FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6	STP 2023(123)TAPS		1
STATE	STATE DIST.	COUNTY	
TX	SAT	WILSON	
CONT.	SECT.	JOB	HIGHWAY NO.
0915	14	050	DL VEST ST

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
STATE HIGHWAY IMPROVEMENT

FEDERAL AID PROJECT
PROJECT NO. STP 2023(123)TAPS
CSJ: 0915-14-050

WILSON COUNTY
DL VEST STREET

LIMITS FROM: DL VEST STREET
TO: FM 1346 SIDEWALKS

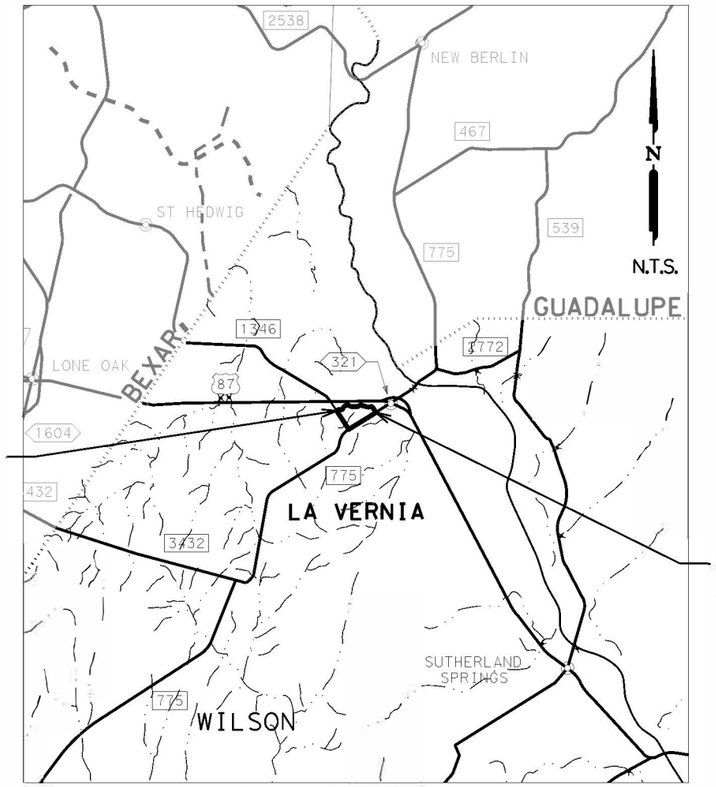
INDEX OF SHEETS

SEE SHEET 2 FOR INDEX OF SHEETS

DESIGN SPEED = NA
AREA OF DISTURBED SOIL = 1.8 AC
ADT: NA
ACCESSIBILITY STANDARDS = PROWAG

REGISTERED ACCESSIBILITY SPECIALIST (RAS) INSPECTION REQUIRED. TDLR NO. EABPRJ: TABS2024005362

FOR WORK CONSISTING OF: CONSTRUCTION OF APPROXIMATELY 1 MILE OF 6-FT SIDEWALK SECTIONS TO CREATE 2.1-MILE PED ROUTE ALONG DL VEST ST, SAN ANTONIO RD, WARREN ST, SILVERADO ST, JESSICA ST, ALEXANDRIA ST, FM 1346 & FM 775. INCLUDES CROSSWALKS, PED BRIDGES & OTHER SAFETY IMPROVEMENTS.



BEGIN PROJECT
FM 1346
STA 11+00

END PROJECT
DL VEST STREET
STA 508+00

LOCATION MAP NOT TO SCALE

EXCEPTIONS: NONE
EQUATIONS: NONE
R.R. CROSSINGS: NONE

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

FINAL PLANS

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

FINAL PLANS STATEMENT:

THE CONSTRUCTION WORK WAS PERFORMED IN ACCORDANCE WITH THE PLANS.

_____ P.E. _____
AREA ENGINEER DATE

TEXAS DEPARTMENT OF TRANSPORTATION

SUBMITTED FOR LETTING 2/~~14~~/2024
DocuSigned by: Linda Cox, P.E.
TRANSPORTATION ENGINEER SUPERVISOR

RECOMMENDED FOR LETTING 2/~~15~~/2024
DocuSigned by: Clayton Kipps, P.E.
Deputy DISTRICT ENGINEER

REVIEWED FOR LETTING 2/~~15~~/2024
DocuSigned by: DRogers, P.E.
TRANSPORTATION ENGINEER SUPERVISOR

APPROVED FOR LETTING 3/~~18~~/2024
DocuSigned by: Charles Benavides
DISTRICT ENGINEER

FILE LOCATION AND NAME
T:\Engdata\Standards\Design\TITLESHEET-2014Specs.DGN

LEVELS DISPLAYED

COUNTY_____ PROJ. NO._____
HWY. NO._____ LETTING DATE_____
DATE ACCEPTED_____

N_TITLE

DESIGN | DRAFT | CHECK

GENERAL

1	TITLE SHEET
2	INDEX OF SHEETS
3	PROJECT LAYOUT
4-9	TYPICAL SECTIONS
10	GENERAL NOTES
11-12	ESTIMATE & QUANTITY
13-16	QUANTITY SUMMARY

TRAFFIC CONTROL PLAN

17	TRAFFIC CONTROL PLAN - NARRATIVE
18-19	TRAFFIC CONTROL PLAN - TYPICAL SECTIONS
20	TRAFFIC CONTROL PLAN - SCHEDULE OF BARRICADES
21	TRAFFIC CONTROL PLAN - ADVANCE WARNING DEVICES
22	TRUCK MOUNTED ATTENUATOR (TMA) AND TRAILER ATTENUATOR (TA) SUMMARY SHEET
23	TRAFFIC CONTROL PLAN - ALTERNATIVE PEDESTRIAN ROUTES
24-25	TRAFFIC CONTROL PLAN - TEMPORARY CURB RAMP DETAIL

TRAFFIC CONTROL PLAN STANDARDS

#	26	WZ(BTS-1)-13
#	27	WZ(BTS-2)-13
#	28-39	BC (1)-21 THRU BC (12)-21
#	40	TCP(1-1)-18
#	41	TCP(2-1)-18
#	42	TCP(2-2)-18
#	43-44	SSCB(2)-10
#	45	SSCB(5)-10
#	46	LPTB-22

ROADWAY DETAILS

47-50	ALIGNMENT DATA
51-61	SIDEWALK PLAN AT FM 1346
62-67	SIDEWALK PLAN AT FM 775
68-69	SIDEWALK PLAN AT ALEXANDRIA ST
70-72	SIDEWALK PLAN AT JESSICA ST
73-79	SIDEWALK PLAN AT WARREN & SILVERADO ST
80-85	SIDEWALK PLAN AT SAN ANTONIO ST
86-89	SIDEWALK PLAN AT DL VEST ST
90-94	DRIVEWAY PLAN AND PROFILE
95-97	DETAILS

ROADWAY DETAILS STANDARDS

#	98-101	PED-18
#	102	DISTRICT STANDARD FOR DRIVEWAY DETAILS (SAT DISTRICT STD)
#	103-105	SIDEWALK BRIDGE (SAT DISTRICT STD)
#	106-108	SIDEWALK BRIDGE (SAT DISTRICT STD)(MOD)
#	109	ARMOR CURB SLOT W/ CONC. FOUNDATION (SAT DISTRICT STD)
#	110-111	MISCELLANEOUS CURB AND SIDEWALK DETAILS (SAT DISTRICT STD)

SIGNS, PAVEMENT MARKINGS & DELINEATION STANDARDS

#	112	SMD(GEN)-08
#	113	SMD(SLIP-1)-08
#	114	SMD(SLIP-2)-08
#	115	SMD(SLIP-3)-08
#	116	PM(1)-22
#	117	TSR4-13
#	118	TSR5-13
#	119	TYPICAL CROSSWALK DETAILS (SAT DISTRICT STD)

UTILITIES

120	EXISTING UTILITY LAYOUT
121	EXISTING UTILITY LEGEND
122-125	EXISTING UTILITY PLAN

ENVIRONMENTAL ISSUES

126-127	STORMWATER POLLUTION PREVENTION PLAN (SWP3)
128	ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS

ENVIRONMENTAL ISSUES STANDARDS

#	129-131	EC (9)-16

THE STANDARD SHEETS SPECIFICALLY IDENTIFIED BY A "#" HAVE ISSUED BY ME AND ARE APPLICABLE TO THIS PROJECT.

Martha Gandara — 3/11/2024

MARTHA GANDARA, P.E. — DATE

STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

DATE: 3/11/2024

SCALE: NTS

Texas Department of Transportation

DL VEST STREET INDEX OF SHEETS

SHEET: 1 OF 1

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		2

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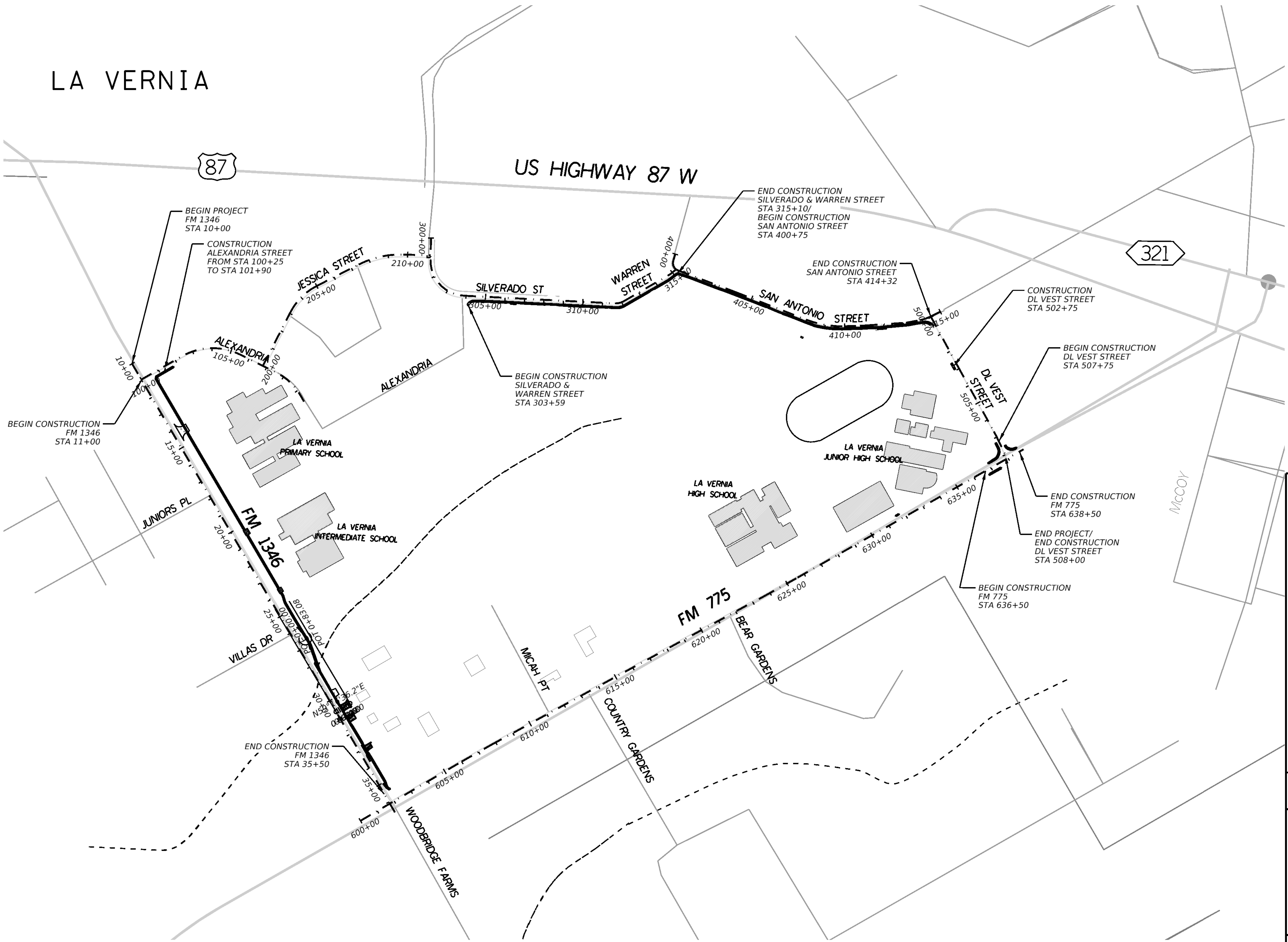

LA VERNIA
US HIGHWAY 87 W
87
321
N
BEGIN PROJECT
FM 1346
STA 10+00
CONSTRUCTION
ALEXANDRIA STREET
FROM STA 100+25
TO STA 101+90
JESSICA STREET
ALEXANDRIA
SILVERADO ST
WARREN STREET
END CONSTRUCTION
SILVERADO & WARREN STREET
STA 315+10/
BEGIN CONSTRUCTION
SAN ANTONIO STREET
STA 400+75
SAN ANTONIO STREET
END CONSTRUCTION
SAN ANTONIO STREET
STA 414+32
CONSTRUCTION
DL VEST STREET
STA 502+75
BEGIN CONSTRUCTION
DL VEST STREET
STA 507+75
DL VEST STREET
BEGIN CONSTRUCTION
SILVERADO &
WARREN STREET
STA 303+59
BEGIN CONSTRUCTION
FM 1346
STA 11+00
LA VERNIA PRIMARY SCHOOL
LA VERNIA INTERMEDIATE SCHOOL
LA VERNIA HIGH SCHOOL
LA VERNIA JUNIOR HIGH SCHOOL
JUNIORS PL
FM 1346
VILLAS DR
FM 775
BEAR GARDENS
MICAH PT
COUNTRY GARDENS
WOODBRIDGE FARMS
McCOY
END CONSTRUCTION
FM 775
STA 638+50
END PROJECT/
END CONSTRUCTION
DL VEST STREET
STA 508+00
BEGIN CONSTRUCTION
FM 775
STA 636+50
END CONSTRUCTION
FM 1346
STA 35+50

STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

SCALE: NTS

Texas Department of Transportation

DL VEST STREET PROJECT LAYOUT

SHEET: 1 OF 1

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST		COUNTY	SHEET NO.
SAT		WILSON	3

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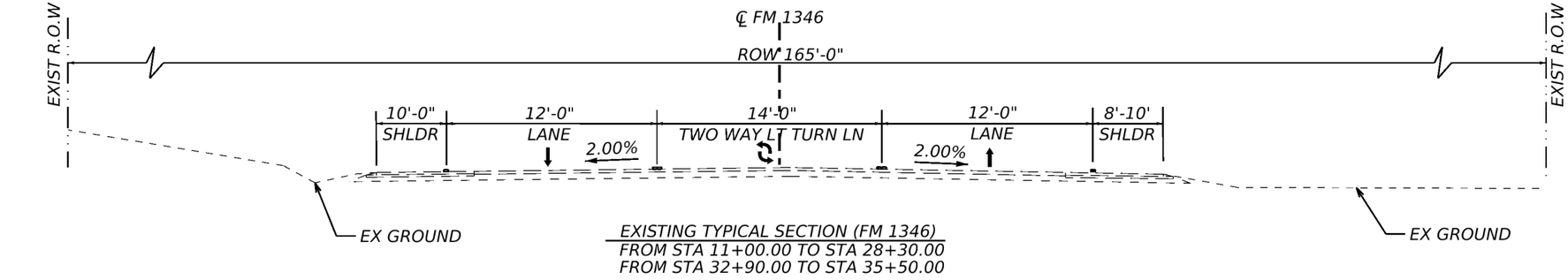

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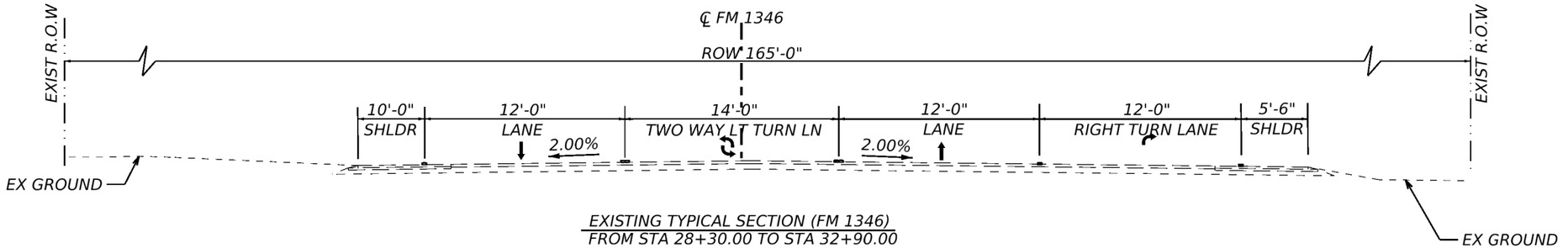
FROM STA 11+00.00 TO STA 28+30.00
FROM STA 32+90.00 TO STA 35+50.00



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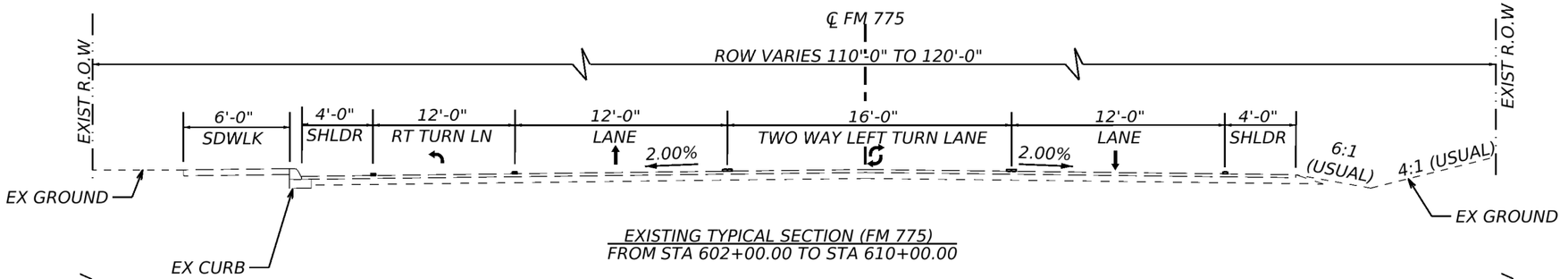
FROM STA 28+30.00 TO STA 32+90.00



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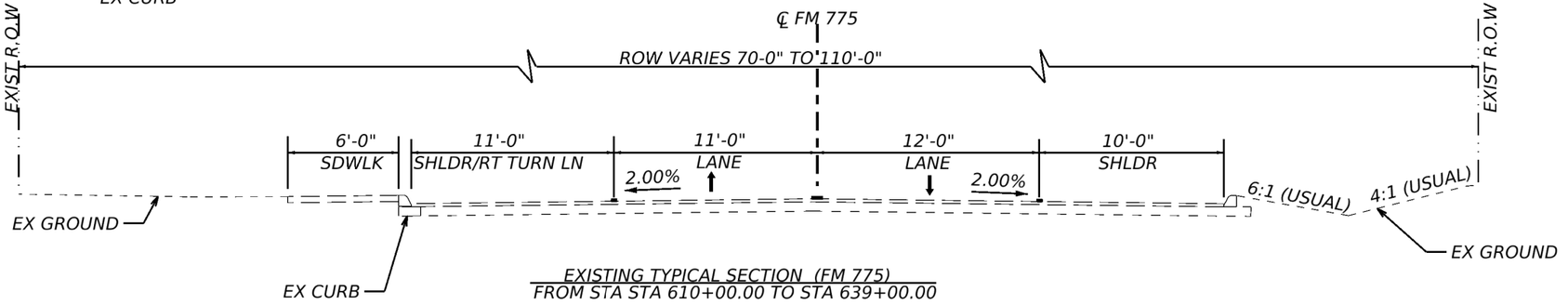

EXISTING TYPICAL SECTION (FM 775)
FROM STA STA 610+00.00 TO STA 639+00.00

STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

Texas Department of Transportation

DL VEST STREET EXISTING TYPICAL SECTIONS

SHEET: 1 OF 3

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		4

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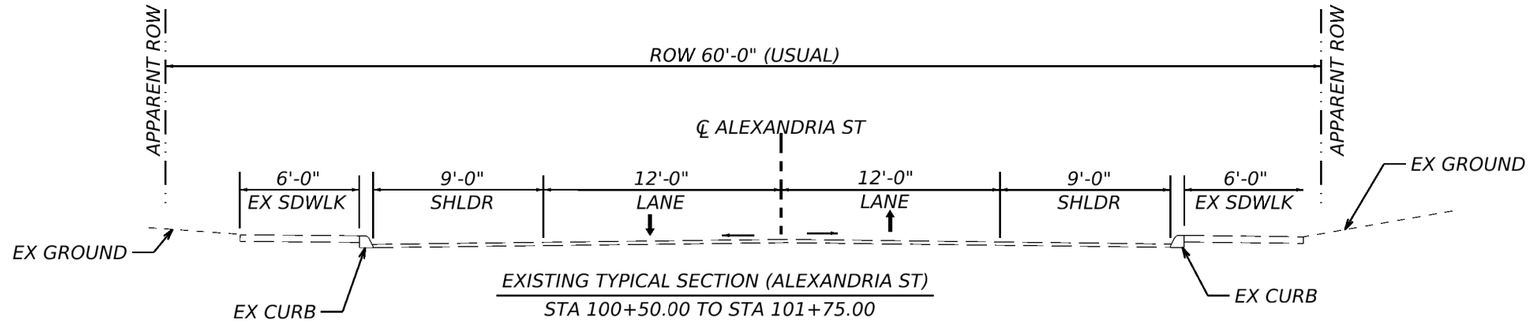

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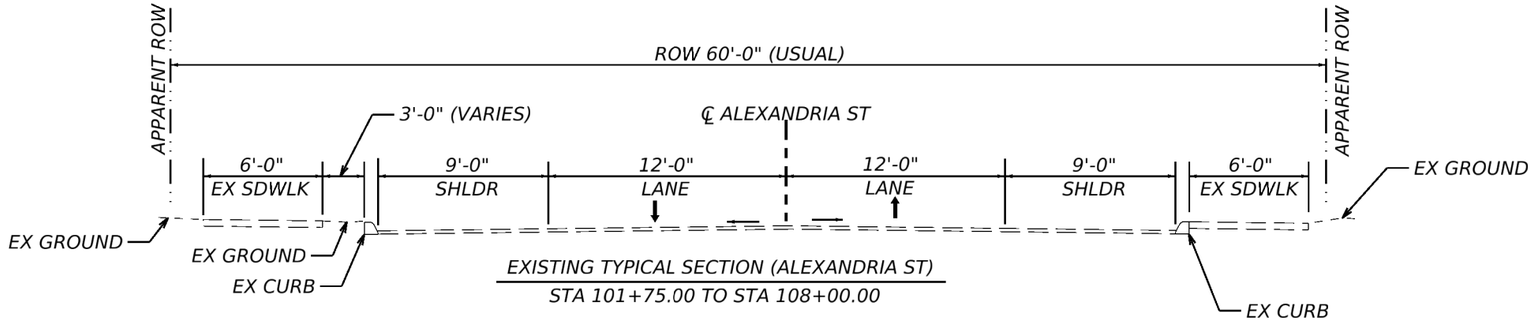
STA 100+50.00 TO STA 101+75.00



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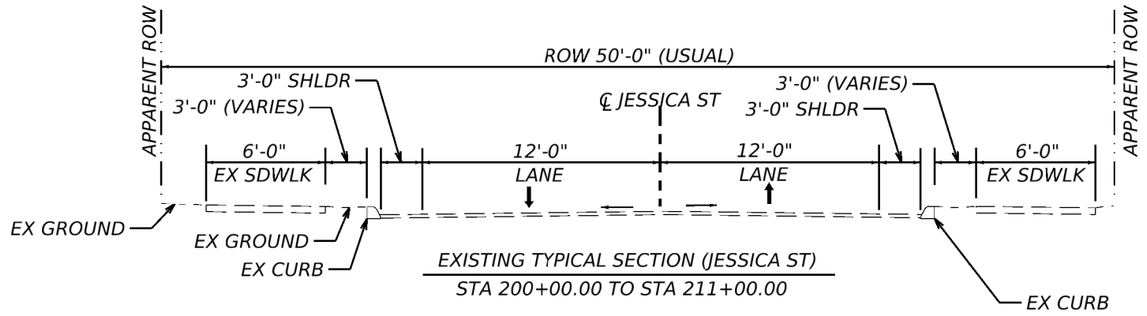
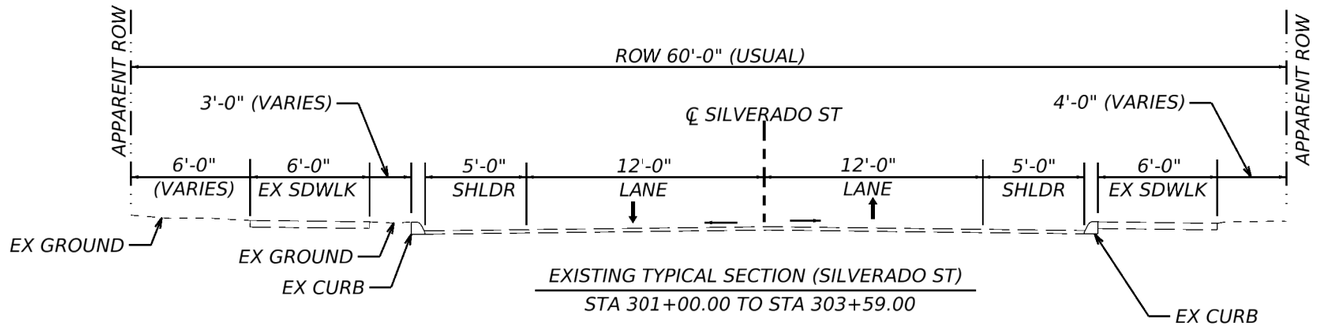


EXISTING TYPICAL SECTION (JESSICA ST)
STA 200+00.00 TO STA 211+00.00



EXISTING TYPICAL SECTION (SILVERADO ST)
STA 301+00.00 TO STA 303+59.00

STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

Texas Department of Transportation

DL VEST STREET EXISTING TYPICAL SECTIONS

SHEET: 2 OF 3

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		5

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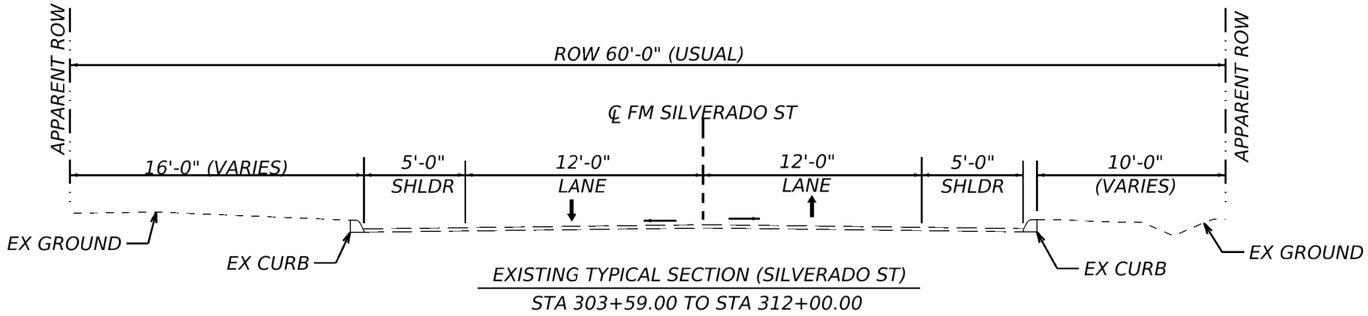

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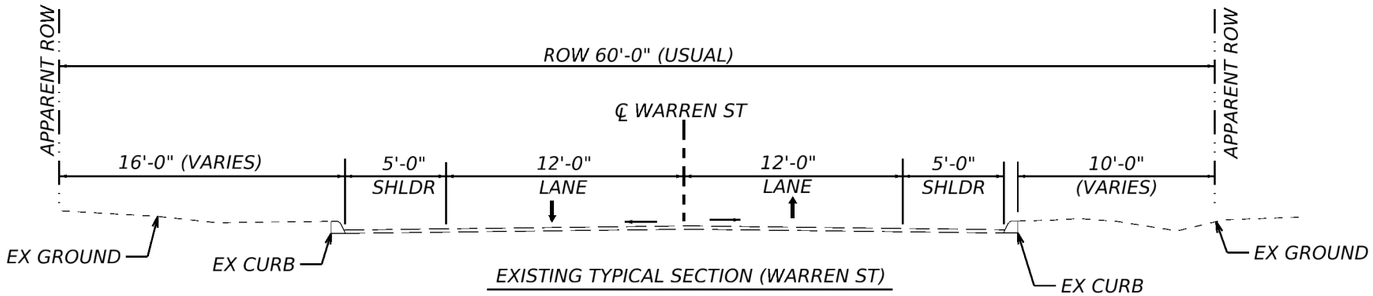
STA 303+59.00 TO STA 312+00.00



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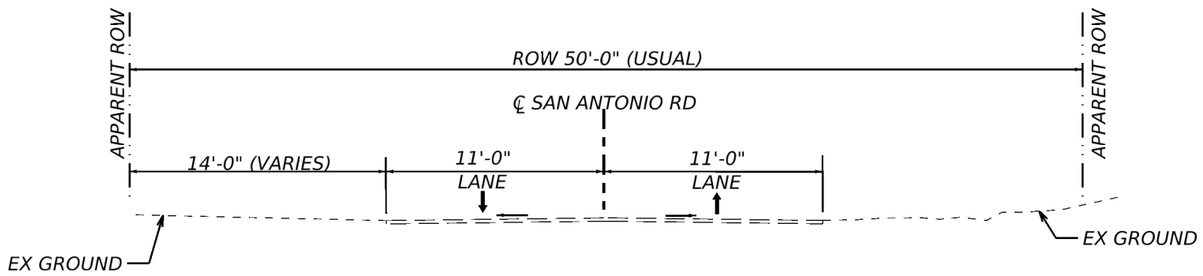

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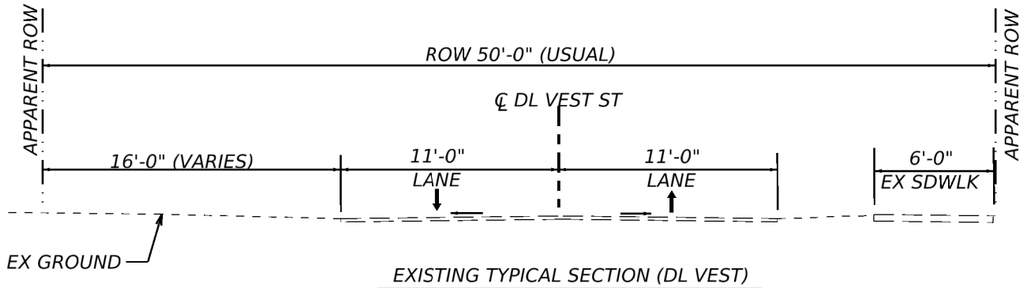

EXISTING TYPICAL SECTION (DL VEST)
STA 500+00.00 TO STA 508+00.00

STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

Texas Department of Transportation

DL VEST STREET EXISTING TYPICAL SECTIONS

SHEET: 3 OF 3

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		6

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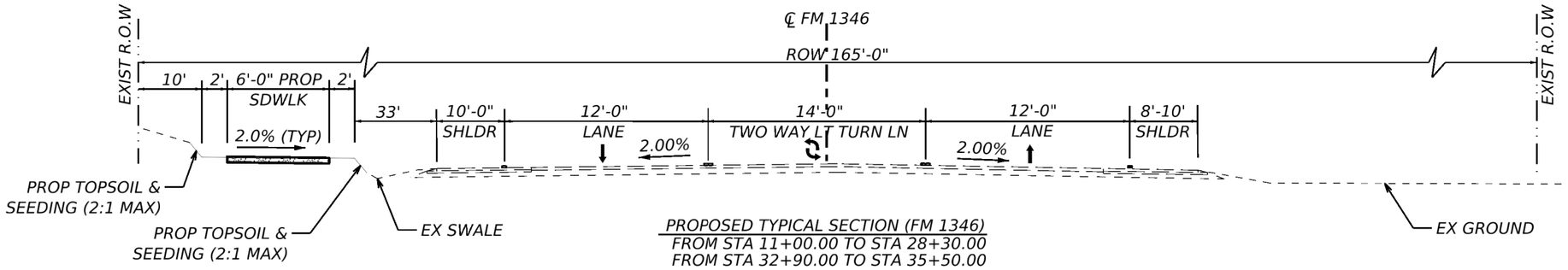

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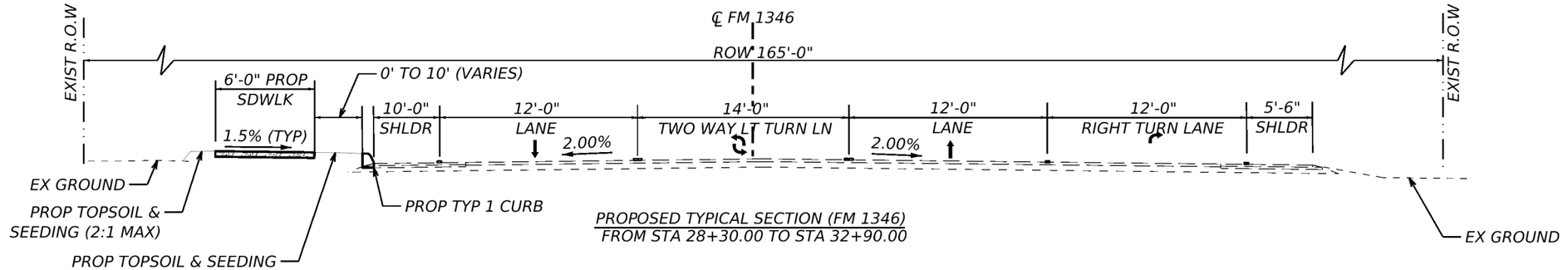
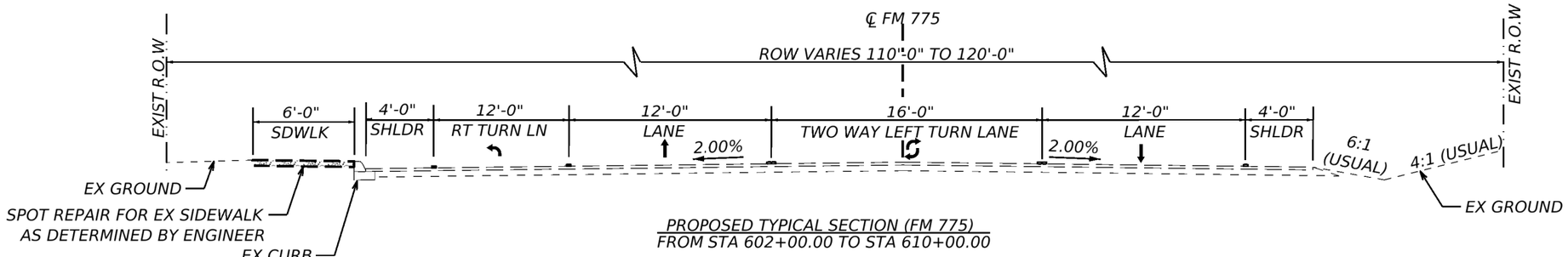
FROM STA 32+90.00 TO STA 35+50.00



PROPOSED TYPICAL SECTION (FM 1346)
FROM STA 28+30.00 TO STA 32+90.00

NOTE :
NO ROADWAY WORK



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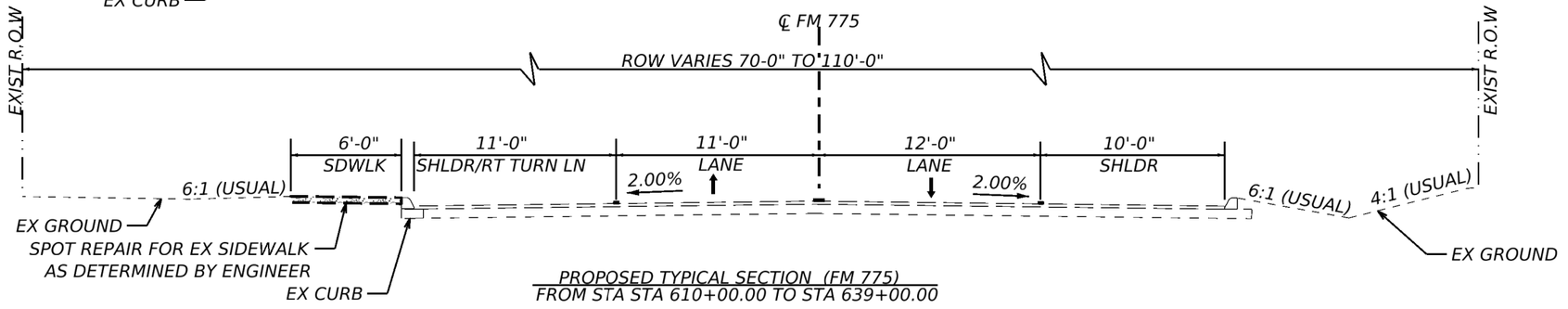

PROPOSED TYPICAL SECTION (FM 775)
FROM STA STA 610+00.00 TO STA 639+00.00

STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

Texas Department of Transportation

DL VEST STREET PROPOSED TYPICAL SECTIONS

SHEET: 1 OF 3

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		7

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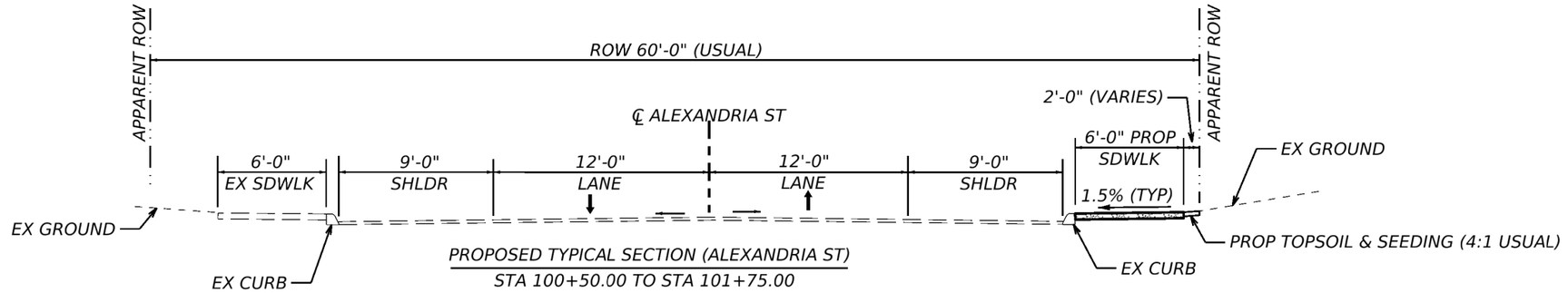

PROPOSED TYPICAL SECTION (ALEXANDRIA ST)
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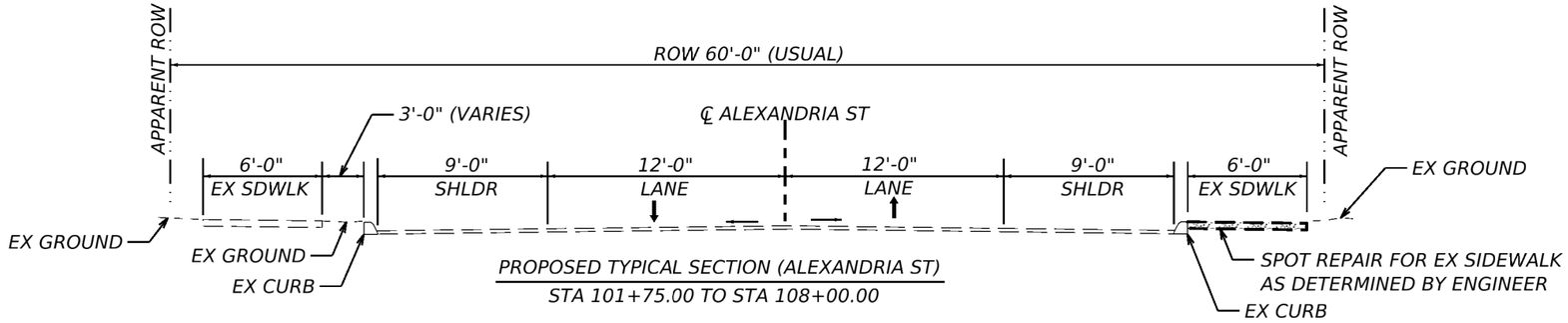

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NOTE :
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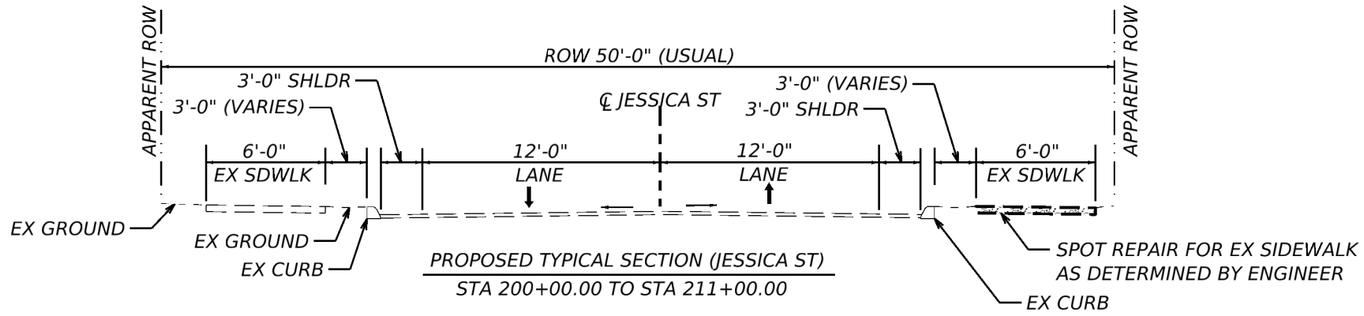

PROPOSED TYPICAL SECTION (JESSICA ST)
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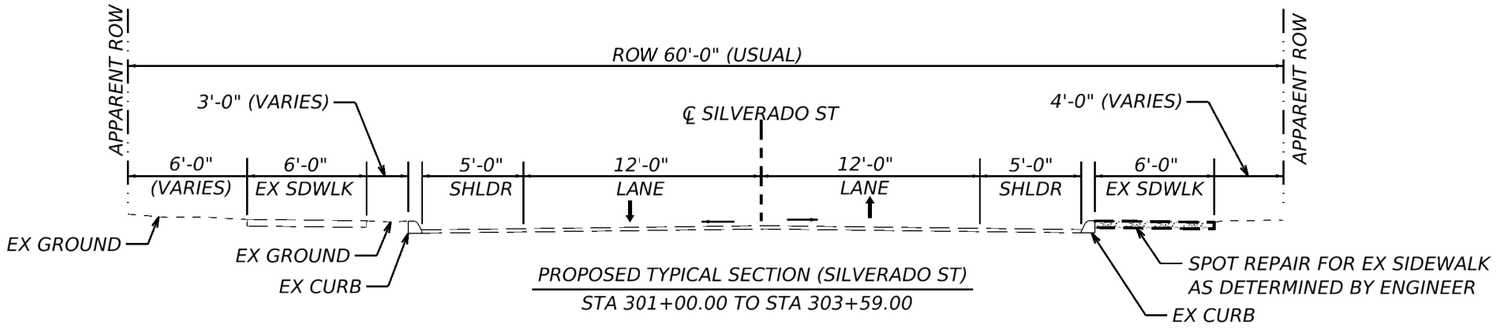

PROPOSED TYPICAL SECTION (SILVERADO ST)
STA 301+00.00 TO STA 303+59.00

STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

Texas Department of Transportation

DL VEST STREET PROPOSED TYPICAL SECTIONS

SHEET: 2 OF 3

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		8

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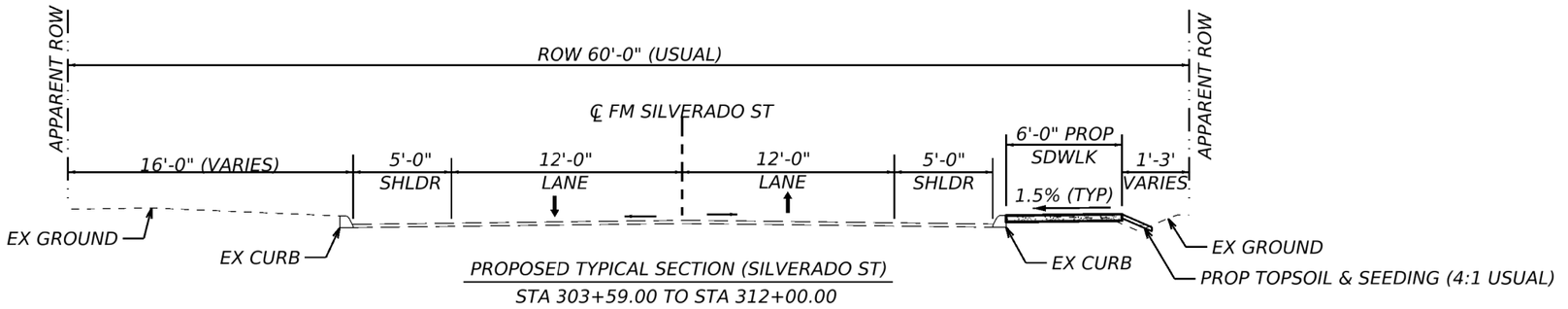

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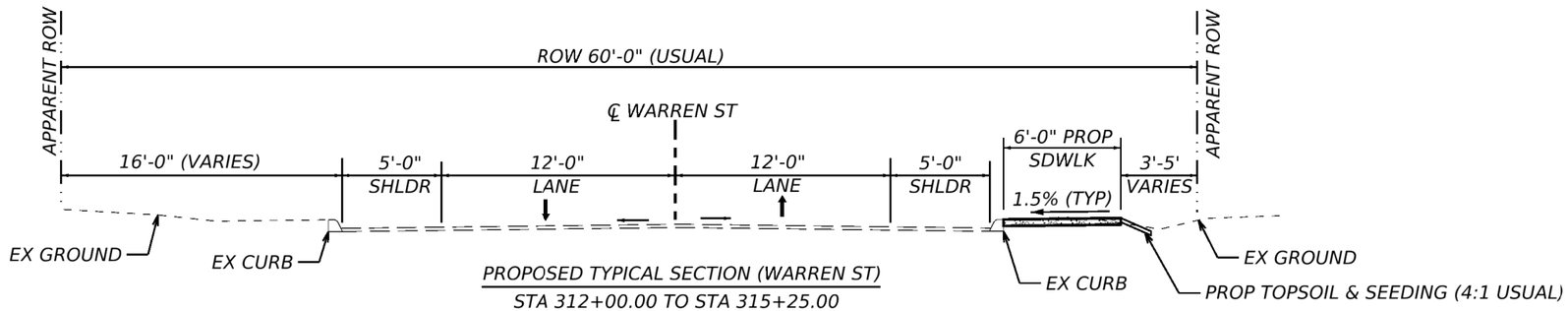
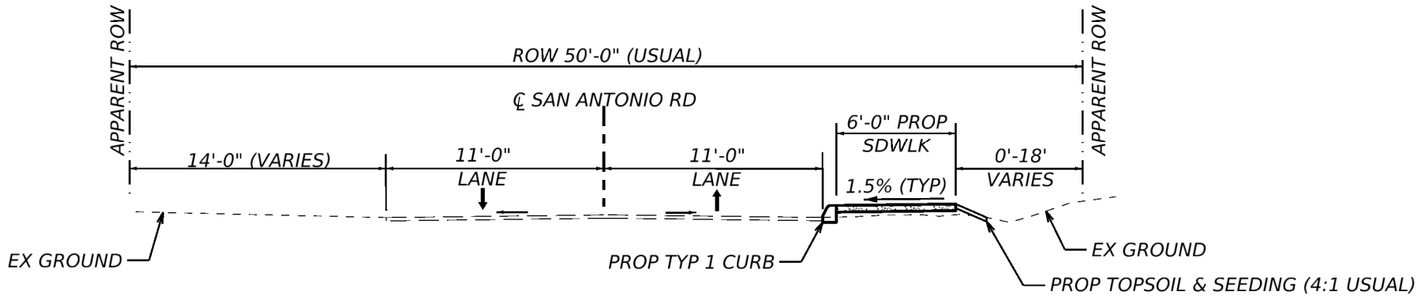


PROPOSED TYPICAL SECTION (WARREN ST)
STA 312+00.00 TO STA 315+25.00

NOTE :
NO ROADWAY WORK



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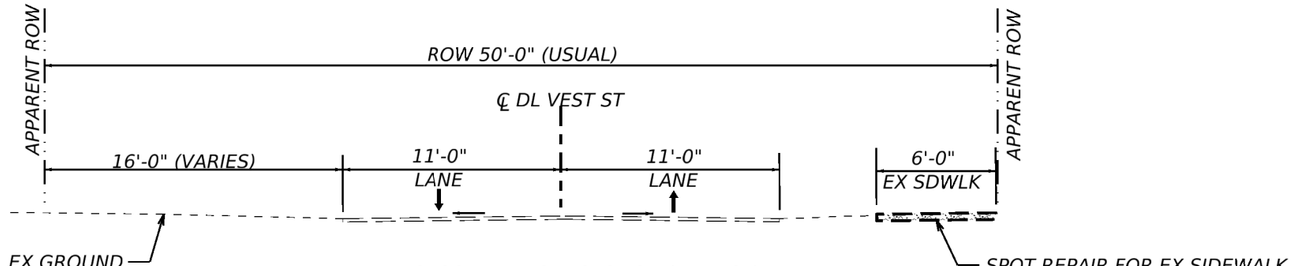

PROPOSED TYPICAL SECTION (DL VEST)
STA 500+00.00 TO STA 508+00.00

STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

Texas Department of Transportation

DL VEST STREET PROPOSED TYPICAL SECTIONS

SHEET: 3 OF 3

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		9

DESIGN: DRAFT: CHECK:

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pw://txdot.projectwiseonline.com:TXDOT4/Documents/15 - SAT/Design Projects/091514050/4 - Design/Plan Set/1. General/DL VEST ST*GEN*PROP*TYP*03.dgn

**********GENERAL NOTES**********
2014 Specification Book (Revised September 25, 2023)

========== **Basis of Estimate** ==========

Item	Description	Rate/Area	Quant-Unit
168-6001	Vegetative Watering	1.3 Gal/week/SY	56 MG

--General--
The following State, District, Local and/or Utility Standards have been modified: _SIDEWALK BRIDGE (SAT DISTRICT)(MOD).

Contact the Engineer or the City when construction operations are within 400 feet of a signalized intersection to determine/verify the location of loop detectors, conduit, ground-boxes, etc. Repair or replace any signal equipment damaged by construction operations. The method of repair or replacement shall be pre-approved and inspected. Depending on the type and extent of the damage, the Engineer reserves the right to perform the repair or replacement work and the Contractor will be billed for this work.

Any materials removed and not reused and determined to be salvageable shall be stored within the project limits at an approved location or delivered undamaged to the storage yard as directed. Deface traffic signs so that they will not reappear in public as signs.

Any sign panels that are adjusted or removed and replaced, shall be done the same workday unless otherwise approved. This work shall be considered subsidiary to Item 502.

Notify the Engineer at least two weeks prior to a proposed traffic pattern change(s) that will require a revision to traffic signals.

Locate and reference all manholes and valves within the construction area with station and offset or GPS. Each manhole and valve shall be identified by its owner (SAWS, CPS, etc.). No roadwork will begin until this list has been submitted. All valves and manhole covers have to be accessible at all times, therefore; temp. CTB, material stockpiles, etc. cannot be placed over these valves or covers.

The Contractor has the option to adjust or construct all manholes and valves to final pavement elevations prior to the final mat of HMA or after final mat of HMA. If between the final elevation adjustment and the final mat of HMA, the manholes and valves are going to be exposed to traffic, place temporary asphalt around the manhole and valve to provide a +/- 50:1

taper. The cost of elevation adjustment and the concrete apron around the manhole and valve will be part of the manhole and valve work. The asphalt tapers are part of the HMA work.

Hurricane Evacuation

Hurricane Season is from June 1 thru November 30. As the closest metropolitan city inland from the Texas Coast, the City of San Antonio is a major shelter destination during mandatory hurricane evacuations. As such, planned work zone lane or road closures may be restricted and/or suspended during mandatory hurricane evacuation operations. The District will coordinate these restrictions at a minimum H-120 from any projected impact to the Texas Coast.

No time charges will be made if the Engineer determines that work on the project was impacted by the hurricane.

The Engineer may order changes in the Traffic Control Plan to accommodate evacuation traffic, and may suspend the work, all or in part, to ensure timely completion of this work. All work to implement changes in the Traffic Control Plan will be paid through existing bid prices or through Item 9.5, Force Account. However, the Department will not entertain any request for delay damages, loss of efficiency that may be attributed to the restriction or suspension of road or lane closures, or to changes in the Traffic Control Plan.

In accordance with the Underground Facility Damage Prevention Act (One Call Bill) the phone number for a utility locator is 811. It is the Contractor's responsibility to plan for utility locators as needed.

Underground utilities owned by the Texas Department of Transportation may be present within the Right-Of-Way. Call or email the TxDOT offices listed below for locates a minimum of 48 hours in advance of excavation. If city or town owned irrigation facilities are present, call the appropriate department of the local city or town a minimum of 48 hours in advance of excavation. The Contractor is liable for all damages incurred to the above-mentioned utilities when working without having the utilities located prior to excavation.

For signal and ITS locates call TransGuide at 210-731-5136 or email sat_its_locates@txdot.gov for ITS locates and signal.request@txdot.gov for signal locates.

Contractor questions on this project are to be addressed to the following individual(s):
Area Engineer: William A Lockett, Will.Lockett@txdot.gov
Assistant Area Engineer: Jeb Stuart Smith, Jeb.Smith@txdot.gov

Contractor questions will be accepted through email, phone and in person by the above individuals. Questions may also be submitted via the Letting Pre-Bid Q&A web page. This

webpage can be accessed from the Notice to Contractors dashboard located at the following Address:
https://tableau.txdot.gov/views/ProjectInformationDashboard/NoticetoContractors

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

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

--Item 5--
Taper ACP placed at curb inlets, traffic inlets and slotted drains.

Prevention of Migratory Bird Nesting

It is anticipated that migratory birds, a protected group of species, may try to nest on bridges, culverts, vegetation, or gravel substrate, at any time of the year. The preferred nesting season for migratory birds is from February 15 through October 1. When practicable, schedule construction operations outside of the preferred nesting season. Otherwise, nests containing migratory birds must be avoided and no work will be performed in the nesting areas until the young birds have fledged.

Structures

Bridge and culvert construction operations cannot begin until swallow nesting prevention is implemented, until after October 1 if it's determined that swallow nesting is actively occurring, or until it's determined swallow nests have been abandoned. If the State installed nesting deterrent on the bridges and culverts, maintain the existing nesting deterrent to prevent swallow nesting until October 1 or completion of the bridge and culvert work, whichever occurs earlier. If new nests are built and occupied after the beginning of the work, do not perform work that can interfere with or discourage swallows from returning to their nests. Prevention of swallow nesting can be performed by one of the following methods:

1. By February 15 begin the removal of any existing mud nests and all other mud placed by swallows for the construction of nests on any portion of the bridge and culverts. The Engineer will inspect the bridges and culverts for nest building activity. If swallows begin nest building, scrape, or wash down all nest sites. Perform these activities daily unless the Engineer determines the need to do this work more frequently. Remove nests and mud through October 1 or until bridge and culvert construction operations are completed.

2. By February 15 place a nesting deterrent (which prevents access to the bridge and culvert by swallows) on the entire bridge (except deck and railing) and culverts. This work is subsidiary to the various bid items.

No extension of time or compensation payment will be granted for a delay or suspension of work caused by nesting swallows.

Provide a non-intrusive back-up alarm system on all heavy equipment used in close proximity to residential areas. This item is subsidiary to various bid items.

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

--Item 6--
Show the stockpile lot and/or sub lot numbers on all tickets for all materials.

Steel Wrapped or Asbestos Utility Lines:

Existing steel wrapped natural gas and/or asbestos cement (AC) water lines that will no longer be in service are usually abandoned in place (AIP). However, if any of these lines have to be removed for whatever reason (in the way of other construction, to make tie-ins, etc.), comply with Item 6.

If removal of AC water lines is included in the construction contract, then notify the Engineer of proposed dates of removal of the AC water lines in accordance to Item 6. Excavate to the top of the AC water line to allow a separate contractor hired by the State to remove the AC water line. The excavation for the AC water line removal is subsidiary to the work that created the need for the removal (excavation for structures, roadway, a new line, tie-ins, etc.).

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

The Buy America Material Classification Sheet is located at the below link.

https://www.txdot.gov/business/resources/materials/buy-america-material-classification-sheet.html for clarification on material categorization.

--Item 7--
The project's total disturbed area is __1.8 AC_. The disturbed area in all project locations and Contractor project specific locations (PSL's), within 1/4 mile of the project limits, will further establish the authorization requirements for storm water discharges. The department will obtain an authorization to discharge storm water from the Texas Commission on Environmental Quality (TCEQ) for the construction activities shown on the plans. Obtain any required authorization from the TCEQ for any PSL's on or off the ROW. When the total area disturbed on the project and PSL's within 1/4 mile of the project exceeds 5 acres, provide a copy of the Contractor NOI for PSL's to the Engineer (to the appropriate MS4 operator when the project is on an off-state system route).

Notify the Engineer of the disturbed acreage within one (1) mile of the project limits. Obtain authorization from the TCEQ for Contractor PSL's for construction support activities on or off ROW.

No significant traffic generators events identified.

--Item 8--
Working days will be computed and charged in accordance with Article 8.3.1. Standard work week.

--Item 9--
When approved, provide uniformed, off-duty law enforcement officers with marked vehicles during work that requires a lane closure. The officer in marked vehicles shall be located as approved to monitor or direct traffic during the closure. The method used to direct traffic at signalized intersections shall be as approved. Additional officers and vehicles may be provided when approved or directed.

Complete the daily tracking form provided by the department and submit invoices that agree with the tracking form for payment at the end of each month approved services were provided.

Show proof of certification by the Texas Commission on Law Enforcement Standards.

All law enforcement personnel used in Work Zone Traffic Control shall be trained for performing duties in work zones and are required to take "Safe and Effective Use of Law Enforcement Personnel in Work Zones" (Course #133119) which can be found online at the following site: www.nhi.fhwa.dot.gov

Certificates of completion should be available to all who finish the course. These should be kept by the officers to substantiate completion when reporting to the work site.

Minimums, scheduling fees, etc. will not be paid; TxDOT will consider paying cancellation fees on a case-by-case basis.

--Item 100--
Trim and remove brush and trees within the stations noted in the plans and as needed for construction operations. Unless shown otherwise in the plans or a designated non-mow area, perform trimming or removal for areas to the ROW limits. Trim or remove to provide minimum of 5 ft. of horizontal clearance and 7 ft. of vertical clearance for the following: sidewalks, paths, guard fence, rails, signs, object markers, and structures. Trim to provide a minimum of 12 ft. vertical clearance under all trees.

Obtain approval for proposed method of tree and brush trimming and removal. Vertical flailing equipment is not allowed. Treat damaged or cut branches, roots and/or stumps of all oak trees with a commercial tree wound dressing. Disinfect all pruning tools with a solution of 70% alcohol before moving from one tree to another. Unless otherwise approved remove all resulting vegetative debris from the ROW within 24 hours. The Engineer can stop all construction operations if the dressing, cut and removal requirements are not followed.

Removal and disposal of existing abandoned utilities that were unable to be identified before letting required to support this project's construction shall be performed under the overall Preparing Right of Way. If you are uncertain whether the utility is active, contact the District Utility Section.

--Item 132--

--Item 160--
Approximately _____ CY of existing topsoil may be windrowed or stockpiled (as approved) for later use under this Item. Place erosion control measures for the stockpile and/or windrow.
--Item 161--
Approximately _____ CY of existing topsoil may be salvaged and windrowed or stockpiled (as approved) for later use as Compost Manufactured Topsoil (CMT). Place erosion control measures for the stockpile and/or windrow.

--Item 164--
Drill seeding of permanent grasses requires the use of approved grass seeding equipment capable of properly storing and metering the release of small seeds (such as Bermuda grass) separately from fluffy type seeds (such as bluestems). Equipment manufactured for planting grain crops is acceptable for planting temporary cool season seeds, but not for planting the permanent seed mix.

