAMP AT DETECTIBLE WARNINGS**

DETECTABLE WARNING SURFACE DETAILS



SHEET 2 OF 4

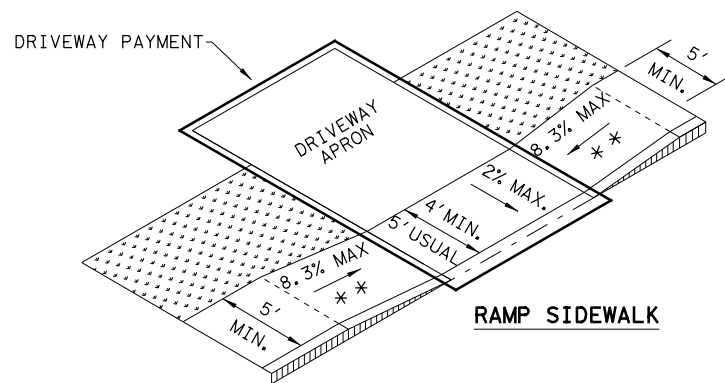
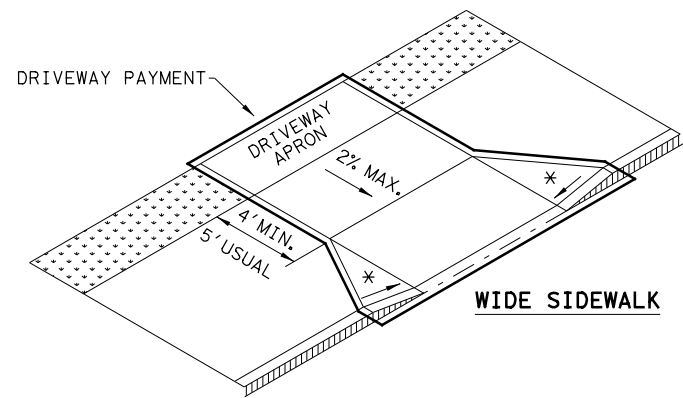
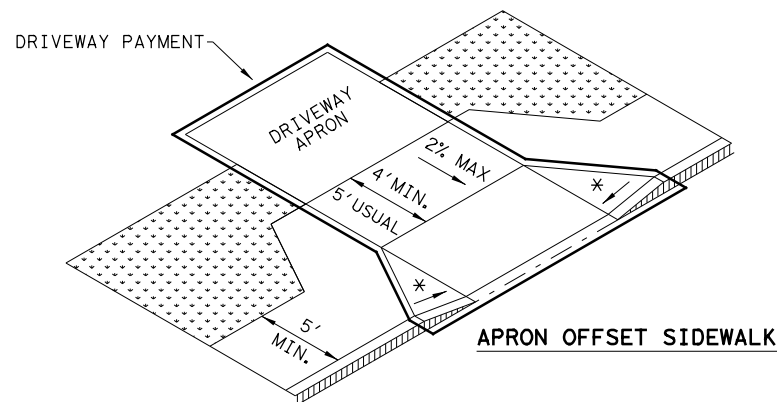
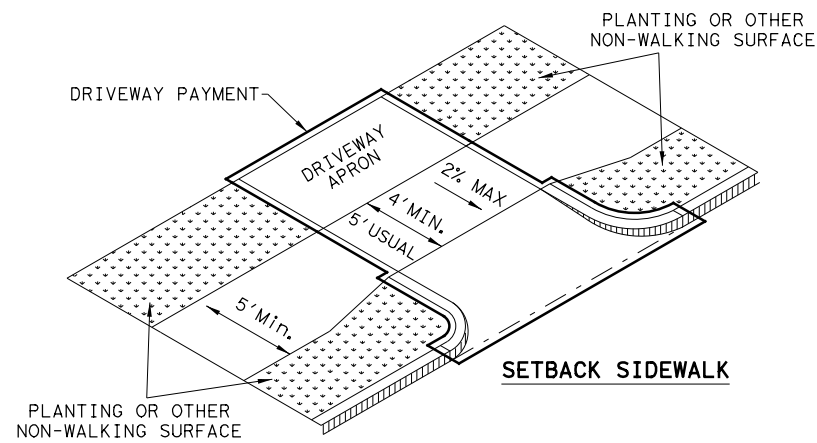
		Design Division Standard	
<h1>PEDESTRIAN FACILITIES</h1> <h2>CURB RAMPS</h2> <h3>PED-18</h3>			
FILE: ped18	DN: TxDOT	DW: VP	CK: KM
© TxDOT: MARCH, 2002	CONT	SECT	JOB
REVISIONS	0439	05	026
REVISED 08, 2009	DIST	COUNTY	SHEET NO.
REVISED 06, 2012	LBB	HALE	174
REVISED 01, 2018			

DATE: 2/27/2023
 FILE: 05_ped18.dgn

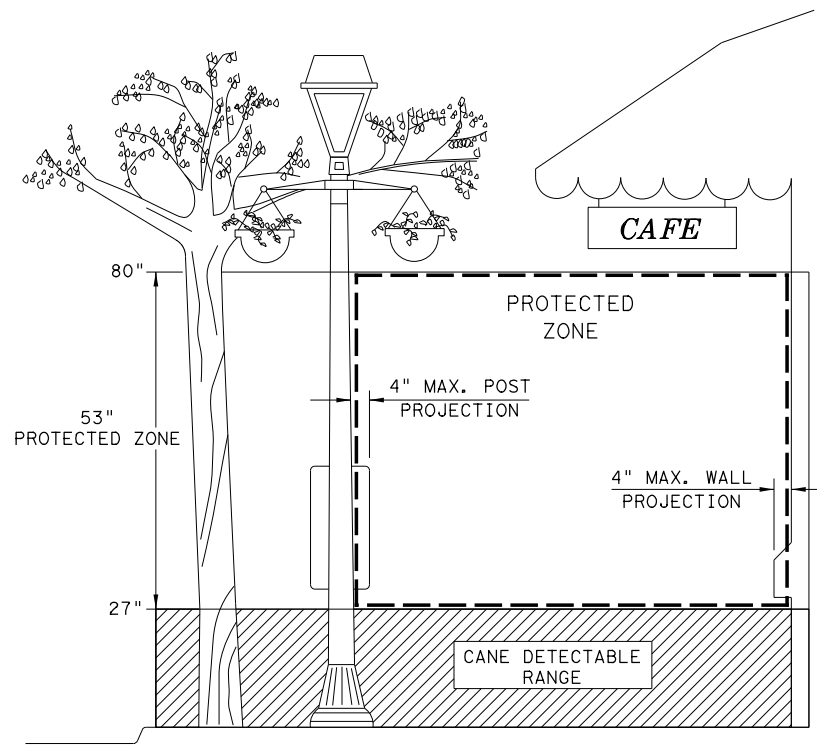
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: 2/27/2023
FILE: 05_ped18.dgn

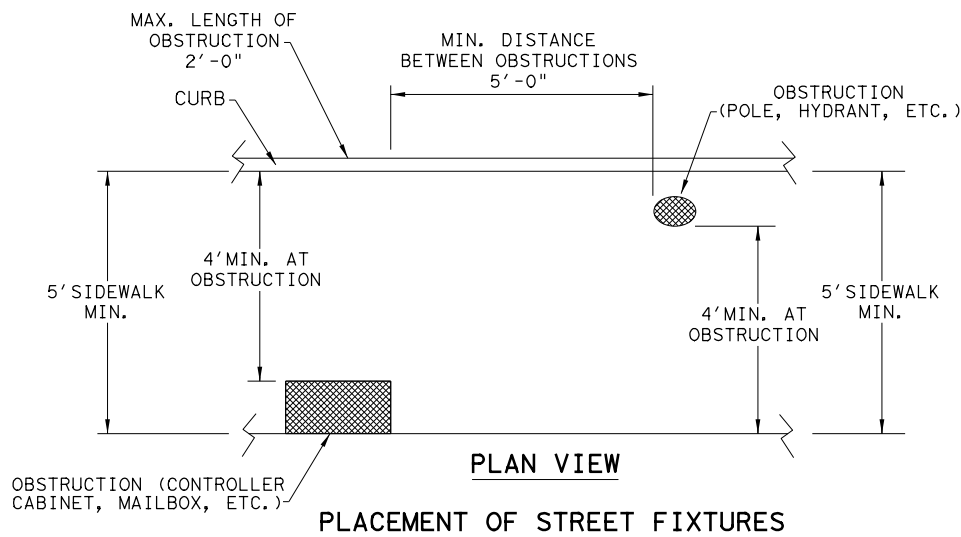
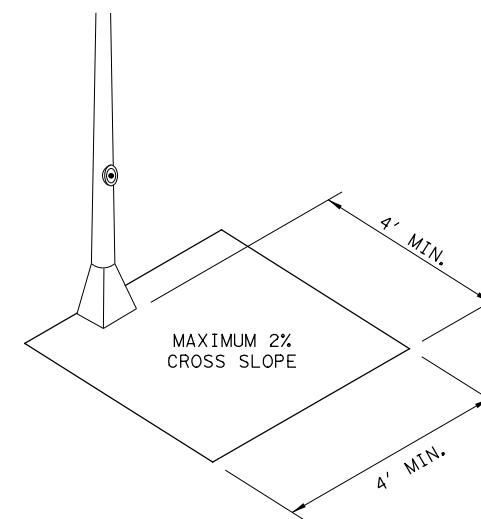
SIDEWALK TREATMENT AT DRIVEWAYS



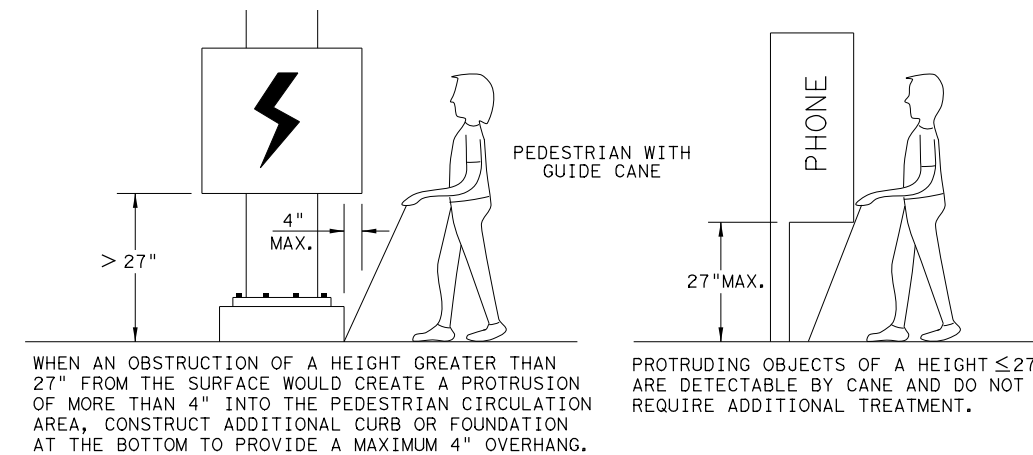
NOTES:
 * WHERE DRIVEWAYS CROSS THE PEDESTRIAN ROUTE, SIDES SHALL BE FLARED AT 10% MAX SLOPE.
 * * IF CURB HEIGHT IS GREATER THAN 6 INCHES, USE GRADE LESS THAN OR EQUAL TO 5%. HANDRAIL AND DETECTABLE WARNING ARE NOT REQUIRED.



NOTE: IN PEDESTRIAN CIRCULATION AREA, MAXIMUM 4" PROJECTION FOR POST OR WALL MOUNTED OBJECTS BETWEEN 27" AND 80" ABOVE THE SURFACE.



NOTE: ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' X 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.



WHEN AN OBSTRUCTION OF A HEIGHT GREATER THAN 27" FROM THE SURFACE WOULD CREATE A PROTRUSION OF MORE THAN 4" INTO THE PEDESTRIAN CIRCULATION AREA, CONSTRUCT ADDITIONAL CURB OR FOUNDATION AT THE BOTTOM TO PROVIDE A MAXIMUM 4" OVERHANG.

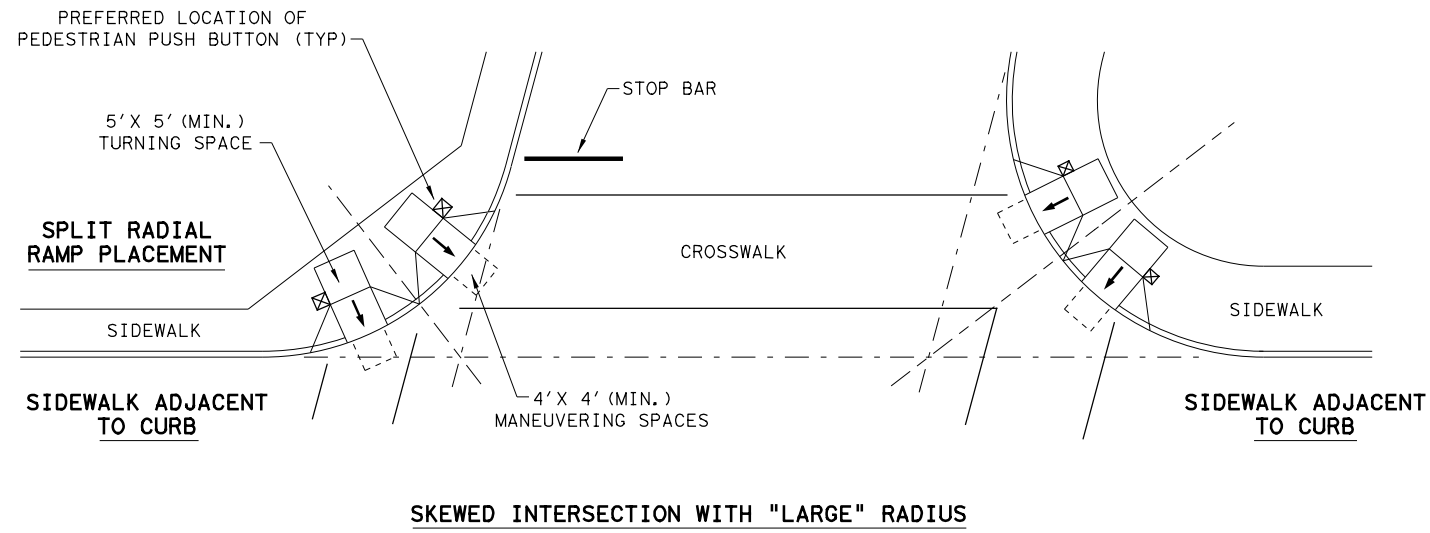
PROTRUDING OBJECTS OF A HEIGHT ≤ 27" ARE DETECTABLE BY CANE AND DO NOT REQUIRE ADDITIONAL TREATMENT.

SHEET 3 OF 4

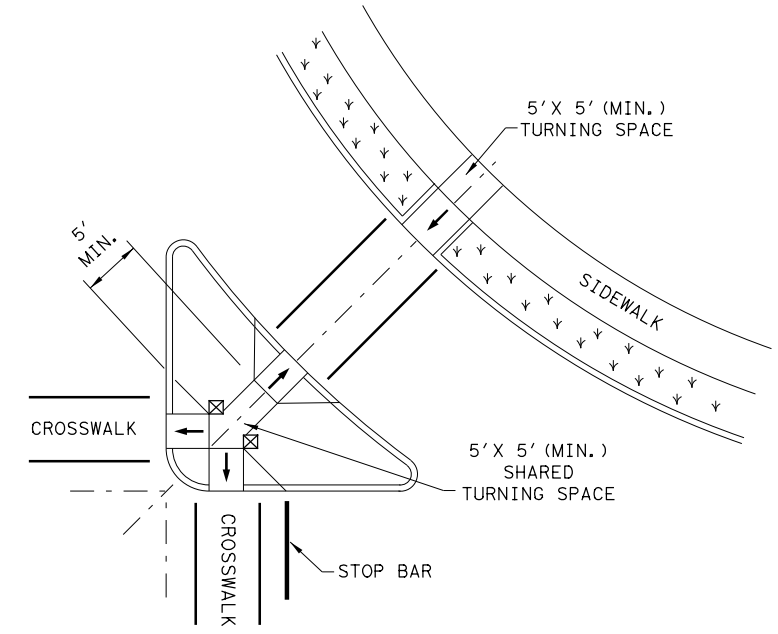
		Design Division Standard	
PEDESTRIAN FACILITIES CURB RAMPS PED-18			
FILE: ped18	DN: TxDOT	DW: VP	CK: KM
© TxDOT: MARCH, 2002	CONT	SECT	JOB
REVISIONS	0439	05	026
REVISED 08, 2005	DIST	COUNTY	SHEET NO.
REVISED 06, 2012	LBB	HALE	175
REVISED 01, 2018			

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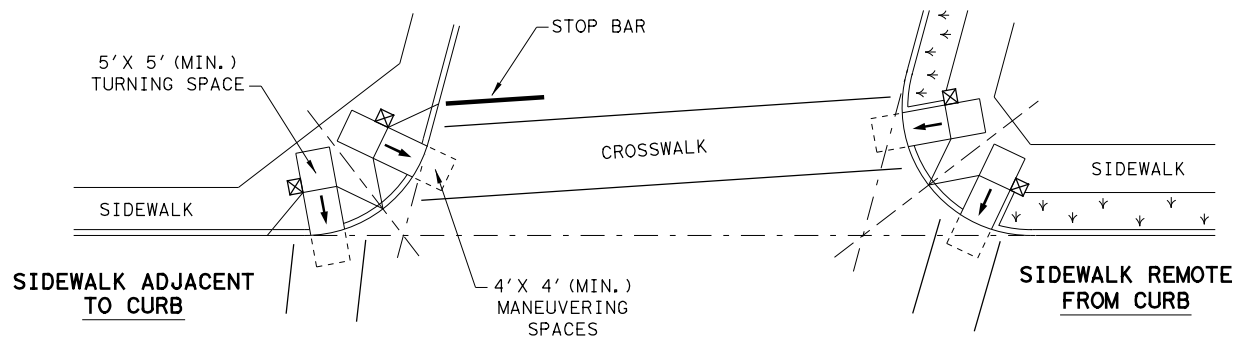
TYPICAL CROSSING LAYOUTS
SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS



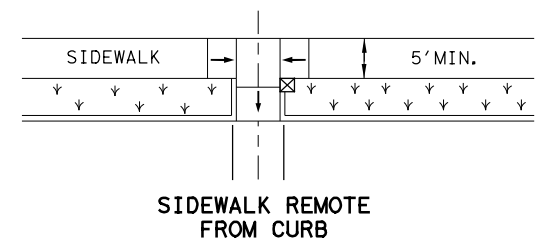
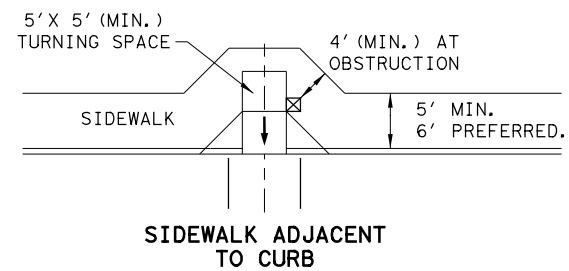
SKewed INTERSECTION WITH "LARGE" RADIUS



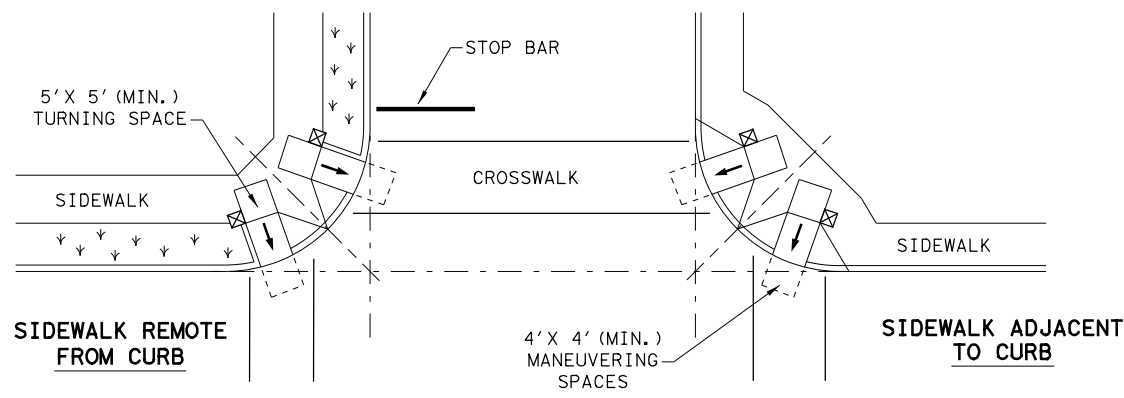
AT INTERSECTION W/FREE RIGHT TURN & ISLAND



SKewed INTERSECTION WITH "SMALL" RADIUS



MID-BLOCK PLACEMENT PERPENDICULAR RAMPS



NORMAL INTERSECTION WITH "SMALL" RADIUS

LEGEND:

- SHOWS DOWNWARD SLOPE. →
- DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON (IF APPLICABLE). ☒
- DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH. ↙ ↘

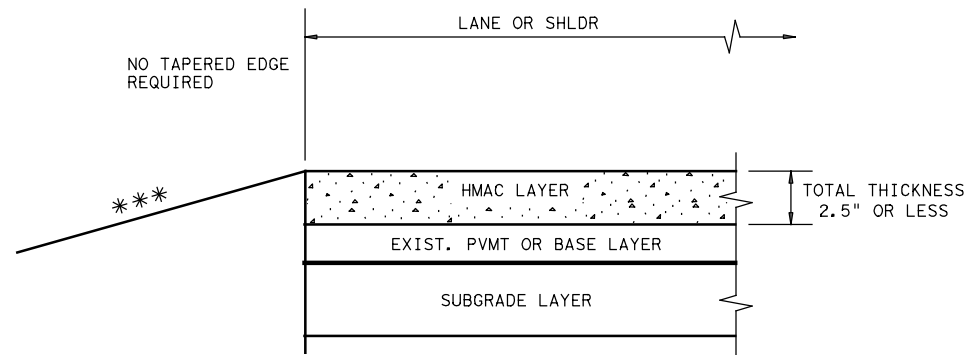


PEDESTRIAN FACILITIES CURB RAMPS
PED-18

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0439	05	026	SH 194
REVISED 08, 2005	DIST	COUNTY	SHEET NO.	
REVISED 06, 2012	LBB	HALE	176	
REVISED 01, 2018				

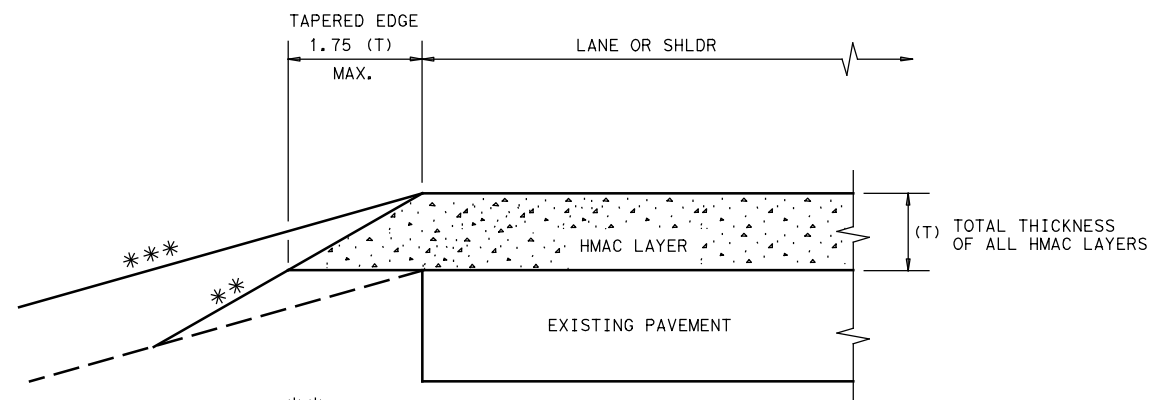
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DATE: 2/27/2023
FILE: 07_tehmac1.dgn



*** SEE TYPICAL SECTION FOR ROADSIDE DETAILS

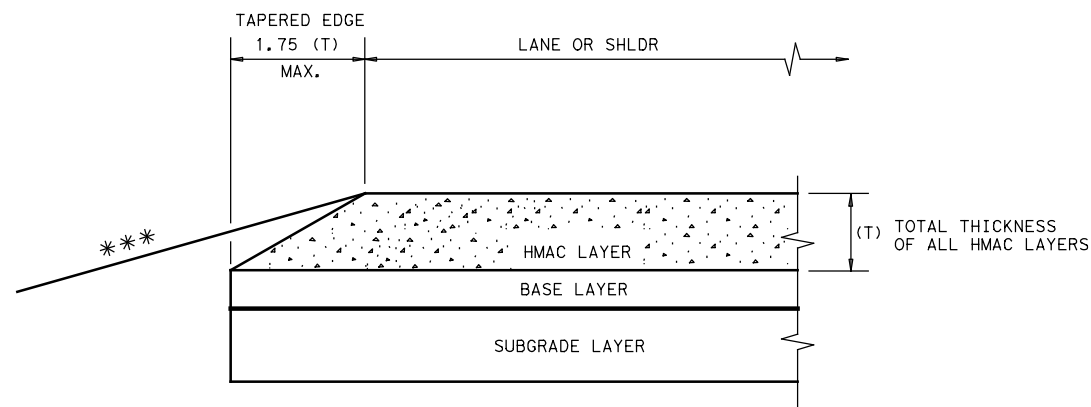
CONDITION - 1
THIN HMAC SURFACES OR HMAC OVERLAY
WITH THICKNESS OF 2.5" OR LESS



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

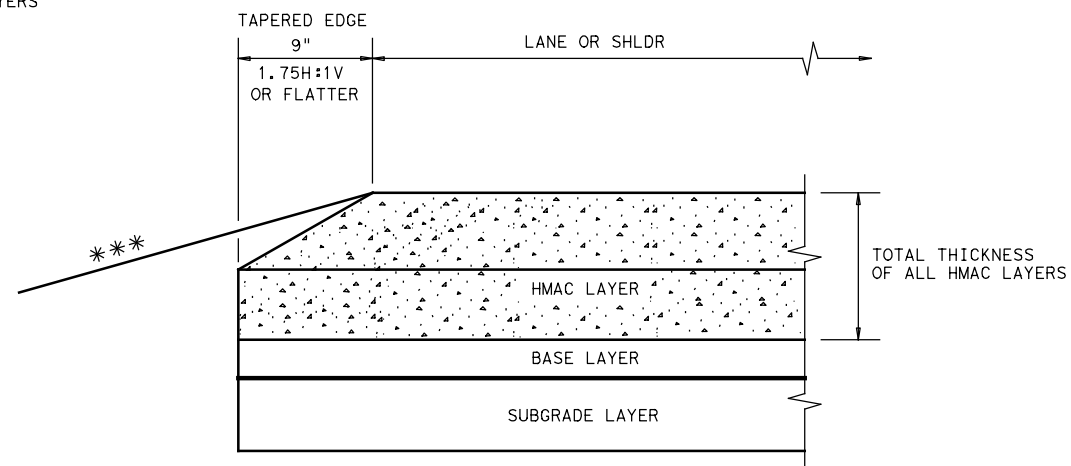
*** SEE TYPICAL SECTION FOR ROADSIDE DETAILS

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



*** SEE TYPICAL SECTION FOR ROADSIDE DETAILS

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



*** SEE TYPICAL SECTION FOR ROADSIDE DETAILS

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

GENERAL NOTES

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

(NOT TO SCALE)



**TAPERED EDGE DETAILS
HMAC PAVEMENT**

TE (HMAC) - 11

FILE: tehmoc11.dgn	DN: TxDOT	CK: RL	DW: KB	CK:
© TxDOT January 2011	CONT	SECT	JOB	HIGHWAY
REVISIONS	0439	05	026	SH 194
	DIST	COUNTY	SHEET NO.	
	LBB	HALE	181	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:38:42 PM SCALE: 1:1
 FILE: SH194_Quantities_DrainageStructure.dgn

DRAINAGE SUMMARY

PLAN & PROFILE SHEET NUMBER	432 6010	467 6423	467 6494	429 6009
	RIPRAP (CONC) (CL B) (5 IN)	SET (TY II) (30 IN) (RCP) (6:1) (P)	SET (TY II) (60 IN) (CMP) (6:1) (P)	CONC STR REPAIR (STANDARD)
	CY	EA	EA	SF
SHEET 1 OF 26	4			
SHEET 3 OF 26			1	
SHEET 4 OF 26			1	
SHEET 5 OF 26	14			
SHEET 6 OF 26				16
SHEET 11 OF 26				11
SHEET 17 OF 26		1		
TOTAL:	18	1	2	27

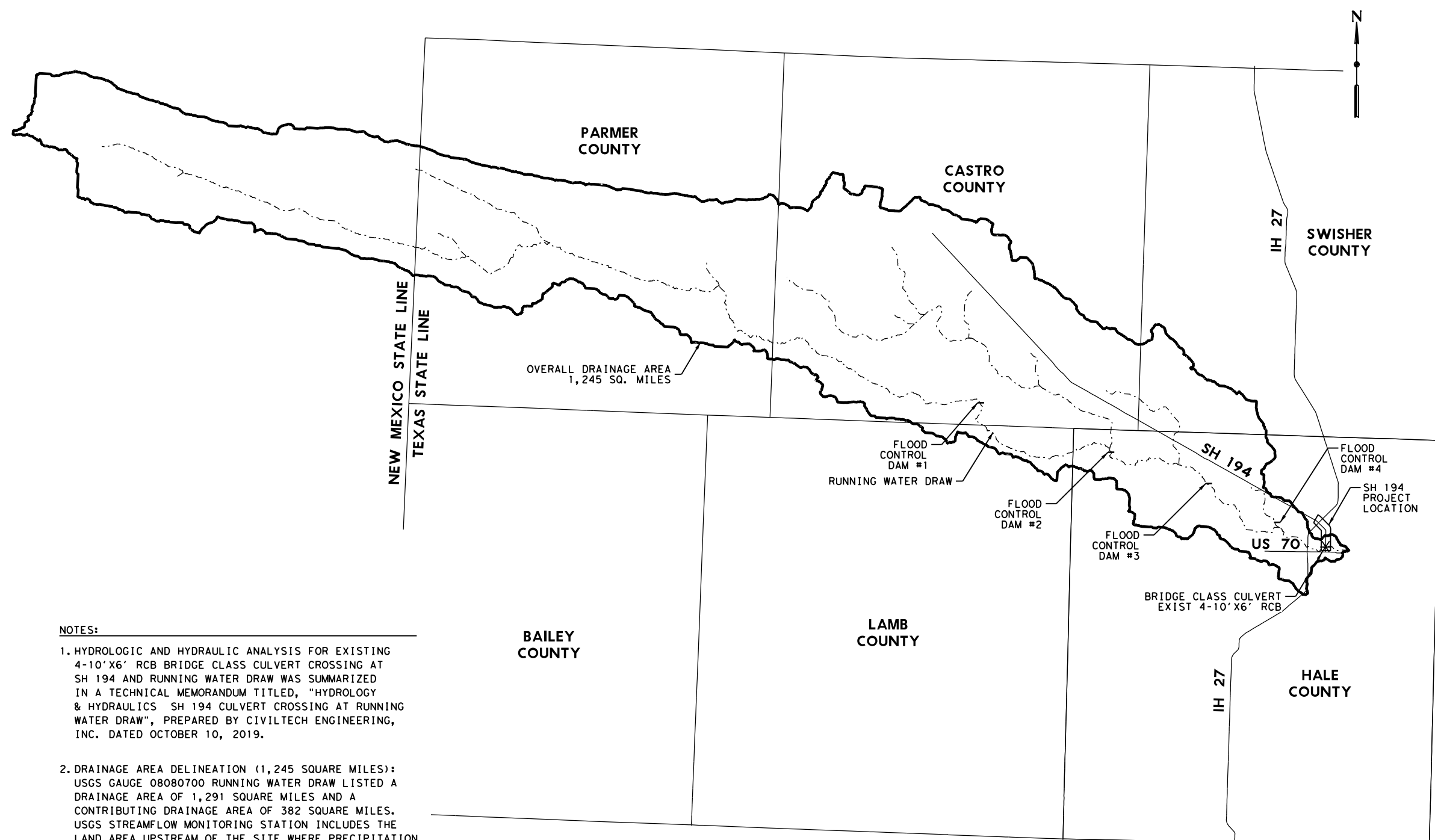
STRUCTURE SUMMARY

NBI	450 6012	420 6066
	RAIL (TY 411)	CLASS C CONC (RAIL FOUNDATION)
	LF	CY
050960043905	118	5
TOTAL:	118	5



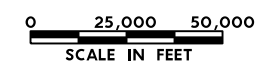
DRAINAGE & STRUCTURE SUMMARY

FED. RD. DIV. NO:	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	182
CONTROL	SECTION	JOB	
0439	05	026	



LEGEND

- DRAINAGE AREA BOUNDARY
- * OUTFALL POINT (EXISTING)
- - - - - STREAM
- FLOOD CONTROL DAM



NOTES:

1. HYDROLOGIC AND HYDRAULIC ANALYSIS FOR EXISTING 4-10' X6' RCB BRIDGE CLASS CULVERT CROSSING AT SH 194 AND RUNNING WATER DRAW WAS SUMMARIZED IN A TECHNICAL MEMORANDUM TITLED, "HYDROLOGY & HYDRAULICS SH 194 CULVERT CROSSING AT RUNNING WATER DRAW", PREPARED BY CIVILTECH ENGINEERING, INC. DATED OCTOBER 10, 2019.
2. DRAINAGE AREA DELINEATION (1,245 SQUARE MILES): USGS GAUGE 08080700 RUNNING WATER DRAW LISTED A DRAINAGE AREA OF 1,291 SQUARE MILES AND A CONTRIBUTING DRAINAGE AREA OF 382 SQUARE MILES. USGS STREAMFLOW MONITORING STATION INCLUDES THE LAND AREA UPSTREAM OF THE SITE WHERE PRECIPITATION FALLS AND THEN FLOWS TO THE STREAMFLOW STATION. WITHIN THIS DRAINAGE AREA, THERE MAY BE AREAS WHERE WATER IS CONTAINED IN CLOSED DEPRESSIONS (PLAYAS), AND DOES NOT FLOW TO THE MONITORING SITE. USGS EVALUATES THE TOPOGRAPHY AND IDENTIFIES A CONTRIBUTING DRAINAGE AREA, CONSIDERING FEATURES SUCH AS PLAYAS.
3. HYDROLOGY: USGS PEAKFQ VERSION 7.2 COMPUTER PROGRAM WAS USED TO DETERMINE THE ANNUAL PROBABILITY OF EXCEEDANCE OF PEAK FLOWS BASED ON THE LOG-PEARSON TY III (LPIII) STATISTICAL DISTRIBUTION METHOD AS RECOMMENDED IN BULLETIN #17C. PEAKFQ FLOWS WERE COMPUTED BASED ON THE ANNUAL MAXIMUM PEAK FLOWS FOR THE PERIOD OF RECORD FROM 2003 TO 2017.
4. HYDRAULICS: THE EXISTING 4-10' X6' RCB BRIDGE CLASS CULVERT CROSSING AT SH 194 AND RUNNING WATER DRAW WAS ANALYZED USING HEC-RAS COMPUTER MODEL.

PEAK FLOW COMPUTATIONS

Storm Frequency	USGS PeakFQ Flows (csf)
2 - Year	136
5 - Year	292
10 -Year	439
25 - Year	682
50 - Year	911
100 - Year	1,184

HYDRAULIC COMPUTATIONS

HEC-RAS STATION (DS/US)	STRUCTURE	CULVERT FL ELEVATION (FEET)	MIN ROAD OVERTOP ELEVATION (FEET)	10-YEAR		25-YEAR		100-YEAR	
				Q (CFS)	WSEL (FEET) NAVD 88	Q (CFS)	WSEL (FEET) NAVD 88	Q (CFS)	WSEL (FEET) NAVD 88
155765	4-10' X6' RCB	3352.05	3359.03	439	3356.06	682	3356.78	1184	3357.81
155860		3351.75			3356.21		3357.05		3358.39

CivilTech Engineering, Inc.
 11821 Telge Road
 Cypress, Texas 77429
 PH: (281) 304-0200 - FX: (281) 304-0210
 Firm Registration No. F-382

Texas Department of Transportation
 © 2023

SH 194 FROM FM 3466 TO IH 27
 OVERALL DRAINAGE AREA MAP

HORZ SCALE: 1"=50000' SHEET 1 OF 1

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:
6	SEE TITLE SHEET	SH 194
STATE:	DISTRICT:	COUNTY:
TEXAS	LBB	HALE
CONTROL:	SECTION:	JOB:
0439	05	026

183

PLOT DRIVER: T:\DOT-EM-PDF-SRV-R-pltcfgr PENTABLE: \$PENTBL\$
 USER: \$USER\$ DATE: 2/28/2023 TIME: 2:45:48 PM SCALE: 1:50000
 FILE: SH194-OVERALL DAM_Sheet1.dgn

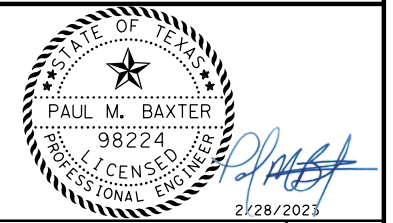
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 USER: \$USER\$ DATE: 2/28/2023 TIME: 2:45:53 PM SCALE: 1:100
 FILE: SH194_DAM_Sheet1.dgn

LEGEND

- MANHOLE
- GRATE INLET
- CURB INLET
- CURB INLET WITH EXTENSION
- PROPOSED DITCH
- DIRECTION OF FLOW
- DRAINAGE AREA BOUNDARY

ID
 DRAINAGE AREA ID
00.00
 DRAINAGE AREA ACREAGE

- NOTES:**
- SEE HYDRAULIC COMPUTATION SHEETS FOR ALL DRAINAGE AREA CALCUTONS.
 - SEE OVERALL DRAINAGE AREA MAP SHEET FOR FULL EXTENTS OF DRAINAGE AREA BOUNDARIES.



NO.	DATE	REVISION	APPROVED

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 Firm Registration No. F-382

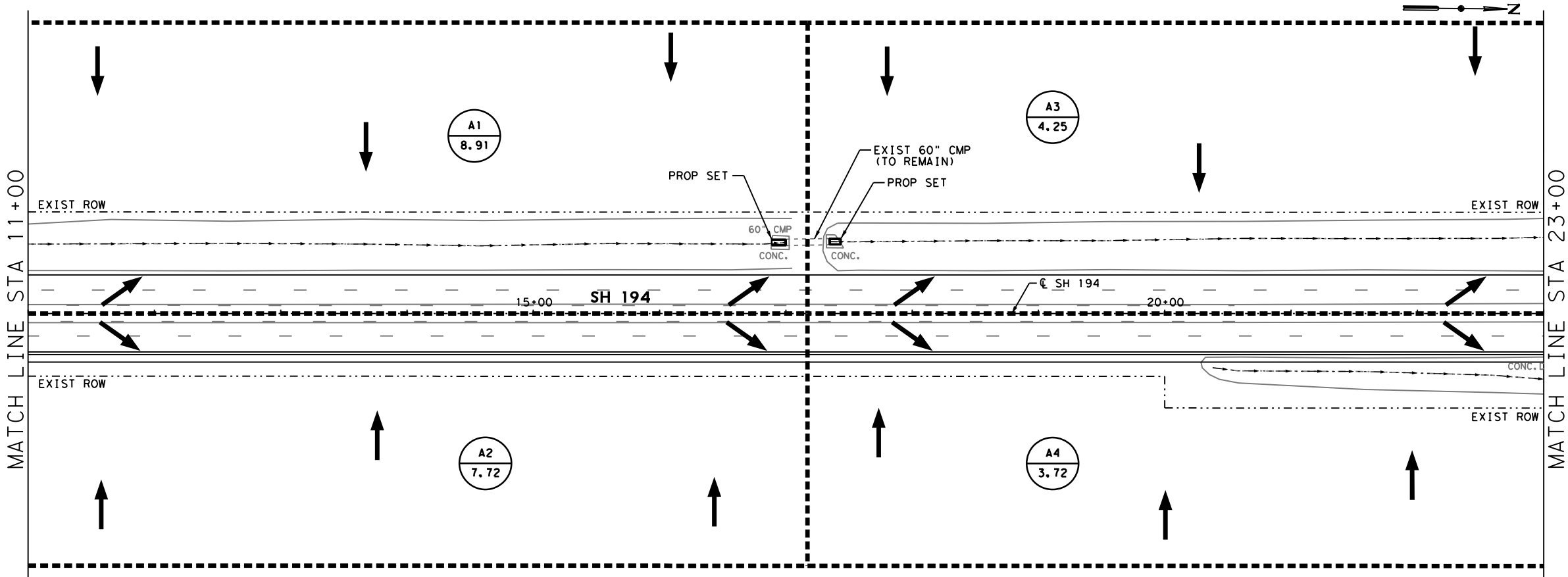
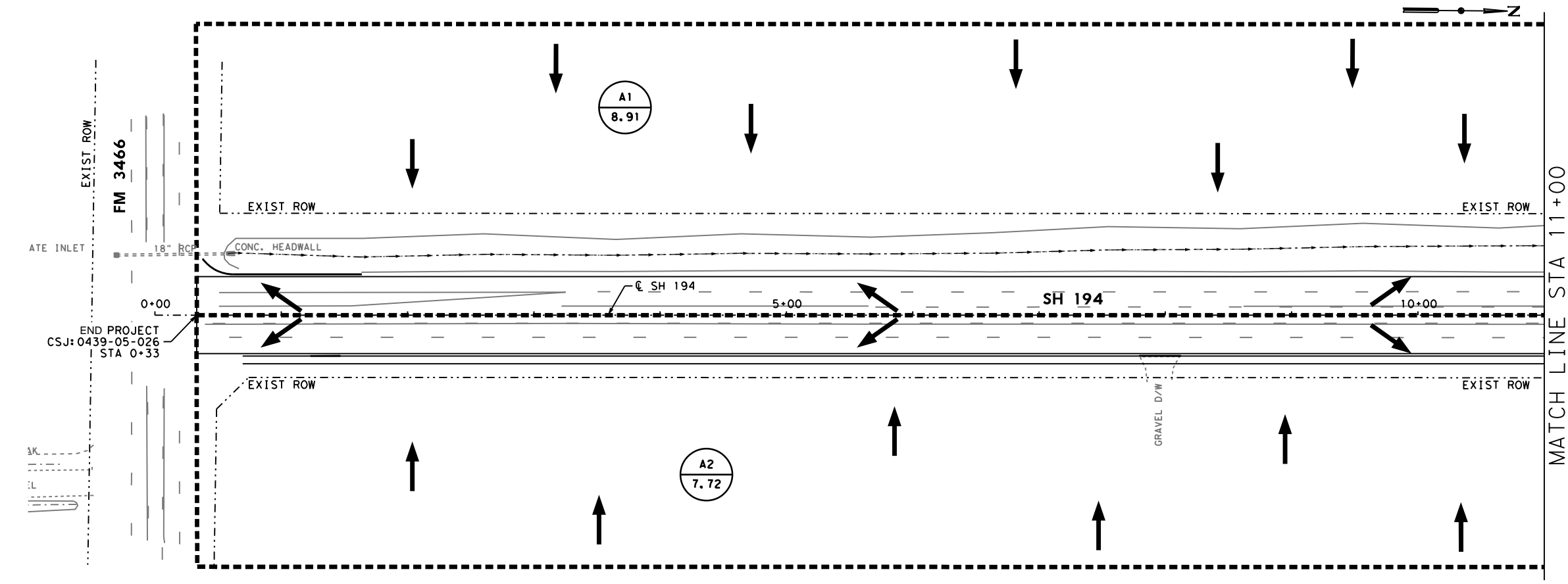


SH 194 FROM FM 3466 TO IH 27
 DRAINAGE AREA MAP
 BEGIN TO STA 23+00

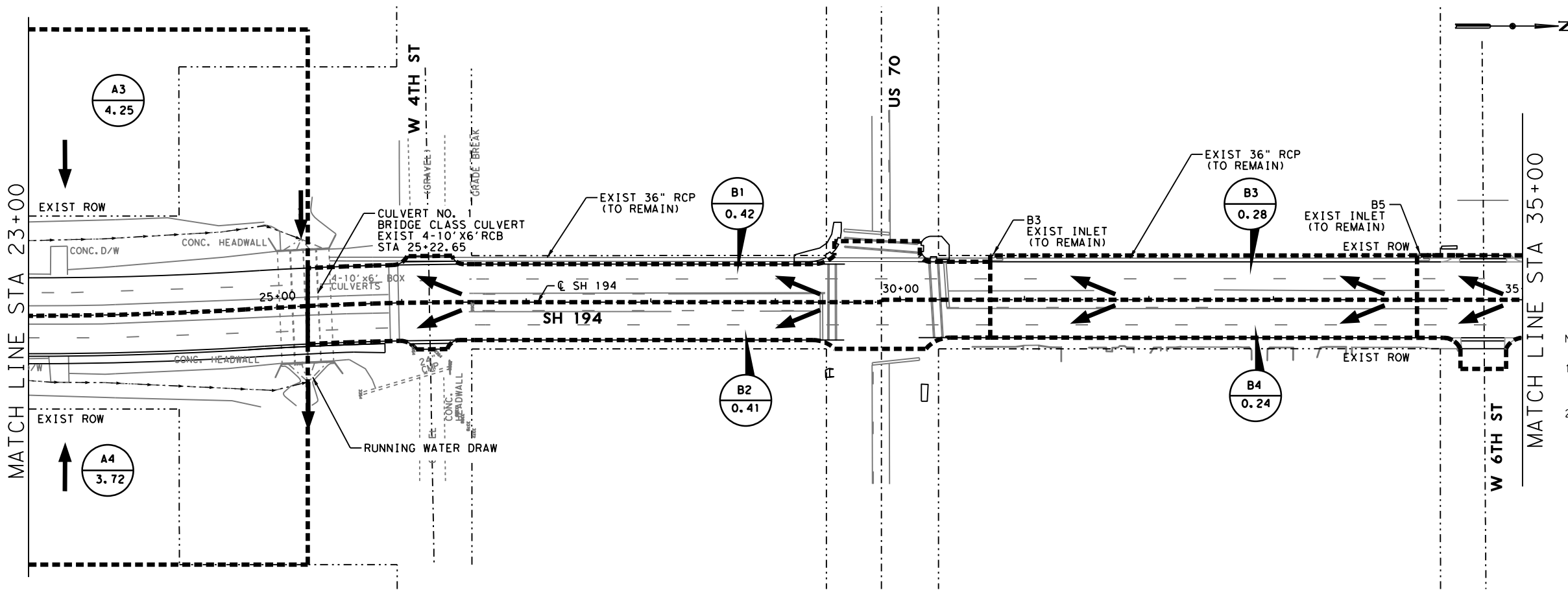
HORZ SCALE: 1"=100' SHEET 1 OF 7

FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026

184



PLOT DRIVER: T:\DOT-EM-PDF-SRV-R-pltcfg PENTABLE: \$PENTBL\$
 USER: \$USER\$ DATE: 2/28/2023 TIME: 2:45:59 PM SCALE: 1:100
 FILE: SH194_DAM_Sheet2.dgn

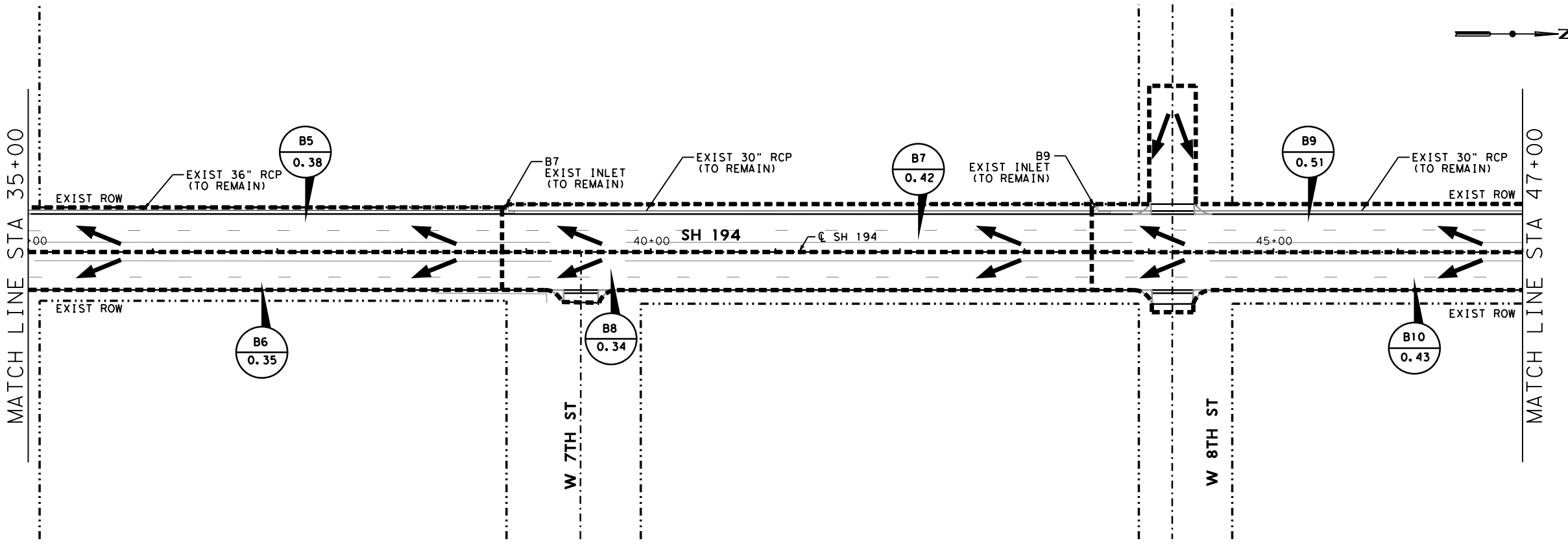


LEGEND

- MANHOLE
- GRATE INLET
- CURB INLET
- CURB INLET WITH EXTENSION
- PROPOSED DITCH
- DIRECTION OF FLOW
- DRAINAGE AREA BOUNDARY

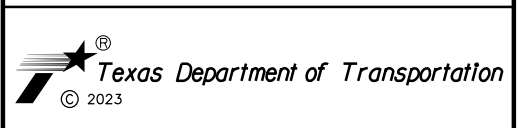
ID
 DRAINAGE AREA ID
00.00
 DRAINAGE AREA ACREAGE

- NOTES:**
- SEE HYDRAULIC COMPUTATION SHEETS FOR ALL DRAINAGE AREA CALCULATIONS.
 - SEE OVERALL DRAINAGE AREA MAP SHEET FOR FULL EXTENTS OF DRAINAGE AREA BOUNDARIES.



NO.	DATE	REVISION	APPROVED

CivilTech Engineering, Inc.
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 PH: (281) 304-0200 - FX: (281) 304-0210
 Firm Registration No. F-382



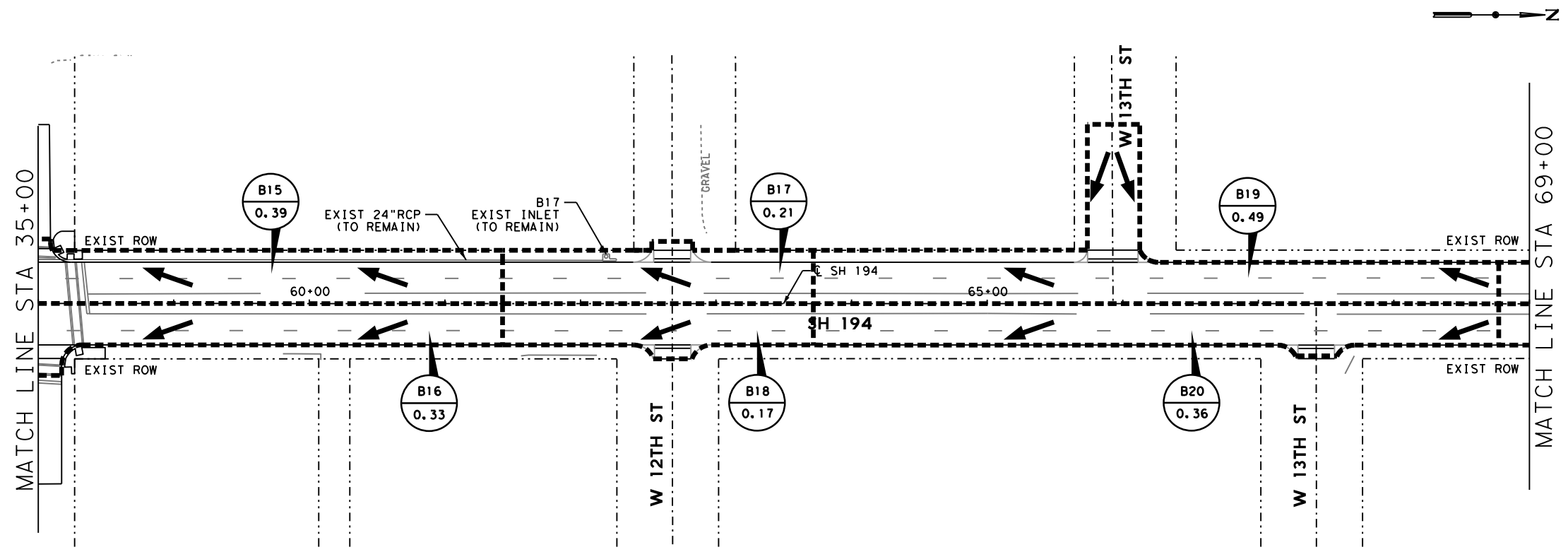
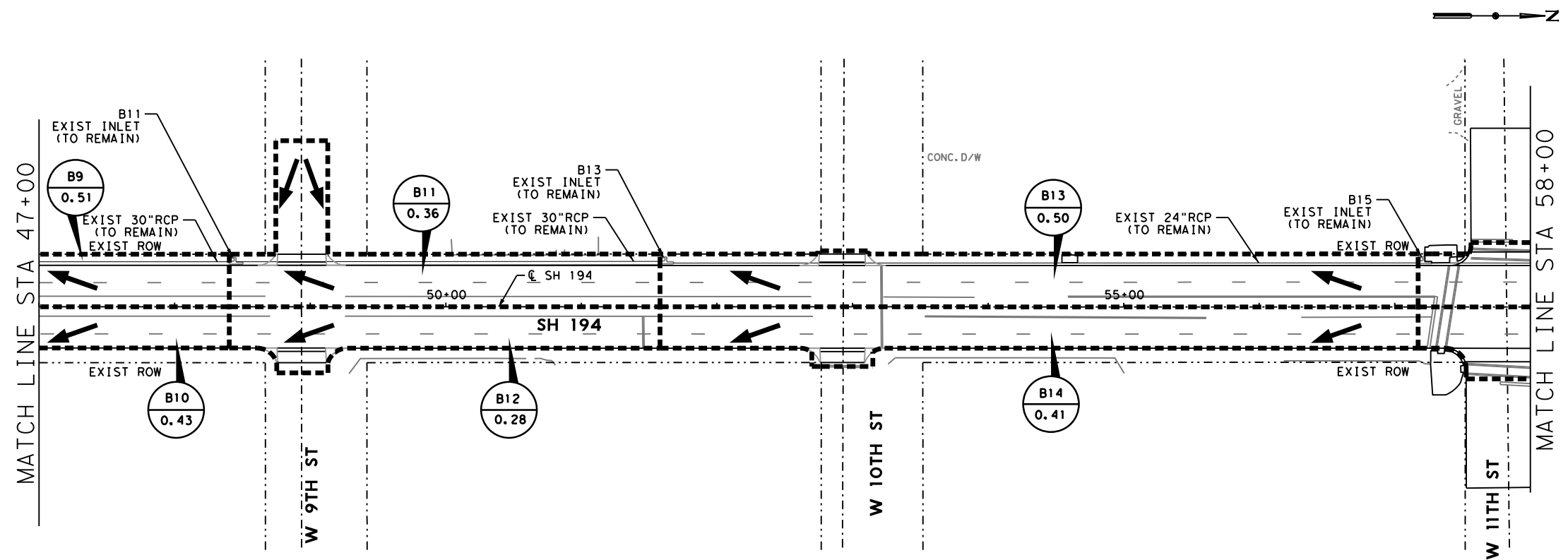
SH 194 FROM FM 3466 TO IH 27
 DRAINAGE AREA MAP
 STA 23+00 TO STA 47+00

HORZ SCALE: 1"=100' SHEET 2 OF 7

FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026

185

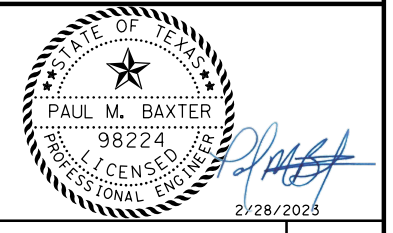
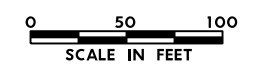
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 USER: \$USER\$ DATE: 2/28/2023 TIME: 2:46:04 PM SCALE: 1:100
 FILE: SH194_DAM_Sheet3.dgn



LEGEND

- MANHOLE
- GRATE INLET
- CURB INLET
- CURB INLET WITH EXTENSION
- PROPOSED DITCH
- DIRECTION OF FLOW
- DRAINAGE AREA BOUNDARY
- DRAINAGE AREA ID
- DRAINAGE AREA ACREAGE

- NOTES:**
- SEE HYDRAULIC COMPUTATION SHEETS FOR ALL DRAINAGE AREA CALCULATIONS.
 - SEE OVERALL DRAINAGE AREA MAP SHEET FOR FULL EXTENTS OF DRAINAGE AREA BOUNDARIES.



NO.	DATE	REVISION	APPROVED

CivilTech Engineering, Inc.
 11821 Telge Road
 Cypress, Texas 77429
 PH: (281) 304-0200 - FX: (281) 304-0210
 Firm Registration No. F-382



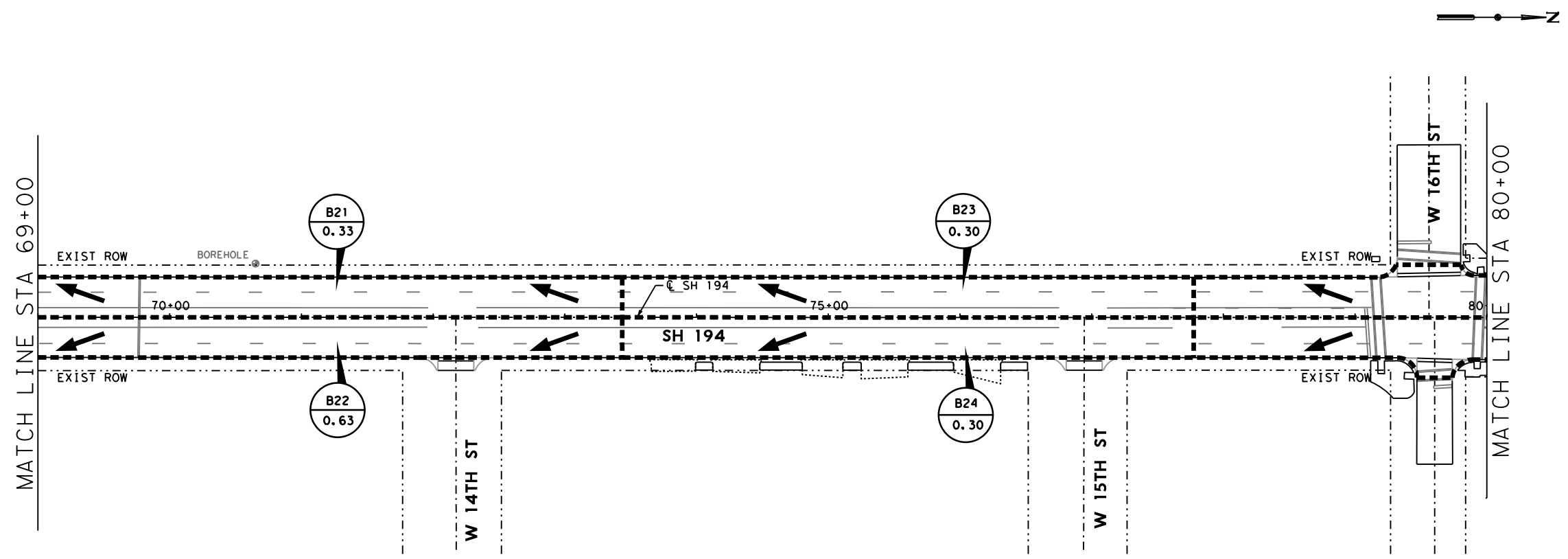
SH 194 FROM FM 3466 TO IH 27
 DRAINAGE AREA MAP
 STA 47+00 TO STA 69+00

HORZ SCALE: 1"=100' SHEET 3 OF 7

FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026

186

PLOT DRIVER: T:\DOT-EM-PDF-SRV-PLT\cfg PENTABLE: \$PENTBL\$
 USER: \$USER\$ DATE: 2/28/2023 TIME: 2:46:09 PM SCALE: 1/80
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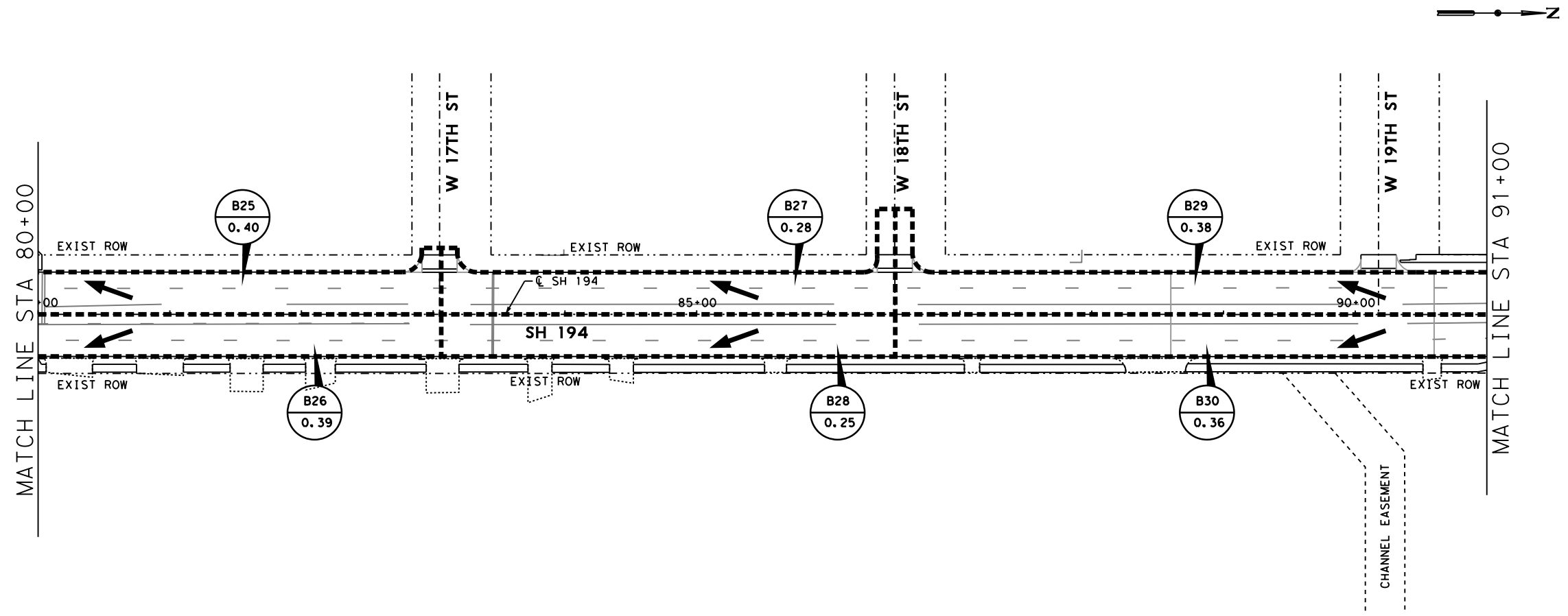


LEGEND

- MANHOLE
- GRATE INLET
- CURB INLET
- CURB INLET WITH EXTENSION
- PROPOSED DITCH
- DIRECTION OF FLOW
- DRAINAGE AREA BOUNDARY

ID
 DRAINAGE AREA ID
00.00
 DRAINAGE AREA ACREAGE

- NOTES:**
- SEE HYDRAULIC COMPUTATION SHEETS FOR ALL DRAINAGE AREA CALCATIONS.
 - SEE OVERALL DRAINAGE AREA MAP SHEET FOR FULL EXTENTS OF DRAINAGE AREA BOUNDARIES.



NO.	DATE	REVISION	APPROVED

CivilTech Engineering, Inc.
 11821 Telge Road
 Cypress, Texas 77429
 PH: (281) 304-0200 - FX: (281) 304-0210
 Firm Registration No. F-382

Texas Department of Transportation
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SH 194 FROM FM 3466 TO IH 27

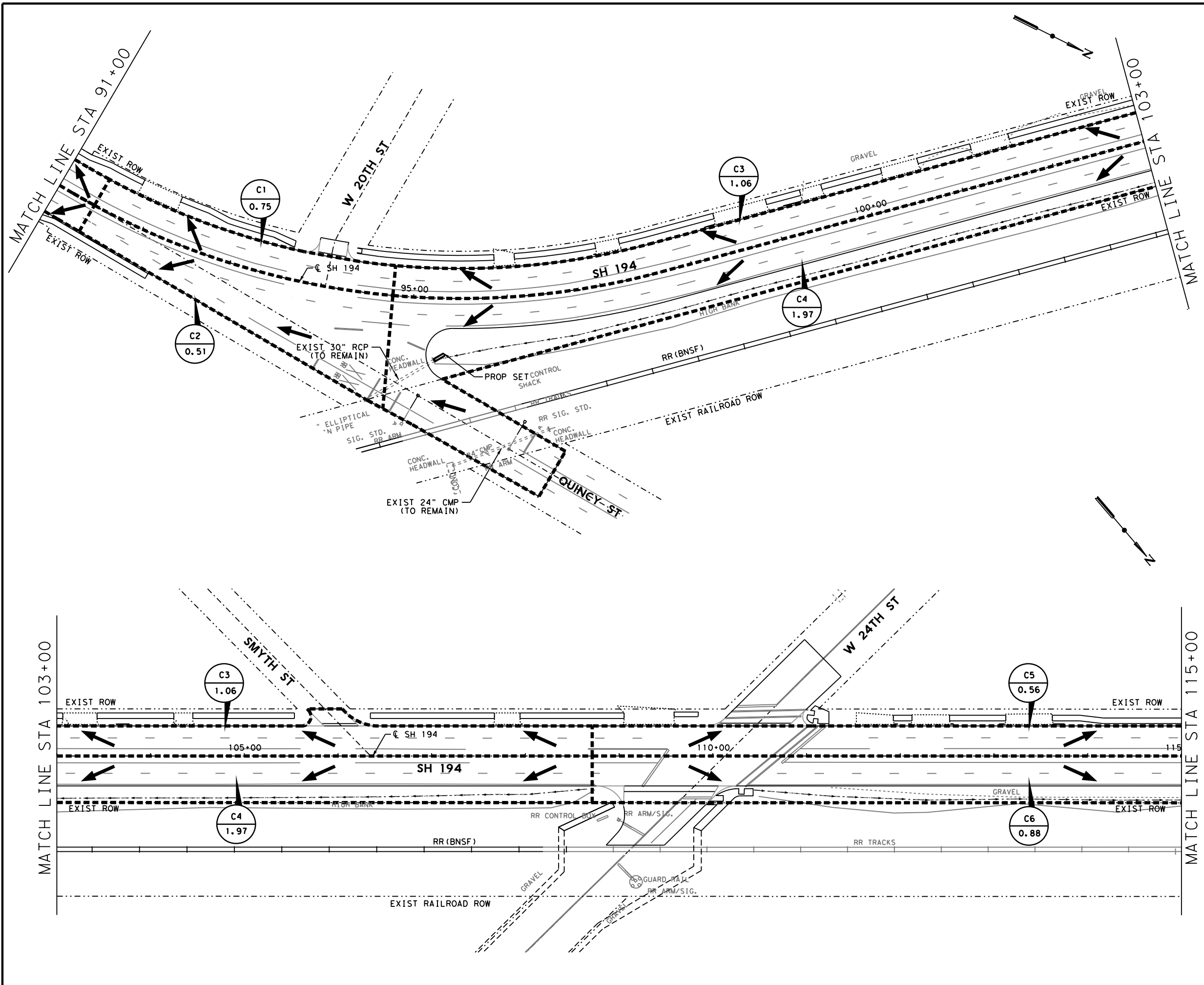
DRAINAGE AREA MAP
 STA 69+00 TO STA 91+00

HORZ SCALE: 1"=100' SHEET 4 OF 7

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:
6	SEE TITLE SHEET	SH 194
STATE:	DISTRICT:	COUNTY:
TEXAS	LBB	HALE
CONTROL:	SECTION:	JOB:
0439	05	026

187

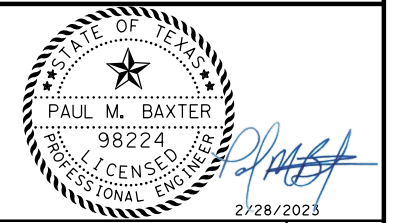
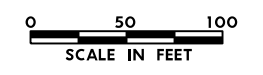
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 USER: \$USER\$ DATE: 2/28/2023 TIME: 2:46:14 PM SCALE: 1:100
 FILE: SH194_DAM_Sheet5.dgn



LEGEND

- MANHOLE
- GRATE INLET
- CURB INLET
- CURB INLET WITH EXTENSION
- PROPOSED DITCH
- DIRECTION OF FLOW
- DRAINAGE AREA BOUNDARY
- DRAINAGE AREA ID
- DRAINAGE AREA ACREAGE

- NOTES:**
- SEE HYDRAULIC COMPUTATION SHEETS FOR ALL DRAINAGE AREA CALCUTONS.
 - SEE OVERALL DRAINAGE AREA MAP SHEET FOR FULL EXTENTS OF DRAINAGE AREA BOUNDARIES.



NO.	DATE	REVISION	APPROVED

CivilTech Engineering, Inc.
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 Cypress, Texas 77429
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 Firm Registration No. F-382



SH 194 FROM FM 3466 TO IH 27
 DRAINAGE AREA MAP
 STA 91+00 TO STA 115+00

HORZ SCALE: 1"=100' SHEET 5 OF 7

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:
6	SEE TITLE SHEET	SH 194
STATE:	DISTRICT:	COUNTY:
TEXAS	LBB	HALE
CONTROL:	SECTION:	JOB:
0439	05	026

188










PLOT DRIVER: T:\DOT-EM-PDF-SRV-R-pltcfgr
 USER: \$USER\$ DATE: 2/28/2023 TIME: 2:46:18 PM SCALE: 1:100
 FILE: SH194_DAM_Sheet6.dgn

MATCH LINE STA 115+00

MATCH LINE STA 127+00

MATCH LINE STA 127+00

MATCH LINE STA 139+00

- LEGEND**
-  MANHOLE
 -  GRATE INLET
 -  CURB INLET
 -  CURB INLET WITH EXTENSION
 -  PROPOSED DITCH
 -  DIRECTION OF FLOW
 -  DRAINAGE AREA BOUNDARY
 -  DRAINAGE AREA ID
 -  DRAINAGE AREA ACREAGE

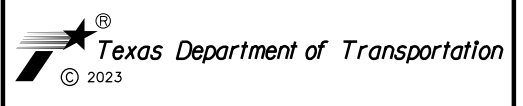
- NOTES:**
- SEE HYDRAULIC COMPUTATION SHEETS FOR ALL DRAINAGE AREA CALCULATIONS.
 - SEE OVERALL DRAINAGE AREA MAP SHEET FOR FULL EXTENTS OF DRAINAGE AREA BOUNDARIES.



STATE OF TEXAS
 PAUL M. BAXTER
 98224
 LICENSED PROFESSIONAL ENGINEER
 2/28/2023

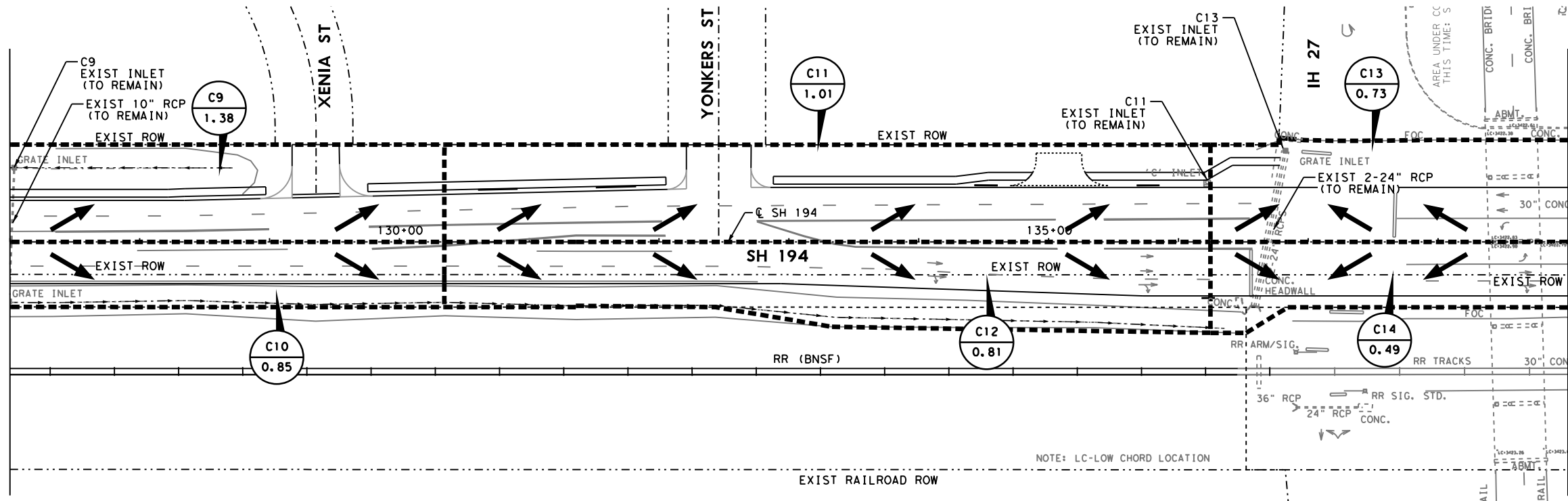
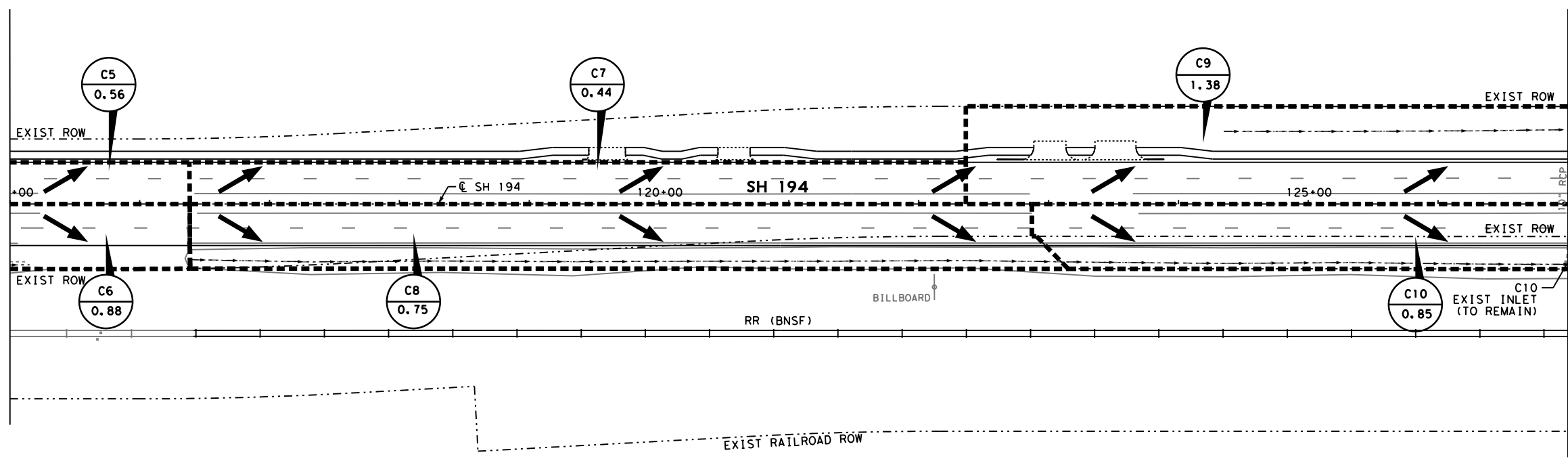
NO.	DATE	REVISION	APPROVED

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 11821 Telge Road
 Cypress, Texas 77429
 PH: (281) 304-0200 - FX: (281) 304-0210
 Firm Registration No. F-382



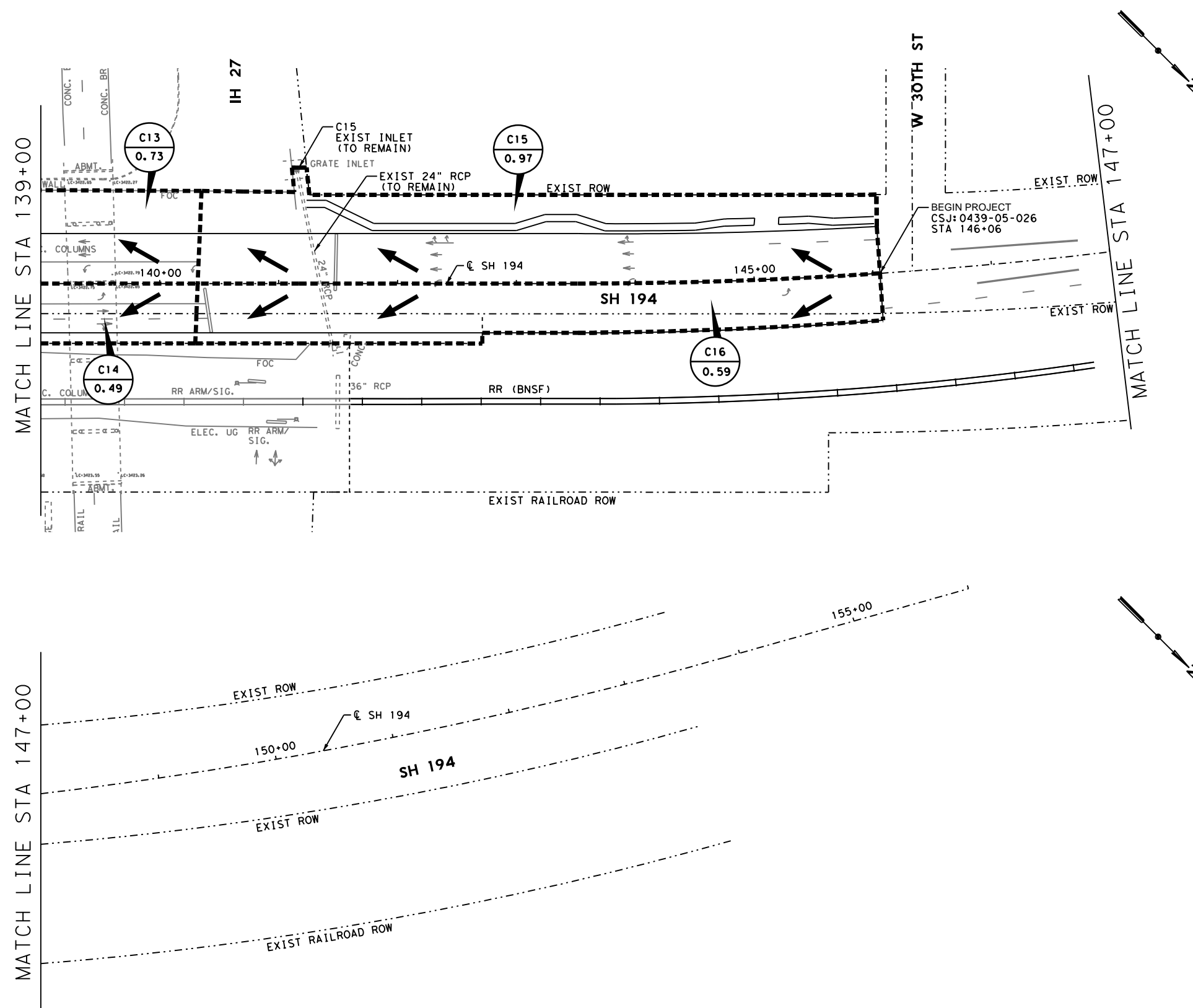
SH 194 FROM FM 3466 TO IH 27
 DRAINAGE AREA MAP
 STA 115+00 TO STA 139+00

HORZ SCALE: 1"=100'			SHEET 6 OF 7
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	189
CONTROL	SECTION	JOB	
0439	05	026	



NOTE: LC-LOW CHORD LOCATION

PLOT DRIVER: T:\DOT-EM-PDF-SRVR-pltcfg PENTABLE: \$PENTBL\$.
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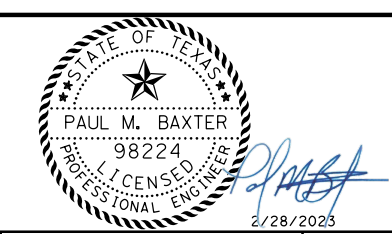


LEGEND

- MANHOLE
- GRATE INLET
- CURB INLET
- CURB INLET WITH EXTENSION
- PROPOSED DITCH
- DIRECTION OF FLOW
- DRAINAGE AREA BOUNDARY

ID
 DRAINAGE AREA ID
00.00
 DRAINAGE AREA ACREAGE

- NOTES:**
- SEE HYDRAULIC COMPUTATION SHEETS FOR ALL DRAINAGE AREA CALCULATIONS.
 - SEE OVERALL DRAINAGE AREA MAP SHEET FOR FULL EXTENTS OF DRAINAGE AREA BOUNDARIES.



NO.	DATE	REVISION	APPROVED

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SH 194 FROM FM 3466 TO IH 27
 DRAINAGE AREA MAP
 STA 139+00 TO END

HORZ SCALE: 1"=100' SHEET 7 OF 7

FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026

190

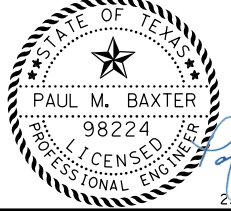
GEOPAK 2013 Drainage (STORM DRAIN DESIGN)
 Project Name: SH 194
 Design Frequency: 10 Year
 Measurement Unit: English
 County: Hale
 Runoff Computations for Design Frequency

SH 194						
ID	Runoff (C)	Drainage Area (acres)	Time of Conc. (min)	Time Used (min)	Intensity (in/hr)	Discharge (cfs)
A1	0.65	8.91	20.00	20.00	4.10	23.75
A2	0.35	7.71	20.00	20.00	4.10	11.07
A3	0.35	4.25	20.00	20.00	4.10	6.10
A4	0.35	3.72	15.00	15.00	4.75	6.18
B1	0.90	0.42	10.00	10.00	5.68	2.14
B2	0.90	0.40	10.00	10.00	5.68	2.07
B3	0.90	0.28	10.00	10.00	5.68	1.43
B4	0.90	0.24	10.00	10.00	5.68	1.23
B5	0.90	0.38	10.00	10.00	5.68	1.95
B6	0.90	0.35	10.00	10.00	5.68	1.78
B7	0.90	0.42	10.00	10.00	5.68	2.14
B8	0.90	0.34	10.00	10.00	5.68	1.74
B9	0.90	0.51	10.00	10.00	5.68	2.62
B10	0.90	0.43	10.00	10.00	5.68	2.19
B11	0.90	0.36	10.00	10.00	5.68	1.82
B12	0.90	0.28	10.00	10.00	5.68	1.43
B13	0.90	0.50	10.00	10.00	5.68	2.57
B14	0.90	0.41	10.00	10.00	5.68	2.08
B15	0.90	0.39	10.00	10.00	5.68	2.01
B16	0.90	0.33	10.00	10.00	5.68	1.71
B17	0.90	0.21	10.00	10.00	5.68	1.08
B18	0.90	0.17	10.00	10.00	5.68	0.86
B19	0.90	0.49	10.00	10.00	5.68	2.49
B20	0.90	0.36	10.00	10.00	5.68	1.85
B21	0.90	0.33	10.00	10.00	5.68	1.67
B22	0.90	0.63	10.00	10.00	5.68	3.22
B23	0.90	0.30	10.00	10.00	5.68	1.55
B24	0.90	0.30	10.00	10.00	5.68	1.55
B25	0.90	0.40	10.00	10.00	5.68	2.05
B26	0.90	0.39	10.00	10.00	5.68	2.01
B27	0.90	0.27	10.00	10.00	5.68	1.41
B28	0.90	0.25	10.00	10.00	5.68	1.29
B29	0.90	0.38	10.00	10.00	5.68	1.93
B30	0.90	0.36	10.00	10.00	5.68	1.85
C1	0.90	0.75	10.00	10.00	5.68	3.84
C2	0.90	0.51	10.00	10.00	5.68	2.60
C3	0.90	1.06	10.00	10.00	5.68	5.44
C4	0.90	1.97	10.00	10.00	5.68	10.06
C5	0.90	0.56	10.00	10.00	5.68	2.88
C6	0.90	0.88	10.00	10.00	5.68	4.50
C7	0.90	0.44	10.00	10.00	5.68	2.25
C8	0.90	0.75	10.00	10.00	5.68	3.84
C9	0.90	1.37	10.00	10.00	5.68	7.03
C10	0.90	0.85	10.00	10.00	5.68	4.34
C11	0.90	1.01	10.00	10.00	5.68	5.18
C12	0.90	0.81	10.00	10.00	5.68	4.14
C13	0.90	0.73	10.00	10.00	5.68	3.74
C14	0.90	0.49	10.00	10.00	5.68	2.50
C15	0.90	0.97	10.00	10.00	5.68	4.97
C16	0.90	0.59	10.00	10.00	5.68	3.03



GEOPAK 2013 Drainage (STORM DRAIN DESIGN)
 Project Name: SH 194
 Design Frequency: 100 Year
 Measurement Unit: English
 County: Hale
 Runoff Computations for Design Frequency

SH 194						
ID	Runoff (C)	Drainage Area (acres)	Time of Conc. (min)	Time Used (min)	Intensity (in/hr)	Discharge (cfs)
A1	0.65	8.91	20.00	20.00	6.86	39.72
A2	0.35	7.71	20.00	20.00	6.86	18.51
A3	0.35	4.25	20.00	20.00	6.86	10.20
A4	0.35	3.72	15.00	15.00	7.86	10.23
B1	0.90	0.42	10.00	10.00	9.25	3.49
B2	0.90	0.40	10.00	10.00	9.25	3.37
B3	0.90	0.28	10.00	10.00	9.25	2.33
B4	0.90	0.24	10.00	10.00	9.25	2.00
B5	0.90	0.38	10.00	10.00	9.25	3.18
B6	0.90	0.35	10.00	10.00	9.25	2.90
B7	0.90	0.42	10.00	10.00	9.25	3.48
B8	0.90	0.34	10.00	10.00	9.25	2.83
B9	0.90	0.51	10.00	10.00	9.25	4.27
B10	0.90	0.43	10.00	10.00	9.25	3.56
B11	0.90	0.36	10.00	10.00	9.25	2.97
B12	0.90	0.28	10.00	10.00	9.25	2.32
B13	0.90	0.50	10.00	10.00	9.25	4.19
B14	0.90	0.41	10.00	10.00	9.25	3.38
B15	0.90	0.39	10.00	10.00	9.25	3.27
B16	0.90	0.33	10.00	10.00	9.25	2.78
B17	0.90	0.21	10.00	10.00	9.25	1.76
B18	0.90	0.17	10.00	10.00	9.25	1.41
B19	0.90	0.49	10.00	10.00	9.25	4.05
B20	0.90	0.36	10.00	10.00	9.25	3.01
B21	0.90	0.33	10.00	10.00	9.25	2.72
B22	0.90	0.63	10.00	10.00	9.25	5.25
B23	0.90	0.30	10.00	10.00	9.25	2.53
B24	0.90	0.30	10.00	10.00	9.25	2.53
B25	0.90	0.40	10.00	10.00	9.25	3.34
B26	0.90	0.39	10.00	10.00	9.25	3.27
B27	0.90	0.27	10.00	10.00	9.25	2.29
B28	0.90	0.25	10.00	10.00	9.25	2.11
B29	0.90	0.38	10.00	10.00	9.25	3.14
B30	0.90	0.36	10.00	10.00	9.25	3.01
C1	0.90	0.75	10.00	10.00	9.25	6.25
C2	0.90	0.51	10.00	10.00	9.25	4.23
C3	0.90	1.06	10.00	10.00	9.25	8.86
C4	0.90	1.97	10.00	10.00	9.25	16.38
C5	0.90	0.56	10.00	10.00	9.25	4.69
C6	0.90	0.88	10.00	10.00	9.25	7.32
C7	0.90	0.44	10.00	10.00	9.25	3.66
C8	0.90	0.75	10.00	10.00	9.25	6.25
C9	0.90	1.37	10.00	10.00	9.25	11.45
C10	0.90	0.85	10.00	10.00	9.25	7.07
C11	0.90	1.01	10.00	10.00	9.25	8.44
C12	0.90	0.81	10.00	10.00	9.25	6.75
C13	0.90	0.73	10.00	10.00	9.25	6.09
C14	0.90	0.49	10.00	10.00	9.25	4.07
C15	0.90	0.97	10.00	10.00	9.25	8.09
C16	0.90	0.59	10.00	10.00	9.25	4.93

PLOT DRIVER: T:\DOT-BW-PDF-SRVR-pltcfp PENTABLE: \$PENTBL\$
 USER: \$USER\$ DATE: 2/28/2023 TIME: 2:46:29 PM SCALE: 1:00
 FILE: SH194-HYDRAULIC COMPUTATIONS_Sheet1.dgn



PAUL M. BAXTER
 98224
 LICENSED PROFESSIONAL ENGINEER
 2/28/2023

NO.	DATE	REVISION	APPROVED
 <p>11821 Telge Road Cypress, Texas 77429 PH: (281) 304-0200 - FX: (281) 304-0210 Firm Registration No. F-382</p>			
 <p>© 2023</p>			
<p>SH 194 FROM FM 3466 TO IH 27</p> <p>RUNOFF COMPUTATIONS</p>			
SHEET 1 OF 1			
FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	191
CONTROL	SECTION	JOB	
0439	05	026	

GEOPAK 2013 Drainage (STORM DRAIN DESIGN)
 Project Name: SH 194
 Design Frequency: 10 Year
 Measurement Unit: English
 County: Hale
 On Grade Inlet Computation Data

SH 194													
ID	Type	Discharge (cfs)	Ponded Width	Ponded Depth	Max Allow Pond	Transverse Slope (%)	Longitudinal Slope %	Length (ft)	Width (ft)	Depr.	Capacity (cfs)	By Pass (cfs)	To Node
B3	Curb	1.43	7.30	0.15	13.50	2.00	1.28	n/a	n/a	0.25	1.40	0.03	OUTFALL
B4	Curb	1.23	7.20	0.14	13.50	2.00	1.01	n/a	n/a	0.25	1.23	0.00	
B5	Curb	1.95	10.90	0.22	13.50	2.00	0.28	n/a	n/a	0.25	1.95	0.00	B3
B6	Curb	1.78	9.01	0.18	13.50	2.00	0.64	n/a	n/a	0.25	1.77	0.02	
B7	Curb	2.14	11.16	0.22	13.50	2.00	0.30	n/a	n/a	0.25	2.14	0.00	B5
B8	Curb	1.74	9.98	0.20	13.50	2.00	0.36	n/a	n/a	0.25	1.74	0.00	
B9	Curb	2.62	12.37	0.25	13.50	2.00	0.26	n/a	n/a	0.25	2.62	0.00	B7
B10	Curb	2.19	11.27	0.23	13.50	2.00	0.29	n/a	n/a	0.25	2.19	0.00	
B11	Curb	1.82	11.17	0.22	13.50	2.00	0.21	n/a	n/a	0.25	1.82	0.00	B9
B12	Curb	1.43	9.38	0.19	13.50	2.00	0.33	n/a	n/a	0.25	1.43	0.00	
B13	Curb	2.57	15.17	0.30	13.50	2.00	0.08	n/a	n/a	0.25	2.57	0.00	B11
B14	Curb	2.08	12.65	0.25	13.50	2.00	0.14	n/a	n/a	0.25	2.08	0.00	
B15	Curb	2.01	15.28	0.31	13.50	2.00	0.05	n/a	n/a	0.25	2.01	0.00	B13
B16	Curb	1.71	14.22	0.28	13.50	2.00	0.05	n/a	n/a	0.25	1.71	0.00	
B18	Curb	0.86	9.45	0.19	13.50	2.00	0.12	n/a	n/a	0.25	0.86	0.00	
C11	Curb	5.18	19.90	0.40	13.50	2.00	0.08	n/a	n/a	0.25	3.31	1.87	

GEOPAK 2013 Drainage (STORM DRAIN DESIGN)
 Project Name: SH 194
 Design Frequency: 100 Year
 Measurement Unit: English
 County: Hale
 On Grade Inlet Computation Data

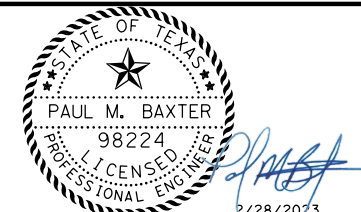
SH 194													
ID	Type	Discharge (cfs)	Ponded Width	Ponded Depth	Max Allow Pond	Transverse Slope (%)	Longitudinal Slope %	Length (ft)	Width (ft)	Depr.	Capacity (cfs)	By Pass (cfs)	To Node
B3	Curb	2.33	8.77	0.18	13.50	2.00	1.28	n/a	n/a	0.25	2.03	0.30	OUTFALL
B4	Curb	2.00	8.64	0.17	13.50	2.00	1.01	n/a	n/a	0.25	1.87	0.13	
B5	Curb	3.18	13.08	0.26	13.50	2.00	0.28	n/a	n/a	0.25	3.18	0.00	B3
B6	Curb	2.90	10.82	0.22	13.50	2.00	0.64	n/a	n/a	0.25	2.60	0.30	
B7	Curb	3.48	13.40	0.27	13.50	2.00	0.30	n/a	n/a	0.25	3.48	0.00	B5
B8	Curb	2.83	11.98	0.24	13.50	2.00	0.36	n/a	n/a	0.25	2.72	0.11	
B9	Curb	4.27	14.85	0.30	13.50	2.00	0.26	n/a	n/a	0.25	4.27	0.00	B7
B10	Curb	3.56	13.52	0.27	13.50	2.00	0.29	n/a	n/a	0.25	3.31	0.25	
B11	Curb	2.97	13.41	0.27	13.50	2.00	0.21	n/a	n/a	0.25	2.97	0.00	B9
B12	Curb	2.32	11.25	0.23	13.50	2.00	0.33	n/a	n/a	0.25	2.31	0.01	
B13	Curb	4.19	18.21	0.36	13.50	2.00	0.08	n/a	n/a	0.25	4.19	0.00	B11
B14	Curb	3.38	15.19	0.30	13.50	2.00	0.14	n/a	n/a	0.25	3.36	0.02	
B15	Curb	3.27	18.34	0.37	13.50	2.00	0.05	n/a	n/a	0.25	3.27	0.00	B13
B16	Curb	2.78	17.06	0.34	13.50	2.00	0.05	n/a	n/a	0.25	2.78	0.00	
B18	Curb	1.41	11.34	0.23	13.50	2.00	0.12	n/a	n/a	0.25	1.41	0.00	
C11	Curb	8.44	23.89	0.48	13.50	2.00	0.08	n/a	n/a	0.25	4.37	4.07	

GEOPAK 2013 Drainage (STORM DRAIN DESIGN)
 Project Name: SH 194
 Design Frequency: 10 Year
 Measurement Unit: English
 County: Hale
 Sag Inlet Computation Data

SH 194																	
ID	Type	Discharge (cfs)	Discharge (cfs)		Ponded Width (ft)		Max Allow Pond Width (ft)	Slope %		Length (ft)	Width (ft)	Depr.	Area (ft)	Perim. (ft)	Capacity (cfs)	Ponded Depth	Transverse Slope (%)
			Left	Right	Left	Right		Left	Right								
B17	Curb	1.76	0.88	0.88	9.81	9.81	13.50	0.10	0.10	10.00	n/a	0.25	n/a	n/a	4.70	0.14	2.00
C9	Grate	11.45	5.73	5.73	5.90	5.90	13.50	0.10	0.10	2.48	2.48	n/a	4.38	7.44	1.89	1.00	25.00
C10	Grate	7.07	3.54	3.54	4.93	4.93	13.50	0.10	0.10	2.48	2.48	n/a	4.38	7.44	1.89	0.72	25.00
C13	Grate	6.09	3.05	3.05	4.66	4.66	13.50	0.10	0.10	2.96	2.75	n/a	4.58	8.46	2.15	0.60	25.00
C15	Grate	8.09	4.05	4.05	5.19	5.19	13.50	0.10	0.10	2.96	2.75	n/a	4.58	8.46	2.15	0.73	25.00

GEOPAK 2013 Drainage (STORM DRAIN DESIGN)
 Project Name: SH 194
 Design Frequency: 100 Year
 Measurement Unit: English
 County: Hale
 Sag Inlet Computation Data

SH 194																	
ID	Type	Discharge (cfs)	Discharge (cfs)		Ponded Width (ft)		Max Allow Pond Width (ft)	Slope %		Length (ft)	Width (ft)	Depr.	Area (ft)	Perim. (ft)	Capacity (cfs)	Ponded Depth	Transverse Slope (%)
			Left	Right	Left	Right		Left	Right								
B17	Curb	1.76	0.88	0.88	10.35	10.35	13.50	0.10	0.10	10.00	n/a	0.25	n/a	n/a	5.82	0.14	2.00
C9	Grate	11.45	5.73	5.73	5.90	5.90	13.50	0.10	0.10	2.48	2.48	n/a	4.38	7.44	1.89	1.00	25.00
C10	Grate	7.07	3.54	3.54	4.93	4.93	13.50	0.10	0.10	2.48	2.48	n/a	4.38	7.44	1.89	0.72	25.00
C13	Grate	6.09	3.05	3.05	4.66	4.66	13.50	0.10	0.10	2.48	2.75	n/a	4.58	8.46	2.15	0.60	25.00
C15	Grate	8.09	4.05	4.05	5.19	5.19	13.50	0.10	0.10	2.48	2.75	n/a	4.58	8.46	2.15	0.73	25.00



CivilTech Engineering, Inc.
 11821 Telge Road
 Cypress, Texas 77429
 PH: (281) 304-0200 - FX: (281) 304-0210
 Firm Registration No. F-382

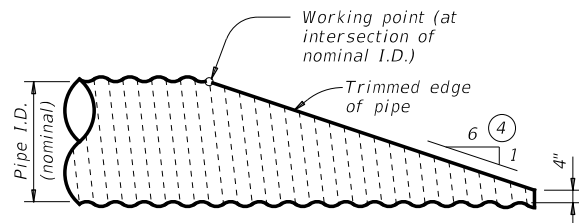


SH 194 FROM FM 3466 TO IH 27			
INLET HYDRAULIC COMPUTATIONS			
SHEET 1 OF 1			
FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	192
CONTROL	SECTION	JOB	
0439	05	026	

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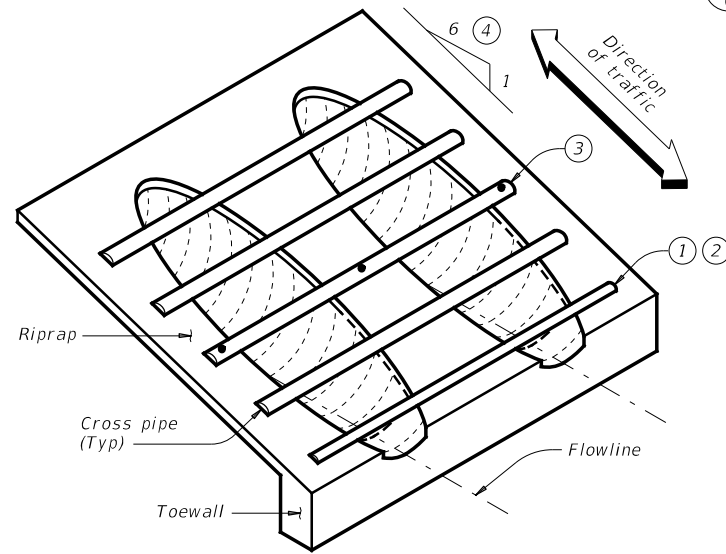
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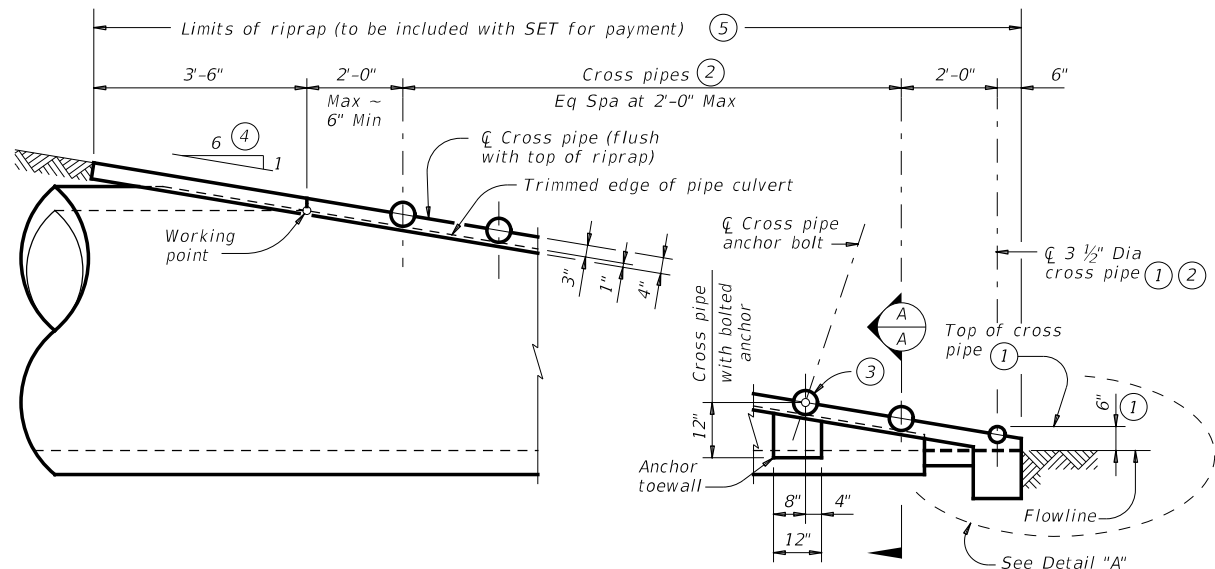
NOTE: All cross pipes, calculations, and dimensions are based on the pipe culverts mitered as shown in this detail. Alternate styles of mitered ends will require that appropriate adjustments be made to the values presented on this standard.

SIDE ELEVATION OF TYPICAL PIPE CULVERT MITER

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

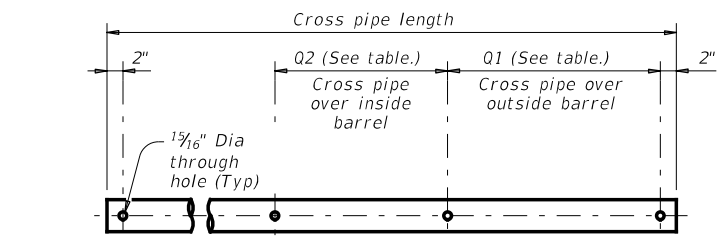


ISOMETRIC VIEW OF TYPICAL INSTALLATION

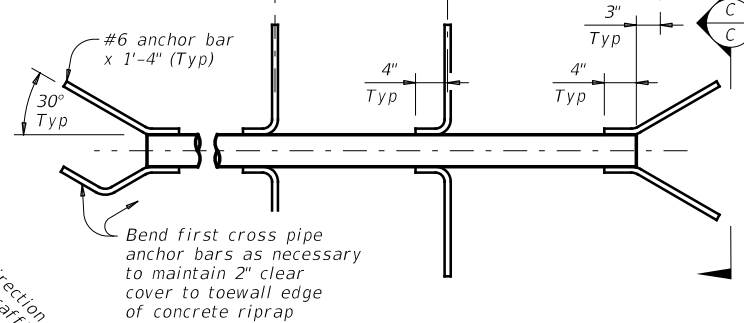


SIDE ELEVATION OF CAST-IN-PLACE CONCRETE

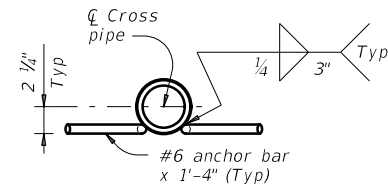
(Showing reinforced concrete pipe (RCP) culvert. Details at corrugated metal pipe (CMP) culvert are similar.)



PIPE WITH BOLTED ANCHOR

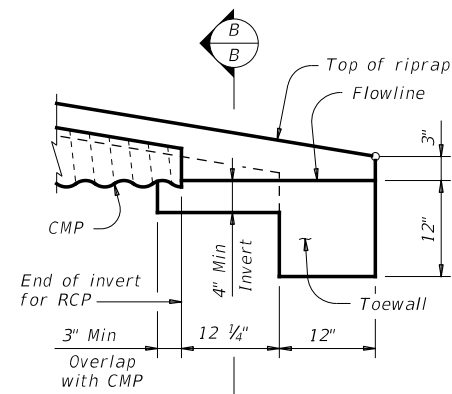


PIPE WITH ANCHOR BARS



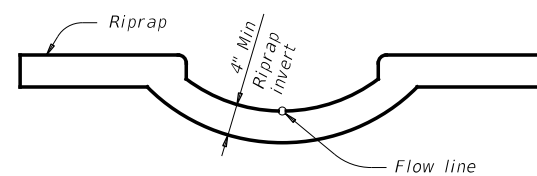
SECTION C-C

CROSS PIPE DETAILS



DETAIL "A"

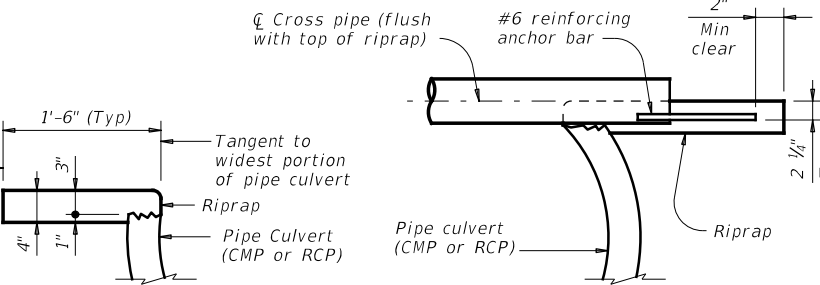
(Showing invert with corrugated metal pipe (CMP) culvert. Reinforced concrete pipe (RCP) culvert details are similar. Cross pipes not shown for clarity.)



SECTION B-B

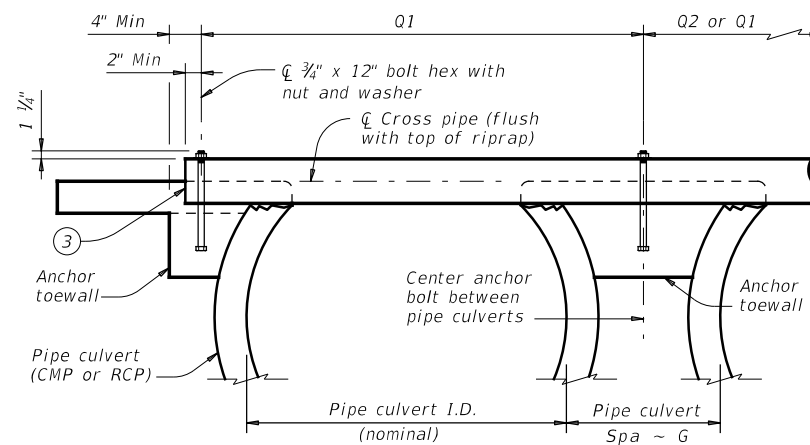
(Cross pipes not shown for clarity.)

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



SHOWING TYPICAL PIPE CULVERT AND RIPRAP

SHOWING CROSS PIPE WITH ANCHOR BAR



SHOWING CROSS PIPE WITH BOLTED ANCHOR

SECTION A-A

CROSS PIPE LENGTHS, REQUIRED PIPE SIZES, AND RIPRAP QUANTITIES

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

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

MATERIAL NOTES:

Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise. Provide cross pipes that meet the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 (Gr B), or API 5LX52. Provide ASTM A307 bolts and nuts. Galvanize all steel components, except concrete reinforcing, after fabrication. Repair galvanizing damaged during transport or construction in accordance with the specifications.

GENERAL NOTES:

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

Texas Department of Transportation Bridge Division Standard

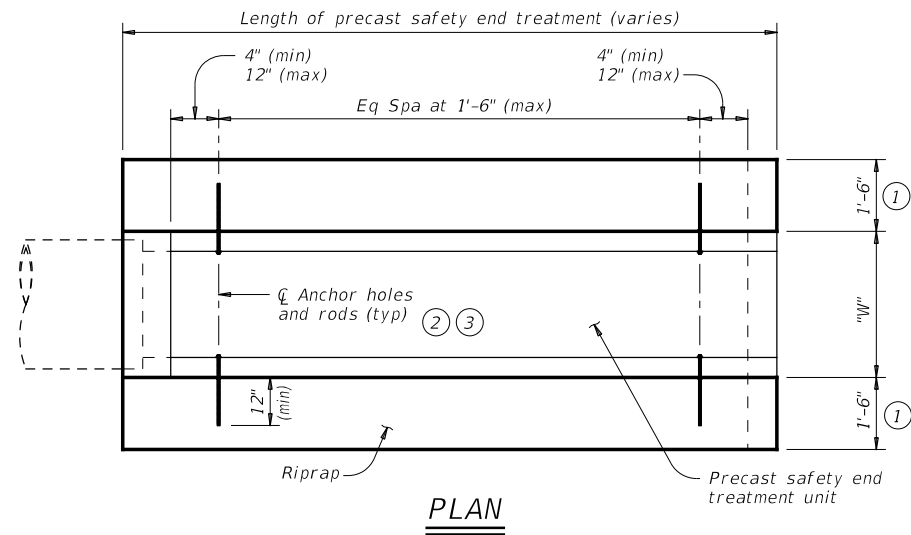
SAFETY END TREATMENT FOR 12" DIA TO 72" DIA PIPE CULVERTS TYPE II ~ PARALLEL DRAINAGE

SETP-PD

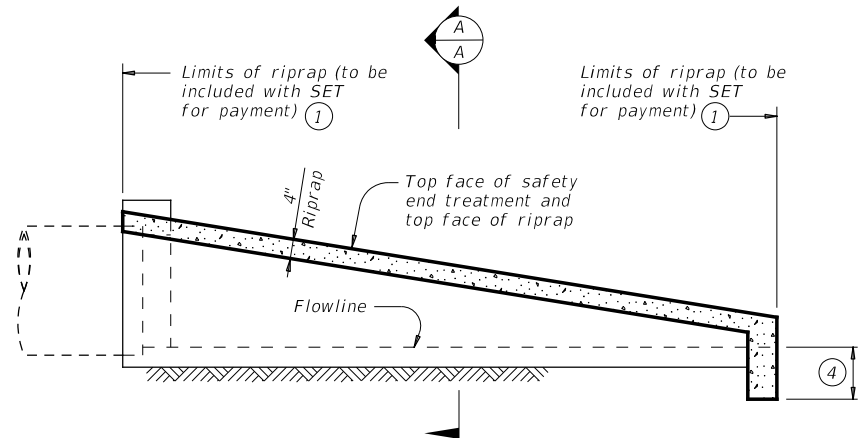
FILE: setpdse-20.dgn	DN: GAF	CK: CAT	DW: JRP	CK: GAF
©TxDOT February 2020	CONTRACT: 0439	SECTION: 05	JOB: 026	HIGHWAY: SH 194
REVISIONS	DIST: LBB	COUNTY: HALE	SHEET NO. 192A	

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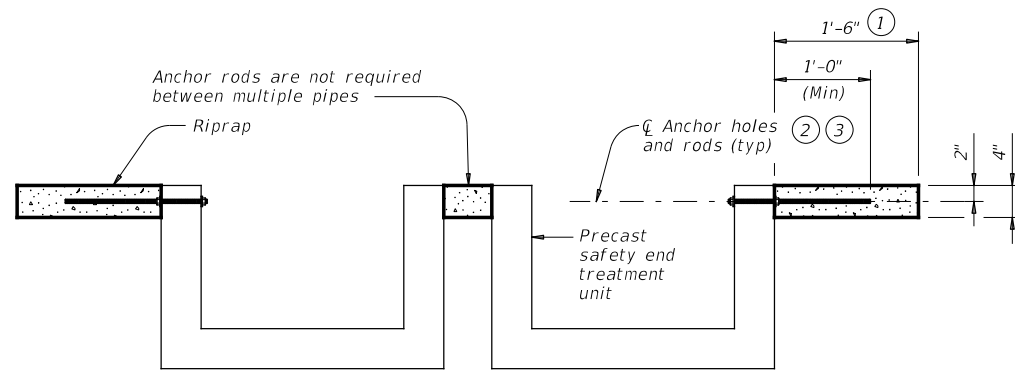
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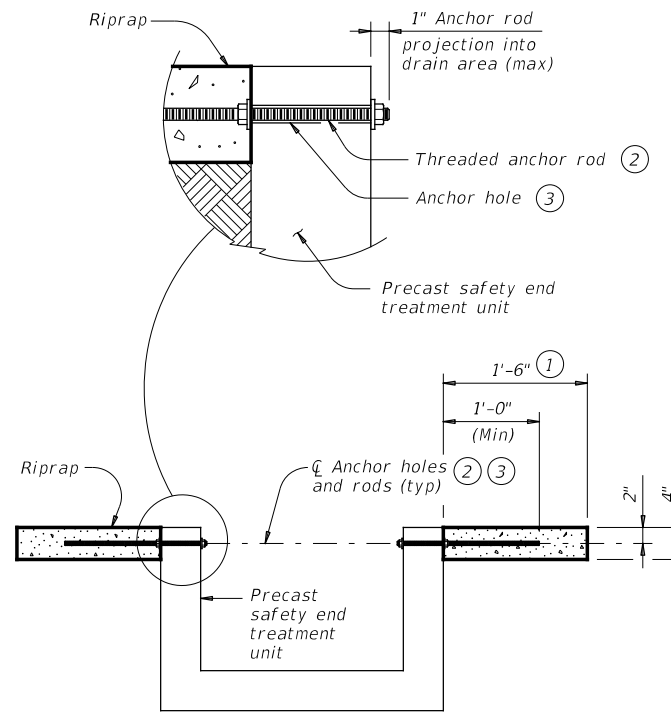
PLAN



LONGITUDINAL ELEVATION



MULTIPLE PIPE INSTALLATION



SINGLE PIPE INSTALLATION

SECTION A-A

ESTIMATED CONCRETE RIPRAP QUANTITIES (CY)

Nominal Culvert (Pipe) I.D.	PSET-SC and PSET-SP Standards					PSET-RC and PSET-RP Standards		
	Unit Width "W"	Side Slope			Unit Width "W"	Side Slope		
		3:1	4:1	6:1		3:1	4:1	6:1
12"	23.0"	0.1	0.2	0.2	16.0"	0.1	0.1	0.2
15"	26.5"	0.2	0.2	0.3	19.5"	0.1	0.2	0.2
18"	30.0"	0.2	0.2	0.3	23.0"	0.2	0.2	0.3
24"	37.0"	0.3	0.3	0.5	30.0"	0.2	0.3	0.4
30"	44.5"	0.3	0.4	0.6	37.0"	0.3	0.3	0.5
36"	51.5"	0.4	0.5	0.7	44.0"	0.3	0.4	0.6
42"	58.5"	0.5	0.6	0.8	51.0"	0.4	0.5	0.7

- Riprap placed beyond the limits shown will be paid as concrete riprap in accordance with Item 432, "Riprap." When riprap is cast integrally with the precast safety end treatment, this dimension is 1'-0" minimum.
- 1#2" Dia ASTM A307 Gr A threaded anchor rod with 2 nuts and 2 washers. Galvanize all components in accordance with Item 445, "Galvanizing." Repair galvanizing that is damaged during transport or construction in accordance with the specifications.
- 3#4" through holes in walls of safety end treatment for riprap anchor rods may be drilled with rotary (coring or masonry) type drilling equipment or may be formed. Do not use percussive (star) type drilling equipment. If holes are drilled, patch spalls in the inside face of the wall exceeding 1#2" from the holes.
- Provide riprap toe wall when dimension is shown elsewhere in the plans or when field conditions require a toe wall.
- Quantities shown are for one end of one reinforced concrete pipe culvert. For multiple pipe culverts, quantities will need to be adjusted. Riprap quantities are for Contractor's information only. Quantities are based on the minimum unit lengths shown on the Precast Safety End Treatment (SET) standard sheets.

MATERIAL NOTES:

Provide Class "B" riprap in accordance with Item 432, "Riprap." Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise. The anchor rods shown are always required.

GENERAL NOTES:

Precast safety end treatment for reinforced concrete pipe may be used for TYPE II end treatment as specified in Item 467, "Safety End Treatment." Refer to PSET-SC or PSET-SP standard sheets for details of square safety end treatments not shown. Refer to PSET-RC or PSET-RP standard sheets for details of round safety end treatments not shown. For precast units with integrally cast riprap, substitute reinforcing steel in the amount on 0.26 in./ft. minimum for the threaded anchor rods shown. When requested, submit sealed engineering drawings for approval prior to construction. Shop drawings will not be required. Note that a proprietary precast unit with integral riprap is available from L&R Precast Concrete Works, Inc. (956) 583-6293 or www.lrpccast.com. Payment for riprap and toewalls is included in the price bid for each safety end treatment.

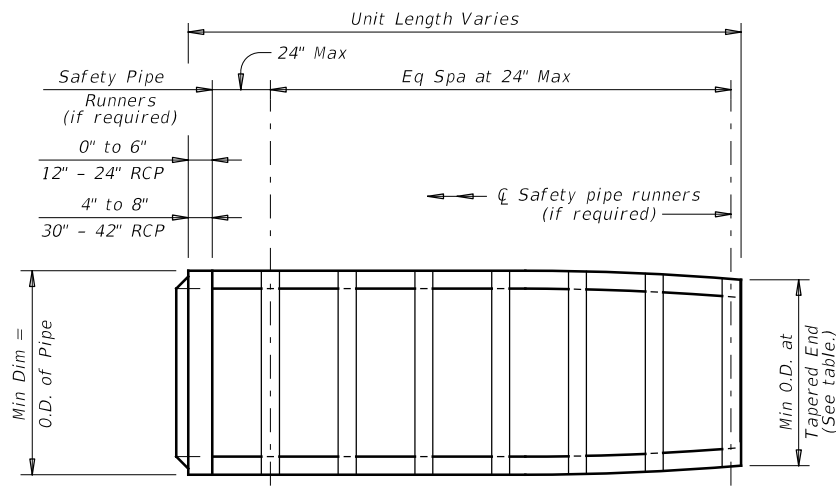
These riprap details are only applicable when notes that require placement of riprap with precast safety end treatments are shown elsewhere in the plans.

Precast units with integrally cast riprap are permitted unless noted otherwise on the plans.

				Bridge Division Standard	
<p>PRECAST SAFETY END TREATMENT TYPE II RIPRAP DETAILS PSET-RR</p>					
FILE:	DN: GAF	CK: TxDOT	DW: JRP	CK: GAF	
©TxDOT February 2020	CONTRACT	SECTION	JOB	HIGHWAY	
REVISIONS	0439	05	026	SH 194	
	DIST	COUNTY	SHEET NO.		
	LBB	HALE	192B		

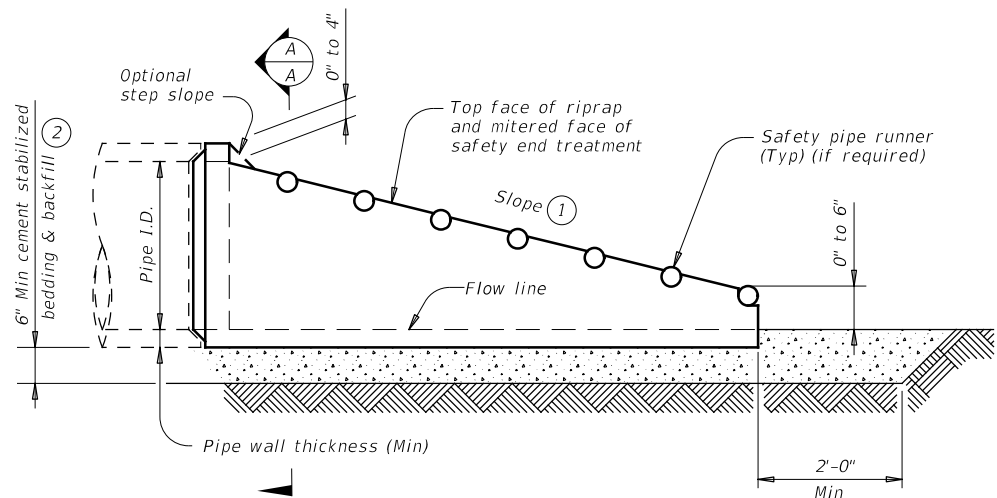
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DATE: 7/29/2024 7:38:36 PM
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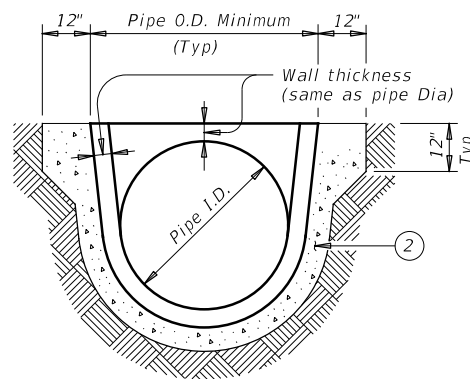
PLAN VIEW - 12" THRU 24"

(Showing spigot end connection.)

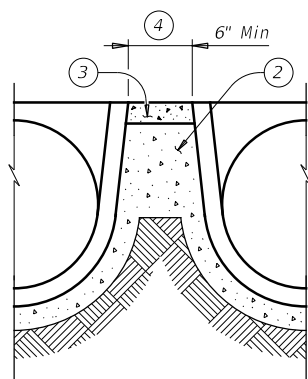


LONGITUDINAL ELEVATION - 12" THRU 24"

(Showing spigot end connection.)

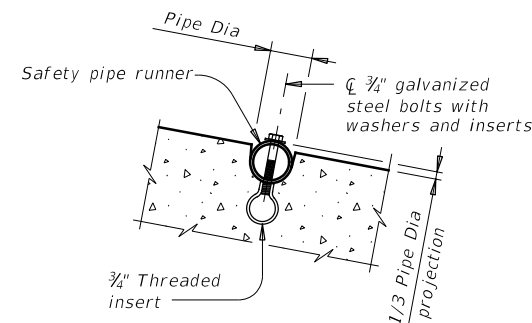


SECTION A-A



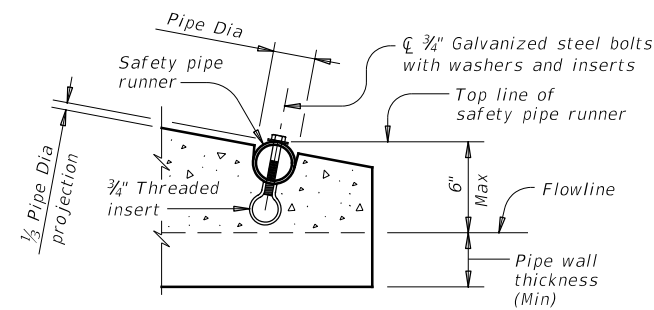
MULTIPLE PIPE INSTALLATION

- ① Slope as shown elsewhere in the plans. Slope of 6:1 or flatter is required for vehicle safety.
- ② Provide cement stabilized bedding and backfill in accordance with the Item, "Excavation and Backfill for Structures." Bedding and backfill is considered subsidiary to the Item 467, "Safety End Treatment." When concrete riprap is specified around the safety end treatment, backfill as directed by Engineer.
- ③ Fill the top 4" of void between precast end treatments with concrete riprap. Concrete riprap is considered subsidiary to the Item 467, "Safety End Treatment."
- ④ Adjust clear distance between pipes to provide for the minimum distance between safety end treatments.
- ⑤ Safety pipe runners are required for multiple pipe culverts with more than two pipes.

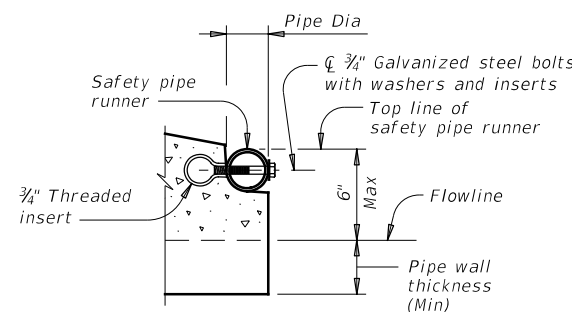


INSTALLATION DETAIL FOR SAFETY PIPE RUNNERS

(If required)



OPTION A



OPTION B

END DETAILS FOR INSTALLATION OF SAFETY PIPE RUNNERS

(If required)

REQUIREMENTS FOR CULVERT PIPES AND SAFETY PIPE RUNNERS

Pipe I.D.	Min Wall Thickness	Min O.D.	Min O.D. at Tapered End	Min Reinf Requirements (sq. in. per ft. of Pipe)	Max Slope	Min Length of Unit	Pipe Runner Requirements		Required Pipe Runner Sizes		
							Single Pipe	Multiple Pipe	Nominal Dia	O.D.	I.D.
12"	2"	16"	16"	0.07 Circ.	6:1	4'-0"	No	(5)	3" STD	3.500"	3.068"
15"	2 1/4"	19 1/2"	19"	0.07 Circ.	6:1	5'-8"	No	(5)	3" STD	3.500"	3.068"
18"	2 1/2"	23"	21 1/2"	0.07 Circ.	6:1	7'-3"	No	(5)	3" STD	3.500"	3.068"
24"	3"	30"	27"	0.07 Circ.	6:1	10'-6"	No	(5)	3" STD	3.500"	3.068"
30"	3 1/2"	37"	31"	0.18 Circ.	6:1	12'-1"	No	Yes	4" STD	4.500"	4.026"
36"	4"	44"	36"	0.19 Ellip.	6:1	15'-4"	Yes	Yes	4" STD	4.500"	4.026"
42"	4 1/2"	51"	41 1/2"	0.23 Ellip.	6:1	18'-7"	Yes	Yes	4" STD	4.500"	4.026"

MATERIAL NOTES:

Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.
Provide pipe runners meeting the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 Gr B, or API 5LX52.
Galvanize steel components except reinforcing steel after fabrication. Repair galvanizing damaged during transport or construction in accordance with the specifications.

GENERAL NOTES:

Precast safety end treatment for reinforced concrete pipe (RCP) may be used for TYPE II end treatment as specified in Item 467, "Safety End Treatment."
When precast safety end treatment is used as a Contractor's alternate to mitered RCP, riprap will not be required unless noted otherwise on the plans.
Manufacture precast concrete end sections in accordance with Item 464, "Reinforced Concrete Pipe" and in accordance with ASTM Specification C-76, Class III, Wall B for circular pipe.
Provide precast concrete end sections with a spigot or bell end for compatibility to upstream or downstream end conditions with sufficient annular space to allow for grout, mortar, cold applied asphalt joint compound or pre-formed plastic gasket material.
Methods of lifting shall be provided by the manufacturer for ease of loading, unloading and installation.
Pipe runners are designed for a traversing load of 10,000 Lbs at yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981.

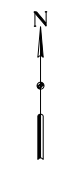


PRECAST SAFETY END TREATMENT TYPE II ~ PARALLEL DRAINAGE

PSET-RP

FILE:	DN: RLW	CK: KLR	DW: JTR	CK: GAF
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	0439	05	026	SH 194
	DIST	COUNTY	SHEET NO.	
	LBB	HALE	192C	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
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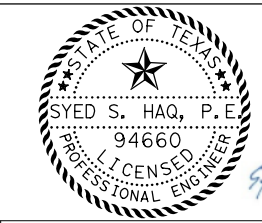
LEGEND

- DIRECTION OF TRAFFIC
- EOP EDGE OF PAVEMENT
- BOC BACK OF CURVE

NOTES

1. PROVIDE TRAFFIC RAILING (TYPE T411) FOR BOTH SIDES OF BRIDGE CLASS CULVERT.
2. REFER TO "TYPE T411" RAILING STANDARD DRAWINGS FOR DETAIL OF RAIL.
3. REFER TO "TRF" STANDARD DRAWINGS FOR DETAIL OF RAIL FOUNDATION OUTSIDE OF EXISTING HEADWALL.
4. REFER TO SIDEWALK DETAIL SHEET FOR ADDITIONAL INFORMATION.
5. DO NOT CAST RAILS ON TOP OF OVERLAY. IF OVERLAY IS PRESENT, REMOVE EXISTING OVERLAY AND CLEAN SURFACE PRIOR TO RAIL INSTALLATION.
6. THE CONTRACTOR SHALL LOCATE EXISTING BARS PRIOR TO STARTING WORK. THE CONTRACTOR SHALL AVOID EXPOSURE /CONTACT WITH EXISTING REBAR DURING THE INSTALLATION OF DOWEL BARS.

NBI # 050960043905



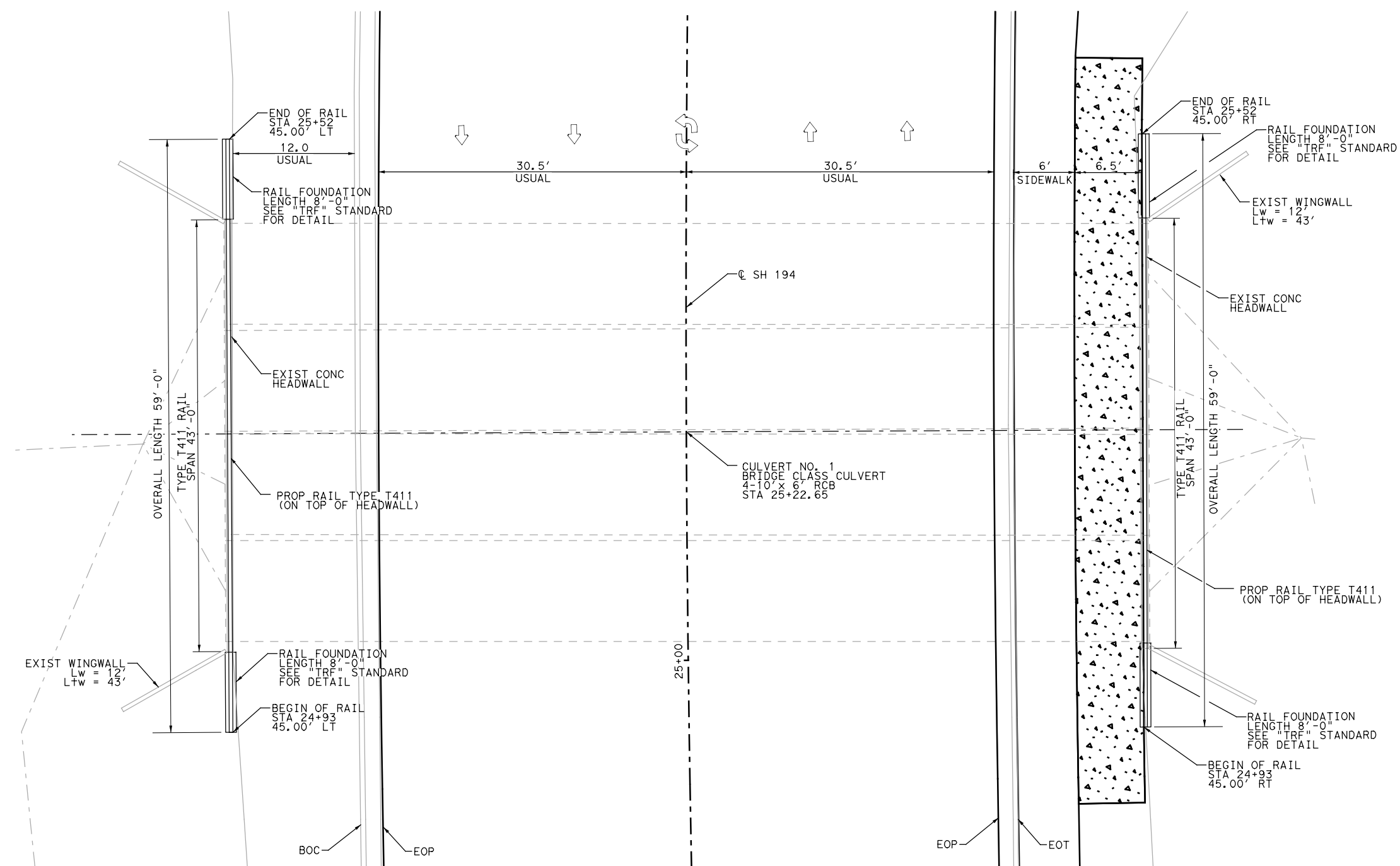
NO.	DATE	REVISION	APPROVED



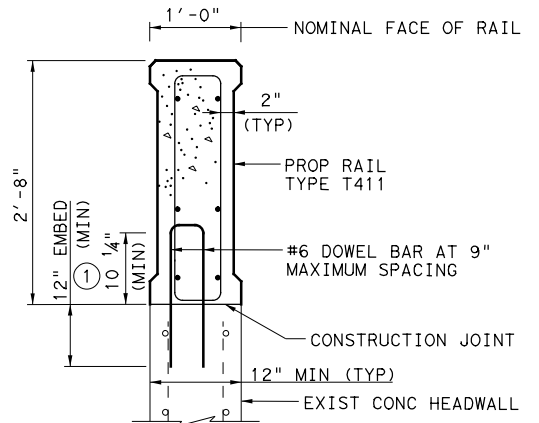
SH 194 FROM FM 3466 TO IH 27

RAIL LAYOUT (TY T411)
 BRIDGE CLASS CULVERT 1
 STA 25+22.65

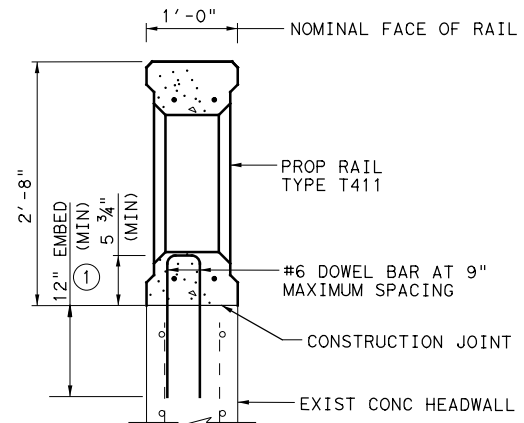
N. T. S.			
FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	193
CONTROL	SECTION	JOB	
0439	05	026	



**PLAN VIEW
(N. T. S.)**

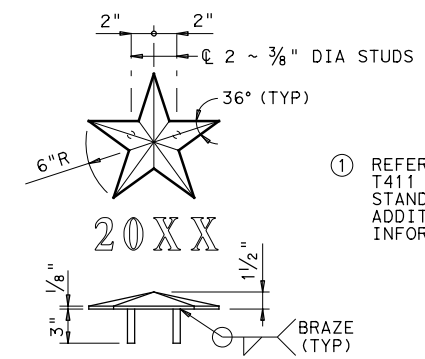


**RAIL RETROFIT SECTION THRU POST
(N. T. S.)**



**RAIL RETROFIT SECTION THRU WINDOW
(N. T. S.)**

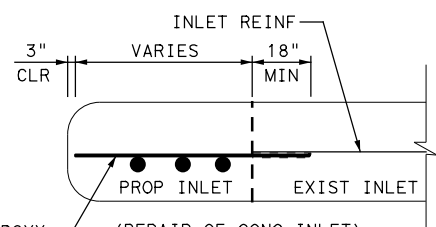
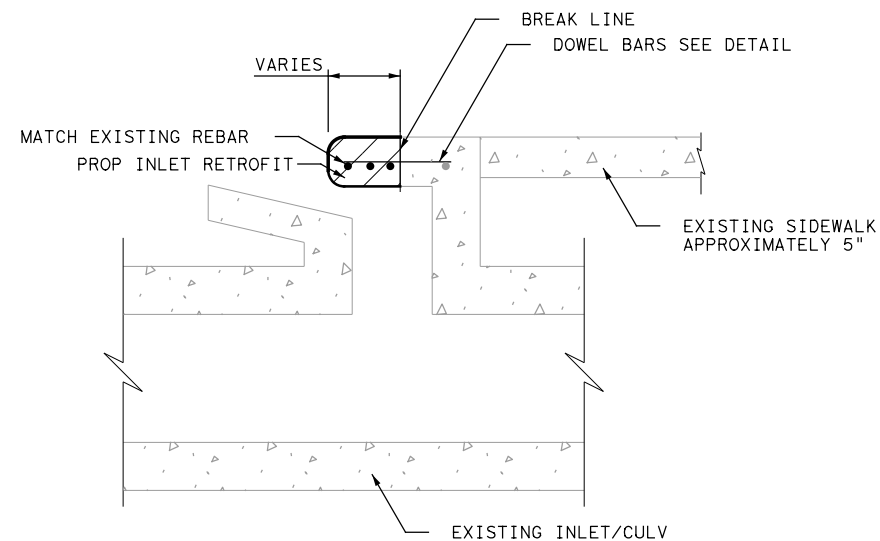
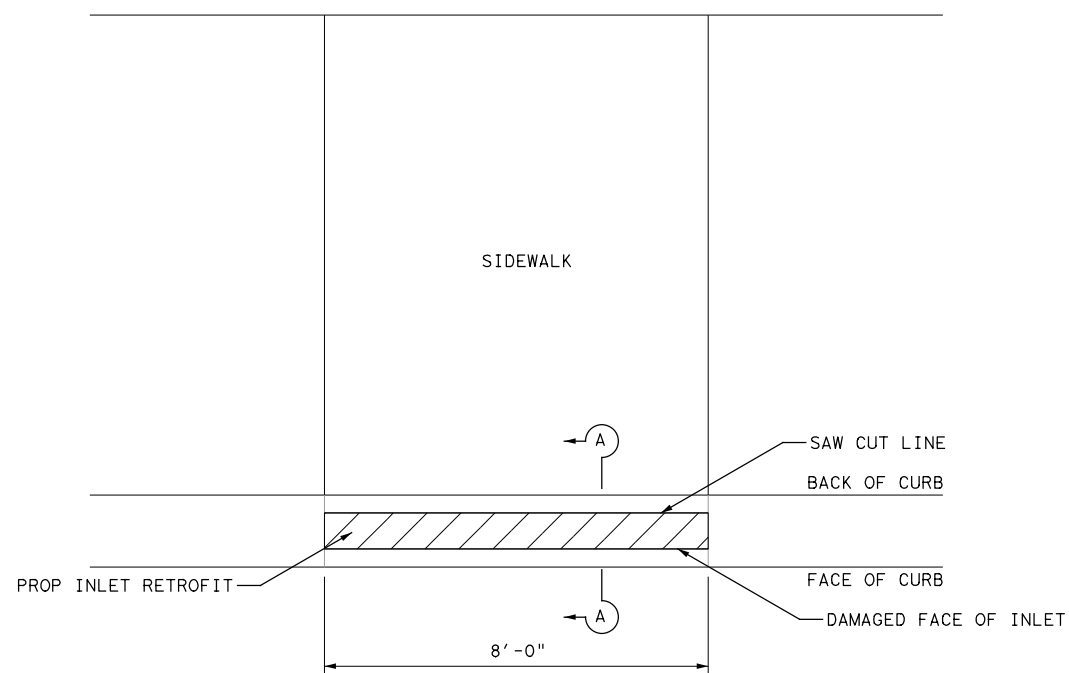
① EMBED DOWEL BARS WITH A TYPE III, CLASS C, D, E, OR F ANCHOR ADHESIVE. MINIMUM ADHESIVE ANCHOR EMBEDMENT DEPTH IS 12". ANCHOR ADHESIVE CHOSEN MUST BE ABLE TO ACHIEVE A BASIC BOND STRENGTH IN TENSION, NBA, OF 20 KIPS. ANCHOR INSTALLATION, INCLUDING HOLE SIZE, DRILLING, AND CLEAN OUT, MUST BE IN ACCORDANCE WITH ITEM 450, "RAILING".



**BRONZE STAR DETAIL
(N. T. S.)**

① REFER TO TYPE T411 RAILING STANDARD FOR ADDITIONAL INFORMATION.

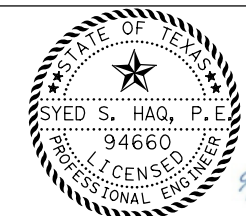
PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 8:44:00 PM
 FILE: SH194_INLET_RETRO.dgn



#4 DOWELS (DRILL AND EPOXY GROUT) SPACED AT 6" C-C MIN 12" EMBEDDED IN EXIST CONC INLET

NOTES

1. CONCRETE SHALL BE CLASS C.
2. REMOVAL OF EXISTING DAMAGED INLET TO BE CONSIDERED SUBSIDIARY.
3. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
4. DIMENSIONS RELATING TO REINFORCING STEEL ARE TO THE CENTER OF THE BARS.
5. ALL WORK SHALL BE DONE IN ACCORDANCE WITH ITEM 440 WITH GRADE 60 REINFORCEMENT.
6. DO NOT SHEAR CUT DOWEL BAR.
7. DOWEL BAR EPOXY COATING SHALL CONFORM TO ARTICLE 440.2.7., "EPOXY COATING".
8. REMOVAL OF EXISTING INLET IS SUBSIDIARY TO ITEM 465 6216 INLET (COMPL) (CURB) (SPECIAL).
9. REPAIRS TO SIDEWALK AND CURB & GUTTER FROM INLET CONSTRUCTION WILL BE SUBSIDIARY.
10. MAKE SAW CUT MINIMUM OF 6" FROM DAMAGED AREA.
11. ADDITIONAL SAW CUTS MAY BE REQUIRED WITHIN THE AREA OF REPAIR TO FACILITATE REMOVAL OF THE CONCRETE OR TO ALLEVIATIVE BINDING OF THE FULL DEPTH SAW CUT AT THE REPAIR EDGE.
12. WHEN GROUTING, PLACE EPOXY INTO DRILLED HOLE, FROM BACK TO FRONT, UNTIL GROUT IS FLOWING OUT BEFORE PLACING IN REINFORCING STEEL.



Syed S. Haq
 7/29/2024

NO.	DATE	REVISION	APPROVED



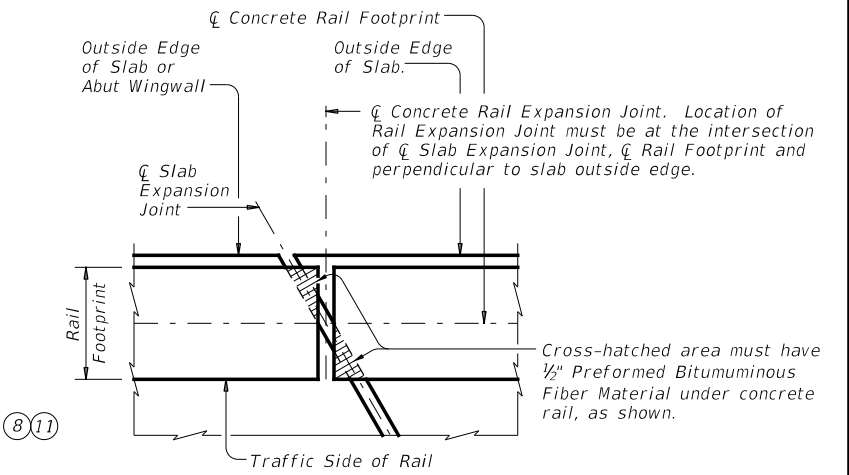
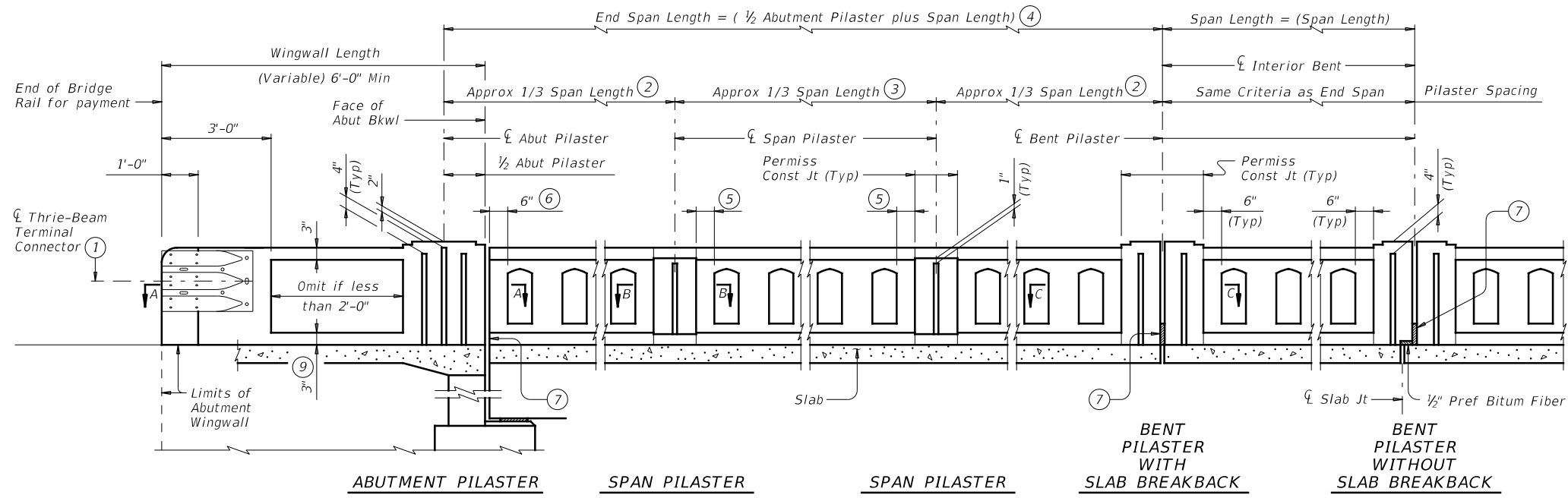
SH 194 FROM FM 3466 TO IH 27

INLET RETRO

FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	194
CONTROL	SECTION	JOB	
0439	05	026	

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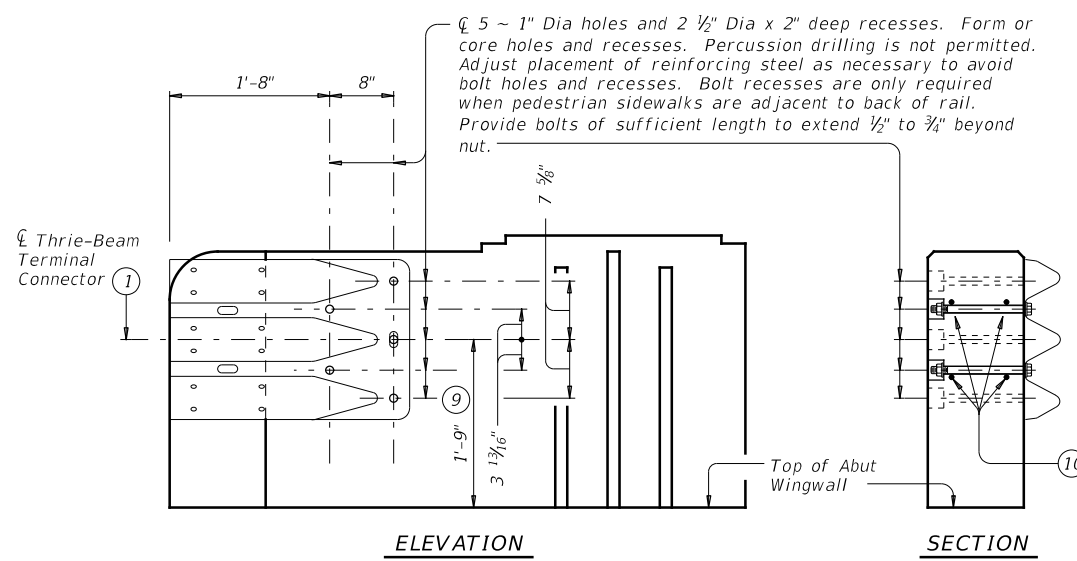
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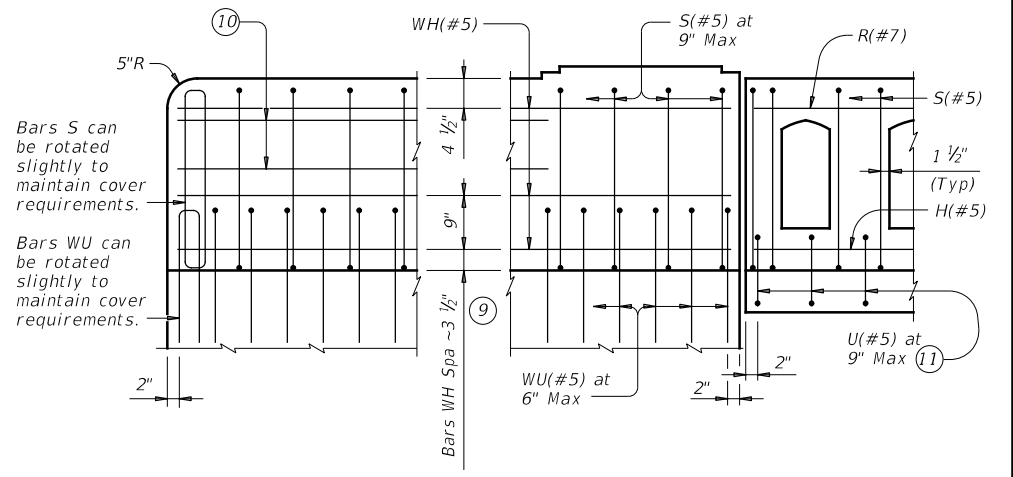
PLAN OF RAIL AT EXPANSION JOINTS
Example showing Slab Expansion Joints without breakbacks.

ROADWAY ELEVATION OF RAIL

- 1 Terminal Connectors and associated hardware are to be paid for under the Item "Metal Beam Guard Fence". Attach Metal Beam Guard Fence Transitions to the bridge unless otherwise shown in the plans.
- 2 Number of windows in exterior bays are equal.
- 3 Number of windows in interior bay(s) are not less than the amount in exterior bays (Note 2).
- 4 Space Span Pilasters at 1/3 span length (Approx) when spans are 100 ft and less, as shown. Space Span Pilasters at 1/5 span length (Approx) for spans greater than 100 ft.
- 5 Dimension is the same for all posts adjacent to Span Pilasters in a span. Dimension may vary from span to span, Min = 3", Max = 7 1/2".
- 6 Min = 6", Max = 1'-3".
- 7 Provide rail joints at ends of all spans the same width as Slab joint opening, except that Rail Joints over construction joints must be 1/2" Min to 3/4" Max in width. Joints must be open if slab joint opening is not sealed. Joints over construction joints and over sealed deck joints must be plugged. Forming material used in joints may be left in place if it is light in color and compressible, such as the following materials: polystyrene, molded cork granules, sponge rubber sheet, etc. If forming material is not left in place, plug the bottom 6" with slab joint sealing compound to prevent drainage and staining.
- 8 Place Preformed Bituminous Fiber Material between slab and rail when rail extends over expansion joint. Shift Bars U as necessary.
- 9 Increase 2" for structures with overlay.
- 10 Place 4 additional Bars WH(#5) 3'-8" in length inside Bars S(#5) and centered 2'-0" from end of rail when Terminal Connections are required. Field bend as needed.
- 11 Shift U Bars from region below 1/2" Preformed Bituminous Fiber Material at joints.

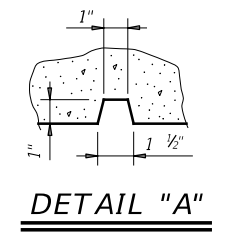


TERMINAL CONNECTION DETAILS
(Showing parapet with Pilaster on 6'-0" Wingwall)

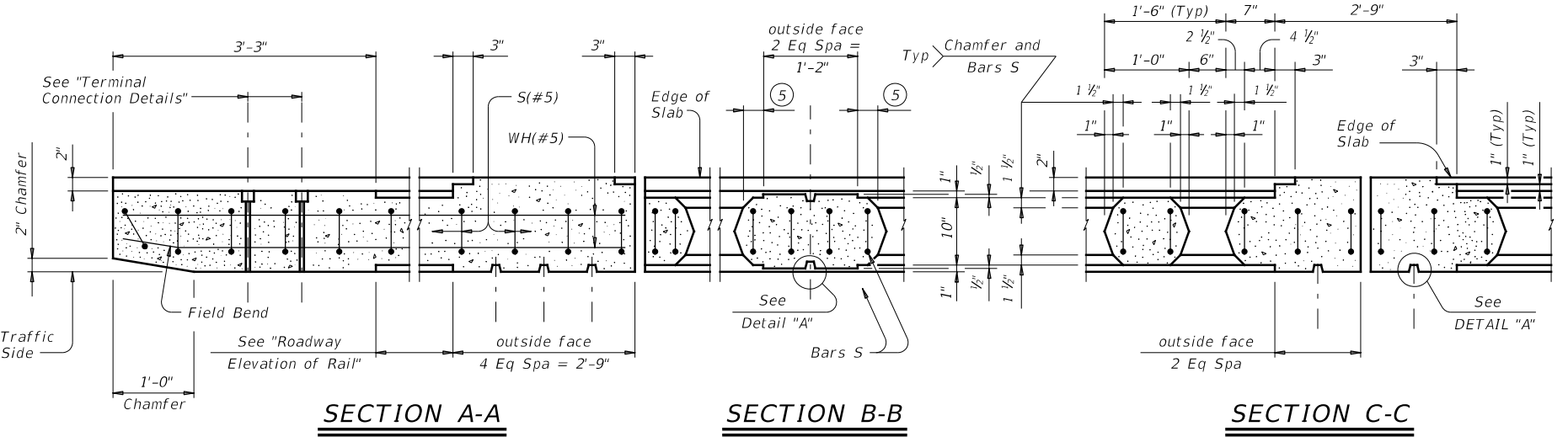


ELEVATION SHOWING TYPICAL REINFORCING PLACEMENT

The use of this railing is restricted to speeds of 45 mph or less.



DETAIL "A"



SECTION A-A

SECTION B-B

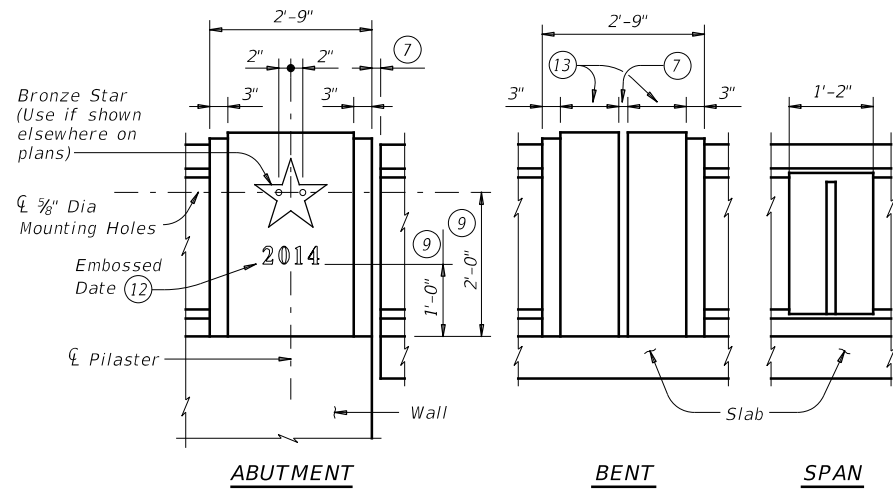
SECTION C-C

SHEET 1 OF 2

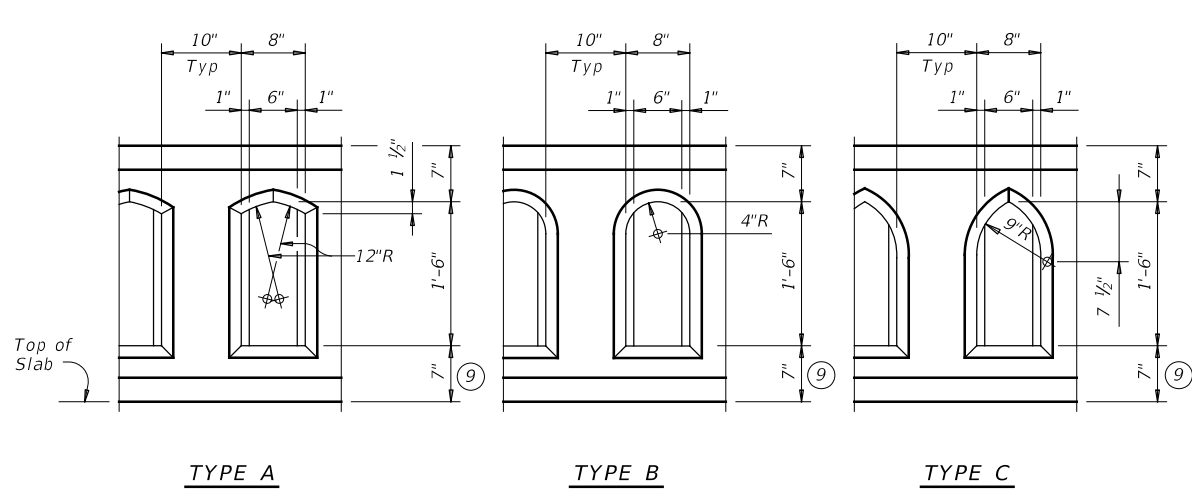
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TRAFFIC RAIL TEXAS CLASSIC			
TYPE T411			
FILE: rlst008-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT
©TxDOT September 2019	CONTRACT	SECTION	JOB
REVISIONS	0439	05	026
7-20: Bronze star change to one manufacturer.	DIST	COUNTY	SHEET NO.
LBB	HALE		195

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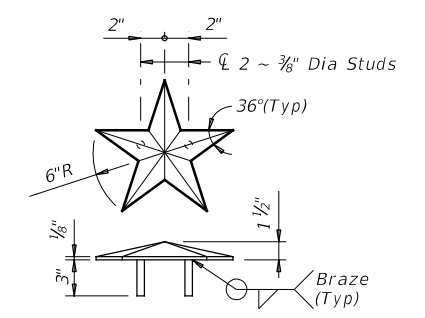
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EXTERIOR PILASTER ELEVATIONS



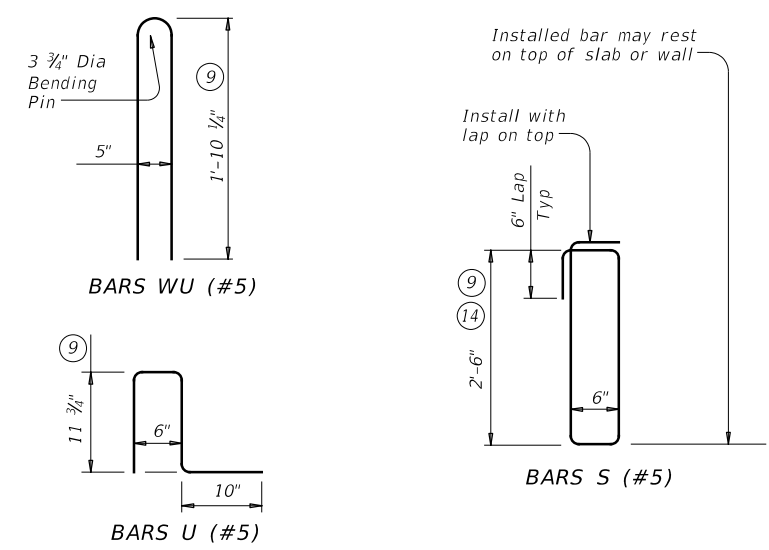
WINDOW TYPES



BRONZE STAR DETAIL

One known manufacturer is:
 1. Southwell Company
 Corpus Christi, Texas

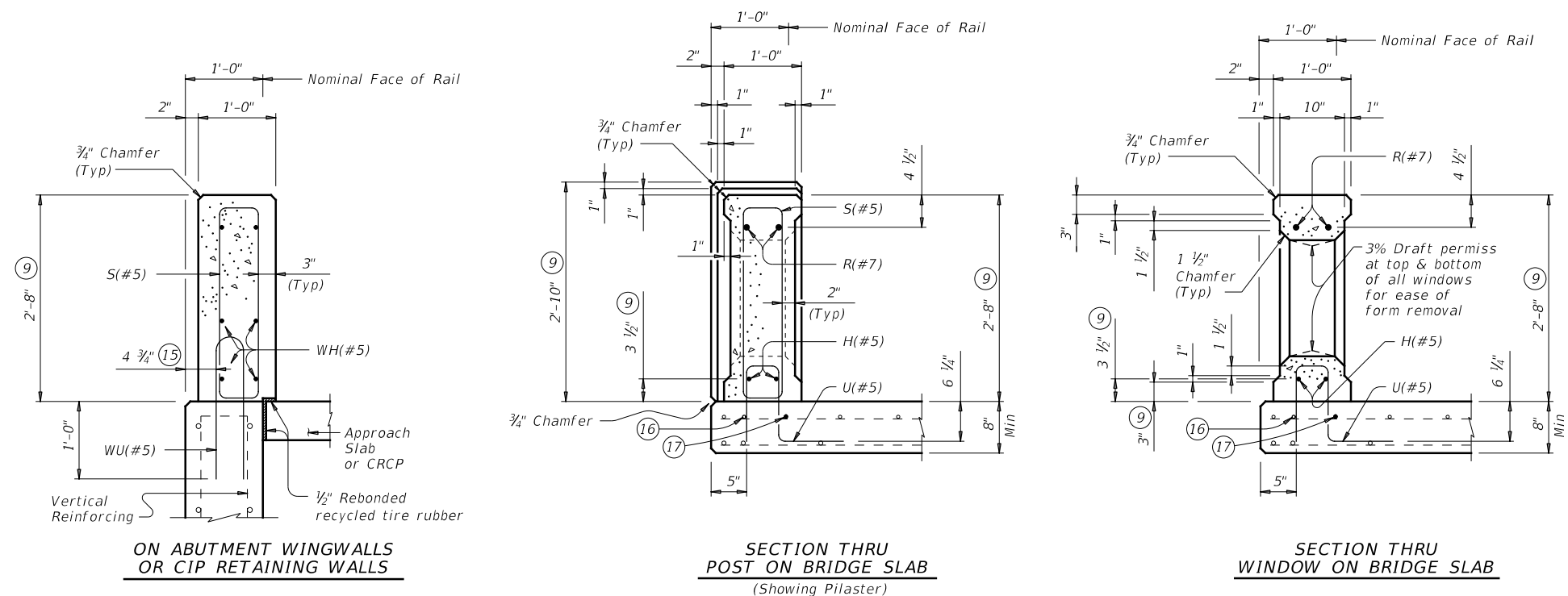
- 7 Provide rail joints at ends of all spans the same width as Slab joint opening, except that Rail Joints over construction joints must be 1/4" Min to 3/4" Max in width. Joints must be open if slab joint opening is not sealed. Joints over construction joints and over sealed deck joints must be plugged. Forming material used in joints may be left in place if it is light in color and compressible, such as the following materials: polystyrene, molded cork granules, sponge rubber sheet, etc. If forming material is not left in place, plug the bottom 6" with slab joint sealing compound to prevent drainage and staining.
- 9 Increase 2" for structures with overlay.
- 12 Construction year (use if shown elsewhere on plans) 3" High "Plantin Bold" Typeface with 1/4" recess. Placed at one Abutment only or as directed by the Engineer.
- 13 Dimensions must be the same on each side of joint.
- 14 Reduce by 2" or field bend over Preformed Bituminous Fiber Material to gain cover.
- 15 5/4" when vertical reinforcing has closer clear cover over horizontal reinforcing in abutment wingwalls or retaining walls on traffic side of wall.
- 16 As an aid in supporting reinforcement, additional longitudinal bars may be used in the slab with the approval of the Engineer. Such bars must be furnished at the Contractor's expense.
- 17 Top longitudinal slab bar may be adjusted laterally 3" plus or minus to tie reinforcing.
- 18 Bronze Star dimensions of the final product can be slightly smaller due to shrinkage after casting.



- CONSTRUCTION NOTES:**
 Attach Bronze Star with a Type III Class C, D, E, or F epoxy adhesive. Clamp star until epoxy achieves set. Remove any visible epoxy "squeeze out" from under star.
 Face of rail and pilasters, parapet must be plumb unless otherwise approved.
 Apply a one rub finish to all railing surfaces unless otherwise shown elsewhere on the plans.
- MATERIAL NOTES:**
 Provide Class "S" concrete for railing. Provide Class "S" (HPC) concrete if shown elsewhere in the plans.
 Provide Grade 60 reinforcing steel.
 Epoxy coat or galvanize all reinforcing steel if slab bars are epoxy coated or galvanized.
 Bronze Star must be cast of architectural bronze having the following composition: Copper 85 %, Tin 5 %, Lead 5 %, Zinc 5 %.
 Provide bar laps, where required, as follows:
 Uncoated or galvanized ~ #5 = 2'-0"
 Uncoated or galvanized ~ #7 = 2'-11"
 Epoxy coated ~ #5 = 3'-0"
 Epoxy coated ~ #7 = 4'-4"

- GENERAL NOTES:**
 This rail has been evaluated and approved to be of equal strength to railing with like geometry, which have been crash tested to meet MASH TL-2 criteria. This rail can be used for speeds of 45 mph and less when a TL-2 or TL-3 rated guard fence transition is used. This rail is only approved for low speed use, speeds of 45 mph and less.
 Do not use this railing on bridges with expansion joints providing more than 5" movement.
 Rail anchorage details shown on this standard may require modification for select structure types. See appropriate details elsewhere in plans for these modifications.
 Shop drawings will not be required for this rail.
 See Bridge Layout or other plan sheets for the following: dimensions with the number of span pilasters, dimensions with the number of windows, window type, inclusion of bronze stars, inclusion of construction year with abutment identity.
 Submit erection drawings showing span number, span pilaster locations, number of windows between pilasters and spacing to first window (see Note 6) to the Engineer for approval.
 Average weight of railing with no overlay increase and no pilasters is 270 plf.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing bar dimensions shown are out-to-out of bar.

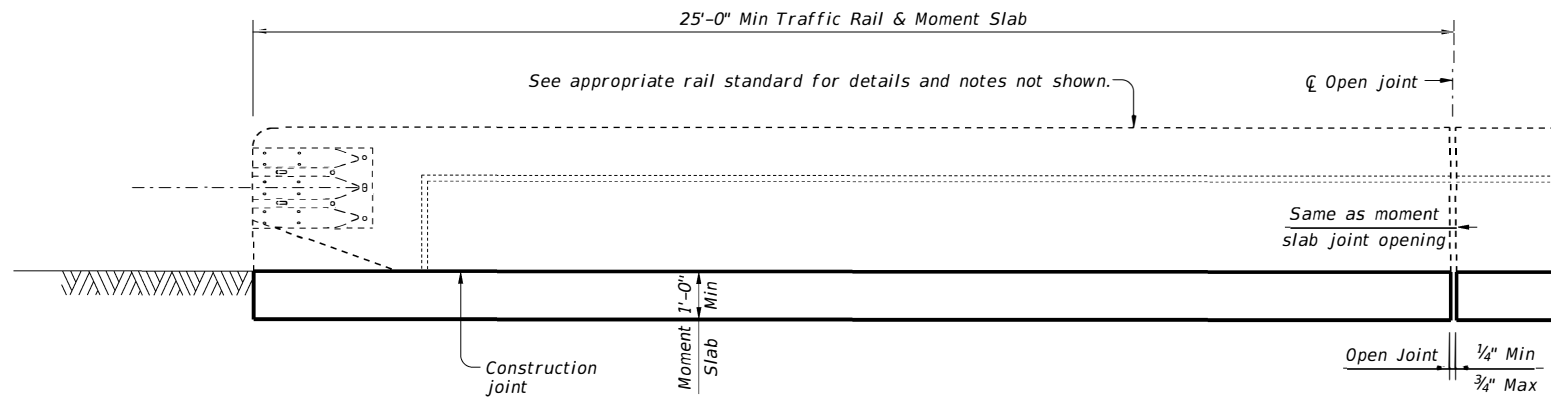


SECTIONS THRU RAIL

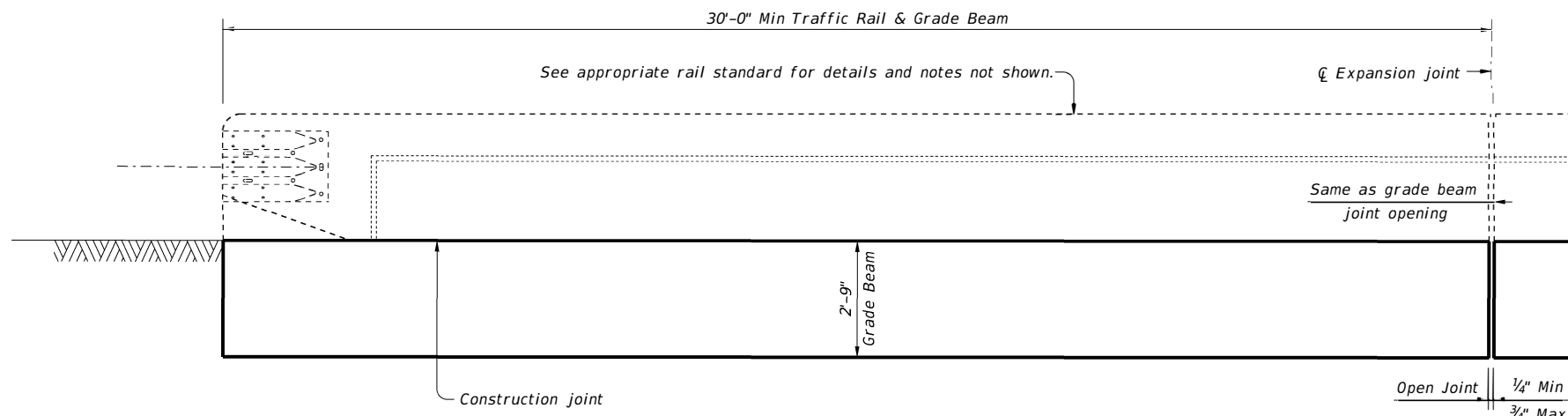
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TRAFFIC RAIL TEXAS CLASSIC			
TYPE T411			
FILE: r1std008-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT
©TxDOT September 2019	CONV	SECT	JOB
REVISIONS	0439	05	026
7-20: Bronze star change to one manufacturer.	DIST	COUNTY	SHEET NO.
LBB	HALE		196

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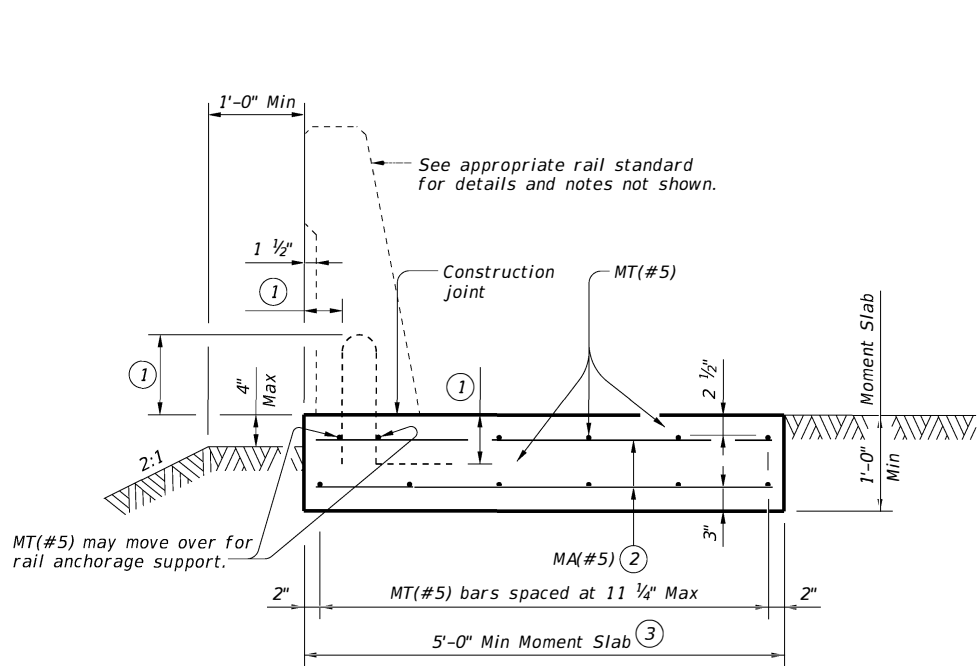
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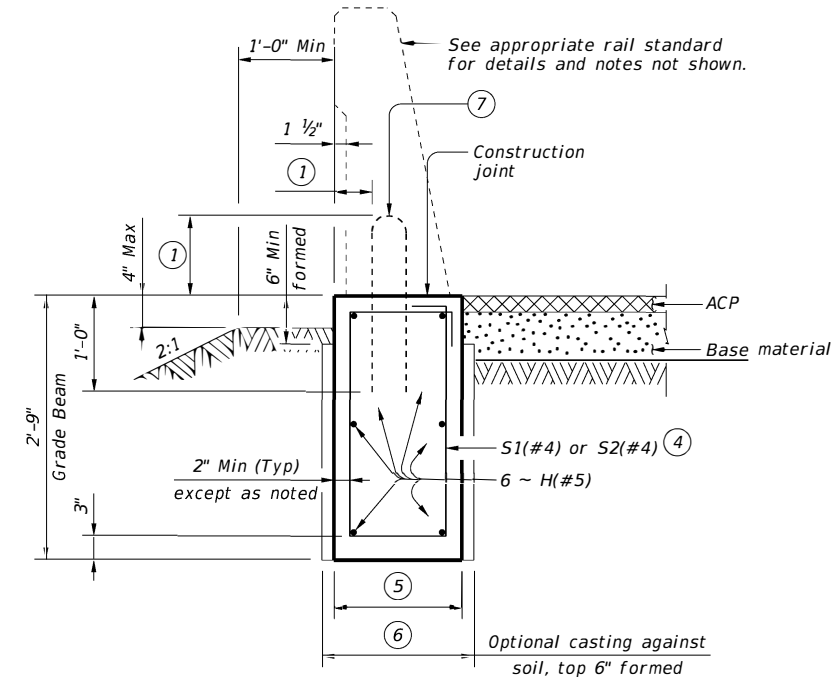
ROADWAY ELEVATION OF TRAFFIC RAIL ON MOMENT SLAB (TRF-MS)
 (Showing SSTR rail other rails are similar. Reinforcing not shown for clarity.)



ROADWAY ELEVATION OF TRAFFIC RAIL ON GRADE BEAM (TRF-GB)
 (Showing SSTR rail other rails are similar. Reinforcing not shown for clarity.)

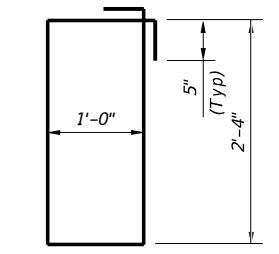


SECTION OF TRAFFIC RAIL ON MOMENT SLAB (TRF-MS)
 (Showing SSTR rail other rails are similar.)

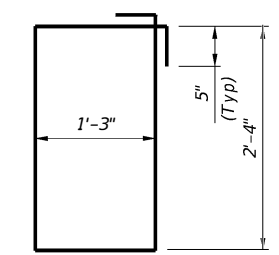


SECTION OF TRAFFIC RAIL ON GRADE BEAM (TRF-GB)
 (Showing SSTR rail other rails are similar.)

- ① See applicable bridge rail standard.
- ② MA(#5) space longitudinally along moment slab at 12" Max. (Spaced 2 1/2" longitudinally from outside edge of moment slab).
- ③ Approximate moment slab concrete = 0.19 CY/LF and reinforcement = 22.4 LB/LF.
- ④ S1(#4) or S2(#4) spaced longitudinally along grade beam at 8" Max. (Spaced 2 1/2" longitudinally from outside edge of grade beam).
- ⑤ Use bar S1(#4) with 1'-4" grade beam width and bridge rail types: All rails except for T224, C412, T66, C66, T80HT and T80SS. Approximate grade beam concrete = 0.14 CY/LF and reinforcement = 13.8 LB/LF.
Use bar S2(#4) with 1'-7" grade beam width and bridge rail types: T66 and C66. Approximate grade beam concrete = 0.16 CY/LF and reinforcement = 14.2 LB/LF.
- ⑥ 1'-6" for bridge rail types: All rails except for T224, C412, T66, C66, T80HT and T80SS.
1'-9" bridge rail types: T66 and C66.
- ⑦ Modify reinforcing on standard bridge rail anchorage if necessary by extending rail anchorage 12" Min, vertically into traffic rail



BARS S1(#4)



BARS S2(#4)

CONSTRUCTION NOTES:
 Align moment slab (TRF-MS) or grade beam (TRF-GB) open joints with rail open joints maintaining no less than minimum rail length. Provide moment slab (TRF-MS) or grade beam (TRF-GB) with open joints at no greater than 100' spacing unless otherwise shown on the plans or approved by the Engineer.

MATERIAL NOTES:
 Provide Class "C" concrete. Provide Class "C" (HPC) if required elsewhere.
 Provide Grade 60 reinforcing steel.
 Epoxy coat or galvanize all reinforcing steel if required elsewhere.
 Deformed Welded Wire Reinforcement (WWR) (ASTM A1064) of equal size and spacing may be substituted for bars S1(#4), S2(#4) and H(#5) unless noted otherwise. Provide the same laps as required for reinforcing bars.
 Provide bar laps, where required, as follows:
 Uncoated or galvanized ~ #5 = 2'-4"
 Epoxy coated ~ #5 = 3'-6"

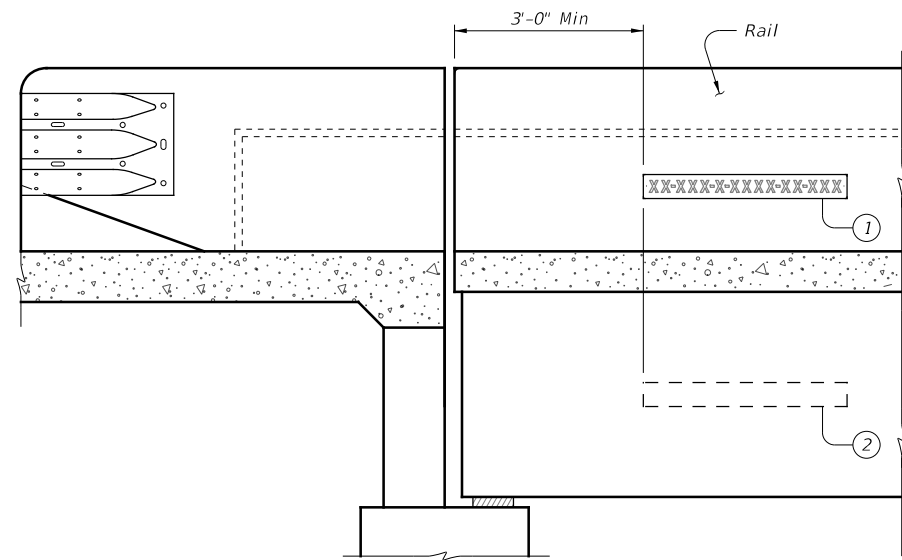
GENERAL NOTES:
 Use of these details will result in a moment slab (TRF-MS) or grade beam (TRF-GB) foundation that is acceptable for traffic rails which are MASH TL-2, TL-3, or TL-4 compliant.
 See elsewhere in the plans for selected options between moment slab (TRF-MS) and/or grade beam (TRF-GB).
 The foundation design resistance is based on the current AASHTO bridge railing requirements with the assumption of fair to good soil support conditions. Poor soil conditions will require suitably deeper and/or wider foundations.
 See appropriate rail standard for details and notes not shown. This detail is intended for use as a guide to unusual railing anchorage situations but may be included in the plans, modified as necessary to apply to specific installations required on the project.
 Payment for moment slab (TRF-MS) and/or grade beam (TRF-GB) will be by Class "C" concrete or Class "C" (HPC) concrete for rail foundations.
 The associated bridge railing will be paid for by the linear foot which includes the concrete and reinforcement.
 Excavation will be subsidiary to other items.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing bar dimensions shown are out-to-out of bar.

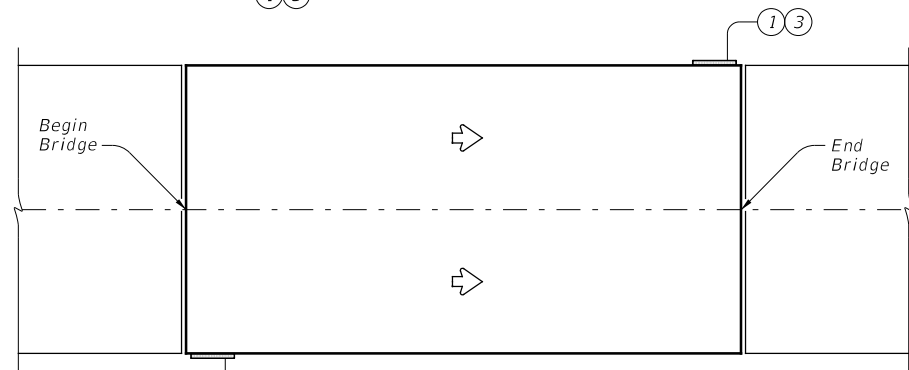
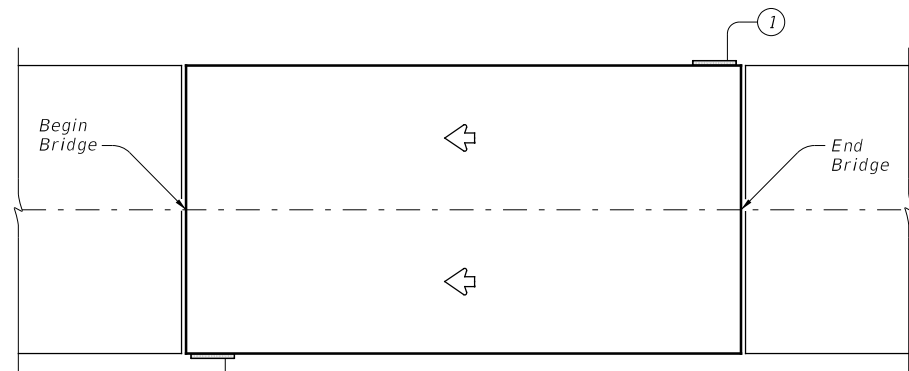
		Bridge Division Standard	
TRAFFIC RAIL FOUNDATIONS FOR MASH TL-2, TL-3 & TL-4 BRIDGE RAILS			
TRF			
FILE: RL-TRF-20.dgn	DN: TxDOT	CK: TAR	DW: JTR
CON: 0439	SECT: 05	JOB: 026	HIGHWAY: SH 194
DIST: LBB		COUNTY: HALE	SHEET NO: 197

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DATE: 7/3/2024 3:08:42 PM
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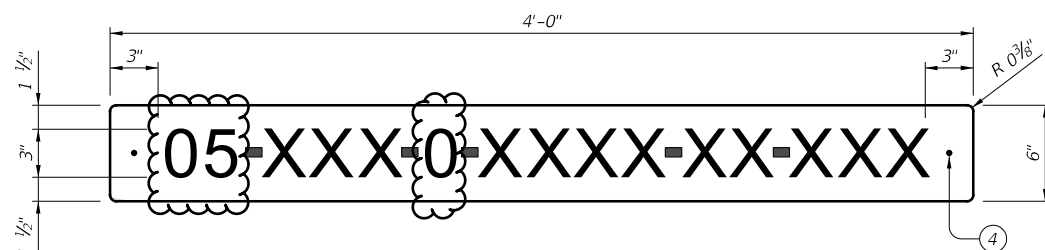


ELEVATION

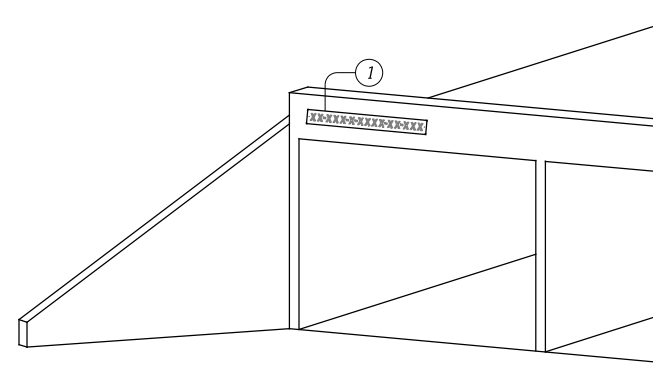


PLAN

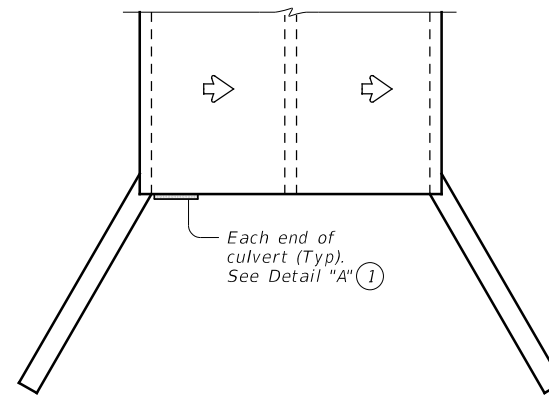
BRIDGE SIGN LOCATIONS



BRIDGE IDENTIFICATION SIGN

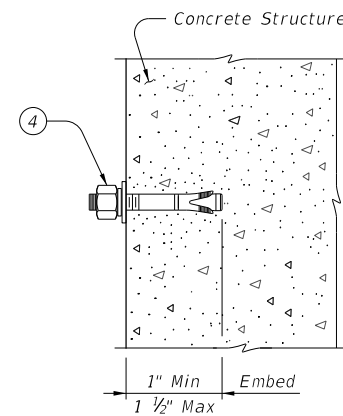


DETAIL "A"

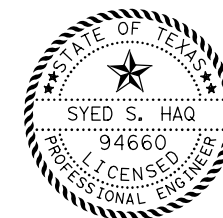


PLAN

BRIDGE CLASS CULVERT SIGN PLACEMENT



ANCHOR DETAIL



Spill
7/3/2024

SHEETING REQUIREMENTS

Usage	Color	Sign Face Material
Background	White	Type B or C Sheeting
Letters and Symbols	Black	Type B or C Sheeting

- ① Bridge identification sign location
- ② Alternate sign placement location for exterior concrete beams.
- ③ If adjacent bridges are less than 2 feet apart, these signs may be omitted.
- ④ 1/4" Diameter stainless steel expansion anchor with hex nut, washer, and spring-lock washer.

SIGN NOTES:

Standard sign designs can be found in the Standard Highway Sign Designs for Texas (SHSD).

Use the Clearview Alphabet CV-2W for the letters and symbols.

MATERIAL NOTES:

Provide lateral spacing between letters and numerals conforming with the SHSD, and any approved changes thereto. Provide a balanced appearance when spacing is not shown.

Provide aluminum sign blanks with a minimum thickness of 0.080" that meet the requirements of DMS-7110.

Provide sign face materials that meet the requirements of DMS-8300 and the sheeting requirements shown in the table.

Provide 1/4" diameter stainless steel expansion anchors with one hex head nut, one flat washer, and one helical spring-lock washer each.

Use torque controlled mechanical expansion anchors that are approved for use in cracked concrete by the International Code Council, Evaluation Service (ICC-ES). Provide anchor products that have a designated ICC-ES Evaluation Report number. The approval status must be maintained on the ICC-ES website under Division 031600 for Concrete Anchors.

Unless otherwise approved by the Engineer: do not use adhesive anchors; do not use expansion anchors that are not included in the ICC-ES approval list; and do not use expansion anchors that are only approved for use in uncracked concrete.

Use anchors manufactured with stainless steel expansion wedges. Anchors manufactured with carbon steel expansion wedges are not allowed. Anchor bodies can be either zinc-plated carbon steel or stainless steel. For application in marine environments, provide both stainless steel anchor bodies and expansion wedges.

GENERAL NOTES:

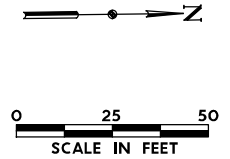
Prior to hole drilling, locate rebar to ensure clearing of existing reinforcement and/or strands.

Prior to installation, obtain approval of sign locations from the Engineer. Avoid placement of sign over travel lanes and pedestrian walkways. Submit proposed installation method to Engineer prior to beginning work. Install anchors as shown on plans and in accordance with the anchor manufacturer's published installation instructions.

Do not install anchors sections of members under tension. These signs and anchors are paid under Item 442 "Metal for Structures." Each sign weighs 28 lbs.

Texas Department of Transportation				Bridge Division Standard	
NBI BRIDGE IDENTIFICATION SIGN STANDARD					
NBIS (MOD)					
FILE: MS-NBIS-23.dgn	DN: TAR	CK: TxDOT	DW: JER	CK: TAR	
©TxDOT	March 2023	CONTRACT NO. 0439	SECTION 05	JOB NO. 026	HIGHWAY SH 194
REVISIONS		DIST. LBB	COUNTY. HALE	SHEET NO. 197A	

NOTE TO CONTRACTOR: SOME WL HAVE BEEN RELOCATED BY OTHERS. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION.



NOTES

1. THE QUALITY LEVEL B HORIZONTAL LOCATION OF UTILITIES SHOWN ON THESE DRAWINGS IS ARRIVED AT BY THE USE OF DESIGNATING EQUIPMENT. THESE LINES WERE NOT UNCOVERED TO VERIFY EXACT HORIZONTAL LOCATIONS.
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UTILITY TYPE:	OWNER:	CONTACT:	PHONE:	EMAIL:	ADDRESS:
COMMUNICATION	AT&T (D)	BRYAN JONES	806-741-6103	bj1726@att.com	210 AVE R RM 102, LUBBOCK, TX 79411
COMMUNICATION	NTS COMMUNICATIONS	MICHAEL PENNY	806-788-2958	Michael.Penny@ntscom.com	1220 BROADWAY, LUBBOCK, TX 79401
COMMUNICATION	SUDDENLINK COMMUNICATIONS	JEREMY MCDONALD	806-771-6210	jeremy.mcdonald@AlticeTechServicesUSA.com	6710 HARTFORD AVE, LUBBOCK, TX 79413
COMMUNICATION	FIBERLIGHT	STEVE FUTCH	940-390-8098	steve.futch@fiberlight.com	5728 RITTIMAN PLAZA, SAN ANTONIO, TX 78218
TELEPHONE	AT&T (D)	BRYAN JONES	806-741-6103	bj1726@att.com	210 AVE R RM 102, LUBBOCK, TX 79411
GAS	ATMOS ENERGY	JERRY HARRISON	806-379-5822	jerry.harrison@atmosenergy.com	4730 CANYON DRIVE, AMARILLO, TX 79109
ELECTRICAL (D)	XCEL ENERGY (D)	OMAR MORALES	806-378-4128	Omar.Morales@xcelenergy.com	304 N NELSON, AMARILLO, TX 79107
ELECTRICAL (T)	XCEL ENERGY (T)	SEAN FREDERIKSEN	806-771-6256	sean.l.frederiksen@xcelenergy.com	6710 HARTFORD AVE, LUBBOCK, TX 79413
ELECTRICAL	TXDOT	TERRY HARRIS	806-748-4465	Terry.Harris@txdot.gov	135 E SLATON HWY, LUBBOCK, TX 79404
WATER	CITY OF PLAINVIEW	NEIL WEEMS	806-291-1225	nweems@plainviewtx.org	901 BROADWAY ST, PLAINVIEW, TX 79072
WASTE WATER	CITY OF PLAINVIEW	NEIL WEEMS	806-291-1225	nweems@plainviewtx.org	901 BROADWAY ST, PLAINVIEW, TX 79072

LEGEND

- | | | | | | | | |
|--|--------------------------|--|---------------------------|--|-------------------------|--|---|
| | CATV MANHOLE | | GAS VENT PIPE | | TRAFFIC SIGNAL BOX | | ELEC-7 - CITY OF PLAINVIEW STREETLIGHT- ABANDONED |
| | CURB INLET | | LIGHT STANDARD | | TRAVERSE POINT | | FO-1 - AT&T (D) |
| | DROP OR GRATE INLET | | POWER POLE | | TXDOT MONUMENT | | FO-2 - NTS COMMUNICATIONS |
| | ELECTRIC PULL BOX | | POWER POLE WITH RISER | | UTILITY CONTINUATION | | FO-3 - SUDDENLINK COMMUNICATIONS |
| | ELECTRIC JUNCTION BOX | | STORM MANHOLE | | WASTEWATER CLEANOUT | | FO-4 - FIBERLIGHT |
| | ELECTRIC CABINET | | TELEPHONE MANHOLE | | WASTEWATER MANHOLE | | TELE-1 - AT&T (D) |
| | ELECTRIC HAND HOLE | | TELEPHONE MARKER POST | | WATER AIR RELEASE VALVE | | ELEC-1 - XCEL ENERGY (D) (UNDERGROUND) |
| | ELECTRIC MANHOLE | | TELEPHONE PEDESTAL | | WATER MANHOLE | | ELEC-2 - XCEL ENERGY (T) (NOT USED) |
| | EOI (END OF INFORMATION) | | TELEPHONE PEDESTAL | | WATER MARKER POST | | ELEC-3 - PRIVATE ELECTRIC |
| | FIRE HYDRANT | | TELEPHONE POLE | | WATER METER | | ELEC-4 - TXDOT- TRAFFIC SIGNALS |
| | GAS MANHOLE | | TELEPHONE POLE WITH RISER | | WATER VALVE | | ELEC-5 - BNSF RAILWAY ELECTRIC CABLES |
| | GAS MARKER POST | | TEST HOLE | | AERIAL TARGET | | ELEC-6 - TXDOT - ITS |
| | GAS TEST STATION | | TRAFFIC CONTROL BOX | | PROP SIDEWALK | | |
| | GAS VALVE | | | | | | |

NOTE: - THE SUE QL-B WORK WAS PERFORMED IN 2019

02/27/2023

NO.	DATE	REVISION	APPROVED

Binkley & Barfield, Inc.
 TxEng F-257
 1710 Seamist Dr
 Houston, TX 77008
 713.869.3433
 BinkleyBarfield.com

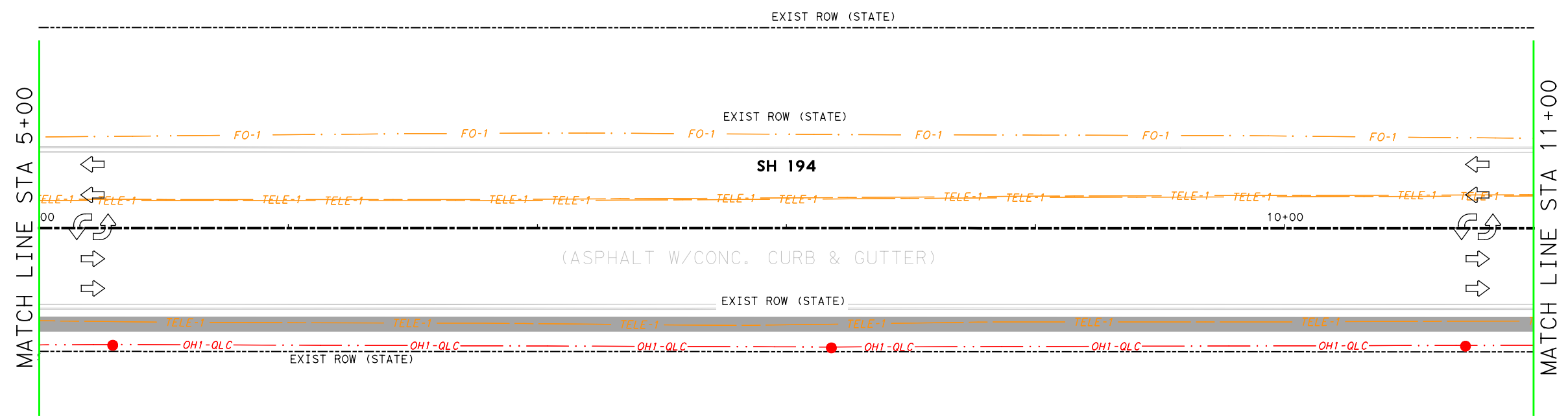
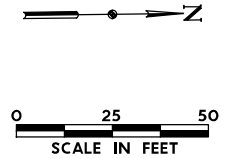
SH 194 FROM FM 3466 TO IH27

EXISTING UTILITIES
 BEGIN TO STA 5+00

HORZ SCALE: 1"=50'		SHEET 1 OF 26	
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET	HIGHWAY NO. SH 194	
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 198
CONTROL 0439	SECTION 05	JOB 026	

PLOT DRIVER: \$PLTDRVS\$ PENTABLE: \$PENTBLS\$
 USER: \$USER\$ DATE: \$DATE\$ TIME: \$TIME\$ SCALE: \$SCALES\$ SHORT: \$SHORT\$
 FILE: \$FILES\$

NOTE TO CONTRACTOR: SOME WL HAVE BEEN RELOCATED BY OTHERS. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION.



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02/27/2023

NO.	DATE	REVISION	APPROVED

Binkley & Barfield
 BCCM
 Binkley & Barfield, Inc.
 TxEng F-257
 1710 Seamist Dr
 Houston, TX 77008
 713.869.3433
 BinkleyBarfield.com

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SH 194 FROM FM 3466 TO IH27

EXISTING UTILITIES
 STA 5+00 TO STA 11+00

HORZ SCALE: 1"=50' SHEET 2 OF 26

FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET	HIGHWAY NO. SH 194
STATE TEXAS	DISTRICT LBB	COUNTY HALE
CONTROL 0439	SECTION 05	JOB 026

199

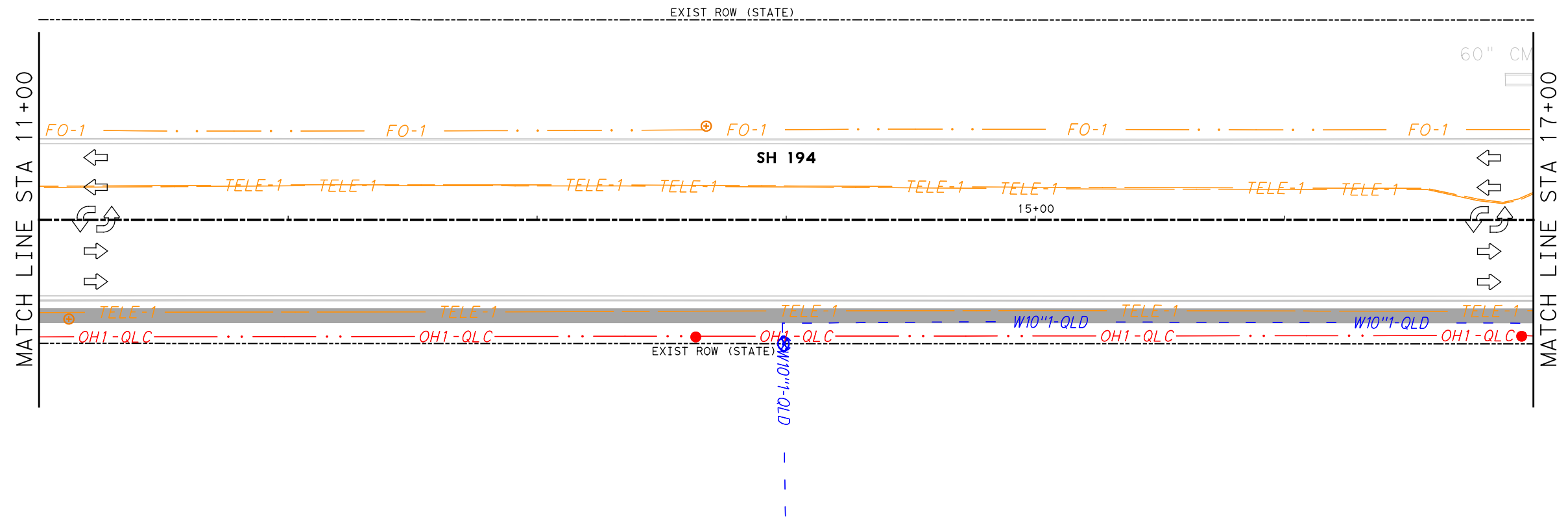
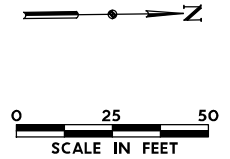
LEGEND

- | | | | | | | | | | |
|--|--------------------------|--|---------------------------|--|-------------------------|--|-------------------------------|--|--|
| | CATV MANHOLE | | GAS VENT PIPE | | TRAFFIC SIGNAL BOX | | AT&T (D) | | CITY OF PLAINVIEW STREETLIGHT- ABANDONED |
| | CURB INLET | | LIGHT STANDARD | | TRAVERSE POINT | | NTS COMMUNICATIONS | | XCEL ENERGY (D) (OVERHEAD) |
| | DROP OR GRATE INLET | | POWER POLE | | TXDOT MONUMENT | | SUDDENLINK COMMUNICATIONS | | XCEL ENERGY (T) (OVERHEAD) |
| | ELECTRIC PULL BOX | | POWER POLE WITH RISER | | UTILITY CONTINUATION | | FIBERLIGHT | | ATMOS ENERGY |
| | ELECTRIC JUNCTION BOX | | STORM MANHOLE | | WASTEWATER CLEANOUT | | AT&T (D) | | PRIVATE GAS |
| | ELECTRIC CABINET | | TELEPHONE MANHOLE | | WASTEWATER MANHOLE | | XCEL ENERGY (D) (UNDERGROUND) | | CITY OF PLAINVIEW |
| | ELECTRIC HAND HOLE | | TELEPHONE MARKER POST | | WATER AIR RELEASE VALVE | | XCEL ENERGY (T) (NOT USED) | | PRIVATE - HOMEOWNER |
| | ELECTRIC MANHOLE | | TELEPHONE PEDESTAL | | WATER MANHOLE | | PRIVATE ELECTRIC | | PRIVATE - IRRIGATION SPRINKLER |
| | EOI (END OF INFORMATION) | | TELEPHONE PEDESTAL | | WATER MARKER POST | | TXDOT- TRAFFIC SIGNALS | | CITY OF PLAINVIEW |
| | FIRE HYDRANT | | TELEPHONE POLE | | WATER METER | | BNSF RAILWAY ELECTRIC CABLES | | UNKNOWN - ABANDONED LINES |
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PLOT DRIVER: \$PLTDRVS\$
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LEGEND

- | | | | | | | | |
|--|--------------------------|--|---------------------------|--|-------------------------|--|---|
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| | ELECTRIC CABINET | | TELEPHONE MANHOLE | | WASTEWATER MANHOLE | | TELE-1 - AT&T (D) |
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| | ELECTRIC MANHOLE | | TELEPHONE PEDESTAL | | WATER MANHOLE | | ELEC-2 - XCEL ENERGY (T) (NOT USED) |
| | EOI (END OF INFORMATION) | | TELEPHONE PEDESTAL | | WATER MARKER POST | | ELEC-3 - PRIVATE ELECTRIC |
| | FIRE HYDRANT | | TELEPHONE POLE | | WATER METER | | ELEC-4 - TXDOT- TRAFFIC SIGNALS |
| | GAS MANHOLE | | TELEPHONE POLE WITH RISER | | WATER VALVE | | ELEC-5 - BNSF RAILWAY ELECTRIC CABLES |
| | GAS MARKER POST | | TEST HOLE | | AERIAL TARGET | | ELEC-6 - TXDOT - ITS |
| | GAS TEST STATION | | TRAFFIC CONTROL BOX | | PROP SIDEWALK | | Unk - UNKNOWN - ABANDONED LINES |
| | GAS VALVE | | | | | | |

NOTE: - THE SUE QL-B WORK WAS PERFORMED IN 2019

02/27/2023

NO.	DATE	REVISION	APPROVED

Binkley & Barfield, Inc.
 TxEng F-257
 1710 Seamist Dr
 Houston, TX 77008
 713.869.3433
 BinkleyBarfield.com

DCCM

Texas Department of Transportation
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SH 194 FROM FM 3466 TO IH27

EXISTING UTILITIES
 STA 11+00 TO STA 17+00

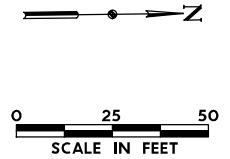
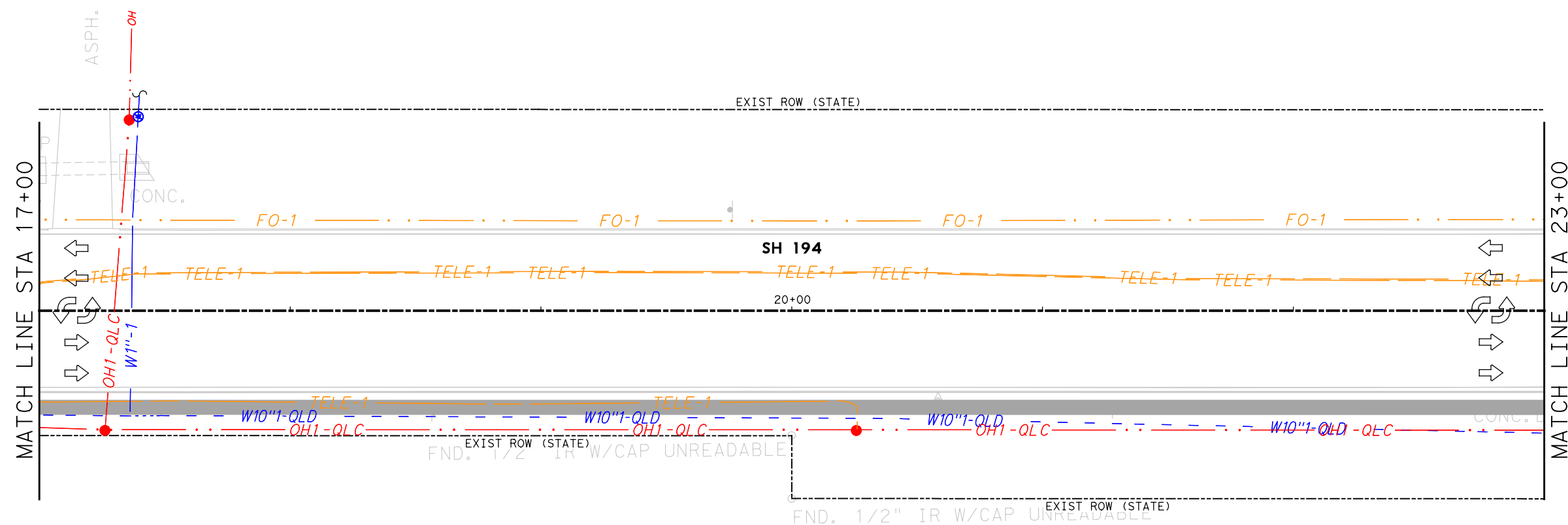
HORZ SCALE: 1"=50' SHEET 3 OF 26

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:
6	SEE TITLE SHEET	SH 194
STATE:	DISTRICT:	COUNTY:
TEXAS	LBB	HALE
CONTROL:	SECTION:	JOB:
0439	05	026

200

PLOT DRIVER: \$PLTDRVS\$ PENTABLE: \$PENTBLS\$
 USER: \$USER\$ DATE: \$DATE\$ TIME: \$TIME\$ SCALE: \$SCALESHORT\$
 FILE: \$FILES\$

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ELECTRICAL (T)	XCEL ENERGY (T)	SEAN FREDERIKSEN	806-771-6256	sean.l.frederiksen@xcelenergy.com	6710 HARTFORD AVE, LUBBOCK, TX 79413
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WATER	CITY OF PLAINVIEW	NEIL WEEMS	806-291-1225	nweems@plainviewtx.org	901 BROADWAY ST, PLAINVIEW, TX 79072
WASTE WATER	CITY OF PLAINVIEW	NEIL WEEMS	806-291-1225	nweems@plainviewtx.org	901 BROADWAY ST, PLAINVIEW, TX 79072

LEGEND

- | | | | | | | | | | |
|--|--------------------------|--|---------------------------|--|-------------------------|--|--|--|---|
| | CATV MANHOLE | | GAS VENT PIPE | | TRAFFIC SIGNAL BOX | | FO-1 - AT&T (D) | | ELEC-7 - CITY OF PLAINVIEW STREETLIGHT- ABANDONED |
| | CURB INLET | | LIGHT STANDARD | | TRAVERSE POINT | | FO-2 - NTS COMMUNICATIONS | | OH1-QLC - XCEL ENERGY (D) (OVERHEAD) |
| | DROP OR GRATE INLET | | POWER POLE | | TXDOT MONUMENT | | FO-3 - SUDDENLINK COMMUNICATIONS | | OH2-QLC - XCEL ENERGY (T) (OVERHEAD) |
| | ELECTRIC PULL BOX | | POWER POLE WITH RISER | | UTILITY CONTINUATION | | FO-4 - FIBERLIGHT | | G-1 - ATMOS ENERGY |
| | ELECTRIC JUNCTION BOX | | STORM MANHOLE | | WASTEWATER CLEANOUT | | TELE-1 - AT&T (D) | | G-2 - PRIVATE GAS |
| | ELECTRIC CABINET | | TELEPHONE MANHOLE | | WASTEWATER MANHOLE | | ELEC-1 - XCEL ENERGY (D) (UNDERGROUND) | | W-1 - CITY OF PLAINVIEW |
| | ELECTRIC HAND HOLE | | TELEPHONE MARKER POST | | WATER AIR RELEASE VALVE | | ELEC-2 - XCEL ENERGY (T) (NOT USED) | | W-2 - PRIVATE - HOMEOWNER |
| | ELECTRIC MANHOLE | | TELEPHONE PEDESTAL | | WATER MANHOLE | | ELEC-3 - PRIVATE ELECTRIC | | W-3 - PRIVATE - IRRIGATION SPRINKLER |
| | EOI (END OF INFORMATION) | | TELEPHONE PEDESTAL | | WATER MARKER POST | | ELEC-4 - TXDOT- TRAFFIC SIGNALS | | WW-1 - CITY OF PLAINVIEW |
| | FIRE HYDRANT | | TELEPHONE POLE | | WATER METER | | ELEC-5 - BNSF RAILWAY ELECTRIC CABLES | | Unk - UNKNOWN - ABANDONED LINES |
| | GAS MANHOLE | | TELEPHONE POLE WITH RISER | | WATER VALVE | | ELEC-6 - TXDOT - ITS | | |
| | GAS MARKER POST | | TEST HOLE | | AERIAL TARGET | | | | |
| | GAS TEST STATION | | TRAFFIC CONTROL BOX | | PROP SIDEWALK | | | | |
| | GAS VALVE | | | | | | | | |

NOTE: - THE SUE QL-B WORK WAS PERFORMED IN 2019

02/27/2023

NO.	DATE	REVISION	APPROVED

Binkley & Barfield, Inc.
TxEng F-257
1710 Seamist Dr
Houston, TX 77008
713.869.3433
BinkleyBarfield.com

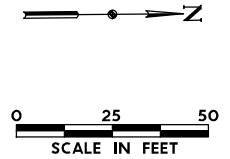
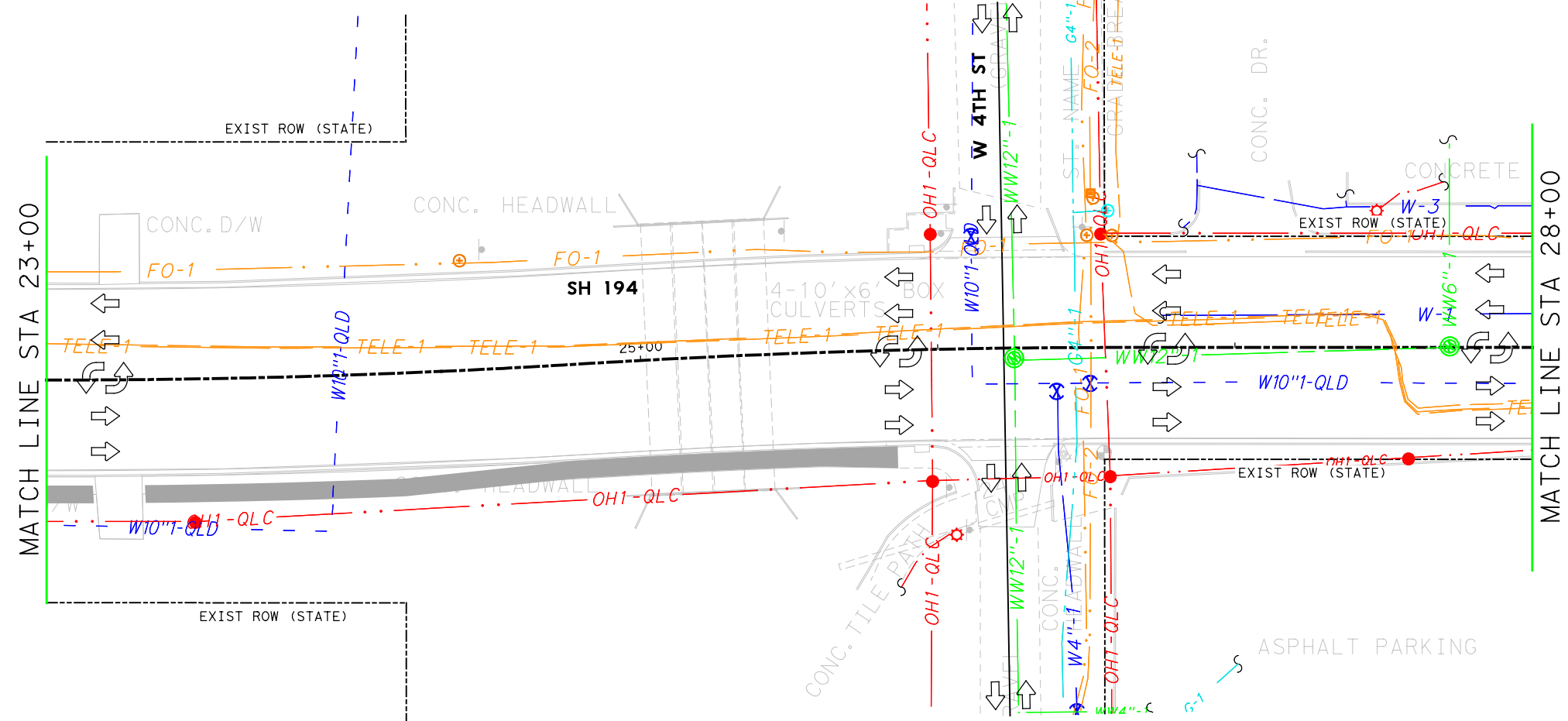
SH 194 FROM FM 3466 TO IH27

EXISTING UTILITIES
STA 17+00 TO STA 23+00

HORZ SCALE: 1"=50'		SHEET 4 OF 26	
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET	HIGHWAY NO. SH 194	
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 201
CONTROL 0439	SECTION 05	JOB 026	

PLOT DRIVER: \$PLTDRVS\$ PENTABLE: \$PENTBLS\$
 USER: \$USER\$ DATE: \$DATE\$ TIME: \$TIME\$ SCALE: \$SCALES\$ SHORT\$
 FILE: \$FILES\$

NOTE TO CONTRACTOR: SOME WL HAVE BEEN RELOCATED BY OTHERS. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION.



- NOTES**
1. THE QUALITY LEVEL B HORIZONTAL LOCATION OF UTILITIES SHOWN ON THESE DRAWINGS IS ARRIVED AT BY THE USE OF DESIGNATING EQUIPMENT. THESE LINES WERE NOT UNCOVERED TO VERIFY EXACT HORIZONTAL LOCATIONS.
 2. THE ACCURACY OF THE HORIZONTAL LOCATION OF UTILITY LINES SHOWN ON THESE PLANS CAN BE INFLUENCED BY FACTORS BEYOND BINKLEY & BARFIELD, INC.'S CONTROL, SUCH AS CONDUCTIVITY OF MATERIALS AND THEIR SURROUNDINGS, SOIL MOISTURE CONTENT, PROXIMITY OF OTHER UNDERGROUND UTILITIES OR STRUCTURES, DEPTH OF UTILITY, ETC. THEREFORE, ONLY THE ACCURACY OBTAINED BY ACTUAL EXCAVATION CAN BE GUARANTEED TO APPLICABLE ENGINEERING AND/OR SURVEYING STANDARDS.
 3. UTILITY INFORMATION LABELED QL-C OR QL-D IS DERIVED FROM RECORDS. SUCH INFORMATION MAY NOT BE ACCURATE OR RELIABLE. BINKLEY & BARFIELD, INC. EXPRESSLY DISCLAIMS RESPONSIBILITY FOR THE ACCURACY OR RELIABILITY OF UTILITY RECORDS INFORMATION DEPICTED ACCORDING TO RECORDS.
 4. AS-BUILT DRAWINGS WERE USED TO COMPARE DESIGNATED LOCATIONS TO CONSTRUCTION AS-BUILT LOCATIONS.
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UTILITY TYPE:	OWNER:	CONTACT:	PHONE:	EMAIL:	ADDRESS:
COMMUNICATION	AT&T (D)	BRYAN JONES	806-741-6103	bj1726@att.com	210 AVE R RM 102, LUBBOCK, TX 79411
COMMUNICATION	NTS COMMUNICATIONS	MICHAEL PENNY	806-788-2958	Michael.Penny@ntscom.com	1220 BROADWAY, LUBBOCK, TX 79401
COMMUNICATION	SUDDENLINK COMMUNICATIONS	JEREMY McDONALD	806-771-6210	jeremy.mcdonald@AlticeTechServicesUSA.com	6710 HARTFORD AVE, LUBBOCK, TX 79413
COMMUNICATION	FIBERLIGHT	STEVE FUTCH	940-390-8098	steve.futch@fiberlight.com	5728 RITTIMAN PLAZA, SAN ANTONIO, TX 78218
TELEPHONE	AT&T (D)	BRYAN JONES	806-741-6103	bj1726@att.com	210 AVE R RM 102, LUBBOCK, TX 79411
GAS	ATMOS ENERGY	JERRY HARRISON	806-379-5822	jerry.harrison@atmosenergy.com	4730 CANYON DRIVE, AMARILLO, TX 79109
ELECTRICAL (D)	XCEL ENERGY (D)	OMAR MORALES	806-378-4128	Omar.Morales@xcelenergy.com	304 N NELSON, AMARILLO, TX 79107
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WASTE WATER	CITY OF PLAINVIEW	NEIL WEEMS	806-291-1225	nweems@plainviewtx.org	901 BROADWAY ST, PLAINVIEW, TX 79072

LEGEND

- | | | | | |
|--|--|---|--|---|
| <ul style="list-style-type: none"> ⊙ CATV MANHOLE ⊠ CURB INLET ⊠ DROP OR GRATE INLET ⊠ ELECTRIC PULL BOX ⊠ ELECTRIC JUNCTION BOX ⊠ ELECTRIC CABINET ⊠ ELECTRIC HAND HOLE ⊠ ELECTRIC MANHOLE ⊠ EOI (END OF INFORMATION) ⊠ FIRE HYDRANT ⊠ GAS MANHOLE ⊠ GAS MARKER POST ⊠ GAS TEST STATION ⊠ GAS VALVE | <ul style="list-style-type: none"> ○ GAS VENT PIPE ⊠ LIGHT STANDARD ⊠ POWER POLE ⊠ POWER POLE WITH RISER ⊠ STORM MANHOLE ⊠ TELEPHONE MANHOLE ⊠ TELEPHONE MARKER POST ⊠ TELEPHONE PEDESTAL ⊠ TELEPHONE PEDESTAL ⊠ TELEPHONE PEDESTAL ⊠ TELEPHONE PEDESTAL ⊠ TELEPHONE POLE ⊠ FIBER PEDESTAL ⊠ TELEPHONE POLE WITH RISER ⊠ TEST HOLE ⊠ TRAFFIC CONTROL BOX | <ul style="list-style-type: none"> ⊠ TRAFFIC SIGNAL BOX ⊠ TRAVERSE POINT ⊠ TXDOT MONUMENT ⊠ UTILITY CONTINUATION ⊠ WASTEWATER CLEANOUT ⊠ WASTEWATER MANHOLE ⊠ WATER AIR RELEASE VALVE ⊠ WATER MANHOLE ⊠ WATER MARKER POST ⊠ WATER MARKER POST ⊠ WATER METER ⊠ WATER VALVE ⊠ AERIAL TARGET ⊠ PROP SIDEWALK | <ul style="list-style-type: none"> — FO-1 — AT&T (D) — FO-2 — NTS COMMUNICATIONS — FO-3 — SUDDENLINK COMMUNICATIONS — FO-4 — FIBERLIGHT — TELE-1 — AT&T (D) — ELEC-1 — XCEL ENERGY (D) (UNDERGROUND) — ELEC-2 — XCEL ENERGY (T) (NOT USED) — ELEC-3 — PRIVATE ELECTRIC — ELEC-4 — TXDOT- TRAFFIC SIGNALS — ELEC-5 — BNSF RAILWAY ELECTRIC CABLES — ELEC-6 — TXDOT - ITS | <ul style="list-style-type: none"> — ELEC-7 — CITY OF PLAINVIEW STREETLIGHT- ABANDONED — OH1-QLC — XCEL ENERGY (D) (OVERHEAD) — OH2-QLC — XCEL ENERGY (T) (OVERHEAD) — G-1 — ATMOS ENERGY — G-2 — PRIVATE GAS — W-1 — CITY OF PLAINVIEW — W-2 — PRIVATE - HOMEOWNER — W-3 — PRIVATE - IRRIGATION SPRINKLER — WW-1 — CITY OF PLAINVIEW — Unk — UNKNOWN - ABANDONED LINES |
|--|--|---|--|---|

NOTE: - THE SUE QL-B WORK WAS PERFORMED IN 2019

PLOT DRIVER: \$PLTDRVS\$
 USER: \$USER\$
 FILE: \$FILES\$
 PENTABLE: \$PENTBLS\$
 TIME: \$TIME\$
 SCALE: \$SCALES\$
 DATE: \$DATE\$

02/27/2023

NO.	DATE	REVISION	APPROVED

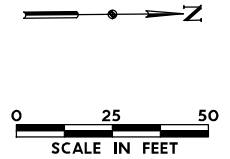
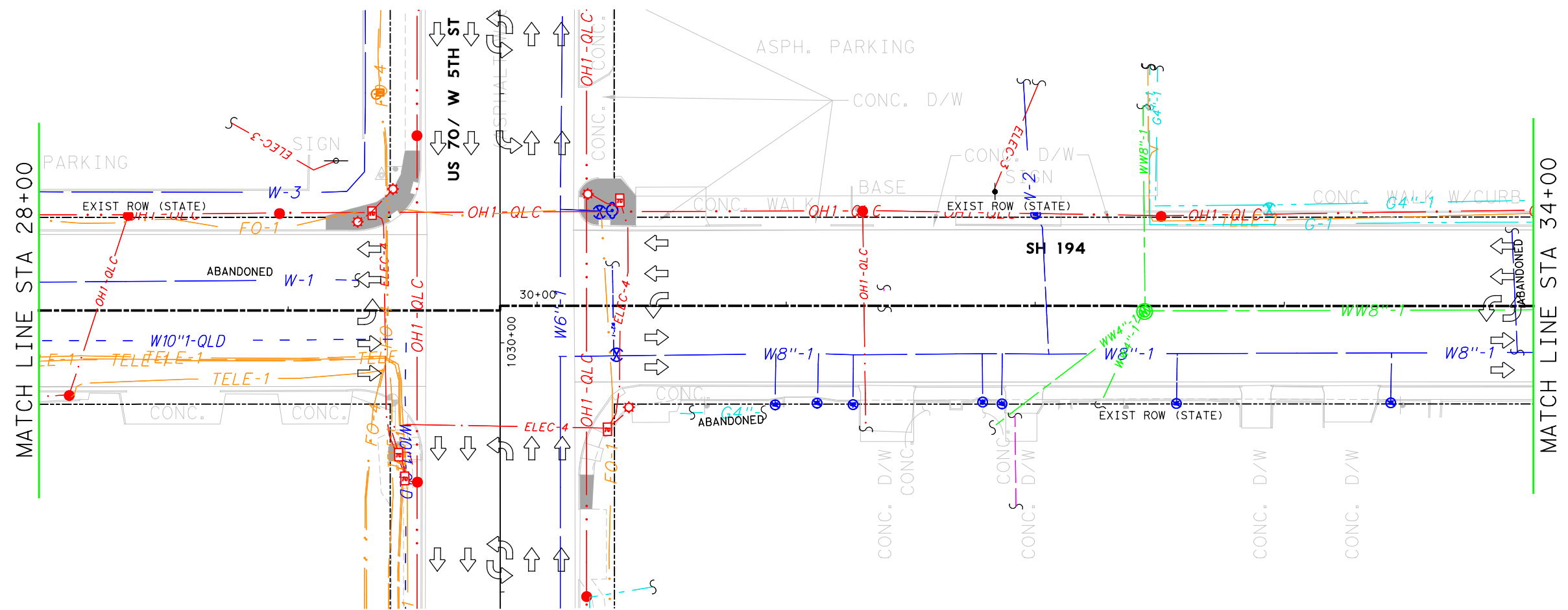
Binkley & Barfield, Inc.
 TxEng F-257
 1710 Seamist Dr
 Houston, TX 77008
 713.869.3433
 BinkleyBarfield.com

SH 194 FROM FM 3466 TO IH27

EXISTING UTILITIES
 STA 23+00 TO STA 28+00

HORZ SCALE: 1"=50'		SHEET 5 OF 26	
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET	HIGHWAY NO. SH 194	
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 202
CONTROL 0439	SECTION 05	JOB 026	

NOTE TO CONTRACTOR: SOME WL HAVE BEEN RELOCATED BY OTHERS. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION.



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LEGEND

- | | | | | | | | | | |
|--|--------------------------|--|---------------------------|--|-------------------------|--|--|--|---|
| | CATV MANHOLE | | GAS VENT PIPE | | TRAFFIC SIGNAL BOX | | FO-1 — AT&T (D) | | ELEC-7 — CITY OF PLAINVIEW STREETLIGHT- ABANDONED |
| | CURB INLET | | LIGHT STANDARD | | TRAVERSE POINT | | FO-2 — NTS COMMUNICATIONS | | OH1-QLC — XCEL ENERGY (D) (OVERHEAD) |
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| | ELECTRIC PULL BOX | | POWER POLE WITH RISER | | UTILITY CONTINUATION | | FO-4 — FIBERLIGHT | | G-1 — ATMOS ENERGY |
| | ELECTRIC JUNCTION BOX | | STORM MANHOLE | | WASTEWATER CLEANOUT | | TELE-1 — AT&T (D) | | G-2 — PRIVATE GAS |
| | ELECTRIC CABINET | | TELEPHONE MANHOLE | | WASTEWATER MANHOLE | | ELEC-1 — XCEL ENERGY (D) (UNDERGROUND) | | W-1 — CITY OF PLAINVIEW |
| | ELECTRIC HAND HOLE | | TELEPHONE MARKER POST | | WATER AIR RELEASE VALVE | | ELEC-2 — XCEL ENERGY (T) (NOT USED) | | W-2 — PRIVATE - HOMEOWNER |
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| | EOI (END OF INFORMATION) | | TELEPHONE PEDESTAL | | WATER MARKER POST | | ELEC-4 — TXDOT- TRAFFIC SIGNALS | | WW-1 — CITY OF PLAINVIEW |
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NOTE: - THE SUE QL-B WORK WAS PERFORMED IN 2019

PLOT DRIVER: \$PLTDRVS\$ PENTABLE: \$PENTBLS\$
 USER: \$USER\$ DATE: \$DATE\$ TIME: \$TIME\$ SCALE: \$SCALE\$
 FILE: \$FILES\$

02/27/2023

NO.	DATE	REVISION	APPROVED

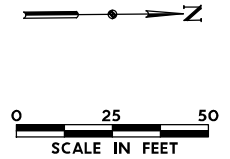
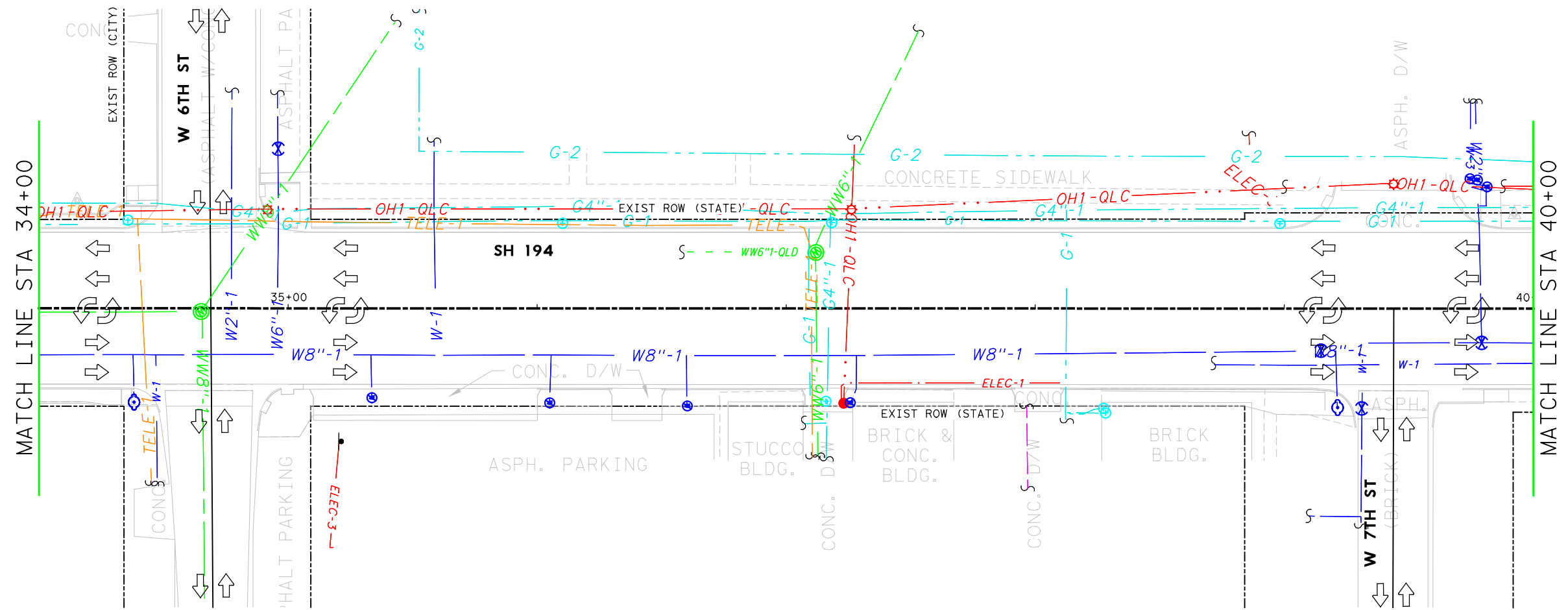
Binkley & Barfield, Inc.
 TxEng F-257
 1710 Seamist Dr
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 713.869.3433
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SH 194 FROM FM 3466 TO IH27

EXISTING UTILITIES
 STA 28+00 TO STA 34+00

HORZ SCALE: 1"=50'		SHEET 6 OF 26	
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET	HIGHWAY NO. SH 194	
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 203
CONTROL 0439	SECTION 05	JOB 026	

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LEGEND

- | | | | | | | | |
|--|--------------------------|--|---------------------------|--|-------------------------|--|---|
| | CATV MANHOLE | | GAS VENT PIPE | | TRAFFIC SIGNAL BOX | | ELEC-7 - CITY OF PLAINVIEW STREETLIGHT- ABANDONED |
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| | GAS MARKER POST | | TEST HOLE | | PROP SIDEWALK | | |
| | GAS TEST STATION | | | | | | |
| | GAS VALVE | | | | | | |

NOTE: - THE SUE QL-B WORK WAS PERFORMED IN 2019

PLOT DRIVER: \$PLTDRVS\$ PENTABLE: \$PENTBLS\$
 USER: \$USER\$ DATE: \$DATE\$ TIME: \$TIME\$ SCALE: \$SCALES\$
 FILE: \$FILES\$

02/27/2023

NO.	DATE	REVISION	APPROVED

Binkley & Barfield, Inc.
 TxEng F-257
 1710 Seamist Dr
 Houston, TX 77008
 713.869.3433
 BinkleyBarfield.com

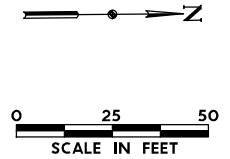
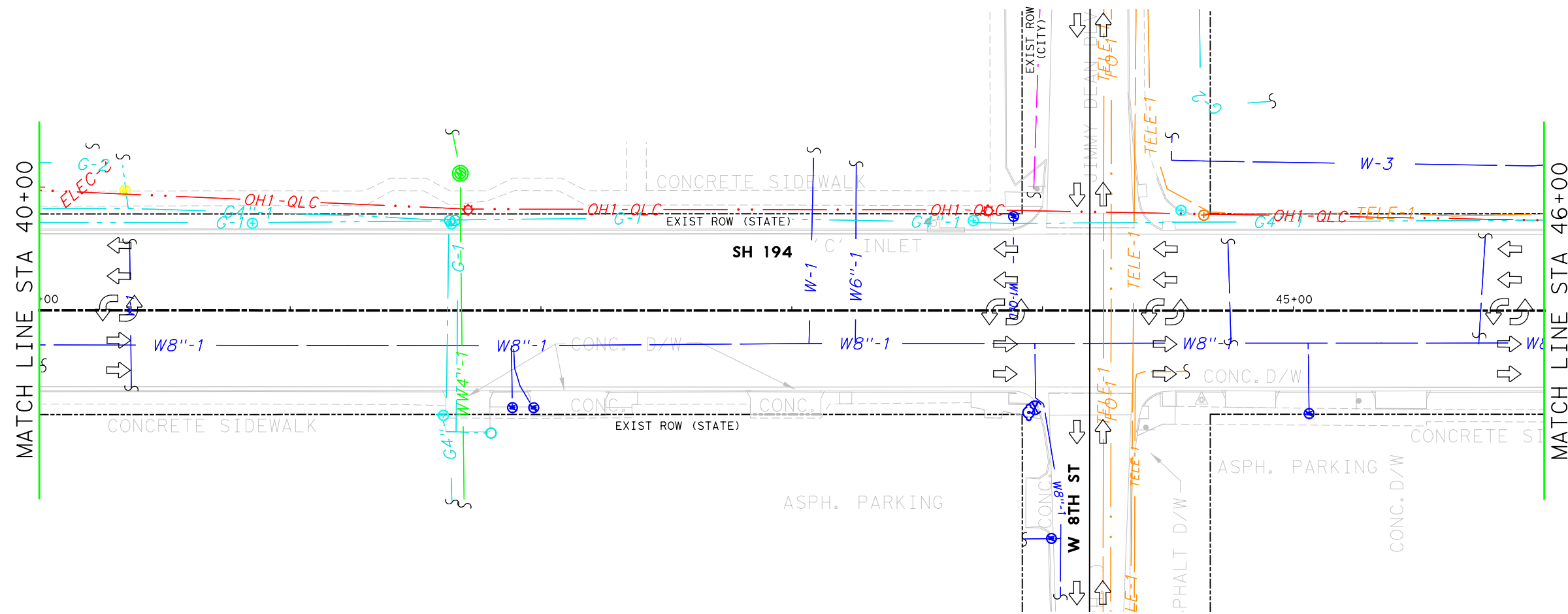
Texas Department of Transportation
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SH 194 FROM FM 3466 TO IH27

EXISTING UTILITIES
 STA 34+00 TO STA 40+00

HORZ SCALE: 1"=50'		SHEET 7 OF 26	
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET	HIGHWAY NO. SH 194	
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 204
CONTROL 0439	SECTION 05	JOB 026	

NOTE TO CONTRACTOR: SOME WL HAVE BEEN RELOCATED BY OTHERS. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION.



NOTES

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3. UTILITY INFORMATION LABELED QL-C OR QL-D IS DERIVED FROM RECORDS. SUCH INFORMATION MAY NOT BE ACCURATE OR RELIABLE. BINKLEY & BARFIELD, INC. EXPRESSLY DISCLAIMS RESPONSIBILITY FOR THE ACCURACY OR RELIABILITY OF UTILITY RECORDS INFORMATION DEPICTED ACCORDING TO RECORDS.
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UTILITY TYPE:	OWNER:	CONTACT:	PHONE:	EMAIL:	ADDRESS:
COMMUNICATION	AT&T (D)	BRYAN JONES	806-741-6103	bj1726@att.com	210 AVE R RM 102, LUBBOCK, TX 79411
COMMUNICATION	NTS COMMUNICATIONS	MICHAEL PENNY	806-788-2958	Michael.Penny@ntscom.com	1220 BROADWAY, LUBBOCK, TX 79401
COMMUNICATION	SUDDENLINK COMMUNICATIONS	JEREMY McDONALD	806-771-6210	jeremy.mcdonald@AlticeTechServicesUSA.com	6710 HARTFORD AVE, LUBBOCK, TX 79413
COMMUNICATION	FIBERLIGHT	STEVE FUTCH	940-390-8098	steve.futch@fiberlight.com	5728 RITTIMAN PLAZA, SAN ANTONIO, TX 78218
TELEPHONE	AT&T (D)	BRYAN JONES	806-741-6103	bj1726@att.com	210 AVE R RM 102, LUBBOCK, TX 79411
GAS	ATMOS ENERGY	JERRY HARRISON	806-379-5822	jerry.harrison@atmosenergy.com	4730 CANYON DRIVE, AMARILLO, TX 79109
ELECTRICAL (D)	XCEL ENERGY (D)	OMAR MORALES	806-378-4128	Omar.Morales@xcelenergy.com	304 N NELSON, AMARILLO, TX 79107
ELECTRICAL (T)	XCEL ENERGY (T)	SEAN FREDERIKSEN	806-771-6256	sean.l.frederiksen@xcelenergy.com	6710 HARTFORD AVE, LUBBOCK, TX 79413
ELECTRICAL	TXDOT	TERRY HARRIS	806-748-4465	Terry.Harris@txdot.gov	135 E SLATON HWY, LUBBOCK, TX 79404
WATER	CITY OF PLAINVIEW	NEIL WEEMS	806-291-1225	nweems@plainviewtx.org	901 BROADWAY ST, PLAINVIEW, TX 79072
WASTE WATER	CITY OF PLAINVIEW	NEIL WEEMS	806-291-1225	nweems@plainviewtx.org	901 BROADWAY ST, PLAINVIEW, TX 79072

LEGEND

- | | | | | | | | |
|--|--------------------------|--|---------------------------|--|-------------------------|--|---|
| | CATV MANHOLE | | GAS VENT PIPE | | TRAFFIC SIGNAL BOX | | ELEC-7 - CITY OF PLAINVIEW STREETLIGHT- ABANDONED |
| | CURB INLET | | LIGHT STANDARD | | TRAVERSE POINT | | FO-1 - AT&T (D) |
| | DROP OR GRATE INLET | | POWER POLE | | TXDOT MONUMENT | | FO-2 - NTS COMMUNICATIONS |
| | ELECTRIC PULL BOX | | POWER POLE WITH RISER | | UTILITY CONTINUATION | | FO-3 - SUDDENLINK COMMUNICATIONS |
| | ELECTRIC JUNCTION BOX | | STORM MANHOLE | | WASTEWATER CLEANOUT | | FO-4 - FIBERLIGHT |
| | ELECTRIC CABINET | | TELEPHONE MANHOLE | | WASTEWATER MANHOLE | | TELE-1 - AT&T (D) |
| | ELECTRIC HAND HOLE | | TELEPHONE MARKER POST | | WATER AIR RELEASE VALVE | | ELEC-1 - XCEL ENERGY (D) (UNDERGROUND) |
| | ELECTRIC MANHOLE | | TELEPHONE PEDESTAL | | WATER MANHOLE | | ELEC-2 - XCEL ENERGY (T) (NOT USED) |
| | EOI (END OF INFORMATION) | | TELEPHONE PEDESTAL | | WATER MARKER POST | | ELEC-3 - PRIVATE ELECTRIC |
| | FIRE HYDRANT | | TELEPHONE POLE | | WATER METER | | ELEC-4 - TXDOT- TRAFFIC SIGNALS |
| | GAS MANHOLE | | TELEPHONE POLE WITH RISER | | WATER VALVE | | ELEC-5 - BNSF RAILWAY ELECTRIC CABLES |
| | GAS MARKER POST | | TEST HOLE | | AERIAL TARGET | | ELEC-6 - TXDOT - ITS |
| | GAS TEST STATION | | TRAFFIC CONTROL BOX | | PROP SIDEWALK | | |
| | GAS VALVE | | | | | | |

NOTE: - THE SUE QL-B WORK WAS PERFORMED IN 2019

PLOT DRIVER: \$PLTDRVS\$ PENTABLE: \$PENTBLS\$
 USER: \$USER\$ DATE: \$DATE\$ TIME: \$TIME\$ SCALE: \$SCALE\$ SHORT: \$SHORT\$
 FILE: \$FILES\$

02/27/2023

NO.	DATE	REVISION	APPROVED

Binkley & Barfield, Inc.
 TxEng F-257
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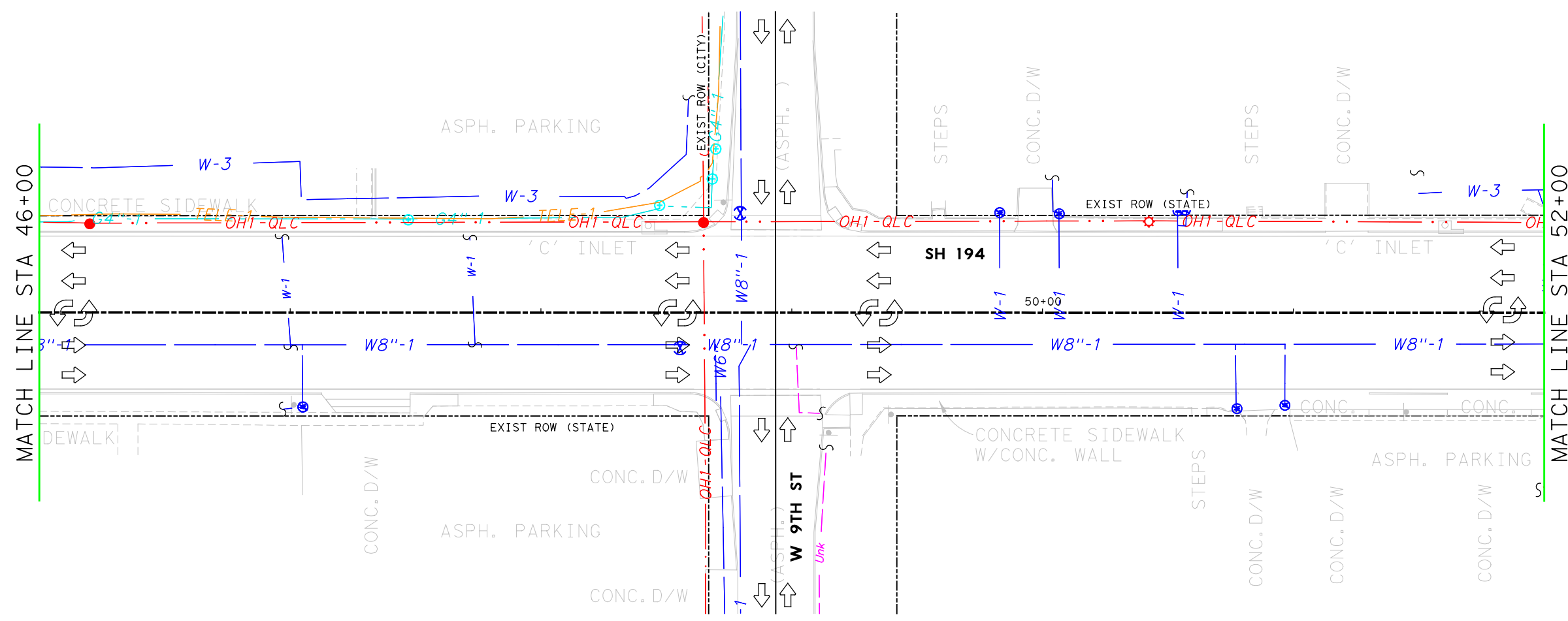
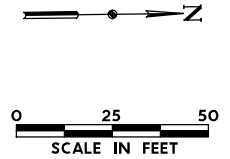
Texas Department of Transportation
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SH 194 FROM FM 3466 TO IH27

EXISTING UTILITIES
 STA 40+00 TO STA 46+00

HORZ SCALE: 1"=50'		SHEET 8 OF 26	
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:	
6	SEE TITLE SHEET	SH 194	
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	205
CONTROL:	SECTION:	JOB:	
0439	05	026	

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WASTE WATER	CITY OF PLAINVIEW	NEIL WEEMS	806-291-1225	nweems@plainviewtx.org	901 BROADWAY ST, PLAINVIEW, TX 79072

LEGEND

- | | | | | | | | |
|--|--------------------------|--|---------------------------|--|-------------------------|--|---|
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| | GAS VALVE | | | | | | |

NOTE: - THE SUE QL-B WORK WAS PERFORMED IN 2019

02/27/2023

NO.	DATE	REVISION	APPROVED

Binkley & Barfield, Inc.
 TxEng F-257
 1710 Seamist Dr
 Houston, TX 77008
 713.869.3433
 BinkleyBarfield.com

DCCM

Texas Department of Transportation
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SH 194 FROM FM 3466 TO IH27

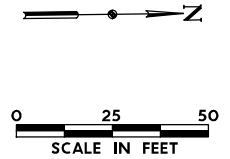
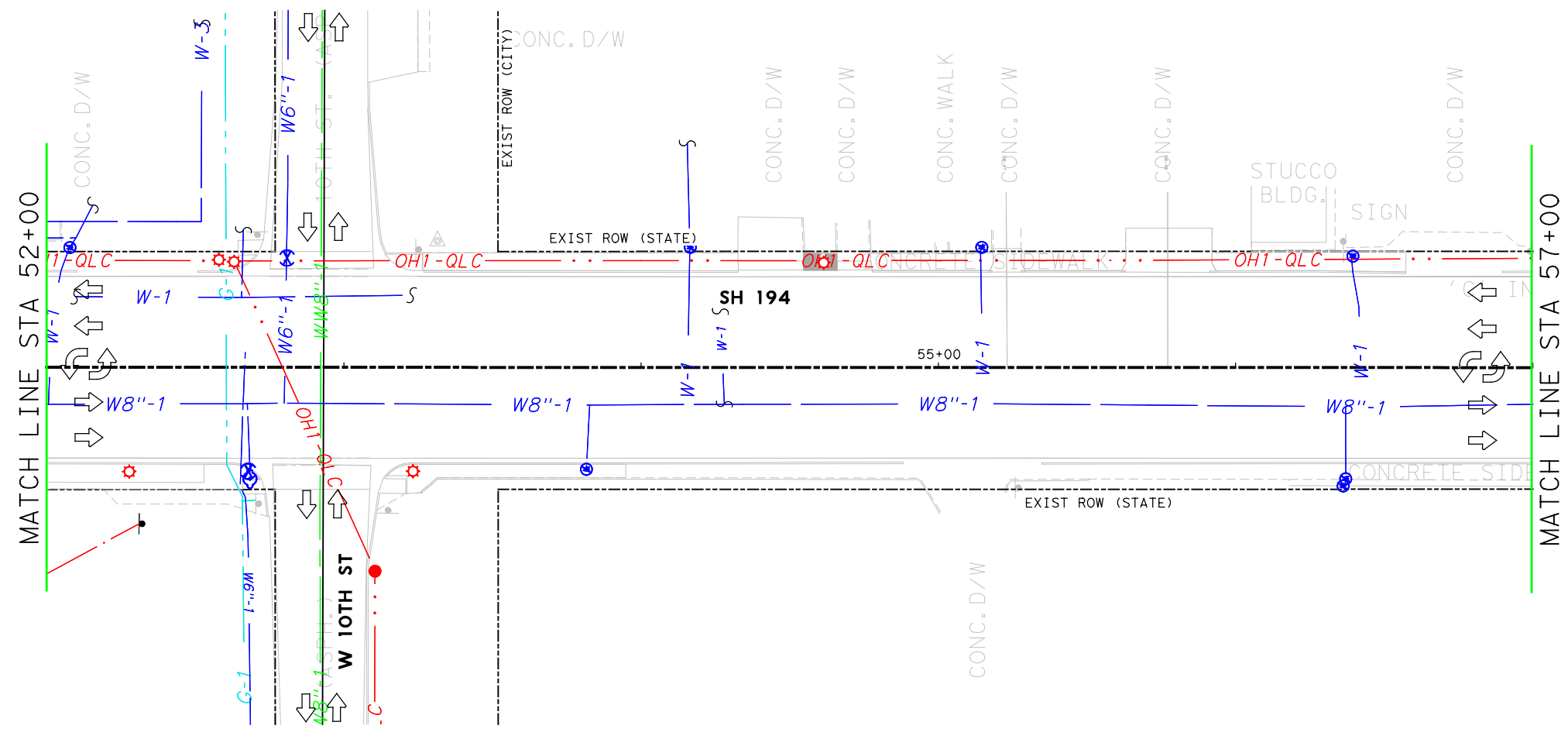
EXISTING UTILITIES
 STA 46+00 TO STA 52+00

HORZ SCALE: 1"=50' SHEET 9 OF 26

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:
6	SEE TITLE SHEET	SH 194
STATE:	DISTRICT:	COUNTY:
TEXAS	LBB	HALE
CONTROL:	SECTION:	JOB:
0439	05	026

PLOT DRIVER: \$PLTDRVS\$ PENTABLE: \$PENTBLS\$
 USER: \$USER\$ DATE: \$DATE\$ TIME: \$TIME\$ SCALE: \$SCALE\$ SHORT\$
 FILE: \$FILES\$

NOTE TO CONTRACTOR: SOME WL HAVE BEEN RELOCATED BY OTHERS. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION.



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LEGEND

- | | | | | | | | |
|--|--------------------------|--|---------------------------|--|-------------------------|--|---|
| | CATV MANHOLE | | GAS VENT PIPE | | TRAFFIC SIGNAL BOX | | ELEC-7 - CITY OF PLAINVIEW STREETLIGHT- ABANDONED |
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NOTE: - THE SUE QL-B WORK WAS PERFORMED IN 2019

PLOT DRIVER: \$PLTDRVS\$ PENTABLE: \$PENTBLS\$
 USER: \$USER\$ DATE: \$DATE\$ TIME: \$TIME\$ SCALE: \$SCALESHORT\$
 FILE: \$FILES\$

02/27/2023

NO.	DATE	REVISION	APPROVED

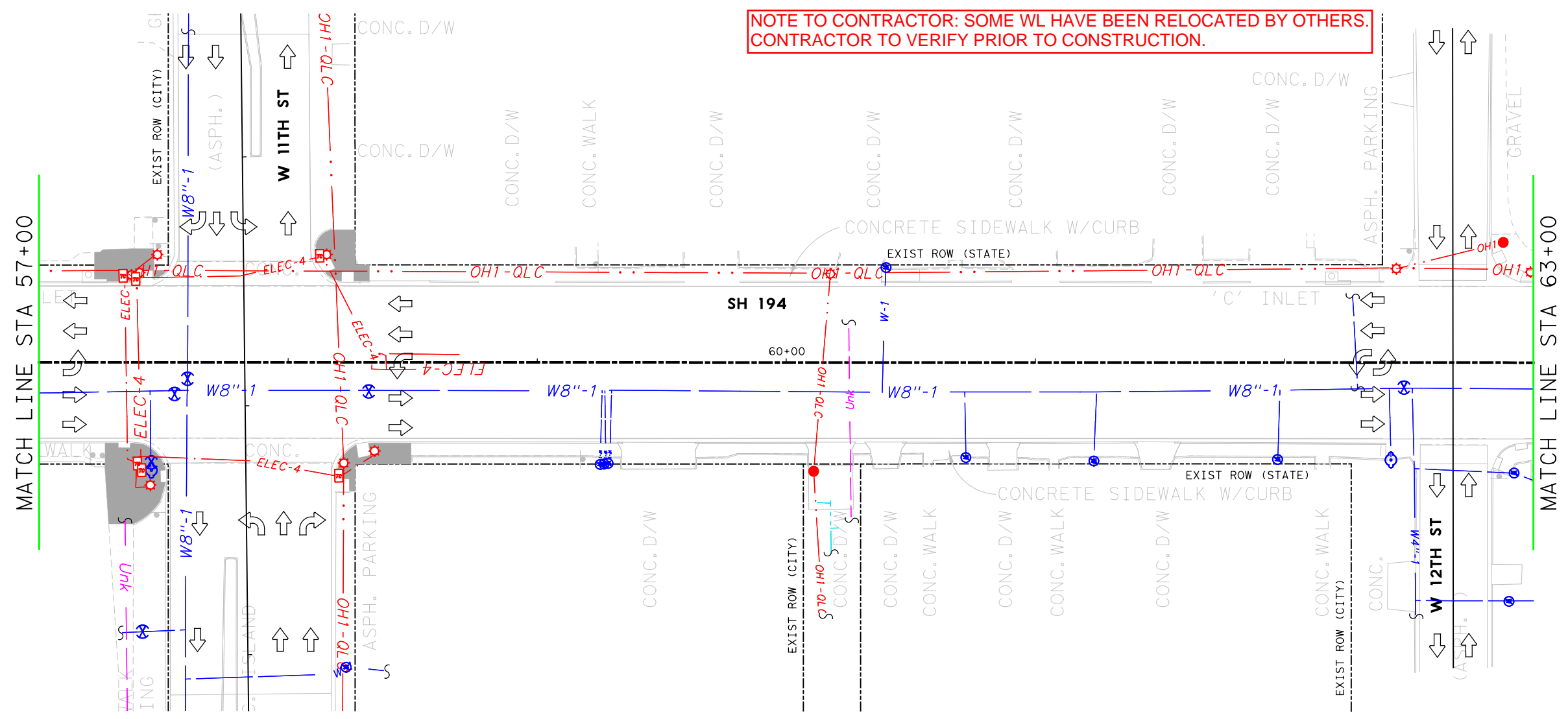
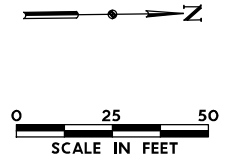
Binkley & Barfield, Inc.
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 1710 Seamist Dr
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 BinkleyBarfield.com

SH 194 FROM FM 3466 TO IH27

EXISTING UTILITIES
 STA 52+00 TO STA 57+00

HORZ SCALE: 1"=50'		SHEET 10 OF 26	
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET	HIGHWAY NO. SH 194	
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 207
CONTROL 0439	SECTION 05	JOB 026	

NOTE TO CONTRACTOR: SOME WL HAVE BEEN RELOCATED BY OTHERS. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION.



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UTILITY TYPE:	OWNER:	CONTACT:	PHONE:	EMAIL:	ADDRESS:
COMMUNICATION	AT&T (D)	BRYAN JONES	806-741-6103	bj1726@att.com	210 AVE R RM 102, LUBBOCK, TX 79411
COMMUNICATION	NTS COMMUNICATIONS	MICHAEL PENNY	806-788-2958	Michael.Penny@ntscom.com	1220 BROADWAY, LUBBOCK, TX 79401
COMMUNICATION	SUDDENLINK COMMUNICATIONS	JEREMY MCDONALD	806-771-6210	jeremy.mcdonald@AlticeTechServicesUSA.com	6710 HARTFORD AVE, LUBBOCK, TX 79413
COMMUNICATION	FIBERLIGHT	STEVE FUTCH	940-390-8098	steve.futch@fiberlight.com	5728 RITTIMAN PLAZA, SAN ANTONIO, TX 78218
TELEPHONE	AT&T (D)	BRYAN JONES	806-741-6103	bj1726@att.com	210 AVE R RM 102, LUBBOCK, TX 79411
GAS	ATMOS ENERGY	JERRY HARRISON	806-379-5822	jerry.harrison@atmosenergy.com	4730 CANYON DRIVE, AMARILLO, TX 79109
ELECTRICAL (D)	XCEL ENERGY (D)	OMAR MORALES	806-378-4128	Omar.Morales@xcelenergy.com	304 N NELSON, AMARILLO, TX 79107
ELECTRICAL (T)	XCEL ENERGY (T)	SEAN FREDERIKSEN	806-771-6256	sean.l.frederiksen@xcelenergy.com	6710 HARTFORD AVE, LUBBOCK, TX 79413
ELECTRICAL	TXDOT	TERRY HARRIS	806-748-4465	Terry.Harris@txdot.gov	135 E SLATON HWY, LUBBOCK, TX 79404
WATER	CITY OF PLAINVIEW	NEIL WEEMS	806-291-1225	nweems@plainviewtx.org	901 BROADWAY ST, PLAINVIEW, TX 79072
WASTE WATER	CITY OF PLAINVIEW	NEIL WEEMS	806-291-1225	nweems@plainviewtx.org	901 BROADWAY ST, PLAINVIEW, TX 79072

LEGEND

- | | | | | | | | |
|--|--------------------------|--|---------------------------|--|-------------------------|--|---|
| | CATV MANHOLE | | GAS VENT PIPE | | TRAFFIC SIGNAL BOX | | ELEC-7 - CITY OF PLAINVIEW STREETLIGHT- ABANDONED |
| | CURB INLET | | LIGHT STANDARD | | TRAVERSE POINT | | OH1-QLC - XCEL ENERGY (D) (OVERHEAD) |
| | DROP OR GRATE INLET | | POWER POLE | | TXDOT MONUMENT | | OH2-QLC - XCEL ENERGY (T) (OVERHEAD) |
| | ELECTRIC PULL BOX | | POWER POLE WITH RISER | | UTILITY CONTINUATION | | G-1 - ATMOS ENERGY |
| | ELECTRIC JUNCTION BOX | | STORM MANHOLE | | WASTEWATER CLEANOUT | | G-2 - PRIVATE GAS |
| | ELECTRIC CABINET | | TELEPHONE MANHOLE | | WASTEWATER MANHOLE | | W-1 - CITY OF PLAINVIEW |
| | ELECTRIC HAND HOLE | | TELEPHONE MARKER POST | | WATER AIR RELEASE VALVE | | W-2 - PRIVATE - HOMEOWNER |
| | ELECTRIC MANHOLE | | TELEPHONE PEDESTAL | | WATER MANHOLE | | W-3 - PRIVATE - IRRIGATION SPRINKLER |
| | EOI (END OF INFORMATION) | | TELEPHONE PEDESTAL | | WATER MARKER POST | | WW-1 - CITY OF PLAINVIEW |
| | FIRE HYDRANT | | TELEPHONE POLE | | WATER METER | | UNK - UNKNOWN - ABANDONED LINES |
| | GAS MANHOLE | | TELEPHONE POLE WITH RISER | | WATER VALVE | | |
| | GAS MARKER POST | | TEST HOLE | | AERIAL TARGET | | |
| | GAS TEST STATION | | TRAFFIC CONTROL BOX | | PROP SIDEWALK | | |
| | GAS VALVE | | | | | | |

NOTE: - THE SUE QL-B WORK WAS PERFORMED IN 2019

02/27/2023

NO.	DATE	REVISION	APPROVED

Binkley & Barfield, Inc.
 TxEng F-257
 1710 Seamist Dr
 Houston, TX 77008
 713.869.3433
 BinkleyBarfield.com

DCCM

Texas Department of Transportation
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SH 194 FROM FM 3466 TO IH27

EXISTING UTILITIES
 STA 57+00 TO STA 63+00

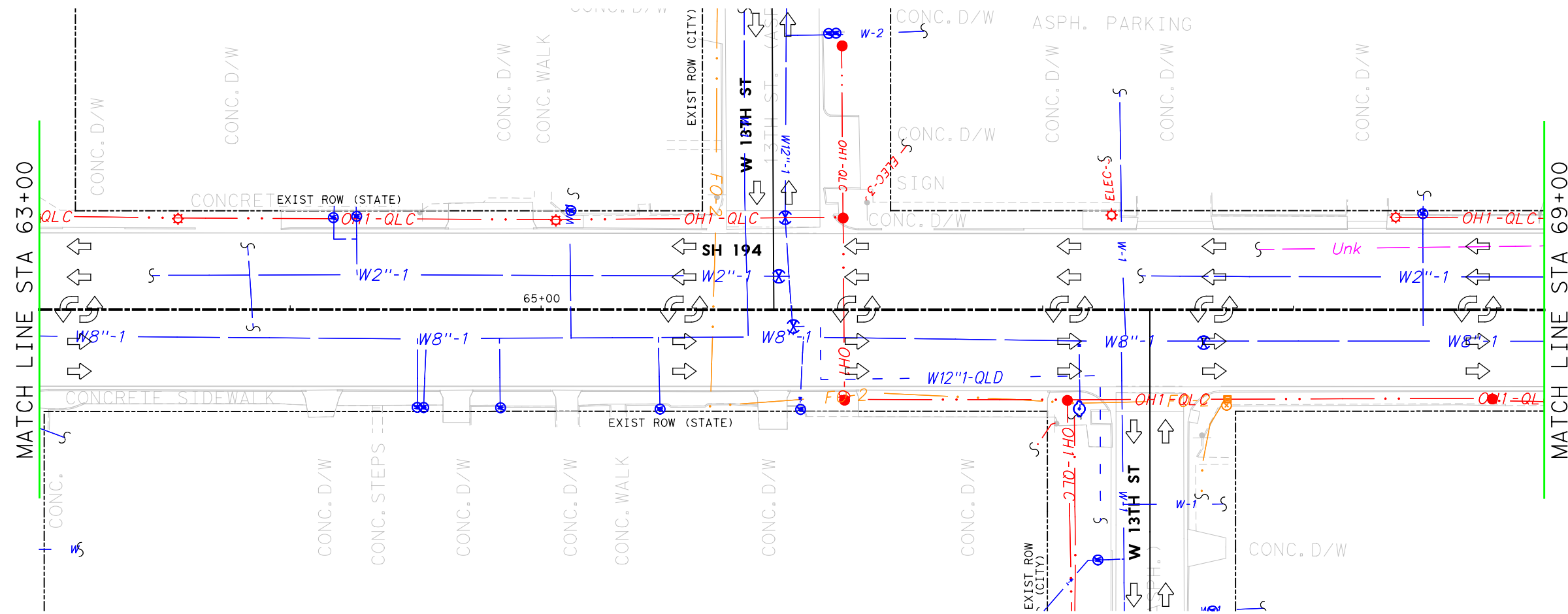
HORZ SCALE: 1"=50' SHEET 11 OF 26

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:
6	SEE TITLE SHEET	SH 194
STATE:	DISTRICT:	COUNTY:
TEXAS	LBB	HALE
CONTROL:	SECTION:	JOB:
0439	05	026

SHEET NO. 208

PLOT DRIVER: \$PLTDRVS\$ PENTABLE: \$PENTBLS\$
 USER: \$USER\$ DATE: \$DATE\$ TIME: \$TIME\$ SCALE: \$SCALE\$
 FILE: \$FILES\$

NOTE TO CONTRACTOR: SOME WL HAVE BEEN RELOCATED BY OTHERS. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION.



NOTES

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LEGEND

- | | | | | | | | | | |
|--|--------------------------|--|---------------------------|--|-------------------------|--|--|--|---|
| | CATV MANHOLE | | GAS VENT PIPE | | TRAFFIC SIGNAL BOX | | FO-1 - AT&T (D) | | ELEC-7 - CITY OF PLAINVIEW STREETLIGHT- ABANDONED |
| | CURB INLET | | LIGHT STANDARD | | TRAVERSE POINT | | FO-2 - NTS COMMUNICATIONS | | OH1-QLC - XCEL ENERGY (D) (OVERHEAD) |
| | DROP OR GRATE INLET | | POWER POLE | | TXDOT MONUMENT | | FO-3 - SUDDENLINK COMMUNICATIONS | | OH2-QLC - XCEL ENERGY (T) (OVERHEAD) |
| | ELECTRIC PULL BOX | | POWER POLE WITH RISER | | UTILITY CONTINUATION | | FO-4 - FIBERLIGHT | | G-1 - ATMOS ENERGY |
| | ELECTRIC JUNCTION BOX | | STORM MANHOLE | | WASTEWATER CLEANOUT | | TELE-1 - AT&T (D) | | G-2 - PRIVATE GAS |
| | ELECTRIC CABINET | | TELEPHONE MANHOLE | | WASTEWATER MANHOLE | | ELEC-1 - XCEL ENERGY (D) (UNDERGROUND) | | W-1 - CITY OF PLAINVIEW |
| | ELECTRIC HAND HOLE | | TELEPHONE MARKER POST | | WATER AIR RELEASE VALVE | | ELEC-2 - XCEL ENERGY (T) (NOT USED) | | W-2 - PRIVATE - HOMEOWNER |
| | ELECTRIC MANHOLE | | TELEPHONE PEDESTAL | | WATER MANHOLE | | ELEC-3 - PRIVATE ELECTRIC | | W-3 - PRIVATE - IRRIGATION SPRINKLER |
| | EOI (END OF INFORMATION) | | TELEPHONE PEDESTAL | | WATER MARKER POST | | ELEC-4 - TXDOT- TRAFFIC SIGNALS | | WW-1 - CITY OF PLAINVIEW |
| | FIRE HYDRANT | | TELEPHONE POLE | | WATER METER | | ELEC-5 - BNSF RAILWAY ELECTRIC CABLES | | Unk - UNKNOWN - ABANDONED LINES |
| | GAS MANHOLE | | TELEPHONE POLE WITH RISER | | WATER VALVE | | ELEC-6 - TXDOT - ITS | | |
| | GAS MARKER POST | | TEST HOLE | | AERIAL TARGET | | | | |
| | GAS TEST STATION | | TRAFFIC CONTROL BOX | | PROP SIDEWALK | | | | |
| | GAS VALVE | | | | | | | | |

NOTE: - THE SUE QL-B WORK WAS PERFORMED IN 2019

PLOT DRIVER: \$PLTDRVS\$
 USER: \$USER\$ DATE: \$DATE\$
 FILE: \$FILES\$
 PENTABLE: \$PENTBLS\$
 SCALE: \$SCALES\$
 TIME: \$TIME\$

02/27/2023

NO.	DATE	REVISION	APPROVED

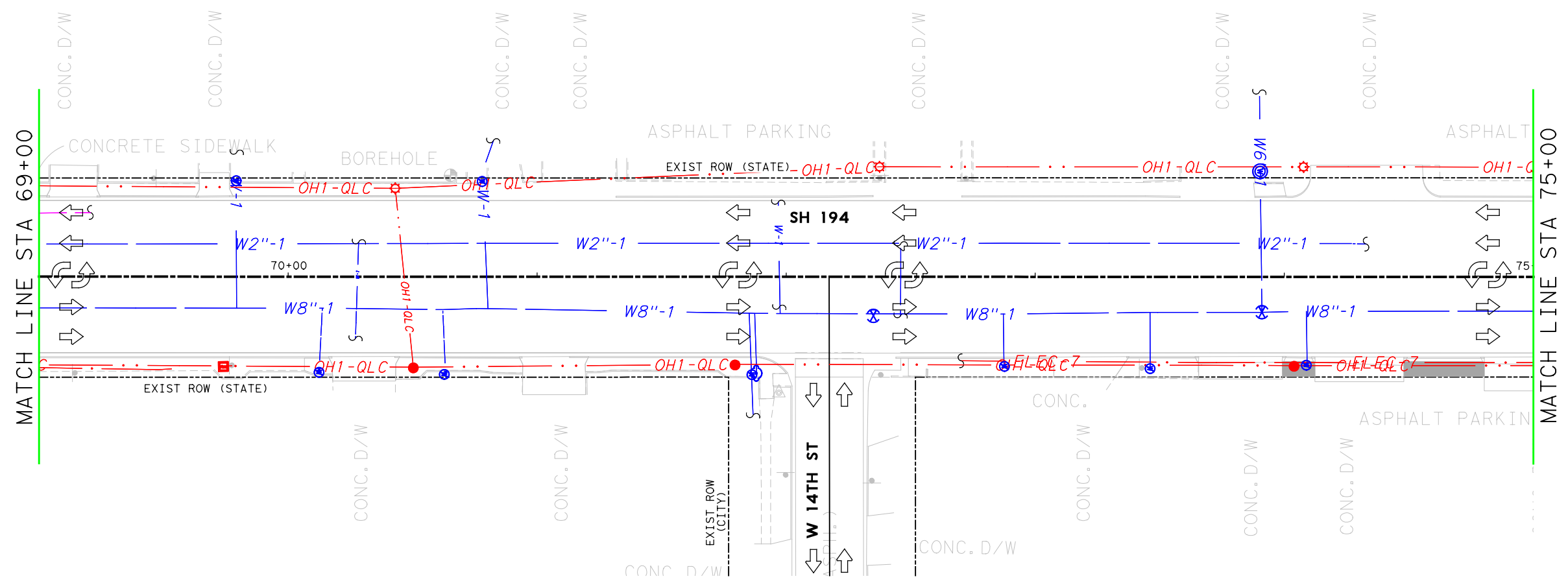
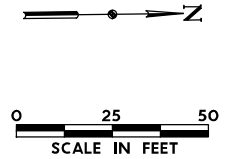
Binkley & Barfield, Inc.
 TxEng F-257
 1710 Seamist Dr
 Houston, TX 77008
 713.869.3433
 BinkleyBarfield.com

SH 194 FROM FM 3466 TO IH27

EXISTING UTILITIES
 STA 63+00 TO STA 69+00

HORZ SCALE: 1"=50'		SHEET 12 OF 26	
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET	HIGHWAY NO. SH 194	
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 209
CONTROL 0439	SECTION 05	JOB 026	

NOTE TO CONTRACTOR: SOME WL HAVE BEEN RELOCATED BY OTHERS. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION.



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COMMUNICATION	NTS COMMUNICATIONS	MICHAEL PENNY	806-788-2958	Michael.Penny@ntscom.com	1220 BROADWAY, LUBBOCK, TX 79401
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LEGEND

- | | | | | | | | | | |
|--|--------------------------|--|---------------------------|--|-------------------------|--|--|--|---|
| | CATV MANHOLE | | GAS VENT PIPE | | TRAFFIC SIGNAL BOX | | FO-1 - AT&T (D) | | ELEC-7 - CITY OF PLAINVIEW STREETLIGHT- ABANDONED |
| | CURB INLET | | LIGHT STANDARD | | TRAVERSE POINT | | FO-2 - NTS COMMUNICATIONS | | OH1-QLC - XCEL ENERGY (D) (OVERHEAD) |
| | DROP OR GRATE INLET | | POWER POLE | | TXDOT MONUMENT | | FO-3 - SUDDENLINK COMMUNICATIONS | | OH2-QLC - XCEL ENERGY (T) (OVERHEAD) |
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| | GAS VALVE | | | | | | | | |

NOTE: - THE SUE QL-B WORK WAS PERFORMED IN 2019

02/27/2023

NO.	DATE	REVISION	APPROVED

Binkley & Barfield, Inc.
 TxEng F-257
 1710 Seamist Dr
 Houston, TX 77008
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 BinkleyBarfield.com

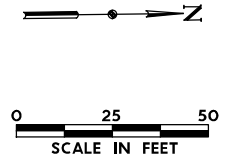
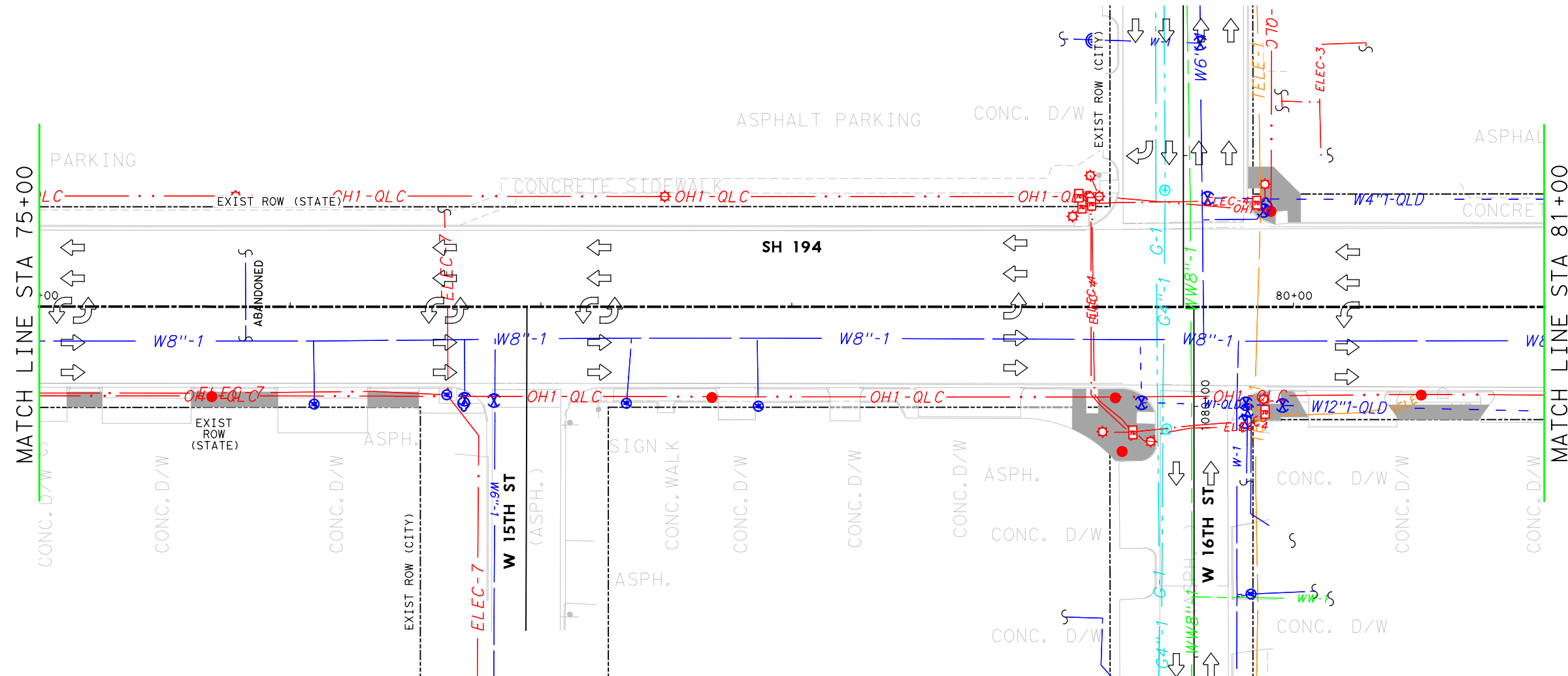
SH 194 FROM FM 3466 TO IH27

EXISTING UTILITIES
 STA 69+00 TO STA 75+00

HORZ SCALE: 1"=50'		SHEET 13 OF 26	
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:	
6	SEE TITLE SHEET	SH 194	
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	210
CONTROL:	SECTION:	JOB:	
0439	05	026	

PLOT DRIVER: \$PLTDRVS\$ PENTABLE: \$PENTBLS\$
 USER: \$USER\$ DATE: \$DATE\$ TIME: \$TIME\$ SCALE: \$SCALESHORT\$
 FILE: \$FILES\$

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LEGEND

- | | | | | | | | |
|--|--------------------------|--|---------------------------|--|-------------------------|--|---|
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| | ELECTRIC HAND HOLE | | TELEPHONE MARKER POST | | WATER AIR RELEASE VALVE | | ELEC-1 - XCEL ENERGY (D) (UNDERGROUND) |
| | ELECTRIC MANHOLE | | TELEPHONE PEDESTAL | | WATER MANHOLE | | ELEC-2 - XCEL ENERGY (T) (NOT USED) |
| | EOI (END OF INFORMATION) | | TELEPHONE PEDESTAL | | WATER MARKER POST | | ELEC-3 - PRIVATE ELECTRIC |
| | FIRE HYDRANT | | TELEPHONE POLE | | WATER METER | | ELEC-4 - TXDOT- TRAFFIC SIGNALS |
| | GAS MANHOLE | | TELEPHONE POLE WITH RISER | | WATER VALVE | | ELEC-5 - BNSF RAILWAY ELECTRIC CABLES |
| | GAS MARKER POST | | TEST HOLE | | AERIAL TARGET | | ELEC-6 - TXDOT - ITS |
| | GAS TEST STATION | | TRAFFIC CONTROL BOX | | PROP SIDEWALK | | |
| | GAS VALVE | | | | | | |

NOTE: - THE SUE QL-B WORK WAS PERFORMED IN 2019

PLOT DRIVER: \$PLTDRVS\$
 USER: \$USER\$ DATE: \$DATE\$
 PENTABLE: \$PENTBLS\$
 TIME: \$TIME\$
 SCALE: \$SCALESHORT\$
 FILE: \$FILES\$

02/27/2023

NO.	DATE	REVISION	APPROVED

Binkley & Barfield, Inc.
 TxEng F-257
 1710 Seamist Dr
 Houston, TX 77008
 713.869.3433
 BinkleyBarfield.com

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Texas Department of Transportation
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SH 194 FROM FM 3466 TO IH27

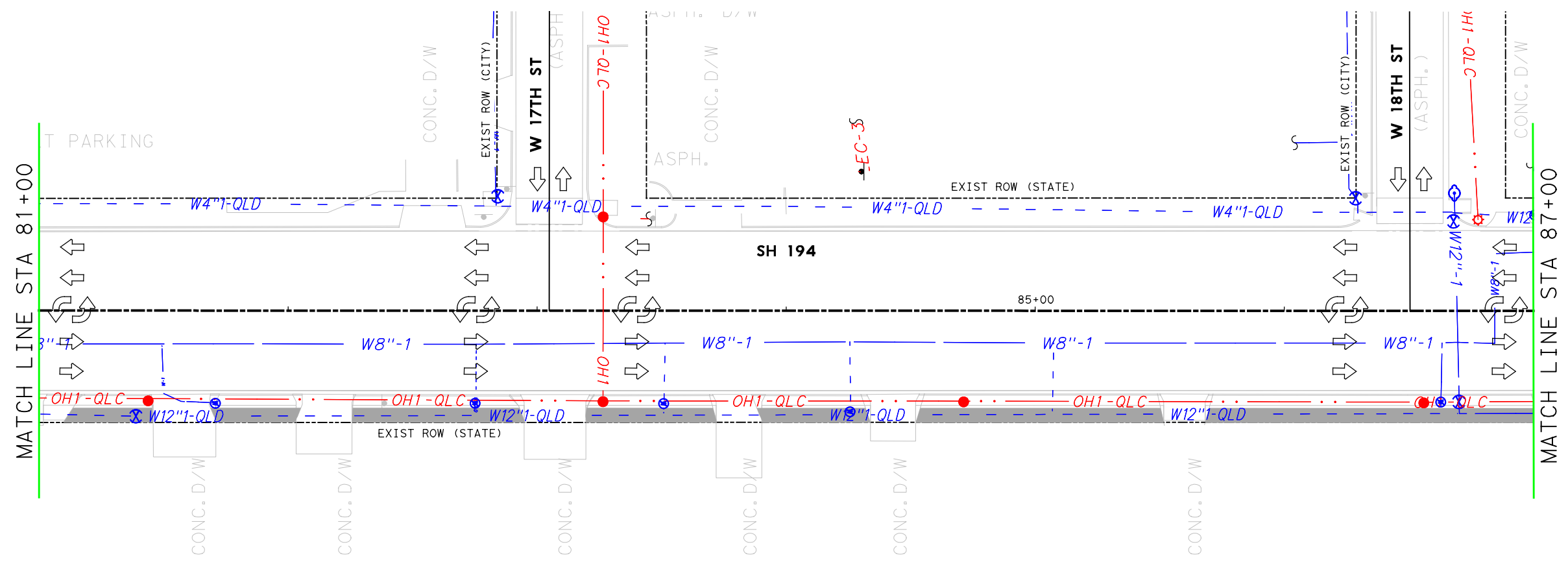
EXISTING UTILITIES
 STA 75+00 TO STA 81+00

HORZ SCALE: 1"=50' SHEET 14 OF 26

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:
6	SEE TITLE SHEET	SH 194
STATE:	DISTRICT:	COUNTY:
TEXAS	LBB	HALE
CONTROL:	SECTION:	JOB:
0439	05	026

211

NOTE TO CONTRACTOR: SOME WL HAVE BEEN RELOCATED BY OTHERS. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION.



NOTES

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UTILITY TYPE:	OWNER:	CONTACT:	PHONE:	EMAIL:	ADDRESS:
COMMUNICATION	AT&T (D)	BRYAN JONES	806-741-6103	bj1726@att.com	210 AVE R RM 102, LUBBOCK, TX 79411
COMMUNICATION	NTS COMMUNICATIONS	MICHAEL PENNY	806-788-2958	Michael.Penny@ntscom.com	1220 BROADWAY, LUBBOCK, TX 79401
COMMUNICATION	SUDDENLINK COMMUNICATIONS	JEREMY McDONALD	806-771-6210	jeremy.mcdonald@AlticeTechServicesUSA.com	6710 HARTFORD AVE, LUBBOCK, TX 79413
COMMUNICATION	FIBERLIGHT	STEVE FUTCH	940-390-8098	steve.futch@fiberlight.com	5728 RITTIMAN PLAZA, SAN ANTONIO, TX 78218
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ELECTRICAL (D)	XCEL ENERGY (D)	OMAR MORALES	806-378-4128	Omar.Morales@xcelenergy.com	304 N NELSON, AMARILLO, TX 79107
ELECTRICAL (T)	XCEL ENERGY (T)	SEAN FREDERIKSEN	806-771-6256	sean.l.frederiksen@xcelenergy.com	6710 HARTFORD AVE, LUBBOCK, TX 79413
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WASTE WATER	CITY OF PLAINVIEW	NEIL WEEMS	806-291-1225	nweems@plainviewtx.org	901 BROADWAY ST, PLAINVIEW, TX 79072

LEGEND

- | | | | | | | | |
|--|--------------------------|--|---------------------------|--|-------------------------|--|---|
| | CATV MANHOLE | | GAS VENT PIPE | | TRAFFIC SIGNAL BOX | | ELEC-7 - CITY OF PLAINVIEW STREETLIGHT- ABANDONED |
| | CURB INLET | | LIGHT STANDARD | | TRAVERSE POINT | | FO-1 - AT&T (D) |
| | DROP OR GRATE INLET | | POWER POLE | | TXDOT MONUMENT | | FO-2 - NTS COMMUNICATIONS |
| | ELECTRIC PULL BOX | | POWER POLE WITH RISER | | UTILITY CONTINUATION | | FO-3 - SUDDENLINK COMMUNICATIONS |
| | ELECTRIC JUNCTION BOX | | STORM MANHOLE | | WASTEWATER CLEANOUT | | FO-4 - FIBERLIGHT |
| | ELECTRIC CABINET | | TELEPHONE MANHOLE | | WASTEWATER MANHOLE | | TELE-1 - AT&T (D) |
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02/27/2023

NO.	DATE	REVISION	APPROVED

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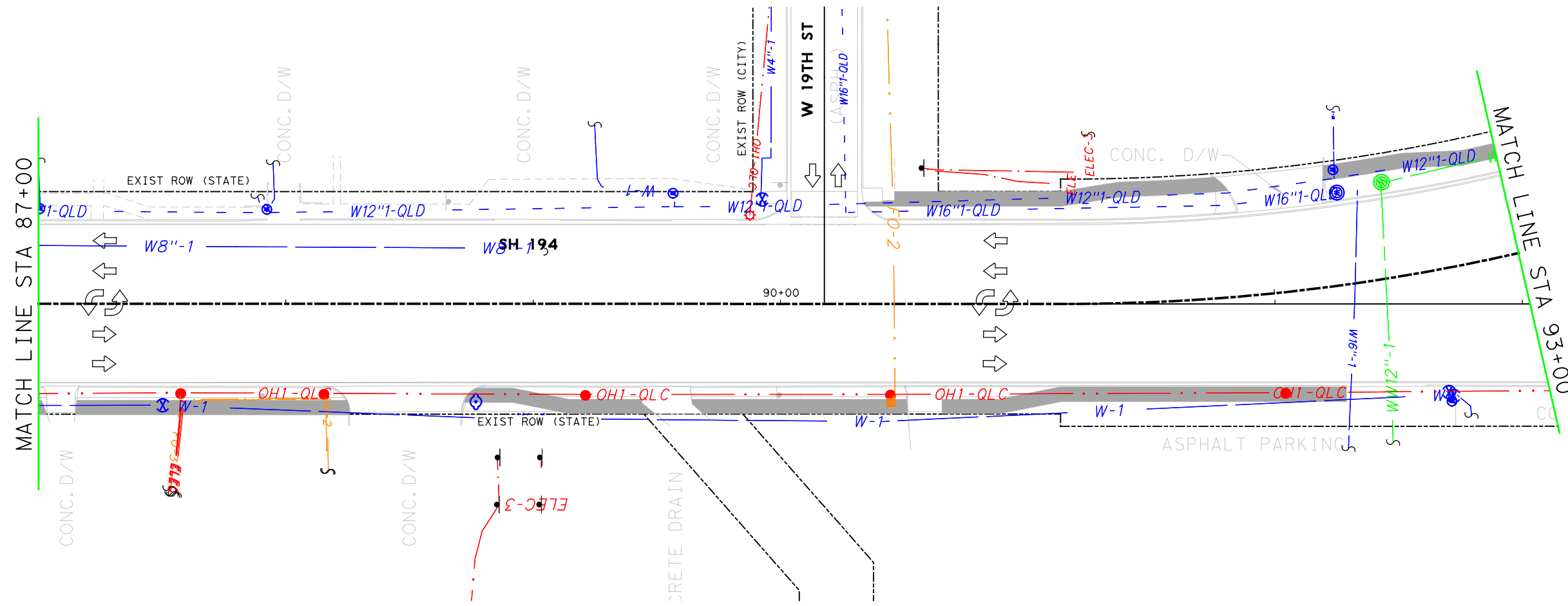
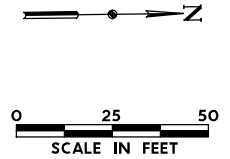
SH 194 FROM FM 3466 TO IH27

EXISTING UTILITIES
 STA 81+00 TO STA 87+00

HORZ SCALE: 1"=50'		SHEET 15 OF 26	
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	212
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: \$PLTDRVS\$ PENTABLE: \$PENTBLS\$
 USER: \$USER\$ DATE: \$DATE\$ TIME: \$TIME\$ SCALE: \$SCALESHORT\$
 FILE: \$FILES\$

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LEGEND

- | | | | | | | | |
|--|--------------------------|--|---------------------------|--|-------------------------|--|---|
| | CATV MANHOLE | | GAS VENT PIPE | | TRAFFIC SIGNAL BOX | | ELEC-7 - CITY OF PLAINVIEW STREETLIGHT- ABANDONED |
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NOTE: - THE SUE QL-B WORK WAS PERFORMED IN 2019

02/27/2023

NO.	DATE	REVISION	APPROVED

Binkley & Barfield, Inc.
 TxEng F-257
 1710 Seamist Dr
 Houston, TX 77008
 713.869.3433
 BinkleyBarfield.com

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SH 194 FROM FM 3466 TO IH27

EXISTING UTILITIES
 STA 87+00 TO STA 91+00

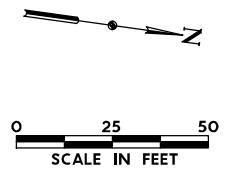
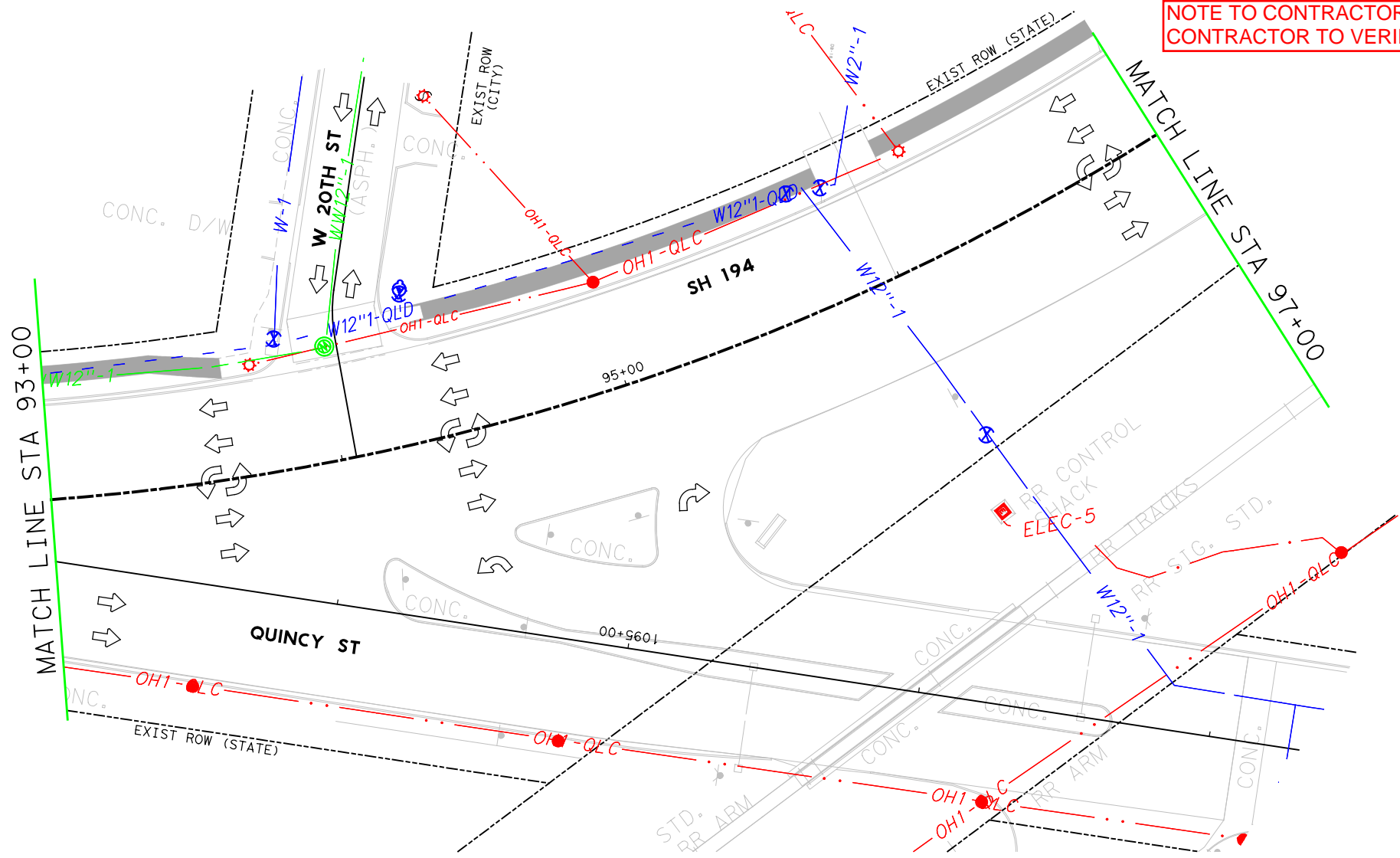
HORZ SCALE: 1"=50' SHEET 16 OF 26

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:
6	SEE TITLE SHEET	SH 194
STATE:	DISTRICT:	COUNTY:
TEXAS	LBB	HALE
CONTROL:	SECTION:	JOB:
0439	05	026

213

PLOT DRIVER: \$PLTDRVS\$ PENTABLE: \$PENTBLS\$
 USER: \$USER\$ DATE: \$DATE\$ TIME: \$TIME\$ SCALE: \$SCALESHORT\$
 FILE: \$FILES\$

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LEGEND

- | | | | | | | | |
|--|--------------------------|--|---------------------------|--|-------------------------|--|---|
| | CATV MANHOLE | | GAS VENT PIPE | | TRAFFIC SIGNAL BOX | | ELEC-7 - CITY OF PLAINVIEW STREETLIGHT- ABANDONED |
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| | ELECTRIC CABINET | | TELEPHONE MANHOLE | | WASTEWATER MANHOLE | | W-1 - CITY OF PLAINVIEW |
| | ELECTRIC HAND HOLE | | TELEPHONE MARKER POST | | WATER AIR RELEASE VALVE | | W-2 - PRIVATE - HOMEOWNER |
| | ELECTRIC MANHOLE | | TELEPHONE PEDESTAL | | WATER MANHOLE | | W-3 - PRIVATE - IRRIGATION SPRINKLER |
| | EOI (END OF INFORMATION) | | TELEPHONE PEDESTAL | | WATER MARKER POST | | WW-1 - CITY OF PLAINVIEW |
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PLOT DRIVER: \$PLTDRVS\$ PENTABLE: \$PENTBLS\$
 USER: \$USER\$ DATE: \$DATE\$ TIME: \$TIME\$ SCALE: \$SCALESHORT\$
 FILE: \$FILES\$

02/27/2023

NO.	DATE	REVISION	APPROVED

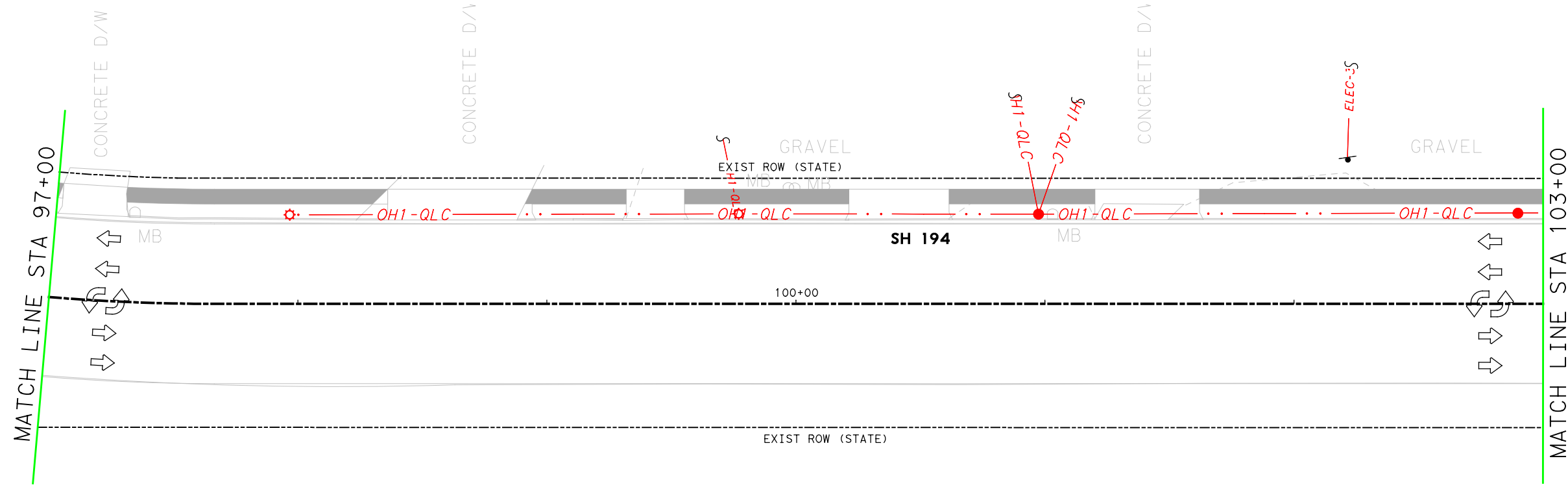
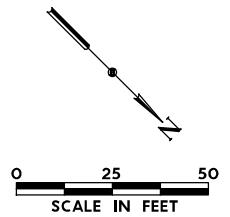
Binkley & Barfield, Inc.
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SH 194 FROM FM 3466 TO IH27

EXISTING UTILITIES
 STA 93+00 TO STA 97+00

HORZ SCALE: 1"=50'		SHEET 17 OF 26	
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:	
6	SEE TITLE SHEET	SH 194	
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	214
CONTROL:	SECTION:	JOB:	
0439	05	026	

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UTILITY TYPE:	OWNER:	CONTACT:	PHONE:	EMAIL:	ADDRESS:
COMMUNICATION	AT&T (D)	BRYAN JONES	806-741-6103	bj1726@att.com	210 AVE R RM 102, LUBBOCK, TX 79411
COMMUNICATION	NTS COMMUNICATIONS	MICHAEL PENNY	806-788-2958	Michael.Penny@ntscom.com	1220 BROADWAY, LUBBOCK, TX 79401
COMMUNICATION	SUDDENLINK COMMUNICATIONS	JEREMY McDONALD	806-771-6210	jeremy.mcdonald@AlticeTechServicesUSA.com	6710 HARTFORD AVE, LUBBOCK, TX 79413
COMMUNICATION	FIBERLIGHT	STEVE FUTCH	940-390-8098	steve.futch@fiberlight.com	5728 RITTIMAN PLAZA, SAN ANTONIO, TX 78218
TELEPHONE	AT&T (D)	BRYAN JONES	806-741-6103	bj1726@att.com	210 AVE R RM 102, LUBBOCK, TX 79411
GAS	ATMOS ENERGY	JERRY HARRISON	806-379-5822	jerry.harrison@atmosenergy.com	4730 CANYON DRIVE, AMARILLO, TX 79109
ELECTRICAL (D)	XCEL ENERGY (D)	OMAR MORALES	806-378-4128	Omar.Morales@xcelenergy.com	304 N NELSON, AMARILLO, TX 79107
ELECTRICAL (T)	XCEL ENERGY (T)	SEAN FREDERIKSEN	806-771-6256	sean.l.frederiksen@xcelenergy.com	6710 HARTFORD AVE, LUBBOCK, TX 79413
ELECTRICAL	TXDOT	TERRY HARRIS	806-748-4465	Terry.Harris@txdot.gov	135 E SLATON HWY, LUBBOCK, TX 79404
WATER	CITY OF PLAINVIEW	NEIL WEEMS	806-291-1225	nweems@plainviewtx.org	901 BROADWAY ST, PLAINVIEW, TX 79072
WASTE WATER	CITY OF PLAINVIEW	NEIL WEEMS	806-291-1225	nweems@plainviewtx.org	901 BROADWAY ST, PLAINVIEW, TX 79072

LEGEND

	CATV MANHOLE		GAS VENT PIPE		TRAFFIC SIGNAL BOX		ELEC-7 - CITY OF PLAINVIEW STREETLIGHT- ABANDONED
	CURB INLET		LIGHT STANDARD		TRAVERSE POINT		FO-1 - AT&T (D)
	DROP OR GRATE INLET		POWER POLE		TXDOT MONUMENT		FO-2 - NTS COMMUNICATIONS
	ELECTRIC PULL BOX		POWER POLE WITH RISER		UTILITY CONTINUATION		FO-3 - SUDDENLINK COMMUNICATIONS
	ELECTRIC JUNCTION BOX		STORM MANHOLE		WASTEWATER CLEANOUT		FO-4 - FIBERLIGHT
	ELECTRIC CABINET		TELEPHONE MANHOLE		WASTEWATER MANHOLE		TELE-1 - AT&T (D)
	ELECTRIC HAND HOLE		TELEPHONE MARKER POST		WATER AIR RELEASE VALVE		ELEC-1 - XCEL ENERGY (D) (UNDERGROUND)
	ELECTRIC MANHOLE		TELEPHONE PEDESTAL		WATER MANHOLE		ELEC-2 - XCEL ENERGY (T) (NOT USED)
	EOI (END OF INFORMATION)		TELEPHONE PEDESTAL		WATER MARKER POST		ELEC-3 - PRIVATE ELECTRIC
	FIRE HYDRANT		TELEPHONE POLE		WATER METER		ELEC-4 - TXDOT- TRAFFIC SIGNALS
	GAS MANHOLE		TELEPHONE POLE WITH RISER		WATER VALVE		ELEC-5 - BNSF RAILWAY ELECTRIC CABLES
	GAS MARKER POST		TEST HOLE		AERIAL TARGET		ELEC-6 - TXDOT - ITS
	GAS TEST STATION		TRAFFIC CONTROL BOX		PROP SIDEWALK		
	GAS VALVE						

NOTE: - THE SUE QL-B WORK WAS PERFORMED IN 2019

02/27/2023

Binkley & Barfield, Inc.
 TxEng F-257
 1710 Seamist Dr
 Houston, TX 77008
 713.869.3433
 BinkleyBarfield.com



SH 194 FROM FM 3466 TO IH27

EXISTING UTILITIES
 STA 97+00 TO STA 103+00

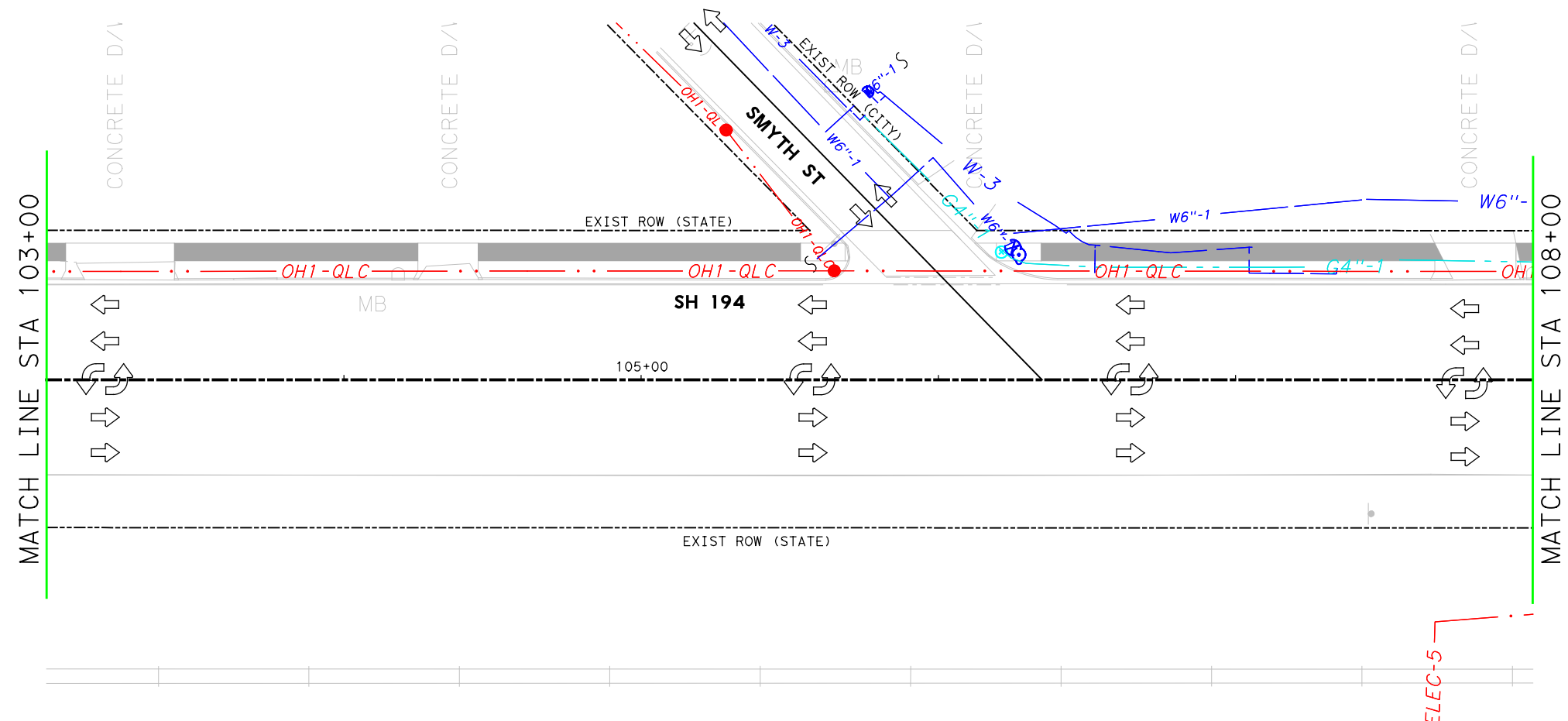
HORZ SCALE: 1"=50' SHEET 18 OF 26

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026

215

PLOT DRIVER: \$PLTDRVS\$ PENTABLE: \$PENTBLS\$
 USER: \$USER\$ DATE: \$DATE\$ TIME: \$TIME\$ SCALE: \$SCALES\$
 FILE: \$FILES\$

NOTE TO CONTRACTOR: SOME WL HAVE BEEN RELOCATED BY OTHERS. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION.



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LEGEND

- | | | | | |
|--|--|---|--|---|
| <ul style="list-style-type: none"> ⊙ CATV MANHOLE ⊕ CURB INLET ⊖ DROP OR GRATE INLET ⊕ ELECTRIC PULL BOX ⊕ ELECTRIC JUNCTION BOX ⊕ ELECTRIC CABINET ⊕ ELECTRIC HAND HOLE ⊕ ELECTRIC MANHOLE ⊕ EOI (END OF INFORMATION) ⊕ FIRE HYDRANT ⊕ GAS MANHOLE ⊕ GAS MARKER POST ⊕ GAS TEST STATION ⊕ GAS VALVE | <ul style="list-style-type: none"> ⊕ GAS VENT PIPE ⊕ LIGHT STANDARD ⊕ POWER POLE ⊕ POWER POLE WITH RISER ⊕ STORM MANHOLE ⊕ TELEPHONE MANHOLE ⊕ TELEPHONE MARKER POST ⊕ TELEPHONE PEDESTAL ⊕ TELEPHONE PEDESTAL ⊕ TELEPHONE PEDESTAL ⊕ TELEPHONE POLE ⊕ FIBER PEDESTAL ⊕ TELEPHONE POLE WITH RISER ⊕ TEST HOLE ⊕ TRAFFIC CONTROL BOX | <ul style="list-style-type: none"> ⊕ TRAFFIC SIGNAL BOX ⊕ TRAVERSE POINT ⊕ TXDOT MONUMENT ⊕ UTILITY CONTINUATION ⊕ WASTEWATER CLEANOUT ⊕ WASTEWATER MANHOLE ⊕ WATER AIR RELEASE VALVE ⊕ WATER MANHOLE ⊕ WATER MARKER POST ⊕ WATER MANHOLE ⊕ WATER METER ⊕ WATER VALVE ⊕ AERIAL TARGET ⊕ PROP SIDEWALK | <ul style="list-style-type: none"> — FO-1 — AT&T (D) — FO-2 — NTS COMMUNICATIONS — FO-3 — SUDDENLINK COMMUNICATIONS — FO-4 — FIBERLIGHT — TELE-1 — AT&T (D) — ELEC-1 — XCEL ENERGY (D) (UNDERGROUND) — ELEC-2 — XCEL ENERGY (T) (NOT USED) — ELEC-3 — PRIVATE ELECTRIC — ELEC-4 — TXDOT- TRAFFIC SIGNALS — ELEC-5 — BNSF RAILWAY ELECTRIC CABLES — ELEC-6 — TXDOT - ITS | <ul style="list-style-type: none"> — ELEC-7 — CITY OF PLAINVIEW STREETLIGHT- ABANDONED — OH1-QLC — XCEL ENERGY (D) (OVERHEAD) — OH2-QLC — XCEL ENERGY (T) (OVERHEAD) — G-1 — ATMOS ENERGY — G-2 — PRIVATE GAS — W-1 — CITY OF PLAINVIEW — W-2 — PRIVATE - HOMEOWNER — W-3 — PRIVATE - IRRIGATION SPRINKLER — WW-1 — CITY OF PLAINVIEW — Unk — UNKNOWN - ABANDONED LINES |
|--|--|---|--|---|

NOTE: - THE SUE QL-B WORK WAS PERFORMED IN 2019

PLOT DRIVER: \$PLTDRVS\$ PENTABLE: \$PENTBLS\$ SCALE: \$SCALES\$ SHORT\$
 USER: \$USER\$ DATE: \$DATE\$ TIME: \$TIME\$ FILE: \$FILES\$

02/27/2023

NO.	DATE	REVISION	APPROVED

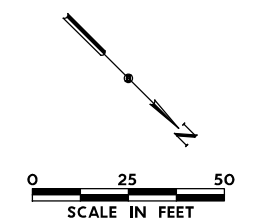
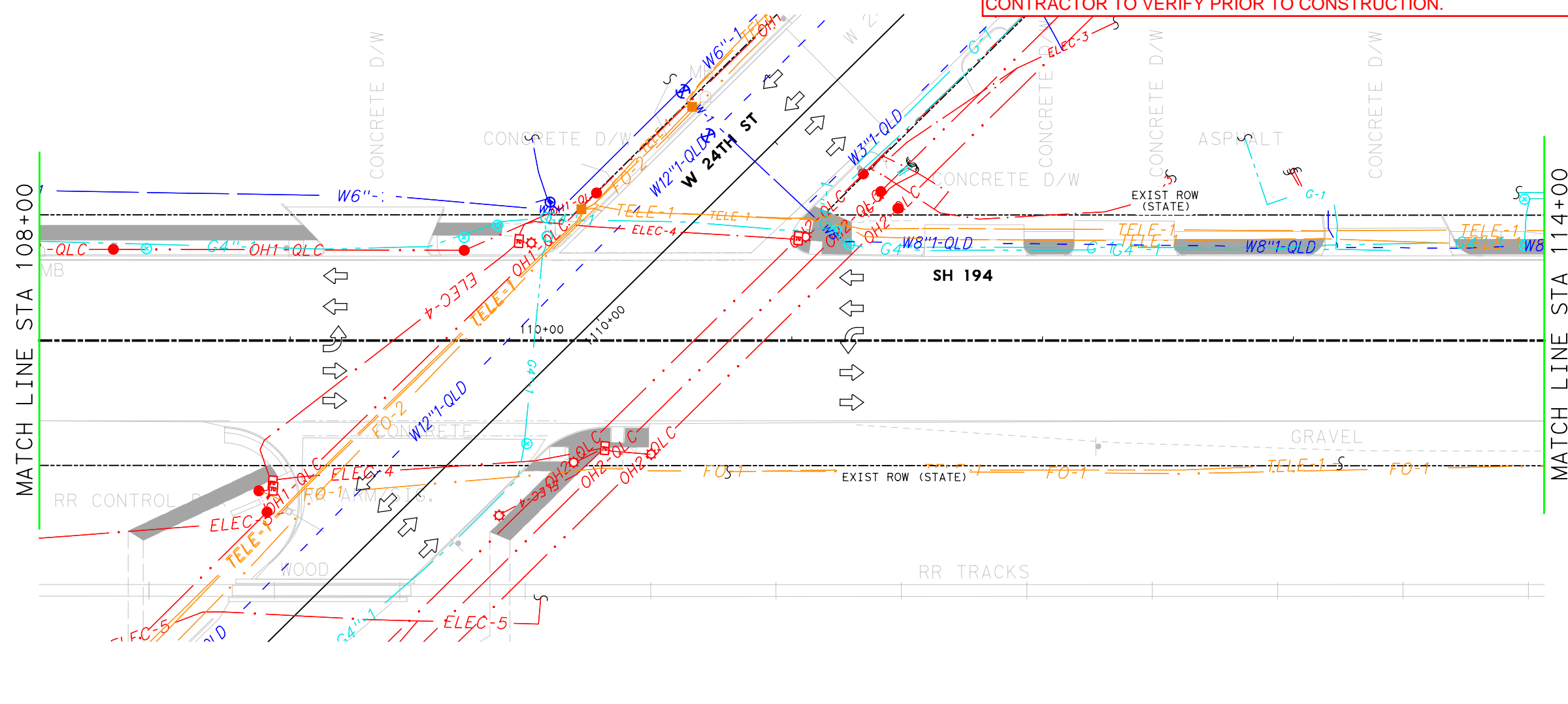
Binkley & Barfield, Inc.
 TxEng F-257
 1710 Seamist Dr
 Houston, TX 77008
 713.869.3433
 BinkleyBarfield.com

SH 194 FROM FM 3466 TO IH27

EXISTING UTILITIES
 STA 103+00 TO STA 108+00

HORZ SCALE: 1"=50'		SHEET 19 OF 26	
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:	
6	SEE TITLE SHEET	SH 194	
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	216
CONTROL:	SECTION:	JOB:	
0439	05	026	

NOTE TO CONTRACTOR: SOME WL HAVE BEEN RELOCATED BY OTHERS. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION.



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LEGEND

- | | | | | |
|--|---|---|---|---|
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|--|---|---|---|---|

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PLOT DRIVER: \$PLTDRVS\$ PENTABLE: \$PENTBLS\$
 USER: \$USER\$ DATE: \$DATE\$ TIME: \$TIME\$ SCALE: \$SCALESHORT\$
 FILE: \$FILES\$

02/27/2023

NO.	DATE	REVISION	APPROVED

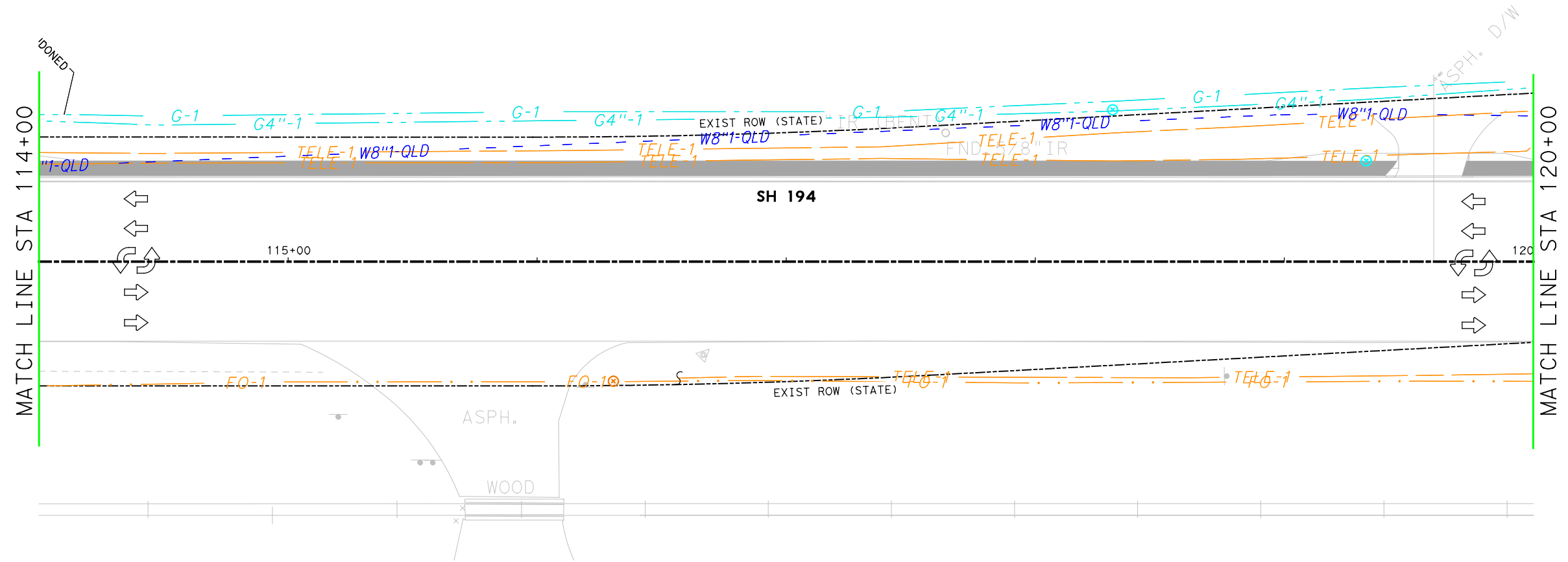
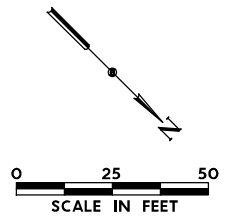
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SH 194 FROM FM 3466 TO IH27

EXISTING UTILITIES
 STA 108+00 TO STA 114+00

HORZ SCALE: 1"=50'		SHEET 20 OF 26	
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.:
TEXAS	LBB	HALE	217
CONTROL	SECTION	JOB	
0439	05	026	

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LEGEND

- | | | | | | | | |
|--|--------------------------|--|---------------------------|--|-------------------------|--|---|
| | CATV MANHOLE | | GAS VENT PIPE | | TRAFFIC SIGNAL BOX | | ELEC-7 - CITY OF PLAINVIEW STREETLIGHT- ABANDONED |
| | CURB INLET | | LIGHT STANDARD | | TRAVERSE POINT | | OH1-QLC - XCEL ENERGY (D) (OVERHEAD) |
| | DROP OR GRATE INLET | | POWER POLE | | TXDOT MONUMENT | | OH2-QLC - XCEL ENERGY (T) (OVERHEAD) |
| | ELECTRIC PULL BOX | | POWER POLE WITH RISER | | UTILITY CONTINUATION | | G-1 - ATMOS ENERGY |
| | ELECTRIC JUNCTION BOX | | STORM MANHOLE | | WASTEWATER CLEANOUT | | G-2 - PRIVATE GAS |
| | ELECTRIC CABINET | | TELEPHONE MANHOLE | | WASTEWATER MANHOLE | | W-1 - CITY OF PLAINVIEW |
| | ELECTRIC HAND HOLE | | TELEPHONE MARKER POST | | WATER AIR RELEASE VALVE | | W-2 - PRIVATE - HOMEOWNER |
| | ELECTRIC MANHOLE | | TELEPHONE PEDESTAL | | WATER MANHOLE | | W-3 - PRIVATE - IRRIGATION SPRINKLER |
| | EOI (END OF INFORMATION) | | TELEPHONE PEDESTAL | | WATER MARKER POST | | WW-1 - CITY OF PLAINVIEW |
| | FIRE HYDRANT | | TELEPHONE POLE | | WATER METER | | Unk - UNKNOWN - ABANDONED LINES |
| | GAS MANHOLE | | TELEPHONE POLE WITH RISER | | WATER VALVE | | |
| | GAS MARKER POST | | TEST HOLE | | AERIAL TARGET | | |
| | GAS TEST STATION | | TRAFFIC CONTROL BOX | | PROP SIDEWALK | | |
| | GAS VALVE | | | | | | |

NOTE: - THE SUE QL-B WORK WAS PERFORMED IN 2019

02/27/2023

NO.	DATE	REVISION	APPROVED

Binkley & Barfield, Inc.
 TxEng F-257
 1710 Seamist Dr
 Houston, TX 77008
 713.869.3433
 BinkleyBarfield.com

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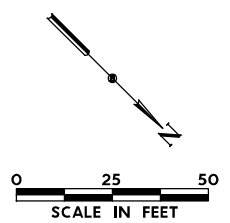
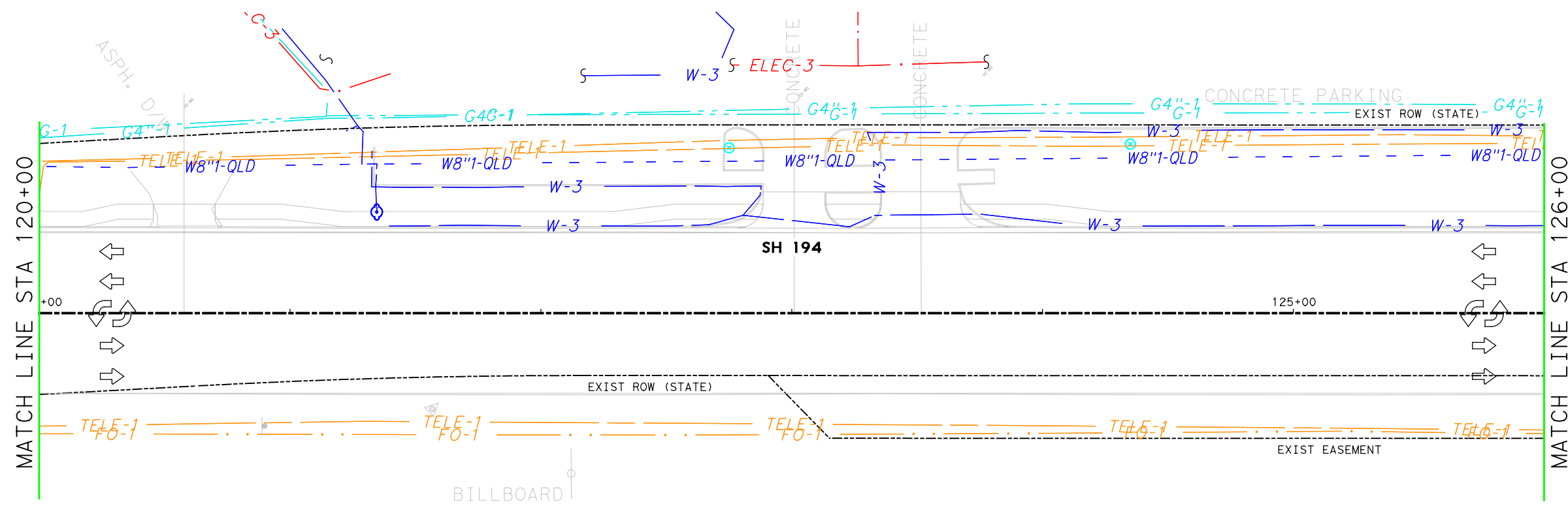
SH 194 FROM FM 3466 TO IH27

EXISTING UTILITIES
 STA 114+00 TO STA 120+00

HORZ SCALE: 1"=50'		SHEET 21 OF 26	
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	218
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: \$PLTDRVS\$ PENTABLE: \$PENTBLS\$
 USER: \$USER\$ DATE: \$DATE\$ TIME: \$TIME\$ SCALE: \$SCALES\$
 FILE: \$FILES\$

NOTE TO CONTRACTOR: SOME WL HAVE BEEN RELOCATED BY OTHERS. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION.