If performing a permanent seeding in an area with established temporary grass cover and mowing is performed instead of tilling, seed and fertilizer may be distributed simultaneously during “Broadcast Seeding” operations, provided each component is applied at the specified rate.

--Item 166--
Use a fertilizer with an analysis of 13-13-13 (50% of the total N must be sulfur coated urea) to apply 60 lbs of actual N per acre. This requires 460 lbs of 13-13-13 per acre or .095 lbs per SY of area.

--Item 168--
Apply vegetative watering as needed to supplement natural rainfall during the vegetation establishment period. Plan quantity of irrigation water is based on the application of a total of 1.3 gal of water each week for each sq. yd. of area that is sodded or seeded. Establishment time is estimated to be 12 weeks for both sod and permanent seed mixes. Temporary seeding will require less time for establishment. Provide a schedule and coordinate watering cycles and rates per cycle with the Engineer. Obtain approval if the quantity of water to be applied is expected to exceed the plan quantity. Adjust the amount of water applied with each cycle and the number of cycles each wk. according to actual site conditions. Drought or other conditions, as determined by the Engineer, may require the application of supplemental irrigation during hours other than normal working hours.

--Item 316--

Clean all concrete curbs, islands, medians, etc. that get coated with asphalt.

--Item 502--
General

In addition to providing a Contractor's Responsible Person and a phone number for emergency contact, have an employee available to respond on the project for emergencies and for taking corrective measures within 2 hours or within a reasonable time frame as specified by the Engineer.

Avoid placing stockpiles, equipment, and other construction materials within the roadway’s horizontal clear zone or at any location that will constitute a hazard and will endanger traffic. If a stockpile is placed within the clear zone, address in accordance with the TMUTCD.

If Nighttime work is required and work is not behind positive barrier then full Class 3 reflective gear is required to be worn by all workers, hard hat halos are required to be worn by the flaggers at flagging stations, TY III barricades are required to be spaced at 500 ft, and a mandatory night work meeting is required.

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

Mounting and moving the mailbox as needed for the various construction phases is subsidiary to Item 502.

Access to adjoining property must be maintained at all times.

Barricades, Signs, and Traffic Control Devices

When advanced warning flashing arrow panels and/or changeable message sign is specified, have one standby unit in good condition at the job site. Standby time shall be considered subsidiary to the bid item.

After written notification, the time frame is provided on the Form 599 to provide properly maintained signs and barricades before considered in non-compliance with this item.

Moving an existing sign to a temporary location is subsidiary to Item 502. Installations with permanent supports at permanent locations will be paid for under the applicable bid item(s).

Cover permanent signs if not used. This is subsidiary to Item 502.

Unless otherwise noted in the plans and/or as directed by the Engineer, daily lane closures shall be limited according to the following restrictions:

No lane closures will be permitted for the following dates and/or special events:
Between December 15 and January 1
Wednesday before Thanksgiving thru the Sunday after Thanksgiving
Saturday and Sunday before Memorial Day and Labor Day
Saturday or Sunday when July 4 falls on a Friday or Monday
Easter, March 31, 2024

Hauling

The use of rubber-tired equipment will be required for moving dirt or other materials along or across pavement surfaces. Where the contractor desires to move any equipment not licensed for

operation on public highways, on or across pavement, they shall protect the pavement from damage as directed/approved by the Engineer.

502-5B Throughout construction operations, the Contractor will be required to conduct their hauling operations in a manner such that vehicles will not haul over previously recompacted subgrade or compacted base material, except in short sections for dumping manipulations.

502-5C The Contractor shall keep the roadway clean and free of dirt or other materials during hauling operations. If the Contractor does not maintain a clean roadway, they shall cease all construction operations, when directed by the Engineer, to clean the roadway to the satisfaction of the Engineer.

--Item 506--

506-1A An Inspector will perform a regularly scheduled SWP3 inspection every 7 calendar days.

--Item 510--

510-1 The length of the one-way traffic control section is limited to __0.1__ miles.

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--Item 531--

531-1 The curb ramp locations shown in the plans have considered the geometric features of the intersection, traffic signals, and the pavement markings. If anything changes during construction, the location of curb ramps must be adjusted to ensure they meet TAS requirements.

--Item 666--

666-1 Use TY II markings (vs. an acrylic or epoxy) on asphalt surfaces as the sealer for the TY I markings, unless otherwise approved by the Engineer.

--Item 672--

672-1 Place all adhesive material directly from the heated dispenser to the pavement. Do not use portable or non-heated containers. Use adhesive of sufficient thickness so that when the marker is pressed into the adhesive, 1/8" or more adhesive will remain under 100% of the marker. The adhesive should extend not less than 1/2" but not more than 1 1/2" beyond the perimeter of the marker.

--Item 677--

677-1 Obtain approval before using the mechanical method for the elimination of existing thermoplastic pavement markings.

--Item 6185--

6185-1 _71__ shadow vehicles with TMA will be required for this project. The TMA's will be measured and paid for by the DAY for each TMA/TA set up and operational on the worksite. The contractor will be responsible for determining if one or more of these operations will be ongoing at the same time to determine the total number of TMA's needed for the project. See TMA and TA Summary sheet in the plans.

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0915-14-050 **DISTRICT** San Antonio **COUNTY** Wilson
HIGHWAY D L VEST ST

						TOTAL EST.	TOTAL FINAL
		CONTROL SECTION JOB		**0915-14-050**			
		PROJECT ID		**A00184250**			
		COUNTY		**Wilson**			
		HIGHWAY		**D L VEST ST**			
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL		
	104-6015	REMOVING CONC (SIDEWALKS)	SY	133.000		133.000	
	104-6017	REMOVING CONC (DRIVEWAYS)	SY	1,170.000		1,170.000	
	104-6028	REMOVING CONC (MISC)	SY	12.000		12.000	
	104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	126.000		126.000	
	104-6032	REMOVING CONC (WHEELCHAIR RAMP)	SY	47.000		47.000	
	104-6044	REMOVING CONC (FLUME)	SY	6.000		6.000	
	105-6045	REMOVING STAB BASE AND ASPH PAV (2"-8")	SY	29.000		29.000	
	110-6002	EXCAVATION (CHANNEL)	CY	11.300		11.300	
	110-6003	EXCAVATION (SPECIAL)	CY	314.000		314.000	
	132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	562.000		562.000	
	160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	2,842.000		2,842.000	
	164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	2,842.000		2,842.000	
	168-6001	VEGETATIVE WATERING	MG	56.000		56.000	
	169-6002	SOIL RETENTION BLANKETS (CL 1) (TY B)	SY	634.000		634.000	
	169-6004	SOIL RETENTION BLANKETS (CL 1) (TY D)	SY	2,122.000		2,122.000	
	351-6002	FLEXIBLE PAVEMENT STRUCTURE REPAIR(6")	SY	17.200		17.200	
	432-6001	RIPRAP (CONC)(4 IN)	CY	5.000		5.000	
	465-6233	INLET (COMP) (TY SIDEWALK BRIDGE)	EA	4.000		4.000	
	465-6389	INLET (COMPL)(TY SIDEWALK BRIDGE)(MOD)	EA	1.000		1.000	
	500-6001	MOBILIZATION	LS	1.000		1.000	
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	7.000		7.000	
	506-6002	ROCK FILTER DAMS (INSTALL) (TY 2)	LF	100.000		100.000	
	506-6011	ROCK FILTER DAMS (REMOVE)	LF	100.000		100.000	
	506-6035	SANDBAGS FOR EROSION CONTROL	EA	261.000		261.000	
	506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	1,337.000		1,337.000	
	506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	1,337.000		1,337.000	
	506-6041	BIODEG EROSN CONT LOGS (INSTL) (12")	LF	875.000		875.000	
	506-6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	875.000		875.000	
	529-6001	CONC CURB (TY I)	LF	2,103.000		2,103.000	
	530-6004	DRIVEWAYS (CONC)	SY	841.000		841.000	
	530-6021	DRIVEWAYS (ACP) (TYPE 2)	SY	478.000		478.000	
	531-6001	CONC SIDEWALKS (4")	SY	3,097.000		3,097.000	
	531-6004	CURB RAMPS (TY 1)	EA	6.000		6.000	
	560-6025	RELOCATE EXISTING MAILBOX	EA	1.000		1.000	
	644-6068	RELOCATE SM RD SN SUP&AM TY 10BWG	EA	5.000		5.000	
	666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	579.000		579.000	
	666-6230	PAVEMENT SEALER 24"	LF	579.000		579.000	

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0915-14-050 **DISTRICT** San Antonio **COUNTY** Wilson
HIGHWAY D L VEST ST

		CONTROL SECTION JOB		**0915-14-050**		TOTAL EST.	TOTAL FINAL
		PROJECT ID		**A00184250**			
		COUNTY		**Wilson**			
		HIGHWAY		**D L VEST ST**			
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL		
	677-6007	ELIM EXT PAV MRK & MRKS (24")	LF	238.000		238.000	
	752-6007	TREE REMOVAL (18" - 24" DIA)	EA	3.000		3.000	
	6001-6002	PORTABLE CHANGEABLE MESSAGE SIGN	EA	1.000		1.000	
	6185-6002	TMA (STATIONARY)	DAY	71.000		71.000	
	18	LAW ENFORCEMENT: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS	1.000		1.000	
		EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS	1.000		1.000	
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS	1.000		1.000	

DESIGN: DRAFT: CHECK:

ROADWAY SUMMARY

		0104-6015	0104-6017	0104-6028	0104-6029	0104-6032	0104-6044	0105-6045	0110-6002	0110-6003	0132-6003
SHEET NO.	HIGHWAY	REMOVING CONC (SIDEWALKS)	REMOVING CONC (DRIVEWAYS)	REMOVING CONC (MISC)	REMOVING CONC (CURB OR CURB & GUTTER)	REMOVING CONC (WHEELCHAIR RAMP)	REMOVING CONC (FLUME)	REMOVING STAB BASE AND ASPH PAV (2"-8")	EXCAVATION (CHANNEL)	EXCAVATION (SPECIAL)	EMBANKMENT (FINAL)(ORD COMP)(TY B)
C.S.J. --- 0915-14-050		SY	SY	SY	LF	SY	SY	SY	CY	CY	CY
1 of 11	FM 1346	3	0	0	0	0	0	0	0	6	14
2 of 11	FM 1346	0	145	0	0	0	0	0	0	38	52
3 of 11	FM 1346	0	0	0	0	0	0	0	0	2	95
4 of 11	FM 1346	0	0	0	0	0	0	0	0	4	61
5 of 11	FM 1346	0	79	0	0	0	0	0	0	46	28
6 of 11	FM 1346	0	79	0	0	0	0	0	0	19	39
7 of 11	FM 1346	0	0	0	0	0	0	0	0	22	58
8 of 11	FM 1346	0	0	0	0	0	0	0	0	16	79
9 of 11	FM 1346	0	428	0	0	0	0	0	0	47	8
10 of 11	FM 1346	0	142	0	0	0	0	0	0	10	20
11 of 11	FM 1346	0	0	0	0	0	0	0	0	6	9
1 of 6	FM 775	0	0	0	0	0	0	0	0	0	0
2 of 6	FM 775	0	0	0	0	0	0	0	0	0	0
3 of 6	FM 775	0	0	0	0	0	0	0	0	0	0
4 of 6	FM 775	0	0	0	0	0	0	0	0	0	0
5 of 6	FM 775	0	0	0	0	0	0	0	0	0	0
6 of 6	FM 775	0	0	0	0	0	0	0	0	0	0
1 of 2	ALEXANDRIA ST	36	0	0	0	0	0	0	0	3	3
2 of 2	ALEXANDRIA ST	0	0	0	0	0	0	0	0	0	0
1 of 3	JESSICA ST	0	0	0	0	0	0	0	0	0	0
2 of 3	JESSICA ST	0	0	0	0	0	0	0	0	0	0
3 of 3	JESSICA ST	0	0	0	0	0	0	0	0	0	0
1 of 7	WARREN & SILVERADO ST	0	0	0	0	0	0	0	0	0	0
2 of 7	WARREN & SILVERADO ST	15	0	0	0	4	0	0	0	1	1
3 of 7	WARREN & SILVERADO ST	0	67	0	0	0	0	0	0	8	8
4 of 7	WARREN & SILVERADO ST	0	51	0	0	0	0	0	0	8	8
5 of 7	WARREN & SILVERADO ST	0	22	0	0	0	6	0	7.1	8	8
6 of 7	WARREN & SILVERADO ST	0	12	0	0	0	0	0	1.5	8	8
7 of 7	WARREN & SILVERADO ST	0	0	0	0	0	0	0	0	2	2
1 of 6	SAN ANTONIO ST	0	0	0	0	0	0	13	0	10	11
2 of 6	SAN ANTONIO ST	0	0	0	0	0	0	0	0	9	9
3 of 6	SAN ANTONIO ST	0	69	0	0	0	0	0	0	7	7
4 of 6	SAN ANTONIO ST	0	0	0	0	0	0	0	0	9	9
5 of 6	SAN ANTONIO ST	0	76	12	0	0	0	0	2.7	8	8
6 of 6	SAN ANTONIO ST	0	0	0	0	0	0	0	0	8	8
1 of 4	DL VEST ST	0	0	0	0	0	0	0	0	0	0
2 of 4	DL VEST ST	0	0	0	0	0	0	0	0	2	2
3 of 4	DL VEST ST	0	0	0	0	0	0	0	0	0	0
4 of 4	DL VEST ST	79	0	0	126	43	0	16	0	7	7
PROJECT TOTAL		133	1170	12	126	47	6	29	11.3	314	562

Texas Department of Transportation

DL VEST STREET SUMMARY OF QUANTITIES

SHEET: 1 OF 4

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		13

DESIGN: DRAFT: CHECK:

ROADWAY SUMMARY

		0160-6003	0164-6005	0168-6001	0169-6002	0169-6004	0351-6002	0432-6001	0465-6233	0465-6389	0500-6001
SHEET NO.	HIGHWAY	FURNISHING AND PLACING TOPSOIL (4")	BROADCAST SEED (PERM) (URBAN) (SANDY)	VEGETATIVE WATERING	SOIL RETENTION BLANKETS (CL 1) (TY B)	SOIL RETENTION BLANKETS (CL 1) (TY D)	FLEXIBLE PAVEMENT STRUCTURE REPAIR(6")	RIPRAP (CONC)(4 IN)	INLET (COMP) (TY SIDEWALK BRIDGE)	INLET (COMPL)(TY SIDEWALK BRIDGE)(MOD)	MOBILIZATION
C.S.J. --- 0915-14-050		SY	SY	MG	SY	SY	SY	CY	EA	EA	LS
1 of 11	FM 1346	107	107	2	0	112	0	0	0	0	0
2 of 11	FM 1346	230	230	4	0	226	0	0	0	0	0
3 of 11	FM 1346	278	278	5	0	273	0	0	0	0	0
4 of 11	FM 1346	246	246	4	0	265	0	0	0	0	0
5 of 11	FM 1346	199	199	4	0	192	0	0	0	0	0
6 of 11	FM 1346	213	213	4	0	208	0	0	0	0	0
7 of 11	FM 1346	263	263	5	0	243	0	2	0	1	0
8 of 11	FM 1346	280	280	5	0	252	0	0	0	0	0
9 of 11	FM 1346	123	123	2	0	123	0	0	0	0	0
10 of 11	FM 1346	160	160	3	0	129	0	0	0	0	0
11 of 11	FM 1346	109	109	2	0	99	0	0	0	0	0
1 of 6	FM 775	0	0	0	0	0	0	0	0	0	0
2 of 6	FM 775	0	0	0	0	0	0	0	0	0	0
3 of 6	FM 775	0	0	0	0	0	0	0	0	0	0
4 of 6	FM 775	0	0	0	0	0	0	0	0	0	0
5 of 6	FM 775	0	0	0	0	0	0	0	0	0	0
6 of 6	FM 775	0	0	0	0	0	0	0	0	0	0
1 of 2	ALEXANDRIA ST	17	17	1	17	0	0	0	0	0	0
2 of 2	ALEXANDRIA ST	0	0	0	0	0	0	0	0	0	0
1 of 3	JESSICA ST	0	0	0	0	0	0	0	0	0	0
2 of 3	JESSICA ST	0	0	0	0	0	0	0	0	0	0
3 of 3	JESSICA ST	0	0	0	0	0	0	0	0	0	0
1 of 7	WARREN & SILVERADO ST	0	0	0	0	0	0	0	0	0	0
2 of 7	WARREN & SILVERADO ST	15	15	1	15	0	0	0	0	0	0
3 of 7	WARREN & SILVERADO ST	47	47	1	47	0	0	0	0	0	0
4 of 7	WARREN & SILVERADO ST	45	45	1	45	0	0	0	0	0	0
5 of 7	WARREN & SILVERADO ST	75	75	2	75	0	0	1	1	0	0
6 of 7	WARREN & SILVERADO ST	71	71	2	71	0	0	0	1	0	0
7 of 7	WARREN & SILVERADO ST	0	0	0	0	0	0	0	0	0	0
1 of 6	SAN ANTONIO ST	54	54	1	54	0	0	0	0	0	0
2 of 6	SAN ANTONIO ST	54	54	1	54	0	0	0	0	0	0
3 of 6	SAN ANTONIO ST	39	39	1	39	0	0	0	0	0	0
4 of 6	SAN ANTONIO ST	55	55	1	55	0	1.7	0	2	0	0
5 of 6	SAN ANTONIO ST	42	42	1	42	0	0	2	0	0	0
6 of 6	SAN ANTONIO ST	49	49	1	49	0	0	0	0	0	0
1 of 4	DL VEST ST	0	0	0	0	0	0	0	0	0	0
2 of 4	DL VEST ST	23	23	1	23	0	0	0	0	0	0
3 of 4	DL VEST ST	0	0	0	0	0	0	0	0	0	0
4 of 4	DL VEST ST	48	48	1	48	0	15.5	0	0	0	0
PROJECT TOTAL		2842	2842	56	634	2122	17.2	5	4	1	1

Texas Department of Transportation

DL VEST STREET SUMMARY OF QUANTITIES

SHEET: 2 OF 4

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		14

DESIGN: DRAFT: CHECK:

ROADWAY SUMMARY

		0502-6001	0506-6002	0506-6011	0506-6035	0506-6038	0506-6039	0506-6041	0506-6043	0529-6001	0530-6004	0530-6021
SHEET NO.	HIGHWAY	BARRICADES, SIGNS AND TRAFFIC HANDLING	ROCK FILTER DAMS (INSTALL) (TY 2)	ROCK FILTER DAMS (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)	CONC CURB (TY I)	DRIVEWAYS (CONC)	DRIVEWAYS (ACP) (TYPE 2)
C.S.J. --- 0915-14-050		MO	LF	LF	EA	LF	LF	LF	LF	LF	SY	SY
1 of 11	FM 1346	0	25	25	10	0	0	55	55	0	0	0
2 of 11	FM 1346	0	25	25	20	0	0	0	0	0	266	0
3 of 11	FM 1346	0	0	0	24	0	0	0	0	0	0	0
4 of 11	FM 1346	0	0	0	24	0	0	0	0	0	0	0
5 of 11	FM 1346	0	25	25	21	0	0	0	0	0	82	0
6 of 11	FM 1346	0	25	25	22	40	40	0	0	0	61	0
7 of 11	FM 1346	0	0	0	24	240	240	0	0	0	0	0
8 of 11	FM 1346	0	0	0	26	127	127	0	0	126	0	0
9 of 11	FM 1346	0	0	0	15	150	150	0	0	45	135	336
10 of 11	FM 1346	0	0	0	22	218	218	0	0	160	0	142
11 of 11	FM 1346	0	0	0	15	150	150	0	0	50	0	0
1 of 6	FM 775	0	0	0	0	0	0	0	0	0	0	0
2 of 6	FM 775	0	0	0	0	0	0	0	0	0	0	0
3 of 6	FM 775	0	0	0	0	0	0	0	0	0	0	0
4 of 6	FM 775	0	0	0	0	0	0	0	0	0	0	0
5 of 6	FM 775	0	0	0	0	0	0	0	0	0	0	0
6 of 6	FM 775	0	0	0	0	0	0	0	0	0	0	0
1 of 2	ALEXANDRIA ST	0	0	0	0	0	0	55	55	0	0	0
2 of 2	ALEXANDRIA ST	0	0	0	0	0	0	0	0	0	0	0
1 of 3	JESSICA ST	0	0	0	0	0	0	0	0	0	0	0
2 of 3	JESSICA ST	0	0	0	0	0	0	0	0	0	0	0
3 of 3	JESSICA ST	0	0	0	0	0	0	0	0	0	0	0
1 of 7	WARREN & SILVERADO ST	0	0	0	0	0	0	0	0	0	0	0
2 of 7	WARREN & SILVERADO ST	0	0	0	0	0	0	45	45	0	0	0
3 of 7	WARREN & SILVERADO ST	0	0	0	0	0	0	170	170	0	67	0
4 of 7	WARREN & SILVERADO ST	0	0	0	0	0	0	170	170	0	51	0
5 of 7	WARREN & SILVERADO ST	0	0	0	0	0	0	165	165	0	22	0
6 of 7	WARREN & SILVERADO ST	0	0	0	3	25	25	215	215	0	12	0
7 of 7	WARREN & SILVERADO ST	0	0	0	15	0	0	0	0	0	0	0
1 of 6	SAN ANTONIO ST	0	0	0	14	10	10	0	0	247	0	0
2 of 6	SAN ANTONIO ST	0	0	0	0	145	145	0	0	240	0	0
3 of 6	SAN ANTONIO ST	0	0	0	0	132	132	0	0	158	69	0
4 of 6	SAN ANTONIO ST	0	0	0	0	25	25	0	0	390	0	0
5 of 6	SAN ANTONIO ST	0	0	0	0	10	10	0	0	352	76	0
6 of 6	SAN ANTONIO ST	0	0	0	0	10	10	0	0	191	0	0
1 of 4	DL VEST ST	0	0	0	0	0	0	0	0	0	0	0
2 of 4	DL VEST ST	0	0	0	6	55	55	0	0	0	0	0
3 of 4	DL VEST ST	0	0	0	0	0	0	0	0	0	0	0
4 of 4	DL VEST ST	0	0	0	0	0	0	0	0	144	0	0
PROJECT TOTAL		7	100	100	261	1337	1337	875	875	2103	841	478

Texas Department of Transportation

DL VEST STREET SUMMARY OF QUANTITIES

SHEET: 3 OF 4

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		15

DESIGN: DRAFT: CHECK:

ROADWAY SUMMARY

		0531-6004	0560-6025	0644-6068	0666-6048	0666-6230	0677-6007	0752-6007	6001-6002	6185-6002
SHEET NO.	HIGHWAY	CURB RAMPS (TY 1)	RELOCATE EXISTING MAILBOX	RELOCATE SM RD SN SUP&AM TY 10BWG	REFL PAV MRK TY I (W)24"(SLD)(100 MIL)	PAVEMENT SEALER 24"	ELIM EXT PAV MRK & MRKS (24")	TREE REMOVAL (18" - 24" DIA)	PORTABLE CHANGEABLE MESSAGE SIGN	TMA (STATIONARY)
C.S.J. --- 0915-14-050		EA	EA	EA	LF	LF	LF	EA	EA	DAY
1 of 11	FM 1346	0	0	0	0	0	0	0	0	0
2 of 11	FM 1346	0	0	0	0	0	0	0	0	0
3 of 11	FM 1346	0	0	0	0	0	0	0	0	0
4 of 11	FM 1346	0	0	0	0	0	0	0	0	0
5 of 11	FM 1346	0	0	0	0	0	0	0	0	0
6 of 11	FM 1346	0	0	0	0	0	0	0	0	0
7 of 11	FM 1346	0	0	0	0	0	0	3	0	0
8 of 11	FM 1346	0	0	0	0	0	0	0	0	0
9 of 11	FM 1346	0	1	0	0	0	0	0	0	0
10 of 11	FM 1346	0	0	1	0	0	0	0	0	0
11 of 11	FM 1346	0	0	0	0	0	0	0	0	0
1 of 6	FM 775	0	0	0	0	0	0	0	0	0
2 of 6	FM 775	0	0	0	0	0	0	0	0	0
3 of 6	FM 775	0	0	0	0	0	0	0	0	0
4 of 6	FM 775	0	0	0	0	0	0	0	0	0
5 of 6	FM 775	0	0	0	0	0	0	0	0	0
6 of 6	FM 775	0	0	0	0	0	0	0	0	0
1 of 2	ALEXANDRIA ST	0	0	0	0	0	0	0	0	0
2 of 2	ALEXANDRIA ST	0	0	0	0	0	0	0	0	0
1 of 3	JESSICA ST	0	0	0	0	0	0	0	0	0
2 of 3	JESSICA ST	0	0	0	0	0	0	0	0	0
3 of 3	JESSICA ST	0	0	0	0	0	0	0	0	0
1 of 7	WARREN & SILVERADO ST	0	0	0	0	0	0	0	0	0
2 of 7	WARREN & SILVERADO ST	2	0	1	264	264	0	0	0	0
3 of 7	WARREN & SILVERADO ST	0	0	0	0	0	0	0	0	0
4 of 7	WARREN & SILVERADO ST	0	0	0	0	0	0	0	0	0
5 of 7	WARREN & SILVERADO ST	0	0	0	0	0	0	0	0	0
6 of 7	WARREN & SILVERADO ST	0	0	0	0	0	0	0	0	0
7 of 7	WARREN & SILVERADO ST	0	0	0	0	0	0	0	0	0
1 of 6	SAN ANTONIO ST	0	0	2	0	0	0	0	0	0
2 of 6	SAN ANTONIO ST	0	0	0	0	0	0	0	0	0
3 of 6	SAN ANTONIO ST	0	0	0	0	0	0	0	0	0
4 of 6	SAN ANTONIO ST	0	0	0	0	0	0	0	0	0
5 of 6	SAN ANTONIO ST	0	0	0	0	0	0	0	0	0
6 of 6	SAN ANTONIO ST	0	0	0	0	0	0	0	0	0
1 of 4	DL VEST ST	0	0	0	0	0	0	0	0	0
2 of 4	DL VEST ST	0	0	0	0	0	0	0	0	0
3 of 4	DL VEST ST	0	0	0	0	0	0	0	0	0
4 of 4	DL VEST ST	4	0	1	315	315	238	0	0	0
PROJECT TOTAL		6	1	5	579	579	238	3	1	71

Texas Department of Transportation

DL VEST STREET SUMMARY OF QUANTITIES

SHEET: 4 OF 4

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		16

DESIGN: DRAFT: CHECK:

TRAFFIC CONTROL PLAN SEQUENCE OF WORK

1. THIS PROJECT WILL BE CONSTRUCTED IN THREE PHASES (6 WORK ZONES). BEFORE THE COMMENCEMENT OF EACH PHASE, INSTALL ADVANCE WARNING SIGNS, TEMPORARY SIGNS AND BARRICADES AS SHOWN ON THE PLANS AND/OR AS DIRECTED/APPROVED BY THE ENGINEER. TRAFFIC MUST BE HANDLED THROUGHOUT THE DURATION OF THE PROJECT. LANE CLOSURES MUST BE MOVED UP PERIODICALLY IN ORDER TO KEEP UP WITH THE MOVING WORK ZONE. AS WORK PROGRESSES, APPROPRIATE SIGNS AND BARRICADES MUST FOLLOW APPLICABLE STANDARDS.
2. NOTIFY AFFECTED BUSINESS OWNERS 2 WEEKS PRIOR TO CONSTRUCTION, MAINTAIN TEMPORARY ACCESS AT ALL TIMES. SEE ADVANCE WARNING SIGN SHEETS.
3. PREPARING ROW / REMOVAL OF EXISTING ITEMS TO BE DONE ONLY IN AREAS WHERE WORK IS OCCURING.
4. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE REQUIREMENTS OF ITEM 7, "LEGAL RELATIONS AND RESPONSIBILITIES TO THE PUBLIC" AND ITEM 502, "BARRICADES, SIGNS, AND TRAFFIC HANDLING", OF THE STANDARD SPECIFICATIONS, AND TO THE GENERAL NOTES.
5. A BRIEF DESCRIPTION OF THESE PHASES ARE AS FOLLOWS:

PHASE 1

THIS PHASE WILL CONSIST OF WORK ZONE 1 AND 2.

1. MOBILIZATION FOR WORK ZONE 1
   a. INSTALL WORK ZONE TRAFFIC CONTROL DEVICES AS INDICATED IN TCP (2-1c).
   b. WORK ZONE IS WITHIN A SCHOOL ZONE, ENSURE ACCESSIBILITY FOR PARENTS TO PARK ALONG FM 1346 DURING DROP OFF/PICKUP TIMES. LIMIT CONSTRUCTION BETWEEN THE HOURS OF 9AM AND 3PM MONDAY THROUGH FRIDAY, UNLESS APPROVED BY THE ENGINEER.
2. PREP ROW.
3. INSTALL SW3P IN ACCORDANCE WITH STORM WATER POLLUTION PREVENTION PLAN.
4. DO NOT STORE ANY CONSTRUCTION MATERIAL OR EQUIPMENT AT ANY LOCATION THAT WILL CONSTITUTE A HAZARD AND WILL ENDANGER VEHICULAR AND PEDESTRIAN TRAFFIC.
5. TEMPORARY DRAINAGE IS THE RESPONSIBILITY OF THE CONTRACTOR.
6. INSTALL SIDEWALKS AS SHOWN IN THE PLANS.
7. INSTALL DRIVEWAYS. NO MORE THAT ONE DRIVEWAY SHALL BE CLOSED. PHASE CONSTRUCT SCHOOL/COMMERCIAL DRIVEWAYS WHERE POSSIBLE. DRIVEWAY MUST BE OPEN AT THE END OF EACH WORKDAY.
8. INSTALL SIDEWALK BRIDGE.
9. ESTABLISH VEGETATION.
10. OPEN COMPLETED SIDEWALK TO PEDESTRIANS AS SOON AS POSSIBLE, WITH THE APPROVAL OF THE ENGINEER.
11. REMOVE SW3P ITEMS.
12. MOBILIZATION FOR WORK ZONE 2
    a. INSTALL WORK ZONE TRAFFIC CONTROL DEVICES AND SHIFT TRAFFIC AS SHOWN AS INDICATED IN TCP (2-1b).
13. PREP ROW.
14. INSTALL SW3P IN ACCORDANCE WITH STORM WATER POLLUTION PREVENTION PLAN.
15. DO NOT STORE ANY CONSTRUCTION MATERIAL OR EQUIPMENT AT ANY LOCATION THAT WILL CONSTITUTE A HAZARD AND WILL ENDANGER VEHICULAR AND PEDESTRIAN TRAFFIC.
16. TEMPORARY DRAINAGE IS THE RESPONSIBILITY OF THE CONTRACTOR.
17. INSTALL SIDEWALKS, FORM AND CONSTRUCT CURB AS SHOWN IN THE PLANS.
18. INSTALL DRIVEWAYS. NO MORE THAT ONE DRIVEWAY SHALL BE CLOSED. PHASE CONSTRUCT SCHOOL/COMMERCIAL DRIVEWAYS WHERE POSSIBLE. DRIVEWAY MUST BE OPEN AT THE END OF EACH WORKDAY.
19. ESTABLISH VEGETATION.
20. OPEN COMPLETED SIDEWALK TO PEDESTRIANS AS SOON AS POSSIBLE, WITH THE APPROVAL OF THE ENGINEER.
21. REMOVE SW3P ITEMS

PHASE 2

THE INTENT OF PHASE 2 CONSIST OF WORK FOR ZONE 3 AND 4.

1. MOBILIZATION FOR WORK ZONE 3
   a. INSTALL WORK ZONE TRAFFIC CONTROL DEVICES AS INDICATED IN TCP (2-1b) ALONG FM 755.
   b. INSTALL WORK ZONE TRAFFIC CONTROL DEVICES AS INDICATED IN TCP (2-2b) ALONG DL VEST STREET.
   c. WORK ZONE IS WITHIN A SCHOOL ZONE, ENSURE ACCESSIBILITY FOR STUDENTS, PARENTS, TEACHERS, AND STAFF. LIMIT CONSTRUCTION BETWEEN THE HOURS OF 9AM AND 3PM MONDAY THROUGH FRIDAY, UNLESS APPROVED BY THE ENGINEER.
2. PREP ROW.
3. INSTALL SW3P IN ACCORDANCE WITH STORM WATER POLLUTION PREVENTION PLAN.
4. DO NOT STORE ANY CONSTRUCTION MATERIAL OR EQUIPMENT AT ANY LOCATION THAT WILL CONSTITUTE A HAZARD AND WILL ENDANGER VEHICULAR AND PEDESTRIAN TRAFFIC.
5. TEMPORARY DRAINAGE IS THE RESPONSIBILITY OF THE CONTRACTOR.
6. REMOVE ASPHALT, SIDEWALKS, CURBS AND ADA RAMPS AS SHOWN IN PLANS.
7. INSTALL SIDEWALKS, FORM AND INSTALL CURB, ADA RAMPS, PLACE PAVEMENT MARKINGS, AND ASPHALT AS SHOWN IN THE PLANS.
8. NO DRIVEWAY WILL BE CONSTRUCTED BUT ENSURE THAT NO MORE THAT ONE DRIVEWAY SHALL BE CLOSED.
9. ESTABLISH VEGETATION.
10. OPEN COMPLETED SIDEWALK TO PEDESTRIANS AS SOON AS POSSIBLE, WITH THE APPROVAL OF THE ENGINEER.
11. REMOVE SW3P ITEMS.
12. MOBILIZATION FOR WORK ZONE 4
    a. INSTALL WORK ZONE TRAFFIC CONTROL DEVICES AND SHIFT TRAFFIC AS SHOWN AS INDICATED IN TCP (1-1a).
    b. WORK ZONE IS WITHIN A SCHOOL ZONE, ENSURE ACCESSIBILITY FOR STUDENTS, PARENTS, TEACHERS, AND STAFF. LIMIT CONSTRUCTION BETWEEN THE HOURS OF 9AM AND 3PM MONDAY THROUGH FRIDAY, UNLESS APPROVED BY THE ENGINEER.
13. PREP ROW.
14. INSTALL SW3P IN ACCORDANCE WITH STORM WATER POLLUTION PREVENTION PLAN.
15. DO NOT STORE ANY CONSTRUCTION MATERIAL OR EQUIPMENT AT ANY LOCATION THAT WILL CONSTITUTE A HAZARD AND WILL ENDANGER VEHICULAR AND PEDESTRIAN TRAFFIC.
16. TEMPORARY DRAINAGE IS THE RESPONSIBILITY OF THE CONTRACTOR.
17. REMOVE SIDEWALK AS SHOWN IN THE PLANS.
18. INSTALL SIDEWALKS AS SHOWN IN THE PLANS. ENSURE SIDEWALKS ARE LEVELED WITH ANY EXISTING VALVES OR MANHOLES.
19. NO DRIVEWAY WILL BE CONSTRUCTED BUT ENSURE THAT NO MORE THAT ONE DRIVEWAY SHALL BE CLOSED. DRIVEWAY MUST BE OPEN AT THE END OF EACH WORKDAY.
20. ESTABLISH VEGETATION.
21. OPEN COMPLETED SIDEWALK TO PEDESTRIANS AS SOON AS POSSIBLE, WITH THE APPROVAL OF THE ENGINEER.
22. REMOVE SW3P ITEMS

PHASE 3

THIS PHASE WILL CONSIST OF WORK ZONE 5 AND 6.

1. MOBILIZATION FOR WORK ZONE 5
   a. INSTALL WORK ZONE TRAFFIC CONTROL DEVICES AS INDICATED IN TCP (2-2b).
   b. THIS SHALL BE CONSIDERED THE MINIMUM REQUIRED TO PROVIDE FOR THE SAFETY OF TRAFFIC DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN OTHER SUCH BARRICADES AND DEEMED NECESSARY BY THE ENGINEER OR AS DIRECTED BY FIELD CONDITIONS, TO PROVIDE FOR THE SAFE PASSAGE
   OF TRAFFIC AT ALL TIMES. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN FLAGGERS AS DIRECTED/APPROVED BY THE ENGINEER AT SUCH POINTS, AND FOR SUCH PERIODS OF TIME AS MAY BE REQUIRED TO PROVIDE FOR THE SAFETY OF THE TRAVELING PUBLIC AND THE CONTRACTOR' S PERSONNEL.
2. PREP ROW.
3. INSTALL SW3P IN ACCORDANCE WITH STORM WATER POLLUTION PREVENTION PLAN.
4. DO NOT STORE ANY CONSTRUCTION MATERIAL OR EQUIPMENT AT ANY LOCATION THAT WILL CONSTITUTE A HAZARD AND WILL ENDANGER VEHICULAR AND PEDESTRIAN TRAFFIC.
5. TEMPORARY DRAINAGE IS THE RESPONSIBILITY OF THE CONTRACTOR.
6. INSTALL SIDEWALKS, FORM AND INSTALL CURB, AND ADA RAMPS AS SHOWN IN THE PLANS.
7. INSTALL DRIVEWAYS. NO MORE THAT ONE DRIVEWAY SHALL BE CLOSED. PHASE CONSTRUCT SCHOOL/COMMERCIAL DRIVEWAYS WHERE POSSIBLE. DRIVEWAY MUST BE OPEN AT THE END OF EACH WORKDAY.
8. INSTALL SIDEWALK BRIDGE.
9. ESTABLISH VEGETATION.
10. OPEN COMPLETED SIDEWALK TO PEDESTRIANS AS SOON AS POSSIBLE, WITH THE APPROVAL OF THE ENGINEER.
11. REMOVE SW3P ITEMS.
12. MOBILIZATION FOR WORK ZONE 6
    a. INSTALL WORK ZONE TRAFFIC CONTROL DEVICES AND SHIFT TRAFFIC AS SHOWN AS INDICATED IN TCP (2-1b).
    b. CONSIDER THE USE OF LAW ENFORNCMENT NEAR THE INTERSECTION OF SILVERADO ST AND JESSICA STREET DUE TO VIEW OBSTRUCTION FROM EXISTING SHRUBERY ALONG THE NB LANE OF SILVERADO ST.
13. PREP ROW.
14. INSTALL SW3P IN ACCORDANCE WITH STORM WATER POLLUTION PREVENTION PLAN.
15. DO NOT STORE ANY CONSTRUCTION MATERIAL OR EQUIPMENT AT ANY LOCATION THAT WILL CONSTITUTE A HAZARD AND WILL ENDANGER VEHICULAR AND PEDESTRIAN TRAFFIC.
16. TEMPORARY DRAINAGE IS THE RESPONSIBILITY OF THE CONTRACTOR.
17. INSTALL SIDEWALKS AS SHOWN IN THE PLANS.
18. INSTALL DRIVEWAYS. NO MORE THAT ONE DRIVEWAY SHALL BE CLOSED. PHASE CONSTRUCT SCHOOL/COMMERCIAL DRIVEWAYS WHERE POSSIBLE. DRIVEWAY MUST BE OPEN AT THE END OF EACH WORKDAY.

STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

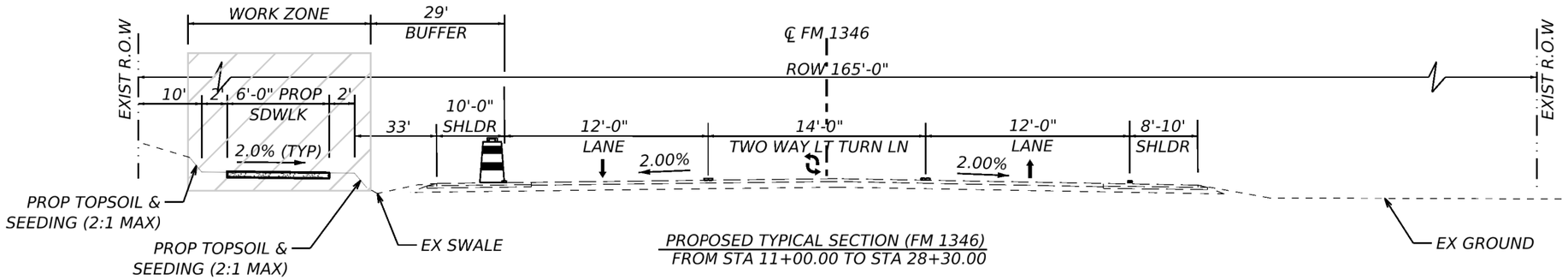
DATE: 2/21/2024

Texas Department of Transportation

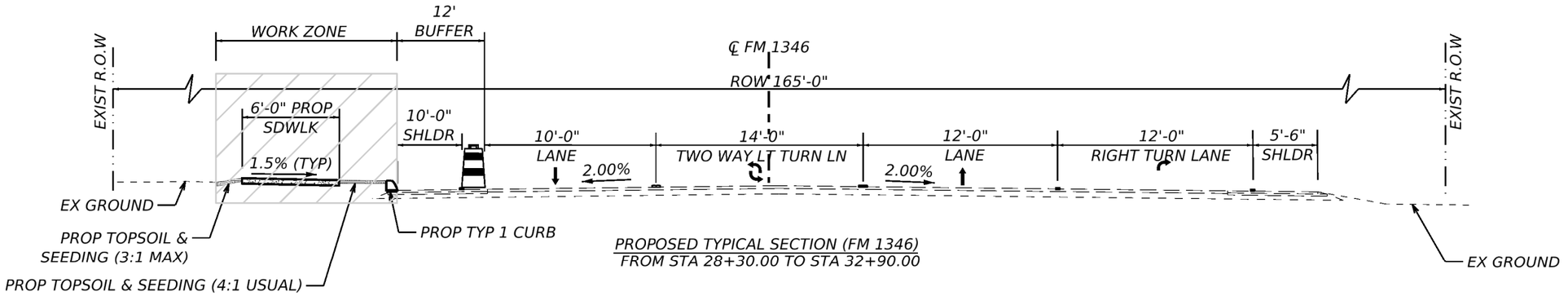
DL VEST STREET TRAFFIC CONTROL PLAN NARRATIVE

SHEET: 1 OF 1

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		17



PROPOSED TYPICAL SECTION (FM 1346)
FROM STA 11+00.00 TO STA 28+30.00



PROPOSED TYPICAL SECTION (FM 1346)
FROM STA 28+30.00 TO STA 32+90.00

STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

SCALE: NTS

Texas Department of Transportation

DL VEST STREET
TRAFFIC CONTROL PLAN
TYPICAL SECTIONS

SHEET: 1 OF 2

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		18

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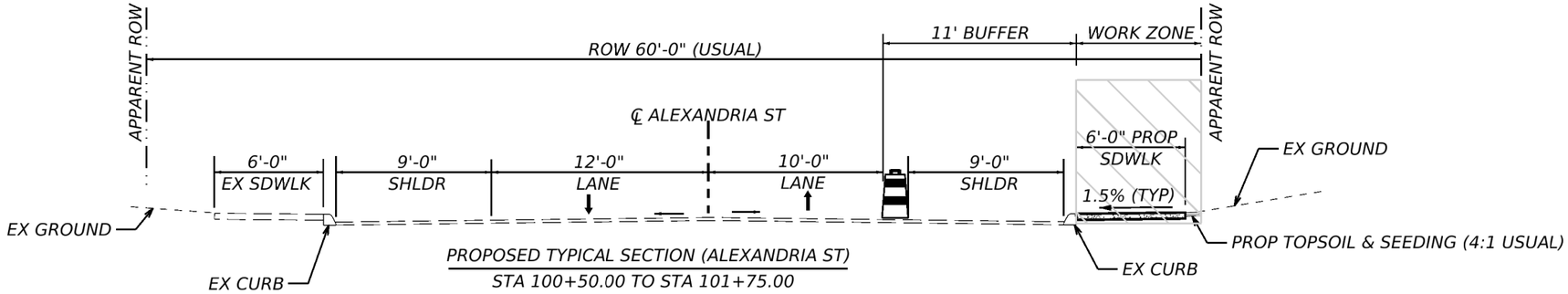
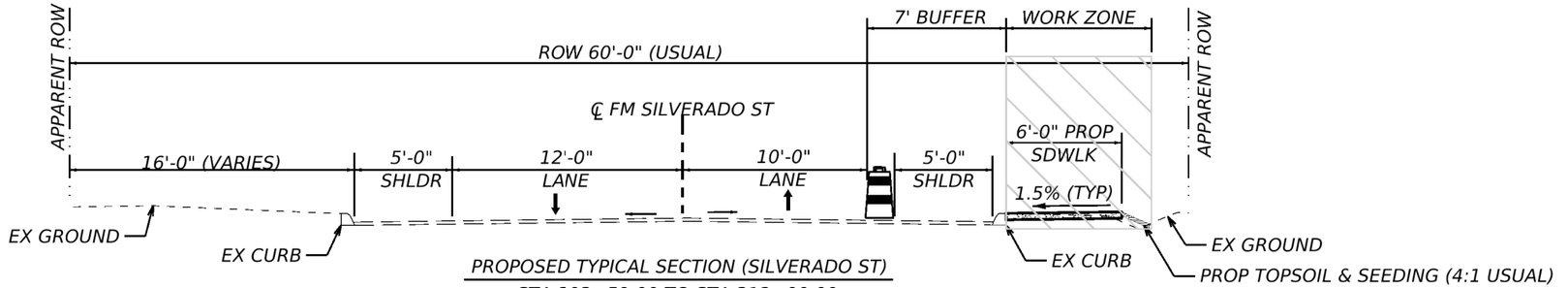
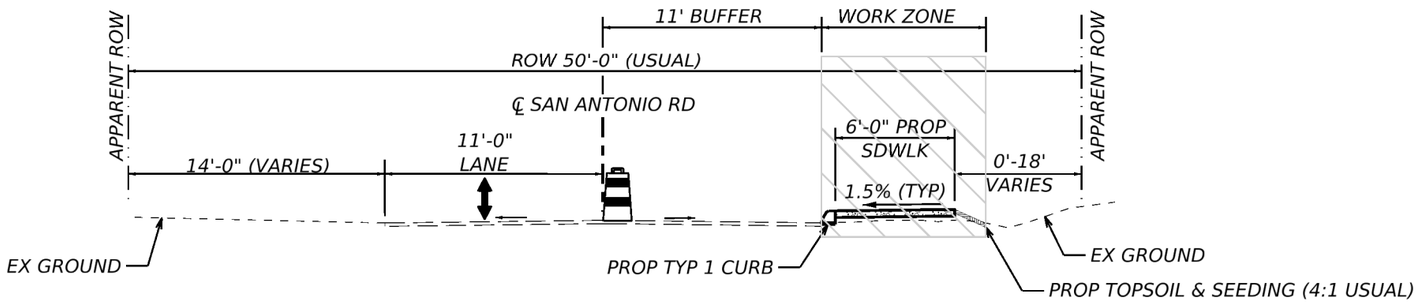


PROPOSED TYPICAL SECTION (ALEXANDRIA ST)
STA 100+50.00 TO STA 101+75.00



PROPOSED TYPICAL SECTION (SILVERADO ST)
STA 303+59.00 TO STA 312+00.00

PROPOSED TYPICAL SECTION (WARREN ST)
STA 312+00.00 TO STA 315+25.00



PROPOSED TYPICAL SECTION (SAN ANTONIO RD)
STA 401+00.00 TO STA 414+50.00

DESIGN: DRAFT: CHECK:

STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara
DATE: 2/21/2024

SCALE: NTS

Texas Department of Transportation

DL VEST STREET
TRAFFIC CONTROL PLAN
TYPICAL SECTIONS

SHEET: 2 OF 2

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		19

SCHEDULE OF TRAFFIC CONTROL AND WARNING DEVICES

	PROJECT LIMIT SIGNING														TCP SIGNING						
LOCATION	OBEY WARNING SIGNS STATE LAW	STAY ALERT (TALK OR TEXT LATER)	BEGIN WORK ZONE	TRAFFIC FINES DOUBLE	WHEN WORKERS ARE PRESENT	SPEED LIMIT XX	ROAD WORK AHEAD	DO NOT PASS		XX M.P.H.	NAME ADDRESS CITY STATE CONTRACTOR	END ROAD WORK	SPEED LIMIT 45	END WORK ZONE	RIGHT LANE CLOSED	XX FT				PASS WITH CARE	ONE LANE ROAD 500 FT
	R20-3T	G20-10T	G20-9TP	R20-5	R20-5aTP	R2-1	CW20-1D 48 X 48	R4-1	CW1-4L OR R	CW13-1P	G20-6T	G20-2	R2-1	G20-2BT	CW20-5T(R)	CW16-3aP	CW1-6A	CW1-4R	CW1-6aT	R4-2	CW20-4C
1	X	X	X	X	X	X	X	X	X	X	X	X									
2													X	X							
3							X		X	X		X			X	X	X				
4							X	X	X	X		X					X	X	X	X	
5							X	X	X	X		X					X	X	X	X	
6							X					X									X
7							X					X									X
8																					

SCHEDULE OF TRAFFIC CONTROL AND WARNING DEVICES

	TCP SIGNING																		
LOCATION	BE PREPARED TO STOP	XX FT					RUMBLE STRIPS AHEAD					M	SIDEWALK CLOSED	SIDEWALK CLOSED USE OTHER SIDE	SIDEWALK CLOSED AHEAD CROSS HERE	SIDEWALK CLOSED AHEAD CROSS HERE	DETOUR	DRIVEWAY		RIGHT SHOULDER CLOSED
	CW3-4	CW16-2P	CW20-7a	CW1-8(F)	VP(F)IR,L	BARRELS	CW17-2T	PCTB	TRUCK MOUNTED ATTENUATOR (TMA)	TRAILER MOUNTED FLASHING ARROW PANEL	PORTABLE CHANGEABLE MESSAGE SIGN	R9-9	R9-10	R9-11	R9-11	M4-9b (R&L)		LPTCB	W21-5a (R/L)
1																			
2																			
3																			
4																			
5																			
6	X	X	X																
7	X	X	X																
8				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

LOCATION OF BARRICADES

LOCATION NO. 1 SIGNS TO BE USED AT APPROACHES OF THE PROJECT.
LOCATION NO. 2 SIGNS TO BE USED AT THE DEPARTURE OF THE PROJECT.
LOCATION NO. 3 SIGNS TO BE USED FOR WORK ZONES ON FM 1346.
LOCATION NO. 4 SIGNS TO BE USED FOR WORK ZONES ON FM 755.
LOCATION NO. 5 SIGNS TO BE USED FOR WORK ZONES ON SILVERADO & WARREN STREET.
LOCATION NO. 6 SIGNS TO BE USED FOR WORK ZONES ON SAN ANTONIO STREET.
LOCATION NO. 7 SIGNS TO BE USED FOR WORK ZONES ON DL VEST STREET.
LOCATION NO. 8 AS DIRECTED BY THE ENGINEER.

NOTES:

1. CERTAIN SIGNS MUST BE USED IN CONJUNCTION WITH OTHER SIGNS. EXAMPLE: "FLAGGER AHEAD" MUST HAVE A "BE PREPARED TO STOP".
2. BARRICADES AND WARNING SIGNS ON THIS SHEET ARE THE MINIMUM CONSTRUCTION ZONE, SIGNING, ADDITIONAL BARRICADES, WARNING SIGNS, ARROW PANELS, CONES, ETC. REQUIRED IN ACCORDANCE WITH CURRENT BC STANDARDS AND THE TEXAS MUTCD MAY BE REQUIRED IN AREAS OF ACTUAL CONSTRUCTION.
3. A DISTANCE PLAQUE IN FEET OR MILES MAY BE REQUIRED FOR USE IN CONJUNCTION WITH WARNING SIGNS.
4. IMPLEMENT DETOURS N ACCORDANCE WITH THE TEXAS MUTCD. USE CHANGEABLE MESSAGE BOARDS TO GUIDE MOTORISTS THROUGH THE DETOUR.
5. ALL BARRICADES, SIGNS, AND FLAGGERS SHALL BE SUBSIDIARY TO ITEM 502 BARRICADES, SIGNS AND TRAFFIC HANDLING.

STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

Texas Department of Transportation

DL VEST STREET SCHEDULE OF BARRICADES

SHEET: 1 OF 1

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		20

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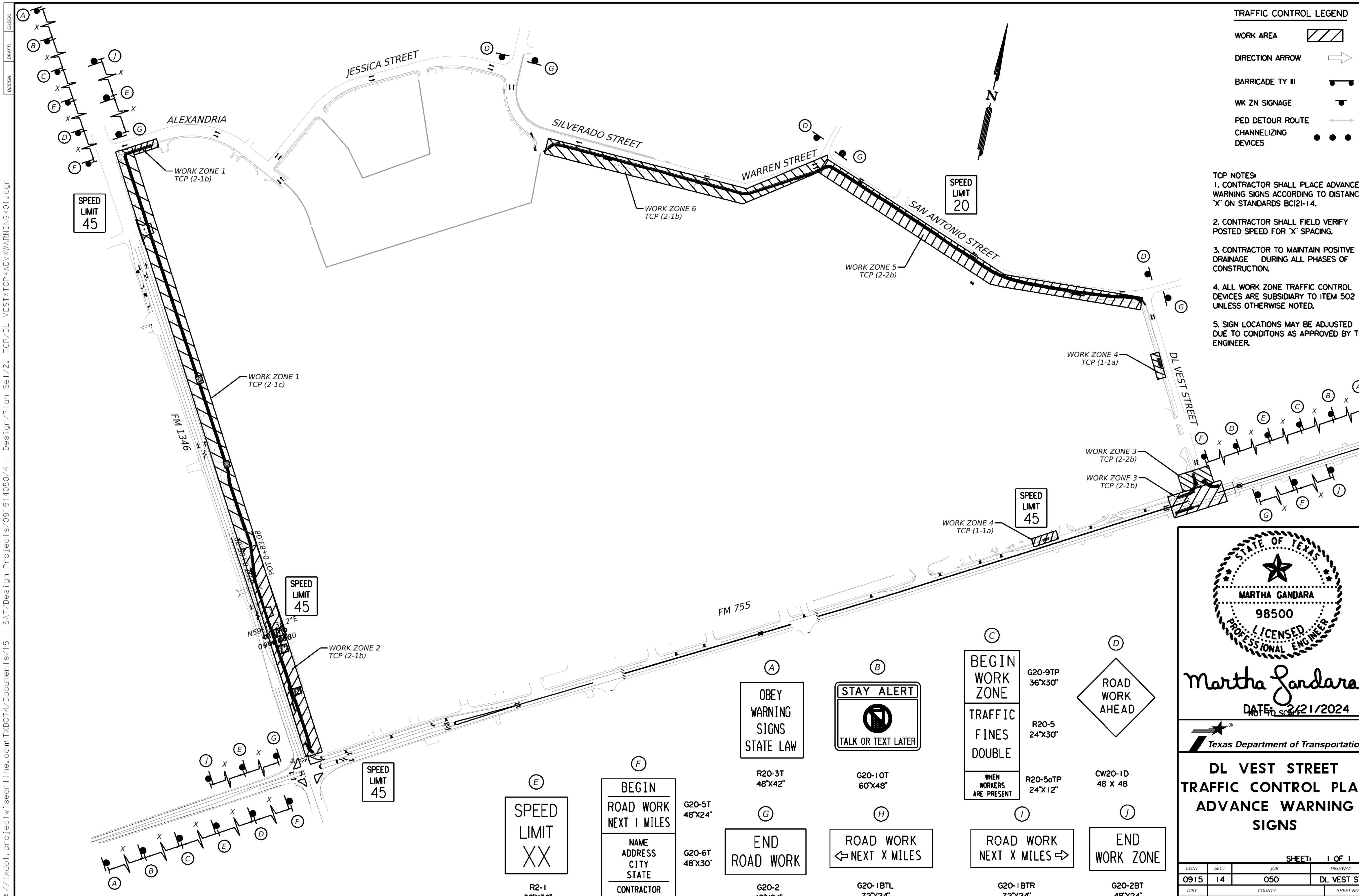

TRAFFIC CONTROL LEGEND

- WORK AREA
- DIRECTION ARROW
- BARRICADE TY III
- WK ZN SIGNAGE
- PED DETOUR ROUTE
- CHANNELIZING DEVICES

TCP NOTES:

1. CONTRACTOR SHALL PLACE ADVANCE WARNING SIGNS ACCORDING TO DISTANCE "X" ON STANDARDS BC(2)-14.
2. CONTRACTOR SHALL FIELD VERIFY POSTED SPEED FOR "X" SPACING.
3. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE DURING ALL PHASES OF CONSTRUCTION.
4. ALL WORK ZONE TRAFFIC CONTROL DEVICES ARE SUBSIDIARY TO ITEM 502 UNLESS OTHERWISE NOTED.
5. SIGN LOCATIONS MAY BE ADJUSTED DUE TO CONDITONS AS APPROVED BY THE ENGINEER.

STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

NOT TO SCALE

Texas Department of Transportation

DL VEST STREET TRAFFIC CONTROL PLAN ADVANCE WARNING SIGNS

SHEET: 1 OF 1

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST		COUNTY	SHEET NO.
SAT		WILSON	21

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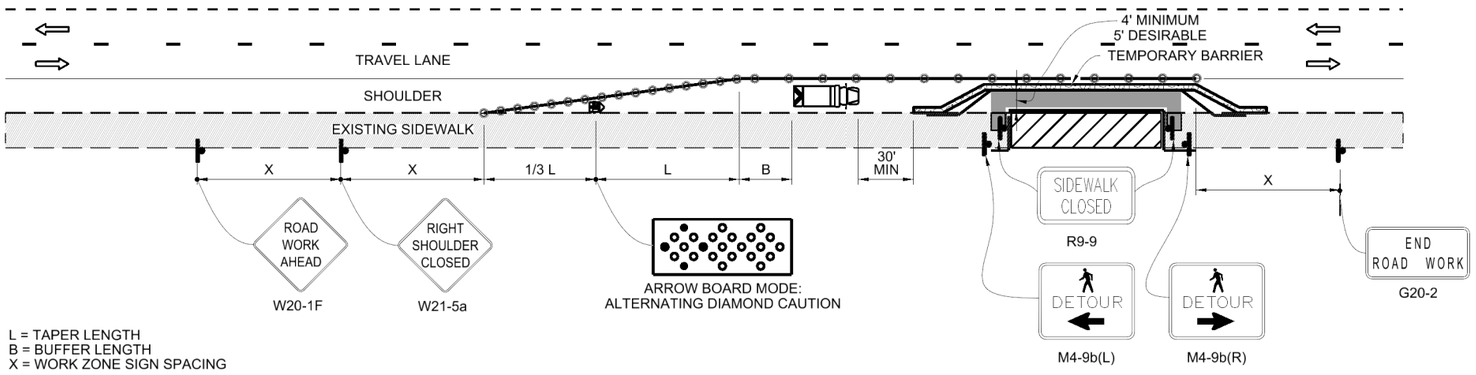
DESIGN: DRAFT: CHECK:

LOC NO.	TCP PHASE	SPECIFIC TCP PLAN SHEET OR TCP STANDARD SHEET	FURNISH TMA/TA	RELOCATE/REUSE TMA/TA	TOTAL TMA/TA PER SET UP	start	finish	DURATION OF TMA/TA SET UP	6185 - 6002 TMA (STATIONARY)	6185 - 6005 TMA (MOBILE
			EA	EA	EA			DAYS/HRS PER	DAY	DAY
1	PHASE I -WZ 2	TCP (2-1b) - 18	1		1	98	115	17	17	
2	PHASE II -WZ 3	TCP (2-1b) - 18	1		1	119	122	3	3	
3	PHASE II -WZ 4	TCP (1-1a) - 18	1		1	126	127	1	1	
4	PHASE III -WZ 5	TCP (2-1b) - 18	1		1	128	153	25	25	
5	PHASE III -WZ 6	TCP (2-1b) - 18	1		1	153	178	25	25	
								PROJECT TOTAL	71	0

NOTE.
FURNISH TMA/TA - THE NUMBER OF ATTENUATORS BEING FURNISHED FOR THE SPECIFIC TCP.
RELOCATE/REUSE TMA/TA - THE NUMBER OF ATTENUATORS BEING REUSED FROM A PREVIOUS TCP FOR THE SPECIFIC TCP.
TOTAL TMA/TA PER SET UP = (FURNISH TMA/TA) + (RELOCATE/REUSE TMA/TA)
DURATION OF TMA/TA SET UP - THE NUMBER OF DAYS THE ATTENTUATORS WILL BE USED FOR THE SPECIFIC TCP.
TMA/TA (STATIONARY) = (TOTAL TMA/TA PER SET UP) X (THE DURATION OF TMA/TA SET UP)
TMA/TA (MOBILE OPERATION) = (TOTAL TMA/TA PER SET UP) X (THE DURATION OF TMA/TA SET UP)

TRUCK MOUNTED ATTENUATOR (TMA) AND TRAILER ATTENUATOR (TA) SUMMARY SHEET

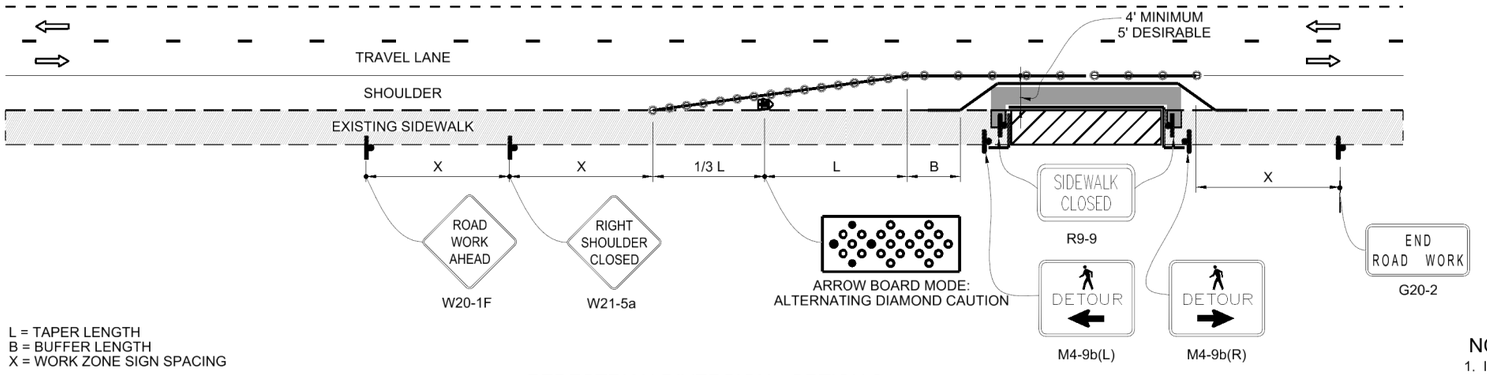
FILE: tma.dgn	DN: TxDOT	CK:	CK:
© TxDOT	CONT	SECT	JOB	HIGHWAY
REVISIONS 3/2018	0915	14	050 DL VEST ST
	DIST	COUNTY	
	SAT	WILSON	
	FEDERAL AID PROJECT		SHEET NO.
	SEE TITLE SHEET		22



L = TAPER LENGTH
B = BUFFER LENGTH
X = WORK ZONE SIGN SPACING

PEDESTRIAN DIVERSION - OPTION 1

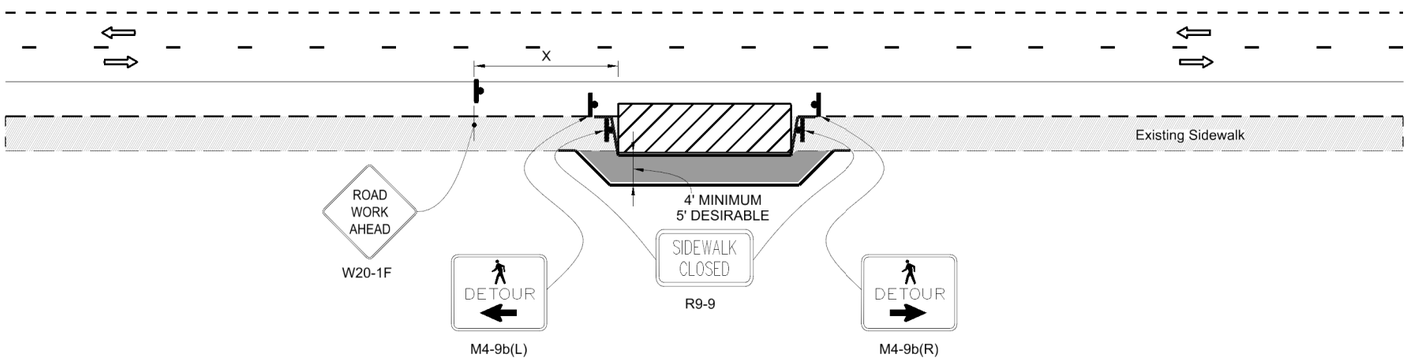
(Work Zone Speed 45 mph or Less: Low Profile Barrier,
Work Zone Speed 50 mph or greater: CTB)



L = TAPER LENGTH
B = BUFFER LENGTH
X = WORK ZONE SIGN SPACING

PEDESTRIAN DIVERSION - OPTION 2

(Work Zone Speed 35 mph or Less)



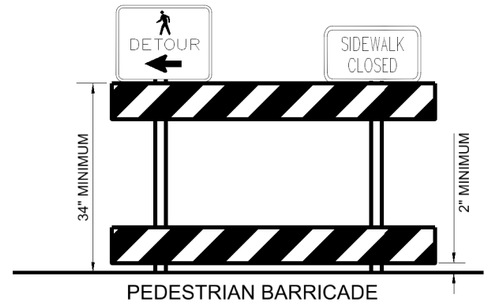
X = WORK ZONE SIGN SPACING

PEDESTRIAN SPECIAL DETOUR

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

* Conventional Roads Only

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



PEDESTRIAN BARRICADE

SYMBOLS:

- Work Area
- Temporary Pedestrian Way
- Channelizing Device
- Work Zone Sign
- Arrow Board
- Lane Identification and Direction of Traffic

NOTES:

1. ITEM 502 "BARRICADES, SIGNS, AND TRAFFIC HANDLING" SHALL GOVERN FOR THIS WORK. ALL PEDESTRAIN TCP WILL BE SUBSIDEIARY TO ITEM 502.

2. WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, PROVIDE DETECTABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES. THE ALTERNATE PEDESTRIAN ROUTE (APR) MUST REMAIN OPEN AT ALL TIMES.

3. TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER DEVICES MAY BE NECESSARY TO CONTROL VEHICULAR TRAFFIC. STAGE WORK AS NECESSARY TO PROVIDE AN APR AT ALL TIMES FOR ROADWAYS WITH NO AVAILABLE DETOURS. PROVIDE A SMOOTH, CONTINUOUS, HARD SURFACE THROUGH THE LENGTH OF THE APR.

4. PROVIDE A 5' WIDE TEMPORARY PEDESTRIAN WAY WITH A MAXIMUM CROSS-SLOPE OF 2%, EXCEPT WHERE SPACE RESTRICTIONS WARRANT A MINIMUM WIDTH OF 4'. PROVIDE A 5' X 5' PASSING SPACE FOR TEMPORARY PEDESTRIAN WAYS LESS THAN 5' IN WIDTH AT INTERVALS NOT TO EXCEED 200'.

5. WHEN TEMPORARY PEDESTRIAN ROUTES REQUIRE CURB RAMPS, SEE TCP TEMPORARY CURB RAMP DETAILS.

6. PROVIDE A FIRM, STABLE, FREE-DRAINING, NON-SLIP, TEMPORARY WALKWAY SURFACE REGARDLESS OF WEATHER CONDITIONS. SUPPORT THE TEMPORARY WALKWAY SURFACE WITH A SOLID BASE TO COVER SHORT SEGMENTS OF ROUGH, SOFT, OR UNEVEN GROUND. THE TEMPORARY WALKWAY SURFACE WILL ALLOW NORMAL USAGE OF WHEELCHAIRS, WALKERS, STROLLERS, AND OTHER MOBILITY DEVICES. STEEL, RUBBER, WOOD (¾" OR THICKER), AND PLASTIC ARE ACCEPTABLE SURFACE MATERIALS FOR THE TEMPORARY WALKWAY SURFACE. GRAVEL, MILLINGS, AND OTHER UNEVEN SURFACES ARE NOT ACCEPTABLE SURFACE MATERIALS. IF NEEDED, PROVIDE SOIL STABILIZATION TO PREVENT EROSION AROUND TEMPORARY SURFACES. IF NEEDED, PROVIDE SOIL STABILIZATION TO PREVENT EROSION AROUND TEMPORARY SURFACES.

7. POST-MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7' MINIMUM CLEARANCE FROM THE BOTTOM OF THE LOWEST SIGN TO THE SIDEWALK SURFACE.

8. PEDESTRIAN DIVERSION MAY ONLY BE USED WHEN CALLED FOR IN THE PLANS, OR AS DIRECTED BY AN ENGINEER.

Martha Gandara

DATE: 2/21/2024

Texas Department of Transportation

DL VEST STREET TRAFFIC CONTROL PLAN ALTERNATIVE PEDESTRIAN ROUTES

SHEET: 1 OF 1

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		23

DESIGN: DRAFT: CHECK:

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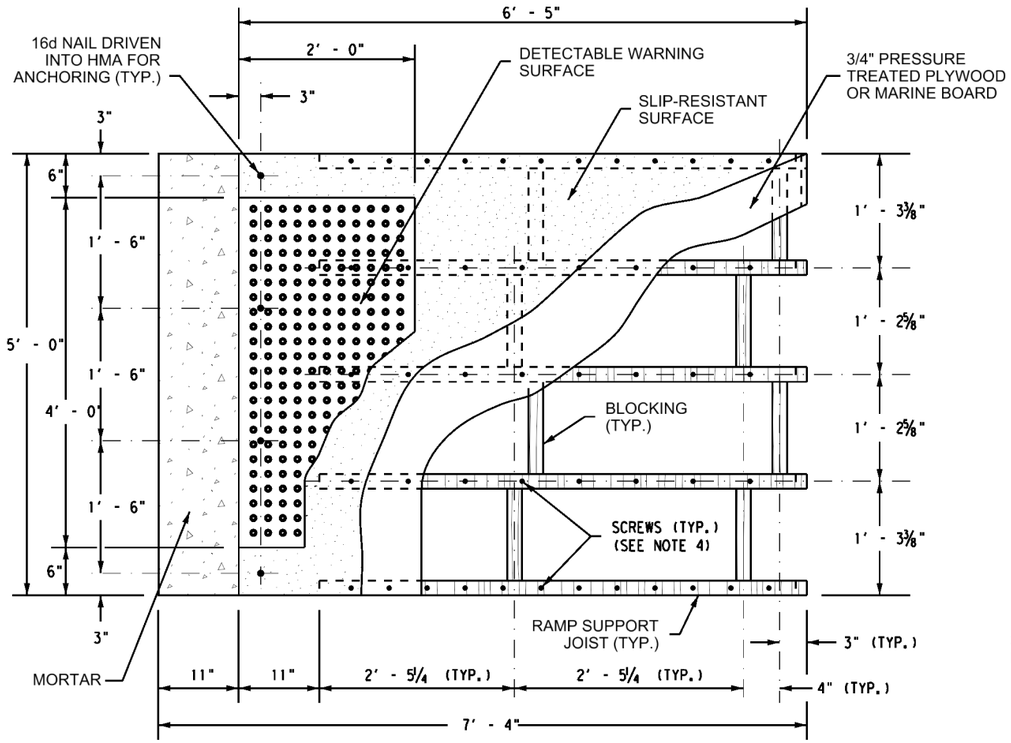
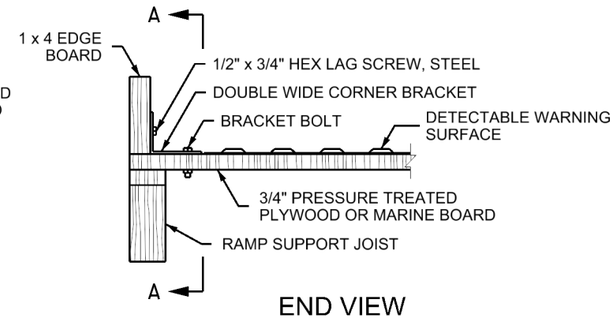
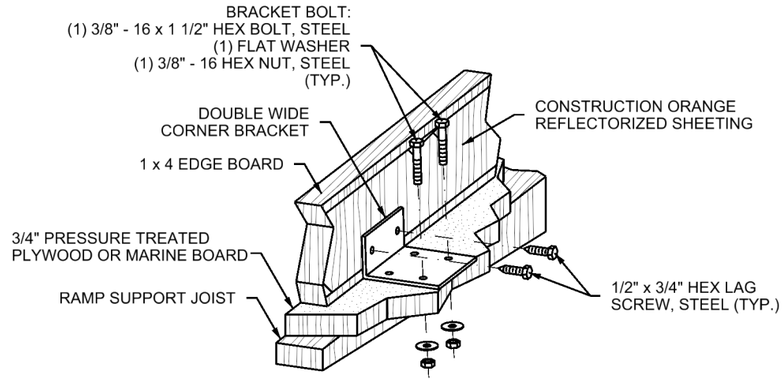


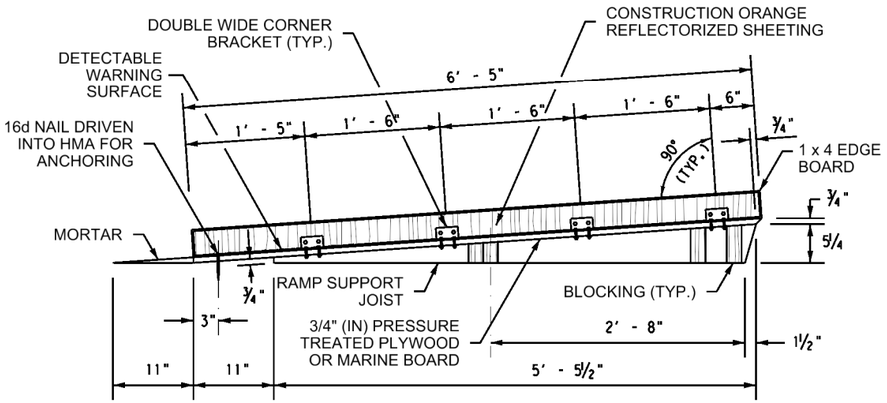
TOP VIEW



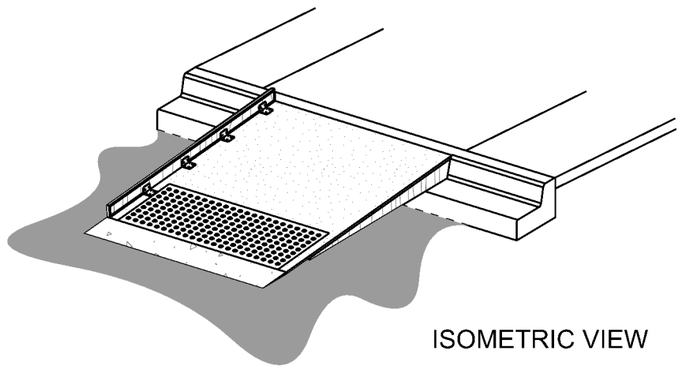
END VIEW



SECTION A-A
PERSPECTIVE VIEW



SIDE VIEW
RAMP AND EDGE BOARD



ISOMETRIC VIEW

NOTES:

1. ITEM 502 "BARRICADES, SIGNS, AND TRAFFIC HANDLING" SHALL GOVERN FOR THIS WORK. ALL PEDESTRAIN TCP WILL BE SUBSIDEIARY TO ITEM 502.

2. THIS DESIGN ASSUMES OPTIMAL CONDITIONS AND A STANDARD CURB HEIGHT OF 6 INCHES. INSTALLED RAMPS SHALL BE NO STEEPER THAN 8.3% AND SHALL HAVE A CROSS-SLOPE OF 2.0% OR LESS. USE SHIMS OR GROUT AS REQUIRED TO ADJUST FOR EXISTING CONDITIONS AND TO PREVENT ROCKING. SHIMS SHALL BE NO HIGHER THAN 1 INCH AND SHALL BE SECURED TO THE RAMP. FOR CURBS SHORTER THAN 6 INCHES, INSTALL A RAMP ON THE SIDEWALK NO STEEPER THAN 8.3%, AND MADE OF GROUT OR AS APPROVED BY THE ENGINEER. ADJUSTMENTS TO THE RAMP DIMENSIONS SHOWN MAY BE REQUIRED TO MATCH EXISTING CONDITIONS.

3. USE A SLIP-RESISTANT TREATMENT FOR THE SURFACE OF RAMP.

TEMPORARY PERPENDICULAR CURB RAMP DETAIL

STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

Texas Department of Transportation

DL VEST STREET
TRAFFIC CONTROL PLAN
TEMPORARY CURB RAMP DETAIL

SHEET: 1 OF 2

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		24

DESIGN: DRAFT: CHECK:

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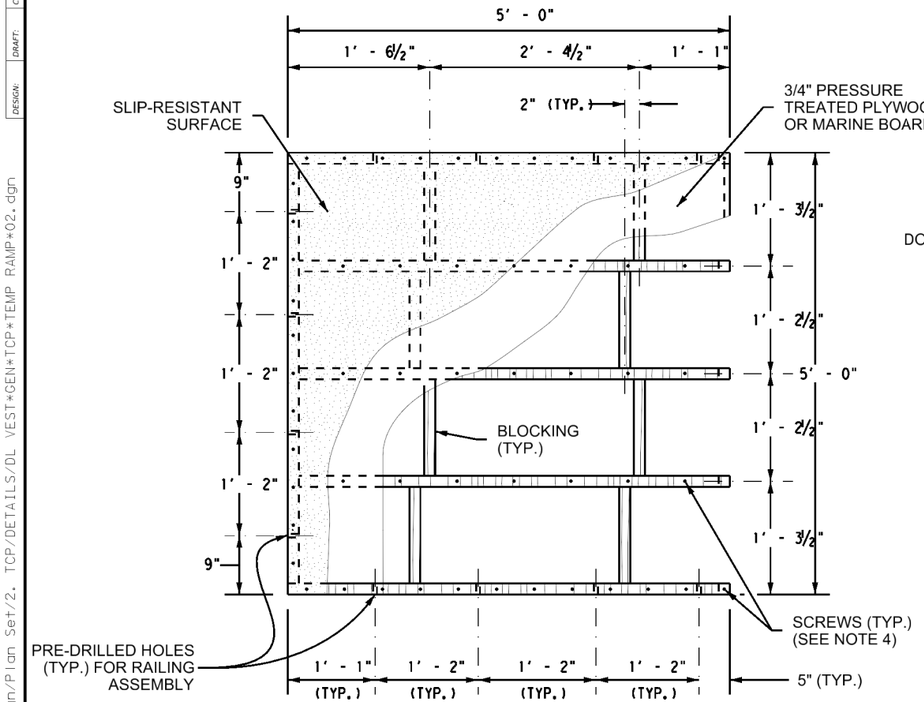
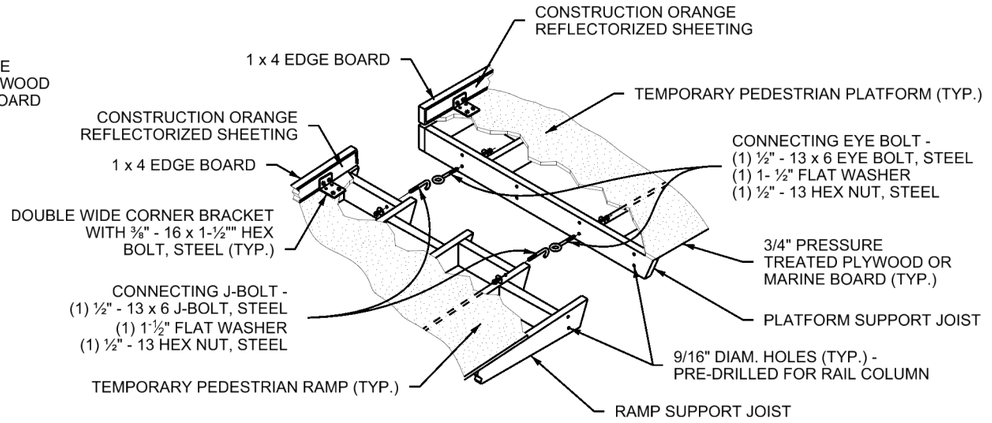
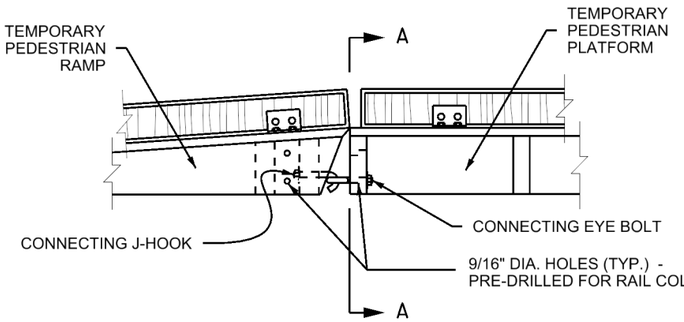


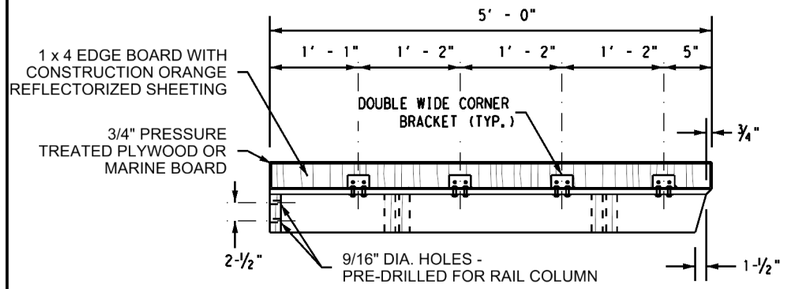
PLAN VIEW



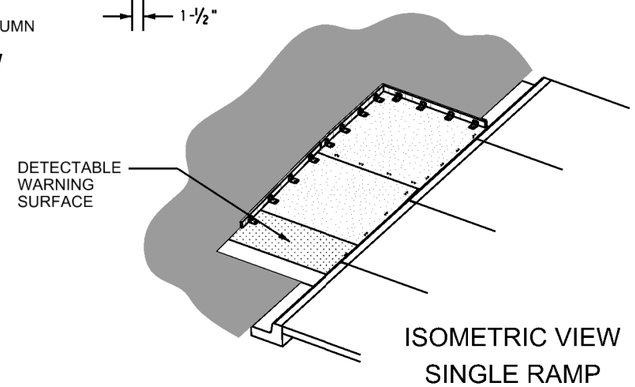
SECTION A-A
PERSPECTIVE VIEW



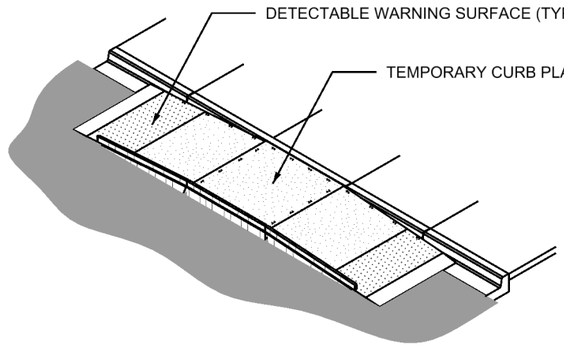
SIDE VIEW



ELEVATION VIEW



ISOMETRIC VIEW
SINGLE RAMP



ISOMETRIC VIEW
DUAL RAMP

TEMPORARY PARALLEL CURB RAMP (SINGLE OR DUAL) DETAIL

NOTES:

1. ITEM 502 "BARRICADES, SIGNS, AND TRAFFIC HANDLING" SHALL GOVERN FOR THIS WORK. ALL PEDESTRAIN TCP WILL BE SUBSIDEIARY TO ITEM 502.

2. THIS DESIGN ASSUMES OPTIMAL CONDITIONS AND A STANDARD CURB HEIGHT OF 6 INCHES. INSTALLED RAMPS SHALL BE NO STEEPER THAN 8.3% AND SHALL HAVE A CROSS-SLOPE OF 2.0% OR LESS. USE SHIMS OR GROUT AS REQUIRED TO ADJUST FOR EXISTING CONDITIONS AND TO PREVENT ROCKING. SHIMS SHALL BE NO HIGHER THAN 1 INCH AND SHALL BE SECURED TO THE RAMP. FOR CURBS SHORTER THAN 6 INCHES, INSTALL A RAMP ON THE SIDEWALK NO STEEPER THAN 8.3%, AND MADE OF GROUT OR AS APPROVED BY THE ENGINEER. ADJUSTMENTS TO THE RAMP DIMENSIONS SHOWN MAY BE REQUIRED TO MATCH EXISTING CONDITIONS.

3. ALL HOLES SHOWN SHALL BE DRILLED TO FACILITATE RE-USE AND FLEXIBLE EXPANSION.

4. USE A SLIP-RESISTANT TREATMENT FOR THE SURFACE OF RAMP.

STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

Texas Department of Transportation

DL VEST STREET TRAFFIC CONTROL PLAN TEMPORARY CURB RAMP DETAIL

SHEET: 2 OF 2

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		25

DATE: 2/21/2024 7:44:39 AM
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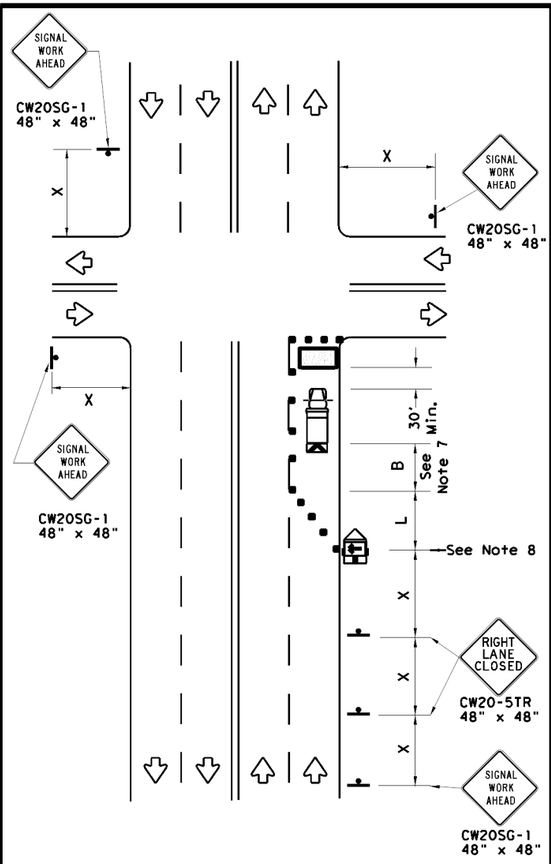
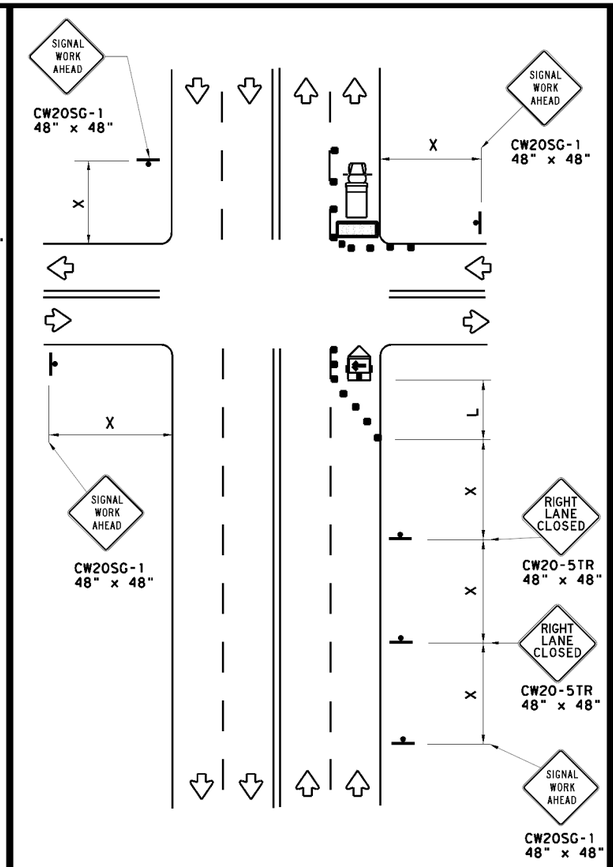


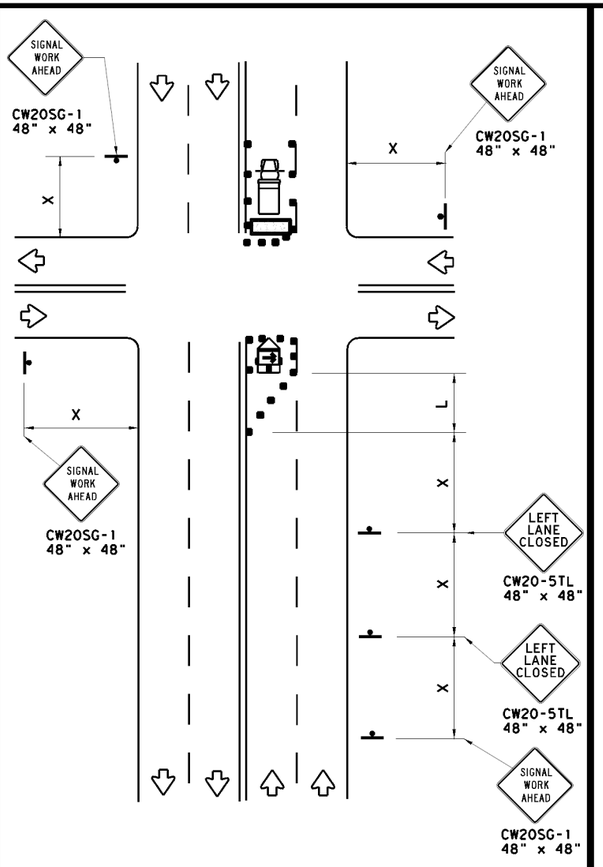
NEAR SIDE LANE CLOSURE

SHORT DURATION OR SHORT TERM STATIONARY



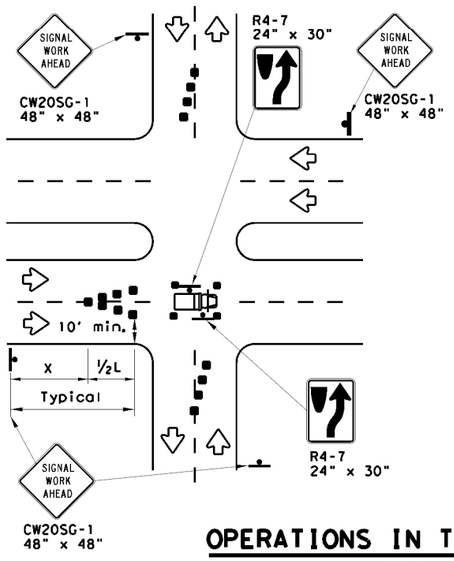
FAR SIDE RIGHT LANE CLOSURE

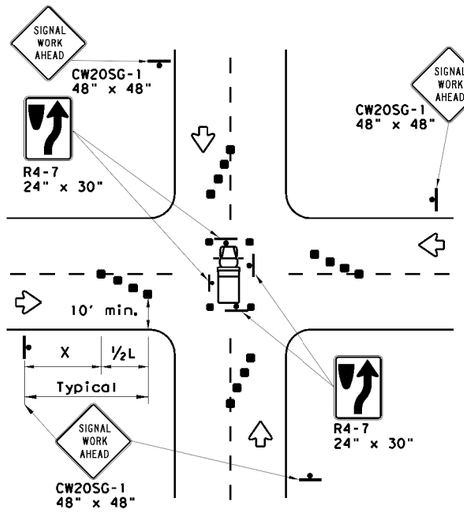
SHORT DURATION OR SHORT TERM STATIONARY



FAR SIDE LEFT LANE CLOSURE

SHORT DURATION OR SHORT TERM STATIONARY





OPERATIONS IN THE INTERSECTION

SHORT DURATION

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

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

* Conventional Roads Only

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

WORKERS IN BUCKET TRUCKS SHALL NOT WORK ABOVE OPEN LANES OF TRAFFIC.

GENERAL NOTES

1. 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.
2. Obstructions or hazards at the work area shall be clearly marked and delineated at all times.
3. Flaggers and Flagger Symbol (CW20-7) signs may be required according to field conditions.
4. Vehicles parked in roadway shall be equipped with at least two high intensity rotating, flashing, oscillating or strobe type lights.
5. High level warning devices (flag trees) may be used at corners of the vehicle.
6. 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.
7. 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.
8. 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.
9. 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.

SHEET 1 OF 2

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC SIGNAL WORK TYPICAL DETAILS

WZ(BTS-1)-13

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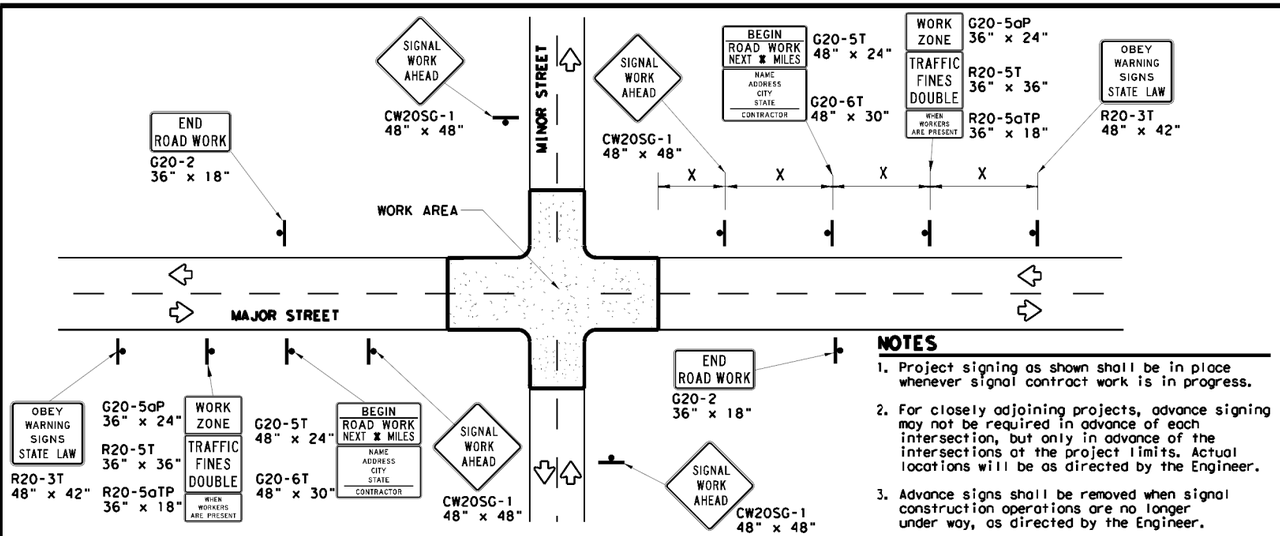


TYPICAL ADVANCE SIGNAL PROJECT SIGNING

FOR LONG TERM and INTERMEDIATE-TERM STATIONARY WORK OPERATIONS

NOTES

1. Project signing as shown shall be in place whenever signal contract work is in progress.
2. For closely adjoining projects, advance signing may not be required in advance of each intersection, but only in advance of the intersections at the project limits. Actual locations will be as directed by the Engineer.
3. Advance signs shall be removed when signal construction operations are no longer under way, as directed by the Engineer.
4. Warning sign spacing shown is typical for both directions.
5. See the Table on sheet 1 of 2 for Typical warning sign spacing.

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 6G.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

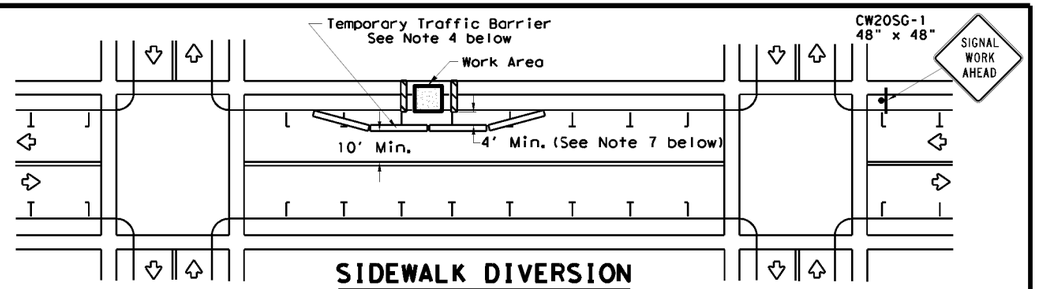
1. Weights used to keep signs from turning over should be sandbags filled with dry, cohesionless material.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects will not be permitted for use as sign support 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 fastners. 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

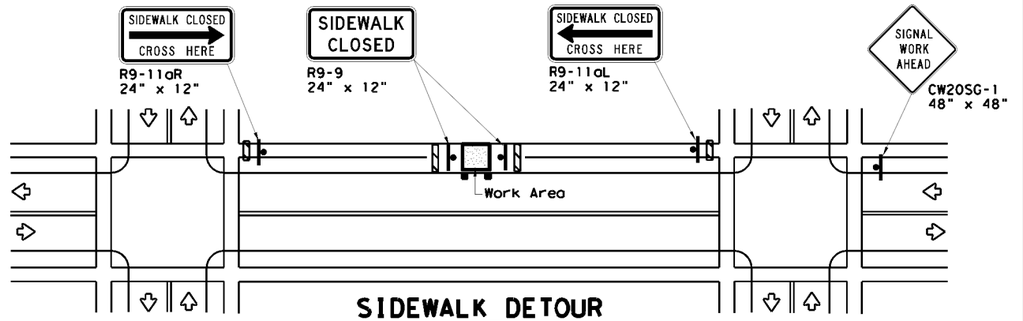
DEPARTMENTAL MATERIAL SPECIFICATIONS	
SIGN FACE MATERIALS	DMS-8300
FLEXIBLE ROLL-UP REFLECTIVE SIGNS	DMS-8310

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

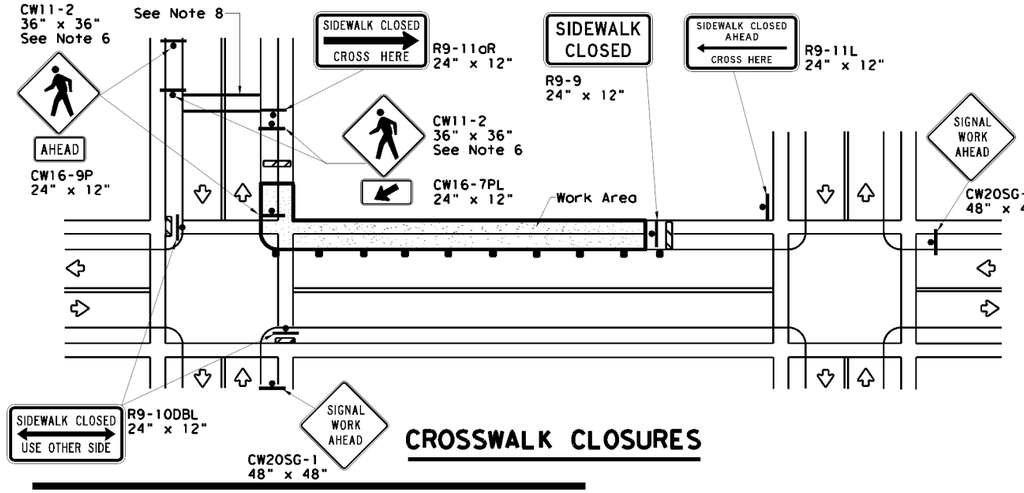
Only pre-qualified products shall be used. A copy of the "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be found at the following web address:
http://www.txdot.gov/txdot_library/publications/construction.htm



SIDEWALK DIVERSION



SIDEWALK DETOUR



CROSSWALK CLOSURES

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.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC SIGNAL WORK BARRICADES AND SIGNS

WZ(BTS-2)-13

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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).

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

SHEET 1 OF 12

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-21

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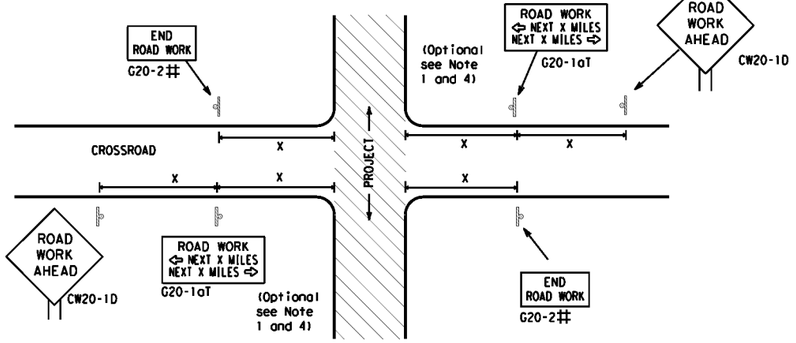
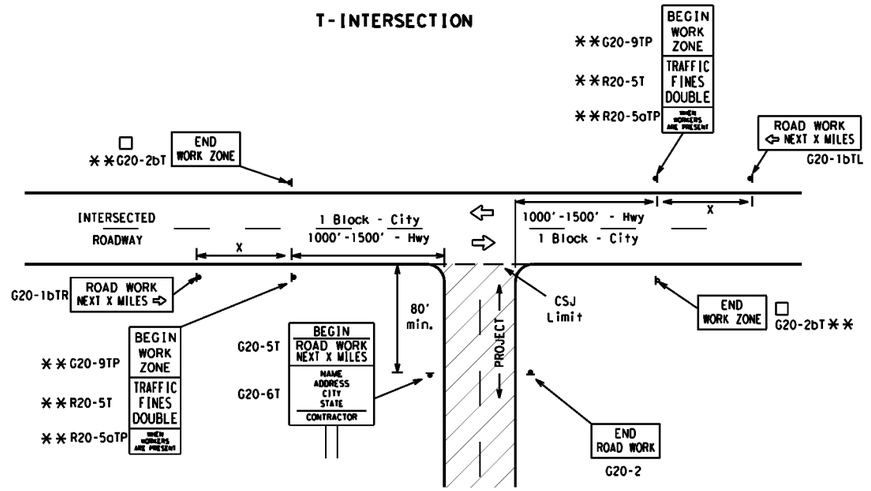
TYPICAL LOCATION OF CROSSROAD SIGNS



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

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

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

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

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

SIZE

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

SPACING

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

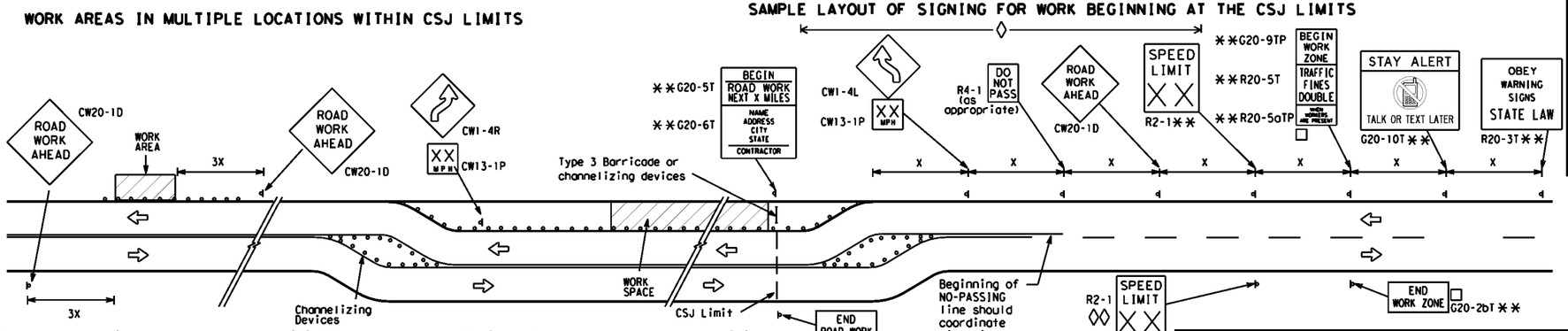
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

GENERAL NOTES

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

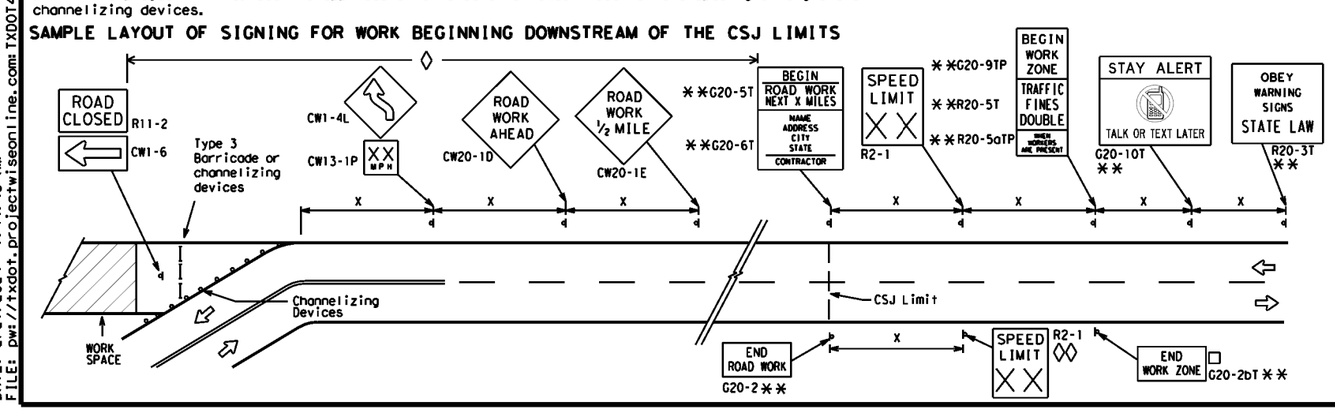
WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS



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

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS

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



NOTES

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

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

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

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

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

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

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

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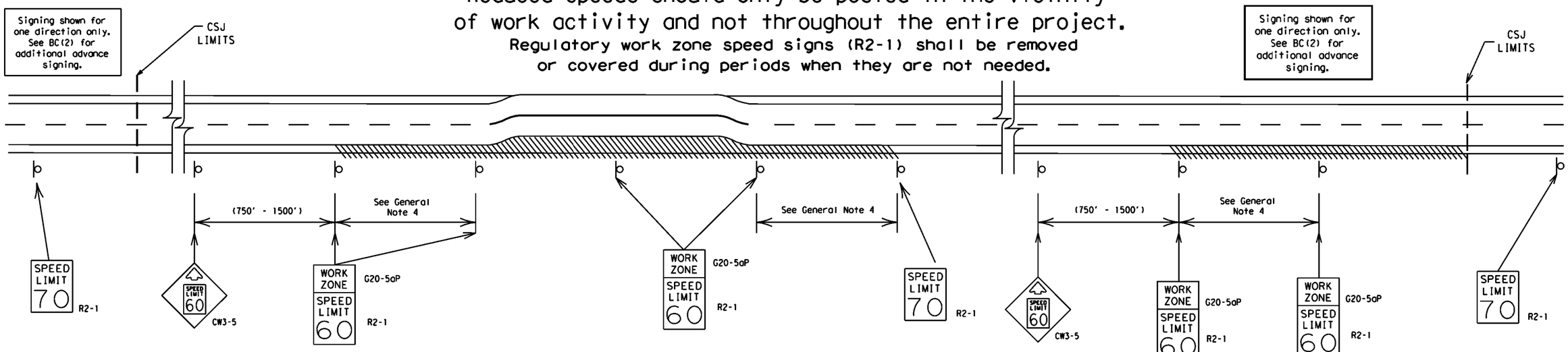
TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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

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

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



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

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

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

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

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

SHORT TERM WORK ZONE SPEED LIMITS

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

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

GENERAL NOTES

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	14	050	DL VEST ST
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	SAT	WILSON		30

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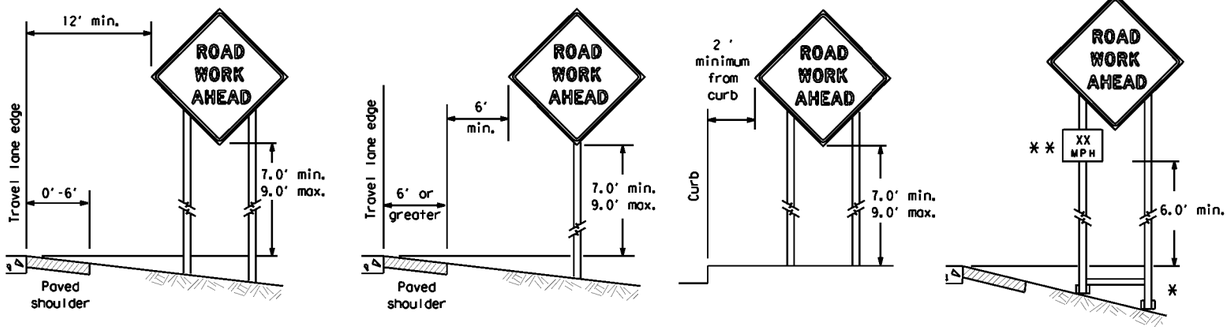
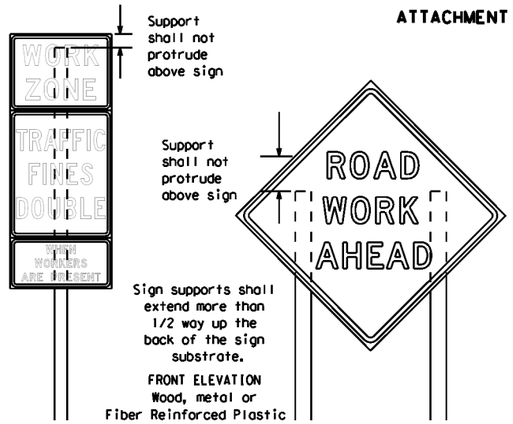
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS

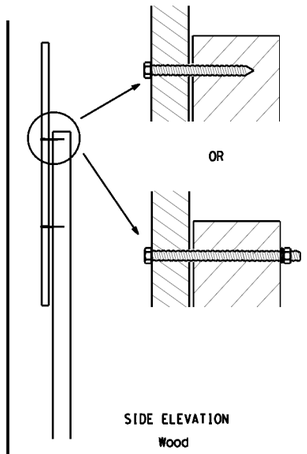


* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

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

ATTACHMENT FOR SIGN SUPPORTS





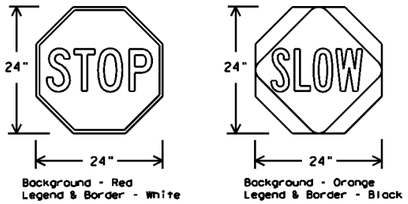
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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

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

STOP/SLOW PADDLES

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



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

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

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

GENERAL NOTES FOR WORK ZONE SIGNS

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

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

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

SIGN MOUNTING HEIGHT

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

SIZE OF SIGNS

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

SIGN SUBSTRATES

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

REFLECTIVE SHEETING

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

SIGN LETTERS

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

REMOVING OR COVERING

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

SIGN SUPPORT WEIGHTS

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

FLAGS ON SIGNS

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

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-21

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©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
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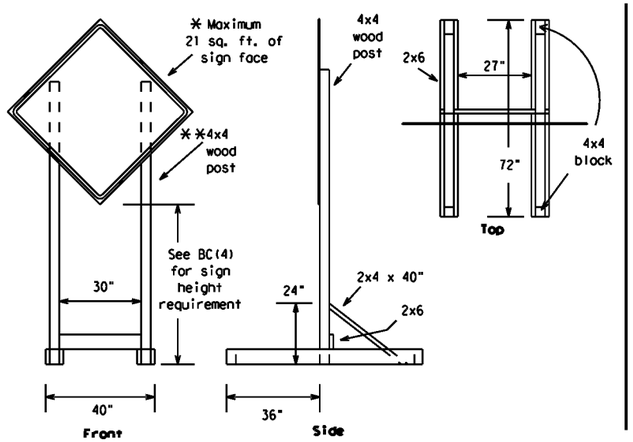
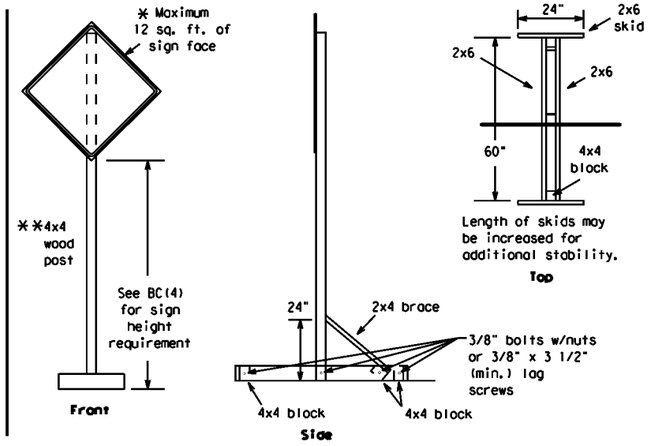
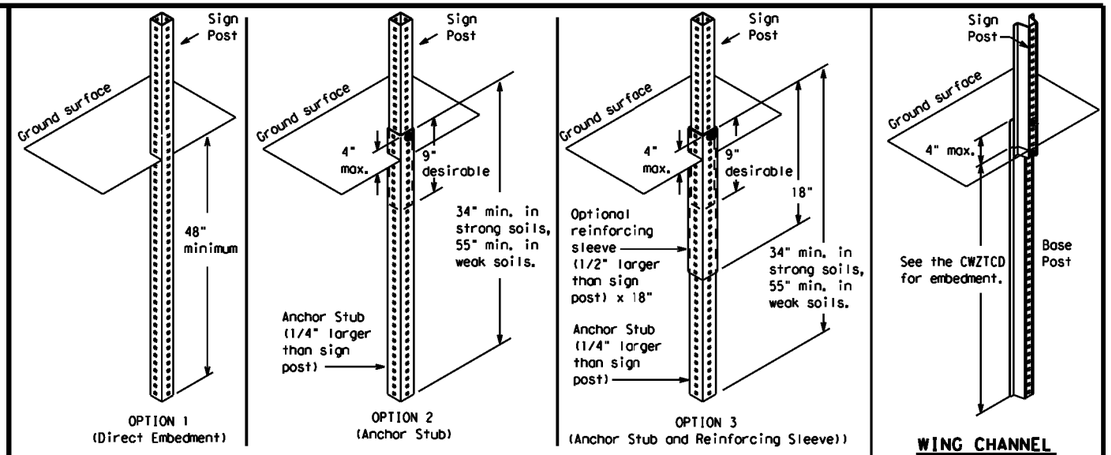
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	SAT	WILSON		31





SKID MOUNTED WOOD SIGN SUPPORTS

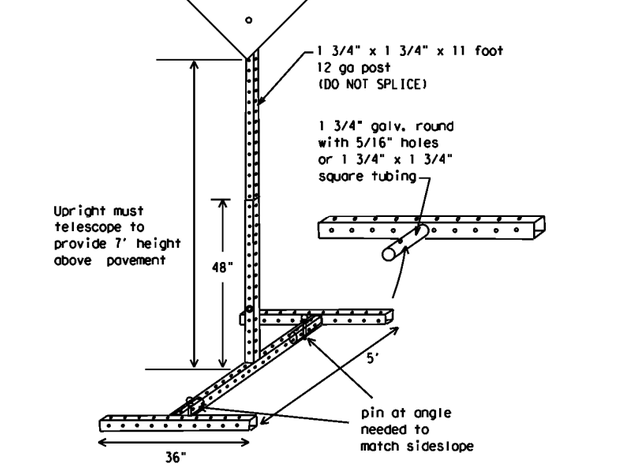
*** LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS**

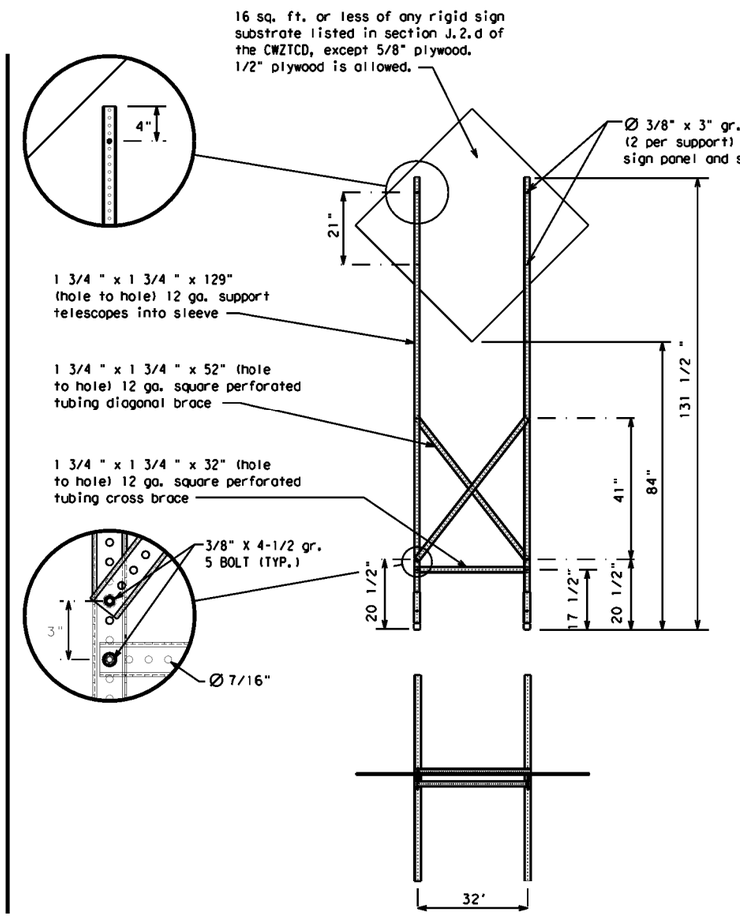


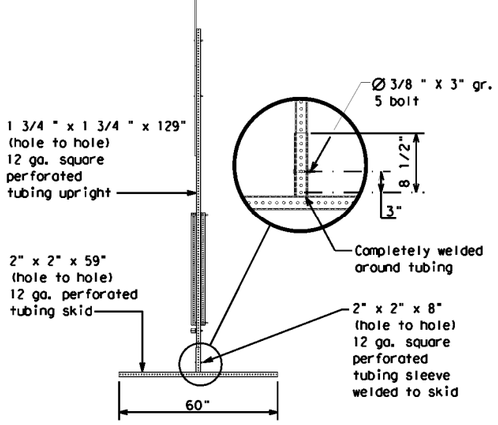
PERFORATED SQUARE METAL TUBING

GROUND MOUNTED SIGN SUPPORTS

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







SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

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

WEDGE ANCHORS

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

OTHER DESIGNS

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

GENERAL NOTES

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

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

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

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

SHEET 5 OF 12

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

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

PORTABLE CHANGEABLE MESSAGE SIGNS

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

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

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

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

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

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

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

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

Other Condition List

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

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

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

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

Location List

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

Warning List

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

** Advance Notice List

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

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

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

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

WORDING ALTERNATIVES

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

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

FULL MATRIX PCMS SIGNS

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-21

FILE:	bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT	November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS		0915	14	050	DL VEST ST
9-07 8-14		DIST	COUNTY		SHEET NO.
7-13 5-21		SAT	WILSON		33

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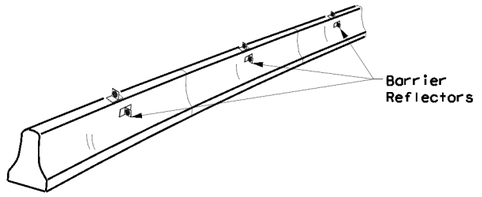
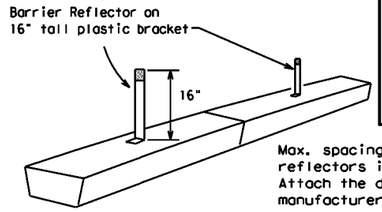
DATE: 2/21/2024 7:44:55 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT4/Documents/15 - SAT/Design Projects/0915140504 - Design/Plan Set/2. TCP/STANDARDS/Barricade and Construction.dgn

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



CONCRETE TRAFFIC BARRIER (CTB)

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

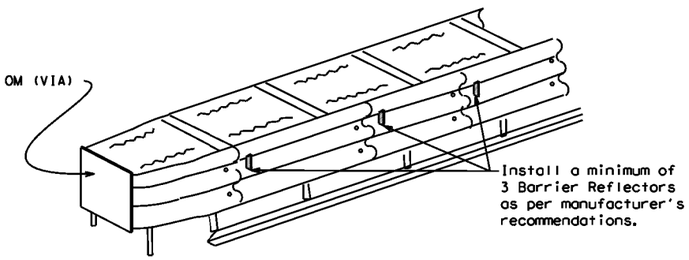


Max. spacing of barrier reflectors is 20 feet. Attach the delineators as per manufacturer's recommendations.

LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES

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

LOW PROFILE CONCRETE BARRIER (LPCB)

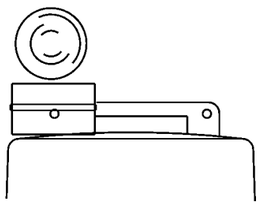


DELINEATION OF END TREATMENTS

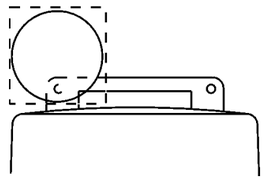
END TREATMENTS FOR CTB'S USED IN WORK ZONES

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

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS



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



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

WARNING LIGHTS

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

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

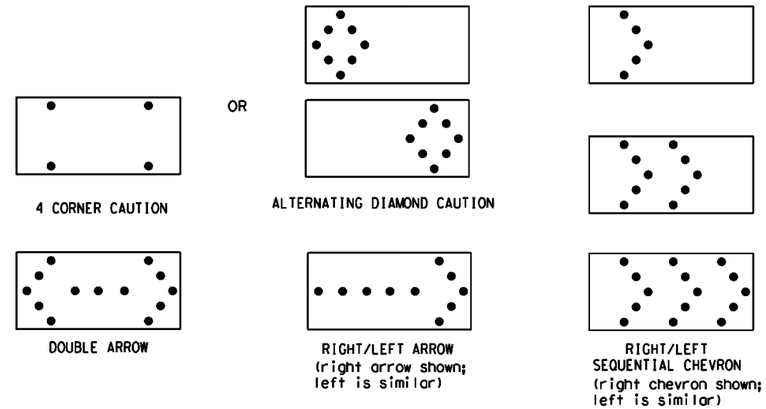
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing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

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

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

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

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



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

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

ATTENTION

Flashing Arrow Boards shall be equipped with automatic dimming devices.

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

FLASHING ARROW BOARDS

TRUCK-MOUNTED ATTENUATORS

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

Texas Department of Transportation

Traffic Safety Division Standard

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

BC(7)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	14	050	DL VEST ST
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	SAT	WILSON		34

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DATE: 2/21/2024 7:44:56 AM
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GENERAL NOTES

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

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

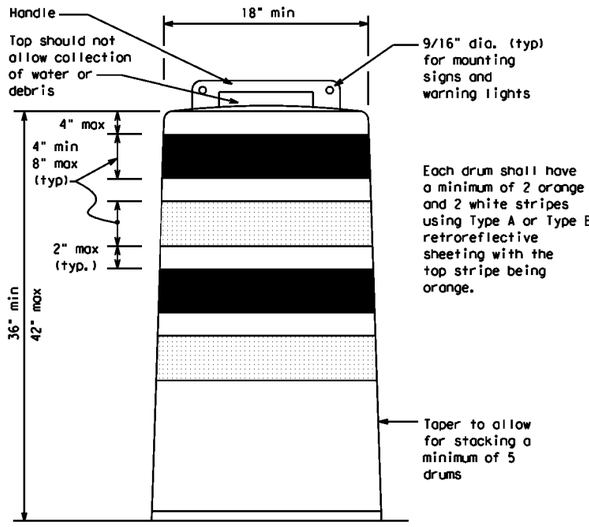
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents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

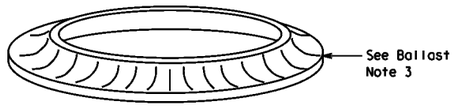
RETROREFLECTIVE SHEETING

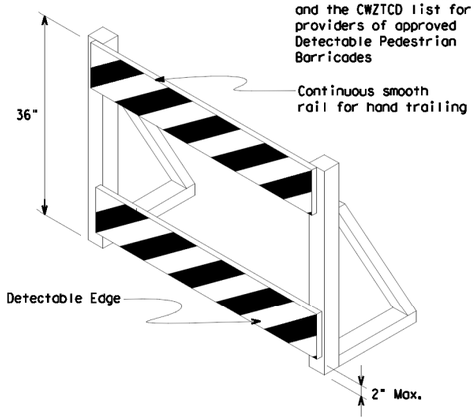
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Deportmental Materials Specification DMS-8300, "Sign Face Materials." Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall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

BALLAST

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

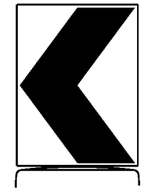




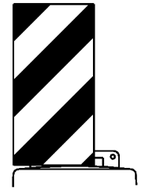


DETECTABLE PEDESTRIAN BARRICADES

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



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



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

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

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

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

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
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4-03 8-14	DIST	COUNTY		SHEET NO.
9-07 5-21	SAT	WILSON		35
7-13				

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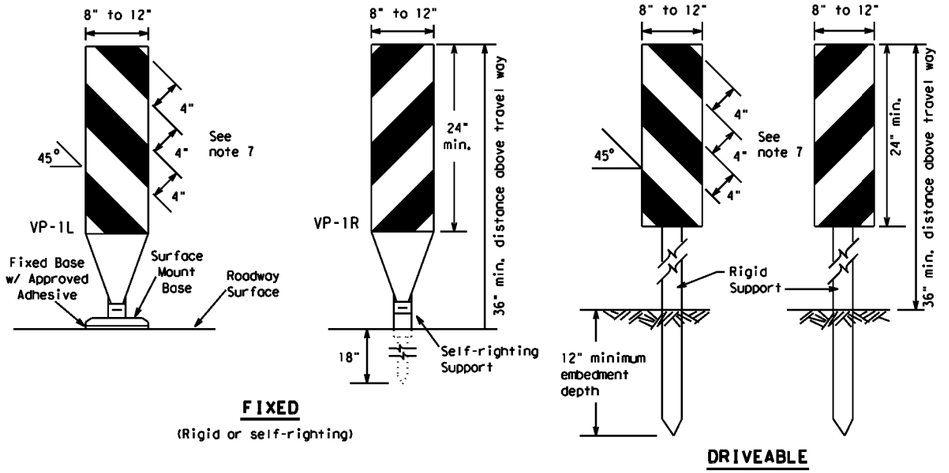
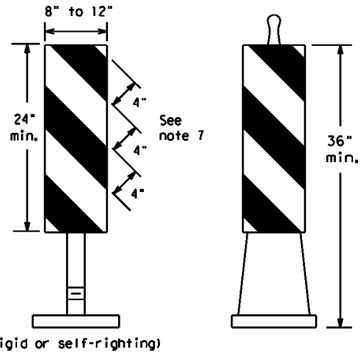


FIXED
(Rigid or self-righting)

DRIVEABLE

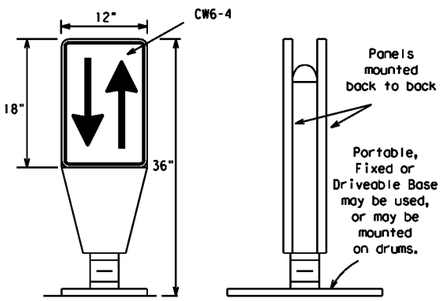


(Rigid or self-righting)

PORTABLE

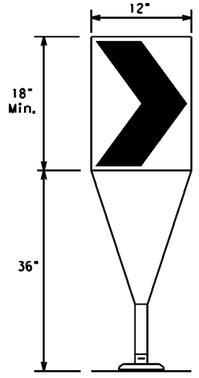
1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is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

VERTICAL PANELS (VPs)



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

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



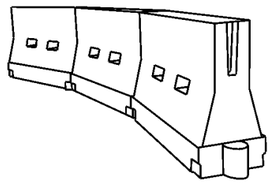
Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

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

CHEVRONS

GENERAL NOTES

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



LONGITUDINAL CHANNELIZING DEVICES (LCD)

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

WATER BALLASTED SYSTEMS USED AS BARRIERS

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

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

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

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

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

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

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Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(9)-21

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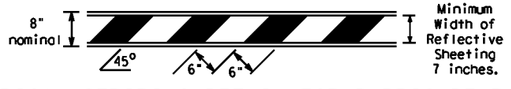
DATE: 2/21/2024 7:44:59 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT4/Documents/15 - SAT/Design Projects/0915140504 - Design/Plan Set/2. TCP/STANDARDS/Barricade and Construction.dgn

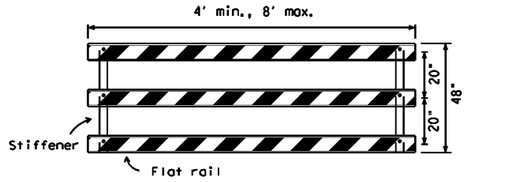
TYPE 3 BARRICADES

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 stocked in a manner that covers any portion of a barricade rails reflective sheeting. Rock, concrete, iron, steel or other solid objects will NOT be permitted. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall not be used for sandbags. Sandbags shall only be placed along or upon the base supports of the device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners.
9. Sheeting for barricades shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

Barricades shall NOT be used as a sign support.



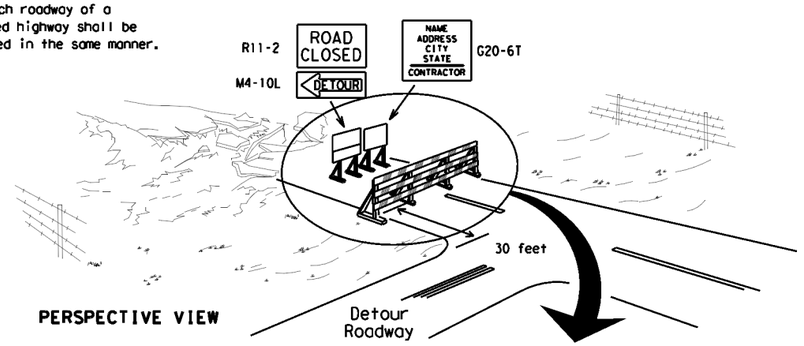
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



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

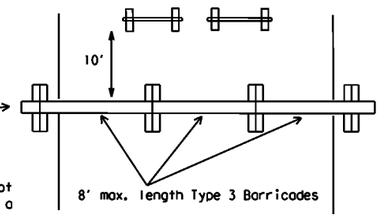
TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

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



PERSPECTIVE VIEW

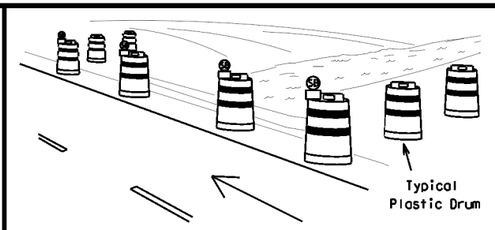
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

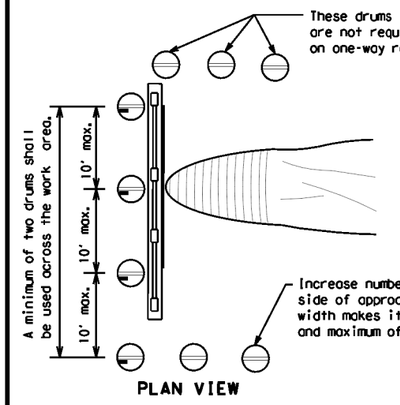
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

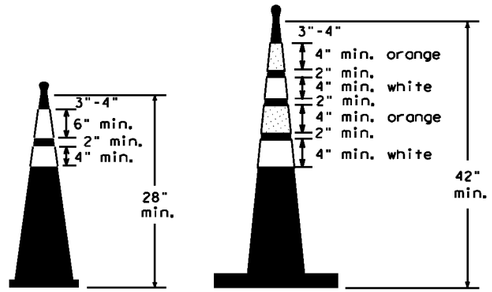
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder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



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

PLAN VIEW

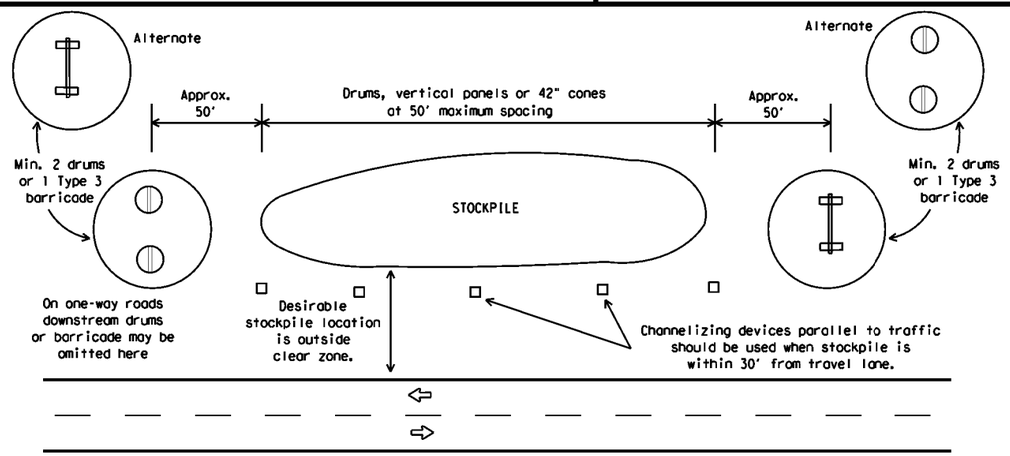
CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



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

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

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



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

SHEET 10 OF 12

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-21

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WORK ZONE PAVEMENT MARKINGS

GENERAL

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

RAISED PAVEMENT MARKERS

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

PREFABRICATED PAVEMENT MARKINGS

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

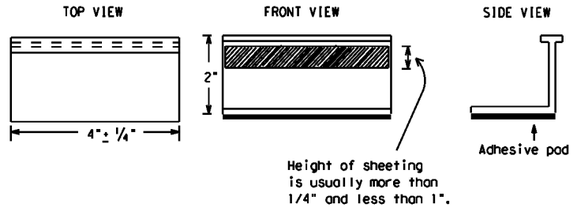
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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

REMOVAL OF PAVEMENT MARKINGS

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

Temporary Flexible-Reflective Roadway Marker Tabs



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

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

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

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

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

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

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

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BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-21

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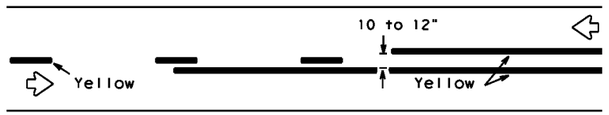
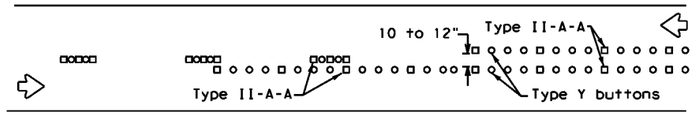
11-02 8-14				

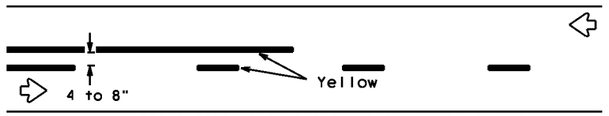
PAVEMENT MARKING PATTERNS



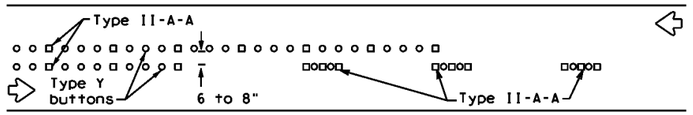
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



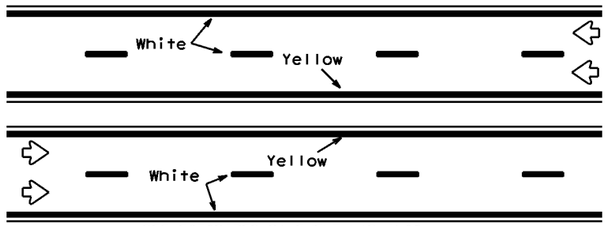
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



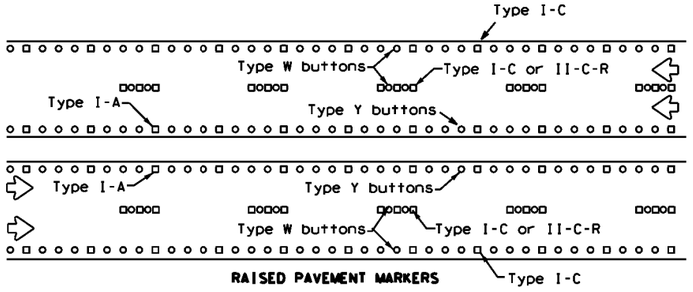
RAISED PAVEMENT MARKERS - PATTERN B

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

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



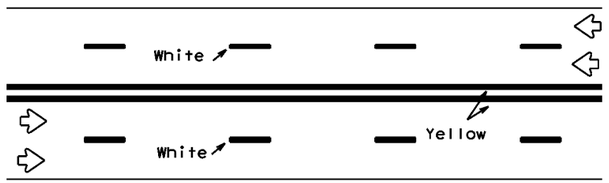
REFLECTORIZED PAVEMENT MARKINGS



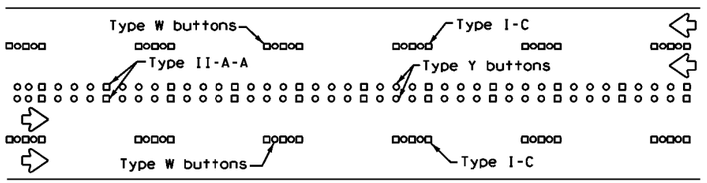
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



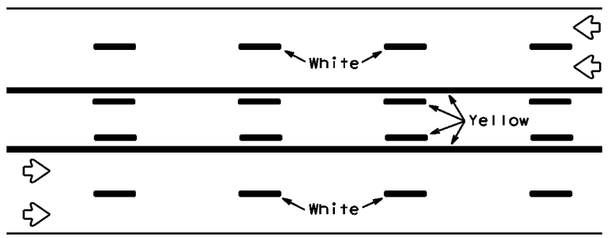
REFLECTORIZED PAVEMENT MARKINGS



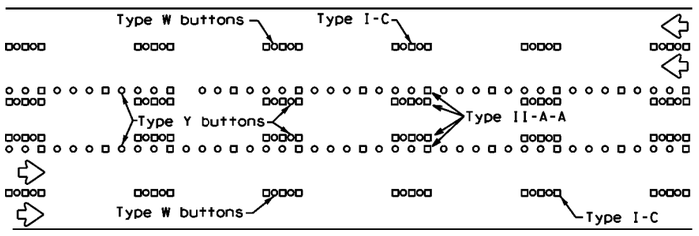
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

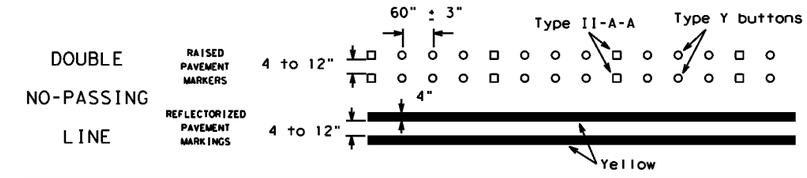
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

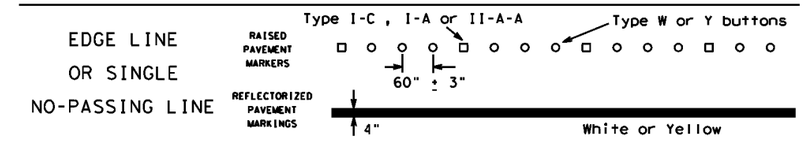
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

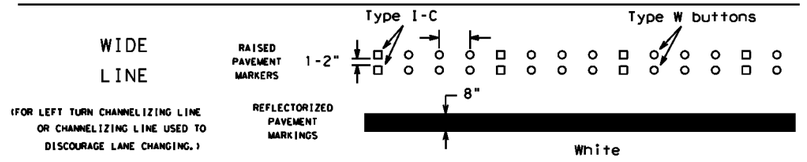


EDGE LINE OR SINGLE NO-PASSING LINE



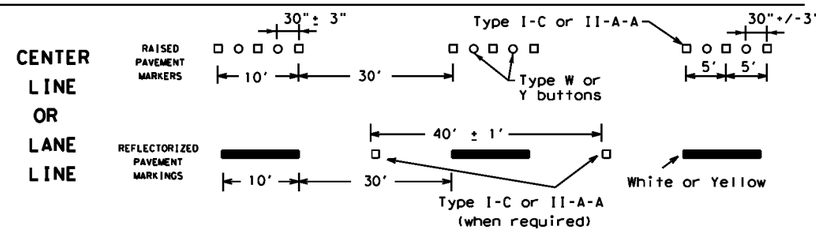
WIDE LINE

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

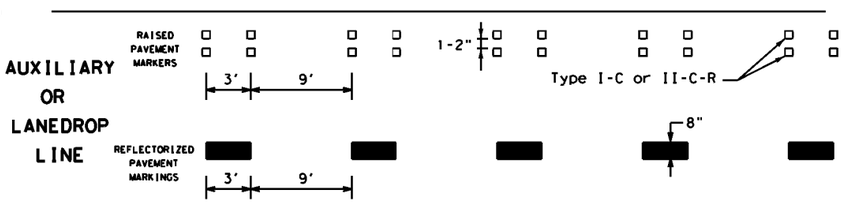


BROKEN LINES

CENTER LINE OR LANE LINE

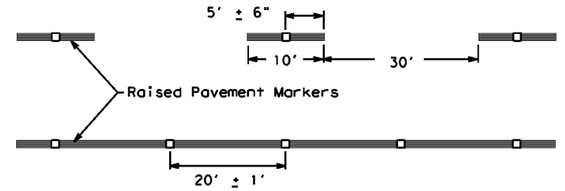


AUXILIARY OR LANEDROP LINE



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

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



Centerline only - not to be used on edge lines

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS 1-97 9-07 5-21 2-98 7-13 11-02 8-14	0915	14	050	DL VEST ST
	DIST	COUNTY		SHEET NO.
	SAT	WILSON		39

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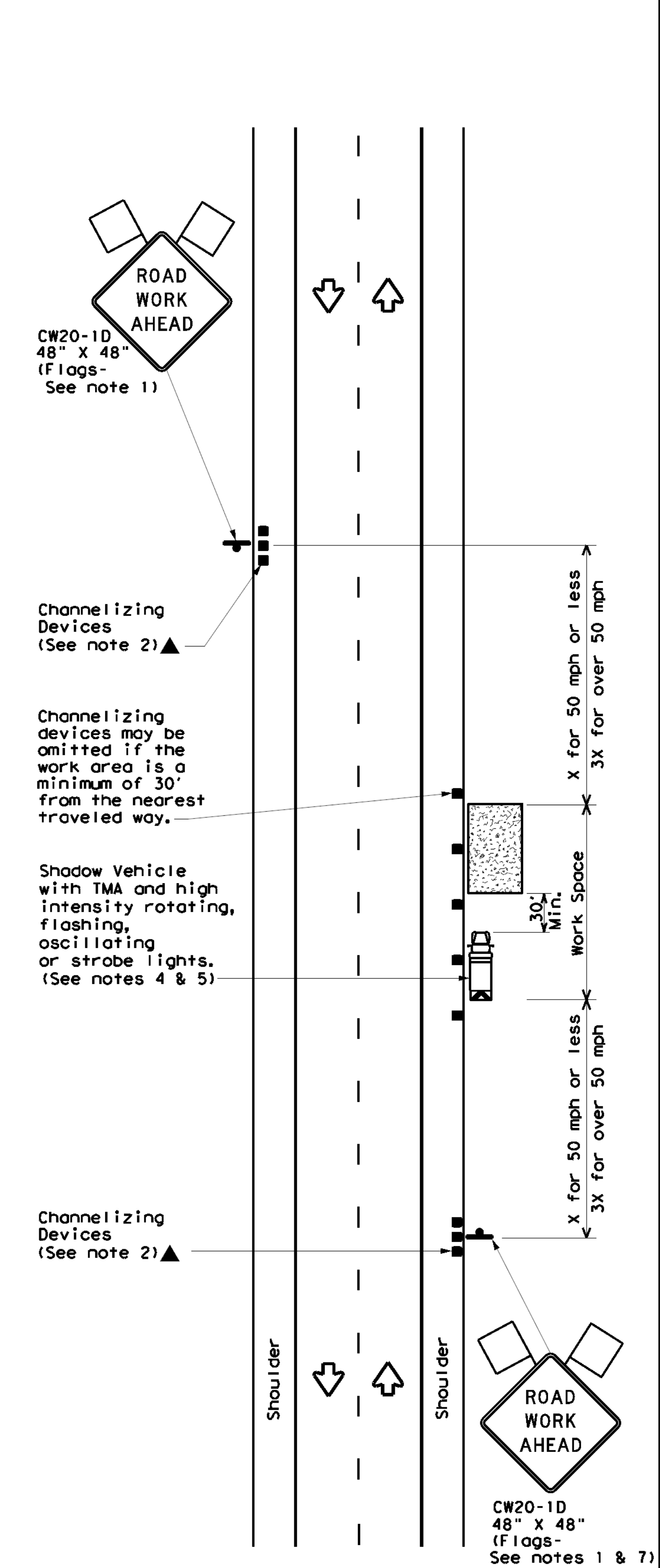
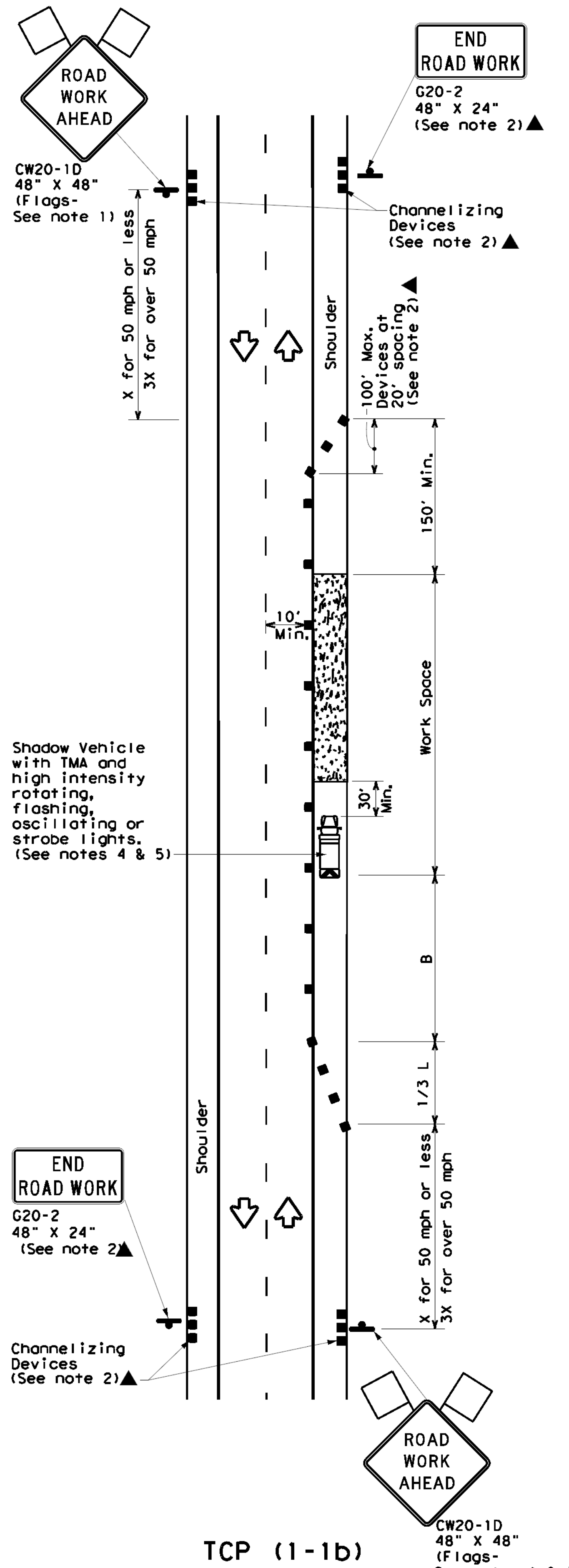


TCP (1-1a)

WORK SPACE NEAR SHOULDER

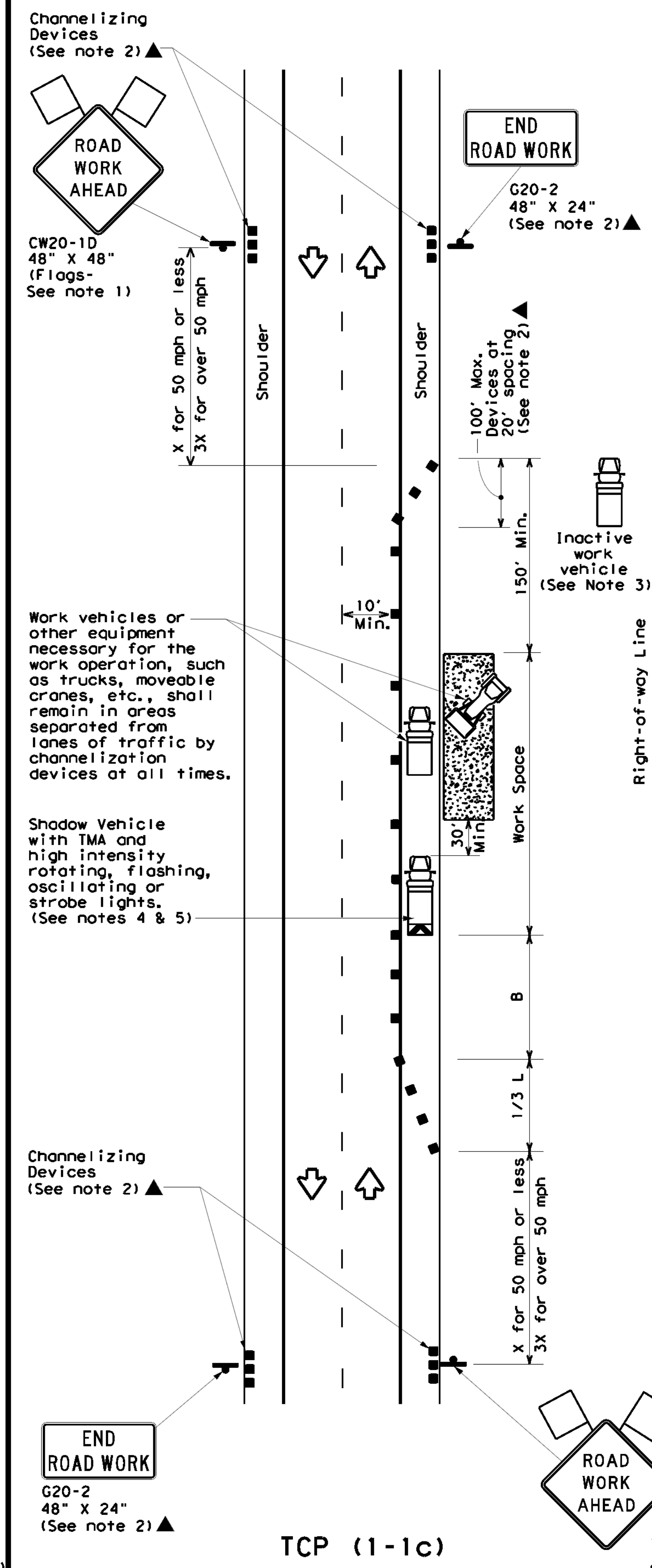
Conventional Roads



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	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L = WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* Conventional Roads Only

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

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

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
4. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
6. See TCP(5-1)for shoulder work on divided highways, expressways and freeways.
7. 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(1-1)-18

FILE: tcp1-1-18.dgn		DN:		CK:	DW:	CK:
© TxDOT December 1985		CONT	SECT	JOB	HIGHWAY	
REVISIONS 2-94 4-98 8-95 2-12 1-97 2-18		0915	14	050	DL VEST ST	
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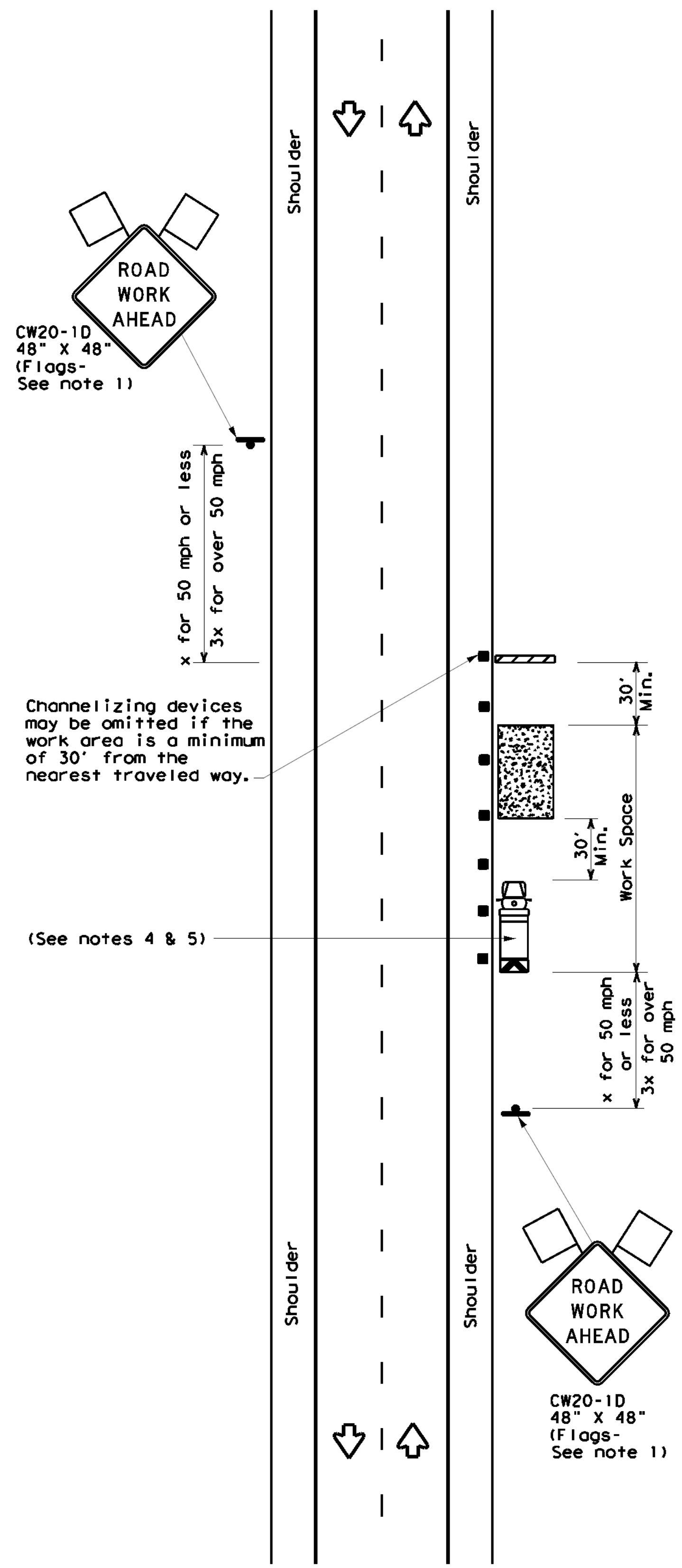
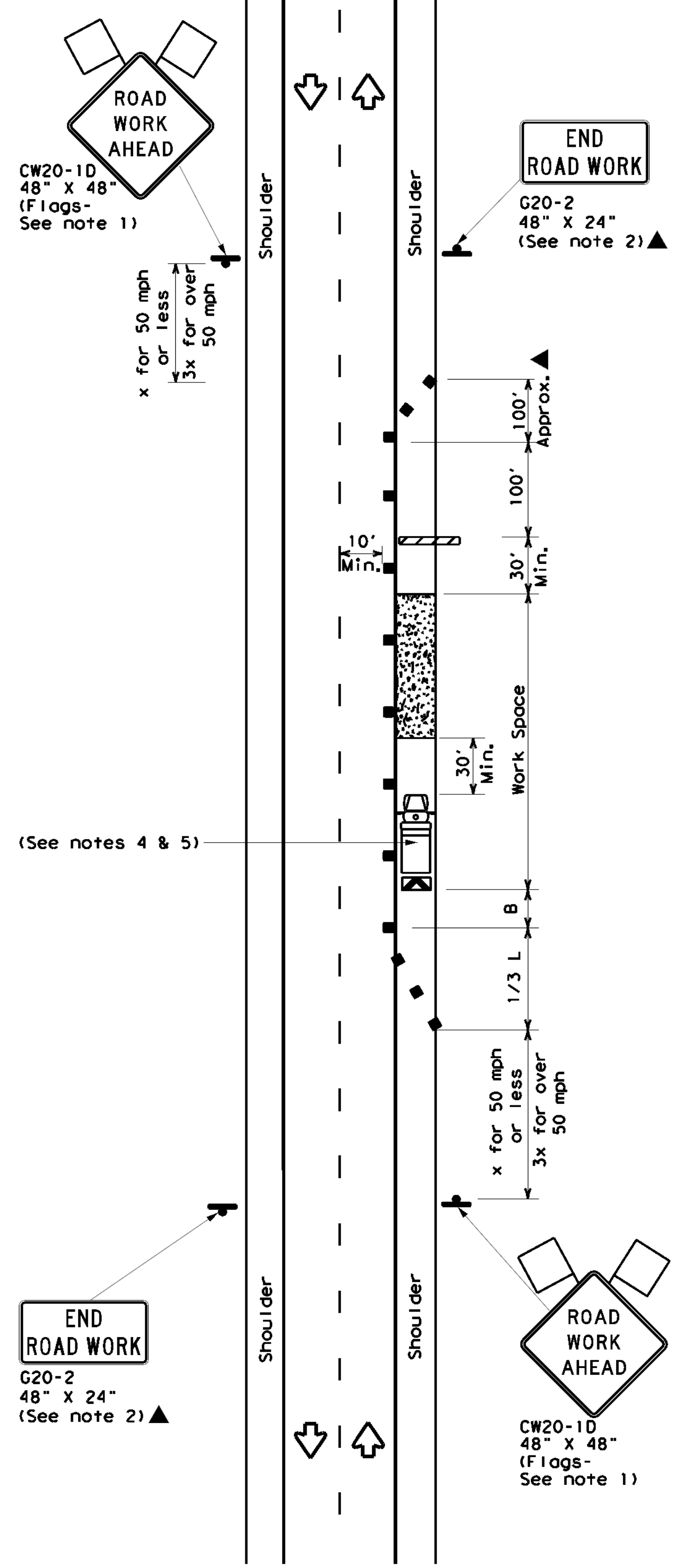
		SAT	WILSON		40	



TCP (2-1a)

WORK SPACE NEAR SHOULDER

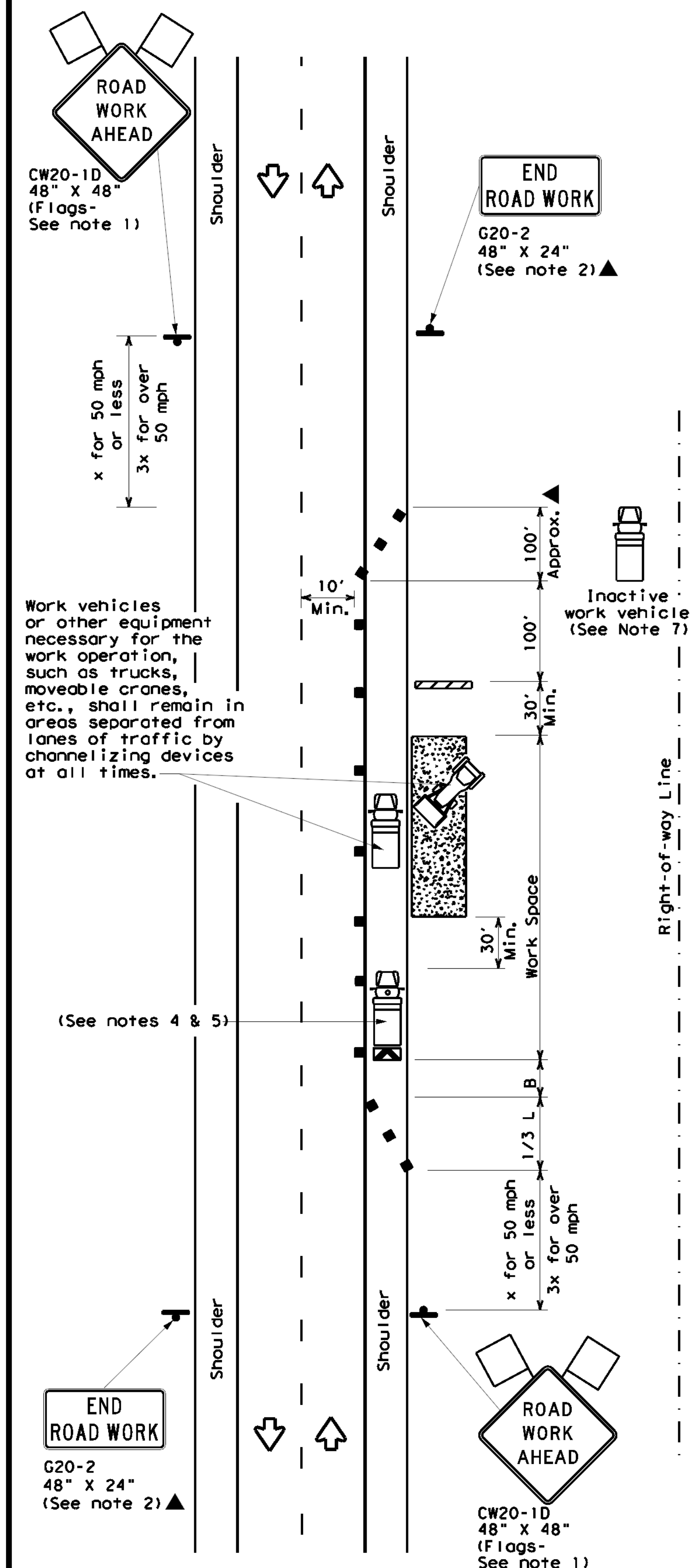
Conventional Roads



TCP (2-1b)

WORK SPACE ON SHOULDER

Conventional Roads



TCP (2-1c)

WORK VEHICLES ON SHOULDER

Conventional Roads

LEGEND

Symbol	Description	Symbol	Description
	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

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

Texas Department of Transportation — Traffic Operations Division Standard

TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK

TCP(2-1)-18

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© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-94 4-98 8-95 2-12 1-97 2-18	0915	14	050	DL VEST ST
	DIST		COUNTY	SHEET NO.
	SAT		WILSON	41

161

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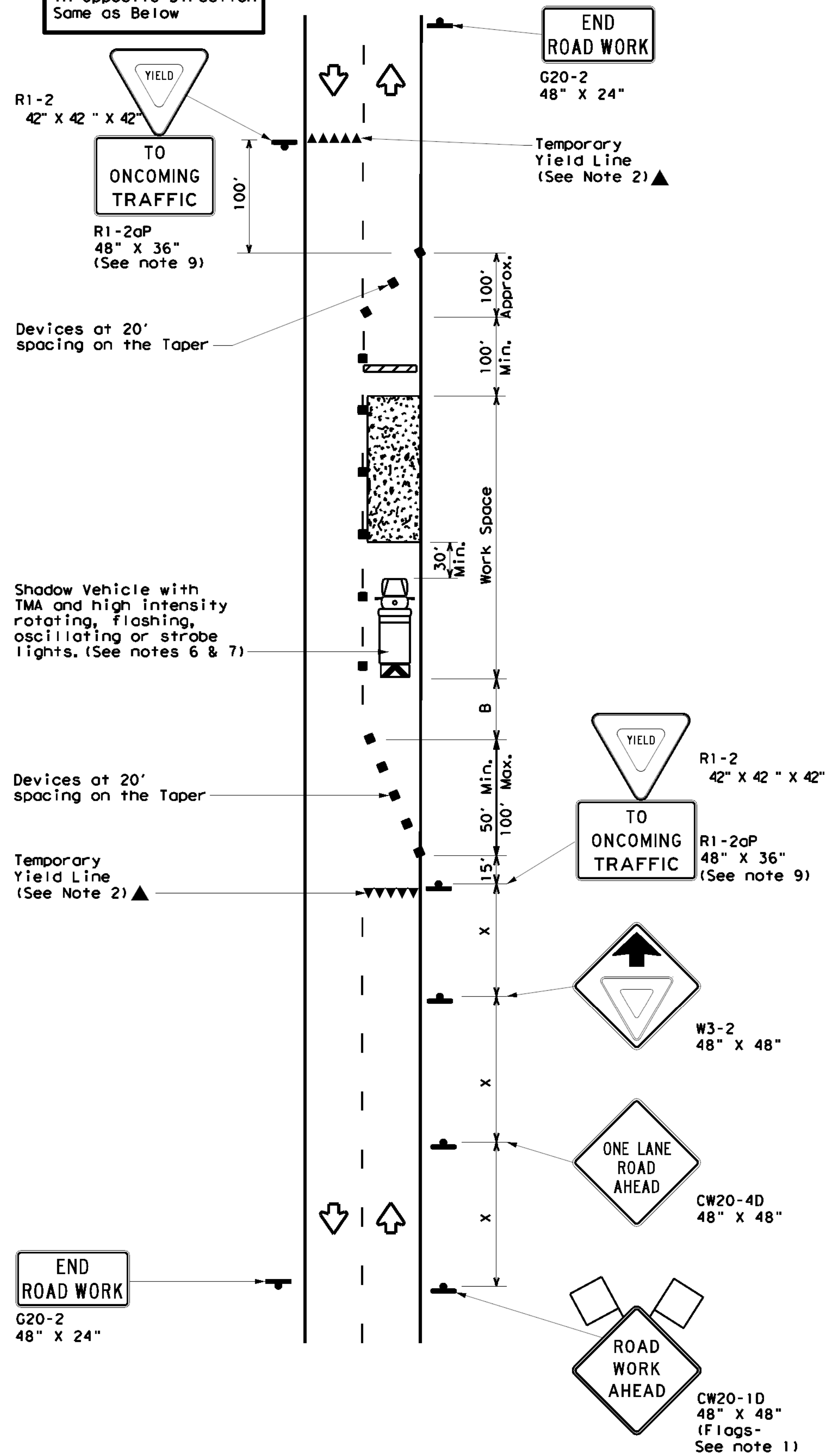


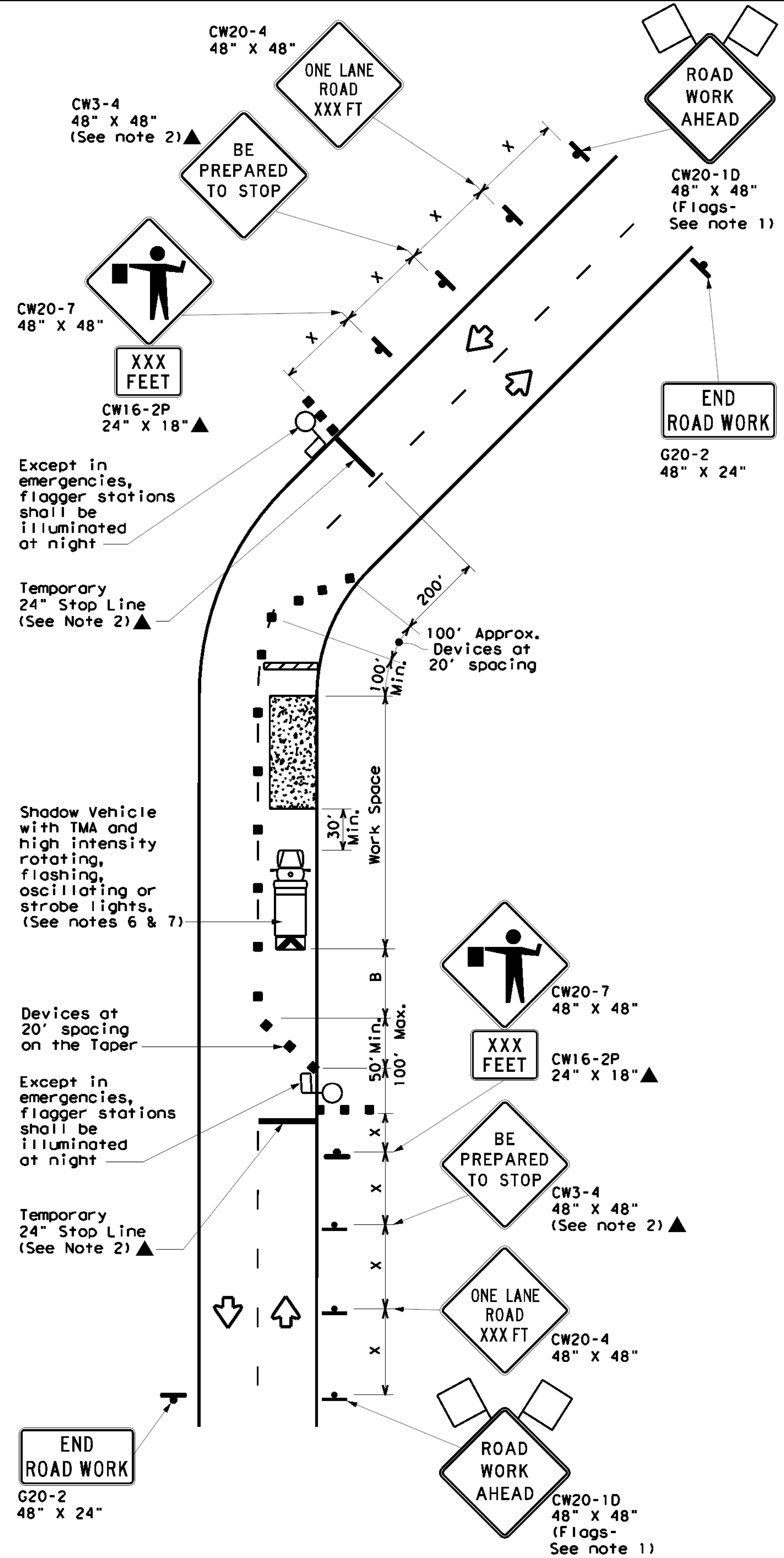
TCP (2-2a)

2-LANE ROADWAY WITHOUT PAVED SHOULDERS

ONE LANE TWO-WAY

CONTROL WITH YIELD SIGNS

(Less than 2000 ADT - See Note 9)



TCP (2-2b)

2-LANE ROADWAY WITHOUT PAVED SHOULDERS

ONE LANE TWO-WAY

CONTROL WITH FLAGGERS

LEGEND

Type 3 Barricade		Channelizing Devices	
Heavy Work Vehicle		Truck Mounted Attenuator (TMA)	
Trailer Mounted Flashing Arrow Board		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	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45	L=WS	450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

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

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

GENERAL NOTES

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

TCP (2-2a)

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

TCP (2-2b)

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

Texas Department of Transportation — Traffic Operations Division Standard

TRAFFIC CONTROL PLAN ONE-LANE TWO-WAY TRAFFIC CONTROL

TCP(2-2)-18

FILE: tcp2-2-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT 0915	SECT 14	JOB 050	HIGHWAY DL VEST ST
REVISIONS 8-95 3-03 1-97 2-12 4-98 2-18	DIST SAT		COUNTY WILSON	SHEET NO. 42

162

DATE: 2/21/2024
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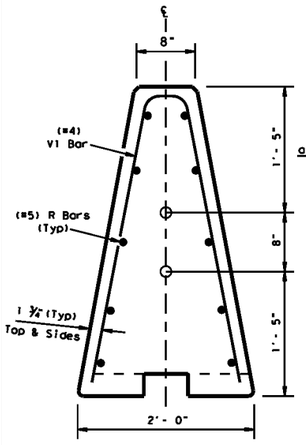
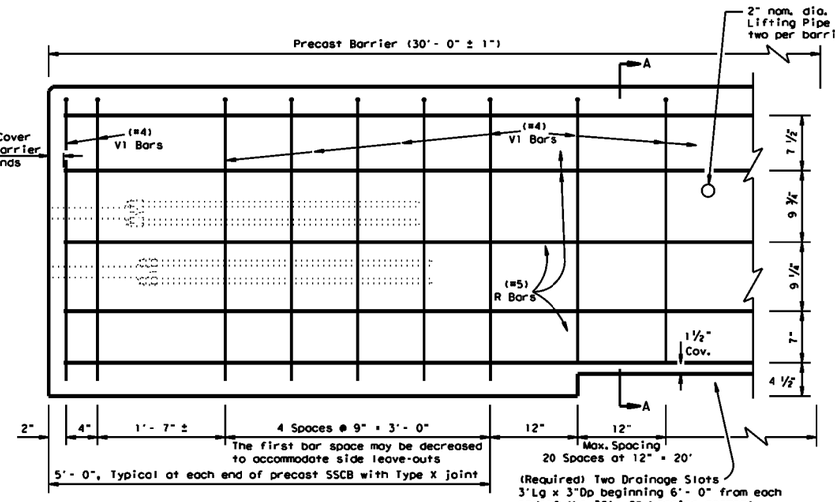


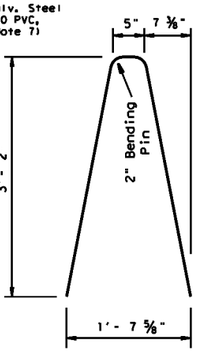
End View
Precast Barrier

Pipe locations for Joint Type X connection



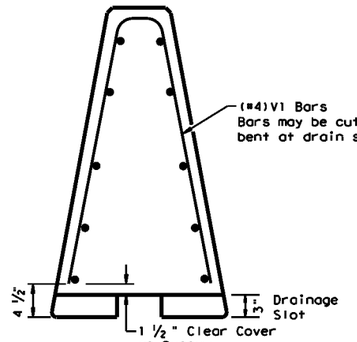
Reinforcement for Precast (SSCB)
Single Slope Concrete Barrier (Type 1)

Showing reinforcement for Joint Connection (Type X)

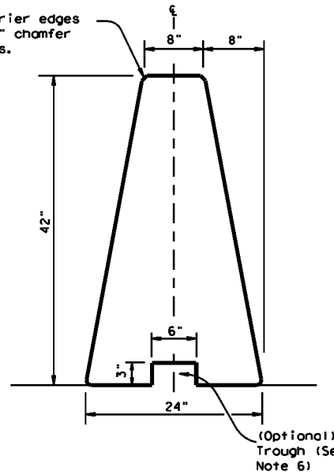


V1 Bar
#4 Rebar

Note:
V1 Bars above the drainage slots may bent to accomodate 1 ½" clear cover as directed by the Engineer.

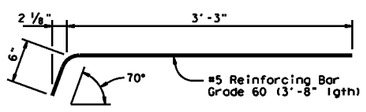


Section A-A
Steel Placement at (Required) Drainage Slots



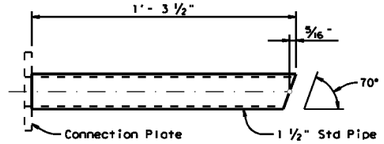
Single Slope Concrete Traffic Barrier

Precast SSCB barrier may be connected to cast-in-place SSBC. The joint connection "Types" may be used in the cast-in-place barrier, to match the precast barrier connection.



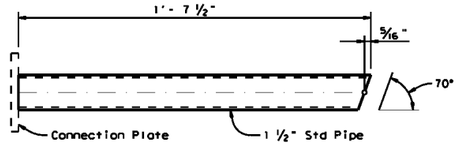
DEFORMED BAR ANCHOR DETAILS

Two (2) Bars required per assembly.
Eight (8) required per Joint.



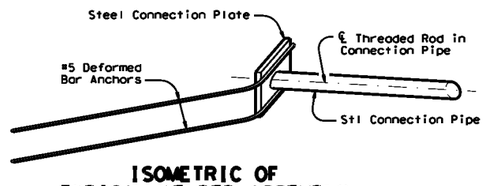
UPPER CONNECTION PIPE DETAILS

One (1) Steel Pipe required per Upper Assembly.
Two (2) required per Joint.



LOWER CONNECTION PIPE DETAILS

One (1) Steel Pipe required per Lower Assembly.
Two (2) required per Joint.

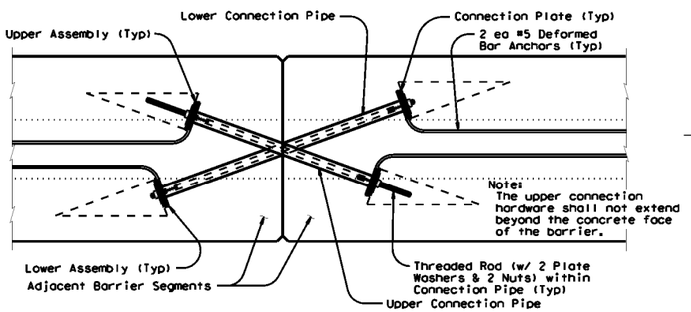


ISOMETRIC OF TYPICAL WELDED ASSEMBLY

Four (4) [2 Upper & 2 Lower] Assemblies required per Joint.

General Notes

1. Concrete shall be Class H with a minimum compressive strength of 3,600 psi.
2. Where used, rebar reinforcement shall be Grade 60 and conform to ASTM A615.
3. Precast barrier length shall be 30 ft. unless otherwise specified on the plans.
4. All precast barrier edges shall have a ¾" chamfer or a tooled radius.
5. All concrete, reinforcement, joint connection systems, grout etc. as shown, are considered as part of the barrier payment.
6. Conduit trough when required shall be shown elsewhere on the plans, or as directed by the Engineer.
7. Regardless of the method of handling, barrier lifting points shall be approx. 7.5 feet from the ends of the barrier. Lifting devices and attachments to barrier sections shall be approved by the Engineer.
8. Surface finishing and grouting (where required) shall be two parts sand one part cement with enough water to make the mixture plastic. Grouting shall be done in a manner that will assure a smooth surface. Surface finishing shall be considered subsidiary to the various bid items.
9. All steel assemblies shall be galvanized after fabrication in accordance with Item 445, "Galvanizing."



TYPE X JOINT INSTALLATION DETAIL

Barrier reinforcing and Type X Joint Leave-Out dimensions not shown for clarity.

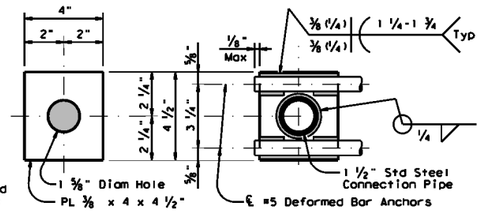
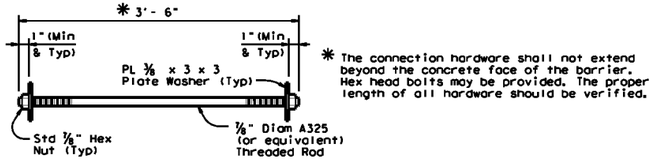


PLATE DIMENSIONS **WELDING DETAILS**

CONNECTION PLATE DETAILS

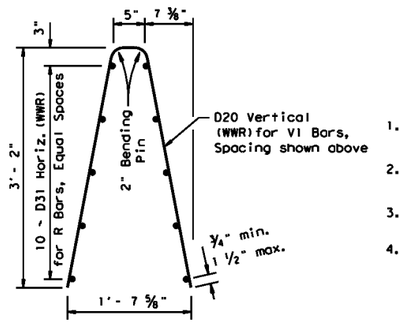
One (1) Plate required per assembly.
Four (4) required per Joint. All steel fittings for joint Type X shall be galvanized after fabrication in accordance with Item 445.



CONNECTION BOLT OR THREADED ROD DETAIL

Two (2) Threaded Rods (Or Equivalent Hex Hd. Bolts) (w/ Two (2) PL ⅜ x 3 x 3 Plate Washers & Two (2) Std Hex Nuts) required per Joint.

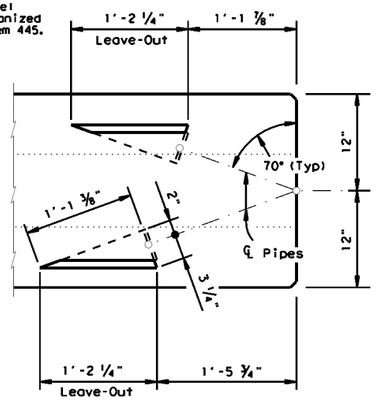
Weight of one precast 30 ft. (SSCB) segment = Approx. 10.5 Tons or 717 lbs per ft.



Welded Wire Reinforcement
(WWR) Option for Bars R and V1

(WWR) General Notes

1. Deformed Welded Wire Reinforcement (WWR) shall conform to ASTM A497.
2. Welded wire cage may be cut or bent to accommodate the Type X joint connection and drainage slots, as directed by the Engineer.
3. All reinforcement shall comply with Item 440, "Reinforcing Steel."
4. Combinations of reinforcing steel and WWR will be permitted, as directed by the Engineer. The dimension from the end of the barrier section to the first wire shall not exceed 3".