NOTES

1. THE QUALITY LEVEL B HORIZONTAL LOCATION OF UTILITIES SHOWN ON THESE DRAWINGS IS ARRIVED AT BY THE USE OF DESIGNATING EQUIPMENT. THESE LINES WERE NOT UNCOVERED TO VERIFY EXACT HORIZONTAL LOCATIONS.
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4. AS-BUILT DRAWINGS WERE USED TO COMPARE DESIGNATED LOCATIONS TO CONSTRUCTION AS-BUILT LOCATIONS.
5. THE USE OF THE HORIZONTAL LOCATIONS OF THE UTILITIES SHOWN ON THESE PLANS DOES NOT RELIEVE THE CONTRACTOR FROM THE DUTY TO COMPLY WITH APPLICABLE UTILITY DAMAGE PREVENTION LAWS AND REGULATIONS, INCLUDING, BUT NOT LIMITED TO, GIVING NOTIFICATION TO UTILITY OWNER'S "ONE-CALL" CENTERS BEFORE EXCAVATION.
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UTILITY TYPE:	OWNER:	CONTACT:	PHONE:	EMAIL:	ADDRESS:
COMMUNICATION	AT&T (D)	BRYAN JONES	806-741-6103	bj1726@att.com	210 AVE R RM 102, LUBBOCK, TX 79411
COMMUNICATION	NTS COMMUNICATIONS	MICHAEL PENNY	806-788-2958	Michael.Penny@ntscom.com	1220 BROADWAY, LUBBOCK, TX 79401
COMMUNICATION	SUDDENLINK COMMUNICATIONS	JEREMY MCDONALD	806-771-6210	jeremy.mcdonald@AlticeTechServicesUSA.com	6710 HARTFORD AVE, LUBBOCK, TX 79413
COMMUNICATION	FIBERLIGHT	STEVE FUTCH	940-390-8098	steve.futch@fiberlight.com	5728 RITTIMAN PLAZA, SAN ANTONIO, TX 78218
TELEPHONE	AT&T (D)	BRYAN JONES	806-741-6103	bj1726@att.com	210 AVE R RM 102, LUBBOCK, TX 79411
GAS	ATMOS ENERGY	JERRY HARRISON	806-379-5822	jerry.harrison@atmosenergy.com	4730 CANYON DRIVE, AMARILLO, TX 79109
ELECTRICAL (D)	XCEL ENERGY (D)	OMAR MORALES	806-378-4128	Omar.Morales@xcelenergy.com	304 N NELSON, AMARILLO, TX 79107
ELECTRICAL (T)	XCEL ENERGY (T)	SEAN FREDERIKSEN	806-771-6256	sean.l.frederiksen@xcelenergy.com	6710 HARTFORD AVE, LUBBOCK, TX 79413
ELECTRICAL	TXDOT	TERRY HARRIS	806-748-4465	Terry.Harris@txdot.gov	135 E SLATON HWY, LUBBOCK, TX 79404
WATER	CITY OF PLAINVIEW	NEIL WEEMS	806-291-1225	nweems@plainviewtx.org	901 BROADWAY ST, PLAINVIEW, TX 79072
WASTE WATER	CITY OF PLAINVIEW	NEIL WEEMS	806-291-1225	nweems@plainviewtx.org	901 BROADWAY ST, PLAINVIEW, TX 79072

LEGEND

- | | | | | | | | |
|--|--------------------------|--|---------------------------|--|-------------------------|--|---|
| | CATV MANHOLE | | GAS VENT PIPE | | TRAFFIC SIGNAL BOX | | ELEC-7 - CITY OF PLAINVIEW STREETLIGHT- ABANDONED |
| | CURB INLET | | LIGHT STANDARD | | TRAVERSE POINT | | FO-1 - AT&T (D) |
| | DROP OR GRATE INLET | | POWER POLE | | TXDOT MONUMENT | | FO-2 - NTS COMMUNICATIONS |
| | ELECTRIC PULL BOX | | POWER POLE WITH RISER | | UTILITY CONTINUATION | | FO-3 - SUDDENLINK COMMUNICATIONS |
| | ELECTRIC JUNCTION BOX | | STORM MANHOLE | | WASTEWATER CLEANOUT | | FO-4 - FIBERLIGHT |
| | ELECTRIC CABINET | | TELEPHONE MANHOLE | | WASTEWATER MANHOLE | | TELE-1 - AT&T (D) |
| | ELECTRIC HAND HOLE | | TELEPHONE MARKER POST | | WATER AIR RELEASE VALVE | | ELEC-1 - XCEL ENERGY (D) (UNDERGROUND) |
| | ELECTRIC MANHOLE | | TELEPHONE PEDESTAL | | WATER MANHOLE | | ELEC-2 - XCEL ENERGY (T) (NOT USED) |
| | EOI (END OF INFORMATION) | | TELEPHONE PEDESTAL | | WATER MARKER POST | | ELEC-3 - PRIVATE ELECTRIC |
| | FIRE HYDRANT | | TELEPHONE POLE | | WATER METER | | ELEC-4 - TXDOT- TRAFFIC SIGNALS |
| | GAS MANHOLE | | TELEPHONE POLE WITH RISER | | WATER VALVE | | ELEC-5 - BNSF RAILWAY ELECTRIC CABLES |
| | GAS MARKER POST | | TEST HOLE | | AERIAL TARGET | | ELEC-6 - TXDOT - ITS |
| | GAS TEST STATION | | TRAFFIC CONTROL BOX | | PROP SIDEWALK | | |
| | GAS VALVE | | | | | | |

NOTE: - THE SUE QL-B WORK WAS PERFORMED IN 2019

02/27/2023

NO.	DATE	REVISION	APPROVED

Binkley & Barfield, Inc.
 TxEng F-257
 1710 Seamist Dr
 Houston, TX 77008
 713.869.3433
 BinkleyBarfield.com

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Texas Department of Transportation
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SH 194 FROM FM 3466 TO IH27

EXISTING UTILITIES
 STA 120+00 TO STA 126+00

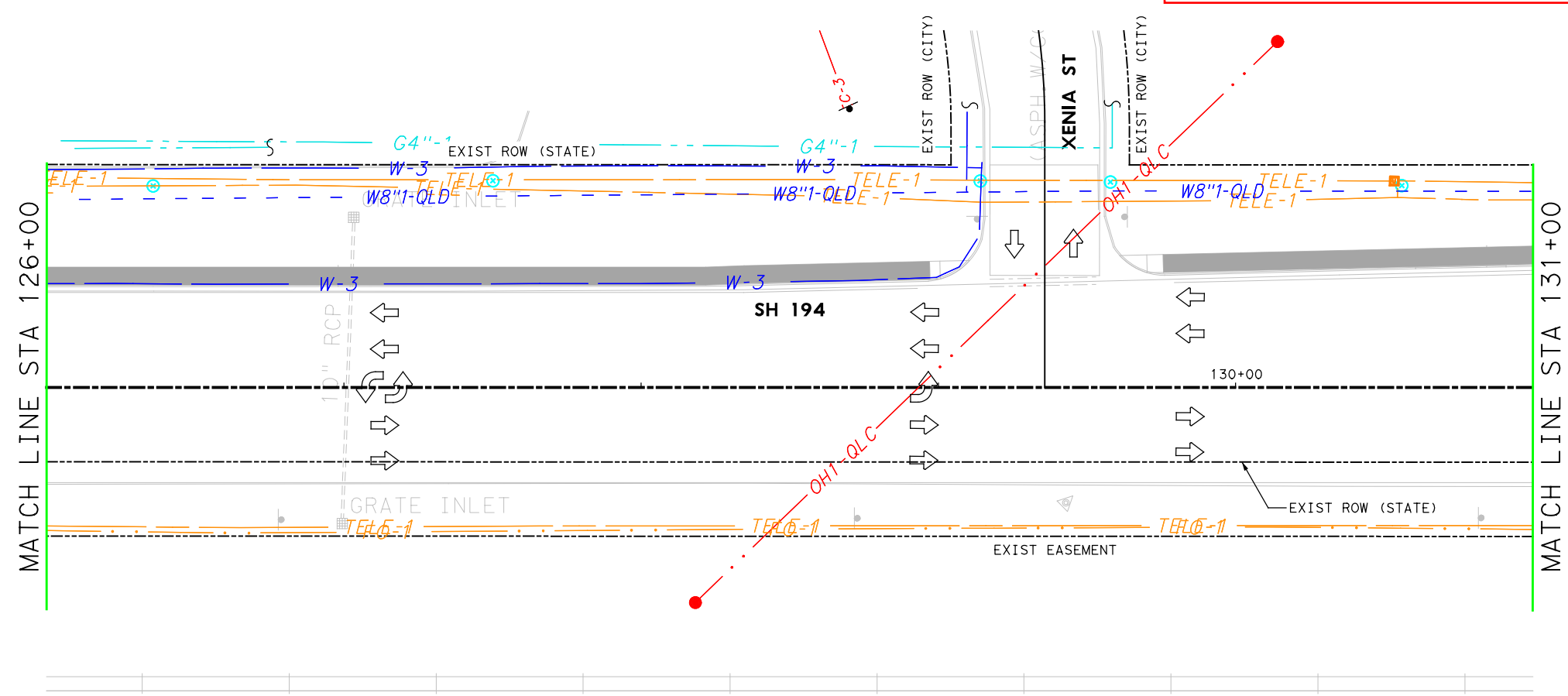
HORZ SCALE: 1"=50' SHEET 22 OF 26

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:
6	SEE TITLE SHEET	SH 194
STATE:	DISTRICT:	COUNTY:
TEXAS	LBB	HALE
CONTROL:	SECTION:	JOB:
0439	05	026

219

PLOT DRIVER: \$PLTDRVS\$ PENTABLE: \$PENTBLS\$
 USER: \$USER\$ DATE: \$DATE\$ TIME: \$TIME\$ SCALE: \$SCALE\$ SHORT \$
 FILE: \$FILES\$

NOTE TO CONTRACTOR: SOME WL HAVE BEEN RELOCATED BY OTHERS. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION.



NOTES

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WASTE WATER	CITY OF PLAINVIEW	NEIL WEEMS	806-291-1225	nweems@plainviewtx.org	901 BROADWAY ST, PLAINVIEW, TX 79072

LEGEND

- | | | | | | | | |
|--|--------------------------|--|---------------------------|--|-------------------------|--|---|
| | CATV MANHOLE | | GAS VENT PIPE | | TRAFFIC SIGNAL BOX | | ELEC-7 - CITY OF PLAINVIEW STREETLIGHT- ABANDONED |
| | CURB INLET | | LIGHT STANDARD | | TRAVERSE POINT | | OH1-QLC - XCEL ENERGY (D) (OVERHEAD) |
| | DROP OR GRATE INLET | | POWER POLE | | TXDOT MONUMENT | | OH2-QLC - XCEL ENERGY (T) (OVERHEAD) |
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| | ELECTRIC CABINET | | TELEPHONE MANHOLE | | WASTEWATER MANHOLE | | W-1 - CITY OF PLAINVIEW |
| | ELECTRIC HAND HOLE | | TELEPHONE MARKER POST | | WATER AIR RELEASE VALVE | | W-2 - PRIVATE - HOMEOWNER |
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| | GAS MARKER POST | | TEST HOLE | | AERIAL TARGET | | |
| | GAS TEST STATION | | TRAFFIC CONTROL BOX | | PROP SIDEWALK | | |
| | GAS VALVE | | | | | | |

NOTE: - THE SUE QL-B WORK WAS PERFORMED IN 2019

PLOT DRIVER: \$PLTDRVS\$
 USER: \$USER\$ DATE: \$DATE\$
 PENTABLE: \$PENTBLS\$
 TIME: \$TIME\$
 SCALE: \$SCALESHORT\$
 FILE: \$FILES\$

02/27/2023

NO.	DATE	REVISION	APPROVED

Binkley & Barfield, Inc.
 TxEng F-257
 1710 Seamist Dr
 Houston, TX 77008
 713.869.3433
 BinkleyBarfield.com

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SH 194 FROM FM 3466 TO IH27

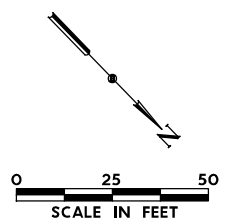
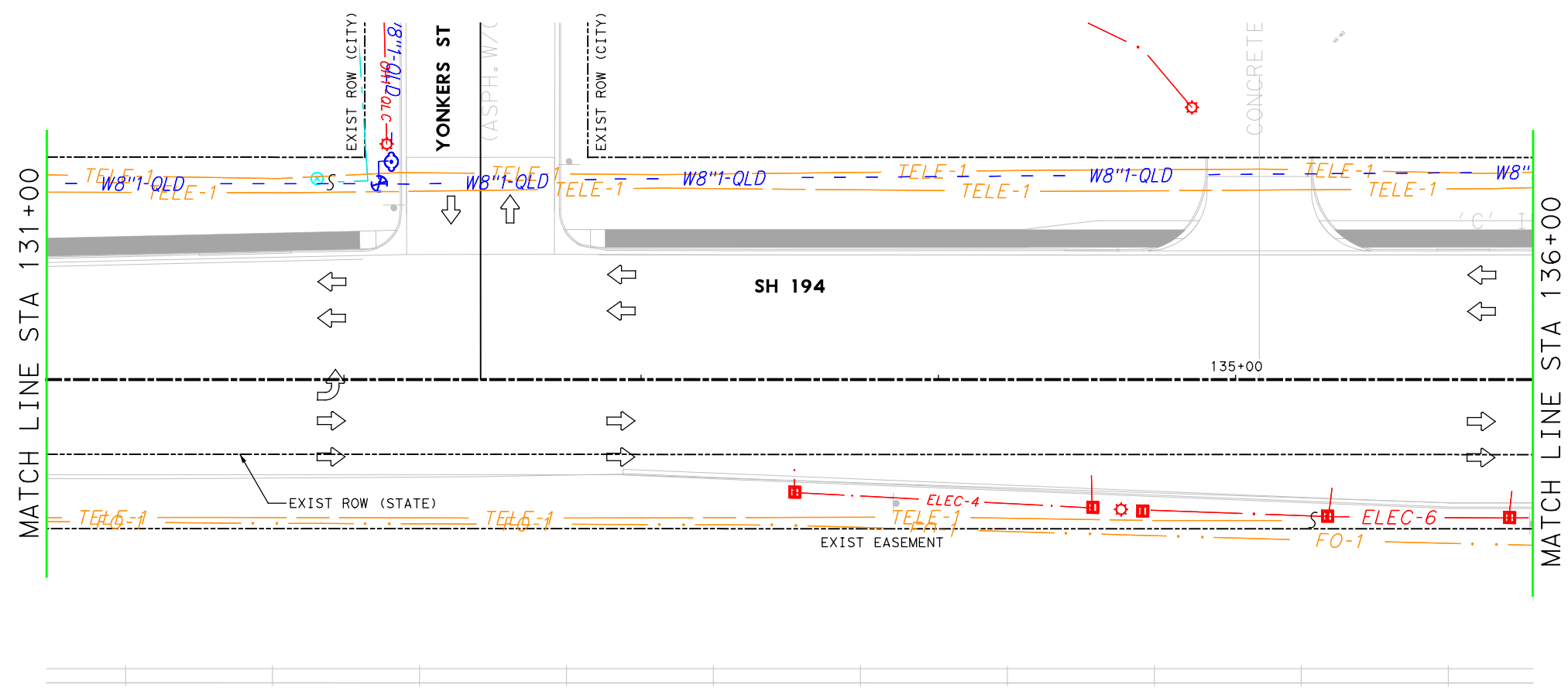
EXISTING UTILITIES
 STA 126+00 TO STA 131+00

HORZ SCALE: 1"=50' SHEET 23 OF 26

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:
6	SEE TITLE SHEET	SH 194
STATE:	DISTRICT:	COUNTY:
TEXAS	LBB	HALE
CONTROL:	SECTION:	JOB:
0439	05	026

220

NOTE TO CONTRACTOR: SOME WL HAVE BEEN RELOCATED BY OTHERS. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION.



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WASTE WATER	CITY OF PLAINVIEW	NEIL WEEMS	806-291-1225	nweems@plainviewtx.org	901 BROADWAY ST, PLAINVIEW, TX 79072

LEGEND

- | | | | | | | | | | |
|--|--------------------------|--|---------------------------|--|-------------------------|--|--|--|---|
| | CATV MANHOLE | | GAS VENT PIPE | | TRAFFIC SIGNAL BOX | | FO-1 — AT&T (D) | | ELEC-7 — CITY OF PLAINVIEW STREETLIGHT- ABANDONED |
| | CURB INLET | | LIGHT STANDARD | | TRAVERSE POINT | | FO-2 — NTS COMMUNICATIONS | | OH1-QLC — XCEL ENERGY (D) (OVERHEAD) |
| | DROP OR GRATE INLET | | POWER POLE | | TXDOT MONUMENT | | FO-3 — SUDDENLINK COMMUNICATIONS | | OH2-QLC — XCEL ENERGY (T) (OVERHEAD) |
| | ELECTRIC PULL BOX | | POWER POLE WITH RISER | | UTILITY CONTINUATION | | FO-4 — FIBERLIGHT | | G-1 — ATMOS ENERGY |
| | ELECTRIC JUNCTION BOX | | STORM MANHOLE | | WASTEWATER CLEANOUT | | TELE-1 — AT&T (D) | | G-2 — PRIVATE GAS |
| | ELECTRIC CABINET | | TELEPHONE MANHOLE | | WASTEWATER MANHOLE | | ELEC-1 — XCEL ENERGY (D) (UNDERGROUND) | | W-1 — CITY OF PLAINVIEW |
| | ELECTRIC HAND HOLE | | TELEPHONE MARKER POST | | WATER AIR RELEASE VALVE | | ELEC-2 — XCEL ENERGY (T) (NOT USED) | | W-2 — PRIVATE - HOMEOWNER |
| | ELECTRIC MANHOLE | | TELEPHONE PEDESTAL | | WATER MANHOLE | | ELEC-3 — PRIVATE ELECTRIC | | W-3 — PRIVATE - IRRIGATION SPRINKLER |
| | EOI (END OF INFORMATION) | | TELEPHONE PEDESTAL | | WATER MARKER POST | | ELEC-4 — TXDOT- TRAFFIC SIGNALS | | WW-1 — CITY OF PLAINVIEW |
| | FIRE HYDRANT | | TELEPHONE POLE | | WATER METER | | ELEC-5 — BNSF RAILWAY ELECTRIC CABLES | | Unk — UNKNOWN - ABANDONED LINES |
| | GAS MANHOLE | | TELEPHONE POLE WITH RISER | | WATER VALVE | | ELEC-6 — TXDOT - ITS | | |
| | GAS MARKER POST | | TEST HOLE | | AERIAL TARGET | | | | |
| | GAS TEST STATION | | TRAFFIC CONTROL BOX | | PROP SIDEWALK | | | | |
| | GAS VALVE | | | | | | | | |

NOTE: - THE SUE QL-B WORK WAS PERFORMED IN 2019

PLOT DRIVER: \$PLTDRVS\$ PENTABLE: \$PENTBLS\$
 USER: \$USER\$ DATE: \$DATE\$ TIME: \$TIME\$ SCALE: \$SCALE\$ SHORT: \$SHORT\$
 FILE: \$FILES\$

02/27/2023

NO.	DATE	REVISION	APPROVED

Binkley & Barfield, Inc.
 TxEng F-257
 1710 Seamist Dr
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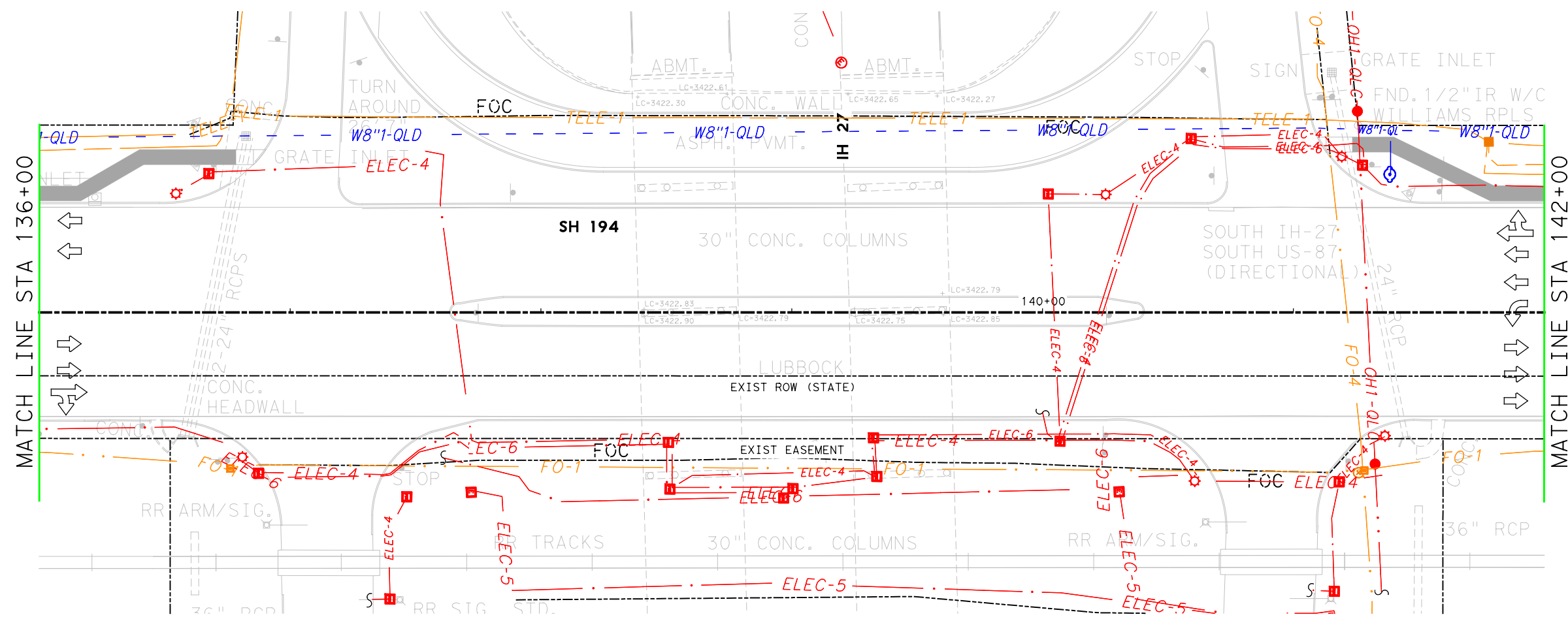
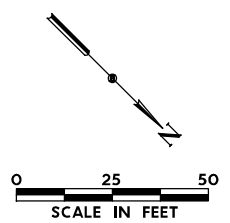
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SH 194 FROM FM 3466 TO IH27

EXISTING UTILITIES
 STA 131+00 TO STA 136+00

HORZ SCALE: 1"=50'		SHEET 24 OF 26	
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.:
TEXAS	LBB	HALE	221
CONTROL	SECTION	JOB	
0439	05	026	

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NOTES

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2. THE ACCURACY OF THE HORIZONTAL LOCATION OF UTILITY LINES SHOWN ON THESE PLANS CAN BE INFLUENCED BY FACTORS BEYOND BINKLEY & BARFIELD, INC.'S CONTROL, SUCH AS CONDUCTIVITY OF MATERIALS AND THEIR SURROUNDINGS, SOIL MOISTURE CONTENT, PROXIMITY OF OTHER UNDERGROUND UTILITIES OR STRUCTURES, DEPTH OF UTILITY, ETC. THEREFORE, ONLY THE ACCURACY OBTAINED BY ACTUAL EXCAVATION CAN BE GUARANTEED TO APPLICABLE ENGINEERING AND/OR SURVEYING STANDARDS.
3. UTILITY INFORMATION LABELED QL-C OR QL-D IS DERIVED FROM RECORDS. SUCH INFORMATION MAY NOT BE ACCURATE OR RELIABLE. BINKLEY & BARFIELD, INC. EXPRESSLY DISCLAIMS RESPONSIBILITY FOR THE ACCURACY OR RELIABILITY OF UTILITY RECORDS INFORMATION DEPICTED ACCORDING TO RECORDS.
4. AS-BUILT DRAWINGS WERE USED TO COMPARE DESIGNATED LOCATIONS TO CONSTRUCTION AS-BUILT LOCATIONS.
5. THE USE OF THE HORIZONTAL LOCATIONS OF THE UTILITIES SHOWN ON THESE PLANS DOES NOT RELIEVE THE CONTRACTOR FROM THE DUTY TO COMPLY WITH APPLICABLE UTILITY DAMAGE PREVENTION LAWS AND REGULATIONS, INCLUDING, BUT NOT LIMITED TO, GIVING NOTIFICATION TO UTILITY OWNER'S "ONE-CALL" CENTERS BEFORE EXCAVATION.
6. ALL UTILITY INFORMATION HEREON IS DEPICTED TO QUALITY LEVEL "B" UNLESS OTHERWISE NOTED. SIZE INFORMATION SHOWN HEREON IS TAKEN FROM BEST AVAILABLE UTILITY RECORDS.
7. ONLY THE ACCURACY OF DATA OBTAINED BY ACTUAL PHYSICAL VERIFICATION (THROUGH VACUUM OR HYDRO EXCAVATION OR OTHERWISE) CAN BE GUARANTEED TO APPLICABLE ENGINEERING AND/OR SURVEYING STANDARDS.

UTILITY TYPE:	OWNER:	CONTACT:	PHONE:	EMAIL:	ADDRESS:
COMMUNICATION	AT&T (D)	BRYAN JONES	806-741-6103	bj1726@att.com	210 AVE R RM 102, LUBBOCK, TX 79411
COMMUNICATION	NTS COMMUNICATIONS	MICHAEL PENNY	806-788-2958	Michael.Penny@ntscom.com	1220 BROADWAY, LUBBOCK, TX 79401
COMMUNICATION	SUDDENLINK COMMUNICATIONS	JEREMY McDONALD	806-771-6210	jeremy.mcdonald@AlticeTechServicesUSA.com	6710 HARTFORD AVE, LUBBOCK, TX 79413
COMMUNICATION	FIBERLIGHT	STEVE FUTCH	940-390-8098	steve.futch@fiberlight.com	5728 RITTIMAN PLAZA, SAN ANTONIO, TX 78218
TELEPHONE	AT&T (D)	BRYAN JONES	806-741-6103	bj1726@att.com	210 AVE R RM 102, LUBBOCK, TX 79411
GAS	ATMOS ENERGY	JERRY HARRISON	806-379-5822	jerry.harrison@atmosenergy.com	4730 CANYON DRIVE, AMARILLO, TX 79109
ELECTRICAL (D)	XCEL ENERGY (D)	OMAR MORALES	806-378-4128	Omar.Morales@xcelenergy.com	304 N NELSON, AMARILLO, TX 79107
ELECTRICAL (T)	XCEL ENERGY (T)	SEAN FREDERIKSEN	806-771-6256	sean.l.frederiksen@xcelenergy.com	6710 HARTFORD AVE, LUBBOCK, TX 79413
ELECTRICAL	TXDOT	TERRY HARRIS	806-748-4465	Terry.Harris@txdot.gov	135 E SLATON HWY, LUBBOCK, TX 79404
WATER	CITY OF PLAINVIEW	NEIL WEEMS	806-291-1225	nweems@plainviewtx.org	901 BROADWAY ST, PLAINVIEW, TX 79072
WASTE WATER	CITY OF PLAINVIEW	NEIL WEEMS	806-291-1225	nweems@plainviewtx.org	901 BROADWAY ST, PLAINVIEW, TX 79072

LEGEND

- | | | | | | | | |
|--|--------------------------|--|---------------------------|--|-------------------------|--|---|
| | CATV MANHOLE | | GAS VENT PIPE | | TRAFFIC SIGNAL BOX | | ELEC-7 - CITY OF PLAINVIEW STREETLIGHT- ABANDONED |
| | CURB INLET | | LIGHT STANDARD | | TRAVERSE POINT | | FO-2 - NTS COMMUNICATIONS |
| | DROP OR GRATE INLET | | POWER POLE | | TXDOT MONUMENT | | FO-3 - SUDDENLINK COMMUNICATIONS |
| | ELECTRIC PULL BOX | | POWER POLE WITH RISER | | UTILITY CONTINUATION | | FO-4 - FIBERLIGHT |
| | ELECTRIC JUNCTION BOX | | STORM MANHOLE | | WASTEWATER CLEANOUT | | TELE-1 - AT&T (D) |
| | ELECTRIC CABINET | | TELEPHONE MANHOLE | | WASTEWATER MANHOLE | | ELEC-1 - XCEL ENERGY (D) (UNDERGROUND) |
| | ELECTRIC HAND HOLE | | TELEPHONE MARKER POST | | WATER AIR RELEASE VALVE | | ELEC-2 - XCEL ENERGY (T) (NOT USED) |
| | ELECTRIC MANHOLE | | TELEPHONE PEDESTAL | | WATER MANHOLE | | ELEC-3 - PRIVATE ELECTRIC |
| | EOI (END OF INFORMATION) | | TELEPHONE PEDESTAL | | WATER MARKER POST | | ELEC-4 - TXDOT- TRAFFIC SIGNALS |
| | FIRE HYDRANT | | TELEPHONE POLE | | WATER METER | | ELEC-5 - BNSF RAILWAY ELECTRIC CABLES |
| | GAS MANHOLE | | TELEPHONE POLE WITH RISER | | WATER VALVE | | ELEC-6 - TXDOT - ITS |
| | GAS MARKER POST | | TEST HOLE | | AERIAL TARGET | | |
| | GAS TEST STATION | | TRAFFIC CONTROL BOX | | PROP SIDEWALK | | |
| | GAS VALVE | | | | | | |

NOTE: - THE SUE QL-B WORK WAS PERFORMED IN 2019

PLOT DRIVER: \$PLTDRVS\$ PENTABLE: \$PENTBLS\$
 USER: \$USER\$ DATE: \$DATE\$ TIME: \$TIME\$ SCALE: \$SCALE\$ SHORT \$
 FILE: \$FILES\$

02/27/2023

NO.	DATE	REVISION	APPROVED

Binkley & Barfield, Inc.
 TxEng F-257
 1710 Seamist Dr
 Houston, TX 77008
 713.869.3433
 BinkleyBarfield.com

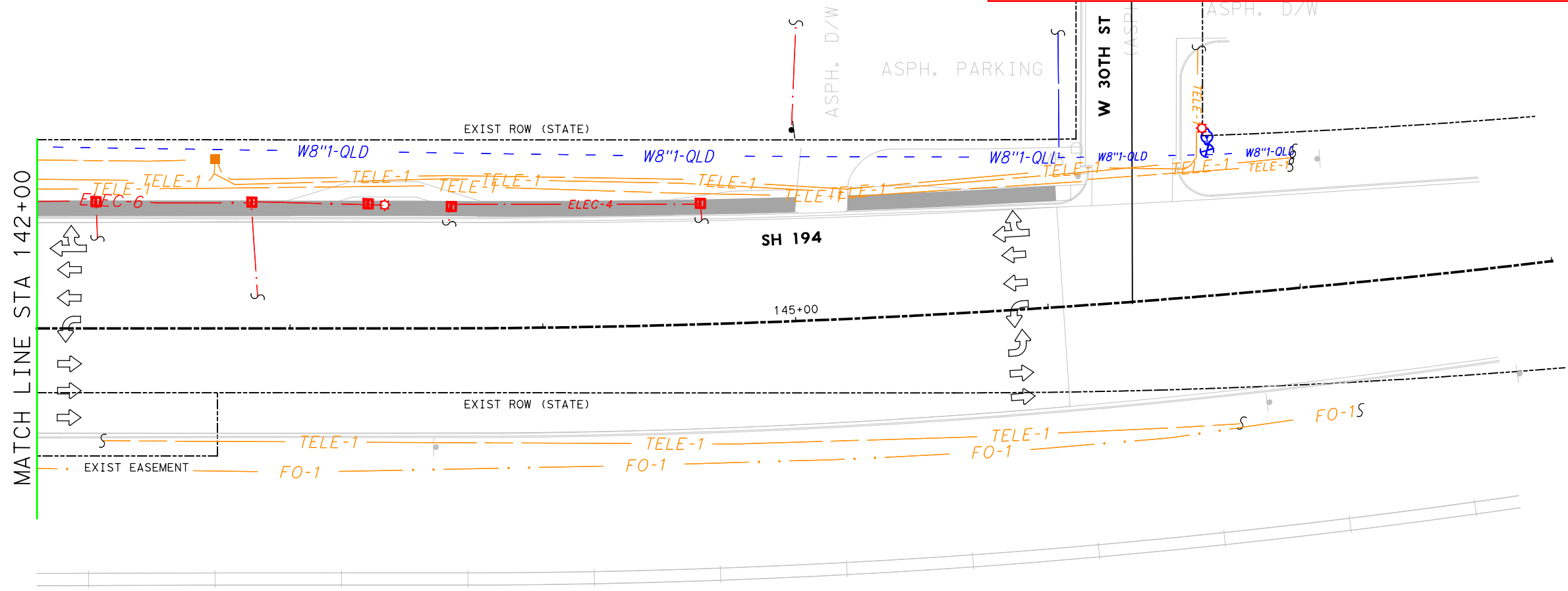
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SH 194 FROM FM 3466 TO IH27

EXISTING UTILITIES
 STA 136+00 TO STA 142+00

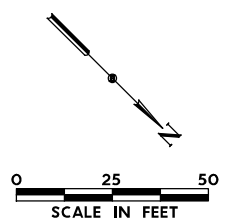
HORZ SCALE: 1"=50'		SHEET 25 OF 26	
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:	
6	SEE TITLE SHEET	SH 194	
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	222
CONTROL:	SECTION:	JOB:	
0439	05	026	

NOTE TO CONTRACTOR: SOME WL HAVE BEEN RELOCATED BY OTHERS. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION.



NOTES

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LEGEND

- | | | | | | | | | | |
|--|--------------------------|--|---------------------------|--|-------------------------|--|--|--|---|
| | CATV MANHOLE | | GAS VENT PIPE | | TRAFFIC SIGNAL BOX | | FO-1 — AT&T (D) | | ELEC-7 — CITY OF PLAINVIEW STREETLIGHT- ABANDONED |
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| | DROP OR GRATE INLET | | POWER POLE | | TXDOT MONUMENT | | FO-3 — SUDDENLINK COMMUNICATIONS | | OH2-QLC — XCEL ENERGY (T) (OVERHEAD) |
| | ELECTRIC PULL BOX | | POWER POLE WITH RISER | | UTILITY CONTINUATION | | FO-4 — FIBERLIGHT | | G-1 — ATMOS ENERGY |
| | ELECTRIC JUNCTION BOX | | STORM MANHOLE | | WASTEWATER CLEANOUT | | TELE-1 — AT&T (D) | | G-2 — PRIVATE GAS |
| | ELECTRIC CABINET | | TELEPHONE MANHOLE | | WASTEWATER MANHOLE | | ELEC-1 — XCEL ENERGY (D) (UNDERGROUND) | | W-1 — CITY OF PLAINVIEW |
| | ELECTRIC HAND HOLE | | TELEPHONE MARKER POST | | WATER AIR RELEASE VALVE | | ELEC-2 — XCEL ENERGY (T) (NOT USED) | | W-2 — PRIVATE - HOMEOWNER |
| | ELECTRIC MANHOLE | | TELEPHONE PEDESTAL | | WATER MANHOLE | | ELEC-3 — PRIVATE ELECTRIC | | W-3 — PRIVATE - IRRIGATION SPRINKLER |
| | EOI (END OF INFORMATION) | | TELEPHONE PEDESTAL | | WATER MARKER POST | | ELEC-4 — TXDOT- TRAFFIC SIGNALS | | WW-1 — CITY OF PLAINVIEW |
| | FIRE HYDRANT | | TELEPHONE POLE | | WATER METER | | ELEC-5 — BNSF RAILWAY ELECTRIC CABLES | | Unk — UNKNOWN - ABANDONED LINES |
| | GAS MANHOLE | | TELEPHONE POLE WITH RISER | | WATER VALVE | | ELEC-6 — TXDOT - ITS | | |
| | GAS MARKER POST | | TEST HOLE | | AERIAL TARGET | | | | |
| | GAS TEST STATION | | TRAFFIC CONTROL BOX | | PROP SIDEWALK | | | | |
| | GAS VALVE | | | | | | | | |

NOTE: - THE SUE QL-B WORK WAS PERFORMED IN 2019

PLOT DRIVER: \$PLOTDRVS\$
 USER: \$USER\$ DATE: \$DATE\$
 TIME: \$TIME\$ SCALE: \$SCALE\$ SHORT \$
 FILE: \$FILES\$

02/27/2023

NO.	DATE	REVISION	APPROVED

Binkley & Barfield, Inc.
 TxEng F-257
 1710 Seamist Dr
 Houston, TX 77008
 713.869.3433
 BinkleyBarfield.com

DCCM

Texas Department of Transportation
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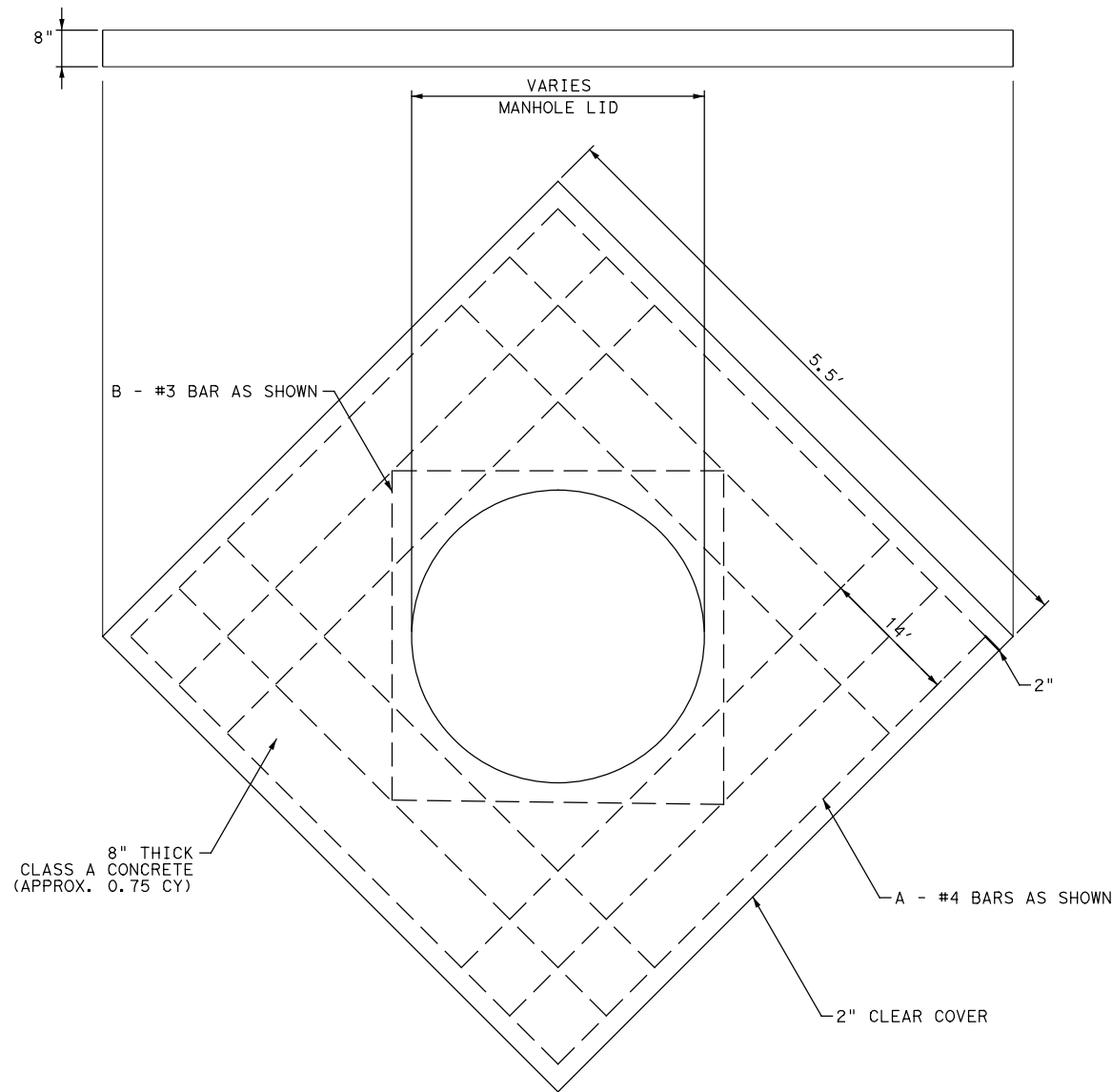
SH 194 FROM FM 3466 TO IH27

EXISTING UTILITIES
 STA 142+00 TO END

HORZ SCALE: 1"=50' SHEET 26 OF 26

FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026

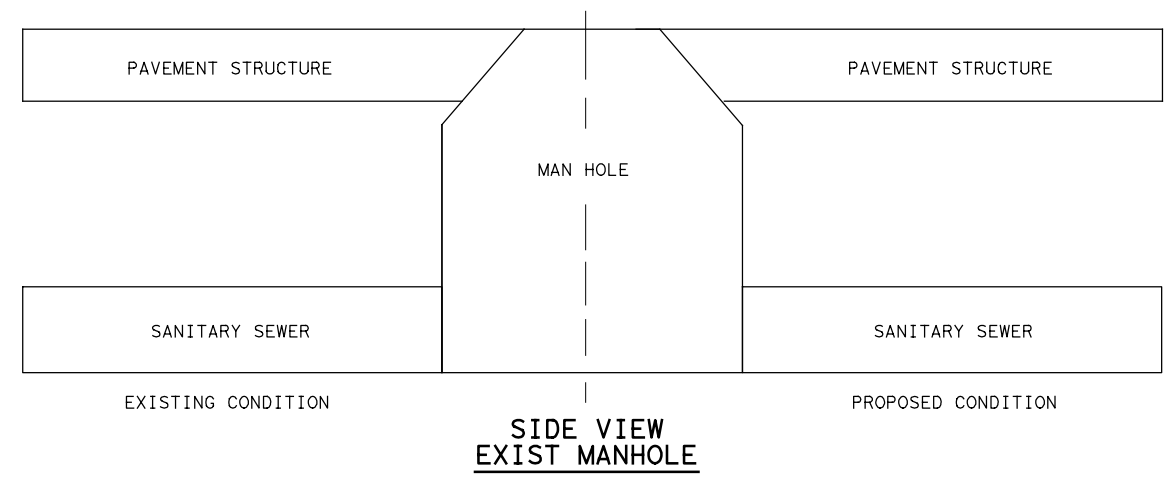
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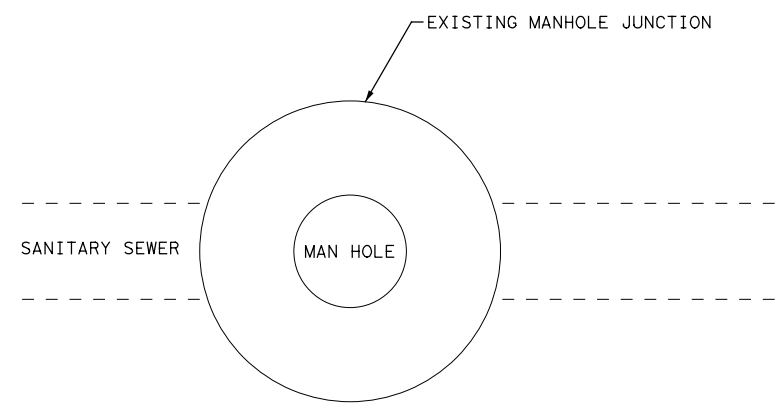
MANHOLE APRON DETAIL

NOTE: PLACE AT TOP OF MANHOLE, FLUSH WITH EXISTING PAVEMENT ELEVATION. ELEVATION ADJUSTMENT MAY BE DIRECTED BY THE ENGINEER. MATCH PROPOSED CROSS SLOPE.

NOTE: CLASS A CONCRETE IS SUBSIDIARY TO ITEM 479.



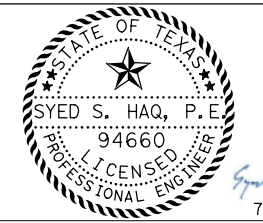
**SIDE VIEW
EXIST MANHOLE**



**TOP VIEW
EXIST MANHOLE**

NOTES:

- 1. EXISTING MANHOLE CONE MATERIAL WILL VARY FROM CONCRETE TO BRICKS.



Syed S. Haq
7/29/2024

NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

MANHOLE APRON DETAIL

FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	224
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Arabinson DATE: 7/30/2024 TIME: 4:02:23 PM SCALE: 1:1
 FILE: SH194_Quantities_Signals.dgn

NOTES:
 * SUBSIDIARY TO THE ITEM 680 6002.
 ** SUBSIDIARY TO THE ITEM 687 6001.
 *** SUBSIDIARY TO THE ITEM 688 6001.
 **** SUBSIDIARY TO THE ITEM 6292 6004.
 ***** SUBSIDIARY TO THE ITEM 6292 6005.

SIGNAL QUANTITIES								
ITEM	CODE	DESCRIPTION	UNIT	INTERSECTION				
				5TH ST	11TH ST	16TH ST	24TH ST	TOTAL
416	6004	DRILL SHAFT (36 IN)	LF	60	48	48	50	206
618	6046	CONDT (PVC) (SCH 80) (2")	LF	115	350	100	170	735
618	6047	CONDT (PVC) (SCH 80) (2") (BORE)	LF	235	250	135	270	890
618	6053	CONDT (PVC) (SCH 80) (3")	LF	65	55	60	90	270
618	6054	CONDT (PVC) (SCH 80) (3") (BORE)	LF	35				35
618	6058	CONDT (PVC) (SCH 80) (4")	LF	40	70	40	25	175
618	6059	CONDT (PVC) (SCH 80) (4") (BORE)	LF	400	340	290	540	1570
620	6007	ELEC CONDR (NO. 8) BARE	LF	330	385	245	405	1365
620	6008	ELEC CONDR (NO. 8) INSULATED	LF	660	770	490	810	2730
620	6009	ELEC CONDR (NO. 6) BARE	LF	590	765	445	585	2385
620	6011	ELEC CONDR (NO. 4) BARE	LF	15	240	10	15	280
620	6012	ELEC CONDR (NO. 4) INSULATED	LF	30	480	20	30	560
624	6010	GROUND BOX TY D (162922)W/APRON	EA	7	6	6	6	25
628	6145	ELC SRV TY D 120/240 060(NS)SS(E)SP(O)	EA	1	1	1	1	4
680	6002	INSTALL HWY TRF SIG (ISOLATED)	EA	1	1	1	1	4
	*	CONTROLLER, FULL ACTUATED GROUND CABINET	EA	1	1	1	1	4
	*	CONTROLLER FOUNDATION, TRAFFIC SIGNAL	EA	1	1	1	1	4
	*	ROD, 5/8" X 10' COPPER GROUND (CONTROLLER ONLY)	EA	1	1	1	1	4
	*	SIGN, STREET NAME (QUINCY ST)	EA	2	2	2		6
	*	SIGN, STREET NAME (5TH ST)	EA	2				2
	*	SIGN, STREET NAME (11 ST)	EA		2			2
	*	SIGN, STREET NAME (16TH ST)	EA			2		2
	*	SIGN, STREET NAME (24TH ST)	EA				2	2
	*	SIGN, STREET NAME (DIMMITT ST)	EA				2	2
	*	DETECTOR UNIT (DUEL CHANNEL)	EA	1	1	1	1	4
	*	DETECTOR CARD RACK (8 SLOTS & 4 SLOTS)	EA	1	1	1	1	4
	*	GPS COMMUNICATIONS UNIT	EA	1	1	1	1	5
	*	18" CABINET BASE EXTENSION	EA	1	1	1	1	4
	*	BBU FOUNDATION	EA	1	1	1	1	5
680	6004	REMOVING TRAFFIC SIGNALS	EA	1	1	1	1	4
682	6001	VEH SIG SEC (12")LED(GRN)	EA	8	8	8	8	32
682	6002	VEH SIG SEC (12")LED(GRN ARW)	EA	4	4	2	2	12
682	6003	VEH SIG SEC (12")LED(YEL)	EA	8	8	8	8	32
682	6004	VEH SIG SEC (12")LED(YEL ARW)	EA	8	8	4	4	24
682	6005	VEH SIG SEC (12")LED(RED)	EA	8	8	8	8	32
682	6006	VEH SIG SEC (12")LED(RED ARW)	EA	4	4	2	2	12
682	6018	PED SIG SEC (LED) (COUNTDOWN)	EA	8	8	8	6	30
682	6054	BACKPLATE W/REF BRDR (3 SEC) (VENT) ALUM	EA	8	8	8	8	32
682	6055	BACKPLATE W/REF BRDR (4 SEC) (VENT) ALUM	EA	4	4	2	2	12
684	6009	TRF SIG CBL (TY A) (12 AWG) (4 CONDR)	LF	1100	985	860	1155	4100
684	6010	TRF SIG CBL (TY A) (12 AWG) (5 CONDR)	LF	180	172	180	204	736
684	6012	TRF SIG CBL (TY A) (12 AWG) (7 CONDR)	LF	1368	1245	1010	1295	4918
684	6017	TRF SIG CBL (TY A) (12 AWG) (12 CONDR)	LF	545	560	420	700	2225
686	6025	INS TRF SIG PL AM (S)1 ARM(24')	EA			1		1
686	6033	INS TRF SIG PL AM(S)1 ARM(32')	EA			1		1
686	6037	INS TRF SIG PL AM(S)1 ARM(36')	EA	1	2		1	4
686	6039	INS TRF SIG PL AM(S)1 ARM(36') LUM	EA	1	2	2	1	6
686	6041	INS TRF SIG PL AM(S)1 ARM(40')	EA	1				1
686	6043	INS TRF SIG PL AM(S)1 ARM(40') LUM	EA	1				1
686	6045	INS TRF SIG PL AM(S)1 ARM(44')	EA				1	1
686	6047	INS TRF SIG PL AM(S)1 ARM(44') LUM	EA				1	1
687	6001	PED POLE ASSEMBLY	EA	5	5	4	3	17
	**	SCREW-IN TYPE ANCHOR ASSEMBLY	EA	5	8	4	3	20
688	6001	PED DETECT PUSH BUTTON (APS)	EA	8	8	8	6	30
	***	SIGN, PEDESTRIAN PUSHBUTTON (SYMBOL TYPE) (R10-3e) (L)	EA	4	4	4	3	15
	***	SIGN, PEDESTRIAN PUSHBUTTON (SYMBOL TYPE) (R10-3e) (R)	EA	4	4	4	3	15
6058	6001	BBU SYSTEM (EXTERNAL BATT CABINET)	EA	1	1	1	1	4
6292	6004	RVDS(PRESENCE DET ONLY) (INSTALL ONLY)	EA	4	4	4	4	16
	****	POWER AND COMM CABLE	LF	545	470	430	680	2125
6292	6005	RVDS(ADVANCE DET ONLY) (INSTALL ONLY)	EA	4	2	2	2	10
	****	POWER AND COMM CABLE	LF	545	220	205	360	1

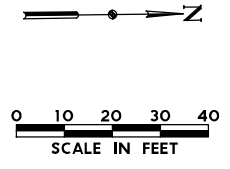


SH 194 FROM FM 3466 TO IH 27

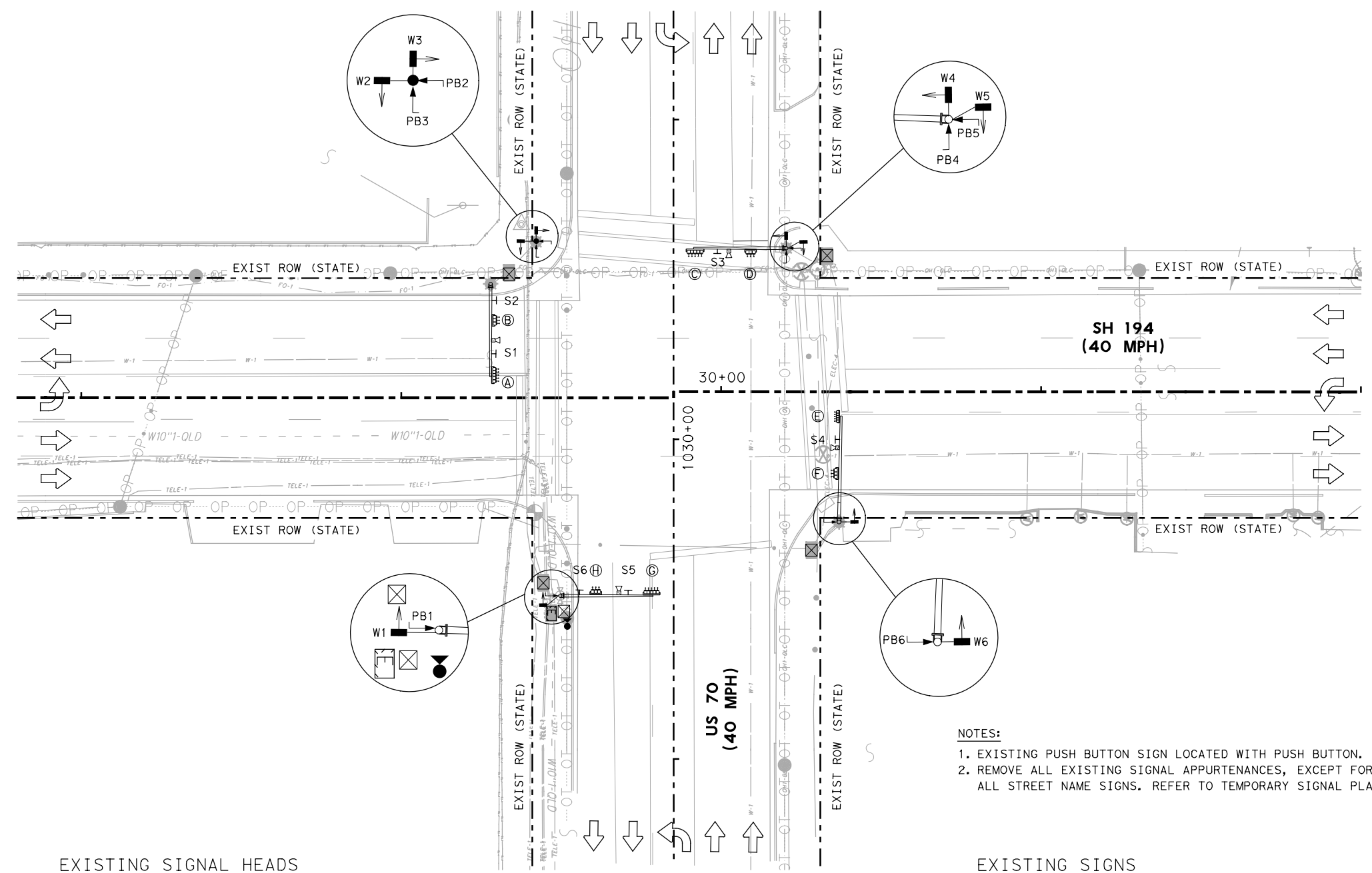
SIGNAL SUMMARY

FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	225
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 2/27/2023 TIME: 11:47:29 AM
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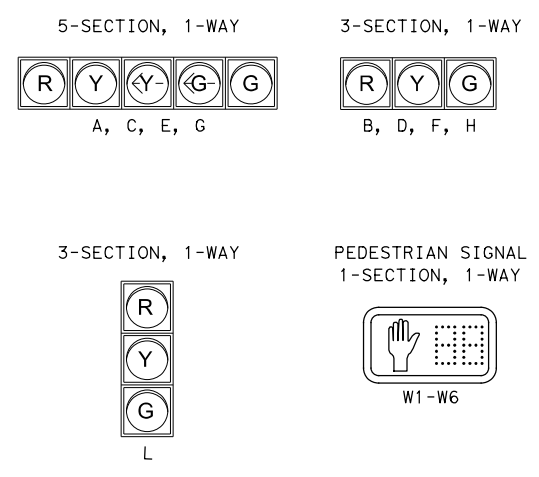


- LEGEND**
- DIRECTION OF TRAFFIC
 - EXISTING SERVICE METER
 - EXISTING SIGNAL CONTROLLER
 - EXISTING PEDESTRIAN POLE
 - EXISTING MAST ARM
 - EXISTING HORIZONTAL SIGNAL HEAD
 - EXISTING VERTICAL SIGNAL HEAD
 - EXISTING PEDESTRIAN SIGNAL HEAD
 - EXISTING PEDESTRIAN PUSH BUTTON
 - EXISTING MAST ARM MOUNTED SIGN
 - EXISTING VIDEO DETECTOR
 - EXISTING GROUND BOX

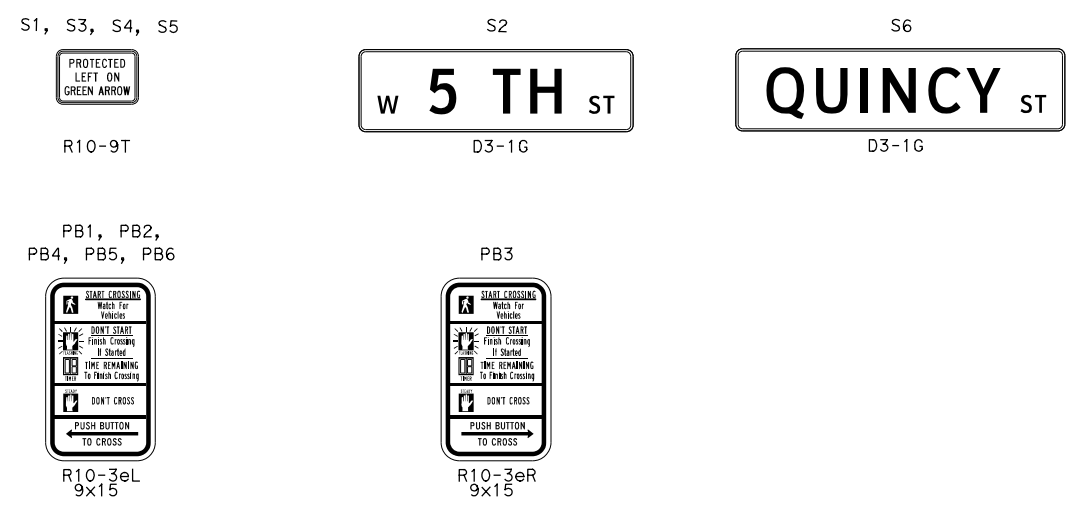


- NOTES:**
- EXISTING PUSH BUTTON SIGN LOCATED WITH PUSH BUTTON.
 - REMOVE ALL EXISTING SIGNAL APPURTENANCES, EXCEPT FOR ALL STREET NAME SIGNS. REFER TO TEMPORARY SIGNAL PLANS.

EXISTING SIGNAL HEADS



EXISTING SIGNS



ZAHIDUL Q. SIDDIQUE
 98635
 LICENSED PROFESSIONAL ENGINEER
 2/27/2023

NO.	DATE	REVISION	APPROVED

infraTECH
 Engineers & Innovators, LLC
 TBPE REGISTRATION NO. F-18368

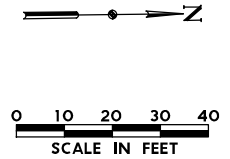
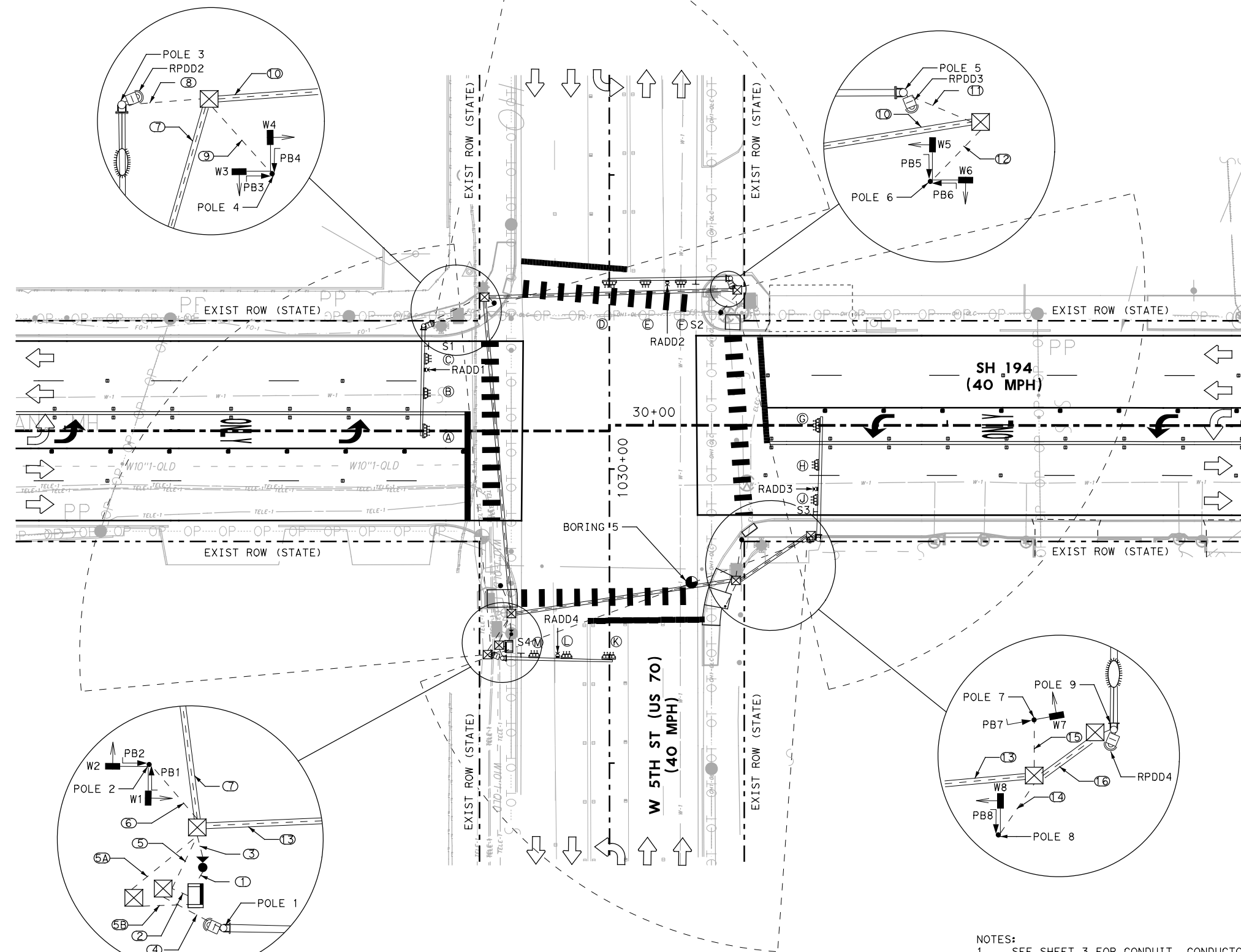
Texas Department of Transportation
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SH 194 FROM FM 3466 TO IH 27

SIGNAL CONDITION DIAGRAM
 SH 194 AT W 5TH ST/ US 70

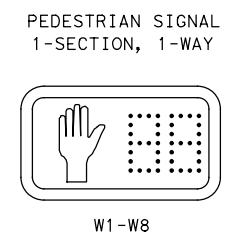
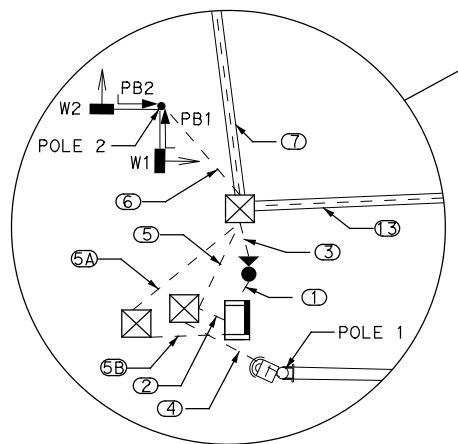
SCALE: 1"=40'		SHEET 1 OF 3	
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET	HIGHWAY NO. SH 194	
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 226
CONTROL 0439	SECTION 05	JOB 026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Arabinson DATE: 7/29/2024
 FILE: SH194_Proposed_Signal_I.dgn



LEGEND

- DIRECTION OF TRAFFIC
- BORING LOCATION
- PROP SERVICE METER
- PROP SIGNAL CONTROLLER
- PROP PEDESTRIAN POLE
- PROP MAST ARM
- PROP HORIZONTAL SIGNAL HEAD
- PROP PEDESTRIAN SIGNAL HEAD
- PROP PEDESTRIAN PUSH BUTTON
- PROP MAST ARM MOUNTED SIGN
- PROP ILLUMINATION ASSEMBLY
- PROP GROUND BOX
- PROP RADAR PRESENCE DETECTION DEVICE (RPDD)
- PROP RADAR ADVANCE DETECTION DEVICE (RADD)
- PROP CONDUIT (TRENCH)
- PROP CONDUIT (BORE)
- PROP RUN NUMBER
- PROP RADAR DETECTION ZONE



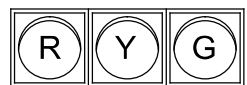
PROPOSED SIGNAL HEADS

4-SECTION, 1-WAY



A, D, G, K

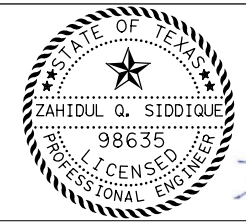
3-SECTION, 1-WAY



B, C, E, F
H, J, L, M

NOTES:

1. SEE SHEET 3 FOR CONDUIT, CONDUCTOR RUNS, ELECTRICAL SERVICE DATA, AND PROPOSED OVERHEAD SIGNS.
2. SIGNAL CONTROLLER IS SHOWN AT APPROXIMATE LOCATION. FINAL LOCATION MAY BE ADJUSTED BASED ON FILED CONDITION.
3. PEDESTRIAN SIGNALS AND PUSH BUTTONS SHALL BE ACCESSIBLE.
4. CONTRACTOR SHALL COORDINATE WITH OVERHEAD UTILITY COMPANIES FOR UTILITY ADJUSTMENTS WHERE POLES AND MAST ARMS DEEM IN CONFLICTS WITH OVERHEAD UTILITIES.



NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

TRAFFIC SIGNAL LAYOUT
SH 194 AT W 5TH ST/ US 70

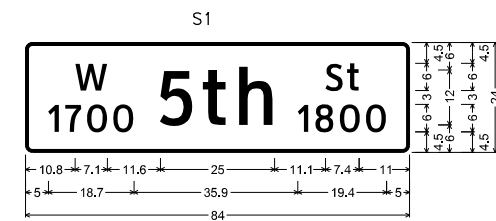
SCALE: 1"=40'			SHEET 2 OF 3
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:	
6	SEE TITLE SHEET	SH 194	
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	227
CONTROL:	SECTION:	JOB:	
0439	05	026	

ELECTRICAL SERVICE ID	ELECTRICAL SERVICE DESCRIPTION (SEE ED(5)-14)	SERVICE CONDUIT SIZE	SEIVICE CONDUCTORS NO./SIZE	SAFETY SWITCH AMPS	MAIN CKT. BRK. POLE/AMPS	TWO-POLE CONTRACTOR AMPS	PANELEB./LOADCENTER AMP RATING	BRANCH CIRCUIT ID	BRANCH CKT. BKR. POLE/AMPS	KVA LOAD
SH 194 AT W 5TH ST	TY D 120/240 060 (NS) SS (E) SP (O)	2"	3/#2	N/A	2P/60	N/A	100	SIG. CONTROLLER, LUMINAIRES	1P/50, 2P/15	<7.1

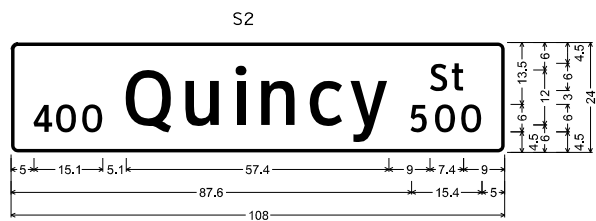
Run No.	LENGTH (LF)	CONDUIT (618)						CONDUCTORS (620)					CABLES (684)			RADAR (6292)	
		2" (SCHD 80)		3" (SCHD 80)		4" (SCHD 80)		ILLUMINATION		GROUND	POWER		PUSH BUTTON	PED SIGNAL	VEHICLE SIGNAL	RPDD	RADD
		6046 (TRENCH)	6047 (BORE)	6053 (TRENCH)	6054 (BORE)	6058 (TRENCH)	6059 (BORE)	6007 (#8 BARE)	6008 (#8 INSULATED)	6009 (#6 BARE)	6011 (#4 BARE)	6012 (#4 INSULATED)	6009 (#12/4C)	6012 (#12/7C)	6017 (#12/12C)	6004 (POWER & COMM)	6005 (POWER & COMM)
	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	
1	10	1								1	2						
2	5	1						2		1	2	8	8	2	1	1	
3	10	1						1	2								
4	10			1						1				1	1	1	
5	15							2		1		8	8	1			
5A	10			1						1				2	3	3	
5B	10			1						1				2	3	3	
6	15	1								1		2	2				
7	110		1				2	1	2	2		4	4	2	2	2	
8	25	1		1				1	2	1				1	1	1	
9	5	1								1		2	2				
10	90						1			1		2	2	1	1	1	
11	10			1						1				1	1	1	
12	15	1								1		2	2				
13	90		1					1	1	2		2	2	1	1	1	
14	15	1								1		1	1				
15	15	1								1		1	1				
16	35		1		1			1	2	1				1	1	1	
TOTAL		115	235	65	35	40	400	270	540	590	15	30	1060	1060	545	545	

NOTES:
1. RUN ILLUMINATION CONDUCTORS IN A SEPARATE 2" CONDUIT.
2. RADAR EQUIPMENT TO BE SUPPLIED BY TXDOT.

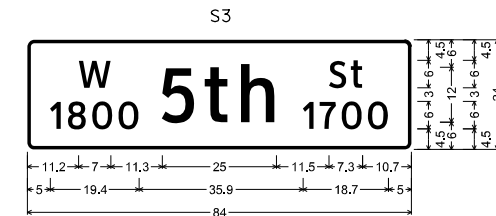
PROPOSED SIGNS



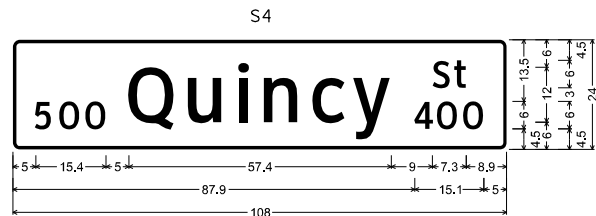
D3-1G; 1.5" Radius, 0.8" Border, White on, Green;
"W" ClearviewHwy-3-W; "1700" ClearviewHwy-3-W;
"5th" ClearviewHwy-3-W; "St" ClearviewHwy-3-W;
"1800" ClearviewHwy-3-W;



D3-1G; 1.5" Radius, 0.8" Border, White on, Green;
"400" ClearviewHwy-3-W; "Quincy" ClearviewHwy-3-W;
"St" ClearviewHwy-3-W; "500" ClearviewHwy-3-W;



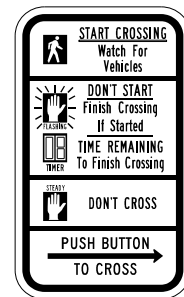
D3-1G; 1.5" Radius, 0.8" Border, White on, Green;
"W" ClearviewHwy-3-W; "1800" ClearviewHwy-3-W;
"5th" ClearviewHwy-3-W; "St" ClearviewHwy-3-W;
"1700" ClearviewHwy-3-W;



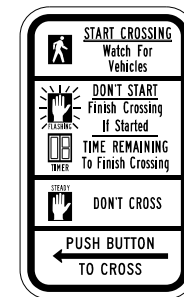
D3-1G; 1.5" Radius, 0.8" Border, White on, Green;
"500" ClearviewHwy-3-W; "Quincy" ClearviewHwy-3-W;
"St" ClearviewHwy-3-W; "400" ClearviewHwy-3-W;

POLE #	DESCRIPTION	FOUNDATION TYPE	FND LENGTH (LF)	#12/4C (LF)	#12/5C (LF)	#12/7C (LF)	#8 BARE (LF)	#8 INSULATED (LF)
POLE 1	36 MAST ARM	36-A	14		43	55		
POLE 2	PEDESTRIAN POLE	SCREW ANCHOR		10		20		
POLE 3	36 MAST ARM W/ LUM	36-A	14		43	55	30	60
POLE 4	PEDESTRIAN POLE	SCREW ANCHOR		10		20		
POLE 5	40 MAST ARM	36-B	16		47	59		
POLE 6	PEDESTRIAN POLE	SCREW ANCHOR		10		20		
POLE 7	PEDESTRIAN POLE	SCREW ANCHOR		5		10		
POLE 8	PEDESTRIAN POLE	SCREW ANCHOR		5		10		
POLE 9	40 MAST ARM W/ LUM	36-B	16		47	59	30	60

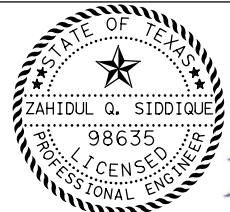
PB1, PB3, PB5, PB8 PB2, PB4, PB6, PB7



R10-3eR 9x15



R10-3eL 9x15



Zahidul Q. Siddique
7/29/2024

NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

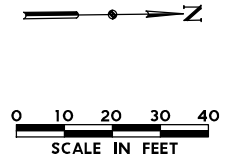
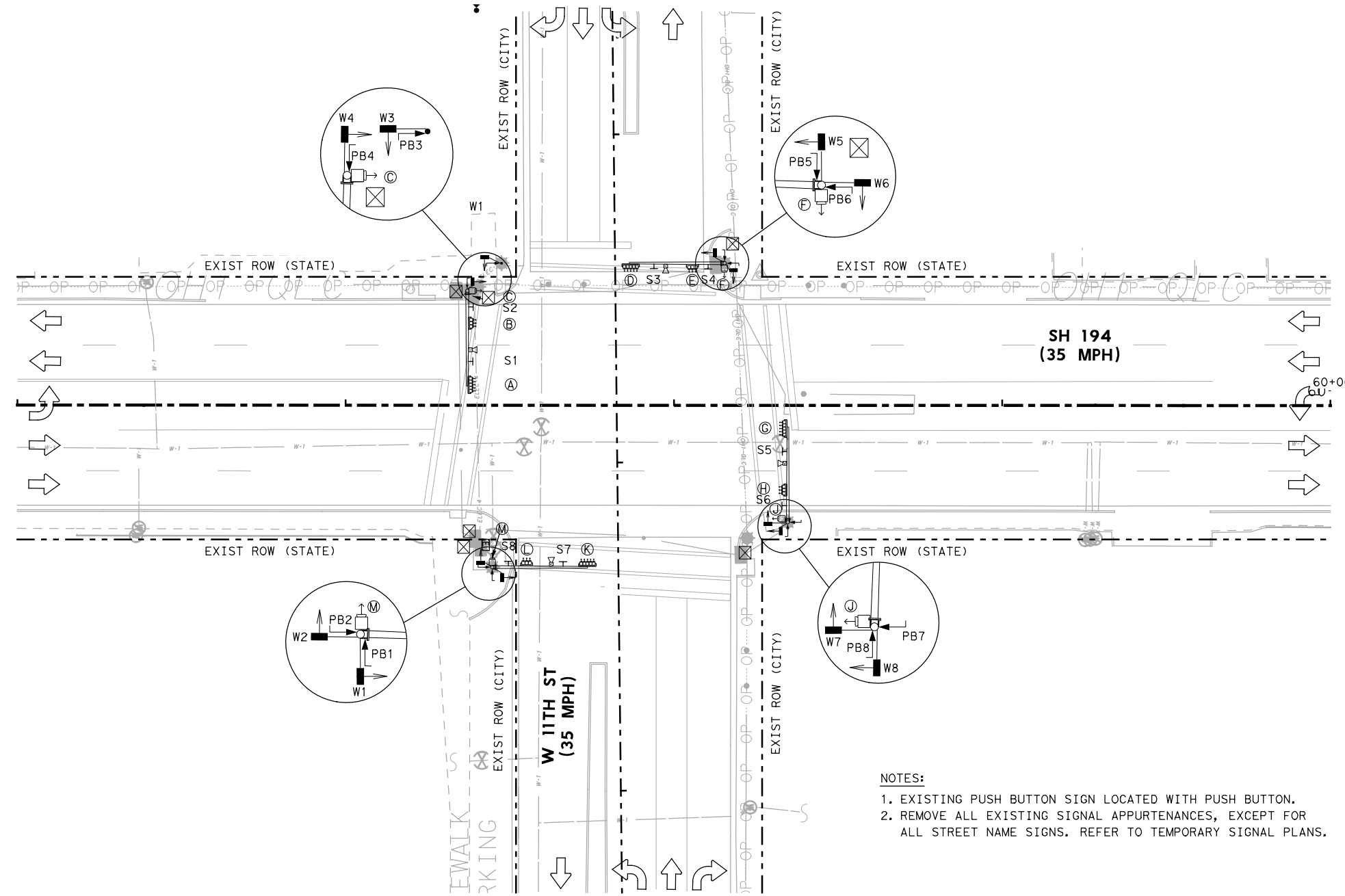
TRAFFIC SIGNAL LAYOUT DETAIL
SH 194 AT W 5TH ST/ US 70

SHEET 3 OF 3

FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026
		SHEET NO.
		228

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: SH194_Proposed_Signal.tbl
USER: Robinson DATE: 7/29/2024 TIME: 7:39:43 PM SCALE: 1/40,00025
FILE: SH194_Proposed_Signal_2.dgn

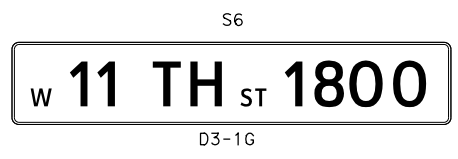
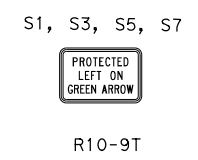
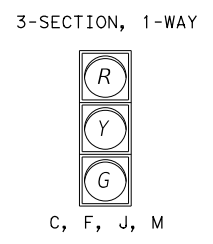
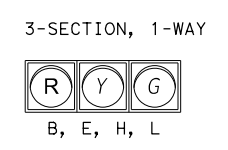
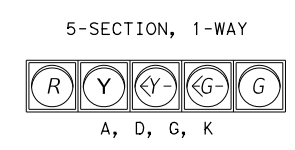
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 USER: Robinson DATE: 2/27/2023 TIME: 11:47:51 AM
 FILE: SH194_Signal_3.dgn



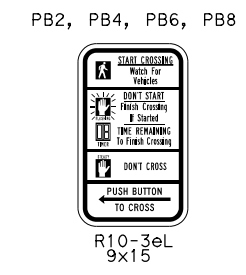
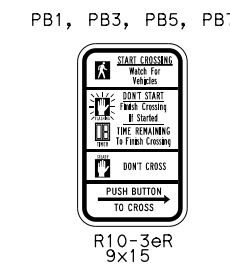
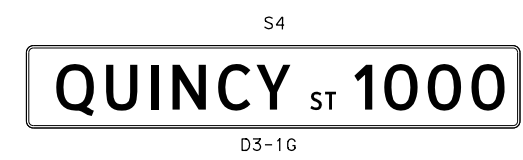
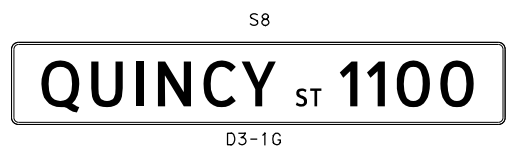
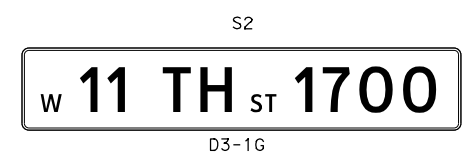
- LEGEND**
- DIRECTION OF TRAFFIC
 - EXISTING SERVICE METER
 - EXISTING SIGNAL CONTROLLER
 - EXISTING PEDESTRIAN POLE
 - EXISTING MAST ARM
 - EXISTING HORIZONTAL SIGNAL HEAD
 - EXISTING VERTICAL SIGNAL HEAD
 - EXISTING PEDESTRIAN SIGNAL HEAD
 - EXISTING PEDESTRIAN PUSH BUTTON
 - EXISTING MAST ARM MOUNTED SIGN
 - EXISTING VIDEO DETECTOR
 - EXISTING GROUND BOX

- NOTES:**
- EXISTING PUSH BUTTON SIGN LOCATED WITH PUSH BUTTON.
 - REMOVE ALL EXISTING SIGNAL APPURTENANCES, EXCEPT FOR ALL STREET NAME SIGNS. REFER TO TEMPORARY SIGNAL PLANS.

EXISTING SIGNAL HEADS



EXISTING SIGNS



Zahidul Q. Siddique
 LICENSED PROFESSIONAL ENGINEER
 98635
 2/27/2023

NO.	DATE	REVISION	APPROVED

infraTECH
 Engineers & Innovators, LLC
 TBPE REGISTRATION NO. F-18368

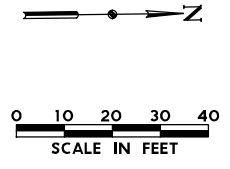
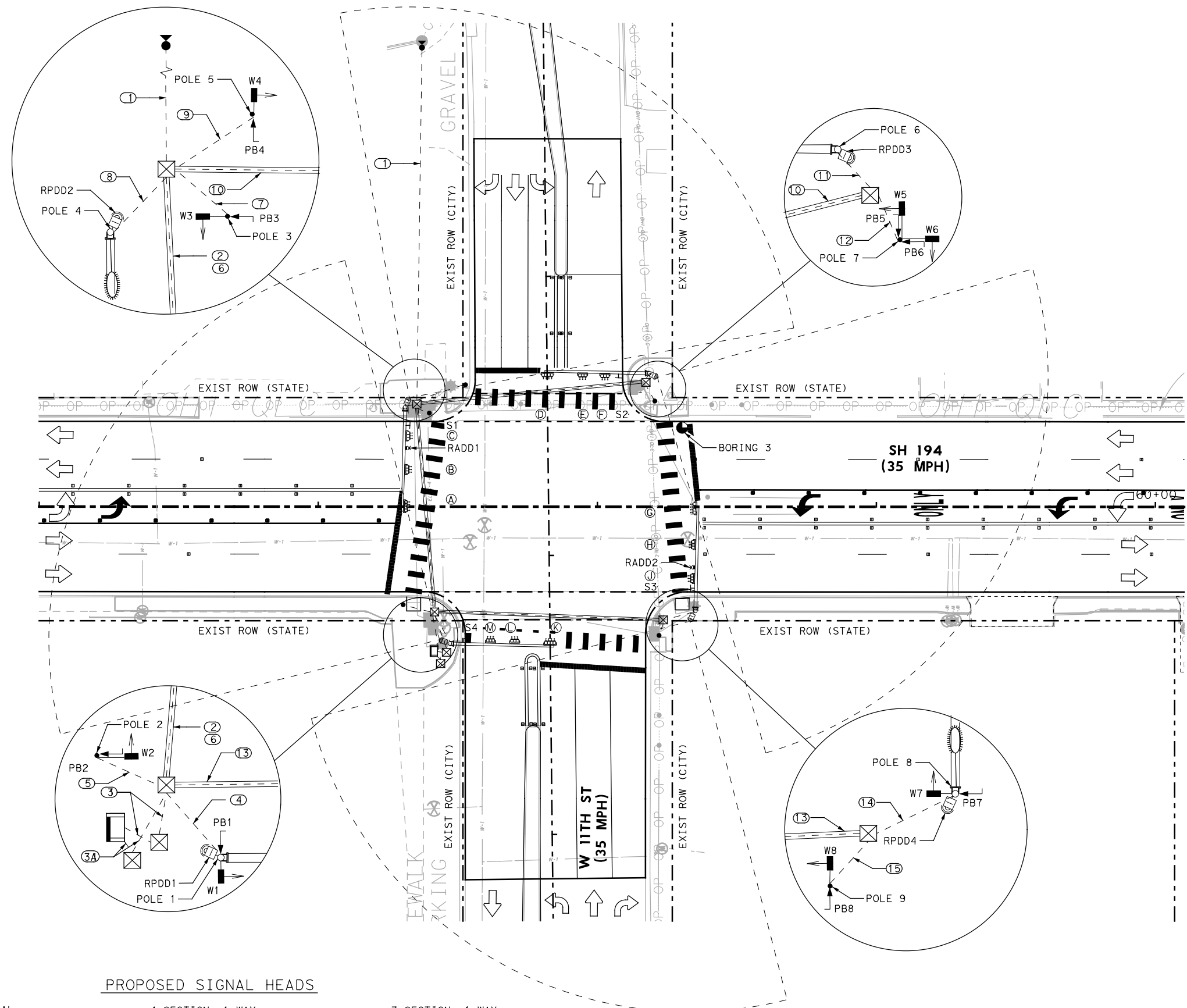
Texas Department of Transportation
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SH 194 FROM FM 3466 TO IH 27

SIGNAL CONDITION DIAGRAM
 SH 194 AT W 11TH ST

SCALE: 1"=40'		SHEET 1 OF 3	
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET	HIGHWAY NO. SH 194	
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 229
CONTROL 0439	SECTION 05	JOB 026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.plt
 USER: Robinson DATE: 7/29/2024 TIME: 7:39:56 PM
 FILE: SH194_Proposed_Signal_5.dgn

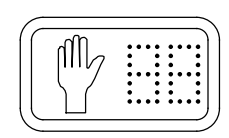


LEGEND

- DIRECTION OF TRAFFIC
- BORING LOCATION
- PROP SERVICE METER
- PROP SIGNAL CONTROLLER
- PROP PEDESTRIAN POLE
- PROP MAST ARM
- PROP HORIZONTAL SIGNAL HEAD
- PROP PEDESTRIAN SIGNAL HEAD
- PROP PEDESTRIAN PUSH BUTTON
- PROP MAST ARM MOUNTED SIGN
- PROP ILLUMINATION ASSEMBLY
- PROP GROUND BOX
- PROP RADAR PRESENCE DETECTION DEVICE (RPDD)
- PROP RADAR ADVANCE DETECTION DEVICE (RADD)
- PROP CONDUIT (TRENCH)
- PROP CONDUIT (BORE)
- PROP RUN NUMBER
- PROP RADAR DETECTION ZONE

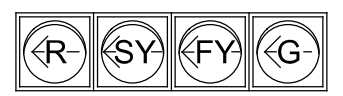
PROPOSED SIGNAL HEADS

PEDESTRIAN SIGNAL
 1-SECTION, 1-WAY



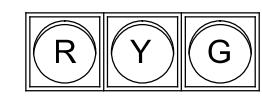
W1-W8

4-SECTION, 1-WAY



A, D, G, K

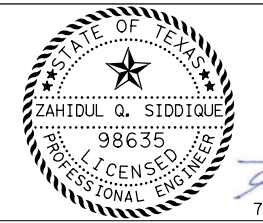
3-SECTION, 1-WAY



B, C, E, F
 H, J, L, M

NOTES:

1. SEE SHEET 3 FOR CONDUIT, CONDUCTOR RUNS, ELECTRICAL SERVICE DATA, AND PROPOSED OVERHEAD SIGNS.
2. SIGNAL CONTROLLER IS SHOWN AT APPROXIMATE LOCATION. FINAL LOCATION MAY BE ADJUSTED BASED ON FILED CONDITION.
3. PEDESTRIAN SIGNALS AND PUSH BUTTONS SHALL BE ACCESSIBLE.
4. CONTRACTOR SHALL COORDINATE WITH OVERHEAD UTILITY COMPANIES FOR UTILITY ADJUSTMENTS WHERE POLES AND MAST ARMS DEEM IN CONFLICTS WITH OVERHEAD UTILITIES.



NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

TRAFFIC SIGNAL LAYOUT
 SH 194 AT W 11TH ST

SCALE: 1"=40'			SHEET 2 OF 3
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	230
CONTROL	SECTION	JOB	
0439	05	026	

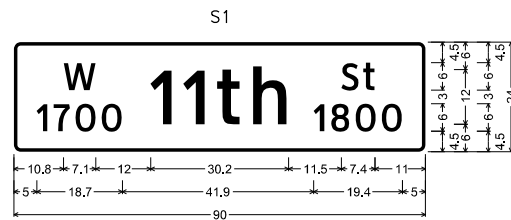
ELECTRICAL SERVICE DATA

ELECTRICAL SERVICE ID	ELECTRICAL SERVICE DESCRIPTION (SEE ED(5)-14)	SERVICE CONDUIT SIZE	SEIVICE CONDUCTORS NO./SIZE	SAFETY SWITCH AMPS	MAIN CKT. BRK. POLE/AMPS	TWO-POLE CONTRACTOR AMPS	PANELEB./LOADCENTER AMP RATING	BRANCH CIRCUIT ID	BRANCH CKT. BKR. POLE/AMPS	KVA LOAD
SH 194 AT W 11TH ST	TY D 120/240 060 (NS) SS (E) SP (O)	2"	3/#2	N/A	2P/60	N/A	100	SIG. CONTROLLER, LUMINAIRES	1P/50, 2P/15	<7.1

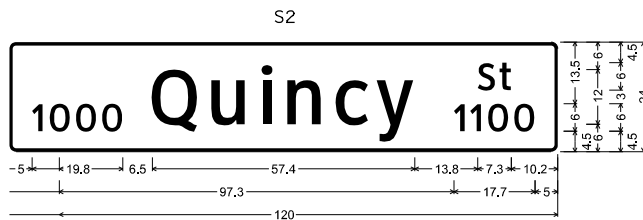
Run No.	LENGTH (LF)	CONDUIT (618)				CONDUCTORS (620)						CABLES (684)			RADAR (6292)		
		2" (SCHD 80)		3" (SCHD 80)		4" (SCHD 80)		ILLUMINATION		GROUND	POWER		PUSH BUTTON	PED SIGNAL	VEHICLE SIGNAL	RPDD	RADD
		6046 (TRENCH)	6047 (BORE)	6053 (TRENCH)	6054 (BORE)	6058 (TRENCH)	6059 (BORE)	6007 (#8 BARE)	6008 (#8 INSULATED)	6009 (#6 BARE)	6011 (#4 BARE)	6012 (#4 INSULATED)	6009 (#12/4C)	6012 (#12/7C)	6017 (#12/12C)	6004 (POWER & COMM)	6005 (POWER & COMM)
	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	
1	130	2						1	2		1	2					
2	80		2					1	2	2	1	2					
3	20			1				1		2	1	2	8	8	2		
3A	20							1							4	2	
4	15			1				1					1	1	1		
5	15	1						1					1	1			
6	80							2		2			4	4	2	1	
7	10	1						1					1	1			
8	10	1		1				1	2	1	1	2			1	1	
9	20	1						1					1	1			
10	90							1					2	2	1	1	
11	10			1				1							1		
12	10	1						1					2	2			
13	90		1					1	2	2			2	2	2	1	
14	15	1						1	2	1			1	1	1	1	
15	10	1						1					1	1			
TOTAL		350	250	55		70	340	325	650	765	240	480	945	945	560	470	220

NOTES:
 1. RUN ILLUMINATION CONDUCTORS IN A SEPARATE 2" CONDUIT.
 2. RADAR EQUIPMENT TO BE SUPPLIED BY TXDOT.

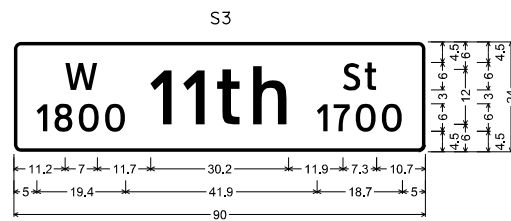
PROPOSED SIGNS



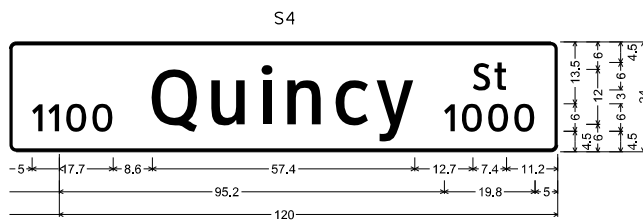
D3-1G; 1.5" Radius, 0.8" Border, White on, Green;
 "W" ClearviewHwy-3-W; "1700" ClearviewHwy-3-W;
 "11th" ClearviewHwy-3-W; "St" ClearviewHwy-3-W;
 "1800" ClearviewHwy-3-W;



D3-1G; 1.5" Radius, 0.8" Border, White on, Green;
 "1000" ClearviewHwy-3-W; "Quincy" ClearviewHwy-3-W;
 "St" ClearviewHwy-3-W; "1100" ClearviewHwy-3-W;



D3-1G; 1.5" Radius, 0.8" Border, White on, Green;
 "W" ClearviewHwy-3-W; "1800" ClearviewHwy-3-W;
 "11th" ClearviewHwy-3-W; "St" ClearviewHwy-3-W;
 "1700" ClearviewHwy-3-W;

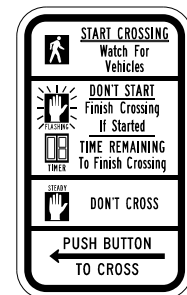


D3-1G; 1.5" Radius, 0.8" Border, White on, Green;
 "1100" ClearviewHwy-3-W; "Quincy" ClearviewHwy-3-W;
 "St" ClearviewHwy-3-W; "1000" ClearviewHwy-3-W;

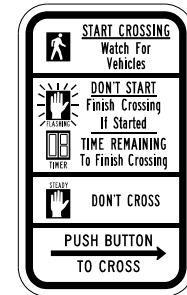
POLE #	DESCRIPTION	FOUNDATION TYPE	FND LENGTH (LF)	#12/4C (LF)	#12/5C (LF)	#12/7C (LF)	#8 BARE (LF)	#8 INSULATED (LF)
POLE 1	36' MAST ARM	36-A	12	5	43	65		
POLE 2	PEDESTRIAN POLE	SCREW ANCHOR		5		10		
POLE 3	PEDESTRIAN POLE	SCREW ANCHOR		5		10		
POLE 4	36' MAST ARM W/ LUM	36-A	12		43	55	30	60
POLE 5	PEDESTRIAN POLE	SCREW ANCHOR		5		10		
POLE 6	36' MAST ARM	36-A	12		43	55		
POLE 7	PEDESTRIAN POLE	SCREW ANCHOR		10		20		
POLE 8	36' MAST ARM W/ LUM	36-A	12	5	43	65	30	60
POLE 9	PEDESTRIAN POLE	SCREW ANCHOR		5		10		

PB1, PB3, PB6, PB8

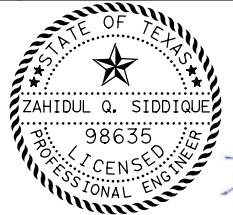
PB2, PB4, PB5, PB7



R10-3eL 9x15



R10-3eR 9x15



Zahidul Q. Siddique
 7/29/2024

NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

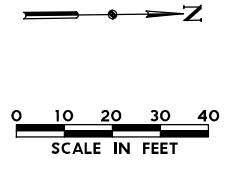
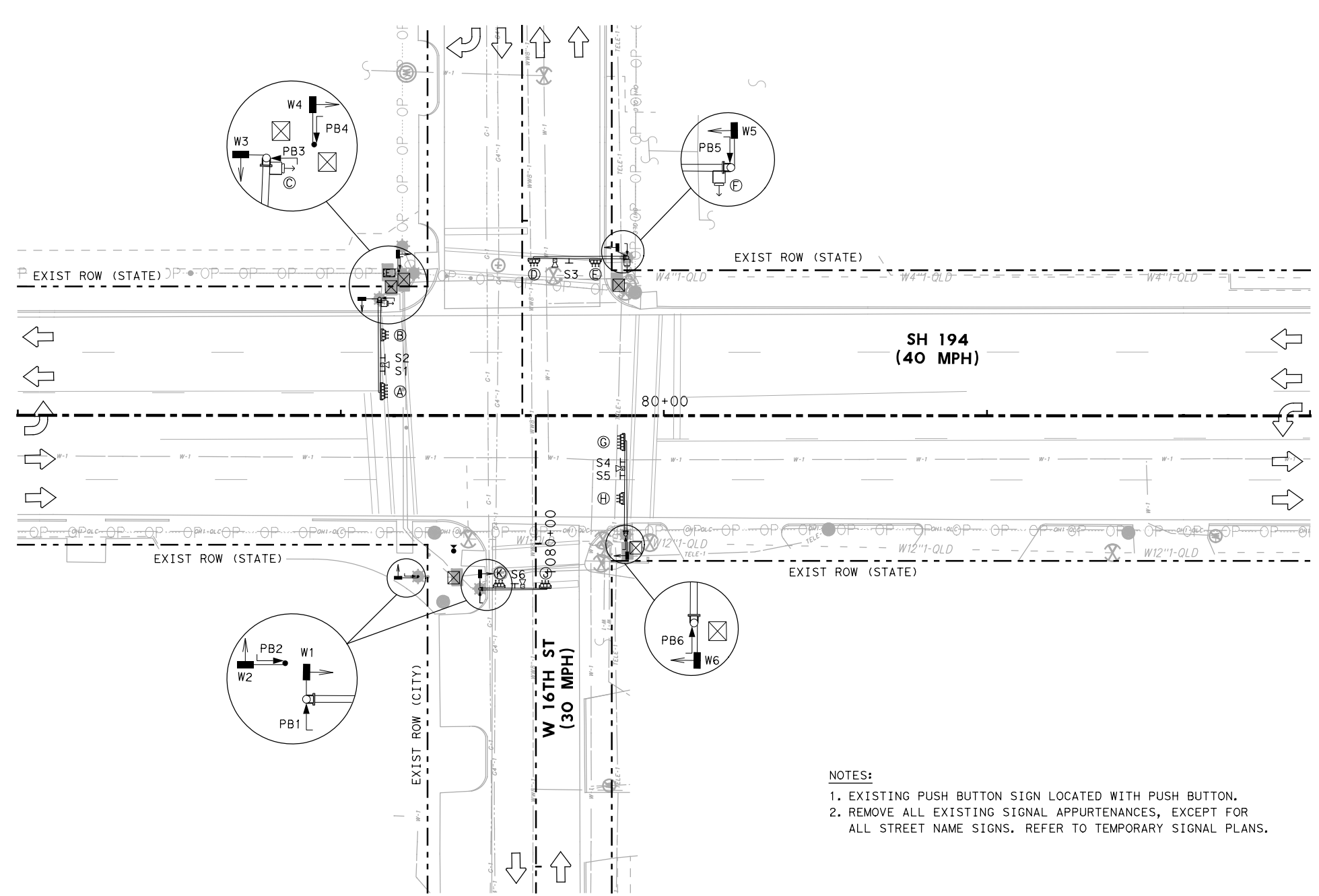
TRAFFIC SIGNAL LAYOUT DETAIL
 SH 194 AT W 11TH ST

SHEET 3 OF 3

FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	231
CONTROL	SECTION	JOB	
0439	05	026	

PLT DRIVER: TXDOT_PDF_BM_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:40:02 PM
 FILE: SH194_Proposed_Signal_6.dgn

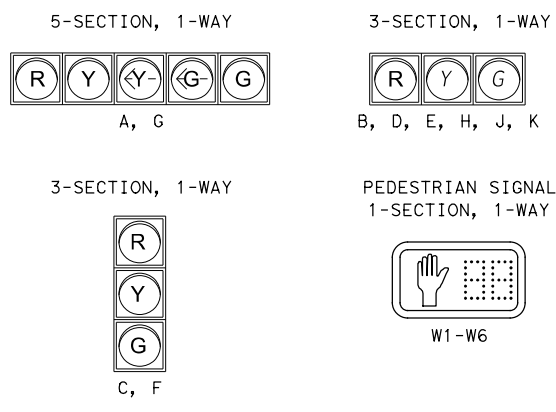
PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 2/27/2023 TIME: 11:46:14 AM
 FILE: SH194_Signal_4.dgn



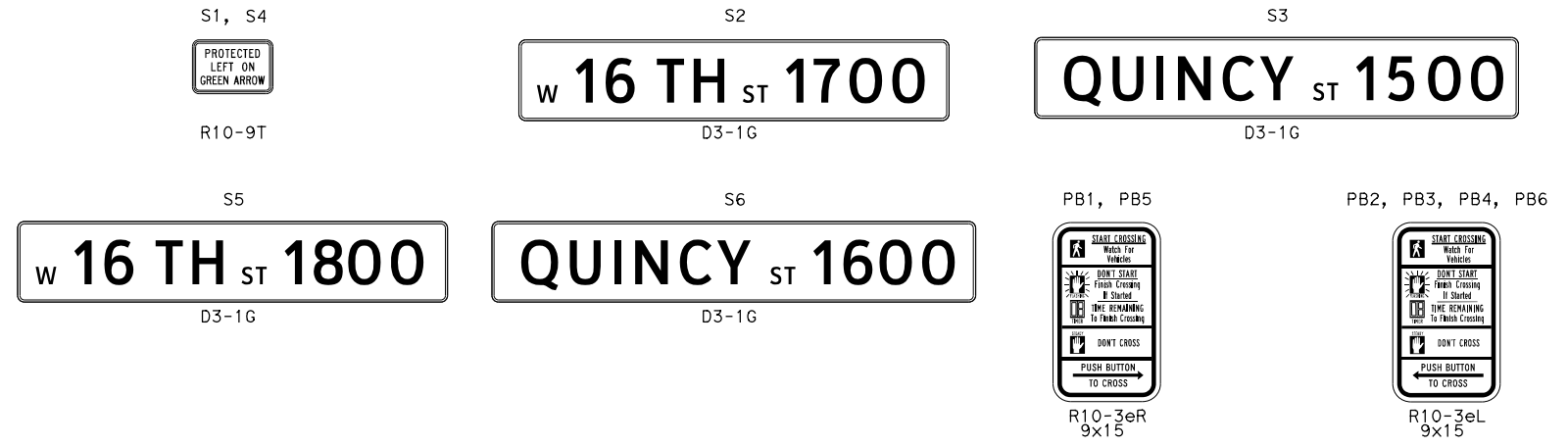
- LEGEND**
- DIRECTION OF TRAFFIC
 - EXISTING SERVICE METER
 - EXISTING SIGNAL CONTROLLER
 - EXISTING PEDESTRIAN POLE
 - EXISTING MAST ARM
 - EXISTING HORIZONTAL SIGNAL HEAD
 - EXISTING VERTICAL SIGNAL HEAD
 - EXISTING PEDESTRIAN SIGNAL HEAD
 - EXISTING PEDESTRIAN PUSH BUTTON
 - EXISTING MAST ARM MOUNTED SIGN
 - EXISTING VIDEO DETECTOR
 - EXISTING GROUND BOX

- NOTES:**
1. EXISTING PUSH BUTTON SIGN LOCATED WITH PUSH BUTTON.
 2. REMOVE ALL EXISTING SIGNAL APPURTENANCES, EXCEPT FOR ALL STREET NAME SIGNS. REFER TO TEMPORARY SIGNAL PLANS.

EXISTING SIGNAL HEADS



EXISTING SIGNS



ZAHIDUL Q. SIDDIQUE
 98635
 LICENSED PROFESSIONAL ENGINEER
 2/27/2023

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infraTECH
 Engineers & Innovators, LLC
 TBPE REGISTRATION NO. F-18368

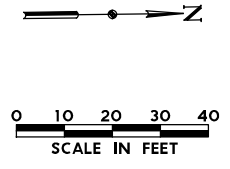
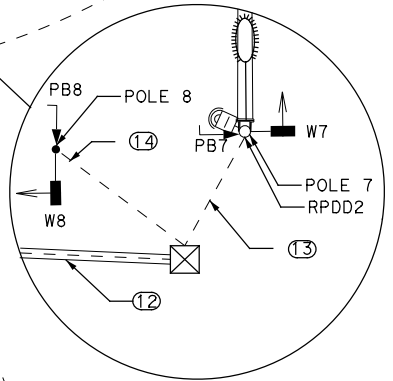
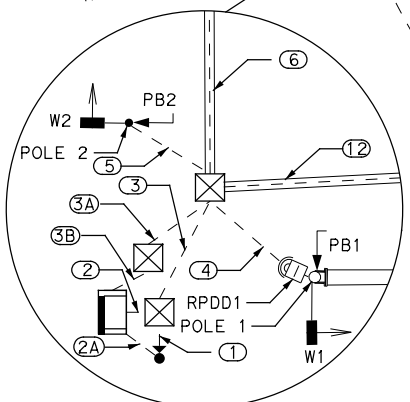
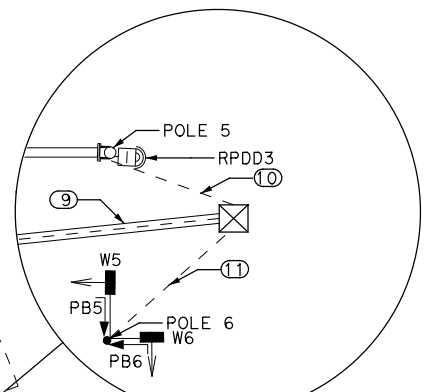
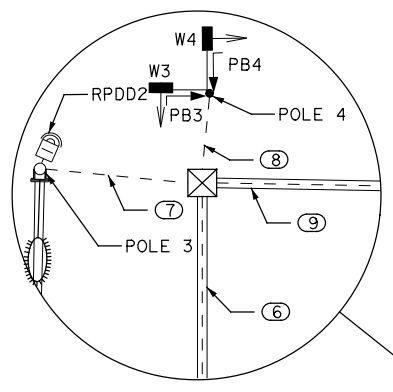
Texas Department of Transportation
 © 2023

SH 194 FROM FM 3466 TO IH 27

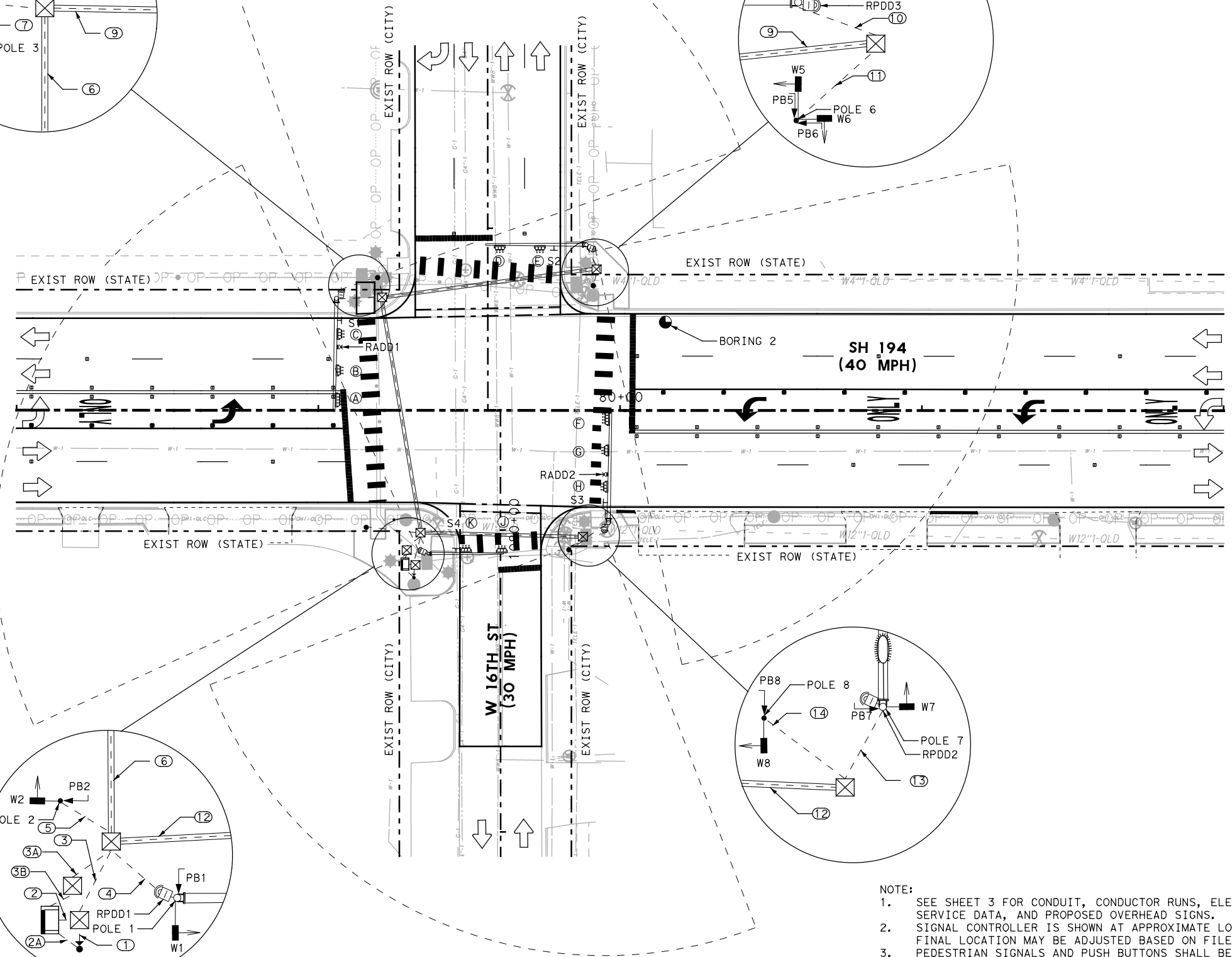
SIGNAL CONDITION DIAGRAM
 SH 194 AT W 16TH ST

SCALE: 1"=40'		SHEET 1 OF 3	
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	232
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:40:12 PM
 FILE: SH194_Proposed_Signal_T.dgn

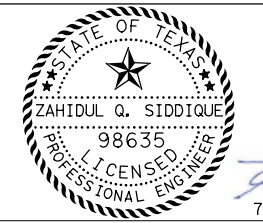
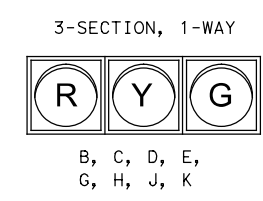
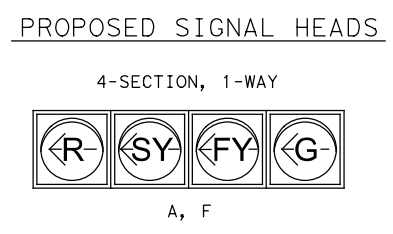
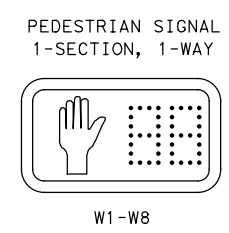


- LEGEND**
- DIRECTION OF TRAFFIC
 - BORING LOCATION
 - PROP SERVICE METER
 - PROP SIGNAL CONTROLLER
 - PROP PEDESTRIAN POLE
 - PROP MAST ARM
 - PROP HORIZONTAL SIGNAL HEAD
 - PROP PEDESTRIAN SIGNAL HEAD
 - PROP PEDESTRIAN PUSH BUTTON
 - PROP MAST ARM MOUNTED SIGN
 - PROP ILLUMINATION ASSEMBLY
 - PROP GROUND BOX
 - PROP RADAR PRESENCE DETECTION DEVICE (RPDD)
 - PROP RADAR ADVANCE DETECTION DEVICE (RADD)
 - PROP CONDUIT (TRENCH)
 - PROP CONDUIT (BORE)
 - PROP RUN NUMBER
 - PROP RADAR DETECTION ZONE



NOTE:

1. SEE SHEET 3 FOR CONDUIT, CONDUCTOR RUNS, ELECTRICAL SERVICE DATA, AND PROPOSED OVERHEAD SIGNS.
2. SIGNAL CONTROLLER IS SHOWN AT APPROXIMATE LOCATION. FINAL LOCATION MAY BE ADJUSTED BASED ON FILED CONDITION.
3. PEDESTRIAN SIGNALS AND PUSH BUTTONS SHALL BE ACCESSIBLE.
4. CONTRACTOR SHALL COORDINATE WITH OVERHEAD UTILITY COMPANIES FOR UTILITY ADJUSTMENTS WHERE POLES AND MAST ARMS DEEM IN CONFLICTS WITH OVERHEAD UTILITIES.



Zahidul Q. Siddique
7/29/2024

NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

TRAFFIC SIGNAL LAYOUT
SH 194 AT W 16TH ST

SCALE: 1"=40' SHEET 2 OF 3

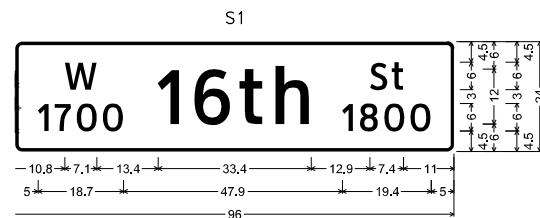
FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	233
CONTROL	SECTION	JOB	
0439	05	026	

ELECTRICAL SERVICE DATA										
ELECTRICAL SERVICE ID	ELECTRICAL SERVICE DESCRIPTION (SEE ED(5)-14)	SERVICE CONDUIT SIZE	SEIVICE CONDUCTORS NO./SIZE	SAFETY SWITCH AMPS	MAIN CKT. BRK. POLE/AMPS	TWO-POLE CONTRACTOR AMPS	PANLEB./LOADCENTER AMP RATING	BRANCH CIRCUIT ID	BRANCH CKT. BKR. POLE/AMPS	KVA LOAD
SH 194 AT W 16TH ST	TY D 120/240 060 (NS) SS (E) SP (O)	2"	3/#2	N/A	2P/60	N/A	100	SIG. CONTROLLER, LUMINAIRES	1P/50, 2P/15	<7.1

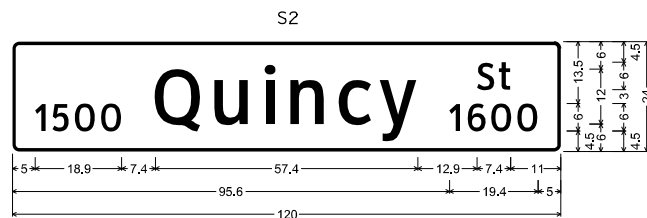
Run No.	LENGTH	CONDUIT (618)						CONDUCTORS (620)					CABLES (684)			RADAR (6292)	
		2" (SCHD 80)		3" (SCHD 80)		4" (SCHD 80)		ILLUMINATION		GROUND	POWER		PUSH BUTTON	PED SIGNAL	VEHICLE SIGNAL	RPDD	RADD
		6046 (TRENCH)	6047 (BORE)	6053 (TRENCH)	6054 (BORE)	6058 (TRENCH)	6059 (BORE)	6007 (#8 BARE)	6008 (#8 INSULATED)	6009 (#6 BARE)	6011 (#4 BARE)	6012 (#4 INSULATED)	6009 (#12/4C)	6012 (#12/7C)	6017 (#12/12C)	6004 (POWER & COMM)	6005 (POWER & COMM)
		EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
1	5	1					1	2									
2	5					1			1			8	8	2			
2A	10	1								1	2						
3	15	1				1	2	2				8	8	2			
3A	15			1				1						2	4	2	
3B	15			1				1						2	4	2	
4	10					1			1			1	1	1	1		
5	10	1						1				1	1				
6	80		1				2	1	2	2		4	4	2	2	1	
7	20	1		1				1	2	1				1	1	1	
8	10	1						1				2	2				
9	75						1		1			2	2	1	1		
10	10			1				1						1	1		
11	10	1						1				2	2				
12	55		1				1	1	2	1		2	2	1	1	1	
13	10	1				1		1	2	1		1	1	1	1	1	
14	10	1						1				1	1		1		
TOTAL		100	135	60	0	40	290	185	370	445	10	20	820	820	420	430	205

NOTES:
1. RUN ILLUMINATION CONDUCTORS IN A SEPARATE 2" CONDUIT.
2. RADAR EQUIPMENT TO BE SUPPLIED BY TXDOT.

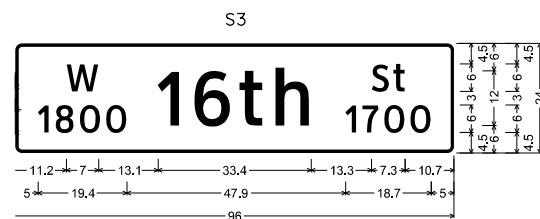
PROPOSED SIGNS



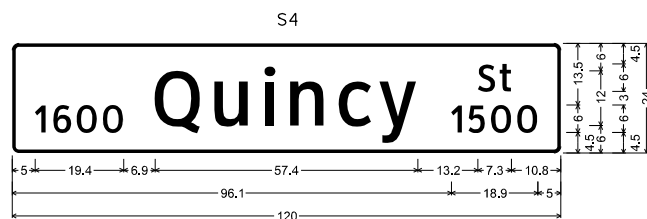
D3-1G; 1.5" Radius, 0.8" Border, White on, Green;
"W" ClearviewHwy-3-W; "1700" ClearviewHwy-3-W;
"16th" ClearviewHwy-3-W; "St" ClearviewHwy-3-W;
"1800" ClearviewHwy-3-W;



D3-1G; 1.5" Radius, 0.8" Border, White on, Green;
"1500" ClearviewHwy-3-W; "Quincy" ClearviewHwy-3-W;
"St" ClearviewHwy-3-W; "1600" ClearviewHwy-3-W;



D3-1G; 1.5" Radius, 0.8" Border, White on, Green;
"W" ClearviewHwy-3-W; "1800" ClearviewHwy-3-W;
"16th" ClearviewHwy-3-W; "St" ClearviewHwy-3-W;
"1700" ClearviewHwy-3-W;

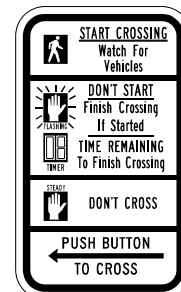


D3-1G; 1.5" Radius, 0.8" Border, White on, Green;
"1600" ClearviewHwy-3-W; "Quincy" ClearviewHwy-3-W;
"St" ClearviewHwy-3-W; "1500" ClearviewHwy-3-W;

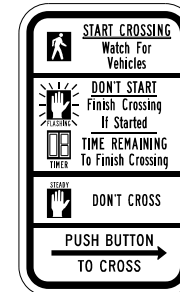
POLE/ MAST ARM DETAILS								
POLE #	DESCRIPTION	FOUNDATION TYPE	FND LENGTH (LF)	#12/4C (LF)	#12/5C (LF)	#12/7C (LF)	#8 BARE (LF)	#8 INSULATED (LF)
POLE 1	24' MAST ARM	36-A	12	5	43	10		
POLE 2	PEDESTRIAN POLE	SCREW ANCHOR		5		10		
POLE 3	36' MAST ARM W/ LUM	36-A	12		43	55	30	60
POLE 4	PEDESTRIAN POLE	SCREW ANCHOR		10		20		
POLE 5	32' MAST ARM	36-A	12		51			
POLE 6	PEDESTRIAN POLE	SCREW ANCHOR		10		20		
POLE 7	36' MAST ARM W/ LUM	36-A	12	5	43	65	30	60
POLE 8	PEDESTRIAN POLE	SCREW ANCHOR		5		10		

PB1, PB4, PB6, PB8

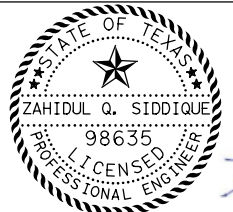
PB2, PB3, PB5, PB7



R10-3eL 9x15



R10-3eR 9x15



Z. Siddique
7/29/2024

NO.	DATE	REVISION	APPROVED



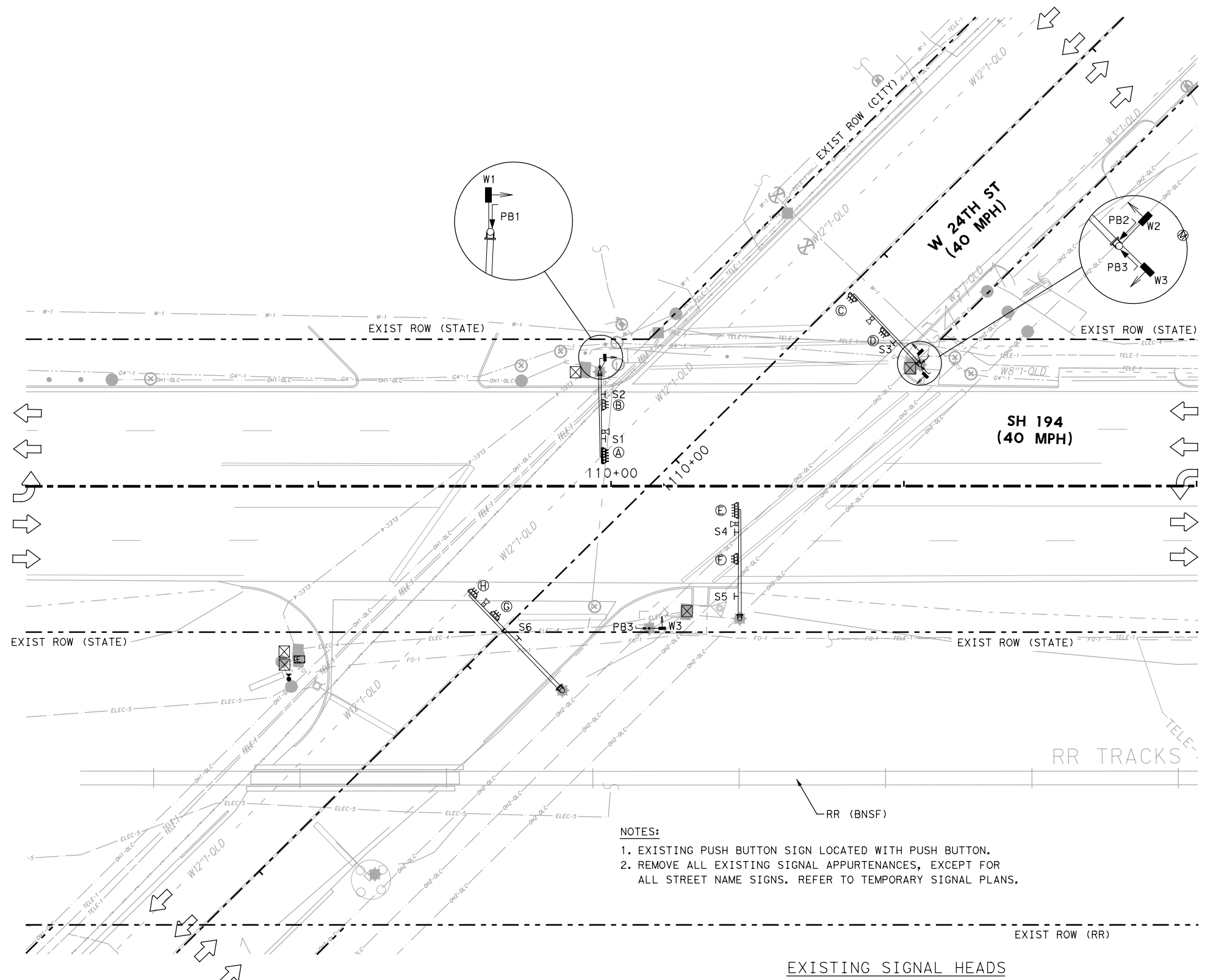
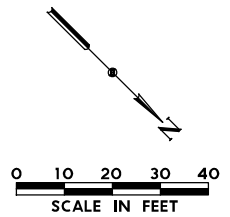
SH 194 FROM FM 3466 TO IH 27

TRAFFIC SIGNAL LAYOUT DETAIL
SH 194 AT W 16TH ST

SHEET 3 OF 3			
FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	234
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.plt;g PENTABLE: SH194_Proposed_Signal.tbl
USER: Robinson DATE: 7/29/2024 TIME: 7:40:18 PM SCALE: 1/40,000
FILE: SH194_Proposed_Signal_8.dgn

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Arabinson DATE: 2/27/2023 TIME: 11:48:40 AM
 FILE: SH194_Signal_5.dgn



- LEGEND**
- DIRECTION OF TRAFFIC
 - EXISTING SERVICE METER
 - EXISTING SIGNAL CONTROLLER
 - EXISTING PEDESTRIAN POLE
 - EXISTING MAST ARM
 - EXISTING HORIZONTAL SIGNAL HEAD
 - EXISTING VERTICAL SIGNAL HEAD
 - EXISTING PEDESTRIAN SIGNAL HEAD
 - EXISTING PEDESTRIAN PUSH BUTTON
 - EXISTING MAST ARM MOUNTED SIGN
 - EXISTING VIDEO DETECTOR
 - EXISTING GROUND BOX

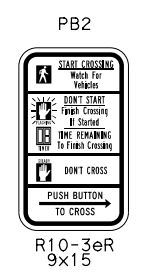
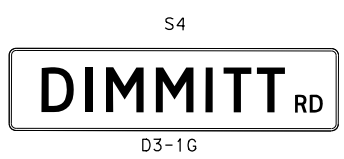
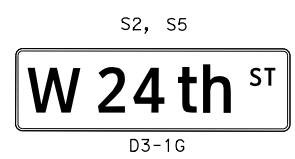
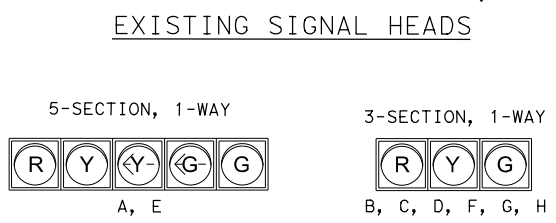
NOTES:
 1. EXISTING PUSH BUTTON SIGN LOCATED WITH PUSH BUTTON.
 2. REMOVE ALL EXISTING SIGNAL APPURTENANCES, EXCEPT FOR ALL STREET NAME SIGNS. REFER TO TEMPORARY SIGNAL PLANS.

NO.	DATE	REVISION	APPROVED

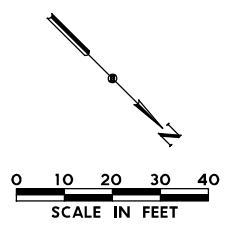
SH 194 FROM FM 3466 TO IH 27
 SIGNAL CONDITION DIAGRAM
 SH 194 AT W 24TH ST

SCALE: 1"=40' SHEET 1 OF 3

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	235
CONTROL	SECTION	JOB	
0439	05	026	

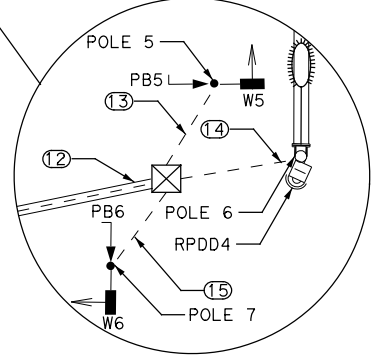
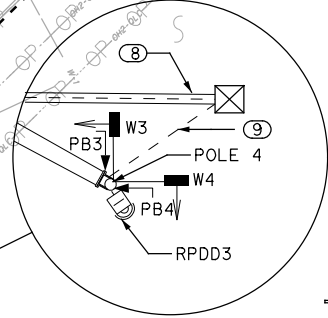
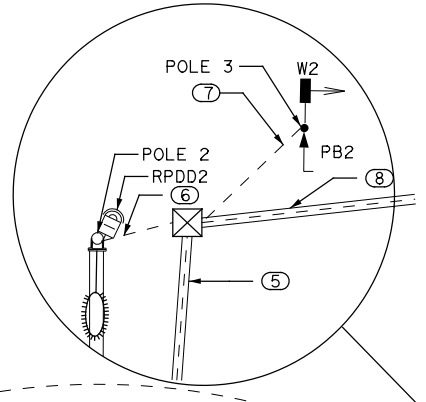
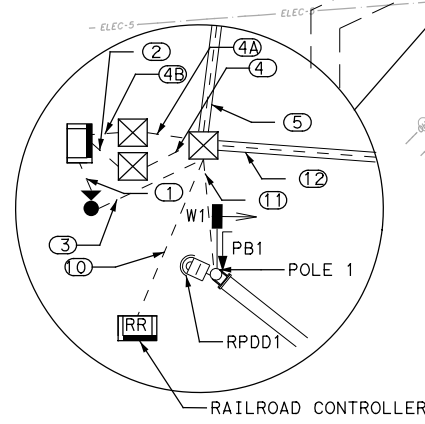
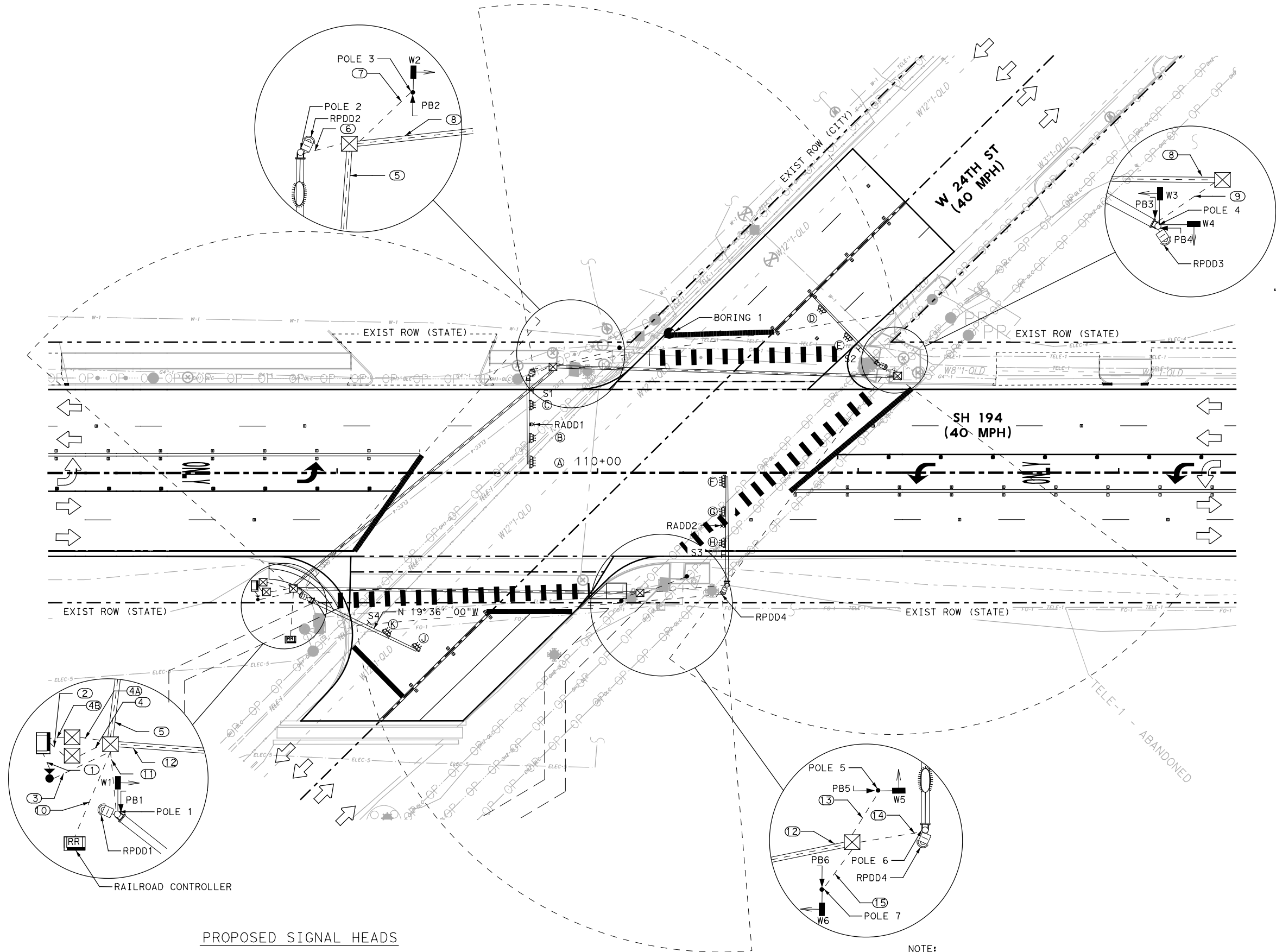


PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:40:28 PM SCALE: 1/40
 FILE: SH194_Proposed_Signal_9.dgn

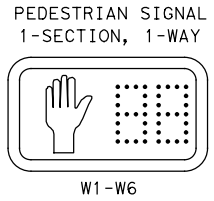
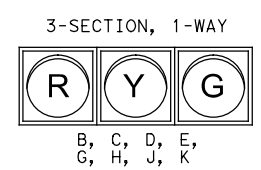
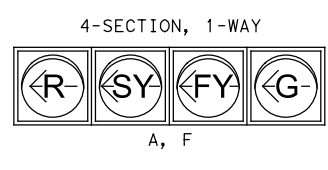


LEGEND

- DIRECTION OF TRAFFIC
- BORING LOCATION
- PROP SERVICE METER
- EXISTING RAILROAD CONTROLLER
- PROP SIGNAL CONTROLLER
- PROP PEDESTRIAN POLE
- PROP MAST ARM
- PROP HORIZONTAL SIGNAL HEAD
- PROP PEDESTRIAN SIGNAL HEAD
- PROP PEDESTRIAN PUSH BUTTON
- PROP MAST ARM MOUNTED SIGN
- PROP ILLUMINATION ASSEMBLY
- PROP GROUND BOX
- PROP RADAR PRESENCE DETECTION DEVICE (RPDD)
- PROP RADAR ADVANCE DETECTION DEVICE (RADD)
- PROP CONDUIT (TRENCH)
- PROP CONDUIT (BORE)
- PROP RUN NUMBER
- PROP RADAR DETECTION ZONE



PROPOSED SIGNAL HEADS



- NOTE:**
- SEE SHEET 3 FOR CONDUIT, CONDUCTOR RUNS, ELECTRICAL SERVICE DATA, AND PROPOSED OVERHEAD SIGNS.
 - SIGNAL CONTROLLER IS SHOWN AT APPROXIMATE LOCATION. FINAL LOCATION MAY BE ADJUSTED BASED ON FILED CONDITION.
 - PEDESTRIAN SIGNALS AND PUSH BUTTONS SHALL BE ACCESSIBLE.
 - CONTRACTOR SHALL COORDINATE WITH OVERHEAD UTILITY COMPANIES FOR UTILITY ADJUSTMENTS WHERE POLES AND MAST ARMS DEEM IN CONFLICTS WITH OVERHEAD UTILITIES.

NO.	DATE	REVISION	APPROVED

SH 194 FROM FM 3466 TO IH 27

**TRAFFIC SIGNAL LAYOUT
SH 194 AT W 24TH ST**

SCALE: 1"=40' SHEET 2 OF 3

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	236
CONTROL	SECTION	JOB	
0439	05	026	

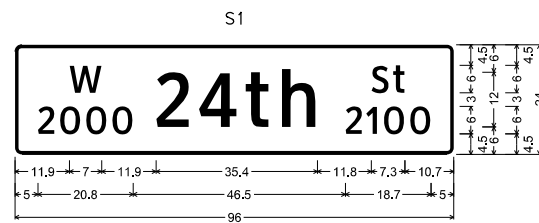
ELECTRICAL SERVICE DATA

ELECTRICAL SERVICE ID	ELECTRICAL SERVICE DESCRIPTION (SEE ED(5)-14)	SERVICE CONDUIT SIZE	SEIVICE CONDUCTORS NO./SIZE	SAFETY SWITCH AMPS	MAIN CKT. BRK. POLE/AMPS	TWO-POLE CONTRACTOR AMPS	PANEEB./LOADCENTER AMP RATING	BRANCH CIRCUIT ID	BRANCH CKT. BKR. POLE/AMPS	KVA LOAD
SH 194 AT W 24TH ST	TY D 120/240 060 (NS) SS (E) SP (O)	2"	3/#2	N/A	2P/60	N/A	100	SIG. CONTROLLER, LUMINAIRES	1P/50, 2P/15	<7.1

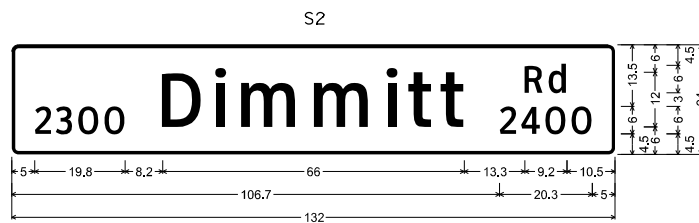
Run No.	LENGTH	CONDUIT (618)				CONDUCTORS (620)						CABLES (684)			RADAR (6292)		
		2" (SCHD 80)		3" (SCHD 80)		4" (SCHD 80)		ILLUMINATION		GROUND	POWER		PUSH BUTTON	PED SIGNAL	VEHICLE SIGNAL	RPDD	RADD
		6046 (TRENCH) EA	6047 (BORE) EA	6053 (TRENCH) EA	6054 (BORE) EA	6058 (TRENCH) EA	6059 (BORE) EA	6007 (#8 BARE) EA	6008 (#8 INSULATED) EA	6009 (#6 BARE) EA	6011 (#4 BARE) EA	6012 (#4 INSULATED) EA	6009 (#12/4C) EA	6012 (#12/7C) EA	6017 (#12/12C) EA	6004 (POWER & COMM) EA	6005 (POWER & COMM) EA
1	10	1								1	2						
2	5	1				1				1	2	6	6	2			
3	15	1						1	2								
4	10					1				1		6	6	2			
4A	10			1										2	4	2	
4B	10			1										2	4	2	
5	135		1					2	1	2	2	3	3	2	2	1	
6	25	1		1				1	2	1				1	1	1	
7	25	1						1		1		1	1				
8	135							1	1	1		2	2	1	1		
9	10					1				1		2	2	1	1		
10	20	1								1				1			
11	10			1						1		1	1	1	1		
12	135		1					1	1	2		2	2	1	1	1	
13	25	1						1		1		1	1				
14	35	1		1				1	2	1				1	1	1	
15	10	1						1		1		1	1				
TOTAL		170	270	90	0	25	540	345	690	585	15	30	1125	1125	700	680	360

NOTES:
 1. RUN ILLUMINATION CONDUCTORS IN A SEPARATE 2" CONDUIT.
 2. RADAR EQUIPMENT TO BE SUPPLIED BY TXDOT.

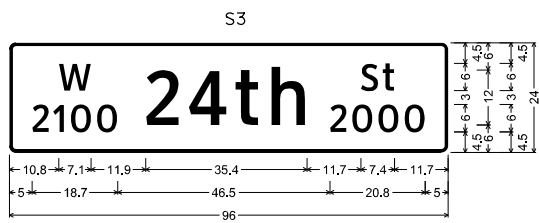
PROPOSED SIGNS



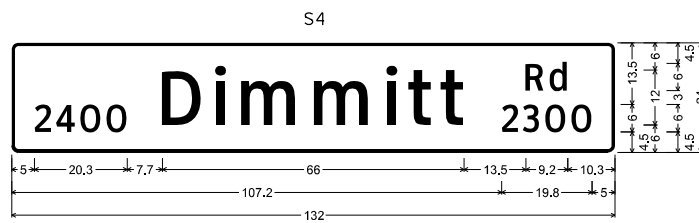
D3-1G; 1.5" Radius, 0.8" Border, White on, Green;
 "W" ClearviewHwy-3-W; "2000" ClearviewHwy-3-W;
 "24th" ClearviewHwy-3-W; "St" ClearviewHwy-3-W;
 "2100" ClearviewHwy-3-W;



D3-1G; 1.5" Radius, 0.8" Border, White on, Green;
 "2300" ClearviewHwy-3-W; "Dimmitt" ClearviewHwy-3-W;
 "Rd" ClearviewHwy-3-W; "2400" ClearviewHwy-3-W;



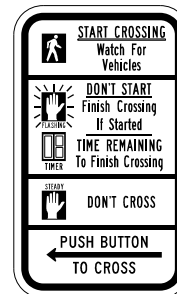
D3-1G; 1.5" Radius, 0.8" Border, White on, Green;
 "W" ClearviewHwy-3-W; "2100" ClearviewHwy-3-W;
 "24th" ClearviewHwy-3-W; "St" ClearviewHwy-3-W;
 "2000" ClearviewHwy-3-W;



D3-1G; 1.5" Radius, 0.8" Border, White on, Green;
 "2400" ClearviewHwy-3-W; "Dimmitt" ClearviewHwy-3-W;
 "Rd" ClearviewHwy-3-W; "2300" ClearviewHwy-3-W;

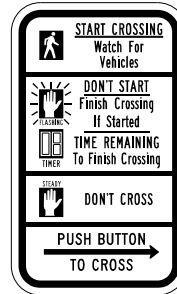
POLE #	DESCRIPTION	FOUNDATION TYPE	FND LENGTH (LF)	#12/4C (LF)	#12/5C (LF)	#12/7C (LF)	#8 BARE (LF)	#8 INSULATED (LF)
POLE 1	44' MAST ARM	36-B	14	5	63	10		
POLE 2	32' MAST ARM W/ LUM	36-A	12		39	51	30	60
POLE 3	PEDESTRIAN POLE	SCREW ANCHOR		5		10		
POLE 4	36' MAST ARM	36-A	12	10	55	20		
POLE 5	PEDESTRIAN POLE	SCREW ANCHOR		5		10		
POLE 6	40' MAST ARM W/ LUM	36-A	14		47	59	30	60
POLE 7	PEDESTRIAN POLE	SCREW ANCHOR		5		10		

PB1, PB4, PB5

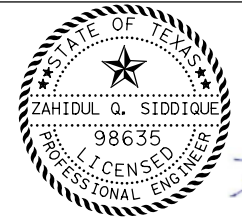


R10-3eL 9x15

PB2, PB3, PB6



R10-3eR 9x15



Zahidul Q. Siddique
7/29/2024

NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

TRAFFIC SIGNAL LAYOUT DETAIL
SH 194 AT W 24TH ST

SHEET 3 OF 3

FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	237
CONTROL	SECTION	JOB	
0439	05	026	

PL0T DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: SH194_Proposed_Signal.tbl
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 FILE: SH194_Proposed_Signal_JO.dgn

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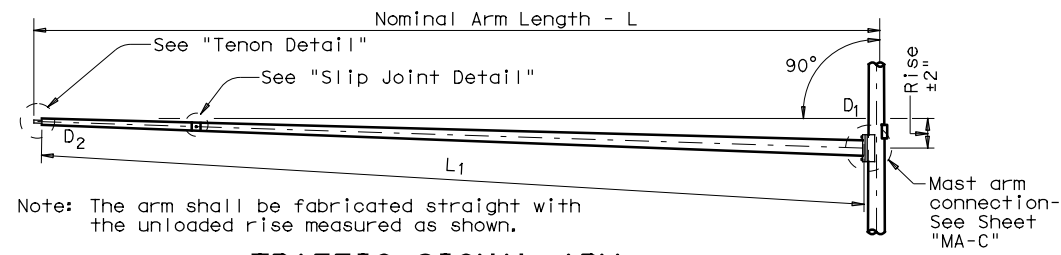
DATE: 7/29/2024 7:40:38 PM
FILE: 01*sma-100.dgn

Arm Length ft.	ROUND POLES					POLYGONAL POLES					Foundation Type
	D _B in.	D ₁₉ in.	D ₂₄ in.	D ₃₀ in.	① thk in.	D _B in.	D ₁₉ in.	D ₂₄ in.	D ₃₀ in.	① thk in.	
20	12.0	9.3	8.6	7.8	.239	12.5	9.5	8.7	7.8	.239	36-A
24	12.0	9.3	8.6	7.8	.239	13.0	10.0	9.2	8.3	.239	36-A
28	12.0	9.3	8.6	7.8	.239	13.5	10.5	9.7	8.8	.239	36-A
32	13.0	10.3	9.6	8.8	.239	14.0	11.0	10.2	9.3	.239	36-A
36	13.5	10.8	10.1	9.3	.239	15.0	12.0	11.2	10.3	.239	36-A
40	14.0	11.3	10.6	9.8	.239	16.0	13.0	12.2	11.3	.239	36-B
44	14.5	11.8	11.1	10.3	.239	16.5	13.5	12.7	11.8	.239	36-B

Arm Length ft.	ROUND ARMS					POLYGONAL ARMS				
	L ₁ ft.	D ₁ in.	D ₂ in.	① thk in.	Rise	L ₁ ft.	D ₁ in.	② D ₂ in.	① thk in.	Rise
20	19.1	8.0	5.3	.179	1'-8"	19.1	8.0	3.5	.179	1'-7"
24	23.1	9.0	5.8	.179	1'-9"	23.1	9.0	3.5	.179	1'-8"
28	27.1	9.5	5.7	.179	1'-10"	27.1	10.0	3.5	.179	1'-9"
32	31.0	9.5	5.2	.239	1'-11"	31.0	9.5	3.5	.239	1'-10"
36	35.0	10.0	5.1	.239	2'-0"	35.0	10.0	3.5	.239	1'-11"
40	39.0	10.5	5.1	.239	2'-3"	39.0	11.0	3.5	.239	2'-1"
44	43.0	11.0	5.1	.239	2'-8"	43.0	11.5	4.0	.239	2'-3"

D_B = Pole Base O.D.
D₁₉ = Pole Top O.D. with no Luminaire and no ILSN
D₂₄ = Pole Top O.D. with ILSN w/out Luminaire
D₃₀ = Pole Top O.D. with Luminaire
D₁ = Arm Base O.D.
D₂ = Arm End O.D.
L₁ = Shaft Length
L = Nominal Arm Length

- ① Thickness shown are minimums, thicker materials may be used.
- ② D₂ may be increased by up to 1" for polygonal arms.



Note: The arm shall be fabricated straight with the unloaded rise measured as shown.

TRAFFIC SIGNAL ARM
(Fixed Mount)

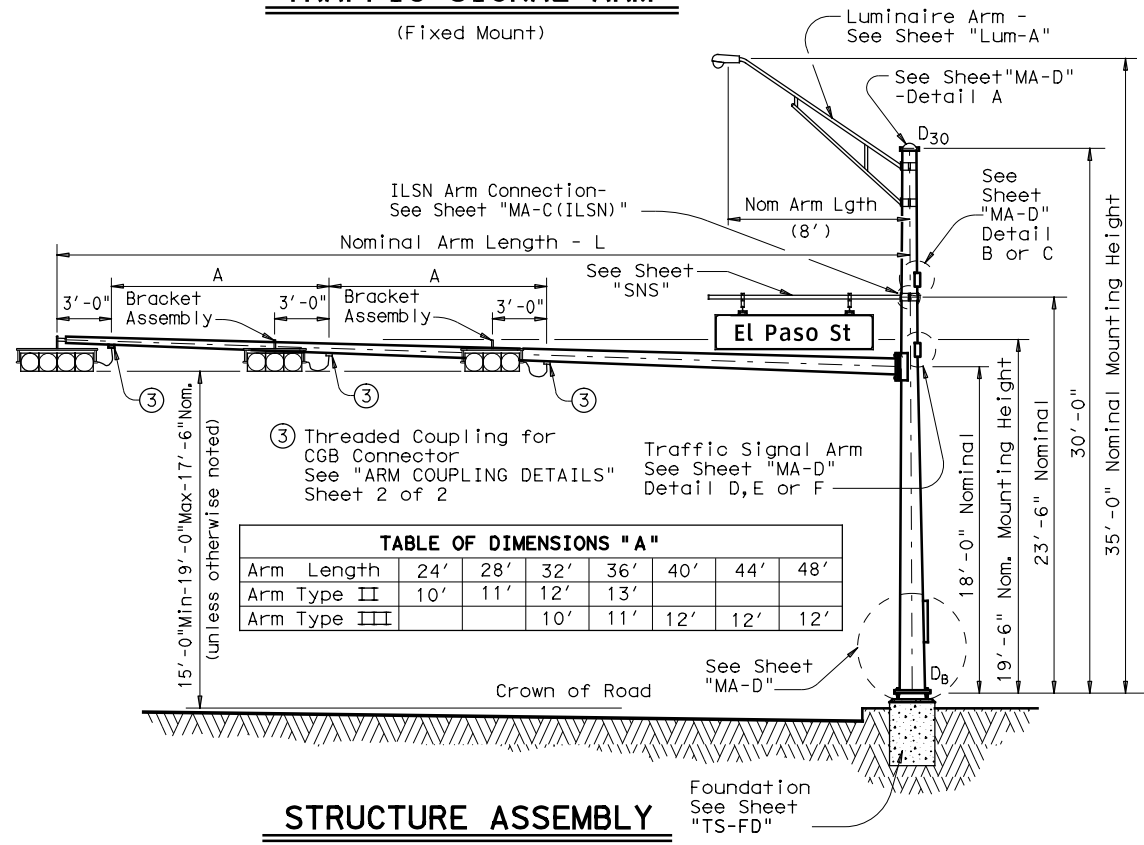


TABLE OF DIMENSIONS "A"

Arm Length	24'	28'	32'	36'	40'	44'	48'
Arm Type II	10'	11'	12'	13'			
Arm Type III			10'	11'	12'	12'	12'

STRUCTURE ASSEMBLY

SHIPPING PARTS LIST

Ship each pole with the following attached: enlarged hand hole, pole cap, fixed-arm connection bolts and washers and any additional hardware listed in the table.

Nominal Arm Length ft.	30' Poles With Luminaire		24' Poles With ILSN		19' Poles With No Luminaire and No ILSN	
	Designation	Quantity	Designation	Quantity	Designation	Quantity
20	20L-100		20S-100		20-100	
24	24L-100		24S-100		24-100	1
28	28L-100		28S-100		28-100	
32	32L-100	1	32S-100		32-100	1
36	36L-100	5	36S-100		36-100	4
40	40L-100	2	40S-100		40-100	1
44	44L-100		44S-100		44-100	1

Traffic Signal Arms (1 per pole) Ship each arm with the listed equipment attached

Nominal Arm Length ft.	Type I Arm (1 Signal)		Type II Arm (2 Signals)		Type III Arm (3 Signals)	
	Designation	Quantity	Designation	Quantity	Designation	Quantity
20	20I-100					
24	24I-100		24II-100	1		
28	28I-100		28II-100			
32			32II-100	1	32III-100	1
36			36II-100	1	36III-100	8
40					40III-100	3
44					44III-100	1

Luminaire Arms (1 per 30' pole)

Nominal Arm Length	Quantity
8' Arm	8

ILSN Arm (Max. 2 per pole) Ship with clamps, bolts and washers


Nominal Arm Length	Quantity
7' Arm	
9' Arm	

Anchor Bolt Assemblies (1 per pole)

Anchor Bolt Diameter	Anchor Bolt Length	Quantity
1 1/2"	3'-4"	
1 3/4"	3'-10"	12
2"	4'-3"	4

Each anchor bolt assembly consists of the following: Top and Bottom templates, 4 anchor bolts, 8 nuts, 8 flat washers, and 4 nut anchor devices (Type 2) per Standard Drawing "TS-FD".

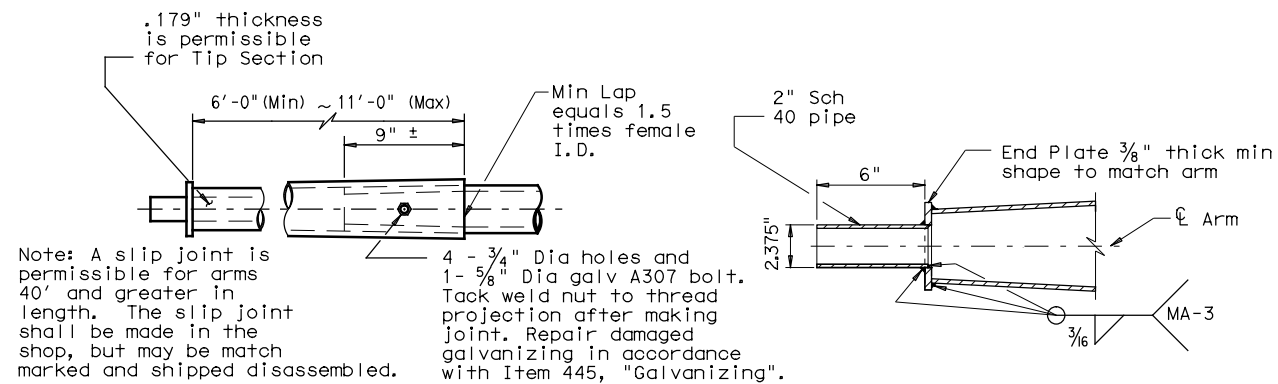
Templates may be removed for shipment.


Texas Department of Transportation
 Traffic Operations Division
TRAFFIC SIGNAL SUPPORT STRUCTURES
SINGLE MAST ARM ASSEMBLY
(100 MPH WIND ZONE)
SMA-100(1)-12

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11-99					
1-12					
		DIST	COUNTY	SHEET NO.	
		LBB	HALE	238	

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 FILE: 01*sma-100.dgn



SLIP JOINT DETAIL

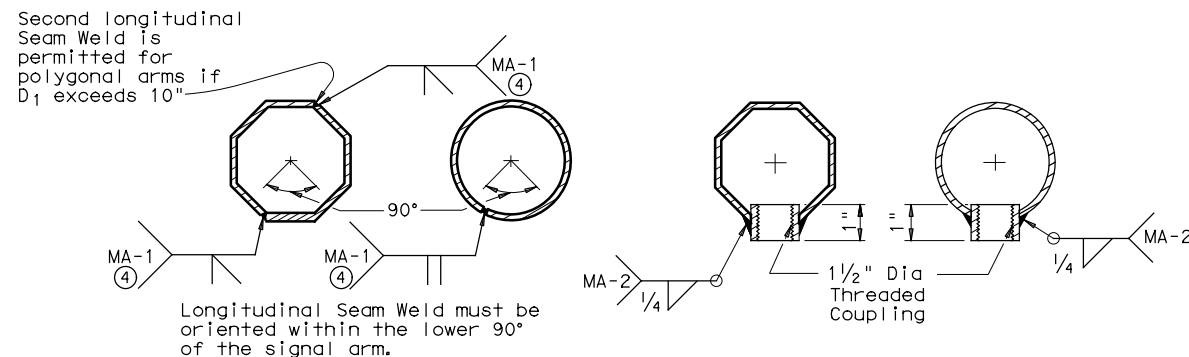
TENON DETAIL

Note: A slip joint is permissible for arms 40' and greater in length. The slip joint shall be made in the shop, but may be match marked and shipped disassembled.

4 - 3/4" Dia holes and 1-5/8" Dia galv A307 bolt. Tack weld nut to thread projection after making joint. Repair damaged galvanizing in accordance with Item 445, "Galvanizing".

Stainless steel bands (or Cables) and cast bracket as in "Astro-Brac", "Sky Bracket" or "Easy Bracket" with 1 1/2" Dia Threaded Coupling.

BRACKET ASSEMBLY



ARM WELD DETAIL

ARM COUPLING DETAILS

④ 60% Min. penetration
 100% penetration within
 6" of circumferential
 base welds.

VIBRATION WARNING

Mast Arms of SMA and DMA structures and clamp-on Arms of LMA structures of approximately 40 ft or longer are subject to harmonic vertical vibrations in light wind conditions due to the aeroelastic characteristics of a few of the myriads of possible combinations of the following: signal numbers, weights and positions; existence/solidity of backplates; presence of additional attachments to the arm, such as signs and cameras; arm-wind orientation; and arm-pole stiffness.

Such vibrations may cause fatigue damage to the structure and may lead to galloping in moderate wind conditions which may further damage the structure and alarm the public. Tests have indicated that when wind is blowing toward the back side of signal heads having un-vented backplates attached the probability of unacceptable harmonic vibration and/or galloping is rather high.

If backplates are not required for improved visibility they should not be applied to the signal heads or, if they must be applied, they should be vented as a first and inexpensive measure to mitigate vibrations.

The traffic signal mast arms shall be visually inspected in 5 to 20 mph wind conditions after installation of signal heads and any attachments, including any required backplates. If vertical movements with a total excursion (maximum upward excursion to maximum downward excursion) of more than approximately 8" are observed at the arm tip, a damping plate shall be fitted to the arm. See "Damping Plate Mounting Details" on standard sheet, MA-DP-10.

This visual inspection shall be repeated after each modification of the structure that could affect its aeroelastic response. Excessive vibrations shall not be allowed to continue for more than two days.

GENERAL NOTES:

Design conforms to 1994 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals and Interim Specifications thereto. Design Wind Speed equals 100 mph plus a 1.3 gust factor.


Poles are designed to support one 8'-0" luminaire arm, one 9'-0" internally lighted street name sign and one traffic signal arm with a length as tabulated. The specified luminaire load applied at the end of the luminaire arm equals 60 lbs vertical dead load plus the horizontal wind load on an effective projected area of 1.6 sq ft. The specified internally lighted street name sign load applied 4.5 ft from the centerline of the pole equals 85 lbs vertical dead load plus horizontal wind load on an effective projected area of 11.5 sq ft. The specified signal load applied at the end of the traffic signal arm equals 180 lbs vertical dead load plus the horizontal wind load on an effective projected area of 32.4 sq ft (actual area times drag coefficient).

See Standard Sheet "MA-D" for pole details, "MA-C" for traffic signal arm connection details, "MA-C (ILSN)" for internally lighted street name sign arm connection details, "LUM-A" for luminaire arm and connection details, "SNS" for internally lighted street name sign details, and "TS-FD" for anchor bolt and foundation details. See "MA-C" for material specifications.

Fabrication shall be in accordance with Item 686, "Traffic Signal Pole Assemblies (Steel)" and with the details, dimensions, and weld procedures shown herein. Weld references call for preapproved weld procedures which the Fabricator must obtain prior to fabrication. Materials, fabrication tolerances, and shipping practices shall meet the requirements of this sheet and Item 686, "Traffic Signal Pole Assemblies (Steel)".

Unless otherwise noted, all parts shall be galvanized in accordance with Item 445, "Galvanizing", after fabrication.

Deviation from the details and dimensions shown herein require submission of shop drawings in accordance with Item 441, "Steel Structures". Alternate designs are not acceptable.

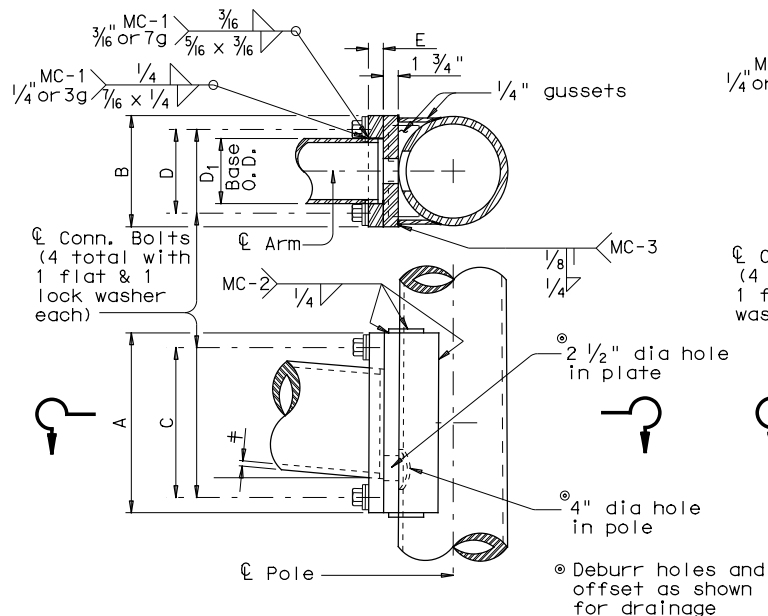

Texas Department of Transportation
 Traffic Operations Division
TRAFFIC SIGNAL SUPPORT STRUCTURES
SINGLE MAST ARM ASSEMBLY
(100 MPH WIND ZONE)
SMA-100(2)-12

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	DIST	COUNTY		SHEET NO.	
	LBB	HALE		239	

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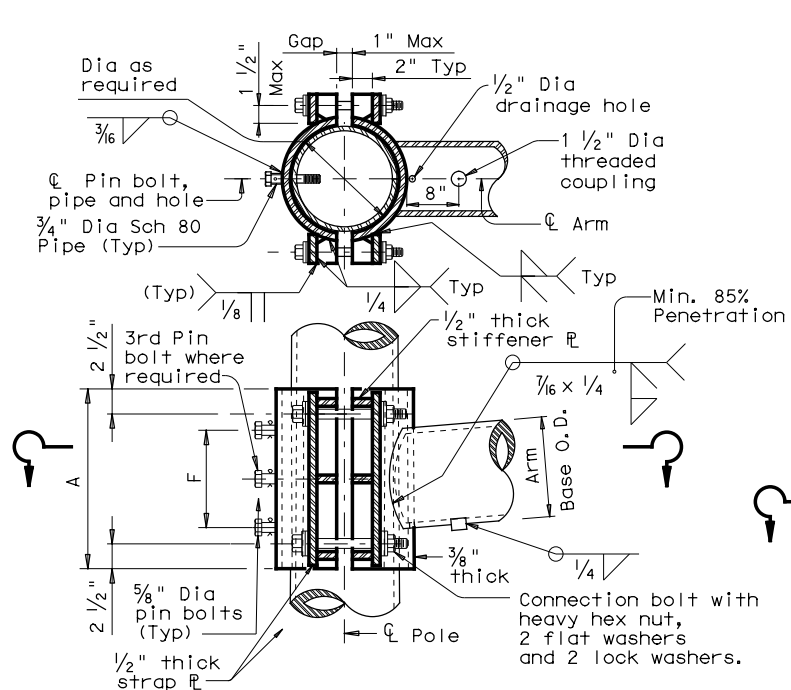
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ARM SIZE		A	B	C	D	E	CONN BOLT DIA
D ₁	ϕ	in.	in.	in.	in.	in.	in.
6.5	.179	12	9	9	6	1 3/4	1
7.5	.179	13	9	10	6	1 3/4	1
8.0	.179	14	10	11	7	2	1 1/4
9.0	.179	16	11	13	8	2	1 1/4
9.5	.179	17	12	14	9	2	1 1/4
9.5	.239	18	12	15	9	2	1 1/4
10.0	.239	18	12	15	9	2	1 1/4
10.5	.239	18	13	15	10	3	1 1/2
11.0	.239	18	13	15	10	3	1 1/2



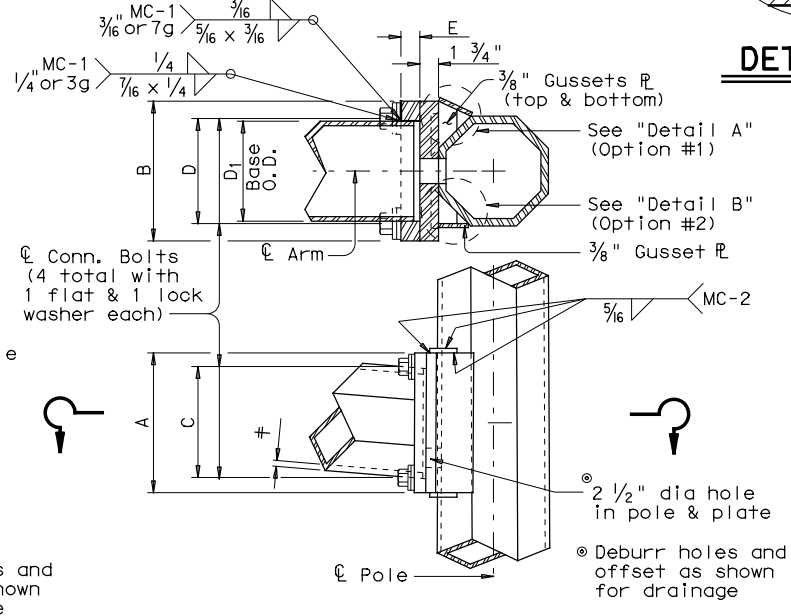
FIXED MOUNT DETAIL 1

ARM SIZE		A	F	CONN. BOLTS	PIN BOLTS
D ₁	ϕ	in.	in.	No. Dia	No. Dia
6.5	.179	12	6	4 1	2 5/8
7.5	.179	14	8	4 1	2 5/8
8.0	.179	14	8	4 1	2 5/8
9.0	.179	16	10	4 1	2 5/8
9.5	.179	18	12	4 1 1/4	3 5/8
9.5	.239	18	12	4 1 1/4	3 5/8
10.0	.239	18	12	4 1 1/4	3 5/8



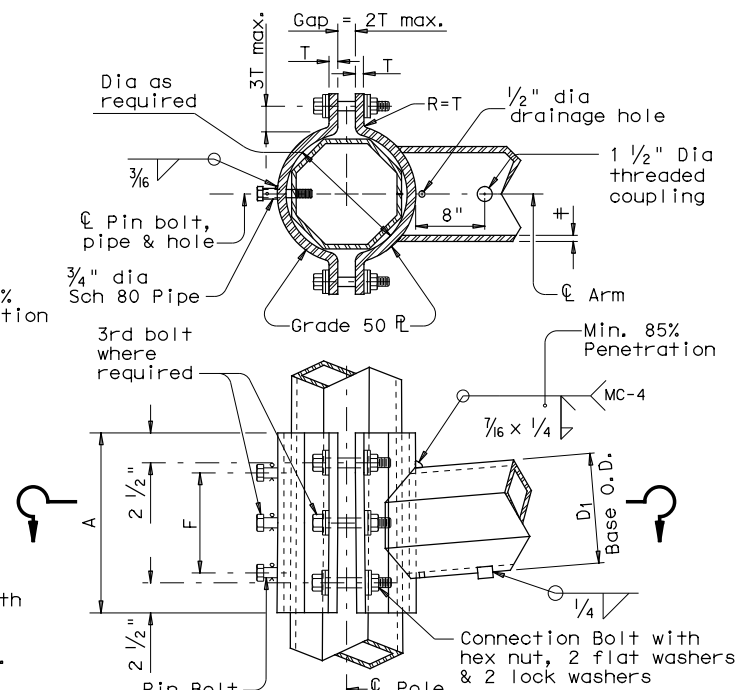
CLAMP-ON DETAIL 1

ARM SIZE		A	B	C	D	E	CONN BOLT DIA
D ₁	ϕ	in.	in.	in.	in.	in.	in.
7.0	.179	11	11	8	8	1 3/4	1 1/4
7.5	.179	11	11	8	8	1 3/4	1 1/4
8.0	.179	11	11	8	8	2	1 1/4
9.0	.179	13	13	10	10	2	1 1/4
9.5	.239	13	13	10	10	2	1 1/4
10.0	.239	14	14	11	11	2	1 1/2
11.0	.239	14	14	11	11	3	1 1/2
11.5	.239	14	14	11	11	3	1 1/2

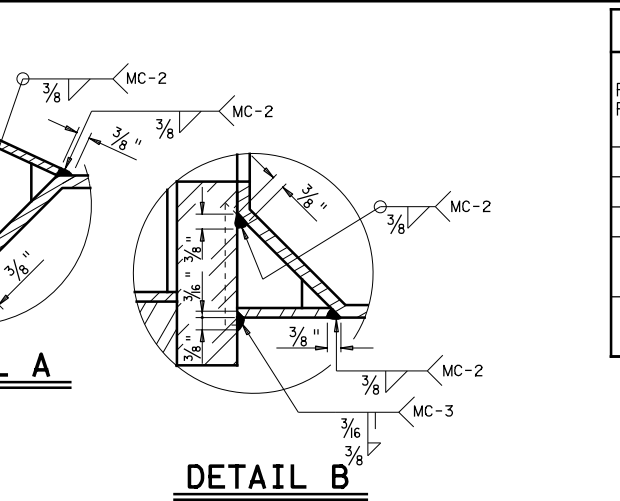


FIXED MOUNT DETAIL 2

ARM SIZE		A	F	T	CONN. BOLTS	PIN BOLTS
D ₁	ϕ	in.	in.	in.	No. Dia	No. Dia
7.0	.179	12	6	3/4	4 3/4	2 5/8
7.5	.179	14	8	3/4	4 3/4	2 5/8
8.0	.179	14	8	3/4	4 3/4	2 5/8
9.0	.179	16	10	7/8	4 1	2 5/8
10.0	.179	18	10	7/8	4 1	2 5/8
9.5	.239	18	10	1	6 1	3 5/8
10.0	.239	18	10	1	6 1	3 5/8

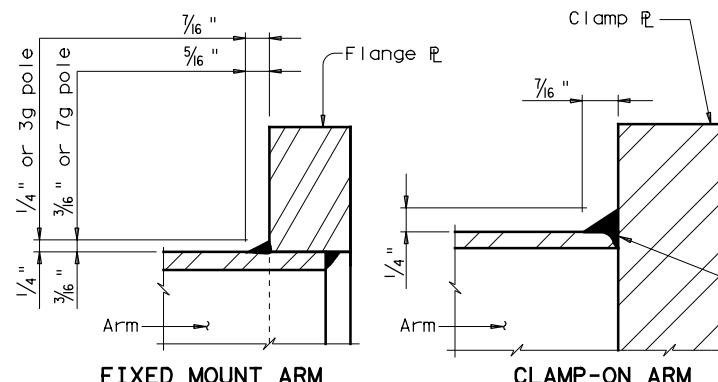


CLAMP-ON DETAIL 2



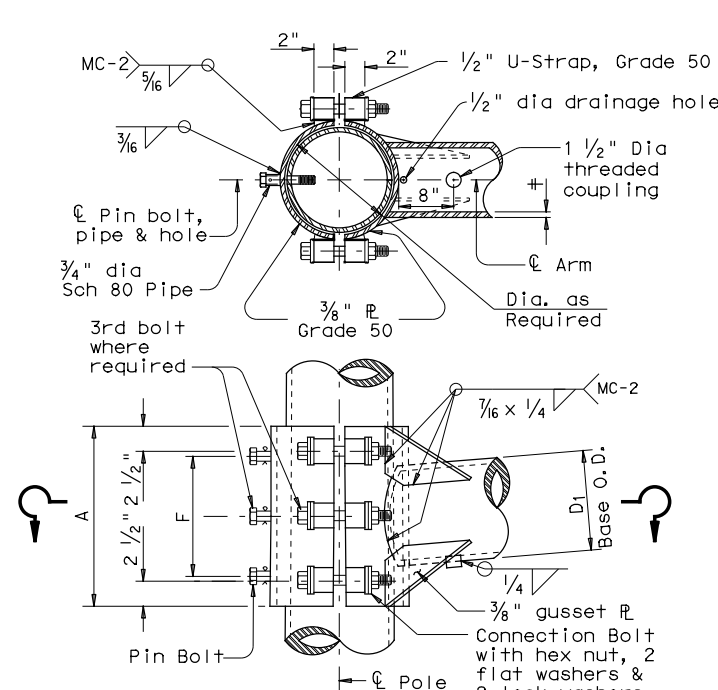
DETAIL A

DETAIL B



ARM BASE WELD DETAILS

ARM SIZE		A	F	CONN. BOLTS	PIN BOLTS
D ₁	ϕ	in.	in.	No. Dia	No. Dia
6.5	.179	12	6	4 1	2 5/8
7.5	.179	14	8	4 1	2 5/8
8.0	.179	14	8	4 1	2 5/8
9.0	.179	16	10	4 1	2 5/8
9.5	.179	18	12	6 1	3 5/8
9.5	.239	18	12	6 1	3 5/8
10.0	.239	18	12	6 1	3 5/8



CLAMP-ON DETAIL 3

MATERIALS	
Round Shafts or Polygonal Shafts ^①	ASTM A595 Gr. A, A588, A1008 HSLAS Gr. 50 Class 2, A1011 HSLAS Gr. 50 Class 2, A572 Gr. 50 or A1011 SS Gr. 50 ^②
Plates ^①	ASTM A36, A588, or A572 Gr. 50
Connection Bolts	ASTM A325 or A449, except where noted
Pin Bolts	ASTM A325
Pipe ^①	ASTM A53 Gr. B, A501, A1008 HSLAS-F Gr. 50, A1011 HSLAS-F Gr. 50
Misc. Hardware	Galvanized steel or stainless steel or as noted

- ① ASTM A572, A1008 HSLAS, A1011 HSLAS, A1008 HSLAS-F, A1011 HSLAS-F or A1011 SS may have higher yield strengths but shall not have less elongation than the grade indicated.
- ② ASTM A1011 SS Gr. 50 material shall also have a minimum elongation of 18 percent in 8 inches or 23 percent in 2 inches. Material thickness in excess of those stipulated under A1011 SS will be acceptable providing the material meets all other A1011 SS requirements and the requirements of this item.

GENERAL NOTES:

Clamp-on details are used for the second arm on dual mast arm assemblies. A Maximum 1 1/2" wide vertical slotted hole shall be cut in the front clamp plate to facilitate drainage during galvanizing. The slot shall be centered behind the arm and shall be no longer than the arm diameter minus 1"

Fixed mount details are used for single mast arm assemblies and for the first arm on dual mast arm assemblies.

Where duplicate parts occur on a detail, welds shown for one part shall apply to all similar parts on the detail.

Pin bolts are required to prevent rotation of clamp-on arms under design wind forces.

NOTE:

Pin bolts shall be A325 with threads excluded from the shear plane. Pin bolt and 3/4" dia pipe shall have 3/16" dia holes for a 1/8" dia galvanized cotter pin. Back clamp plate shall be furnished with a 3/4" dia hole for each pin bolt. An 1/16" dia hole for each pin bolt shall be field drilled through the pole after arm orientations have been approved by the Engineer.

Texas Department of Transportation
Traffic Operations Division

STANDARD ASSEMBLY FOR TRAFFIC SIGNAL SUPPORT STRUCTURES

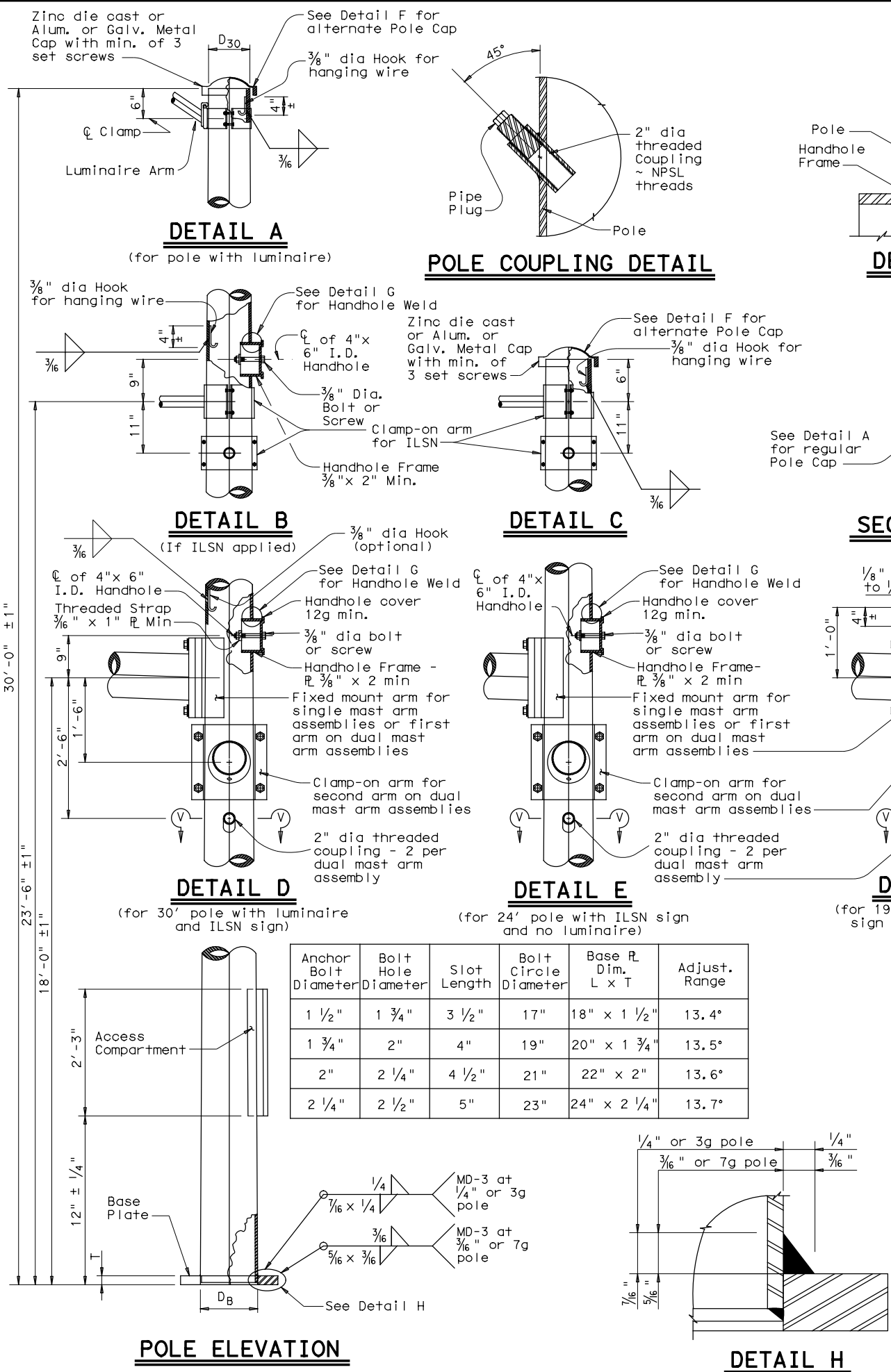
MAST ARM CONNECTIONS

MA-C-12

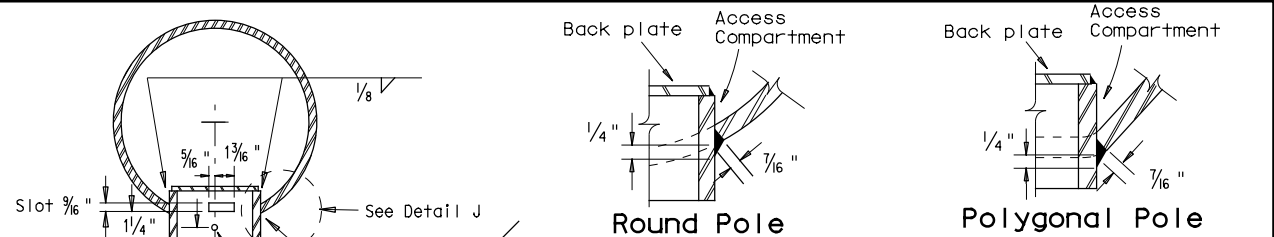
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5-96		0439	05	026	SH 194
5-09		DIST	COUNTY		SHEET NO.
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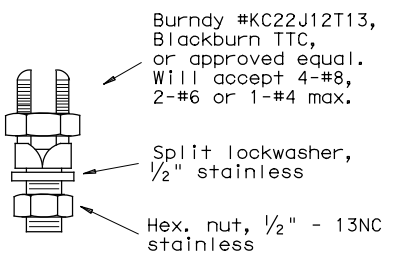


Anchor Bolt Diameter	Bolt Hole Diameter	Slot Length	Bolt Circle Diameter	Base R Dim. L x T	Adjust. Range
1 1/2"	1 3/4"	3 1/2"	17"	18" x 1 1/2"	13.4°
1 3/4"	2"	4"	19"	20" x 1 3/4"	13.5°
2"	2 1/4"	4 1/2"	21"	22" x 2"	13.6°
2 1/4"	2 1/2"	5"	23"	24" x 2 1/4"	13.7°

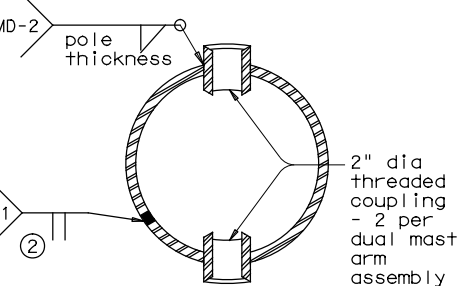


SECTION X-X

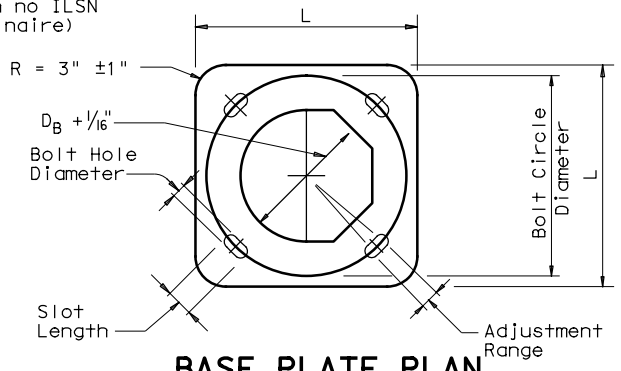
Opening for access compartment shall be no more than 1/16 inch wider than the access compartment itself.



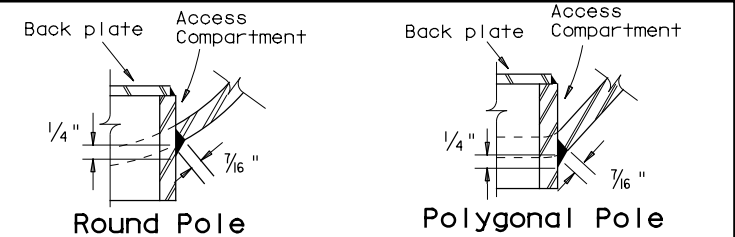
COPPER GROUND CONNECTOR



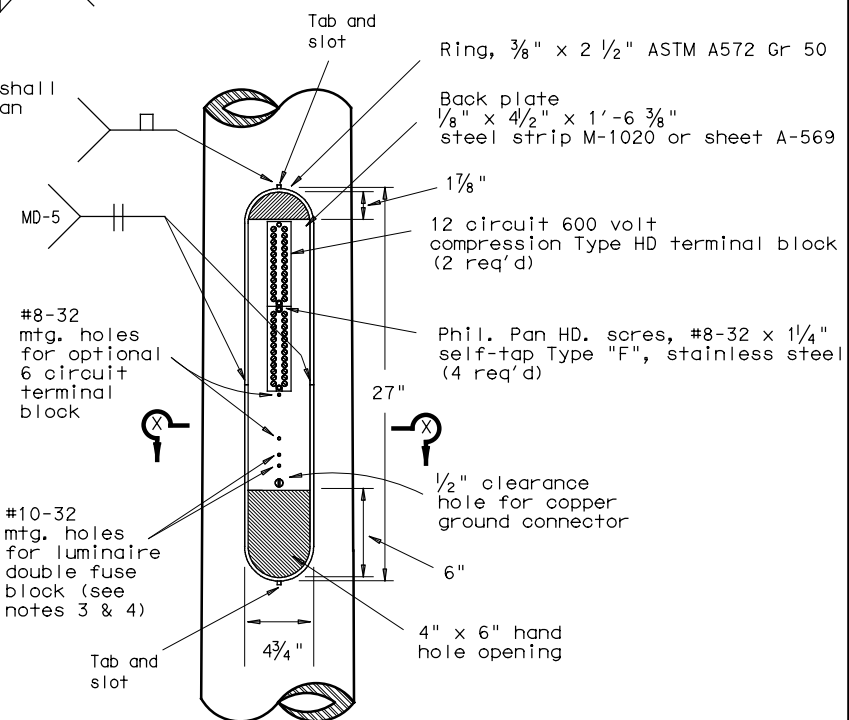
SECTION V-V



- ① 85% Min. penetration
- ② 60% Min. penetration
100% penetration within 6" of circumferential base welds.



DETAIL J



ACCESS COMPARTMENT

NOTES:

- The cover shall be one piece formed from ABS plastic, shall be a pearl gray color, and shall be suitable for exposure to harsh sunlight and extreme weather. Cover shall latch with two screw latches and shall fit tightly to the enclosure ring to create a rainproof seal. Latch screws shall be 1/4-20 stainless flat socket head screws with tamper proof feature.
- The pole manufacturer shall provide with each pole a separate kit consisting of: one cover with two latching assemblies, two terminal strips (Marathon #985GP12CU or approved equal), four #8-32 x 1 1/4" self tapping type "F" stainless steel pan head screws, and one ground connector (Blackburn TTC, Burndy KC22J12T13, or Ilco SSS-5). The traffic signal contractor shall install the kit items in the field.
- The screw hole spacing on the enclosure back plate shall be for two Marathon #985GP12 terminal strips, one Marathon #985GP06CU terminal strip, and one Bussmann #BM6032B fuse block.
- Install one Bussmann #BM6032B, Littelfuse #L60030M-2C, or Ferraz-Shawmut #30352 fuse block for poles where luminaires are to be installed.

Texas Department of Transportation
Traffic Operations Division

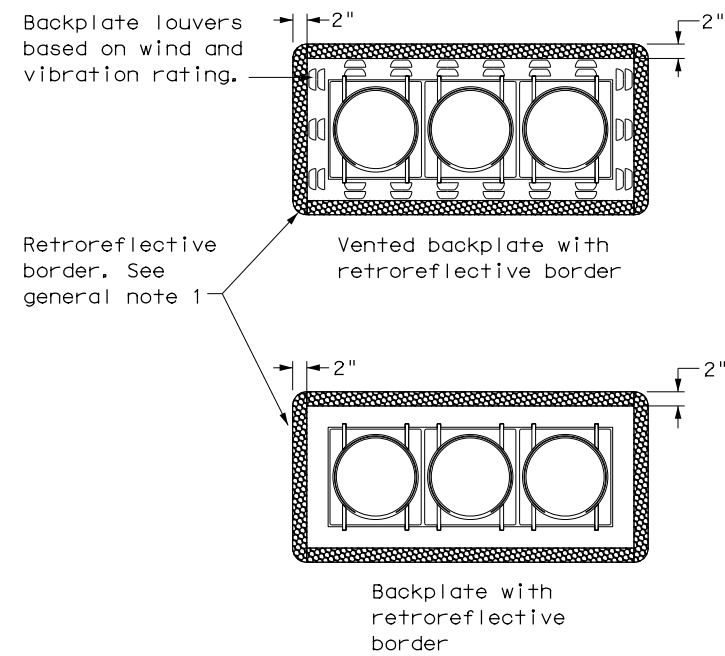
TRAFFIC SIGNAL SUPPORT STRUCTURES MAST ARM POLE DETAILS

MA-D-12

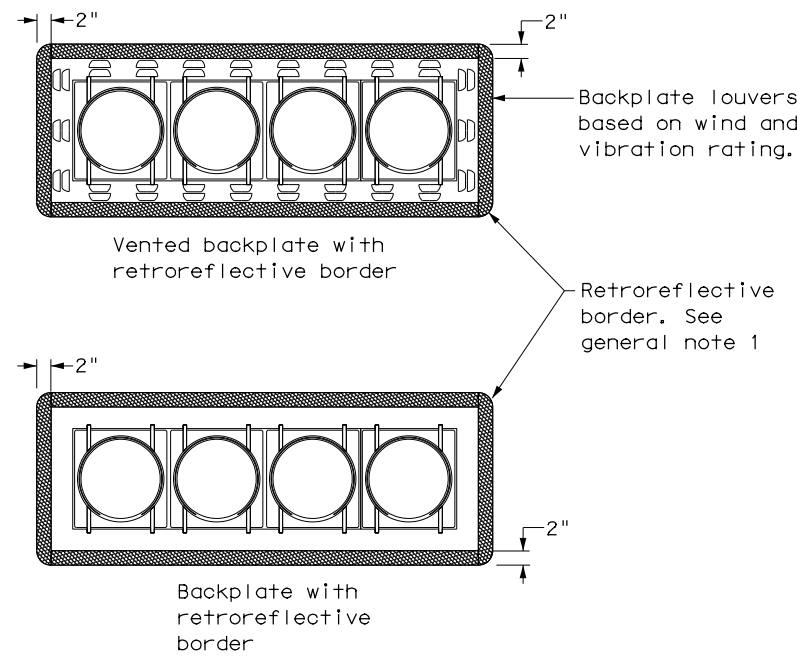
© TxDOT August 1995	DN: MS	CK: JSY	DW: FDN	CK: CAL
REVISIONS	CONT	SECT	JOB	HIGHWAY
8-99 1-12	0439	05	026	SH 194
	DIST	COUNTY		SHEET NO.
	LBB	HALE		241

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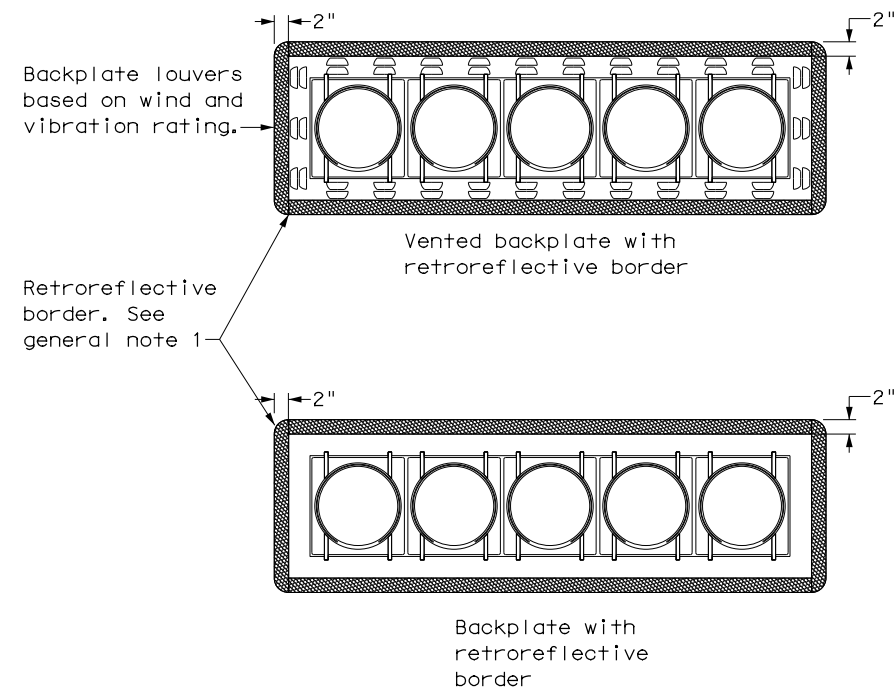
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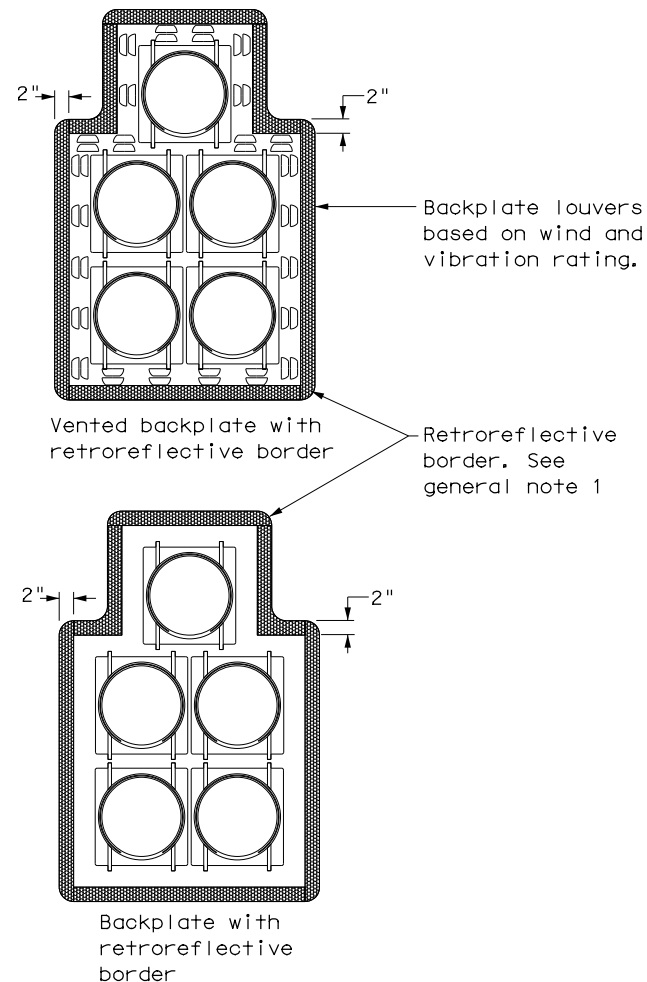
THREE-SECTION HEAD
HORIZONTAL OR VERTICAL



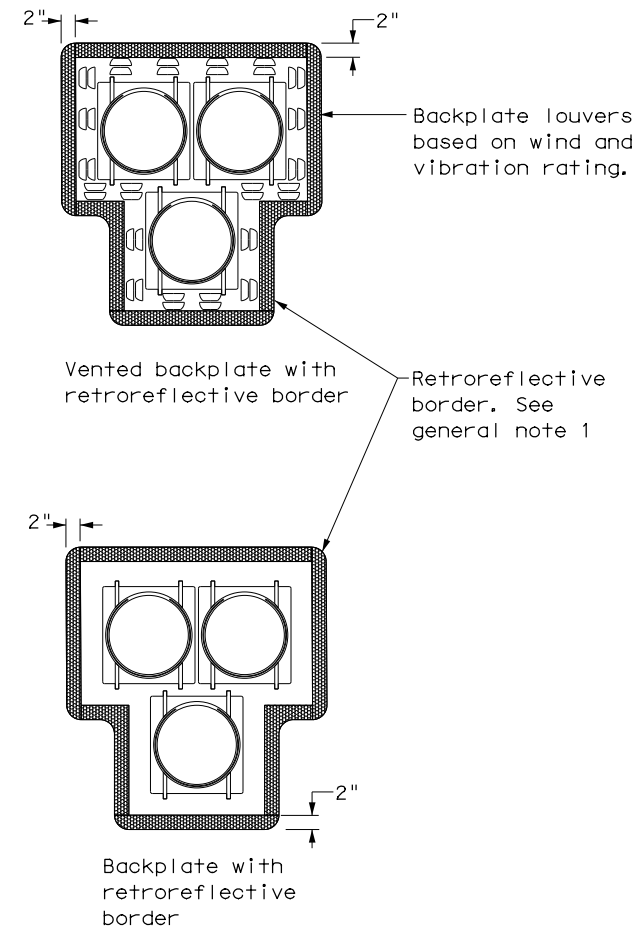
FOUR-SECTION HEAD
HORIZONTAL OR VERTICAL



FIVE-SECTION HEAD
HORIZONTAL OR VERTICAL



FIVE-SECTION HEAD
CLUSTER



PEDESTRIAN HYBRID
BEACON

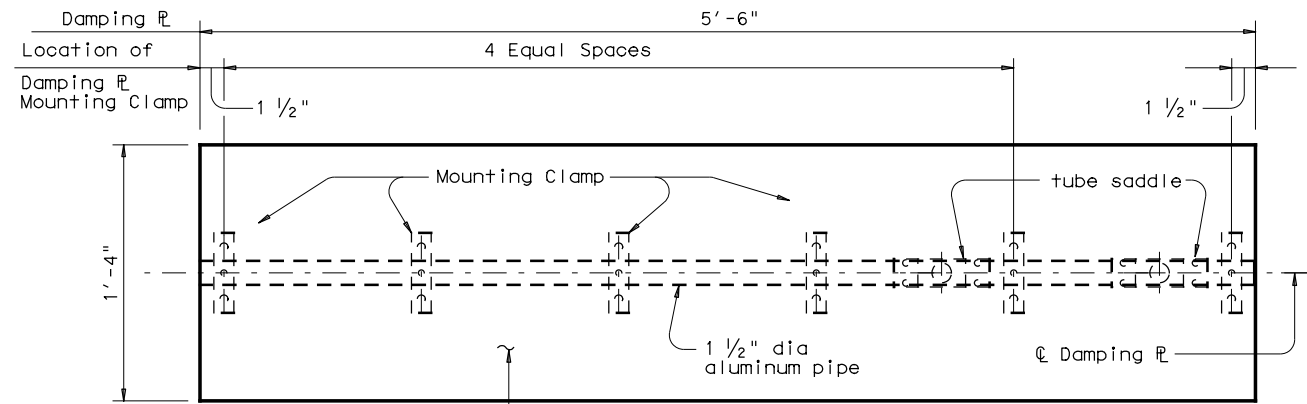
GENERAL NOTES:

1. Backplates are optional for traffic signals and pedestrian hybrid beacons. When backplates are used, a 2-inch wide fluorescent yellow AASHTO Type B_{FL} or C_{FL} retroreflective border conforming to TxDOT DMS-8300 is required. Place on all approaches when used.
2. Signal head and backplate compatibility must be verified by the contractor prior to installation.
3. When using backplates on signal heads, venting is preferred to reduce cyclic vibration stress.
4. When a vented backplate is used, the retroreflective border must not be placed over the louvers.
5. This standard sheet applies to all signal heads with backplates, including but not limited to:
 - Pole mounted
 - Overhead mounted
 - Span wire mounted
 - Mast arm mounted
 - Vertical signal heads
 - Horizontal signal heads
 - Clustered signal heads
 - Pedestrian hybrid beacons

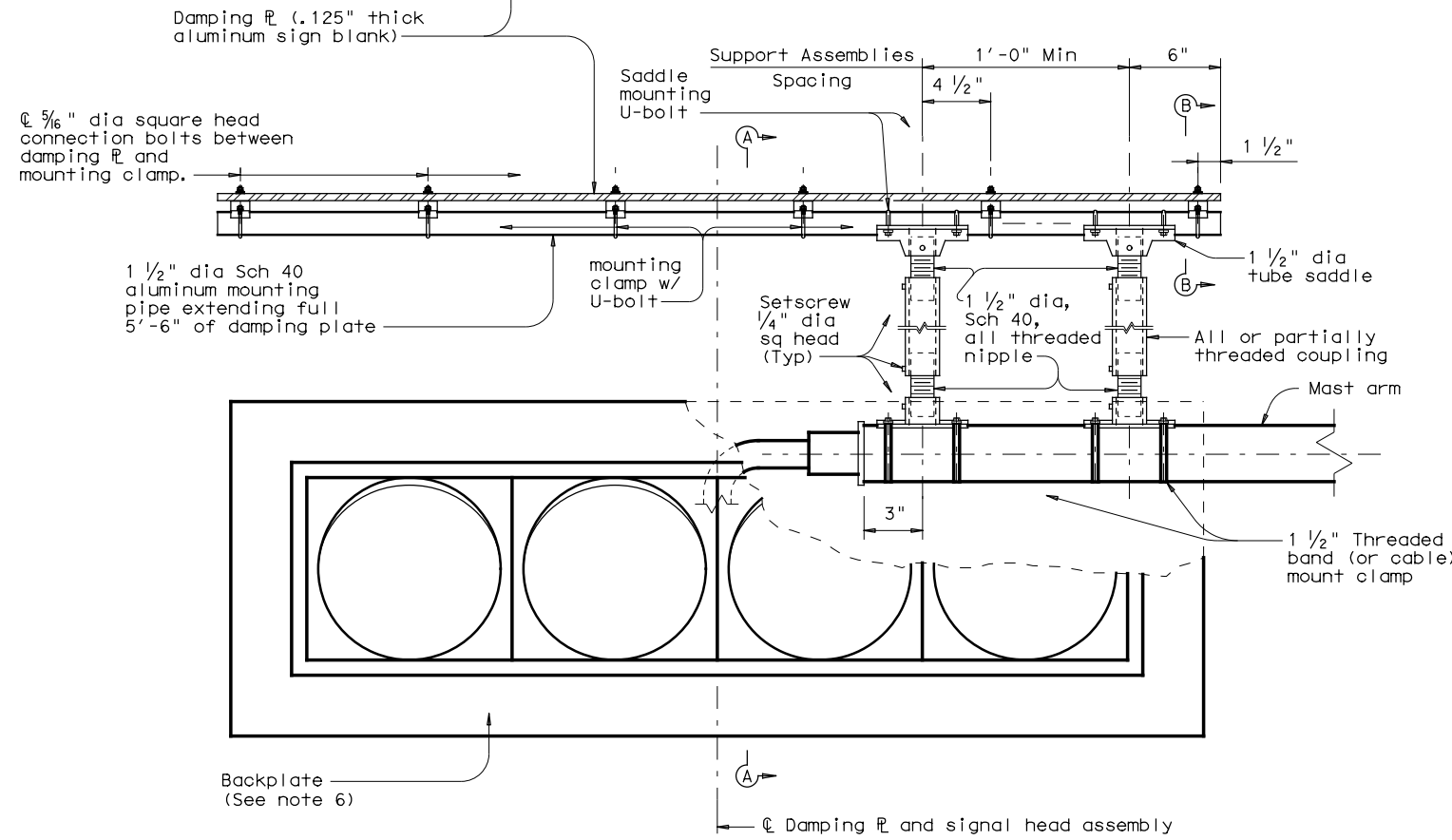
		Texas Department of Transportation		Traffic Safety Division Standard	
TRAFFIC SIGNAL HEAD WITH BACKPLATE TS-BP-20					
FILE: ts-bp-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT	
© TxDOT June 2020	CONT	SECT	JOB	HIGHWAY	
REVISIONS	0439	05	026	SH 194	
	DIST	COUNTY	SHEET NO.		
	LBB	HALE	242		

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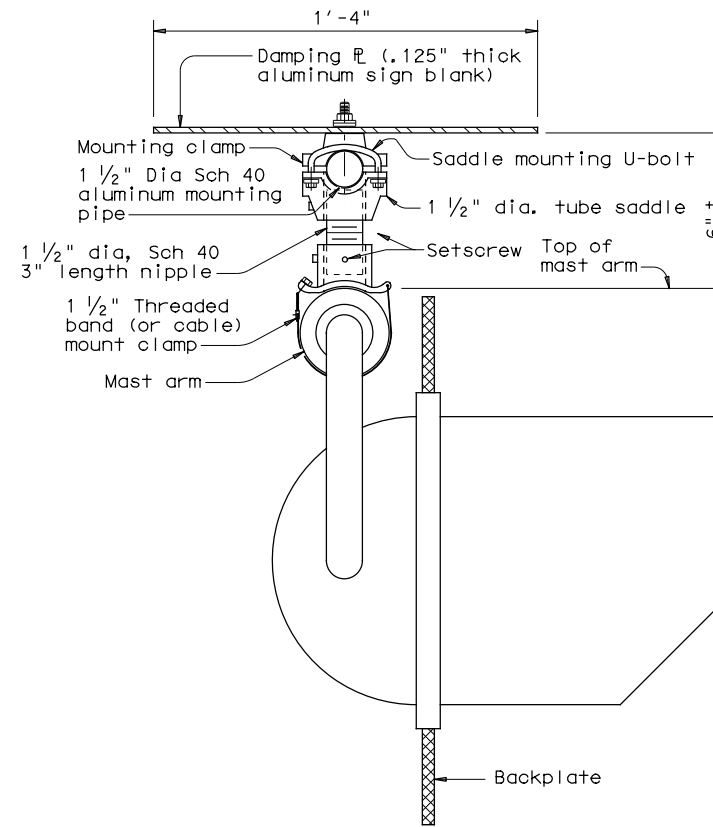
PLAN



ELEVATION

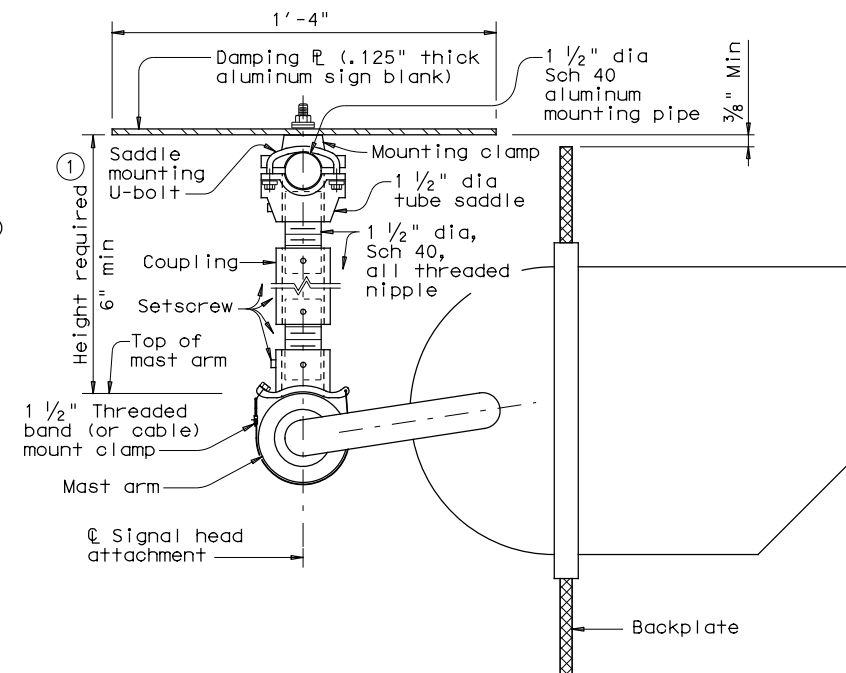
DAMPING PLATE MOUNTING DETAILS

(Showing alternate placement of signal head)



SECTION A-A

(Showing standard placement of signal head)
 (Mounting clamp U-bolt is not shown for clarity)



SECTION A-A

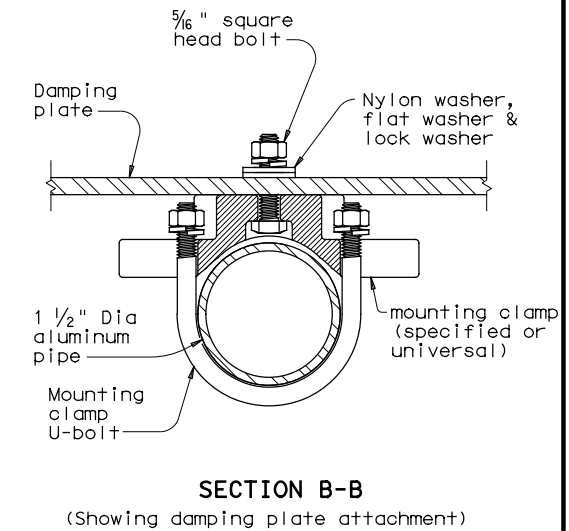
(Showing alternate placement of signal head)
 (Mounting clamp U-bolt is not shown for clarity)

① Recommended supporting assemblies to achieve required height for horizontal section heads

Height required	One nipple each length	Two nipples each length plus	One coupling each length
6"-6 3/4"	3"	-	-
7"-8 1/2"	4"	-	-
9"-10 1/2"	6"	-	-
11"-15 1/2"	-	4"	5"
16"-24"	-	6"	10"

GENERAL NOTES:

- In accordance with the findings of TxDOT sponsored research, the installation of a damping plate in accordance with the details shown here at the end of signal mast arms of SMA and DMA standard structures reduces excessive harmonic vertical vibration, and thus fatigue damage. Any deviation from these details may reduce the effectiveness of this damping device.
- Aluminum sign blank for damping plate will conform to Departmental Material Specifications DMS-7110. Materials for mast arm mounting clamp and tube saddle will be aluminum castings or aluminum alloys as in accordance with manufacturers' stipulations. Mounting pipe, pipe nipple and coupling will be aluminum alloy 6061-T6 or 6063-T6. Damping plate mounting clamp and u-bolt assemblies will conform to Standard sheet SMD(GEN). U-bolts for saddle mounting will have a minimum yield strength of 36 ksi.
- Damping plate will be mounted horizontally. Position centerline of damping plate to align with centerline of mast arm or horizontal signal head assembly. Vertical clearance between signal head (with or without backing plate) and bottom of damping plate will be maintained as shown. The attachments shown here are examples only, other supporting details which meet both alignment and vertical clearance requirements are also acceptable.
- Unless stipulated by the manufacturers, all steel parts will be galvanized finish in accordance with Standard Specification Item 445, "Galvanizing".
- Contractor will verify applicable field dimensions before the installation.
- Backplates are optional for traffic signals. When backplates are used, Backplates will have a 2-inch fluorescent yellow AASHTO Type BFL or CFL retroreflective border conforming to TxDOT DMS-8300 "Sign Face Materials." See Sheet TS-BP-20 for backplate details.



SECTION B-B

(Showing damping plate attachment)

Texas Department of Transportation
 Traffic Safety Division Standard

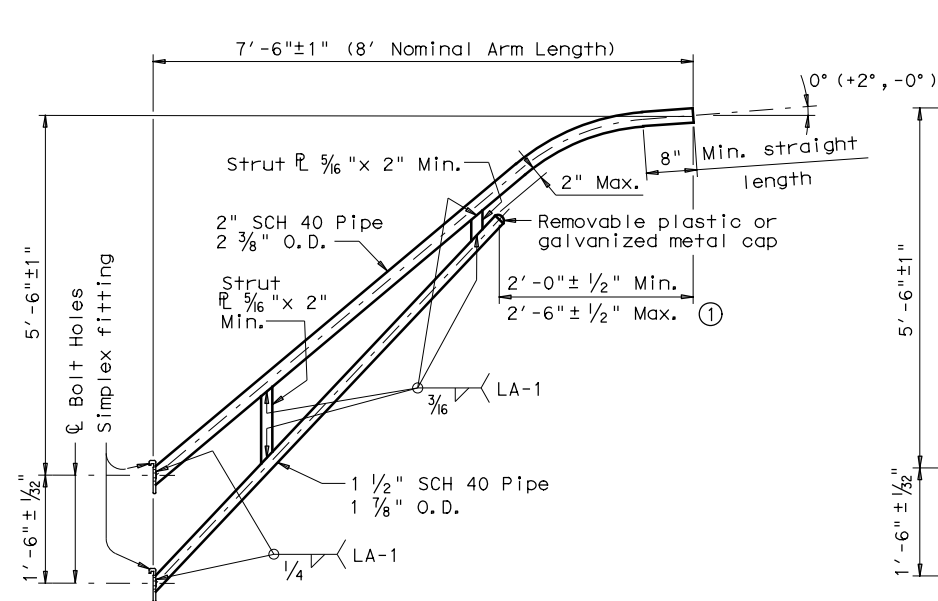
MAST ARM DAMPING PLATE DETAILS

MA-DPD-20

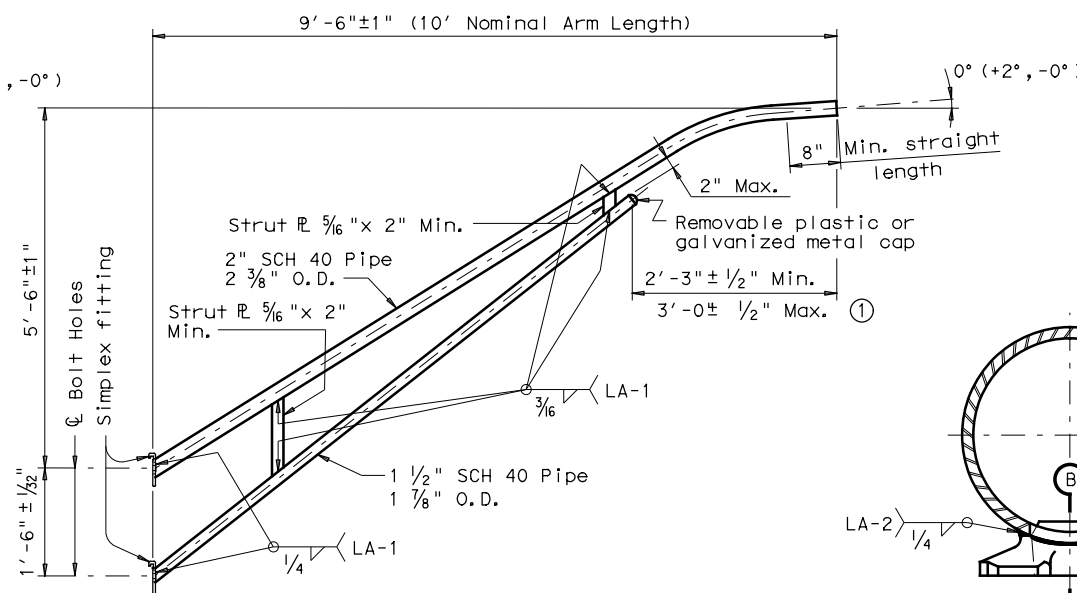
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© TxDOT January 2012	CON: 0439	SECT: 05	JOB: 026	HIGHWAY: SH 194
6-20	DIST: LBB	COUNTY: HALE	SHEET NO. 243	

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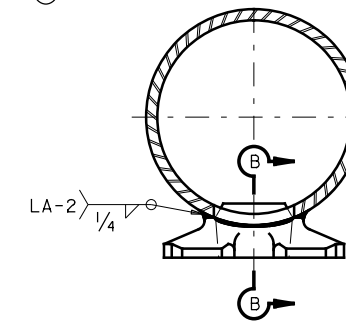
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8-FOOT LUMINAIRE ARM



10-FOOT LUMINAIRE ARM



DIRECT ATTACHMENT DETAIL

MATERIALS	
Pole or Arm Simplex	ASTM A27 Gr. 65-35 or A148 Gr. 80-50, A576 Gr. 1021 (3), or A36 (Arm only)
Arm Pipes	ASTM A53 Gr. B, A501, A1008 HSLAS-F Gr. 50 (4), or A1011 HSLAS-F Gr. 50 (4)
Arm Strut Plates (2)	ASTM A36, A572 Gr. 50 (4), or A588
Misc.	ASTM designations as noted

- ① Dimensional limits are given to show acceptable variation in design. All of a Fabricator's production of a particular arm length shall have the same dimensions within specified tolerances.
- ② Any of the materials listed for plates may be used where the drawings do not specify a particular ASTM designation.
- ③ A576 must be suitable for forging and also meet minimum tensile strength of 65 ksi, minimum yield of 35 ksi, and elongation in 2 inches of 22 percent.
- ④ ASTM A572, A1008 HSLAS-F, and A1011 HSLAS-F may have higher yield strengths but shall not have less elongation than the grade indicated.

GENERAL NOTES:

Design conforms to 1994 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals and Interim Revisions thereto. Design Wind Speed equals 90 mph plus a 1.3 gust factor. Arms are designed to support a 60 lb. luminaire having an effective projected area (actual area times drag coefficient) of 1.6 sq. ft.

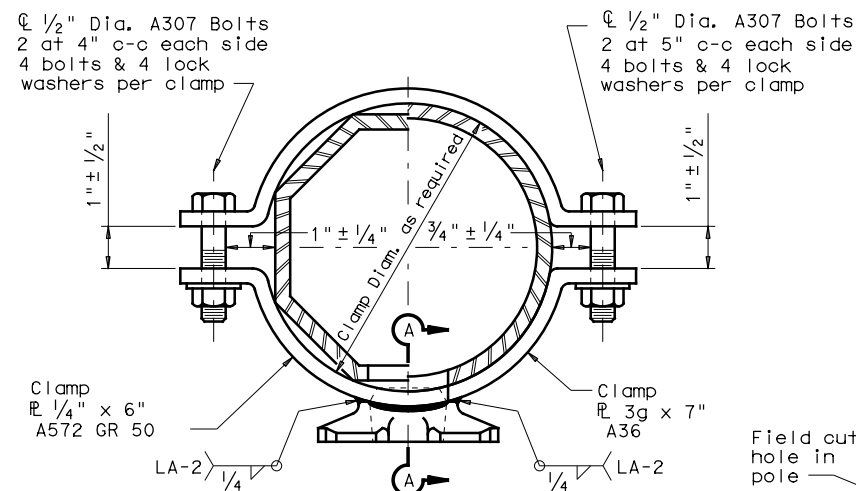
Materials and fabrication shall be in accordance with Item 686, "Traffic Signal Pole Assemblies (Steel)" and with the details, dimensions, and weld procedures shown herein. Weld references call for preapproved weld procedures which the Fabricator must obtain prior to fabrication. In the absence of specified Fabricator tolerances, dimensions shall be within the tolerances generally obtainable in normal fabrication practice.

Unless otherwise noted, all parts shall be galvanized after fabrication in accordance with Item 445, "Galvanizing".

Deviation from the details and dimensions shown herein require submission of shop drawings in accordance with Item 441, "Steel Structures". Alternate designs are not acceptable.

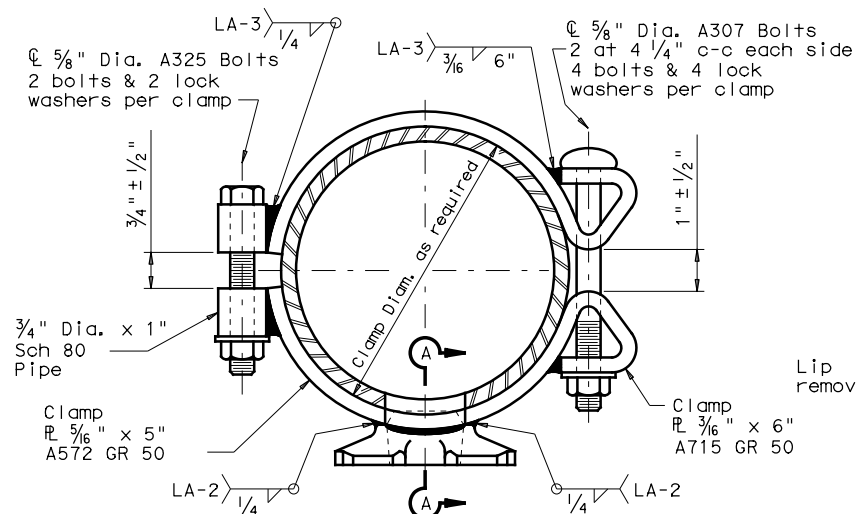
Each pole simplex fitting shall be supplied with 2 ASTM A325 bolts and 2 lock washers of the size specified. The bolts and lock washers shall be secured to the pole with the other hardware items called for in the plans. When clamp attachment is specified, the Fabricator shall ship the clamp assembly securely attached to the pole at the location shown on the plans.

If clamp assemblies are ordered without poles, the Fabricator shall ship one upper and one lower clamp assembly together in a single package, including all nuts and washers required for the clamps and simplex fittings.



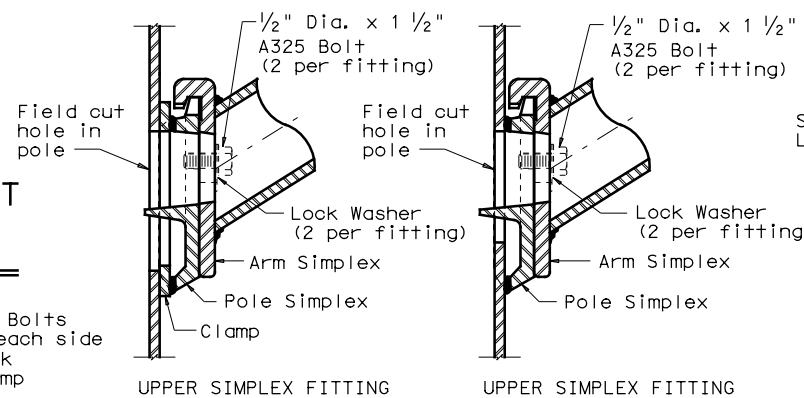
CLAMP ATTACHMENT DETAIL NO. 1 (HALF SECTION)

CLAMP ATTACHMENT DETAIL NO. 2 (HALF SECTION)



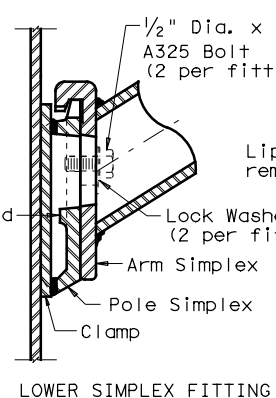
CLAMP ATTACHMENT DETAIL NO. 3 (HALF SECTION)

CLAMP ATTACHMENT DETAIL NO. 4 (HALF SECTION)

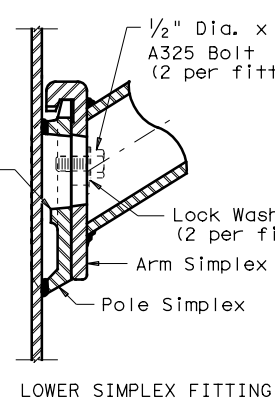


UPPER SIMPLEX FITTING

UPPER SIMPLEX FITTING



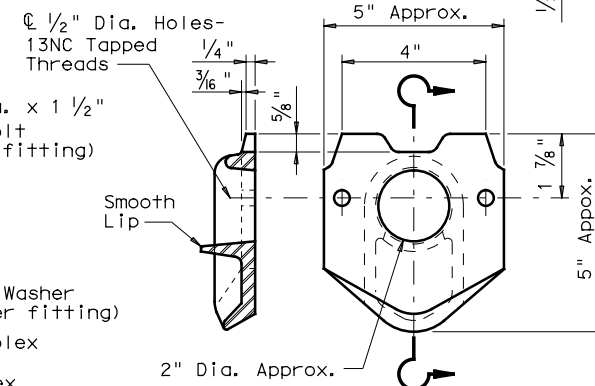
LOWER SIMPLEX FITTING



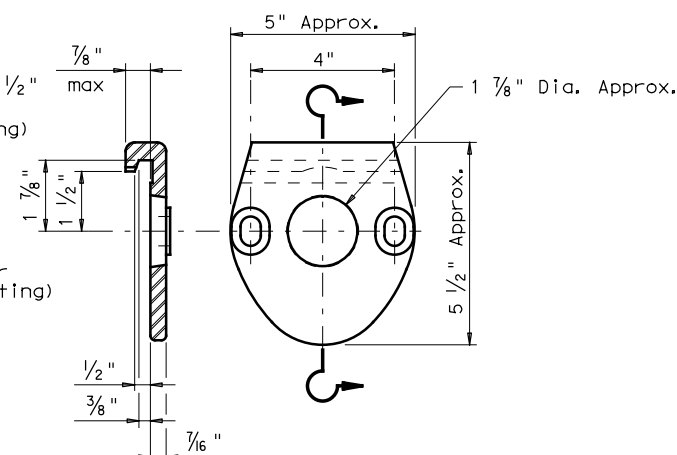
LOWER SIMPLEX FITTING

SECTION A-A

SECTION B-B



POLE SIMPLEX DETAIL



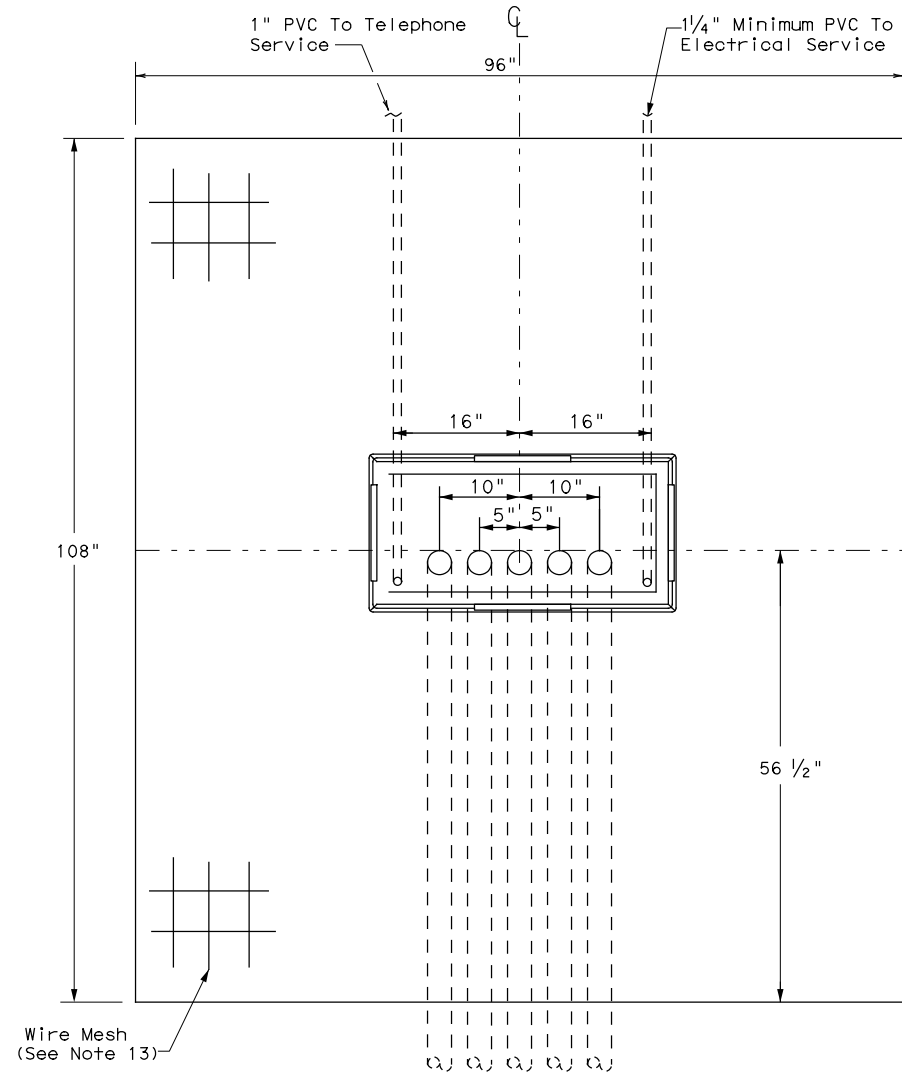
ARM SIMPLEX DETAIL

Texas Department of Transportation
 Traffic Operations Division
STANDARD ASSEMBLY DRAWINGS FOR LUMINAIRE SUPPORT STRUCTURES
ARM DETAILS
LUM-A-12

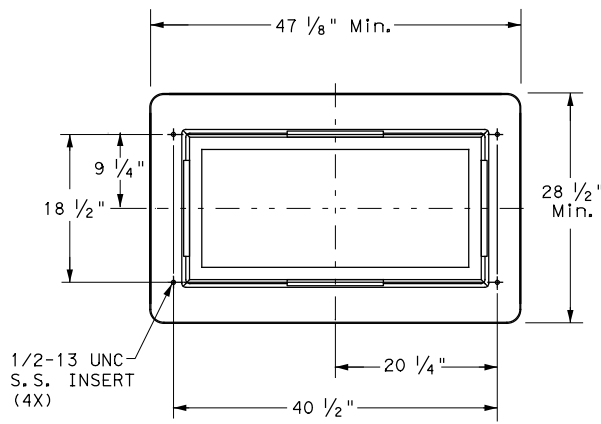
© TxDOT August 1995	DN: LEH	CK: JSY	DW: LTT	CK: TEB
5-96	REVISIONS	CONT	SECT	JOB
1-99		0439	05	026
1-12		DIST	COUNTY	SH 194
		LBB	HALE	SHEET NO. 244

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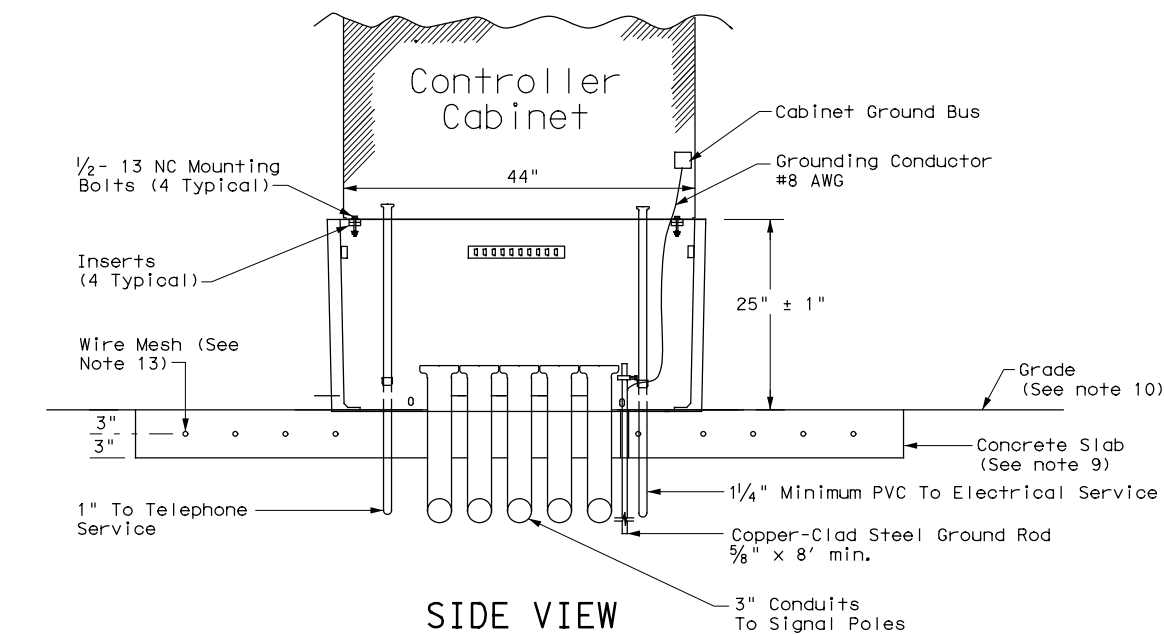
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TOP VIEW



CABINET BASE



SIDE VIEW

TRAFFIC SIGNAL CONTROLLER BASE:

1. Provide a traffic signal controller base (cabinet base) manufactured of polymer concrete material consisting of calcareous and siliceous stone, glass fibers and thermoset polyester resin. The polymer concrete cabinet base must be reinforced on the inside of the cabinet base with fiberglass matting. Provide one of the following bases: Armorcast Part # A6001848X24, Quazite Model # PG3048Z709, or other as approved by TxDOT Traffic Safety Division.
2. The polymer concrete material must have a minimum compressive strength of 10,300 pounds per square inch (psi), minimum flexural strength of 3600 psi, and minimum shear strength of 3600 psi.
3. The polymer concrete cabinet base must conform to the dimensions shown and must accommodate a standard TxDOT basemount cabinet.
4. Supply the cabinet base with four 1#2"-13 UNC stainless steel inserts for attachment of the cabinet to the base. Inserts must withstand a minimum torque of 50 ft-lb and a minimum straight pull out strength of 750 lbs.
5. Provide the cabinet base with 4 cable racks mounted one on each side of the base 2" to 7" from the top edge of the base. Unless approved otherwise, cable racks must be 1-1/2 x 9#16x 3#16inch steel channel with eight T-slots spaced at 1-1/2 inches. The cable racks must easily accommodate the insertion of tie wraps to attach field wiring to the racks to serve as strain relief. Secure cable racks to the base using 1#2"-13 UNC stainless steel screws and inserts.
6. The cabinet base, when secured to the concrete slab with controller cabinet attached, must withstand a minimum wind load of 125 mph or a 850 lb force applied at 49" above the bottom of the base without causing the base or cabinet to come out of their anchored position or cause any permanent deformation. The manufacturer must supply certification by an independent testing laboratory or sealed by a Texas Licensed Professional Engineer. Provide the cabinet base with hardware for attachment to a concrete slab.
7. The traffic signal base must be permanently marked either by impress or by permanent ink with the manufacturer's model number and name or logo.
8. Seal the base to the concrete with a silicone caulk bead and fastened to the slab per manufacturer's instructions.

CONCRETE SLAB:

9. Traffic signal controller pad must be a portland cement concrete slab poured in place, must conform to the dimensions shown, and must be level.
10. Grade earthwork such that it is flush with the concrete pad on all four sides, unless otherwise shown on the plans. Subsidiary to ITEM 680, four inch rip rap may be used in lieu of earthwork. Slopes shall gradually contour to match plans.
11. Bond a #8 AWG copper ground wire and an 8 ft ground rod bonded to the reinforcing mesh by a suitable UL Listed clamp and terminated to the cabinet grounding bus for the purpose of providing a local ground for the electrical grounding conductor. The electrical grounding conductor specified in Item 680-3.A.4 is required and must be terminated to the cabinet ground bus.
12. Install a PVC sleeve to prevent the ground rod from direct embedment in the slab.
13. Provide welded wire mesh 6X6-W2.9 X W2.9 for reinforcement. Provide joints and splices in the mesh with a minimum 6-inch overlap. Center the mesh between top and bottom and provide a minimum 3 inch cover on the edges.
14. Provide Class B concrete minimum for the slab in accordance with Item 421. Construct the slab in accordance with Item 531.

CONDUITS:

15. Stub up and run 3-inch conduits through the slab to the various traffic signal poles and ground boxes as shown on the layouts. Install the number of conduits as shown on layouts plus two additional 3 inch conduits for future use. Terminate the conduits with a bushing between 2 and 4-inches above the slab.
16. Extend conduits for future use at least 18-inches from the edge of the slab, terminate underground with a coupling, and cap and seal so that the seal can be removed without damaging the coupling. This must also apply to unused telephone conduit.
17. Stub up two separate conduits through the slab from the electrical and telephone services. Run the conduit for the electrical feed directly to the electrical service enclosure. Run the conduit for the telephone line directly to the telephone service, usually located on the same pole as the electrical service. Telephone must not under any circumstance share a conduit with any other function.
18. Terminate electric and telephone conduits above the slab with a coupling. After the base is installed, extend the conduits above the top of the base and secure to the base using a steel one-hole strap or similar suitable substitute.

CONTROLLER CABINET:

19. Anchor the controller cabinet to the base using four stainless steel 1/2-13 NC bolts.
20. The silicone caulk bead specified in Item 680.3.B must be RTV 133.

PAYMENT:

21. Bid TS-CF as subsidiary to Item 680.

<p>TRAFFIC SIGNAL CONTROLLER CABINET BASE AND PAD</p> <p>TS-CF-21</p>				
FILE: ts-cf-21.dgn	DN:	CK:	DW:	CK:
© TxDOT October 2000	CONT	SECT	JOB	HIGHWAY
12-04	0439	05	026	SH 194
2-21	DIST	COUNTY	SHEET NO.	
	LBB	HALE	245	

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DISCLAIMER:

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FOUNDATION DESIGN TABLE

FDN TYPE	DRILLED SHAFT DIA	REINFORCING STEEL		EMBEDDED DRILLED SHAFT LENGTH-ft (4), (5), (6)			ANCHOR BOLT DESIGN (1)			FOUNDATION DESIGN LOAD (2)		TYPICAL APPLICATION	
		VERT BARS	SPIRAL & PITCH	TEXAS CONE PENETROMETER N blows/ft	ANCHOR BOLT DIA	Fy (Ksi)	BOLT CIR DIA	ANCHOR TYPE	MOMENT K-ft	SHEAR Kips			
24-A	24"	4- #5	#2 at 12"	5.7	5.3	4.5	3/4"	36	12 3/4"	1	10	1	Pedestal pole, pedestal mounted controller.
30-A	30"	8- #9	#3 at 6"	11.3	10.3	8.0	1 1/2"	55	17"	2	87	3	Mast arm assembly. (see Selection Table)
36-A	36"	10- #9	#3 at 6"	13.2	12.0	9.4	1 3/4"	55	19"	2	131	5	Mast arm assembly. (see Selection Table) 30' strain pole with or without luminaire.
36-B	36"	12- #9	#3 at 6"	15.2	13.6	10.4	2"	55	21"	2	190	7	Mast arm assembly. (see Selection Table) Strain pole taller than 30' & strain pole with mast arm
42-A	42"	14- #9	#3 at 6"	17.4	15.6	11.9	2 1/4"	55	23"	2	271	9	Mast arm assembly. (see Selection Table)

NOTES:

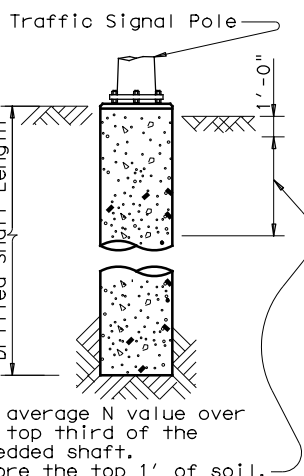
- Anchor bolt design develops the foundation capacity given under Foundation Design Loads.
- Foundation Design Loads are the allowable moments and shears at the base of the structure.
- Foundations may be listed separately or grouped according to similarity of location and type. Quantities are for the Contractor's information only.
- Field Penetrometer readings at a depth of approximately 3 to 5 feet may be used to adjust shaft lengths.
- If rock is encountered, the Drilled Shaft shall extend a minimum of two diameters into solid rock.
- Decimal lengths in Design Table are to allow interpolation for other penetrometer values. Round to nearest foot for entry into Summary Table.

FOUNDATION SUMMARY TABLE (3)

LOCATION IDENTIFICATION	AVG. N BLOW /ft.	FDN TYPE	NO. EA	DRILLED SHAFT LENGTH (6) (FEET)				
				24-A	30-A	36-A	36-B	42-A
SH 194 @ W 5TH ST								
POLE 1	12	36-A	1			14		
POLE 3	12	36-A	1			14		
POLE 5	12	36-B	1				16	
POLE 9	12	36-B	1				16	
SH 194 @ W 11TH ST								
POLE 1	20	36-A	1			12		
POLE 4	20	36-A	1			12		
POLE 6	20	36-A	1			12		
POLE 8	20	36-A	1			12		
SH 194 @ W 16TH ST								
POLE 1	15	36-A	1			12		
POLE 3	15	36-A	1			12		
POLE 5	15	36-A	1			12		
POLE 8	15	36-A	1			12		
SH 194 @ W 24TH ST								
POLE 1	17	36-B	1					14
POLE 2	17	36-A	1			12		
POLE 4	17	36-A	1			12		
POLE 6	17	36-A	1			12		
TOTAL DRILLED SHAFT LENGTHS						160	46	

FOUNDATION SELECTION TABLE FOR STANDARD MAST ARM PLUS ILSN SUPPORT ASSEMBLIES (ft)

80 MPH DESIGN WIND SPEED	MAX SINGLE ARM LENGTH	FDN 30-A	FDN 36-A	FDN 36-B	FDN 42-A
		24' X 24'			
MAXIMUM DOUBLE ARM LENGTH COMBINATIONS	28' X 28'				
	32' X 28'		32' X 32'		
			36' X 36'		
			40' X 36'		
		44' X 28'	44' X 36'		
100 MPH DESIGN WIND SPEED	MAX SINGLE ARM LENGTH		36'	44'	
	MAXIMUM DOUBLE ARM LENGTH COMBINATIONS	24' X 24'			
		28' X 28'			
		32' X 24'		32' X 32'	
			36' X 36'		
		40' X 24'	40' X 36'		
			44' X 36'		



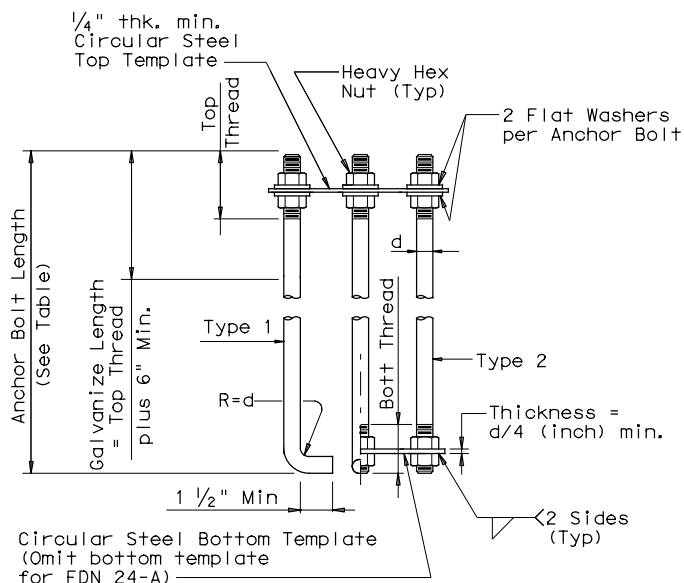
ANCHOR BOLT & TEMPLATE SIZES

BOLT DIA IN.	(7) BOLT LENGTH	TOP THREAD	BOTTOM THREAD	BOLT CIRCLE	R2	R1
3/4"	1'-6"	3"	—	12 3/4"	7 1/8"	5 5/8"
1 1/2"	3'-4"	6"	4"	17"	10"	7"
1 3/4"	3'-10"	7"	4 1/2"	19"	11 1/4"	7 3/4"
2"	4'-3"	8"	5"	21"	12 1/2"	8 1/2"
2 1/4"	4'-9"	9"	5 1/2"	23"	13 3/4"	9 1/4"

(7) Min dimensions given, longer bolts are acceptable.

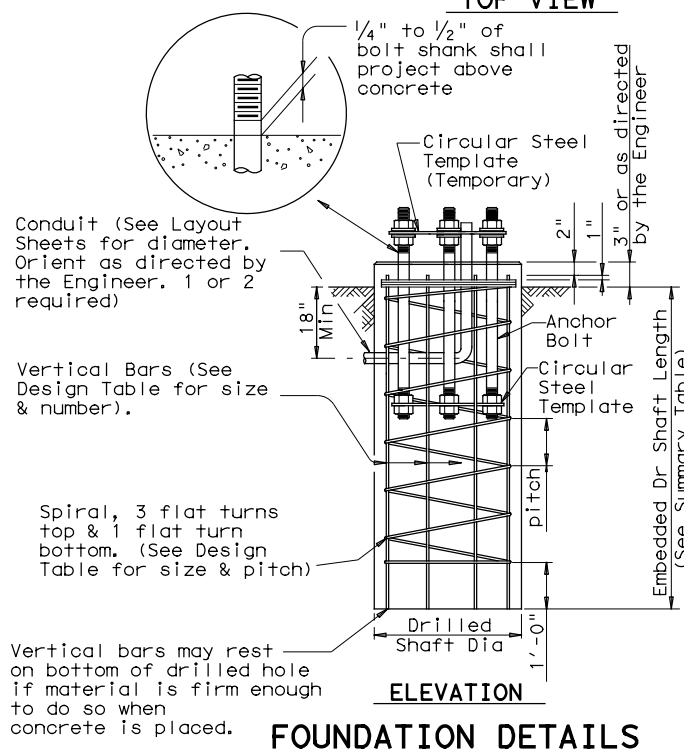
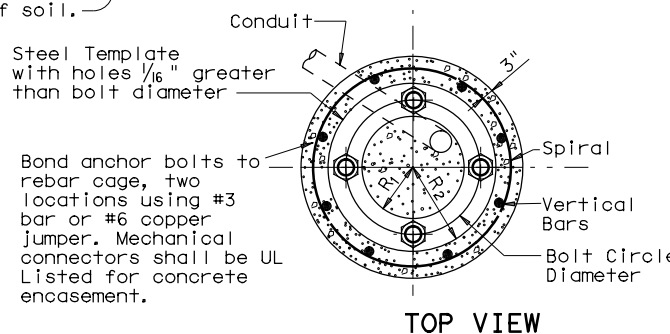
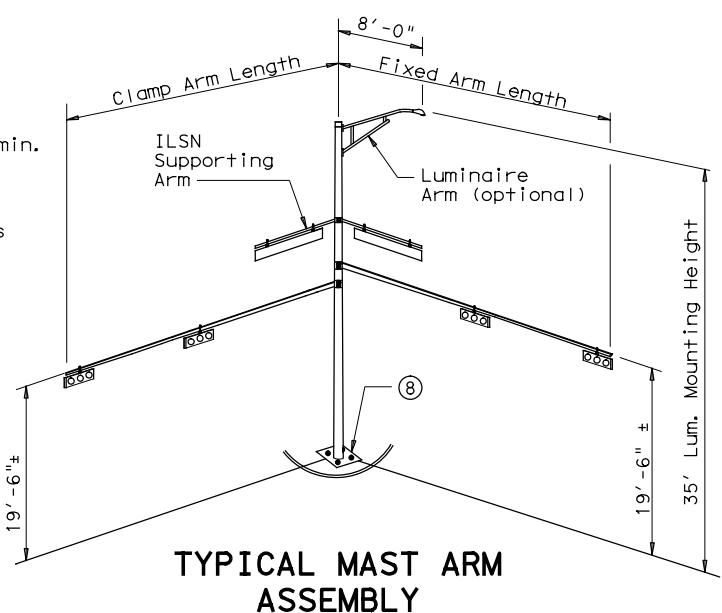
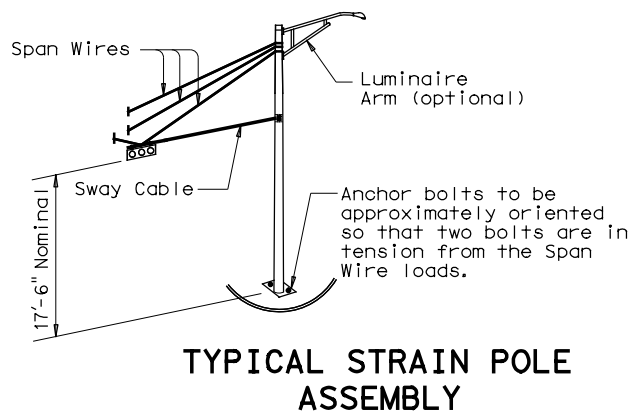
EXAMPLE:

- For 80mph design wind speed, foundation 30-A can support up to a 32' arm with another arm up to 28'
- For 100mph design wind speed, foundation 36-A can support a single 36' mast arm.



HOOKED ANCHOR (TYPE 1) NUT ANCHOR (TYPE 2) ANCHOR BOLT ASSEMBLY

(8) Orient anchor bolts orthogonal with the fixed arm direction to ensure that two bolts are in tension under dead load.



GENERAL NOTES:

Design conforms to 1994 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals and interim revisions thereto.

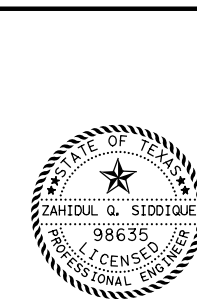
Reinforcing steel shall conform to Item 440, "Reinforcing Steel".

Concrete shall be Class "C".

Threads for anchor bolts and nuts shall be rolled or cut threads of 8UN series up to 2" in diameter or UNC series for all sizes. Bolts and nuts shall have Class 2A and 2B fit tolerances. Galvanized nuts shall be tapped after galvanizing.

Anchor bolts that are larger than 1" in diameter shall conform to "alloy steel" or "medium-strength mild steel" per Item 449, "Anchor Bolts". Anchor bolts that are 1" in diameter or less shall conform to ASTM A36. Galvanize a minimum of the top end thread length plus 6" for all anchor bolts unless otherwise noted. Exposed washers and exposed nuts shall be galvanized. All galvanizing shall be in accordance with Item 445, "Galvanizing".

Templates and embedded nuts need not be galvanized. Lubricate and tighten anchor bolts when erecting the structure in accordance with Item 449, "Anchor Bolts".



Zahidul Q. Siddique
2/27/2023



TRAFFIC SIGNAL POLE FOUNDATION

TS-FD-12

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REVISIONS		CONT	SECT	JOB	HIGHWAY
5-96	0439	05	026	SH 194	
11-99					
1-12					
DIST		COUNTY		SHEET NO.	
LBB		HALE		246	

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GENERAL NOTES FOR ALL ELECTRICAL WORK

- The location of all conduits, junction boxes, ground boxes, and electrical services is diagrammatic and may be shifted to accommodate field conditions.
- Provide new and unused materials. Ensure that all materials and installations comply with the applicable articles of the National Electrical Code (NEC), TxDOT standards and specifications, National Electrical Manufacturers Association (NEMA), and are listed by Underwriters Laboratories (UL) or a Nationally Recognized Testing Lab (NRTL). NRTLs such as Canadian Standard Association (CSA), Intertek Testing Services NA Inc., or FM Approvals LLC can be considered equivalent to UL. Where reference is made to NEMA listed devices, International Electrotechnical Commission (IEC) listed devices will not be considered an acceptable equal to a NEMA listed device. Acceptable devices may have both a NEMA and IEC listing. Faulty fabrication or poor workmanship in any material, equipment, or installation is justification for rejection. Replace or reinstall rejected material or equipment at no additional cost to the Department.
- Miscellaneous nuts, bolts and hardware, except for high strength bolts, may be stainless steel when plans specify galvanized, provided the bolt size is 1/2 in. or less in diameter.
- Provide the following test equipment as required by the Engineer to confirm compliance with the contract and the NEC: voltmeter, ammeter, megohm meter (1000 volt DC), ground resistance tester, torque wrenches, and torque screwdrivers. Ensure all equipment has been properly calibrated within the last year. Provide calibration certification to the Engineer upon request. Operate test equipment during inspection as requested by the Engineer.
- Install grounding as shown on the plans and in accordance with the NEC. Ensure all metallic conduits; metal poles; luminaires; and metal enclosures are bonded to the equipment grounding conductor. Provide stranded bare copper or green insulated grounding conductors. Ground rods, connectors, and bonding jumpers are subsidiary to the various bid items.
- When required by the Engineer, notify the Department in writing of materials from the Material Producers List (MPL) intended for use on each project. Prequalified materials are listed on the MPL on TxDOT's website under "Roadway Illumination and Electrical Supplies." No substitutions will be allowed for materials on this list.

CONDUIT

A. MATERIALS

- Provide conduit, junction boxes, fittings, and hardware as per TxDOT Departmental Material Specification (DMS) 11030 "Conduit" and Item 618 "Conduit" of TxDOT's "Standard Specifications For Construction And Maintenance Of Highways, Streets, And Bridges," latest edition. Provide conduits listed under Item 618 on the MPL under "Roadway Illumination and Electrical Supplies." Provide conduit types according to the descriptive code or as shown on the plans. Do not substitute other types of conduits for those shown. Provide liquidtight flexible metal conduit (LFMC) when flexible conduit is called for on galvanized steel rigid metallic conduit (RMC) systems. Provide liquidtight flexible nonmetallic conduit (LFNC) when flexible conduit is called for on polyvinyl chloride (PVC) systems.
- Provide galvanized steel RMC for all exposed conduits, unless otherwise shown on the plans. Properly bond all metal conduits.
- Unless otherwise shown on the plans, provide junction boxes with a minimum size as shown in the following table, which applies to the greatest number of conductors entering the box through one conduit with no more than four conduits per box. When a mixture of conductor sizes is present, count the conductors as if all are of the larger size. For situations not applicable to the table, size junction boxes in accordance with NEC.


AWG	3 CONDUCTORS	5 CONDUCTORS	7 CONDUCTORS
#1	10" x 10" x 4"	12" x 12" x 4"	16" x 16" x 4"
#2	8" x 8" x 4"	10" x 10" x 4"	12" x 12" x 4"
#4	8" x 8" x 4"	10" x 10" x 4"	10" x 10" x 4"
#6	8" x 8" x 4"	8" x 8" x 4"	10" x 10" x 4"
#8	8" x 8" x 4"	8" x 8" x 4"	8" x 8" x 4"

- Junction boxes with an internal volume of less than 100 cu. in. and supported by entering raceways must have threaded entries or hubs identified for the intended purpose and supported by connection of two or more rigid metal conduits. Secure conduit within 3 ft. of the enclosure or within 18 in. of the enclosure if all conduit entries are on the same side. Mechanically secure all junction boxes with an internal volume greater than 100 cu. inches.
- Provide hot dipped galvanized cast iron or sand cast aluminum outlet boxes for junction boxes containing only 10 AWG or 12 AWG conductors. Do not use die cast aluminum boxes. Size outlet boxes according to the NEC.
- Do not use intermediate metal conduit (IMC) or electrical metallic tubing (EMT) unless specifically required by the plan sheets. When EMT is called for, provide junction boxes made from galvanized steel sheeting, listed and approved for outdoor use, unless otherwise noted on the plans. Size all galvanized steel junction boxes in accordance with the NEC. Provide junction boxes for IMC conduit systems that meet the same requirements for junction boxes used with RMC systems.
- Provide PVC junction boxes intended for outdoor use on PVC conduit systems, unless otherwise noted on the plans.

- Provide PVC elbows in PVC conduit systems, unless otherwise shown on the plans. Use only a flat, high tensile strength polyester fiber pull tape for pulling conductors through the PVC conduit system. When galvanized steel RMC elbows are specifically called for in the plans and any portion of the RMC elbow is buried less than 18 in., ground the RMC elbow by means of a grounding bushing on a rigid metal extension. Grounding of the rigid metal elbow is not required if the entire RMC elbow is encased in a minimum of 2 in. of concrete. PVC extensions are allowed on these concrete encased rigid metal elbows. RMC or PVC elbows are subsidiary to various bid items.
- When required, provide High-Density Polyethylene (HDPE) conduit with factory installed internal conductors according to Item 622 "Duct Cable." At the Contractor's request and with approval by the Engineer, substitute HDPE conduit with no conductors for bored schedule 40 or schedule 80 PVC conduit bid under Item 618. Ensure bored HDPE substituted for PVC is schedule 40 and of the same size PVC called for in the plans. Ensure the substituted HDPE meets the requirements of Item 622, except that the conduit is supplied without factory-installed conductors. Make the transition of the HDPE conduit to PVC (or RMC elbow when required) at the bore pit. Provide conduit of the size and schedule as shown on the plans. Do not extend substituted conduit into ground boxes or foundations. Provide PVC or galvanized steel RMC elbows as called for at all ground boxes and foundations.
- Use two-hole straps when supporting 2 in. and larger conduits. On electrical service poles, properly sized stainless steel or hot dipped galvanized one-hole standoff straps are allowed on the service riser conduit.

B. CONSTRUCTION METHODS

- Provide and install expansion joint conduit fittings on all structure-mounted conduits at the structure's expansion joints to allow for movement of the conduit. In addition, provide and install expansion joint fittings on all continuous runs of galvanized steel RMC conduit externally exposed on structures such as bridges at maximum intervals of 150 ft. When requested by the project Engineer, supply manufacturer's specification sheet for expansion joint conduit fittings. Repair or replace expansion joint fittings that do not allow for movement at no additional cost to the Department. Provide the method of determining the amount of expansion to the Engineer upon request. Do not use LFMC or LFNC as a substitute for the required expansion conduit fittings.
- Space all conduit supports at maximum intervals of 5 ft. Install conduit spacers when attaching metal conduit to surface of concrete structures. See "Conduit Mounting Options" on ED(2). Install conduit support within 3 ft. of all enclosures and conduit terminations.
- Do not attach conduit supports directly to pre-stressed concrete beams except as shown specifically in the plans or as approved by the Engineer.
- Unless otherwise shown on the plans, jack or bore conduit placed beneath existing roadways, driveways, sidewalks, or after the base or surfacing operation has begun. Backfill and compact the bore pits below the conduit per Item 476 "Jacking, Boring, or Tunneling Pipe or Box" prior to installing conduit or duct cable to prevent bending of the connections.
- When placing conduit in the sub-grade of new roadways, backfill all trenches with excavated material unless otherwise noted on the plans. When placing conduit in the sub-base of new roadways, backfill all trenches with cement-stabilized base as per requirements of Items 110 "Excavation", 400 "Excavation and Backfill for Structures", 401 "Flowable Backfill", 402 "Trench Excavation Protection", and 403 "Temporary Special Shoring."
- Provide and place warning tape approximately 10 in. above all trenched conduit as per Item 618.
- During construction, temporarily cap or plug open ends of all conduit and raceways immediately after installation to prevent entry of dirt, debris and animals. Temporary caps constructed of durable duct tape are allowed. Tightly fix the tape to the conduit opening. Clean out the conduit and prove it clear in accordance with Item 618 prior to installing any conductors.
- Ensure conduit entry into the top of any enclosure is waterproof by installing conduit sealing hubs or using boxes with threaded bosses. This includes surface mounted safety switches, meter cans, service enclosures, auxiliary enclosures and junction boxes. Grounding bushings on water tight sealing hubs are not required.
- Fit the ends of all PVC conduit terminations with bushings or bell end fittings. Provide and install a grounding type bushing on all metal conduit terminations.
- Install a bonding jumper from each grounding bushing to the nearest ground rod, grounding lug, or equipment grounding conductor. Ensure all bonding jumpers are the same size as the equipment grounding conductor. Bonding of conduit used as a casing under roadways for duct cable is not required, if the duct extends the full length through the casing.
- At all electrical services, install a 6 AWG solid copper grounding electrode conductor.
- Place conduits entering ground boxes so that the conduit openings are between 3 in. and 6 in. from the bottom of the box. See the ground box detail on sheet ED(4).
- Seal ends of all conduits with duct seal, expandable foam, or by other methods approved by the Engineer. Seal conduit immediately after completion of conductor installation and pull tests. Do not use duct tape as a permanent conduit sealant. Do not use silicone caulk as a conduit sealant.
- File smooth the out ends of all mounting strut and conduit. Before installing, paint the field out ends of all mounting strut and RMC (threaded or non-threaded) with zinc rich paint (94% or more zinc content) to alleviate overspray. Use zinc rich paint to touch up galvanized material as allowed under Item 445 "Galvanizing." Do not paint non-galvanized material with a zinc rich paint as an alternative for materials required to be galvanized.

				Traffic Operations Division Standard	
<h1>ELECTRICAL DETAILS CONDUITS & NOTES</h1>					
<h2>ED(1)-14</h2>					
FILE:	ed1-14.dgn	DN:	CK:	DW:	CK:
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REVISIONS		0439	05	026	SH 194
		DIST	COUNTY		SHEET NO.
		LBB	HALE		247

ELECTRICAL CONDUCTORS

A. MATERIAL INFORMATION

1. Provide Type XHHW insulated conductors in accordance with Departmental Material Specification (DMS) 11040 "Conductors" and Item 620 "Electrical Conductors." Provide conductors as listed on the Material Producers List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies" Item 620. Color code insulated conductors in conformance with the NEC. Identify grounded (neutral) conductors with white insulation. Identify grounding conductors (ground wires) with green insulation or bare conductors. Identify ungrounded (hot) conductors with any color insulation except green, white, or gray. Keep color scheme consistent throughout the wiring system. Identify conductors 6 American Wire Gauge (AWG) and smaller by continuous color jacket. Identify electrical conductors 4 AWG and larger by continuous color jacket or by colored tape. When identifying conductors with colored tape, mark at least 6 in. of the conductor's insulation with half laps of tape.
2. Provide a solid copper 6 AWG grounding electrode conductor to bond the electrical service equipment to the concrete encased grounding electrode or the ground rod at the service location. Connect the grounding electrode conductor to the ground rod with a UL listed connector in accordance with DMS 11040. Connect the grounding electrode conductor to the concrete encased grounding electrode as shown in the plans.
3. Where two or more circuits are present in one conduit or enclosure, permanently identify the conductors of each branch circuit by attaching a non-metallic tag around both circuit conductors at each accessible location. Provide tags with two straps, large enough to indicate circuit number, letter, or other identification as shown in the plans. Print circuit identification on the tag with a permanent marker.
4. Use listed compression or screw type pressure connectors, terminal blocks, or split bolt connectors for splicing as specified in DMS 11040. Use hot melt adhesive tape to fill the gap and seal the ends of heat shrink tubing. Provide UL listed gel-filled insulating splice covers. Splicing materials, insulating materials, breakaway disconnects, splice covers, and fuse holders are subsidiary to various bid items.

B. CONSTRUCTION METHODS

1. Use only a flat, high tensile strength polyester fiber pull tape for pulling conductors through the conduit system. After installing conductors in conduit, perform conductor pull test. If a conductor cannot be freely pulled, make any needed alterations or repairs at no additional cost to the department. Perform insulation resistance tests in accordance with Item 620. Coordinate with the Engineer to witness the tests.
2. Leave 2 ft. minimum, 3 ft. maximum length for each conductor up to the splice in ground boxes. Leave 3 ft. minimum, 4 ft. maximum length of conductor in ground boxes when pulled through with no splice. Leave 1 ft. minimum, 1.5 ft. maximum length of conductor at enclosures, weatherheads and pole bases.
3. Make splices only in junction boxes, ground boxes, pole bases, or electrical enclosures and use only listed compression or screw type pressure connectors, terminal blocks, or split bolt connectors. Insulate splices with heavy wall heat shrink tubing or gel-filled insulating splice covers to provide a watertight splice. Overlap conductor insulation with heat shrink tubing a minimum of 2 in. past both sides of the splice. Where heat shrink tubing may not shrink sufficiently to provide a watertight seal around the individual conductors, prior to heating the tubing, increase the diameter of the conductor insulation using hot melt adhesive tape to provide a watertight seal between the individual conductors and the heat shrink tubing. Ensure the tape extends past the heat shrink tubing. Use hot melt adhesive tape to fill the gap and seal the ends of heat shrink tubing. Heat shrink tubing that appears to have been burned, or overheated, is considered defective and must be replaced.
4. Size and install gel-filled insulating splice covers according to manufacturer's specifications when used in place of heat shrink tubing.
5. Wire nuts with factory applied waterproof sealant may be used for 8 AWG or smaller conductors in above ground junction boxes, but not in pole bases or ground boxes. Install wire nuts in an upright position to prevent the accumulation of water.
6. Support conductors in illumination poles with a J-hook at the top of the pole.
7. When terminating conductors, remove the insulation and jacketing material without nicking the individual strands of the conductor. Conductors with nicked individual conductor strands or removed strands will be considered damaged.
8. Replace conductors and cables that are damaged beyond repair or that fail an insulation resistance test at no additional cost to the department.
9. Do not repair damaged conductors with duct tape, electrical tape, or wire nuts. Use only approved splicing methods.
10. Do not terminate more than one conductor under a single connector, unless the connector is rated for multiple conductors. Do not exceed the pressure connector's listing for maximum number and size of conductors allowed.
11. Install breakaway connectors on conductors bid under Item 620 whenever those conductors pass through a breakaway support device. Follow manufacturer's instructions when terminating conductors to breakaway connectors. Properly torque threaded connections. Proper terminations are critical to the safe operation of breakaway devices. Trim waterproofing boots on breakaway connectors to fit snugly around the conductor to ensure waterproof connection. Only one conductor may enter a single opening in a boot. Provide waterproof boots with the correct number of openings. Leave unused openings factory sealed. Use prequalified breakaway connectors as shown on the MPL.

12. Provide and install a separate stranded equipment grounding conductor (EGC) in all conduits that contain circuit wiring of 50 volts or more. Unless shown elsewhere, size the EGC to be the same size as the largest current carrying conductor contained in the conduit. Ensure all EGCs are bonded together at every accessible location. For traffic signal installations, provide a minimum size 8 AWG EGC. The EGC is paid for under Item 620.

C. TEMPORARY WIRING

1. Install temporary conductors and electrical equipment in accordance with the NEC article "Temporary Installations" and Department standard sheets.
2. Provide a ground fault circuit interrupter (GFCI) for power outlets for portable electrical equipment, power tools, ice machines, ice storage bins and refrigerators located outdoors at grade. GFCI may be any one of the following: molded cord and plug set, receptacle, or circuit breaker type.
3. Use listed wire nuts with factory applied sealant for temporary wiring where approved.
4. Enclose conductor splices within a listed enclosure or ground box, or ensure the splices are more than 10 ft. above grade vertically and more than 5 ft. horizontally from any metal structure. Where installing temporary conductors in areas subject to vehicle traffic or mobile construction equipment, ensure the vertical clearance to ground is at least 18 ft. when measured at the lowest point. Ground messenger wires that support power conductors in conformance with the NEC.
5. Protect and when necessary repair any existing electrical conduits uncovered during the construction process in a timely manner and in conformance with the NEC.

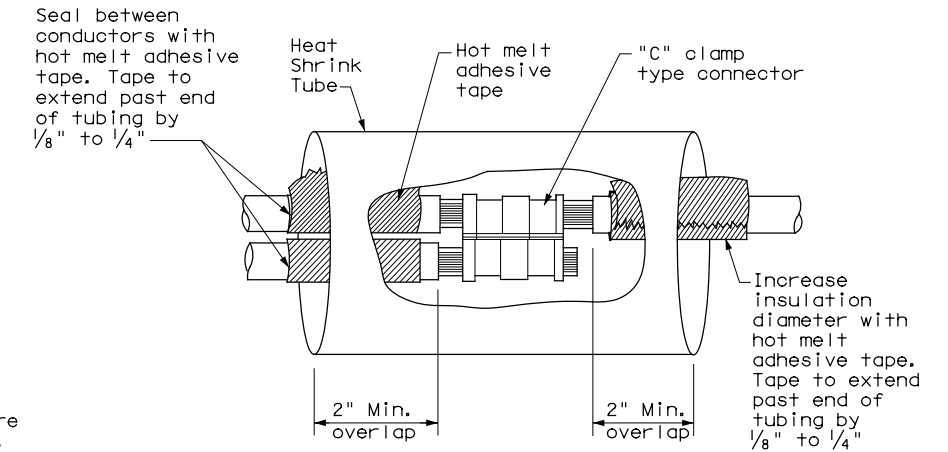
GROUND RODS & GROUNDING ELECTRODES

A. MATERIAL INFORMATION

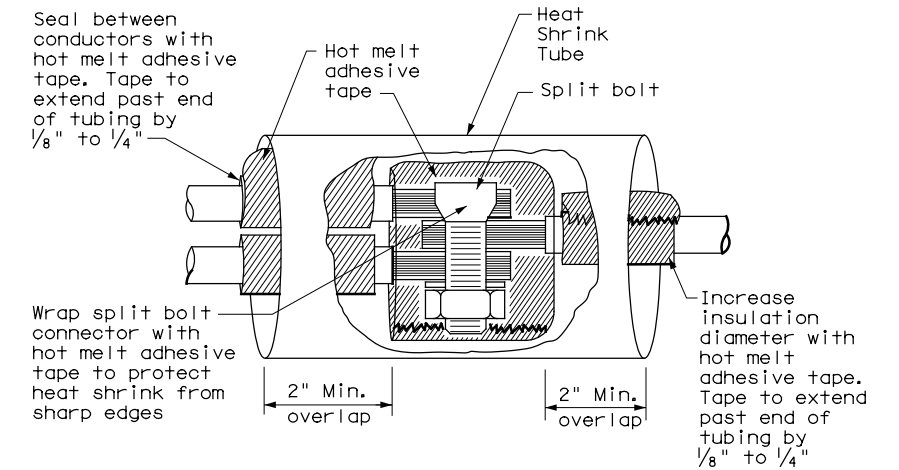
1. Provide and install a grounding electrode at electrical services. Provide ground rods according to DMS 11040 and the plans. Larger diameter or longer length rods may be called for in some specific locations, see the individual plans sheets. Concrete encased grounding electrodes may be called for in specific locations including electrical service, see individual plan sheets.

B. CONSTRUCTION METHODS

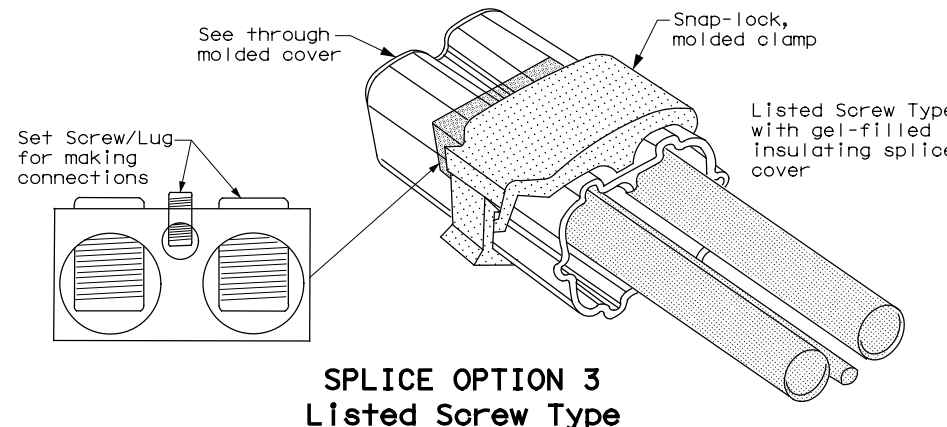
1. Furnish auxiliary ground rods for lightning protection and install in soil, concrete, or both, as called for in the plans. For ground rods installed in concrete, ensure the connection of the conductor to the ground rod is readily accessible for inspection or repairs. For ground rods installed in soil, ensure that the upper end is between 2 to 4 in. below finished grade.
2. Do not place ground rods in the same drilled hole as a timber pole.
3. Install ground rods so the imprinted part number is at the upper end of the rod.
4. Remove all non-conductive coatings such as concrete splatter from the rod at the clamp location.
5. Route all conductors as short and straight as possible for connection to lightning protection ground rods. When a bend is required, ensure a minimum radius bend of four inches for these conductors.
6. Unless otherwise called for in the plans, protect grounding electrode conductors with non-metallic conduit. When protecting grounding electrode conductors with metal conduit, provide and install a grounding type bushing and properly sized bonding jumper on each end of the metal conduit.
7. Written authorization is required before installing a ground rod in a horizontal trench for rocky soil or a solid rock bottom.



**SPLICE OPTION 1
Compression Type**



**SPLICE OPTION 2
Split Bolt Type**



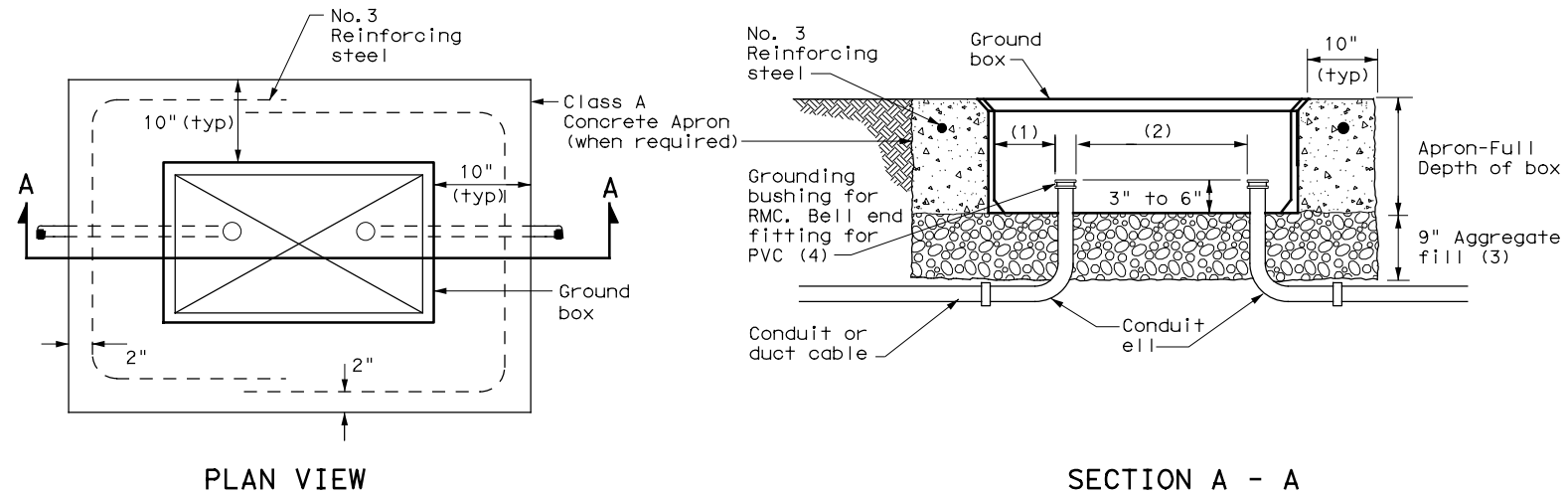
**SPLICE OPTION 3
Listed Screw Type**

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		Traffic Operations Division Standard	
<h2>ELECTRICAL DETAILS CONDUCTORS</h2>			
<h3>ED(3)-14</h3>			
FILE: ed3-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT
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REVISIONS	0439	05	026
	DIST	COUNTY	SHEET NO.
	LBB	HALE	248

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APRON FOR GROUND BOX

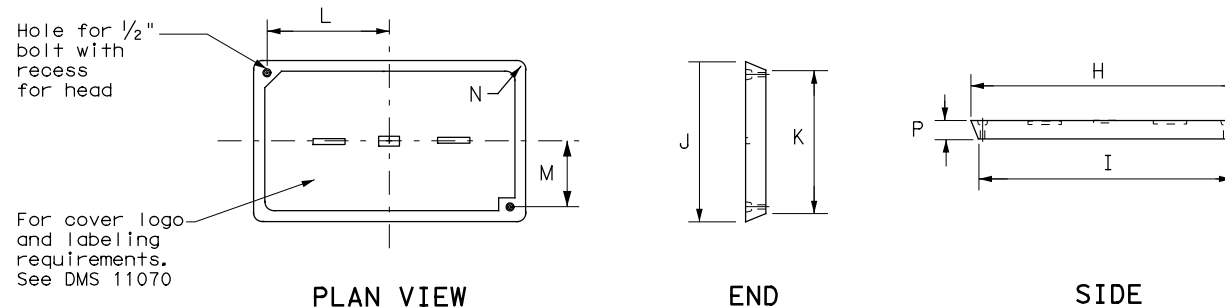
- (1) Uniformly space ends of conduits within the ground box. Position ends of conduits so that ground box walls do not interfere with the installation of grounding bushings or bell end fittings.
- (2) Maintain sufficient space between conduits to allow for proper installation of bushing.
- (3) Place aggregate under the box, not in the box. Aggregate should not encroach on the interior volume of the box.
- (4) Install a grounding bushing on the upper end of all RMC terminating in a ground box. Ground RMC elbows when any part of the elbow is less than 18 in. below the bottom of the ground box. Install a PVC bushing or bell end fitting on the upper end of all PVC conduits terminating in a ground box.

GROUND BOX DIMENSIONS

TYPE	OUTSIDE DIMENSIONS (INCHES) (Width x Length X Depth)
A	12 X 23 X 11
B	12 X 23 X 22
C	16 X 29 X 11
D	16 X 29 X 22
E	12 X 23 X 17

GROUND BOX COVER DIMENSIONS

TYPE	DIMENSIONS (INCHES)							
	H	I	J	K	L	M	N	P
A, B & E	23 1/4	23	13 3/4	13 1/2	9 7/8	5 1/8	1 3/8	2
C & D	30 1/2	30 1/4	17 1/2	17 1/4	13 1/4	6 3/4	1 3/8	2



GROUND BOX COVER

GROUND BOXES

A. MATERIALS

1. Provide polymer concrete ground boxes measuring 16x30x24 in. (WxLxD) or smaller in accordance with Departmental Material Specification (DMS) 11070 "Ground Boxes" and Item 624 "Ground Boxes."
2. Provide Type A, B, C, D, and E ground boxes as shown in the plans, and as listed on the Material Producers List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies," Item 624.

3. Ensure ground box cover is correctly labeled in accordance with DMS 11070.

4. Provide larger ground boxes in accordance with Item 624 and as shown in the plans.

B. CONSTRUCTION METHODS

1. Remove all gravel and dirt from conduit. Cap all conduits prior to placing aggregate and setting ground box. Provide Grade 3 or 4 coarse aggregate as shown on Table 2 of Item 302 "Aggregates for Surface Treatments." Ensure aggregate bed is in place and at least 9 inches deep, prior to setting the ground box. Install ground box on top of aggregate.
2. Cast ground box aprons in place. Reinforcing steel may be field bent. Ensure the depth of concrete for the apron extends from finished grade to the top of the aggregate bed under the box. Ground box aprons, including concrete and reinforcing steel, are subsidiary to ground boxes when called for by descriptive code.
3. Keep bolt holes in the box clear of dirt. Bolt covers down when not working in ground boxes.
4. Install all conduits and ells in a neat and workmanlike manner. Uniformly space conduits so grounding bushings and bell end fittings can easily be installed.
5. Temporarily seal all conduits in the ground box until conductors are installed.
6. Permanently seal conduits immediately after the completion of conductor installation and pull tests. Permanently seal the ends of all conduits with duct seal, expandable foam, or other method as approved. Do not use duct tape as a permanent conduit sealant. Do not use silicone caulk as a sealant.
7. When a ground rod is present in a ground box, bond all equipment grounding conductors together and to the ground rod with listed connectors.
8. When a type B or D ground box is stacked to meet volume requirements, it is allowable to cut an appropriately sized hole for conduit entry in the side wall at least 18 inches below grade.
9. If an existing ground box in the contract has a metal cover, bond the cover to the equipment grounding conductor with a 3 ft. long stranded bonding jumper the same size as the grounding conductor. The bonding jumper is subsidiary to various bid items. Verify existing ground boxes with metal covers are shown on the plans, with notes fully describing the work required.
10. If other ground boxes with metal covers are within the project limits but are not part of the contract, the Engineer may direct the Contractor to bond the metal covers, identifying the specific boxes in writing. This work will be paid for separately.
11. Bond metal ground box covers to the grounding conductor with a tank ground type lug.

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				Traffic Operations Division Standard	
<h2>ELECTRICAL DETAILS</h2> <h3>GROUND BOXES</h3> <h4>ED(4)-14</h4>					
FILE:	ed4-14.dgn	DN:	TxDOT	CK:	TxDOT
© TxDOT	October 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS		0439	05	026	SH 194
DIST	COUNTY	SHEET NO.			
LBB	HALE	249			

ELECTRICAL SERVICES NOTES

- Provide new materials. Ensure installation and materials comply with the applicable provisions of the National Electrical Code (NEC) and National Electrical Manufacturers Association (NEMA) standards. Ensure material is Underwriters Laboratories (UL) listed. Provide and install electrical service conduits, conductors, disconnects, contactors, circuit breaker panels, and branch circuit breakers as shown on the Electrical Service Data chart in the plans. Faulty fabrication or poor workmanship in material, equipment, or installation is justification for rejection. Where manufacturers provide warranties and guarantees as a customary trade practice, furnish these to the State.
- Provide electrical services in accordance with Electrical Details standard sheets, Departmental Material Specification (DMS) 11080 "Electrical Services," DMS 11081 "Electrical Services-Type A," DMS 11082 "Electrical Services-Type C," DMS 11083 "Electrical Services-Type D," DMS 11084 "Electrical Services-Type T," DMS 11085 "Electrical Services-Pedestal (PS)", and Item 628 "Electrical Services" of the Standard Specifications. Provide electrical service types A, C, and D, as listed on the Material Producers List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies," Item 628. Provide other service types as detailed on the plans.
- Provide all work, materials, services, and any incidentals needed to install a complete electrical service as specified in the plans.
- Coordinate with the Engineer and the utility provider for metering and compliance with utility requirements. Primary line extensions, connection charges, meter charges, and other charges by the utility company to provide power to the location are paid for in accordance with Item 628. Get approval for the costs associated with these charges prior to engaging the utility company to do the work. Consult with the utility provider to determine costs and requirements, and coordinate the work as approved.
- The enclosure manufacturer will provide Master Lock Type 2 with brass tumblers keyed #2195 for all custom electrical enclosures. Installing Contractor is to provide Master Lock #2195 Type 2 with brass tumblers for "off the shelf" enclosures. Master Lock #2195 keys and locks become property of the State. Unless otherwise approved, do not energize electrical service equipment until locks are installed.
- Enclosures with external disconnects that de-energize all equipment inside the enclosure do not need a dead front trim. Protect incoming line terminations from incidental contact as required by the NEC.
- When galvanized is specified for nuts, screws, bolts or miscellaneous hardware, stainless steel may be used.
- Provide wiring and electrical components rated for 75°C. Provide red, black, and white colored XHHW service entrance conductors of minimum size 6 American Wire Gauge (AWG). Identify size 6 AWG conductors by continuous color jacket. Identify electrical conductors sized 4 AWG and larger by continuous color jacket or by colored tape. Mark at least 6 inches of the conductor's insulation with half laps of colored tape, when identifying conductors. Ensure each service entrance conductor exits through a separately bushed non-metallic opening in the weatherhead. The lengths of the conductors outside the weatherhead are to be 12 inches minimum, 18 inches maximum, or as required by utility.
- All electrical service conduit and conductors attached to the electrical service including the riser or the elbow below ground are subsidiary to the electrical service. For an underground utility feed, all service conduit and conductors after the elbow, including service conduit and conductors for the utility pole riser when furnished by the Contractor, will be paid for separately.
- Provide rigid metal conduit (RMC) for all conduits on service, except for the 1/2 in. PVC conduit containing the electrical service grounding electrode conductor. Size the service entrance conduit as shown in the plans. Ensure conduit for branch circuit entry to enclosure is the same size as that shown on the layout sheets for branch circuit conduit. Extend all rigid metal conduits a minimum of 6 inches underground and then couple to the type and schedule of the conduit shown on the layout for that particular branch circuit. Install a grounding bushing on the RMC where it terminates in the service enclosure.
- Use of liquidtight flexible metal conduit (LFMC) is allowed between the meter and service enclosure when they are mounted 90 to 180 degrees to each other. Size the LFMC the same size as service entrance conduit. LFMC must not exceed 3 feet in length. Strap LFMC within 1 foot of each end. LFMC less than 12 inches in length need not be strapped. Each end of LFMC must have a grounding bushing or be terminated with a grounding fitting. The LFMC must contain a grounded (neutral) conductor. Ensure any bend in LFMC never exceeds 180 degrees. A pull test is required on all installed conductors, with at least six inches of free conductor movement demonstrated to the satisfaction of the Engineer.
- Ensure all mounting hardware and installation details of services conform to utility company specifications.
- For all electrical service enclosures listed under Item 628 on the MPL, the UL 508 enclosure manufacturers will prepare and submit a schematic drawing unique to each service. Before shipment to the job site, place the applicable laminated schematic drawings and the laminated plan sheet showing the electrical service data chart used to build the enclosure in the enclosure's data pocket. The installing contractor will copy and laminate the actual project plan sheets detailing all equipment and branch circuits supplied by that service. The laminated plan sheets are to be placed in the service enclosure's document pocket. Reduce 11 in. x 17 in. plan sheets to 8 1/2 in. x 11 in. before laminating. If the installation differs from the plan sheets, the installing contractor is to redline plan sheets before laminating.
- When providing an "Off The Shelf" Type D or Type T service, provide laminated plan sheets detailing equipment and branch circuits supplied by that service. Reduce 11 in. x 17 in. plan sheets to 8 1/2 in. x 11 in before laminating. Deliver these drawings before completion of the work to the Engineer, instead of placing in enclosure that has no door pocket.
- Do not install conduit in the back wall of a service enclosure where it would penetrate the equipment mounting panel inside the enclosure. Provide grounding bushings on all metal conduits, and terminate bonding jumpers to grounding bus. Grounding bushings are not required when the end of the metal conduit is fitted with a conduit sealing hub or threaded boss, such as a meter base hub.

SERVICE ASSEMBLY ENCLOSURE

- Provide threaded hub for all conduit entries into the top of enclosure.
- Type galvanized steel (GS) enclosures may be used for Type C panelboards and for Type D and T services that do not use an enclosure mounted photoce ll or lighting contactor. Provide GS enclosures in accordance with DMS 11080, 11082, 11083, and 11084.
- Provide aluminum (AL) and stainless steel (SS) enclosures for Types A, C, and D in accordance with DMS 11080, 11081, 11082, 11083, and 11084. Do not paint stainless steel.
- Provide pedestal service (PS) enclosures in accordance with ED(9) and DMS 11080 and 11085. Do not provide GS pedestal services. If GS is shown in the PS descriptive code, provide an AL enclosure.

MAIN DISCONNECT & BRANCH CIRCUIT BREAKERS

- Field drill flange-mounted remote operator handle if needed, to ensure handle is lockable in both the "On" and "Off" positions.
- When the utility company provides a transformer larger than 50 KVA, verify that the available fault current is less than the circuit breaker's ampere interrupting capacity (AIC) rating and provide documentation from the electric utility provider to the Engineer.

PHOTOELECTRIC CONTROL

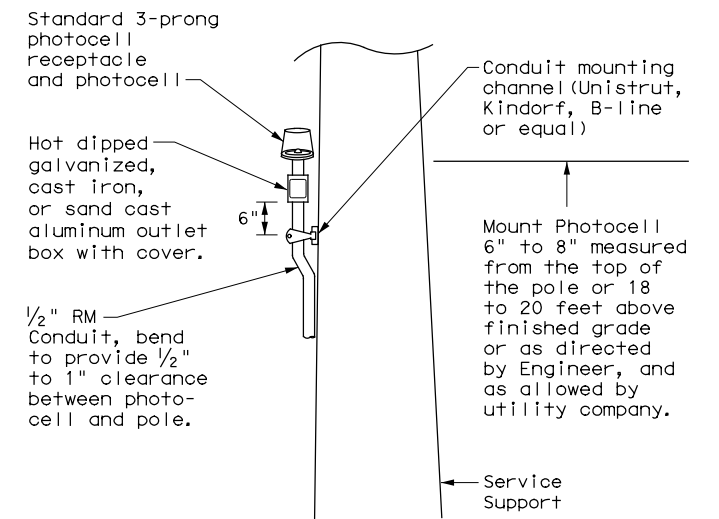
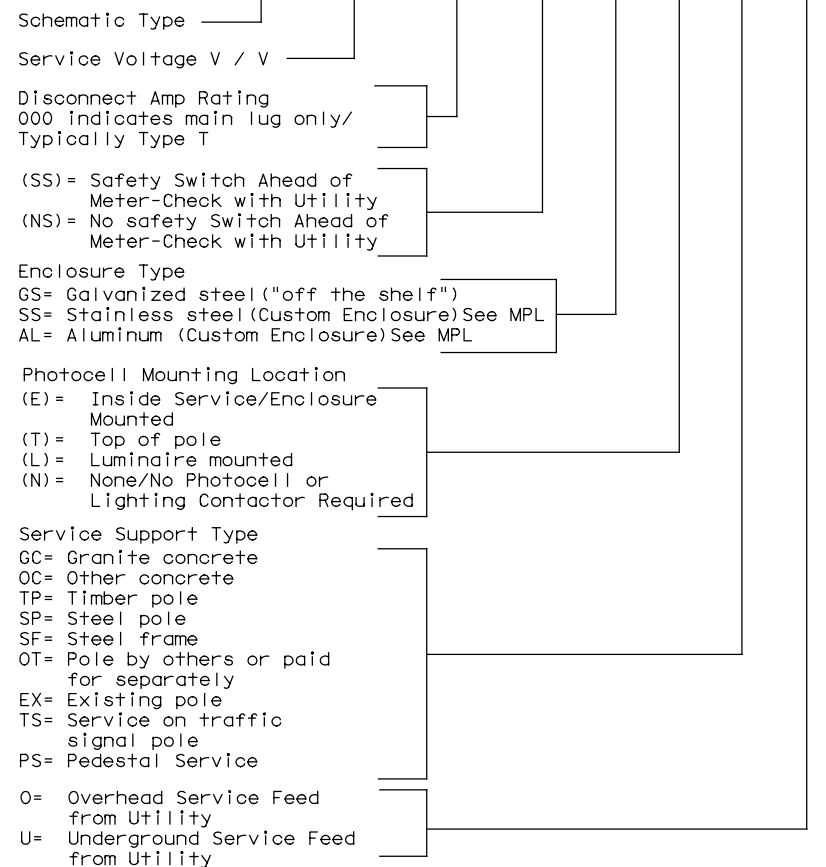
- Provide photocell as listed on the MPL. Move, adjust, or shield the photocell from stray or ambient night time light to ensure proper operation. Mount photocell facing north when practical. Mount top of pole photocells as shown on Top Mounted Photocell Detail.

* ELECTRICAL SERVICE DATA												
Elec. Service ID	Plan Sheet Number	Electrical Service Description	Service Conduit *xS Size	Service Conductors No./Size	Safety Switch Amps	Main Ckt. Bkr. Pole/Amps	Two-Pole Contractor Amps	Panelbd/ Loadcenter Amp Rating	Branch Circuit ID	Branch Ckt. Bkr. Pole/Amps	Branch Circuit Amps	KVA Load
SB 183	289	ELC SRV TY A 240/480 100(SS)AL(E)SF(U)	2"	3/#2	100	2P/100	100	N/A	Lighting NB	2P/40	26	28.1
									Lighting SB	2P/40	25	
									Underpass	1P/20	15	
NB Access	30	ELC SRV TY D 120/240 060(NS)SS(E)TS(O)	1 1/4"	3/#6	N/A	2P/60		100	Sig. Controller	1P/30	23	5.3
							30		Luminaires	2P/20	9	
									CCTV	1P/20	3	
2nd & Main	58	ELC SRV TY T 120/240 000(NS)GS(N)SP(O)	1 1/4"	3/#6	N/A	N/A	N/A	70	Flashing Beacon 1	1P/20	4	1.0
									Flashing Beacon 2	1P/20	4	

* Example only, not for construction. All new electrical services must have electrical service data chart specific to that service as shown in the plans.
 ** Verify service conduit size with utility. Size may change due to utility meter requirements. Ensure conduit size meets the National Electrical Code.

EXPLANATION OF ELECTRICAL SERVICE DESCRIPTIVE CODE

ELEC SERV TY X XXX/XXX XXX (XX) XX (X) XX (X)



TOP MOUNTED PHOTOCELL

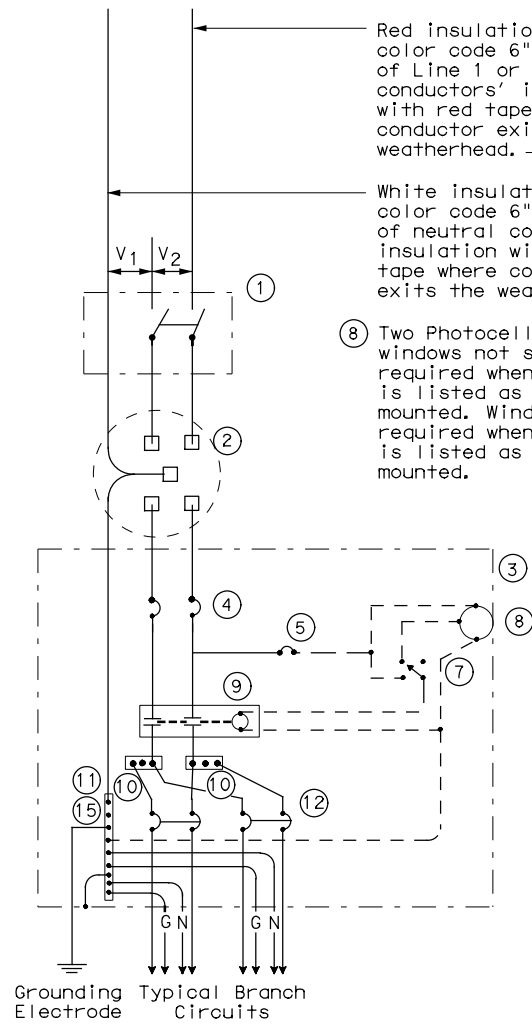
Install conduit strap maximum 3 feet from box. 5 foot maximum spacing between straps supporting conduit.

				Traffic Operations Division Standard	
<h2>ELECTRICAL DETAILS SERVICE NOTES & DATA</h2> <h3>ED(5) - 14</h3>					
FILE:	ed5-14.dgn	DN:	TxDOT	CK:	TxDOT
© TxDOT	October 2014	CONT:	SECT:	JOB:	HIGHWAY:
REVISIONS		0439	05	026	SH 194
DIST:	COUNTY:	SHEET NO.			
LBB	HALE	250			

DATE: 2/27/2023 11:50:17 AM
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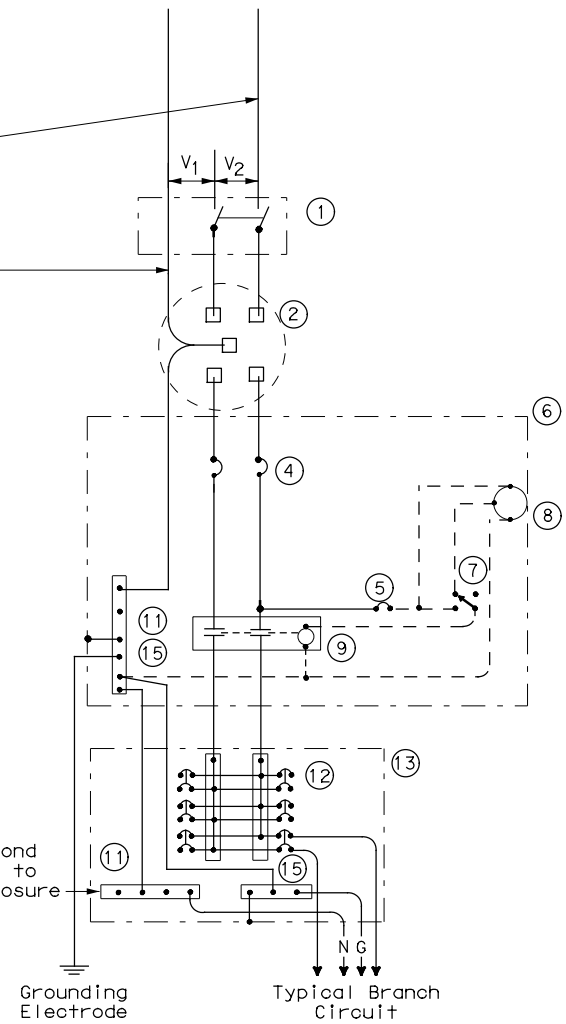


**SCHEMATIC TYPE A
THREE WIRE**

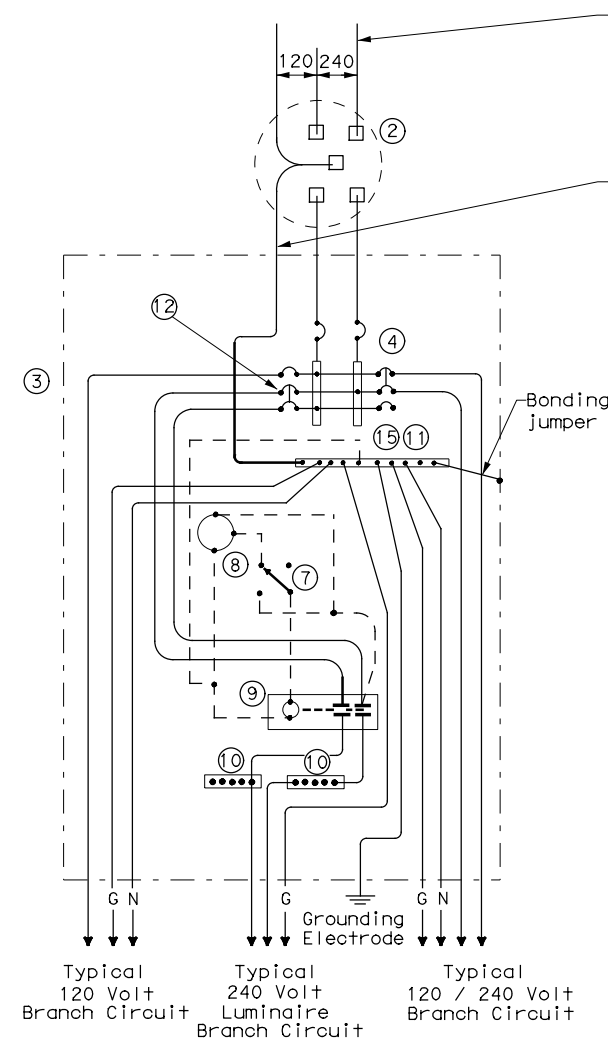
Red insulation or color code 6" length of Line 1 or Line 2 conductors' insulation with red tape where conductor exits the weatherhead.
White insulation or color code 6" length of neutral conductors' insulation with white tape where conductor exits the weatherhead.
⑧ Two Photocell viewing windows not shown but required when photocell is listed as enclosure mounted. Windows not required when photocell is listed as pole top mounted.

Do not bond this bus to the enclosure

WIRING LEGEND	
————	Power Wiring
- - - -	Control Wiring
—N—	Neutral Conductor
—G—	Equipment grounding conductor-always required

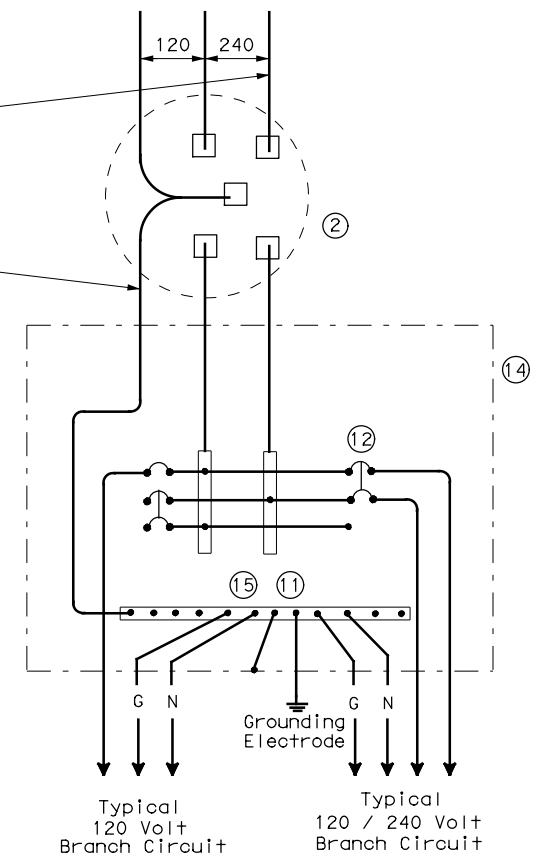


**SCHEMATIC TYPE C
THREE WIRE**



**SCHEMATIC TYPE D - CUSTOM
120/240 VOLTS - THREE WIRE**

Red insulation or color code 6" length of Line 1 or Line 2 conductors' insulation with red tape where conductor exits the weatherhead.
White insulation or color code 6" length of neutral conductors' insulation with white tape where conductor exits the weatherhead.



**SCHEMATIC TYPE T
120/240 VOLTS - THREE WIRE**
Galvanized steel-"Buy Off The Shelf" only. When required install photocell top of the pole or on luminaire only, no lighting contractor will be installed.

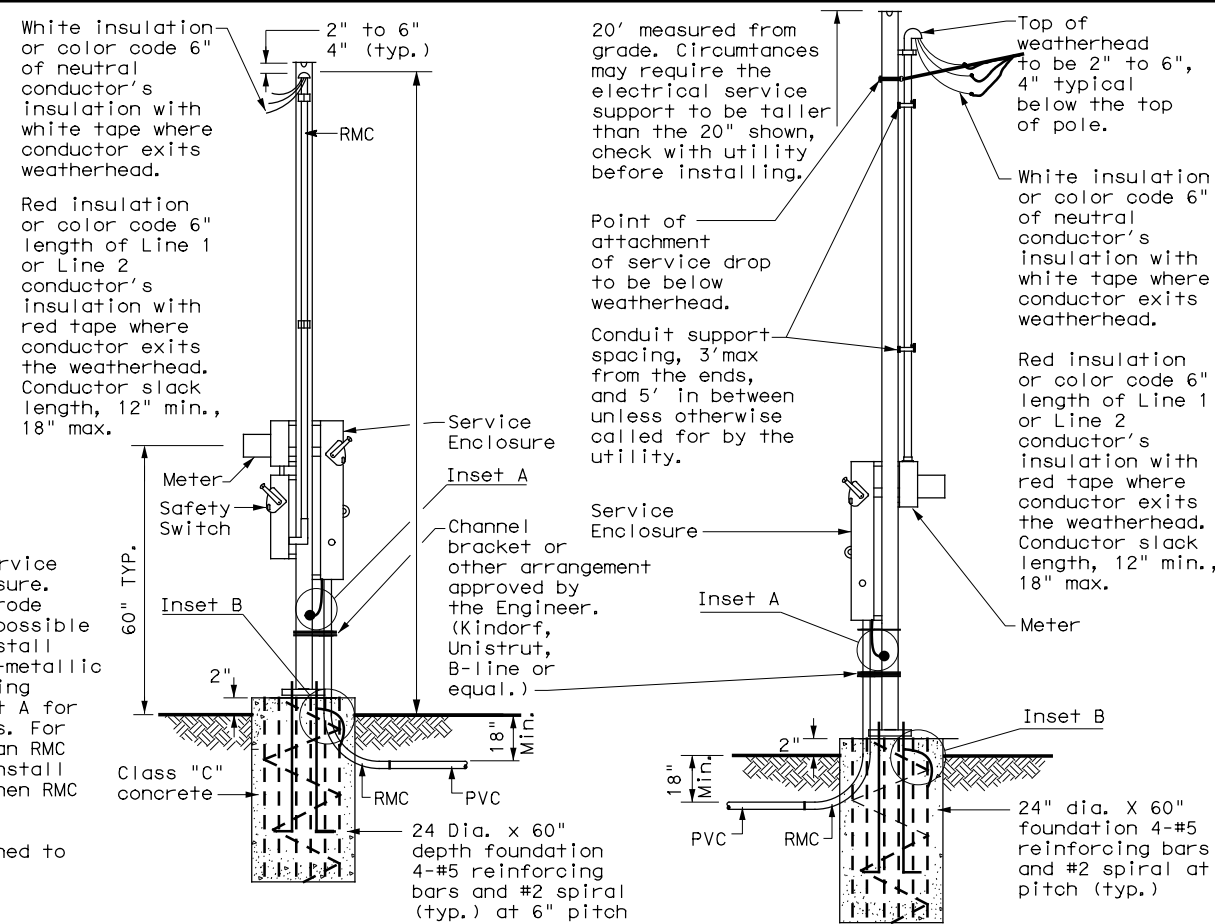
SCHEMATIC LEGEND	
1	Safety Switch (when required)
2	Meter (when required-verify with electric utility provider)
3	Service Assembly Enclosure
4	Main Disconnect Breaker (See Electrical Service Data)
5	Circuit Breaker, 15 Amp (Control Circuit)
6	Auxiliary Enclosure
7	Control Station ("H-O-A" Switch)
8	Photo Electric Control (enclosure-mounted shown)
9	Lighting Contactor
10	Power Distribution Terminal Blocks
11	Neutral Bus
12	Branch Circuit Breaker (See Electrical Service Data)
13	Separate Circuit Breaker Panelboard
14	Load Center
15	Ground Bus

				Traffic Operations Division Standard	
ELECTRICAL DETAILS SERVICE ENCLOSURE AND NOTES ED(6)-14					
FILE:	ed6-14.dgn	DN:	TxDOT	CK:	TxDOT
© TxDOT	October 2014	CON:	0439	SECT:	05
REVISIONS		JOB:	026	HIGHWAY:	SH 194
DIST:	LBB	COUNTY:	HALE	SHEET NO.:	251

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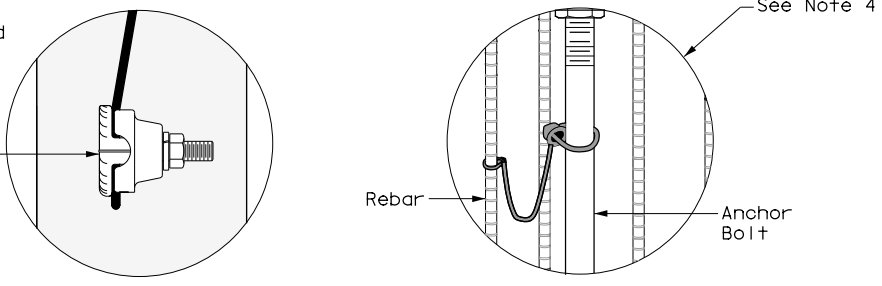
SUPPORT TYPE STEEL POLE (SP) AND STEEL FRAME (SF)

1. Provide steel pole and steel frame supports as per TxDOT Departmental Material Specification (DMS)11080 "Electrical Services." Mount all equipment and conduit on 12 gauge galvanized steel or stainless steel channel strut, 1 1/2 in. or 1 3/8 in. wide by 1 in. up to 3 3/4 in. deep Unistrut, Kindorf, B-line or equal. Bolt or weld all channel and hardware to vertical members as approved. Do not stack channel. File smooth and paint field cut ends of all channel with zinc-rich paint before installing.
2. Provide poles for overhead service with an eyebolt or similar fitting for attachment of the service drop to the pole in conformance with the electric utility provider's specifications.
3. Provide and install galvanized 3/4 in. x 18 in. x 4 in. (dia. x length x hook length) anchor bolts for underground service supports. Provide and install galvanized 3/4 in. x 56 in. x 4 in. anchor bolts for overhead service supports. Ensure anchor bolts have 3 in of thread, with 3 1/4 in. to 3 1/2 in. of the exposed anchor bolt projecting above finished foundation. Provide and install leveling nuts for all anchor bolts.
4. Bond one of the anchor bolts to the rebar cage with 6 AWG bare stranded copper conductor. Use listed mechanical connectors rated for embedment in concrete. See Inset B.
5. Furnish and install rigid metallic ellis in all steel pole and steel frame foundations for all conduits entering the service from underground.
6. Use class C concrete for foundations. Ensure reinforcing steel is Grade 60 with 3" of unobstructed concrete cover.
7. Drill and tap steel poles and frames for 1/2 in. X 13 UNC tank ground fitting. For steel pole service supports, provide and install tank ground fitting 4 in. to 6 in. below electrical service enclosure. Provide properly sized hole through the bottom of the enclosure for the service grounding electrode conductor. Ensure electrical service grounding electrode conductor is as short and straight as possible from the enclosure to the tank ground fitting. For steel frame service supports, provide and install tank ground fitting on steel frame post. Install service grounding electrode conductor in a non-metallic conduit or tubing from the enclosure to the steel frame post. Connect electrical service grounding electrode conductor to the tank ground fitting. See steel frame and steel pole details and Inset A for more information. Size service entrance conduit and branch circuit conduit as shown in the plans. For underground conduit runs from the electrical service, extend RMC from the service enclosure to an RMC elbow, and then connect the schedule type and size of conduit shown in the plans. Provide and install grounding bushings where RMC terminates in the enclosure. Grounding bushings are not required when RMC is fitted into a sealing hub or threaded boss.
8. If Steel pole or frame is painted, bond each separate painted piece with a bonding jumper attached to a tapped hole.
9. Provide 1/4" - 20 machine screws for bonding. Do not use sheet metal screws. Remove all non-conductive material at contact points. Terminate bonding jumpers with listed devices. Install minimum size 6 AWG stranded copper bonding jumpers. Make up all threaded bonding connections wrench tight.
10. Avoid contact of the service drop and service entrance conductors with the metal pole to prevent abrasion of the insulated conductors.
11. Shop drawings are not required for service support structure unless specifically stated elsewhere or directed by the Engineer.

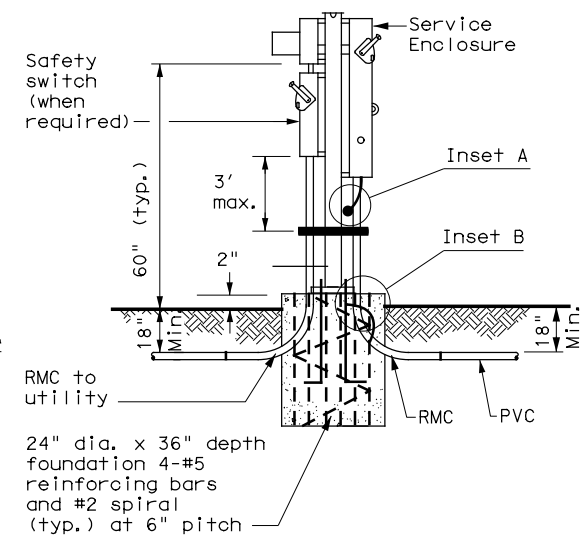


WITH SAFETY SWITCH WITHOUT SAFETY SWITCH
SERVICE SUPPORT TYPE SP (O) - OVERHEAD SERVICE

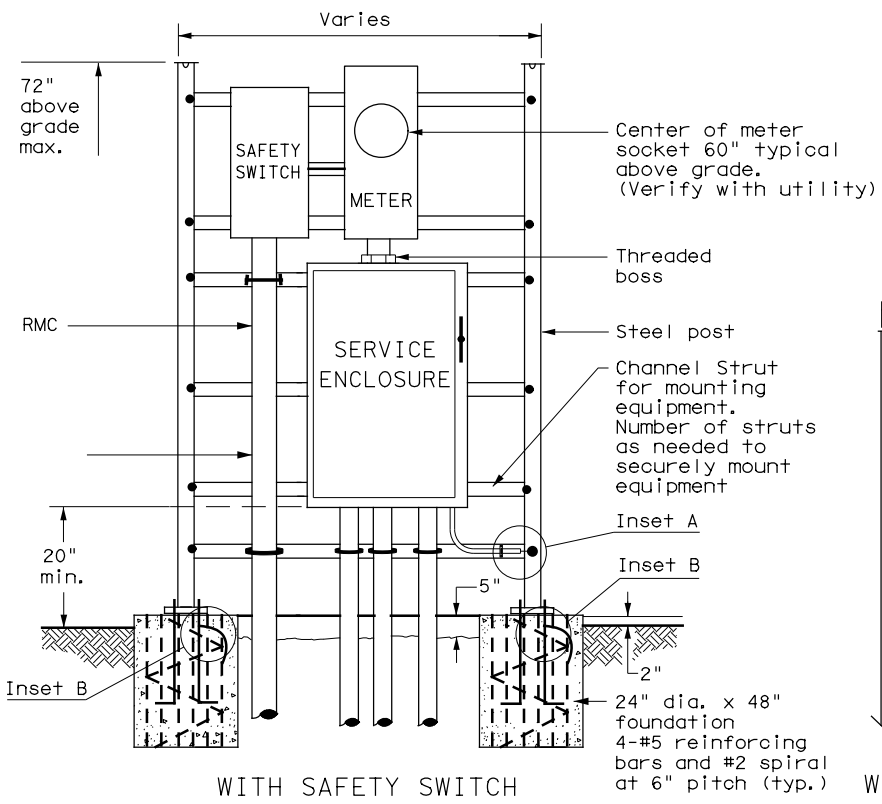
Drill, top, and thread 1/2" X 13 UNC. Install tank ground fitting, connect electrical service grounding electrode conductor. See Note 7.



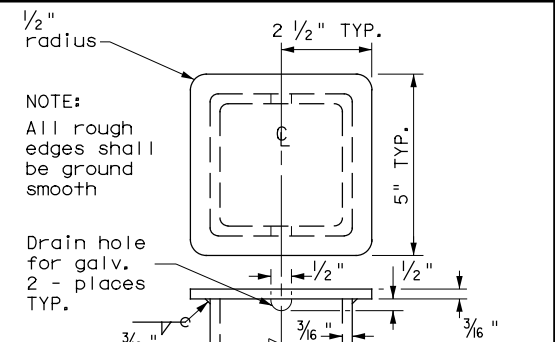
FRONT VIEW INSET A INSET B



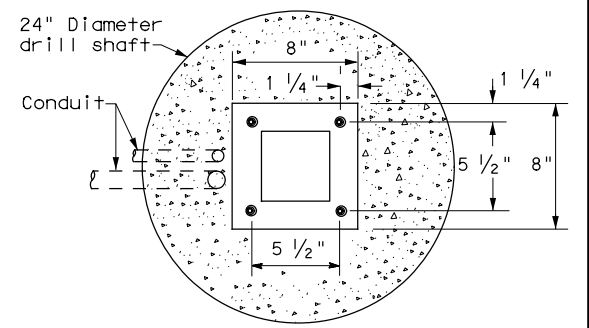
WITH SAFETY SWITCH HOOKED ANCHOR DETAIL
SERVICE SUPPORT TYPE SP (U) - UNDERGROUND SERVICE



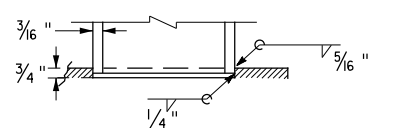
WITH SAFETY SWITCH WITHOUT SAFETY SWITCH
SERVICE SUPPORT TYPE SF (U) - UNDERGROUND SERVICE



POLE TOP PLATE

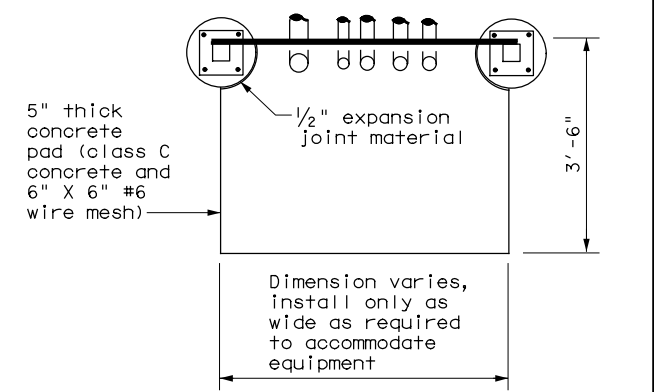


BASE PLATE DETAIL



BOTTOM OF POLE

SERVICE SUPPORT TYPE SF & SP



TOP VIEW
SERVICE SUPPORT TY SF (O) & SF (U)



ELECTRICAL DETAILS
SERVICE SUPPORT
TYPES SF & SP
ED(7)-14

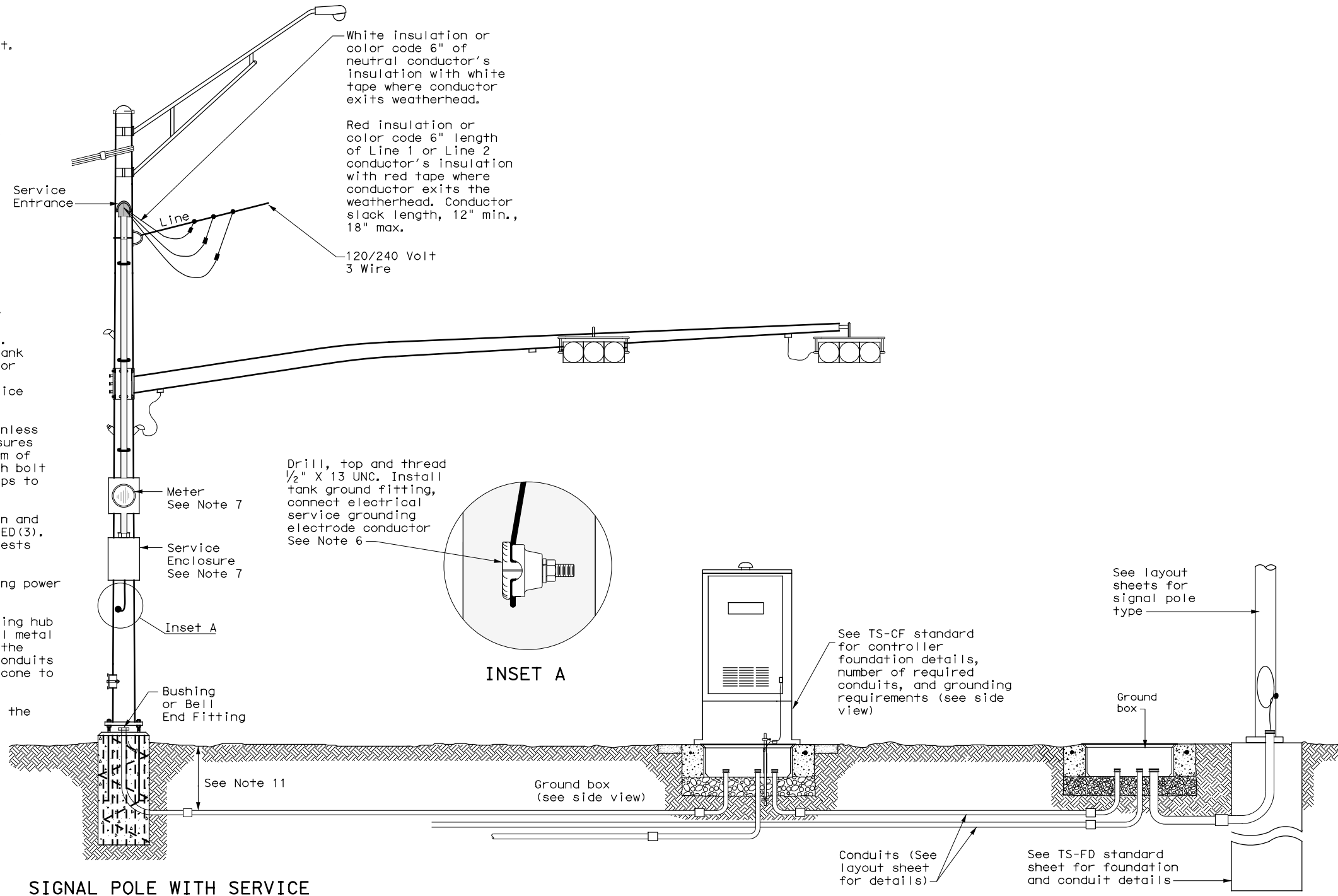
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© TxDOT October 2014	CONT	SECT	JOB	HIGHWAY
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	DIST	COUNTY	SHEET NO.	
	LBB	HALE	252	

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TRAFFIC SIGNAL NOTES

1. Do not pass luminaire conductors through the signal controller cabinet.
2. Include an equipment grounding conductor in all conduits throughout the electrical system. Bond all exposed metal parts to the grounding conductor.
3. Provide roadway luminaires, when required, in accordance with the material and construction sections of Item 610, "Roadway Illumination Assemblies," except for performance testing of luminaires. Test installed roadway luminaires for proper operation as a part of the associated traffic signal system test.
4. If internally illuminated street name signs are approved for use, ground the fixture to the pole with a 12 AWG green XHHW conductor.
5. Bond anchor bolts to rebar cage in two locations using #3 bars or 6 AWG stranded copper conductors. Use listed mechanical connectors rated for embedment in concrete. See TxDOT standard TS-FD for further details.
6. Drill and tap signal poles for 1/2 in. X 13 UNC tank ground fitting. Provide and install tank ground fitting 4 in. to 6 in. directly below electrical service enclosure. Provide properly sized hole through the bottom of the enclosure for the service grounding electrode conductor. Connect the electrical service grounding electrode conductor to the tank ground fitting. Ensure electrical service grounding electrode conductor is as short and straight as possible from the enclosure to the tank ground fitting. See Inset A detail for further information. Size service entrance conduit and branch circuit conduit as shown in the plans.
7. Mount electrical service enclosure and meter to signal pole with stainless steel bands. Ensure bands are a minimum width of 3/4 in. Secure enclosures to bands using two-bolt brackets. Install brackets near top and bottom of each enclosure. Install properly sized stainless steel washers on each bolt in the enclosure. Band or drill and tap properly sized stand-off straps to signal pole for attaching conduit.
8. Conduct pull tests and insulation resistance tests on all illumination and power conductors as required in Item 620 "Electrical Conductors" and ED(3). To prevent electronics damage, do not conduct insulation resistance tests on traffic signal cables after termination.
9. Lock all enclosures and bolt down all ground box covers before applying power to the signal installation.
10. Terminate conduits entering the top of enclosures with a conduit-sealing hub or threaded boss such as meter hub. Install a grounding bushing on all metal conduits not connected to conduit-sealing hub or threaded boss. Bond the grounding bushing to the ground bus with a bonding jumper. Seal all conduits entering enclosures with duct seal or expanding foam. Do not use silicone to seal conduit ends.
11. For all conduits, ensure the burial depth is a minimum of 18". Ensure the minimum burial depth for conduit placed under a roadway is 24".

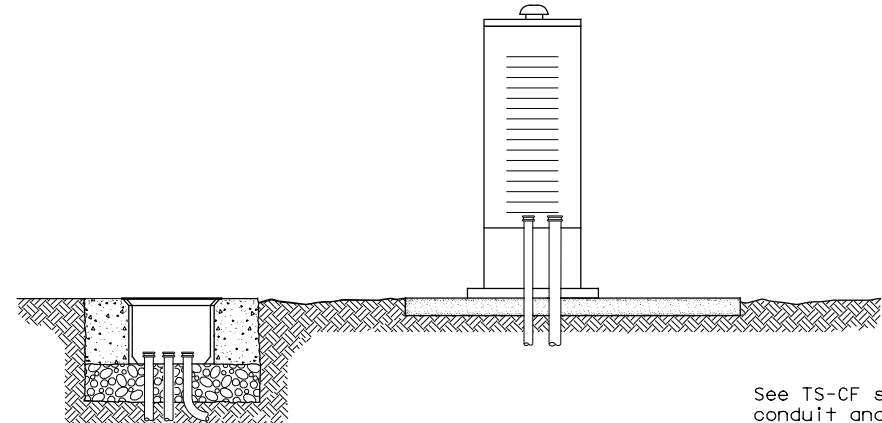


SIGNAL POLE WITH SERVICE

Type T electrical service mounted on signal pole shown as an example. See electrical details, layout sheets, and electrical service data chart for additional details.

SIGNAL CONTROLLER FRONT VIEW

SIGNAL POLE



SIGNAL CONTROLLER SIDE VIEW

See TS-CF standard for conduit and grounding requirements. See layout sheets for ground box locations and any additional conduits that are required.

DATE: 2/27/2023 11:50:39 AM
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**ELECTRICAL DETAILS
TYPICAL TRAFFIC SIGNAL
SYSTEM DETAILS
ED(8)-14**

FILE: ed8-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	0439	05	026	SH 194
	DIST	COUNTY	SHEET NO.	
	LBB	HALE	253	

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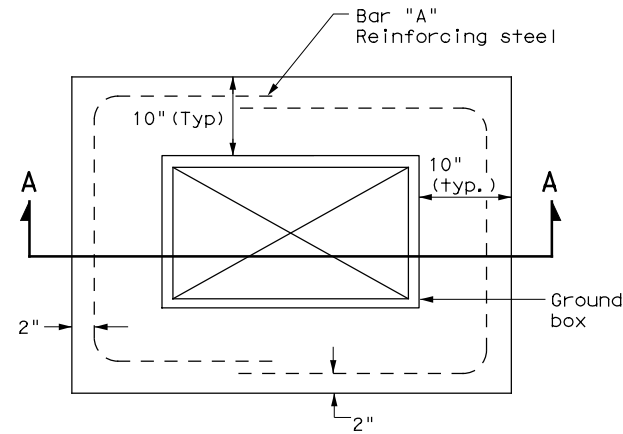
BATTERY BOX GROUND BOXES NOTES

A. MATERIALS

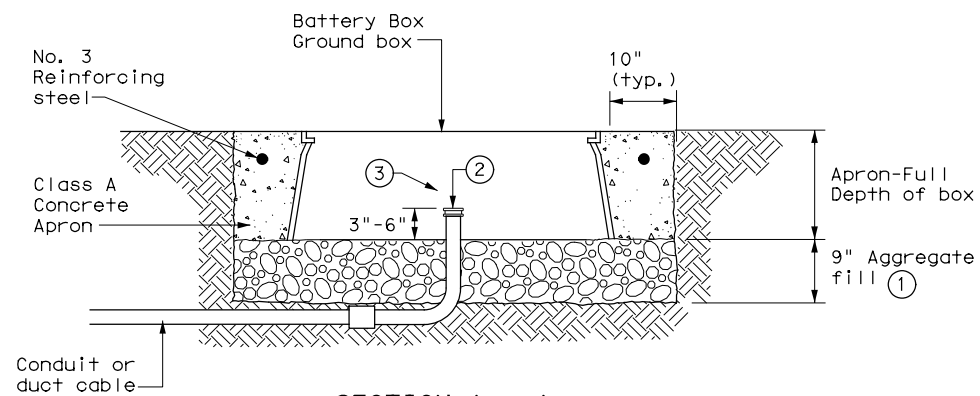
1. Provide polymer concrete or fiberglass reinforced plastic (FRP) battery box ground box and cover in accordance with Departmental Material Specification (DMS) 11071 "Battery Box Ground Boxes." Battery box will accommodate up to 4 batteries, each measuring 8 in. x 13.5 in. x 10 in. (W x L x D). Label battery box ground box cover in accordance with DMS 11071.
2. Supply a marine grade batteries with covers. Secure the marine grade batteries with covers to the stainless steel rack in the bottom of the ground box with tie down straps.

B. CONSTRUCTION METHODS

1. Ensure conduit entry will not interfere with placement of the batteries in the battery box ground box.
2. Remove all gravel and dirt from conduit. Cap all conduits prior to placing aggregate and setting battery box ground box. Provide Grade 3 or 4 coarse aggregate as shown on Table 2 of Item 302 "Aggregates for Surface Treatments." Ensure the aggregate bed is in place and is a minimum of 9 in. deep prior to setting the box. Install battery box ground box on top of aggregate.
3. Cast battery box aprons in place. Reinforcing steel may be field bent. Ensure the depth of concrete for the apron extends from finished grade to the top of the aggregate bed under the box. Battery box ground box aprons, including concrete and reinforcing steel, are subsidiary to battery box ground boxes when called for by descriptive code.
4. Bolt covers down when not working in battery box ground boxes. Keep bolt holes in the box clear of dirt.