BARRIER PLAN AT JOINT

SHEET 1 OF 2

Texas Department of Transportation — Design Division Standard

SINGLE SLOPE CONCRETE BARRIER

PRECAST BARRIER (TYPE 1)

SSCB(2)-10

FILE: sscb210.dgn	DN: TxDOT	CK: AM	DW: BD	CK:
©TxDOT December 2010	CONT	SECT	JOB	HIGHWAY
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	SAT	WILSON		43

DATE: 2/21/2024
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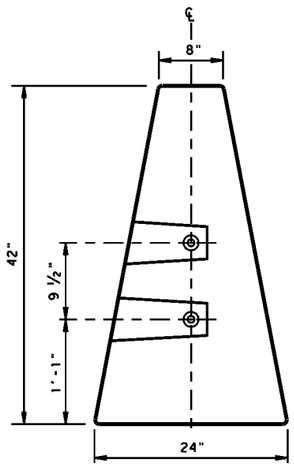
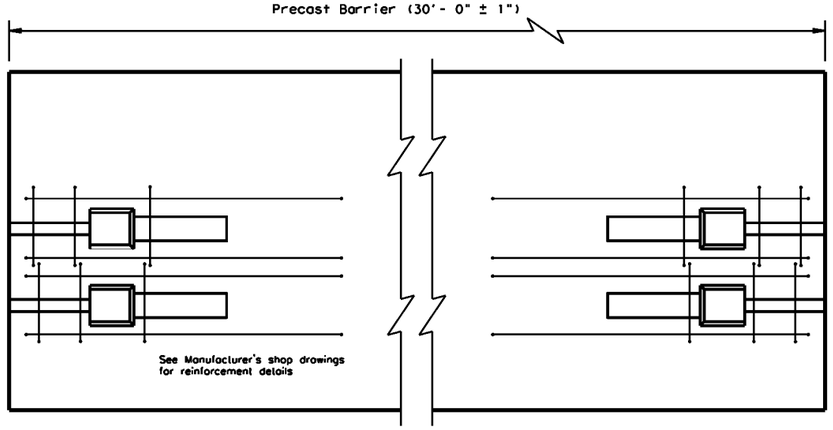
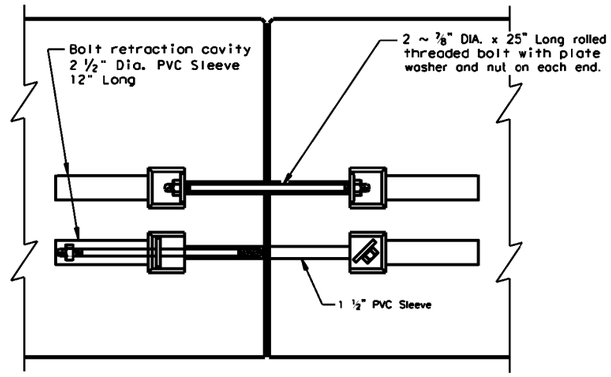


END VIEW
"QUICK-BOLT" POCKET LOCATIONS

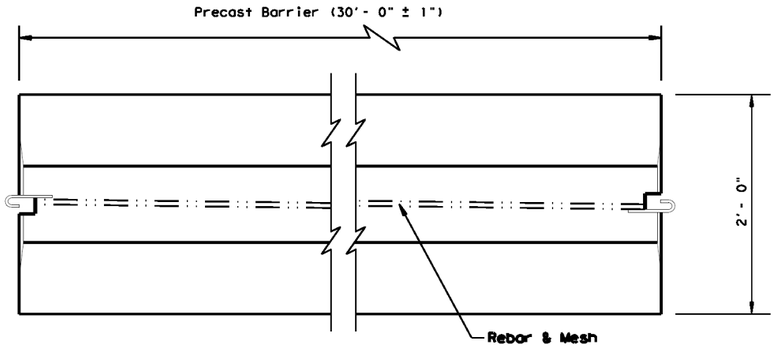


ELEVATION VIEW
"QUICK-BOLT" (SSCB)
See Manufacturer's shop drawing for additional details

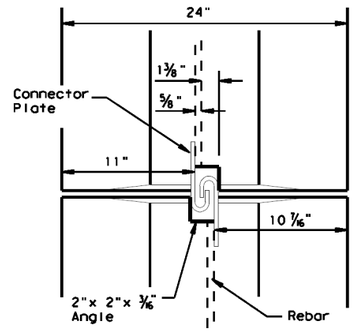


ELEVATION VIEW SHOWING JOINT CONNECTION
"QUICK-BOLT"

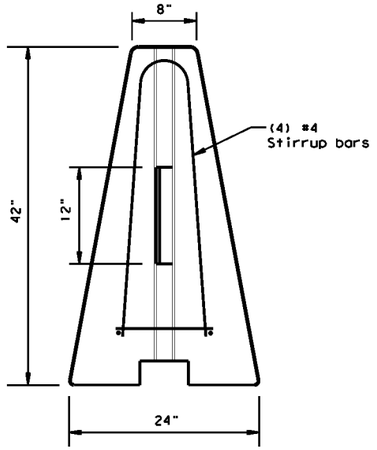
Joint Connection (Type Q)



TOP VIEW
PRECAST (SSCB) WITH J-J HOOKS
See Manufacturer's shop drawing for additional details



VIEW FROM ABOVE
J-J HOOK CONNECTION



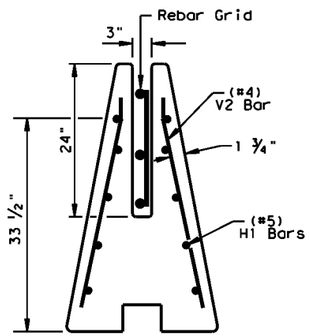
END VIEW

Proprietary Joint Connections (SSCB)

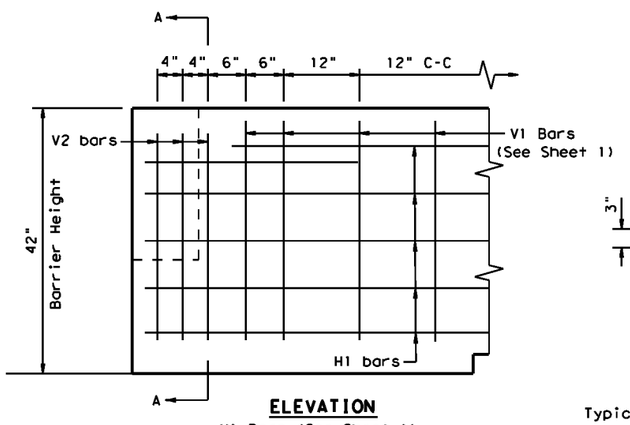
Two proprietary joint connections are acceptable as alternates to the (Type X) connection shown, here on. These joint connections types are:

J-J Hooks by Easi-Set Industries, (800)547-4045
Quick-Bolt by Bexar Concrete, (210)497-3773

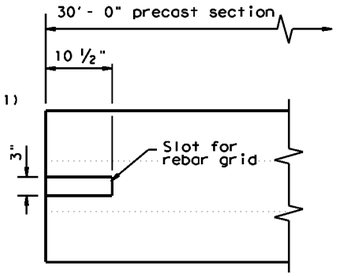
If one of these connection systems are exclusively specified in the plans, prior approval for sole source use must be obtained. Details of the connection components and barrier reinforcement for these systems, will be shown on the manufacturer's shop drawing(s) furnished to the Engineer.



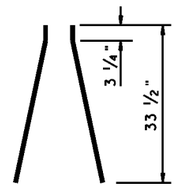
SECTION A-A
Showing (Type R) Rebar Grid



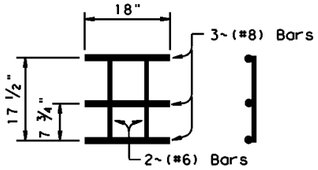
ELEVATION
V1 Bars (See Sheet 1)



TOP VIEW
JOINT CONNECTION
Typical at both ends of barrier segment



(#4) V2 BARS
6 ~ two piece bars per barrier segment



WELDED REBAR GRID

Joint Connection (Type R)

SHEET 2 OF 2

Texas Department of Transportation — Design Division Standard

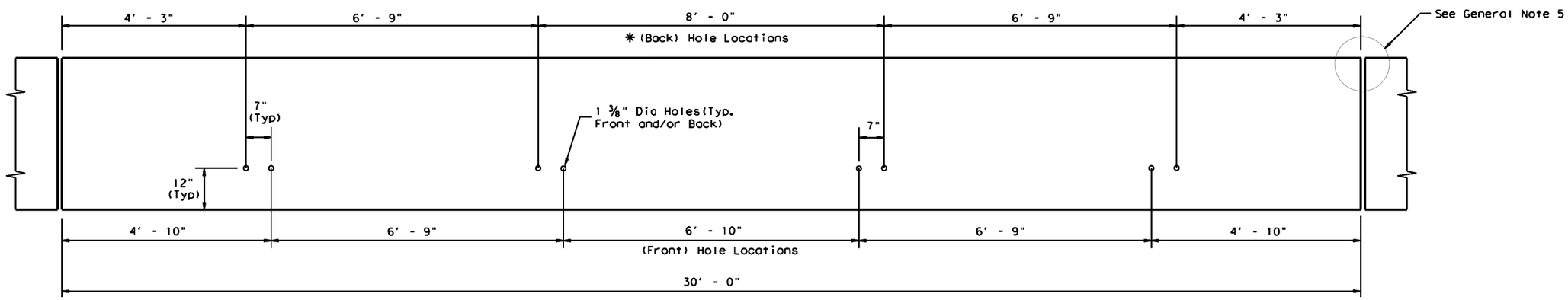
SINGLE SLOPE CONCRETE BARRIER

PRECAST BARRIER
(TYPE 1)

SSCB(2)-10

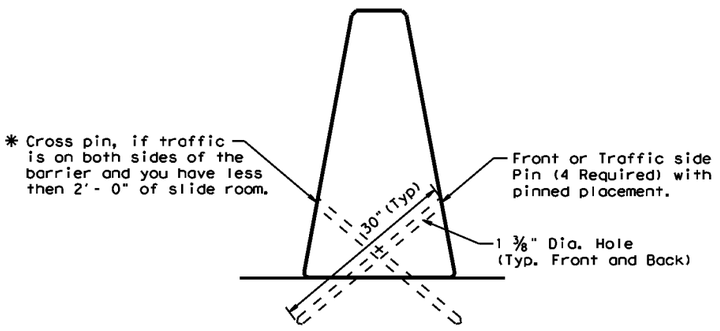
FILE: sscb210.dgn	DN: TxDOT	CK: AM	DW: VP	CK:
©TxDOT December 2010	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	14	050	DL VEST ST
	DIST	COUNTY		SHEET NO.
	SAT	WILSON		44

DATE: 2/21/2024
FILE: pw:\\txdot.projectwiseonline.com:TXDOT4/Documents/15 - SAT/Design Projects/0915140050/4 - Design/Plan Set/2. TCP/STANDARDS/sscb510.dgn



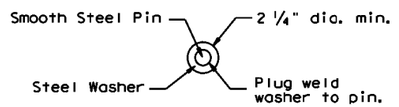
DETAIL 1

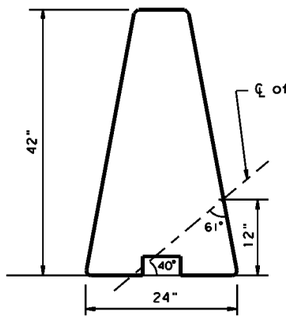
Precast SSCB(42")
Showing hole locations



DETAIL 2

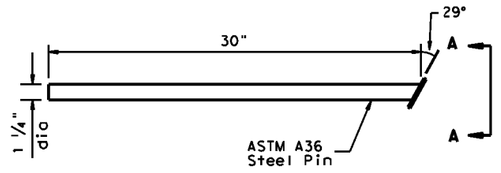
Placement on (ACP)
Asphalt Conc. Pavement
or Treated Base Material
(30" Pin required)



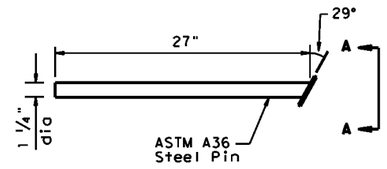


HOLE LOCATION DETAIL

VIEW A-A



(30") PIN DETAIL
See Detail 2

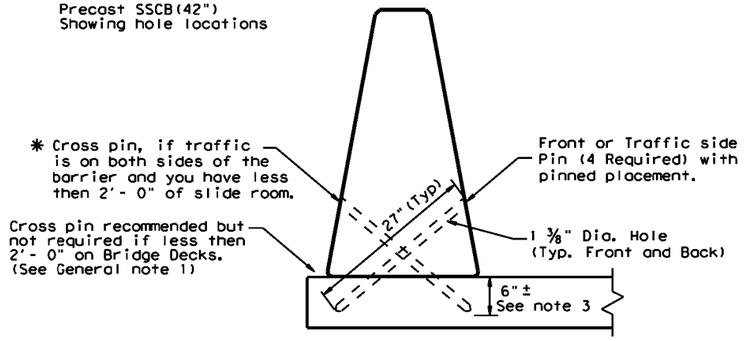


(27") PIN DETAIL
See Detail 3

Note:
Steel washer welded to pin at 29° angle so that the washer is flush with barrier surface. (See View A-A)

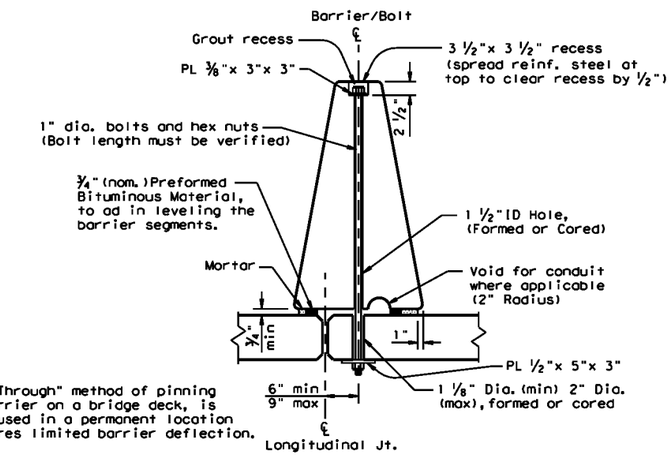
DETAIL 3

Bridge Deck or CRCP
(27" Pin required).



CORE DRILLING EXISTING BARRIER

Core drilling existing concrete barrier is permitted. Holes shall be drilled with coring or masonry drilling type equipment. Percussion (star) drilling shall not be used. A special drill bit (to cut through existing reinforcing) will likely be required. Spalls in the concrete exceeding ½" shall be patched.



Note:
The "Bolt Through" method of pinning precast barrier on a bridge deck, is primarily used in a permanent location that requires limited barrier deflection.

PRECAST SSCB (BOLT THROUGH) PLACEMENT OVER LONGITUDINAL EXPANSION JOINT

For bolt through locations, use the (Front) hole locations shown on Detail 1.

GENERAL NOTES

1. These details provide a method of laterally restraining precast concrete barrier to limit deflections under normally expected passenger vehicle impacts. These details are intended for use in work zones, primarily on bridge decks, or pavement where temporary barrier must be placed less then 2 ft. from the longitudinal edge of the deck or dropoff and parallel to the direction of travel. Other applications of these details are acceptable as directed by the Engineer.
2. Each precast concrete barrier section shall have a minimum of four or total of eight 1 3/8 in. ID holes formed or cored through the barrier. The center lines of the holes are shown in the hole location detail. If rebar is encountered, the entry point may be shifted 2" plus or minus longitudinally along the barrier. The eight holes are spaced along the length of the barrier as shown in Detail 1.
3. The drilling of the travel surface is accomplished by placing the pre-drilled barrier section on the travel surface in the desired position. Then the hole is drilled with the bit passing though the hole in the barrier. The bit is to be inserted into the hole in the barrier so that the travel surface is drilled to a point which is slightly more than the pin length.
4. Note that steel washers have been welded to the top of the steel pins to aid in the removal of the pins, when the barrier is removed.
5. See SSCB(2) standard sheet for reinforcement requirements and joint connection types.
6. The forming or coring of holes in the barrier, drilling of holes in bridge deck or pavement, fabrication and materials for the 1 ¼ in. pins, installation of pins, and any repair to the barrier shall be considered as subsidiary to the barrier bid items.
7. The barrier and travel surface will be repaired as directed by the Engineer in accordance with Item 429, "Concrete Structure Repair."
8. All steel pins shall be galvanized after fabrication in accordance with Item 445, "Galvanizing."
9. Weight of barrier is approx. 700 lbs per foot.

Texas Department of Transportation

Design Division Standard

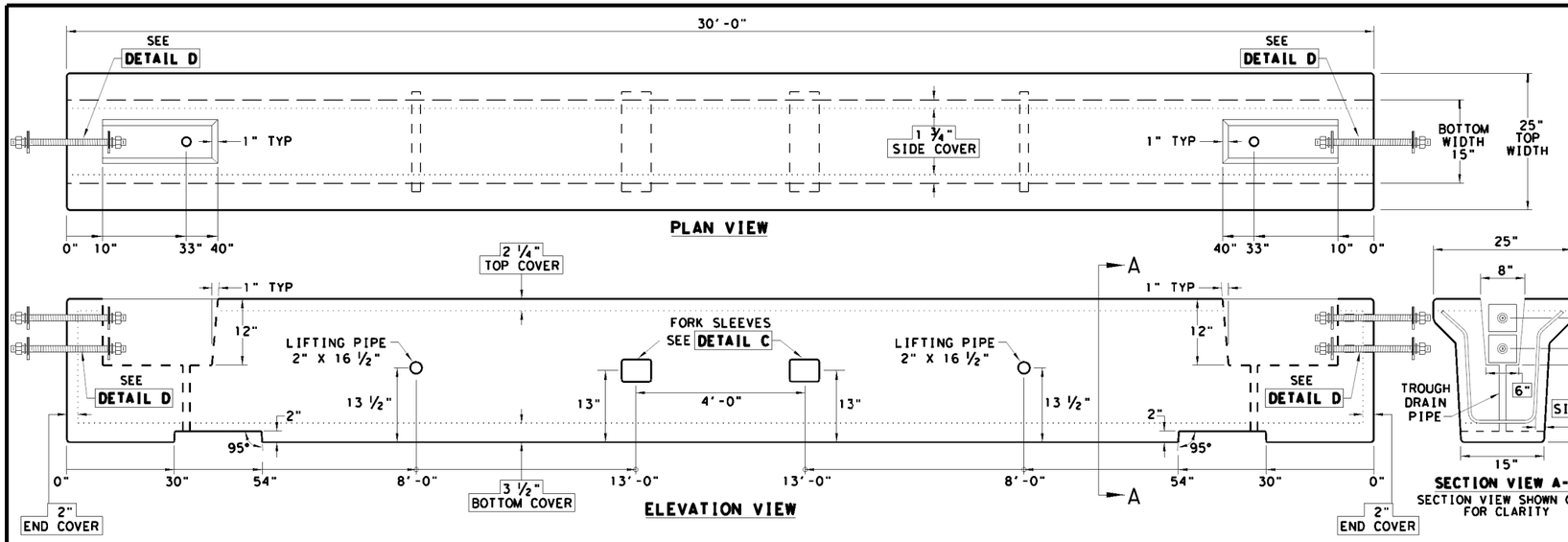
SINGLE SLOPE CONCRETE BARRIER

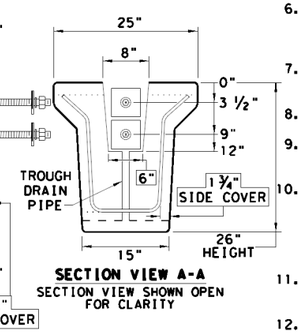
PRECAST BARRIER (TYPE 1) PINNED PLACEMENT

SSCB(5)-10

FILE: sscb510.dgn	DN: TxDOT	CK: AM	DW: BD	CK:
© TxDOT December 2010	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	14	050	DL VEST ST
	DIST	COUNTY		SHEET NO.
	SAT	WILSON		45

DATE:
FILE:





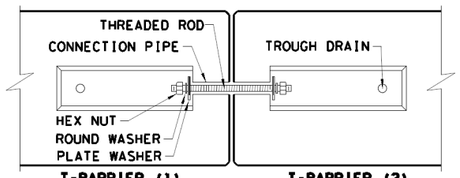
SECTION VIEW A-A
SECTION VIEW SHOWN OPEN FOR CLARITY

GENERAL NOTES

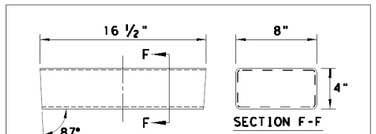
1. THE TL-3 LOW PROFILE CONCRETE BARRIER IS APPROVED FOR USE WITHIN TEMPORARY WORK ZONE LOCATIONS FOR HIGH-SPEED CONDITIONS.
2. PRECAST LOW PROFILE T-BARRIER (LPTB), LENGTH SHALL BE 30 FT.
3. CONCRETE SHALL BE CLASS H WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,600 PSI. CHAMFER EXPOSED EDGES ¾" AS SHOWN ON DETAIL.
4. JOINT CONNECTION HARDWARE SHALL BE IN ACCORDANCE WITH ITEM 449, "ANCHOR BOLTS." AND IS CONSIDERED SUBSIDIARY.
5. ALL STEEL HARDWARE USED FOR JOINT CONNECTION SHALL BE IN ACCORDANCE WITH ITEM 445, GALVANIZING.
6. PVC PIPE REQUIRED FOR THE JOINT CONNECTION, LIFTING PIPES AND TROUGH DRAINAGE PIPES SHALL BE IN ACCORDANCE WITH ITEM 481, AND MEET THE REQUIREMENTS OF ASTM D1785.
7. WELDED WIRE CAGE MAY BE CUT OR BENT, IF NECESSARY, BUT MUST BE APPROVED BY THE ENGINEER.
8. DEFORMED WELDED WIRE SHALL CONFORM TO ASTM A1064.
9. WHERE USED, REBAR REINFORCEMENT SHALL BE GRADE 60 AND CONFORM TO ASTM A615.
10. THE BARRIER SYSTEM IS DESIGNED TO HAVE APPROXIMATELY 25" OF DYNAMIC OR PERMANENT DEFLECTION AS IT CONTAINS AND REDIRECTS A TL-3 ERRANT PICKUP TRUCK. A MINIMUM LENGTH OF 180 FT. OF BARRIER RUN IS RECOMMENDED; SHORTER RUNS MAY BE CONSIDERED BUT DEFLECTIONS WOULD BE GREATER.
11. THE FORK SLEEVES ARE OPTIONAL. ADDITIONALLY, THE FORK SLEEVES MAY BE MADE OF PVC.
12. THE TL-3 LOW PROFILE BARRIER SHOULD NEVER BE ANCHORED IN ANY WAY.
13.

CONNECTION ROD HARDWARE (SEE DETAIL D)

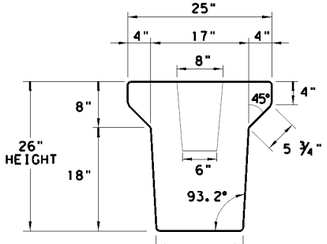
QTY	PART NAME	SIZE
2	THREADED ROD (ASTM A193 GR.B7)	⅞" X (26" LENGTH)
4	ROUND WASHER (ASTM F436)	⅞"
4	PLATE WASHER (A36)	5" X 5" X ½" THICK WITH 1" DIA. HOLE
4	HEAVY HEX NUT (ASTM A563)	⅞"
2	TROUGH DRAIN	1 ½" X 12" PVC PIPE
4	CONNECTION PIPE	1 ½" X 10" PVC PIPE



DETAIL D



FORK SLEEVE
DETAIL C (SEE NOTE: 11)



END VIEW
BARRIER SLOPE 1:18

WWR & REBAR INFORMATION TABLE

QTY	WWR - BAR	SIZE	DETAIL
31	WWR V	#4 - WWR D20	DETAIL A
6	WWR H	#5 - WWR D31	
6	BAR Y	#4	
2	BAR U1	#6 X 20" X 60"	DETAIL B
2	BAR U2	#6 X 13" X 60"	
2	BAR U3	#6 X 12" X 60"	
2	BAR U4	#6 X 11" X 60"	

RIGID PVC PIPE (SCH 40) TABLE

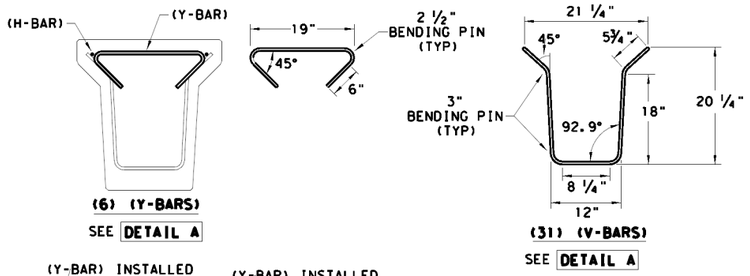
QTY	PART NAME	SIZE
4	CONNECTION ROD PIPE	1 ½" X 10" LENGTH
2	TROUGH DRAIN	1 ½" X 12" LENGTH
2	LIFTING PIPE	2" X 16 ½" LENGTH

COVER DIMENSIONS TABLE

BARRIER TOP	2 ¼"
BARRIER TOP FULL LENGTH U-BAR	1 ½"
BARRIER BOTTOM	3 ½"
BARRIER SIDE	1 ¾"
BARRIER END	2"

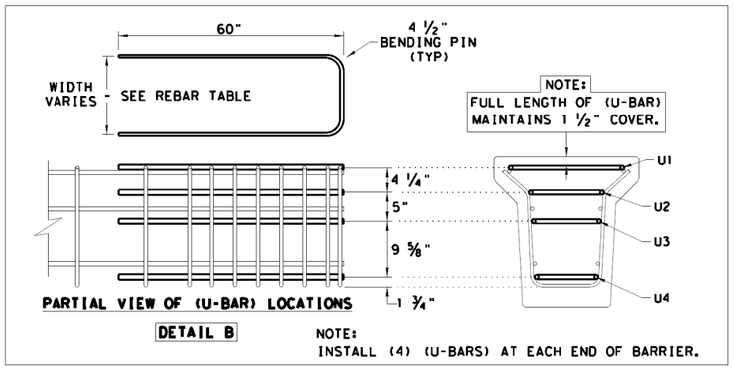
WORKING WIDTH IS APPOXIMATELY 51 INCHES.

THE WEIGHT OF ONE T-SHAPE 30 FT. PRECAST BARRIER IS APPROX. 7.4 TONS OR 500 LBS PER FOOT.



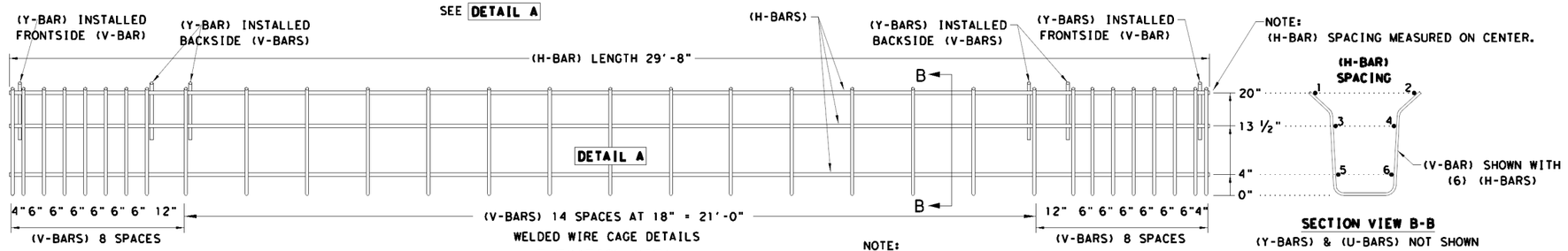
(6) (Y-BARS)
SEE DETAIL A

(31) (Y-BARS)
SEE DETAIL A



PARTIAL VIEW OF (U-BAR) LOCATIONS
DETAIL B

NOTE:
INSTALL (4) (U-BARS) AT EACH END OF BARRIER.



ELEVATION VIEW

NOTE:
(Y-BARS) SHOWN FOR PLACEMENT.

NOTE:
(H-BAR) SPACING MEASURED ON CENTER.

SECTION VIEW B-B
(Y-BARS) & (U-BARS) NOT SHOWN

Texas Department of Transportation

Design Division Standard

LOW PROFILE T-BARRIER PRECAST CONCRETE MASH - TL-3

LPTB-22

FILE: lptb21.dgn	DN: TxDOT	CK: KM	DW: CES	CK: CGL
© TxDOT: JULY 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	14	050	DL VEST ST
	DIST	COUNTY		SHEET NO.
	SAT	WILSON		46

DESIGN: | DRAFT: | CHECK:

Alignment Name: BL_FM1346
Alignment Description:
Alignment Style: Alignment\Baseline

		Station	Northing	Easting
Element: Linear				
POT	( )	10+00.000 R1	13679747	2244956.52
POT	( )	36+65.281 R1	13677447.3	2246303.72
Tangential Direction:		S30°21'42.704"E		
Tangential Length:		2665.281		

Alignment Name: BL_FM775
Alignment Description:
Alignment Style: Alignment\Baselin

		Station	Northing	Easting
Element: Linear				
POT	( )	600+00.000 R1	13677407.4	2246125.41
PC	( )	606+00.005 R1	13677710.4	2246643.29
Tangential Direction:		N59°40'07.558"E		
Tangential Length:		600.005		
Element: Circular				
PC	( )	606+00.005 R1	13677710.4	2246643.29
PI	( )	606+87.170 R1	13677754.4	2246718.52
CC	( )		13672759.8	2249539.8
PT	( )	607+74.322 R1	13677796.2	2246795.06
Radius:		5735.687		
Delta:		01°44'28.750"	Right	
Degree of Curvature		00°59'56.166"		
Length:		174.318		
Tangent:		87.166		
Chord:		174.311		
Middle Ordinate:		0.662		
External:		0.662		
Back Tangent Direction:		N59°40'07.558"E		
Back Radial Direction:		S30°19'52.442"E		
Chord Direction:		N60°32'21.933"E		
Ahead Radial Direction:		S28°35'23.692"E		
Ahead Tangent Direction:		N61°24'36.308"E		
Element: Linear				
PT	( )	607+74.322 R1	13677796.2	2246795.06
PC	( )	623+63.510 R1	13678556.6	2248190.48
Tangential Direction:		N61°24'36.308"E		
Tangential Length:		1589.187		
Element: Circular				
PC	( )	623+63.510 R1	13678556.6	2248190.48
PI	( )	624+62.563 R1	13678604	2248277.45
CC	( )		13688611.4	2242710.76
PT	( )	625+61.611 R1	13678652.9	2248363.59
Radius:		11450.967		
Delta:		00°59'28.379"	Left	
Degree of Curvature		00°30'01.287"		
Length:		198.102		
Tangent:		99.053		
Chord:		198.099		
Middle Ordinate:		0.428		
External:		0.428		
Back Tangent Direction:		N61°24'36.308"E		
Back Radial Direction:		S28°35'23.692"E		
Chord Direction:		N60°54'52.118"E		
Ahead Radial Direction:		S29°34'52.071"E		
Ahead Tangent Direction:		N60°25'07.929"E		
Element: Linear				
PT	( )	625+61.611 R1	13678652.9	2248363.59
POT	( )	638+91.481 R1	13679309.4	2249520.12
Tangential Direction:		N60°25'07.929"E		
Tangential Length:		1329.869		

Alignment Name: BL_Alexandria
Alignment Description:
Alignment Style: Alignment\Baselin

		Station	Northing	Easting
Element: Linear				
POT	( )	100+00.000 R1	13679665.9	2245004.04
PC	( )	102+37.769 R1	13679784.5	2245210.15
Tangential Direction:		N60°05'46.887"E		
Tangential Length:		237.769		
Element: Circular				
PC	( )	102+37.769 R1	13679784.5	2245210.15
PI	( )	104+07.736 R1	13679869.2	2245357.49
CC	( )		13679508.8	2245368.69
PT	( )	105+49.953 R1	13679793.8	2245509.8
Radius:		318		
Delta:		56°14'52.249"	Right	
Degree of Curvature		18°01'03.147"		
Length:		312.184		
Tangent:		169.967		
Chord:		299.798		
Middle Ordinate:		37.546		
External:		42.573		
Back Tangent Direction:		N60°05'46.887"E		
Back Radial Direction:		S29°54'13.113"E		
Chord Direction:		N88°13'13.011"E		
Ahead Radial Direction:		S26°20'39.136"W		
Ahead Tangent Direction:		S63°39'20.864"E		
Element: Linear				
PT	( )	105+49.953 R1	13679793.8	2245509.8
PC	( )	107+53.080 R1	13679703.6	2245691.84
Tangential Direction:		S63°39'20.864"E		
Tangential Length:		203.127		
Element: Circular				
PC	( )	107+53.080 R1	13679703.6	2245691.84
PI	( )	108+45.294 R1	13679662.7	2245774.47
CC	( )		13679434.8	2245558.71
PT	( )	109+32.009 R1	13679582.4	2245819.86
Radius:		300		
Delta:		34°10'22.002"	Right	
Degree of Curvature		19°05'54.935"		
Length:		178.928		
Tangent:		92.214		
Chord:		176.288		
Middle Ordinate:		13.241		
External:		13.853		

NOTES:

1. ALIGNMENTS DEVELOPED IN OPENROADS DESIGNER.
2. HORIZONTAL ALIGNMENTS ARE BEST FIT ONLY.

STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

Texas Department of Transportation

DL VEST STREET ALIGNMENT DATA

SHEET: 1 OF 4

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		47

Back Tangent Direction:		S63°39'20.864"E		
Back Radial Direction:		S26°20'39.136"W		
Chord Direction:		S46°34'09.863"E		
Ahead Radial Direction:		S60°31'01.138"W		
Ahead Tangent Direction:		S29°28'58.862"E		
Element: Linear				
PT	( )	109+32.009 R1	13679582.4	2245819.86
POT	( )	109+65.607 R1	13679553.2	2245836.39
Tangential Direction:		S29°28'58.862"E		
Tangential Length:		33.598		

Alignment Name: BL_JESSICA
Alignment Description:
Alignment Style: **Alignment\Baseline**

		Station	**Northing**	**Easting**
Element: Linear				
POT	( )	199+98.456 R1	13679736.3	2245625.93
PC	( )	203+06.818 R1	13680010.5	2245766.85
Tangential Direction:		N27°11'33.424"E		
Tangential Length:		308.362		
Element: Circular				
PC	( )	203+06.818 R1	13680010.5	2245766.85
PI	( )	204+06.808 R1	13680099.5	2245812.54
CC	( )		13679868.9	2246042.59
PT	( )	205+00.267 R1	13680145	2245901.59
Radius:		310		
Delta:		35°45'15.187"	Right	
Degree of Curvature (Arc):		18°28'57.034"		
Length:		193.449		
Tangent:		99.991		
Chord:		190.325		
Middle Ordinate:		14.968		
External:		15.727		
Back Tangent Direction:		N27°11'33.424"E		
Back Radial Direction:		S62°48'26.576"E		
Chord Direction:		N45°04'11.018"E		
Ahead Radial Direction:		S27°03'11.389"E		
Ahead Tangent Direction:		N62°56'48.611"E		
Element: Linear				
PT	( )	205+00.267 R1	13680145	2245901.59
PC	( )	207+41.436 R1	13680254.6	2246116.38
Tangential Direction:		N62°56'48.611"E		
Tangential Length:		241.169		
Element: Circular				
PC	( )	207+41.436 R1	13680254.6	2246116.38
PI	( )	208+62.266 R1	13680309.6	2246223.98
CC	( )		13679836.1	2246330.14
PT	( )	209+77.974 R1	13680305.8	2246344.76
Radius:		470		
Delta:		28°50'07.334"	Right	
Degree of Curvature (Arc):		12°11'26.129"		
Length:		236.538		
Tangent:		120.83		
Chord:		234.05		
Middle Ordinate:		14.802		
External:		15.283		
Back Tangent Direction:		N62°56'48.611"E		
Back Radial Direction:		S27°03'11.389"E		
Chord Direction:		N77°21'52.278"E		
Ahead Radial Direction:		S01°46'55.945"W		
Ahead Tangent Direction:		S88°13'04.055"E		
Element: Linear				
PT	( )	209+77.974 R1	13680305.8	2246344.76
POT	( )	211+17.546 R1	13680301.5	2246484.26
Tangential Direction:		S88°13'04.055"E		
Tangential Length:		139.572		

Alignment Name: BL_WS
Alignment Description:
Alignment Style: **Alignment\Baseline**

		Station	**Northing**	**Easting**
Element: Linear				
POT	( )	300+00.000 R1	13680390.1	2246486.44
PC	( )	301+09.170 R1	13680280.9	2246483.76
Tangential Direction:		S01°24'28.910"W		
Tangential Length:		109.17		
Element: Circular				
PC	( )	301+09.170 R1	13680280.9	2246483.76
PI	( )	302+87.524 R1	13680102.7	2246477.84
CC	( )		13680275	2246663.66
PT	( )	303+90.260 R1	13680095.1	2246656.04
Radius:		180		
Delta:		89°28'25.742"	Left	
Degree of Curvature (Arc):		31°49'51.559"		
Length:		281.09		
Tangent:		178.354		
Chord:		253.387		
Middle Ordinate:		52.138		
External:		73.398		
Back Tangent Direction:		S01°53'58.722"W		
Back Radial Direction:		N88°06'01.278"W		
Chord Direction:		S42°50'14.149"E		
Ahead Radial Direction:		S02°25'32.980"W		
Ahead Tangent Direction:		S87°34'27.020"E		
Element: Linear				
PT	( )	303+90.260 R1	13680095.1	2246656.04
PC	( )	311+64.439 R1	13680055.7	2247429.21
Tangential Direction:		S87°04'57.208"E		
Tangential Length:		774.179		
Element: Circular				
PC	( )	311+64.439 R1	13680055.7	2247429.21
PI	( )	311+88.223 R1	13680054.5	2247452.97
CC	( )		13680135.6	2247433.28
PT	( )	312+10.677 R1	13680066.5	2247473.52
Radius:		80		
Delta:		33°06'55.829"	Left	
Degree of Curvature (Arc):		71°37'11.008"		
Length:		46.238		
Tangent:		23.785		
Chord:		45.597		
Middle Ordinate:		3.317		
External:		3.461		
Back Tangent Direction:		S87°04'57.208"E		
Back Radial Direction:		S02°55'02.792"W		

NOTES:

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Martha Gandara
DATE: 2/21/2024

Texas Department of Transportation

DL VEST STREET ALIGNMENT DATA

SHEET: 2 OF 4

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		48

DESIGN: | DRAFT: | CHECK:

Chord Direction:		N76°21'34.877"E		
Ahead Radial Direction:		S30°11'53.038"E		
Ahead Tangent Direction:		N59°48'06.962"E		
Element: Linear				
PT	( )	312+10.677 R1	13680066.5	2247473.52
PI	( )	314+86.350 R1	13680205.1	2247711.79
Tangential Direction:		N59°48'06.962"E		
Tangential Length:		275.674		
Element: Linear				
PI	( )	314+86.350 R1	13680205.1	2247711.79
POT	( )	315+25.332 R1	13680229.8	2247741.96
Tangential Direction:		N50°42'45.446"E		
Tangential Length:		38.982		

Alignment Name: SanAntonio_BL
Alignment Description:
Alignment Style: **Alignment\Baseline**

		Station	**Northing**	**Easting**
Element: Linear				
POT	( )	400+00.000 R1	13680308	2247737.77
PC	( )	400+36.181 R1	13680273.4	2247727.37
Tangential Direction:		S16°42'24.801"W		
Tangential Length:		36.181		
Element: Circular				
PC	( )	400+36.181 R1	13680273.4	2247727.37
PI	( )	400+73.524 R1	13680237.6	2247716.63
CC	( )		13680261.9	2247765.68
PT	( )	400+96.266 R1	13680224.4	2247751.58
Radius:		40		
Delta:		86°03'52.497"	Left	
Degree of Curvature (Arc):		143°14'22.016"		
Length:		60.084		
Tangent:		37.343		
Chord:		54.593		
Middle Ordinate:		10.761		
External:		14.722		
Back Tangent Direction:		S16°42'24.801"W		
Back Radial Direction:		N73°17'35.199"W		
Chord Direction:		S26°19'31.448"E		
Ahead Radial Direction:		S20°38'32.304"W		
Ahead Tangent Direction:		S69°21'27.696"E		
Element: Linear				
PT	( )	400+96.266 R1	13680224.4	2247751.58
PI	( )	404+12.165 R1	13680113.1	2248047.2
Tangential Direction:		S69°21'27.696"E		
Tangential Length:		315.899		
Element: Linear				
PI	( )	404+12.165 R1	13680113.1	2248047.2
PC	( )	407+97.919 R1	13679972.8	2248406.55
Tangential Direction:		S68°40'48.674"E		
Tangential Length:		385.754		
Element: Circular				
PC	( )	407+97.919 R1	13679972.8	2248406.55
PI	( )	408+99.722 R1	13679935.8	2248501.39
CC	( )		13680438.6	2248588.34
PT	( )	409+98.778 R1	13679938.8	2248603.15
Radius:		500		
Delta:		23°01'00.279"	Left	
Degree of Curvature (Arc):		11°27'32.961"		
Length:		200.859		
Tangent:		101.802		
Chord:		199.511		
Middle Ordinate:		10.052		
External:		10.258		
Back Tangent Direction:		S68°40'48.674"E		
Back Radial Direction:		S21°19'11.326"W		
Chord Direction:		S80°11'18.814"E		
Ahead Radial Direction:		S01°41'48.953"E		
Ahead Tangent Direction:		N88°18'11.047"E		
Element: Linear				
PT	( )	409+98.778 R1	13679938.8	2248603.15
PI	( )	410+77.596 R1	13679941.2	2248681.93
Tangential Direction:		N88°18'11.047"E		
Tangential Length:		78.818		
Element: Linear				
PI	(BL CL-3)	410+77.596 R1	13679941.2	2248681.93
PI	( )	411+08.210 R1	13679942.9	2248712.49
Tangential Direction:		N86°45'32.026"E		
Tangential Length:		30.614		
Element: Linear				
PI	(BL CL-4)	411+08.210 R1	13679942.9	2248712.49
PI	( )	413+14.454 R1	13679956.8	2248918.27
Tangential Direction:		N86°08'34.805"E		
Tangential Length:		206.243		
Element: Linear				
PI	( )	413+14.454 R1	13679956.8	2248918.27
PC	( )	413+87.642 R1	13679970.2	2248990.21
Tangential Direction:		N79°24'49.539"E		
Tangential Length:		73.188		
Element: Circular				
PC	( )	413+87.642 R1	13679970.2	2248990.21
PI	( )	414+15.744 R1	13679975.4	2249017.84
CC	( )		13680166.8	2248953.47
PT	( )	414+43.481 R1	13679988	2249042.97
Radius:		200		
Delta:		15°59'48.253"	Left	
Degree of Curvature (Arc):		28°38'52.403"		
Length:		55.839		
Tangent:		28.102		
Chord:		55.658		
Middle Ordinate:		1.946		
External:		1.965		
Back Tangent Direction:		N79°24'49.539"E		
Back Radial Direction:		S10°35'10.461"E		
Chord Direction:		N71°24'55.413"E		
Ahead Radial Direction:		S26°34'58.714"E		
Ahead Tangent Direction:		N63°25'01.286"E		
Element: Linear				
PT	( )	414+43.481 R1	13679988	2249042.97
POT	( )	415+22.347 R1	13680023.3	2249113.5
Tangential Direction:		N63°25'01.286"E		
Tangential Length:		78.866		

Alignment Name: BL_DL_VEST1

NOTES:

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PROFESSIONAL ENGINEER

Martha Gandara
DATE: 2/21/2024

Texas Department of Transportation

DL VEST STREET ALIGNMENT DATA

SHEET: 3 OF 4

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		49

DESIGN: DRAFT: CHECK:

Alignment Description:				
Alignment Style:		**Alignment\Baseline**		
		Station	**Northing**	**Easting**
Element: Linear				
POT	( )	499+96.067 R1	13679989	2249045.03
PI	( )	502+89.944 R1	13679730.7	2249185.2
Tangential Direction:		S28°29'22.356"E		
Tangential Length:		293.877		
Element: Linear				
PI	( )	502+89.944 R1	13679730.7	2249185.2
PC	( )	506+67.133 R1	13679400.7	2249367.96
Tangential Direction:		S28°58'52.573"E		
Tangential Length:		377.189		
Element: Circular				
PC	( )	506+67.133 R1	13679400.7	2249367.96
PI	( )	506+81.462 R1	13679388.2	2249374.9
CC	( )		13679158.5	2248930.57
PT	( )	506+95.782 R1	13679375.3	2249381.12
Radius:		500		
Delta:		03°16'58.673"	Right	
Degree of Curvature (Arc):		11°27'32.961"		
Length:		28.649		
Tangent:		14.329		
Chord:		28.645		
Middle Ordinate:		0.205		
External:		0.205		
Back Tangent Direction:		S28°58'52.573"E		
Back Radial Direction:		S61°01'07.427"W		
Chord Direction:		S27°20'23.236"E		
Ahead Radial Direction:		S64°18'06.100"W		
Ahead Tangent Direction:		S25°41'53.900"E		
Element: Linear				
PT	( )	506+95.782 R1	13679375.3	2249381.12
POT	( )	508+21.965 R1	13679261.6	2249435.83
Tangential Direction:		S25°41'53.900"E		
Tangential Length:		126.183		

Alignment Name:		1346_BOS		
Alignment Description:		BACK OF SIDEWALK FOR SIDEWALK ALONG FM 1346		
Alignment Style:		**Alignment\Baseline**		
		Station	**Northing**	**Easting**
Element: Linear				
POT	( )	0+00.000	13679669.7	2245082.97
PI	( )	2+49.651	13679454.2	2245209.16
Tangential Direction:		S30°21'42.704"E		
Tangential Length:		249.651		
Element: Linear				
PI	( )	2+49.651	13679454.2	2245209.16
PI	( )	2+74.227	13679432.5	2245220.71
Tangential Direction:		S28°01'47.460"E		
Tangential Length:		24.576		
Element: Linear				
PI	( )	2+74.227	13679432.5	2245220.71
PI	( )	3+14.314	13679398	2245240.97
Tangential Direction:		S30°21'42.704"E		
Tangential Length:		40.087		
Element: Linear				
PI	( )	3+14.314	13679398	2245240.97
PI	( )	3+35.198	13679379.9	2245251.53
Tangential Direction:		S30°21'42.704"E		
Tangential Length:		20.884		
Element: Linear				
PI	( )	3+35.198	13679379.9	2245251.53
PI	( )	8+83.630	13678906.7	2245528.74
Tangential Direction:		S30°21'42.704"E		
Tangential Length:		548.432		
Element: Linear				
PI	( )	8+83.630	13678906.7	2245528.74
PI	( )	8+94.110	13678897.7	2245534.04
Tangential Direction:		S30°21'42.704"E		
Tangential Length:		10.48		
Element: Linear				
PI	( )	8+94.110	13678897.7	2245534.04
PI	( )	9+24.691	13678871.3	2245549.5
Tangential Direction:		S30°21'42.704"E		
Tangential Length:		30.581		
Element: Linear				
PI	( )	9+24.691	13678871.3	2245549.5
PI	( )	9+33.891	13678863.4	2245554.15
Tangential Direction:		S30°21'42.704"E		
Tangential Length:		9.2		
Element: Linear				
PI	( )	9+33.891	13678863.4	2245554.15
PI	( )	12+24.032	13678613	2245700.8
Tangential Direction:		S30°21'42.704"E		
Tangential Length:		290.141		
Element: Linear				
PI	( )	12+24.032	13678613	2245700.8
PI	( )	12+84.345	13678561	2245731.29
Tangential Direction:		S30°21'42.704"E		
Tangential Length:		60.313		
Element: Linear				
PI	( )	12+84.345	13678561	2245731.29
PI	( )	13+22.424	13678524.5	2245742.22
Tangential Direction:		S16°41'25.999"E		
Tangential Length:		38.079		
Element: Linear				
PI	( )	13+22.424	13678524.5	2245742.22
PI	( )	14+22.424	13678438.2	2245792.77
Tangential Direction:		S30°21'42.704"E		
Tangential Length:		100		
Element: Linear				
PI	( )	14+22.424	13678438.2	2245792.77
PI	( )	15+74.988	13678308.1	2245872.46
Tangential Direction:		S31°29'18.924"E		
Tangential Length:		152.564		
Element: Linear				
PI	( )	15+74.988	13678308.1	2245872.46
PI	( )	17+11.211	13678179.5	2245917.47
Tangential Direction:		S19°17'48.238"E		
Tangential Length:		136.223		

NOTES:

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Martha Gandara

DATE: 2/21/2024

Texas Department of Transportation

DL VEST STREET ALIGNMENT DATA

SHEET: 4 OF 4

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		50

DESIGN: DRAFT: CHECK:

2/21/2024 7:46:29 AM
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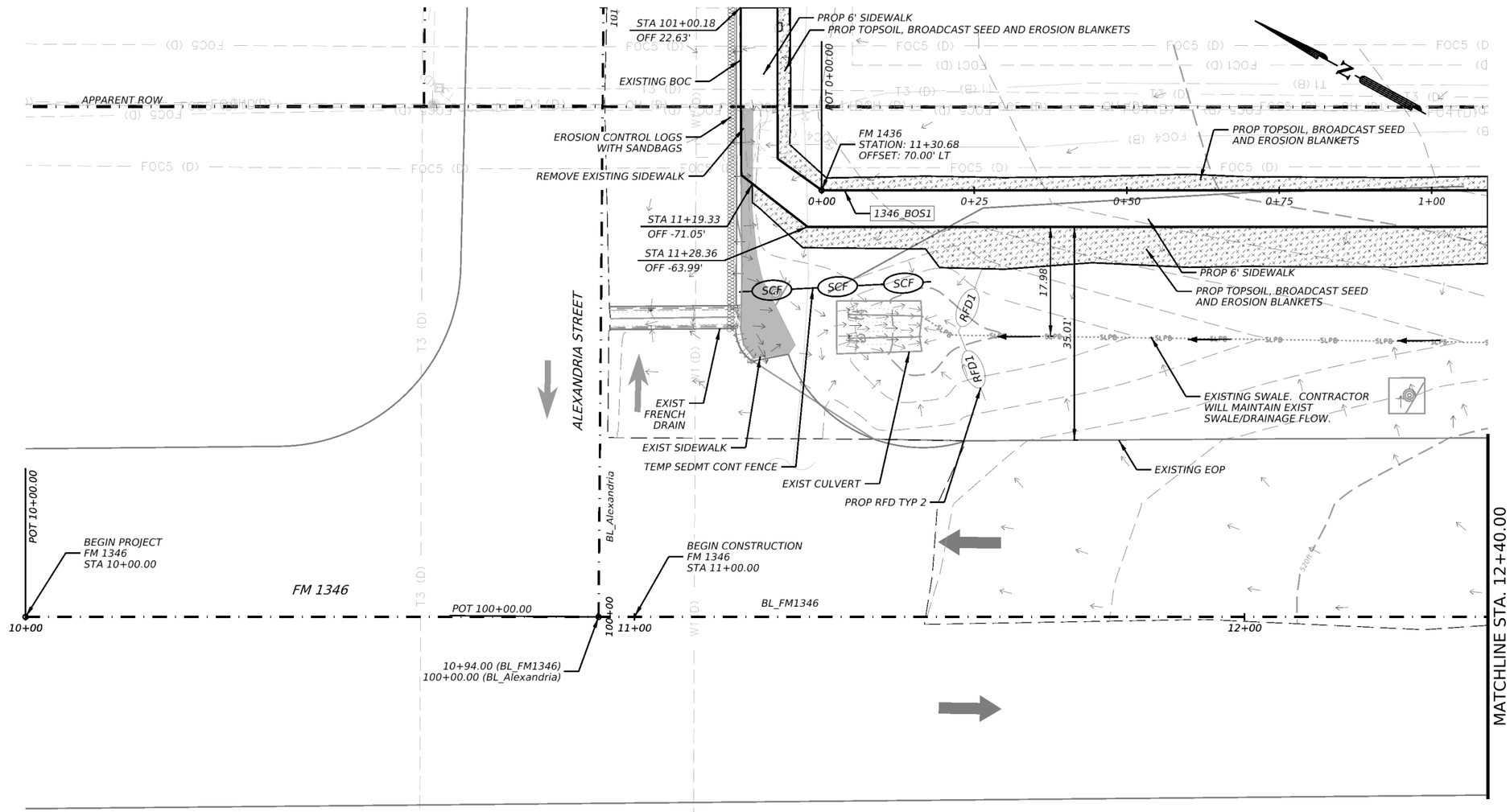

PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

NOTES:

1. SEE UTILITY PLANS FOR INFORMATION ON UTILITIES. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITIES BEFORE BEGINNING ANY TYPE OF WORK.
2. HORIZONTAL ALIGNMENTS AND ROW PROVIDED IS BEST FIT.
3. SEE CROSS-SECTIONS FOR ADDITIONAL INFORMATION.

QTY FM 1346 , SHT 1 of 11

ITEM NO.	ITEM	UNIT	QUANTITY
0104-6015	REMOVING CONC (SIDEWALKS)	SY	3
0110-6003	EXCAVATION (SPECIAL)	CY	6
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	14
0160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	107
0164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	107
0168-6001	VEGETATIVE WATERING	MG	2
0169-6004	SOIL RETENTION BLANKETS (CL 1) (TY D)	SY	112
0506-6002	ROCK FILTER DAMS (INSTALL) (TY 2)	LF	25
0506-6011	ROCK FILTER DAMS (REMOVE)	LF	25
0506-6035	SANDBAGS FOR EROSION CONTROL	EA	10
0506-6041	BIODEG EROSN CONT LOGS (INSTL) (12")	LF	55
0506-6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	55
0531-6001	CONC SIDEWALKS (4")	SY	100

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Martha Gandara

DATE: 2/21/2024

SCALE: 1"=20'

Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN FM 1346

SHEET: 1 OF 11

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		51

DESIGN: DRAFT: CHECK:

2/21/2024 7:46:52 AM
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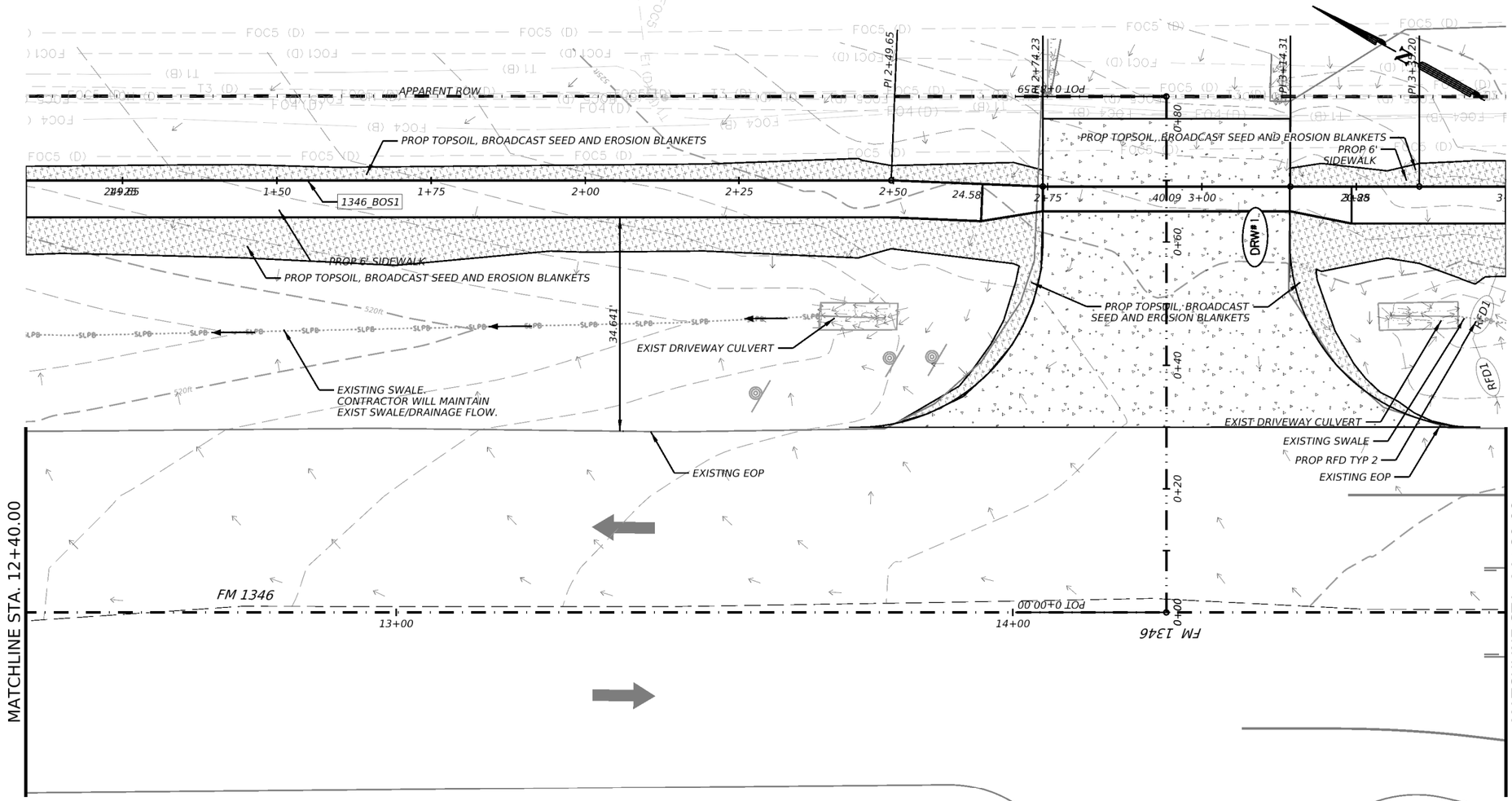

PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

NOTES:

1. SEE UTILITY PLANS FOR INFORMATION ON UTILITIES. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITIES BEFORE BEGINNING ANY TYPE OF WORK.
2. HORIZONTAL ALIGNMENTS AND ROW PROVIDED IS BEST FIT.
3. SEE CROSS-SECTIONS FOR ADDITIONAL INFORMATION.

QTY FM 1346 , SHT 2 of 11

ITEM NO.	ITEM	UNIT	QUANTITY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	145
0110-6003	EXCAVATION (SPECIAL)	CY	38
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	52
0160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	230
0164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	230
0168-6001	VEGETATIVE WATERING	MG	4
0169-6004	SOIL RETENTION BLANKETS (CL 1) (TY D)	SY	226
0506-6002	ROCK FILTER DAMS (INSTALL) (TY 2)	LF	25
0506-6011	ROCK FILTER DAMS (REMOVE)	LF	25
0506-6035	SANDBAGS FOR EROSION CONTROL	EA	20
0530-6004	DRIVEWAYS (CONC)	SY	266
0531-6001	CONC SIDEWALKS (4")	SY	132

STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

SCALE: 1"=20'

Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN FM 1346

SHEET: 2 OF 11

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		52

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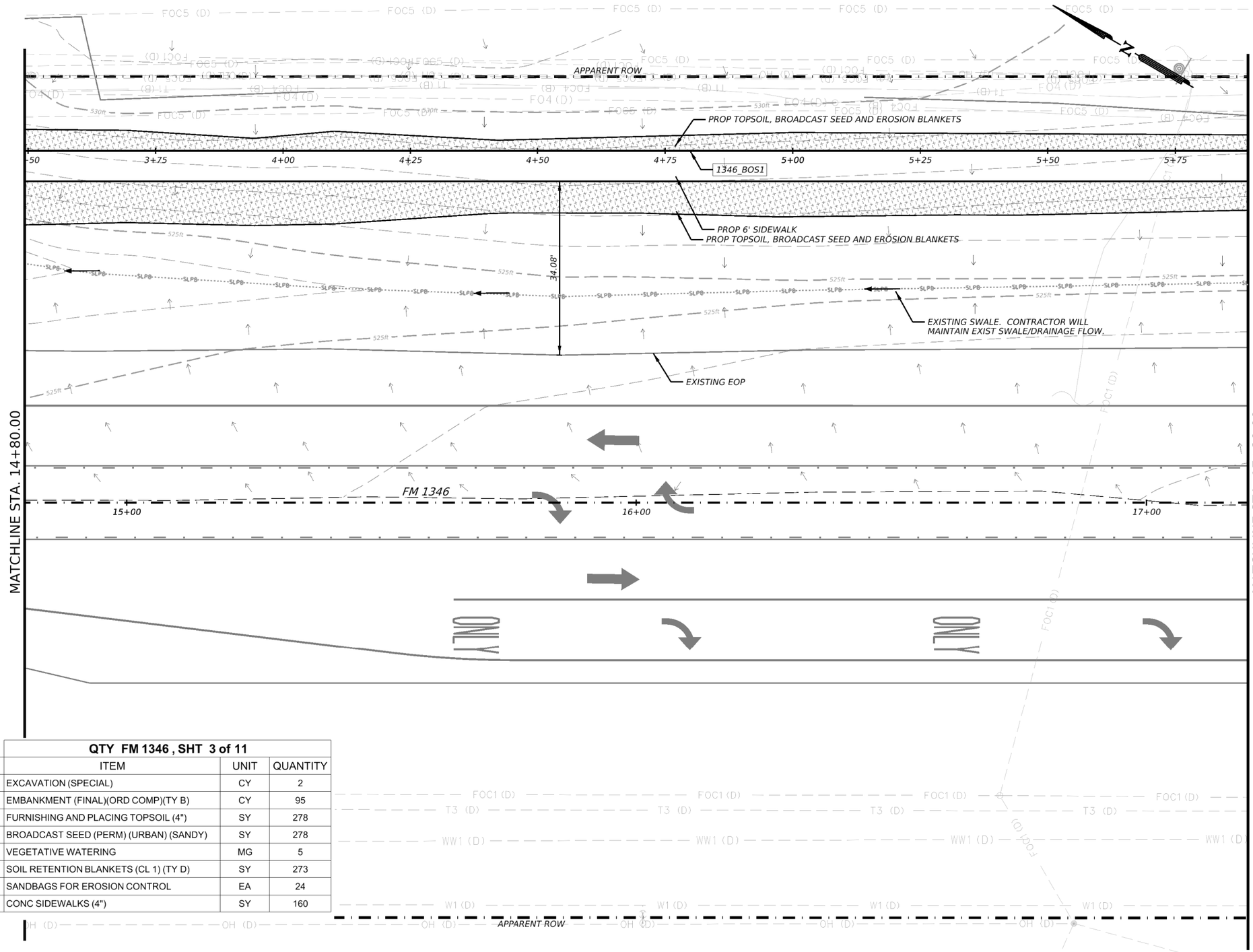

PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

NOTES:

1. SEE UTILITY PLANS FOR INFORMATION ON UTILITIES. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITIES BEFORE BEGINNING ANY TYPE OF WORK.
2. HORIZONTAL ALIGNMENTS AND ROW PROVIDED IS BEST FIT.
3. SEE CROSS-SECTIONS FOR ADDITIONAL INFORMATION.