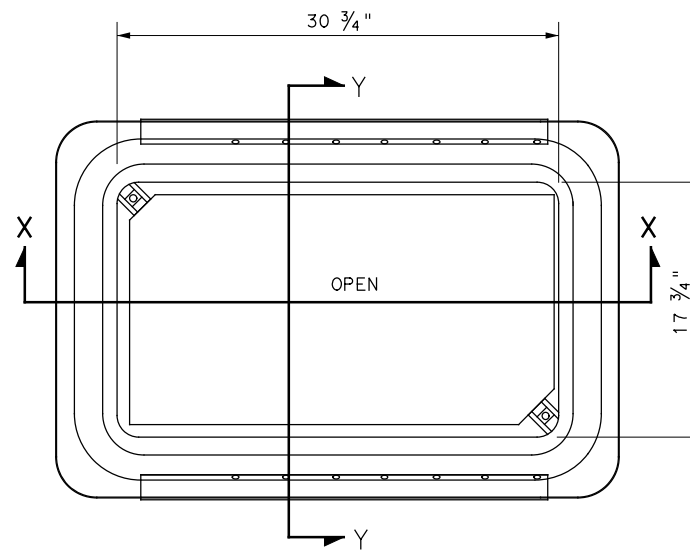
PLAN VIEW



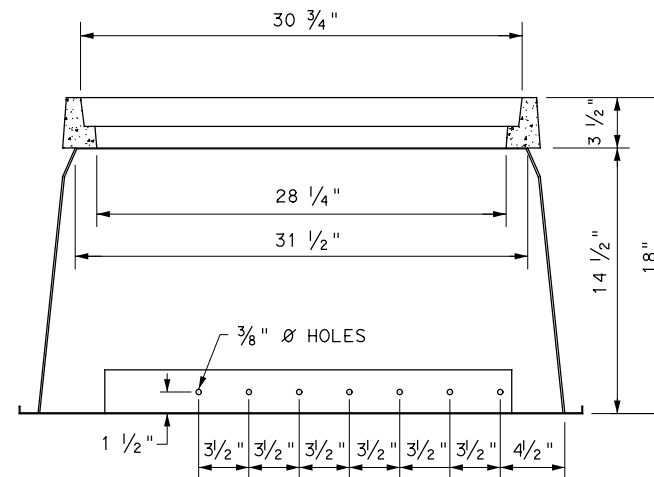
SECTION A - A

APRON FOR BATTERY BOX GROUND BOXES

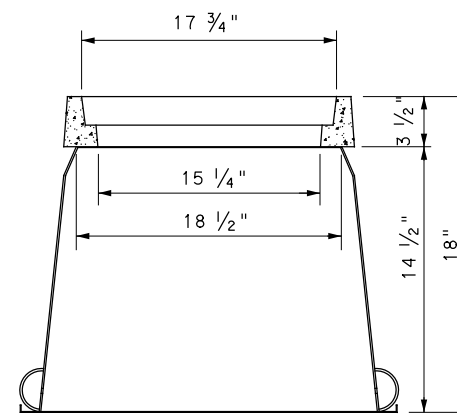
- ① Place aggregate under the box and not in the box. Aggregate should not encroach on the interior volume of the box.
- ② Install bushing or bell end fitting on the upper end of allells.
- ③ Install all conduits in a neat and workmanlike manner.



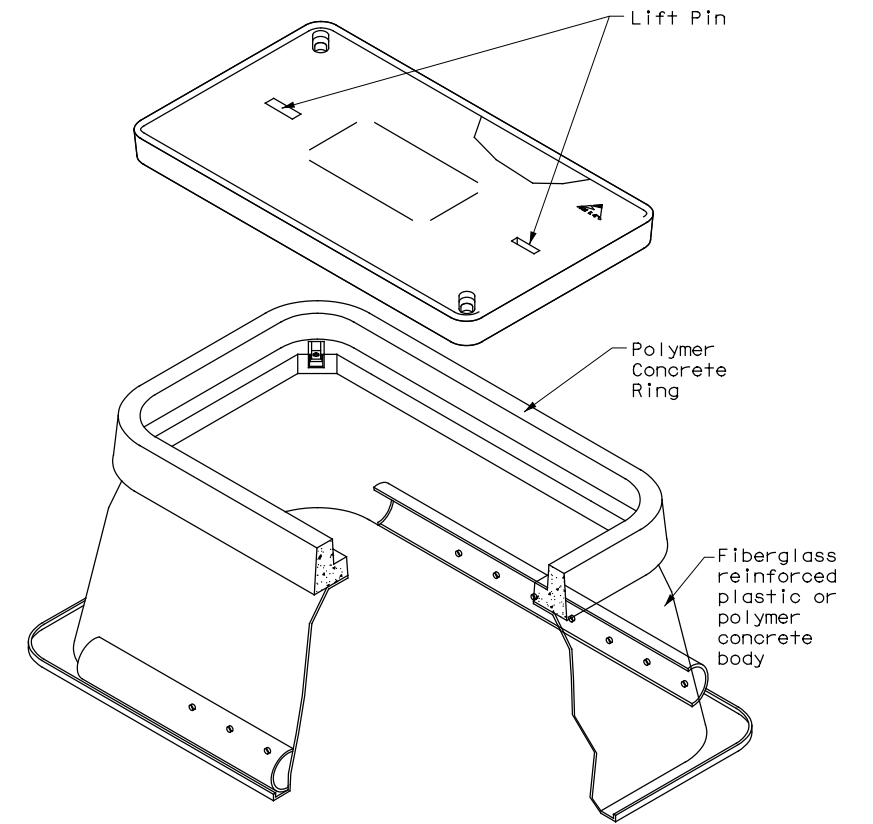
BATTERY BOX TOP VIEW



SECTION X-X



SECTION Y-Y



				Traffic Operations Division Standard	
<h2>ELECTRICAL DETAILS</h2> <h3>BATTERY BOX GROUND BOXES</h3> <h3>ED(12)-14</h3>					
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© TxDOT October 2014	CONT	SECT	JOB	HIGHWAY	
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DIST	COUNTY			SHEET NO.	
LBB	HALE			254	

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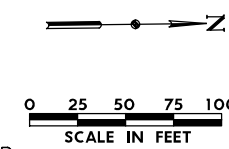
SUMMARY OF ILLUMINATION ITEMS									
LOCATION	416	610	610	618	618	620	620	624	628
	6029	6009	6290	6046	6047	6011	6012	6002	6086
	DRILL SHAFT (RDWY ILL POLE) (30 IN)	REMOVE RD IL ASM (TRANS-BASE)	IN RD IL (TY SA) 50T-12 (400W EQ) LED	CONDT (PVC) (SCH 80) (2")	CONDT (PVC) (SCH 80) (2") (BORE)	ELEC CONDR (NO. 4) BARE	ELEC CONDR (NO. 4) INSULATED	GROUND BOX TY A (122311) W/APRON	ELC SRV TY A 240/480 100 (SS) SS (E) SP (0)
	LF	EA	EA	LF	LF	LF	LF	EA	EA
1 OF 13	90		9	1945	80	2025	4050	2	1
2 OF 13	90		9	2400		2400	4800		
3 OF 13	70		7	405	885	1290	2580	3	1
4 OF 13	100	5	10	20	2265	2285	4570	2	
5 OF 13	90		9		1930	1930	3860		
6 OF 13	80		8		1795	1795	3590		
7 OF 13	90	5	9		2405	2405	4810		
8 OF 13	80		8		2005	2005	4010		
9 OF 13	120		12	400	1195	1595	3190	3	1
10 OF 13	80		8	200	1003	1203	2406	2	1
11 OF 13	90		9	570	630	1200	2400		
12 OF 13	90		9	585	365	950	1900		
13 OF 13									
PROJECT TOTALS	1070	10	107	6525	14558	21083	42166	12	4



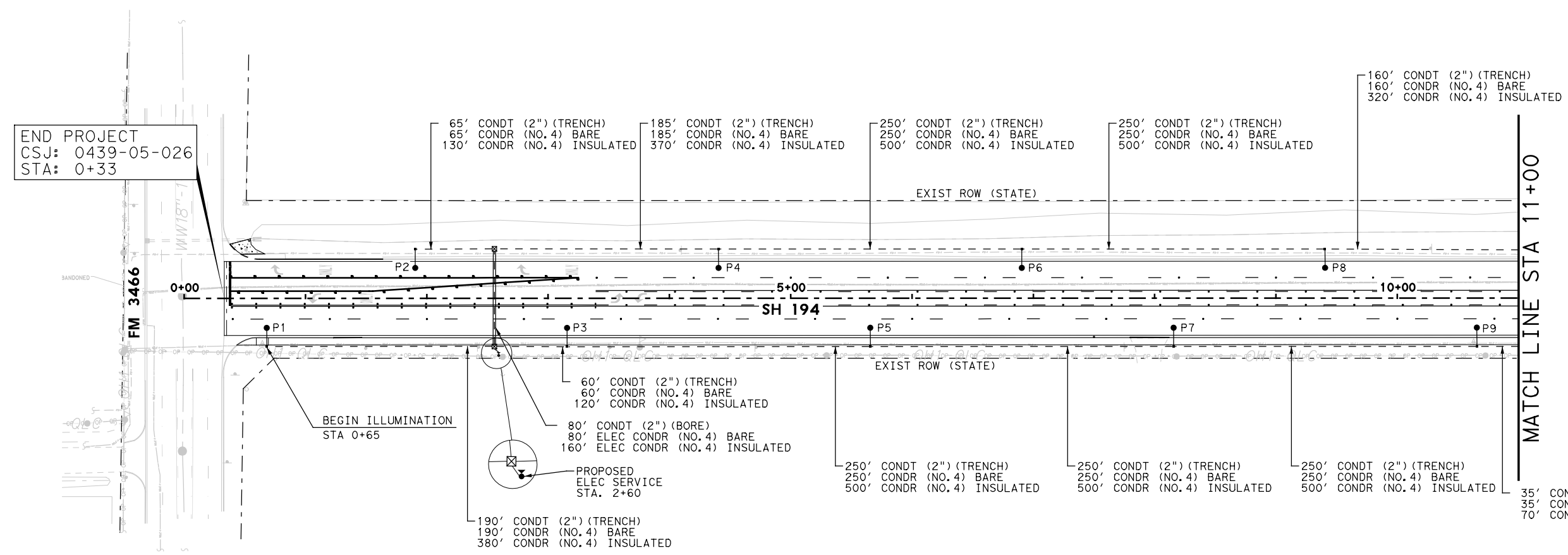
SH 194 FROM FM 3466 TO IH 27

ILLUMINATION SUMMARY

FED. RD. DIV. NO:	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	255
CONTROL	SECTION	JOB	
0439	05	026	



- LEGEND**
- ⊖ ○ EXIST ILLUMINATION ASSEMBLY
 - ⊖ ○ EXIST LIGHT ON UTILITY POLE
 - ○ PROP ILLUMINATION ASSEMBLY
 - ⊖ ○ PROP SERVICE METER
 - ⊖ □ PROP GROUND BOX
 - — PROP CONDUIT (TRENCH)
 - === PROP CONDUIT (BORE)



END PROJECT
CSJ: 0439-05-026
STA: 0+33

BEGIN ILLUMINATION
STA 0+65

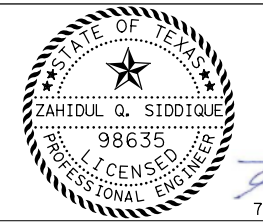
MATCH LINE STA 11+00

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
0416 6029	DRILL SHAFT (RDWY ILL POLE) (30 IN)	LF	90
0610 6290	IN RD IL (TY SA) 50T-12 (400W EQ) LED	EA	9
0618 6046	CONDT (PVC) (SCH 80) (2")	LF	1945
0618 6047	CONDT (PVC) (SCH 80) (2") (BORE)	LF	80
0620 6011	ELEC CONDR (NO.4) BARE	LF	2025
0620 6012	ELEC CONDR (NO.4) INSULATED	LF	4050
0624 6002	GROUND BOX TY A (122311)W/APRON	EA	2
0628 6086	ELC SRV TY A 240/480 100(SS)SS(E)SP(O)	EA	1

- NOTE:**
- ALL PROPOSED ILLUMINATION ASSEMBLIES SHALL BE TY SA 50T-12 400W EQ LED.
 - PROPOSED ASSEMBLIES ARE SHOWN AT APPROXIMATE LOCATIONS, FINAL LOCATION TO BE DETERMINED BY FIELD ENGINEER.
 - THE UTILITY LOCATIONS ARE APPROXIMATE AND NOT ALL EXISTING UTILITIES ARE SHOWN FOR CLARITY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL OVERHEAD AND UNDERGROUND UTILITIES PRIOR TO THE CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL THE UTILITIES DAMAGED DUE TO THE CONSTRUCTION.

ILLUMINATION POLE NO.	P1	P2	P3	P4	P5	P6	P7	P8	P9
STATION	0+70	1+90	3+15	4+40	5+65	6+90	8+15	9+40	10+65
OFFSET	40' RT	40.5' LT	40' RT	40.5' LT	40' RT	40.5' LT	40' RT	40.5' LT	40' RT

NOTE:
EXISTING GAS LINE TO REMAIN. USE EXTREME CAUTION WHILE WORKING ADJACENT TO THE GAS LINE. INFORM ENGINEER IMMEDIATELY IF A CONFLICT IS IDENTIFIED.



NO.	DATE	REVISION	APPROVED

infraTECH
Engineers & Innovators, LLC
TBPE REGISTRATION NO. F-18368



SH 194 FROM FM 3466 TO IH 27

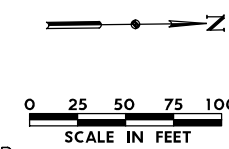
ILLUMINATION DETAILS
BEGIN TO STA 11+00

SCALE: 1"=100' SHEET 1 OF 13

FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026

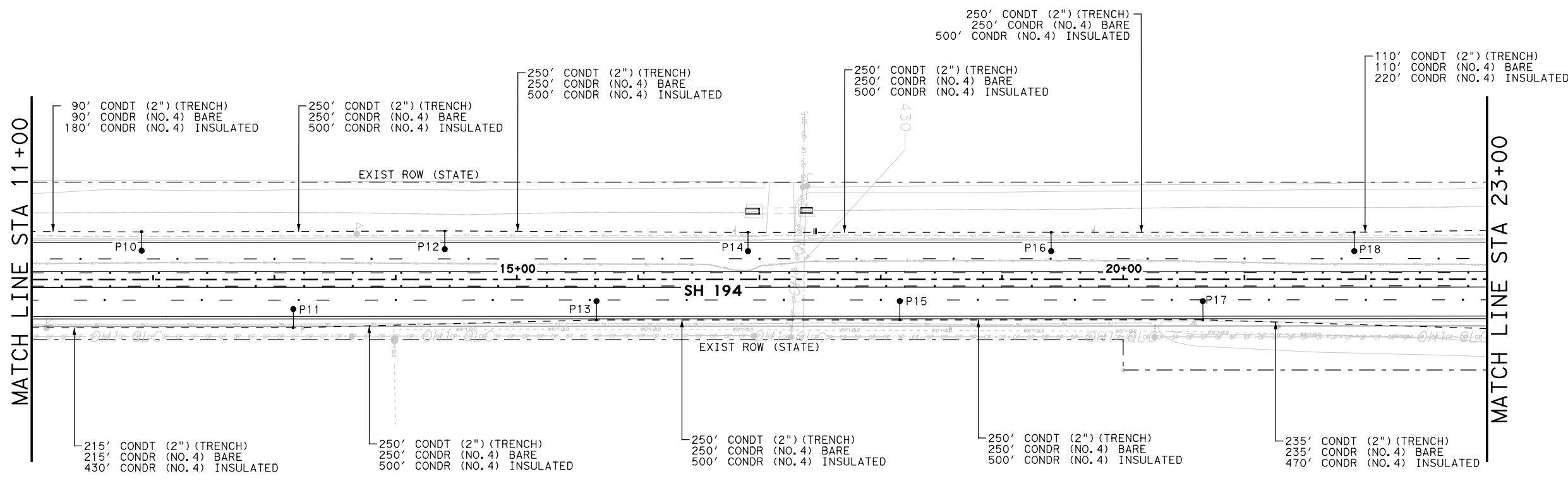
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PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: SH194_illumination.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 7:42:13 PM SCALE: 1:100
 FILE: SH194_illumination.j_dgn



LEGEND

- ⊖ ○ EXIST ILLUMINATION ASSEMBLY
- ⊖ ○ EXIST LIGHT ON UTILITY POLE
- ⊖ ● PROP ILLUMINATION ASSEMBLY
- ⊖ ● PROP SERVICE METER
- ⊖ □ PROP GROUND BOX
- — PROP CONDUIT (TRENCH)
- ==== PROP CONDUIT (BORE)



ITEM NO.	DESCRIPTION	UNIT	QUANTITY
0416 6029	DRILL SHAFT (RDWY ILL POLE) (30 IN)	LF	90
0610 6290	IN RD IL (TY SA) 50T-12 (400W EQ) LED	EA	9
0618 6046	CONDT (PVC) (SCH 80) (2")	LF	2400
0618 6047	CONDT (PVC) (SCH 80) (2") (BORE)	LF	0
0620 6011	ELEC CONDR (NO.4) BARE	LF	2400
0620 6012	ELEC CONDR (NO.4) INSULATED	LF	4800
0624 6002	GROUND BOX TY A (122311)W/APRON	EA	0
0628 6086	ELC SRV TY A 240/480 100(SS)SS(E)SP(O)	EA	0

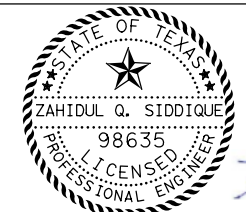
NOTE:

- ALL PROPOSED ILLUMINATION ASSEMBLIES SHALL BE TY SA 50T-12 400W EQ LED.
- PROPOSED ASSEMBLIES ARE SHOWN AT APPROXIMATE LOCATIONS, FINAL LOCATION TO BE DETERMINED BY FIELD ENGINEER.
- THE UTILITY LOCATIONS ARE APPROXIMATE AND NOT ALL EXISTING UTILITIES ARE SHOWN FOR CLARITY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL OVERHEAD AND UNDERGROUND UTILITIES PRIOR TO THE CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL THE UTILITIES DAMAGED DUE TO THE CONSTRUCTION.

ILLUMINATION POLE NO.	P10	P11	P12	P13	P14	P15	P16	P17	P18
STATION	11+90	13+15	14+40	15+65	16+90	18+15	19+40	20+65	21+90
OFFSET	39.5' LT	40' RT	40' LT	33.5' RT	39' LT	33.5' RT	39' LT	33.5' RT	39' LT

NOTE:

EXISTING GAS LINE TO REMAIN. USE EXTREME CAUTION WHILE WORKING ADJACENT TO THE GAS LINE. INFORM ENGINEER IMMEDIATELY IF A CONFLICT IS IDENTIFIED.



Zahidul Q. Siddique
7/29/2024

NO.	DATE	REVISION	APPROVED

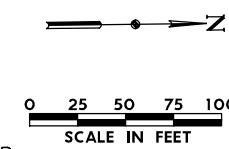


SH 194 FROM FM 3466 TO IH 27

ILLUMINATION DETAILS
STA 11+00 TO STA 23+00

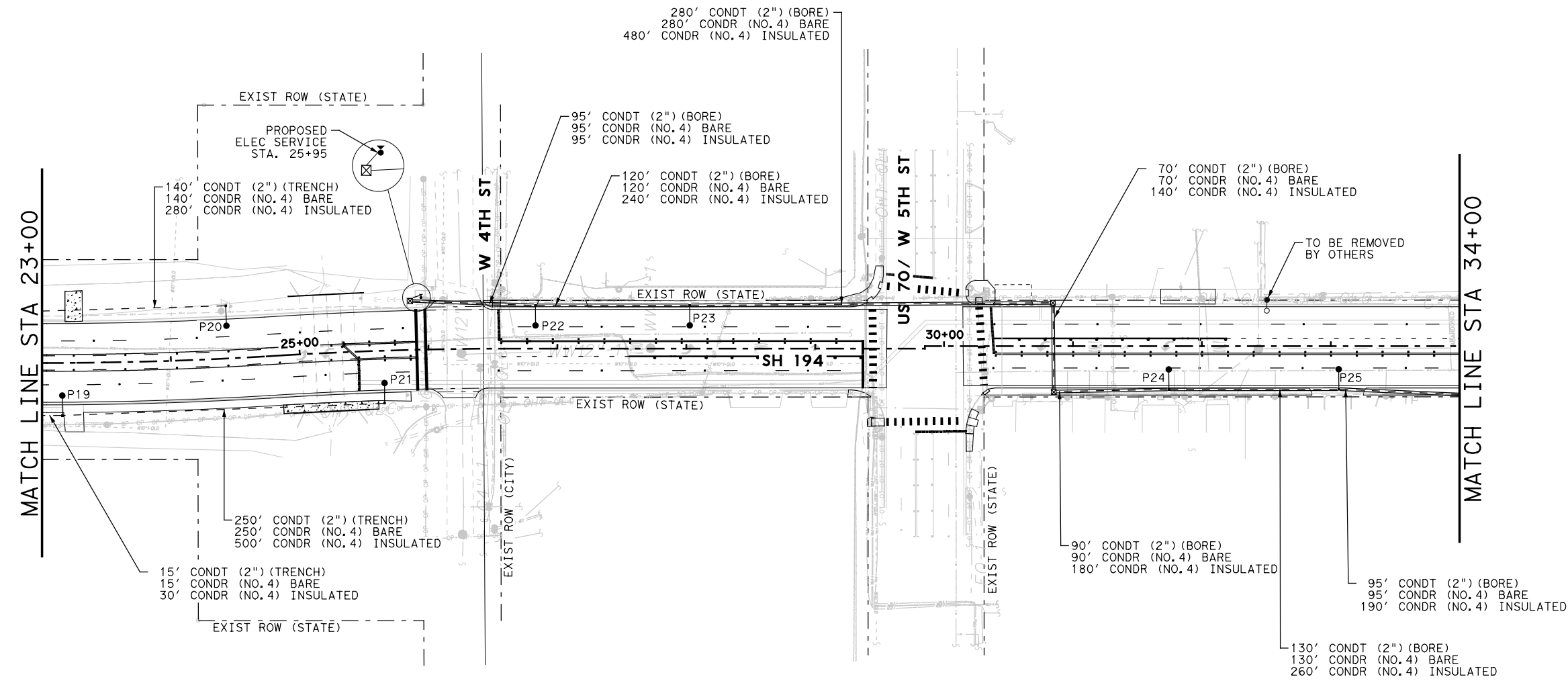
SCALE: 1"=100'			SHEET 2 OF 13
FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	257
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: SH194_illumination.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 7:42:19 PM SCALE: 1:100
 FILE: SH194_illumination_2.dgn



LEGEND

	EXIST ILLUMINATION ASSEMBLY
	EXIST LIGHT ON UTILITY POLE
	PROP ILLUMINATION ASSEMBLY
	PROP SERVICE METER
	PROP GROUND BOX
	PROP CONDUIT (TRENCH)
	PROP CONDUIT (BORE)

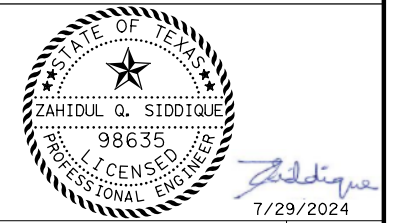


ITEM NO.	DESCRIPTION	UNIT	QUANTITY
0416 6029	DRILL SHAFT (RDWY ILL POLE) (30 IN)	LF	70
0610 6290	IN RD IL (TY SA) 50T-12 (400W EQ) LED	EA	7
0618 6046	COND (PVC) (SCH 80) (2")	LF	405
0618 6047	COND (PVC) (SCH 80) (2") (BORE)	LF	880
0620 6011	ELEC CONDR (NO. 4) BARE	LF	1285
0620 6012	ELEC CONDR (NO. 4) INSULATED	LF	2570
0624 6002	GROUND BOX TY A (122311)W/APRON	EA	3
0628 6086	ELC SRV TY A 240/480 100(SS)SS(E)SP(O)	EA	1

ILLUMINATION POLE NO.	P19	P20	P21	P22	P23	P24	P25
STATION	23+15	24+44	25+65	26+83	28+03	31+75	33+05
OFFSET	41' RT	41' LT	40.5' RT	33.5' LT	33.5' LT	33.5' RT	33.5' RT

- NOTE:**
- ALL PROPOSED ILLUMINATION ASSEMBLIES SHALL BE TY SA 50T-12 400W EQ LED.
 - PROPOSED ASSEMBLIES ARE SHOWN AT APPROXIMATE LOCATIONS, FINAL LOCATION TO BE DETERMINED BY FIELD ENGINEER.
 - THE UTILITY LOCATIONS ARE APPROXIMATE AND NOT ALL EXISTING UTILITIES ARE SHOWN FOR CLARITY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL OVERHEAD AND UNDERGROUND UTILITIES PRIOR TO THE CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL THE UTILITIES DAMAGED DUE TO THE CONSTRUCTION.

NOTE:
EXISTING GAS LINE TO REMAIN. USE EXTREME CAUTION WHILE WORKING ADJACENT TO THE GAS LINE. INFORM ENGINEER IMMEDIATELY IF A CONFLICT IS IDENTIFIED.



NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

ILLUMINATION DETAILS
STA 23+00 TO STA 34+00

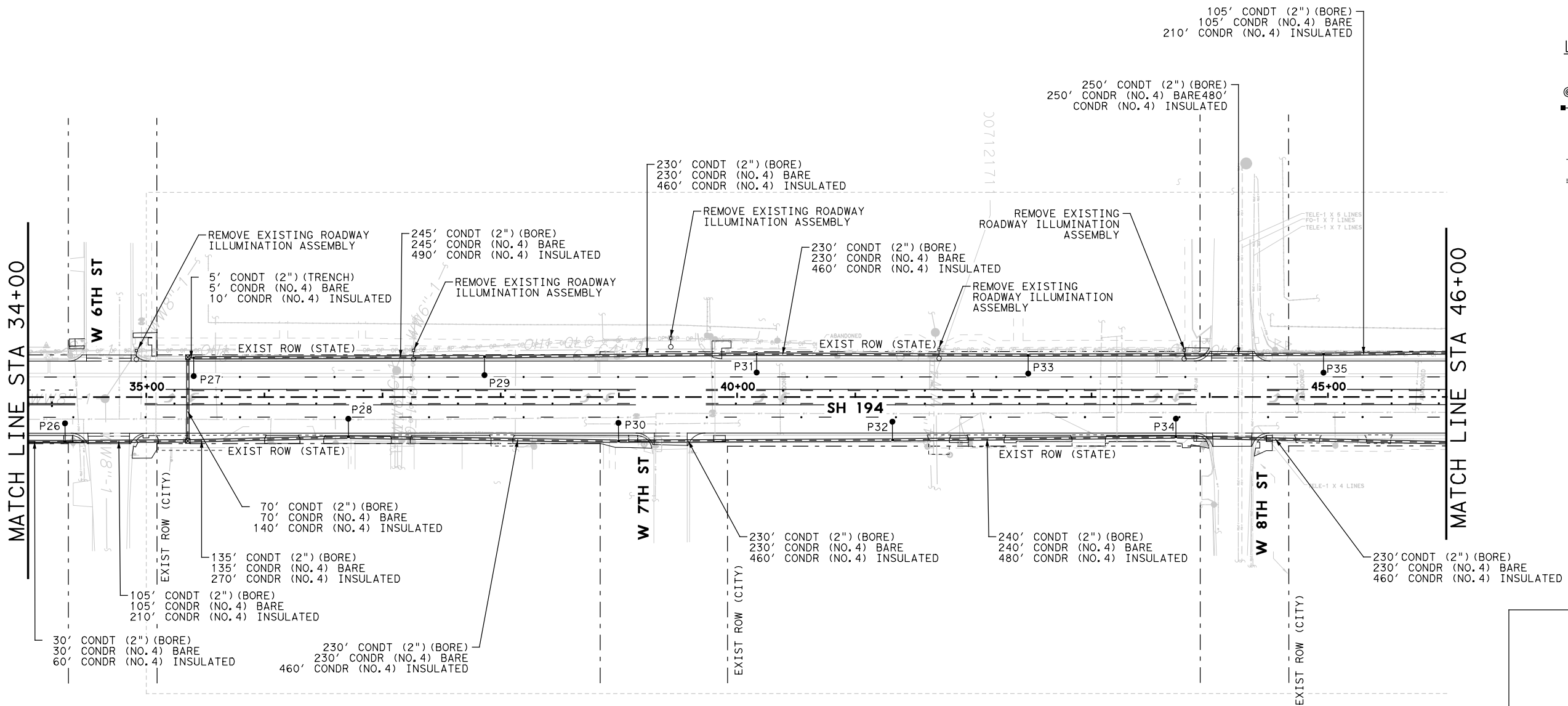
SCALE: 1"=100'			SHEET 3 OF 13
FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	258
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: SH194_illumination.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 7:42:23 PM SCALE: 1:100
 FILE: SH194_illumination_3.dgn



LEGEND

- EXIST ILLUMINATION ASSEMBLY
- EXIST LIGHT ON UTILITY POLE
- PROP ILLUMINATION ASSEMBLY
- PROP SERVICE METER
- PROP GROUND BOX
- PROP CONDUIT (TRENCH)
- PROP CONDUIT (BORE)



ITEM NO.	DESCRIPTION	UNIT	QUANTITY
0416 6029	DRILL SHAFT (RDWY ILL POLE) (30 IN)	LF	100
* 0610 6009	REMOVE RD IL ASM (TRANS-BASE)	EA	5
0610 6290	IN RD IL (TY SA) 50T-12 (400W EQ) LED	EA	10
0618 6046	CONDT (PVC) (SCH 80) (2")	LF	5
0618 6047	CONDT (PVC) (SCH 80) (2") (BORE)	LF	2330
0620 6011	ELEC CONDR (NO.4) BARE	LF	2335
0620 6012	ELEC CONDR (NO.4) INSULATED	LF	4670
0624 6002	GROUND BOX TY A (122311)W/APRON	EA	2
0628 6086	ELC SRV TY A 240/480 100(SS)SS(E)SP(O)	EA	0

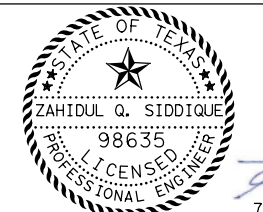
NOTE:

1. ALL PROPOSED ILLUMINATION ASSEMBLIES SHALL BE TY SA 50T-12 400W EQ LED.
2. PROPOSED ASSEMBLIES ARE SHOWN AT APPROXIMATE LOCATIONS, FINAL LOCATION TO BE DETERMINED BY FIELD ENGINEER.
3. THE UTILITY LOCATIONS ARE APPROXIMATE AND NOT ALL EXISTING UTILITIES ARE SHOWN FOR CLARITY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL OVERHEAD AND UNDERGROUND UTILITIES PRIOR TO THE CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL THE UTILITIES DAMAGED DUE TO THE CONSTRUCTION.

ILLUMINATION POLE NO.	P26	P27	P28	P29	P30	P31	P32	P33	P34	P35
STATION	34+30	35+39	36+71	37+86	39+00	40+15	41+30	42+45	43+70	44+95
OFFSET	38' RT	33' LT	34' RT	34' LT	37.5' RT	36' LT	36' RT	35' LT	34' RT	36' LT

* CONTRACTOR TO VERIFY THIS REMOVAL WILL NOT RESULT IN DISCONTINUITY ALONG THE SIDE STREET AND POWER SOURCES FOR ANY ADJACENT HOUSES. IF IT IS DETERMINED THAT THE REMOVAL WILL RESULT IN DISCONTINUITY, THE CONTRACTOR SHALL ONLY REMOVE THE EXISTING ROADWAY ILLUMINATION ARM AND FIXTURE WHILE MAINTAINING THE POLE AND POWER LINES.

NOTE:
EXISTING GAS LINE TO REMAIN. USE EXTREME CAUTION WHILE WORKING ADJACENT TO THE GAS LINE. INFORM ENGINEER IMMEDIATELY IF A CONFLICT IS IDENTIFIED.



7/29/2024

NO.	DATE	REVISION	APPROVED

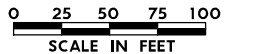


SH 194 FROM FM 3466 TO IH 27

ILLUMINATION DETAILS
STA 34+00 TO STA 46+00

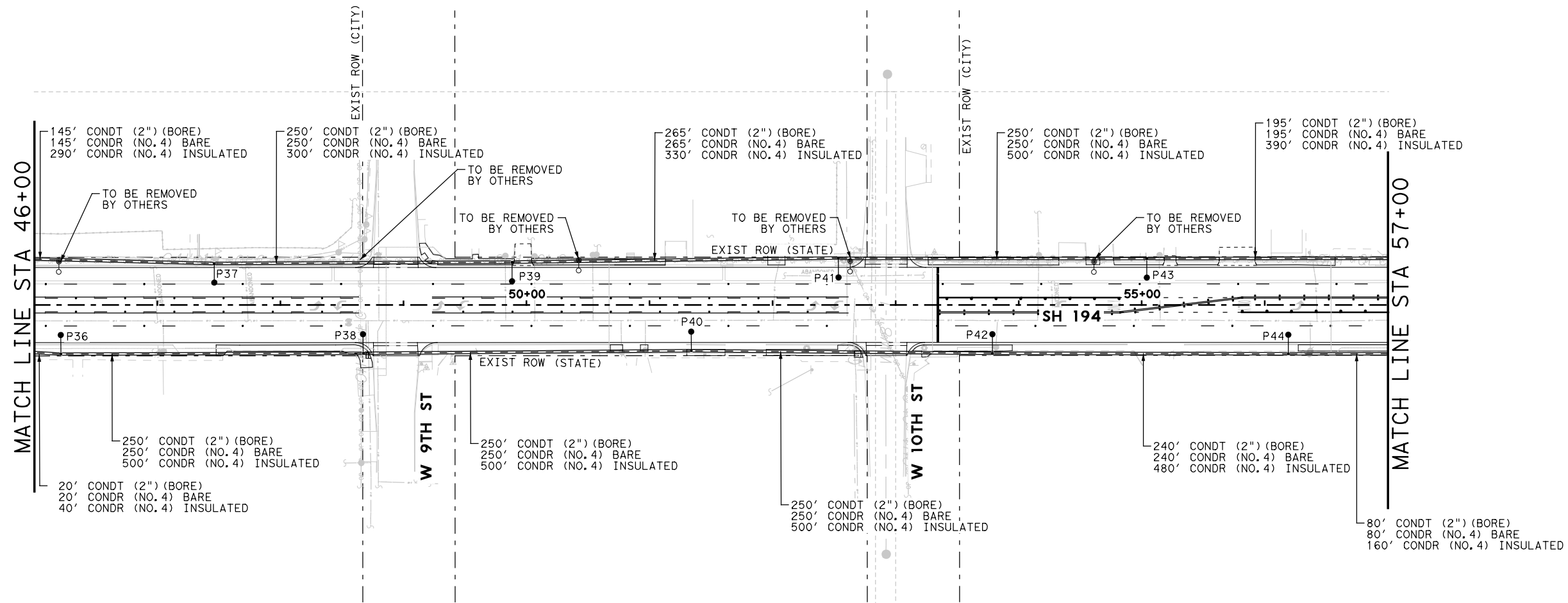
SCALE: 1"=100'		SHEET 4 OF 13	
FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	259
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: SH194_illumination.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 8:55:32 PM SCALE: 1:100
 FILE: SH194_illumination_4.dgn



LEGEND

- EXIST ILLUMINATION ASSEMBLY
- EXIST LIGHT ON UTILITY POLE
- PROP ILLUMINATION ASSEMBLY
- PROP SERVICE METER
- PROP GROUND BOX
- PROP CONDUIT (TRENCH)
- PROP CONDUIT (BORE)



ITEM NO.	DESCRIPTION	UNIT	QUANTITY
0416 6029	DRILL SHAFT (RDWY ILL POLE) (30 IN)	LF	90
0610 6290	IN RD IL (TY SA) 50T-12 (400W EQ) LED	EA	9
0618 6046	CONDT (PVC) (SCH 80) (2")	LF	0
0618 6047	CONDT (PVC) (SCH 80) (2") (BORE)	LF	2195
0620 6011	ELEC CONDR (NO. 4) BARE	LF	2195
0620 6012	ELEC CONDR (NO. 4) INSULATED	LF	4390
0624 6002	GROUND BOX TY A (122311)W/APRON	EA	0
0628 6086	ELC SRV TY A 240/480 100(SS)SS(E)SP(O)	EA	0

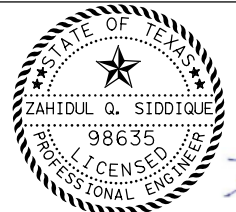
ILLUMINATION POLE NO.	P36	P37	P38	P39	P40	P41	P42	P43	P44
STATION	46+20	47+46	48+70	49+90	51+33	52+55	53+80	55+05	56+20
OFFSET	40' RT	34' LT	39' RT	35' LT	37' RT	38' LT	39' RT	37.5' LT	40' RT

NOTE:

- ALL PROPOSED ILLUMINATION ASSEMBLIES SHALL BE TY SA 50T-12 400W EQ LED.
- PROPOSED ASSEMBLIES ARE SHOWN AT APPROXIMATE LOCATIONS, FINAL LOCATION TO BE DETERMINED BY FIELD ENGINEER.
- THE UTILITY LOCATIONS ARE APPROXIMATE AND NOT ALL EXISTING UTILITIES ARE SHOWN FOR CLARITY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL OVERHEAD AND UNDERGROUND UTILITIES PRIOR TO THE CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL THE UTILITIES DAMAGED DUE TO THE CONSTRUCTION.

NOTE:

EXISTING GAS LINE TO REMAIN. USE EXTREME CAUTION WHILE WORKING ADJACENT TO THE GAS LINE. INFORM ENGINEER IMMEDIATELY IF A CONFLICT IS IDENTIFIED.



Zahidul Q. Siddique
7/29/2024

NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

ILLUMINATION DETAILS
STA 46+00 TO STA 57+00

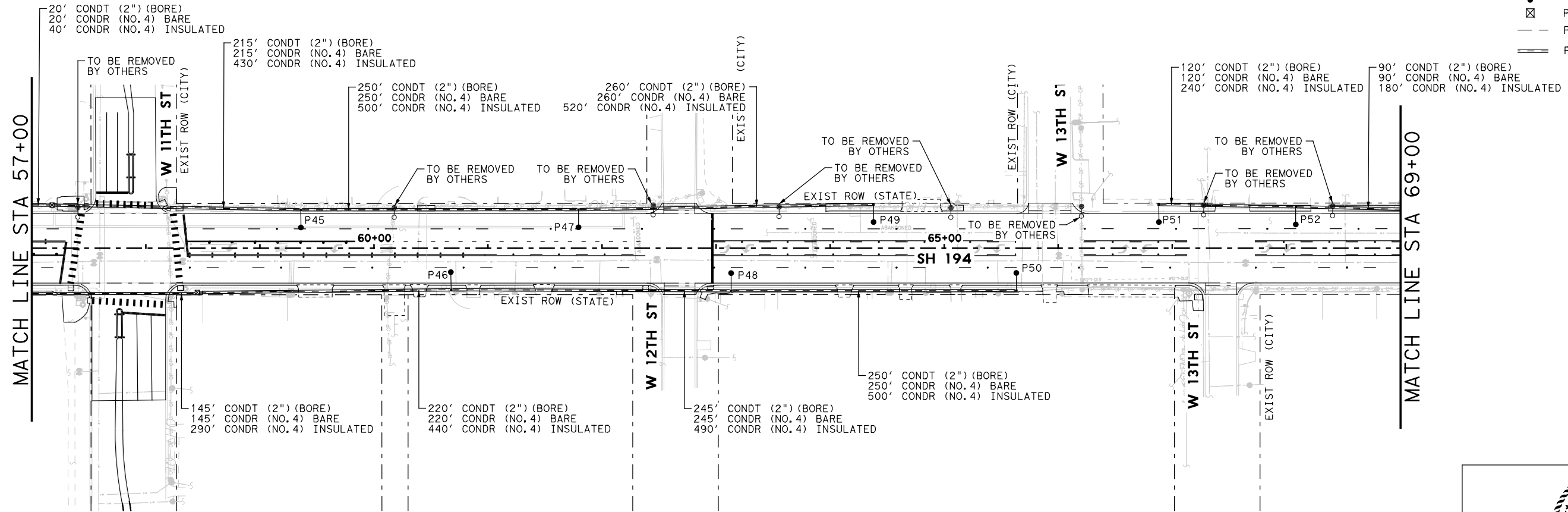
SCALE: 1"=100'		SHEET 5 OF 13	
FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	260
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcfp PENTABLE: SH194_illumination.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 8:55:38 PM SCALE: 1:100
 FILE: SH194_illumination_5.dgn



LEGEND

- EXIST ILLUMINATION ASSEMBLY
- EXIST LIGHT ON UTILITY POLE
- PROP ILLUMINATION ASSEMBLY
- PROP SERVICE METER
- PROP GROUND BOX
- PROP CONDUIT (TRENCH)
- PROP CONDUIT (BORE)



ITEM NO.	DESCRIPTION	UNIT	QUANTITY
0416 6029	DRILL SHAFT (RDWY ILL POLE) (30 IN)	LF	80
0610 6290	IN RD IL (TY SA) 50T-12 (400W EQ) LED	EA	8
0618 6046	CONDT (PVC) (SCH 80) (2")	LF	0
0618 6047	CONDT (PVC) (SCH 80) (2") (BORE)	LF	1815
0620 6011	ELEC CONDR (NO. 4) BARE	LF	1815
0620 6012	ELEC CONDR (NO. 4) INSULATED	LF	3630
0624 6002	GROUND BOX TY A (122311)W/APRON	EA	2
0628 6086	ELC SRV TY A 240/480 100(SS)SS(E)SP(O)	EA	0

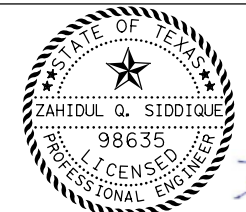
ILLUMINATION POLE NO.	P45	P46	P47	P48	P49	P50	P51	P52
STATION	59+36	60+67	61+86	63+13	64+38	65+63	66+88	68+08
OFFSET	33.5' LT	36.5' RT	34' LT	37' RT	38.5' LT	37.5' RT	38.5' LT	36' LT

NOTE:

- ALL PROPOSED ILLUMINATION ASSEMBLIES SHALL BE TY SA 50T-12 400W EQ LED.
- PROPOSED ASSEMBLIES ARE SHOWN AT APPROXIMATE LOCATIONS, FINAL LOCATION TO BE DETERMINED BY FIELD ENGINEER.
- THE UTILITY LOCATIONS ARE APPROXIMATE AND NOT ALL EXISTING UTILITIES ARE SHOWN FOR CLARITY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL OVERHEAD AND UNDERGROUND UTILITIES PRIOR TO THE CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL THE UTILITIES DAMAGED DUE TO THE CONSTRUCTION.

NOTE:

EXISTING GAS LINE TO REMAIN. USE EXTREME CAUTION WHILE WORKING ADJACENT TO THE GAS LINE. INFORM ENGINEER IMMEDIATELY IF A CONFLICT IS IDENTIFIED.



NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

ILLUMINATION DETAILS
STA 57+00 TO STA 69+00

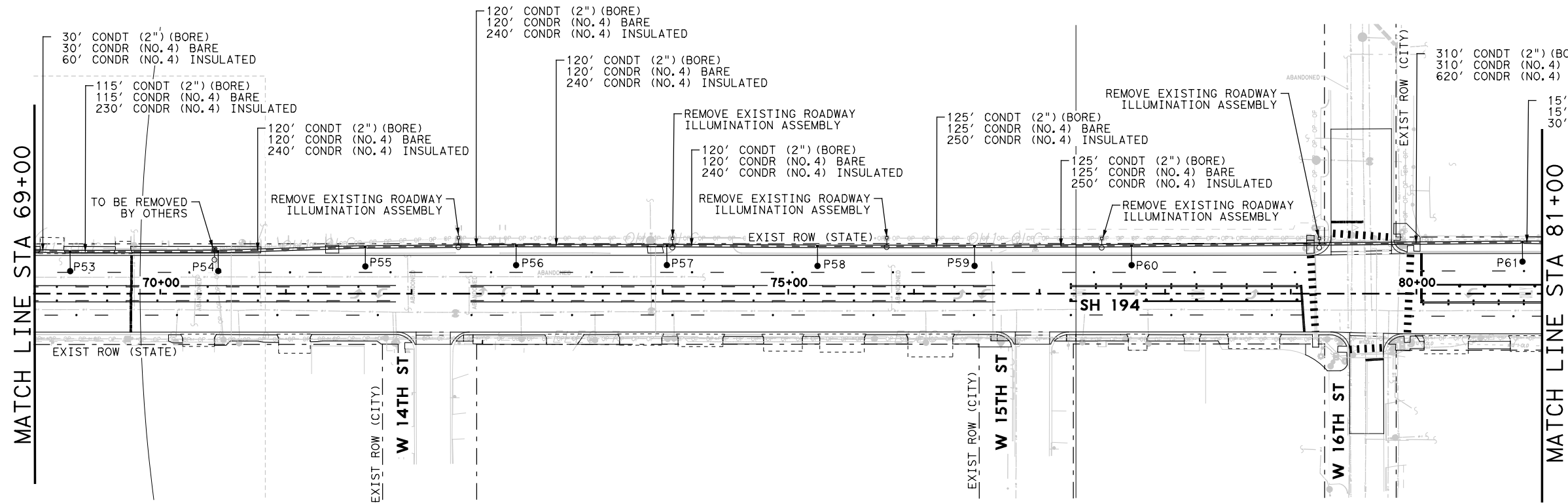
SCALE: 1"=100'		SHEET 6 OF 13	
FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	261
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: SH194_illumination.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 8:55:44 PM SCALE: 1:100
 FILE: SH194_illumination_6.dgn



LEGEND

- EXIST ILLUMINATION ASSEMBLY
- ⊙—○ EXIST LIGHT ON UTILITY POLE
- PROP ILLUMINATION ASSEMBLY
- ⊙ PROP SERVICE METER
- ☒ PROP GROUND BOX
- — PROP CONDUIT (TRENCH)
- ≡≡≡ PROP CONDUIT (BORE)



ITEM NO.	DESCRIPTION	UNIT	QUANTITY
0416 6029	DRILL SHAFT (RDWY ILL POLE) (30 IN)	LF	90
* 0610 6009	REMOVE RD IL ASM (TRANS-BASE)	EA	5
0610 6290	IN RD IL (TY SA) 50T-12 (400W EQ) LED	EA	9
0618 6046	CONDT (PVC) (SCH 80) (2")	LF	0
0618 6047	CONDT (PVC) (SCH 80) (2") (BORE)	LF	1200
0620 6011	ELEC CONDR (NO. 4) BARE	LF	1200
0620 6012	ELEC CONDR (NO. 4) INSULATED	LF	2400
0624 6002	GROUND BOX TY A (122311)W/APRON	EA	0
0628 6086	ELC SRV TY A 240/480 100(SS)SS(E)SP(O)	EA	0

NOTE:

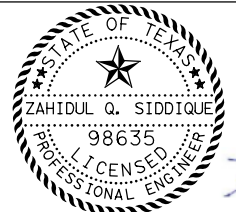
- ALL PROPOSED ILLUMINATION ASSEMBLIES SHALL BE TY SA 50T-12 400W EQ LED.
- PROPOSED ASSEMBLIES ARE SHOWN AT APPROXIMATE LOCATIONS, FINAL LOCATION TO BE DETERMINED BY FIELD ENGINEER.
- THE UTILITY LOCATIONS ARE APPROXIMATE AND NOT ALL EXISTING UTILITIES ARE SHOWN FOR CLARITY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL OVERHEAD AND UNDERGROUND UTILITIES PRIOR TO THE CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL THE UTILITIES DAMAGED DUE TO THE CONSTRUCTION.

ILLUMINATION POLE NO.	P53	P54	P55	P56	P57	P58	P59	P60	P61
STATION	69+28	70+43	71+63	72+83	74+03	75+23	76+48	77+73	80+84
OFFSET	33.5' LT	33.5' LT	37' LT	38' LT	38.5' LT	37.5' LT	37.5' LT	38' LT	41' LT

* CONTRACTOR TO VERIFY THIS REMOVAL WILL NOT RESULT IN DISCONTINUITY ALONG THE SIDE STREET AND POWER SOURCES FOR ANY ADJACENT HOUSES. IF IT IS DETERMINED THAT THE REMOVAL WILL RESULT IN DISCONTINUITY, THE CONTRACTOR SHALL ONLY REMOVE THE EXISTING ROADWAY ILLUMINATION ARM AND FIXTURE WHILE MAINTAINING THE POLE AND POWER LINES.

NOTE:

EXISTING GAS LINE TO REMAIN. USE EXTREME CAUTION WHILE WORKING ADJACENT TO THE GAS LINE. INFORM ENGINEER IMMEDIATELY IF A CONFLICT IS IDENTIFIED.



Zahidul Q. Siddique
7/29/2024

NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

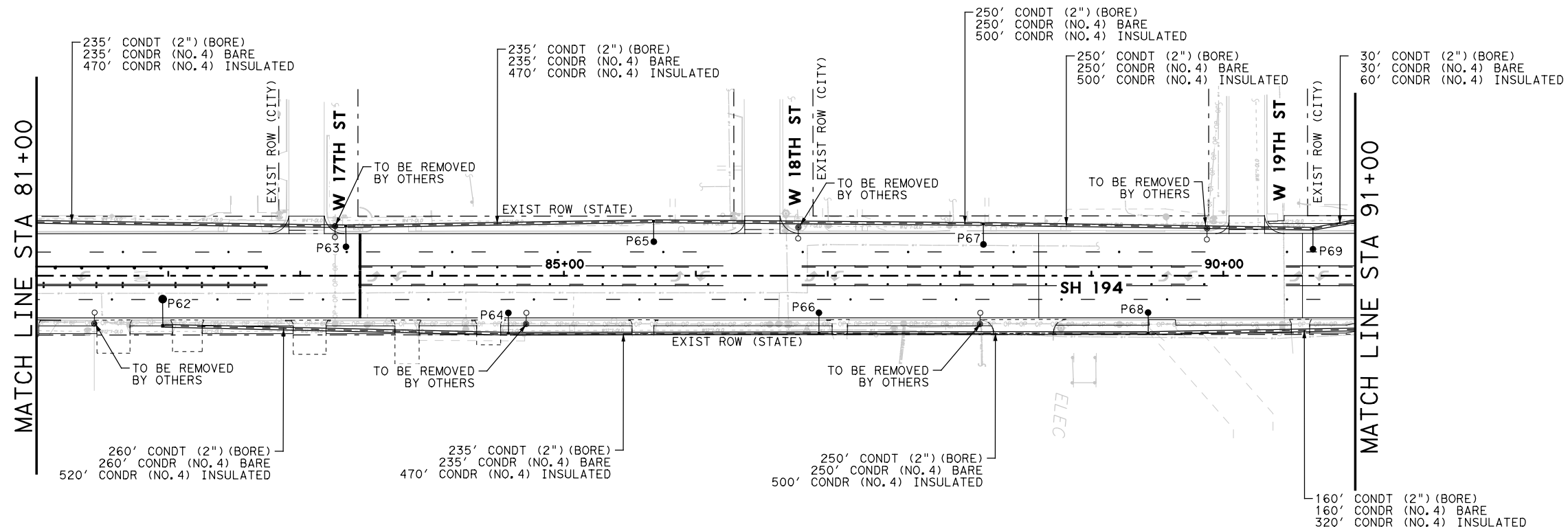
ILLUMINATION DETAILS
STA 69+00 TO STA 81+00

SCALE: 1"=100'			SHEET 7 OF 13
FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	262
CONTROL	SECTION	JOB	
0439	05	026	



LEGEND

- EXIST ILLUMINATION ASSEMBLY
- EXIST LIGHT ON UTILITY POLE
- PROP ILLUMINATION ASSEMBLY
- PROP SERVICE METER
- PROP GROUND BOX
- PROP CONDUIT (TRENCH)
- PROP CONDUIT (BORE)



ITEM NO.	DESCRIPTION	UNIT	QUANTITY
0416 6029	DRILL SHAFT (RDWY ILL POLE) (30 IN)	LF	80
0610 6290	IN RD IL (TY SA) 50T-12 (400W EQ) LED	EA	8
0618 6046	CONDT (PVC) (SCH 80) (2")	LF	0
0618 6047	CONDT (PVC) (SCH 80) (2") (BORE)	LF	1905
0620 6011	ELEC CONDR (NO. 4) BARE	LF	1905
0620 6012	ELEC CONDR (NO. 4) INSULATED	LF	3810
0624 6002	GROUND BOX TY A (122311)W/APRON	EA	0
0628 6086	ELC SRV TY A 240/480 100(SS)SS(E)SP(O)	EA	0

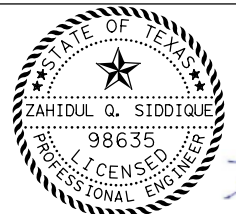
ILLUMINATION POLE NO.	P62	P63	P64	P65	P66	P67	P68	P69
STATION	81+95	83+34	84+57	85+68	86+93	88+18	89+43	90+67
OFFSET	38' RT	37.5' LT	44' RT	41.5' LT	43.5' RT	39' LT	43.5' RT	35.5' LT

NOTE:

- ALL PROPOSED ILLUMINATION ASSEMBLIES SHALL BE TY SA 50T-12 400W EQ LED.
- PROPOSED ASSEMBLIES ARE SHOWN AT APPROXIMATE LOCATIONS, FINAL LOCATION TO BE DETERMINED BY FIELD ENGINEER.
- THE UTILITY LOCATIONS ARE APPROXIMATE AND NOT ALL EXISTING UTILITIES ARE SHOWN FOR CLARITY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL OVERHEAD AND UNDERGROUND UTILITIES PRIOR TO THE CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL THE UTILITIES DAMAGED DUE TO THE CONSTRUCTION.

NOTE:

EXISTING GAS LINE TO REMAIN. USE EXTREME CAUTION WHILE WORKING ADJACENT TO THE GAS LINE. INFORM ENGINEER IMMEDIATELY IF A CONFLICT IS IDENTIFIED.



Zahidul Q. Siddique
7/29/2024

NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

ILLUMINATION DETAILS
STA 81+00 TO STA 91+00

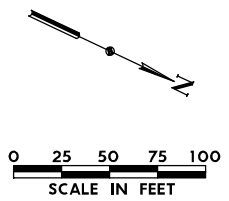
SCALE: 1"=100' SHEET 8 OF 13

FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026

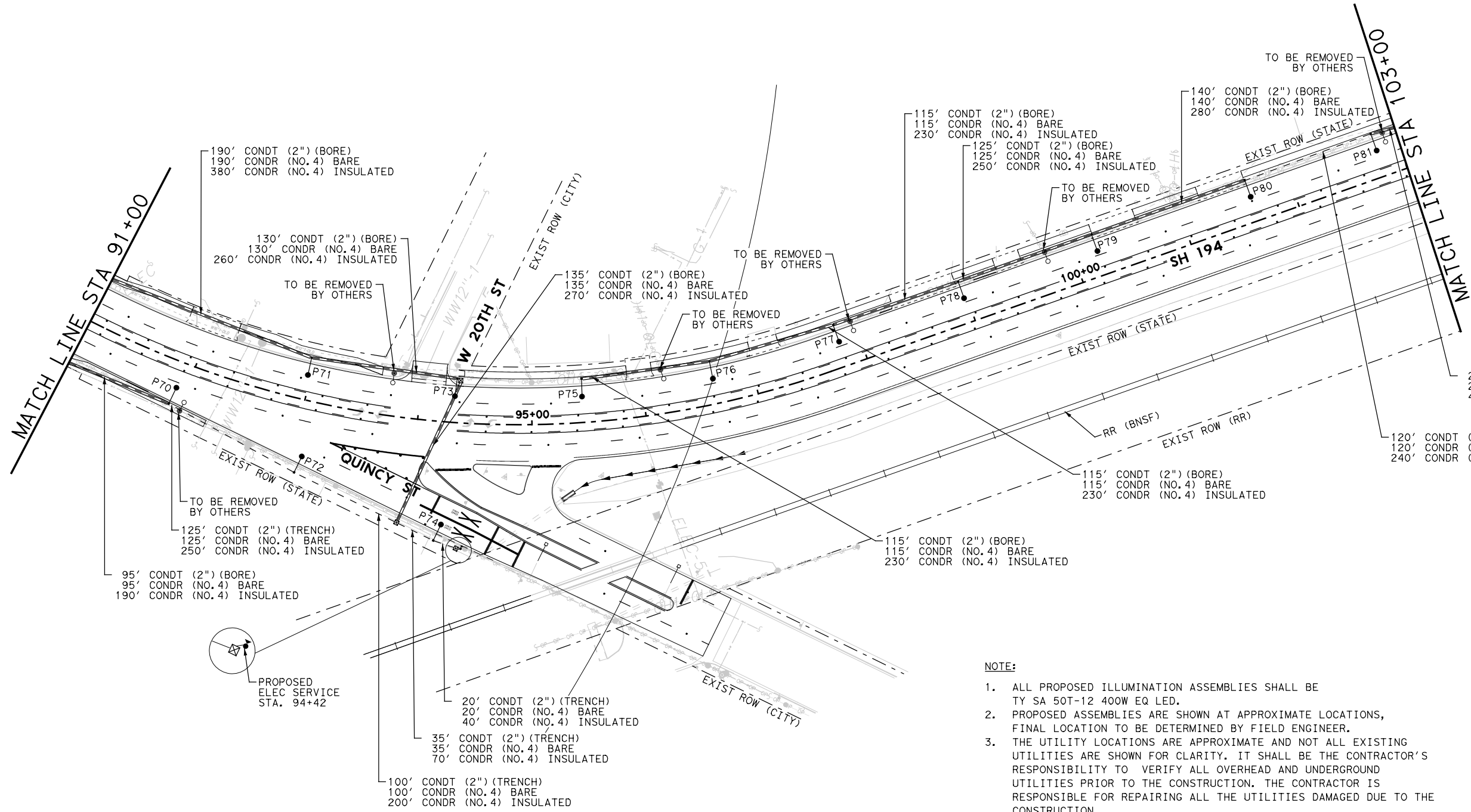
SHEET NO. 263

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 8:55:52 PM
 FILE: SH194_Illumination_B.dgn

NOTE:
EXISTING GAS LINE TO REMAIN. USE EXTREME CAUTION WHILE WORKING ADJACENT TO THE GAS LINE. INFORM ENGINEER IMMEDIATELY IF A CONFLICT IS IDENTIFIED.



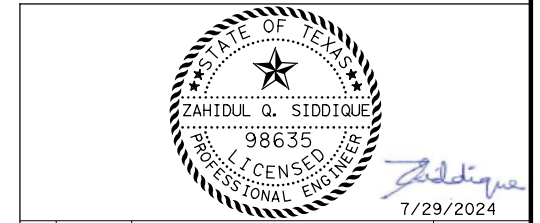
- LEGEND**
- EXIST ILLUMINATION ASSEMBLY
 - ⊙—○ EXIST LIGHT ON UTILITY POLE
 - PROP ILLUMINATION ASSEMBLY
 - ⊙ PROP SERVICE METER
 - ⊠ PROP GROUND BOX
 - PROP CONDUIT (TRENCH)
 - === PROP CONDUIT (BORE)



- NOTE:**
- ALL PROPOSED ILLUMINATION ASSEMBLIES SHALL BE TY SA 50T-12 400W EQ LED.
 - PROPOSED ASSEMBLIES ARE SHOWN AT APPROXIMATE LOCATIONS, FINAL LOCATION TO BE DETERMINED BY FIELD ENGINEER.
 - THE UTILITY LOCATIONS ARE APPROXIMATE AND NOT ALL EXISTING UTILITIES ARE SHOWN FOR CLARITY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL OVERHEAD AND UNDERGROUND UTILITIES PRIOR TO THE CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL THE UTILITIES DAMAGED DUE TO THE CONSTRUCTION.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
0416 6029	DRILL SHAFT (RDWY ILL POLE) (30 IN)	LF	120
0610 6290	IN RD IL (TY SA) 50T-12 (400W EQ) LED	EA	12
0618 6046	CONDT (PVC) (SCH 80) (2")	LF	400
0618 6047	CONDT (PVC) (SCH 80) (2") (BORE)	LF	1180
0620 6011	ELEC CONDR (NO.4) BARE	LF	1580
0620 6012	ELEC CONDR (NO.4) INSULATED	LF	3160
0624 6002	GROUND BOX TY A (122311)W/APRON	EA	3
0628 6086	ELC SRV TY A 240/480 100(SS)SS(E)SP(O)	EA	1

ILLUMINATION POLE NO.	P70	P71	P72	P73	P74	P75	P76	P77	P78	P79	P80	P81
STATION	1091+92 (QUINCY ST)	92+97	1093+18 (QUINCY ST)	94+32	1094+53 (QUINCY ST)	95+46	96+65	97+82	99+97	100+21	101+55	102+80
OFFSET	34.5' RT	37.5' LT	40.5' RT	38.5' LT	40.5' RT	38' LT	38' LT	38' LT	37.5' LT	37' LT	37.5' LT	39' LT



NO.	DATE	REVISION	APPROVED



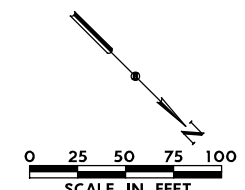
SH 194 FROM FM 3466 TO IH 27

ILLUMINATION DETAILS
STA 91+00 TO STA 103+00

SCALE: 1"=100' SHEET 9 OF 13

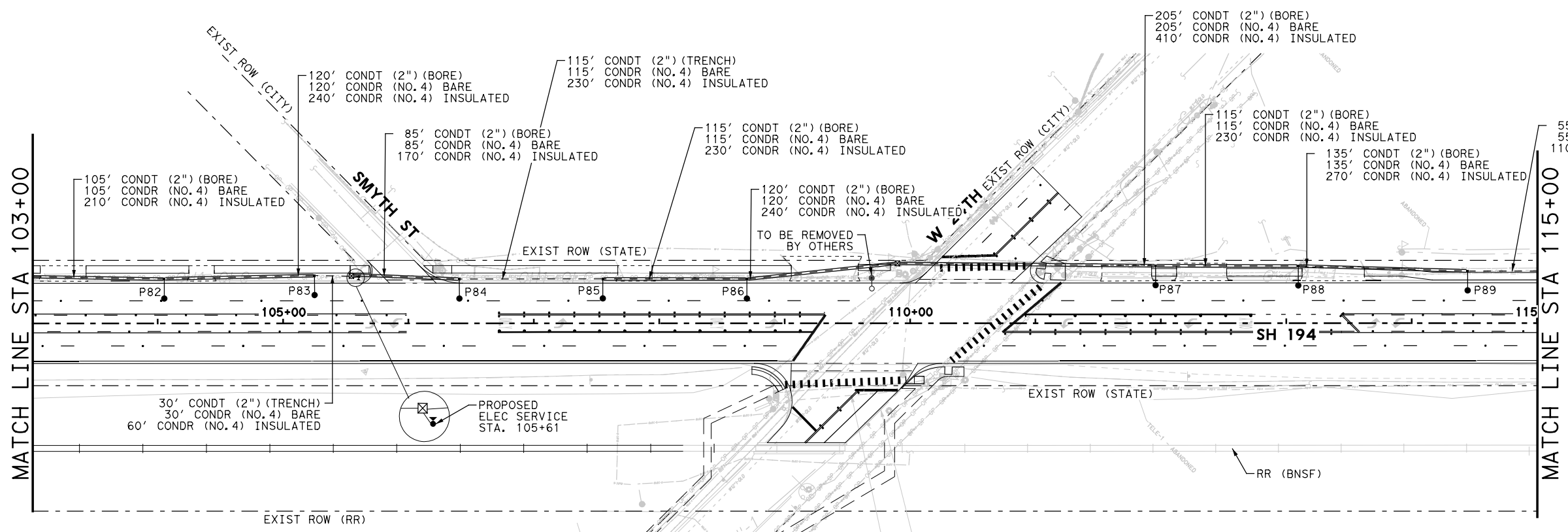
FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: SH194_illumination.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 8:55:56 PM SCALE: 1:100
 FILE: SH194_illumination_9.dgn



LEGEND

- EXIST ILLUMINATION ASSEMBLY
- EXIST LIGHT ON UTILITY POLE
- PROP ILLUMINATION ASSEMBLY
- PROP SERVICE METER
- PROP GROUND BOX
- PROP CONDUIT (TRENCH)
- PROP CONDUIT (BORE)



TxDOT PERMIT #LBB20160725154547

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
0416 6029	DRILL SHAFT (RDWY ILL POLE) (30 IN)	LF	80
0610 6290	IN RD IL (TY SA) 50T-12 (400W EQ) LED	EA	8
0618 6046	CONDT (PVC) (SCH 80) (2")	LF	200
0618 6047	CONDT (PVC) (SCH 80) (2") (BORE)	LF	1000
0620 6011	ELEC CONDR (NO. 4) BARE	LF	1200
0620 6012	ELEC CONDR (NO. 4) INSULATED	LF	2400
0624 6002	GROUND BOX TY A (122311)W/APRON	EA	2
0628 6086	ELC SRV TY A 240/480 100(SS)SS(E)SP(O)	EA	1

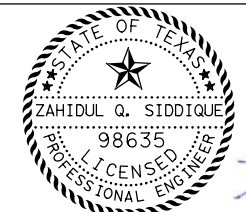
NOTE:

1. ALL PROPOSED ILLUMINATION ASSEMBLIES SHALL BE TY SA 50T-12 400W EQ LED.
2. PROPOSED ASSEMBLIES ARE SHOWN AT APPROXIMATE LOCATIONS, FINAL LOCATION TO BE DETERMINED BY FIELD ENGINEER.
3. THE UTILITY LOCATIONS ARE APPROXIMATE AND NOT ALL EXISTING UTILITIES ARE SHOWN FOR CLARITY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL OVERHEAD AND UNDERGROUND UTILITIES PRIOR TO THE CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL THE UTILITIES DAMAGED DUE TO THE CONSTRUCTION.

ILLUMINATION POLE NO.	P82	P83	P84	P85	P86	P87	P88	P89
STATION	104+05	105+25	106+40	107+55	108+69	111+96	113+09	114+44
OFFSET	35.5' LT	38' LT	35.5' LT	35.5' LT	35.5' LT	46' LT	45.5' LT	41.5' LT

NOTE:

EXISTING GAS LINE TO REMAIN. USE EXTREME CAUTION WHILE WORKING ADJACENT TO THE GAS LINE. INFORM ENGINEER IMMEDIATELY IF A CONFLICT IS IDENTIFIED.



Zahidul Q. Siddique
7/29/2024

NO.	DATE	REVISION	APPROVED

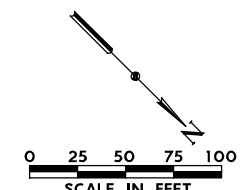


SH 194 FROM FM 3466 TO IH 27

ILLUMINATION DETAILS
STA 103+00 TO STA 115+00

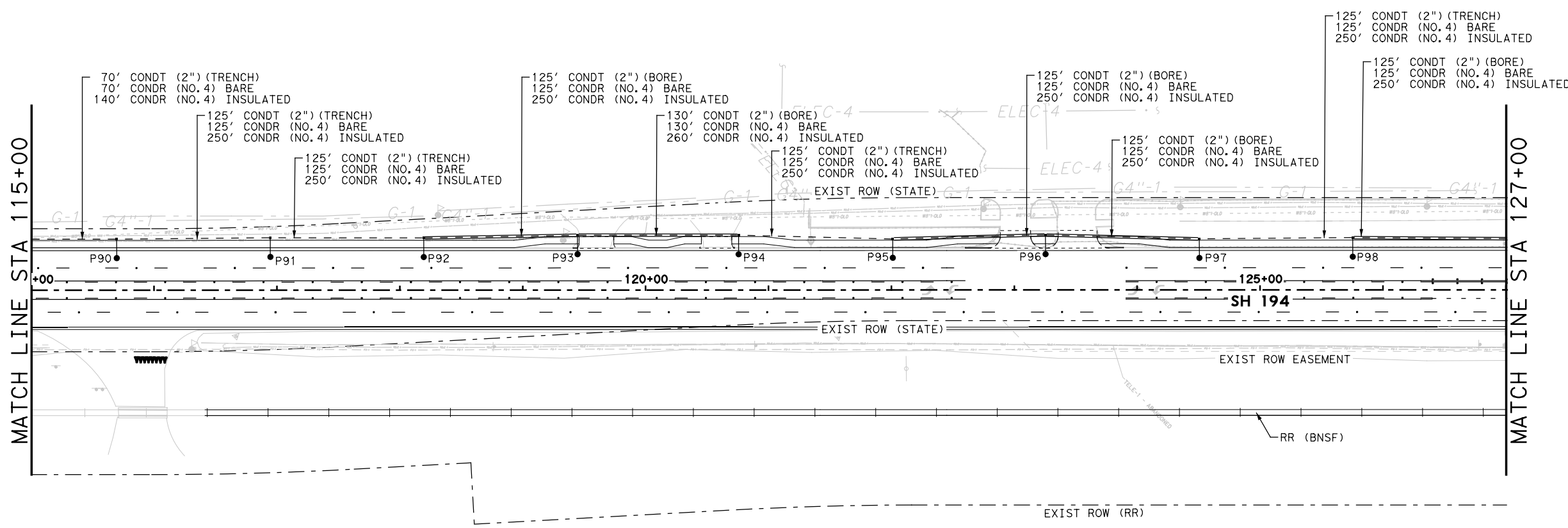
SCALE: 1"=100'		SHEET 10 OF 13	
FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	265
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: SH194_illumination.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 8:56:00 PM SCALE: 1:100
 FILE: SH194_illumination_10.dgn



LEGEND

- EXIST ILLUMINATION ASSEMBLY
- ⊙—○ EXIST LIGHT ON UTILITY POLE
- PROP ILLUMINATION ASSEMBLY
- ⊙ PROP SERVICE METER
- ⊠ PROP GROUND BOX
- — PROP CONDUIT (TRENCH)
- === PROP CONDUIT (BORE)



ITEM NO.	DESCRIPTION	UNIT	QUANTITY
0416 6029	DRILL SHAFT (RDWY ILL POLE) (30 IN)	LF	90
0610 6290	IN RD IL (TY SA) 50T-12 (400W EQ) LED	EA	9
0618 6046	CONDT (PVC) (SCH 80) (2")	LF	570
0618 6047	CONDT (PVC) (SCH 80) (2") (BORE)	LF	630
0620 6011	ELEC CONDR (NO. 4) BARE	LF	1200
0620 6012	ELEC CONDR (NO. 4) INSULATED	LF	2400
0624 6002	GROUND BOX TY A (122311)W/APRON	EA	0
0628 6086	ELC SRV TY A 240/480 100(SS)SS(E)SP(O)	EA	0

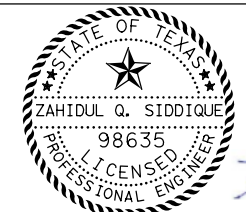
NOTE:

1. ALL PROPOSED ILLUMINATION ASSEMBLIES SHALL BE TY SA 50T-12 400W EQ LED.
2. PROPOSED ASSEMBLIES ARE SHOWN AT APPROXIMATE LOCATIONS, FINAL LOCATION TO BE DETERMINED BY FIELD ENGINEER.
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ILLUMINATION POLE NO.	P90	P91	P92	P93	P94	P95	P96	P97	P98
STATION	115+70	116+94	118+20	119+45	120+75	122+00	123+25	124+50	125+75
OFFSET	42' LT	42.5' LT	42.5' LT	44.5' LT	44.5' LT	41.5' LT	45' LT	41.5' LT	42.5' LT

NOTE:

EXISTING GAS LINE TO REMAIN. USE EXTREME CAUTION WHILE WORKING ADJACENT TO THE GAS LINE. INFORM ENGINEER IMMEDIATELY IF A CONFLICT IS IDENTIFIED.



NO.	DATE	REVISION	APPROVED

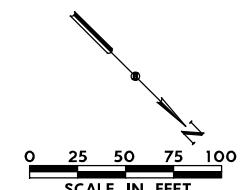


SH 194 FROM FM 3466 TO IH 27

ILLUMINATION DETAILS
STA 115+00 TO STA 127+00

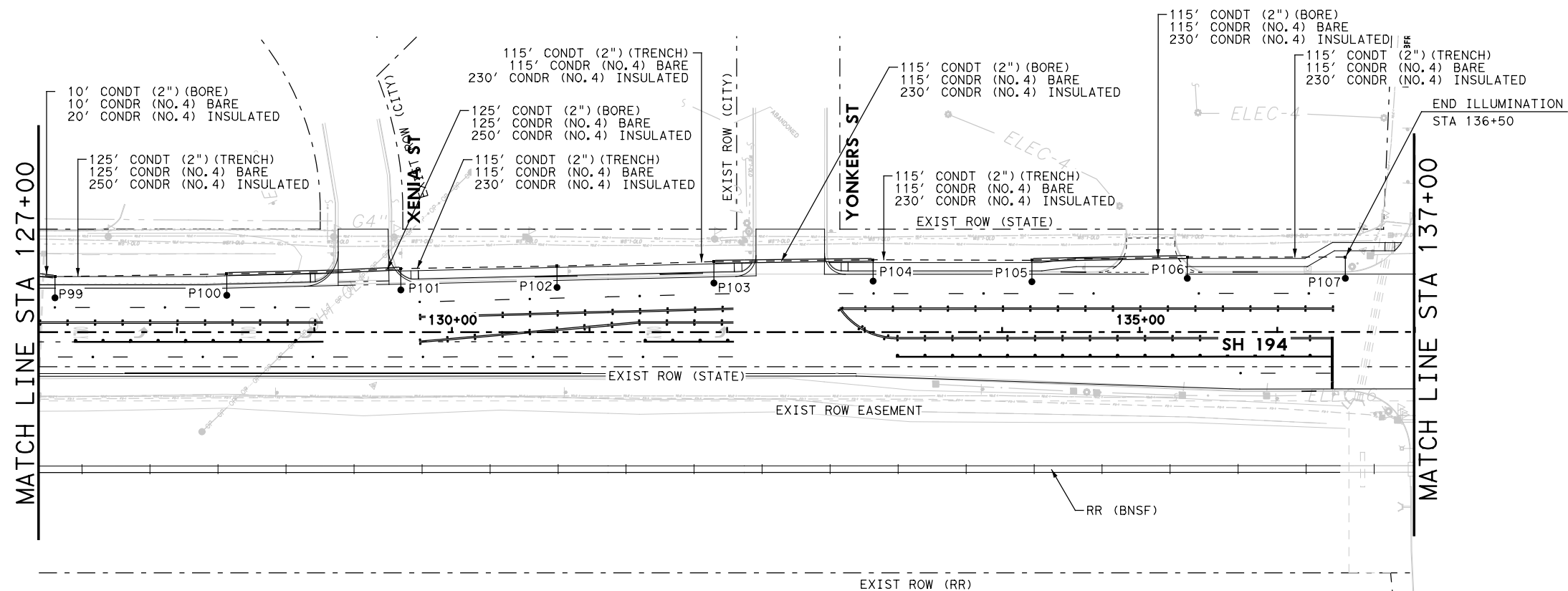
SCALE: 1"=100'		SHEET 11 OF 13	
FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	266
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: SH194_Illumination.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 8:56:04 PM SCALE: 1:00
 FILE: SH194_Illumination_11.dgn



LEGEND

- ⊖ ○ EXIST ILLUMINATION ASSEMBLY
- ⊖ ○ EXIST LIGHT ON UTILITY POLE
- ⊖ ○ PROP ILLUMINATION ASSEMBLY
- ⊖ ○ PROP SERVICE METER
- ⊖ □ PROP GROUND BOX
- — PROP CONDUIT (TRENCH)
- === PROP CONDUIT (BORE)



ITEM NO.	DESCRIPTION	UNIT	QUANTITY
0416 6029	DRILL SHAFT (RDWY ILL POLE) (30 IN)	LF	90
0610 6290	IN RD IL (TY SA) 50T-12 (400W EQ) LED	EA	9
0618 6046	CONDT (PVC) (SCH 80) (2")	LF	585
0618 6047	CONDT (PVC) (SCH 80) (2") (BORE)	LF	365
0620 6011	ELEC CONDR (NO. 4) BARE	LF	950
0620 6012	ELEC CONDR (NO. 4) INSULATED	LF	1900
0624 6002	GROUND BOX TY A (122311)W/APRON	EA	0
0628 6086	ELC SRV TY A 240/480 100(SS)SS(E)SP(O)	EA	0

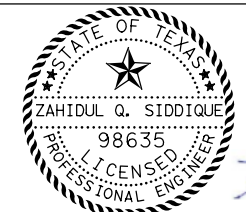
NOTE:

1. ALL PROPOSED ILLUMINATION ASSEMBLIES SHALL BE TY SA 50T-12 400W EQ LED.
2. PROPOSED ASSEMBLIES ARE SHOWN AT APPROXIMATE LOCATIONS, FINAL LOCATION TO BE DETERMINED BY FIELD ENGINEER.
3. THE UTILITY LOCATIONS ARE APPROXIMATE AND NOT ALL EXISTING UTILITIES ARE SHOWN FOR CLARITY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL OVERHEAD AND UNDERGROUND UTILITIES PRIOR TO THE CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL THE UTILITIES DAMAGED DUE TO THE CONSTRUCTION.

ILLUMINATION POLE NO.	P99	P100	P101	P102	P103	P104	P105	P106	P107
STATION	127+10	128+35	129+62	130+75	131+90	133+05	134+20	135+35	136+50
OFFSET	40.5' LT	42.5' LT	46' LT	48' LT	51' LT	52.5' LT	52' LT	54.5' LT	55' LT

NOTE:

EXISTING GAS LINE TO REMAIN. USE EXTREME CAUTION WHILE WORKING ADJACENT TO THE GAS LINE. INFORM ENGINEER IMMEDIATELY IF A CONFLICT IS IDENTIFIED.



NO.	DATE	REVISION	APPROVED

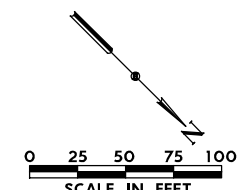


SH 194 FROM FM 3466 TO IH 27

ILLUMINATION DETAILS
STA 127+00 TO STA 137+00

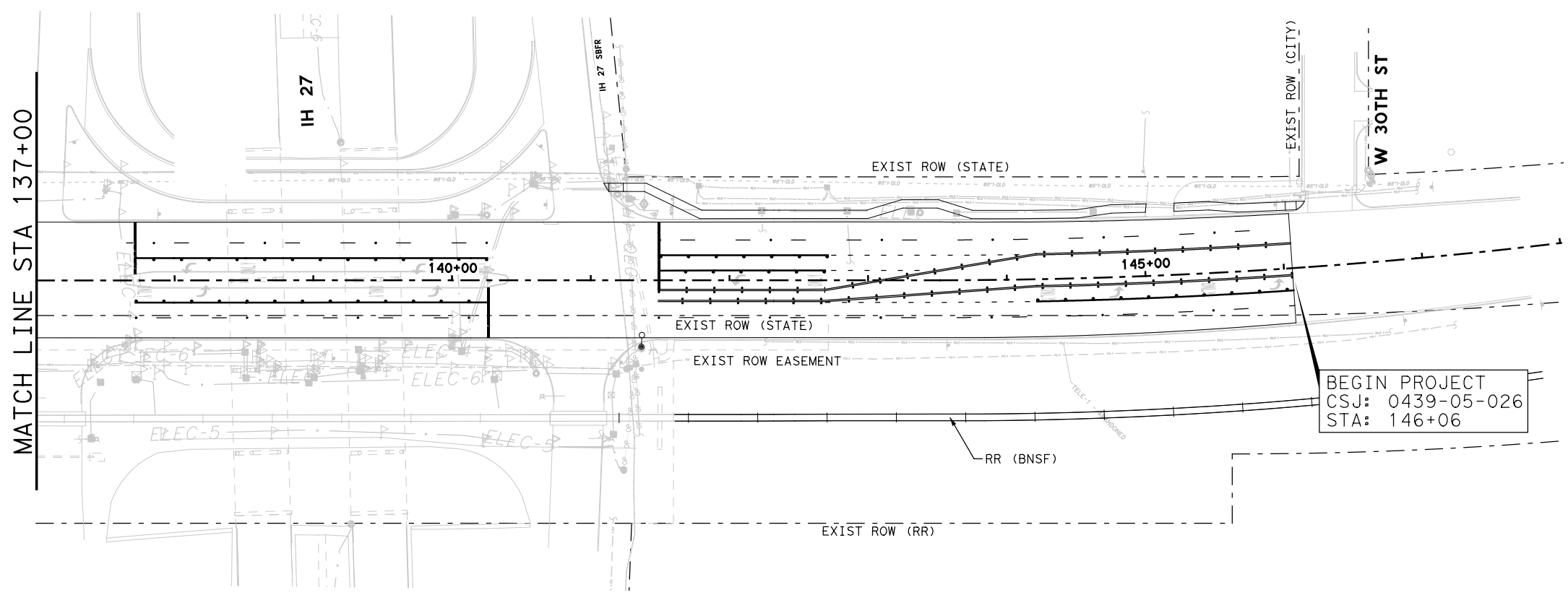
SCALE: 1"=100'		SHEET 12 OF 13	
FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	267
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: SH194_illumination.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 8:56:08 PM SCALE: 1:100
 FILE: SH194_illumination_12.dgn



LEGEND

- EXIST ILLUMINATION ASSEMBLY
- EXIST LIGHT ON UTILITY POLE
- PROP ILLUMINATION ASSEMBLY
- PROP SERVICE METER
- PROP GROUND BOX
- PROP CONDUIT (TRENCH)
- PROP CONDUIT (BORE)

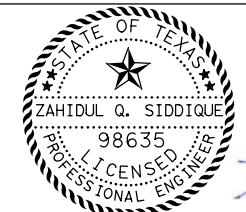


NOTE:

1. ALL PROPOSED ILLUMINATION ASSEMBLIES SHALL BE TY SA 50T-12 400W EQ LED.
2. PROPOSED ASSEMBLIES ARE SHOWN AT APPROXIMATE LOCATIONS, FINAL LOCATION TO BE DETERMINED BY FIELD ENGINEER.
3. THE UTILITY LOCATIONS ARE APPROXIMATE AND NOT ALL EXISTING UTILITIES ARE SHOWN FOR CLARITY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL OVERHEAD AND UNDERGROUND UTILITIES PRIOR TO THE CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL THE UTILITIES DAMAGED DUE TO THE CONSTRUCTION.

NOTE:

EXISTING GAS LINE TO REMAIN. USE EXTREME CAUTION WHILE WORKING ADJACENT TO THE GAS LINE. INFORM ENGINEER IMMEDIATELY IF A CONFLICT IS IDENTIFIED.



NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

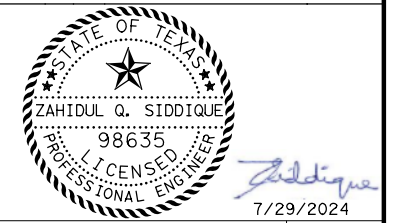
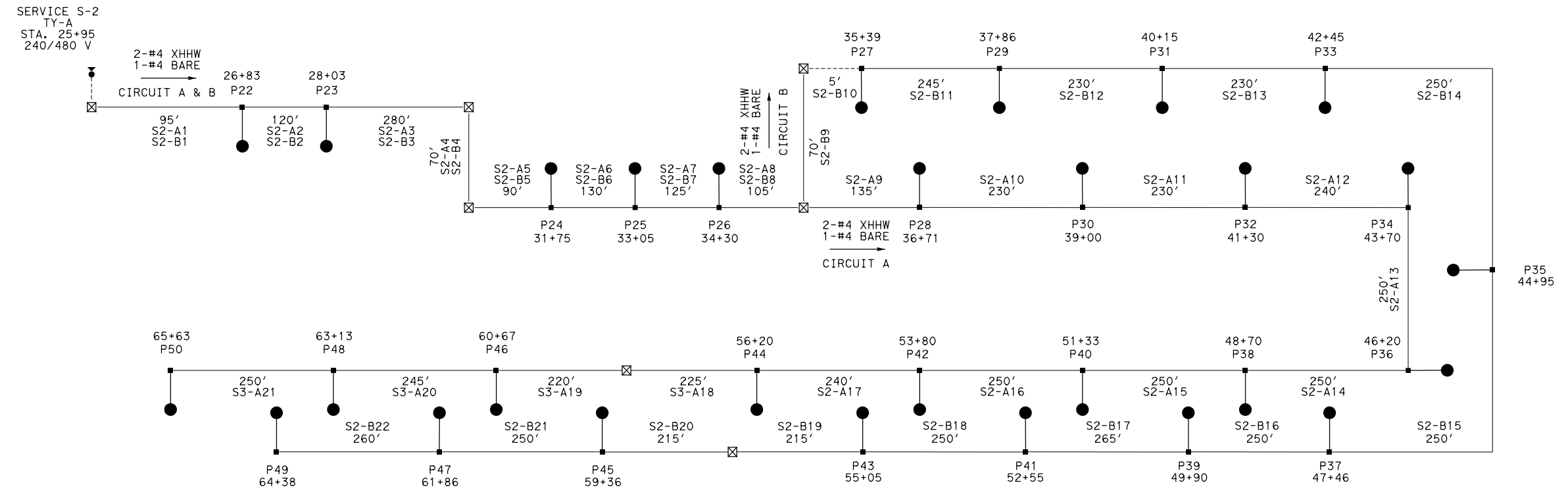
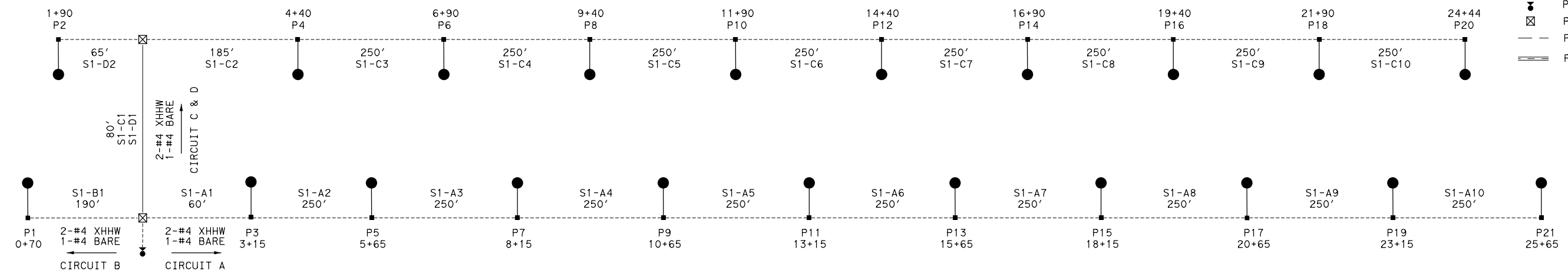
ILLUMINATION DETAILS
STA 137+00 TO END

SCALE: 1"=100'		SHEET 13 OF 13	
FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	268
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: SH194_illumination.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 8:56:13 PM SCALE: 1:100
 FILE: SH194_illumination_13.dgn

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 8:56:07 PM
 FILE: SH194_Illumination_CDI.dgn

- LEGEND**
- ⊠-○ EXIST ILLUMINATION ASSEMBLY
 - ⊙-○ EXIST LIGHT ON UTILITY POLE
 - PROP ILLUMINATION ASSEMBLY
 - ⊙ PROP SERVICE METER
 - ⊠ PROP GROUND BOX
 - PROP CONDUIT (TRENCH)
 - === PROP CONDUIT (BORE)



NO.	DATE	REVISION	APPROVED

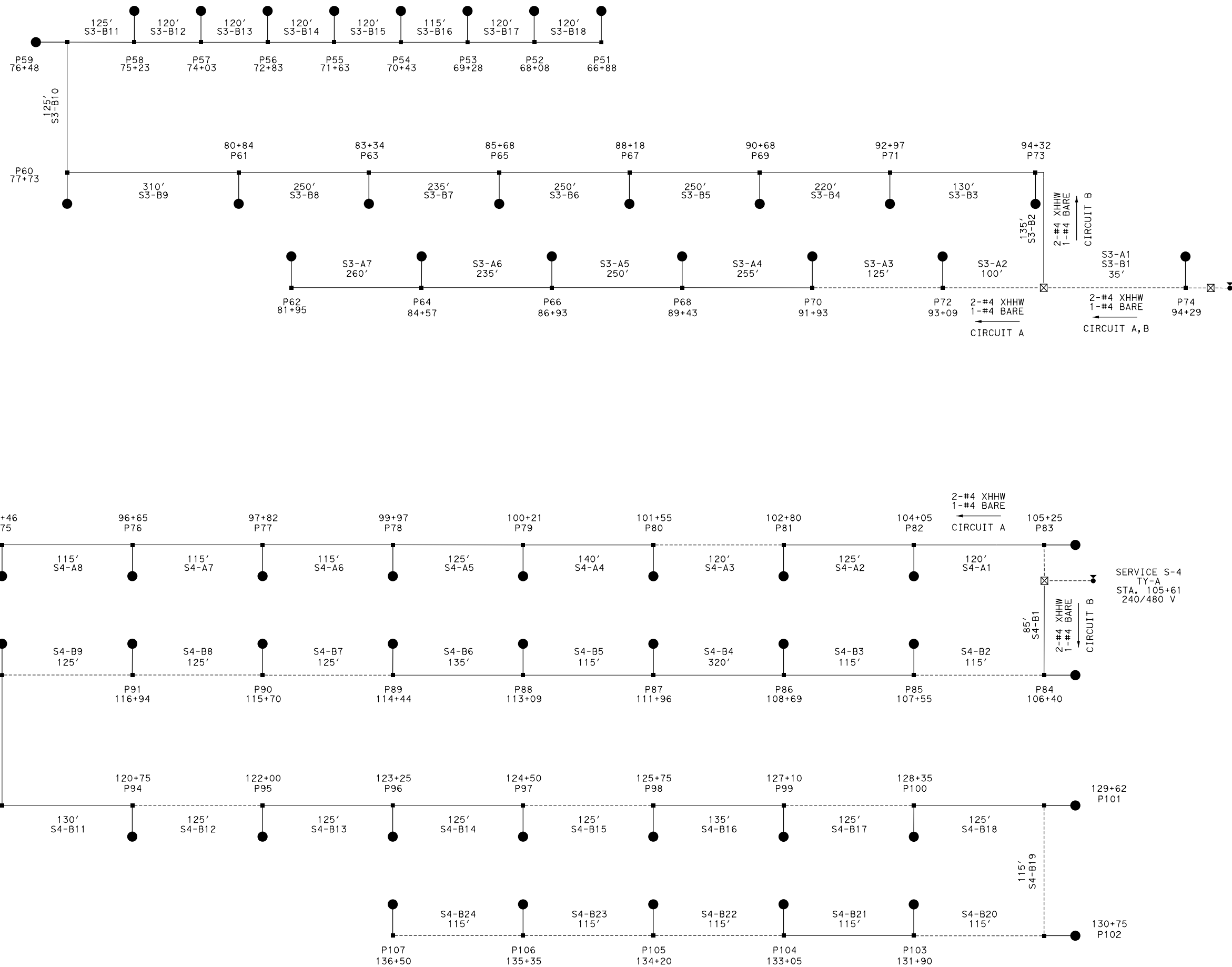


SH 194 FROM FM 3466 TO IH 27

CIRCUIT DIAGRAM

N. T. S.			SHEET 1 OF 2
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET		HIGHWAY NO. SH 194
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 269
CONTROL 0439	SECTION 05	JOB 026	

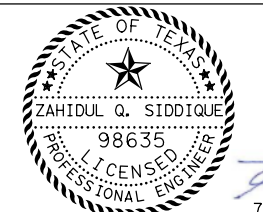
PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcfgr PENTABLE: SH194_Illumination.tbl
 USER: Arabinson DATE: 7/29/2024 TIME: 8:56:21 PM SCALE: 1:100
 FILE: SH194_Illumination_CD2.dgn



- LEGEND**
- ⊖ ○ EXIST ILLUMINATION ASSEMBLY
 - ⊙ ○ EXIST LIGHT ON UTILITY POLE
 - ○ PROP ILLUMINATION ASSEMBLY
 - ⊖ ○ PROP SERVICE METER
 - ⊠ PROP GROUND BOX
 - — PROP CONDUIT (TRENCH)
 - ≡ ≡ PROP CONDUIT (BORE)

SERVICE S-3
 TY-A
 STA. 94+42
 240/480 V

SERVICE S-4
 TY-A
 STA. 105+61
 240/480 V



Z. Siddique
 7/29/2024

NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

CIRCUIT DIAGRAM

N. T. S.			SHEET 2 OF 2
FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	270
CONTROL	SECTION	JOB	
0439	05	026	

ROADWAY ILLUMINATION ASSEMBLY NOTES

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.

1. Details apply to roadway lighting installations bid or referenced under Item 610, "Roadway Illumination Assemblies." Provide, furnish, and install all other materials not shown on the plans which may be necessary for complete and proper construction. Where manufacturers provide warranties or guarantees as a customary trade practice, furnish to the State such warranties or guarantees.
2. The locations of poles and fixtures may be shifted by the Engineer to accommodate local conditions. Install or remove poles and luminaires located near overhead electrical lines using established industry and utility safety practices and in accordance with laws governing such work. Consult with the appropriate utility company prior to beginning such work.
3. Provide new and unused materials. Ensure that all materials and installations comply with the applicable articles of the National Electrical Code (NEC), TxDOT standards and specifications, National Electrical Manufacturers Association (NEMA), and are listed by Underwriters Laboratories (UL) or a Nationally Recognized Testing Lab (NRTL). NRTLs such as Canadian Standard Association, Intertek Testing Services NA Inc., or FM Approvals LLC can be considered equivalent to UL. Faulty fabrication or poor workmanship in any material, equipment, or installation is justification for rejection.
4. Provide Roadway Illumination Light Fixtures as per TxDOT Departmental Material Specification (DMS) 11010, Item 610, and as shown on the Material Producers List (MPL) for Roadway Illumination and Electrical Supplies.
5. Fabricate steel roadway illumination poles in accordance with Roadway Illumination Poles (RIP) standards and Item 610. Poles fabricated according to RIP standards do not require shop drawing submittals.
 - a. Alternate designs to RIP standards or the use of aluminum to fabricate poles will require the submission of shop drawings electronically. For instructions on submitting shop drawings electronically see "Guide to Electronic Shop Drawing Submittal" on the TxDOT web site.
 - b. Limitations on use of the RIP standard: The RIP standard details were developed for installations in locations where the 3-second gust basic maximum wind speed is 110 mph, and where the elevation of the base of the pole is less than (i.e. not more than) 25' above the elevation of the surrounding terrain, in accordance with the "AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals," 6th Edition (2013) of the AASHTO Design Specifications. For poles to be installed in regions where the maximum basic wind speed exceeds 110 mph or to be mounted more than 25' above the surrounding terrain, provide poles meeting the following requirements:
 - i. Submittals. Following the electronic shop drawing submittal process (see Guide to Electronic Shop Drawing Submittal on the TxDOT web site), submit to the Engineer for approval fabrication drawings and calculations for the poles, sealed by a Texas licensed professional engineer (P.E.).
 - ii. Luminaire Structural Support Requirements. Provide light poles, arms, and anchor bolt assemblies with a 25 year design life to safely resist dead loads, ice loads and the required basic wind speeds at the location of installation in accordance with the 6th edition (2013) of the AASHTO Design Specifications. For transformer base poles, include transformer base and connecting hardware in calculations and shop drawing submittals. Structurally test all transformer bases to resist the theoretical plastic moment capacity of the pole. Submit certification of the plastic moment load test and FHWA breakaway requirement test of the model of base being furnished with the shop drawings. Show breakaway base model number, manufacturer's name, and logo on shop drawings. Include on manufacturer's shop drawings the ASTM designations for all materials to be used.
6. For both transformer and shoe-base type illumination poles, provide and install double-pole breakaway fuse holders as specified by DMS-11040. Breakaway fuse holders are listed on the MPL for Roadway Illumination and Electrical Supplies under Items 610 & 620. Provide 10 amp time delay fuses for breakaway connectors in light poles, or inside the light fixture for underpass luminaires. In each pole, connect luminaires to the breakaway connector with continuous stranded 12 AWG copper conductors as listed on the MPL. Bond all equipment grounding conductors together and to the ground lug in the transformer base or hand hole.
7. Tighten anchor bolts for shoe base, concrete traffic barrier base, and bridge mount roadway illumination poles, in accordance with Item 449.
8. Install T-Base with following procedure:
 - a. Anchor Bolt Tightening.
 - i. Coat the threads of the anchor bolts with electrically conductive lubricant.
 - ii. Place the T-base over the anchor bolts. Foundation must be level and flat. The maximum permissible gap under any one corner of the t-base is 1/8" before nuts are tightened.
 - iii. Coat the bearing surfaces of the nuts and washers with electrically conductive lubricant. Install (1) 1/2" hold down washer, (1) lock washer, and (1) nut on each anchor bolt. Turn the nuts onto the bolts so that each is hand-tight against the washer.
 - iv. Using a torque wrench, tighten each nut to 150 ft-lb. Uniform contact is required between the foundation and the T-base in the corner regions of the T-base, and all corner gaps must be closed after applying torque. If a gap still exists after torquing to 150 ft-lbs, continue torquing each bolt incrementally until gap is closed or maximum allowable torque of 250 ft. pound is reached, whichever comes first. If 250 ft-lbs is not enough to close the gap the foundation must be leveled. Gaps along the straight sides of the T-bases and the foundation are permissible. Ensure that no high point of contact occurs between the straight sides of the T-base and the foundation.
 - v. Check top of T-base for level. If not level then foundation must be leveled.
 - b. Top Bolt Procedure
 - i. Erect pole over T-base with crane. Coat bolts, nuts, washers, and lock washers with electrically conductive lubricant.

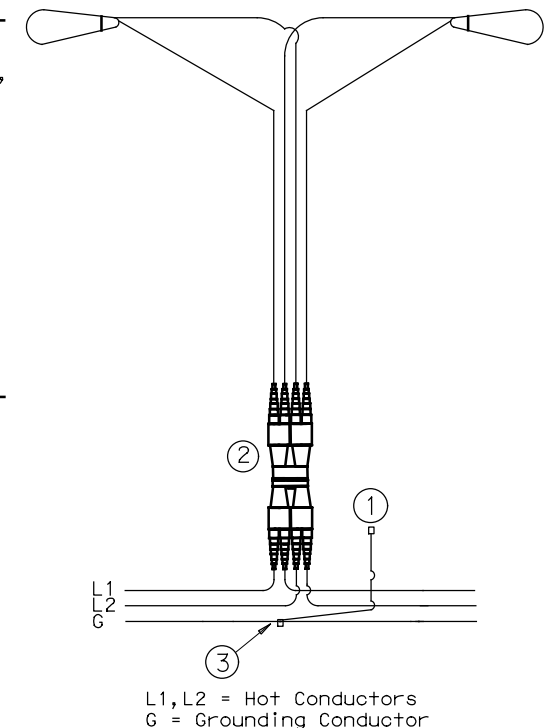
- ii. Install bolts and 1/2" connecting washers from the inside of the T-base, thread up through the pole base. Install flat washers, lock washers and nuts snug tight according to Item 447, "Structural Bolting."
- iii. Tighten each nut to 150 ft-lb. using a torque wrench.
- c. Level and Plumb
 - i. Ensure pole is plumb and mast arm is perpendicular to the roadway according to plans to within 5 degrees.
9. Construct luminaire pole foundations in accordance with Item 416, "Drilled Shaft Foundations," and TxDOT standard sheet RID(2).
10. Provide and install underpass luminaires in accordance with Item 610, DMS-11010, and TxDOT standard sheet RID(3). Typical luminaire size for underpass luminaires is 150W HPS or 150W EQ LED.
11. Mount luminaires on arms level as shown by the luminaire level indicator.
12. Orient luminaires perpendicular to the roadway intended to be lit unless otherwise shown on the plans.

Wiring Diagram Notes:

- ① Use 1/2 in.-13 UNC threaded, copper or tin-plated copper, pole bonding connector, sized appropriately for conductors, bonded to T-base, or use ground lug in handhole as available.
- ② Use pre-qualified two-pole breakaway connectors for all luminaire pole installations. For luminaires fed by a circuit with a neutral conductor, use double pole breakaway connectors with the neutral side unfused and marked white.
- ③ Split Bolt or other connector.

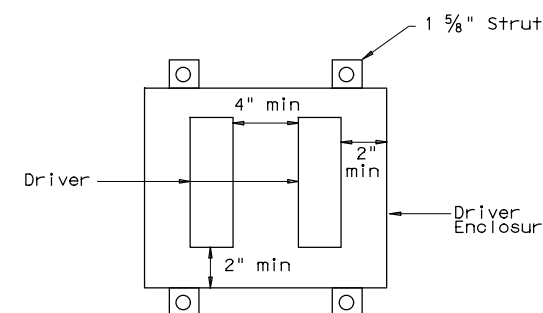
Decorative LED Lighting Notes:

1. LED Drivers in Remote Outdoor enclosures (for drivers that do not include an enclosure as part of a factory assembly):
 - a. Provide NEMA 3R outdoor enclosure or as approved.
 - b. Install enclosure at least 12" above ground or other horizontal surface. Mount vertically or on ceiling, and avoid direct sun where possible.
 - c. Install drivers with at least 2 inches of space from enclosure walls.
 - d. For multiple drivers in an enclosure, provide at least 4 inches side to side and 1 inch end to end from other drivers or electronic equipment
 - e. For drivers mounted on back wall of enclosure, mount enclosure on 1 5/8" strut or other standoff to dissipate heat, or mount driver to side of the enclosure or to the metal cover.
 - f. Provide remote drivers with a maximum of 100 watts
 - g. Provide drivers with documentation of 100,000 hr lifetime at Tcase of 65C or higher.



TYPICAL WIRING DIAGRAM

LUMINAIRES SERVED AT 480V ON 240/480 VOLT SERVICE OR LUMINAIRES SERVED AT 240V FOR 120/240 VOLT SERVICE.

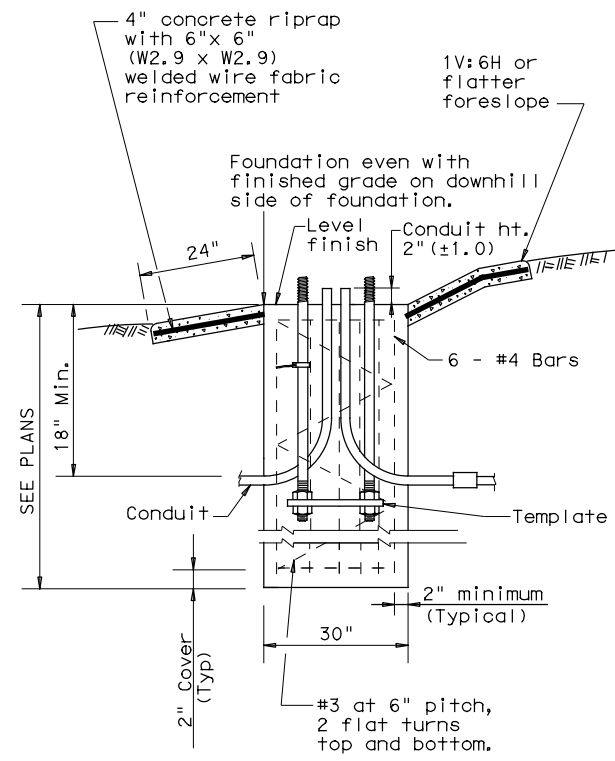


Driver Spacing In Remote Enclosure

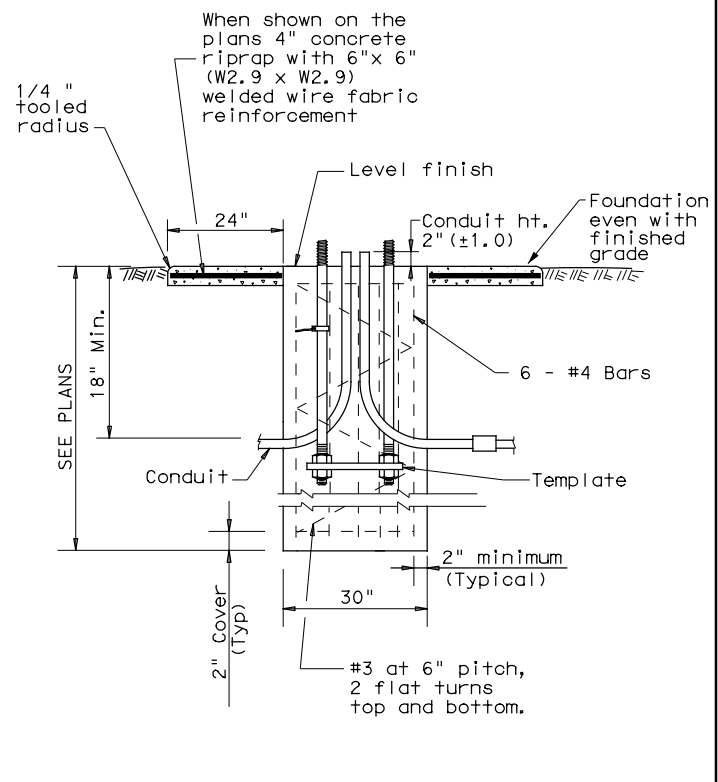
				Traffic Safety Division Standard	
<h1>ROADWAY ILLUMINATION DETAILS</h1> <h2>RID(1)-20</h2>					
FILE:	rid1-20.dgn	DN:	CK:	DW:	CK:
© TxDOT	January 2007	CONT	SECT	JOB	HIGHWAY
REVISIONS		0439	05	026	SH 194
7-17		DIST	COUNTY		SHEET NO.
12-20		LBB	HALE		271

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SECTION A-A
SHOWING SLOPED GRADE



SECTION A-A
SHOWING CONSTANT GRADE

TABLE 1

ANCHOR BOLTS

POLE MOUNTING HEIGHT	BOLT CIRCLE		ANCHOR BOLT SIZE
	Shoe Base	T-Base	
<40 ft.	13 in.	14 in.	1 in. x 30 in.
40-50 ft.	15 in.	17 1/4 in.	1 1/4 in. x 30 in.

TABLE 2

RECOMMENDED FOUNDATION LENGTHS
(See note 1)

MOUNTING HEIGHT	TEXAS CONE PENETROMETER N Blows/ft		
	10	15	40
<20 ft.	6'	6'	6'
>20 ft. to 30 ft.	8'	6'	6'
>30 ft. to 40 ft.	8'	8'	6'
>40 ft. to 50 ft.	10'	8'	6'

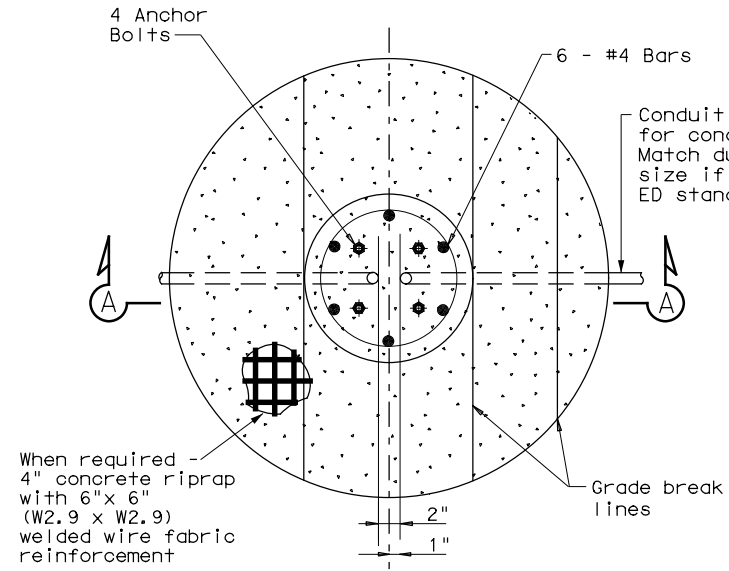
TABLE 3

PAY QUANTITY OF RIPRAP PER FOUNDATION
(Install only when shown on the plans)

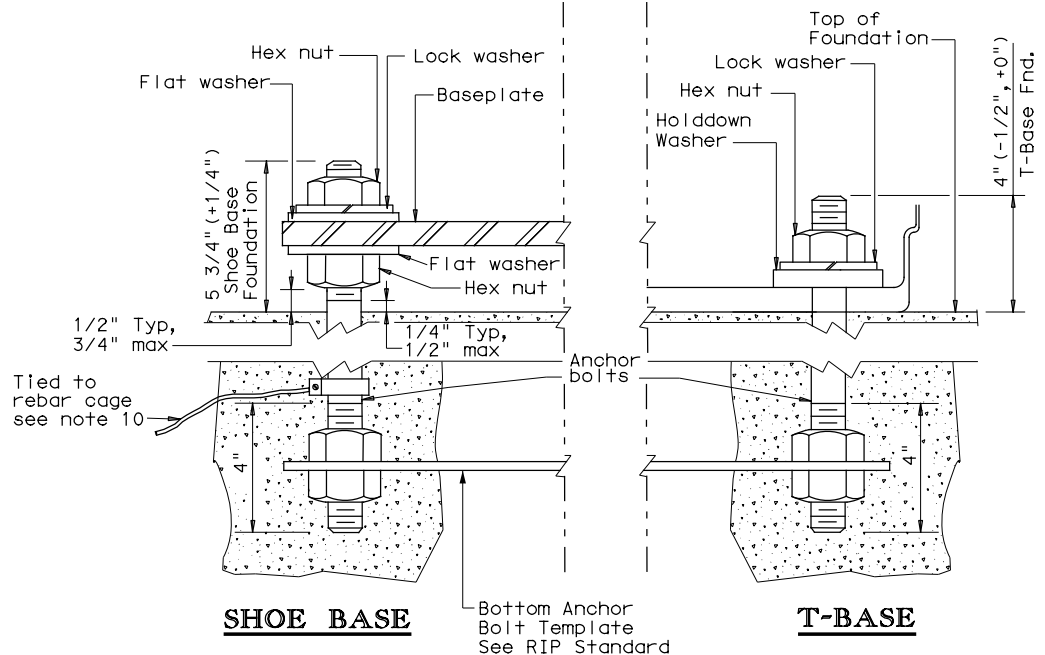
Foundation Diameter	RIPRAP DIAMETER	RIPRAP (CONC) (CL B)
30 in.	78 in.	0.35 CY

GENERAL NOTES:

- "Recommended Foundation Lengths" table is for information purposes only. Foundation lengths shall be as shown on the plans, or as directed by the Engineer. Foundations will be paid for under Item 416, "Drilled Shaft Foundations," unless otherwise shown on the plans.
- Erect roadway illumination assembly poles plumb and true. Form and level the top 6" of the foundation so the pole will be plumb. Use leveling nuts to plumb shoe base poles. Do not use shims or leveling nuts under transformer bases. Do not grout between baseplate and the foundation.
- Ensure Class 2A and 2B fit for anchor bolts and nuts. Tap and chase nuts after galvanizing. Anchor bolt body with rolled threads need not be full size.
- Use appropriate class of concrete as specified in Items 416 and 432. Concrete for riprap may be upgraded to Class C at no extra cost to the Department.
- Place riprap around the foundation when called for elsewhere in the plans. Riprap will be paid for under Item 432.
- Locate breakaway roadway illumination assemblies as shown in the placement table, unless otherwise dimensioned on the plans. Protect non-breakaway illumination assemblies from vehicular impact (i.e. 2.5 ft. behind guard rail or mounted on traffic barrier), or located outside the clear zone, except that 2.5 ft. from curb face is minimum desired for light poles on city streets, 45 mph or less. See Roadway Design Manual for further information.
- Use 4 hold down and 4 connecting washers on transformer base poles as recommended by the manufacturer and supplied with base.
- Install a minimum of 2 conduits in each foundation. See lighting layout sheets for locations of foundations with more than 2 conduits. Cap unused conduits in foundations on both ends.
- Conduit location in foundations is critical for breakaway devices. Place conduits 2 in. apart on centerline as shown.
- Bond anchor bolt to rebar cage with #6 bare stranded copper conductor. Use listed mechanical connectors rated for embedment in concrete. The bonded steel in the foundation creates a concrete encased grounding electrode which replaces the ground rod.
- Grade earthwork around T-base foundations even with the finished grade as shown in Section A-A to ensure proper function of the breakaway device. Use riprap on T-base foundations that are located on sloped grades, and as shown on the plans for level grades.



FOUNDATION DETAIL



ANCHOR BOLT DETAIL

TABLE 4

BREAKAWAY POLE PLACEMENT (See note 6)

ROADWAY FUNCTIONAL CLASSIFICATION	** POLE OFFSET (DISTANCE TO FACE OF TRANSFORMER BASE)
Freeway Mainlanes (roadway with full control of access)	15 ft. (minimum and typical) from lane edge
All curbed, 45 mph or less design speed	2.5 ft. minimum (15 ft. desirable) from curb face
All others	10 ft. minimum*(15 ft. desirable) from lane edge

* or as close to ROW line as is practical

** provide 2/5 of the luminaire mounting height behind the pole for "falling area" to prevent encroachment on the other travel lanes. See design guidelines.

Texas Department of Transportation
Traffic Safety Division Standard

ROADWAY ILLUMINATION DETAILS (RDWY ILLUM FOUNDATIONS)

RID (2) - 20

FILE: rid2-20.dgn	DN:	CK:	DW:	CK:
© TxDOT January 2007	CON: 0439	SECT: 05	JOB: 026	HIGHWAY: SH 194
1-11	REVISIONS		DIST: LBB	COUNTY: HALE
7-17				SHEET NO. 272
12-20				

728

SHIPPING PARTS LIST - POLES AND LUMINAIRE ARMS

Nominal Mounting Ht. (ft)	Shoe Base						T-Base						CSB/SSCB Mounted					
	Designation						Quantity	Designation						Quantity				
	Pole	A1	A2	Luminaire				Pole	A1	A2	Luminaire				Pole	A1	A2	Luminaire
20	(Type SA 20 S - 4)			(150W EQ) LED			(Type SA 20 T - 4)			(150W EQ) LED								
	(Type SA 20 S - 4 - 4)			(150W EQ) LED			(Type SA 20 T - 4 - 4)			(150W EQ) LED								
30	(Type SA 30 S - 4)			(250W EQ) LED			(Type SA 30 T - 4)			(250W EQ) LED			(Type SP 28 S - 4)			(250W EQ) LED		
	(Type SA 30 S - 4 - 4)			(250W EQ) LED			(Type SA 30 T - 4 - 4)			(250W EQ) LED			(Type SP 28 S - 4 - 4)			(250W EQ) LED		
	(Type SA 30 S - 8)			(250W EQ) LED			(Type SA 30 T - 8)			(250W EQ) LED			(Type SP 28 S - 8)			(250W EQ) LED		
	(Type SA 30 S - 8 - 8)			(250W EQ) LED			(Type SA 30 T - 8 - 8)			(250W EQ) LED			(Type SP 28 S - 8 - 8)			(250W EQ) LED		
40	(Type SA 40 S - 4)			(250W EQ) LED			(Type SA 40 T - 4)			(250W EQ) LED			(Type SP 38 S - 4)			(250W EQ) LED		
	(Type SA 40 S - 4 - 4)			(250W EQ) LED			(Type SA 40 T - 4 - 4)			(250W EQ) LED			(Type SP 38 S - 4 - 4)			(250W EQ) LED		
	(Type SA 40 S - 8)			(250W EQ) LED			(Type SA 40 T - 8)			(250W EQ) LED			(Type SP 38 S - 8)			(250W EQ) LED		
	(Type SA 40 S - 8 - 8)			(250W EQ) LED			(Type SA 40 T - 8 - 8)			(250W EQ) LED			(Type SP 38 S - 8 - 8)			(250W EQ) LED		
	(Type SA 40 S - 10)			(250W EQ) LED			(Type SA 40 T - 10)			(250W EQ) LED			(Type SP 38 S - 10)			(250W EQ) LED		
	(Type SA 40 S - 10 - 10)			(250W EQ) LED			(Type SA 40 T - 10 - 10)			(250W EQ) LED			(Type SP 38 S - 10 - 10)			(250W EQ) LED		
	(Type SA 40 S - 12)			(250W EQ) LED			(Type SA 40 T - 12)			(250W EQ) LED			(Type SP 38 S - 12)			(250W EQ) LED		
	(Type SA 40 S - 12 - 12)			(250W EQ) LED			(Type SA 40 T - 12 - 12)			(250W EQ) LED			(Type SP 38 S - 12 - 12)			(250W EQ) LED		
50	(Type SA 50 S - 4)			(400W EQ) LED			(Type SA 50 T - 4)			(400W EQ) LED			(Type SP 48 S - 4)			(400W EQ) LED		
	(Type SA 50 S - 4 - 4)			(400W EQ) LED			(Type SA 50 T - 4 - 4)			(400W EQ) LED			(Type SP 48 S - 4 - 4)			(400W EQ) LED		
	(Type SA 50 S - 8)			(400W EQ) LED			(Type SA 50 T - 8)			(400W EQ) LED			(Type SP 48 S - 8)			(400W EQ) LED		
	(Type SA 50 S - 8 - 8)			(400W EQ) LED			(Type SA 50 T - 8 - 8)			(400W EQ) LED			(Type SP 48 S - 8 - 8)			(400W EQ) LED		
	(Type SA 50 S - 10)			(400W EQ) LED			(Type SA 50 T - 10)			(400W EQ) LED			(Type SP 48 S - 10)			(400W EQ) LED		
	(Type SA 50 S - 10 - 10)			(400W EQ) LED			(Type SA 50 T - 10 - 10)			(400W EQ) LED			(Type SP 48 S - 10 - 10)			(400W EQ) LED		
	(Type SA 50 S - 12)			(400W EQ) LED			(Type SA 50 T - 12)			(400W EQ) LED		107	(Type SP 48 S - 12)			(400W EQ) LED		
	(Type SA 50 S - 12 - 12)			(400W EQ) LED			(Type SA 50 T - 12 - 12)			(400W EQ) LED			(Type SP 48 S - 12 - 12)			(400W EQ) LED		

OTHER				
Designation				Quantity
Pole	A1	A2	Luminaire	

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GENERAL NOTES:

- All work, materials and services not shown on the plans which may be necessary for complete and proper construction shall be performed, furnished and installed by the Contractor. Faulty fabrication or poor workmanship in any material, equipment or installation will be considered justification for rejection. Where manufacturers provide warranties or guarantees as a customary trade practice, furnish to the Department such warranties or guarantees.
- The location of poles and fixtures are diagrammatic only and may be shifted by the Engineer to accommodate local conditions. Install or remove poles and luminaires located near overhead electrical lines using established industry and utility safety practices and in accordance with laws governing such work. Consult with the appropriate utility company prior to beginning such work.
- Standard Steel Pole Designs. Steel poles fabricated in accordance with the details and dimensions shown herein, shall be considered standard designs. Submission of shop drawings and design calculations for standard designs is not required.
- Optional Steel Pole Designs. Multi-sided steel poles may be allowed as optional designs, if steel poles are permitted or required, pending approval by the Department as outlined below.
 - Shop Drawings. Optional designs require submission of shop drawings and design calculations bearing the seal of an engineer licensed in the State of Texas, in accordance with Item 441, "Steel Structures." The Department may elect to pre-approve some shop drawings for optionally designed poles. Submission of shop drawings and design calculations is not required for structures fabricated in accordance with the details of shop drawings on the pre-approved list maintained by the TxDOT Traffic Operations Division. Any deviation from the pre-approved shop drawings will require submission of shop drawings of the complete assembly and design calculations as described above.
 - Structural Support Design for Luminaires. Lighting support structures shall be designed for a 25 year design life in accordance with the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 6th Edition (2013) and Interim Revisions thereto. All poles shall be designed for 110 mph 3-second gust wind speeds. The Gust Factor, G, and Wind Importance Factor, Ir, shall be applied as per the AASHTO Specifications assuming a 25-year design life. The design wind pressure for hurricane wind velocities greater than 100 mph shall not be less than the design wind pressure using 100 mph with the non-hurricane Wind Importance Factor, Ir, value. For transformer base poles, fabricator shall include transformer base and connecting hardware in design calculations and shop drawing submittals. All transformer bases shall have been structurally tested to resist the theoretical plastic moment capacity of the pole. Certification of the plastic moment load test and FHWA breakaway requirement test of the model of base being furnished shall be submitted with the shop drawings. Shop drawings shall show breakaway base model number, and manufacturer's name and logo. Manufacturer's shop drawings shall include the ASTM designations for all materials to be used.
 - Mast Arm Attachments. All poles and attachments shall be structurally designed to support two 12-foot mast arms and luminaires. Poles shall be supplied with mast arm combinations as shown in the plans. All mast arms shall be designed for a 60-pound luminaire having an effective projected area of 1.6 square feet.
 - Anchor Bolt Assembly. Anchor bolt assemblies for optionally designed poles shall be the same as those shown herein.
- Aluminum Pole Designs. Aluminum pole designs may be allowed, if aluminum poles are permitted or required, pending approval by the Department as outlined below.
 - Meet all of the requirements stated above for optional steel pole designs and the following:
 - Aluminum poles shall be fabricated in accordance with "Structural Welding Code-Aluminum" AWS D1.2.
 - Aluminum pole designs shall use the same anchor bolt assembly and be subject to the same geometric restraints and other requirements for steel poles specified herein.
 - Aluminum poles shall be equipped with vibration mitigation devices, as approved by the engineer.
 - Pole components shall be constructed using the following material:
 - Shaft: ASTM B221 or B241 Alloy 6063-T6, ASTM B209 Alloy 5086-H34, ASTM B221 Alloy 6005-T5.
 - Base Flange: ASTM B26 Alloy 356.0-T6 or ASTM B108 Alloy 356.0-T6 (Yield strength test required).
 - Mast Arm Fitting: ASTM B209 Alloy 6061-T6 or ASTM B221 Alloy 6005-T5.
 - Mast Arms: ASTM B241 Alloy 6061-T6 or Alloy 6063-T6.
 - Pole Cap: ASTM B209 Alloy 5086-H32 or ASTM B108 or B26 Alloy 356.0-T6.
 - Bolts: Stainless Steel AISI 300 series. Bolts threading into aluminum threads shall be treated with anti-seize compound, Never-Seez Compound, Permatex 133K or equal.
- Special Designs. Poles with architectural treatments shall meet the requirements shown elsewhere in the plans.
- Luminaire Mounting Height. Actual luminaire mounting height shall be the nominal mounting height given on RIP(2) for all pole-arm combinations except for poles with 4 ft. luminaire arms, which shall be 3'-0" lower than the nominal height, unless otherwise shown or directed.

EXPLANATION OF ROADWAY ILLUMINATION ASSEMBLY DESIGNATIONS

(TYPE SA 50 T - X - X) (400W EQ) LED

SA: Pole and mast arm may be steel or aluminum.

ST: Pole and mast arm must be steel.

AL: Pole and mast arm must be aluminum.

SP: Special (ovalized) steel or aluminum pole for installing on CSB or SSCB. See standard sheet CSB (4), or SSCB (4).

Two numerical digits denote nominal mounting height in feet.

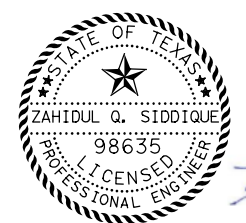
Next letter denotes type of base, (S-Shoe Base, T-Transformer Base, or B-Bridge/Ret.Wall Mount)

First number denotes length of mast arm in feet.

Use of second mast arm is indicated by second dashed number which denotes length in feet.

Luminaire rating in watts (i.e. 400W). Equivalent wattage LED fixtures will include EQ (i.e. 400W EQ)

Last letters indicate light source (S - High Pressure Sodium; LED - LED luminaire)



Zahid Q. Siddique
6/28/2024

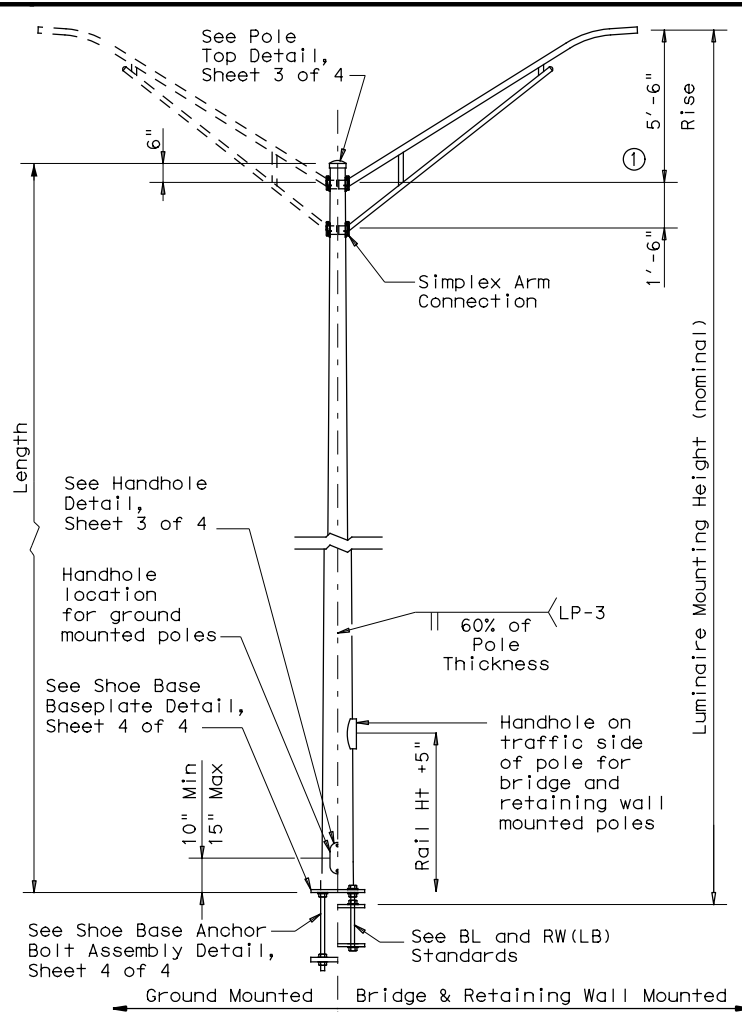
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<h1>ROADWAY ILLUMINATION POLES</h1>			
<h2>RIP(1)-19</h2>			
FILE: rip-19.dgn	DW: 0439	SECT: 05	JOB: 026
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7-17			SHEET NO. 273
12-19			

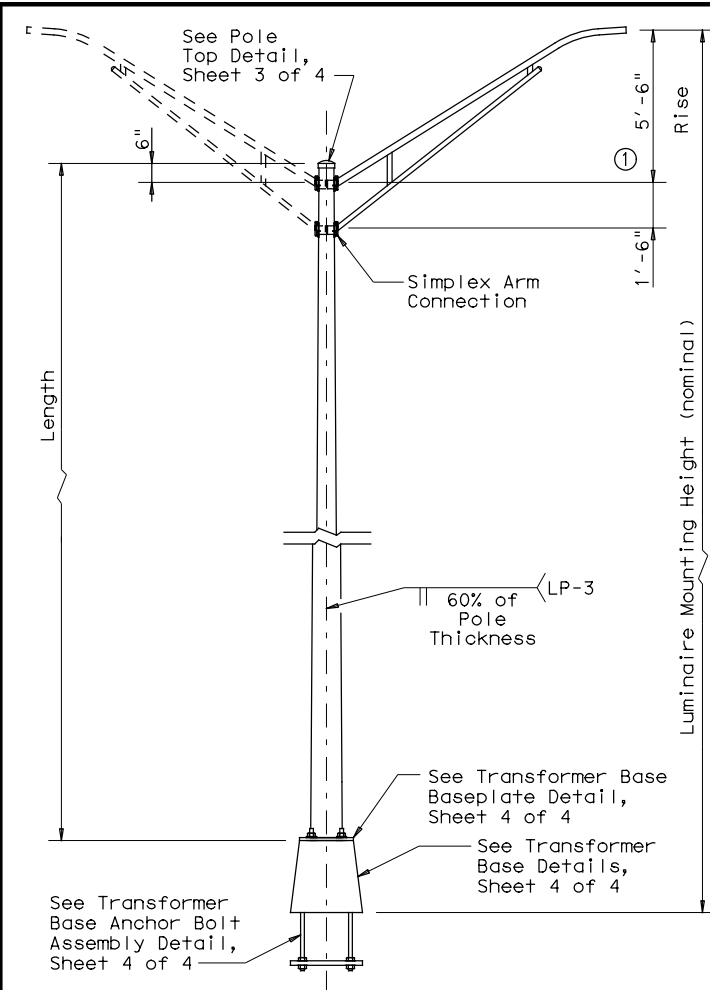
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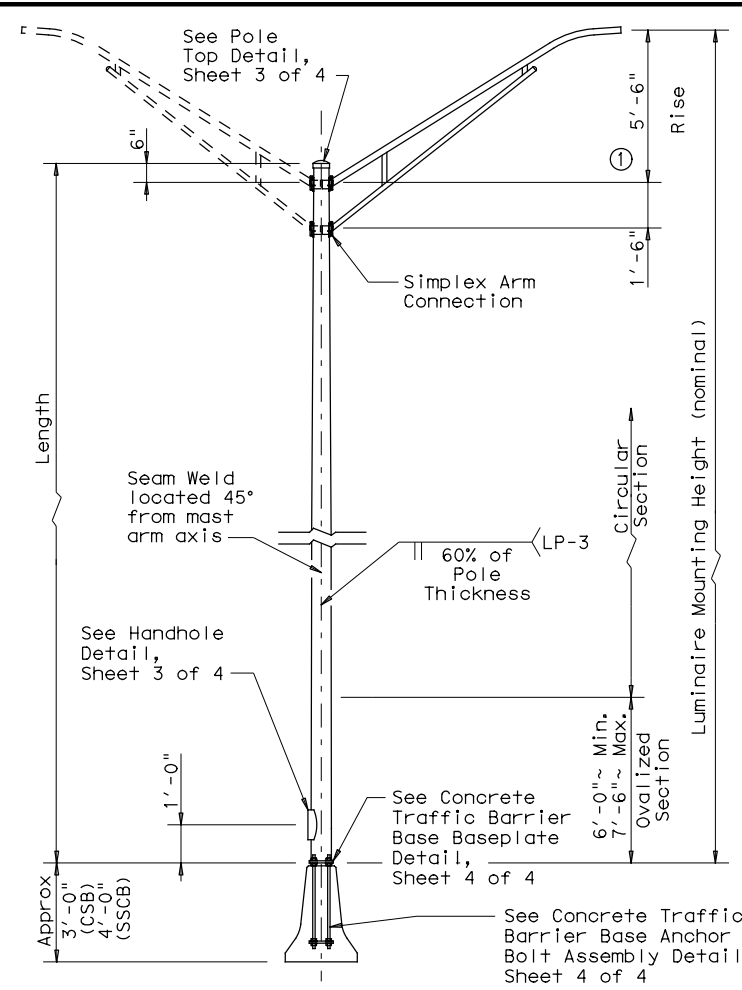
SHOE BASE POLE

SHOE BASE POLE					
Luminaire Mounting Height (Nominal) (ft)	Base Diameter (in)	Top Diameter (in)	Length (ft)	Pole Thickness (in)	Design Moment (K-ft)
20.00	7.00	4.90	15.00	0.1196	7.1
30.00	7.50	4.00	25.00	0.1196	13.2
31.00-39.00	8.00	4.36-3.24	26.00-34.00	0.1196	20.7
40.00	8.50	3.60	35.00	0.1196	20.7
50.00	10.50	4.20	45.00	0.1196	30.3



TRANSFORMER BASE POLE

TRANSFORMER BASE POLE					
Luminaire Mounting Height (Nominal) (ft)	Base Diameter (in)	Top Diameter (in)	Length (ft)	Pole Thickness (in)	Design Moment (K-ft)
20.00	7.00	5.11	13.50	0.1196	7.1
30.00	7.50	4.21	23.50	0.1196	13.2
31.00-39.00	8.00	4.57-3.45	24.50-32.50	0.1196	20.7
40.00	8.50	3.81	33.50	0.1196	20.7
50.00	10.00	3.91	43.50	0.1196	30.3



CONCRETE TRAFFIC BARRIER BASE POLE

CONCRETE TRAFFIC BARRIER BASE POLE (CSB/SSCB)						
Luminaire Mounting Height (Nominal) (ft)	Base Diameter (in)	Top Diameter (in)	Length (ft)	Pole Thickness (in)	Design Moment (K-ft)	
					About C of Rail	Perp. to Rail
28.00	9.00	5.78	23.00	0.1196	10.3	13.2
38.00	9.00	4.38	33.00	0.1196	16.6	20.8
48.00	10.50	4.48	43.00	0.1345	25.1	30.5

GENERAL NOTES:

- Designs conform to AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 6th Edition (2013) and Interim Revisions thereto. Design 3-Second Gust Wind Speed equals 110 mph with a 1.14 gust factor. A wind importance factor of 0.80 is applied to adjust the wind speed to a 25 year recurrence interval. Design moments listed in tables assume base of pole is 25' above natural ground level.
- Structures are designed to support two 12' luminaire mast arms and luminaires. Mast arms are designed to support a 60-pound luminaire having an effective projected area of 1.6 square feet.
- Fabrication shall be in accordance with the Specifications and with the details, dimensions, and weld procedures shown herein. Do not submit shop drawings for roadway illumination pole assemblies fabricated in accordance with the details, dimensions, and weld procedures shown herein. Weld references call for preapproved weld procedures which the Fabricator must obtain prior to fabrication. Materials, fabrication tolerances, and shipping practices shall meet the requirements of these sheets and the Specifications. In the absence of specified fabrication tolerances, dimensions shall be within the tolerances generally obtainable in normal fabrication practice.
- For mounting heights between values shown in the tables, use base diameter and thickness values for the larger height.
- Unless otherwise noted, all steel parts shall be galvanized in accordance with Item 445, "Galvanizing."
- Steel poles shall be fabricated in accordance with Item 441, "Steel Structures." Longitudinal seam welds for pole sections shall have 60% minimum penetration. All welding shall be in accordance with AWS D1.1, Structural Welding Code-Steel.
- Two-section poles joined by circumferential welds will not be permitted, unless otherwise shown on the plans. Poles may be fabricated in two sections and field-assembled by the lap-joint method. The two sections shall telescope together with a lap length of not less than 1-1/2 times the shaft diameter at the lap joint.
- Alternate material equal to or better than material specified may be substituted with the approval of the Engineer.
- Lubricate and tighten anchor bolts, when erecting shoe base poles and concrete traffic barrier base poles, in accordance with Item 449, "Anchor Bolts."
- All poles, except Transformer Base Poles, shall have hand holes with reinforcing frames and covers. For ground mounted shoe base poles, hand holes shall be placed 90 degrees to mast arm unless otherwise noted on the plans. For poles mounted on a concrete traffic barrier with one luminaire arm, hand holes shall be located 180 degrees from luminaire arm. For poles mounted on a concrete traffic barrier with two luminaire arms, all hand holes shall be on the same side of the barrier. For poles mounted on a bridge lighting bracket or a retaining wall lighting bracket, hand hole shall be on traffic side of the pole, at a height that will clear the barrier.
- The finished pole shall have a smooth, uniform finish free of pits, blisters, or other defects. Scratched, chipped, and other damaged galvanized areas on poles and mast arms shall be repaired in accordance with Item 445, "Galvanizing."
- Pole length is based on a 5'-6" luminaire arm rise. 4 ft. luminaire arms have a 2'-6" rise. A pole with 4 ft. luminaire arms will have an actual mounting height 3'-0" less than the nominal mounting height. Increasing the pole length to meet the nominal mounting height is allowed, but unnecessary unless otherwise directed by the engineer.
- Erect transformer base poles in accordance with sheet RID(1).

MATERIAL DATA

COMPONENT	ASTM DESIGNATION	MIN. YIELD (ksi)
Pole Shaft (0.14"/ft. Taper)	A572 Gr 50, A595 Gr A, A1011 HSLAS Gr 50 Cl 2 ③, or A1008 HSLAS Gr 50 Cl 2	50
Base Plate and Handhole Frame	A572 Gr.50, or A36	36
T-Base Connecting Bolts	F3125 Gr A325	92
Anchor Bolts	F1554 Gr 55, A193-B7 or A321	55 105
Anchor Bolt Templates	A36	36
Heavy Hex (H.H.) Nuts	A194 Gr 2H, or A563 Gr DH	
Flat Washers	F436	

NOTES:

- 2'-6" rise for 4 ft. luminaire arms.
- Before ovalized as shown on Concrete Traffic Barrier Base Baseplate details, Sheet 4 of 4.
- A1011 SS Gr 50 may be used instead of HSLAS, provided the material meets the elongation requirements for HSLAS.

POLE ASSEMBLY FABRICATION TOLERANCES TABLE

DIMENSION	TOLERANCE
Shaft length	+1"
I.D. of outside piece of slip fitting pieces	+1/8", -1/16"
O.D. of inside piece of slip fitting pieces	+1/32", -1/8"
Shaft diameter: other	+3/16"
Out of "round"	1/4"
Straightness of shaft	±1/4" in 10 ft
Twist in multi-sided shaft	4° in 50 ft
Perpendicular to baseplate	1/8" in 24"
Pole centered on baseplate	±1/4"
Location of Attachments	±1/4"
Bolt hole spacing	±1/16"

SHEET 2 OF 4

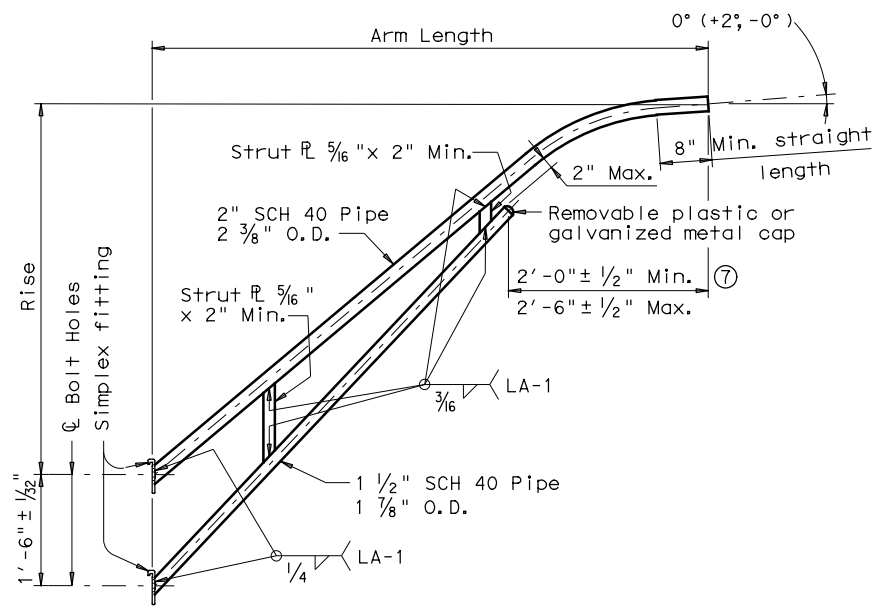


**ROADWAY ILLUMINATION POLES
 RIP (2) - 19**

FILE: rip-19.dgn	DN:	CK:	DW:	CK:
© TxDOT January 2007	CON: 0439	SECT: 05	JOB: 026	HIGHWAY: SH 194
7-17 12-19	REVISIONS:	DIST: LBB	COUNTY: HALE	SHEET NO.: 274

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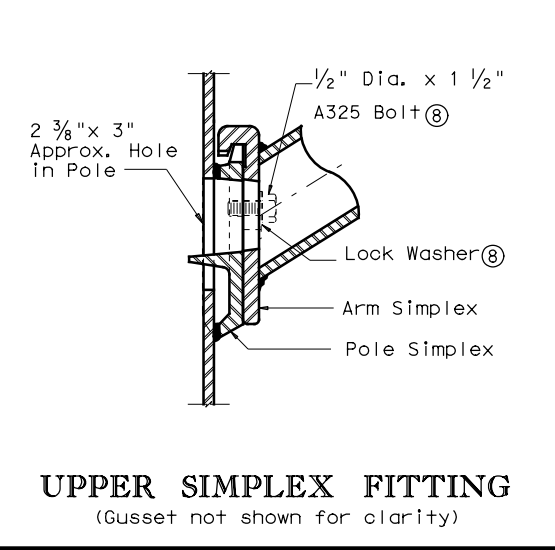
DATE: 2/28/2023 2:33:43 PM
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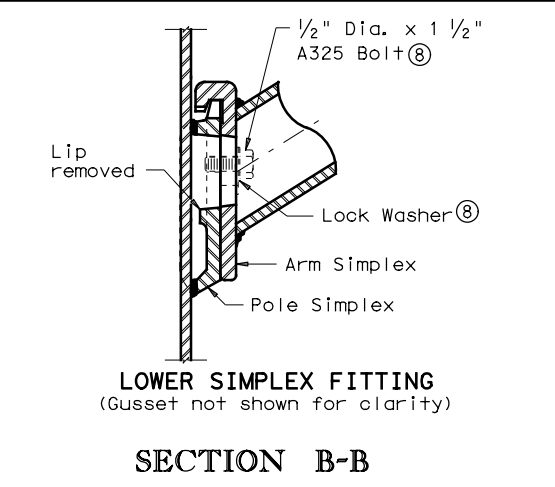
LUMINAIRE ARM

LUMINAIRE ARM DIMENSIONS		
Nominal Arm Length	Arm Length	Rise
4'-0"	3'-6"	2'-6"
6'-0"	5'-6"	5'-6"
8'-0"	7'-6"	5'-6"
10'-0"	9'-6"	5'-6"
12'-0"	11'-6"	5'-6"

ARM ASSEMBLY FABRICATION TOLERANCES TABLE	
DIMENSION	TOLERANCE
Arm Length	±1"
Arm Rise	±1"
Deviation from flat	1/8" in 12"
Spacing between holes	±1/32"

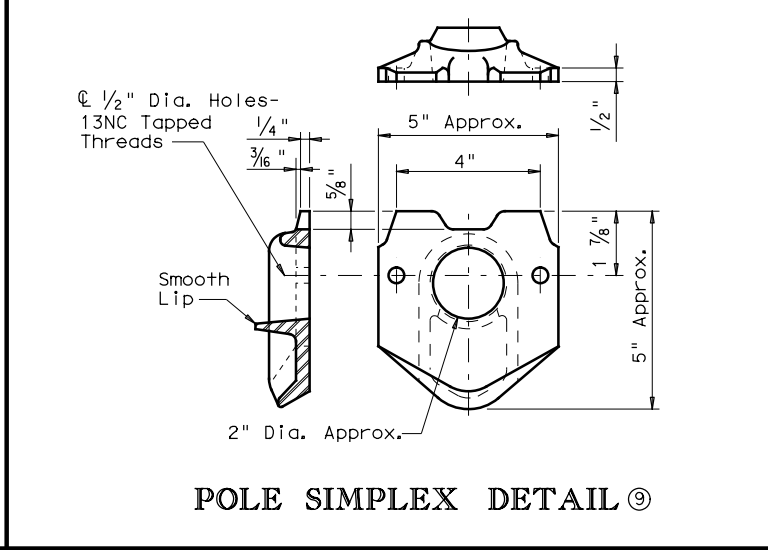


UPPER SIMPLEX FITTING
(Gusset not shown for clarity)

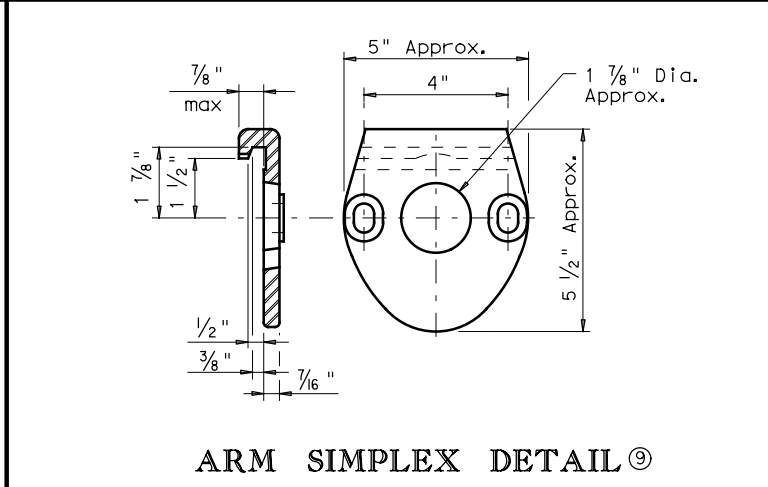


LOWER SIMPLEX FITTING
(Gusset not shown for clarity)

SECTION B-B



POLE SIMPLEX DETAIL



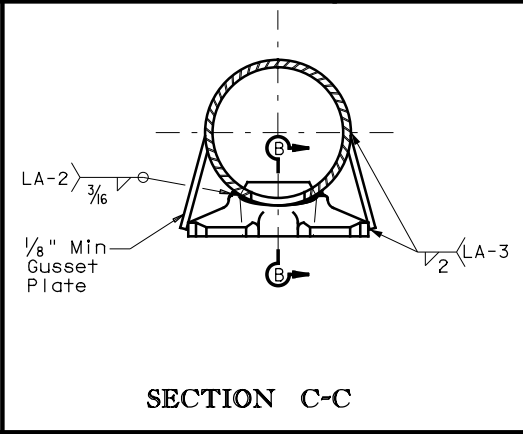
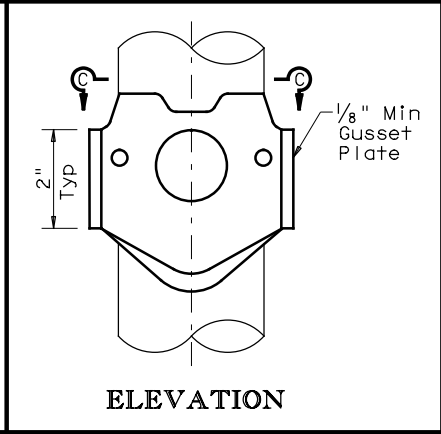
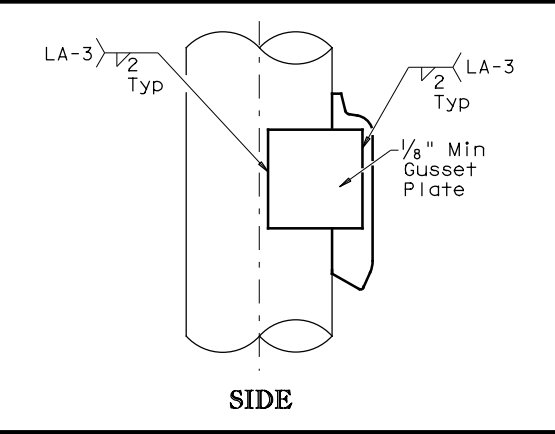
ARM SIMPLEX DETAIL

NOTES:

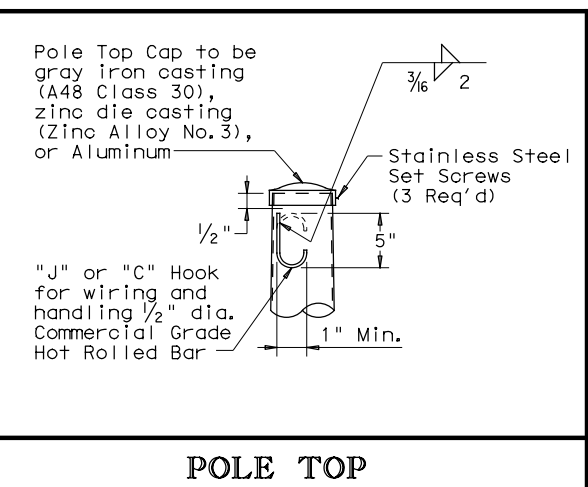
- ④ Any of the materials listed for plates may be used where the drawings do not specify a particular ASTM designation.
- ⑤ A576 must be suitable for forging and also meet minimum tensile strength of 65 ksi, minimum yield of 35 ksi, and elongation in 2 inches of 22 percent.
- ⑥ A572, A1008 HSLAS-F, and A1011 HSLAS-F materials may have higher yield strengths but shall not have less elongation than the grade indicated.
- ⑦ Dimensional limits are given to show acceptable variation in design. All of a Fabricator's production of a particular arm length shall have the same dimensions within specified tolerances.
- ⑧ Each pole simplex fitting shall be supplied with 2 bolts and 2 lock washers of the size specified. The bolts and lock washers shall be secured to the pole with the other hardware items called for in the plans.
- ⑨ Proposed deviations in arm simplex dimensions or materials must be submitted to the Department for approval.
- ⑩ A welded handhole frame is permissible. Maximum of two (2) CJP weld splices is allowed.

MATERIALS

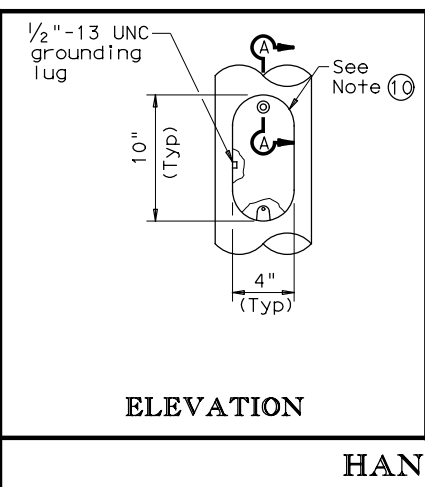
Pole or Arm Simplex	ASTM A27 Gr 65-35 or Gr 70-36, A148 Gr 80-50, A576 Gr 1021 ⑤, or A36 (Arm only)
Arm Pipes	ASTM A53 Gr A or B, A500 Gr B, A501, A 1008 HSLAS-F Gr 50 ⑥, or A1011 HSLAS-F Gr 50 ⑥
Arm Struts and Gusset Plates ④	ASTM A36, A572 Gr 50 ⑥, or A588
Misc.	ASTM designations as noted



SIMPLEX ATTACHMENT DETAIL

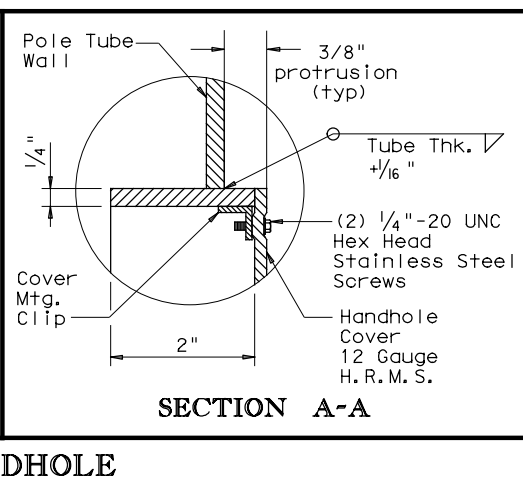


POLE TOP



ELEVATION

HANDHOLE



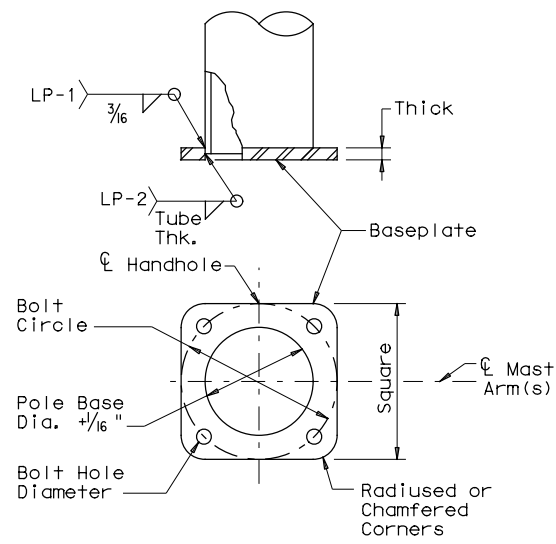
SECTION A-A

ROADWAY ILLUMINATION POLES
RIP (3) - 19

FILE: rip-19.dgn	DN:	CK:	DW:	CK:
© TxDOT January 2007	CONT	SECT	JOB	HIGHWAY
REVISIONS	0439	05	026	SH 194
7-17	DIST	COUNTY	SHEET NO.	
12-19	LBB	HALE	275	

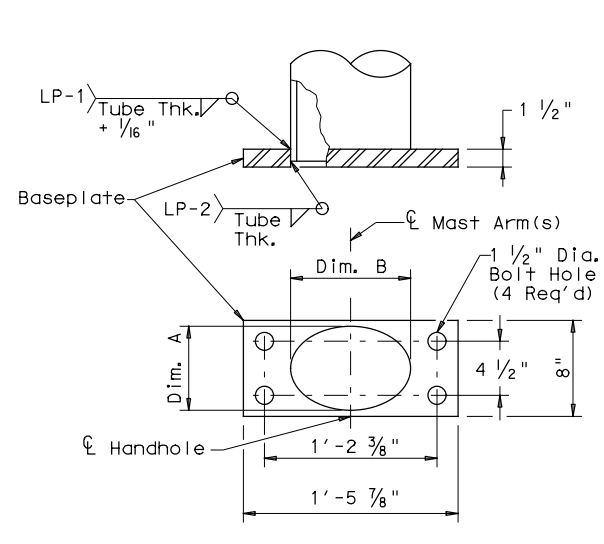
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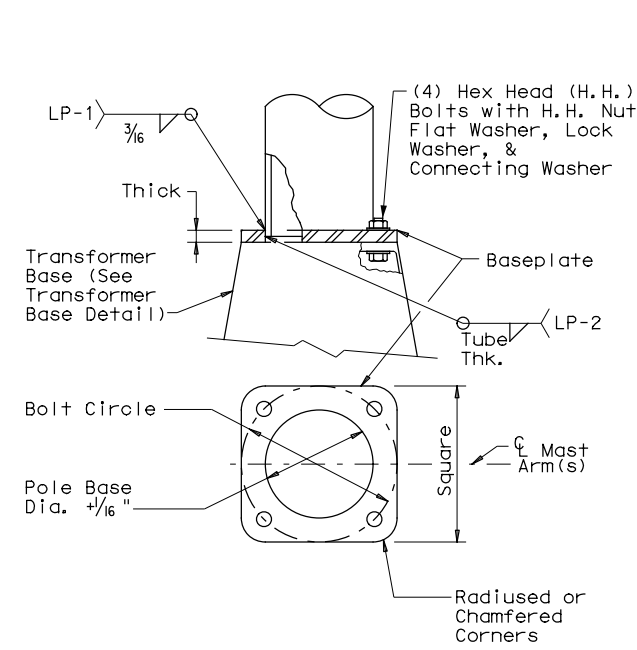
SHOE BASE BASEPLATE

SHOE BASE BASEPLATE TABLE				
MOUNTING HEIGHTS (nominal)	BOLT CIRCLE	SQUARE	THICK	BOLT HOLE DIAMETER
20' - 39'	13"	13"	1 1/4"	1 1/4"
40'	15"	15"	1 1/4"	1 1/2"
50'	15"	15"	1 1/2"	1 1/2"



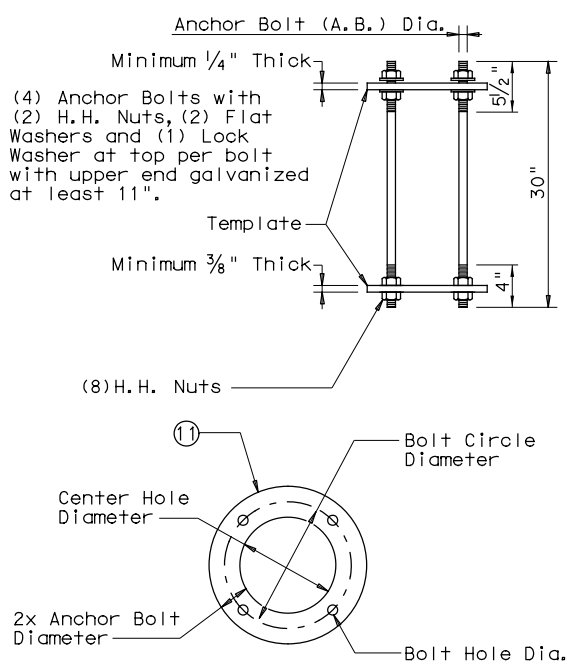
CONCRETE TRAFFIC BARRIER BASE BASEPLATE

CONCRETE TRAFFIC BARRIER BASE BASEPLATE TABLE			
MOUNTING HEIGHTS (nominal)	POLE DIA. (12)	DIM. A	DIM. B
28' - 38'	9"	7" ± 1/4"	10" ± 1/4"
48'	10 1/2"	7" ± 1/4"	13" ± 1/4"



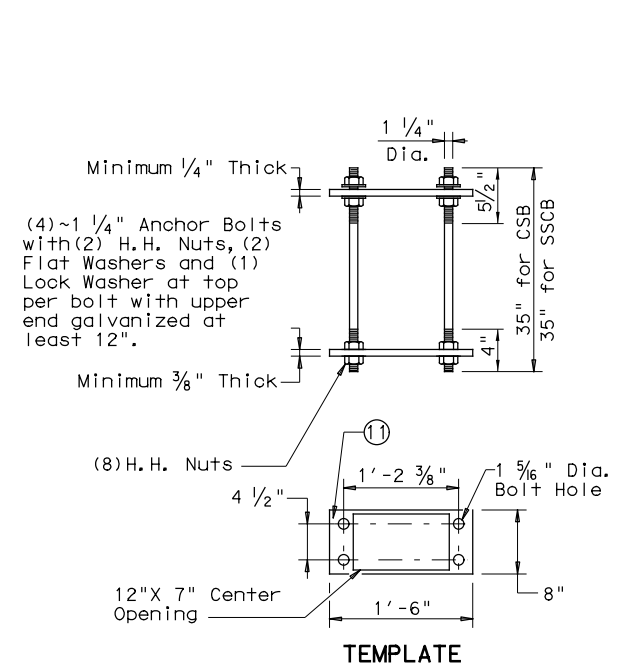
TRANSFORMER BASE BASEPLATE

TRANSFORMER BASE BASEPLATE TABLE						
MOUNTING HEIGHTS (nominal)	BOLT CIRCLE	SQUARE	THICK	CONNECTING BOLT DIA.	BOLT HOLE DIAMETER	TRANSFORMER BASE TYPE
20' - 39'	13"	13"	1 1/4"	1"	1 1/4"	A
40'	15"	15"	1 1/4"	1 1/4"	1 1/2"	B
50'	15"	15"	1 1/2"	1 1/4"	1 1/2"	B



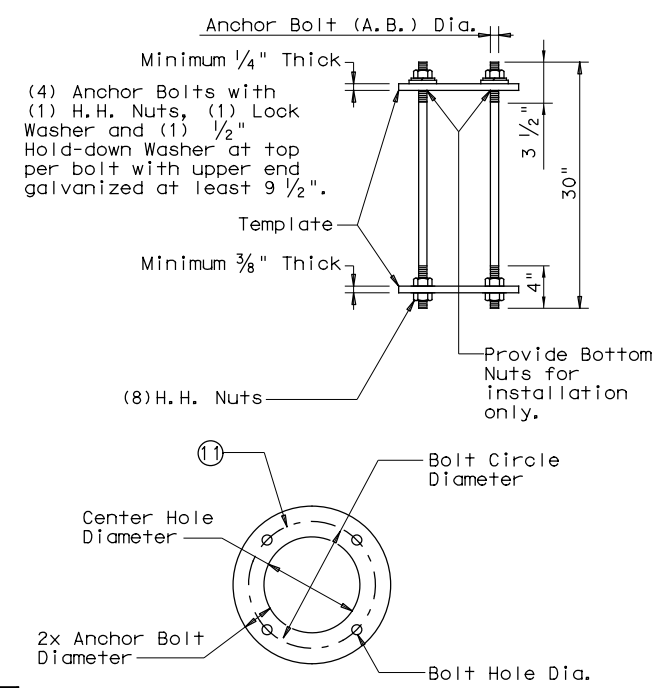
SHOE BASE ANCHOR BOLT ASSEMBLY

SHOE BASE ANCHOR BOLT ASSEMBLY TABLE				
MOUNTING HEIGHTS (nominal)	A.B. Dia.	BOLT CIRCLE DIAMETER	CTR. HOLE DIAMETER	BOLT HOLE DIAMETER
20' - 39'	1"	13"	11"	1 1/16"
40' - 50'	1 1/4"	15"	12 1/2"	1 5/16"



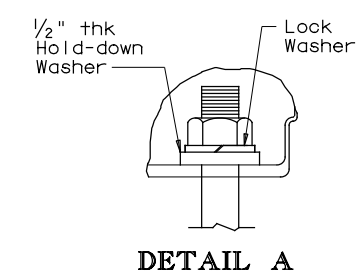
CONCRETE TRAFFIC BARRIER BASE ANCHOR BOLT ASSEMBLY

CONCRETE TRAFFIC BARRIER BASE ANCHOR BOLT ASSEMBLY TABLE				
MOUNTING HEIGHTS (nominal)	A.B. Dia.	BOLT CIRCLE DIAMETER	CTR. HOLE DIAMETER	BOLT HOLE DIAMETER
20' - 39'	1"	14"	12"	1 1/16"
40' - 50'	1 1/4"	17 1/4"	14 3/4"	1 5/16"

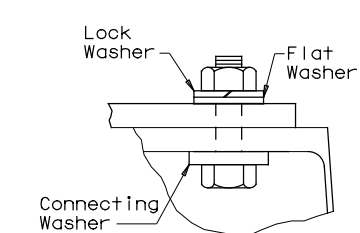


TRANSFORMER BASE ANCHOR BOLT ASSEMBLY

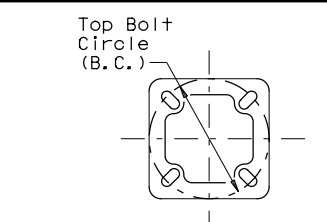
TRANSFORMER BASE TABLE		
TYPE	TOP B.C.	BTM. B.C.
A	13"	14"
B	15"	17 1/4"



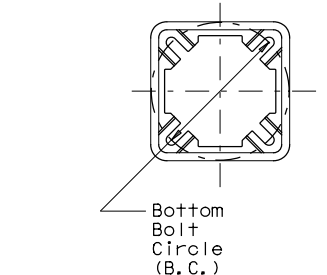
DETAIL A



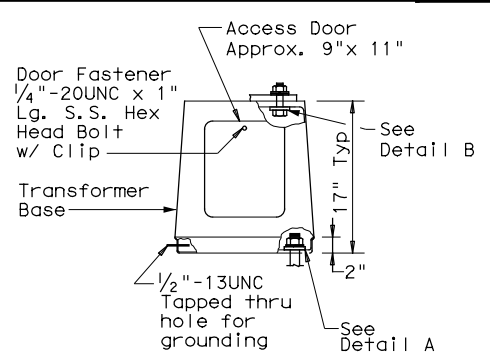
DETAIL B



TOP PLAN



BOTTOM PLAN



ELEVATION

TRANSFORMER BASE DETAILS

GENERAL NOTES:

- For mounting heights between those shown in the table, use the values in the table for the larger mounting height.
- All breakaway bases shall meet the breakaway requirements of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 6th Edition (2013) and Interim Revisions thereto, and shall have been tested by FHWA-approved methods. All bases shall have been structurally tested to resist 150% of the design moment.
- Transformer bases shall be cast from aluminum, ASTM B108 or B26 Alloy 356.0-T6, or other material approved by the Engineer. Four Hex Head (H.H.) bolts with four H.H. nuts, four lock washers, four flat washers, and connecting and hold-down washers as recommended by the manufacturer, galvanized to ASTM A153 Class C or D, or B695 Class 50, shall be provided with each transformer base for connecting the pole. Bolts shall be ASTM A325 or approved equal. Nuts shall be ASTM A563 grade DH galvanized.
- Bases shall be stamped, incised or by other approved permanent means, marked to show fabricator's name or logo, and model number. Such information shall be placed in a readily seen location, inside or outside the base, but shall not be placed on the door.
- Doors for transformer bases shall be made of plastic, fiberglass or other non-metallic material approved by the Engineer and shall be attached with stainless steel screws or bolts. Transformer bases shall be cleaned by grit blast cleaning after heat treatment. Certification by the manufacturer of heat treatment shall be furnished with transformer bases. The certification shall show the metal alloy and temper and that the base meets those requirements, chemical and physical. The certification shall also show the material ASTM specification. Transformer bases shall be cast with a removable tab bar for material testing. Some bars may have been removed by the manufacturer for testing.

NOTES:

- Anchor Bolt Templates do not need to be galvanized.
- Pole diameter before ovalized.

ANCHOR BOLT FABRICATION TOLERANCES TABLE	
DIMENSION	TOLERANCE
Length	± 1/2"
Threaded length	± 1/2"
Galvanized length (if required)	- 1/4"



**ROADWAY ILLUMINATION POLES
RIP(4)-19**


FILE: rip-19.dgn	DN:	CK:	DW:	CK:
©TxDOT January 2007	CON:	SECT:	JOB:	HIGHWAY:
REVISIONS	0439	05	026	SH 194
7-17	DIST:	COUNTY:	SHEET NO.:	
12-19	LBB	HALE	276	

PAVEMENT MARKING SUMMARY										
LOCATION	658	659	660	661	662	663	664	665	666	667
	INSTL OM ASSM (OM-3L) (WFLX) GND	INSTL OM ASSM (OM-3R) (WFLX) GND	REFL PAV MKR TY I (W) 8" (SLO) (100MIL)	REFL PAV MKR TY I (W) 8" (DOT) (100MIL)	REFL PAV MKR TY I (W) 8" (SLO) (100MIL)	REFL PAV MKR TY I (Y) (MED NOSE) (100MIL)	PAVEMENT SEALER 6" (ARROW)	RE FL PAV MKR TY (W) 6" (SLD) (100MIL)	RE FL PAV MKR TY (W) 6" (BRK) (100MIL)	RE FL PAV MKR TY (Y) 6" (BRK) (100MIL)
1 OF 7	EA	EA	LF	LF	LF	EA	EA	LF	LF	LF
2 OF 7	2	2	574	300	300			1070	990	990
3 OF 7			90	130	400			1050	800	800
4 OF 7			130	500	500		2	980	770	770
5 OF 7			20	30	500	6		950	700	700
6 OF 7			30	80	300			1250	840	840
7 OF 7			80	3464	880			970	510	510
PROJECT TOTALS	2	2	350	288	1200	2	4575	6070	4810	4810


PAVEMENT MARKING SUMMARY										
LOCATION	668	669	670	671	672	673	674	675	676	677
	RE FL PAV MKR TY I (W) 8" (SLO) (100MIL)	REFL PAV MKR TY I (W) 8" (SLO) (100MIL)	REFL PAV MKR TY I (W) 8" (SLO) (100MIL)	REFL PAV MKR TY I (W) 8" (SLO) (100MIL)	REFL PAV MKR TY I (W) 8" (SLO) (100MIL)	REFL PAV MKR TY I (W) 8" (SLO) (100MIL)	REFL PAV MKR TY I (W) 8" (SLO) (100MIL)	REFL PAV MKR TY I (W) 8" (SLO) (100MIL)	REFL PAV MKR TY I (W) 8" (SLO) (100MIL)	REFL PAV MKR TY I (W) 8" (SLO) (100MIL)
1 OF 7	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA
2 OF 7	4400	122	37	5	3	86	70	158	160	160
3 OF 7	8700	373	18	4	4	80	150	150	150	150
4 OF 7	3600	320	20	4	4	70	130	130	130	130
5 OF 7	5000	640	12	4	4	100	150	150	150	150
6 OF 7	4800	9	3	3	3	75	194	194	194	194
7 OF 7	2056	170	7	7	7	66	104	104	104	104
PROJECT TOTALS	33876	122	2000	28	2	547	1048	1200	6009	6009

SIGNING SUMMARY										
LOCATION	442	6035	560	6001	636	6001	624	6006	644	6004
	STR STEEL (NBIS)	MAILBOX INSTALL-TY I (TNG-POST) TY I	ALUMINUM SIGNS (TY A)	IN SM RD SN SUPRAM TY (10BWG (1) SA (P))	IN SM RD SN SUPRAM TY (10BWG (1) SB (P))	IN SM RD SN SUPRAM TY (10BWG (1) SB (T))	GROUND BOX TY BATTERY (162915) W/APRON	IN SM RD SN SUPRAM TY (10BWG (1) SB (P))	IN SM RD SN SUPRAM TY (10BWG (1) SB (T))	IN SM RD SN SUPRAM TY (10BWG (1) SB (T))
1 OF 7	EA	EA	SF	EA	EA	EA	EA	EA	EA	EA
2 OF 7	56	4	36	15	5	7	10	7	7	7
3 OF 7		2	36	6	6	3	6	3	3	3
4 OF 7		2	36	10	6	3	6	3	3	3
5 OF 7		2	36	6	6	3	6	3	3	3
6 OF 7		2	36	6	6	3	6	3	3	3
7 OF 7		2	36	6	6	3	6	3	3	3
PROJECT TOTALS	56	8	72	58	4	13	4	1	1	4

SIGNING SUMMARY										
LOCATION	644	6034	644	6035	644	6042	644	6044	644	6044
	IN SM RD SN SUPRAM TY (10BWG (1) SA (U-1EXT))	IN SM RD SN SUPRAM TY (10BWG (1) SA (U-2EXT))	IN SM RD SN SUPRAM TY (10BWG (1) SB (U))	IN SM RD SN SUPRAM TY (10BWG (1) SB (T))	IN SM RD SN SUPRAM TY (10BWG (1) SB (T))	IN SM RD SN SUPRAM TY (10BWG (1) SB (T))	GROUND BOX TY BATTERY (162915) W/APRON	IN SM RD SN SUPRAM TY (10BWG (1) SB (P))	IN SM RD SN SUPRAM TY (10BWG (1) SB (T))	IN SM RD SN SUPRAM TY (10BWG (1) SB (T))
1 OF 7	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
2 OF 7										
3 OF 7										
4 OF 7										
5 OF 7										
6 OF 7										
7 OF 7										
PROJECT TOTALS	2	2	1	1	1	1	1	109	12	4



Engineers & Innovators, LLC
TYPE REGISTRATION NO. F-18388



Texas Department of Transportation

SIGNING & PAVEMENT MARKING SUMMARY

FED. RD. DIV. NO.	6	FEDERAL PROJECT NO.	SH 194
STATE	TEXAS	DISTRICT	LBB
COUNTY	HALE	JOB	026
SECTION	0439	05	277



SUMMARY OF SMALL SIGNS

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)				NOTE
							POST TYPE	POSTS	ANCHOR TYPE	MOUNTING DESIGNATION	
							FRP = Fiberglass TWT = Thin-Wall 10BWG = 10 BWG S80 = Sch 80	1 or 2	UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	PREFABRICATED P = "Plain" T = "T" U = "U" 1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing Channel EXAL= Extruded Alum Sign Panels	
1 OF 7	1	R1-1 W4-4P	STOP CROSS TRAFFIC DOES NOT STOP	36X36 36X18	X X		10BWG	1	SA	P	
	2	M3-4	WEST	24X12	X		10BWG	1	SA	P	
		M1-6T	194 TEXAS	24X24	X						
	3	R3-8LR	LANE CONTROL	36X30	X		10BWG	1	SA	P	
	4	R2-1	SPEED LIMIT 50	30X36	X		10BWG	1	SA	P	
	5	R3-9b	CENTER LANE	24X36	X		10BWG	1	SA	P	
	6	W3-1	STOP AHEAD	30X30	X		10BWG	1	SA	T	
	7	M2-1	JCT	21X15	X		10BWG	1	SA	P	
		M1-4	US 70	24X24	X						
	8	M2-1	JCT	21X15	X		10BWG	1	SA	P	
		M1-6F	FARM ROAD 3466	24X24	X						
9	W3-3	SIGNAL AHEAD	30X30	X		10BWG	1	SA	P		
10	W2-4	T INTERSECTION	30X30	X		10BWG	1	SA	P		
11	R2-1	SPEED LIMIT 40	30X36	X		10BWG	1	SA	P		
2 OF 7	12	R3-9b	CENTER LANE	24X36	X		10BWG	1	SA	P	
	13	R2-1	SPEED LIMIT 50	30X36	X		10BWG	1	SA	P	
	14	W11-2	PEDESTRIAN CROSSING	36X36	X		10BWG	1	SA	P	
		W16-7P	DOWNWARD DIAGONAL ARROW	24X12	X						
	14A	R1-5b	STOP HERE FOR PEDESTRIANS	36X36	X		10BWG	1	SA	P	
	15	R5-3	NO MOTOR VEHICLES	24X24	X		10BWG	1	SA	P	
	16	W11-2	PEDESTRIAN CROSSING	36X36	X		10BWG	1	SA	P	
		W16-7P	DOWNWARD DIAGONAL ARROW	24X12	X						
	16A	R1-5b	STOP HERE FOR PEDESTRIANS	36X36	X		10BWG	1	SA	P	
	17	R1-1	STOP	18X18	X		10BWG	1	SA	P	
	18	R1-1	STOP	36X36	X		10BWG	1	SA	P	
	19	M3-2	EAST	24X12	X		10BWG	1	SA	P	
M1-6T		194 TEXAS	24X24	X							
20	M1-6T	194 TEXAS	24X24	X		10BWG	1	SA	P		
	M6-4	DOUBLE ARROW	21X15	X							
21	M1-4	US 70	24X24	X		10BWG	1	SA	P		
	M6-4	DOUBLE ARROW	21X15	X							
22	M3-4	WEST	24X12	X		10BWG	1	SA	P		
	M1-6T	194 TEXAS	24X24	X							
23	R3-9b	CENTER LANE	24X36	X		10BWG	1	SA	P		

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

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NO.	DATE	REVISION	APPROVED						
 infraTECH Engineers & Innovators, LLC TBPE REGISTRATION NO. F-18368									
 Texas Department of Transportation © 2024									
SH 194 FROM FM 3466 TO IH 27 SUMMARY OF SMALL SIGNS									
HORZ SCALE: N. T. S.					SHEET 1 OF 6				
FED. RD. DIV. NO:	FEDERAL PROJECT NO.						HIGHWAY NO.		
6	SEE TITLE SHEET						SH 194		
STATE	DISTRICT	COUNTY		SHEET NO.					
TEXAS	LBB	HALE		278					
CONTROL	SECTION	JOB							
0439	05	026							

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 PLOT DRIVER: TXDOT_PDF_BW_LEVELS.plt
 USER: Robinson DATE: 7/29/2024 TIME: 7:43:32 PM SCALE: 1:00
 FILE: SUMMARY OF SMALL SIGNS.dgn

SUMMARY OF SMALL SIGNS

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)				NOTE
							POST TYPE	POSTS	ANCHOR TYPE	MOUNTING DESIGNATION	
							FRP = Fiberglass TWT = Thin-Wall 10BWG = 10 BWG S80 = Sch 80	1 or 2	UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	PREFABRICATED 1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing Channel EXAL= Extruded Alum Sign Panels	
2 OF 7	24	R2-1	SPEED LIMIT 35	30X36	X		10BWG	1	SA	P	
3 OF 7	25	M2-1	JCT	21X15	X		10BWG	1	SA	P	
		M1-4	US 70	24X24	X						
	26	S1-1	SCHOOL CROSSING	36X36	X		10BWG	1	SA	P	
	27	S4-3P	SCHOOL	24X8	X		10BWG	1	SB	P	
		R2-1	SPEED LIMIT 20	30X36	X						
		S4-1P	7:30-8:30 AM, 3:30-4:30 PM	24X10	X						
	28	S5-1	SCHOOL, SPEED LIMIT 20 WHEN FLASHING	36X72	X		ROADSIDE FLASHING BEACON ASSEMBLY (SOLAR POWERED)				
	29	R2-1	SPEED LIMIT 35	30X36	X		10BWG	1	SA	P	
		S5-2aTP	END SCHOOL ZONE	24X10	X						
	30	R10-11T	NO RIGHT TURN ON RED	24X30	X		10BWG	1	SA	P	
		S4-1P	7:30-8:30 AM, 3:30-4:30 PM	24X10	X						
	31	R10-11T	NO RIGHT TURN ON RED	24X30	X		10BWG	1	SA	P	
		S4-1P	7:30-8:30 AM, 3:30-4:30 PM	24X10	X						
	32	S4-3P	SCHOOL	24X8	X		10BWG	1	SB	P	
		R2-1	SPEED LIMIT 20	30X36	X						
		S4-1P	7:30-8:30 AM, 3:30-4:30 PM	24X10	X						
	33	R10-11T	NO RIGHT TURN ON RED	24X30	X		10BWG	1	SB	P	
		S4-1P	7:30-8:30 AM, 3:30-4:30 PM	24X10	X						
34	R10-11T	NO RIGHT TURN ON RED	24X30	X		10BWG	1	SB	P		
	S4-1P	7:30-8:30 AM, 3:30-4:30 PM	24X10	X							
35	M3-2	EAST	24X12	X		10BWG	1	SA	P		
	M1-6T	194 TEXAS	24X24	X							
	D10-7aT	REFERENCE MARKER 312	3X10	X							
36	S5-2aTP	END SCHOOL ZONE	24X10	X		10BWG	1	SB	P		
	R2-1	SPEED LIMIT 40	30X36	X							
37	S5-1	SCHOOL, SPEED LIMIT 20 WHEN FLASHING	36X72	X		ROADSIDE FLASHING BEACON ASSEMBLY (SOLAR POWERED)					
38	S1-1	SCHOOL CROSSING	36X36	X		10BWG	1	SB	P		
4 OF 7	39	S5-2aTP	END SCHOOL ZONE	24X10	X		10BWG	1	SA	P	
		R2-1	SPEED LIMIT 40	30X36	X						
	40	S5-1	SCHOOL, SPEED LIMIT 20 WHEN FLASHING	36X72	X		ROADSIDE FLASHING BEACON ASSEMBLY (SOLAR POWERED)				
41	R1-1	STOP	36X36	X		S80	1	SB	P	BM	
	D3-1G	W 14TH ST	42X12	X							
	D3-1G	QUINCY ST	48X12	X							

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
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NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

SUMMARY OF SMALL SIGNS

HORZ SCALE: N.T.S.		SHEET 2 OF 6	
FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	279
CONTROL	SECTION	JOB	
0439	05	026	

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 PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: I94050_SH194_Pentable_SPM.tbl
 USER: Arabinson DATE: 7/29/2024 TIME: 7:43:32 PM SCALE: 1:100
 FILE: SUMMARY OF SMALL SIGNS.dgn

SUMMARY OF SMALL SIGNS

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)				NOTE
							POST TYPE	POSTS	ANCHOR TYPE	MOUNTING DESIGNATION	
							FRP = Fiberglass TWT = Thin-Wall 10BWG = 10 BWG S80 = Sch 80	1 or 2	UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	PREFABRICATED P = "Plain" T = "T" U = "U" 1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing Channel EXAL= Extruded Alum Sign Panels	
4 OF 7	42	M3-4	WEST	24X12	X	10BWG	1	SA	P		
		M1-6T	194 TEXAS	24X24	X						
		M5-4	LEFT LANE	21X18	X						
	43	S1-1	SCHOOL CROSSING	36X36	X	10BWG	1	SA	P		
		S5-1	SCHOOL, SPEED LIMIT 20 WHEN FLASHING	36X72	X	ROADSIDE FLASHING BEACON ASSEMBLY (SOLAR POWERED)					
	45	S5-2aTP	END SCHOOL ZONE	24X10	X	10BWG	1	SA	P		
		R2-1	SPEED LIMIT 40	30X36	X						
	46	M3-4	WEST	24X12	X	10BWG	1	SA	P		
		M1-6T	194 TEXAS	24X24	X						
		M5-2	ADVANCE TURN ARROW	21X15	X						
47	R2-1	SPEED LIMIT 40	30X36	X	10BWG	1	SA	P			
	48	M1-6T	194 TEXAS (SOUTH FACING)	24X24	X	10BWG	1	SB	P		
		M6-2L	DIRECTIONAL ARROW ↘ (SOUTH FACING)	21X15	X						
R1-1		STOP	36X36	X							
49	R1-1	STOP	36X36	X	S80	1	SA	P	BM		
	D3-1G	W 20TH ST	42X12	X							
	D3-1G	QUINCY ST	48X12	X							
50	R4-7	KEEP RIGHT OF MEDIAN	24X30	X	10BWG	1	SB	P			
51	W10-1	RR CROSSING	36X36	X	10BWG	1	SA	P			
52	R5-1	DO NOT ENTER (SOUTH FACING)	36X36	X	S80	1	SB	T			
	R1-1	STOP (NORTH FACING)	48X48	X							
53	R8-8	DO NOT STOP ON TRACKS	24X30	X	10BWG	1	SA	P			
	R15-4	REPORT PROBLEMS TO 1-800-772-7677 CROSSING #276612K	24X12	X							
54	R5-1	DO NOT ENTER	36X36	X	10BWG	1	SB	P			
55	R1-1	STOP	36X36	X	10BWG	1	SA	P			
	R2-1	SPEED LIMIT 40	30X36	X							
57	R8-8	DO NOT STOP ON TRACKS	24X30	X	10BWG	1	SA	P			
	R15-4	REPORT PROBLEMS TO 1-800-772-7677 CROSSING #276612K	24X12	X							
58	R1-1	STOP	36X36	X	S80	1	SA	P	BM		
	D3-1G	SMYTH ST	42X12	X							
	D3-1G	DIMMITT RD	54X12	X							
59	W10-2R	GRADE CROSSING ADVANCE WARNING	36X36	X	10BWG	1	SA	P			
60	R2-1	SPEED LIMIT 40	30X36	X	10BWG	1	SA	P			
61	D9-2	HOSPITAL	24X24	X	10BWG	1	SA	P			
	M6-1B	DIRECTIONAL ARROW →	21X15	X							
62	R2-1	SPEED LIMIT 45	30X36	X	10BWG	1	SA	P			
63	W10-2L	GRADE CROSSING & INTERSECTION ADVANCE WARNING	36X36	X	10BWG	1	SA	P			

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

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NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

SUMMARY OF SMALL SIGNS

HORZ SCALE: N. T. S.			SHEET 3 OF 6
FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	280
CONTROL	SECTION	JOB	
0439	05	026	

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 PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcfg PENTABLE: I94050_SH194_Pentable_SPM.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 7:43:33 PM SCALE: 1:00
 FILE: SUMMARY OF SMALL SIGNS.dgn

SUMMARY OF SMALL SIGNS


PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)				NOTE
							POST TYPE	POSTS	ANCHOR TYPE	MOUNTING DESIGNATION	
							FRP = Fiberglass TWT = Thin-Wall 10BWG = 10 BWG S80 = Sch 80	1 or 2	UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	PREFABRICATED P = "Plain" T = "T" U = "U"	
6 OF 7	64	R1-2	YIELD	48X48X48	X		10BWG	1	SA	T	
	65	M2-1B	JCT	21X15	X		10BWG	1	SA	P	
		M1-1	INTERSTATE 27	24X24	X						
		M2-1	JCT	21X15	X						
		M1-4	US 87	24X24	X						
	66	W10-3R	GRADE CROSSING & INTERSECTION ADVANCE WARNING	36X36	X		10BWG	1	SA	P	
	67	R3-9b	CENTER LANE	24X36	X		10BWG	1	SA	P	
	68	D1-2	↑LUBBOCK AMARILLO →	84X30	X		S80	1	SA	T	
	69	R1-1	STOP	36X36	X		S80	1	SA	P	BM
		D3-1G	SH 194	42X12	X						
		D3-1G	XENIA ST	42X12	X						
	70	D3-3bTL	EMERGENCY ENTRANCE ← (NORTH FACING)	60X36	X		S80	1	SA	T	
		D3-3bTR	EMERGENCY ENTRANCE → (SOUTH FACING)	60X36	X						
	71	R2-1	SPEED LIMIT 45	30X36	X		10BWG	1	SA	P	
	72	R1-1	STOP	36X36	X		S80	1	SA	P	BM
		D3-1G	SH 194	42X12	X						
		D3-1G	YONKERS ST	54X12	X						
	73	R5-2a	NO TRUCKS	24X24	X		10BWG	1	SA	P	
	74	R3-8SSK	LANE CONTROL	54X36	X		10BWG	1	SA	T	
	75	M3-2	EAST	24X12	X		10BWG	1	SA	P	
		M1-6T	194 TEXAS	24X24	X						
	76	M3-3B	SOUTH	24X12	X		S80	1	SA	U	2EXT
		M1-1	INTERSTATE 27	24X24	X						
		M6-3B	DIRECTIONAL ARROW ↑	21X15	X						
		M3-3	SOUTH	24X12	X						
		M1-4	US 87	24X24	X						
		M6-3B	DIRECTIONAL ARROW ↑	21X15	X						
		M3-1	NORTH	24X12	X						
M1-1		INTERSTATE 27	24X24	X							
M6-1B		DIRECTIONAL ARROW →	21X15	X							
M3-1		NORTH	24X12	X							
M1-4		US 87	24X24	X							
M6-1	DIRECTIONAL ARROW →	21X15	X								
77	R1-1	STOP	36X36	X		10BWG	1	SA	P		
	R1-3P	ALL WAY	18X6	X							
78	M3-1B	NORTH	24X12	X		10BWG	1	SA	P		
	M1-1	INTERSTATE 27	24X24	X							
	M6-1B	DIRECTIONAL ARROW ←	21X15	X							
	M3-1	NORTH	24X12	X							
	M1-4	US 87	24X24	X							
	M6-1	DIRECTIONAL ARROW ←	21X15	X							

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

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NO.	DATE	REVISION	APPROVED



infraTECH
Engineers & Innovators, LLC
TBPE REGISTRATION NO. F-18368



SH 194 FROM FM 3466 TO IH 27

SUMMARY OF SMALL SIGNS

HORZ SCALE: N. T. S.			SHEET 4 OF 6
FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	281
CONTROL	SECTION	JOB	
0439	05	026	

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 PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf PENTABLE: I94050_SH194_Pentable_SPM.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 7:43:34 PM SCALE: 1:100
 FILE: SUMMARY OF SMALL SIGNS.dgn

SUMMARY OF SMALL SIGNS

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)				NOTE
							POST TYPE	POSTS	ANCHOR TYPE	MOUNTING DESIGNATION	
							FRP = Fiberglass TWT = Thin-Wall 10BWG = 10 BWG S80 = Sch 80	1 or 2	UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	PREFABRICATED P = "Plain" T = "T" U = "U"	
7 OF 7	79	M3-1B	NORTH	24X12	X	S80	1	SA	U	1EXT	
		M1-1	INTERSTATE 27	24X24	X						
		M6-3B	DIRECTIONAL ARROW ↑	21X15	X						
		M3-4	WEST	24X12	X						
		M1-6T	194 TEXAS	24X24	X						
		M6-1	DIRECTIONAL ARROW ←	21X15	X						
		M3-2	EAST	24X12	X						
		M1-6T	194 TEXAS	24X24	X						
	M6-1	DIRECTIONAL ARROW →	21X15	X							
	80	D9-2	HOSPITAL	24X24	X	10BWG	1	SA	P		
		M6-1	DIRECTIONAL ARROW →	21X15	X						
	81	R3-1	NO RIGHT TURN	36X36	X	S80	1	SB	U		
		R1-1	STOP (NORTH FACING)	36X36	X						
		R1-3P	ALL WAY	18X6	X						
	82	R4-7	KEEP RIGHT OF MEDIAN (SOUTH FACING)	24X30	X	10BWG	1	SB	P		
		R1-1	STOP (NORTH FACING)	36X36	X						
		R1-3P	ALL WAY	18X6	X						
	83	D1-1	← LUBBOCK	78X18	X	10BWG	1	SA	T		
	84	D1-1	← AMARILLO	84X18	X	10BWG	1	SB	T		
	85	R1-1	STOP	36X36	X	10BWG	1	SA	P		
		R1-3P	ALL WAY	18X6	X						
	86	R1-1	STOP (SOUTH FACING)	36X36	X	10BWG	1	SB	P		
		R1-3P	ALL WAY (SOUTH FACING)	18X6	X						
		R4-7	KEEP RIGHT OF MEDIAN (NORTH FACING)	24X30	X						
	87	D3-3bTL	WAYLAND BAPTIST UNIVERSITY ←	84X36	X	S80	1	SA	T		
	88	D9-2	HOSPITAL	24X24	X	10BWG	1	SB	P		
		M6-1	LEFT ARROW	21X15	X						
	89	M3-3B	SOUTH	24X12	X	S80	1	SA	U	1EXT	
		M1-1	INTERSTATE 27	24X24	X						
		M6-3B	DIRECTIONAL ARROW ↑	21X15	X						
M3-2		EAST	24X12	X							
M1-6T		194 TEXAS	24X24	X							
M6-1		DIRECTIONAL ARROW ←	21X15	X							
M3-4		WEST	24X12	X							
M1-6T		194 TEXAS	24X24	X							
M6-1	DIRECTIONAL ARROW →	21X15	X								
90	M3-3B	SOUTH	24X12	X	S80	1	SA	P			
	M1-1	INTERSTATE 27	24X24	X							
	M6-1B	DIRECTIONAL ARROW ←	21X15	X							
	M3-3	SOUTH	24X12	X							
	M1-4	US 87	24X24	X							
	M6-1	DIRECTIONAL ARROW ←	21X15	X							
91	R1-1	STOP	36X36	X	10BWG	1	SA	P			
	R1-3P	ALL WAY	18X6	X							

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NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27

SUMMARY OF SMALL SIGNS

HORZ SCALE: N.T.S.			SHEET 5 OF 6
FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	282
CONTROL	SECTION	JOB	
0439	05	026	

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.
 PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcfp PENTABLE: I94050_SH194_Pentable_SPM.tbl
 USER: Arcobinson DATE: 7/29/2024 TIME: 7:43:34 PM SCALE: 1:100
 FILE: SUMMARY OF SMALL SIGNS.dgn

SUMMARY OF SMALL SIGNS

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)				NOTE	
							POST TYPE	POSTS	ANCHOR TYPE	MOUNTING DESIGNATION		
							FRP = Fiberglass TWT = Thin-Wall 10BWG = 10 BWG S80 = Sch 80	1 or 2	UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	PREFABRICATED 1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing Channel EXAL= Extruded Alum Sign Panels		
7 OF 7	92	M3-1B	NORTH	24X12	X							
		M1-1	INTERSTATE 27	24X24	X							
		M6-3B	DIRECTIONAL ARROW ↑	21X15	X							
		M3-1	NORTH	24X12	X							
		M1-4	US 87	24X24	X							
		M6-3	DIRECTIONAL ARROW ↑	21X15	X			S80	1	SA	U	2EXT
		M3-3B	SOUTH	24X12	X							
		M1-1	INTERSTATE 27	24X24	X							
		M6-1B	DIRECTIONAL ARROW →	21X15	X							
		M3-3	SOUTH	24X12	X							
	M1-4	US 87	24X24	X								
	M6-1	DIRECTIONAL ARROW →	21X15	X								
	93	M3-4	WEST	24X12	X							
M1-6T		194 TEXAS	24X24	X			10BWG	1	SA	P		
94	R3-8LSSK	LANE CONTROL	72X36	X			S80	1	SA	T		

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

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.
<http://www.txdot.gov/>

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

NO.	DATE	REVISION	APPROVED



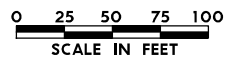
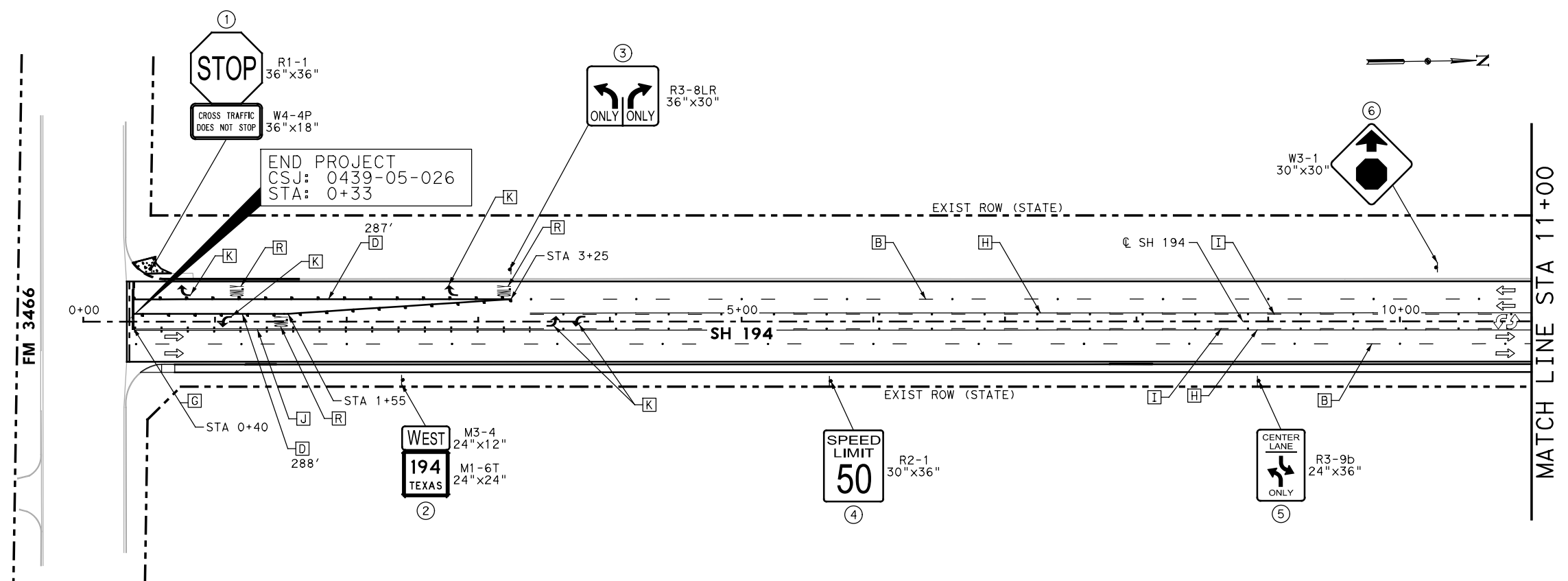
SH 194 FROM FM 3466 TO IH 27

SUMMARY OF SMALL SIGNS

HORZ SCALE: N. T. S.			SHEET 6 OF 6
FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	283
CONTROL	SECTION	JOB	
0439	05	026	

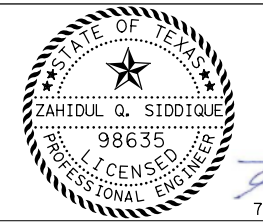
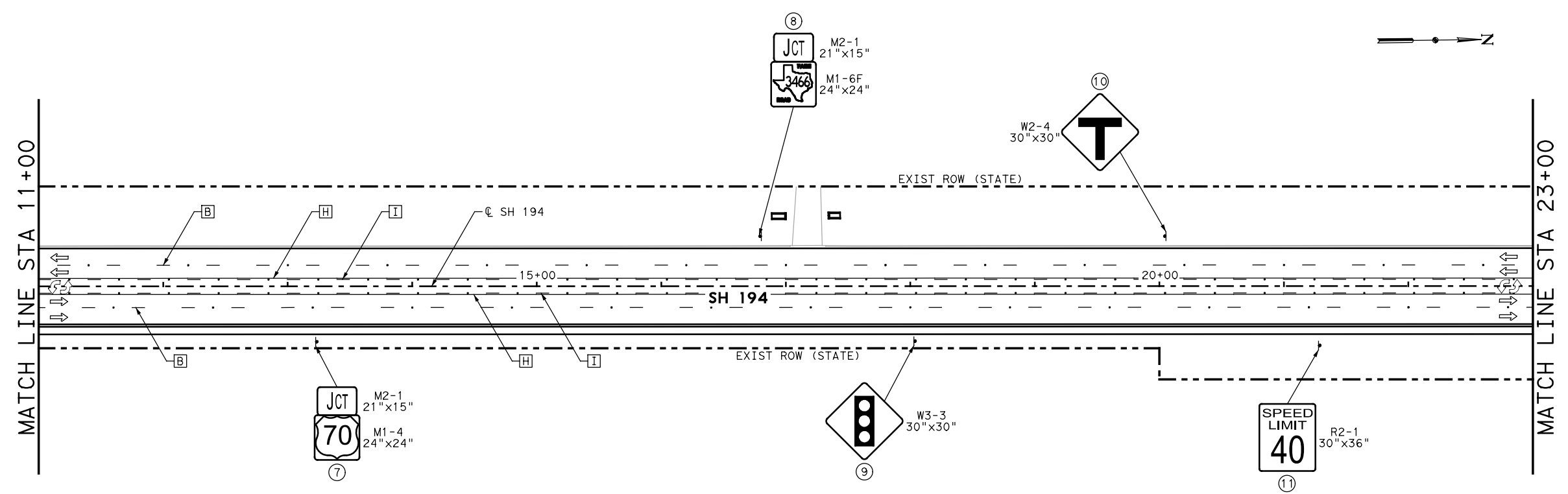
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf PENTABLE: I94050_SH194_Pentable_SPM.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 7:43:34 PM SCALE: 1:00
 FILE: SUMMARY OF SMALL SIGNS.dgn



- LEGEND**
- A (W) 6" (SLD)
 - B (W) 6" (BRK) W/TYPE I-C @ 80' C/C
 - C (W) 8" (SLD)
 - D (W) 8" (SLD) W/TYPE I-C @ 20' C/C
 - E (W) 12" (SLD)
 - F (W) 18" (SLD)
 - G (W) 24" (SLD)
 - H (Y) 6" (SLD)
 - I (Y) 6" (BRK) W/TYPE II-A-A @ 40' C/C
 - J (Y) 6" (DBL) W/TYPE II-A-A @ 20' C/C
 - K (W) (ARROW)
 - L (W) (RR)
 - M (Y) MED NOSE
 - N INSTL OM ASSM
 - P (W) 36" YLD TRI
 - Q (W) 8" DOT
 - R (W) (WORD)
 - PROPOSED SIGN ASSEMBLY
 - PROPOSED SIGN NUMBER
 - TRAFFIC DIRECTION
 - OM
 - MAILBOX

- NOTES**
- REMOVE ALL EXISTING SIGNS UNLESS OTHERWISE SPECIFIED.



NO.	DATE	REVISION	APPROVED

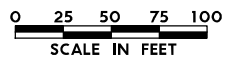
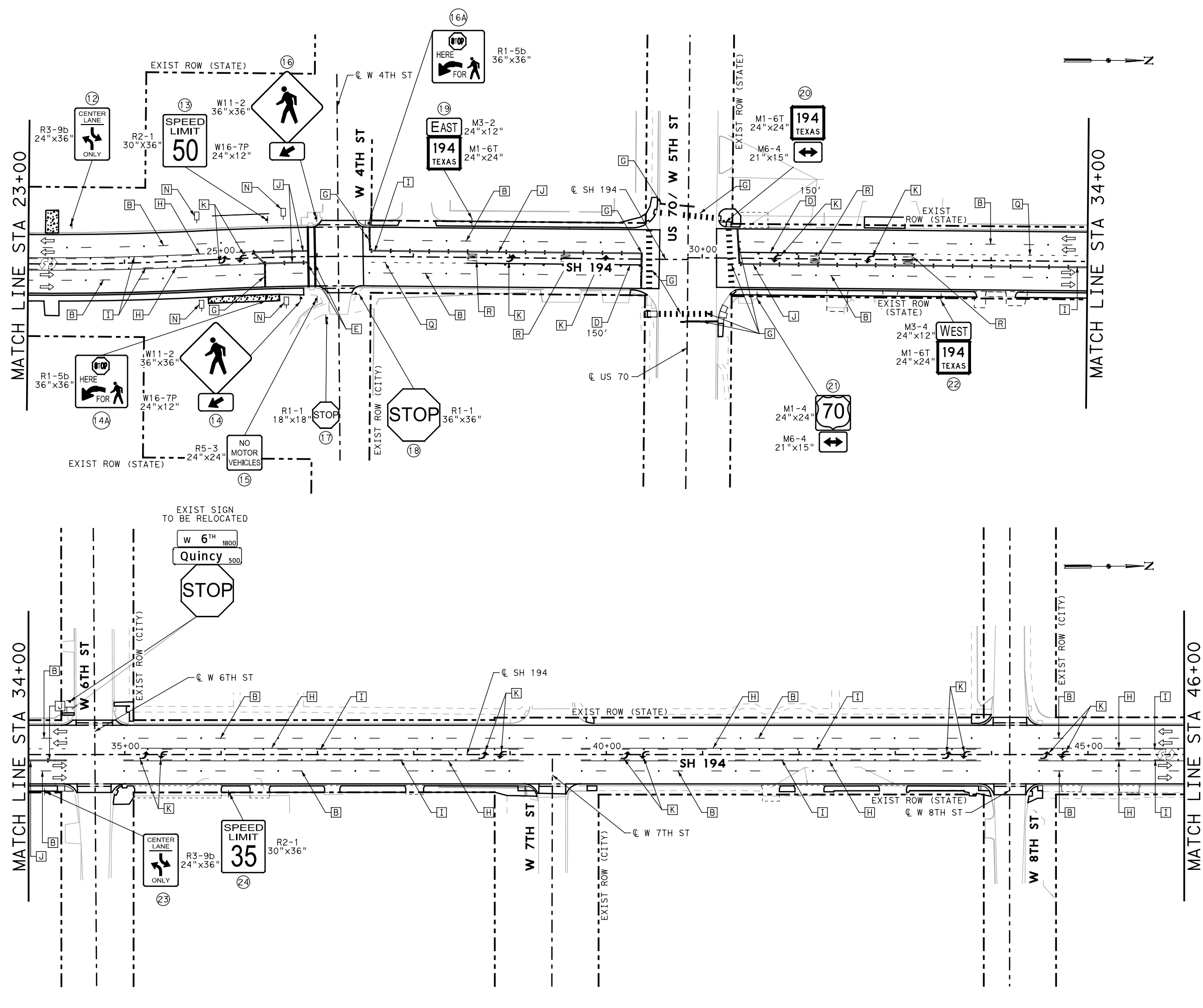


SH 194 FROM FM 3466 TO IH 27
SIGNING & PAVEMENT MARKING
BEGIN TO STA 23+00

HORZ SCALE: 1"=100' SHEET 1 OF 7

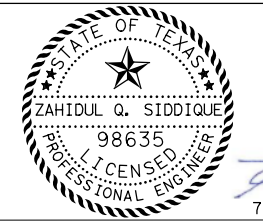
FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	284
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: 194050_SH194_Pentable_SPM.tbl
 USER: Robinson DATE: 7/29/2024 TIME: 7:43:50 PM SCALE: 1:100.062
 FILE: SH194_SPM_Sheet2.dgn



- LEGEND**
- A (W) 6" (SLD)
 - B (W) 6" (BRK) W/TYPE I-C @ 80' C/C
 - C (W) 8" (SLD)
 - D (W) 8" (SLD) W/TYPE I-C @ 20' C/C
 - E (W) 12" (SLD)
 - F (W) 18" (SLD)
 - G (W) 24" (SLD)
 - H (Y) 6" (SLD)
 - I (Y) 6" (BRK) W/TYPE II-A-A @ 40' C/C
 - J (Y) 6" (DBL) W/TYPE II-A-A @ 20' C/C
 - K (W) (ARROW)
 - L (W) (RR)
 - M (Y) MED NOSE
 - N INSTL OM ASSM
 - P (W) 36" YLD TRI
 - Q (W) 8" DOT
 - R (W) (WORD)
 - PROPOSED SIGN ASSEMBLY
 - PROPOSED SIGN NUMBER
 - TRAFFIC DIRECTION
 - OM
 - MAILBOX

- NOTES**
- REMOVE ALL EXISTING SIGNS UNLESS OTHERWISE SPECIFIED.

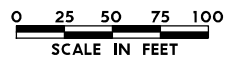
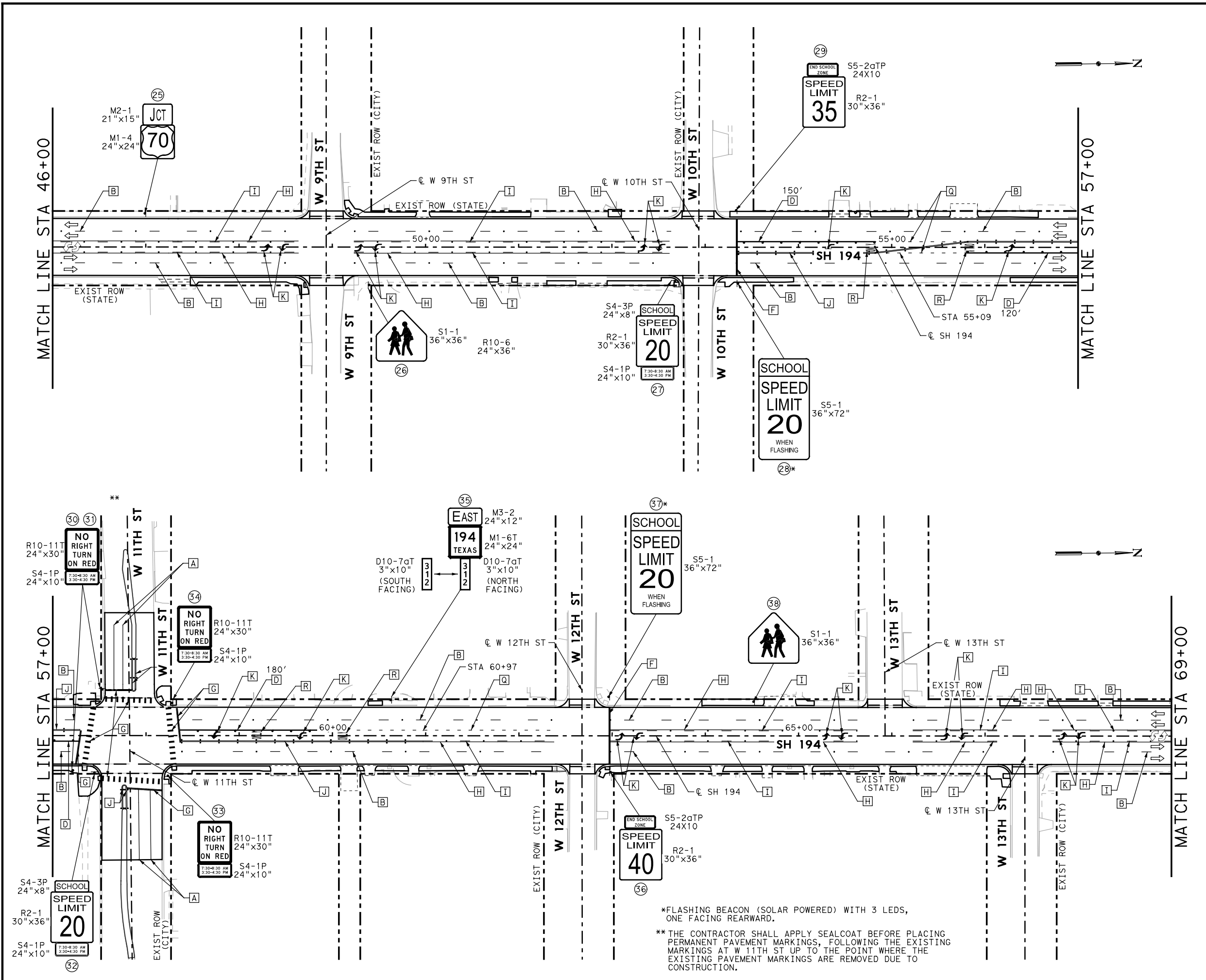


NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27
 SIGNING & PAVEMENT MARKING
 STA 23+00 TO STA 46+00

HORZ SCALE: 1"=100'			SHEET 2 OF 7
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:	
6	SEE TITLE SHEET	SH 194	
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	285
CONTROL:	SECTION:	JOB:	
0439	05	026	



- LEGEND**
- [A] (W) 6" (SLD)
 - [B] (W) 6" (BRK) W/TYPE I-C @ 80' C/C
 - [C] (W) 8" (SLD)
 - [D] (W) 8" (SLD) W/TYPE I-C @ 20' C/C
 - [E] (W) 12" (SLD)
 - [F] (W) 18" (SLD)
 - [G] (W) 24" (SLD)
 - [H] (Y) 6" (SLD)
 - [I] (Y) 6" (BRK) W/TYPE II-A-A @ 40' C/C
 - [J] (Y) 6" (DBL) W/TYPE II-A-A @ 20' C/C
 - [K] (W) (ARROW)
 - [L] (W) (RR)
 - [M] (Y) MED NOSE
 - [N] INSTL OM ASSM
 - [P] (W) 36" YLD TRI
 - [Q] (W) 8" DOT
 - [R] (W) (WORD)
 - PROPOSED SIGN ASSEMBLY
 - ⊗ PROPOSED SIGN NUMBER
 - ⇨ TRAFFIC DIRECTION
 - OM
 - MAILBOX

NOTES

- REMOVE ALL EXISTING SIGNS UNLESS OTHERWISE SPECIFIED.

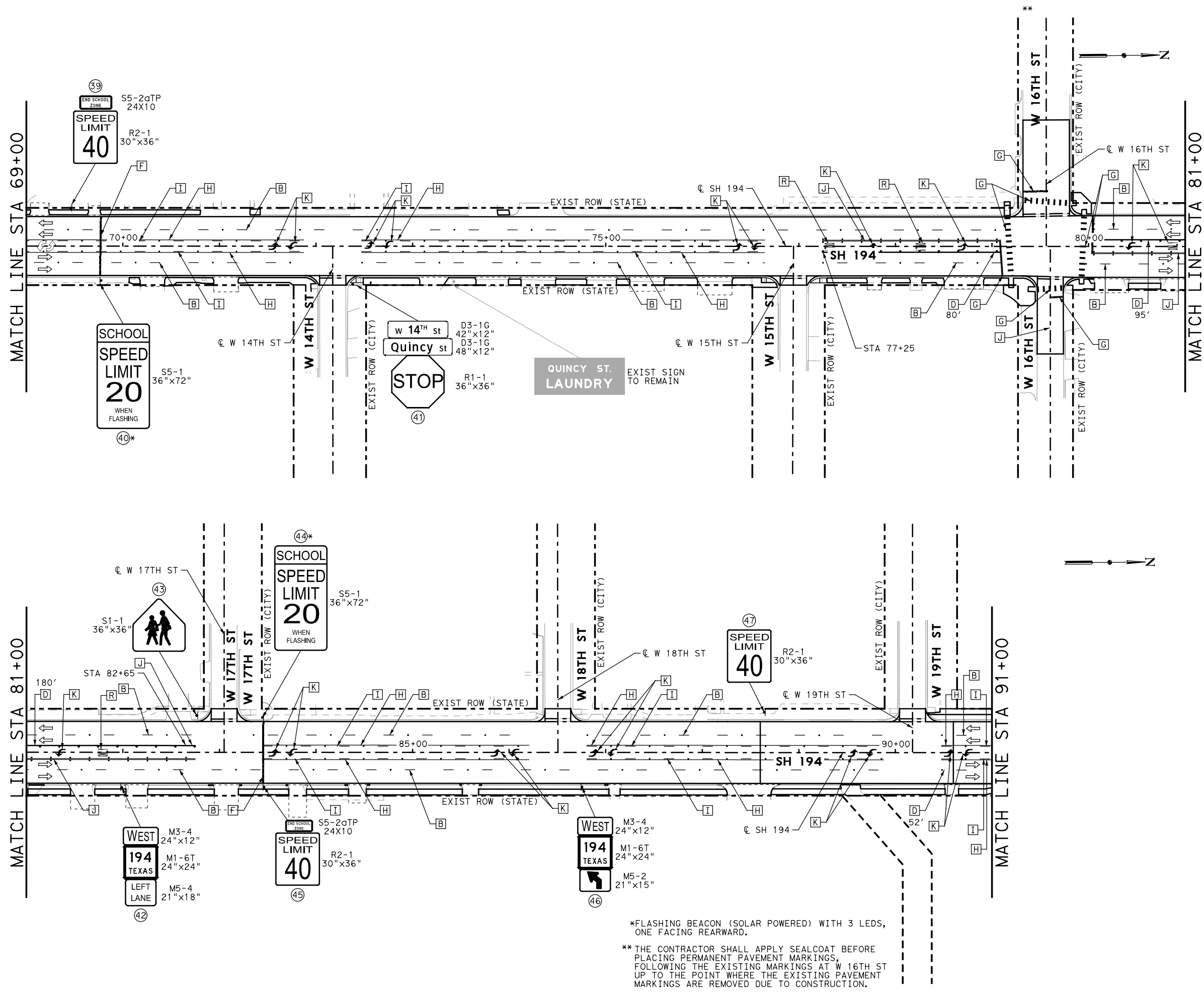
NO.	DATE	REVISION	APPROVED

SH 194 FROM FM 3466 TO IH 27
SIGNING & PAVEMENT MARKING
STA 46+00 TO STA 69+00

HORZ SCALE: 1"=100'			SHEET 3 OF 7
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:	
6	SEE TITLE SHEET	SH 194	
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	286
CONTROL:	SECTION:	JOB:	
0439	05	026	

*FLASHING BEACON (SOLAR POWERED) WITH 3 LEDS, ONE FACING REARWARD.
**THE CONTRACTOR SHALL APPLY SEALCOAT BEFORE PLACING PERMANENT PAVEMENT MARKINGS, FOLLOWING THE EXISTING MARKINGS AT W 11TH ST UP TO THE POINT WHERE THE EXISTING PAVEMENT MARKINGS ARE REMOVED DUE TO CONSTRUCTION.

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:44:03 PM SCALE: 1:100
 FILE: SH194_SPM_Sheet4.dgn



- LEGEND**
- [A] (W) 6" (SLD)
 - [B] (W) 6" (BRK) W/TYPE I-C @ 80' C/C
 - [C] (W) 8" (SLD)
 - [D] (W) 8" (SLD) W/TYPE I-C @ 20' C/C
 - [E] (W) 12" (SLD)
 - [F] (W) 18" (SLD)
 - [G] (W) 24" (SLD)
 - [H] (Y) 6" (SLD)
 - [I] (Y) 6" (BRK) W/TYPE II-A-A @ 40' C/C
 - [J] (Y) 6" (DBL) W/TYPE II-A-A @ 20' C/C
 - [K] (W) (ARROW)
 - [L] (W) (RR)
 - [M] (Y) MED NOSE
 - [N] INSTL OM ASSM
 - [P] (W) 36" YLD TRI
 - [Q] (W) 8" DOT
 - [R] (W) (WORD)
 - PROPOSED SIGN ASSEMBLY
 - ⊗ PROPOSED SIGN NUMBER
 - TRAFFIC DIRECTION
 - OM
 - MAILBOX

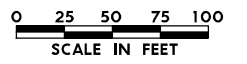
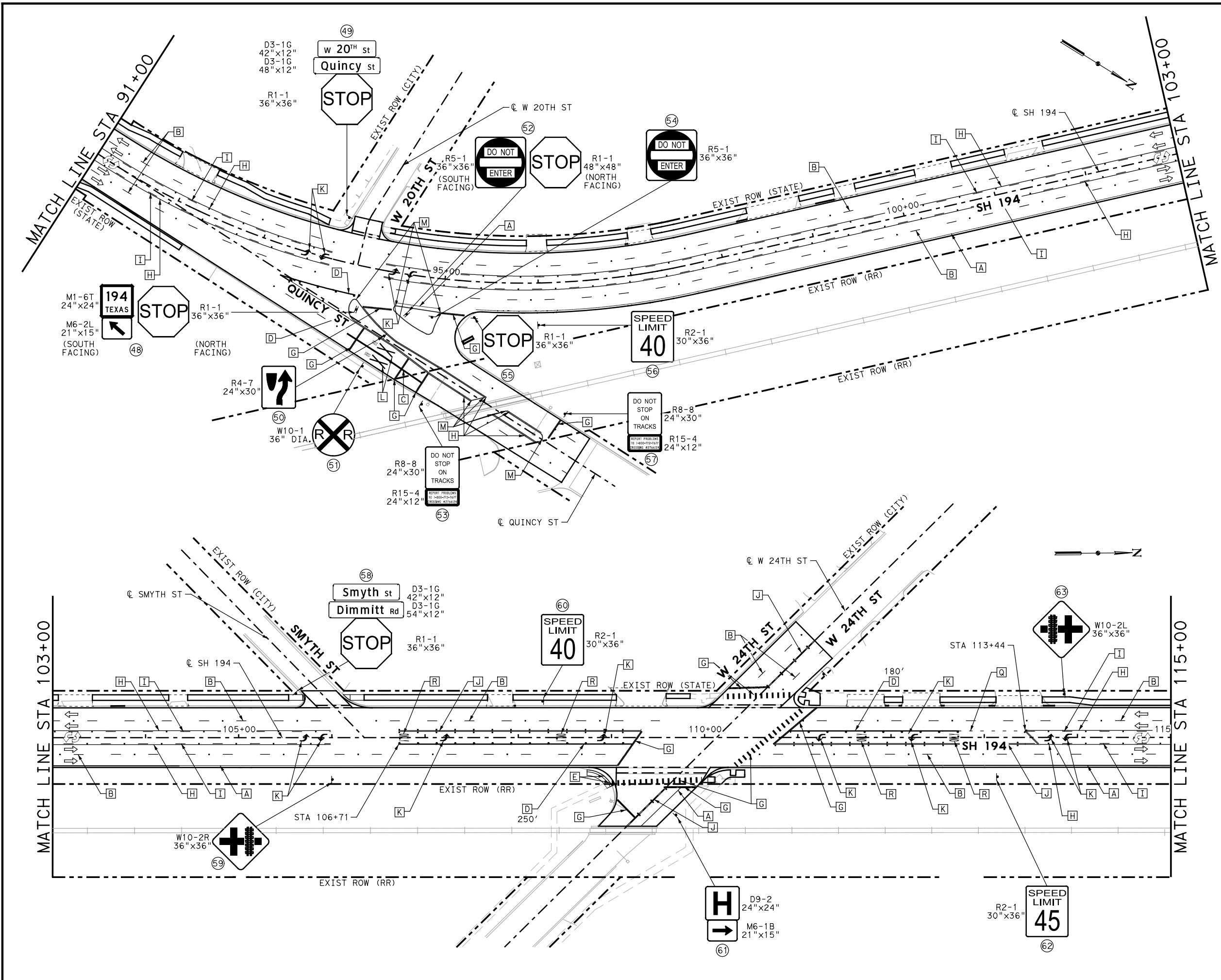
- NOTES**
- REMOVE ALL EXISTING SIGNS UNLESS OTHERWISE SPECIFIED.

NO.	DATE	REVISION	APPROVED

SH 194 FROM FM 3466 TO IH 27
 SIGNING & PAVEMENT MARKING
 STA 69+00 TO STA 91+00

HORZ SCALE: 1"=100'		SHEET 4 OF 7	
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:	
6	SEE TITLE SHEET	SH 194	
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	287
CONTROL:	SECTION:	JOB:	
0439	05	026	

*FLASHING BEACON (SOLAR POWERED) WITH 3 LEDS, ONE FACING REARWARD.
 ** THE CONTRACTOR SHALL APPLY SEALCOAT BEFORE PLACING PERMANENT PAVEMENT MARKINGS, FOLLOWING THE EXISTING MARKINGS AT W 16TH ST UP TO THE POINT WHERE THE EXISTING PAVEMENT MARKINGS ARE REMOVED DUE TO CONSTRUCTION.



- LEGEND**
- [A] (W) 6" (SLD)
 - [B] (W) 6" (BRK) W/TYPE I-C @ 80' C/C
 - [C] (W) 8" (SLD)
 - [D] (W) 8" (SLD) W/TYPE I-C @ 20' C/C
 - [E] (W) 12" (SLD)
 - [F] (W) 18" (SLD)
 - [G] (W) 24" (SLD)
 - [H] (Y) 6" (SLD)
 - [I] (Y) 6" (BRK) W/TYPE II-A-A @ 40' C/C
 - [J] (Y) 6" (DBL) W/TYPE II-A-A @ 20' C/C
 - [K] (W) (ARROW)
 - [L] (W) (RR)
 - [M] (Y) MED NOSE
 - [N] INSTL OM ASSM
 - [P] (W) 36" YLD TRI
 - [Q] (W) 8" DOT
 - [R] (W) (WORD)
 - PROPOSED SIGN ASSEMBLY
 - ⊗ PROPOSED SIGN NUMBER
 - TRAFFIC DIRECTION
 - OM
 - MAILBOX

NOTES

- REMOVE ALL EXISTING SIGNS UNLESS OTHERWISE SPECIFIED.

NO.	DATE	REVISION	APPROVED

infraTECH
 Engineers & Innovators, LLC
 TBPE REGISTRATION NO. F-18368

Texas Department of Transportation
 © 2024

SH 194 FROM FM 3466 TO IH 27
SIGNING & PAVEMENT MARKING
 STA 91+00 TO STA 115+00

HORZ SCALE: 1"=100'		SHEET 5 OF 7	
FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	288
CONTROL	SECTION	JOB	
0439	05	026	

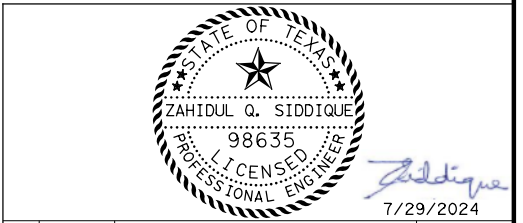
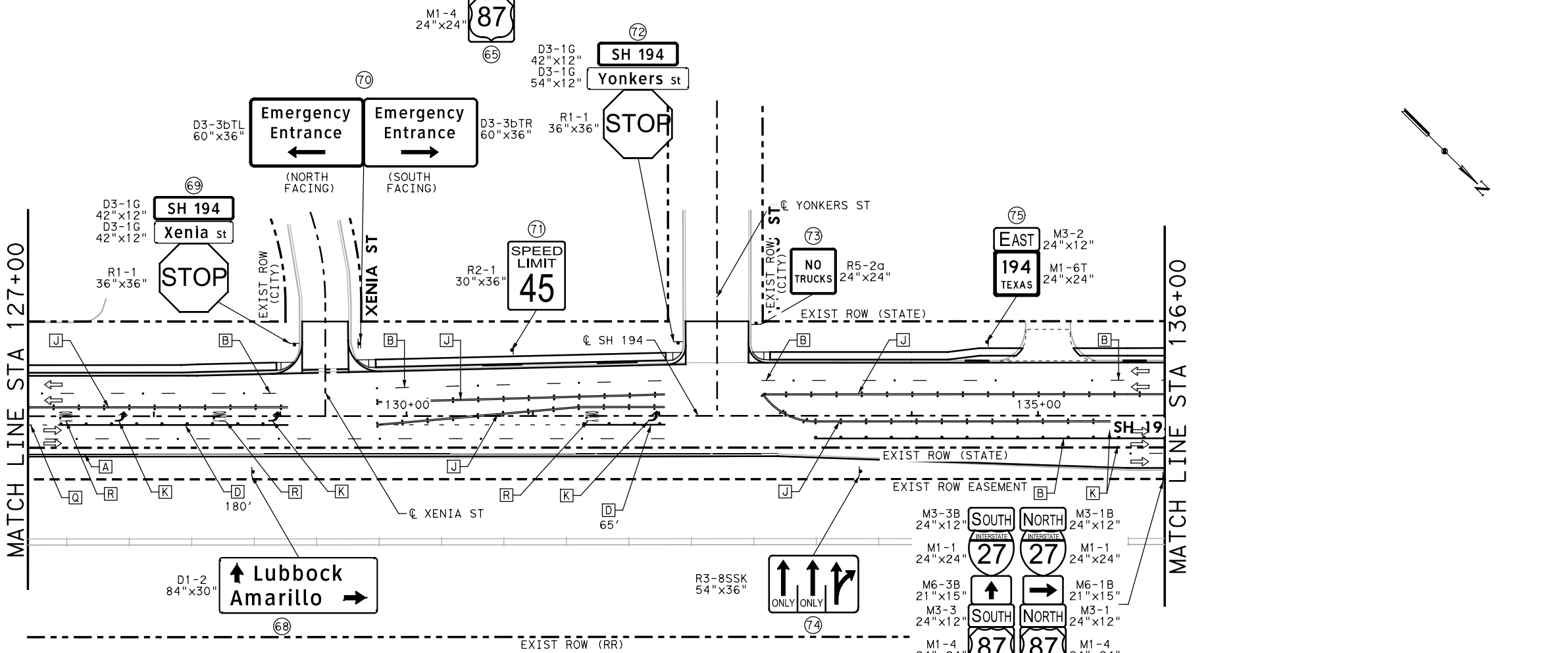
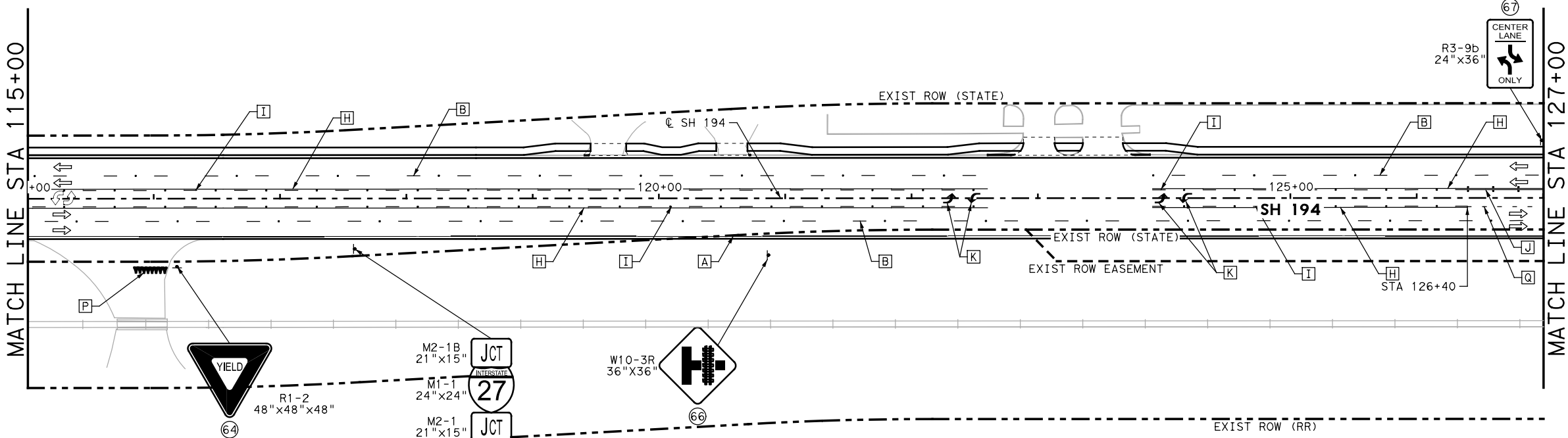


LEGEND

- [A] (W) 6" (SLD)
- [B] (W) 6" (BRK) W/TYPE I-C @ 80' C/C
- [C] (W) 8" (SLD)
- [D] (W) 8" (SLD) W/TYPE I-C @ 20' C/C
- [E] (W) 12" (SLD)
- [F] (W) 18" (SLD)
- [G] (W) 24" (SLD)
- [H] (Y) 6" (SLD)
- [I] (Y) 6" (BRK) W/TYPE II-A-A @ 40' C/C
- [J] (Y) 6" (DBL) W/TYPE II-A-A @ 20' C/C
- [K] (W) (ARROW)
- [L] (W) (RR)
- [M] (Y) MED NOSE
- [N] INSTL OM ASSM
- [P] (W) 36" YLD TRI
- [Q] (W) 8" DOT
- [R] (W) (WORD)
- PROPOSED SIGN ASSEMBLY
- ⊗ PROPOSED SIGN NUMBER
- ➡ TRAFFIC DIRECTION
- OM
- MAILBOX

NOTES

1. REMOVE ALL EXISTING SIGNS UNLESS OTHERWISE SPECIFIED.



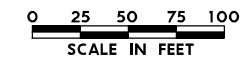
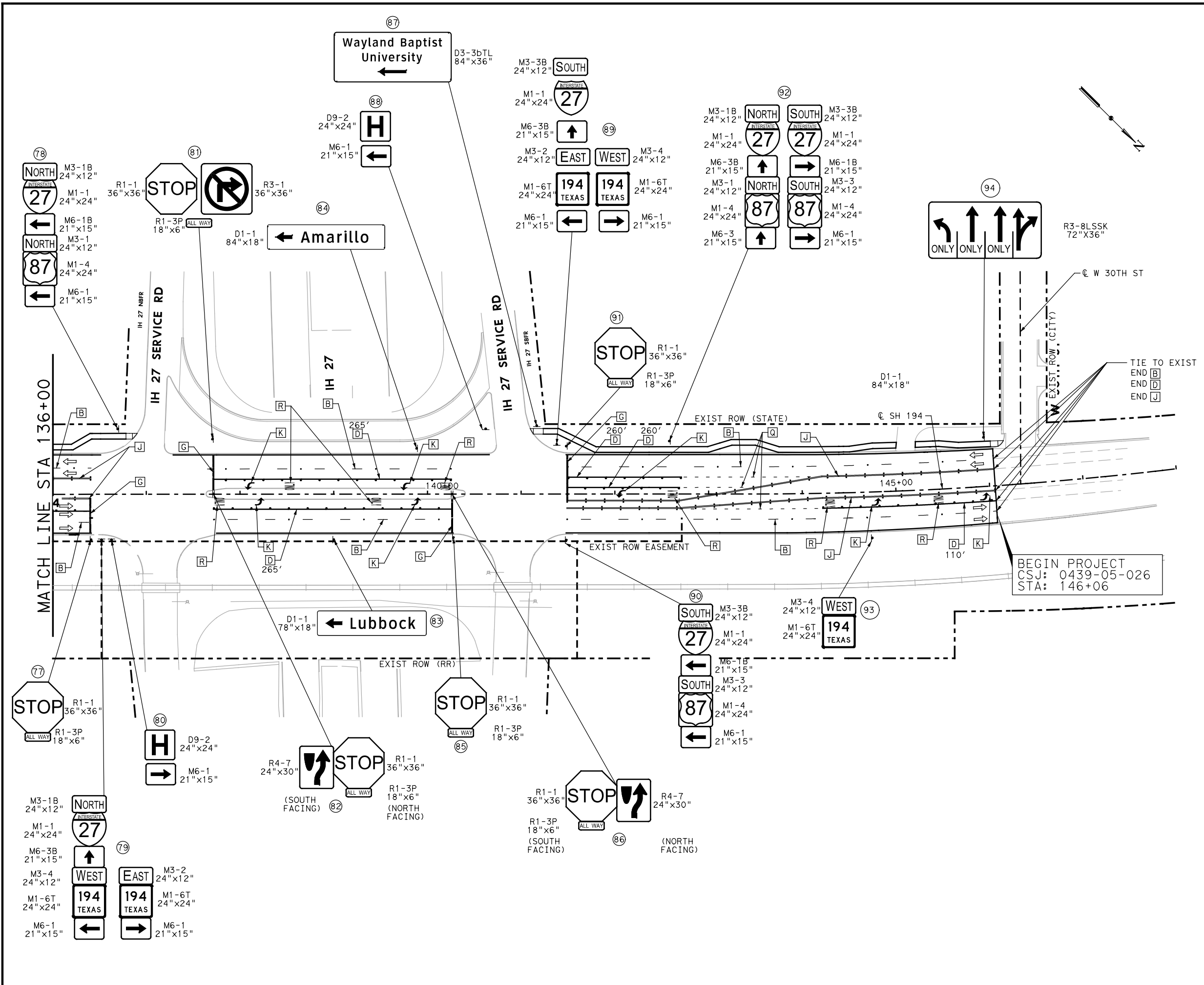
NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27
SIGNING & PAVEMENT MARKING
STA 115+00 TO STA 136+00

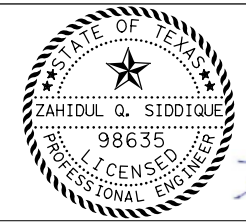
HORZ SCALE: 1"=100'			SHEET 6 OF 7
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	289
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Robinson DATE: 7/29/2024 TIME: 7:44:21 PM
 FILE: SH194_SPM_Sheet7.dgn



- LEGEND**
- [A] (W) 6" (SLD)
 - [B] (W) 6" (BRK) W/TYPE I-C @ 80' C/C
 - [C] (W) 8" (SLD)
 - [D] (W) 8" (SLD) W/TYPE I-C @ 20' C/C
 - [E] (W) 12" (SLD)
 - [F] (W) 18" (SLD)
 - [G] (W) 24" (SLD)
 - [H] (Y) 6" (SLD)
 - [I] (Y) 6" (BRK) W/TYPE II-A-A @ 40' C/C
 - [J] (Y) 6" (DBL) W/TYPE II-A-A @ 20' C/C
 - [K] (W) (ARROW)
 - [L] (W) (RR)
 - [M] (Y) MED NOSE
 - [N] INSTL OM ASSM
 - [P] (W) 36" YLD TRI
 - [Q] (W) 8" DOT
 - [R] (W) (WORD)
 - PROPOSED SIGN ASSEMBLY
 - ⊗ PROPOSED SIGN NUMBER
 - TRAFFIC DIRECTION
 - OM
 - MAILBOX

- NOTES**
- REMOVE ALL EXISTING SIGNS UNLESS OTHERWISE SPECIFIED.

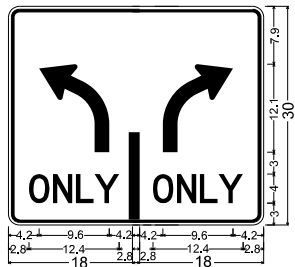


NO.	DATE	REVISION	APPROVED



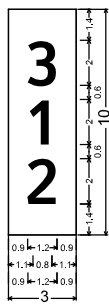
SH 194 FROM FM 3466 TO IH 27
SIGNING & PAVEMENT MARKING
 STA 136+00 TO END

HORZ SCALE: 1"=100'			SHEET 7 OF 7
FED. RD. DIV. NO:	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	290
CONTROL	SECTION	JOB	
0439	05	026	



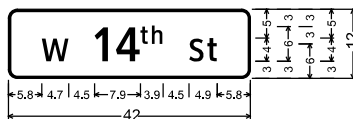
SIGN NO. 3

R3-8LR;
1.5" Radius, 0.4" Border, 0.4" Indent,
LaneMarker height: 12.0 LaneMarker width: 1.5Black on, White;
A2L ir=4.5, s=2;
"ONLY" D 50% spacing;
1.5" Radius, 0.4" Border, 0.4" Indent, Black on, White;
A2R ir=4.5, s=2;
"ONLY" D 50% spacing;



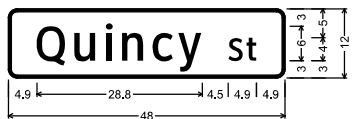
SIGN NO. 35

D10-7aT;
No border, White on, Green;
"3" ClearviewHwy-4-W;
"1" ClearviewHwy-4-W;
"2" ClearviewHwy-4-W;



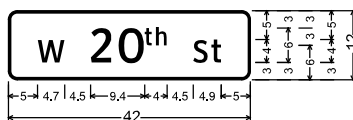
SIGN NO. 41

D3-1G;
1.5" Radius, 0.5" Border, White on, Green;
"W" ClearviewHwy-3-W;
"14th" ClearviewHwy-3-W;
"St" ClearviewHwy-3-W;



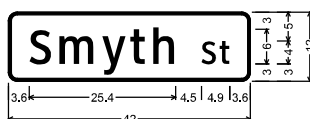
SIGN NO. 41, 49

D3-1G;
1.5" Radius, 0.5" Border, White on, Green;
"Quincy" ClearviewHwy-3-W;
"St" ClearviewHwy-3-W;



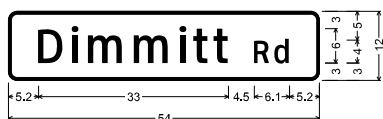
SIGN NO. 49

D3-1G;
1.5" Radius, 0.5" Border, White on, Green;
"W" ClearviewHwy-3-W;
"20th" ClearviewHwy-3-W;
"St" ClearviewHwy-3-W;



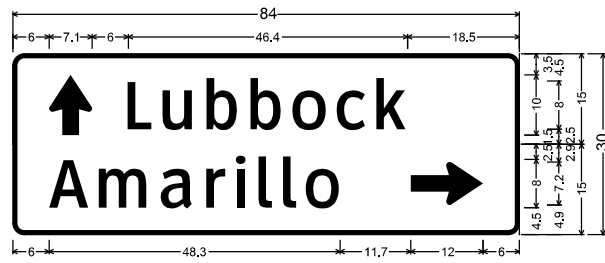
SIGN NO. 58

D3-1G;
1.5" Radius, 0.5" Border, White on, Green;
"Smyth" ClearviewHwy-3-W;
"St" ClearviewHwy-3-W;



SIGN NO. 58

D3-1G;
1.5" Radius, 0.5" Border, White on, Green;
"Dimmitt" ClearviewHwy-3-W;
"Rd" ClearviewHwy-3-W;



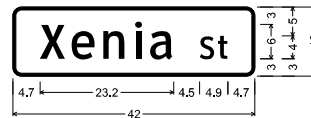
SIGN NO. 68

D1-2;
1.9" Radius, 0.8" Border, White on, Green;
Standard Arrow Custom 10.0" X 7.1" 90"; "Lubbock" ClearviewHwy-3-W;
1.9" Radius, 0.8" Border, White on, Green;
"Amarillo" ClearviewHwy-3-W; Standard Arrow Custom 12.0" X 7.1" 0";



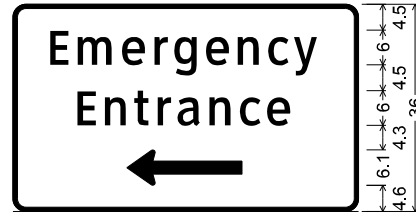
SIGN NO. 69, 72

D3-1G;
1.5" Radius, 0.5" Border, White on, Green;
"SH 194" ClearviewHwy-3-W;

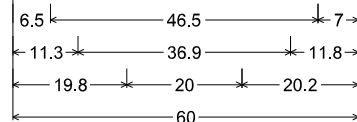


SIGN NO. 69

D3-1G;
1.5" Radius, 0.5" Border, White on, Green;
"Xenia" ClearviewHwy-3-W;
"St" ClearviewHwy-3-W;

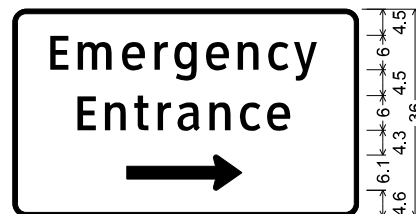


SIGN NO. 70

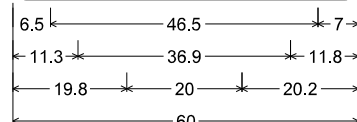


SIGN NO. 70

D3-3bTL_VARx36;
2.3" Radius, 0.8" Border, White on, Green;
"Emergency" ClearviewHwy-3-W;
"Entrance" ClearviewHwy-3-W;
Standard Arrow Custom 20.0" X 6.1" 180°;

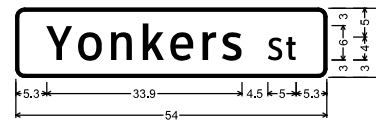


SIGN NO. 70



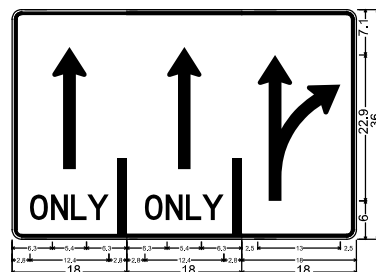
SIGN NO. 70

D3-3bTR;
2.3" Radius, 0.8" Border, White on, Green;
"Emergency" ClearviewHwy-3-W;
"Entrance" ClearviewHwy-3-W;
Standard Arrow Custom 20.0" X 6.1" 0°;



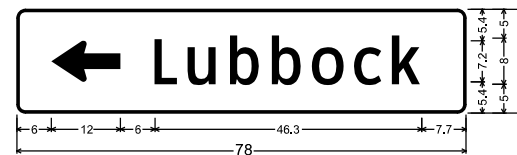
SIGN NO. 72

D3-1G;
1.5" Radius, 0.5" Border, White on, Green;
"Yonkers" ClearviewHwy-3-W;
"St" ClearviewHwy-3-W;



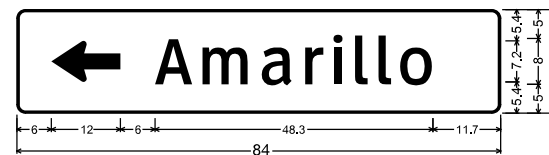
SIGN NO. 74

R3-8SSK;
1.5" Radius, 0.4" Border, 0.4" Indent,
LaneMarker height: 12.0 LaneMarker width: 1.5Black on, White;
C2 h=19.125, s=2;
"ONLY" D 50% spacing;
1.5" Radius, 0.4" Border, 0.4" Indent,
LaneMarker height: 12.0 LaneMarker width: 1.5Black on, White;
C2 h=19.125, s=2;
"ONLY" D 50% spacing;
1.5" Radius, 0.4" Border, 0.4" Indent, Black on, White;
B2R ir=13.25, s=2;



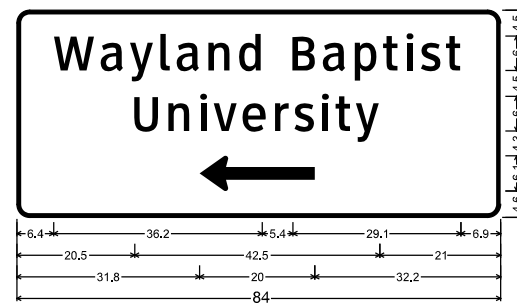
SIGN NO. 83

D1-1;
1.5" Radius, 0.5" Border, White on, Green;
Standard Arrow Custom 12.0" X 7.1" 180°; "Lubbock" ClearviewHwy-3-W;



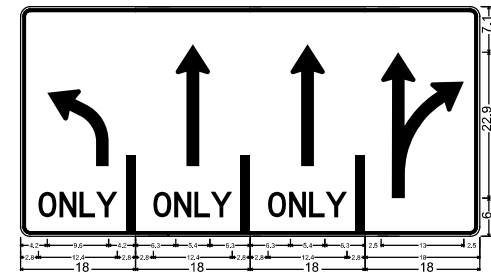
SIGN NO. 84

D1-1;
1.5" Radius, 0.5" Border, White on, Green;
Standard Arrow Custom 12.0" X 7.1" 180°; "Amarillo" ClearviewHwy-3-W;



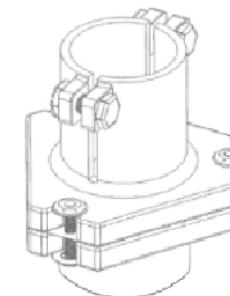
SIGN NO. 87

D3-3bTL;
2.3" Radius, 0.8" Border, White on, Green;
"Wayland Baptist" ClearviewHwy-3-W; "University" ClearviewHwy-3-W;
Standard Arrow Custom 20.0" X 6.1" 180°;

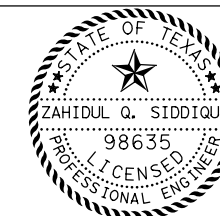


SIGN NO. 94

R3-8LSSK;
1.5" Radius, 0.4" Border, 0.4" Indent,
LaneMarker height: 12.0 LaneMarker width: 1.5Black on, White;
A2L ir=4.5, s=2;
"ONLY" D 50% spacing;
1.5" Radius, 0.4" Border, 0.4" Indent,
LaneMarker height: 12.0 LaneMarker width: 1.5Black on, White;
C2 h=19.125, s=2;
"ONLY" D 50% spacing;
1.5" Radius, 0.4" Border, 0.4" Indent,
LaneMarker height: 12.0 LaneMarker width: 1.5Black on, White;
C2 h=19.125, s=2;
"ONLY" D 50% spacing;
1.5" Radius, 0.4" Border, 0.4" Indent, Black on, White;
B2R ir=13.25, s=2;



TWO BOLT CLAMP
TRIANGULAR SLIP BASE



Zahidul Q. Siddique
7/29/2024

NO.	DATE	REVISION	APPROVED



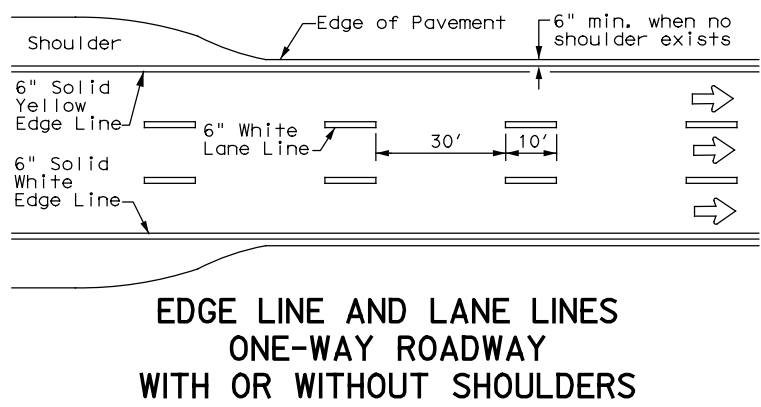
SH 194 FROM FM 3466 TO IH 27

SIGN DETAILS

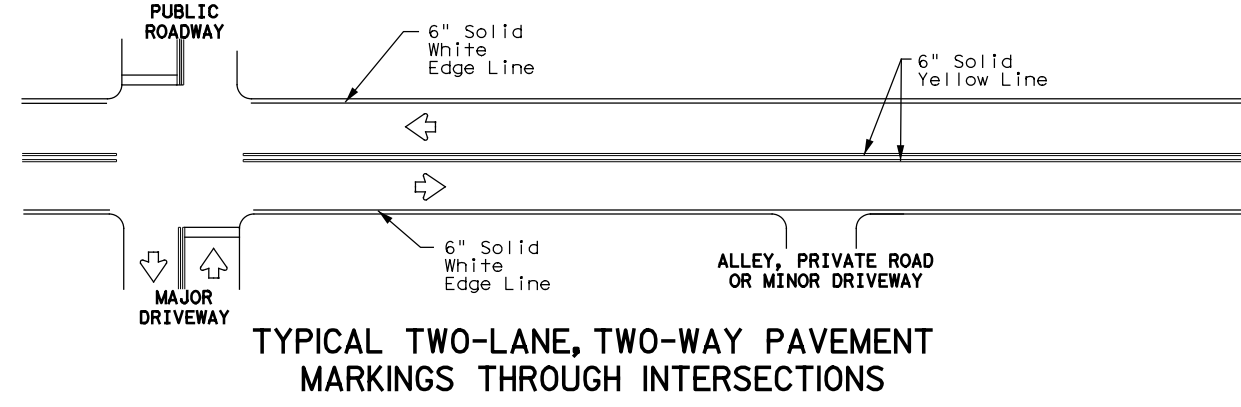
HORZ SCALE: N, T, S.			SHEET 1 OF 1
FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	291
CONTROL	SECTION	JOB	
0439	05	026	

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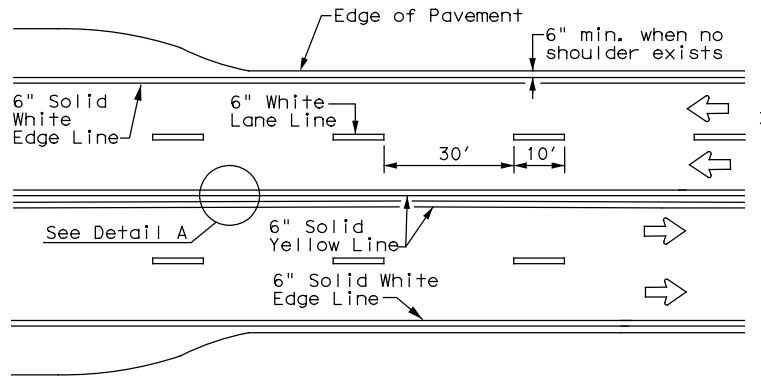
DATE: 2/27/2023 11:53:52 AM
 FILE: 01_pml-22.dgn



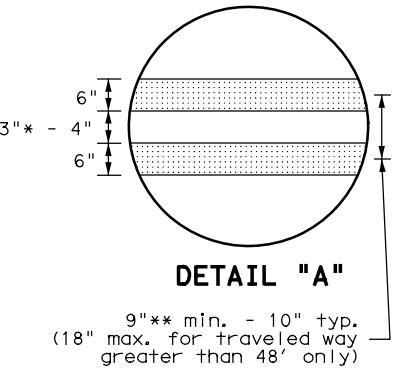
**EDGE LINE AND LANE LINES
ONE-WAY ROADWAY
WITH OR WITHOUT SHOULDERS**



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

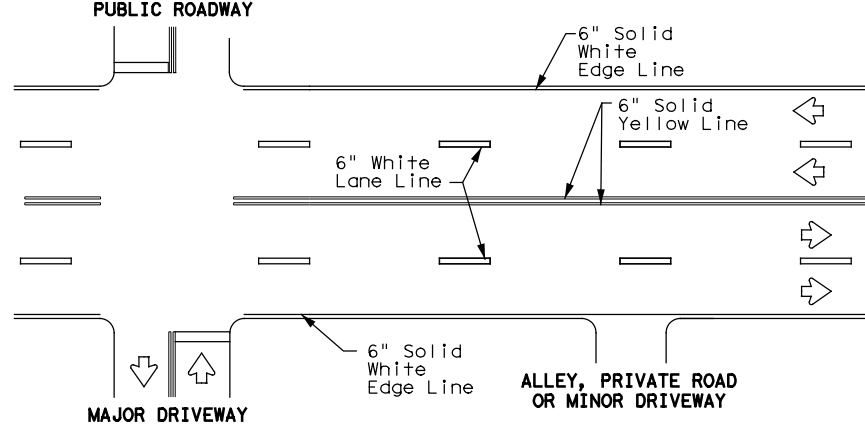


**CENTERLINE AND LANE LINES
FOUR LANE TWO-WAY ROADWAY
WITH OR WITHOUT SHOULDERS**

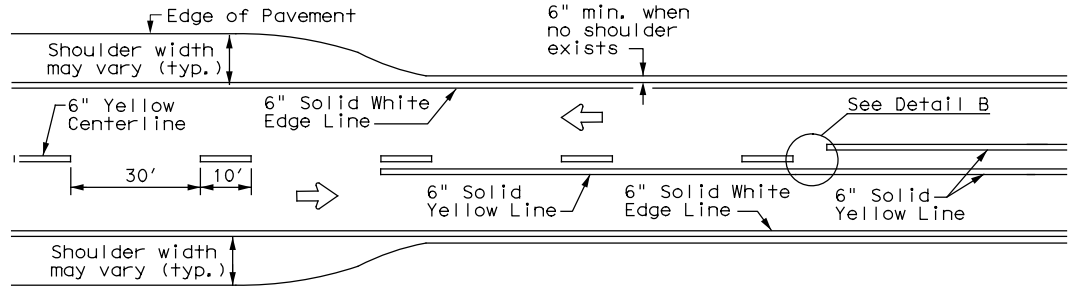


DETAIL "A"

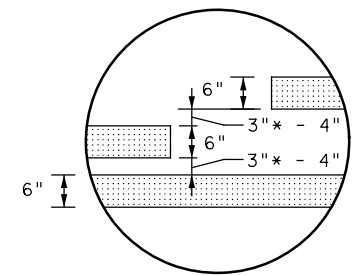
* 2" minimum for restripe projects when approved by the Engineer.
 ** 8" minimum for restripe projects when approved by the Engineer.



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

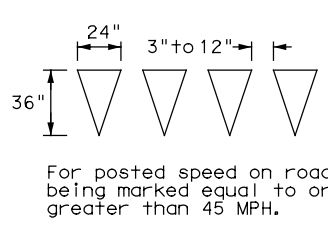


**TWO LANE TWO-WAY ROADWAY
WITH OR WITHOUT SHOULDERS**

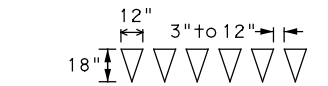


DETAIL "B"

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



YIELD LINES



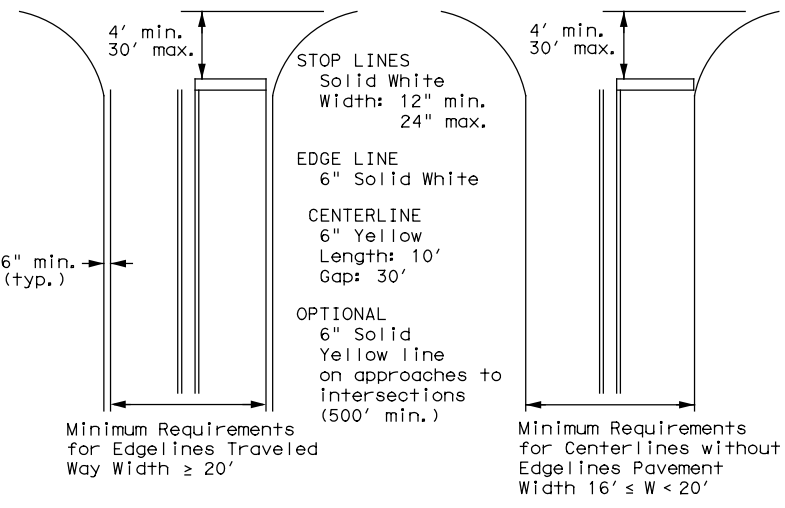
For posted speed on road being marked equal to or less than 40 MPH.

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.

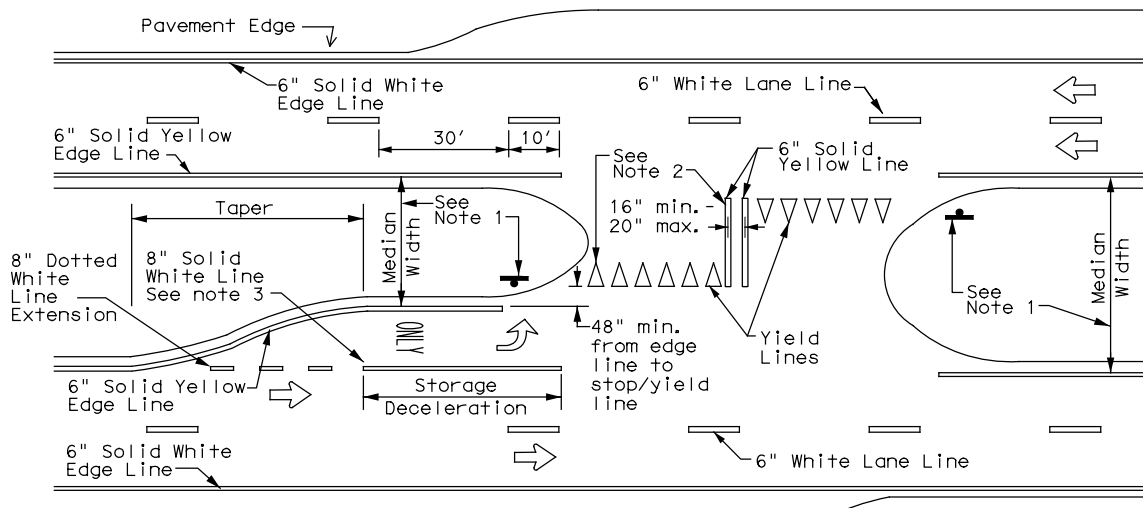


NOTE: Traveled way is exclusive of shoulder widths. Refer to General Note 2 for additional details.

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

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.



FOUR LANE DIVIDED ROADWAY CROSSOVERS



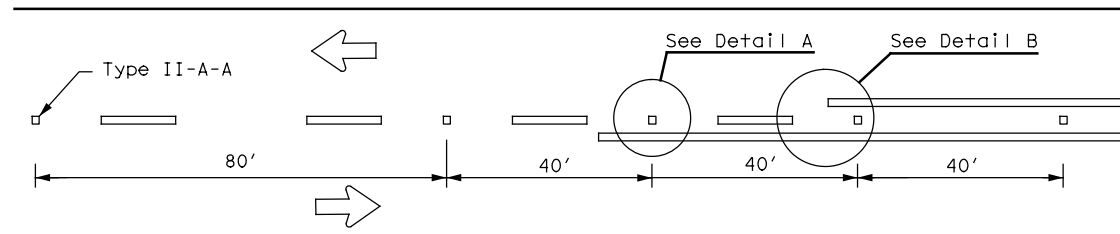
**TYPICAL STANDARD
PAVEMENT MARKINGS**

PM(1)-22

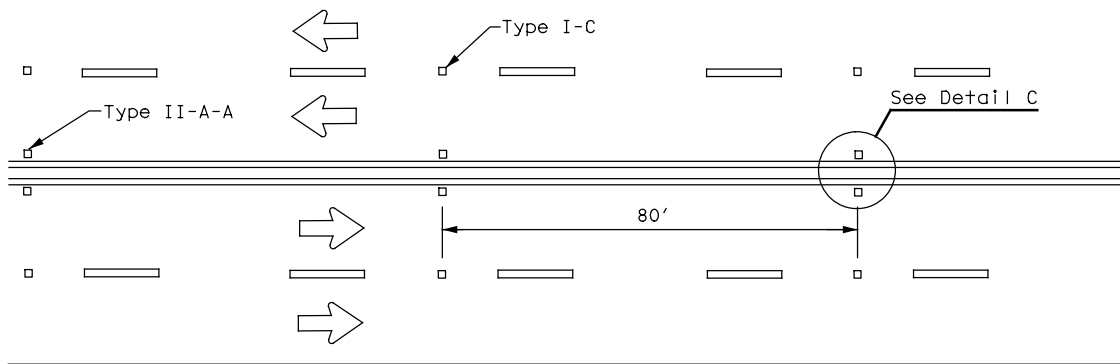
FILE: pml-22.dgn	DN:	CK:	DW:	CK:
© TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0439	05	026	SH 194
11-78 8-00 6-20	DIST	COUNTY	SHEET NO.	
8-95 3-03 12-22	LBB	HALE		292
5-00 2-12				

REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE

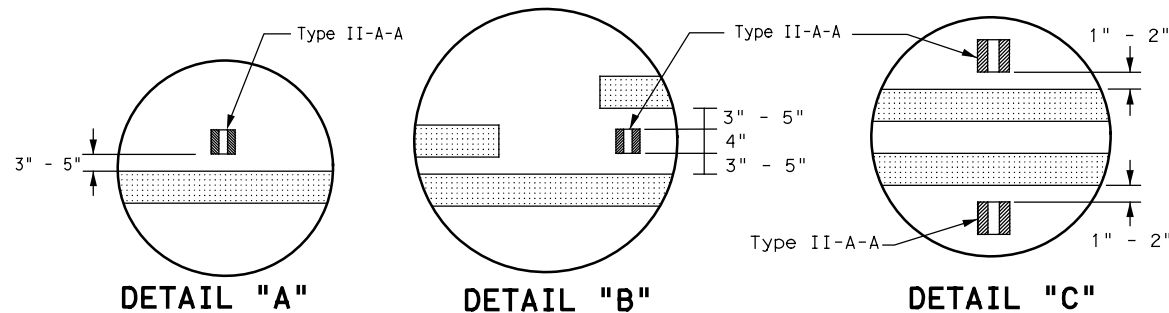
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CENTERLINE FOR ALL TWO LANE TWO-WAY ROADWAYS



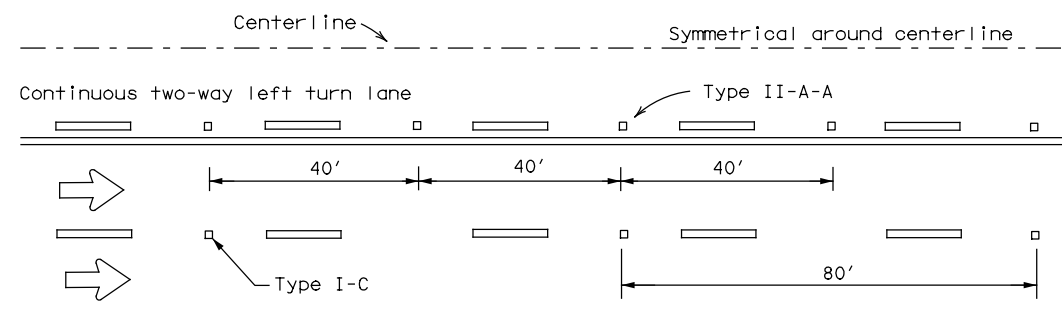
**CENTERLINE & LANE LINES
FOR FOUR LANE TWO-WAY ROADWAYS**



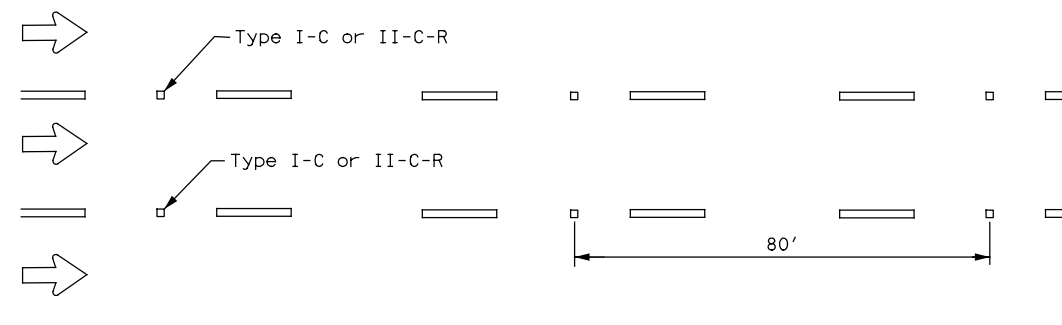
DETAIL "A"

DETAIL "B"

DETAIL "C"



CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE

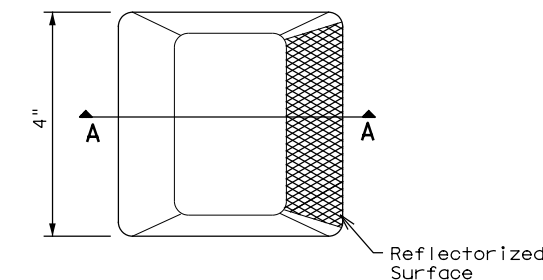


LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)

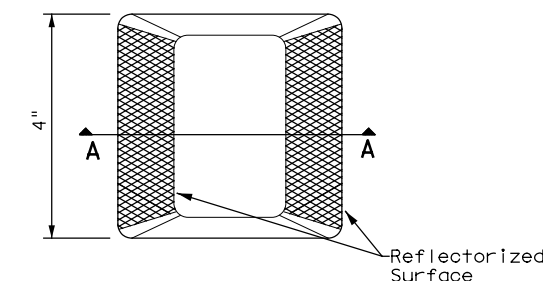
Raised pavement markers Type II-C-R shall have clear face toward normal traffic and red face toward wrong-way traffic.
See Note 3.

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

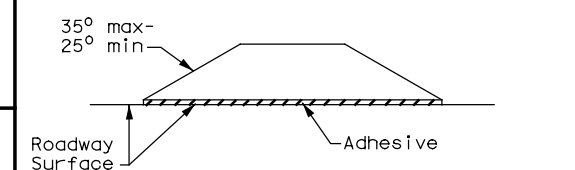
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



Type I (Top View)



Type II (Top View)



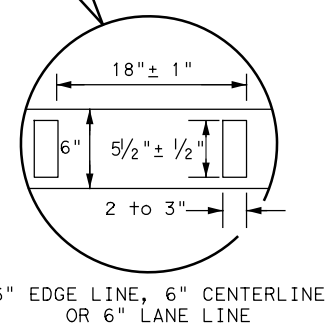
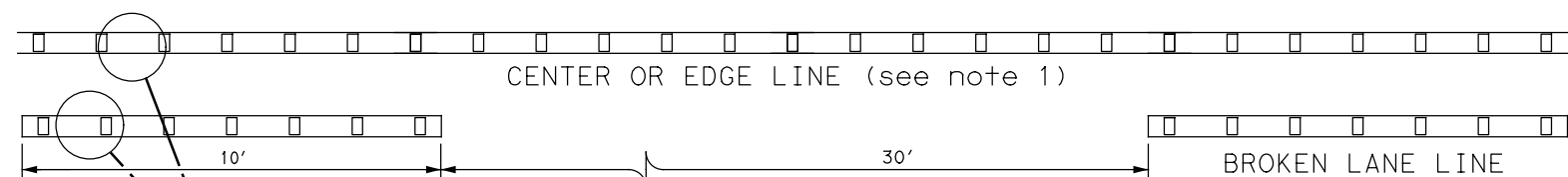
SECTION A

RAISED PAVEMENT MARKERS



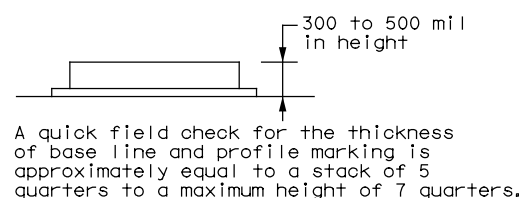
POSITION GUIDANCE USING RAISED MARKERS REFLECTORIZED PROFILE MARKINGS PM(2)-22

FILE: pm2-22.dgn	DN:	CK:	DW:	CK:
© TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
4-77 8-00 6-20	0439	05	026	SH 194
4-92 2-10 12-22	DIST	COUNTY	SHEET NO.	
5-00 2-12	LBB	HALE	293	



**REFLECTORIZED PROFILE
PATTERN DETAIL**

USING REFLECTIVE PROFILE PAVEMENT MARKINGS



A quick field check for the thickness of base line and profile marking is approximately equal to a stack of 5 quarters to a maximum height of 7 quarters.

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.

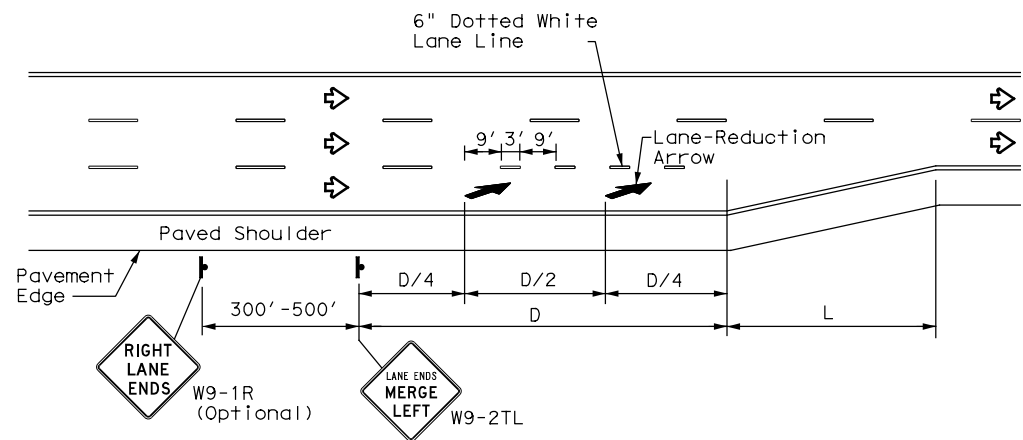
GENERAL NOTES

- 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: 2/27/2023 11:53:58 AM
FILE: 02_pm2-22.dgn

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DATE: 2/27/2023 11:54:03 AM
 FILE: 03_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.

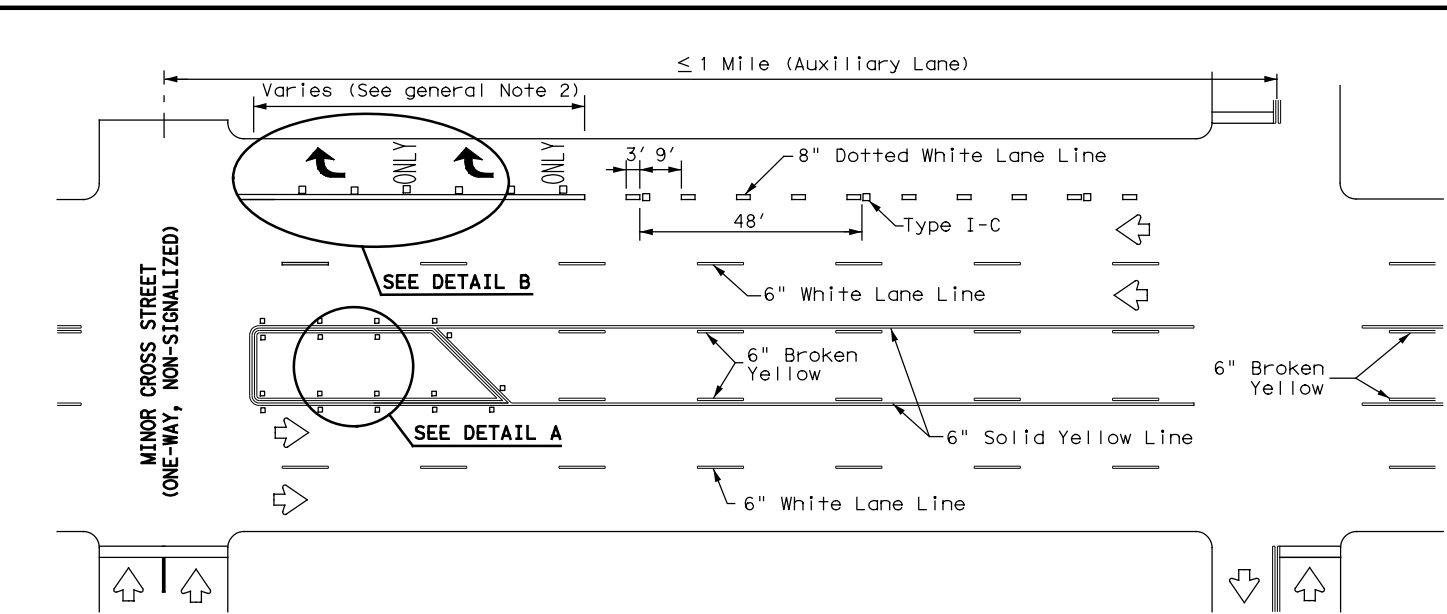
ADVANCED WARNING SIGN DISTANCE (D)		
Posted Speed	D (ft)	L (ft)
30 MPH	460	$L = \frac{WS^2}{60}$
35 MPH	565	
40 MPH	670	L=WS
45 MPH	775	
50 MPH	885	
55 MPH	990	
60 MPH	1,100	
65 MPH	1,200	
70 MPH	1,250	
75 MPH	1,350	

GENERAL NOTES

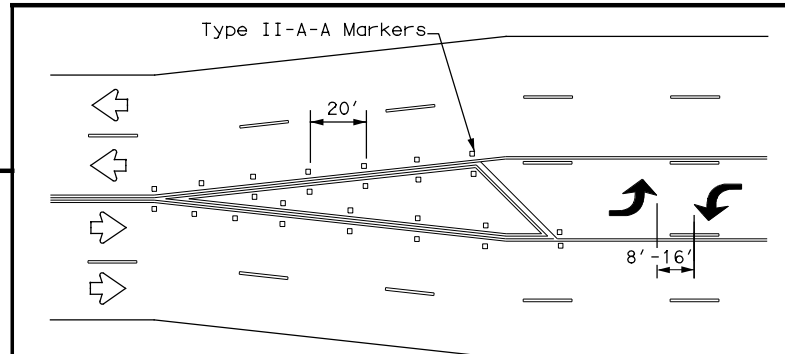
- Lane use word and arrow markings shall be used where through lanes approaching an intersection become mandatory turn lanes. Lane use word and arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings or word and arrow markings may be used in other lanes and turn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

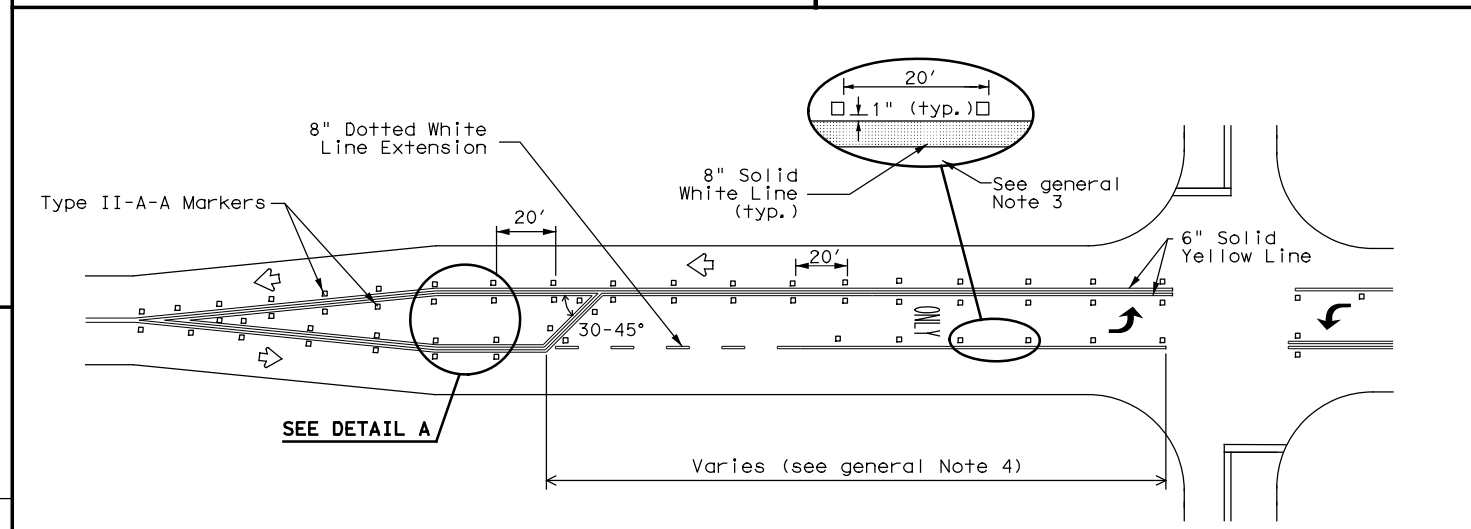
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



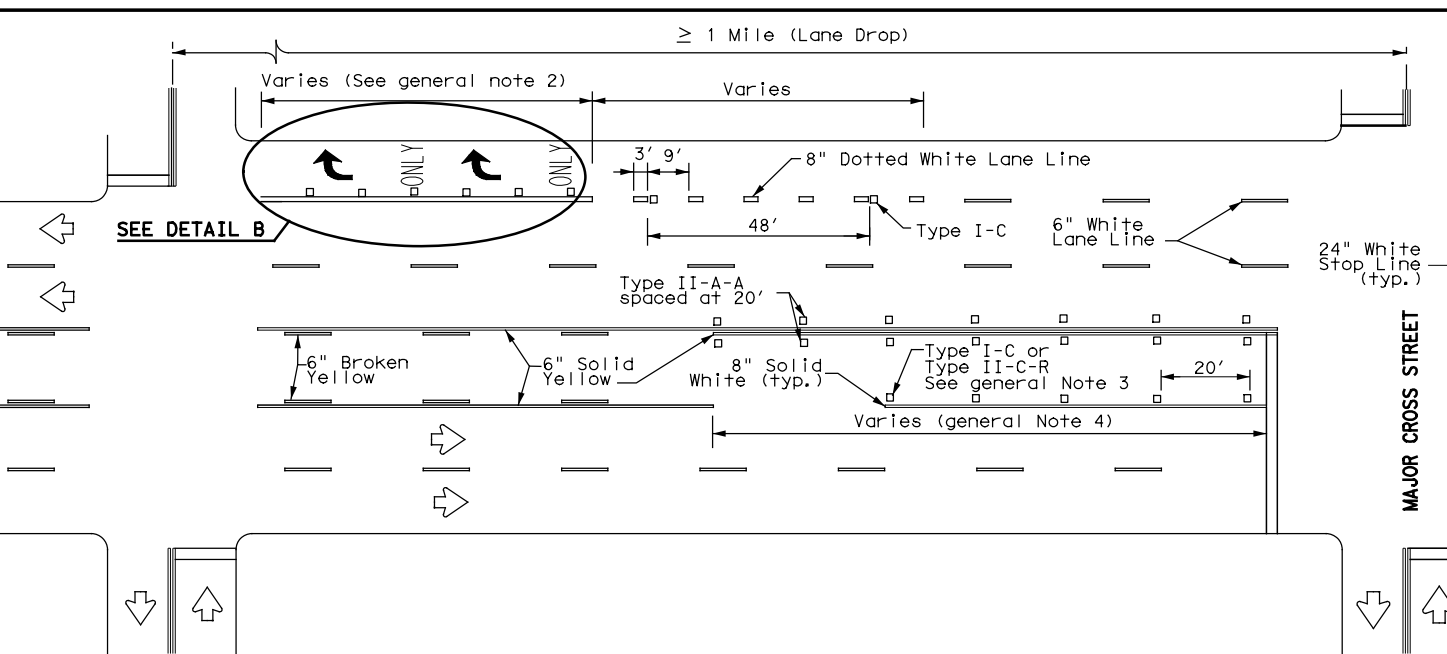
TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE



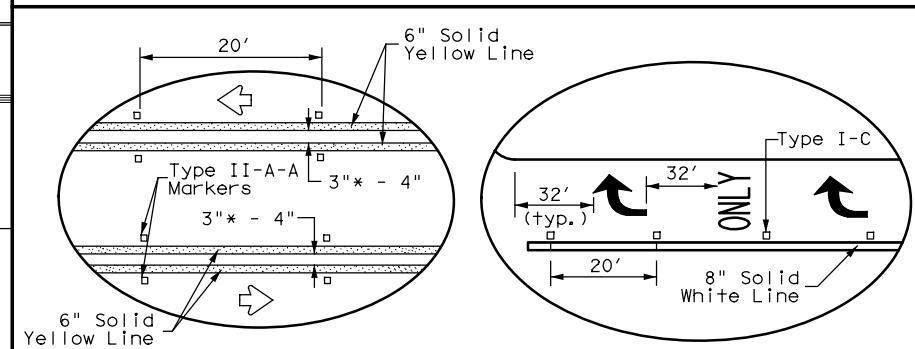
TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY



TYPICAL TWO-LANE ROADWAY INTERSECTION WITH LEFT TURN BAYS



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



DETAIL A

DETAIL B

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

Texas Department of Transportation
 Traffic Safety Division Standard

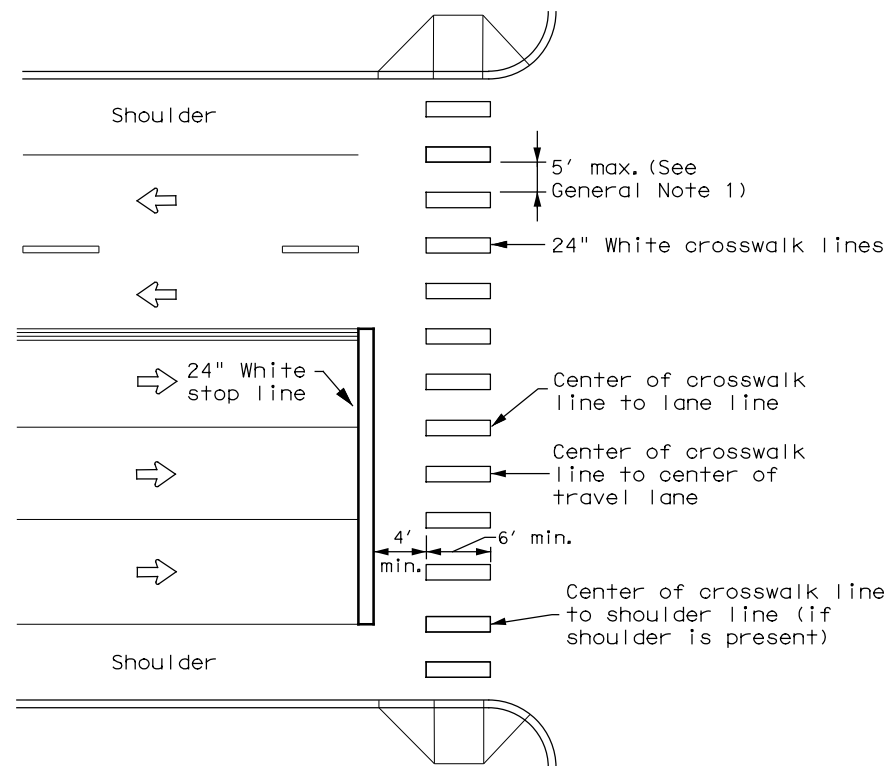
TWO-WAY LEFT TURN LANES, RURAL LEFT TURN BAYS, AND LANE REDUCTION PAVEMENT MARKINGS PM(3)-22

FILE: pm3-22.dgn	DN:	CK:	DW:	CK:
© TxDOT Revision 2022	CONT	SECT	JOB	HIGHWAY
4-98	3-03	6-20	0439	05
5-00	2-10	12-22	026	SH 194
8-00	2-12		LBB	HALE
				SHEET NO. 294

22C

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 FILE: 04_pm4-22a.dgn



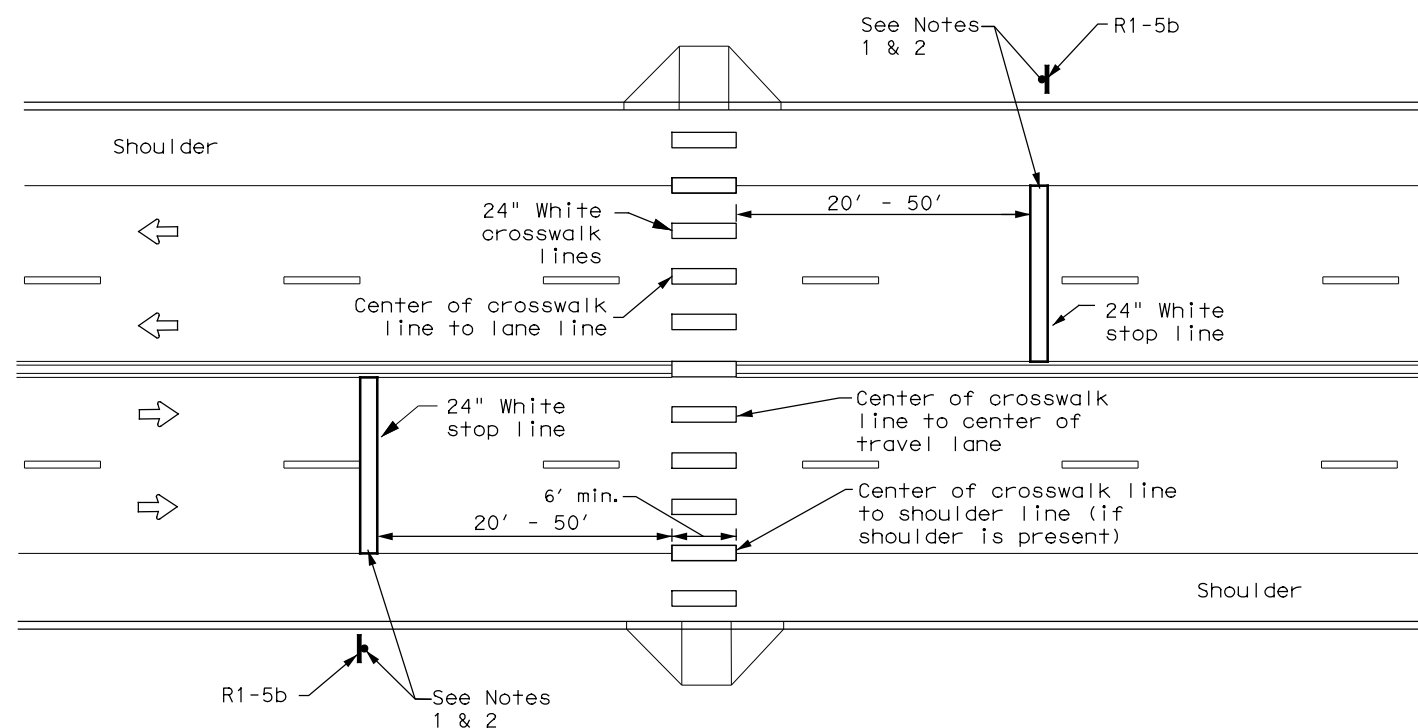
HIGH-VISIBILITY LONGITUDINAL CROSSWALK AT CONTROLLED APPROACH

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.

				Traffic Safety Division Standard	
CROSSWALK PAVEMENT MARKINGS					
PM(4)-22A					
FILE: pm4-22a.dgn	DN:	CK:	DW:	CK:	
© TxDOT December 2022	CONT	SECT	JOB	HIGHWAY	
	0439	05	026	SH 194	
6-20	DIST	COUNTY	SHEET NO.		
6-22	LBB	HALE	295		
12-22					
220					

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SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

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

Post Type

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

Number of Posts (1 or 2)

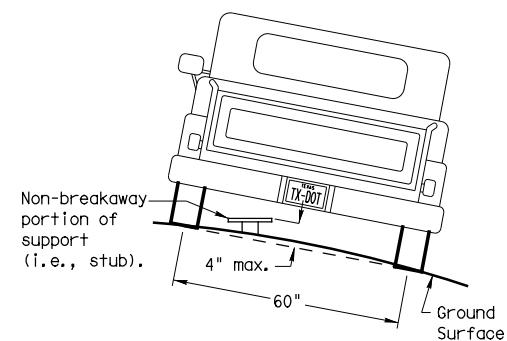
Anchor Type

UA = Universal Anchor - Concreted (see SMD (FRP) and (TWT))
 UB = Universal Anchor - Bolted down (see SMD (FRP) and (TWT))
 WS = Wedge Anchor Steel - (see SMD (TWT))
 WP = Wedge Anchor Plastic (see SMD (TWT))
 SA = Slipbase - Concreted (see SMD (SLIP-1) to (SLIP-3))
 SB = Slipbase - Bolted Down (see SMD (SLIP-1) to (SLIP-3))

Sign Mounting Designation

P = Prefab. "Plain" (see SMD (SLIP-1) to (SLIP-3), (TWT), (FRP))
 T = Prefab. "T" (see SMD (SLIP-1) to (SLIP-3), (TWT))
 U = Prefab. "U" (see SMD (SLIP-1) to (SLIP-3))
 IF REQUIRED
 1EXT or 2EXT = Number of Extensions (see SMD (SLIP-1) to (SLIP-3), (TWT))
 BM = Extruded Wind Beam (see SMD (SLIP-1) to (SLIP-3))
 WC = 1.12 #/ft Wing Channel (see SMD (SLIP-1) to (SLIP-3))
 EXAL = Extruded Aluminum Sign Panels (see SMD (SLIP-3))

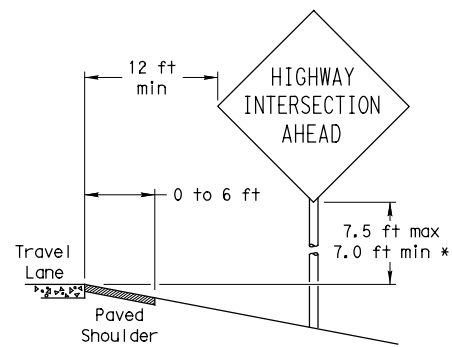
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



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

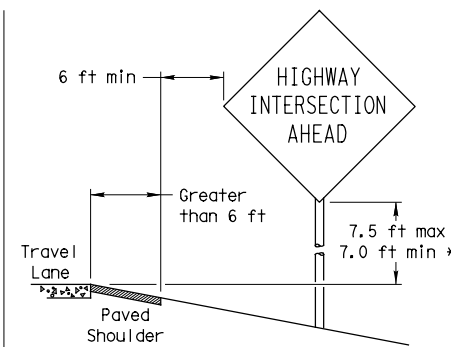
SIGN LOCATION

PAVED SHOULDERS



LESS THAN 6 FT. WIDE

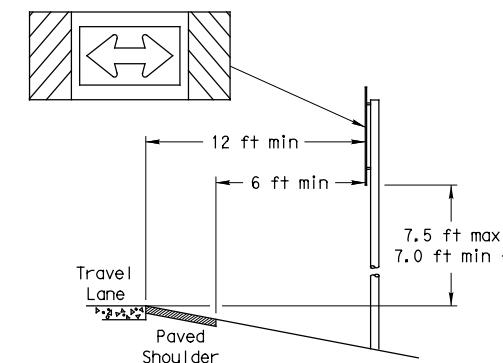
When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.



GREATER THAN 6 FT. WIDE

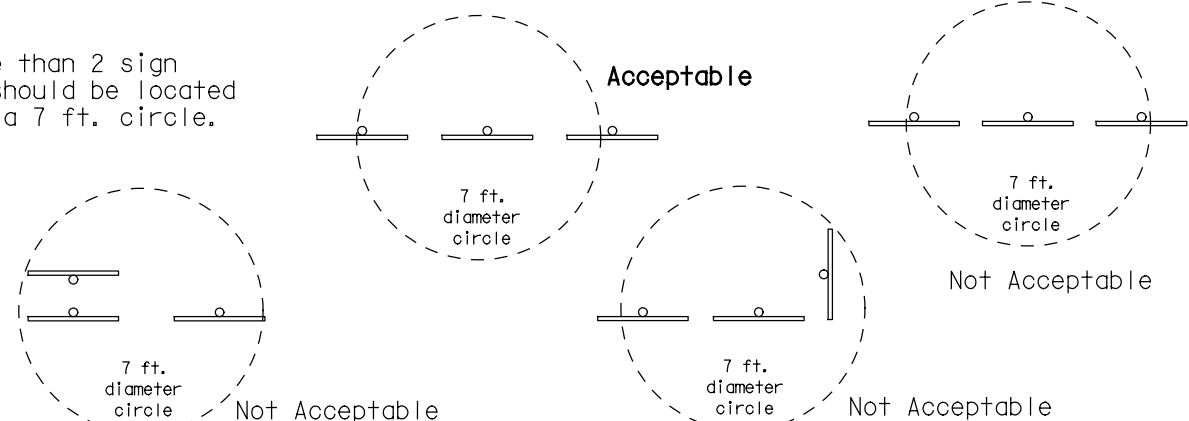
When the shoulder is greater than 6 ft in width, the sign must be placed at least 6 ft. from the edge of the shoulder.

T-INTERSECTION

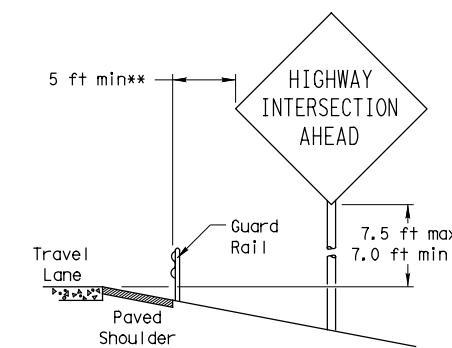


When this sign is needed at the end of a two-lane, two way roadway, the right edge of the sign should be in line with the centerline of the roadway. Place as close to ROW as practical.

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

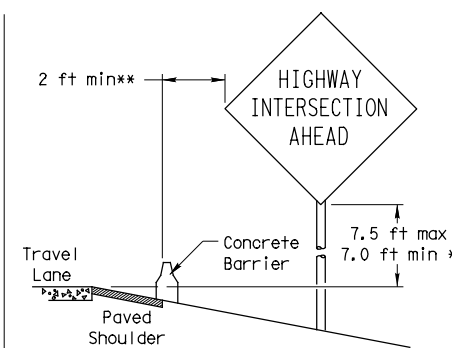


BEHIND BARRIER

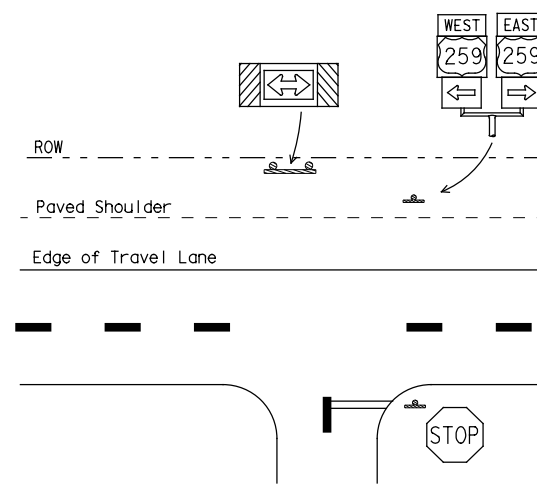


BEHIND GUARDRAIL

**Sign clearance based on distance required for proper guard rail or concrete barrier performance.



BEHIND CONCRETE BARRIER



* Signs shall be mounted using the following condition that results in the greatest sign elevation:

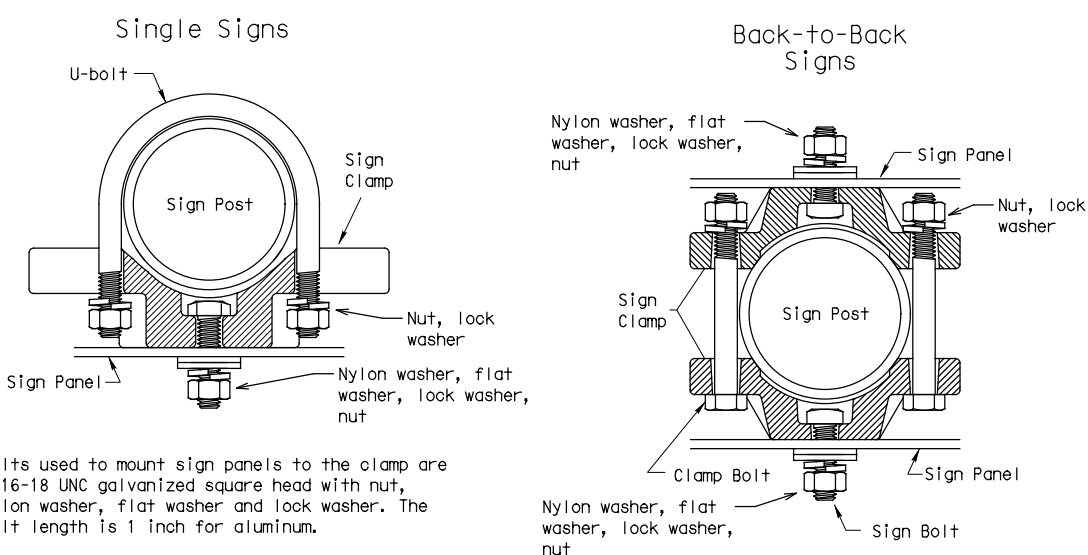
- (1) a minimum of 7 to a maximum of 7.5 feet above the edge of the travel lane or
- (2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

The maximum values may be increased when directed by the Engineer.

See the Traffic Operations Division website for detailed drawings of sign clamps, Triangular Slipbase System components and Wedge Anchor System components.

The website address is:
<http://www.txdot.gov/publications/traffic.htm>

TYPICAL SIGN ATTACHMENT DETAIL



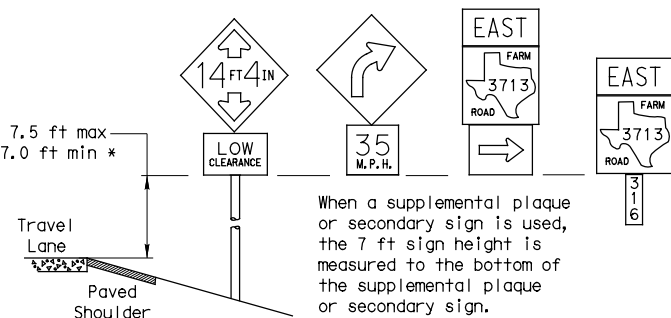
Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

When two sign clamps are used to mount signs back-to-back, use a 5/16-18 UNC galvanized hex head per ASTM A307 with nut and helical-spring lock washer. The approximate bolt lengths for various post sizes and sign clamp types are given in the table at right. The bolt length may need to be adjusted depending upon field conditions.

Sign clamps may be either the specific size clamp or the universal clamp.

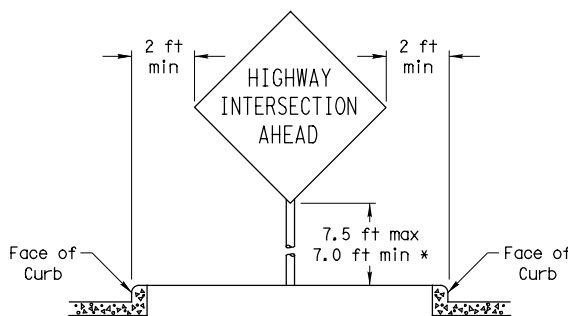
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES

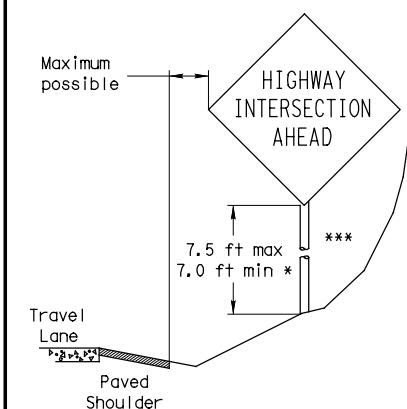


When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

CURB & GUTTER OR RAISED ISLAND



RESTRICTED RIGHT-OF-WAY (When 6 ft min. is not possible.)



Right-of-way restrictions may be created by rocks, water, vegetation, forest, buildings, a narrow island, or other factors.

In situations where a lateral restriction prevents the minimum horizontal clearance from the edge of the travel lane, signs should be placed as far from the travel lane as practical.

*** Post may be shorter if protected by guardrail or if Engineer determines the post could not be hit due to extreme slope.



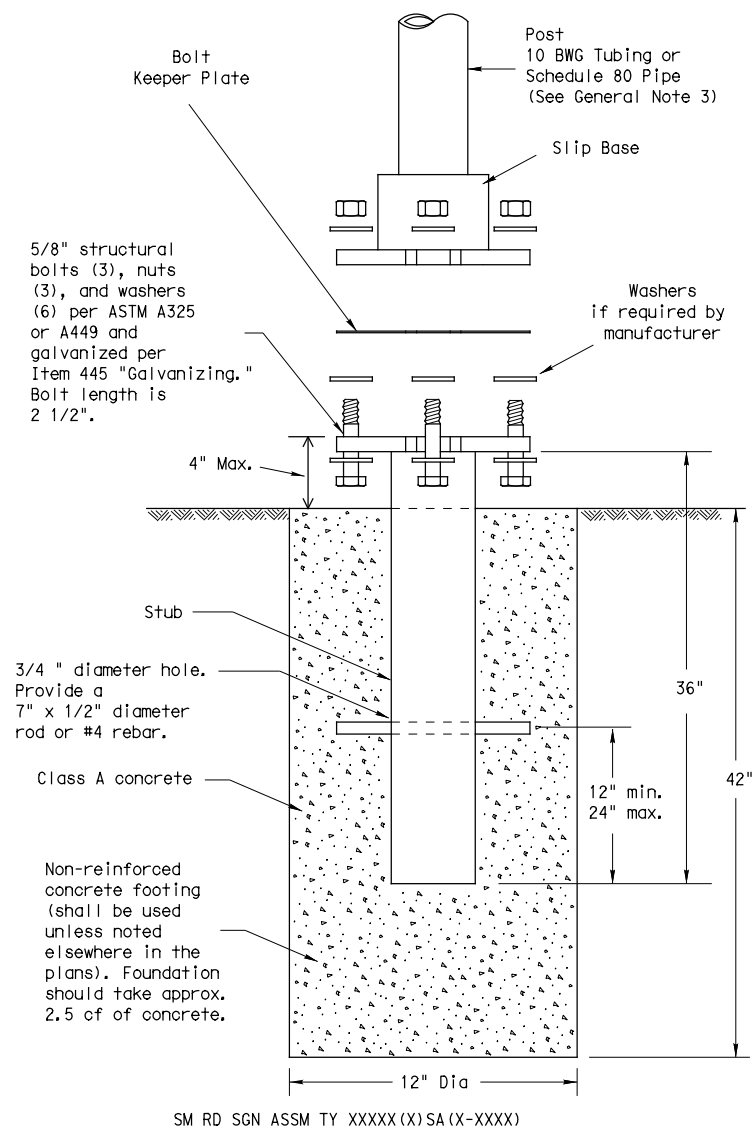
SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

SMD (GEN) -08

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		DIST	COUNTY		SHEET NO.
		LBB	HALE		296

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TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



NOTE

There are various devices approved for the Triangular Slipbase System. Please reference the Material Producer List for approved slip base systems. http://www.txdot.gov/business/producer_list.htm
 The devices shall be installed per manufacturers' recommendations. Installation procedures shall be provided to the Engineer by Contractor.

GENERAL NOTES:

- Slip base shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to approval of the TxDOT Traffic Standards Engineer.
- Material used as post with this system shall conform to the following specifications:
 - 10 BWG Tubing (2.875" outside diameter)
 - 0.134" nominal wall thickness
 - Seamless or electric-resistance welded steel tubing or pipe
 - Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
 - Other steels may be used if they meet the following:
 - 55,000 PSI minimum yield strength
 - 70,000 PSI minimum tensile strength
 - 20% minimum elongation in 2"
 - Wall thickness (uncoated) shall be within the range of 0.122" to 0.138"
 - Outside diameter (uncoated) shall be within the range of 2.867" to 2.883"
 - Galvanization per ASTM A123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
 - Schedule 80 Pipe (2.875" outside diameter)
 - 0.276" nominal wall thickness
 - Steel tubing per ASTM A500 Gr C
 - Other seamless or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the following:
 - 46,000 PSI minimum yield strength
 - 62,000 PSI minimum tensile strength
 - 21% minimum elongation in 2"
 - Wall thickness (uncoated) shall be within the range of 0.248" to 0.304"
 - Outside diameter (uncoated) shall be within the range of 2.855" to 2.895"
 - Galvanization per ASTM A123
- See the Traffic Operations Division website for detailed drawings of sign clamps and Texas Universal Triangular Slipbase System components. The website address is: <http://www.txdot.gov/publications/traffic.htm>
- Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.

ASSEMBLY PROCEDURE

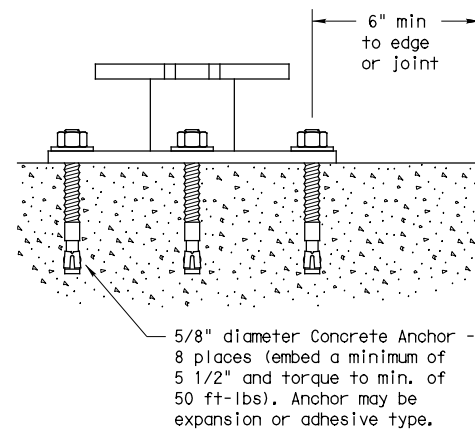
Foundation

- Prepare 12-inch diameter by 42-inch deep hole. If solid rock is encountered, the depth of the foundation may be reduced such that it is embedded a minimum of 18 inches into the solid rock.
- The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor-driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
- Push the pipe end of the slip base stub into the center of the concrete. Rotate the stub back and forth while pushing it down into the concrete to assure good contact between the concrete and stub. Continue to work the stub into the concrete until it is between 2 to 4 inches above the ground.
- Plumb the stub. Allow a minimum of 4 days to set, unless otherwise directed by the Engineer.
- The triangular slipbase system is multidirectional and is designed to release when struck from any direction.

Support

- Cut support so that the bottom of the sign will be 7 to 7.5 feet above the edge of the travelway (i.e., edge of the closest lane) when slip plate is below the edge of pavement or 7 to 7.5 feet above slip plate when the slip plate is above the edge of the travelway. The cut shall be plumb and straight.
- Attach sign to support using connections shown. When multiple signs are installed on the same support, ensure the minimum clearance between each sign is maintained. See SMD(SLIP-2) for clearances based on sign types.

CONCRETE ANCHOR



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

Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. Heavy hex nut per ASTM A563, and hardened washer per ASTM F436. The stud bolt shall have a minimum yield and ultimate tensile strength of 50 and 75 KSI, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxyes and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations. Top of bolt shall extend at least flush with top of the nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 5 1/2" minimum embedment, shall have a minimum allowable tension and shear of 3900 and 3100 psi, respectively.

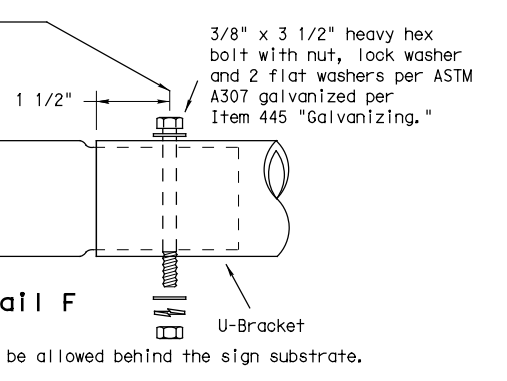
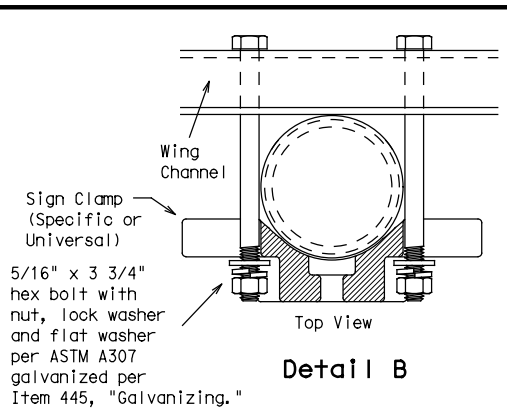
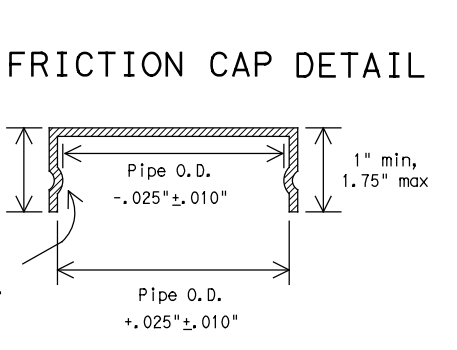
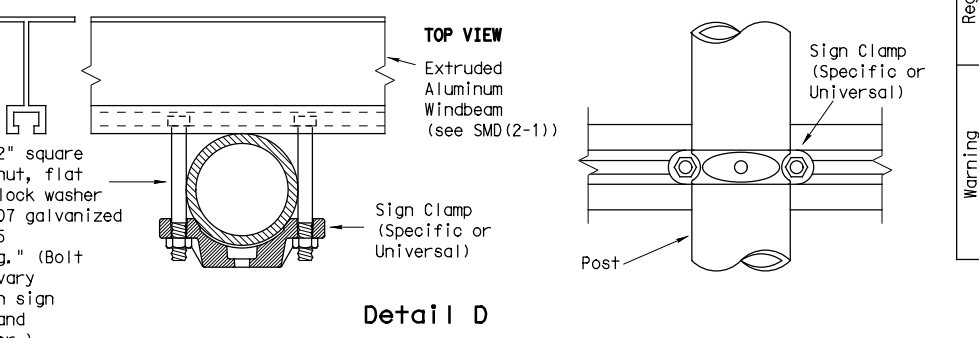
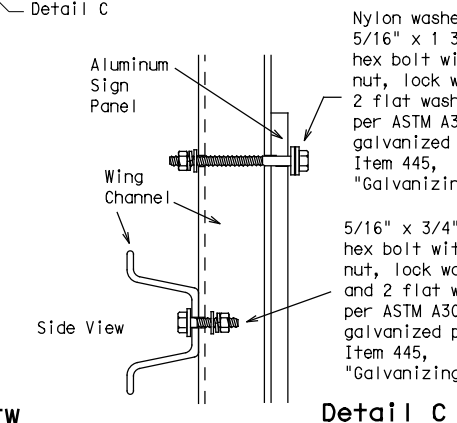
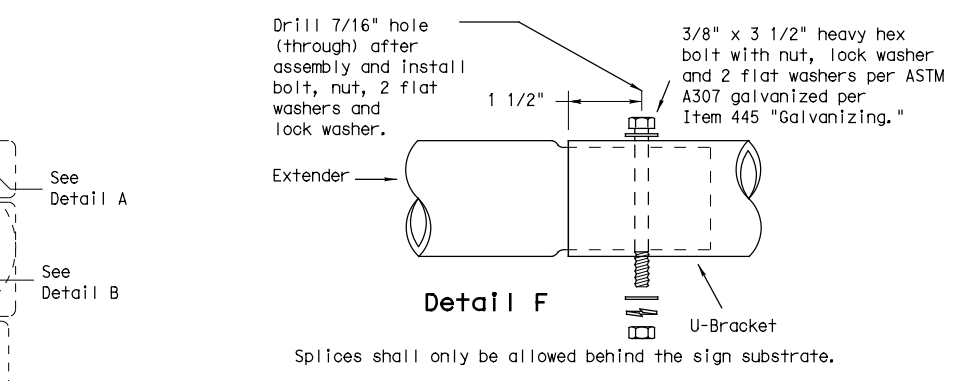
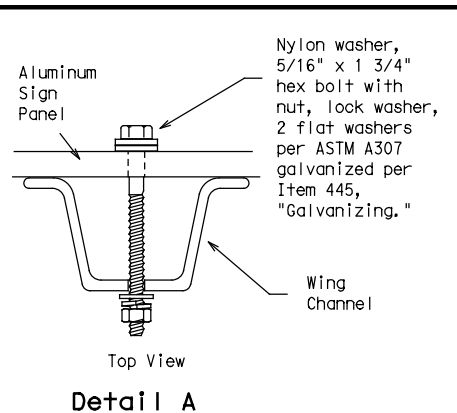
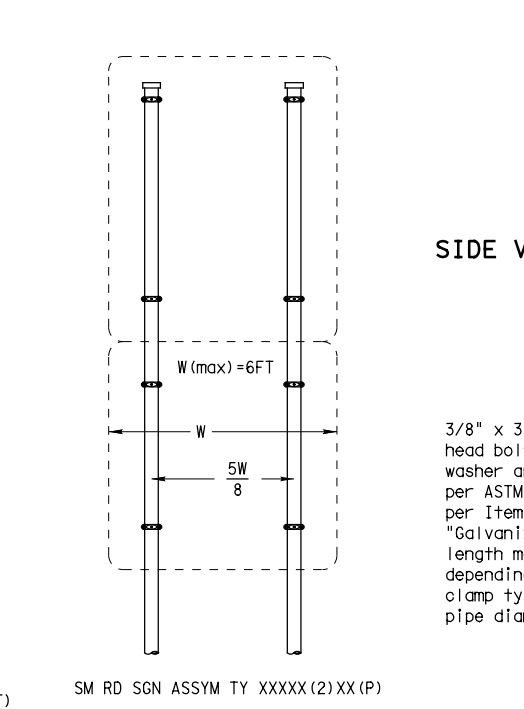
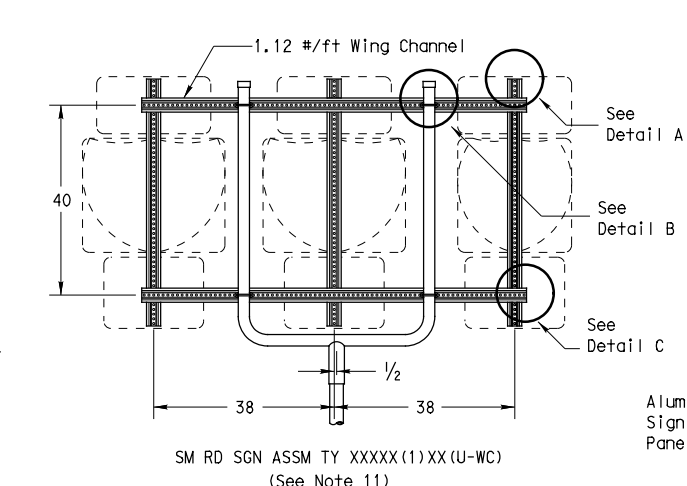
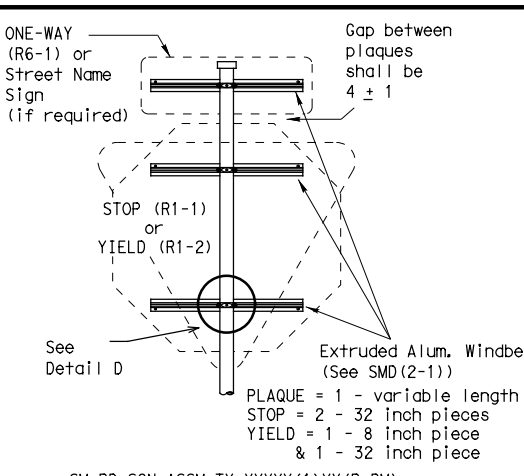
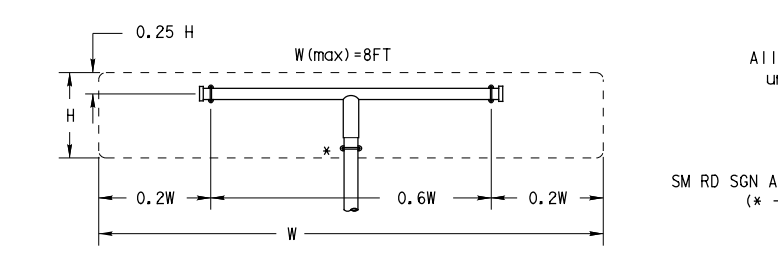
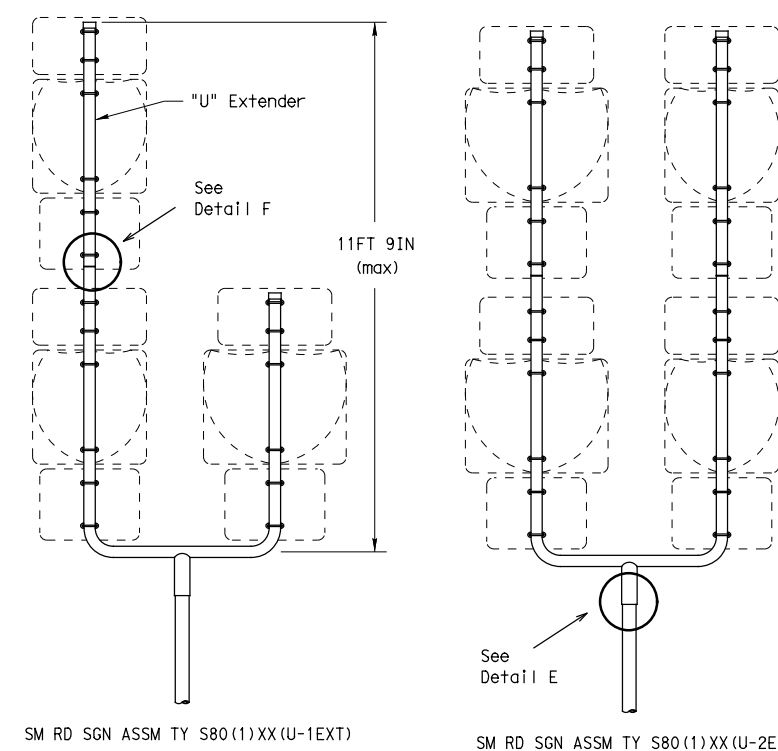
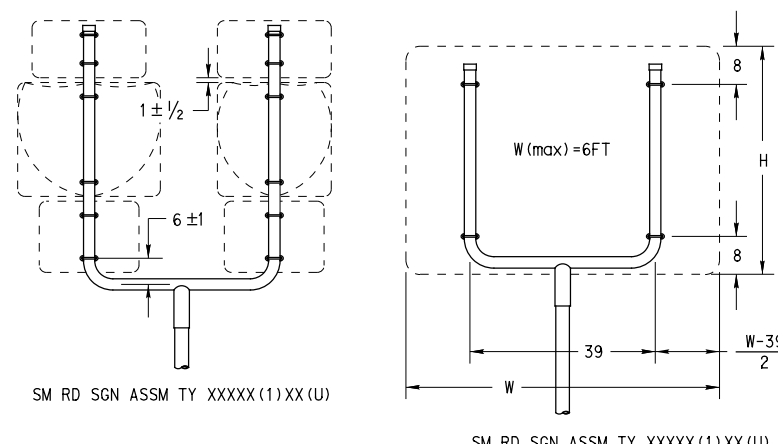
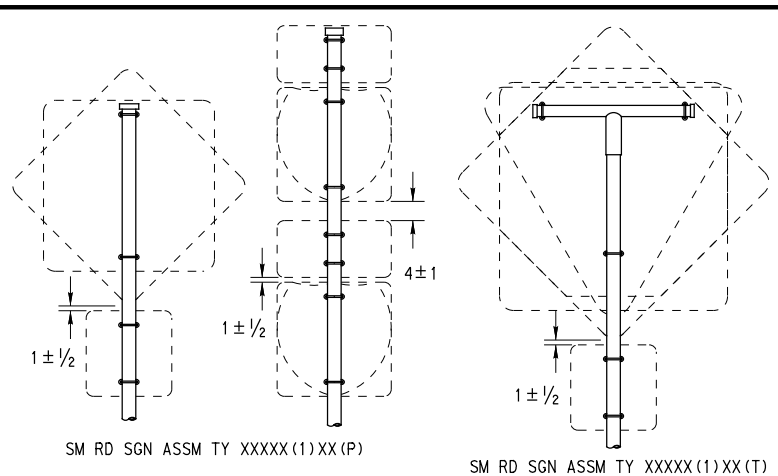
Texas Department of Transportation
 Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM SMD(SLIP-1)-08

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- GENERAL NOTES:**
1.

SIGN SUPPORT	# OF POSTS	MAX. SIGN AREA
10 BWG	1	16 SF
10 BWG	2	32 SF
Sch 80	1	32 SF
Sch 80	2	64 SF
 2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
 3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
 4. Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
 5. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
 6. For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
 7. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
 8. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
 9. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
 10. Additional route markers may be added vertically, provided the total sign area does not exceed the maximum allowable amount per Note 1.
 11. Additional sign clamp required on the "T-bracket" post for 24 inch height signs. Place the clamp 3 inches above bottom of sign when possible.
 12. Post open ends shall be fitted with Friction Caps.
 13. Sign blanks shall be the sizes and shapes shown on the plans.

REQUIRED SUPPORT		
SIGN DESCRIPTION	SUPPORT	
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
Warning	48x60-inch signs	TY S80(1)XX(T)
	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)	

Friction caps may be manufactured from hot rolled or cold rolled steel sheets. The minimum sheet metal thickness shall be 24 gauge for all cap sizes. The rim edges shall be reasonably straight and smooth. Caps shall be sized and formed in such a manner as to produce a drive-on friction fit and have no tendency to rock when seated on the pipe. The depth shall be sufficient to give positive protection against entrance of rainwater. They shall be free of sharp creases or indentations and show no evidence of metal fracture. Caps shall have an electrodeposited coating of zinc in accordance with the requirements of ASTM B633 Class FE/ZN 8.

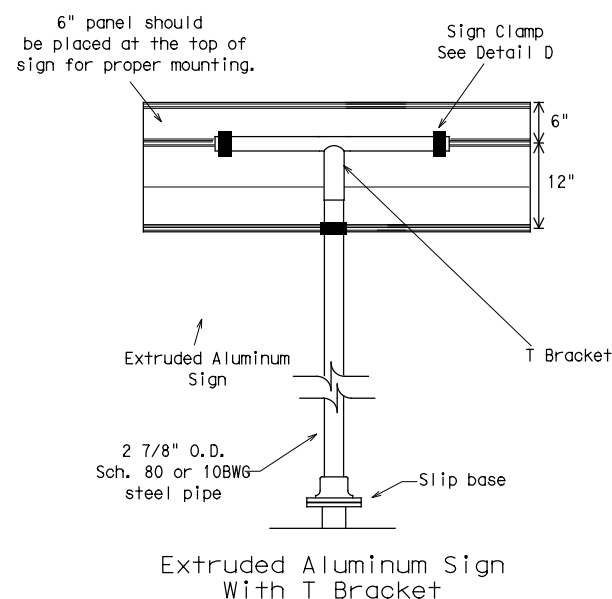
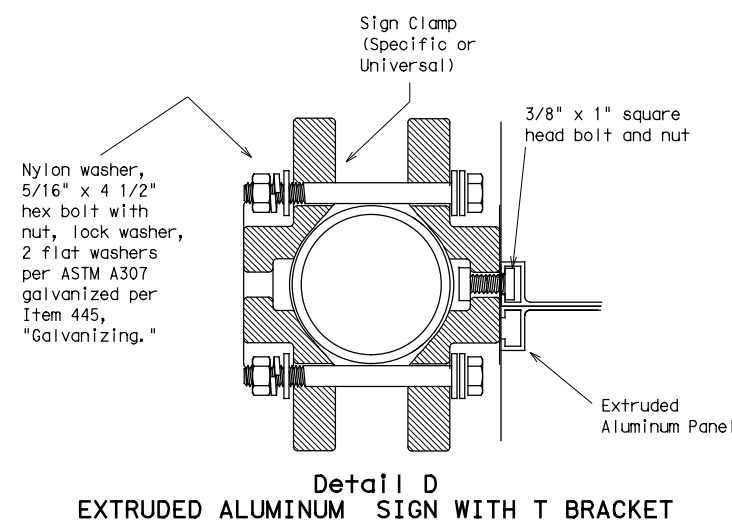
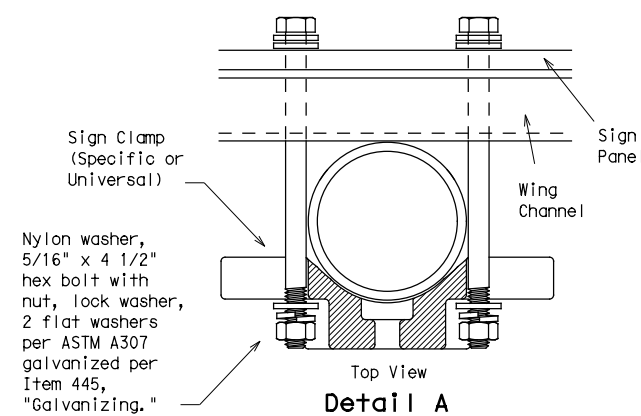
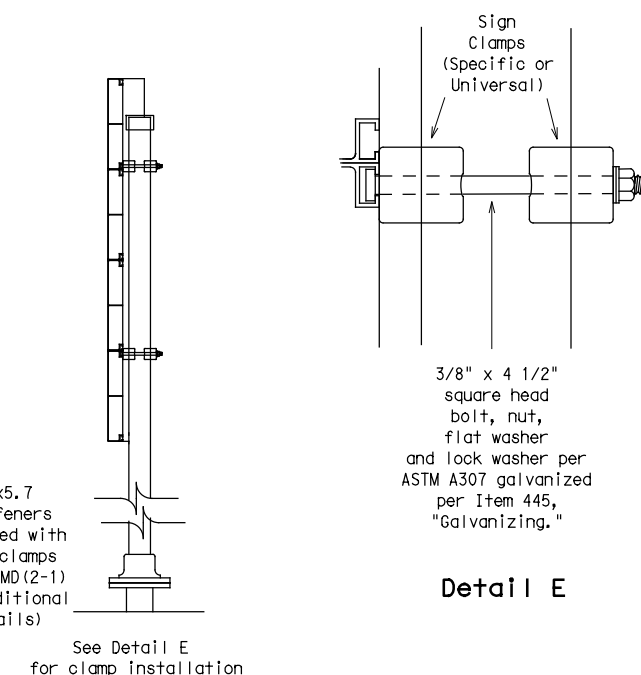
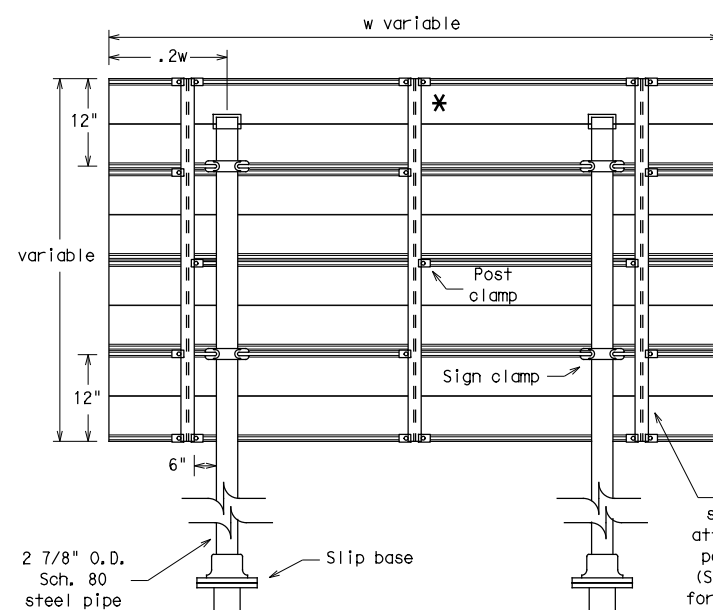
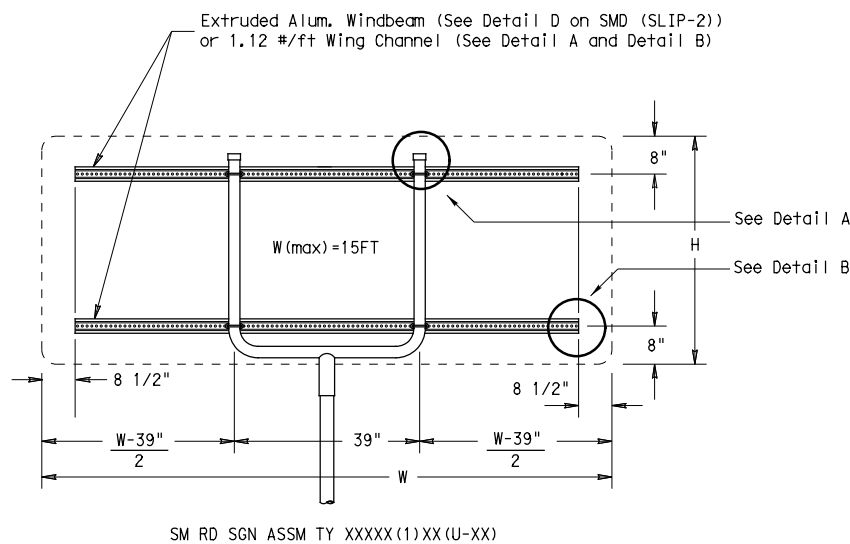
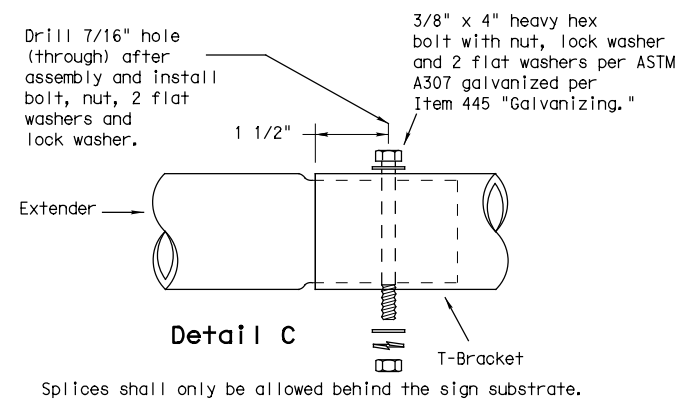
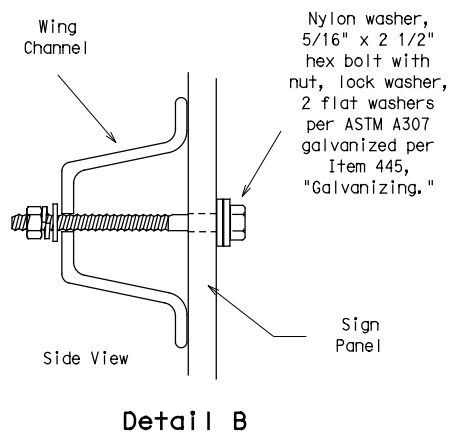
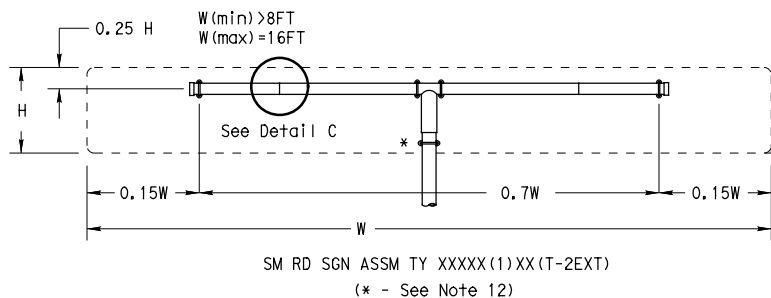
Texas Department of Transportation
Traffic Operations Division

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

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Use Extruded Alum. Windbeam as stiffeners See SMD (2-1) for additional details
See Detail E for clamp installation

GENERAL NOTES:

- | SIGN SUPPORT | # OF POSTS | MAX. SIGN AREA |
|--------------|------------|----------------|
| 10 BWG | 1 | 16 SF |
| 10 BWG | 2 | 32 SF |
| Sch 80 | 1 | 32 SF |
| Sch 80 | 2 | 64 SF |
- The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
- Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
- Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
- Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
- For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
- When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
- Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
- Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
- Sign blanks shall be the sizes and shapes shown on the plans.
- Additional sign clamp required on the "T-bracket" post for 24 inch high signs. Place the clamp 3 inches above bottom of sign when possible.
- Post open ends shall be fitted with Friction Caps.

REQUIRED SUPPORT		
	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
Warning	48x60-inch signs	TY S80(1)XX(T)
	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

Texas Department of Transportation
Traffic Operations Division

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

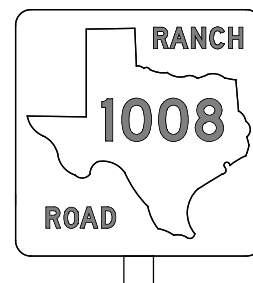
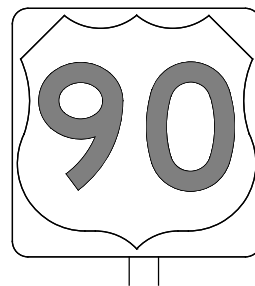
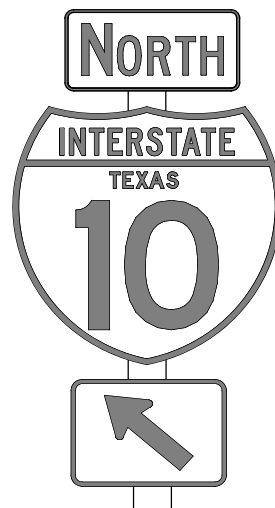
© TxDOT July 2002	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
9-08	REVISIONS	CONT	SECT	JOB
		0439	05	026
		DIST	COUNTY	SHEET NO.
		LBB	HALE	299

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 FILE: 09_tsr3-13.dgn

REQUIREMENTS FOR INDEPENDENT MOUNTED ROUTE SIGNS

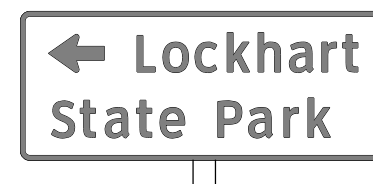
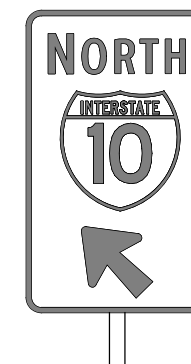
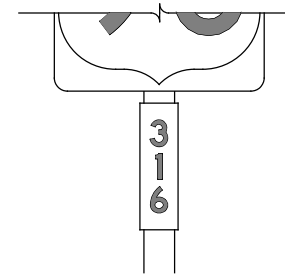
SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	WHITE	TYPE A SHEETING
BACKGROUND	ALL OTHERS	TYPE B OR C SHEETING
LEGEND & BORDERS	WHITE	TYPE A SHEETING
LEGEND & BORDERS	BLACK	ACRYLIC NON-REFLECTIVE FILM
LEGEND & BORDERS	ALL OTHERS	TYPE B or C SHEETING



TYPICAL EXAMPLES

REQUIREMENTS FOR BLUE, BROWN & GREEN D AND I SERIES GUIDE SIGNS

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	ALL	TYPE B OR C SHEETING
LEGEND & BORDERS	WHITE	TYPE D SHEETING
LEGEND, SYMBOLS & BORDERS	ALL OTHERS	TYPE B OR C SHEETING



TYPICAL EXAMPLES

GENERAL NOTES

- Signs to be furnished shall be as detailed elsewhere in the plans and/or as shown on sign tabulation sheet. Standard sign designs and arrow dimensions can be found in the "Standard Highway Sign Designs for Texas" (SHSD).
- White legend shall use the Clearview Alphabet. The following Clearview fonts shall be used to replace the existing white Federal Highway Administration (FHWA) Standard Highway Alphabets, when not specified in the SHSD, or in the plans.

B	CV-1W
C	CV-2W
D	CV-3W
E	CV-4W
Emod	CV-5WR
F	CV-6W

- Route sign legend (ie. IH, US, SH and FM shields) shall use the Federal Highway Administration (FHWA) Standard Highway Alphabets B, C, D, E, Emod or F).
- Lateral spacing between letters and numerals shall conform with the SHSD, and any approved changes thereto. Lateral spacing of legend shall provide a balanced appearance when spacing is not shown.
- Independent mounted route sign with white or colored legend and borders shall be applied by screening process with transparent color ink, transparent colored overlay film to white background sheeting or cut-out white sheeting to colored background sheeting, or combination thereof. White legend, symbols and borders on all other signs shall be cut-out white sheeting applied to colored background sheeting.
- Information regarding borders and radii for signs is found in the "Standard Highway Sign Designs for Texas". Dimensions shown and described for borders and corner radii on parent sign are nominal. Borders may vary in width as much as 1/2 inch. Corner radii above 3 inches may vary in width as much as 1 inch. Borders and corner radii within a parent sign must be of matching widths. The sign area outside the corner radius should be trimmed or rounded.
- Sign substrate shall be any material that meets the Departmental Material Specification requirements of DMS-7110 or approved alternative.
- Mounting details of roadside signs are shown in the "SMD series" Standard Plan Sheets.

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

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

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

<http://www.txdot.gov/>



TYPICAL SIGN REQUIREMENTS

TSR(3)-13

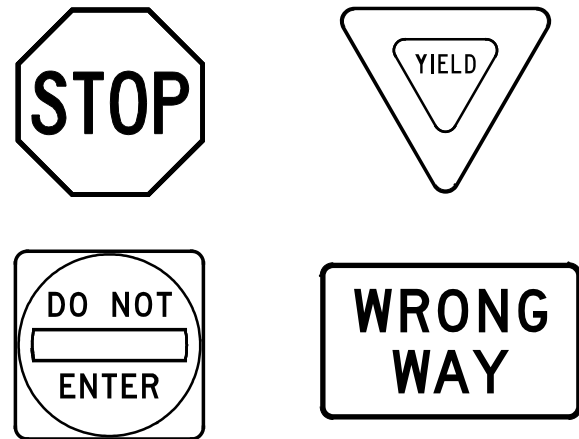
FILE:	tsr3-13.dgn	DN:	TxDOT	CK:	TxDOT	DW:	TxDOT	CK:	TxDOT
©TxDOT	October 2003	CONT	SECT	JOB	HIGHWAY				
REVISIONS		0439	05	026	SH 194				
12-03	7-13	DIST	COUNTY	SHEET NO.					
9-08		LBB	HALE	300					

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 FILE: 10_tsr-4-13.dgn

REQUIREMENTS FOR RED BACKGROUND REGULATORY SIGNS

(STOP, YIELD, DO NOT ENTER AND WRONG WAY SIGNS)



REQUIREMENTS FOR FOUR SPECIFIC SIGNS ONLY

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	RED	TYPE B OR C SHEETING
BACKGROUND	WHITE	TYPE B OR C SHEETING
LEGEND & BORDERS	WHITE	TYPE B OR C SHEETING
LEGEND	RED	TYPE B OR C SHEETING

REQUIREMENTS FOR WHITE BACKGROUND REGULATORY SIGNS

(EXCLUDING STOP, YIELD, DO NOT ENTER AND WRONG WAY SIGNS)



TYPICAL EXAMPLES

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	WHITE	TYPE A SHEETING
BACKGROUND	ALL OTHERS	TYPE B OR C SHEETING
LEGEND, BORDERS AND SYMBOLS	BLACK	ACRYLIC NON-REFLECTIVE FILM
LEGEND, BORDERS AND SYMBOLS	ALL OTHER	TYPE B OR C SHEETING

GENERAL NOTES

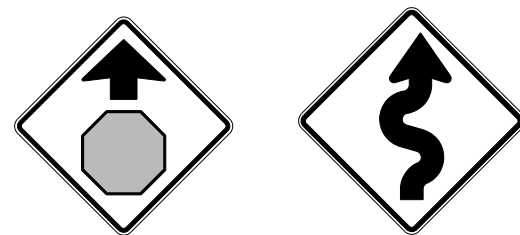
- Signs to be furnished shall be as detailed elsewhere in the plans and/or as shown on sign tabulation sheet. Standard sign designs and arrow dimensions can be found in the "Standard Highway Sign Designs for Texas" (SHSD).
- Sign legend shall use the Federal Highway Administration (FHWA) Standard Highway Alphabets (B, C, D, E, Emod or F).
- Lateral spacing between letters and numerals shall conform with the SHSD, and any approved changes thereto. Lateral spacing of legend shall provide a balanced appearance when spacing is not shown.
- Black legend and borders shall be applied by screening process or cut-out acrylic non-reflective black film to background sheeting, or combination thereof.
- White legend and borders shall be applied by screening process with transparent colored ink, transparent colored overlay film to white background sheeting or cut-out white sheeting to colored background sheeting, or combination thereof.
- Colored legend shall be applied by screening process with transparent colored ink, transparent colored overlay film or colored sheeting to background sheeting, or combination thereof.
- Sign substrate shall be any material that meets the Departmental Material Specification requirements of DMS-7110 or approved alternative.
- Mounting details for roadside mounted signs are shown in the "SMD series" Standard Plan Sheets.

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

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

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website:
<http://www.txdot.gov/>

REQUIREMENTS FOR WARNING SIGNS



TYPICAL EXAMPLES

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	FLOURESCENT YELLOW	TYPE B _{FL} OR C _{FL} SHEETING
LEGEND & BORDERS	BLACK	ACRYLIC NON-REFLECTIVE FILM
LEGEND & SYMBOLS	ALL OTHER	TYPE B OR C SHEETING

REQUIREMENTS FOR SCHOOL SIGNS



TYPICAL EXAMPLES

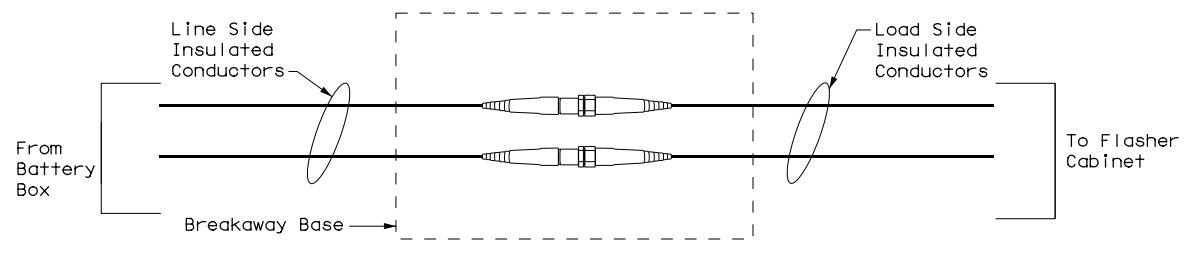
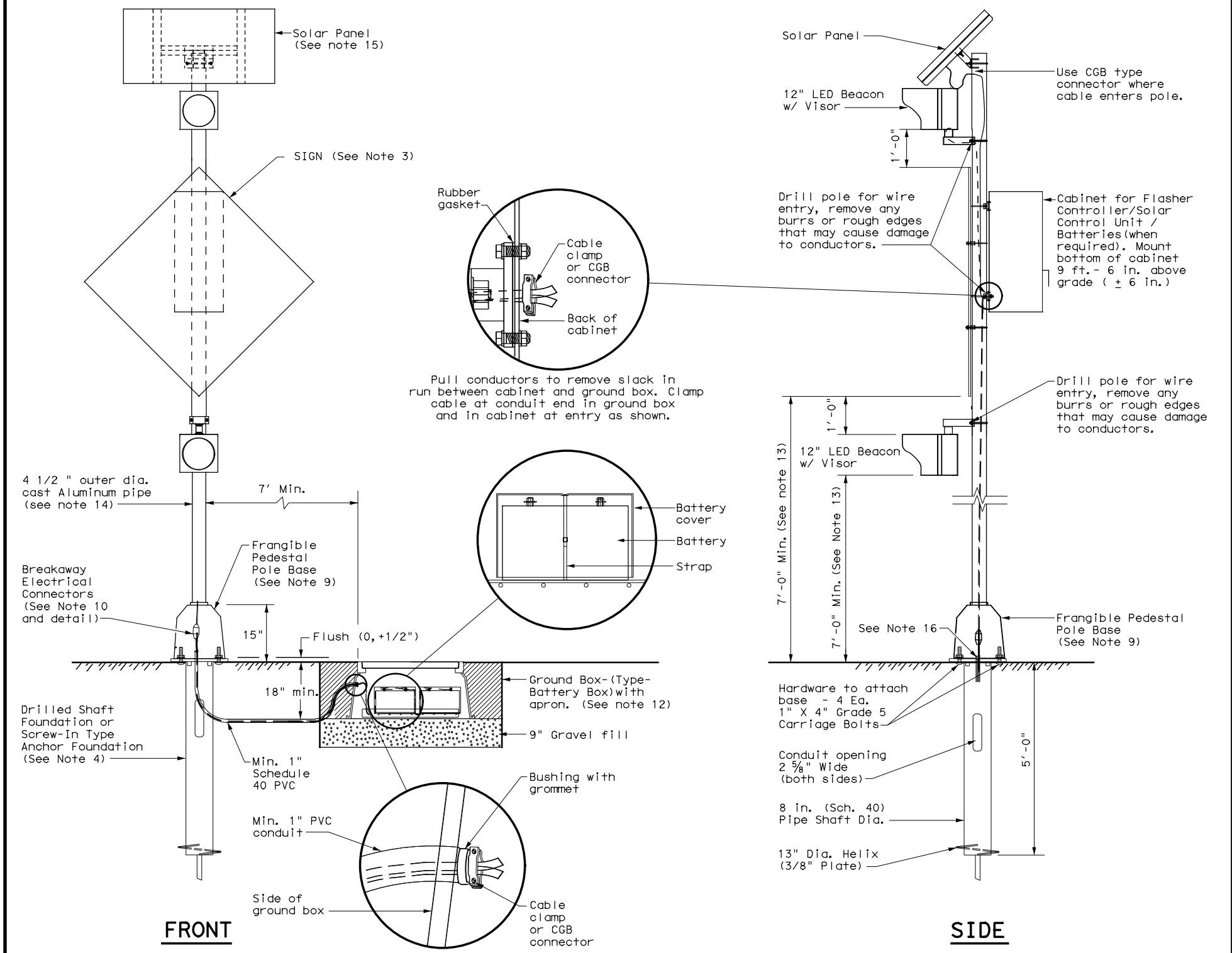
SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	WHITE	TYPE A SHEETING
BACKGROUND	FLOURESCENT YELLOW GREEN	TYPE B _{FL} OR C _{FL} SHEETING
LEGEND, BORDERS AND SYMBOLS	BLACK	ACRYLIC NON-REFLECTIVE FILM
SYMBOLS	RED	TYPE B OR C SHEETING

				<i>Traffic Operations Division Standard</i>	
<h2>TYPICAL SIGN REQUIREMENTS</h2> <h3>TSR (4) - 13</h3>					
FILE:	tsr4-13.dgn	DN:	TxDOT	CK:	TxDOT
© TxDOT	October 2003	CON:	SECT	JOB	HIGHWAY
REVISIONS		0439	05	026	SH 194
12-03	7-13	DIST	COUNTY	SHEET NO.	
9-08		LBB	HALE	301	

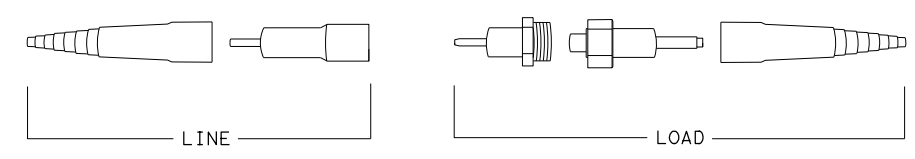
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GENERAL NOTES:

1. Details show a typical warning sign with two flashing beacon heads, other arrangements are possible. When only one beacon is required, install the upper beacon.
2. See Item 685, "Roadside Flashing Beacon Assemblies" for further requirements.
3. See SMD standard sheets for lateral and vertical clearances and sign mounting details. Install signs as shown on the sign layout sheets.
4. Use either a Screw-In Type Anchor Foundation or a Drilled Shaft Foundation as shown elsewhere in the plans. When plans require a Drilled Shaft Foundation, see standard sheet TS-FD. Install the Screw-In Type Anchor Foundation as per manufacturer's recommendations. On a slope, install one edge at ground level. Screw-In/Drilled Shaft Foundation is subsidiary to Item 685. Installation of a ground rod is not required for solar powered flashing beacon assemblies.
5. When used, provide Screw-In Type Anchor Foundations as shown on TxDOT's Material Producer List (MPL) in the file "Highway Traffic Signals".
6. Use materials specifically designed for attaching cabinets, beacon heads, solar panels, etc., to poles.
7. Install beacon heads as shown here, as shown elsewhere on the plans, or as directed. Use hardware specifically designed for mounting beacon heads on poles.
8. Conduit in foundation and within 6 in. of foundation is subsidiary to the Item 685, "Roadside Flashing Beacon Assemblies."
9. Per manufacturer's recommendations, engage all threads on the pedestal pole base and pipe unless the pipe is fully seated into base. In high winds, use a pole and base collar assembly to add strength and prevent loosening on connection.
10. Provide single pole non-fused watertight breakaway electrical connectors for frangible pedestal pole bases, as shown on TxDOT's MPL in the file "Roadway Illumination and Electrical Supplies." Approved models are listed under Item 685. For ungrounded (hot) conductors, install a breakaway connector with a dummy fuse slug. For grounded (neutral) conductors, install a breakaway connector with a white colored marking and a permanently installed dummy fuse (slug).
11. Install the batteries in a battery box. Place the batteries on a 3/16" thick plastic sheet and connect together. Place a plastic cover (battery bell jar) over the top of each battery and secure the battery bell jar to the battery with a strap. The batteries, bell jars, straps and 3/16" plastic sheet are subsidiary to the Item 685, "Roadside Flashing Beacon Assemblies." When required, install batteries in the flasher cabinet. Wire batteries according to manufacturers recommendations. Provide the number of batteries as required by the manufacturer.
12. See standard sheet Electrical Details (ED) for additional requirements regarding the installation of ground boxes/battery boxes, conduit, and cabinets.
13. Provide clearance as shown above the sidewalk or pavement grade at the edge of the road. When a bottom beacon is not used, mount the bottom of the sign at least 7 ft. above the sidewalk or pavement grade at the edge of the road.
14. Unless otherwise shown on the plans, pole shaft shall be one piece, Schedule 40 Aluminum pipe, ASTM B429 or B221 (Alloy 6061-T6 only). Aluminum conduit will not develop the necessary strength and will not be allowed.
15. Orient solar panel for optimum exposure to sunlight (face to the south). Prior to installation, check the location to ensure there is no overhead obstruction that would block the solar panel from receiving full sunlight. Unless specified elsewhere, mount a minimum of 14' above grade.
16. Ensure height of conduit is below top of anchor bolts.



NON-FUSED BREAKAWAY ELECTRICAL CONNECTORS



**NON-FUSED BREAKAWAY ELECTRICAL CONNECTORS
EXPLODED VIEW**

DATE: 6/28/2024 11:29:11 AM
 FILE: 13*spb1-13.dgn

SOLAR POWERED ROADSIDE FLASHING BEACON ASSEMBLY DETAILS
SPRFBA (1) - 13

FILE: spb1-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT May 2003	CONT	SECT	JOB	HIGHWAY
REVISIONS	0439	05	026	SH 194
12-04	DIST	COUNTY	SHEET NO.	
3-13	LBB	HALE	302	

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DATE: 2/27/2023 11:54:51 AM
 FILE: 15_dom1-20.dgn

REFLECTOR UNIT SIZES FOR DELINEATORS AND OBJECT MARKERS					DELINEATORS				D & OM DESCRIPTIVE CODES	
DEVICE	SIZE 1	SIZE 2	SIZE 3	SIZE 4	DEVICE	SINGLE		DOUBLE		INSTL DEL ASSM (D-XX)SZ X (XXXX)XXX (XX) NUMBER OF REFLECTORS S = Single D = Double COLOR OF REFLECTORS W = White Y = Yellow R = Red REFLECTOR UNIT SIZE 1 or 2 TYPE OF POST OR DELINEATOR WC = Wing Channel Post YFLX = Yellow Flexible Post WFLX = White Flexible Post BRFL = Barrier Reflector TYPE OF MOUNT GND = Embedded (drivable or set in concrete) CTB = Concrete Barrier Mount GF1 or GF2 = Guard Fence Attachment SRF = Surface Mount DIRECTION If Required BI = Bi-Directional BR = Bi-Directional with red on back
	 4" ± 1/16" 3" ± 1/16"	 4" ± 1/16" 4" ± 1/16"	 12" ± 1/8" 6" ± 1/8"	 12" ± 1/16" 3" ± 1/16"		 1-Size 2 reflector unit	 1-Size 1 reflector unit	 2-Size 2 reflector units	 2-Size 1 reflector units	
SHEETING	Yellow, White or Red Type B or C reflective sheeting				SHEETING	Yellow, White or Red Type B or C Reflective Sheeting				
NOTE	1. Size 1 and 4 - Direct applied reflective sheeting for use on flexible post (flx). 2. Size 2 and 3 - For use on wing channel (wc) post only. Use approved metal, plastic or fiberglass backplate with 17/64" mounting holes.				POST TYPE	WC	YFLX, WFLX	WC	YFLX, WFLX	
					MOUNT TYPE	GND	GND, SRF	GND	GND, SRF	INSTL OM ASSM (OM-XX) (XXXX)XXX (XX) TYPE OF OBJECT MARKER 1, 2, 3, or 4 NUMBER OF REFLECTORS OR DIRECTION X = 3-Size 2 reflector unit (Type 2 only) Y = 1-Size 3 reflector unit (Type 2 only) Z = 3-Size 1 or 1-Size 4 reflector unit(s) (Type 2 only) L = Left Side (Type 3 Object Marker only) R = Right Side (Type 3 Object Marker only) C = Center (Type 3 Object Marker only) TYPE OF POST WC = Wing Channel Post WFLX = White Flexible Post TWT = Thin Walled Tubing TYPE OF MOUNT GND = Embedded (drivable) SRF = Surface Mount WAS = Wedge Anchor Steel WAP = Wedge Anchor Plastic DIRECTION If Required BI = Bi-Directional

OBJECT MARKERS									
DEVICE	Type 1 (OM-1)		Type 2 (OM-2)			Type 3 (OM-3)			Type 4 (OM-4)
	OM-1	OM-2X	OM-2Y	OM-2Z	OM-3L	OM-3R	OM-3C	OM-4	
 18" 18"	 4" 4" Max	 6" 12"	 3" 12"	 12" 36" 45° 6"	 12" 36"	 12" 36"	 18" 18"		
SHEETING	Yellow-Type B _{FL} or C _{FL} Sheeting		Yellow - Type B or C Sheeting			Alternating acrylic black and retroreflective yellow - Type B _{FL} or C _{FL} Sheeting			Red -Type B _{FL} or C _{FL} Sheeting
POST TYPE	TWT		WC	WC	WFLX	TWT			TWT
MOUNT TYPE	WAS, WAP		GND	GND	GND, SRF	WAS, WAP			WAS, WAP

BARRIER REFLECTORS (BRF)			CHEVRONS				ONE DIRECTION LARGE ARROW		NOTE: Delineator and object marker substrates and sign substrates shall be 0.080" Aluminum sign blank to conform to ASTM B-209 Alloy 6061-T6 or approved alternative.				
DEVICE	GF1	GF2	CTB	 W1-8				 W1-6					
1. Barrier reflectors shall meet the requirements of DMS 8600. 2. Approved Barrier Reflectors are listed on the "Barrier Reflectors" Material Producer List at: www.txdot.gov.	 GF1		 GF2	 CTB		SIZE (W x L)	18" x 24" (Conventional)	24" x 30" (Conventional Oversize)	30" x 36" (Expressway)	36" x 48" (Freeway)	SIZE (W x L)	48" x 24" (Conventional)	60" x 30" (Expressway & Freeway)
	MOUNTING HEIGHT		4'-0" or 7'-0"		7'-0" Only		MOUNTING HEIGHT		7'-0"				
NOTE	1. Reflective sheeting shall have a minimum dimension of 3 inches and minimum surface area of 9 square inches.		NOTE		1. CHEVRON (W1-8) signs and ONE DIRECTION LARGE ARROW (W1-6) Signs shall be installed per Sign Mounting Details (SMD) Standard Sheets and paid under Item 644 (Small Roadside Sign Assemblies). 2. When there is a need to increase conspicuity, the Texas version of the ONE DIRECTION LARGE ARROW sign (W1-9T) may be used instead of the ONE DIRECTION LARGE ARROW (W1-6).								
SHEETING	Yellow, White, Red												

DEPARTMENTAL MATERIAL SPECIFICATIONS	
FLEXIBLE DELINEATOR & OBJECT MARKER POSTS (EMBEDDED & SURFACE MOUNT TYPES)	DMS-4400
SIGN FACE MATERIALS	DMS-8300
DELINEATORS, OBJECT MARKERS AND BARRIER REFLECTORS	DMS-8600

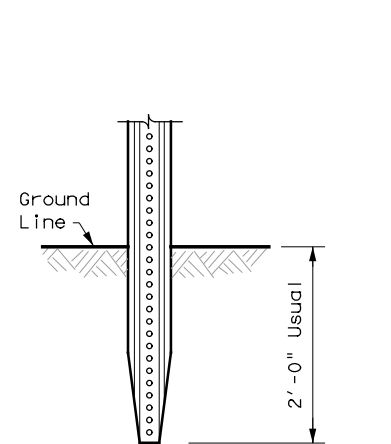
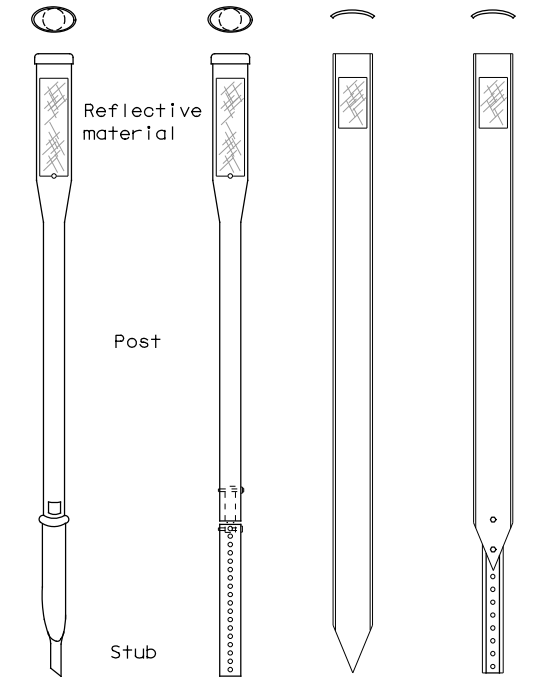
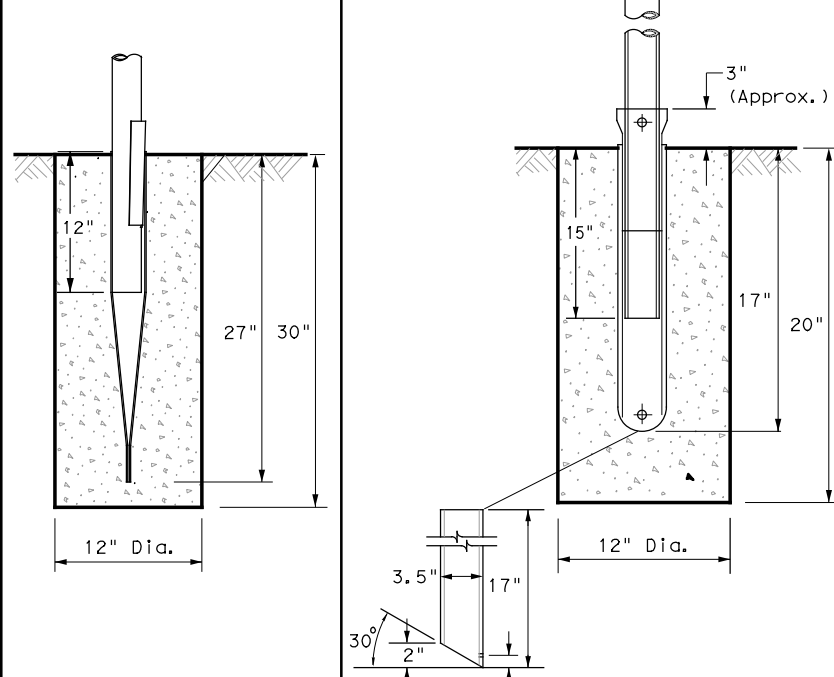
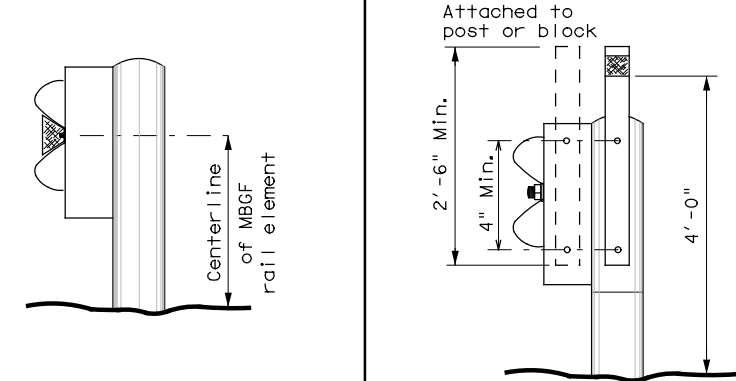
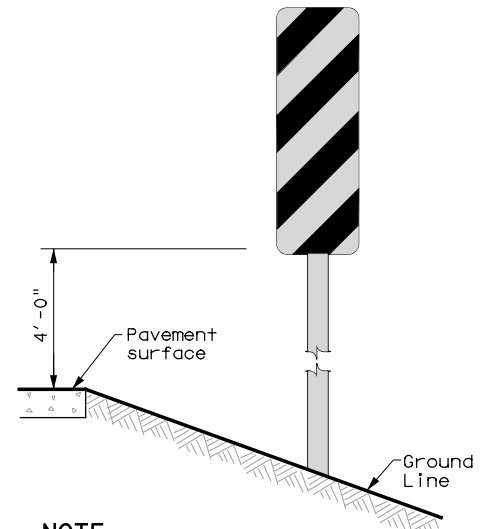
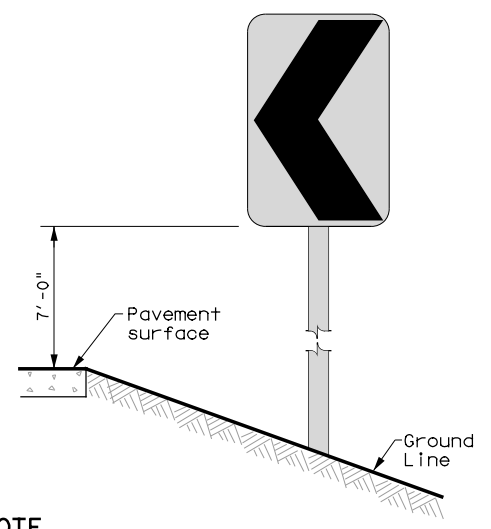
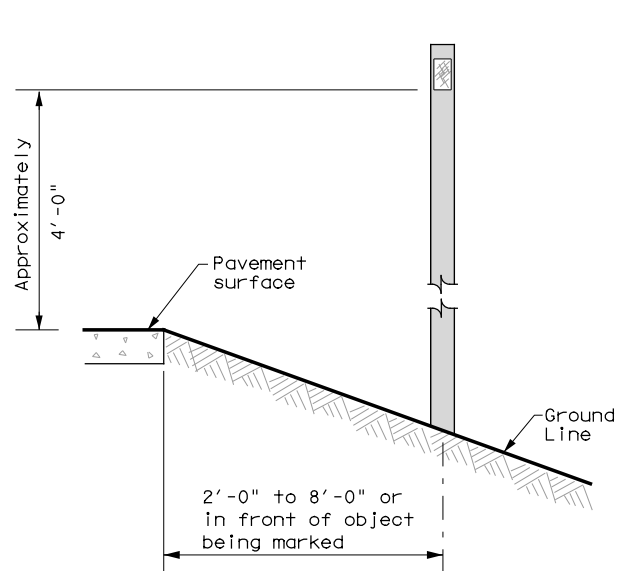
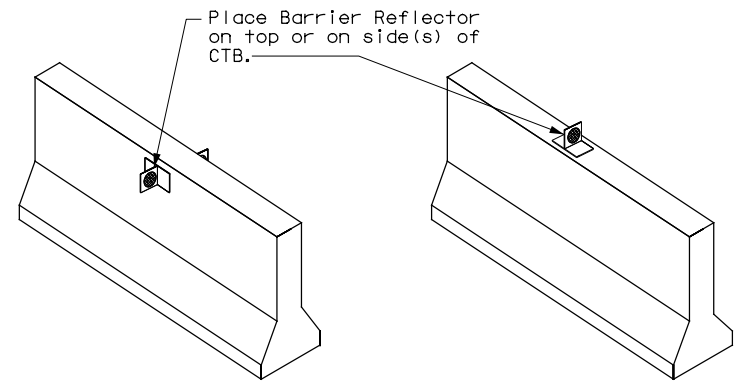



DELINEATOR & OBJECT MARKER MATERIAL DESCRIPTION D & OM(1)-20

FILE: dom1-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT August 2004	CONT	SECT	JOB	HIGHWAY
REVISIONS	0439	05	026	SH 194
10-09 3-15	DIST	COUNTY	SHEET NO.	
4-10 7-20	LBB	HALE	303	

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DATE: 2/27/2023 11:54:57 AM
 FILE: 16_dom2-20.dgn

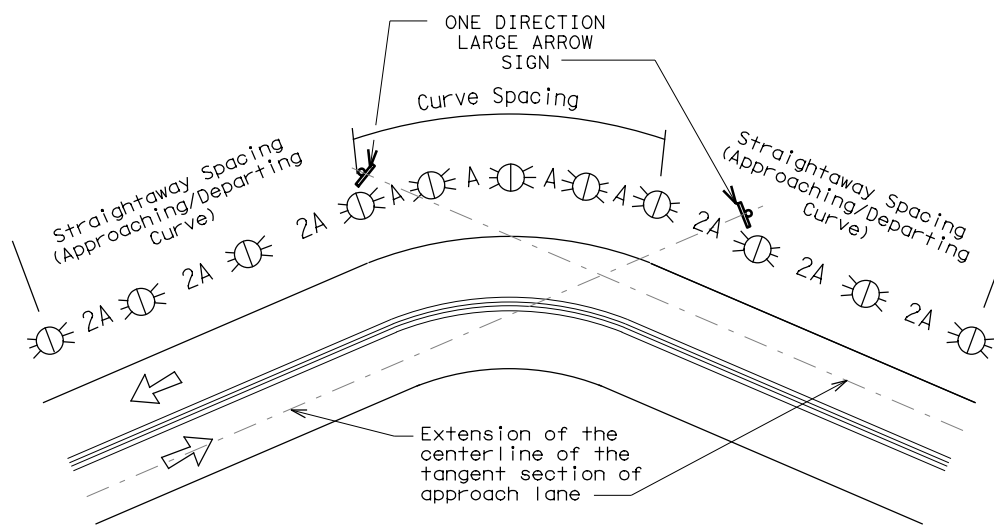
POST TYPE AND SUPPORT FOUNDATION DETAILS				TYPE OF BARRIER MOUNTS					
WING CHANNEL (WC)	FLEXIBLE POSTS (YFLX, WFLX)		WEDGE ANCHOR SYSTEMS		GUARD FENCE ATTACHMENT				
GND	GND	SRF	WAS	WAP	GF1	GF2			
									
	EMBEDDED		SURFACE MOUNT		STEEL		PLASTIC		
NOTES 1. Embedded Wing Channel (WC) post option may be used for Type 2 Object Markers and Delineators only. 2. 1.12 lbs/ft steel per ASTM A 1011 SS Gr. 50, or ASTM A499.			NOTES 1. See "Flexible Delineator and Object Marker Posts" Material Producer List for approved devices. 2. Install per manufacturer's recommendations. 3. Post length may vary to meet field conditions. 4. When using yellow delineators with flexible posts to separate opposing direction of travel, such as centerline or median use, the flexible posts shall be yellow.			NOTE 1. Install per manufacturer's recommendations.			
TYPES 1,3, AND 4 OBJECT MARKERS AND CHEVRONS		CHEVRONS AND ONE DIRECTION LARGE ARROW SIGN		DELINEATORS AND TYPE 2 OBJECT MARKERS					
									
NOTE Mounting at 4 feet to the bottom of the chevron is permitted for chevrons that will not exceed a height of 6'-6" to the top of the chevron (sizes 24" x 30" and smaller)		NOTE Chevrons 30" x 36" and larger shall be mounted at a height of 7' to the bottom of the chevron. Chevron sign and ONE DIRECTION LARGE ARROW sign (W1-9T) shall be installed per SMD standard sheets and paid under item 644.		See general notes 1, 2 and 3.					
CONCRETE TRAFFIC BARRIER (CTB)									
GENERAL NOTES						<ol style="list-style-type: none"> Place delineators on a section of roadway at a consistent distance from the edge of pavement. Where a restriction prevents consistent placement from the pavement edge, place the affected object markers in line with the innermost edge of the obstruction. When Type 2 object markers and delineators are more than 8'-0" from the edge of the pavement, it may not be possible to maintain a height of approximately 4'-0". If this is the case, place the object marker or delineator as close to the desired height as possible. Install all delineators, object markers and barrier reflectors in accordance with the manufacturer's recommendation. Barrier reflectors should be installed a minimum of 18 inches above the edge of the pavement surface. Diagonal stripes on Type 3 object markers shall slope down toward the intended travel lane. 			
						Texas Department of Transportation <i>Traffic Safety Division Standard</i>			
DELINEATOR & OBJECT MARKER INSTALLATION						D & OM(2)-20			
<small>FILE: dom2-20.dgn</small>		<small>DN: TxDOT</small>		<small>CK: TxDOT</small>		<small>DW: TxDOT</small>		<small>CK: TxDOT</small>	
<small>© TxDOT August 2004</small>		<small>CONT SECT</small>		<small>JOB</small>		<small>HIGHWAY</small>		<small>REVISIONS</small>	
<small>10-09 3-15</small>		<small>0439 05</small>		<small>026</small>		<small>SH 194</small>		<small>SHEET NO.</small>	
<small>4-10 7-20</small>		<small>LBB</small>		<small>HALE</small>		<small>304</small>		<small>20B</small>	

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MINIMUM WARNING DEVICES AT CURVES WITH ADVISORY SPEEDS

Amount by which Advisory Speed is less than Posted Speed	Curve Advisory Speed	
	Turn (30 MPH or less)	Curve (35 MPH or more)
5 MPH & 10 MPH	• RPMs	• RPMs
15 MPH & 20 MPH	• RPMs and One Direction Large Arrow sign	• RPMs and Chevrons; or • RPMs and One Direction Large Arrow sign where geometric conditions or roadside obstacles prevent the installation of chevrons.
25 MPH & more	• RPMs and Chevrons; or • RPMs and One Direction Large Arrow sign where geometric conditions or roadside obstacles prevent the installation of chevrons	• RPMs and Chevrons

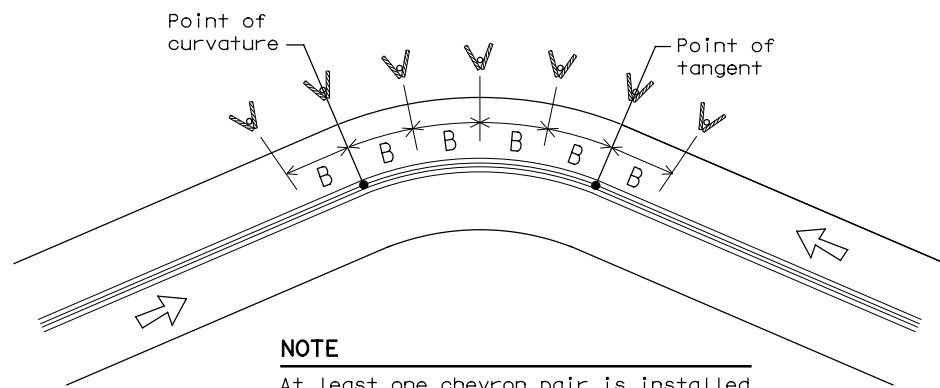
SUGGESTED SPACING FOR DELINEATORS ON HORIZONTAL CURVES



NOTE

ONE DIRECTION LARGE ARROW (W1-6) sign should be located at approximately and perpendicular to the extension of the centerline of the tangent section of approach lane.

SUGGESTED SPACING FOR CHEVRONS ON HORIZONTAL CURVES



NOTE

At least one chevron pair is installed beyond the point of tangent in tangent section.

DELINEATOR AND CHEVRON SPACING

WHEN DEGREE OF CURVE OR RADIUS IS KNOWN				
Degree of Curve	FEET			
	Radius of Curve	Spacing in Curve	Spacing in Straightaway	Chevron Spacing in Curve
		A	2A	B
1	5730	225	450	—
2	2865	160	320	—
3	1910	130	260	200
4	1433	110	220	160
5	1146	100	200	160
6	955	90	180	160
7	819	85	170	160
8	716	75	150	160
9	637	75	150	120
10	573	70	140	120
11	521	65	130	120
12	478	60	120	120
13	441	60	120	120
14	409	55	110	80
15	382	55	110	80
16	358	55	110	80
19	302	50	100	80
23	249	40	80	80
29	198	35	70	40
38	151	30	60	40
57	101	20	40	40

Curve delineator approach and departure spacing should include 3 delineators spaced at 2A. This spacing should be used during design preparation or when the degree of curve is known.

DELINEATOR AND CHEVRON SPACING

WHEN DEGREE OF CURVE OR RADIUS IS NOT KNOWN			
Advisory Speed (MPH)	Spacing in Curve	Spacing in Straightaway	Chevron Spacing in Curve
	A	2xA	B
65	130	260	200
60	110	220	160
55	100	200	160
50	85	170	160
45	75	150	120
40	70	140	120
35	60	120	120
30	55	110	80
25	50	100	80
20	40	80	80
15	35	70	40

If the degree of curve is not known, delineator spacing may be determined based on the Advisory Speed of the curve. Use the delineator curve spacing for each Advisory Speed (MPH).

DELINEATOR AND OBJECT MARKER APPLICATION AND SPACING

CONDITION	REQUIRED TREATMENT	MINIMUM SPACING
Frwy./Exp. Tangent	RPMs	See PM-series and FPM-series standard sheets
Frwy./Exp. Curve	Single delineators on right side	See delineator spacing table
Frwy/Exp. Ramp	Single delineators on at least one side of ramp (should be on outside of curves) (see Detail 3 on D&OM(4))	100 feet on ramp tangents Use delineator spacing table for ramp curves ("straightway spacing" does not apply to ramp curves)
Acceleration/Deceleration Lane	Double delineators (see Detail 3 on D&OM(4))	100 feet (See Detail 3 on D & OM (4))
Truck Escape Ramp	Single red delineators on both sides	50 feet
Bridge Rail (steel or concrete) and Metal Beam Guard Fence	Bi-Directional Delineators when undivided with one lane each direction Single Delineators when multiple lanes each direction	Equal spacing (100' max) but not less than 3 delineators
Concrete Traffic Barrier (CTB) or Steel Traffic Barrier	Barrier reflectors matching the color of the edge line	Equal spacing 100' max
Cable Barrier	Reflectors matching the color of the edge line	Every 5th cable barrier post (up to 100' max)
Guard Rail Terminus/Impact Head	Divided highway - Object marker on approach end Undivided 2-lane highways - Object marker on approach and departure end	Requires reflective sheeting provided by manufacturer per D & OM (VIA) or a Type 3 Object Marker (OM-3) in front of the terminal end See D & OM (5) and D & OM (6)
Bridges with no Approach Rail	Type 3 Object Marker (OM-3) at end of rail and 3 single delineators approaching rail	See D & OM(5)
Reduced Width Approaches to Bridge Rail	Type 2 and Type 3 Object Markers (OM-3) and 3 single delineators approaching bridge	Requires reflective sheeting provided by manufacturer per D & OM (VIA) or a Type 3 Object Marker (OM-3) in front of the terminal end See D & OM (5)
Culverts without MBGF	Type 2 Object Markers	See Detail 2 on D & OM(4)
Crossovers	Double yellow delineators and RPMs	See Detail 1 on D & OM (4)
Pavement Narrowing (lane merge) on Freeways/Expressway	Single delineators adjacent to affected lane for full length of transition	100 feet

NOTES

- Unless indicated otherwise, the delineator or barrier reflector color shall conform to the color of the pavement edge line on the side of the road where the delineators or barrier reflectors are placed.
- Barrier reflectors may be used to replace required delineators.
- Single red delineators may be mounted on the back side of delineator posts for wrong way driver applications

LEGEND

	Bi-directional Delineator
	Delineator
	Sign



DELINEATOR & OBJECT MARKER PLACEMENT DETAILS

D & OM(3)-20

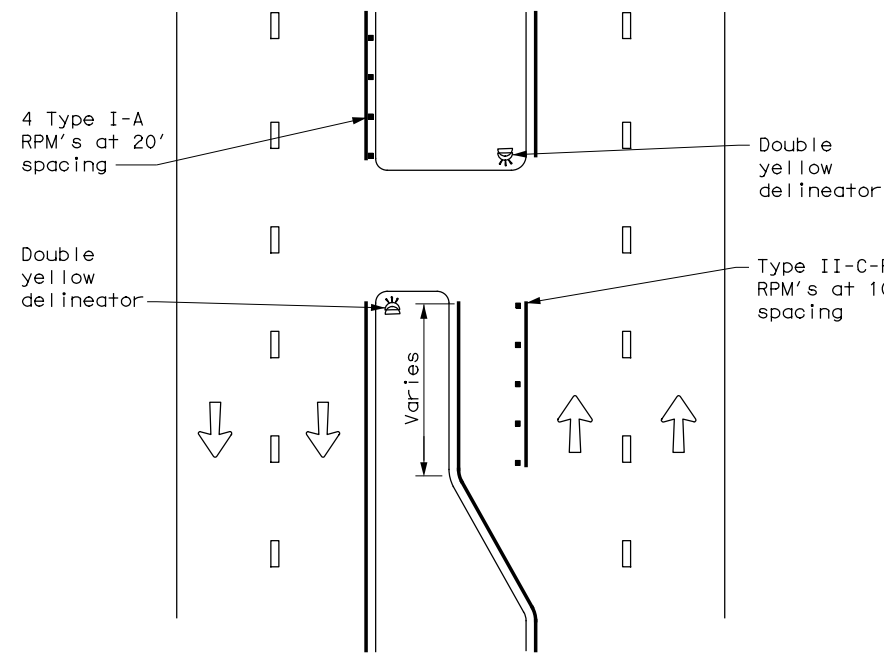
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© TxDOT August 2004	CONT	SECT	JOB	HIGHWAY
REVISIONS	0439	05	026	SH 194
3-15 8-15	DIST	COUNTY	SHEET NO.	
8-15 7-20	LBB	HALE	305	

DATE: 2/27/2023 11:55:03 AM
FILE: 17_dom3-20.dgn

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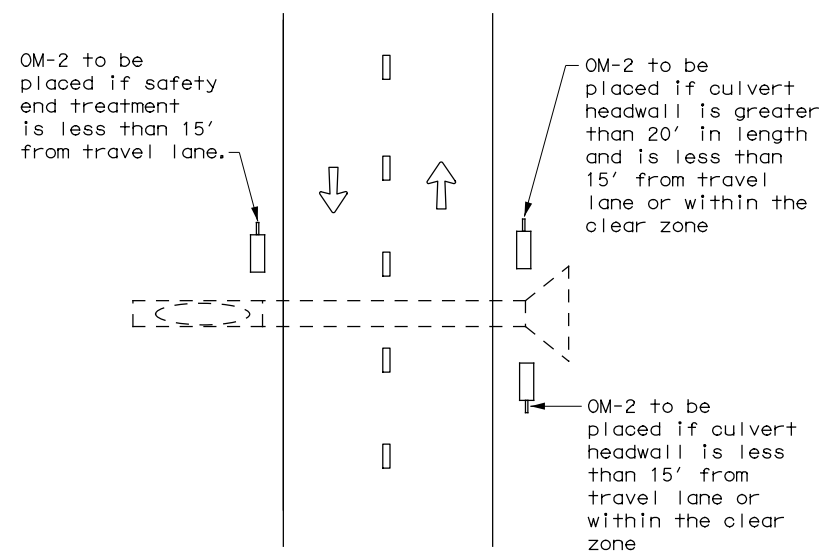
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FILE: 18_dom4-20.dgn

CROSSOVERS



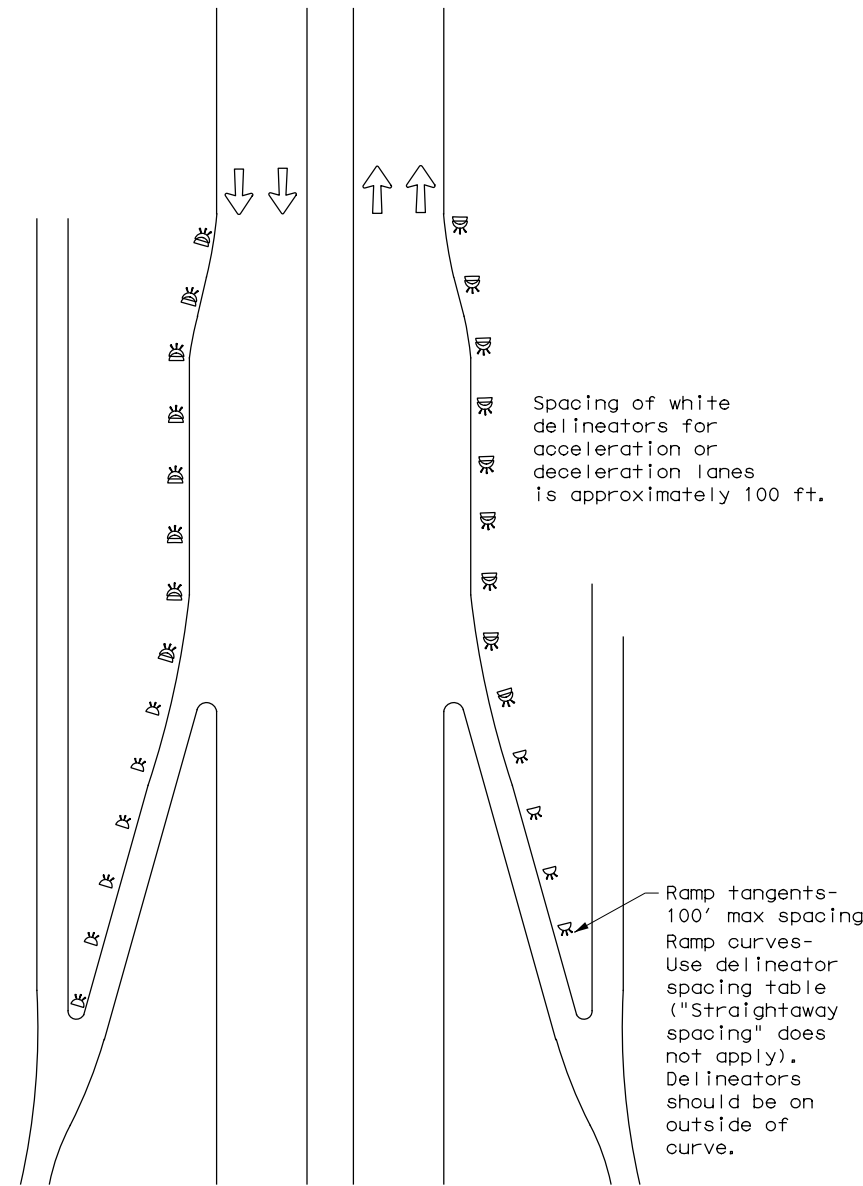
DETAIL 1

FOR CULVERTS WITHOUT MBGF



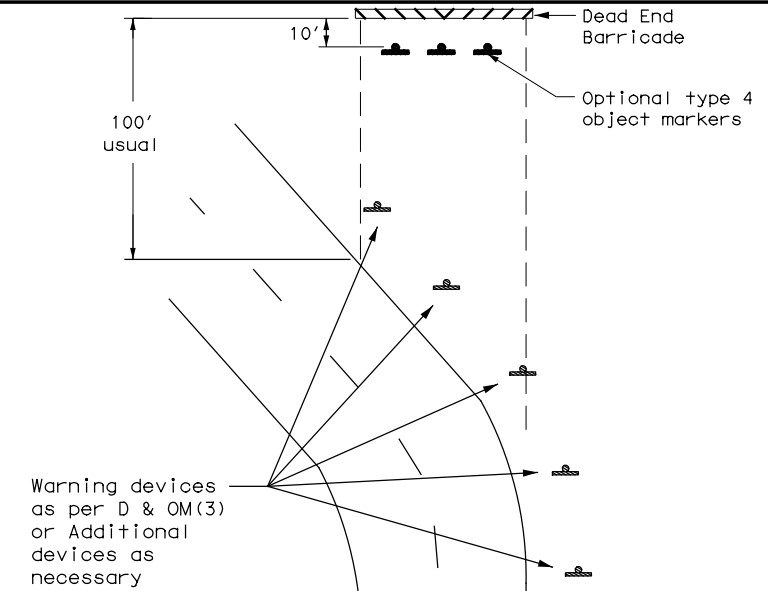
DETAIL 2

FREEWAY DELINEATION FOR RAMPS AND ACCELERATION/DECELERATION LANES



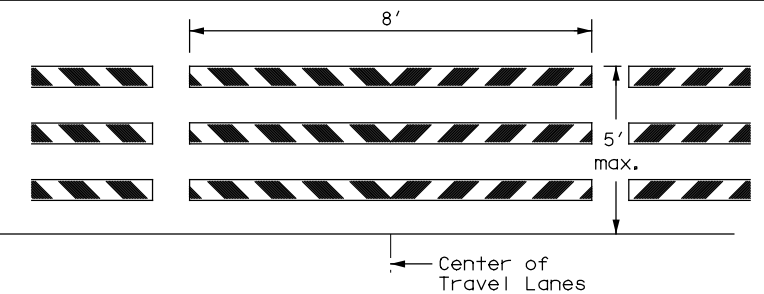
DETAIL 3

TYPICAL APPLICATION OF DEAD END BARRICADE



DETAIL 4

TYPICAL DEAD END BARRICADE INSTALLATION



NOTES

1. Barricade striping shall be red and white reflective sheeting for all permanent road closures.
2. Barricade striping is red and white sloping toward the center of the roadway.
3. Type 3 Barricade Supports should be anchored to soil or pavement as described in compliant Work Zone Traffic Control Devices List, section D.2.f and D.2.g.

DETAIL 5

LEGEND	
	Bidirectional Delineator
	Delineator
	OM-3
	Barricade
	Sign
	OM-2
	Double Delineator

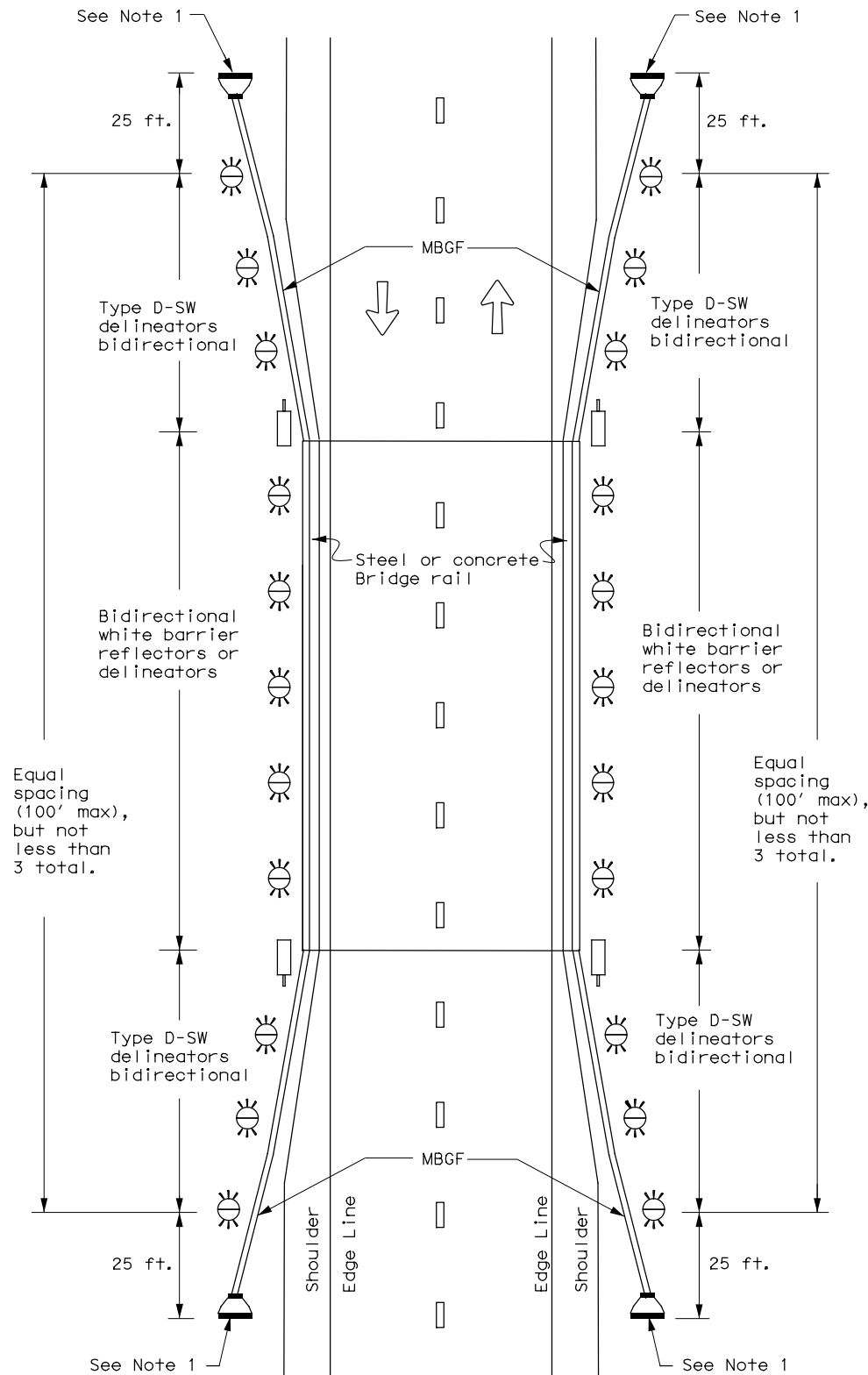


DELINEATOR & OBJECT MARKER PLACEMENT DETAILS

D & OM(4)-20

FILE: dom4-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	0439	05	026	SH 194
3-15	DIST	COUNTY	SHEET NO.	
7-20	LBB	HALE	306	

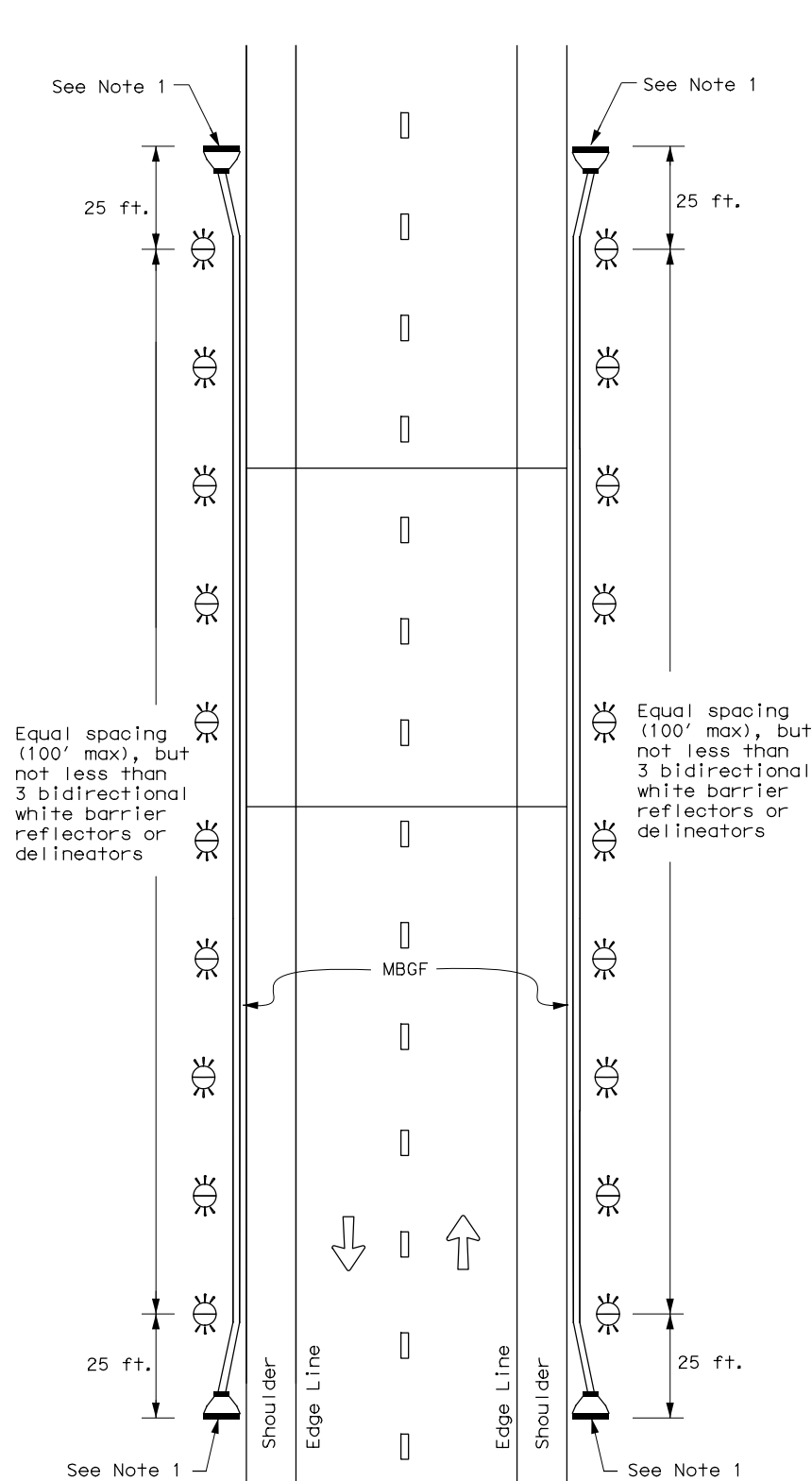
**TWO-WAY, TWO LANE ROADWAY
WITH REDUCED WIDTH APPROACH RAIL**



NOTE:

1. Terminal ends require reflective sheeting provided by manufacturer per D & OM (VIA) or a Type 3 Object Marker (OM-3) in front of the terminal end.

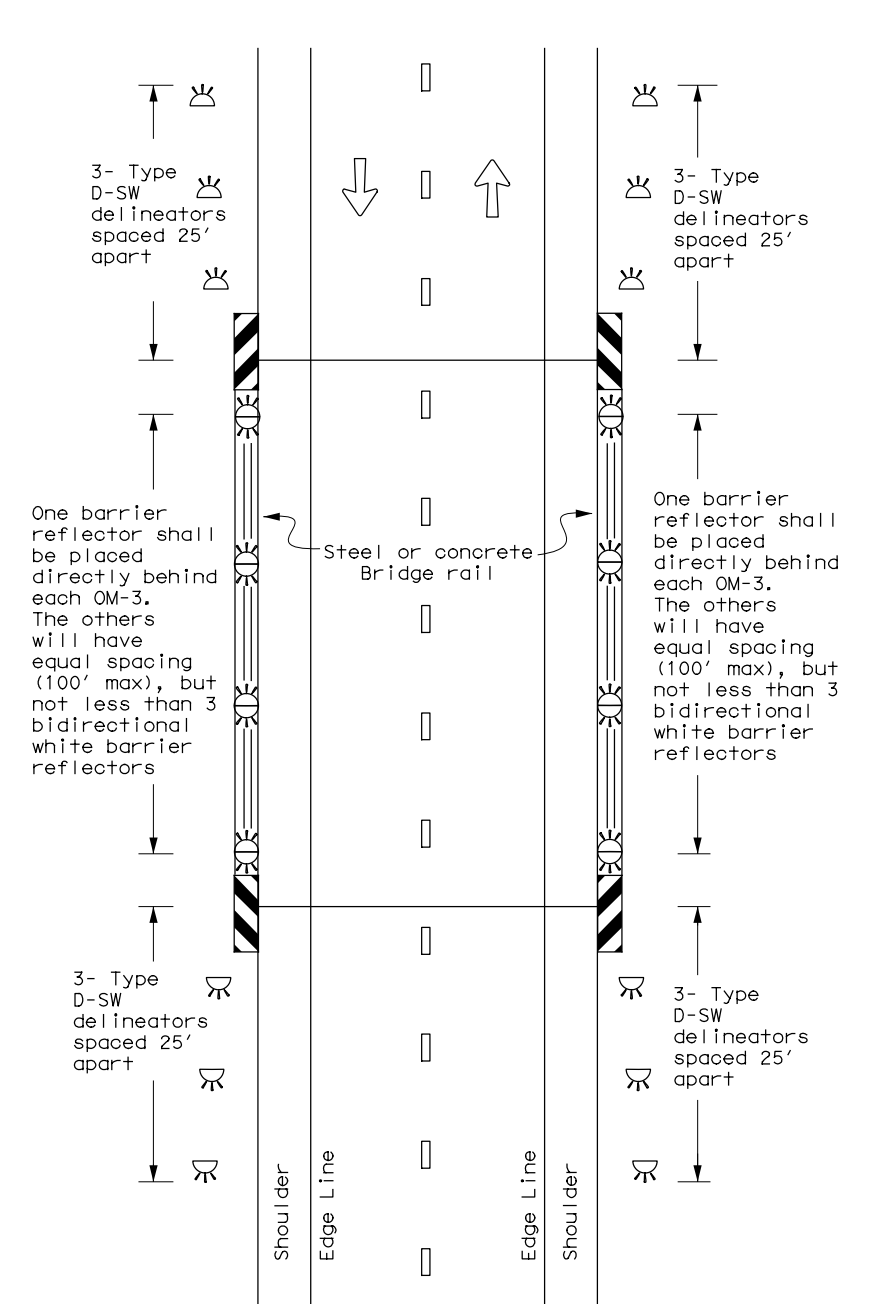
**TWO-WAY, TWO LANE ROADWAY
WITH METAL BEAM GUARD FENCE (MBGF)**



NOTE:

1. Terminal ends require reflective sheeting provided by manufacturer per D & OM (VIA) or a Type 3 Object Marker (OM-3) in front of the terminal end.

**TWO-WAY, TWO LANE ROADWAY
BRIDGE WITH NO APPROACH RAIL**



LEGEND

	Bidirectional Delineator
	Delineator
	OM-3
	OM-2
	Terminal End
	Traffic Flow



**DELINEATOR &
OBJECT MARKER
PLACEMENT DETAILS**

D & OM(5)-20

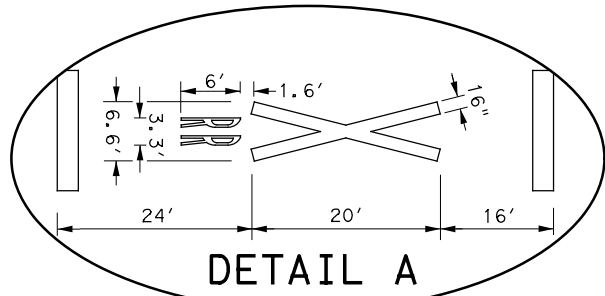
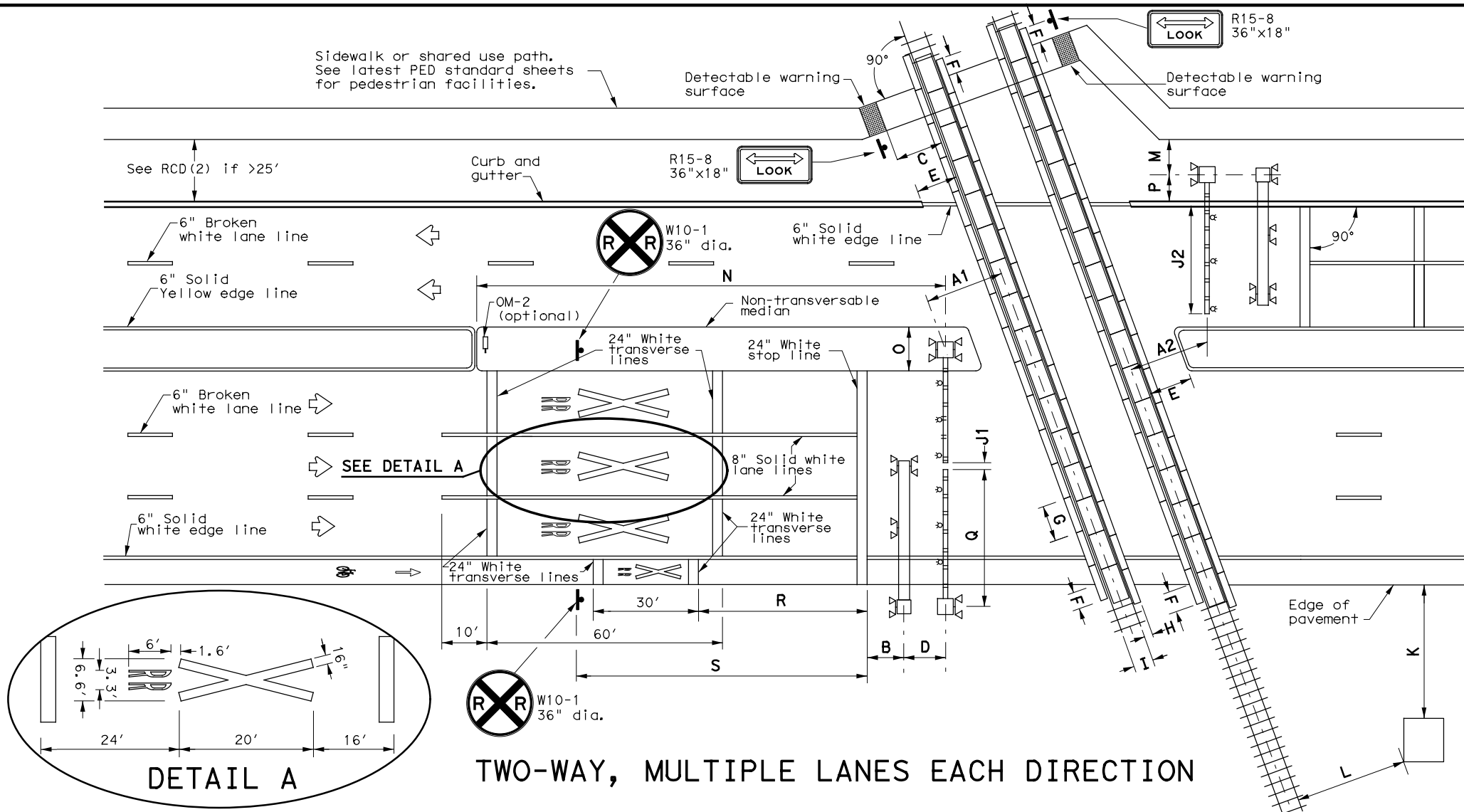
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© TxDOT August 2015	CON: 0439	SECT: 05	JOB: 026	HIGHWAY: SH 194
7-20	DIST: LBB	COUNTY: HALE	SHEET NO. 307	

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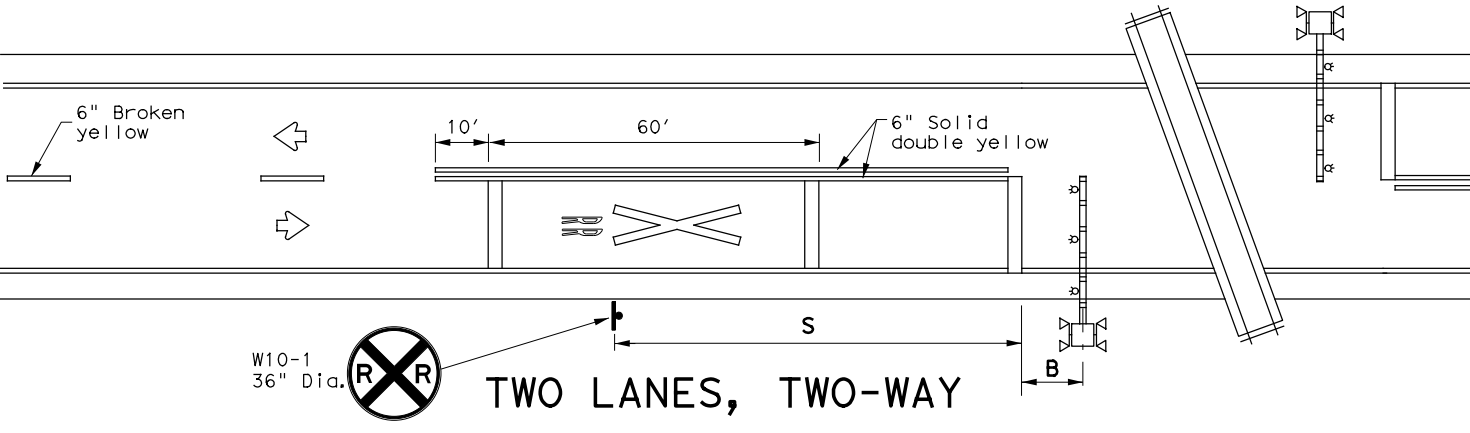
DATE: 2/24/2023 11:55:15 AM
FILE: 19_dom5-20.dgn

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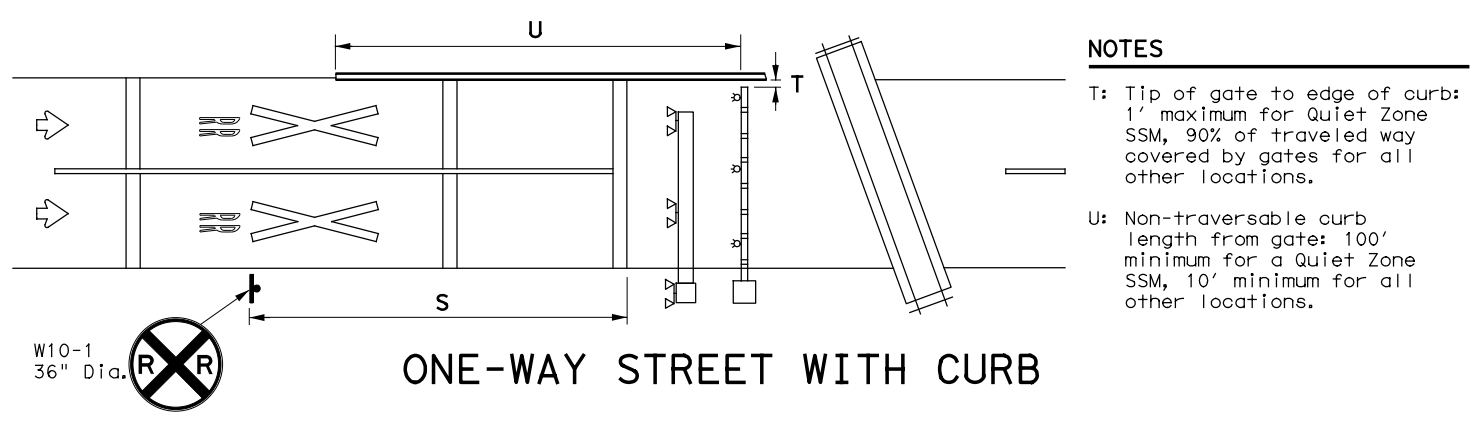
DATE: 2/27/2023 11:55:20 AM
FILE: 20_rcd1-22.dgn



TWO-WAY, MULTIPLE LANES EACH DIRECTION



TWO LANES, TWO-WAY



ONE-WAY STREET WITH CURB

- NOTES**
- T: Tip of gate to edge of curb: 1' maximum for Quiet Zone SSM, 90% of traveled way covered by gates for all other locations.
 - U: Non-transversible curb length from gate: 100' minimum for a Quiet Zone SSM, 10' minimum for all other locations.

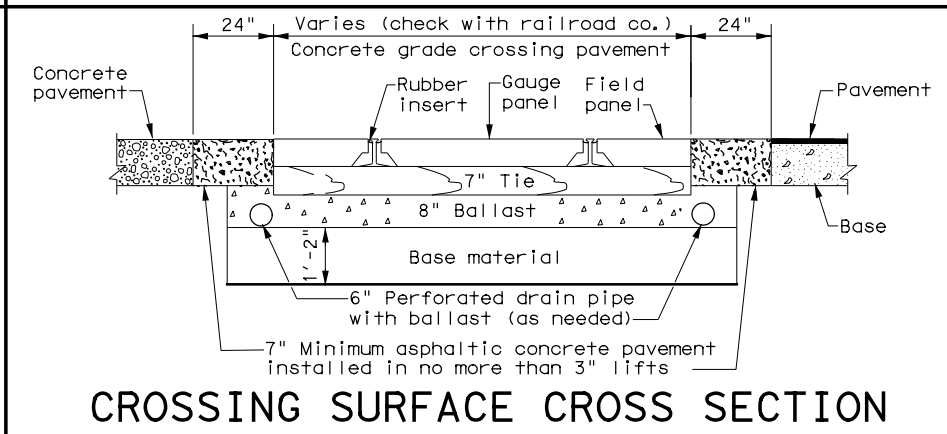
TABLE 1

Approach Speed (mph)	Desirable Placement (feet)
20	100
25	100
30	100
35	100
40	125
45	175
50	250
55	325
60	400
65	475
70	550
75	650

LEGEND

	Sign
	Object Marker
	Traffic Flow
	Cantilever
	Gate Assembly
	Mast Flasher Pair

- GENERAL NOTES**
- Medians and curbs must be non-traversable to qualify as a Quiet Zone Supplementary Safety Measure (SSM). Non-traversable curbs in Quiet Zones are 6" tall minimum and used on roadways where speed does not exceed 40 mph.
 - Raised pavement markers may be used to supplement striping. See PM(2) and PM(3) standard sheets.
 - Medians preferred whenever possible to prevent vehicles from driving around gates.
 - Longitudinal edge striping may be continued thru crossing as needed. Illumination may also be considered for nighttime visibility.
 - See SMD standard sheets for sign mounting details.
 - See the Standard Highway Sign Design for Texas (SHSD) manual for sign and pavement marking details.



CROSSING SURFACE CROSS SECTION

- NOTES**
- A1: Center of RR mast to center of rail: 12' minimum, 15' typical.
 - A2: Tip of gate to center of rail: 12' minimum, 15' typical.
 - B: Center of mast (cantilever, gate, or mast flasher) of nearest active traffic control device to stop line: 8' (NOTE: Stop line may be moved as needed, but should be at least 8' back from gates, if present).
 - C: Near edge of detectable warning surface to nearest rail: 12' minimum.
 - D: Center of gate mast to center of cantilever mast: 6' typical. NOTE: Cantilever may be located in front or behind gates.
 - E: Edge of median or curb to nearest rail: 10' typical. NOTE: Design median edge to be parallel with rail.
 - F: Edge of planking panel from edge of pavement or sidewalk: 3' minimum. NOTE: Field panels need not be in line with gauge panels.
 - G: Length of panels along rail: 8' typical.
 - H: Width of field panel: 2' typical (check with railroad company).
 - I: Distance between rails: 4'- 8'1/2".
 - J1: Tip of gate to tip of gate: 2' maximum.
 - J2: 90% of traveled roadway to be covered by gate.
 - K: Nearest edge of RR cabinet from edge of pavement: 30' typical. NOTE: Cabinet not required to be parallel to edge of pavement.
 - L: Nearest edge of RR cabinet from nearest rail: 25' typical.
 - M: Center of RR mast to edge of sidewalk: 6' minimum.
 - N: Center of gate mast to leading edge of non-traversable median: 100' minimum to qualify as a Quiet Zone SSM. NOTE: 60' will suffice if there is a street intersection within the 100' and all street intersections within 60' are closed.
 - O: Width of median for RR gate assembly: 8'-6" minimum, 10' typical when using median gates. NOTE: Center of gate mast minimum 4'-3" from face of curb.
 - P: Center of RR mast to face of curb: 5'-3" minimum. Center of RR mast to edge of pavement (with shoulder): 7' minimum. Center of RR mast to edge of pavement (no shoulder): 9'-3" minimum. NOTE: Final location determined by the railroad company.
 - Q: Gate length: 28' or less typical, but railroad company may allow up to 32' under special circumstances.
 - R: Stop line to first RR Crossing transverse line (bike lane): 50' typical.
 - S: Stop line to GRADE CROSSING ADVANCE WARNING (W10-1) sign and adjacent RR Crossing pavement markings. See Table 1. See RCD(2) for other signs.

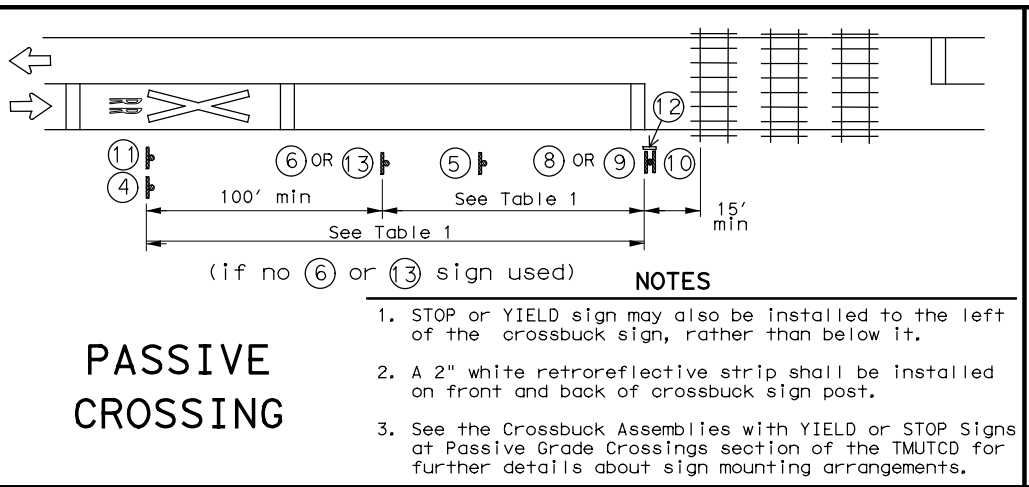
Texas Department of Transportation
Traffic Safety Division Standard

**RAILROAD CROSSING DETAILS
SIGNING, STRIPING, AND
DEVICE PLACEMENT
RCD(1)-22**

FILE: rcd1-22.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2022	CON: 0439	SECT: 05	JOB: 026	HIGHWAY: SH 194
2-16	DIST: LBB	COUNTY: HALE	SHEET NO. 308	

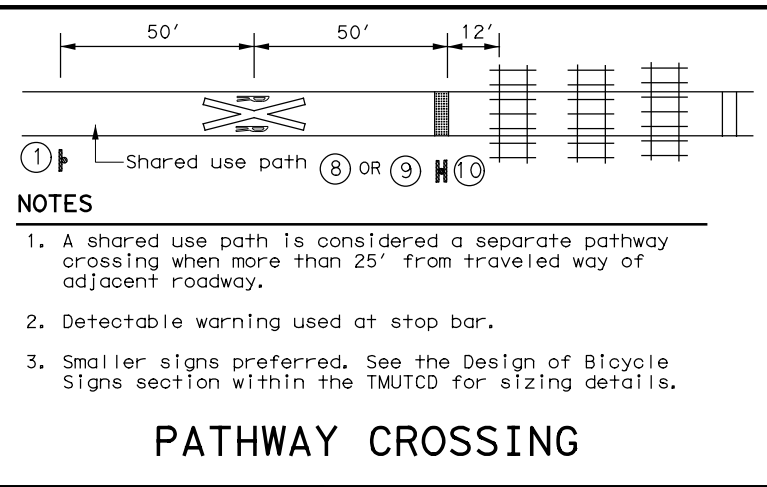
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DATE: 2/27/2023 11:55:25 AM
FILE: 21_rcd2-22.dgn



PASSIVE CROSSING

- NOTES**
- STOP or YIELD sign may also be installed to the left of the crossbuck sign, rather than below it.
 - A 2" white retroreflective strip shall be installed on front and back of crossbuck sign post.
 - See the Crossbuck Assemblies with YIELD or STOP Signs at Passive Grade Crossings section of the TMUTCD for further details about sign mounting arrangements.

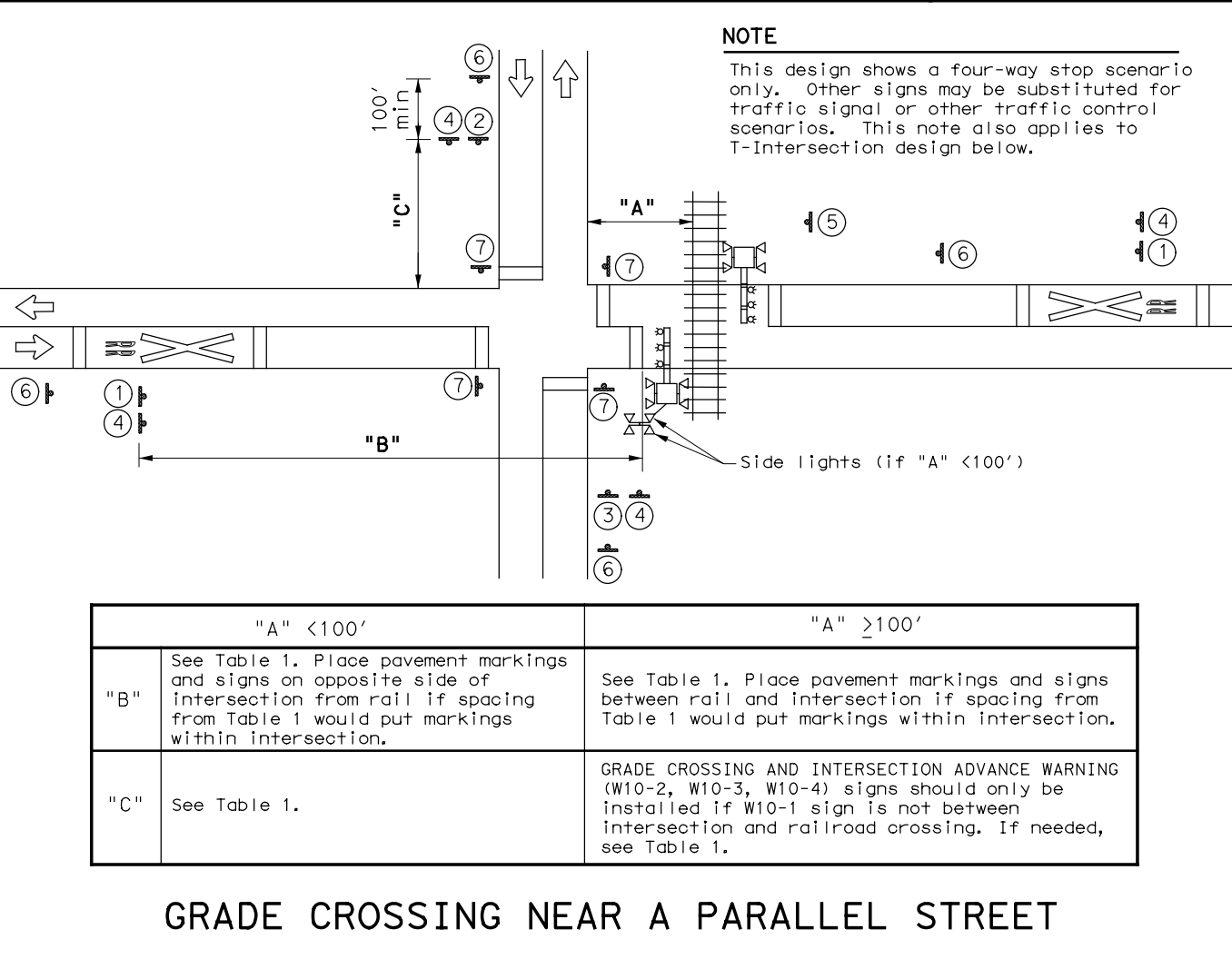


PATHWAY CROSSING

- NOTES**
- A shared use path is considered a separate pathway crossing when more than 25' from traveled way of adjacent roadway.
 - Detectable warning used at stop bar.
 - Smaller signs preferred. See the Design of Bicycle Signs section within the TMUTCD for sizing details.

Approach Speed (mph)	Desirable Placement (feet)
20	100
25	100
30	100
35	100
40	125
45	175
50	250
55	325
60	400
65	475
70	550
75	650

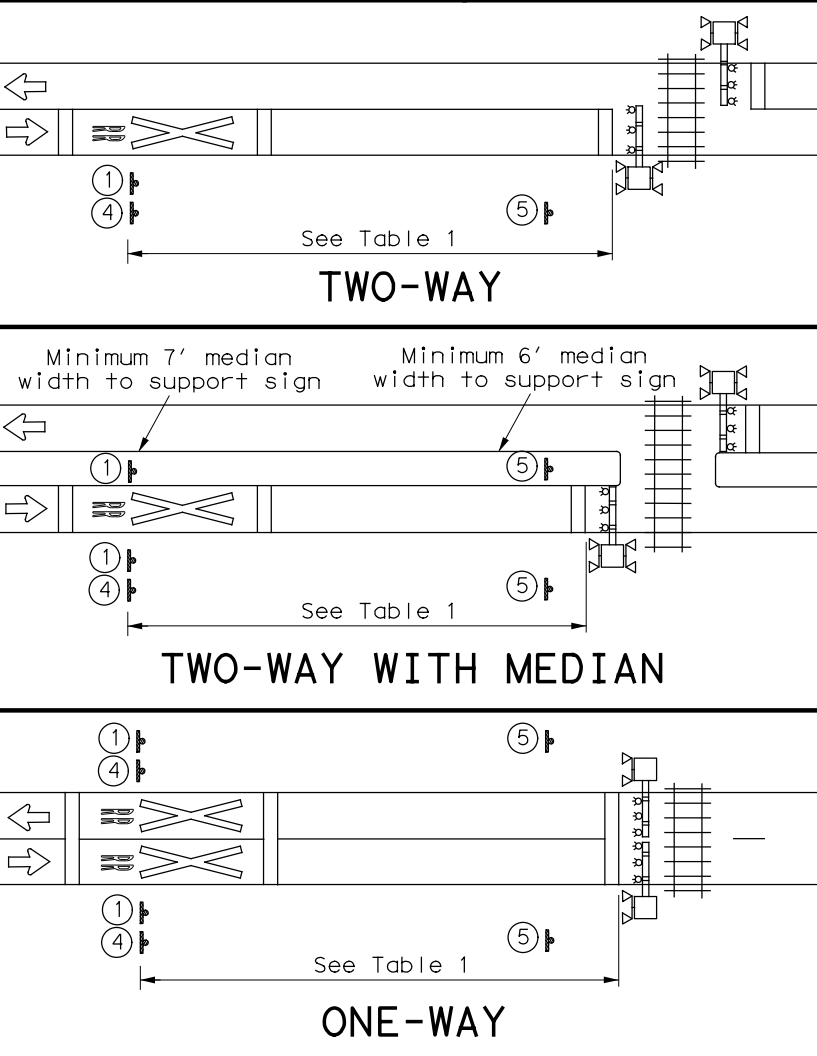
- GENERAL NOTES**
- Railroad company to provide active traffic control devices, CROSSBUCK (R15-1), NUMBER OF TRACKS (R15-2P) plaque (if more than 1 track), and EMERGENCY NOTIFICATION (I-13) signs.
 - LOW GROUND CLEARANCE (W10-5) signs may be relocated further upstream of crossing to provide advance warning of alternate route.
 - GRADE CROSSING AND INTERSECTION ADVANCE WARNING (W10-2) signs may be modified as needed to fit roadway geometry.
 - Table 1 placement distances may vary per the Placement of Warning Signs section of the TMUTCD.
 - See Table 1 to determine placement of STOP AHEAD (W3-1) and YIELD AHEAD (W3-2) signs unless shown otherwise.
 - DO NOT STOP ON TRACKS (R8-8) signs installed when potential for vehicles stopping on tracks is significant as determined by sealing engineer. Install so sign does not block view of RR mast.
 - See the Standard Highway Sign Design for Texas (SHSD) manual for sign and pavement marking details.



NOTE
This design shows a four-way stop scenario only. Other signs may be substituted for traffic signal or other traffic control scenarios. This note also applies to T-intersection design below.

	"A" < 100'	"A" ≥ 100'
"B"	See Table 1. Place pavement markings and signs on opposite side of intersection from rail if spacing from Table 1 would put markings within intersection.	See Table 1. Place pavement markings and signs between rail and intersection if spacing from Table 1 would put markings within intersection.
"C"	See Table 1.	GRADE CROSSING AND INTERSECTION ADVANCE WARNING (W10-2, W10-3, W10-4) signs should only be installed if W10-1 sign is not between intersection and railroad crossing. If needed, see Table 1.

GRADE CROSSING NEAR A PARALLEL STREET



TWO-WAY

TWO-WAY WITH MEDIAN

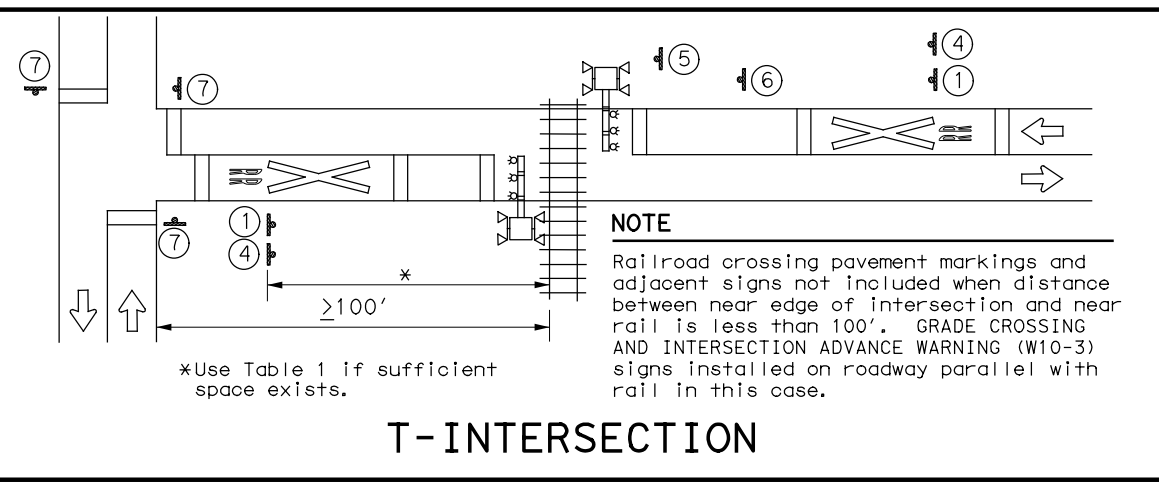
ONE-WAY

SIGNS

** ① W10-1 36" Dia.	** ② W10-2L 36" X 36"	** ③ W10-2R 36" X 36"	IF NEEDED ④ LOW GROUND CLEARANCE W10-5P 30" X 24"
IF NEEDED ⑤ R8-8 24" X 30"	IF NEEDED ⑥ W3-1 30" X 30"	⑦ STOP R1-1 36" X 36" ALL WAY R1-3P 18" X 6"	⑧ STOP R1-1 36" X 36" RAIL CROSSING 3 TRACKS R15-2P 27" X 18"
⑨ R15-1 48" X 9" RAIL CROSSING 3 TRACKS R15-2P 27" X 18"	⑩ R15-1 48" X 9" RAIL CROSSING 3 TRACKS R15-2P 27" X 18"	⑪ ** NO GATES OR LIGHTS W10-13P 30" X 24"	⑫ I-13 15" X 9" REPORT EMERGENCY OR PROBLEM 1-800-555-5555 CROSSING 836 597 H

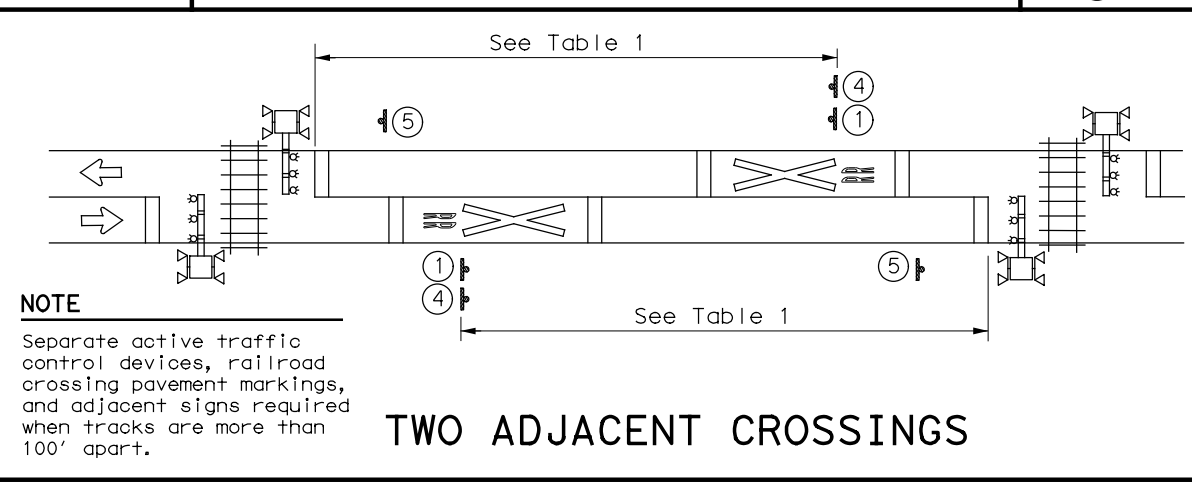
IF NEEDED
⑬ W3-2
30" X 30"

**** Includes a NO TRAIN HORN (W10-9P) plaque if crossing is in a Quiet Zone. If needed, is mounted below W10-2/W10-3/W10-4 signs.**



T-INTERSECTION

NOTE
Railroad crossing pavement markings and adjacent signs not included when distance between near edge of intersection and near rail is less than 100'. GRADE CROSSING AND INTERSECTION ADVANCE WARNING (W10-3) signs installed on roadway parallel with rail in this case.



TWO ADJACENT CROSSINGS

NOTE
Separate active traffic control devices, railroad crossing pavement markings, and adjacent signs required when tracks are more than 100' apart.

Texas Department of Transportation
Traffic Safety Division Standard

RAILROAD CROSSING DETAILS SIGNING & STRIPING

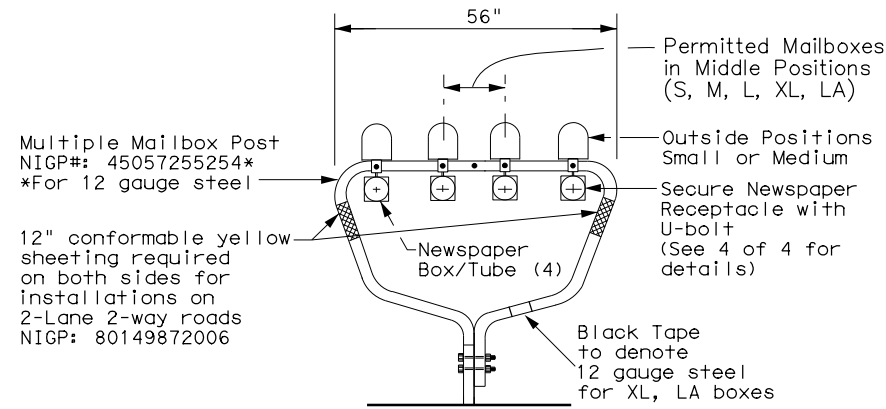
RCD(2)-22

FILE: rcd2-22.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0439	05	026	SH 194
2-16	DIST	COUNTY	SHEET NO.	
11-22	LBB	HALE	309	

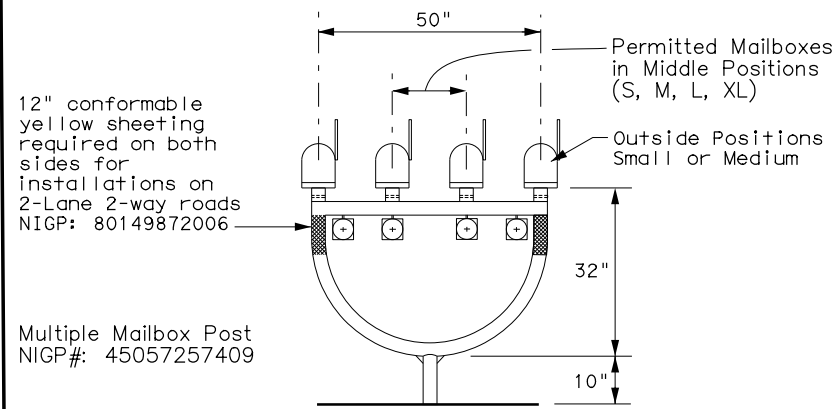
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DATE: 7/29/2024 9:28:10 PM
 FILE: 06_mb-21(1).dgn

TYPE 1 - MULTIPLE



TYPE 4 - MULTIPLE



MAILBOX SIZES

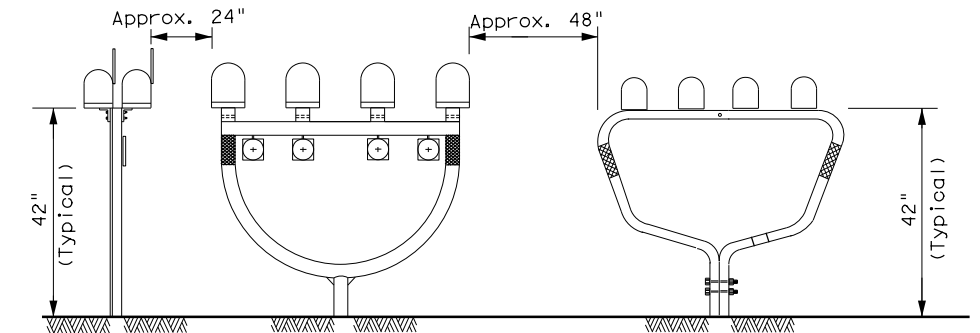
MAILBOX SIZE	TYPICAL DIMENSIONS			MAX ** WEIGHT
	LENGTH	WIDTH	HEIGHT	
SMALL	19 1/2"	6"	7"	6 LBS
MEDIUM	22 1/2" *	8" *	11 1/2" *	8 LBS
LARGE	23 1/2"	11 1/2"	13 1/2"	11 LBS
EXTRA LARGE	18"	14"	12"	13 LBS
LOCKABLE	18"	11 1/2"	15"	23 LBS

GENERAL NOTES:

- Dimensions shown (length, width, and height) are typical, not maximums. However, anytime a medium size mailbox is mounted on a single/double mount or on the outside position on a multi mount, the dimensions shown are maximums.
- Mailboxes shall be made of light weight sheet metal or light weight plastic. Heavy steel, cast iron or decorative mailboxes shall not be used on the state highway system.

* See Note 1.
 ** Excluding Molded Plastic on 4 X 4 Post

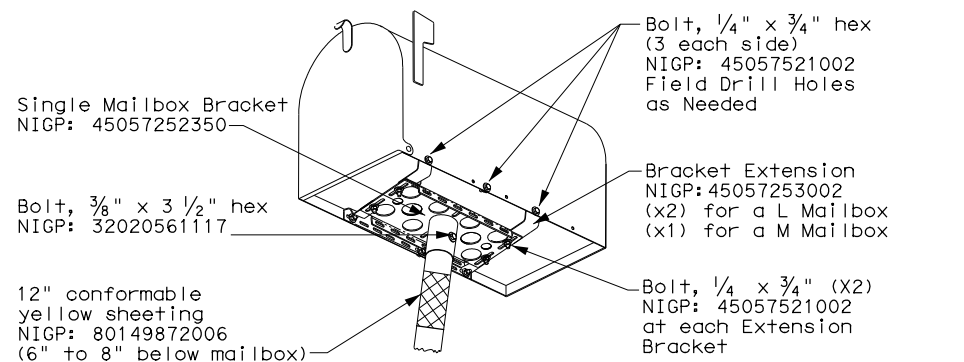
TYPICAL INSTALLATION MEASUREMENTS



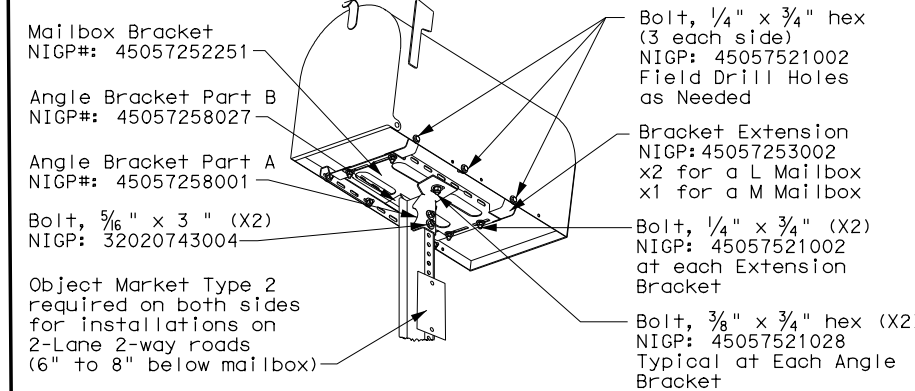
NOTE:

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

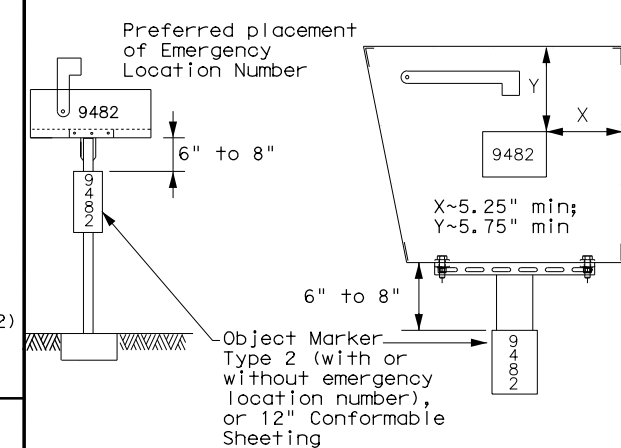
TYPE 2 and 4 - SINGLE/DOUBLE



TYPE 3 - SINGLE/DOUBLE



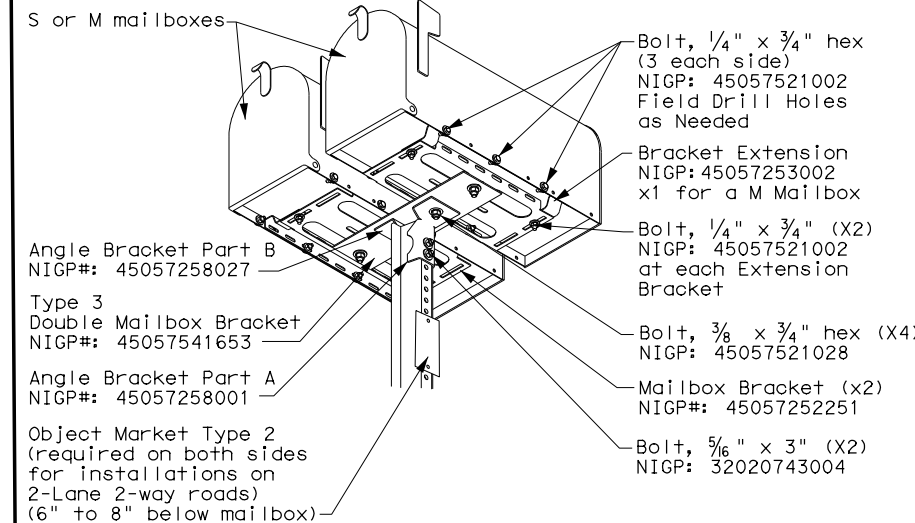
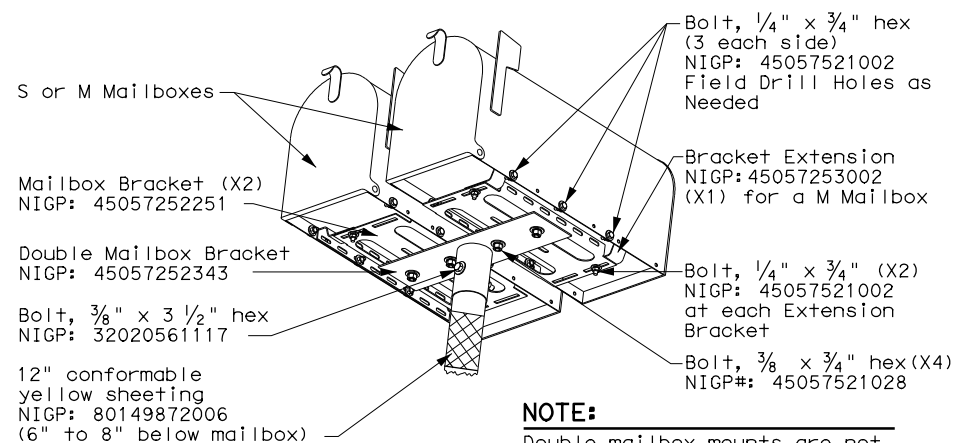
PLACEMENT OF EMERGENCY LOCATION NUMBER



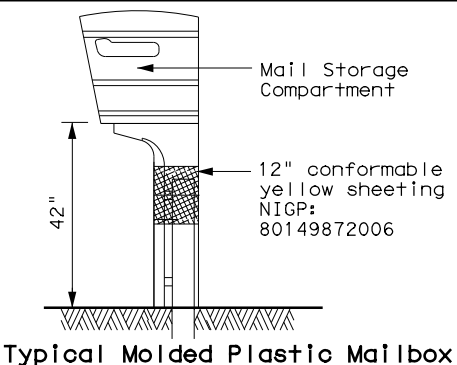
NOTES:

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

SHEET 1 OF 4



TYPE 5



NOTE:

Double mailbox mounts are not allowed with a type 4 multiple mailbox installation



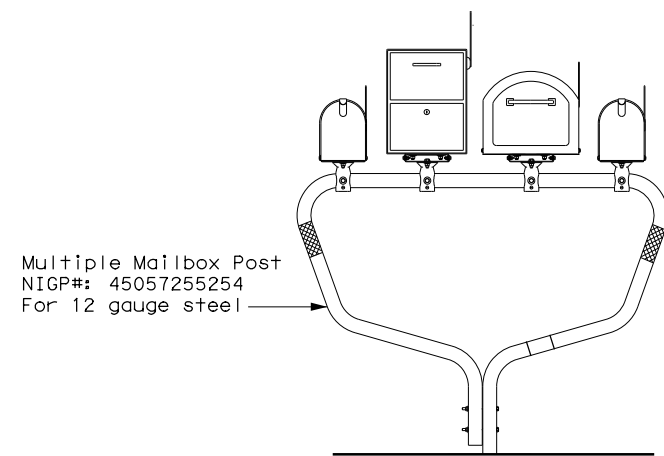
MAILBOX MOUNTING AND ASSEMBLY

MB(1)-21

FILE: MB-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT March 2004	CONT	SECT	JOB	HIGHWAY
REVISIONS	0439	05	026	SH 194
2/2005	11/2009	4/2015		
6/2005	1/2011			
11/2006	7/2014			
	DIST	COUNTY		SHEET NO.
	LBB	HALE		309A

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 1- MULTI LOCKABLE AND XL MAILBOX



Multiple Mailbox Post
NIGP#: 45057255254
For 12 gauge steel

TYPE 2/4 - SINGLE LOCKABLE MAILBOX

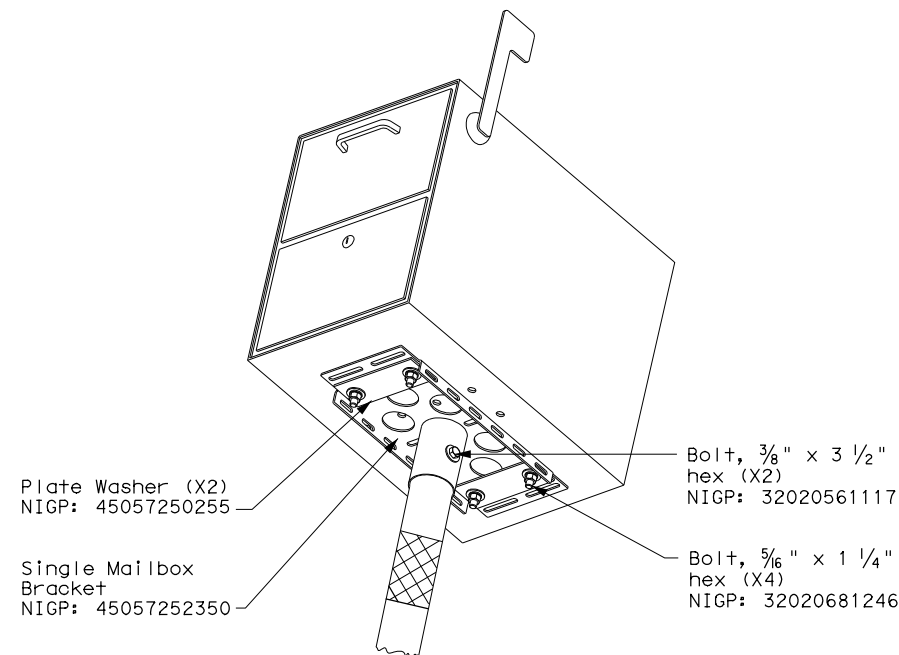


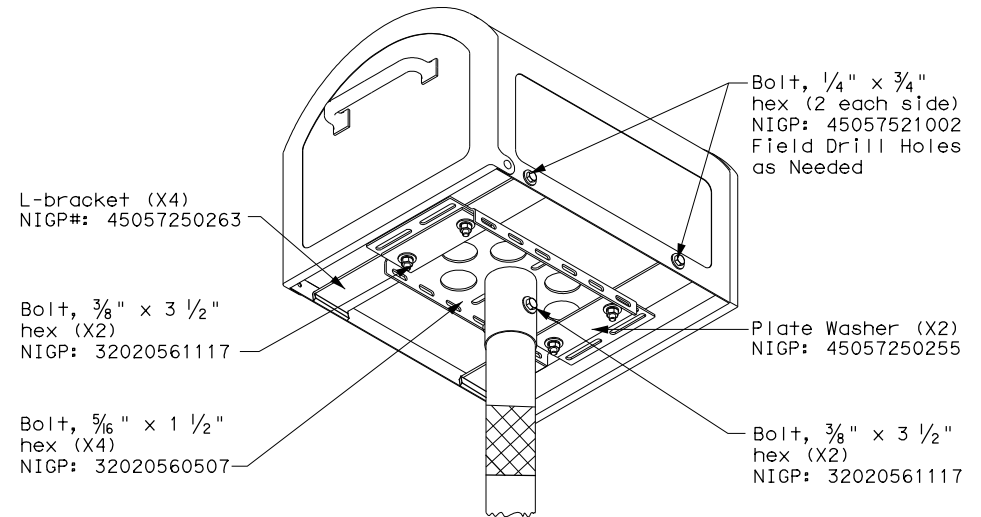
Plate Washer (X2)
NIGP: 45057250255

Single Mailbox
Bracket
NIGP: 45057252350

Bolt, 3/8" x 3 1/2"
hex (X2)
NIGP: 32020561117

Bolt, 5/16" x 1 1/4"
hex (X4)
NIGP: 32020681246

TYPE 2/4 - SINGLE XL MAILBOX



L-bracket (X4)
NIGP#: 45057250263

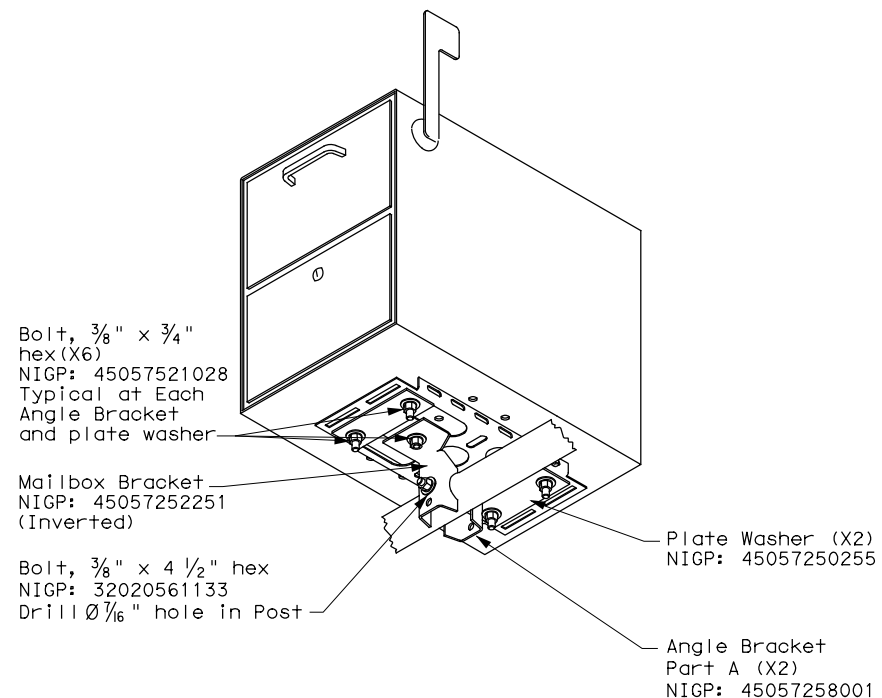
Bolt, 3/8" x 3 1/2"
hex (X2)
NIGP: 32020561117

Bolt, 5/16" x 1 1/2"
hex (X4)
NIGP: 32020560507

Single Mailbox
Bracket
NIGP: 45057252350

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

TYPE 1 MULTI - LOCKABLE ARCHITECTURAL (LA)



Bolt, 3/8" x 3/4"
hex (X6)
NIGP: 45057521028
Typical at Each
Angle Bracket
and plate washer

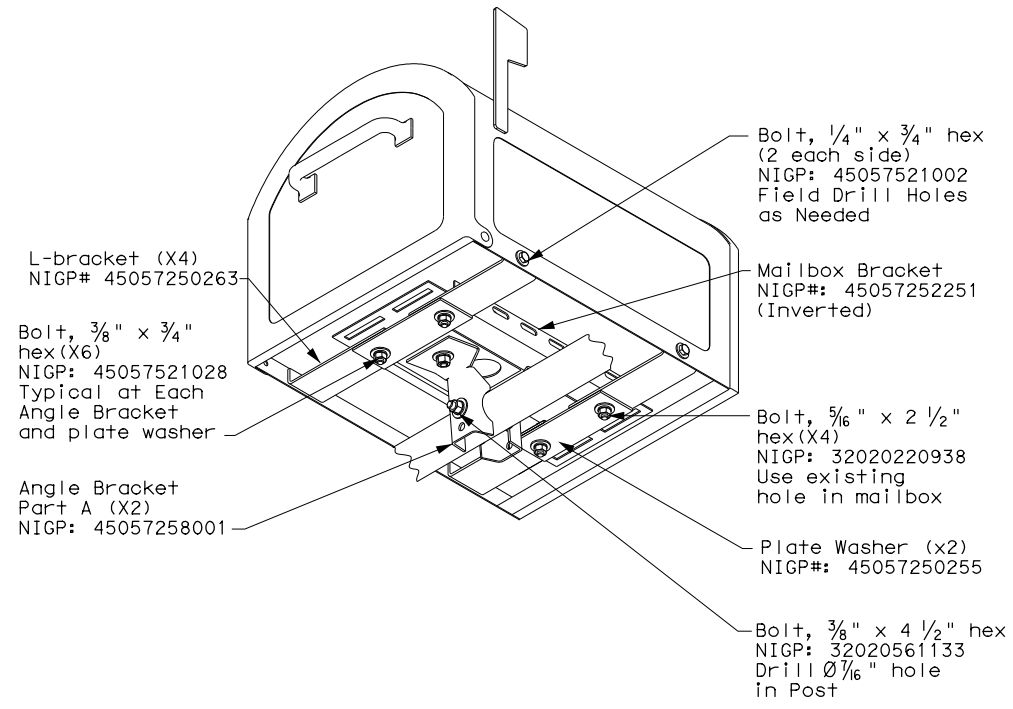
Mailbox Bracket
NIGP: 45057252251
(Inverted)

Bolt, 3/8" x 4 1/2" hex
NIGP: 32020561133
Drill Ø 1/16" hole in Post

Plate Washer (X2)
NIGP: 45057250255

Angle Bracket
Part A (X2)
NIGP: 45057258001

TYPE 1 MULTI - XL MAILBOX



L-bracket (X4)
NIGP# 45057250263

Bolt, 3/8" x 3/4"
hex (X6)
NIGP: 45057521028
Typical at Each
Angle Bracket
and plate washer

Angle Bracket
Part A (X2)
NIGP: 45057258001

Bolt, 1/4" x 3/4" hex
(2 each side)
NIGP: 45057521002
Field Drill Holes
as Needed

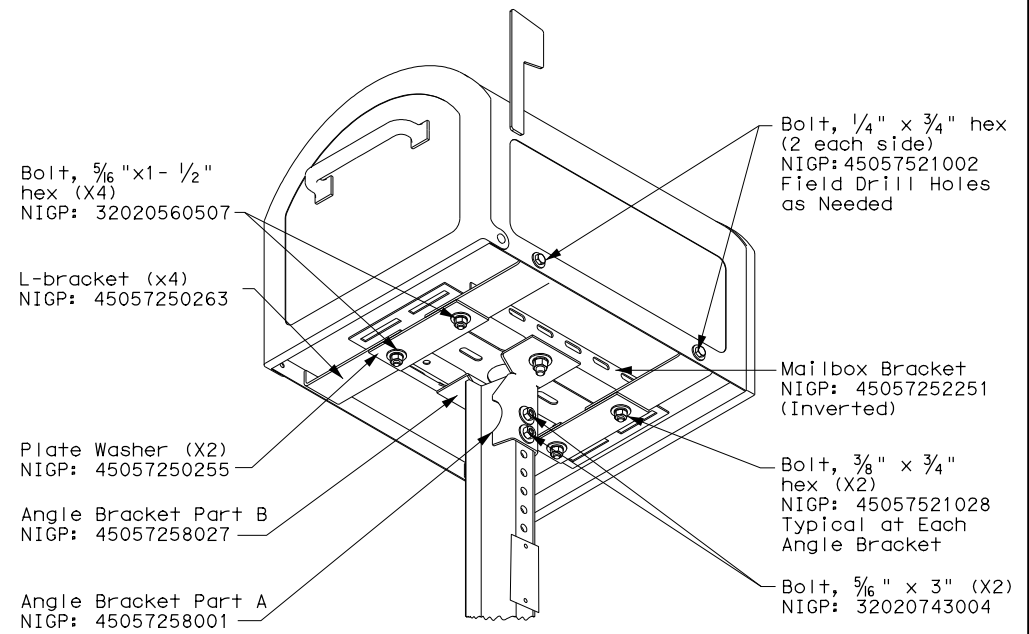
Mailbox Bracket
NIGP#: 45057252251
(Inverted)

Bolt, 5/16" x 2 1/2"
hex (X4)
NIGP: 32020220938
Use existing
hole in mailbox

Plate Washer (x2)
NIGP#: 45057250255

Bolt, 3/8" x 4 1/2" hex
NIGP: 32020561133
Drill Ø 1/16" hole
in Post

TYPE 3 - XL MAILBOX MOUNTING



Bolt, 5/16" x 1- 1/2"
hex (X4)
NIGP: 32020560507

L-bracket (x4)
NIGP: 45057250263

Plate Washer (X2)
NIGP: 45057250255

Angle Bracket Part B
NIGP: 45057258027

Angle Bracket Part A
NIGP: 45057258001

Bolt, 1/4" x 3/4" hex
(2 each side)
NIGP: 45057521002
Field Drill Holes
as Needed

Mailbox Bracket
NIGP: 45057252251
(Inverted)

Bolt, 3/8" x 3/4"
hex (X2)
NIGP: 45057521028
Typical at Each
Angle Bracket

Bolt, 5/16" x 3" (X2)
NIGP: 32020743004

SHEET 2 OF 4

		Maintenance Division Standard	
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XL AND LOCKABLE ARCHITECTURAL MAILBOX ASSEMBLY MB (2) -21

FILE: MB-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT March 2004	CONT	SECT	JOB	HIGHWAY
2/2005	REVISIONS	0439	05	026
6/2005	11/2009	4/2015		
11/2006	1/2011			
	DIST	COUNTY	SHEET NO.	
	LBB	HALE	309B	

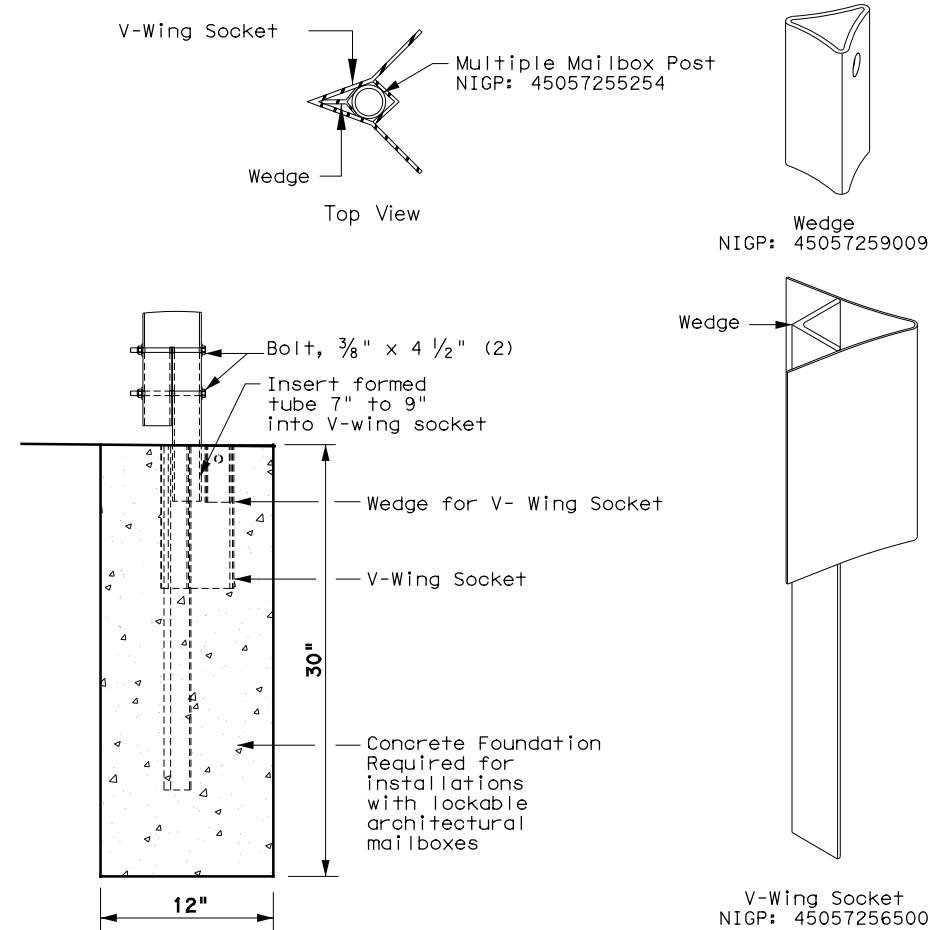
DATE: 7/29/2024 9:28:11 PM
FILE: 06_mb-21(1).dgn

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.

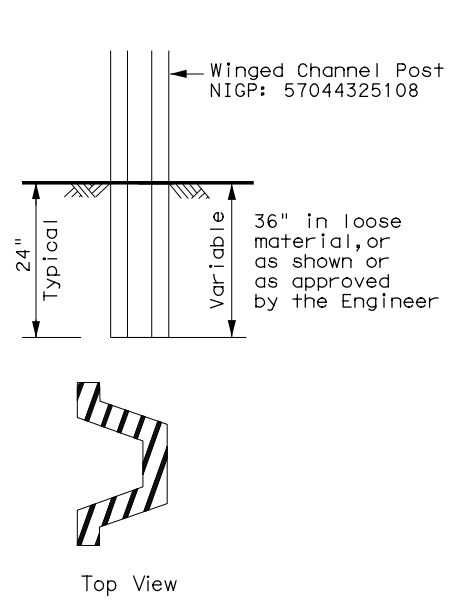
DATE: 7/29/2024 9:28:11 PM
 FILE: 06_mb-21(1).dgn

TYPE 1 - SUPPORT/FOUNDATION

Thin Wall Tube w/ V-LOC Anchorage

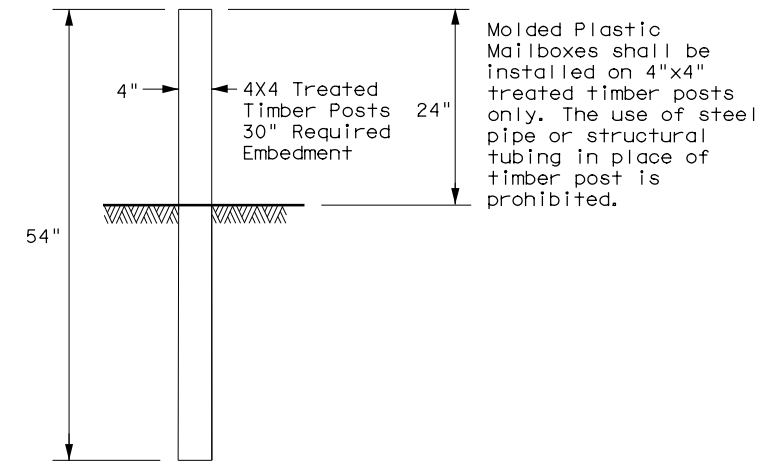


TYPE 3 - SUPPORT/FOUNDATION

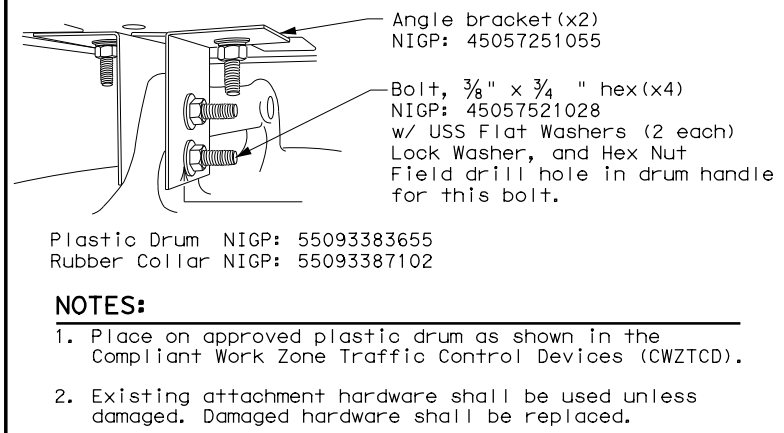


- NOTES:**
1. Attach Object Marker (OM) facing direction of traffic.
 2. OM will also be required on opposite side if installed on a 2-Lane, 2-Way roadway.

TYPE 5 - SUPPORT/FOUNDATION

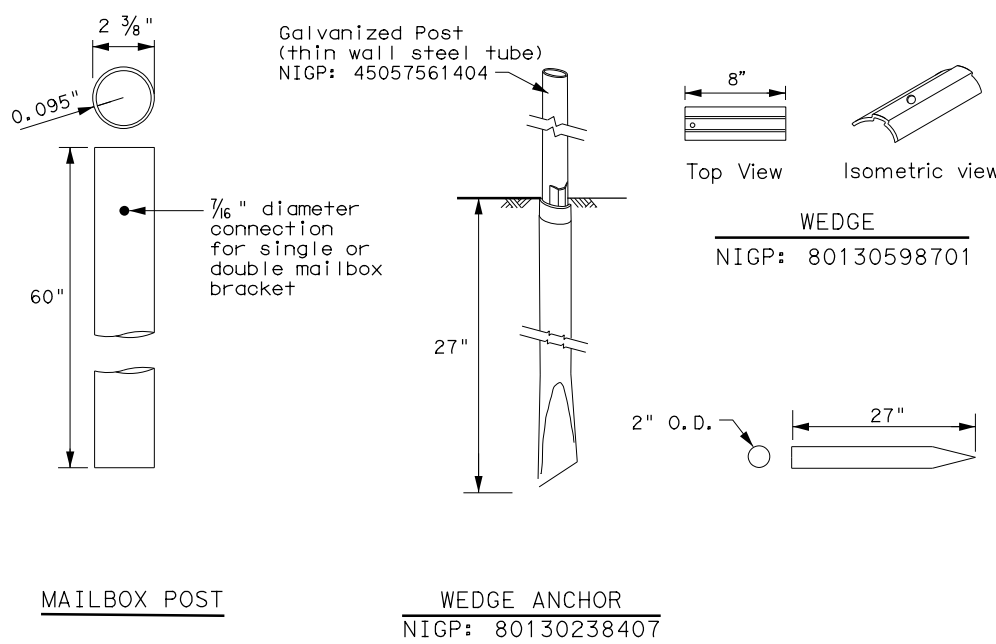


TYPE 6 - TEMPORARY MAILBOX SUPPORT



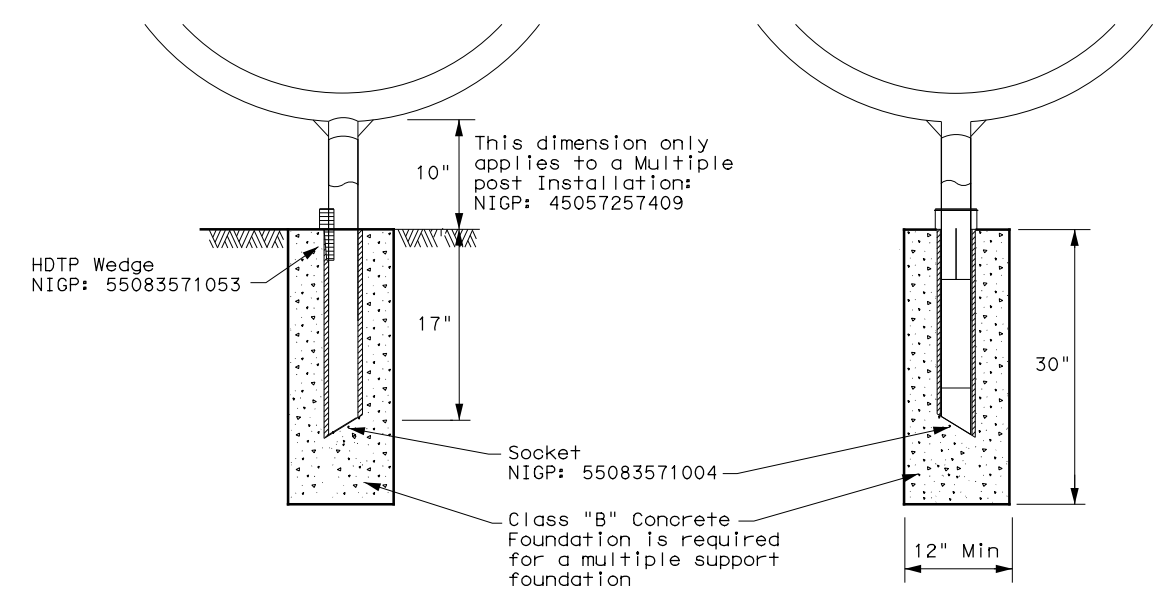
TYPE 2 - SUPPORT/FOUNDATION

Thin Wall Steel Tube w/Wedge Anchor System



TYPE 4 - SUPPORT/FOUNDATION

Whitecoated steel post NIGP: 45057561107
 Multiple post NIGP: 45057257409
 Recycled Rubber post (RR) NIGP: 45057561057



- GENERAL NOTES:**
1. Erect post plumb or vertical.
 2. When galvanized part is required galvanize in accordance with Item 445.
 3. Use a concrete footing as shown or when directed. Concrete footing will be required when soils do not hold the support/foundations in a stable condition, only on Type 1, Type 2, and Type 4

SHEET 3 OF 4



MAILBOX SUPPORT AND FOUNDATION

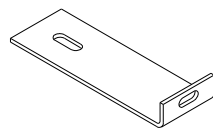
MB (3) -21

FILE: MB-21.dgn	DN:	CK:	DW:	CK:
© TxDOT March 2004	CONT	SECT	JOB	HIGHWAY
2/2005	REVISIONS	0439	05	026
6/2005	1/2011	DIST	COUNTY	SHEET NO.
11/2006	7/2014	LBB	HALE	309C

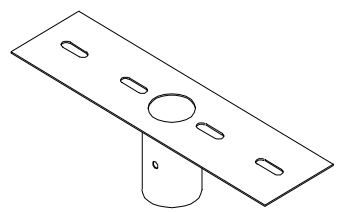
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practise Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: 7/29/2024 9:28:11 PM
 FILE: 06_mb-21(1).dgn

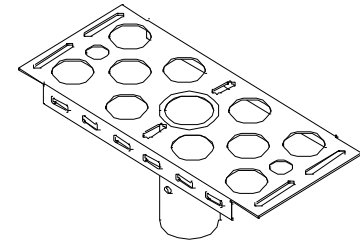
TYPE	TYPE 1	TYPE 2	TYPE 3	TYPE 4	TYPE 5	TYPE 6
Configuration	Multiple	Single or Double	Single or Double	Single	Double	Multiple
Mailbox Size NIGP #	Outside Position: S or M Inside Position: S, M, L, XL, or LA	Single: S, M, L, XL, or LA Double: SS, SM, MM	Single: S, M, L, or XL Double: SS, SM, MM	S, M, L, XL, or LA	SS, SM, or MM	Outside Position: S or M Inside Position: S, M, L, or XL
Mailbox Post NIGP #	45057255254 (Galvanized Multiple)	45057561404 (Thin Walled Gavanize)	57044325108 (Wing Channel Post)	45057561107 (Thin walled white powder coated) 45057561057 (Recycled Rubber Post: S or M only)	45057561107 (Thin Walled White Powder Coated)	45057257409 (White Powder Coated Multiple)
Post and Mailbox Hardware NIGP #	45057259009 (Wedge) 45057256500 (V-Wing Socket) 45057253002 (Bracket Extension) 45057252251 (Mailbox Bracket) 45057258001 (Part A Angle Bracket x2) 45057250255 (Plate Washer for XL/LA x2) 45057250263 (L-Bracket for XL x4)	80130598701 (Wedge) 80130238407 (Wedge Anchor) 45057253002 (Bracket Extension) 45057252343 (Double MB Bracket) 45057252350 (S. Mailbox Bracket) 45057252251 (Mailbox Bracket) 45057250255 (Plate Washer for XL/LA x2) 45057250263 (L-Bracket for XL x4)	45057541653 (Type 3 Double Mailbox Bracket) 45057252251 (Mailbox Bracket) 45057253002 (Bracket Extension) 45057258001 (Part A Angle Bracket) 45057258027 (Part B Angle Bracket) 45057250255 (Plate Washer for XL x2) 45057250263 (L-Bracket for XL x4)	55083571053 (Wedge) 55083571004 (Socket) 45057252350 (Single Mailbox Bracket) 45057253002 (Bracket Extension) 45057250255 (Plate Washer for XL/LA x2) 45057250263 (L-Bracket for XL x4)	55083571053 (Wedge) 55083571004 (Socket) 45057253002 (Bracket Extension) 45057252343 (Double Mount Bracket) 45057252251 (Mailbox Bracket x2)	55083571053 (Wedge) 55083571004 (Socket) 45057253002 (Bracket Extension) 45057252350 (Single Mount Bracket) 45057250255 (Plate Washer for XL x2) 45057250263 (L-Bracket for XL x4)
Foundation Used	Class B Concrete (Required for LA Mailboxes)	Class B Concrete (Required for LA Mailboxes)	None	Class B Concrete (not used with recycled rubber post, required for LA Mailboxes)	Class B Concrete (not required)	Class B Concrete



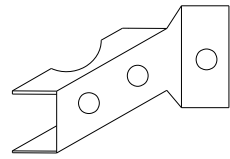
NIGP: 45057250263
L-Bracket x4 for XL sized mailboxes



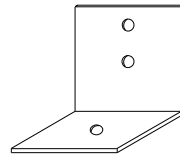
NIGP: 45057252343
Double Mailbox Bracket For Type 2 and Type 4 double mount



NIGP: 45057252350
Single Mailbox Bracket For Type 2 single and for Type 4 single and multi mount



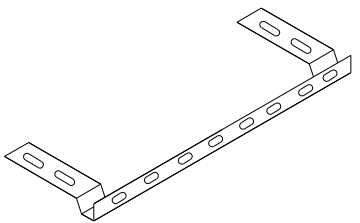
NIGP: 45057258001
Part "A" Angle Bracket For Type 1 multi (2 per mailbox) and Type 3 single and double



NIGP: 45057251055
Type 6 Angle Bracket (2 per mailbox)



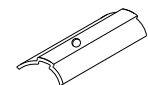
NIGP: 45057252251
Mailbox Bracket For Type 1 multi and any double mount (use 2)




NIGP: 45057253002
Bracket Extension Use 1 for a medium Mailbox Use 2 for a Large Mailbox



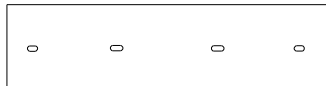
NIGP: 45057258027
Part "B" Angle Bracket For Type 3 single and double



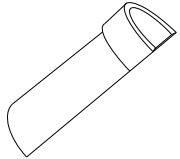
NIGP: 80130598701
Wedge for Type 2



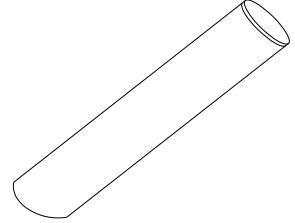
NIGP: 45057250255
Plate Washer for Architecural and XL Mailboxes




NIGP: 45057541653
Type 3 double mailbox bracket



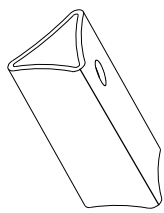
NIGP: 55083571053
Type 4 Mailbox Wedge



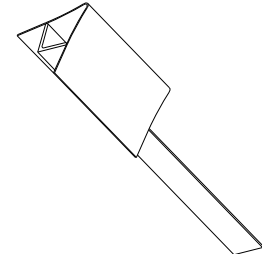
NIGP: 55083571004
Type 4 Mailbox Socket



NIGP: 80130238407
Type 2 Wedge Anchor



NIGP: 45057259009
Wedge for Type 1 V-wing Socket



NIGP: 45057256500
V-wing Socket for Type 1 Foundation

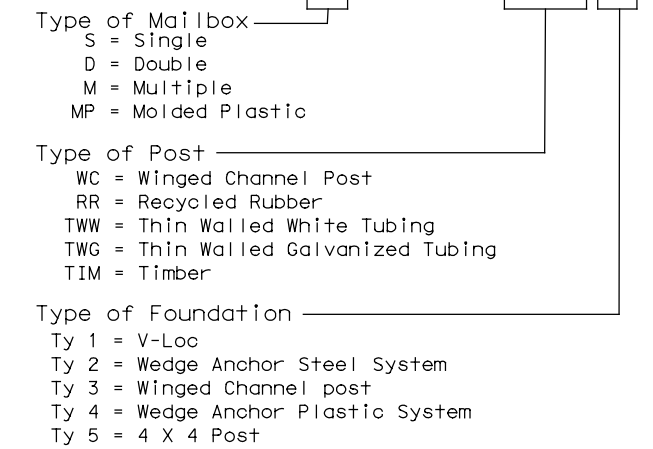
NIGP #	OBJECT MARKERS AND CONFORMABLE SHEETING
55008311759	Type 2 OM 4"x4" (3 Needed) for Type 3 Wing Channel Post
55008312906	Type 2 OM 6"x12" (1 needed) for Type 3 Wing Channel Post
80149872006	12" Conformable Reflective Yellow Sheeting for Flexible Posts

NOTES:


- Type 2 object marker in accordance with Traffic Engineering Standard Delineators & Object Markers.
- A light weight receptacle for newspaper delivery can be attached to mailbox posts if the receptacle does not touch the mailbox, present a hazard to traffic or delivery of the mail, extend beyond the front of the mailbox, or display advertising, except the publication title.

BID CODES FOR CONTRACTS

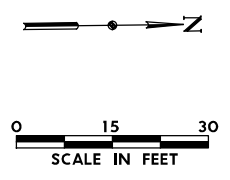
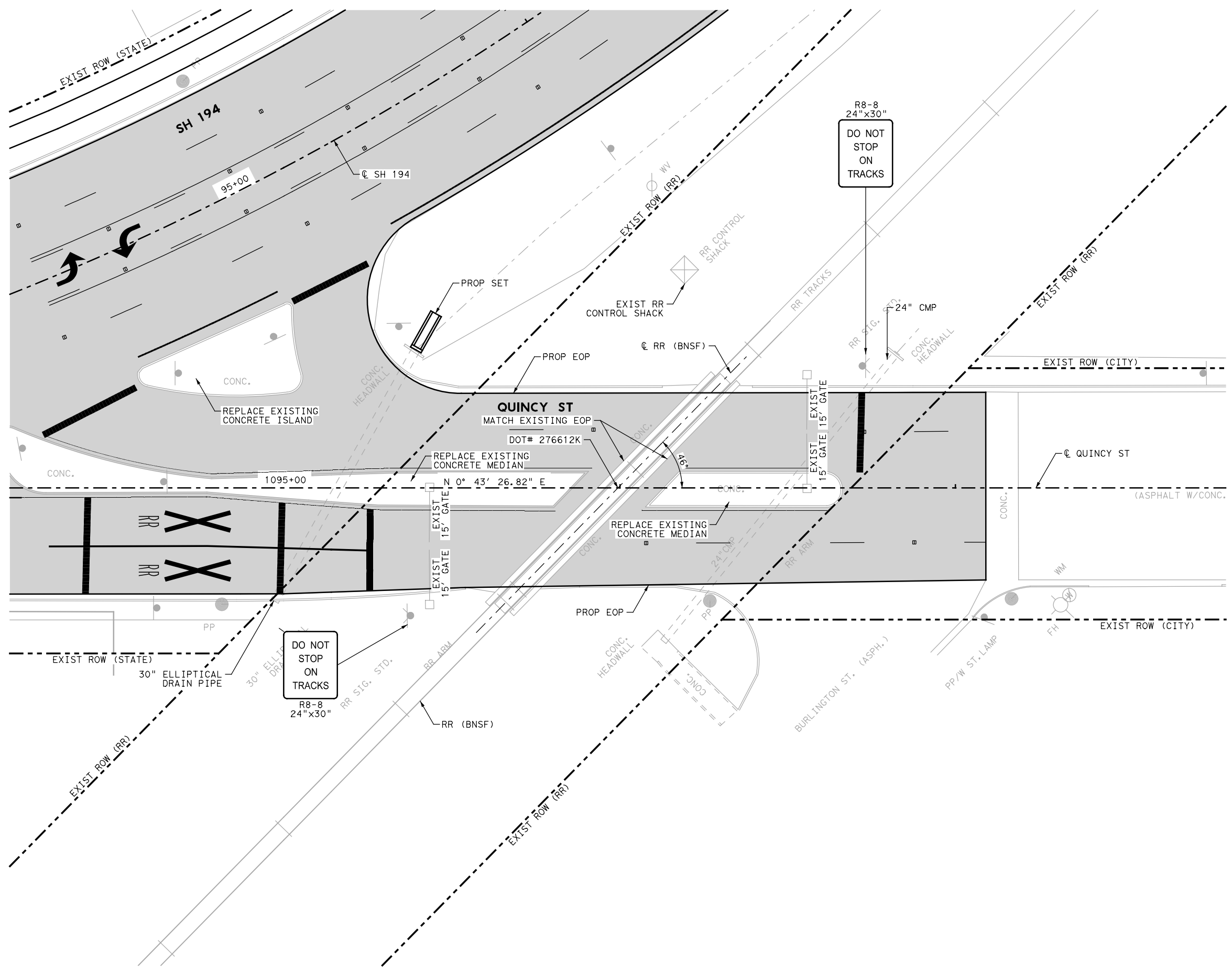
MB-(X) ASSM TY (XXX) (X)



SHEET 4 OF 4

 Texas Department of Transportation				Maintenance Division Standard	
<h2>NIGP PARTS LIST AND COMPATIBILITY</h2> <h3>MB(4)-21</h3>					
FILE: MB-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT	
© TxDOT March 2004	CONT	SECT	JOB	HIGHWAY	
2/2005	6/2005	11/2009	4/2015	0439 05	026 SH 194
				DIST	COUNTY
				LBB	HALE
					SHEET NO. 309D

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf g PENTABLE: I94050_SH194_Pentable.tbl
 USER: Arabinson DATE: 7/29/2024 TIME: 7:46:07 PM SCALE: 1:30
 FILE: SH194_RailroadExhibitA_Quincy.dgn



LEGEND
 [Grey Shaded Area] PAVEMENT REHABILITATION

NOTES
 1. EXISTING GATES TO REMAIN.
 2. MATCH EXISTING EOP.

NO.	DATE	REVISION	APPROVED

SH 194 FROM FM 3466 TO IH 27
 EXHIBIT "A"
 QUINCY STREET
 DOT# 276612K

HORZ SCALE: 1"=30'			SHEET 1 OF 1
FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET		HIGHWAY NO. SH 194
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 310
CONTROL 0439	SECTION 05	JOB 026	

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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.: 276612K
 Crossing Type: AT GRADE
 RR Company Operating Track at Crossing: BNSF
 RR Company Owning Track at Crossing: LBWR
 RR MP: 325.791
 RR Subdivision: DIMMITT SPUR
 City: PLAINVIEW
 County: HALE
 CSJ at this Crossing: 0439-05-026
 Latitude: 34.2022961
 Longitude: -101.7248083

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

NO WORK TO BE PERFORMED AT CROSSING. WORK BEING PERFORMED WITHIN 50-FT OF BNSF RIGHT OF WAY.

Scope of Work to be performed by Railroad Company:

FLAGGING

II. FLAGGING & INSPECTION

No. of Days of Railroad Flagging Expected: 10
 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:

RAILPROS
 817-315-0513
 BNSFINFO@RAILPROS.COM

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 checked="" type="checkbox"/> Not Required	
<input 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: SEE ITEM 5, ARTICLE 8.4
 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: BNSF _____

Railroad Emergency Line at: 800-832-5452

Location: DOT 276612K

RR Milepost: 325.791

Subdivision: DIMMITT SPUR

RRD Review Only

Initials:

Date: 07/31/2024

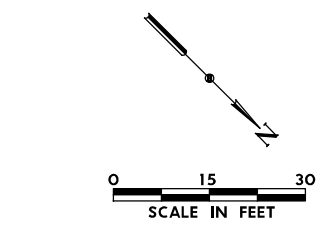
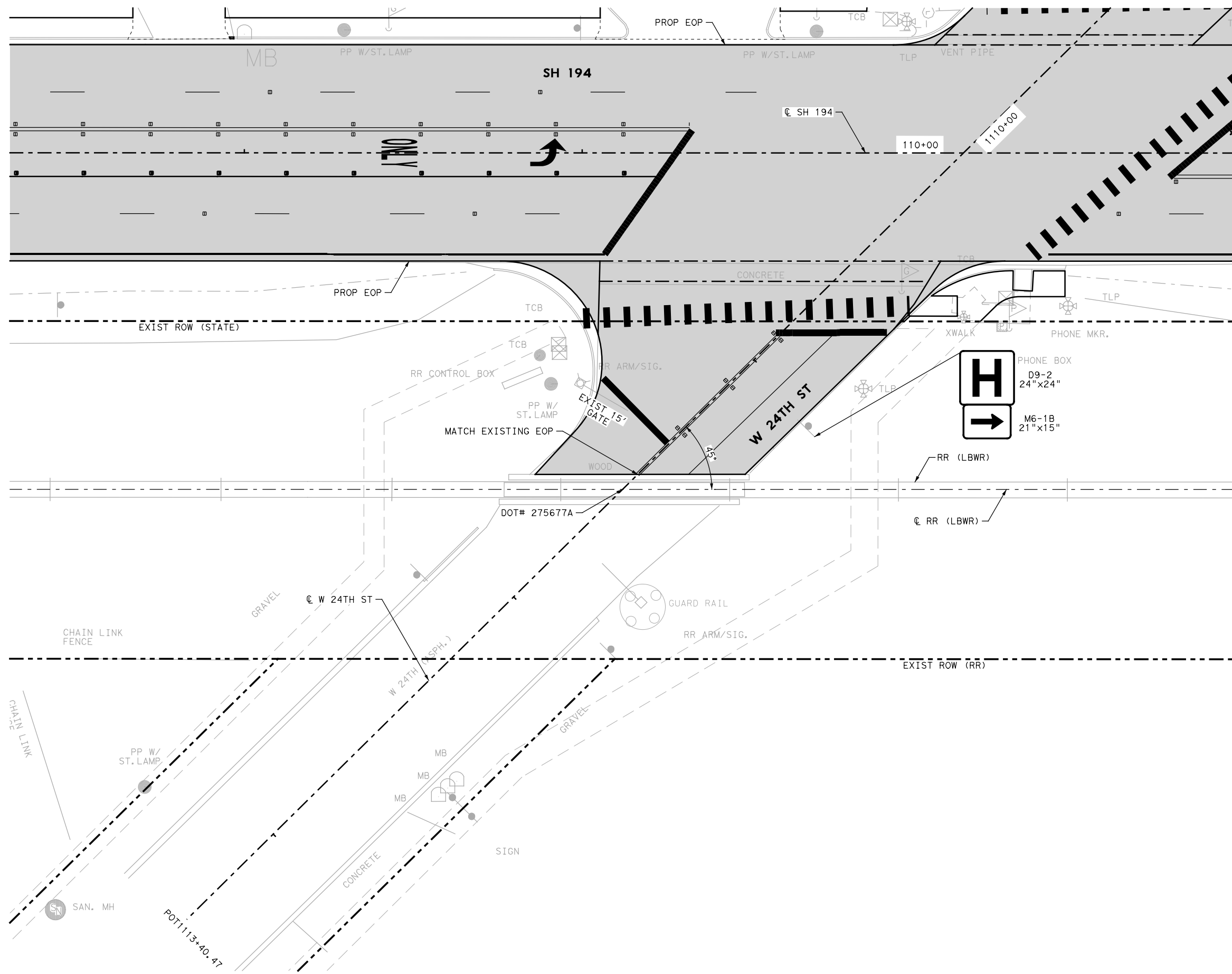
Rail Division

RAILROAD SCOPE OF WORK

PROJECT SPECIFIC DETAILS

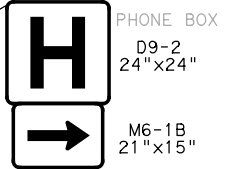
FILE: rr-scope-of-work.pdf	DN: TxDOT	CK:	DW:	CK:
© TxDOT June 2014	CONT	SECT	JOB	HIGHWAY
6/2023	0439	05	026	SH 194
REVISIONS				
	DIST	COUNTY		SHEET NO.
	LBB	HALE		311

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: ArcInson DATE: 7/29/2024 TIME: 7:46:25 PM SCALE: 1:30
 FILE: SH194_RailroadExhibitA_24thSt.dgn



LEGEND
 [Shaded Area] PAVEMENT REHABILITATION

NOTES
 1. EXISTING GATES TO REMAIN.
 2. MATCH EXISTING EOP.



NO.	DATE	REVISION	APPROVED



SH 194 FROM FM 3466 TO IH 27
 EXHIBIT "A"
 W 24TH ST
 DOT# 275677A

HORZ SCALE: 1"=30'			SHEET 1 OF 1
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	312
CONTROL	SECTION	JOB	
0439	05	026	

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.: 275677A
 Crossing Type: AT GRADE
 RR Company Operating Track at Crossing: BNSF
 RR Company Owning Track at Crossing: LBWR
 RR MP: 326.110
 RR Subdivision: DIMMITT SPUR
 City: PLAINVIEW
 County: HALE
 CSJ at this Crossing: 0439-05-026
 Latitude: 34.2049466
 Longitude: -101.7282333

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

ROADWAY REHABILITATION CONSISTING OF PAVEMENT REMOVAL, BASE TREATMENT, NEW ACP, STRIPING, AND SIGN ON WEST SIDE OF THE CROSSING.

Scope of Work to be performed by Railroad Company:

FLAGGING

II. FLAGGING & INSPECTION

No. of Days of Railroad Flagging Expected: 10
 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@railprosfs.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:

RAILPROS
 817-315-0513
 BNSFINFO@RAILPROS.COM

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: SEE ITEM 5, ARTICLE 8.4
 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: BNSF _____
 Railroad Emergency Line at: 800-832-5452
 Location: DOT 275677A
 RR Milepost: 326.110
 Subdivision: DIMMITT SPUR

RRD Review Only
 Initials: [Signature]
 Date: 07/15/2024

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	0439	05	026	SH 194
	DIST	COUNTY		SHEET NO.
	LBB	HALE		313

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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.: 275676T
 Crossing Type: AT GRADE
 RR Company Operating Track at Crossing: BNSF
 RR Company Owning Track at Crossing: LBWR
 RR MP: 326.217
 RR Subdivision: DIMMITT SPUR
 City: PLAINVIEW
 County: HALE
 CSJ at this Crossing: 0439-05-026
 Latitude: 34.2022961
 Longitude: -101.7248083

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

NO WORK TO BE PERFORMED AT CROSSING. WORK BEING PERFORMED WITHIN 50-FT OF BNSF RIGHT OF WAY.

Scope of Work to be performed by Railroad Company:

FLAGGING

II. FLAGGING & INSPECTION

No. of Days of Railroad Flagging Expected: 10
 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:

RAILPROS
 817-315-0513
 BNSFINFO@RAILPROS.COM

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.

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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: SEE ITEM 5, ARTICLE 8.4
<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>

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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: BNSF _____

Railroad Emergency Line at: 800-832-5452

Location: DOT 275676T

RR Milepost: 326.217

Subdivision: DIMMITT SPUR

RRD Review Only

Initials: [Signature]

Date: 07/15/2024

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	0439	05	026	SH 194
	DIST	COUNTY		SHEET NO.
	LBB	HALE		314

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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.: 275675L
 Crossing Type: AT GRADE
 RR Company Operating Track at Crossing: BNSF
 RR Company Owning Track at Crossing: LBWR
 RR MP: 326.600
 RR Subdivision: DIMMITT SPUR
 City: PLAINVIEW
 County: HALE
 CSJ at this Crossing: 0439-05-026
 Latitude: 34.210172
 Longitude: -101.734825

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

NO WORK TO BE PERFORMED AT CROSSING. WORK BEING PERFORMED WITHIN 50-FT OF BNSF RIGHT OF WAY.

Scope of Work to be performed by Railroad Company:

FLAGGING

II. FLAGGING & INSPECTION

No. of Days of Railroad Flagging Expected: 10
 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:

RAILPROS
 817-315-0513
 BNSFINFO@RAILPROS.COM

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: SEE ITEM 5, ARTICLE 8.4
<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

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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: BNSF _____
 Railroad Emergency Line at: 800-832-5452
 Location: DOT 275675L
 RR Milepost: 326.600
 Subdivision: DIMMITT SPUR

RRD Review Only
 Initials: [Signature]
 Date: 07/15/2024

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	0439	05	026	SH 194
REVISIONS		COUNTY		SHEET NO.
	LBB	HALE		315

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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.: 275673X
 Crossing Type: AT GRADE
 RR Company Operating Track at Crossing: BNSF
 RR Company Owning Track at Crossing: LBWR
 RR MP: 326.640
 RR Subdivision: DIMMITT SPUR
 City: PLAINVIEW
 County: HALE
 CSJ at this Crossing: 0439-05-026
 Latitude: 34.210914
 Longitude: -101.735789

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

NO WORK TO BE PERFORMED AT CROSSING. WORK BEING PERFORMED WITHIN 50-FT OF BNSF RIGHT OF WAY.

Scope of Work to be performed by Railroad Company:

FLAGGING

II. FLAGGING & INSPECTION

No. of Days of Railroad Flagging Expected: 10
 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

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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@railprosfs.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:

RAILPROS
 817-315-0513
 BNSFINFO@RAILPROS.COM

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.

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Escalated Limits	
Type of Insurance	Amount of Coverage (Minimum)
Workers Compensation	\$500,000 / \$500,000 / \$500,000
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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: SEE ITEM 5, ARTICLE 8.4
 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>

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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.

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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.

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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: BNSF _____

Railroad Emergency Line at: 800-832-5452

Location: DOT 275673X

RR Milepost: 326.640

Subdivision: DIMMITT SPUR

RRD Review Only

Initials: [Signature]

Date: 07/15/2024

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
	0439	05	026	SH 194
REVISIONS				
6/2023	DIST	COUNTY		SHEET NO.
	LBB	HALE		316

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.

					
<p>RAILROAD REQUIREMENTS FOR NON-BRIDGE CONSTRUCTION PROJECTS</p>					
FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT	
© TxDOT October 2018	CONT	SECT	JOB	HIGHWAY	
REVISIONS March 2020	0439	05	026	SH 194	
	DIST	COUNTY	SHEET NO.		
	LBB	HALE	317		

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.



RAILROAD REQUIREMENTS FOR NON-BRIDGE CONSTRUCTION PROJECTS

FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT October 2018	CONT	SECT	JOB	HIGHWAY
REVISIONS	0439	05	026	SH 194
March 2020	DIST	COUNTY	SHEET NO.	
	LBB	HALE	318	

SWP3 SHEET NUMBER	162 6002	164 6066	168 6001	506 6020	506 6024	506 6035	506 6038	506 6039	506 6041	506 6043	7012 6001
	BLOCK SODDING	DRILL SEEDING (PERM) (WARM OR COOL)	VEGETATIVE WATERING	CONSTRUCTION EXITS (INSTALL) (TY 1)	CONSTRUCTION EXITS (REMOVE)	SANDBAGS FOR EROSION CONTROL	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	BIODEG EROSN CONT LOGS (INSTL) (12")	BIODEG EROSN CONT LOGS (REMOVE)	CURB INLET SEDIMENT PROTECTION
	SY	SY	MG	SY	SY	EA	LF	LF	LF	LF	LF
SHEET 1 OF 14	229	1260	50.1	156	156				170	85	
SHEET 2 OF 14	267	1456	58.0						370	185	
SHEET 3 OF 14	63	319	12.9			12			105	52.5	50
SHEET 4 OF 14						24					80
SHEET 5 OF 14						24					90
SHEET 6 OF 14						12					20
SHEET 7 OF 14	40		1.3			42					
SHEET 8 OF 14	575		19.4			16	900	450			
SHEET 9 OF 14	800		26.9				2628	1314	186	93	
SHEET 10 OF 14	514		17.3			8	1212	606	111	55.5	
SHEET 11 OF 14	358		12.1				2288	1144	270	135	
SHEET 12 OF 14	357		12.0			16	1494	747	352	176	20
SHEET 13 OF 14	270		9.1				1700	850			
SHEET 14 OF 14											
TOTALS:	3473	3035	219.1	156	156	154	10222	5111	1564	782	260

SWP3 SUMMARY

STATION	SHEET NO.	STREET	LOCATION	LT/RT	SANDBAGS (EA)	REPLACEMENT QUANTITY
29+85.12	SHEET 3 OF 14	US 70	IN CURB LINE	LT	6	6
39+43.78	SHEET 4 OF 14	7TH ST	IN CURB LINE	RT	6	6
44+18.78	SHEET 4 OF 14	8TH ST	IN CURB LINE	RT	6	6
48+93.60	SHEET 5 OF 14	9TH ST	IN CURB LINE	RT	6	6
52+92.97	SHEET 5 OF 14	10TH ST	IN CURB LINE	RT	6	6
67+42.78	SHEET 6 OF 14	13TH ST	IN CURB LINE	RT	6	6
72+17.38	SHEET 7 OF 14	14TH ST	IN CURB LINE	RT	6	12
76+94.24	SHEET 7 OF 14	15TH ST	IN CURB LINE	RT	6	18
83+04.27	SHEET 8 OF 14	17TH ST	GUTTER	LT	2	6
86+50.43	SHEET 8 OF 14	18TH ST	GUTTER	LT	2	6
105+85.78	SHEET 10 OF 14	SMYTH ST	GUTTER	LT	2	6
129+35.79	SHEET 12 OF 14	XENIA ST	GUTTER	LT	2	6
132+45.94	SHEET 12 OF 14	YONKERS ST	GUTTER	LT	2	6
TOTAL					154	

STATION	SHEET NO.	LOCATION	LT/RT	EROSION CONTROL LOGS (LF)	REPLACEMENT QUANTITY
0+64.83	SHEET 1 OF 7	DITCH	LT	23	23
5+64.98	SHEET 1 OF 7	DITCH	LT	27	27
10+65.51	SHEET 1 OF 7	DITCH	LT	35	35
15+65.55	SHEET 2 OF 7	DITCH	LT	40	40
16+84.17	SHEET 2 OF 7	DITCH	LT	40	40
17+49.11	SHEET 2 OF 7	DITCH	LT	38	38
21+38.76	SHEET 2 OF 7	DITCH	RT	27	27
22+47.19	SHEET 2 OF 7	DITCH	LT	40	40
24+69.85	SHEET 3 OF 14	DITCH	LT	39	39
24+60.63	SHEET 3 OF 14	DITCH	RT	27	0
95+37.27	SHEET 9 OF 14	DITCH	RT	35	70
100+21.44	SHEET 9 OF 14	DITCH	RT	27	54
105+21.56	SHEET 10 OF 14	DITCH	RT	24	48
110+49.07	SHEET 10 OF 14	DITCH	RT	13	26
115+06.50	SHEET 11 OF 14	DITCH	RT	21	42
116+06.50	SHEET 11 OF 14	DITCH	RT	14	28
121+40.40	SHEET 11 OF 14	DITCH	RT	21	42
126+99.46	SHEET 11 OF 14	INLET	RT	34	68
127+03.32	SHEET 12 OF 14	INLET	LT	34	102
136+22.24	SHEET 12 OF 14	INLET	LT	20	60
141+15.35	SHEET 13 OF 14	INLET	LT	34	102
TOTAL				1564	

STATION APPROX.	SHEET NO.	INITIAL SETUP	REPLACEMENT QUANTITY
86+00.01 RT	SHEET 8 OF 14	200	400
89+00.01 RT	SHEET 8 OF 14	100	200
99+00.00 LT	SHEET 9 OF 14	657	1971
105+96.88 LT	SHEET 10 OF 14	203	609
114+00.00 LT	SHEET 10 OF 14	100	300
115+00.00 LT	SHEET 11 OF 14	572	1716
129+60.82 LT	SHEET 12 OF 12	251	753
132+77.80 LT	SHEET 12 OF 14	130	360
141+66.73 LT	SHEET 13 OF 14	425	1275
TOTAL			10222

314 6013	
LOCATION	EMULS ASPH (EROSN)
*SH 194	668
TOTAL	668

*STA 95+20 TO STA 109+00, RT

STATION	SHEET NO.	LOCATION	LT/RT	EROSION CONTROL LOGS (LF)	REPLACEMENT QUANTITY
30+75.07	SHEET 3 OF 14	INLET	LT	10	10
34+17.74	SHEET 3 OF 14	INLET	LT	15	15
38+82.98	SHEET 4 OF 14	INLET	LT	15	15
43+56.58	SHEET 4 OF 14	INLET	LT	25	25
48+42.77	SHEET 5 OF 14	INLET	LT	15	15
51+60.44	SHEET 5 OF 14	INLET	LT	15	15
57+19.75	SHEET 5 OF 14	INLET	LT	15	15
62+19.98	SHEET 6 OF 14	INLET	LT	10	10
136+22.17	SHEET 12 OF 14	INLET	LT	5	15
TOTAL				260	

NOTES:

- CONSTRUCTION EXITS SHALL BE APPROXIMATELY 30' WIDE BY 30' LONG.

CivilTech Engineering, Inc.
 11821 Telge Road
 Cypress, Texas 77429
 PH: (281) 304-0200 - FX: (281) 304-0210
 Firm Registration No. F-382



SH 194 FROM FM 3466 TO IH 27

SWP3 SUMMARY

SHEET 1 OF 1

FED. RD. DIV. NO. 6	FEDERAL PROJECT NO. SEE TITLE SHEET		HIGHWAY NO. SH 194
STATE TEXAS	DISTRICT LBB	COUNTY HALE	SHEET NO. 320
CONTROL 0439	SECTION 05	JOB 026	

PLOT DRIVER: TXDOT_PDF_BW_LEVELS.pltcf
 USER: Arabinson
 FILE: SH194_Quantities_SWP3.dgn
 PENTABLE: I94050_SH194_Pentable.tbl
 SCALE: 1:1
 DATE: 7/29/2024
 TIME: 9:49:20 PM

STORMWATER POLLUTION PREVENTION PLAN (SWP3):

This SWP3 has been developed in accordance with the TPDES Construction General Permit TXR150000 (CGP). The Texas Department of Transportation (TxDOT) ensures that project specifications include adequate best management practices (BMPs) for this project.

For all projects with soil disturbing activity and for projects that have Environmental, Permits, Issues, and Commitments (EPICs) dependent on stormwater controls and water quality measures TxDOT will maintain a SWP3 with all pertinent records, correspondence, environmental documents, etc. at the project field office, Area Office, or electronically.

This SWP3 is consistent with requirements specified in applicable stormwater plans and the projects environmental permits, issues, and commitments (EPICs). A copy of the CGP is included in Attachment 2.12 of the SWP3 binder.

1.0 SITE/PROJECT DESCRIPTION

1.1 PROJECT CONTROL SECTION JOB (CSJ):

0439-05-026

1.2 PROJECT LIMITS:

From: IH 27

To: FM 3466

1.3 PROJECT COORDINATES:

BEGIN: (Lat) 34° 10' 33.07" N, (Long) 101° 42' 55.42" W

END: (Lat) 34° 12' 37.68" N, (Long) 101° 44' 07.48" W

1.4 TOTAL PROJECT AREA (Acres): 36.41 AC

1.5 TOTAL AREA TO BE DISTURBED (Acres): 23.32 AC

1.6 NATURE OF CONSTRUCTION ACTIVITY:

Grading, Base Treatment, ACP, Sidewalk/ADA, Illumination, Signals, Signs, and Striping

1.7 MAJOR SOIL TYPES:

Soil Type	Description
Lpfton Clay Loam, 0 to 1 percent slopes, occasionally ponded	85% Lofton soils, moderately well drained negligible runoff class, slight erosion hazard
Mansker Loam, 3 to 5 percent slopes	85% Mansker soils, well drained, low runoff class, moderate erosion hazard
Pullman Clay Loam, 0 to 1 percent slopes	85% Pullman soils, well drained, medium runoff class, slight erosion hazard
Olton Loam, 0 to 1 percent slopes	85% Olton soils, well drained, low runoff class, slight erosion hazard

1.8 PROJECT SPECIFIC LOCATIONS (PSLs):

PSLs must be depicted on the Environmental Layout Sheets in Attachment 1.2 of this SWP3. PSLs may be identified during preconstruction meetings or during the construction process. Please choose from the options below:

- PSLs determined during preconstruction meeting
- PSLs determined during construction
- No PSLs planned for construction

Type	Sheet #s

All off-ROW PSLs required by the Contractor are the Contractor's responsibility. The Contractor shall secure all permits required by local, state, federal laws for off-ROW PSLs. The contractor shall provide diagrams, areas of disturbance, acreage, and BMPs for all off-ROW PSLs within one mile of the project.

1.9 CONSTRUCTION ACTIVITIES:

(Use the following list as a starting point when developing the Construction Activity Schedule and Ceasing Record in Attachment 2.5.)

- Mobilization
- Install sediment and erosion controls
 - Blade existing topsoil into windrows, prep ROW, clear and grub
 - Remove existing pavement
 - Grading operations, excavation, and embankment
 - Excavate and prepare subgrade for proposed pavement widening
 - Remove existing culverts, safety end treatments (SETs)
 - Remove existing metal beam guard fence (MBGF), bridge rail
 - Install proposed pavement per plans
- Install culverts, culvert extensions, SETs
- Install mow strip, MBGF, bridge rail
 - Place flex base
 - Rework slopes, grade ditches
 - Blade windrowed material back across slopes
- Revegetation of unpaved areas
- Achieve site stabilization and remove sediment and erosion control measures
- Other: Install Sidewalk/ADA Ramps per plans

Other: _____
 Other: _____
 Other: _____

1.10 POTENTIAL POLLUTANTS AND SOURCES:

- Sediment laden stormwater from stormwater conveyance over disturbed area
- Fuels, oils, and lubricants from construction vehicles, equipment, and storage
- Solvents, paints, adhesives, etc. from various construction activities
- Transported soils from offsite vehicle tracking
- Construction debris and waste from various construction activities
- Contaminated water from excavation or dewatering pump-out water
- Sanitary waste from onsite restroom facilities
- Trash from various construction activities/receptacles
- Long-term stockpiles of material and waste
- Other: Discharges from concrete washout activities, runoff from concrete cutting activities, and other concrete related activities.
- Other: Concrete washout pollutants from concrete trucks, concrete pump trucks, and paving equipment.

Concrete truck wash-out is allowed provided:

- a) wash-out of concrete trucks to surface waters in the state, including storm sewer drains and inlets, is prohibited;
- b) wash-out shall be to a structural control;
- c) the direct discharge of wash-out water is prohibited at all times;
- d) the discharge shall not contribute to groundwater contamination;
- e) wash-out areas must be shown on the site map;
- f) wash-out pits shall be bermed and lined with plastic.

1.11 RECEIVING WATERS:

Receiving waters must be depicted on the Environmental Layout Sheets in Attachment 1.2 of this SWP3. Include Segment # for receiving waters.

Tributaries	Classified Waterbody
Running Water Draw	White River above White River Reservoir (1240A)
White River	*White River Lake (1240); Impaired for Chloride and Total Dissolved Solids

* Add (*) for impaired waterbodies with pollutant in ().

1.12 ROLES AND RESPONSIBILITIES: TxDOT

- Development of plans and specifications
- Submit Notice of Intent (NOI) to TCEQ (≥5 acres)
- Post Construction Site Notice
- Submit NOI/CSN to local MS4
- Perform SWP3 inspections
- Maintain SWP3 records and update to reflect daily operations
- Complete and submit Notice of Termination to TCEQ
- Maintain SWP3 records for 3 years
- Other: _____

Other: _____

NOTE: Environmental Documentation shall be uploaded to Site Manager and Projectwise within 7 calendar days per CGP Part III.E.

1.13 ROLES AND RESPONSIBILITIES: CONTRACTOR

- Day To Day Operational Control
- Submit Notice of Intent (NOI) to TCEQ (≥5 acres)
- Post Construction Site Notice
- Submit NOI/CSN to local MS4
- Maintain schedule of major construction activities
- Install, maintain and modify BMPs
- Complete and submit Notice of Termination to TCEQ
- Maintain SWP3 records for 3 years
- Other: _____

Other: _____

NOTE: Environmental Documentation must be readily available

1.14 LOCAL MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) OPERATOR COORDINATION:

MS4 Entity
None

LBB DISTRICT ADVISEMENT: Within the project area there area identified Waters of the United States (W.O.T.U.S). Please review the EPIC for any applicable permits, best management practices, or environmental commitments that may apply. Listed Below are the identified WOTUS(s) in the project limits:

Running Water Draw

LBB DISTRICT NOTE:

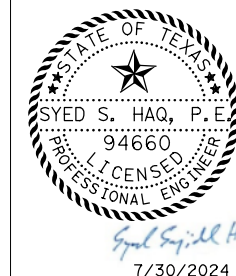
Concrete truck wash-out is allowed if the following are provided:

- a) wash-out of concrete trucks to surface waters in the state, including storm sewer drains and inlets is prohibited.
- b) washout shall be to a structural control
- c) the direct discharge of wash-out water is prohibited at all times
- d) the discharge shall not contribute to groundwater contamination
- e) wash-out areas must be shown on the site map;
- f) wash-out pits shall be bermed and lined with plastic

STORMWATER POLLUTION PREVENTION PLAN (SWP3) OVER 1 ACRE

July 2023 Sheet 1 of 3

Texas Department of Transportation



FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
6				321
STATE	STATE DIST.	COUNTY		
TEXAS	LBB	HALE		
CONT.	SECT.	JOB	HIGHWAY NO.	
0439	05	026	SH 194	

STORMWATER POLLUTION PREVENTION PLAN (SWP3):

2.0 BEST MANAGEMENT PRACTICES (BMPs) AND CONTROLS, INSPECTION, AND MAINTENANCE

The Contractor shall be the responsible party for implementing the BMPs described herein and for complying with the SWP3 for control of erosion and sedimentation during day-to-day operations. The Contractor shall implement changes to this SWP3 approved by TxDOT within the times specified in this SWP3 or the CGP.

2.1 EROSION CONTROL AND SOIL STABILIZATION BMPs:

T / P

- Protection of Existing Vegetation
- Vegetated Buffer Zones
- Soil Retention Blankets
- Geotextiles
- Mulching/ Hydromulching
- Soil Surface Treatments
- Temporary Seeding
- Permanent Planting, Sodding or Seeding
- Biodegradable Erosion Control Logs
- Rock Filter Dams/ Rock Check Dams
- Vertical Tracking
- Interceptor Swale
- Riprap
- Diversion Dike
- Temporary Pipe Slope Drain
- Embankment for Erosion Control
- Paved Flumes
- Other: _____
- Other: _____
- Other: _____
- Other: _____

2.2 SEDIMENT CONTROL BMPs:

T / P

- Biodegradable Erosion Control Logs
- Dewatering Controls
- Inlet Protection
- Rock Filter Dams/ Rock Check Dams
- Sandbag Berms
- Sediment Control Fence
- Stabilized Construction Exit
- Floating Turbidity Barrier
- Vegetated Buffer Zones
- Vegetated Filter Strips
- Other: _____
- Other: _____
- Other: _____
- Other: _____

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

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

T / P

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

2.3 PERMANENT CONTROLS:

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

BMPs To Be Left In Place Post Construction:

Type	CL	Stationing	
		From	To
Permanent Seeding	SH 194	STA 0+50	STA 26+00
Permanent Sodding	SH 194	STA 0+33	STA 25+86
	SH 194	STA 69+00	STA 147+00
Concrete Riprap	SH 194	STA 23+15	STA 23+28

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

2.4 OFFSITE VEHICLE TRACKING CONTROLS:

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

2.5 POLLUTION PREVENTION MEASURES:

- Chemical Management
- Concrete and Materials Waste Management
- Debris and Trash Management
- Dust Control
- Sanitary Facilities
- Other: LIDDED DUMPSTER (Part III.G.4.c in CGP)

Litter and Construction Debris:

Storage of construction and waste materials on-site shall be temporary. The project contractor shall establish a schedule for the regular removal of litter and construction debris: the schedule shall be approved by the project engineer; and, once approved, implemented by the contractor. As needed. The project engineer shall direct the contractor to establish good housekeeping measures consistent with the TCEQ's Construction General Permit.

2.6 VEGETATED BUFFER ZONES:

Natural vegetated buffers shall be maintained as feasible to protect adjacent surface waters. If vegetated natural buffer zones are not feasible due to site geometry, the appropriate additional sediment control measures have been incorporated into this SWP3.

Type	Stationing	
	From	To

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

2.7 ALLOWABLE NON-STORMWATER DISCHARGES:

- Fire hydrant flushings
- Irrigation drainage
- Pavement washwater (where spills or leaks have not occurred, and detergents are not used)
- Potable water sources
- Springs
- Uncontaminated groundwater
- Water used to wash vehicles or control dust
- Other allowable non-stormwater discharges as allowed by TPDES GP TXR150000.

NOTE: Discharges from dewatering activities are prohibited unless managed by appropriate controls per the CGP. Part III.G.3

2.8 DEWATERING:

Dewatering discharges of accumulated stormwater, groundwater, and surface water including discharges from dewatering of trenches, excavations, foundations, vaults, and other points of accumulation are prohibited unless managed by appropriate controls to prevent and minimize the offsite discharge of sediment and other pollutants.

2.9 INSPECTIONS:

All disturbed areas and erosion and sediment control devices shall be inspected at least once every seven (7) days. Inspections shall be performed by TxDOT as indicated on the Field Inspection and Maintenance Report Form 2118 and retained in Attachment 2.5 of this SWP3.

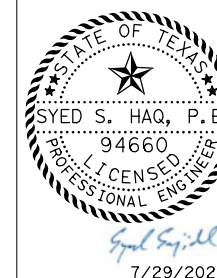
When dewatering activities are present, a daily inspection will be conducted once per day during those activities and documented in accordance with CGP and TxDOT requirements.

2.10 MAINTENANCE:

Control measures shall be properly installed according to specifications. If it is determined that a BMP or control measure is not operating effectively, maintenance must be accomplished as soon as possible and before the next anticipated rain event, but in no case later than 7 calendar days after being able to access the site. Maintenance shall be performed by the Contractor as indicated on the Field Inspection and Maintenance Report Form 2118 and retained in Attachment 2.5 of this SWP3.

Inspection of Controls:

Lubbock District: an Informal Inspection of controls shall occur every work day; a formal inspection of controls accompanied by an inspection report using Form 2118 shall occur every seven calendar days. Inspectors must inspect disturbed areas that have not been finally stabilized, areas that are used for storage of materials and that are exposed to rain. discharge locations and structural controls for evidence of, or the potential for, pollutants entering the drainage system. The SWP3 must be modified based on the results of Inspections to better control pollutants In runoff. Revisions to the SWP3 must be completed within seven calendar days following inspection. If existing BMPs are modified or if additional BMPs are necessary, an implementation schedule must be described In the SWP3 and wherever possible those changes implemented before the next storm event.



STORMWATER POLLUTION PREVENTION PLAN (SWP3) OVER 1 ACRE

© 2024 July 2023 Sheet 2 of 3

Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
6				322
STATE	STATE DIST.	COUNTY		
TEXAS	LBB	HALE		
CONT.	SECT.	JOB	HIGHWAY NO.	
0439	05	026	SH 194	

DESCRIPTION OF BMPs USED TO MINIMIZE POLLUTION IN RUNOFF:

EROSION AND SEDIMENT CONTROLS: If It Is necessary to pump water, BMP's shall be used to reduce the off-site transport of sediment. BMP's shall be Installed per the manufacturer specifications or as directed by the Engineer.

GENERAL SCHEDULE FOR IMPLEMENTATION OF SW3P CONTROLS:

CONTROL IMPLEMENTATION SCHEDULE AND DESCRIPTION
 general, various controls control measures are to be provided at a time and In a manner that will minimize Impacts to receiving waters

rock filter dams to be Installed prior to soil disturbing activities In the surrounding areas

sandbag berms to be Installed prior to the start of construction; sandbag berms are to serve as water velocity dissipaters, as ditch blocks, as sedimentation basins, In support of other control devices, and as a final multiple control for water leaving the construction zone

silt fence silt fence will be Installed prior to the start of construction along right-of-way lines
 silt fence will be Installed as quickly as feasible (where It Is reasonable to do so) at the toe of header bank and other slopes

tackifiers/emulsions silt fence may be Installed at the start of construction, during construction as appropriate, and during construction to support other controls as needed
 soil tackifiers may be used to control dust

water to be used to suppress dust and compact dirt on an as needed schedule

seed, temporary to be Installed, when appropriate, In disturbed areas where construction has temporarily ceased for 21 days

seed, permanent to be Installed as a final stabilization measure where construction Is complete or as directed by the Engineer

construction exits to be Installed at all construction vehicle exit points to publicly traveled ways prior to the use of these exits by construction vehicles

erosion control logs to be Installed prior to the start of construction; erosion control logs are to serve as water velocity dissipaters, as ditch blocks, as sedimentation basins, and In support of other control devices.

soil retention blankets to be Installed as a final stabilization measure where construction Is complete or as directed by the Engineer

Inlet protectors to be Installed to cover curb Inlets with support from sandbags or as directed by the Engineer

compost socks to be Installed as channel blocks, Inlet protectors, and to support sandbag berms, silt fences or as directed by the Engineer

REMOVAL SCHEDULE
 at final stabilization; at the resumption of construction (temporary measures); at the direction of the SW3P plan; at the direction of the project manager

at final stabilization or as directed by the project engineer

at final stabilization or as directed by the project engineer

at final stabilization or as directed by the project engineer at final stabilization or as directed by the project engineer at the removal of the construction exit, at final stabilization, or as directed by the project engineer

erosion controls that are designed to remain In-place for a indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal (CGP, page 23)

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as directed by construction conditions or by the Engineer

as directed by construction conditions or by the Engineer

erosion controls that are designed to remain In-place for a indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal (CGP, page 23)

as directed by construction conditions or by the Engineer

as directed by construction conditions or by the Engineer

Notes from the Lubbock District:

-This Is a general schedule for the Installation of and removal of SW3P best management practice controls. The final determination of the Implementation and removal of controls Is at the discretion of the project engineer.

-Control measures must be properly selected, Installed, and maintained according to the manufacturer's or designer's specifications. If periodic inspections or other information indicates control has been used incorrectly, or that the control Is performing inadequately, the operator must replace or modify the control as soon as practicable after the discovery that the control has been used incorrectly, Is performing inadequately, or Is damaged.

-Sediment must be removed from traps and sedimentation ponds no later than the time that design capacity has been reduced by 50 percent.

-If sediment escapes the site, accumulations must be removed at a frequency to minimize further negative effects, and whenever feasible, prior to the next rain event.

-Controls must be developed to limit, to the extent practicable, the off-site transport of litter, construction debris, and construction materials.

-Erosion and sediment controls must be designed to retain sediment on-site to the extent practicable with consideration for local topography, soil type, and rainfall. Controls must also be designed and utilized to reduce the off-site transport of suspended sediments and other pollutants if It Is necessary to pump or channel standing water.

MAINTENANCE REQUIREMENTS:

Control measures shall be properly Installed and maintained according to the manufacturer's specifications. Sediment must be removed from BMP's as directed by the SW3P plan requirements, and as directed by the manufacturer's recommendations, but no later than the time at which the capacity of the BMP has been reduced by 50 percent. If sediment or other pollutants escape the site, accumulations will be removed to reduce further negative effects. If inspections or other information indicates a control has been Installed, used, or Is performing inadequately, the contractor must modify or replace the control as soon as practicable after the problem Is discovered. Controls shall be maintained In effective operating condition. If inspections determine that BMPs are not operating effectively, maintenance shall be performed as necessary to continue the effectiveness of the controls. Controls that have been intentionally disabled, run over, removed, or otherwise made Ineffective, must be corrected or replaced at discovery.

LITTER AND CONSTRUCTION DEBRIS:

The project contractor shall establish a schedule for the regular removal of litter and construction debris; this schedule shall be approved by the project engineer; and, once approved, Implemented by the contractor. As needed, the project engineer shall direct the contractor to establish good housekeeping measures consistent with the TCEQ's Construction General Permit.

DESCRIPTION OF PERMANENT STORM WATER CONTROLS:

PERMANENT STORM WATER CONTROLS: A description of controls that will stay In-place after construction Is completed must be Included In the SW3P.

- Riprap: concrete riprap can be Installed as a permanent stabilization measure at locations where construction Is completed must be Included In the SW3P.
- Existing Vegetation & Vegetative Buffers: to the extent practicable, existing vegetation will not be disturbed by construction activities; and, where feasible (especially at storm water discharge sites), existing vegetation will remain undisturbed to form a vegetative buffer between construction areas and areas undisturbed by construction.
- Permanent Sodding/Seeding & Plantings: this Is the establishment of permanent perennial vegetation. Permanent vegetation stabilizes soil by holding soil particles In-place. Vegetation filters sediments, helps soil absorb water, Improves wildlife habitat, and enhances aesthetics of the site.
- Permanent vegetation will remain In vegetated channels.

SEDIMENT CONTROL PRACTICES:

1. Sandbags: the purpose of a sandbag Is to Intercept sediment laden storm water from disturbed areas, create a detention pond, detain sediment and release water In a sheet flow. Sandbag berms are a general purpose sediment control device and will be used throughout the project to detain sediment on site. Sandbags will be placed In ditches and channels to form sedimentation basins. Sandbags will also be used where runoff exits the construction site to enter receiving waters and to support other storm water controls.

2. Silt fence: silt fence Is to be Installed with construction near the perimeter of a disturbed area to Intercept sediment while allowing water to percolate through. This Is a general use control that will be used to create detention basins that retain sediment on-site; they will also be used In support of other controls such as construction exits and rock filter dams.

Silt fence will be used along playa lakes to reduce the loss of sediment from roadway front slopes; It may be used In ditches, channels, discharge points to support sandbag berms; may be used to support stabilized construction exits.

3. Rock Filter Dams: the purpose of a rock filter dam Is to Intercept and slow sediment laden water runoff from disturbed areas, retain the sediment and release the water In sheet flow. Rock filter dams will generally be used In high water velocity flow channels.

4. Stabilized Construction Exit: the purpose of the stabilized exit Is to reduce the tracking of sediment and dirt onto public roadways beyond the construction zone. Stabilized Construction Exits are to be In-place at exit points to streets and thoroughfares In urban areas and are to be used by all construction vehicles regardless of size. They are to be supported where appropriate with silt fence and mechanized brooms.

Sediment basins are required where feasible for common drainage locations that serve an area with 10 or more acres disturbed at one time. Temporary or permanent sediment basins that provide water storage capacity are located on the project; the following controls provide, where feasible, structural controls / sediment basins:

- Sandbag Berm as a Sediment Basin: a temporary basin designed to Intercept sediment-laden storm water runoff and to trap sediment on-site.
- Vegetative Buffer Strip: vegetative buffer strips reduce water velocity which reduces the potential of water erosion and allows sediments to fall out of the storm water.
- Silt Fence will be used to reduce the loss of sediment from roadway front slopes adjacent to playa lakes by filtering out silt laden storm water from construction area.

Erosion control and stabilization measures must be Initiated Immediately In portions of the site where construction activities have ceased and will not resume for a period exceeding 14 calendar days. Stabilization measures that provide a protective cover must be Initiated Immediately In portions of the site where construction activities have permanently ceased (CGP Part III Sect. F2(b) III page 33).

STABILIZATION PRACTICES AND OTHER REQUIRED CONTROLS AND BMPs:

- Stabilized Construction Exit: a stabilized pad of stone, timber, or other stabilized surface located at points where construction traffic will leave the construction zone to enter a public roadway. The purpose of the stabilized exit Is to reduce the tracking of sediment and dirt onto public roadways beyond the construction zone. Stabilized Construction Exits will be placed as needed.
- Water: water will be used to temporarily suppress dust and compact dirt.
- Tackifiers: tackifiers such as asphalt emulsion, guar, (and other natural tackifiers), and synthetic tackifiers will be used to control air (dust) & water erosion.
- Existing Vegetation & Vegetative Buffers: to the extent practicable, existing vegetation will not be disturbed by construction activities; where feasible (especially at storm water discharge sites), existing vegetation will remain undisturbed to form a vegetative buffer between construction areas and areas undisturbed by construction.
- Cleaning and Sweeping: clean and sweep curb and gutter sections twice a month to reduce dirt and trash or as directed.
- Riprap: concrete riprap can be Installed as a permanent stabilization measure at locations where construction Is complete and permanent stabilization Is required.
- Tracking and Dust: off-site tracking and generation of dust must be minimized.

ON-SITE STORAGE OF CONSTRUCTION AND WASTE MATERIALS:

1. Disposal methods must meet federal, state, and local waste management requirements. No construction waste shall be buried or burned on-site. Spills of disposal, material storage, and waste materials from the demolition of existing roads and structures shall be stored In areas designated by the project engineer, and prevented from becoming a pollutant source with appropriate BMPs. Construction and waste materials that might be temporarily stored on-site include concrete and steel pipe; steel reinforcing bar, forms and frames; sand and gravel; wire, concrete and steel beams; wood and steel building units; and controls, construction signs and barricades. A list of construction and waste materials stored on site and controls will be presented to the Project Engineer.

2. Contractor shall design and utilize appropriate controls to minimize the off-site transport of suspended sediments and other pollutants, if It Is necessary to pump or channel standing water from the site.

3. Litter, construction debris, and construction material exposed to stormwater shall be managed In a manner that prevents this material from becoming a pollutant. A regular sweep of the project shall be made to pick up litter. No construction material of any kind (including dirt) shall be discharged to a water of the United States (ephemeral streams and playa lakes) without a permit from the Corps of Engineers.

4. Oil, gasoline, grease, solvents, and other petroleum products are not to be stored on-site. Major vehicle maintenance shall occur on-site only under emergency conditions, and when this maintenance type Is necessary, a plastic cover shall be used (and properly disposed of) to prevent petroleum products from contaminating the surrounding soil.

5. Potential Pollutant Sources from Areas Other than Construction:
 oil, grease, and other petroleum fluids construction traffic at concrete plant and field office
 sediment laden stormwater disturbed soil from concrete batch plant and field office
 litter, motorists driving through the project

All best management practices available to this construction project are available to control non-construction generated pollutants including sand bag berms, silt fence, stabilized construction exits, sedimentation basins, and litter management programs among other controls listed In this document.

STORAGE TANKS:

Storage tanks that are above ground, regardless of whether they are used to store petroleum products, hazardous waste, or other hazardous material must follow the Summary of Federal Requirements.

Aboveground storage tanks (ASTs) used for the storage of petroleum products Is regulated primarily under 40 CFR 112. These containers are used for purposes including, but not limited to, the storage of oil prior to use, while being used, or prior to further distribution In commerce.

A bulk storage container Is 55 gal. or greater and may be aboveground, partially buried, bunkered, or completely buried. AST's include mobile storage containers such as trailers and tanked vehicles. Oil-filled electrical, operating, or manufacturing equipment Is not a bulk storage container.

All bulk storage container installations must be constructed so a secondary means of containment Is provided for the entire capacity of the largest single container and sufficient freeboard to contain precipitation. Diked areas must be sufficiently Impervious to contain discharged oil.

Mobile/Portable AST:

Mobile or portable oil bulk storage containers must be positioned or located to prevent a discharge and furnished with a secondary means of containment, such as a dike or catchment basin, sufficient to contain the capacity of the largest single compartment or container with sufficient freeboard to contain precipitation.

DETERMINATION OF REPORTABLE QUANTITIES:

A list of each substance designated as hazardous In 40 CFR Part 116 Is found In the project's SW3P folder. The 40 CFR 116 registration applies to quantities, when discharged Into or upon the Waters of the United States, adjoining shorelines, Into or upon the contiguous zone, or beyond the contiguous zone as provided In the Act.

NOTE:

Sediment basins are not feasible on the project because right-of-way Is limited and the construction of a sedimentation basin would be within the boundaries of the roadway's clear zone and for the safety of motorists, sedimentation basins cannot be constructed within the clear zone. Since sedimentation basins are not feasible due to lack of right-of-way, mathematical calculations have not been developed.

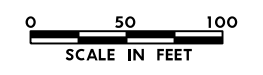
STORMWATER POLLUTION PREVENTION PLAN (SWP3) NARRATIVE - OVER 1 ACRE

FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
6				323
STATE	STATE DIST.	COUNTY		
TEXAS	LBB	HALE		
CONT.	SECT.	JOB	HIGHWAY NO.	
0439	05	026	SH 194	

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- LEGEND**
- (CL-DI) DROP INLET
 - (CL-CI) CURB INLET GUARD
 - (CL-D) DITCH
 - (S) SANDBAG
 - EROSION CONTROL LOG
 - ~ FLOW DIRECTION
 - - - - - EXISTING DITCH
 - x - x - TEMPORARY SEDIMENT CONTROL FENCE (SCF)
 - (RFD3) ROCK FILTER DAM TYPE 3
 - [Hatched Box] SEEDING (PERM) & EMULSION

- NOTES:**
- SEE SWP3 STANDARD SHEETS FOR DETAILS.
 - REFER TO TRAFFIC CONTROL PLANS FOR MORE INFORMATION ON PROJECT CONSTRUCTION AND PHASING.
 - LOCATION OF CONSTRUCTION EXITS BMP'S TO BE IDENTIFIED IN THE FIELD BY THE ENGINEER.
 - CIG BMP'S ARE ERTEC OR GEOCURVE CURB INLET GUARDS. EACH UNIT IS 5 FT LONG. PROVIDE ERTEC GUARDS PER SS-7012 6001. CONTRACTOR SHALL PROVIDE ERTEC INLET GUARDS OF EQUIVALENT.
 - PLACE SODDING (PERMANENT) BETWEEN EDGE OF PAVEMENT AND PROPOSED SIDEWALK.



NO.	DATE	REVISION	APPROVED

CivilTech Engineering, Inc.
 11821 Telge Road
 Cypress, Texas 77429
 PH: (281) 304-0200 - FX: (281) 304-0210
 Firm Registration No. F-382

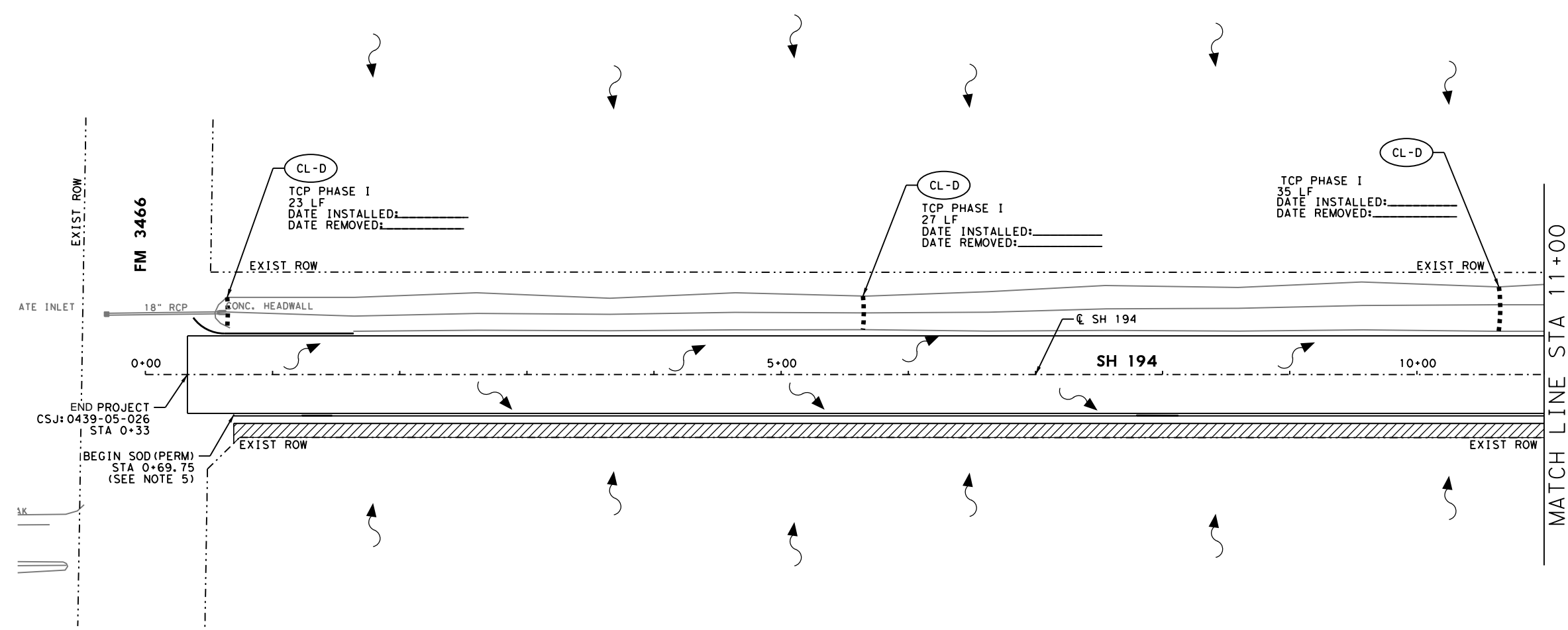


SH 194 FROM FM 3466 TO IH 27
STORM WATER POLLUTION PREVENTION PLAN
 BEGIN TO STA 11+00

HORZ SCALE: 1"=100' SHEET 1 OF 14

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:
6	SEE TITLE SHEET	SH 194
STATE:	DISTRICT:	COUNTY:
TEXAS	LBB	HALE
CONTROL:	SECTION:	JOB:
0439	05	026

324



EXIST ROW
 FM 3466
 18" RCP
 CONC. HEADWALL
 0+00
 END PROJECT
 CSJ: 0439-05-026
 STA 0+33
 BEGIN SOD (PERM)
 STA 0+69.75
 (SEE NOTE 5)

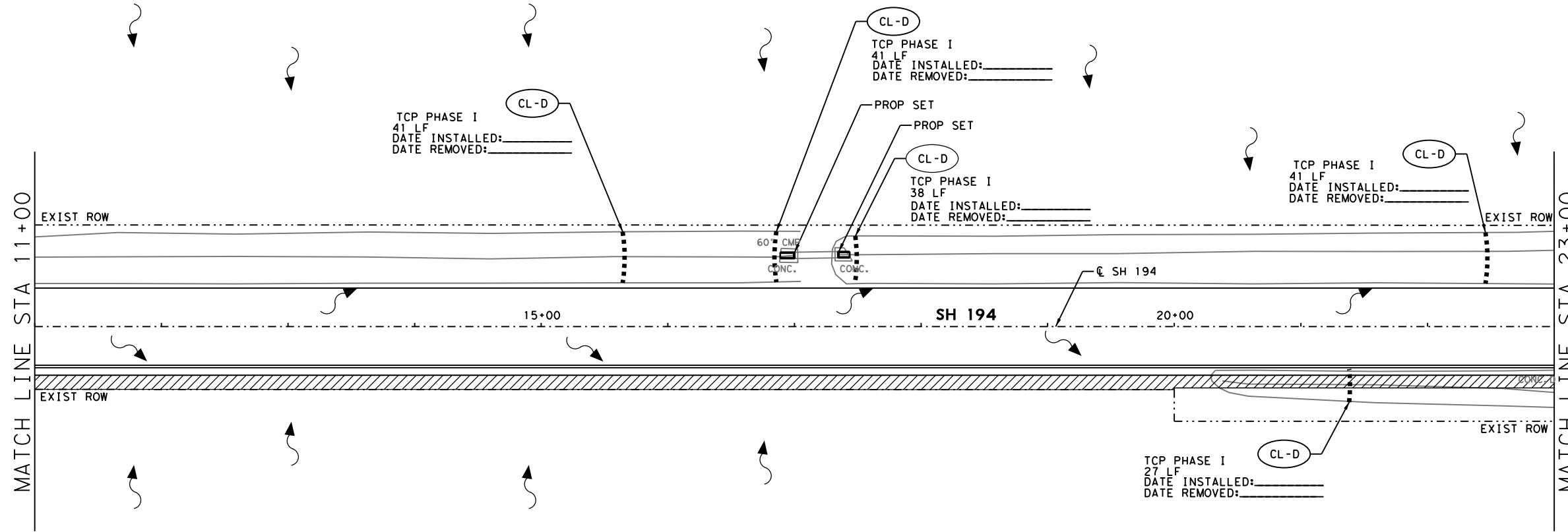
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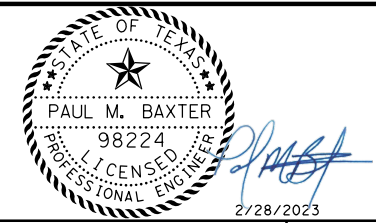
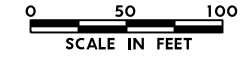
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- LEGEND**
- (CL-D1) DROP INLET
 - (CL-C1) CURB INLET GUARD
 - (CL-D) DITCH
 - (S) SANDBAG
 - EROSION CONTROL LOG
 - FLOW DIRECTION
 - Existing Ditch
 - x-x- TEMPORARY SEDIMENT CONTROL FENCE (SCF)
 - (RFD3) ROCK FILTER DAM TYPE 3
 - [Hatched] SEEDING (PERM) & EMULSION

- NOTES:**
- SEE SWP3 STANDARD SHEETS FOR DETAILS.
 - REFER TO TRAFFIC CONTROL PLANS FOR MORE INFORMATION ON PROJECT CONSTRUCTION AND PHASING.
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 - CIG BMP'S ARE ERTEC OR GEOCURVE CURB INLET GUARDS. EACH UNIT IS 5 FT LONG. PROVIDE ERTEC GUARDS PER SS-7012 6001. CONTRACTOR SHALL PROVIDE ERTEC INLET GUARDS OF EQUIVALENT.
 - PLACE SODDING (PERMANENT) BETWEEN EDGE OF PAVEMENT AND PROPOSED SIDEWALK.



NO.	DATE	REVISION	APPROVED

CivilTech Engineering, Inc.
 11821 Telge Road
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 PH: (281) 304-0200 - FX: (281) 304-0210
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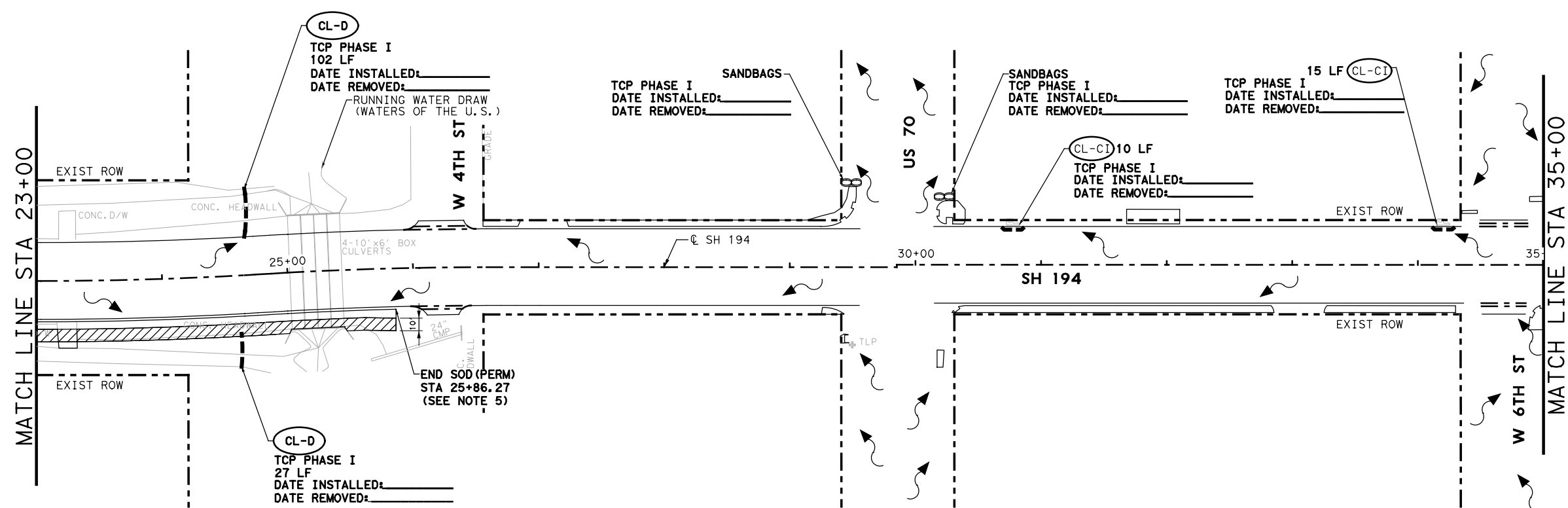
SH 194 FROM FM 3466 TO IH 27
STORM WATER POLLUTION PREVENTION PLAN
 STA 11+00 TO STA 23+00

HORZ SCALE: 1"=100' SHEET 2 OF 14

FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026

325

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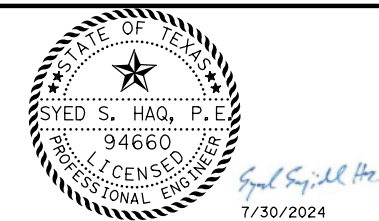


LEGEND

- CL-DI DROP INLET
- CL-CI CURB INLET GUARD
- CL-D DITCH
- SANDBAG
- EROSION CONTROL LOG
- FLOW DIRECTION
- EXISTING DITCH
- TEMPORARY SEDIMENT CONTROL FENCE (SCF)
- ROCK FILTER DAM TYPE 3 (RFD3)
- SEEDING (PERM) & EMULSION

NOTES:

1. SEE SWP3 STANDARD SHEETS FOR DETAILS.
2. REFER TO TRAFFIC CONTROL PLANS FOR MORE INFORMATION ON PROJECT CONSTRUCTION AND PHASING.
3. LOCATION OF CONSTRUCTION EXITS BMP'S TO BE IDENTIFIED IN THE FIELD BY THE ENGINEER.
4. CIG BMP'S ARE ERTEC OR GEOCURVE CURB INLET GUARDS. EACH UNIT IS 5 FT LONG. PROVIDE ERTEC GUARDS PER SS-7012 6001. CONTRACTOR SHALL PROVIDE ERTEC INLET GUARDS OF EQUIVALENT.
5. PLACE SODDING (PERMANENT) BETWEEN EDGE OF PAVEMENT AND PROPOSED SIDEWALK.



NO.	DATE	REVISION	APPROVED



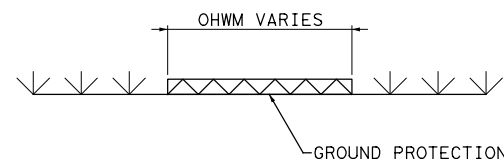
**SH 194 FROM FM 3466 TO IH 27
 STORM WATER POLLUTION
 PREVENTION PLAN
 STA 23+00 TO STA 35+00**

HORZ SCALE: 1"=100' SHEET 3 OF 14

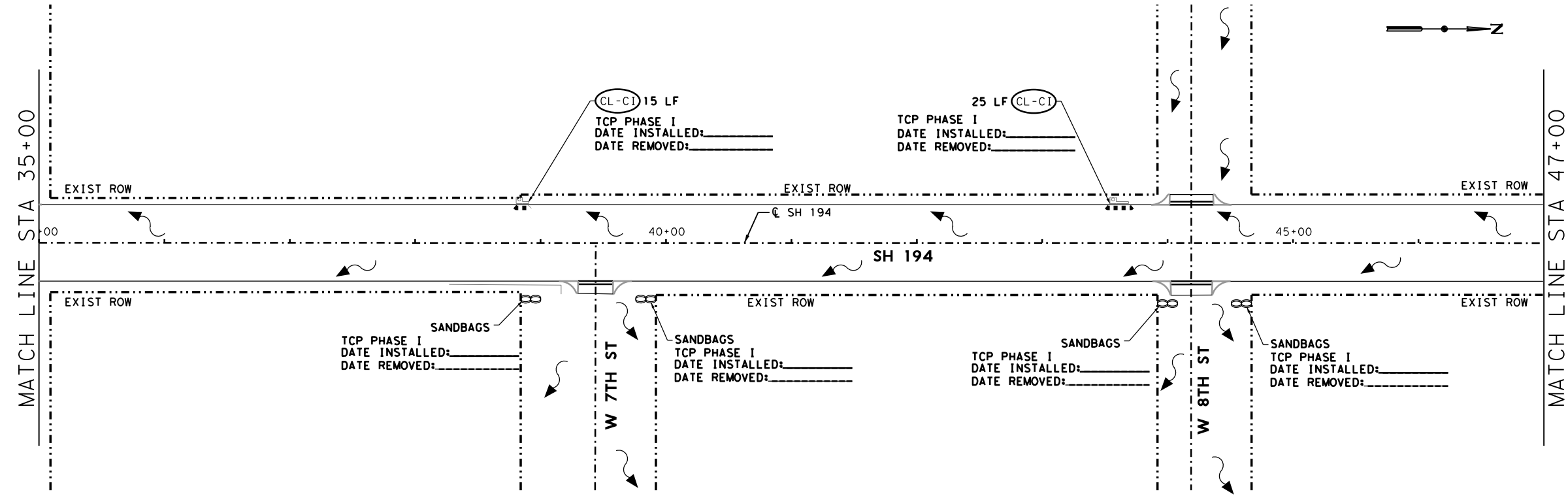
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:		HIGHWAY NO.:
6	SEE TITLE SHEET		SH 194
STATE:	DISTRICT:	COUNTY:	SHEET NO.:
TEXAS	LBB	HALE	326
CONTROL:	SECTION:	JOB:	
0439	05	026	

NO EQUIPMENT OR MACHINERY MAY TOUCH THE SOIL SURFACE OF THE OHWM. CONTRACTORS MUST UTILIZE GROUND PROTECTION INSIDE THE OHWM.

GROUND PROTECTION MUST BE APPROVED BY THE AREA ENGINEER PRIOR TO INSTALLATION AND USE. GROUND PROTECTION SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.



PLOT DRIVER: T:\DOT-EM-PDF-SRVR-pltcfgr PENTABLE: \$PENTBL\$
 USER: \$USER\$ DATE: 2/28/2023 TIME: 2:47:08 PM SCALE: 1:100
 FILE: SH194_SW3P_Sheet4.dgn



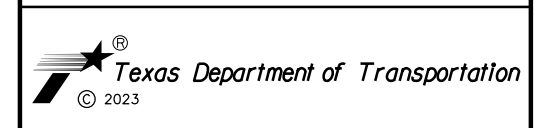
- LEGEND**
- (CL-DI) DROP INLET
 - (CL-CI) CURB INLET GUARD
 - (CL-D) DITCH
 - (S) SANDBAG
 - EROSION CONTROL LOG
 - FLOW DIRECTION
 - - - - - EXISTING DITCH
 - x - x - TEMPORARY SEDIMENT CONTROL FENCE (SCF)
 - (RFD3) ROCK FILTER DAM TYPE 3
 - ▨ SEEDING (PERM) & EMULSION

- NOTES:**
1. SEE SWP3 STANDARD SHEETS FOR DETAILS.
 2. REFER TO TRAFFIC CONTROL PLANS FOR MORE INFORMATION ON PROJECT CONSTRUCTION AND PHASING.
 3. LOCATION OF CONSTRUCTION EXITS BMP'S TO BE IDENTIFIED IN THE FIELD BY THE ENGINEER.
 4. CIG BMP'S ARE ERTEC OR GEOCURVE CURB INLET GUARDS. EACH UNIT IS 5 FT LONG. PROVIDE ERTEC GUARDS PER SS-7012 6001. CONTRACTOR SHALL PROVIDE ERTEC INLET GUARDS OF EQUIVALENT.
 5. PLACE SODDING (PERMANENT) BETWEEN EDGE OF PAVEMENT AND PROPOSED SIDEWALK.
- 0 50 100
SCALE IN FEET

PAUL M. BAXTER
 98224
 LICENSED PROFESSIONAL ENGINEER
 2/28/2023

NO.	DATE	REVISION	APPROVED

CivilTech Engineering, Inc.
 11821 Telge Road
 Cypress, Texas 77429
 PH: (281) 304-0200 - FX: (281) 304-0210
 Firm Registration No. F-382



SH 194 FROM FM 3466 TO IH 27
STORM WATER POLLUTION PREVENTION PLAN
 STA 35+00 TO STA 47+00

HORZ SCALE: 1"=100' SHEET 4 OF 14

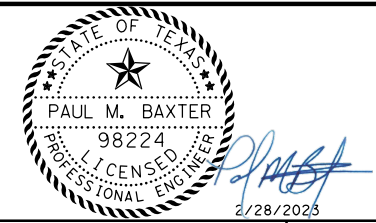
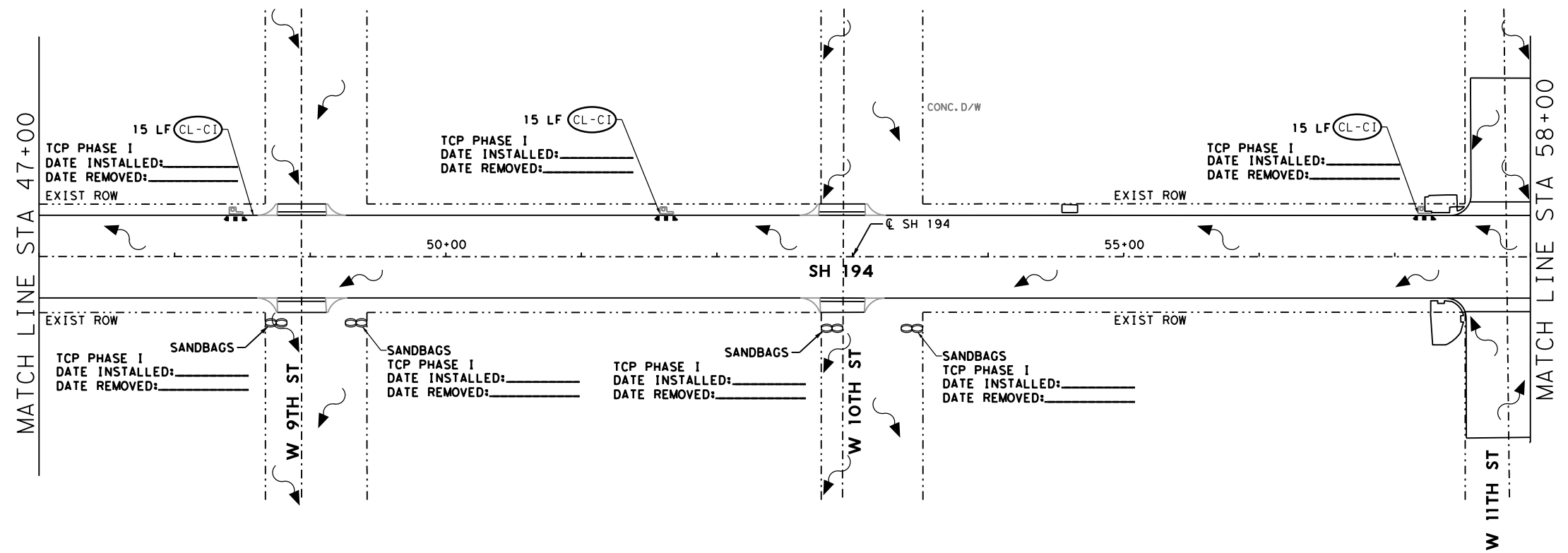
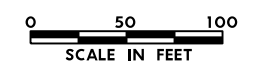
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:
6	SEE TITLE SHEET	SH 194
STATE:	DISTRICT:	COUNTY:
TEXAS	LBB	HALE
CONTROL:	SECTION:	JOB:
0439	05	026

327

PLOT DRIVER: T:\DOT-EM-PDF-SRV-R-pltcfg PENTABLE: \$PENTBL\$.
 USER: \$USER\$ DATE: 2/28/2023 TIME: 2:47:11 PM SCALE: 1:100
 FILE: SH194_SW3P_Sheet5.dgn

- LEGEND**
- (CL-DI) DROP INLET
 - (CL-CI) CURB INLET GUARD
 - (CL-D) DITCH
 - (S) SANDBAG
 - EROSION CONTROL LOG
 - FLOW DIRECTION
 - Existing DITCH
 - x-x- TEMPORARY SEDIMENT CONTROL FENCE (SCF)
 - (RFD3) ROCK FILTER DAM TYPE 3
 - ▨ SEEDING (PERM) & EMULSION

- NOTES:**
- SEE SWP3 STANDARD SHEETS FOR DETAILS.
 - REFER TO TRAFFIC CONTROL PLANS FOR MORE INFORMATION ON PROJECT CONSTRUCTION AND PHASING.
 - LOCATION OF CONSTRUCTION EXITS BMP'S TO BE IDENTIFIED IN THE FIELD BY THE ENGINEER.
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 - PLACE SODDING (PERMANENT) BETWEEN EDGE OF PAVEMENT AND PROPOSED SIDEWALK.



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SH 194 FROM FM 3466 TO IH 27
STORM WATER POLLUTION PREVENTION PLAN
 STA 47+00 TO STA 58+00

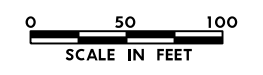
HORZ SCALE: 1"=100' SHEET 5 OF 14

FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	328
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: T:\DOT-EM-PDF-SRVR-pltcrfg PENTABLE: \$PENTBL\$
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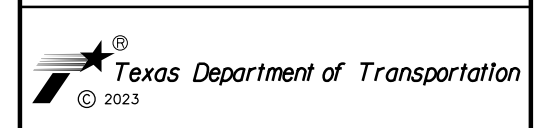
- LEGEND**
- (CL-DI) DROP INLET
 - (CL-CI) CURB INLET GUARD
 - (CL-D) DITCH
 - (S) SANDBAG
 - EROSION CONTROL LOG
 - ~ FLOW DIRECTION
 - - - - - EXISTING DITCH
 - x - x - TEMPORARY SEDIMENT CONTROL FENCE (SCF)
 - (RFD3) ROCK FILTER DAM TYPE 3
 - ▨ SEEDING (PERM) & EMULSION

- NOTES:**
- SEE SWP3 STANDARD SHEETS FOR DETAILS.
 - REFER TO TRAFFIC CONTROL PLANS FOR MORE INFORMATION ON PROJECT CONSTRUCTION AND PHASING.
 - LOCATION OF CONSTRUCTION EXITS BMP'S TO BE IDENTIFIED IN THE FIELD BY THE ENGINEER.
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 - PLACE SODDING (PERMANENT) BETWEEN EDGE OF PAVEMENT AND PROPOSED SIDEWALK.



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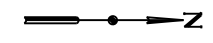
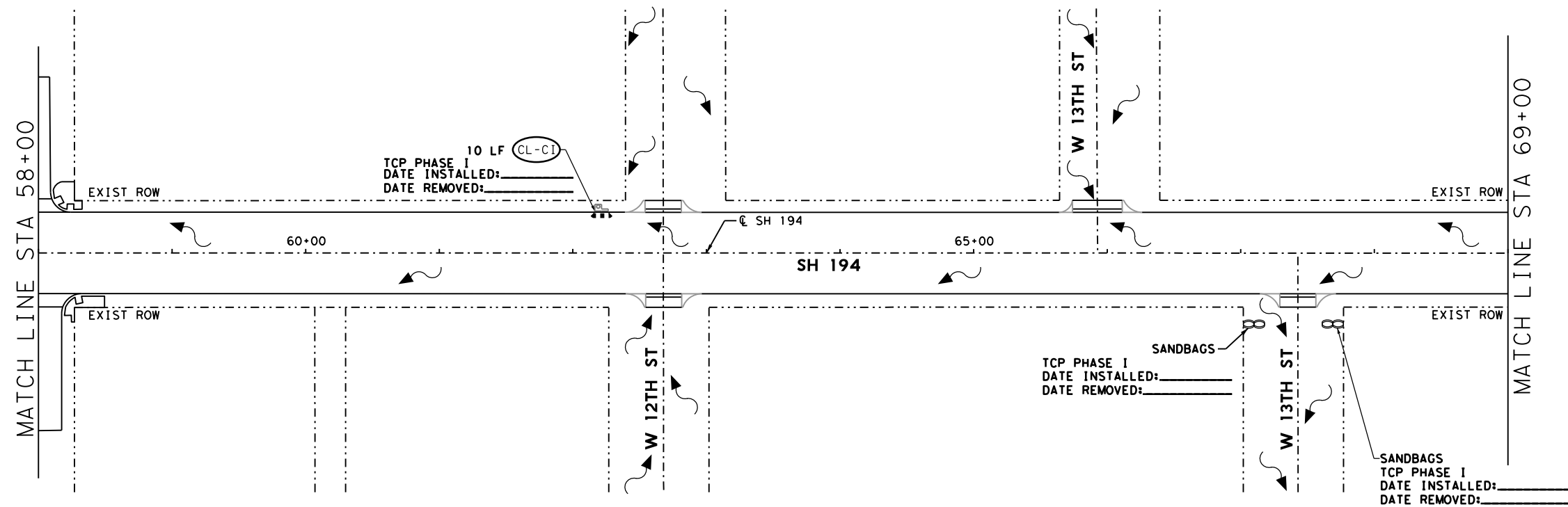


SH 194 FROM FM 3466 TO IH 27
 STORM WATER POLLUTION PREVENTION PLAN
 STA 58+00 TO STA 69+00

HORZ SCALE: 1"=100' SHEET 6 OF 14

FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026

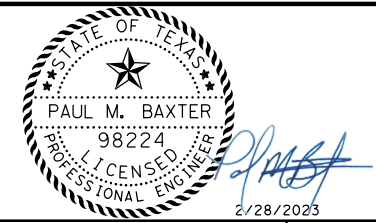
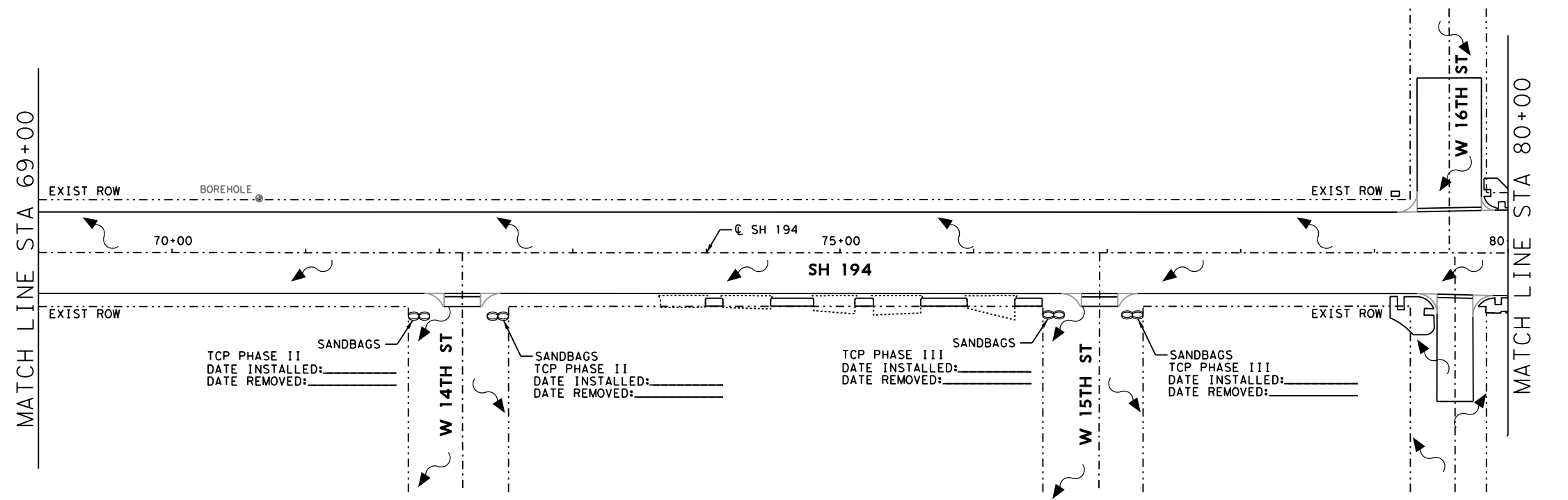
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 USER: \$USER\$ DATE: 2/28/2023 TIME: 2:47:17 PM SCALE: 1:100
 FILE: SH194_SW3P_Sheet7.dgn

- LEGEND**
- CL-D1 DROP INLET
 - CL-C1 CURB INLET GUARD
 - CL-D DITCH
 - SANDBAG
 - EROSION CONTROL LOG
 - FLOW DIRECTION
 - EXISTING DITCH
 - TEMPORARY SEDIMENT CONTROL FENCE (SCF)
 - ROCK FILTER DAM TYPE 3 (RFD3)
 - SEEDING (PERM) & EMULSION

- NOTES:**
- SEE SWP3 STANDARD SHEETS FOR DETAILS.
 - REFER TO TRAFFIC CONTROL PLANS FOR MORE INFORMATION ON PROJECT CONSTRUCTION AND PHASING.
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 - PLACE SODDING (PERMANENT) BETWEEN EDGE OF PAVEMENT AND PROPOSED SIDEWALK.



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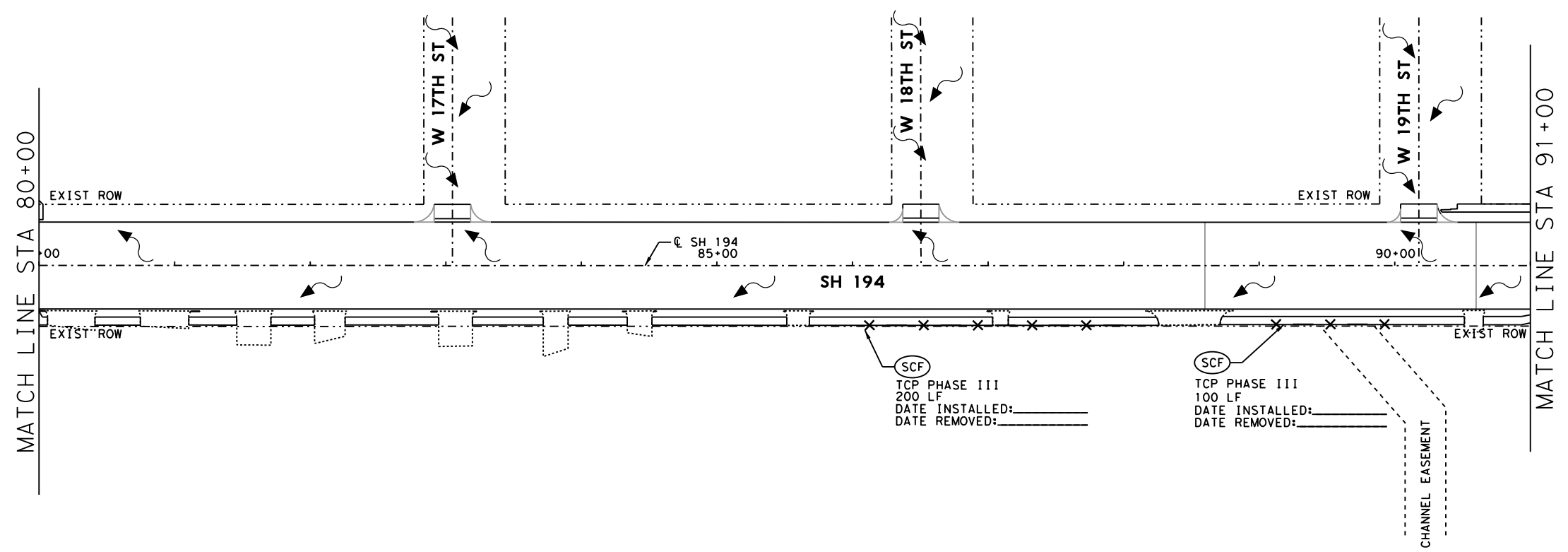


SH 194 FROM FM 3466 TO IH 27
 STORM WATER POLLUTION PREVENTION PLAN
 STA 69+00 TO STA 80+00

HORZ SCALE: 1"=100' SHEET 7 OF 14

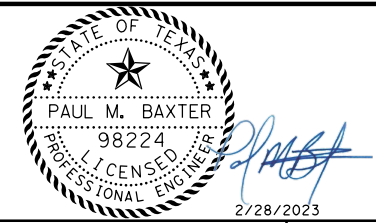
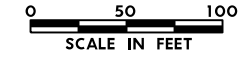
FED. RD. DIV. NO.	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	330
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: T:\DOT-BW-PDF-SRVR-pltcfg PENTABLE: \$PENTBL\$
 USER: \$USER\$ DATE: 2/28/2023 TIME: 2:47:20 PM SCALE: 1:100
 FILE: SH194_SW3P_SheetB.dgn



- LEGEND**
- (CL-DI) DROP INLET
 - (CL-CI) CURB INLET GUARD
 - (CL-D) DITCH
 - (S) SANDBAG
 - EROSION CONTROL LOG
 - FLOW DIRECTION
 - EXISTING DITCH
 - x-x- TEMPORARY SEDIMENT CONTROL FENCE (SCF)
 - (RFD3) ROCK FILTER DAM TYPE 3
 - ▨ SEEDING (PERM) & EMULSION

- NOTES:**
- SEE SWP3 STANDARD SHEETS FOR DETAILS.
 - REFER TO TRAFFIC CONTROL PLANS FOR MORE INFORMATION ON PROJECT CONSTRUCTION AND PHASING.
 - LOCATION OF CONSTRUCTION EXITS BMP'S TO BE IDENTIFIED IN THE FIELD BY THE ENGINEER.
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 - PLACE SODDING (PERMANENT) BETWEEN EDGE OF PAVEMENT AND PROPOSED SIDEWALK.



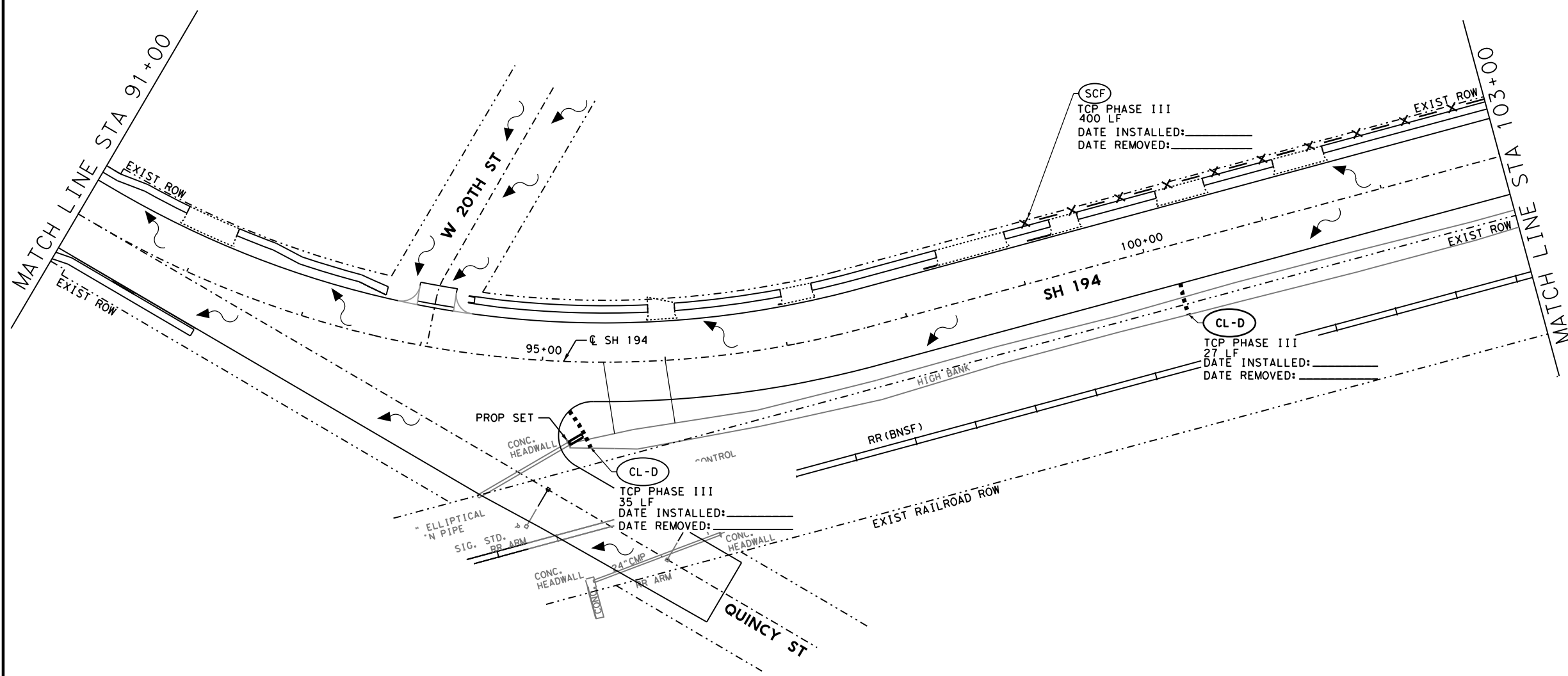
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SH 194 FROM FM 3466 TO IH 27
STORM WATER POLLUTION PREVENTION PLAN
 STA 80+00 TO STA 91+00

HORZ SCALE: 1"=100'			SHEET 8 OF 14
FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	331
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: T:\DOT-BW-PDF-SRVR-pltcfgr PENTABLE: \$PENTBL\$
 USER: \$USER\$ DATE: 2/28/2023 TIME: 2:47:24 PM SCALE: 1:100
 FILE: SH194_SW3P_Sheet9.dgn



- LEGEND**
- (CL-DI) DROP INLET
 - (CL-CI) CURB INLET GUARD
 - (CL-D) DITCH
 - (SANDBAG) SANDBAG
 - EROSION CONTROL LOG
 - ~ FLOW DIRECTION
 - EXISTING DITCH
 - x-x- TEMPORARY SEDIMENT CONTROL FENCE (SCF)
 - (RFD3) ROCK FILTER DAM TYPE 3
 - ▨ SEEDING (PERM) & EMULSION

- NOTES:**
- SEE SWP3 STANDARD SHEETS FOR DETAILS.
 - REFER TO TRAFFIC CONTROL PLANS FOR MORE INFORMATION ON PROJECT CONSTRUCTION AND PHASING.
 - LOCATION OF CONSTRUCTION EXITS BMP'S TO BE IDENTIFIED IN THE FIELD BY THE ENGINEER.
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 - PLACE SODDING (PERMANENT) BETWEEN EDGE OF PAVEMENT AND PROPOSED SIDEWALK.
- 0 50 100
SCALE IN FEET

STATE OF TEXAS
 PAUL M. BAXTER
 98224
 LICENSED PROFESSIONAL ENGINEER
 2/28/2023

NO.	DATE	REVISION	APPROVED

CivilTech Engineering, Inc.
 11821 Telge Road
 Cypress, Texas 77429
 PH: (281) 304-0200 - FX: (281) 304-0210
 Firm Registration No. F-382










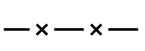


SH 194 FROM FM 3466 TO IH 27
 STORM WATER POLLUTION PREVENTION PLAN
 STA 91+00 TO STA 103+00

HORZ SCALE: 1"=100' SHEET 9 OF 14

FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026

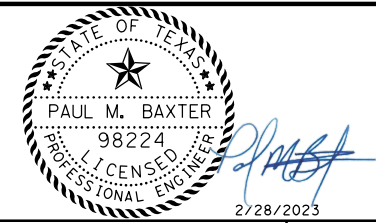
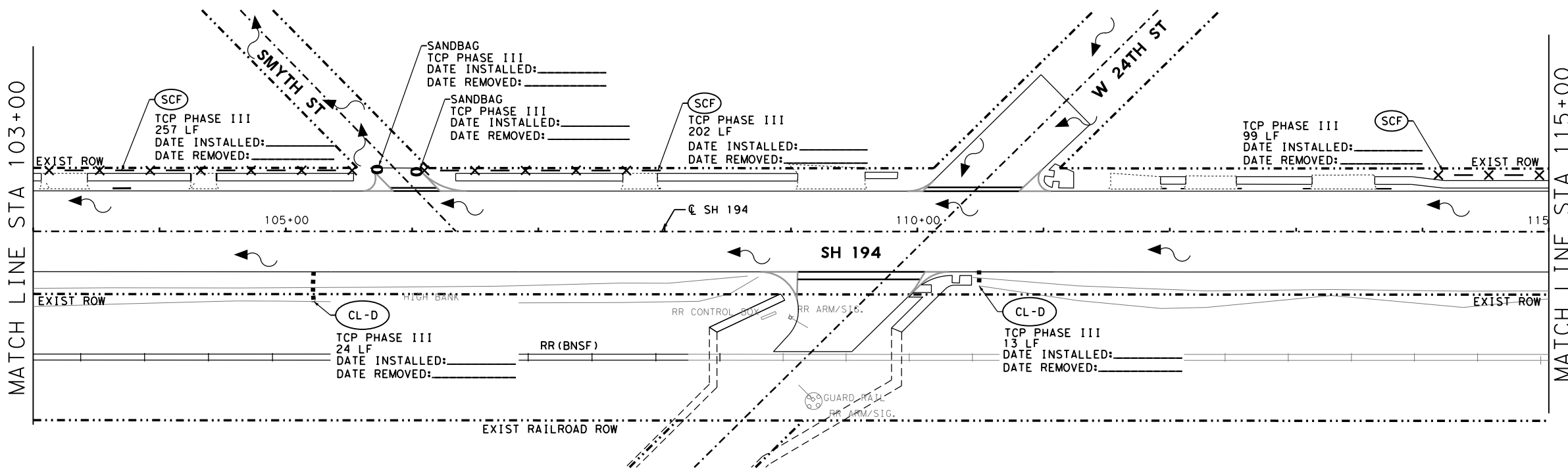
332

LEGEND

-  DROP INLET
-  CURB INLET GUARD
-  DITCH
-  SANDBAG
-  EROSION CONTROL LOG
-  FLOW DIRECTION
-  EXISTING DITCH
-  TEMPORARY SEDIMENT CONTROL FENCE
-  ROCK FILTER DAM TYPE 3
-  SEEDING (PERM) & EMULSION

NOTES:

1. SEE SWP3 STANDARD SHEETS FOR DETAILS.
2. REFER TO TRAFFIC CONTROL PLANS FOR MORE INFORMATION ON PROJECT CONSTRUCTION AND PHASING.
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5. PLACE SODDING (PERMANENT) BETWEEN EDGE OF PAVEMENT AND PROPOSED SIDEWALK.



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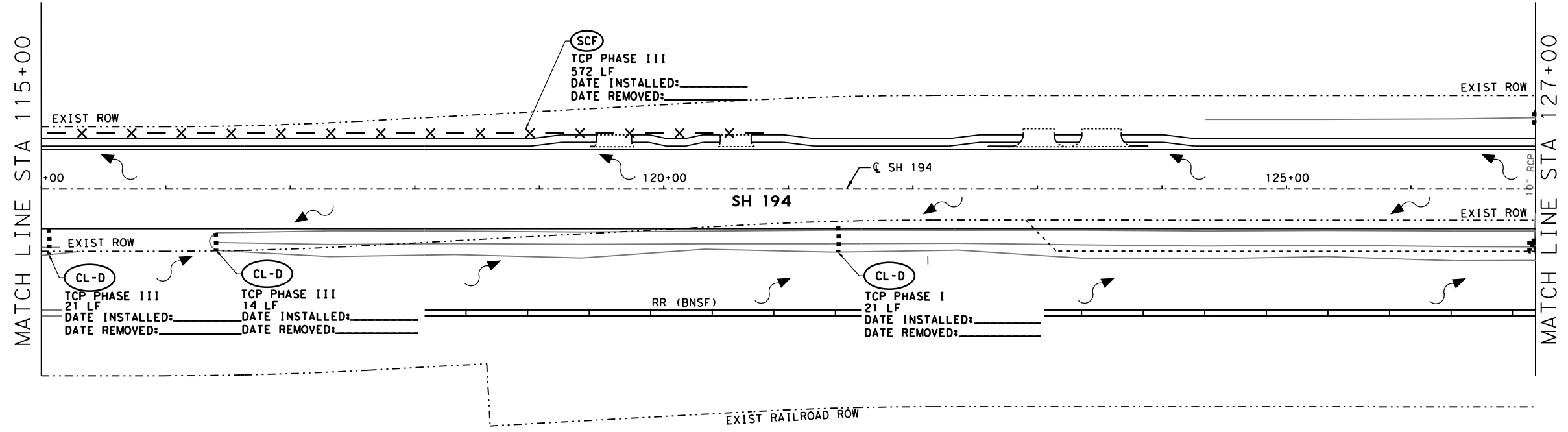


SH 194 FROM FM 3466 TO IH 27
STORM WATER POLLUTION PREVENTION PLAN
 STA 103+00 TO STA 115+00

HORZ SCALE: 1"=100'			SHEET 10 OF 14
FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	333
CONTROL	SECTION	JOB	
0439	05	026	

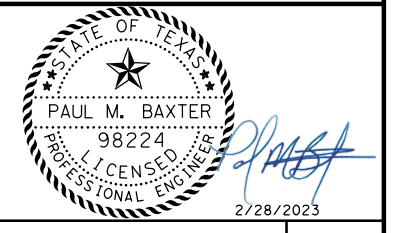
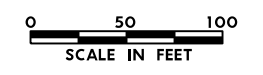
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 FILE: SH194_SW3P_Sheet10.dgn

PLOT DRIVER: T:\DOT\BW-PDF-SRVR-pltcfgr PENTABLE: \$PENTBL\$
 USER: \$USER\$ DATE: 2/28/2023 TIME: 2:47:30 PM SCALE: 1/8"=100'
 FILE: SH194_SW3P_Sheet11.dgn



- LEGEND**
- (CL-DI) DROP INLET
 - (CL-CI) CURB INLET GUARD
 - (CL-D) DITCH
 - (S) SANDBAG
 - EROSION CONTROL LOG
 - FLOW DIRECTION
 - - - - - ∅ EXISTING DITCH
 - x - x - TEMPORARY SEDIMENT CONTROL FENCE (SCF)
 - (RFD3) ROCK FILTER DAM TYPE 3
 - [Hatched Box] SEEDING (PERM) & EMULSION

- NOTES:**
- SEE SWP3 STANDARD SHEETS FOR DETAILS.
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 - PLACE SODDING (PERMANENT) BETWEEN EDGE OF PAVEMENT AND PROPOSED SIDEWALK.



NO.	DATE	REVISION	APPROVED

CivilTech Engineering, Inc.
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 Cypress, Texas 77429
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 Firm Registration No. F-382



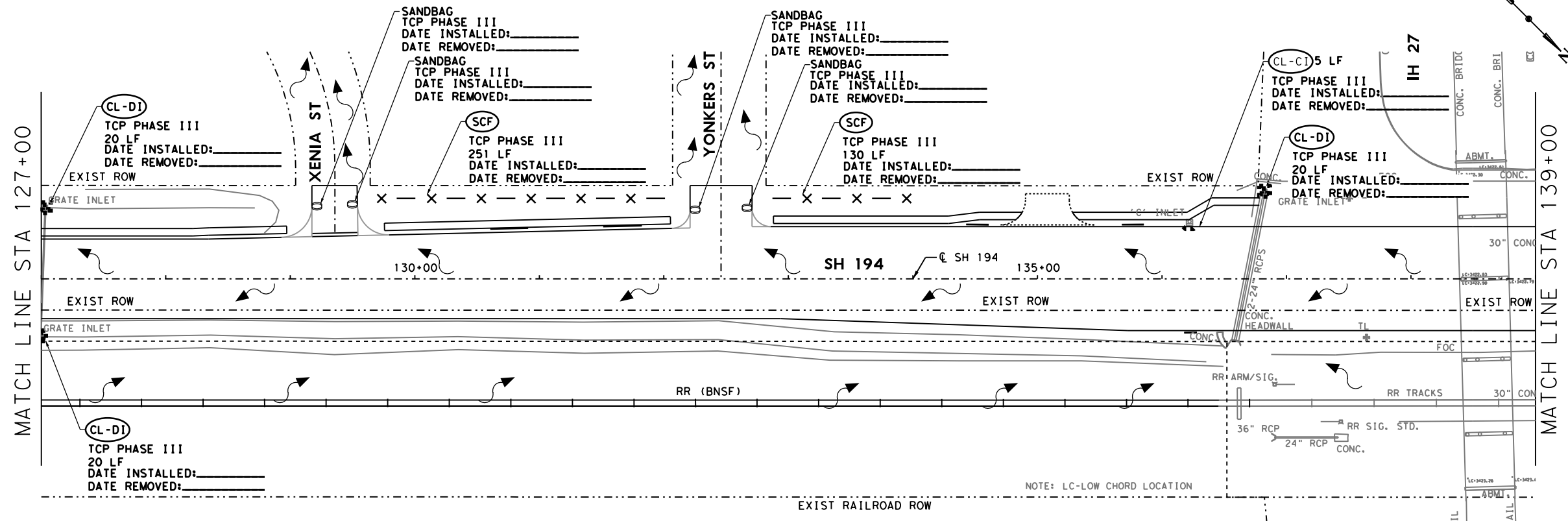
SH 194 FROM FM 3466 TO IH 27
 STORM WATER POLLUTION PREVENTION PLAN
 STA 115+00 TO STA 127+00

HORZ SCALE: 1"=100' SHEET 11 OF 14

FED. RD. DIV. NO.:	FEDERAL PROJECT NO.:	HIGHWAY NO.:
6	SEE TITLE SHEET	SH 194
STATE:	DISTRICT:	COUNTY:
TEXAS	LBB	HALE
CONTROL:	SECTION:	JOB:
0439	05	026

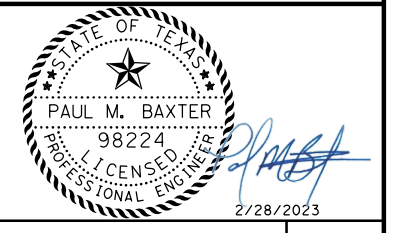
334

PLOT DRIVER: T:\DOT-BW-PDF-SRVR-pltcfgr PENTABLE: \$PENTBLS\$
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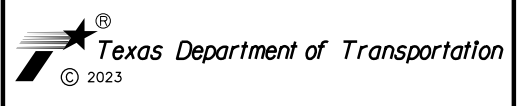


- LEGEND**
- CL-DI DROP INLET
 - CL-CI CURB INLET GUARD
 - CL-D DITCH
 - SANDBAG
 - EROSION CONTROL LOG
 - FLOW DIRECTION
 - EXISTING DITCH
 - TEMPORARY SEDIMENT CONTROL FENCE (SCF)
 - ROCK FILTER DAM TYPE 3 (RFD3)
 - SEEDING (PERM) & EMULSION

- NOTES:**
- SEE SWP3 STANDARD SHEETS FOR DETAILS.
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 - CIG BMP'S ARE ERTEC OR GEOCURVE CURB INLET GUARDS. EACH UNIT IS 5 FT LONG. PROVIDE ERTEC GUARDS PER SS-7012 6001. CONTRACTOR SHALL PROVIDE ERTEC INLET GUARDS OF EQUIVALENT.
 - PLACE SODDING (PERMANENT) BETWEEN EDGE OF PAVEMENT AND PROPOSED SIDEWALK.



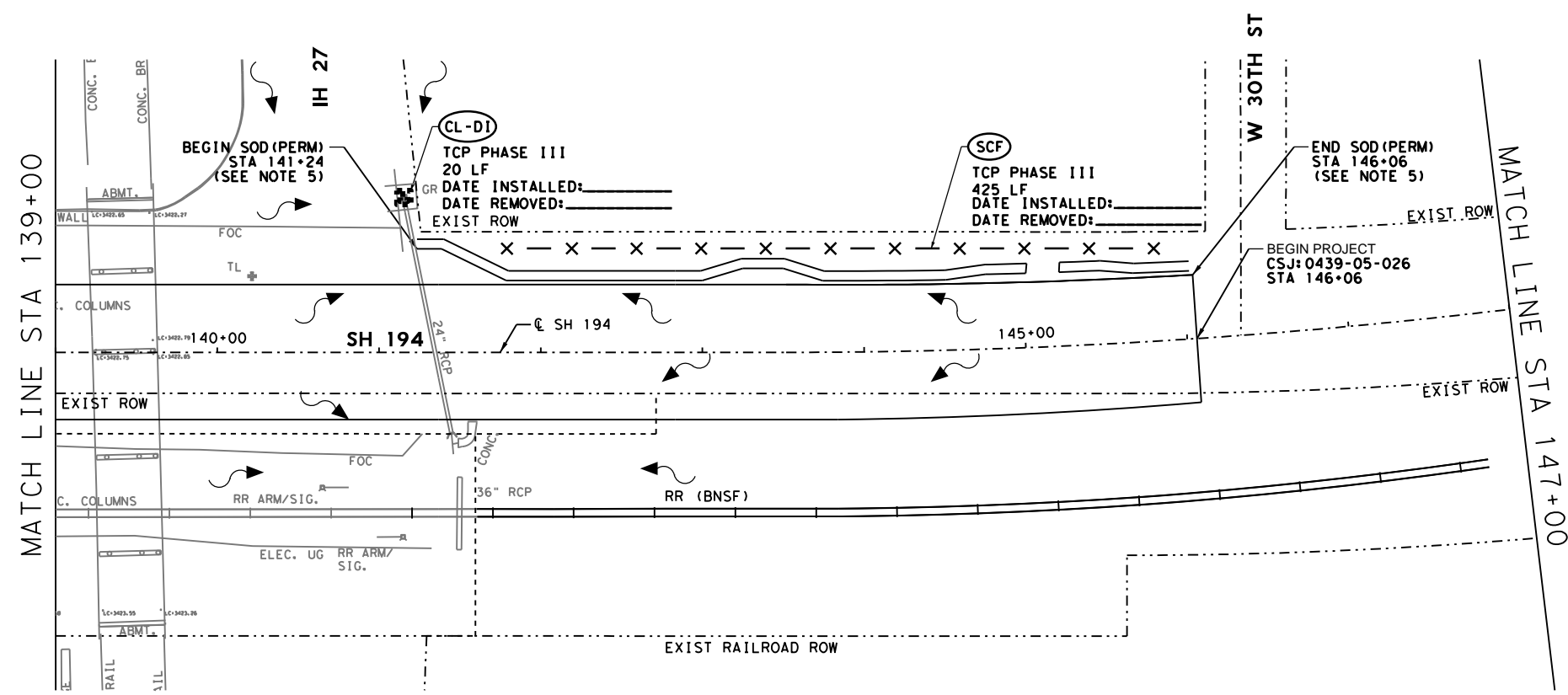
NO.	DATE	REVISION	APPROVED
CivilTech Engineering, Inc. 11821 Telge Road Cypress, Texas 77429 PH: (281) 304-0200 - FX: (281) 304-0210 Firm Registration No. F-382			



SH 194 FROM FM 3466 TO IH 27
 STORM WATER POLLUTION PREVENTION PLAN
 STA 127+00 TO STA 139+00

HORZ SCALE: 1"=100'			SHEET 12 OF 14
FED. RD. DIV. NO.:	FEDERAL PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		SH 194
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	335
CONTROL	SECTION	JOB	
0439	05	026	

PLOT DRIVER: T:\DOT-EM-PDF-SRVR-pltcfg PENTABLE: \$PENTBL\$
 USER: \$USER\$ DATE: 2/28/2023 TIME: 2:47:36 PM SCALE: 1:00
 FILE: SH194_SW3P_Sheet13.dgn



- LEGEND**
- (CL-DI) DROP INLET
 - (CL-CI) CURB INLET GUARD
 - (CL-D) DITCH
 - (SANDBAG) SANDBAG
 - EROSION CONTROL LOG
 - FLOW DIRECTION
 - EXISTING DITCH
 - x-x- TEMPORARY SEDIMENT CONTROL FENCE (SCF)
 - (RFD3) ROCK FILTER DAM TYPE 3
 - ▨ SEEDING (PERM) & EMULSION

- NOTES:**
1. SEE SWP3 STANDARD SHEETS FOR DETAILS.
 2. REFER TO TRAFFIC CONTROL PLANS FOR MORE INFORMATION ON PROJECT CONSTRUCTION AND PHASING.
 3. LOCATION OF CONSTRUCTION EXITS BMP'S TO BE IDENTIFIED IN THE FIELD BY THE ENGINEER.
 4. CIG BMP'S ARE ERTEC OR GEOCURVE CURB INLET GUARDS. EACH UNIT IS 5 FT LONG. PROVIDE ERTEC GUARDS PER SS-7012 6001. CONTRACTOR SHALL PROVIDE ERTEC INLET GUARDS OF EQUIVALENT.
 5. PLACE SODDING (PERMANENT) BETWEEN EDGE OF PAVEMENT AND PROPOSED SIDEWALK.
- 0 50 100
SCALE IN FEET

PAUL M. BAXTER
 98224
 LICENSED PROFESSIONAL ENGINEER
 2/28/2023

NO.	DATE	REVISION	APPROVED

CivilTech Engineering, Inc.
 11821 Telge Road
 Cypress, Texas 77429
 PH: (281) 304-0200 - FX: (281) 304-0210
 Firm Registration No. F-382



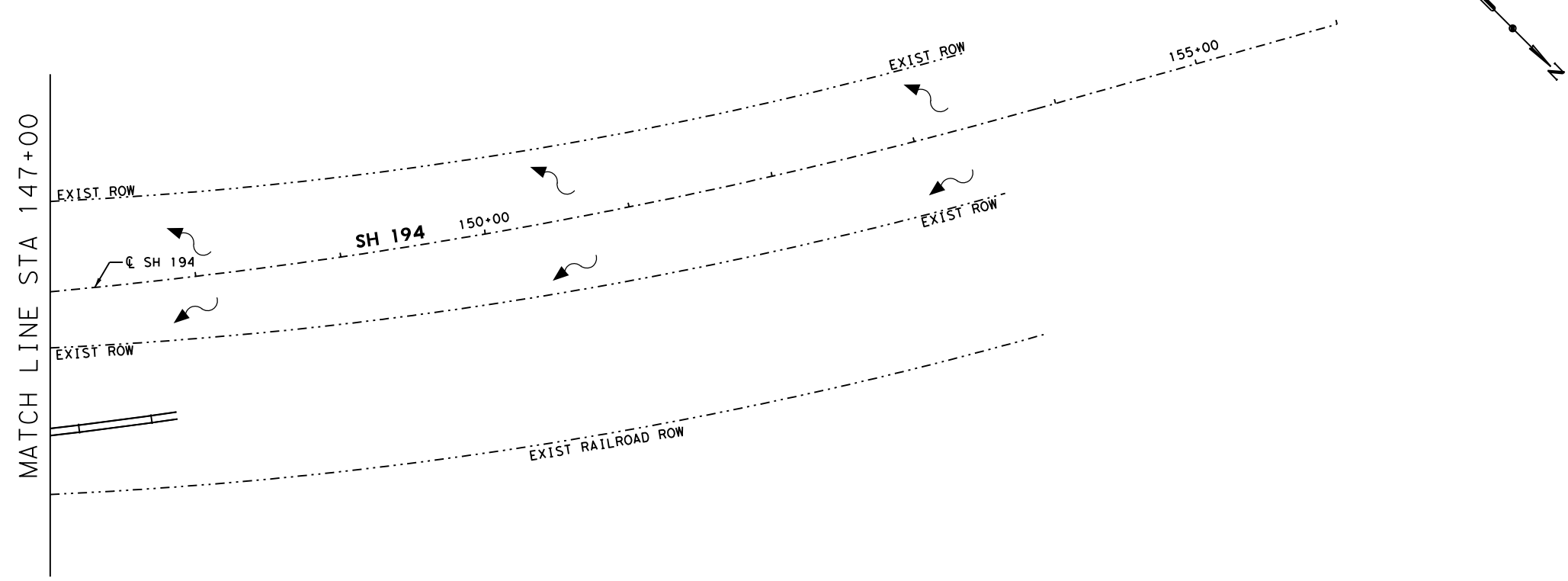
SH 194 FROM FM 3466 TO IH 27
STORM WATER POLLUTION PREVENTION PLAN
STA 139+00 TO STA 147+00

HORZ SCALE: 1"=100' SHEET 13 OF 14

FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	SH 194
STATE	DISTRICT	COUNTY
TEXAS	LBB	HALE
CONTROL	SECTION	JOB
0439	05	026

336

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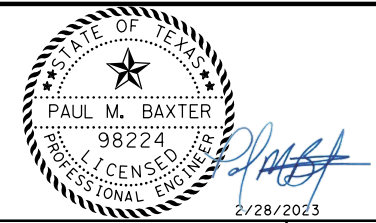


LEGEND

- CL-DI DROP INLET
- CL-CI CURB INLET GUARD
- CL-D DITCH
- SANDBAG
- EROSION CONTROL LOG
- FLOW DIRECTION
- CL EXISTING DITCH
- TEMPORARY SEDIMENT CONTROL FENCE (SCF)
- ROCK FILTER DAM TYPE 3 (RFD3)
- SEEDING (PERM) & EMULSION

NOTES:

1. SEE SWP3 STANDARD SHEETS FOR DETAILS.
2. REFER TO TRAFFIC CONTROL PLANS FOR MORE INFORMATION ON PROJECT CONSTRUCTION AND PHASING.
3. LOCATION OF CONSTRUCTION EXITS BMP'S TO BE IDENTIFIED IN THE FIELD BY THE ENGINEER.
4. CIG BMP'S ARE ERTEC OR GEOCURVE CURB INLET GUARDS. EACH UNIT IS 5 FT LONG. PROVIDE ERTEC GUARDS PER SS-7012 6001. CONTRACTOR SHALL PROVIDE ERTEC INLET GUARDS OF EQUIVALENT.
5. PLACE SODDING (PERMANENT) BETWEEN EDGE OF PAVEMENT AND PROPOSED SIDEWALK.



NO.	DATE	REVISION	APPROVED

CivilTech Engineering, Inc.
 11821 Telge Road
 Cypress, Texas 77429
 PH: (281) 304-0200 - FX: (281) 304-0210
 Firm Registration No. F-382

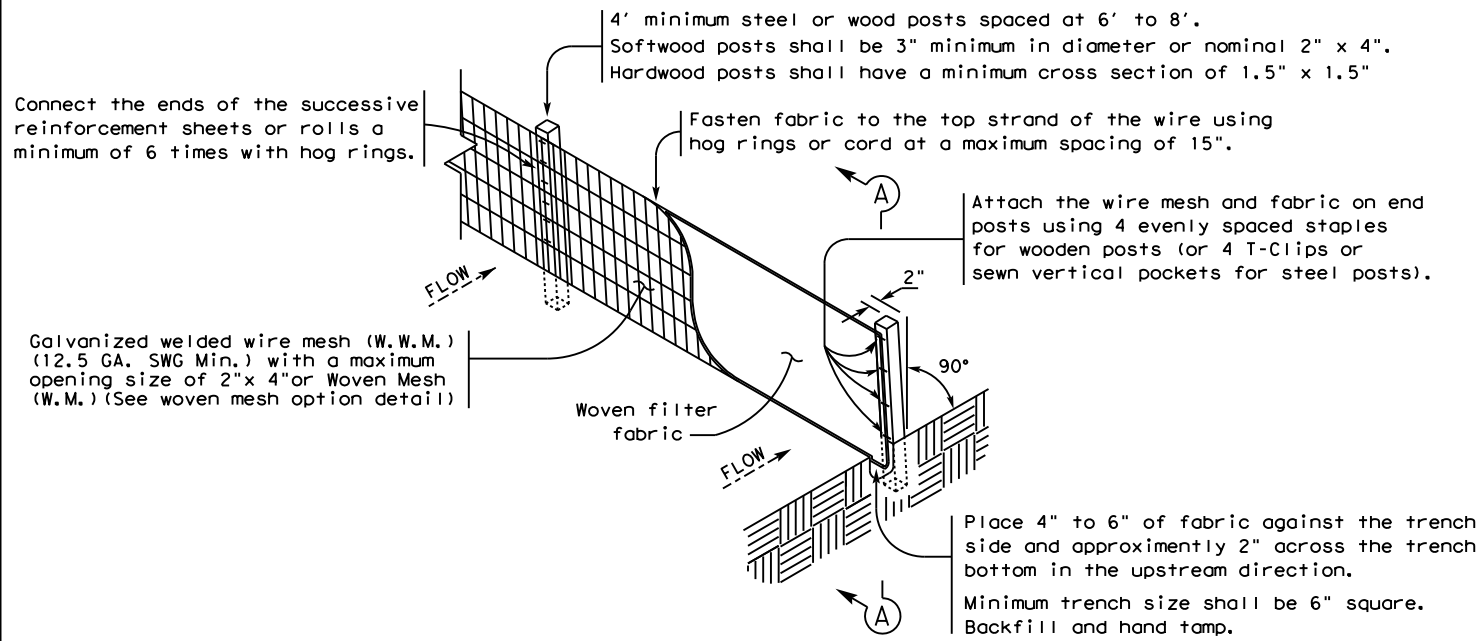


SH 194 FROM FM 3466 TO IH 27
STORM WATER POLLUTION PREVENTION PLAN
 STA 147+00 TO END

HORZ SCALE: 1"=100'			SHEET 14 OF 14
FED. RD. DIV. NO.	FEDERAL PROJECT NO.	HIGHWAY NO.	
6	SEE TITLE SHEET	SH 194	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	LBB	HALE	337
CONTROL	SECTION	JOB	
0439	05	026	

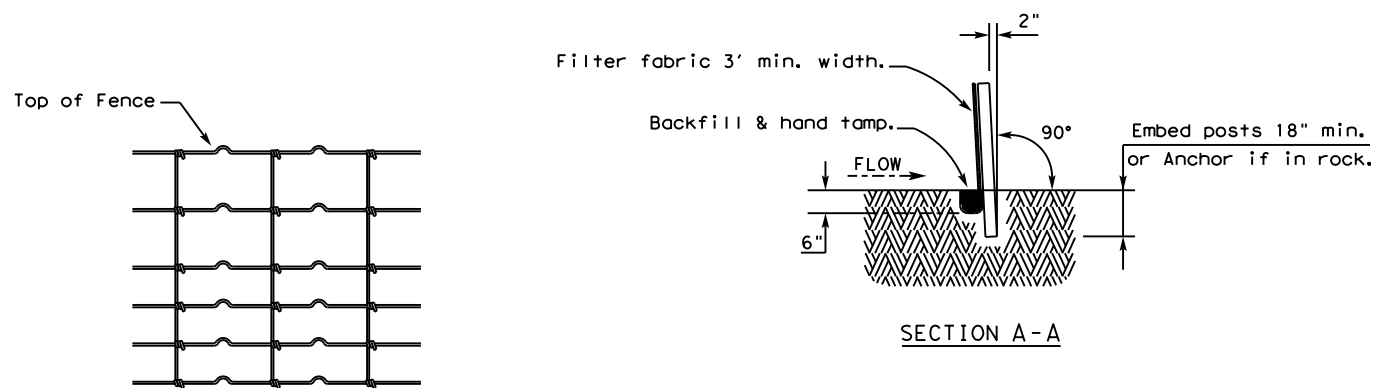
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DATE
FILE



TEMPORARY SEDIMENT CONTROL FENCE

SCF



HINGE JOINT KNOT WOVEN MESH (OPTION) DETAIL

Galvanized hinge joint knot woven mesh (12.5 GA. SWG Min.) requires a minimum of five horizontal wires spaced at a maximum of 12 inches apart and all vertical wires spaced at a maximum of 12 inches apart.

SEDIMENT CONTROL FENCE USAGE GUIDELINES

A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

Sediment control fence should be sized to filter a maximum flow through rate of 100 GPM/FT². Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

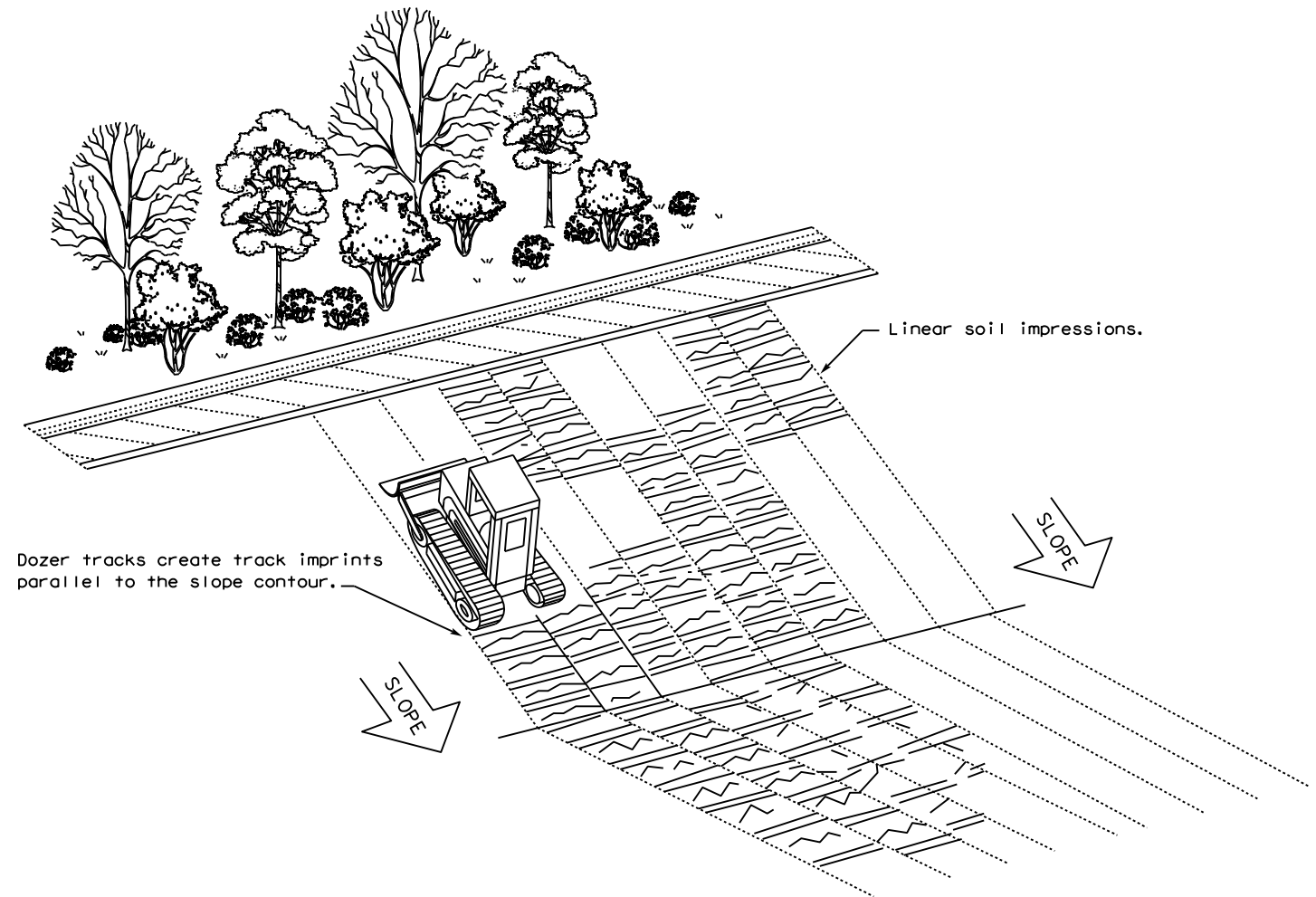
LEGEND

Sediment Control Fence

SCF

GENERAL NOTES

1. Vertical tracking is required on projects where soil distributing activities have occurred unless otherwise approved.
2. Perform vertical tracking on slopes to temporarily stabilize soil.
3. Provide equipment with a track undercarriage capable of producing linear soil impressions measuring a minimum of 12" in length by 2" to 4" in width by 1/2" to 2" in depth.
4. Do not exceed 12" between track impressions.
5. Install continuous linear track impressions where the minimum 12" length impressions are perpendicular to the slope or direction of water flow.

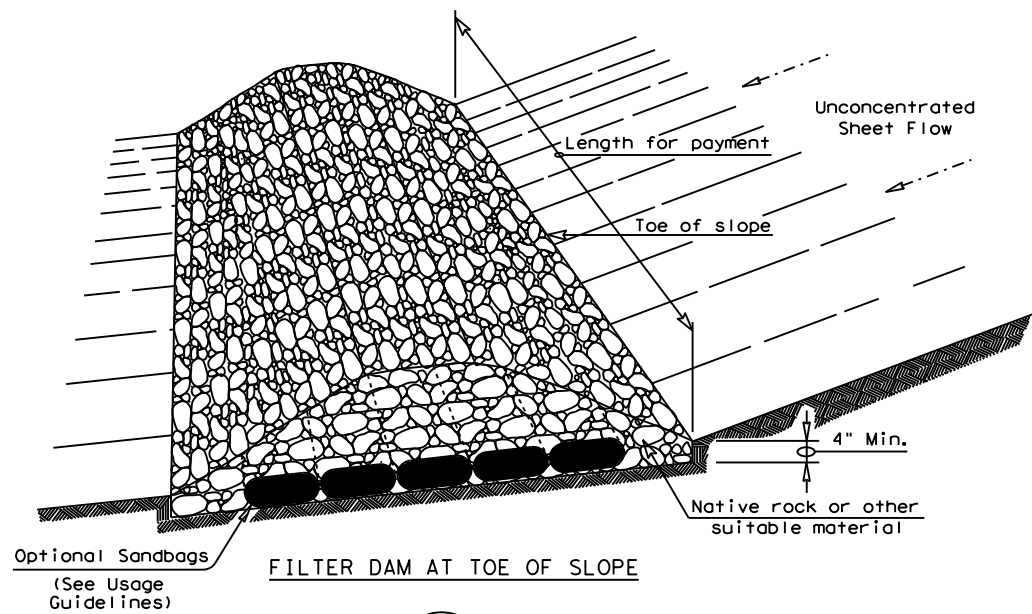


VERTICAL TRACKING

				Design Division Standard	
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES FENCE & VERTICAL TRACKING EC(1)-16					
FILE: ec116	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS	
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY	
REVISIONS					
	0439	05	026	SH 194	
	DIST	COUNTY		SHEET NO.	
	LBB	HALE		338	

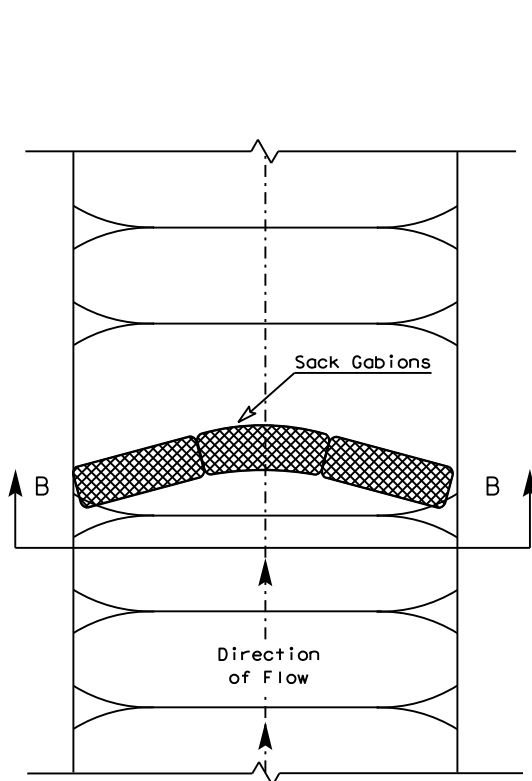
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DATE: FILE:

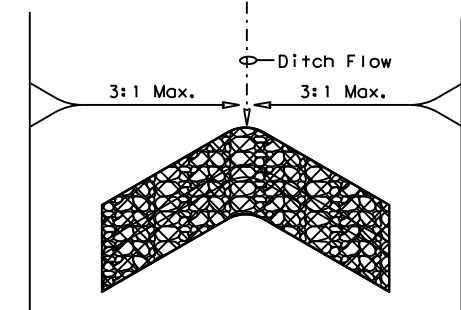


FILTER DAM AT TOE OF SLOPE

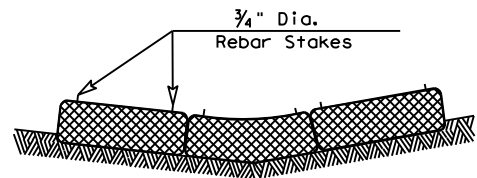
(RFD1)



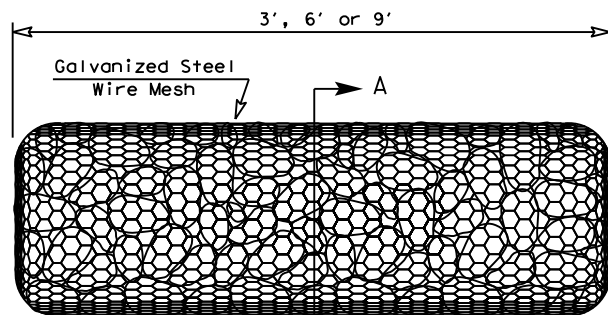
PLAN VIEW



"V" SHAPE PLAN VIEW

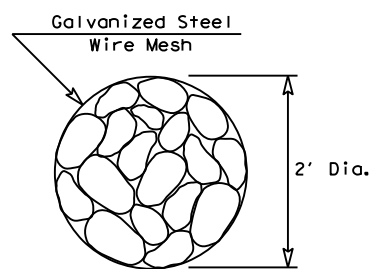


SECTION B-B

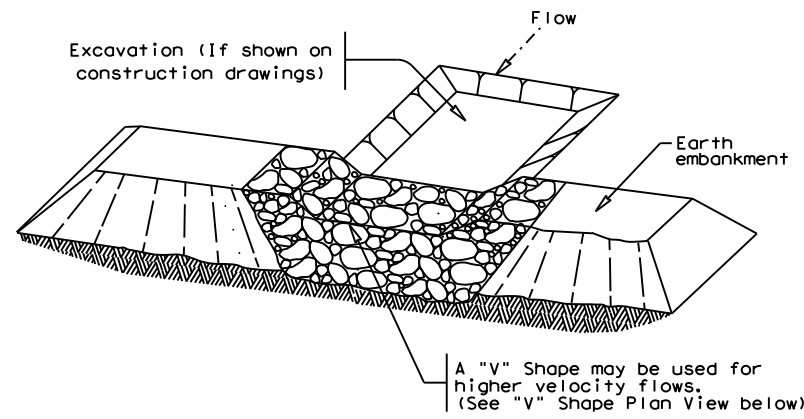


TYPE 4 (SACK GABIONS)

(RFD4)

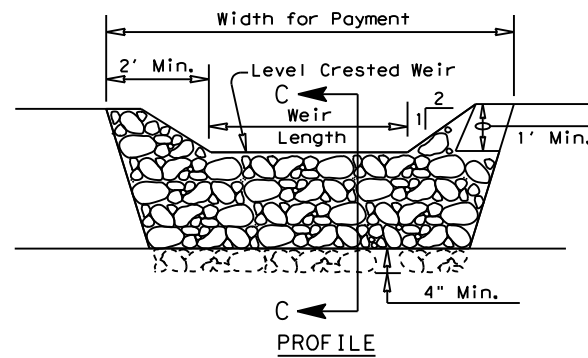


SECTION A-A

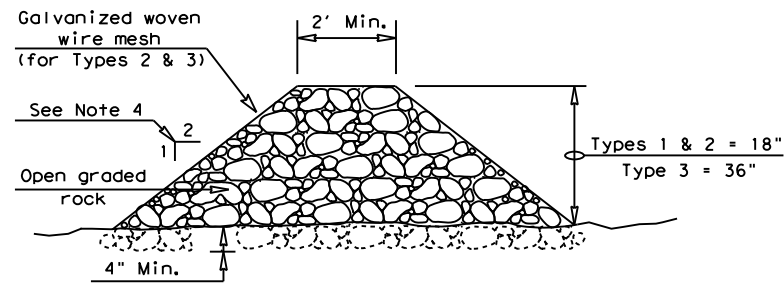


FILTER DAM AT SEDIMENT TRAP

(RFD2) OR (RFD1)



PROFILE



SECTION C-C

ROCK FILTER DAM USAGE GUIDELINES

Rock Filter Dams should be constructed downstream from disturbed areas to intercept sediment from overland runoff and/or concentrated flow. The dams should be sized to filter a maximum flow through rate of 60 GPM/FT² of cross sectional area. A 2 year storm frequency may be used to calculate the flow rate.

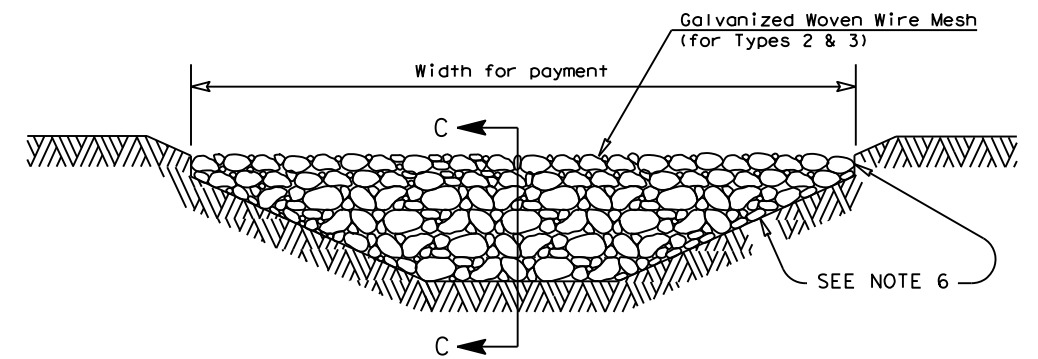
Type 1 (18" high with no wire mesh) (3" to 6" aggregate): Type 1 may be used at the toe of slopes, around inlets, in small ditches, and at dike or swale outlets. This type of dam is recommended to control erosion from a drainage area of 5 acres or less. Type 1 may not be used in concentrated high velocity flows (approximately 8 Ft/Sec or more) in which aggregate wash out may occur. Sandbags may be used at the embedded foundation (4" deep min.) for better filtering efficiency of low flows if called for on the plans or directed by the Engineer.

Type 2 (18" high with wire mesh) (3" to 6" aggregate): Type 2 may be used in ditches and at dike or swale outlets.

Type 3 (36" high with wire mesh) (4" to 8" aggregate): Type 3 may be used in stream flow and should be secured to the stream bed.

Type 4 (Sack gabions) (3" to 6" aggregate): Type 4 May be used in ditches and smaller channels to form an erosion control dam.

Type 5: Provide rock filter dams as shown on plans.



FILTER DAM AT CHANNEL SECTIONS

(RFD3) OR (RFD2) OR (RFD1)

GENERAL NOTES

- If shown on the plans or directed by the Engineer, filter dams should be placed near the toe of slopes where erosion is anticipated, upstream and/or downstream at drainage structures, and in roadway ditches and channels to collect sediment.
- Materials (aggregate, wire mesh, sandbags, etc.) shall be as indicated by the specification for "Rock Filter Dams for Erosion and Sedimentation Control".
- The rock filter dam dimensions shall be as indicated on the SW3P plans.
- Side slopes should be 2:1 or flatter. Dams within the safety zone shall have sideslopes of 6:1 or flatter.
- Maintain a minimum of 1' between top of rock filter dam weir and top of embankment for filter dams at sediment traps.
- Filter dams should be embedded a minimum of 4" into existing ground.
- The sediment trap for ponding of sediment laden runoff shall be of the dimensions shown on the plans.
- Rock filter dam types 2 & 3 shall be secured with 20 gauge galvanized woven wire mesh with 1" diameter hexagonal openings. The aggregate shall be placed on the mesh to the height & slopes specified. The mesh shall be folded at the upstream side over the aggregate and tightly secured to itself on the downstream side using wire ties or hog rings. For in stream use, the mesh should be secured or staked to the stream bed prior to aggregate placement.
- Sack Gabions should be staked down with 3/4" dia. rebar stakes, and have a double-twisted hexagonal weave with a nominal mesh opening of 2 1/2" x 3 1/4".
- Flow outlet should be onto a stabilized area (vegetation, rock, etc.).
- The guidelines shown hereon are suggestions only and may be modified by the Engineer.

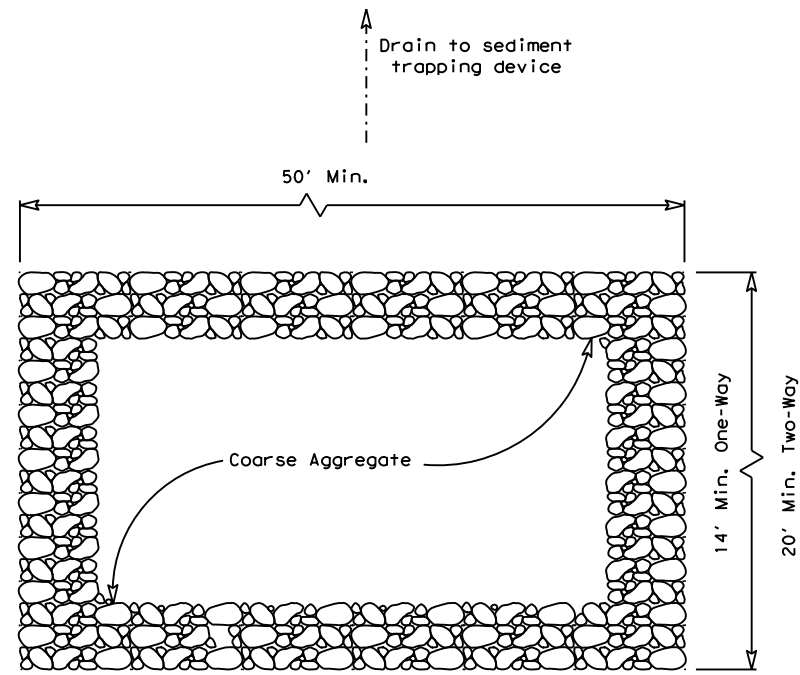
PLAN SHEET LEGEND

- Type 1 Rock Filter Dam (RFD1)
- Type 2 Rock Filter Dam (RFD2)
- Type 3 Rock Filter Dam (RFD3)
- Type 4 Rock Filter Dam (RFD4)

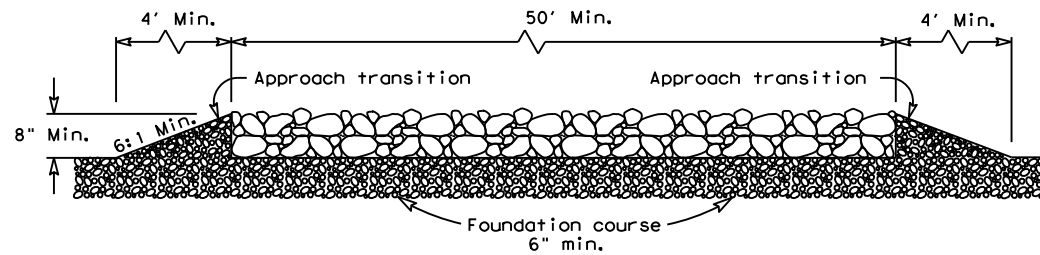
		Design Division Standard	
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES ROCK FILTER DAMS EC(2)-16			
FILE: ec216	DN: TxDOT	CK: KM	DN: VP
© TxDOT: JULY 2016	CON: 0439	SECT: 05	JOB: 026
REVISIONS	DIST: LBB	COUNTY: HALE	HIGHWAY: SH 194
			SHEET NO.: 339

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DATE:
FILE:



PLAN VIEW

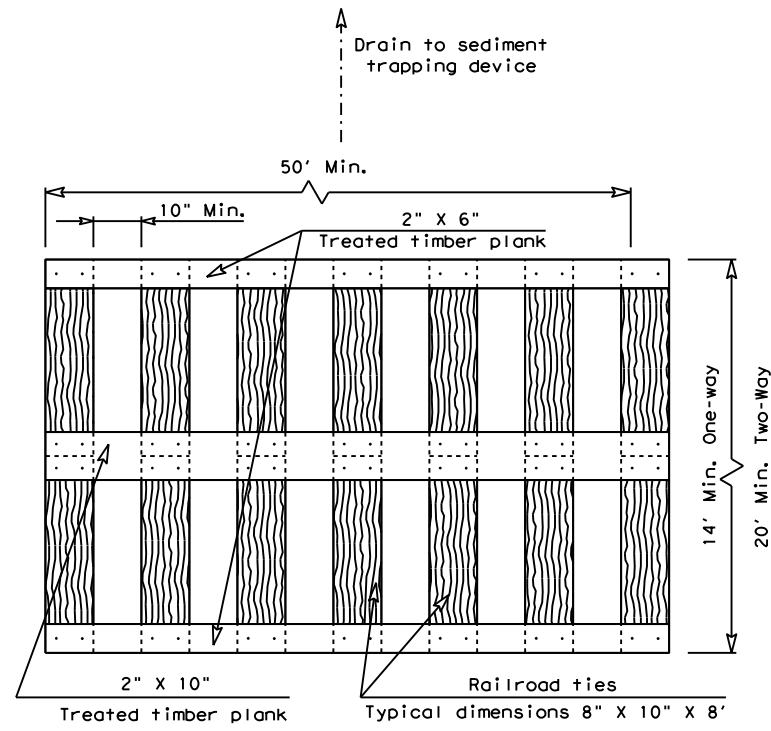


ELEVATION VIEW

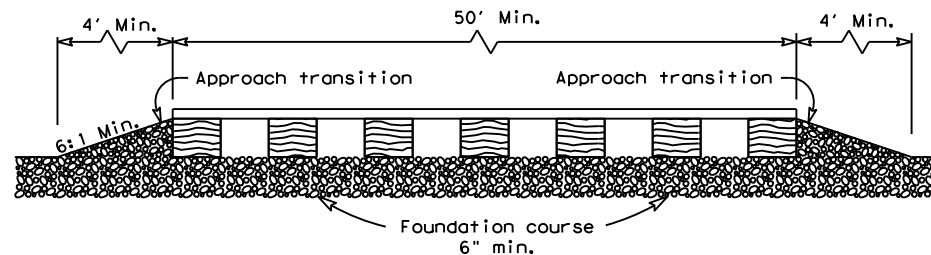
CONSTRUCTION EXIT (TYPE 1)
ROCK CONSTRUCTION (LONG TERM)

GENERAL NOTES (TYPE 1)

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



PLAN VIEW

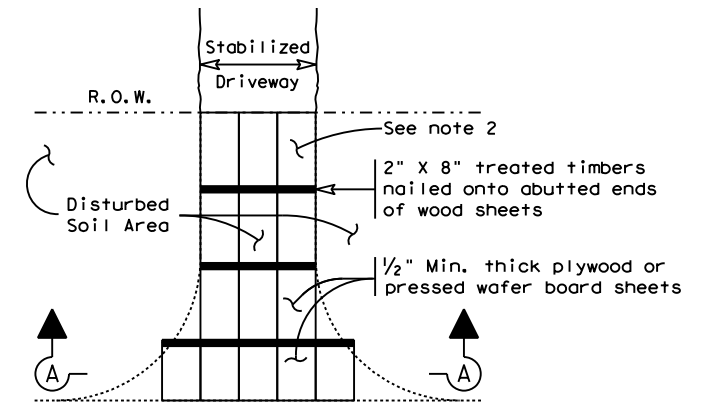


ELEVATION VIEW

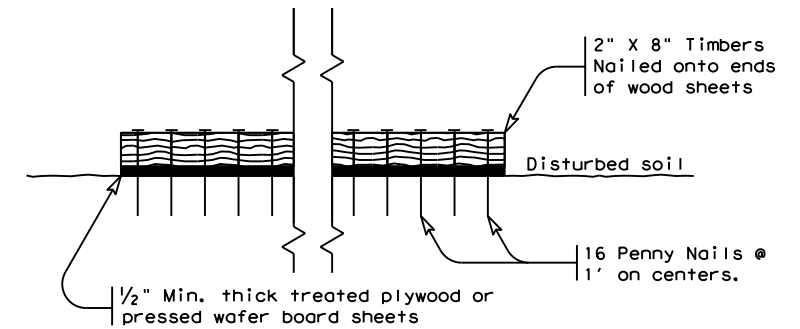
CONSTRUCTION EXIT (TYPE 2)
TIMBER CONSTRUCTION (LONG TERM)

GENERAL NOTES (TYPE 2)

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



Paved Roadway
PLAN VIEW



SECTION A-A
CONSTRUCTION EXIT (TYPE 3)
SHORT TERM

GENERAL NOTES (TYPE 3)

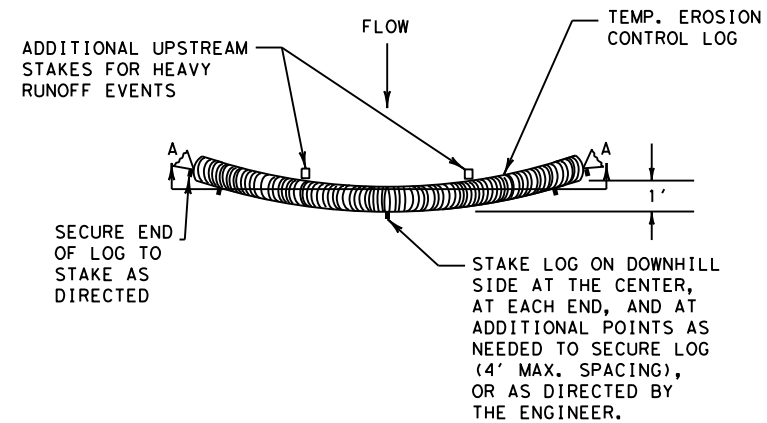
- The length of the type 3 construction exit shall be as shown on the plans, or as directed by the Engineer.
- The type 3 construction exit may be constructed from open graded crushed stone with a size of two to four inches spread a min. of 4" thick to the limits shown on the plans.
- The treated timber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



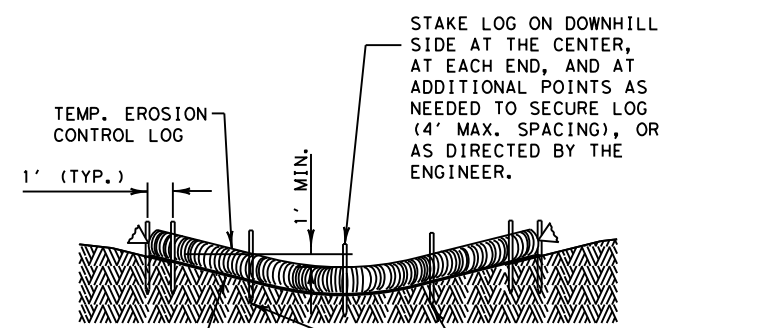
TEMPORARY EROSION,
SEDIMENT AND WATER
POLLUTION CONTROL MEASURES
CONSTRUCTION EXITS
EC(3)-16

FILE: ec316	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY
REVISIONS	0439	05	026	SH 194
	DIST	COUNTY	SHEET NO.	
	LBB	HALE	340	

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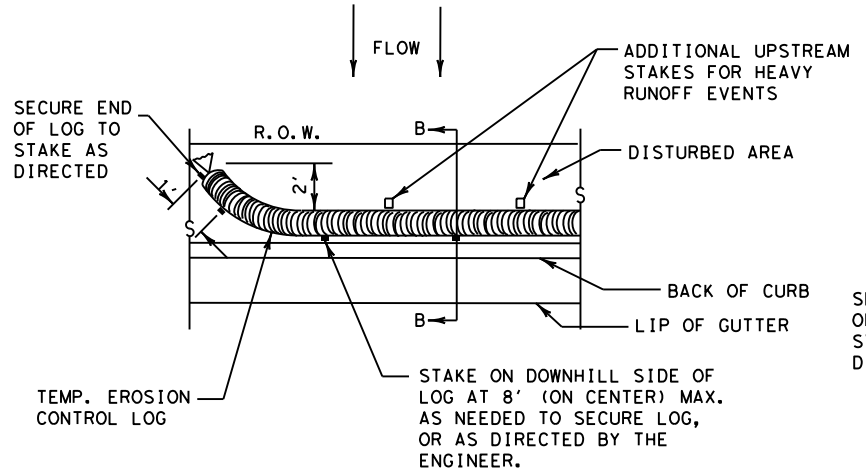
PLAN VIEW



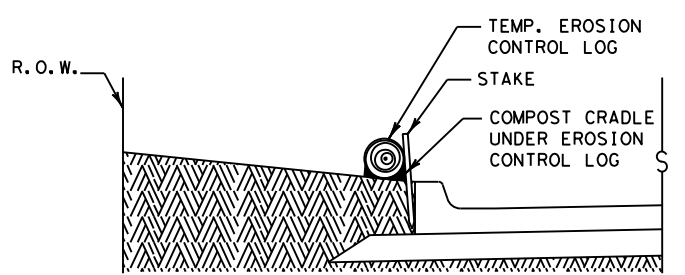
SECTION A-A

EROSION CONTROL LOG DAM

CL-D



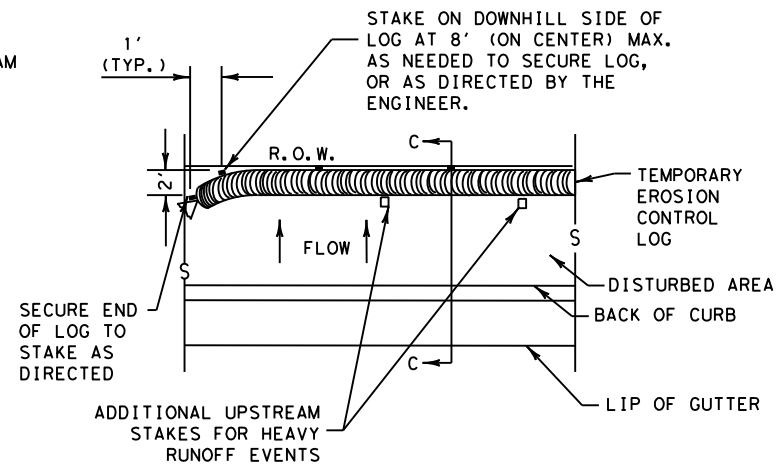
PLAN VIEW



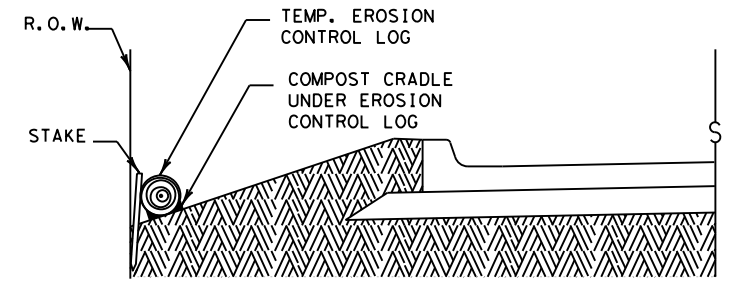
SECTION B-B

EROSION CONTROL LOG AT BACK OF CURB

CL-BOC



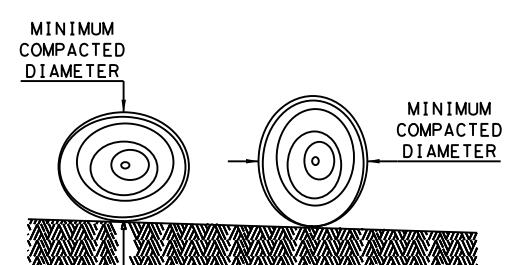
PLAN VIEW



SECTION C-C

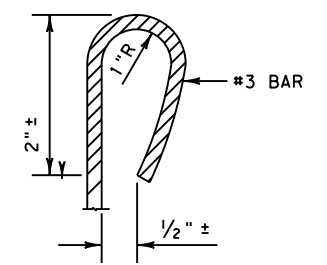
EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY

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.

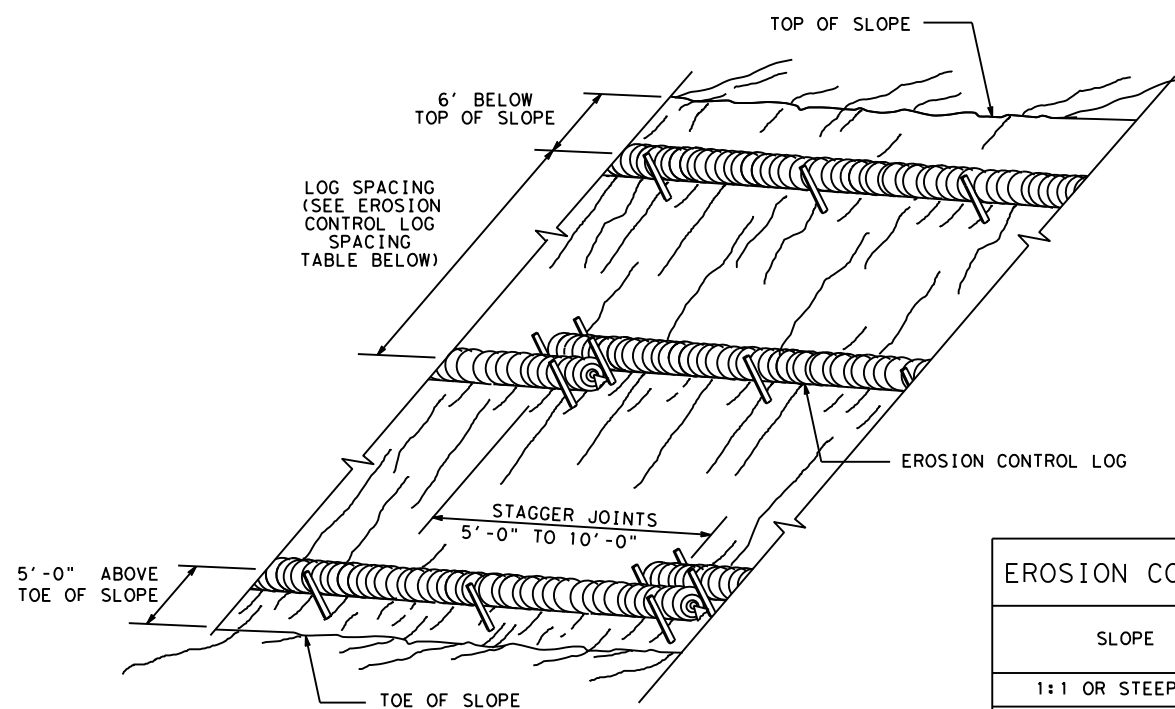
SHEET 1 OF 3

		Design Division Standard	
<p>TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES</p> <p>EROSION CONTROL LOG</p> <p>EC(9)-16</p>			
FILE: ec916	DW: TxDOT	CK: KM	DW: LS/PT
© TxDOT: JULY 2016	CONT: 0439	SECT: 05	JOB: 026
REVISIONS	DIST: LBB	COUNTY: HALE	SHEET NO.: 341

DATE: FILE:

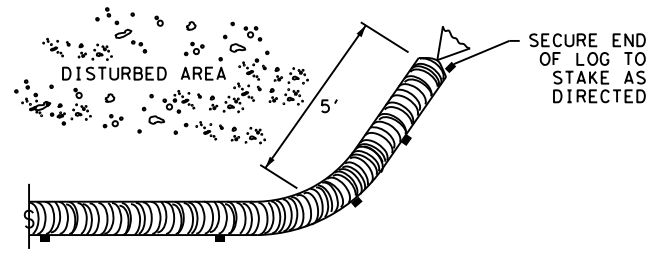
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DATE: FILE:



EROSION CONTROL LOGS ON SLOPES
STAKE AND TRENCHING ANCHORING

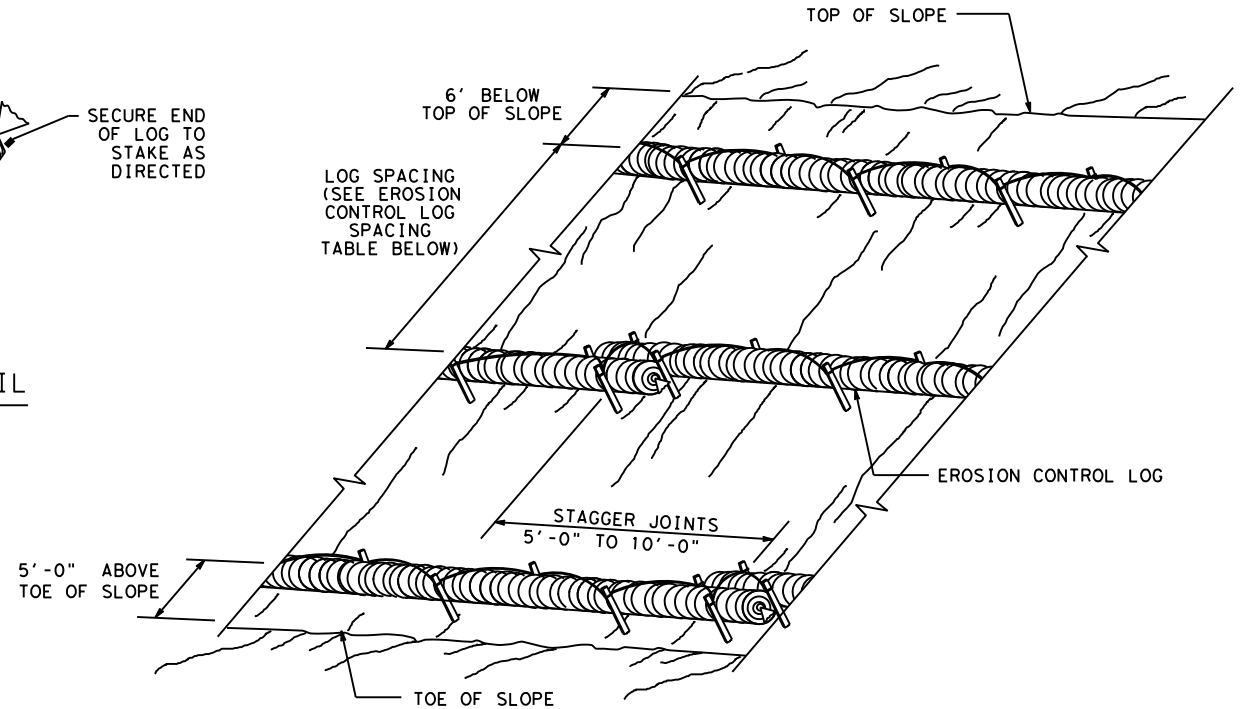
CL-SST



END SECTION RAP DETAIL

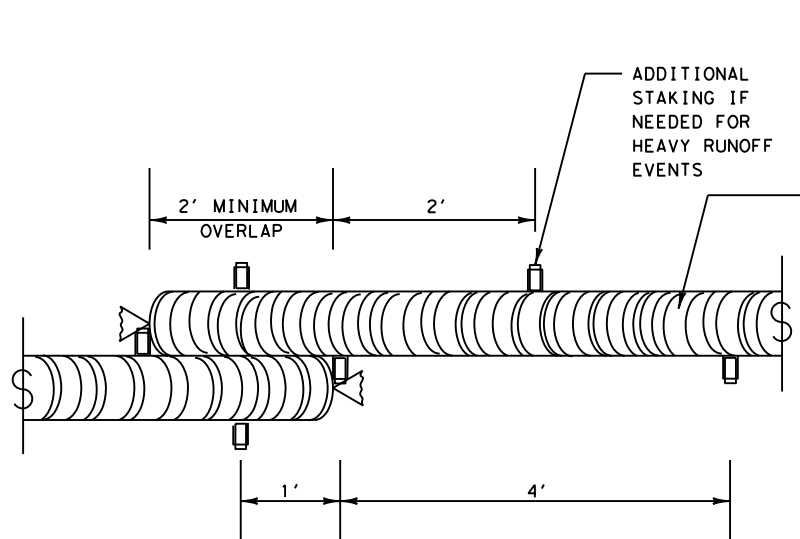
EROSION CONTROL LOG SPACING TABLE				
SLOPE	LOG DIAMETER			
	6"	8"	12"	18"
1:1 OR STEEPER	5'	10'	15'	20'
2:1	10'	20'	30'	40'
3:1	15'	30'	45'	60'
4:1 OR FLATTER	20'	40'	60'	80'

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



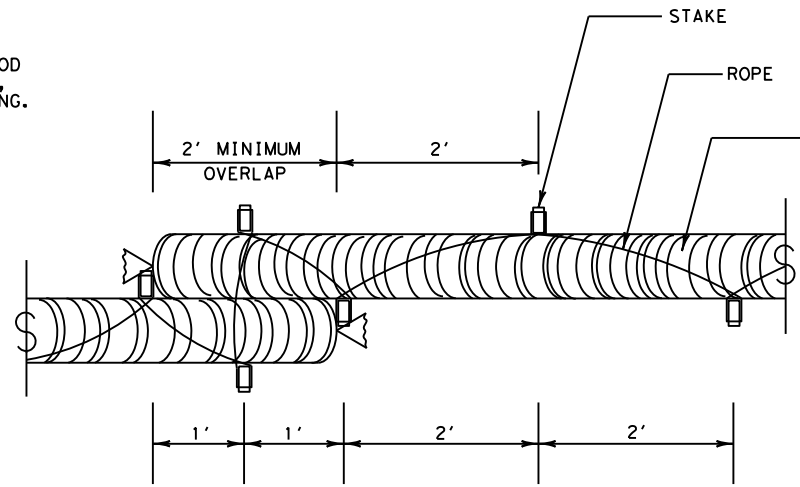
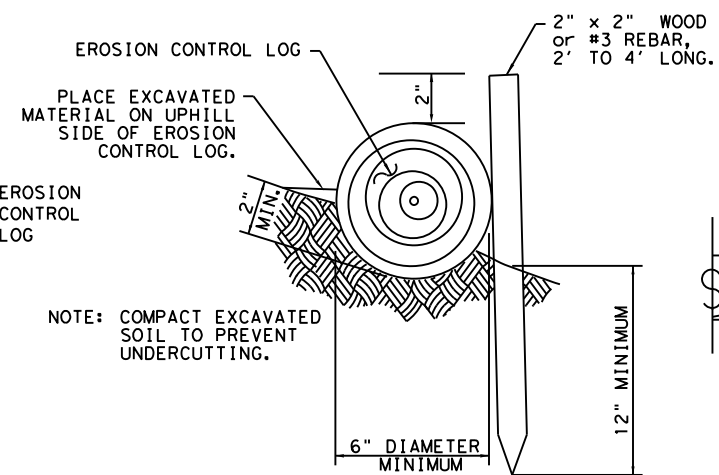
EROSION CONTROL LOGS ON SLOPES
STAKE AND LASHING ANCHORING

CL-SSL



STAKE AND TRENCHING ANCHORING DETAIL

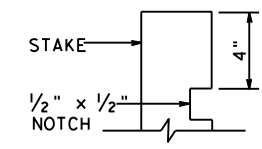
CL-SST



STAKE AND LASHING ANCHORING DETAIL

CL-SSL

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

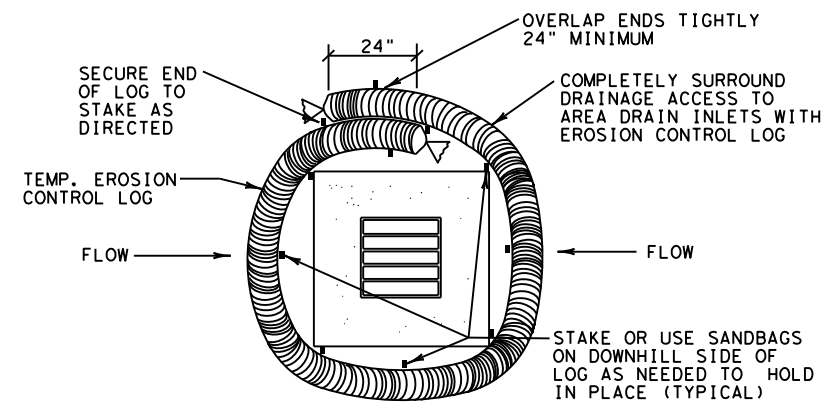


STAKE NOTCH DETAIL

SHEET 2 OF 3

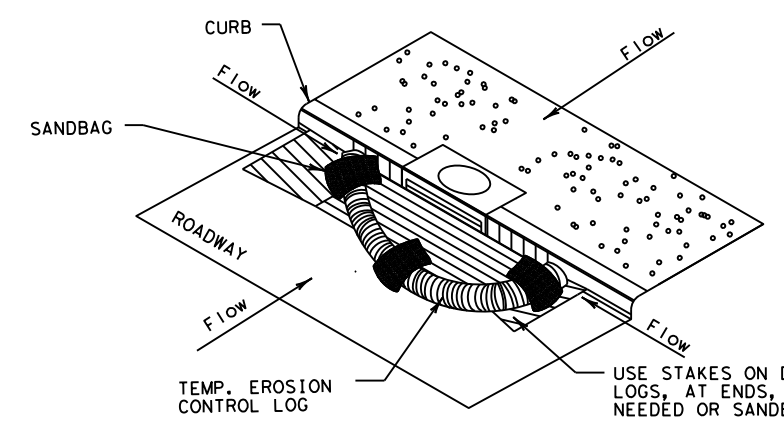
		Design Division Standard	
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES EROSION CONTROL LOG EC(9) - 16			
FILE: ec116	DN: TxDOT	CK: KM	DW: LS/PT
© TxDOT: JULY 2016	CONT SECT	JOB	HIGHWAY
REVISIONS	0439 05	026	SH 194
	DIST	COUNTY	SHEET NO.
	LBB	HALE	342

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.



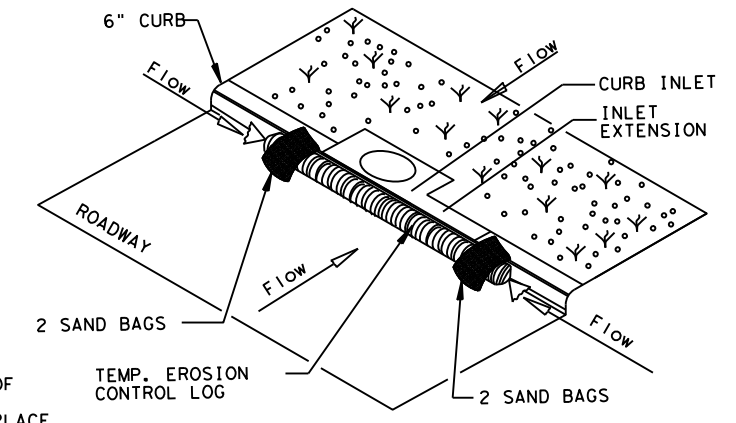
EROSION CONTROL LOG AT DROP INLET

CL-DI



EROSION CONTROL LOG AT CURB INLET

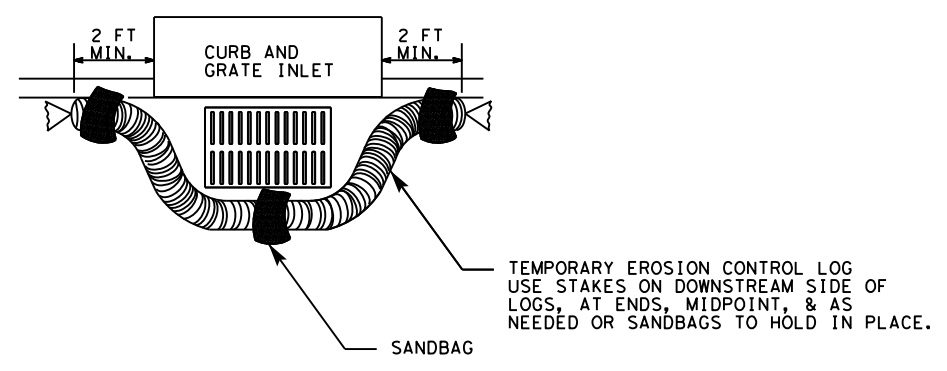
CL-CI



EROSION CONTROL LOG AT CURB INLET

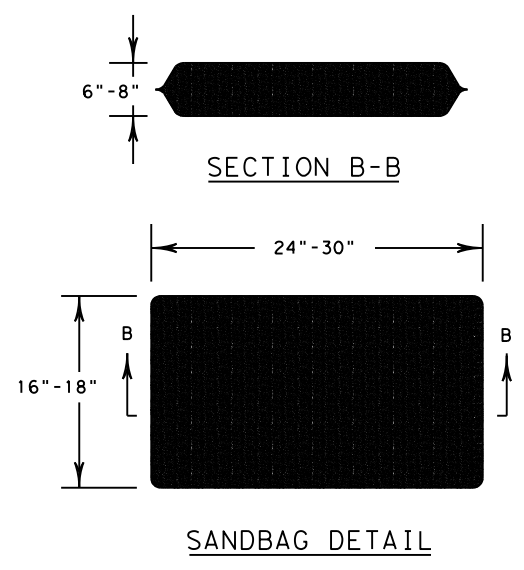
CL-CI

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



SANDBAG DETAIL

SHEET 3 OF 3

		<i>Design Division Standard</i>	
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	HIGHWAY
REVISIONS	0439 05	026	SH 194
	DIST	COUNTY	SHEET NO.
	LBB	HALE	343

DATE:
FILE:

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: 7/29/2024
FILE: epic.dgn

I. STORMWATER POLLUTION PREVENTION-CLEAN WATER ACT SECTION 402

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

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

- 1. None
- 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 SWP3 and revise when necessary to control pollution or required by the Engineer.
3. Post Construction Site Notice (CSN) with SWP3 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 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

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. Comply with Executive Order 13112 on Invasive Plant Species.
2. Comply with TxDOT Executive Memorandum on beneficial landscaping.
3. Comply with temporary and permanent vegetation stabilization protocols of the SWP3.

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. Do not handle or harm Texas horned lizards, prairie dogs, barn swallows or burrowing owls.
2. No prairie dog towns can be damaged or crossed with equipment without approval of the Engineer.
3. No nests of burrowing owls (in prairie dog holes) can be disturbed or damaged (See General Notes).
4. No nests of barn swallows (likely on structures such as bridges) can be disturbed or damaged (See General Notes).
5. Obey the Bald and Golden Eagle Protection Act. Do not handle, harm, capture, disturb, or kill the species. Do not handle, harm, or take nests, eggs, feathers, bones, or eagles.
6. Obey the Migratory Bird Treaty Act of 1916, of which details there cannot be any handling or harming of migratory bird species; including their eggs, nests, or feathers.

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.

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 labeling as required by the Act.

LIST OF ABBREVIATIONS

BMP: Best Management Practice	SPCC: Spill Prevention Control and Countermeasure
CGP: Construction General Permit	SWP3: 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):

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

VII. OTHER ENVIRONMENTAL ISSUES

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

- No Action Required Required Action

Action No.

1. Maintain equipment muffler systems and work hour restrictions to reduce traffic noise.
2. No PSL's may be located in the prairie dog towns, playa lakes (wet or dry) or stream beds (wet or dry).
3. No dumping of construction material in playa lakes or stream beds regardless of property owner requests.
4. Contractor must obtain historical and archaeological clearances for off-site PSL's.
5. Contractor is responsible for air quality permits for concrete and asphalt batch and similar plants.
6. Contractor is responsible for water appropriation or impoundment TCEQ permits.
7. Contractor will protect environmentally sensitive areas with fencing, work sequencing or scheduling as directed.
8. PSL's beyond the project right-of-way have "individual operator" status under the TPDES Construction General Permit and the Contractor is responsible for the SWP3 and any TCEQ permits.
9. No waste material of any type may be placed at any location where it could be washed into a water of the U.S. or a surface water of Texas.
10. Flood elevations will not be increased to a level that would violate flood plain regulations or ordinances.
11. Contractor shall remove all construction debris daily from the waterway by close of business, where applicable.
12. The SWP3, including best management practices, must be in-place prior to disturbing soil.



ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS EPIC

FILE: epic.dgn	DN: TxDOT	CK: RG	DW: VP	CK: AR
©TxDOT: February 2015	CONT	SECT	JOB	HIGHWAY
12-12-2011 IDS REVISIONS	0439	05	026	SH 194
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.	LBB	HALE	344	