QTY FM 1346 , SHT 3 of 11

ITEM NO.	ITEM	UNIT	QUANTITY
0110-6003	EXCAVATION (SPECIAL)	CY	2
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	95
0160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	278
0164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	278
0168-6001	VEGETATIVE WATERING	MG	5
0169-6004	SOIL RETENTION BLANKETS (CL 1) (TY D)	SY	273
0506-6035	SANDBAGS FOR EROSION CONTROL	EA	24
0531-6001	CONC SIDEWALKS (4")	SY	160

MARTHA GANDARA
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STATE OF TEXAS

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Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN FM 1346

SHEET: 3 OF 11

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		53

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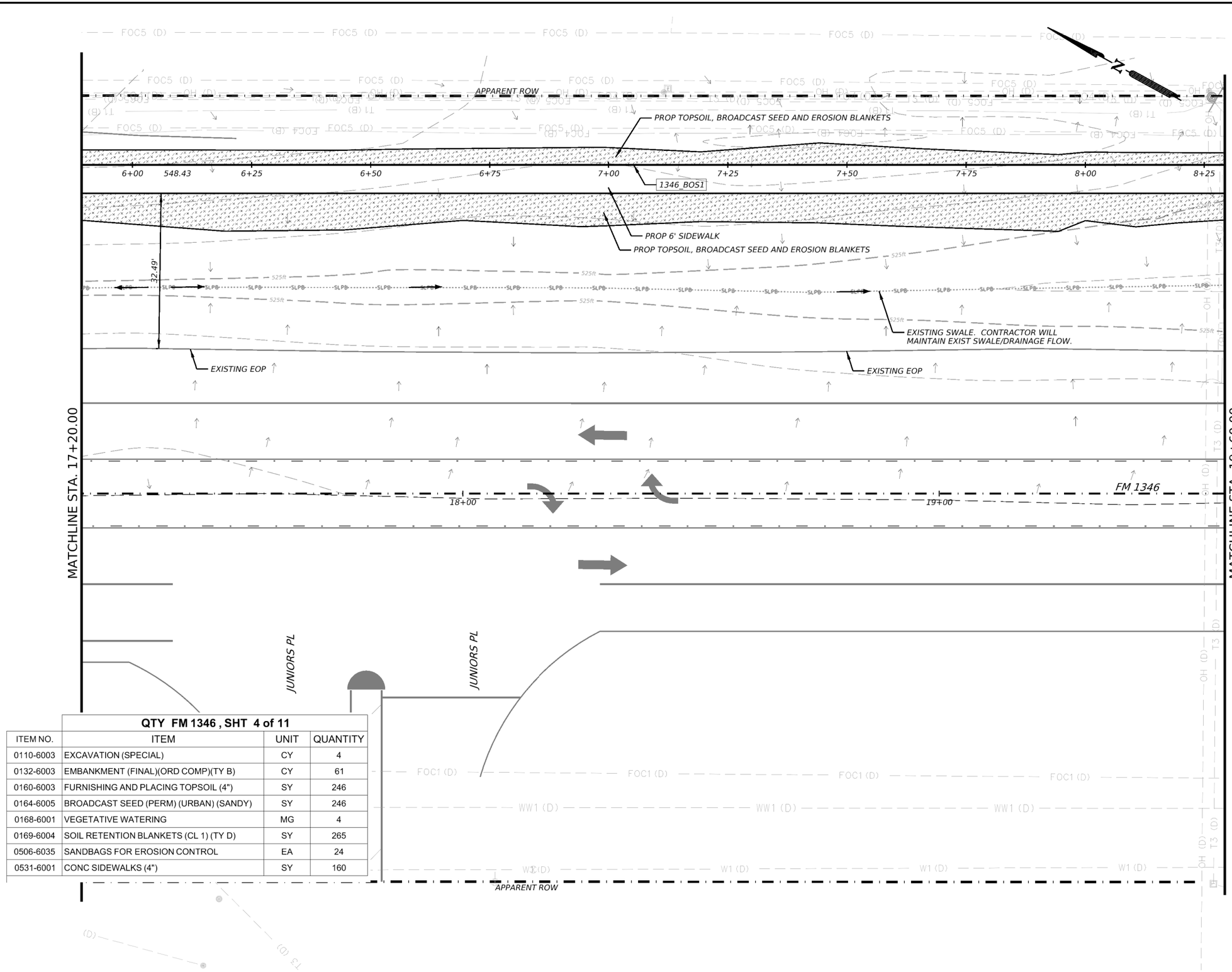

QTY FM 1346 , SHT 4 of 11			
ITEM NO.	ITEM	UNIT	QUANTITY
0110-6003	EXCAVATION (SPECIAL)	CY	4
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	61
0160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	246
0164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	246
0168-6001	VEGETATIVE WATERING	MG	4
0169-6004	SOIL RETENTION BLANKETS (CL 1) (TY D)	SY	265
0506-6035	SANDBAGS FOR EROSION CONTROL	EA	24
0531-6001	CONC SIDEWALKS (4")	SY	160

PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

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DL VEST STREET SIDEWALK PLAN FM 1346

SHEET: 4 OF 11

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		54

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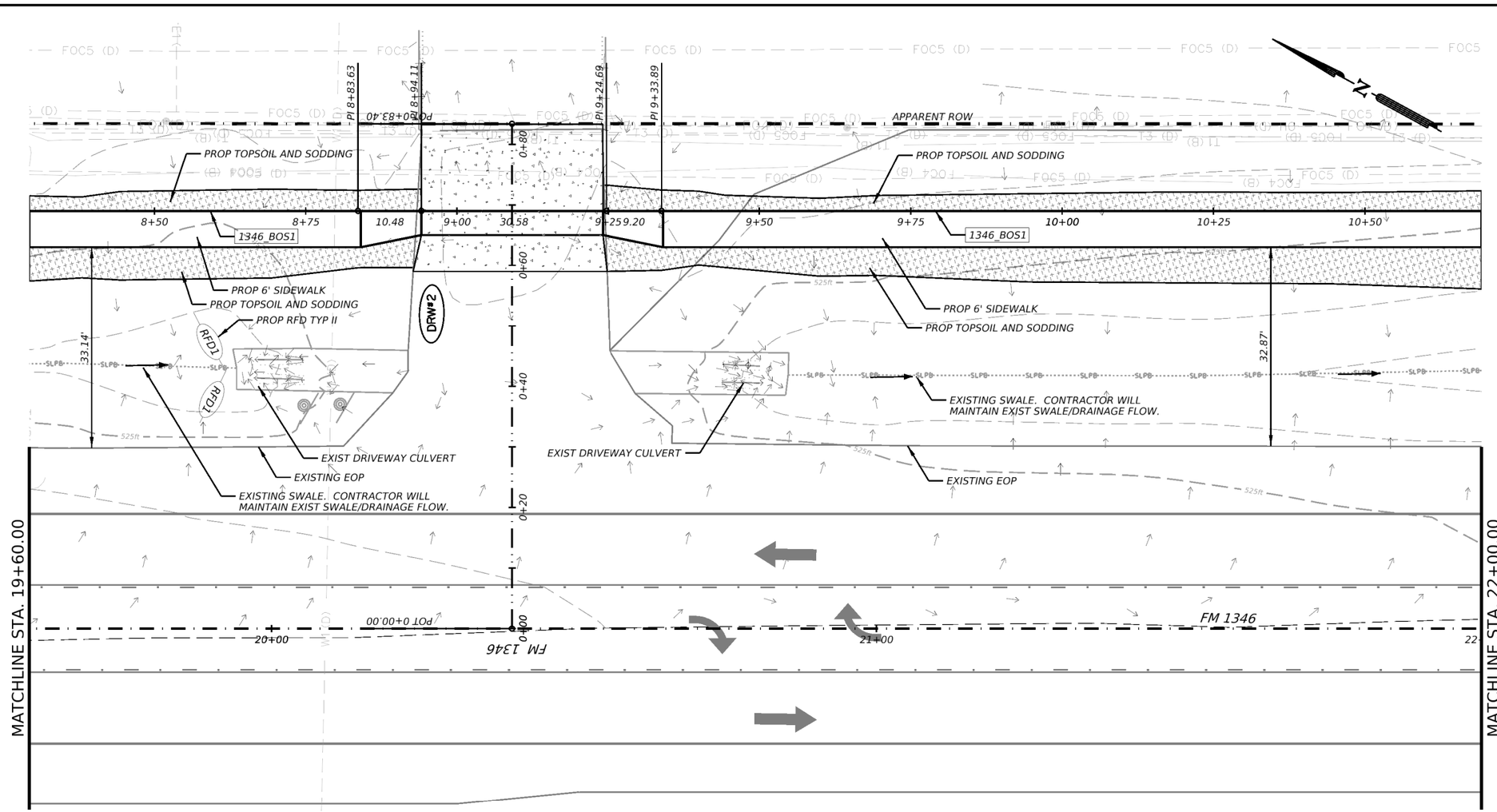

PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRW# DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
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QTY FM 1346 , SHT 5 of 11

ITEM NO.	ITEM	UNIT	QUANTITY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	79
0110-6003	EXCAVATION (SPECIAL)	CY	46
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	28
0160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	199
0164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	199
0168-6001	VEGETATIVE WATERING	MG	4
0169-6004	SOIL RETENTION BLANKETS (CL 1) (TY D)	SY	192
0506-6002	ROCK FILTER DAMS (INSTALL) (TY 2)	LF	25
0506-6011	ROCK FILTER DAMS (REMOVE)	LF	25
0506-6035	SANDBAGS FOR EROSION CONTROL	EA	21
0530-6004	DRIVEWAYS (CONC)	SY	82
0531-6001	CONC SIDEWALKS (4")	SY	138

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DL VEST STREET SIDEWALK PLAN FM 1346

SHEET: 5 OF 11

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		55

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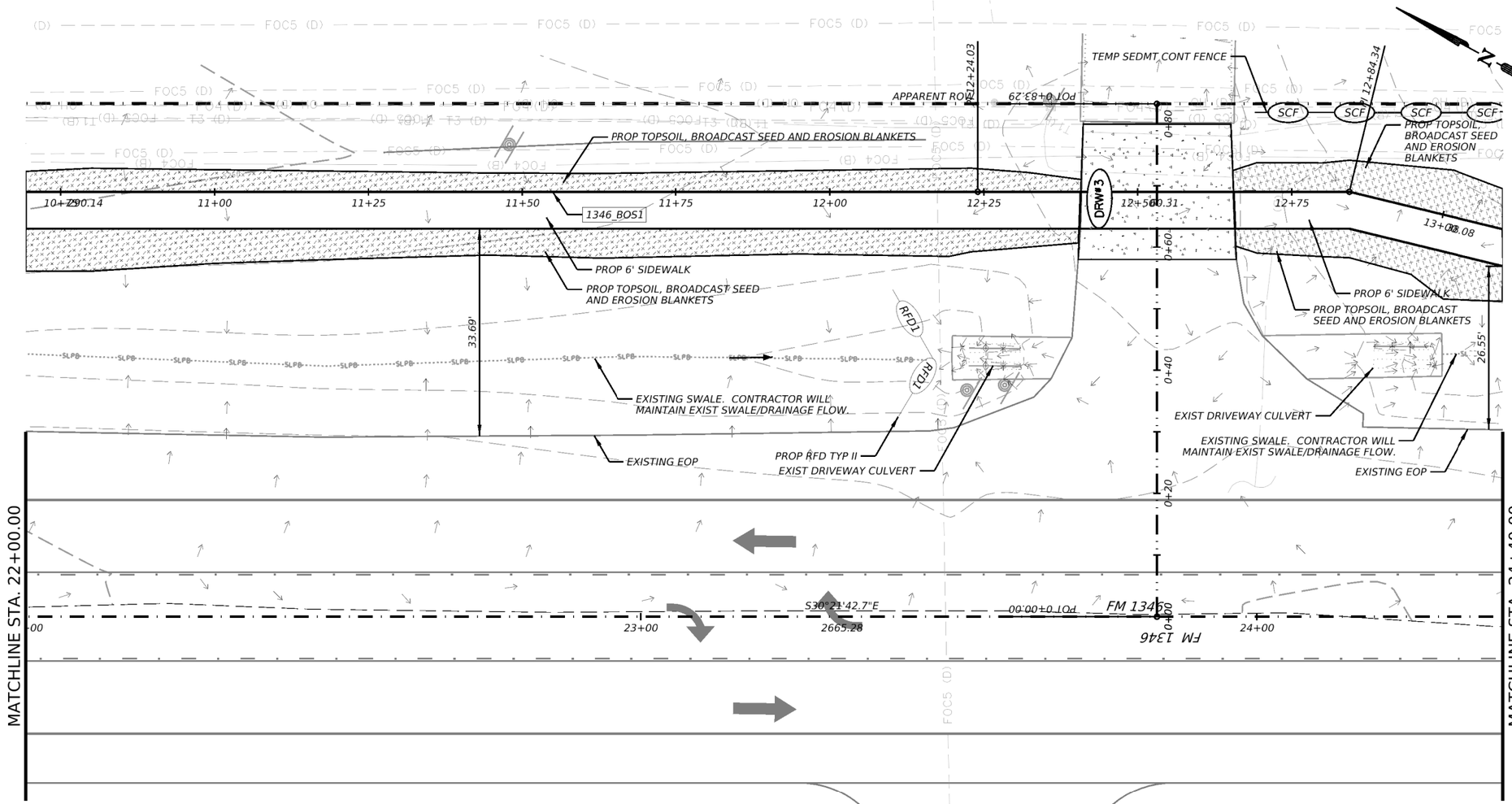

PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRW# DRIVEWAY I.D.
- APPARENT ROW
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QTY FM 1346 , SHT 6 of 11

ITEM NO.	ITEM	UNIT	QUANTITY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	79
0110-6003	EXCAVATION (SPECIAL)	CY	19
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	39
0160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	213
0164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	213
0168-6001	VEGETATIVE WATERING	MG	4
0169-6004	SOIL RETENTION BLANKETS (CL 1) (TY D)	SY	208
0506-6002	ROCK FILTER DAMS (INSTALL) (TY 2)	LF	25
0506-6011	ROCK FILTER DAMS (REMOVE)	LF	25
0506-6035	SANDBAGS FOR EROSION CONTROL	EA	22
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	40
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	40
0530-6004	DRIVEWAYS (CONC)	SY	61
0531-6001	CONC SIDEWALKS (4")	SY	144

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DL VEST STREET SIDEWALK PLAN FM 1346

SHEET: 6 OF 11

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		56

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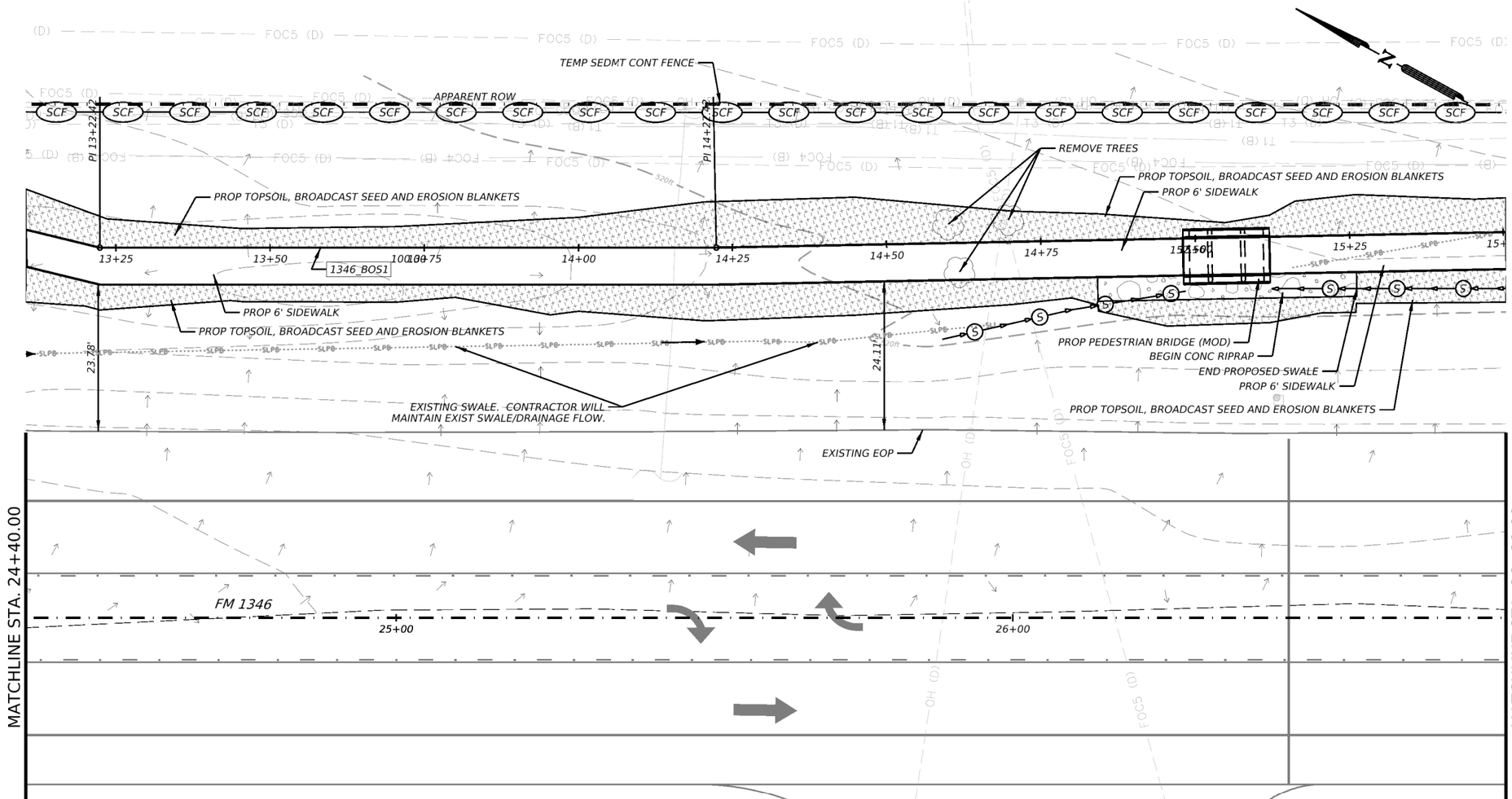

PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D.
- APPARENT ROW
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QTY FM 1346 , SHT 7 of 11

ITEM NO.	ITEM	UNIT	QUANTITY
0110-6003	EXCAVATION (SPECIAL)	CY	22
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	58
0160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	263
0164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	263
0168-6001	VEGETATIVE WATERING	MG	5
0169-6004	SOIL RETENTION BLANKETS (CL 1) (TY D)	SY	243
0432-6001	RIPRAP (CONC)(4 IN)	CY	2
0465-6389	INLET (COMPL)(TY SIDEWALK BRIDGE)(MOD)	EA	1
0506-6035	SANDBAGS FOR EROSION CONTROL	EA	24
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	240
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	240
0531-6001	CONC SIDEWALKS (4")	SY	161
0752-6007	TREE REMOVAL (18" - 24" DIA)	EA	3

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DL VEST STREET SIDEWALK PLAN FM 1346

SHEET: 7 OF 11

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		57

DESIGN: DRAFT: CHECK:

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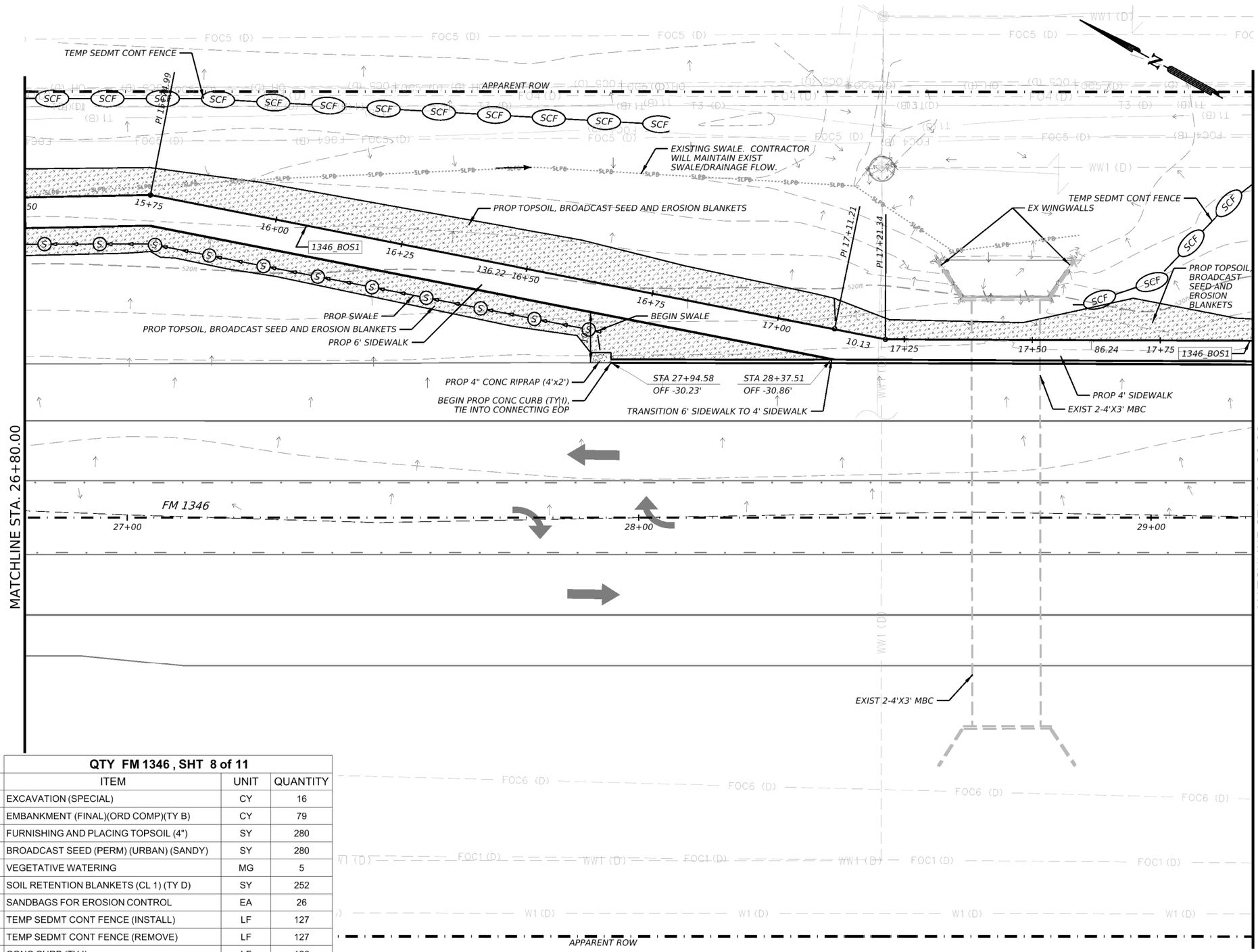

PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
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QTY FM 1346 , SHT 8 of 11			
ITEM NO.	ITEM	UNIT	QUANTITY
0110-6003	EXCAVATION (SPECIAL)	CY	16
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	79
0160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	280
0164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	280
0168-6001	VEGETATIVE WATERING	MG	5
0169-6004	SOIL RETENTION BLANKETS (CL 1) (TY D)	SY	252
0506-6035	SANDBAGS FOR EROSION CONTROL	EA	26
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	127
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	127
0529-6001	CONC CURB (TY I)	LF	126
0531-6001	CONC SIDEWALKS (4")	SY	160

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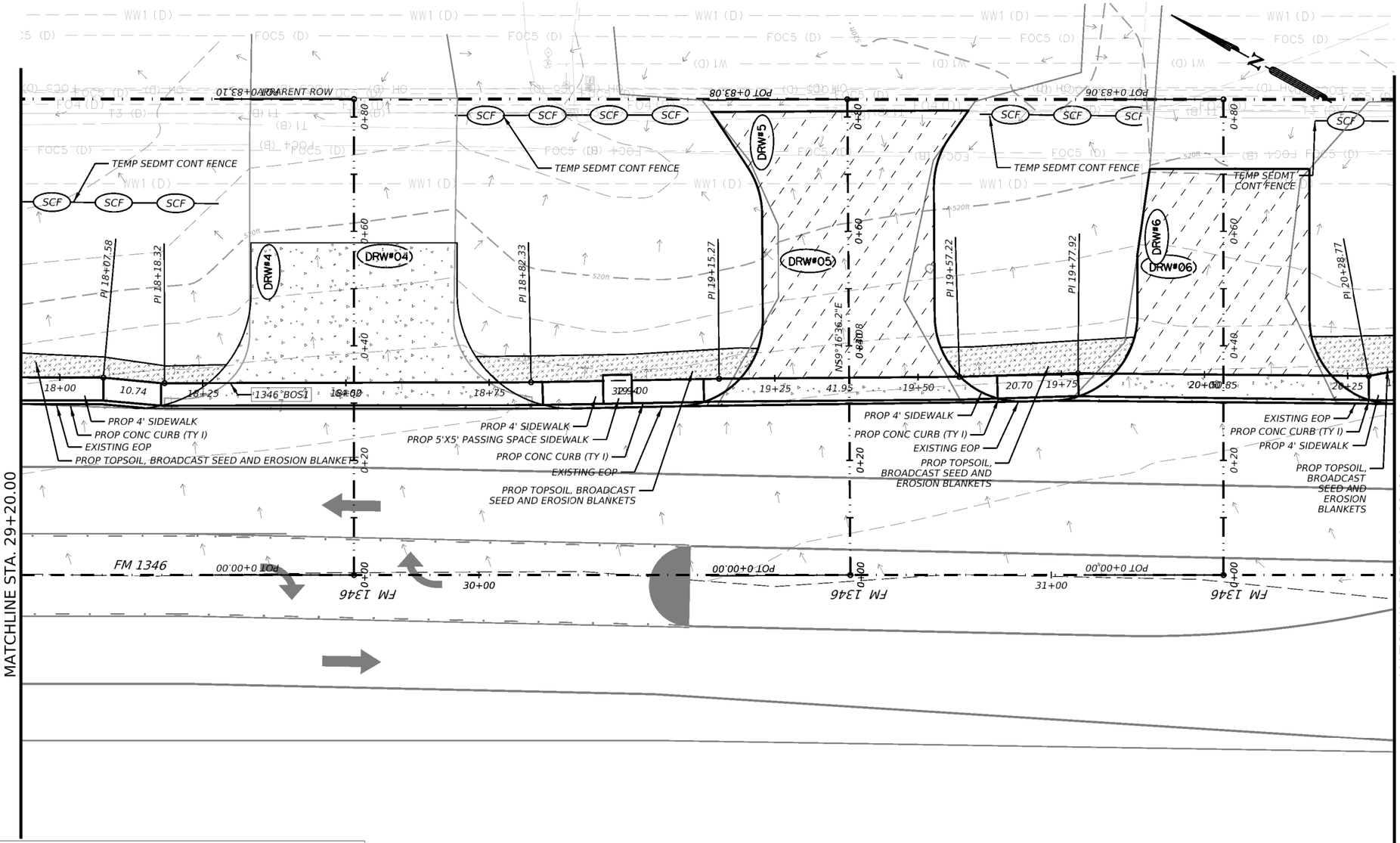
DL VEST STREET SIDEWALK PLAN FM 1346

SHEET: 8 OF 11

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		58



PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
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- DRW# DRIVEWAY I.D.
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QTY FM 1346 , SHT 9 of 11

ITEM NO.	ITEM	UNIT	QUANTITY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	428
0110-6003	EXCAVATION (SPECIAL)	CY	47
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	8
0160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	123
0164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	123
0168-6001	VEGETATIVE WATERING	MG	2
0169-6004	SOIL RETENTION BLANKETS (CL 1) (TY D)	SY	123
0506-6035	SANDBAGS FOR EROSION CONTROL	EA	15
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	150
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	150
0529-6001	CONC CURB (TY I)	LF	45
0530-6004	DRIVEWAYS (CONC)	SY	135
0530-6021	DRIVEWAYS (ACP) (TYPE 2)	SY	336
0531-6001	CONC SIDEWALKS (4")	SY	37
0560-6025	RELOCATE EXISTING MAILBOX	EA	1

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DL VEST STREET SIDEWALK PLAN FM 1346

SHEET: 9 OF 11

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		59

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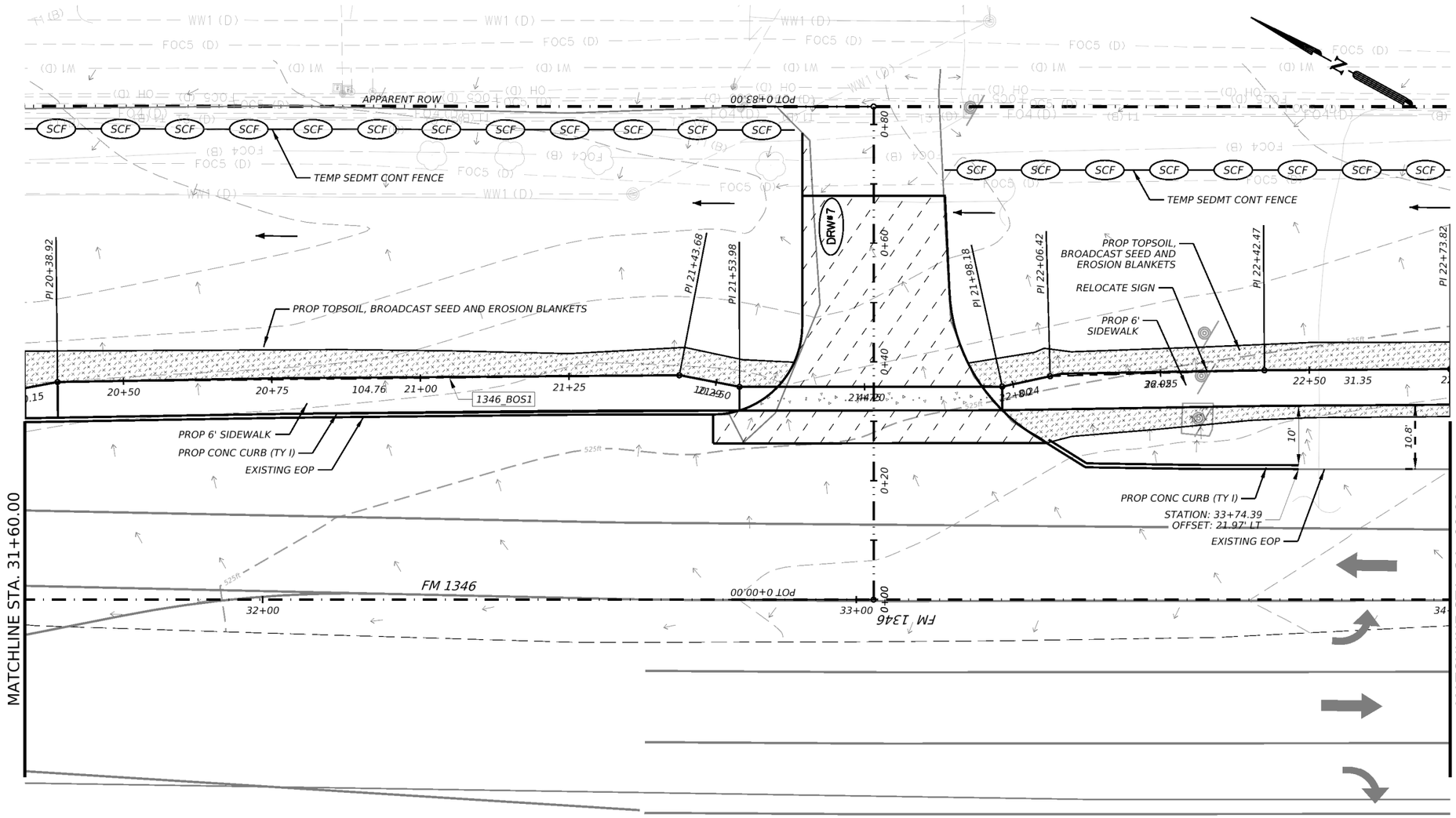

PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRW# DRIVEWAY I.D.
- APPARENT ROW
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QTY FM 1346 , SHT 10 of 11

ITEM NO.	ITEM	UNIT	QUANTITY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	142
0110-6003	EXCAVATION (SPECIAL)	CY	10
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	20
0160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	160
0164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	160
0168-6001	VEGETATIVE WATERING	MG	3
0169-6004	SOIL RETENTION BLANKETS (CL 1) (TY D)	SY	129
0506-6035	SANDBAGS FOR EROSION CONTROL	EA	22
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	218
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	218
0529-6001	CONC CURB (TY I)	LF	160
0530-6021	DRIVEWAYS (ACP) (TYPE 2)	SY	142
0531-6001	CONC SIDEWALKS (4")	SY	125
0644-6068	RELOCATE SM RD SN SUP&AM TY 10BWG	EA	1

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DL VEST STREET SIDEWALK PLAN FM 1346

SHEET: 10 OF 11

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		60

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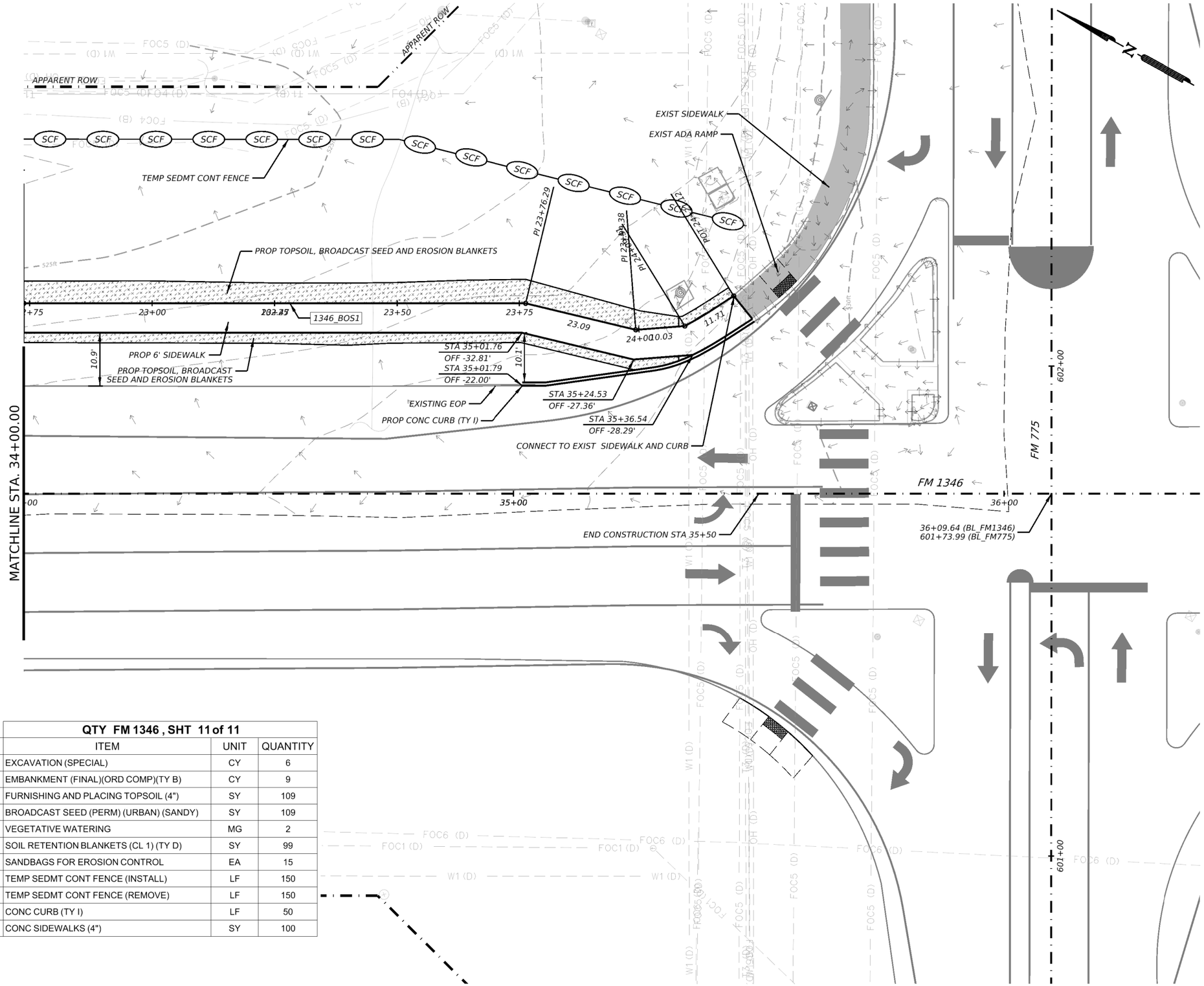

PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D. (DRW#)
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
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QTY FM 1346 , SHT 11 of 11

ITEM NO.	ITEM	UNIT	QUANTITY
0110-6003	EXCAVATION (SPECIAL)	CY	6
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	9
0160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	109
0164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	109
0168-6001	VEGETATIVE WATERING	MG	2
0169-6004	SOIL RETENTION BLANKETS (CL 1) (TY D)	SY	99
0506-6035	SANDBAGS FOR EROSION CONTROL	EA	15
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	150
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	150
0529-6001	CONC CURB (TY I)	LF	50
0531-6001	CONC SIDEWALKS (4")	SY	100

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DL VEST STREET SIDEWALK PLAN FM 1346

SHEET: 11 OF 11

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		61

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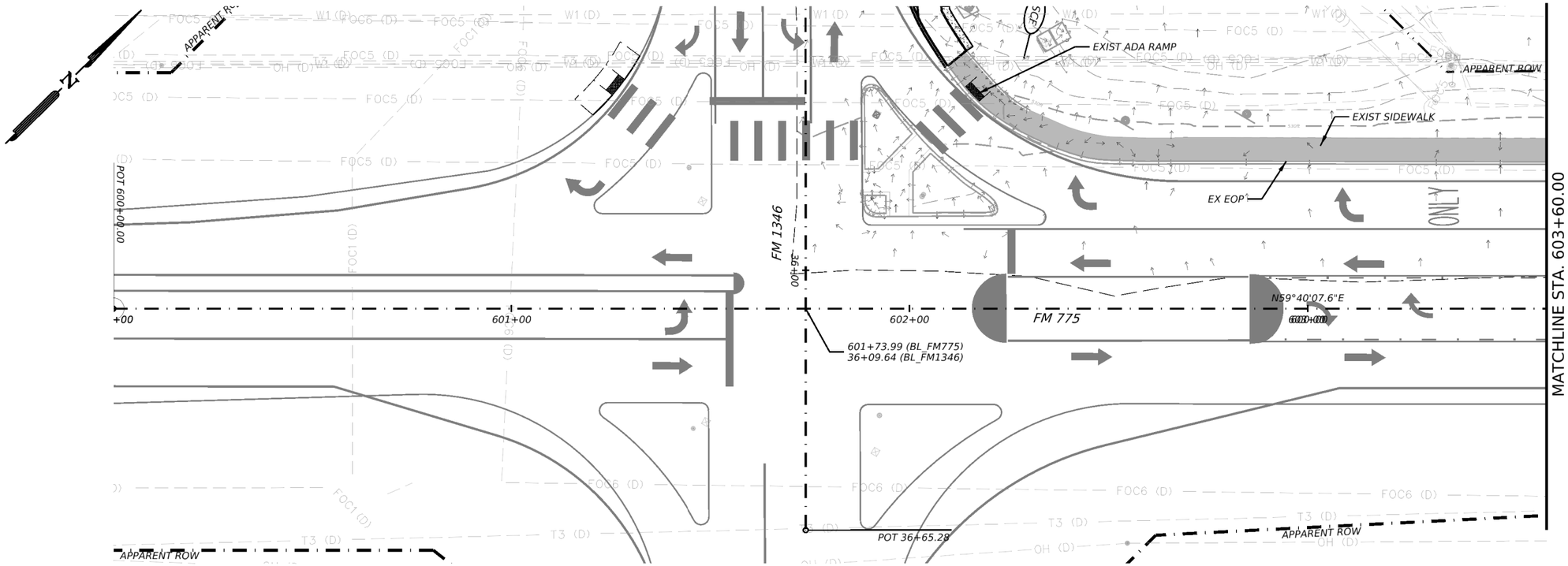

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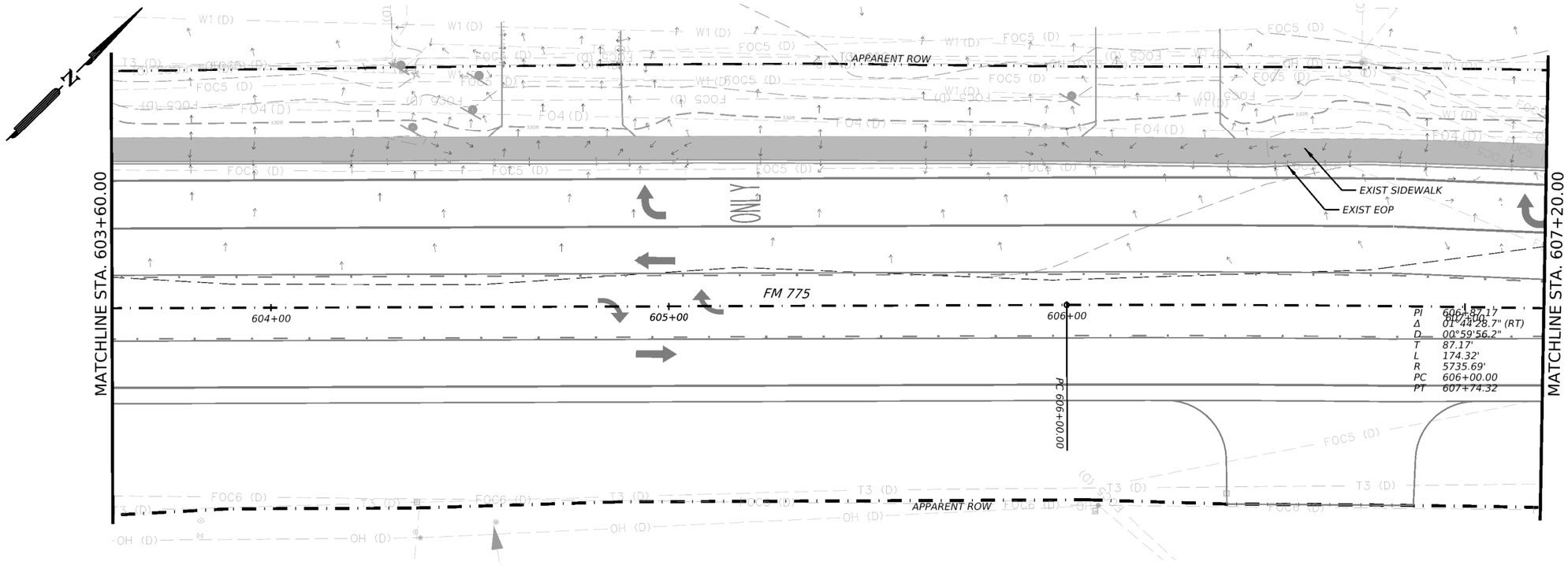
PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS



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DATE: 2/21/2024

SCALE: 1"=30'

Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN FM 775

SHEET: 1 OF 6

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		62

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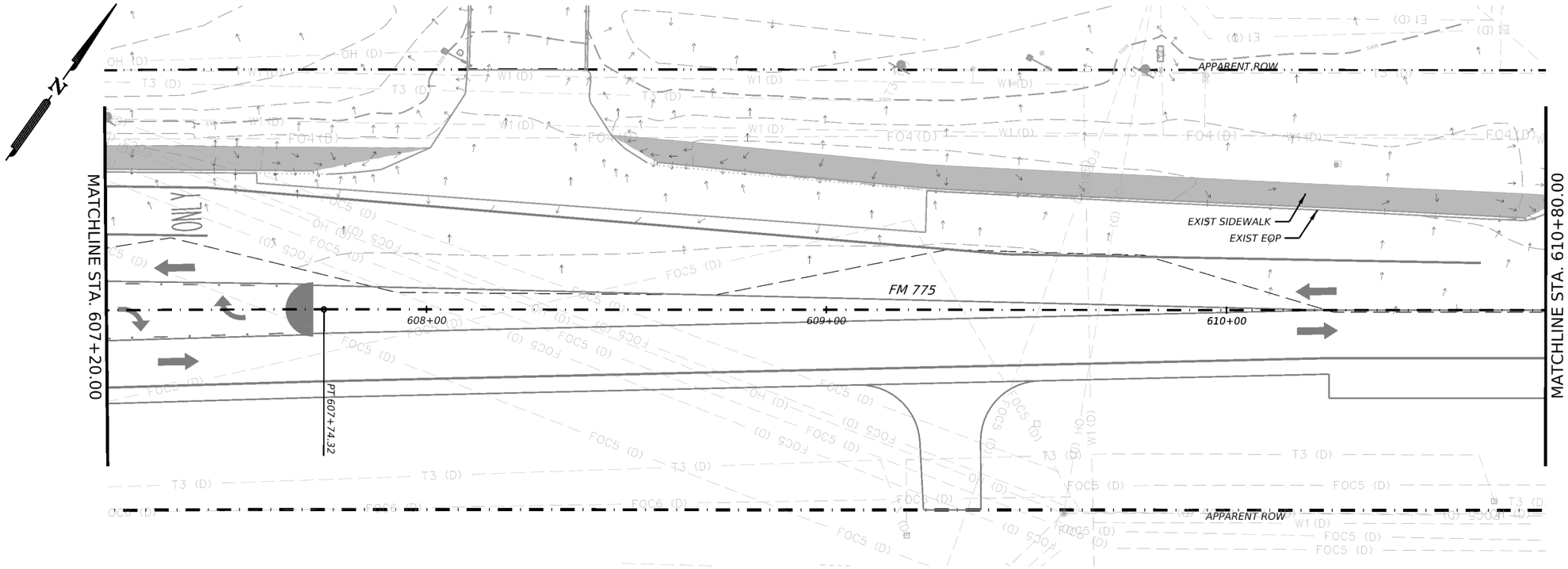

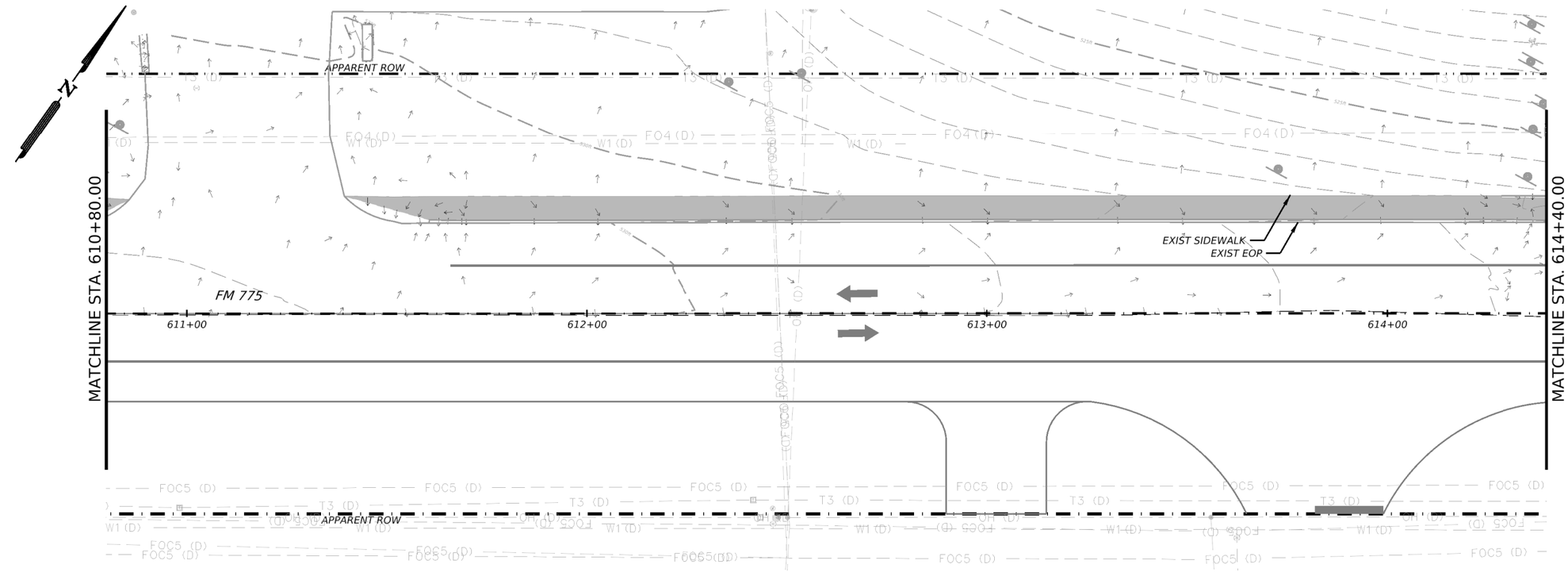

NO WORK THIS SHEET

PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

NOTES:

1. SEE UTILITY PLANS FOR INFORMATION ON UTILITIES. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITIES BEFORE BEGINNING ANY TYPE OF WORK.
2. HORIZONTAL ALIGNMENTS AND ROW PROVIDED IS BEST FIT.

STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

SCALE: 1"=30'

Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN FM 775

SHEET: 2 OF 6

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		63

2/21/2024 7:52:14 AM
pw://txdot.projectwiseonline.com:TXDOT4/Documents/15 - SAT/Design Projects/091514050/4 - Design/Plan Set/3. Roadway/DL VEST*ROW*FM775*3.dgn

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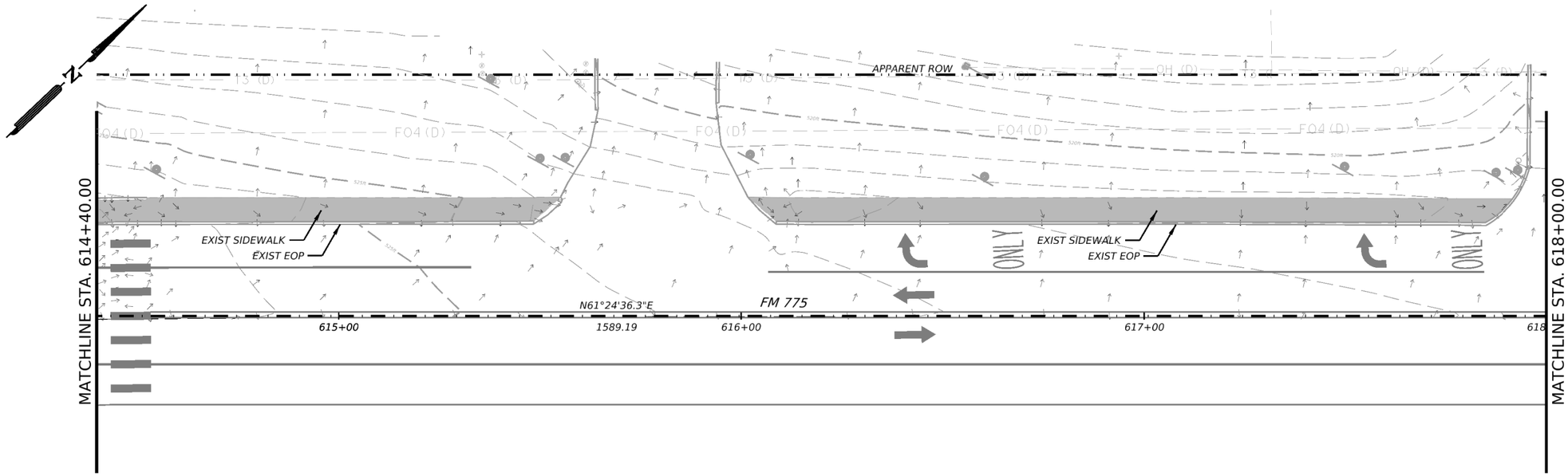

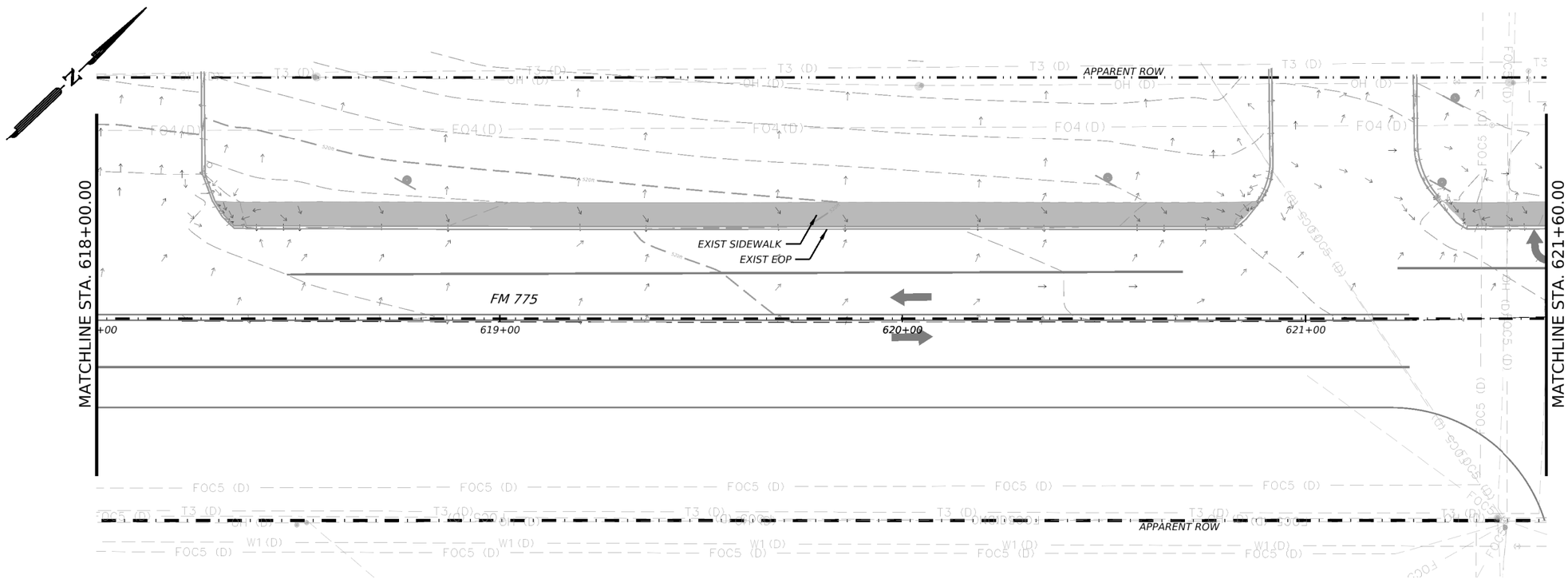

NO WORK THIS SHEET

PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

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STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

SCALE: 1"=30'

Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN FM 775

SHEET: 3 OF 6

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		64

2/21/2024 7:52:35 AM
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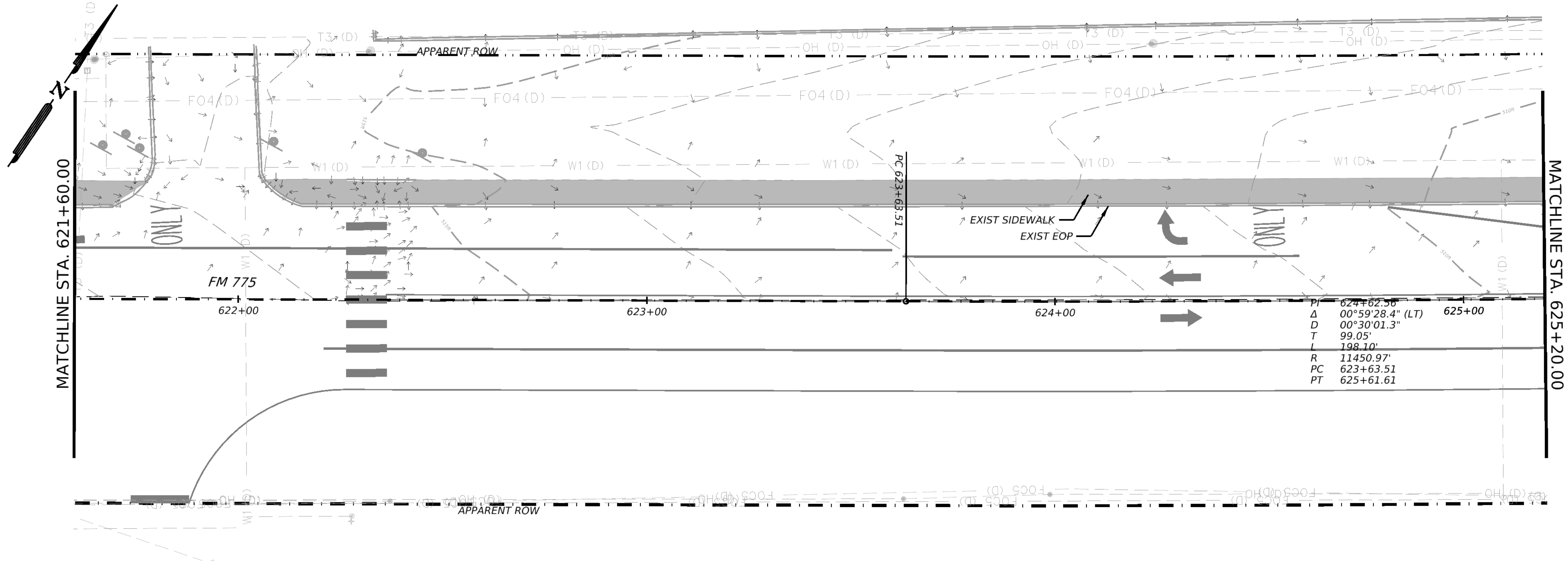
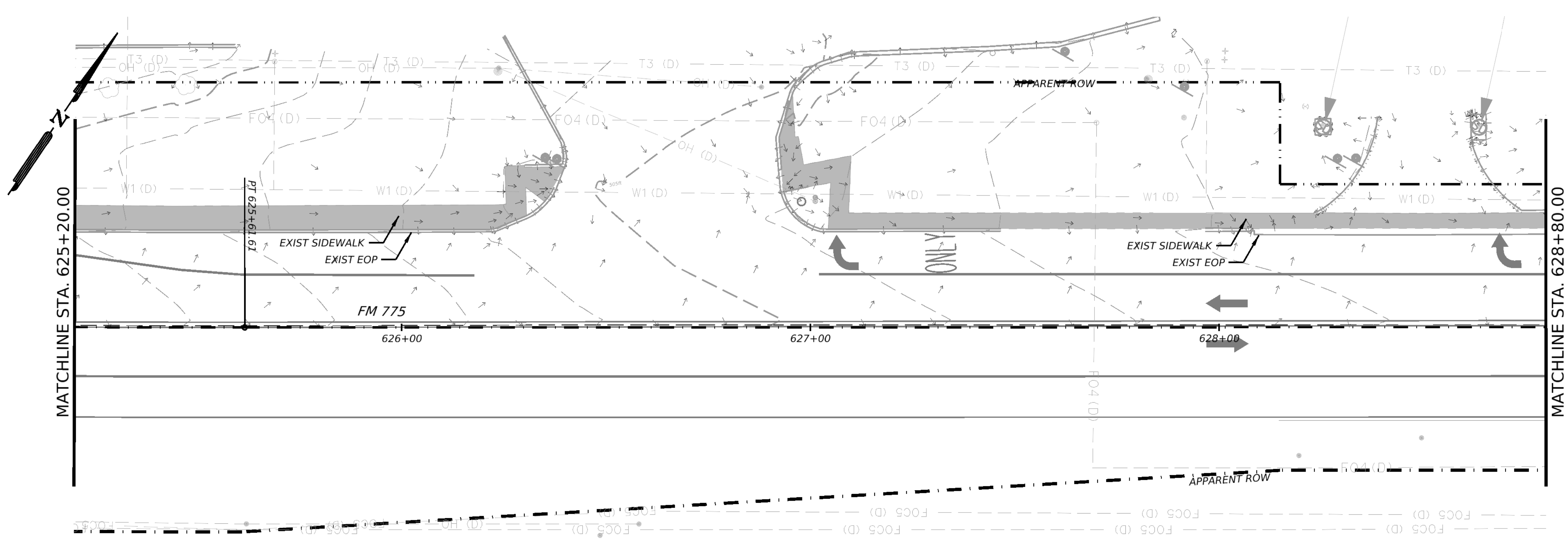
NO WORK THIS SHEET





PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

NOTES:

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STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

SCALE: 1"=30'

Texas Department of Transportation

DL VEST STREET
SIDEWALK PLAN
FM 775

SHEET: 4 OF 6

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST		COUNTY	SHEET NO.
SAT		WILSON	65

DESIGN: DRAFT: CHECK:

2/21/2024 7:52:56 AM
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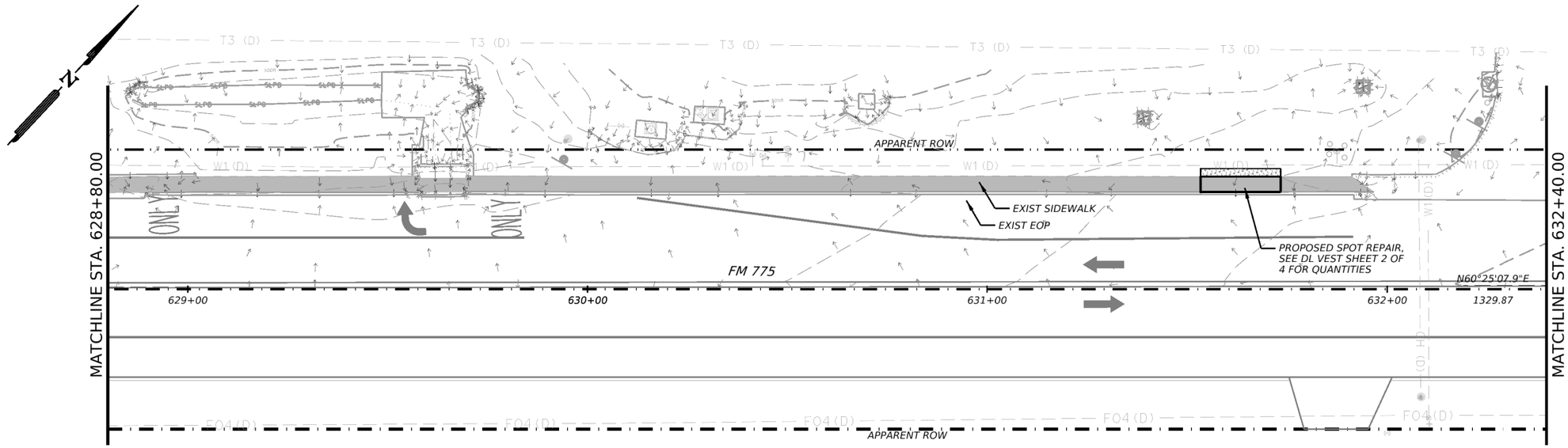

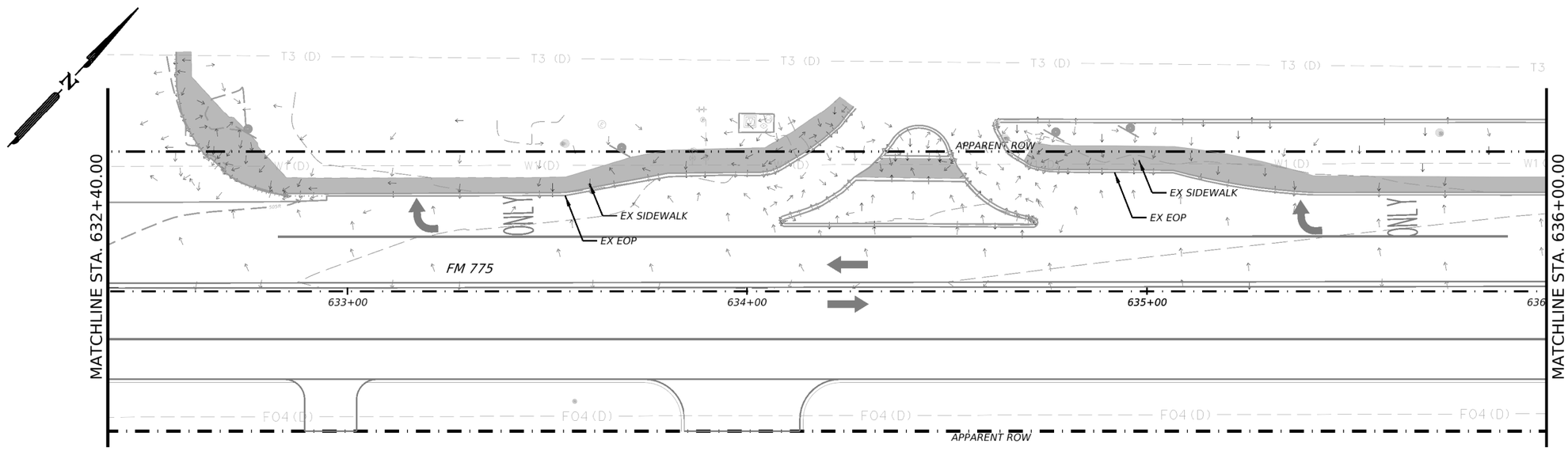

PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

NOTES:

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STATE OF TEXAS
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PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

SCALE: 1"=30'

Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN FM 775

SHEET: 5 OF 6

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		66

DESIGN: DRAFT: CHECK:

2/21/2024 7:53:18 AM
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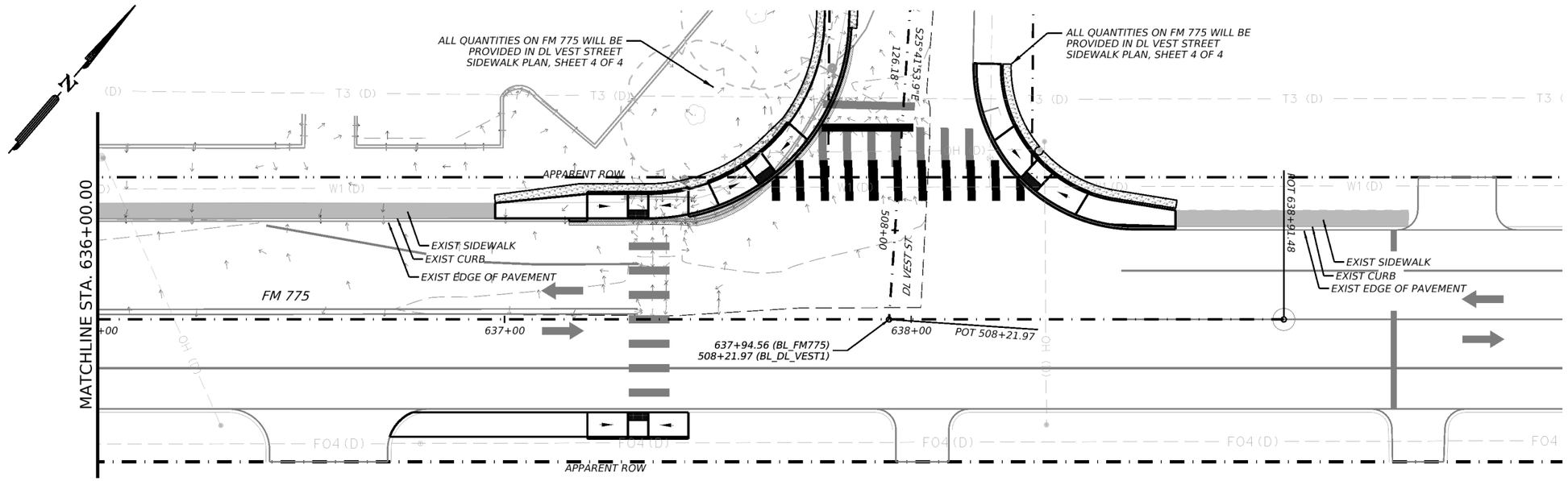

PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY LD.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

EXISTING CONDITION/UTILITIES SHOWN FOR THE NORTHEAST CORNER AND SOUTHBOUND FM775 WAS OBTAINED FROM AS-BUILT. VERIFY FIELD CONDITIONS PRIOR TO CONSTRUCTION. NOTIFY ENGINEER WITH ANY DISCREPANCIES.

NOTES:

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PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

SCALE: 1"=30'

Texas Department of Transportation

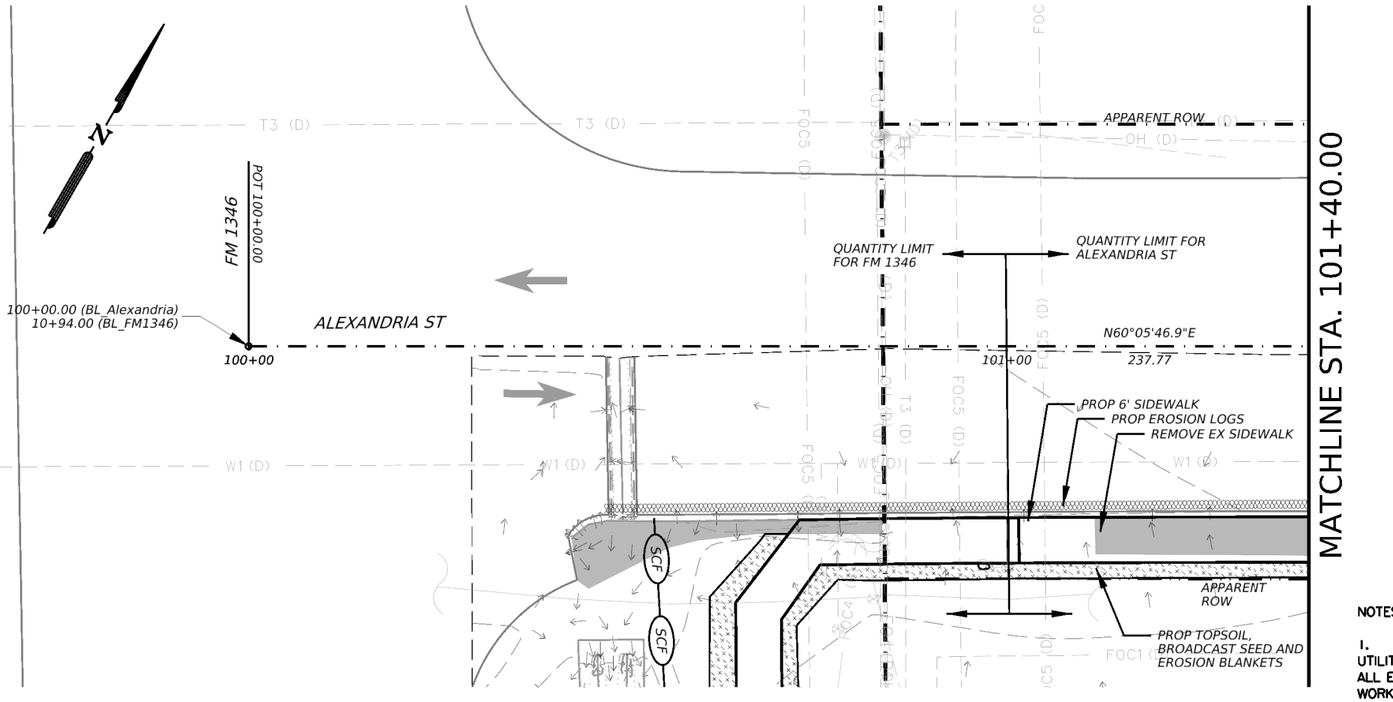
DL VEST STREET SIDEWALK PLAN FM 775

SHEET: 6 OF 6

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		67

DESIGN: DRAFT: CHECK:

QTY ALEXANDRIA ST , SHT 1 of 2			
ITEM NO.	ITEM	UNIT	QUANTITY
0104-6015	REMOVING CONC (SIDEWALKS)	SY	36
0110-6003	EXCAVATION (SPECIAL)	CY	3
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	3
0160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	17
0164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	17
0168-6001	VEGETATIVE WATERING	MG	1
0169-6002	SOIL RETENTION BLANKETS (CL 1) (TY B)	SY	17
0506-6041	BIODEG EROSN CONT LOGS (INSTL) (12")	LF	55
0506-6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	55
0531-6001	CONC SIDEWALKS (4")	SY	51



PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

NOTES:

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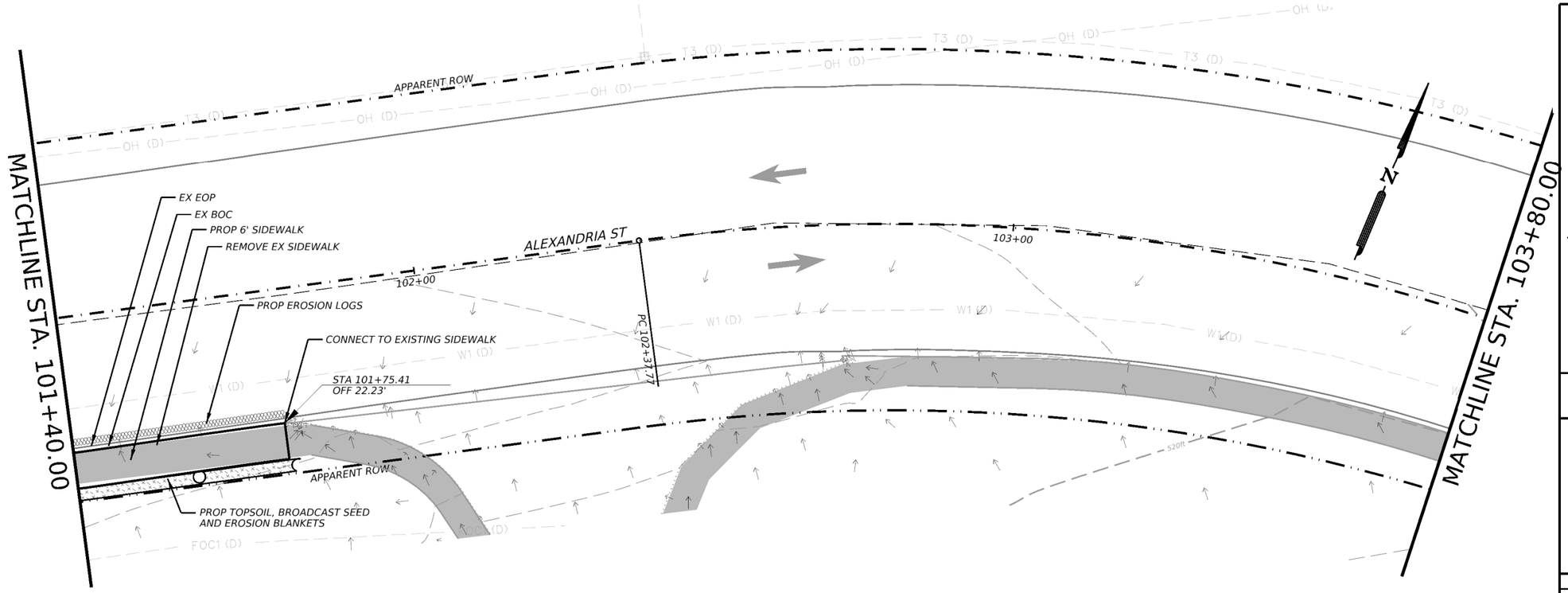

STATE OF TEXAS
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98500
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PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

SCALE: 1"=30'

Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN ALEXANDRIA ST

SHEET: 1 OF 2

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		68

DESIGN: DRAFT: CHECK:

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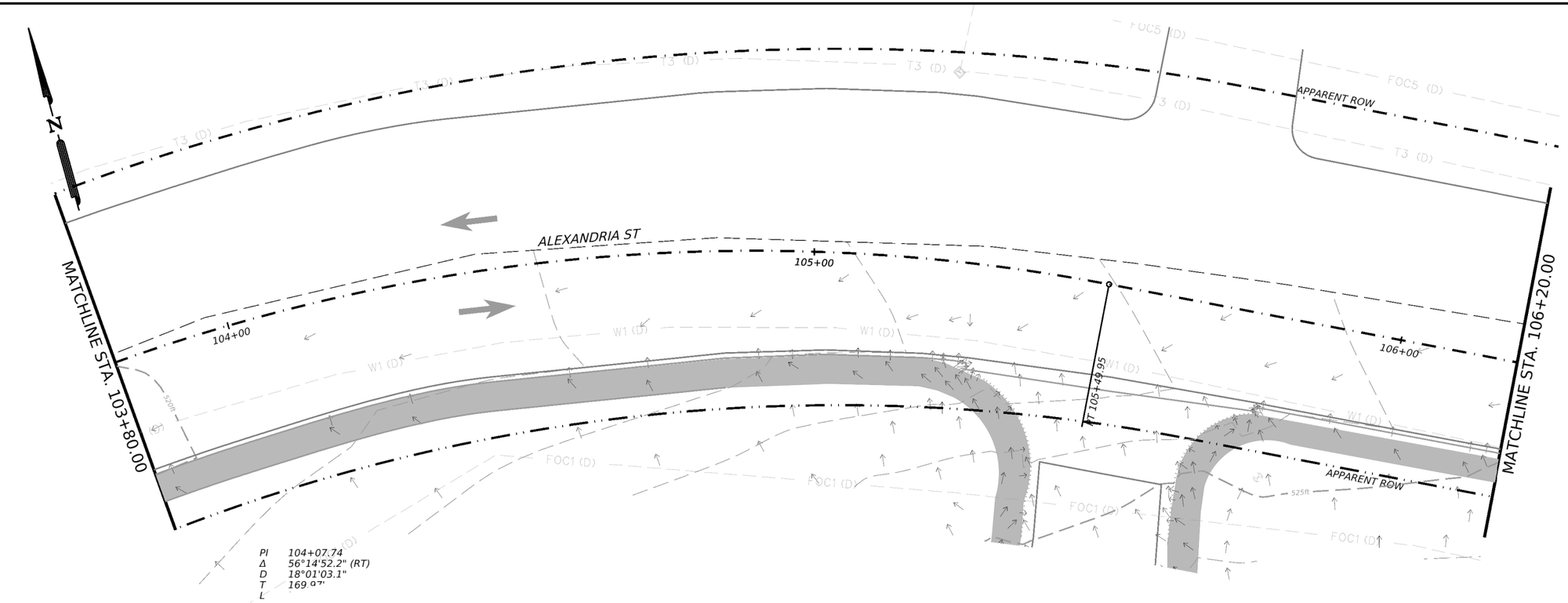
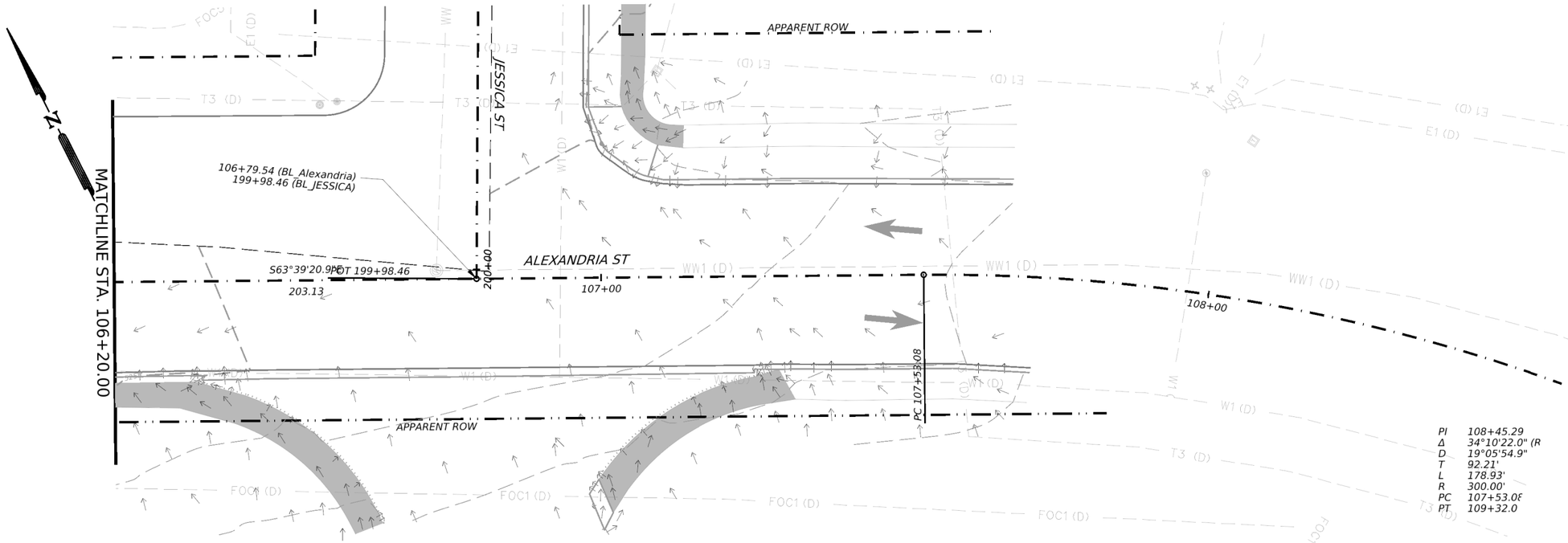
DESIGN: | DRAFT: | CHECK:





NO WORK THIS SHEET

PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

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STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

SCALE: 1"=30'

Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN ALEXANDRIA ST

SHEET: 2 OF 2

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		69

2/21/2024 7:54:26 AM
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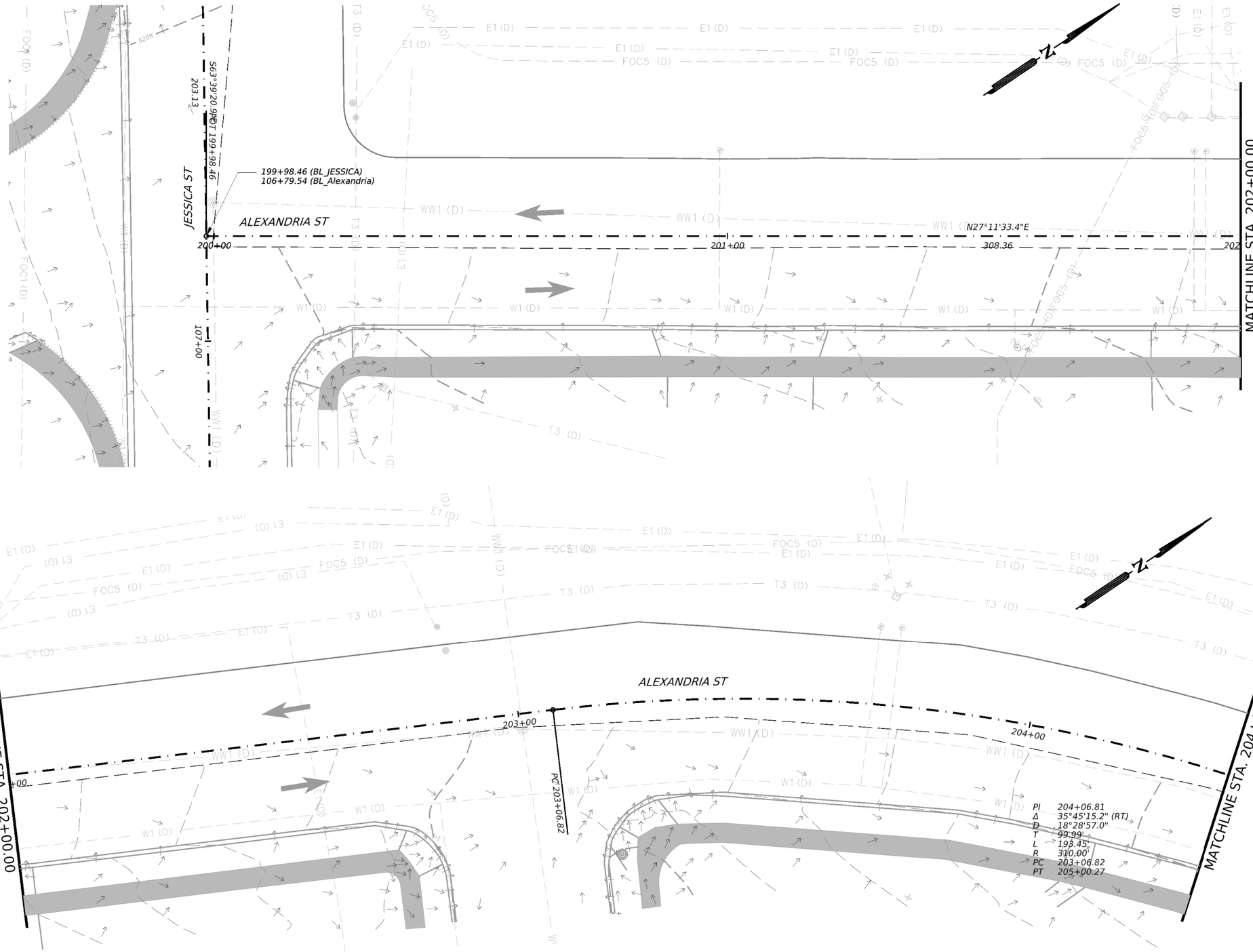

NO WORK THIS SHEET

PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

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STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

SCALE: 1"=30'

Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN JESSICA ST

SHEET: 1 OF 3

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		70

DESIGN: DRAFT: CHECK:

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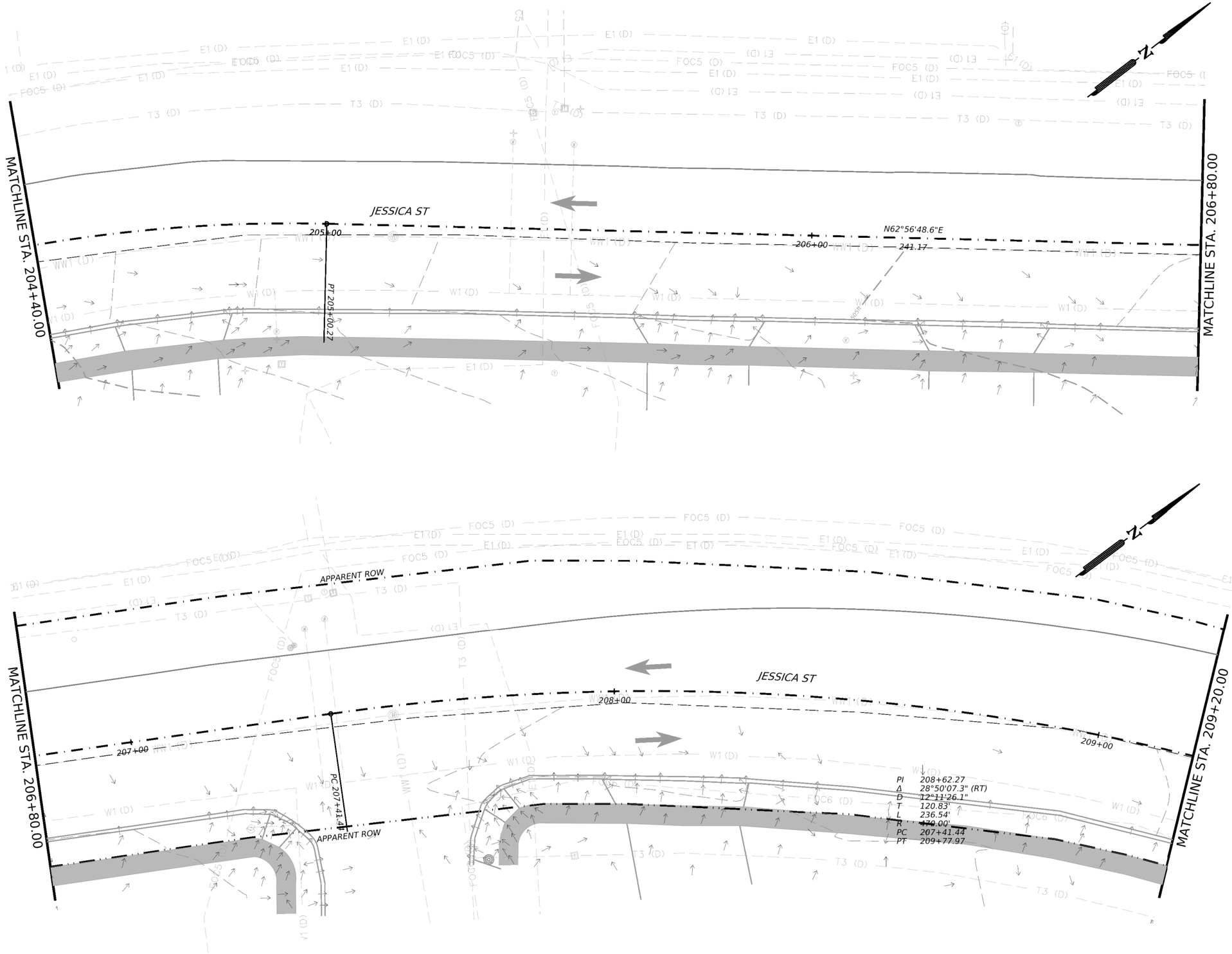
DESIGN: | DRAFT: | CHECK:



NO WORK THIS SHEET

PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

NOTES:

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STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

SCALE: 1"=30'

Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN JESSICA ST

SHEET: 2 OF 3

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		71

2/21/2024 7:55:07 AM
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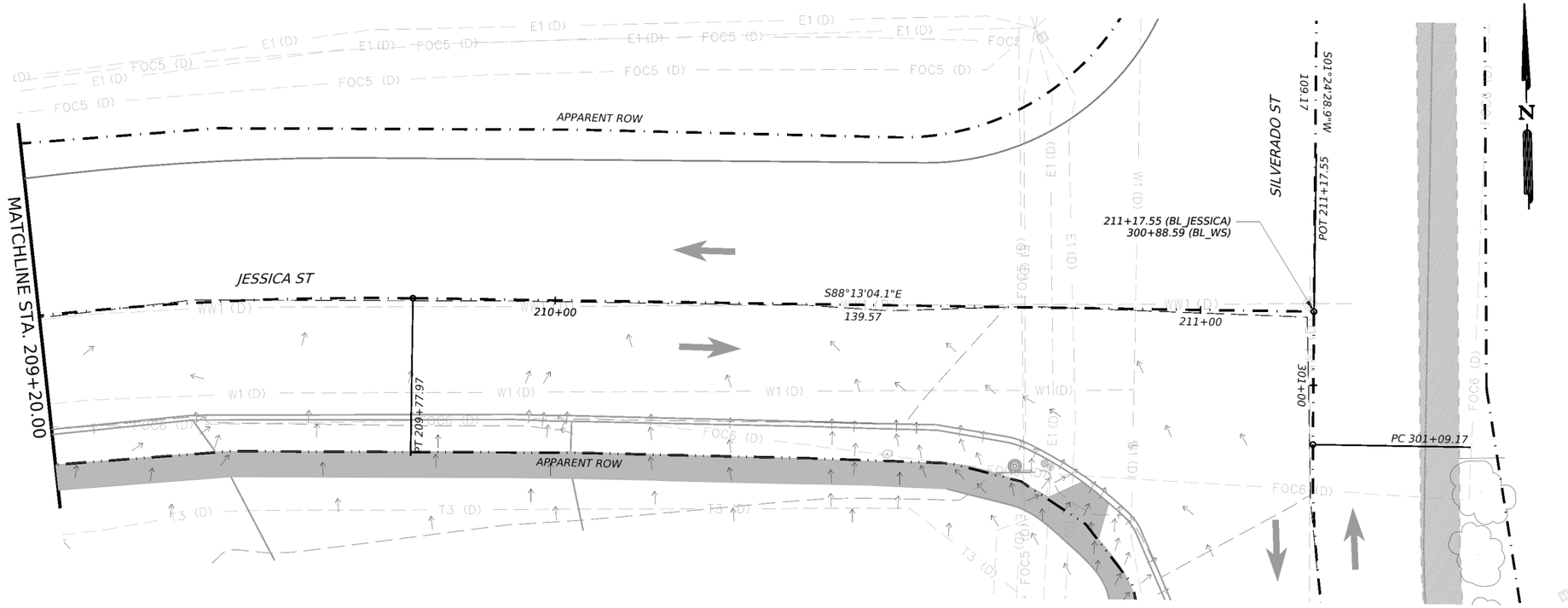

NO WORK THIS SHEET

PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

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STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

SCALE: 1"=30'

Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN JESSICA ST

SHEET: 3 OF 3

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		72

DESIGN: DRAFT: CHECK:

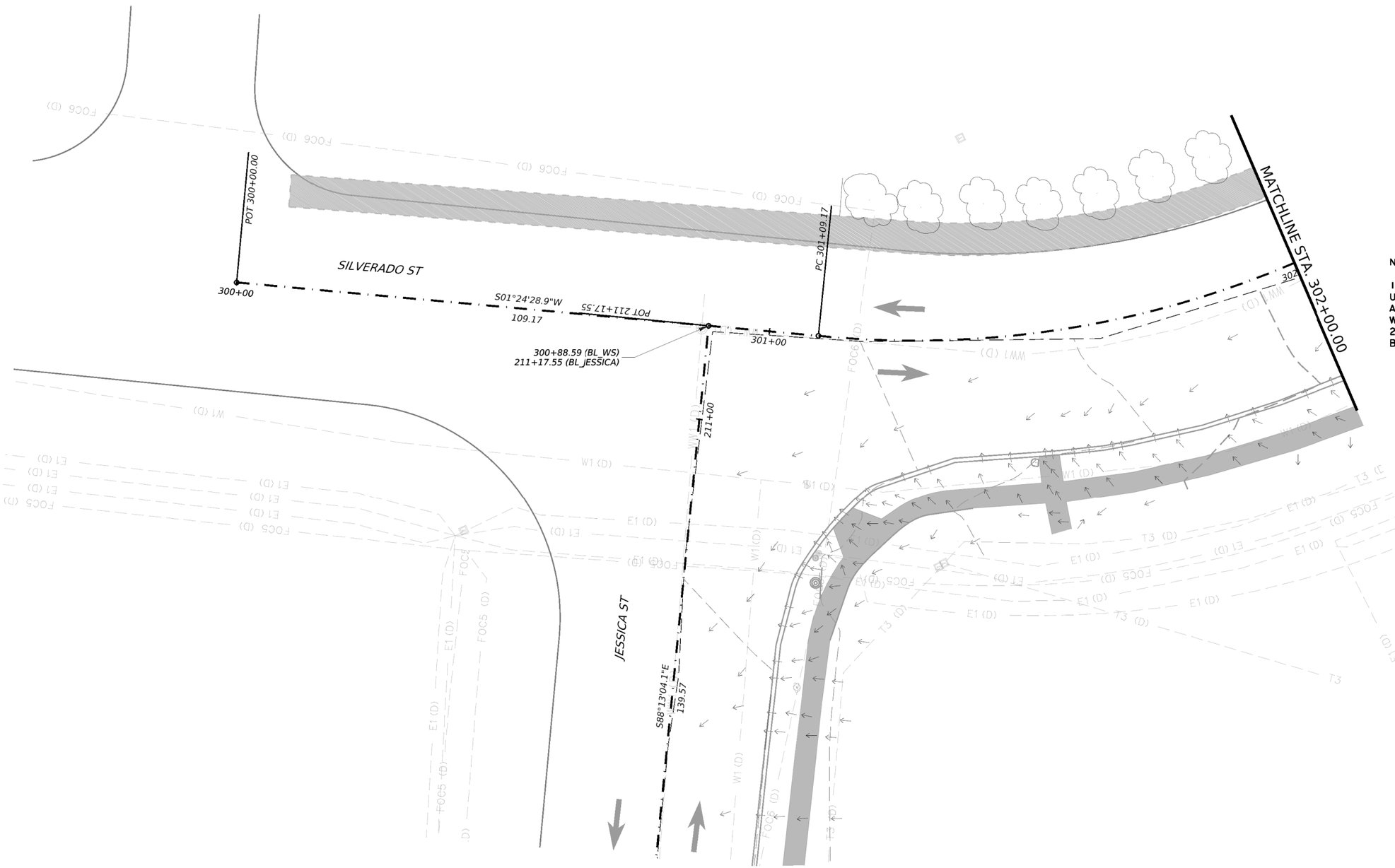
DESIGN: | DRAFT: | CHECK:

NO WORK THIS SHEET

N

PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS



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STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

SCALE: 1"=20'

Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN WARREN ST & SILVERADO ST

SHEET: 1 OF 7

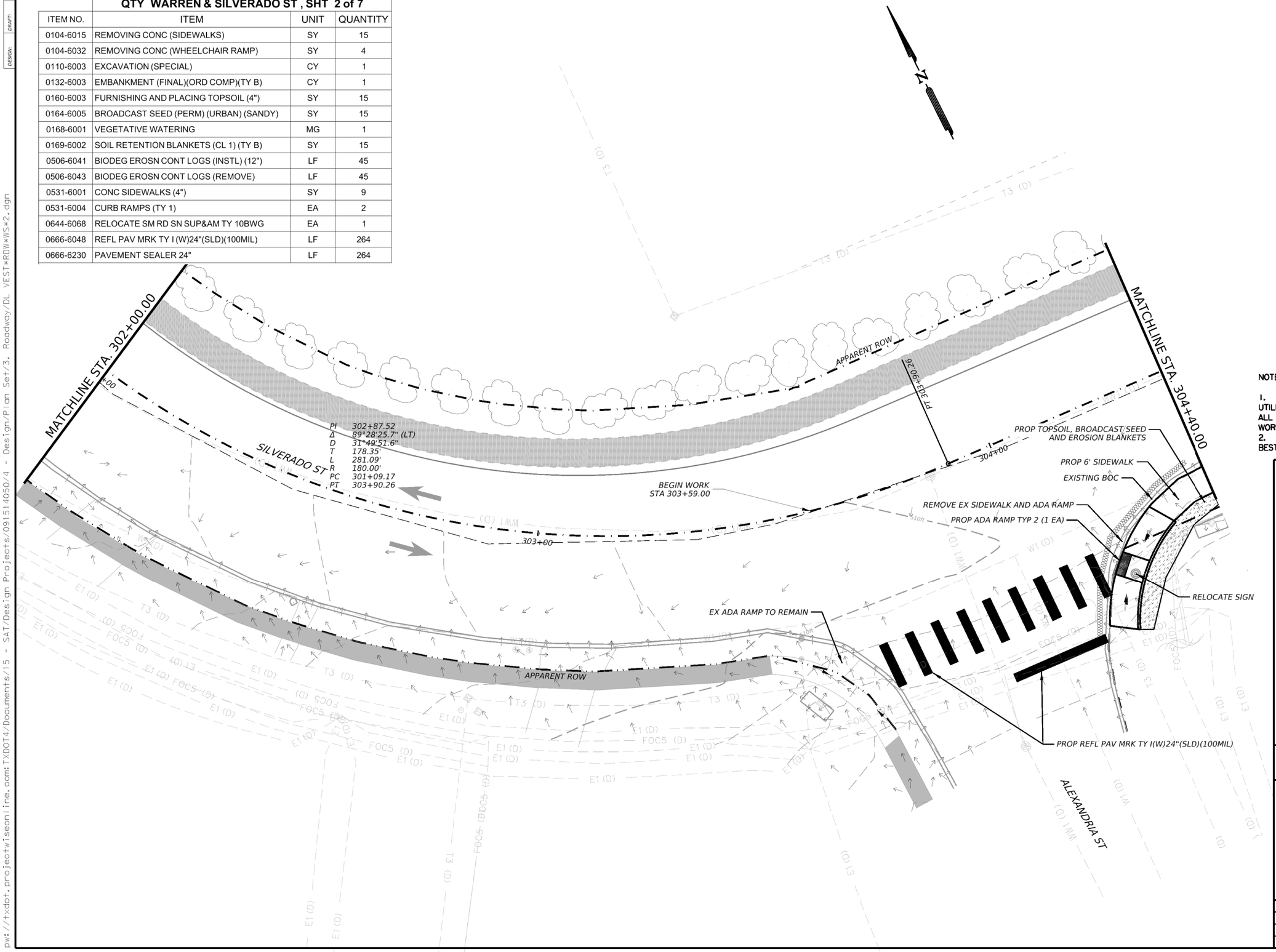
CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		73

2/21/2024 7:55:48 AM
pw://txdot.projectwiseonline.com:TXDOT4/Documents/15 - SAT/Design Projects/091514050/4 - Design/Plan Set/3. Roadway/DL_VEST*ROW*WS*1.dgn

DESIGN: DRAFT: CHECK:

QTY WARREN & SILVERADO ST , SHT 2 of 7

ITEM NO.	ITEM	UNIT	QUANTITY
0104-6015	REMOVING CONC (SIDEWALKS)	SY	15
0104-6032	REMOVING CONC (WHEELCHAIR RAMP)	SY	4
0110-6003	EXCAVATION (SPECIAL)	CY	1
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	1
0160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	15
0164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	15
0168-6001	VEGETATIVE WATERING	MG	1
0169-6002	SOIL RETENTION BLANKETS (CL 1) (TY B)	SY	15
0506-6041	BIODEG EROSN CONT LOGS (INSTL) (12")	LF	45
0506-6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	45
0531-6001	CONC SIDEWALKS (4")	SY	9
0531-6004	CURB RAMPS (TY 1)	EA	2
0644-6068	RELOCATE SM RD SN SUP&AM TY 10BWG	EA	1
0666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	264
0666-6230	PAVEMENT SEALER 24"	LF	264



PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY LD.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

NOTES:

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STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

SCALE: 1"=20'

Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN WARREN ST & SILVERADO ST

SHEET: 2 OF 7

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		74

2/21/2024 7:56:11 AM
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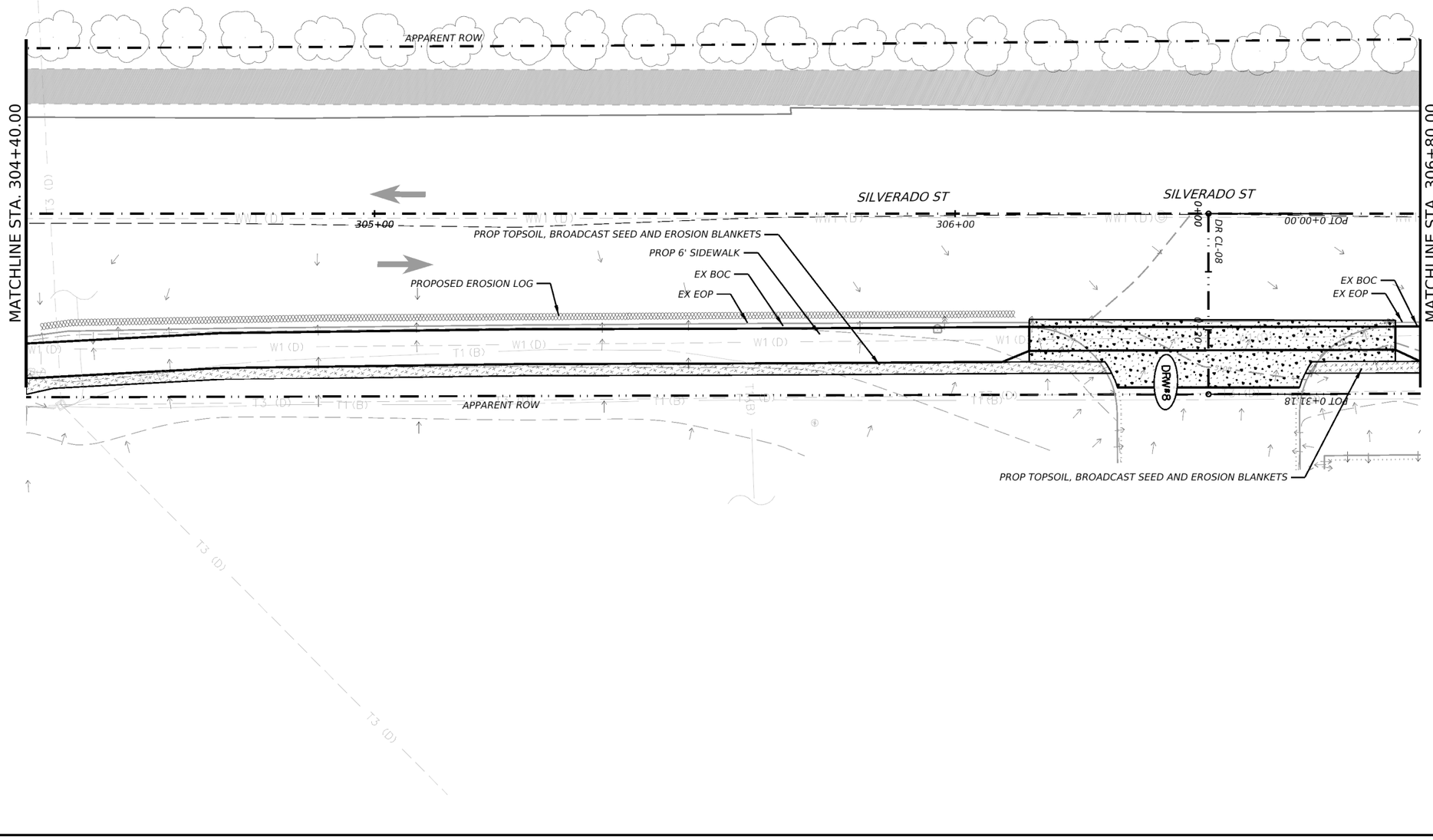
QTY WARREN & SILVERADO ST , SHT 3 of 7			
ITEM NO.	ITEM	UNIT	QUANTITY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	67
0110-6003	EXCAVATION (SPECIAL)	CY	8
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	8
0160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	47
0164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	47
0168-6001	VEGETATIVE WATERING	MG	1
0169-6002	SOIL RETENTION BLANKETS (CL 1) (TY B)	SY	47
0506-6041	BIODEG EROSN CONT LOGS (INSTL) (12")	LF	170
0506-6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	170
0530-6004	DRIVEWAYS (CONC)	SY	67
0531-6001	CONC SIDEWALKS (4")	SY	133



PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRW# — DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

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DATE: 2/21/2024

SCALE: 1"=20'

Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN WARREN ST & SILVERADO ST

SHEET: 3 OF 7

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		75

DESIGN: DRAFT: CHECK:

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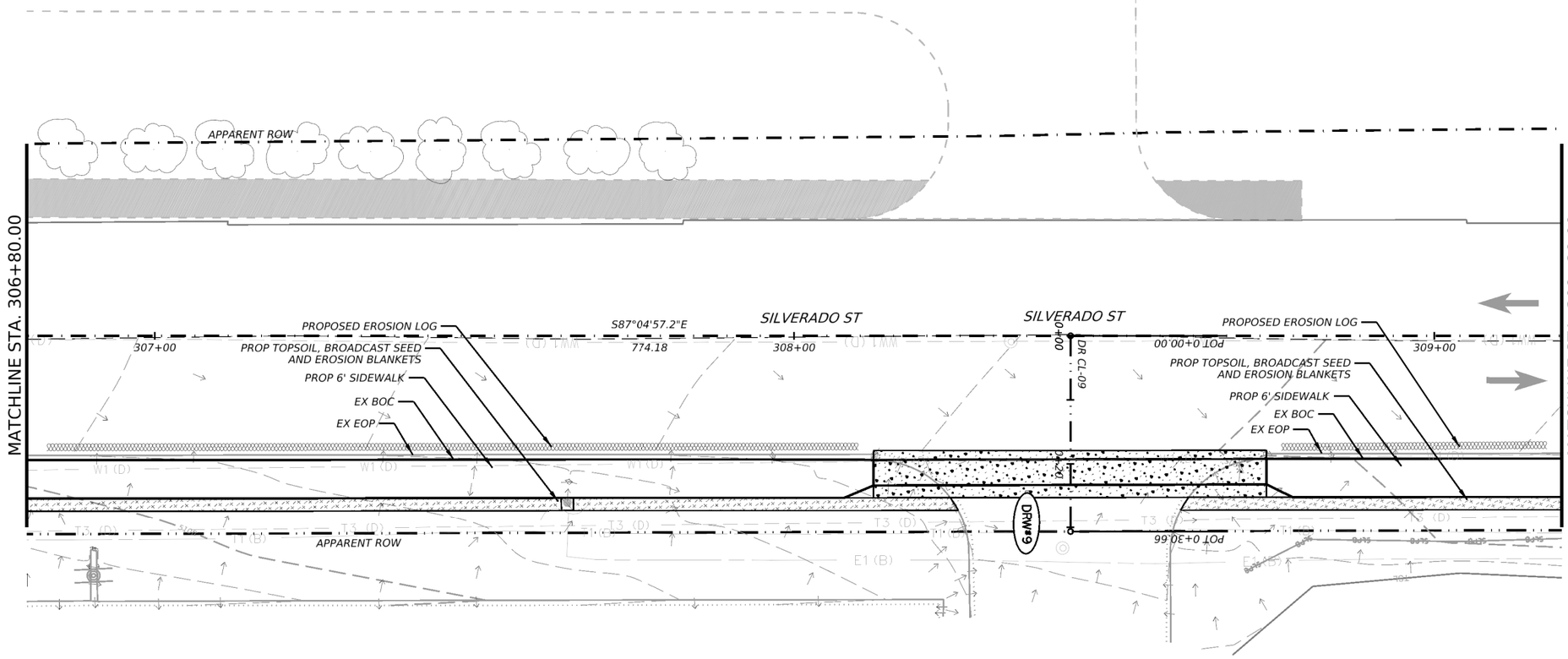
DESIGN: DRAFT: CHECK:

QTY WARREN & SILVERADO ST , SHT 4 of 7			
ITEM NO.	ITEM	UNIT	QUANTITY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	51
0110-6003	EXCAVATION (SPECIAL)	CY	8
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	8
0160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	45
0164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	45
0168-6001	VEGETATIVE WATERING	MG	1
0169-6002	SOIL RETENTION BLANKETS (CL 1) (TY B)	SY	45
0506-6041	BIODEG EROSN CONT LOGS (INSTL) (12")	LF	170
0506-6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	170
0530-6004	DRIVEWAYS (CONC)	SY	51
0531-6001	CONC SIDEWALKS (4")	SY	133



PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRW# DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

NOTES:

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2. HORIZONTAL ALIGNMENTS AND ROW PROVIDED IS BEST FIT.

STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

SCALE: 1"=20'

Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN WARREN ST & SILVERADO ST

SHEET: 4 OF 7

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		76

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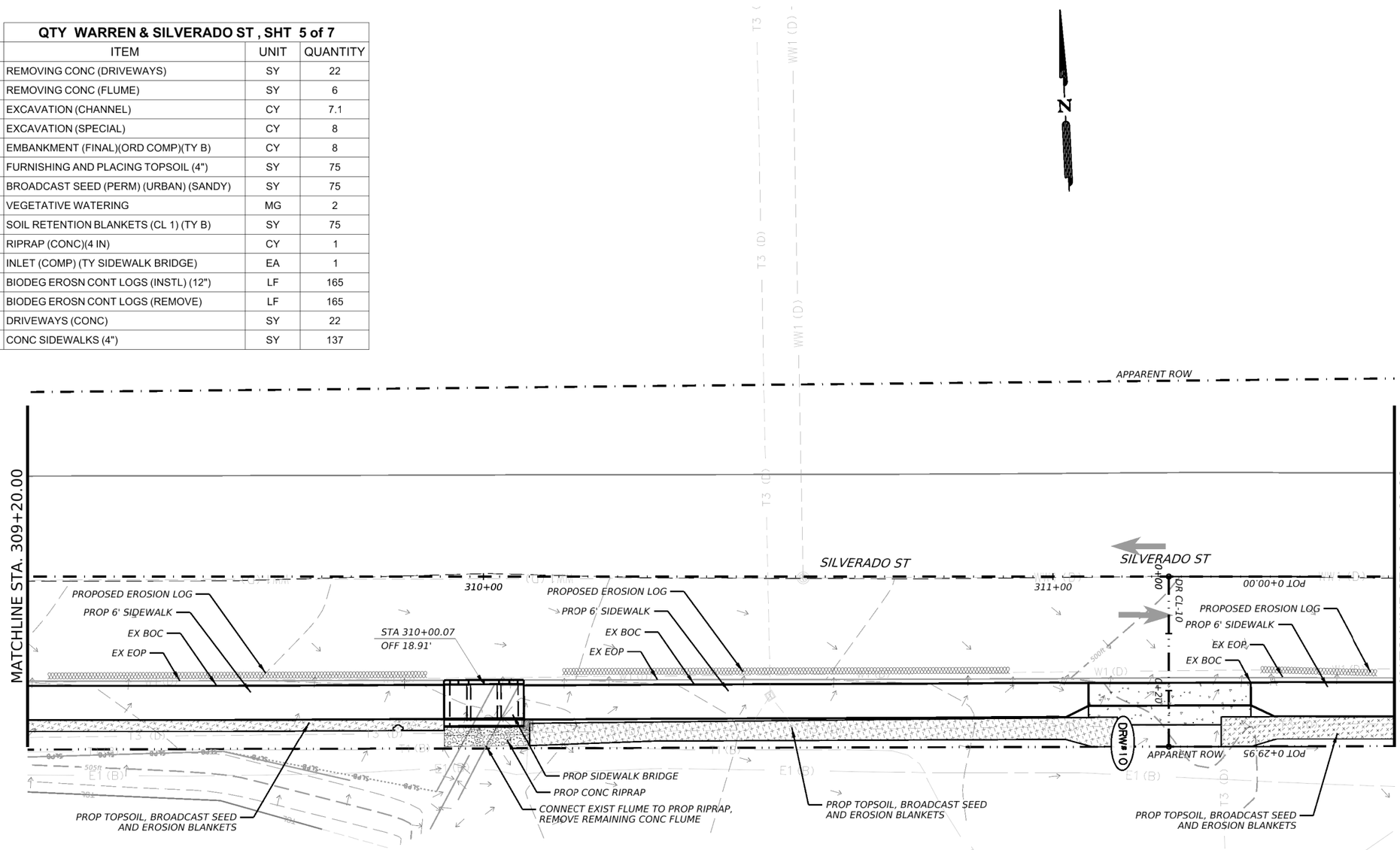
QTY WARREN & SILVERADO ST , SHT 5 of 7			
ITEM NO.	ITEM	UNIT	QUANTITY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	22
0104-6044	REMOVING CONC (FLUME)	SY	6
0110-6002	EXCAVATION (CHANNEL)	CY	7.1
0110-6003	EXCAVATION (SPECIAL)	CY	8
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	8
0160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	75
0164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	75
0168-6001	VEGETATIVE WATERING	MG	2
0169-6002	SOIL RETENTION BLANKETS (CL 1) (TY B)	SY	75
0432-6001	RIPRAP (CONC)(4 IN)	CY	1
0465-6233	INLET (COMP) (TY SIDEWALK BRIDGE)	EA	1
0506-6041	BIODEG EROSN CONT LOGS (INSTL) (12")	LF	165
0506-6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	165
0530-6004	DRIVEWAYS (CONC)	SY	22
0531-6001	CONC SIDEWALKS (4")	SY	137



PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

NOTES:

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STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

SCALE: 1"=20'

Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN WARREN ST & SILVERADO ST

SHEET: 5 OF 7

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		77

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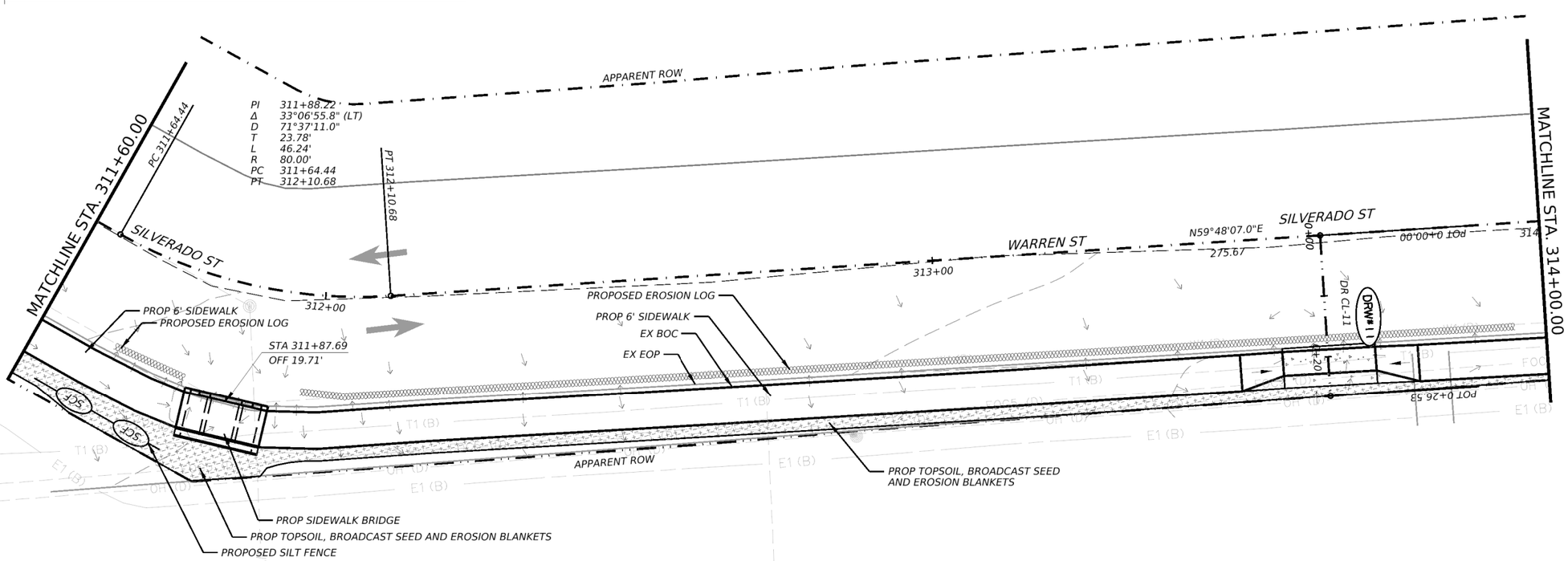
DESIGN: DRAFT: CHECK:

QTY WARREN & SILVERADO ST , SHT 6 of 7

ITEM NO.	ITEM	UNIT	QUANTITY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	12
0110-6002	EXCAVATION (CHANNEL)	CY	1.5
0110-6003	EXCAVATION (SPECIAL)	CY	8
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	8
0160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	71
0164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	71
0168-6001	VEGETATIVE WATERING	MG	2
0169-6002	SOIL RETENTION BLANKETS (CL 1) (TY B)	SY	71
0465-6233	INLET (COMP) (TY SIDEWALK BRIDGE)	EA	1
0506-6035	SANDBAGS FOR EROSION CONTROL	EA	3
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	25
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	25
0506-6041	BIODEG EROSN CONT LOGS (INSTL) (12")	LF	215
0506-6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	215
0530-6004	DRIVEWAYS (CONC)	SY	12
0531-6001	CONC SIDEWALKS (4")	SY	140



PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D. (DRW#)
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

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STATE OF TEXAS
MARTHA GANDARA
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PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

SCALE: 1"=20'

Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN WARREN ST & SILVERADO ST

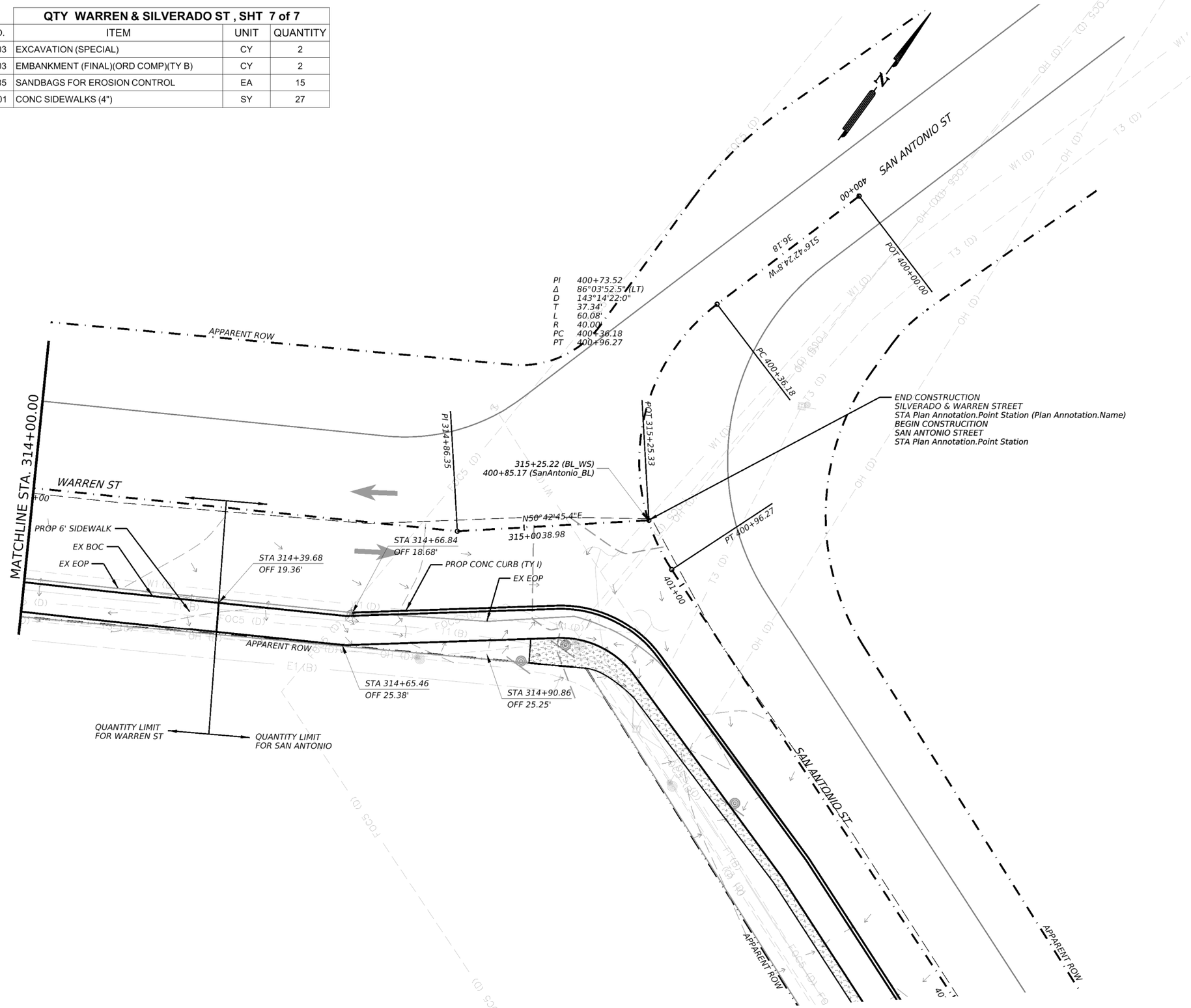
SHEET: 6 OF 7

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		78

DESIGN: DRAFT: CHECK:

QTY WARREN & SILVERADO ST , SHT 7 of 7

ITEM NO.	ITEM	UNIT	QUANTITY
0110-6003	EXCAVATION (SPECIAL)	CY	2
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	2
0506-6035	SANDBAGS FOR EROSION CONTROL	EA	15
0531-6001	CONC SIDEWALKS (4")	SY	27



PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

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Martha Gandara

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Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN WARREN ST & SILVERADO ST

SHEET: 7 OF 7

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		79

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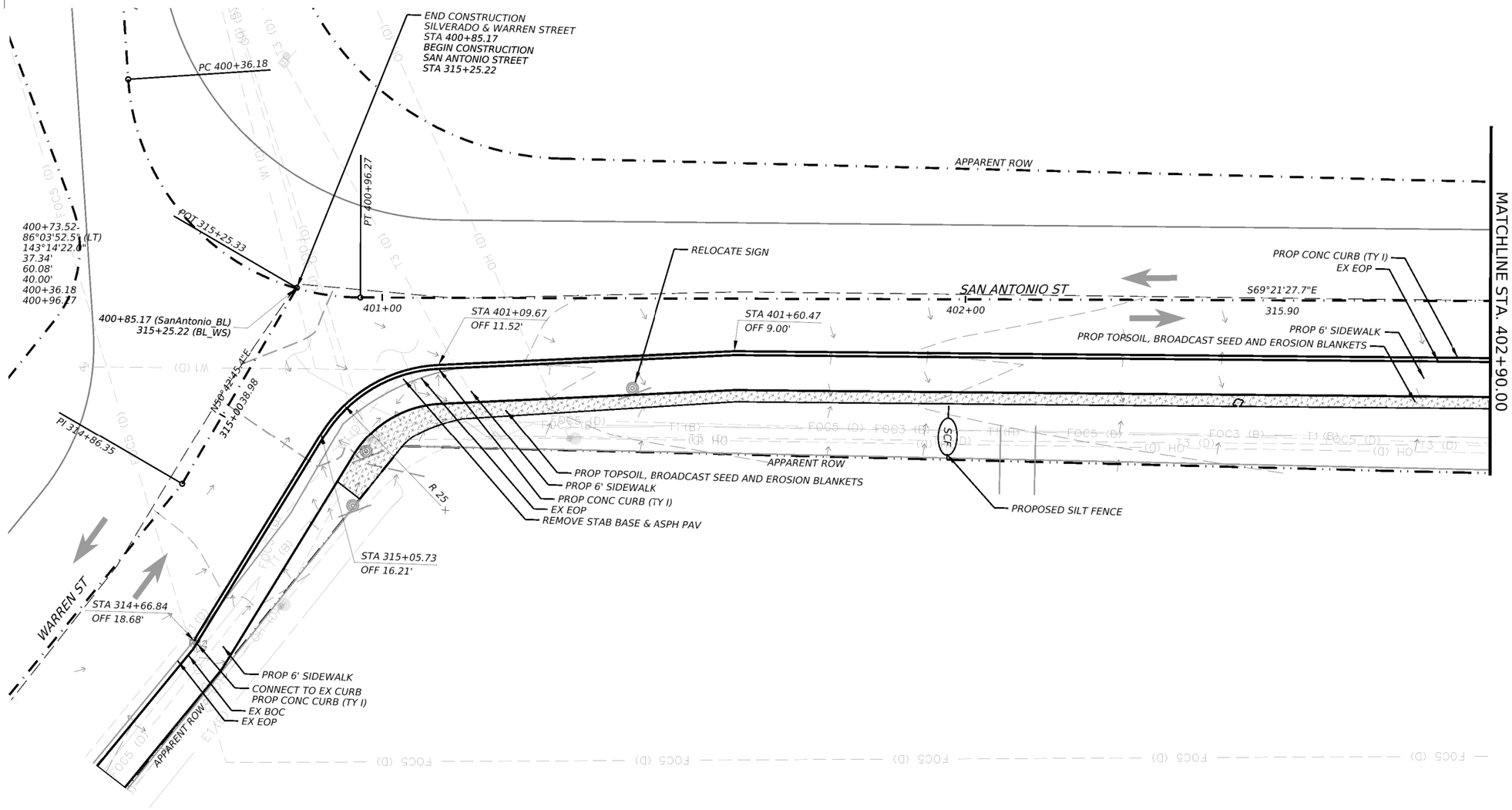
DESIGN: DRAFT: CHECK:

QTY SAN ANTONIO ST , SHT 1 of 6

ITEM NO.	ITEM	UNIT	QUANTITY
0105-6045	REMOVING STAB BASE AND ASPH PAV (2"-8")	SY	13
0110-6003	EXCAVATION (SPECIAL)	CY	10
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	11
0160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	54
0164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	54
0168-6001	VEGETATIVE WATERING	MG	1
0169-6002	SOIL RETENTION BLANKETS (CL 1) (TY B)	SY	54
0506-6035	SANDBAGS FOR EROSION CONTROL	EA	14
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	10
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	10
0529-6001	CONC CURB (TY I)	LF	247
0531-6001	CONC SIDEWALKS (4")	SY	181
0644-6068	RELOCATE SM RD SN SUP&AM TY 10BWG	EA	2



PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

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PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

SCALE: 1"=20'

Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN SAN ANTONIO ST

SHEET: 1 OF 6

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		80

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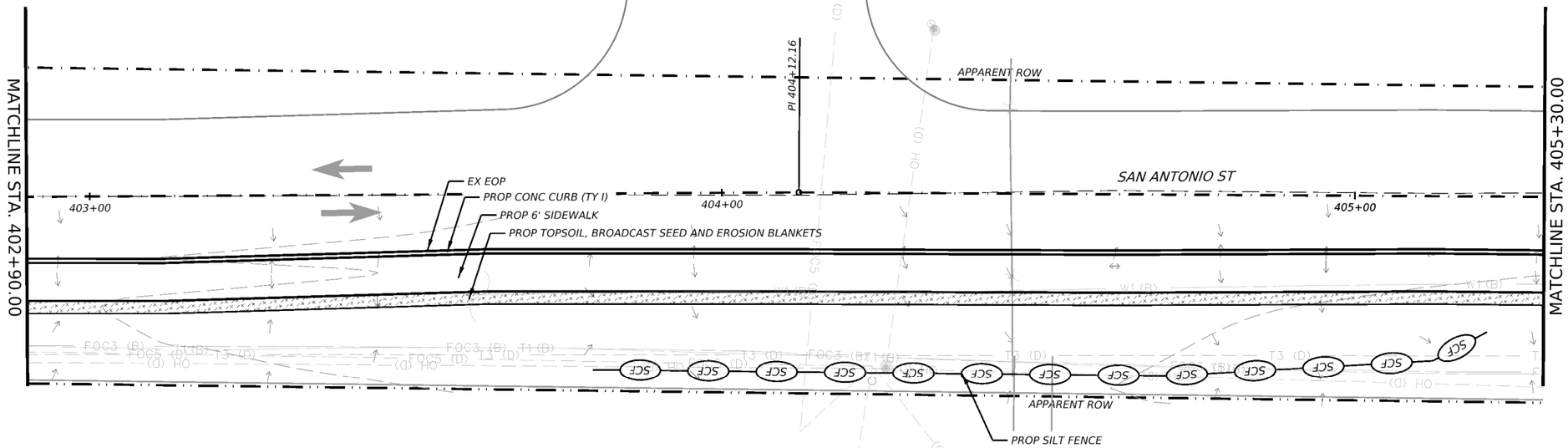
DESIGN: DRAFT: CHECK:

QTY SAN ANTONIO ST , SHT 2 of 6			
ITEM NO.	ITEM	UNIT	QUANTITY
0110-6003	EXCAVATION (SPECIAL)	CY	9
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	9
0160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	54
0164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	54
0168-6001	VEGETATIVE WATERING	MG	1
0169-6002	SOIL RETENTION BLANKETS (CL 1) (TY B)	SY	54
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	145
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	145
0529-6001	CONC CURB (TY I)	LF	240
0531-6001	CONC SIDEWALKS (4")	SY	160



PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRW# DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

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Martha Gandara

DATE: 2/21/2024

SCALE: 1"=20'

Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN SAN ANTONIO ST

SHEET: 2 OF 6

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		81

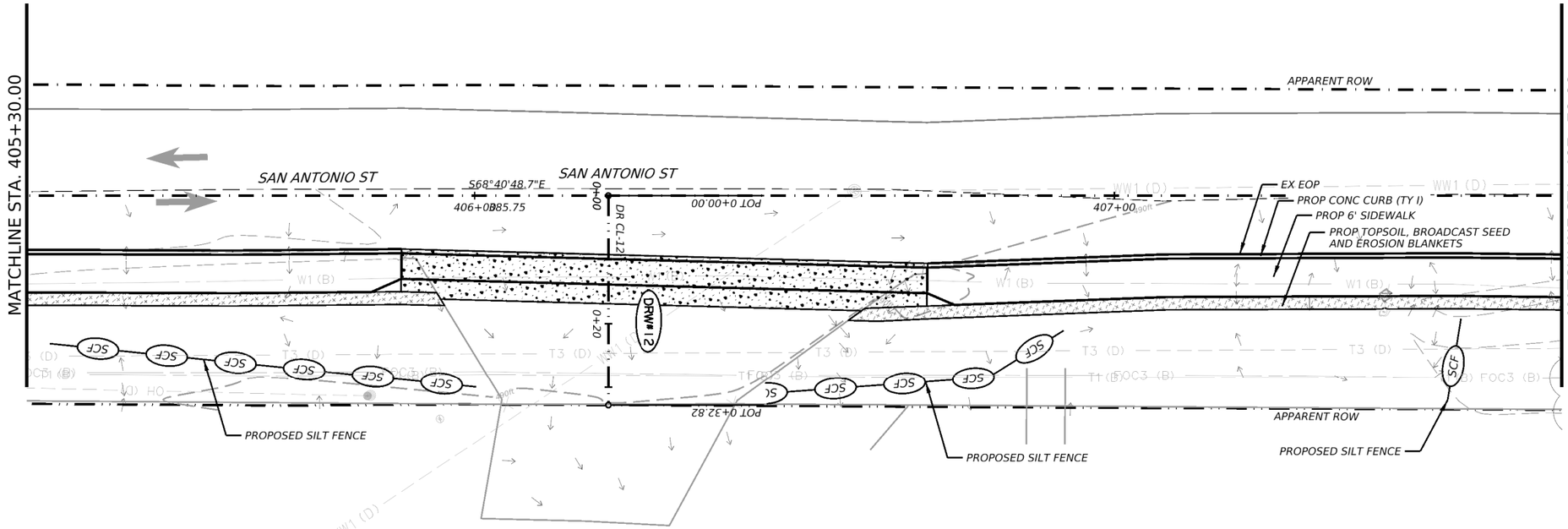
DESIGN: DRAFT: CHECK:

QTY SAN ANTONIO ST , SHT 3 of 6			
ITEM NO.	ITEM	UNIT	QUANTITY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	69
0110-6003	EXCAVATION (SPECIAL)	CY	7
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	7
0160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	39
0164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	39
0168-6001	VEGETATIVE WATERING	MG	1
0169-6002	SOIL RETENTION BLANKETS (CL 1) (TY B)	SY	39
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	132
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	132
0529-6001	CONC CURB (TY I)	LF	158
0530-6004	DRIVEWAYS (CONC)	SY	69
0531-6001	CONC SIDEWALKS (4")	SY	111

N

PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS



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PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

SCALE: 1"=20'

Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN SAN ANTONIO ST

SHEET: 3 OF 6

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		82

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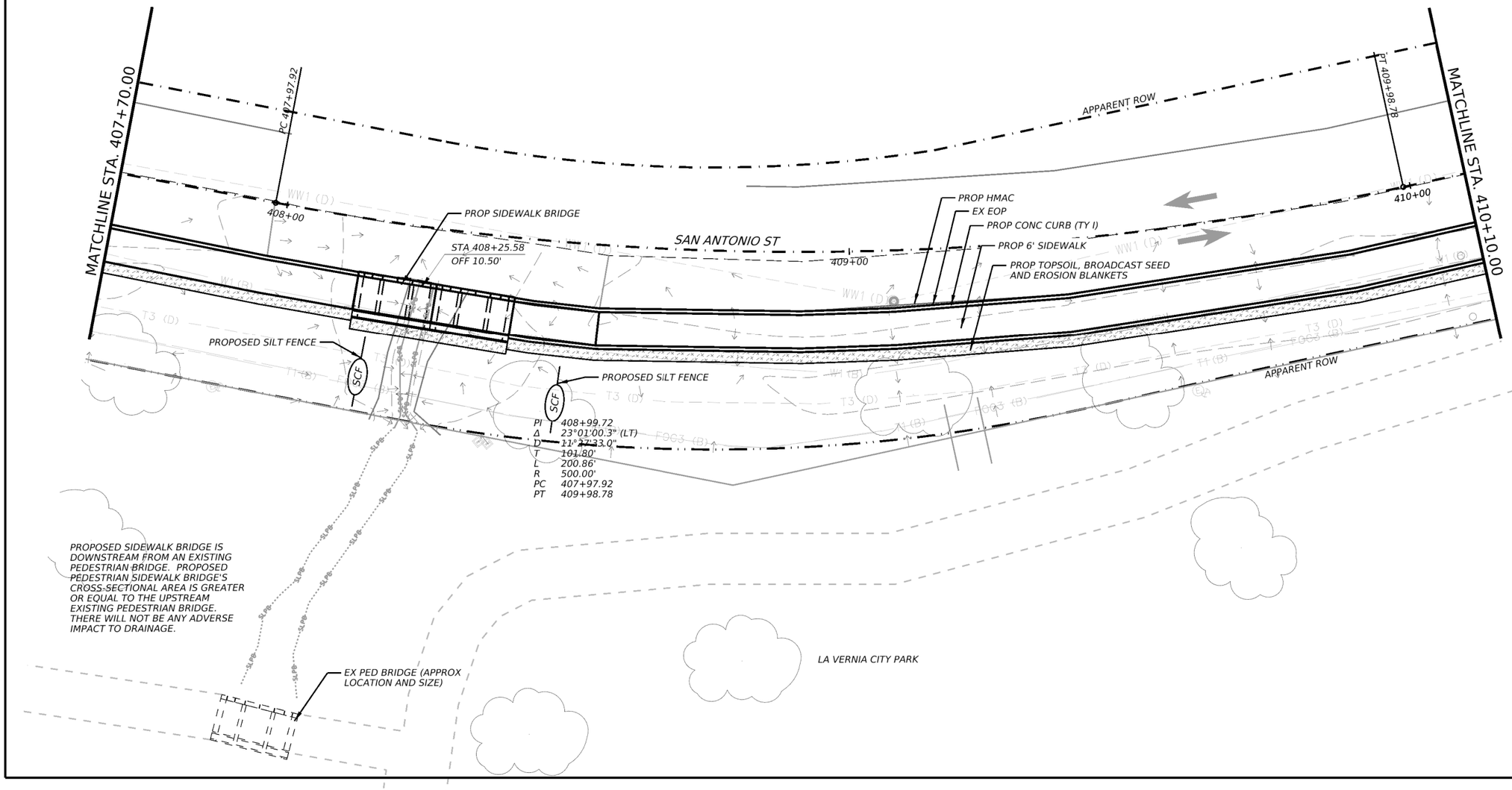
DESIGN: DRAFT: CHECK:

QTY SAN ANTONIO ST , SHT 4 of 6			
ITEM NO.	ITEM	UNIT	QUANTITY
0110-6003	EXCAVATION (SPECIAL)	CY	9
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	9
0160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	55
0164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	55
0168-6001	VEGETATIVE WATERING	MG	1
0169-6002	SOIL RETENTION BLANKETS (CL 1) (TY B)	SY	55
0351-6002	FLEXIBLE PAVEMENT STRUCTURE REPAIR(6")	SY	1.7
0465-6233	INLET (COMP) (TY SIDEWALK BRIDGE)	EA	2
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	25
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	25
0529-6001	CONC CURB (TY I)	LF	390
0531-6001	CONC SIDEWALKS (4")	SY	145

PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS



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Martha Gandara

DATE: 2/21/2024

SCALE: 1"=20'

Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN SAN ANTONIO ST

SHEET: 4 OF 6

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		83

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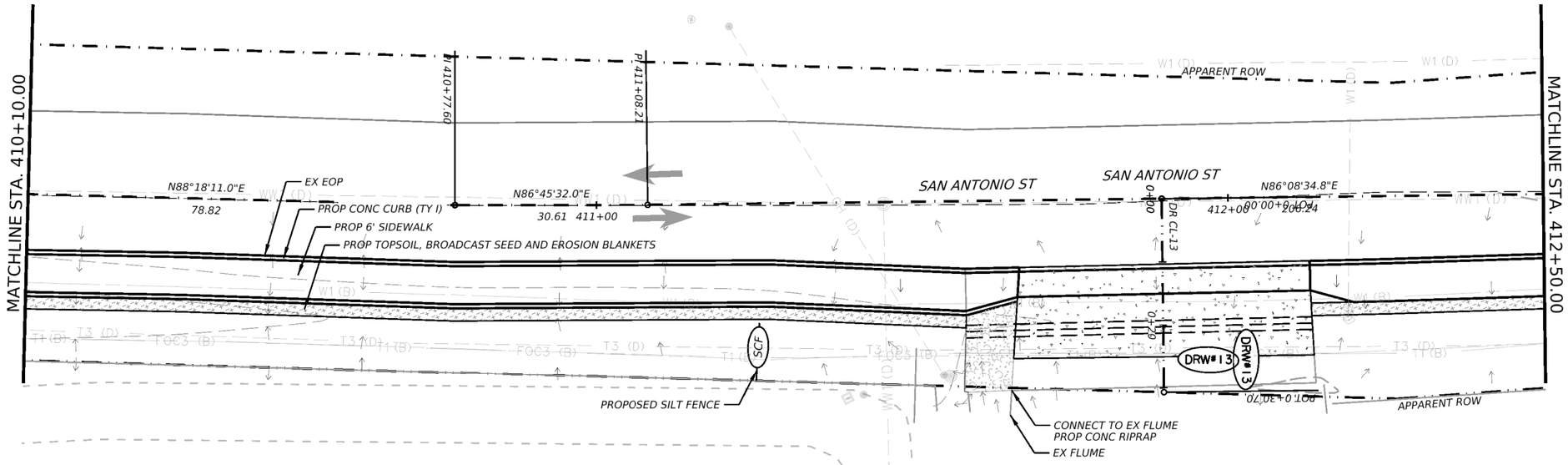
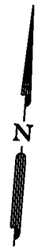
DESIGN: DRAFT: CHECK:

QTY SAN ANTONIO ST , SHT 5 of 6			
ITEM NO.	ITEM	UNIT	QUANTITY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	76
0104-6028	REMOVING CONC (MISC)	SY	12
0110-6002	EXCAVATION (CHANNEL)	CY	2.7
0110-6003	EXCAVATION (SPECIAL)	CY	8
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	8
0160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	42
0164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	42
0168-6001	VEGETATIVE WATERING	MG	1
0169-6002	SOIL RETENTION BLANKETS (CL 1) (TY B)	SY	42
0432-6001	RIPRAP (CONC)(4 IN)	CY	2
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	10
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	10
0529-6001	CONC CURB (TY I)	LF	352
0530-6004	DRIVEWAYS (CONC)	SY	76
0531-6001	CONC SIDEWALKS (4")	SY	129





PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRW# — DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

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STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

SCALE: 1"=20'

Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN SAN ANTONIO ST

SHEET: 5 OF 6

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		84

2/21/2024 8:00:31 AM
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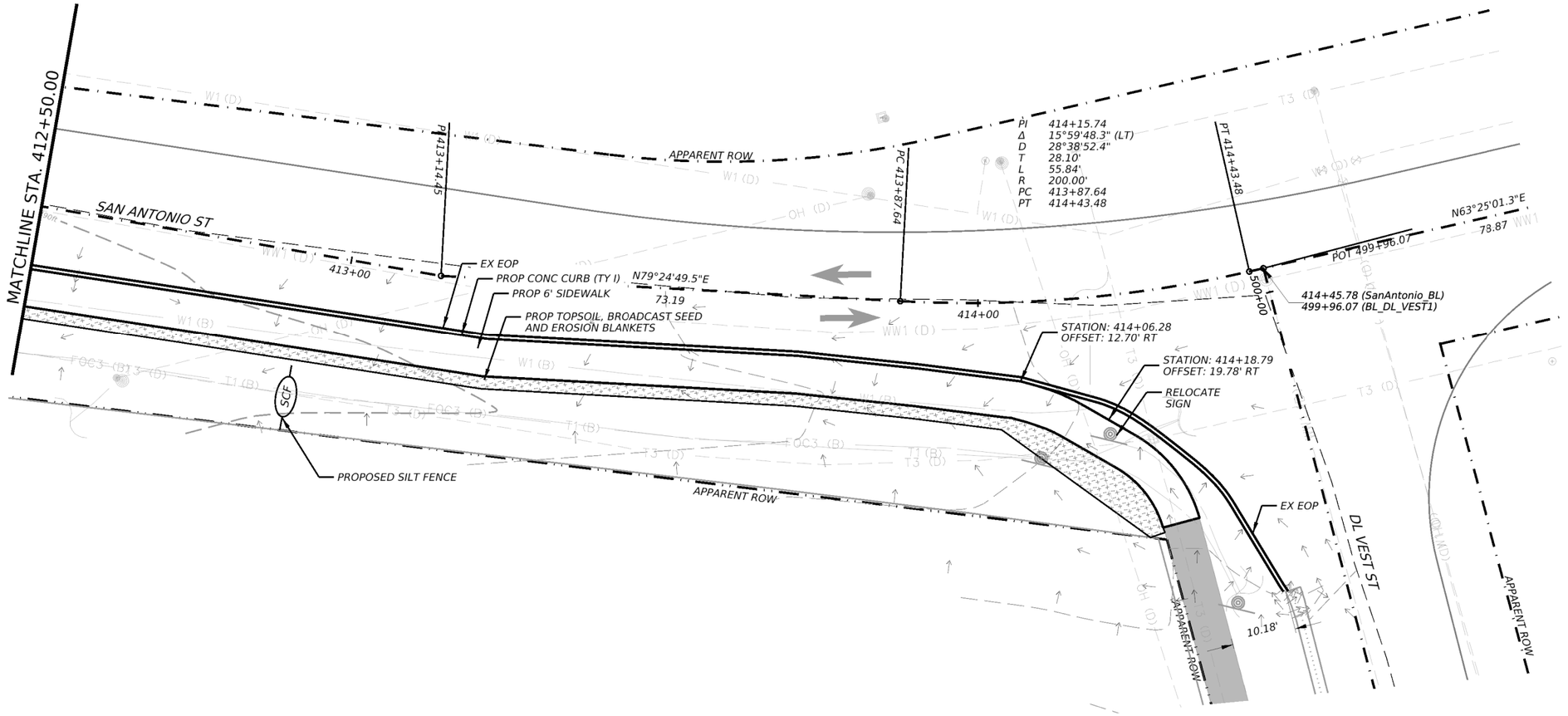
QTY SAN ANTONIO ST , SHT 6 of 6			
ITEM NO.	ITEM	UNIT	QUANTITY
0110-6003	EXCAVATION (SPECIAL)	CY	8
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	8
0160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	49
0164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	49
0168-6001	VEGETATIVE WATERING	MG	1
0169-6002	SOIL RETENTION BLANKETS (CL 1) (TY B)	SY	49
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	10
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	10
0529-6001	CONC CURB (TY I)	LF	191
0531-6001	CONC SIDEWALKS (4")	SY	128



PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

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Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN SAN ANTONIO ST

SHEET: 6 OF 6

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		85

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NO WORK THIS SHEET

N

SAN ANTONIO ST

415+00

N63°25'01.3"E
78.87

POT 499+96.07

APPARENT ROW

499+96.07 (BL_DL_VEST1)
414+45.78 (SanAntonio_BL)

PT 414+43.48

500+00

DL VEST ST

501+00

EXISTING EOP
EXISTING GUTTER

S28°29'22.4"E
293.88

SAN ANTONIO ST

PI 414+15.74
Δ 15°59'48.3" (LT)
-D 28°38'52.4"
T 28.10'
L 55.84'
-R 200.00'
PC 413+87.64
PT 414+43.48

414+00

PC 413+87.64

APPARENT ROW

CONNECT TO EXISTING SIDEWALK

EXISTING SIDEWALK

ALL QUANTITIES ON FM 775 WILL BE PROVIDED IN SAN ANTONIO STREET SIDEWALK PLAN, SHEET 6 OF 6

APPARENT ROW

N79°24'49.5"E
73.19

APPARENT ROW

PI 413+14.45

MATCHLINE STA. 501+60.00

PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

NOTES:

1. SEE UTILITY PLANS FOR INFORMATION ON UTILITIES. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITIES BEFORE BEGINNING ANY TYPE OF WORK.
2. HORIZONTAL ALIGNMENTS AND ROW PROVIDED IS BEST FIT.

STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

SCALE: 1"=20'

Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN DL VEST ST

SHEET: 1 OF 4

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		86

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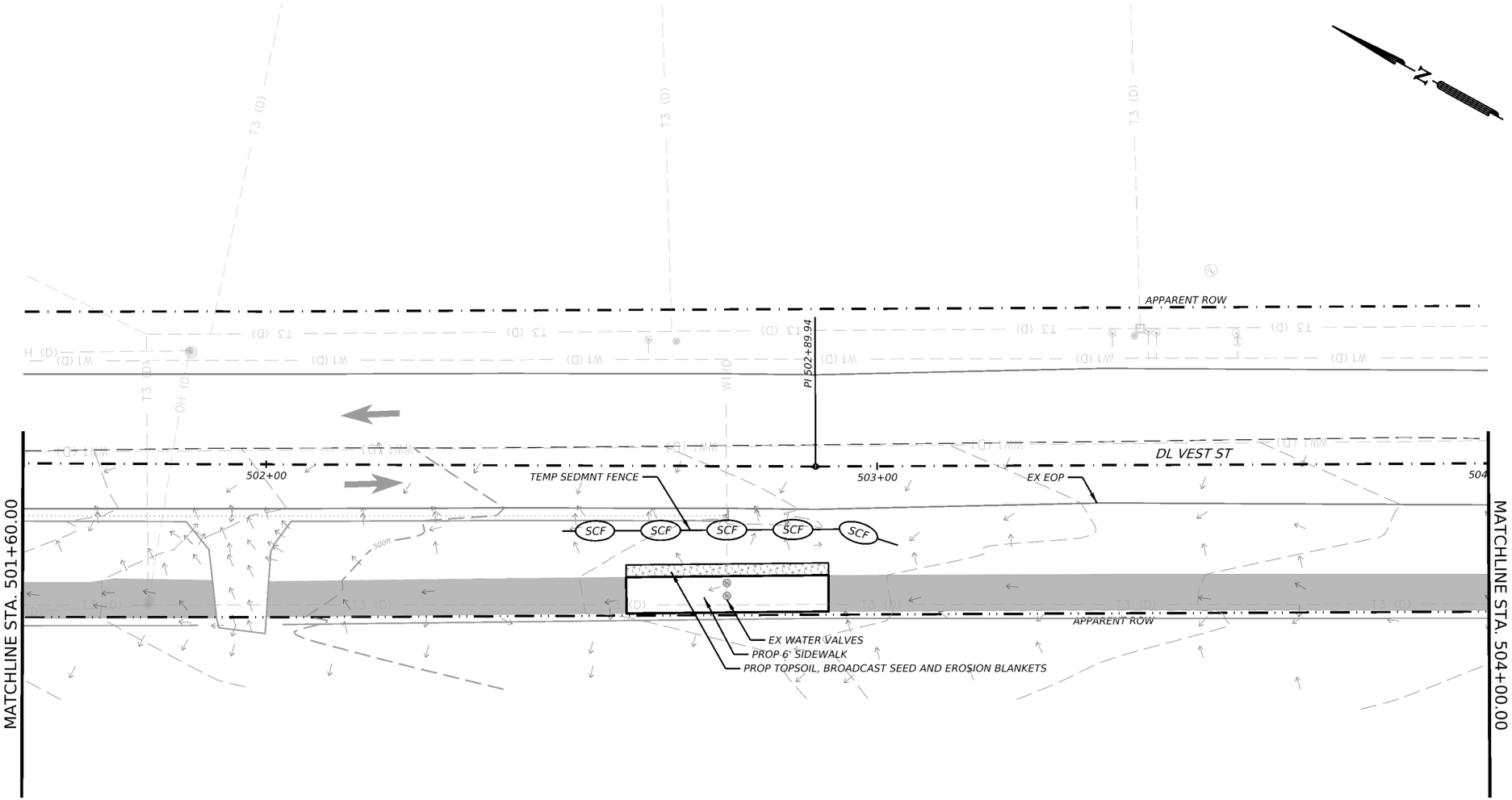

PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D. (DRW#)
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

NOTES:

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2. HORIZONTAL ALIGNMENTS AND ROW PROVIDED IS BEST FIT.

QTY DL VEST ST , SHT 2 of 4			
ITEM NO.	ITEM	UNIT	QUANTITY
0110-6003	EXCAVATION (SPECIAL)	CY	2
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	2
0160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	23
0164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	23
0168-6001	VEGETATIVE WATERING	MG	1
0169-6002	SOIL RETENTION BLANKETS (CL 1) (TY B)	SY	23
0506-6035	SANDBAGS FOR EROSION CONTROL	EA	6
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	55
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	55
0531-6001	CONC SIDEWALKS (4")	SY	87

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DL VEST STREET SIDEWALK PLAN DL VEST ST

SHEET: 2 OF 4

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		87

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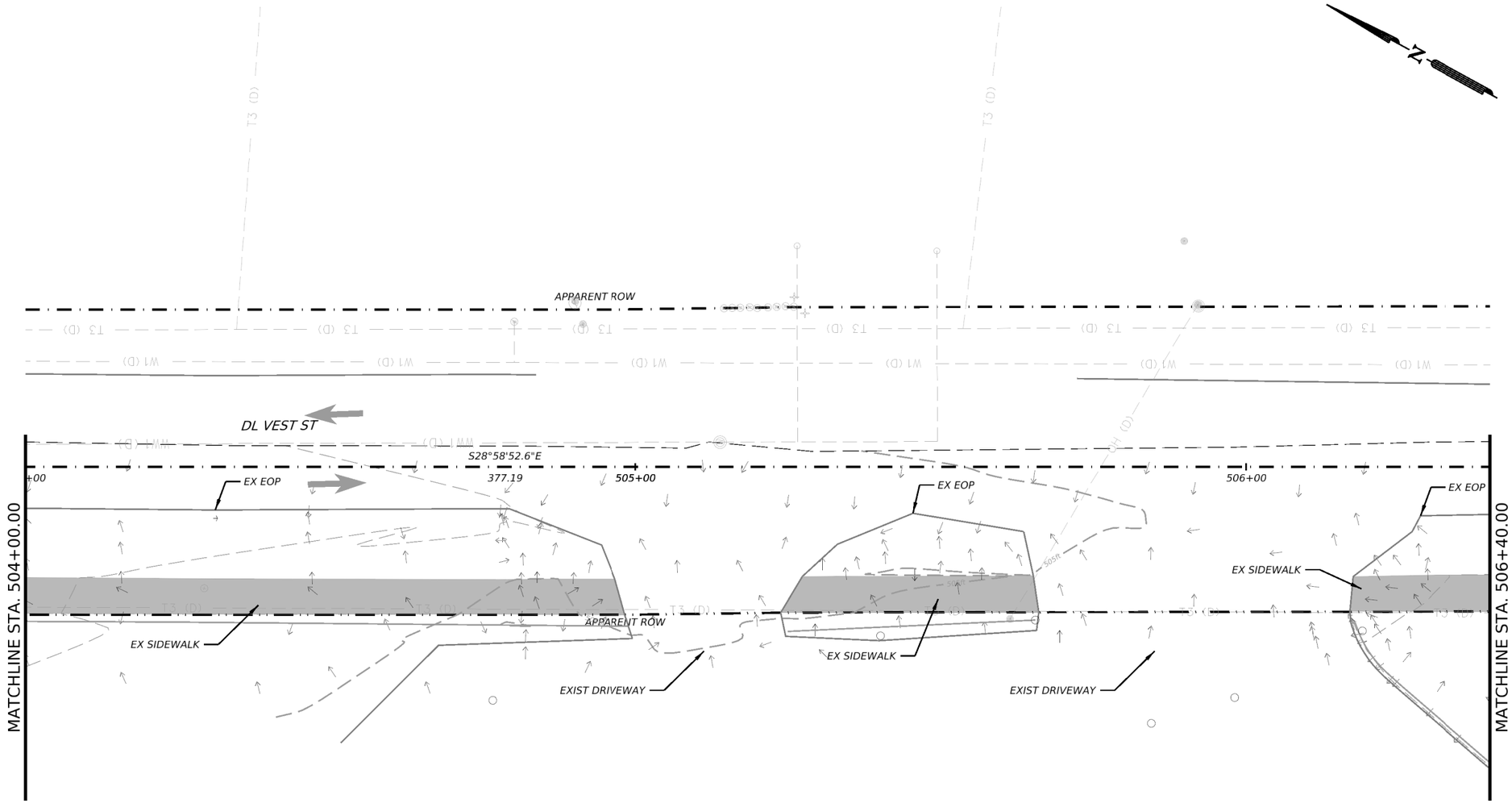

PLAN LEGEND

- PROPOSED SIDEWALK
- BLOCK SODDING
- DRIVEWAY
- DRIVEWAY I.D.
- APPARENT ROW
- EXISTING TRAFFIC DIRECTION
- EXISTING DRAINAGE FLOWS

NOTES:

1. SEE UTILITY PLANS FOR INFORMATION ON UTILITIES. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITIES BEFORE BEGINNING ANY TYPE OF WORK.
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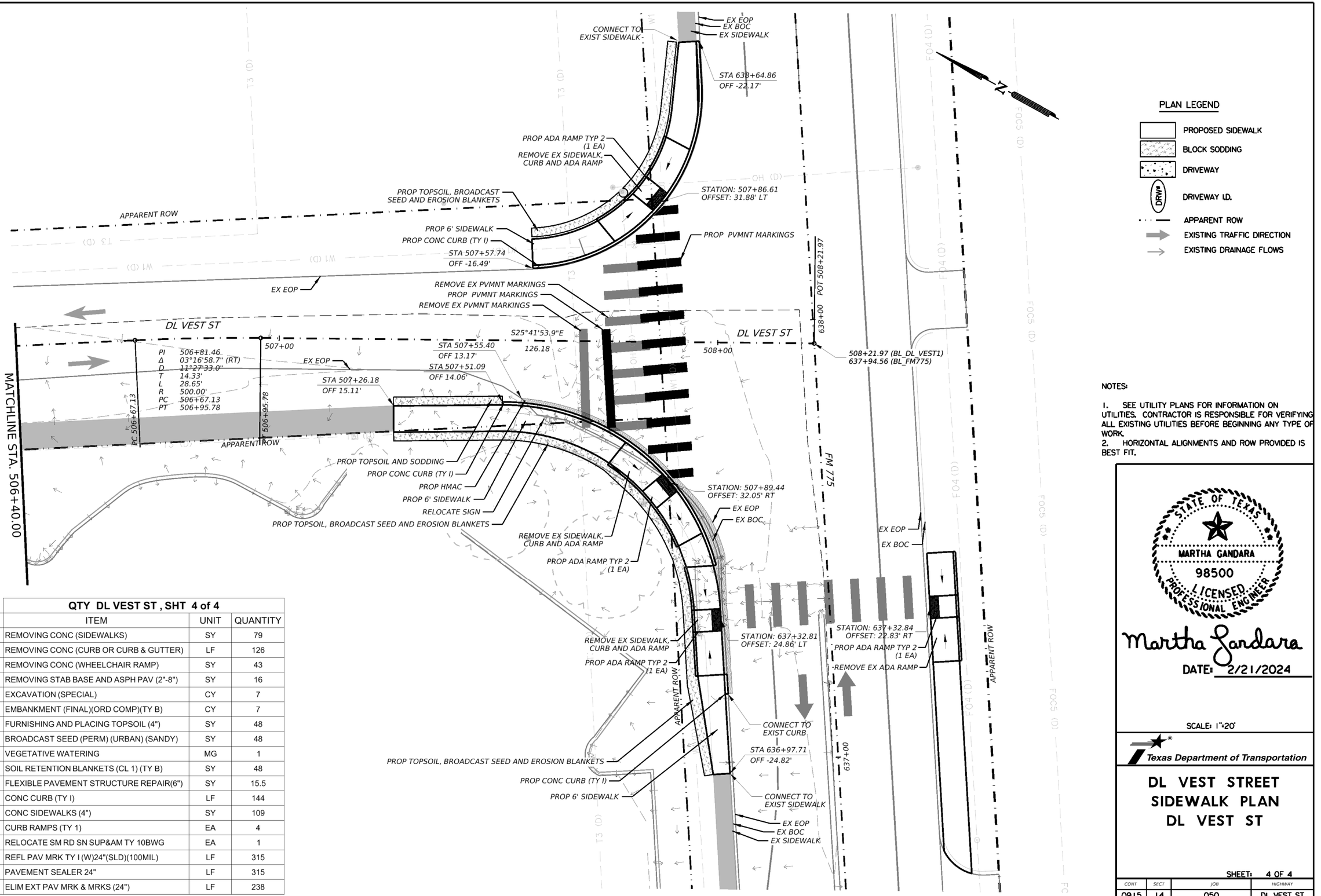
Texas Department of Transportation

DL VEST STREET SIDEWALK PLAN DL VEST ST

SHEET: 3 OF 4

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		88



NOTES:

1. SEE UTILITY PLANS FOR INFORMATION ON UTILITIES. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITIES BEFORE BEGINNING ANY TYPE OF WORK.
2. HORIZONTAL ALIGNMENTS AND ROW PROVIDED IS BEST FIT.

QTY DL VEST ST , SHT 4 of 4			
ITEM NO.	ITEM	UNIT	QUANTITY
0104-6015	REMOVING CONC (SIDEWALKS)	SY	79
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	126
0104-6032	REMOVING CONC (WHEELCHAIR RAMP)	SY	43
0105-6045	REMOVING STAB BASE AND ASPH PAV (2"-8")	SY	16
0110-6003	EXCAVATION (SPECIAL)	CY	7
0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	7
0160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	48
0164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	48
0168-6001	VEGETATIVE WATERING	MG	1
0169-6002	SOIL RETENTION BLANKETS (CL 1) (TY B)	SY	48
0351-6002	FLEXIBLE PAVEMENT STRUCTURE REPAIR(6")	SY	15.5
0529-6001	CONC CURB (TY I)	LF	144
0531-6001	CONC SIDEWALKS (4")	SY	109
0531-6004	CURB RAMPS (TY 1)	EA	4
0644-6068	RELOCATE SM RD SN SUP&AM TY 10BWG	EA	1
0666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	315
0666-6230	PAVEMENT SEALER 24"	LF	315
0677-6007	ELIM EXT PAV MRK & MRKS (24")	LF	238

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DL VEST STREET SIDEWALK PLAN DL VEST ST

SHEET: 4 OF 4

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		89

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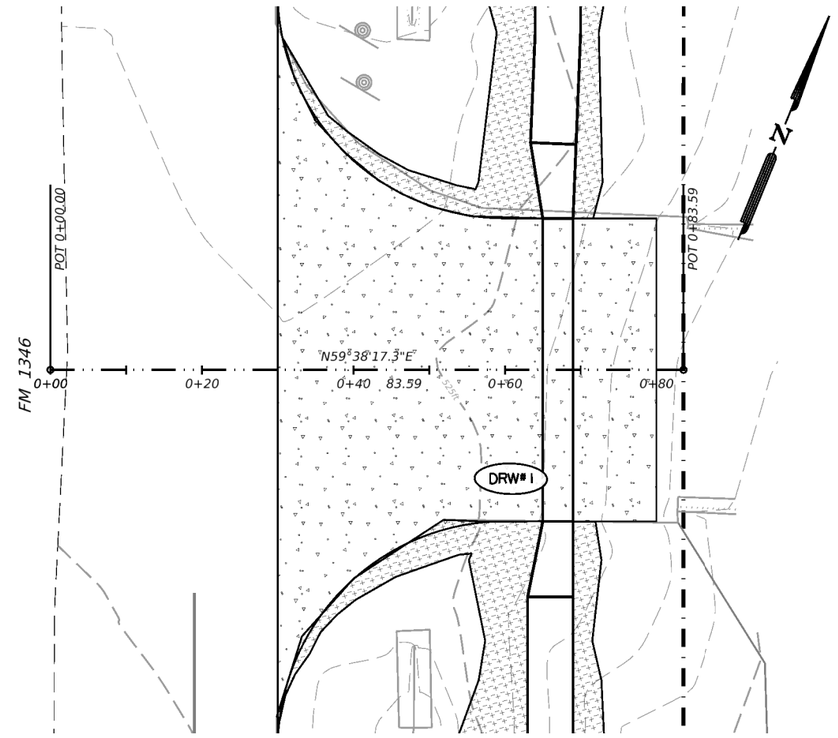
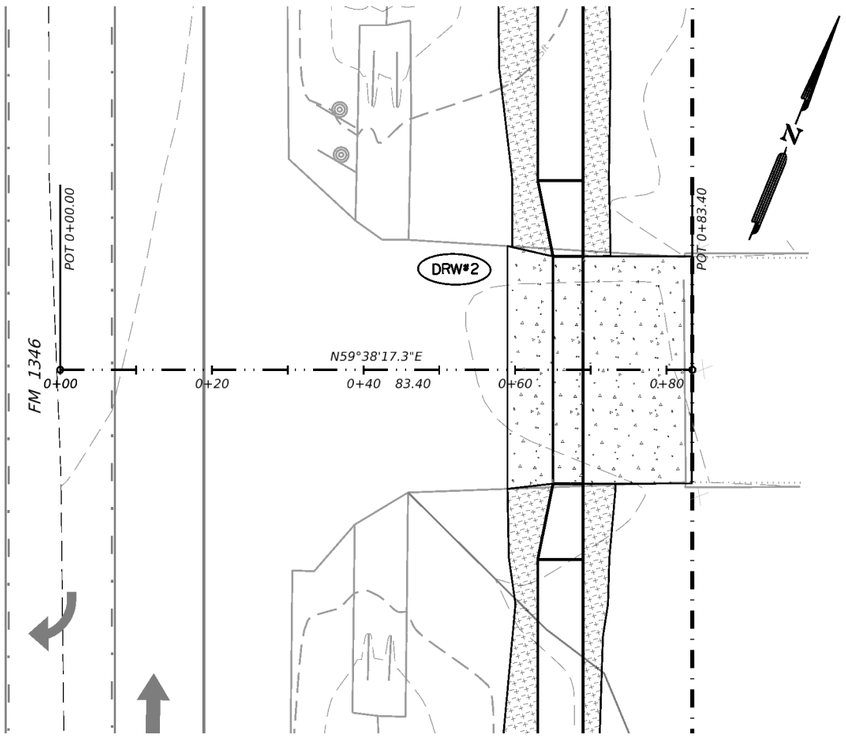
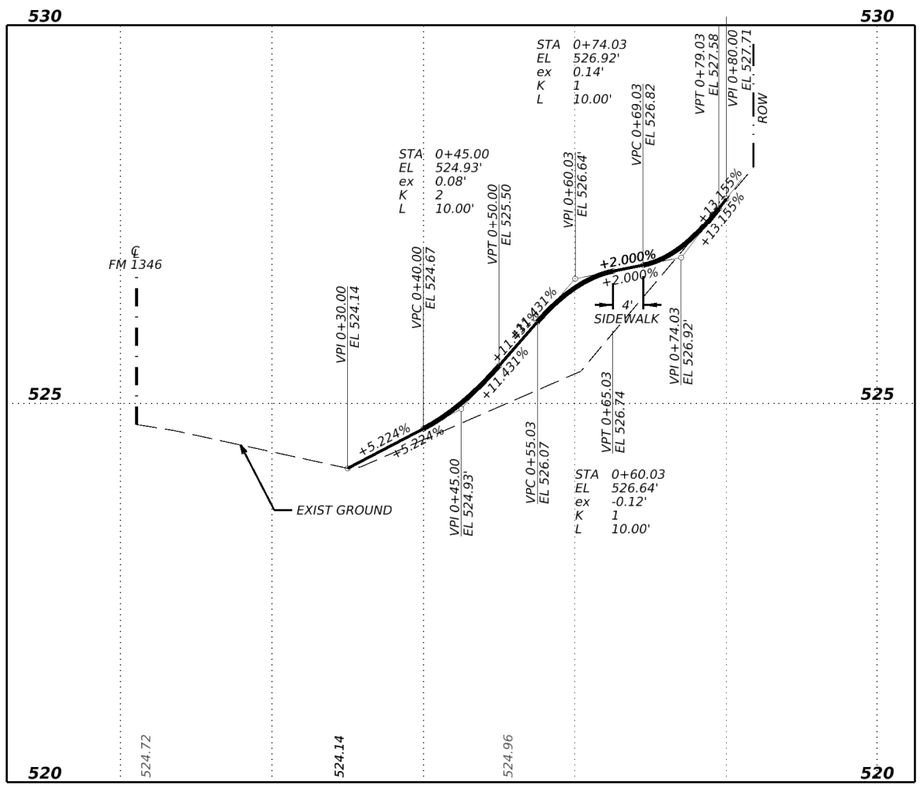
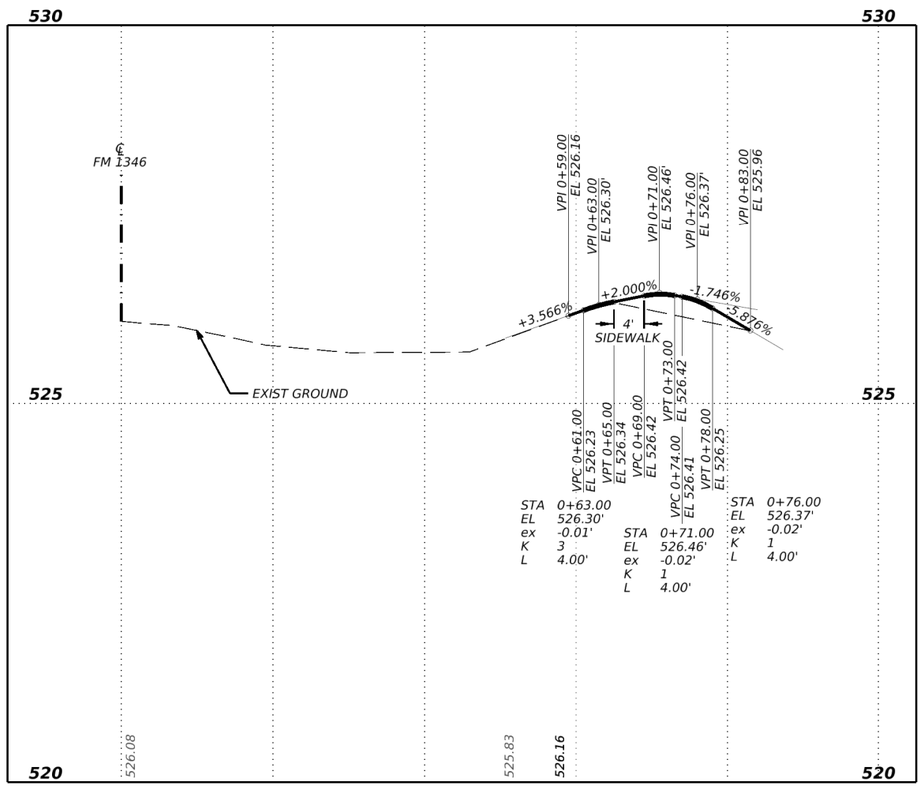




PLAN LEGEND

- CONC DRIVEWAY
- ASHPALT DRIVEWAY
- FAST TRACK CONC DRIVEWAY
- DRW# — DRIVEWAY I.D.





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Martha Gandara

DATE: 2/21/2024

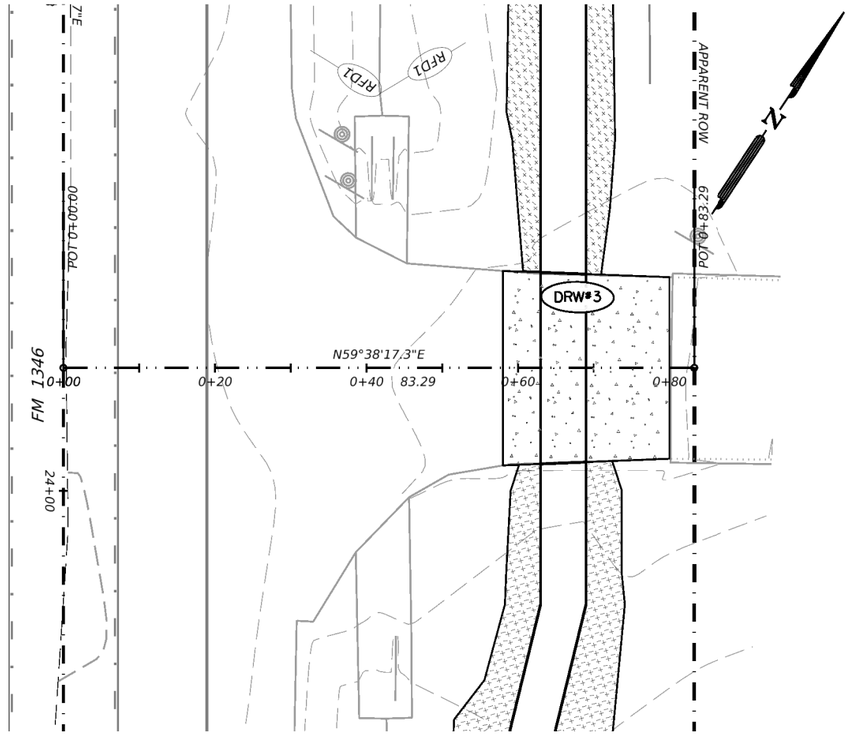
SCALE: HORIZONTAL 1"=20'
SCALE: VERTICAL 1"=2'

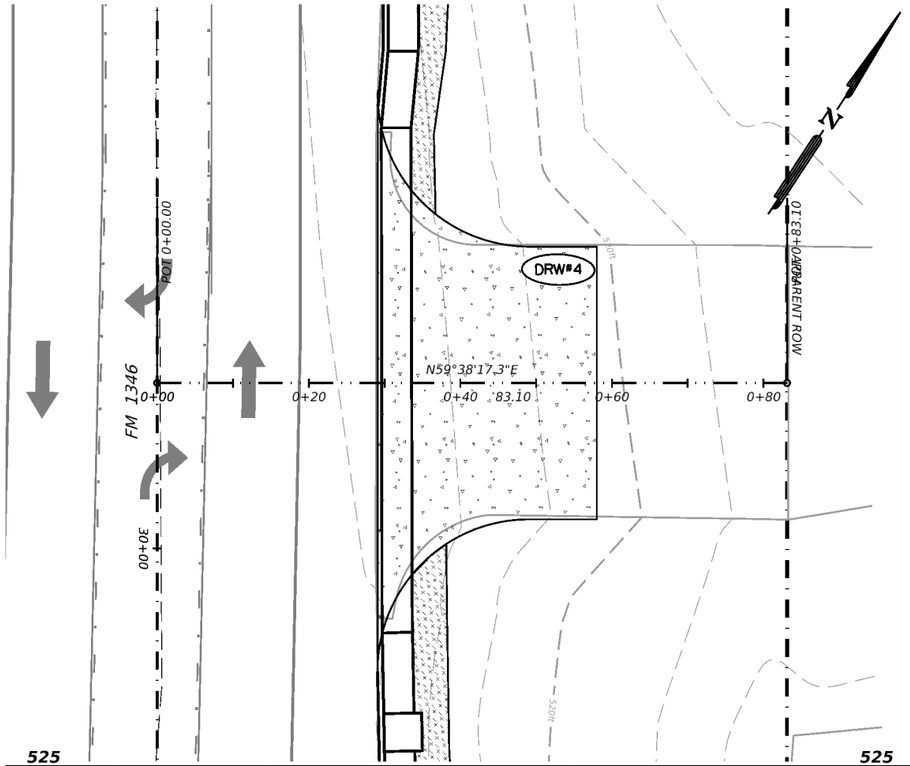
Texas Department of Transportation

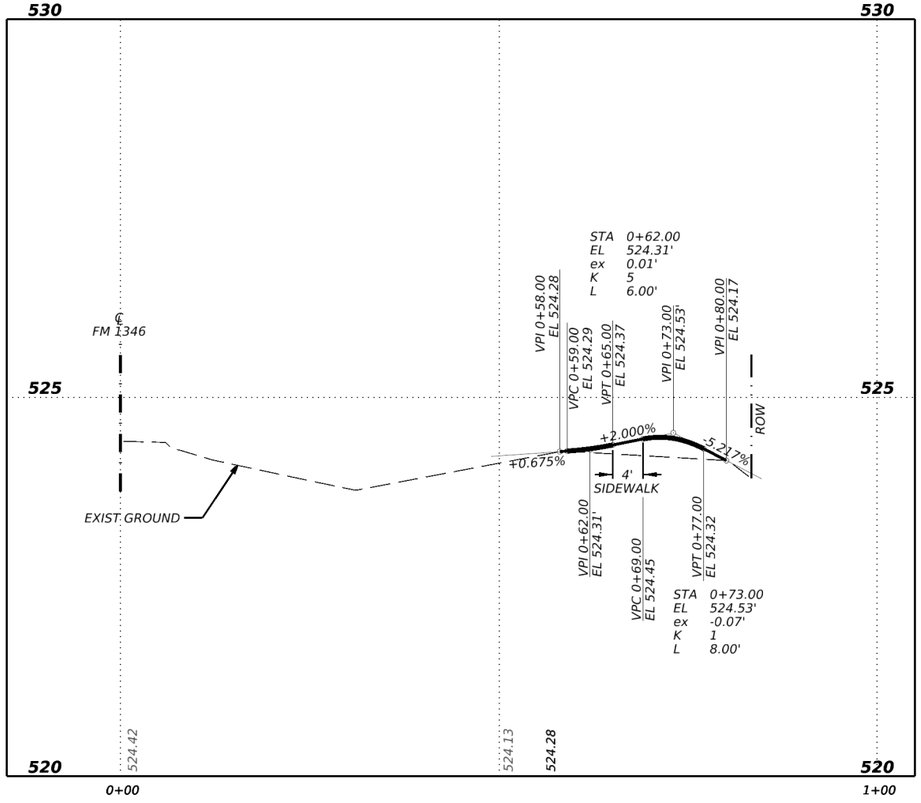
DL VEST STREET DRIVEWAY PLAN AND PROFILE

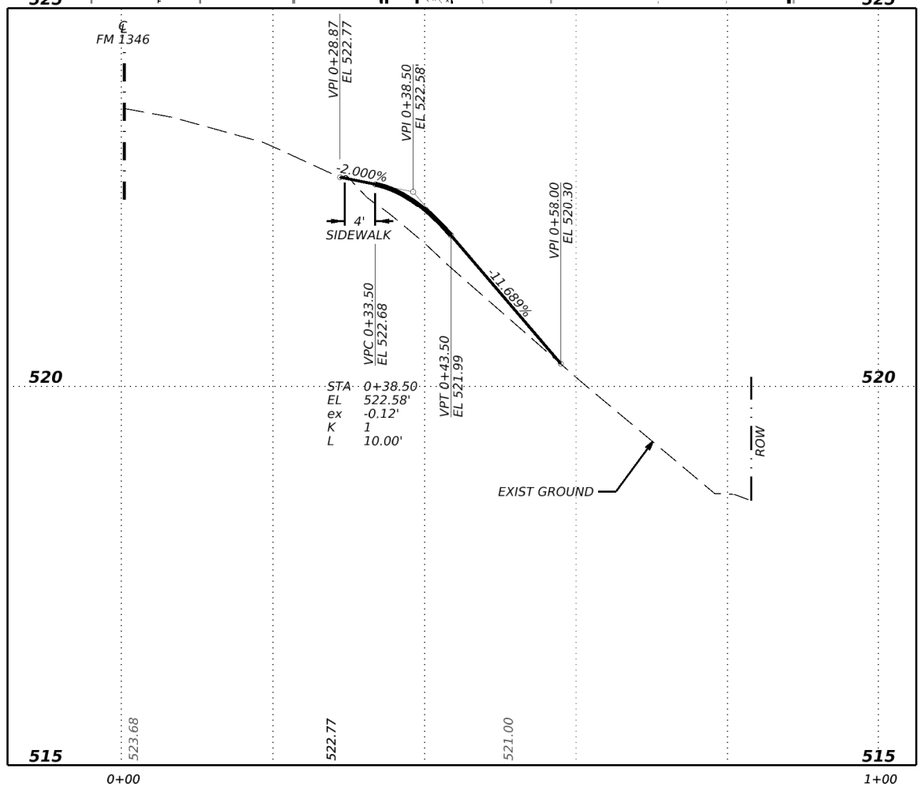
SHEET: 1 OF 5

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		90









PLAN LEGEND

- CONC DRIVEWAY
- ASHPALT DRIVEWAY
- FAST TRACK CONC DRIVEWAY
- DRW# — DRIVEWAY I.D.

STATE OF TEXAS
MARTHA GANDARA
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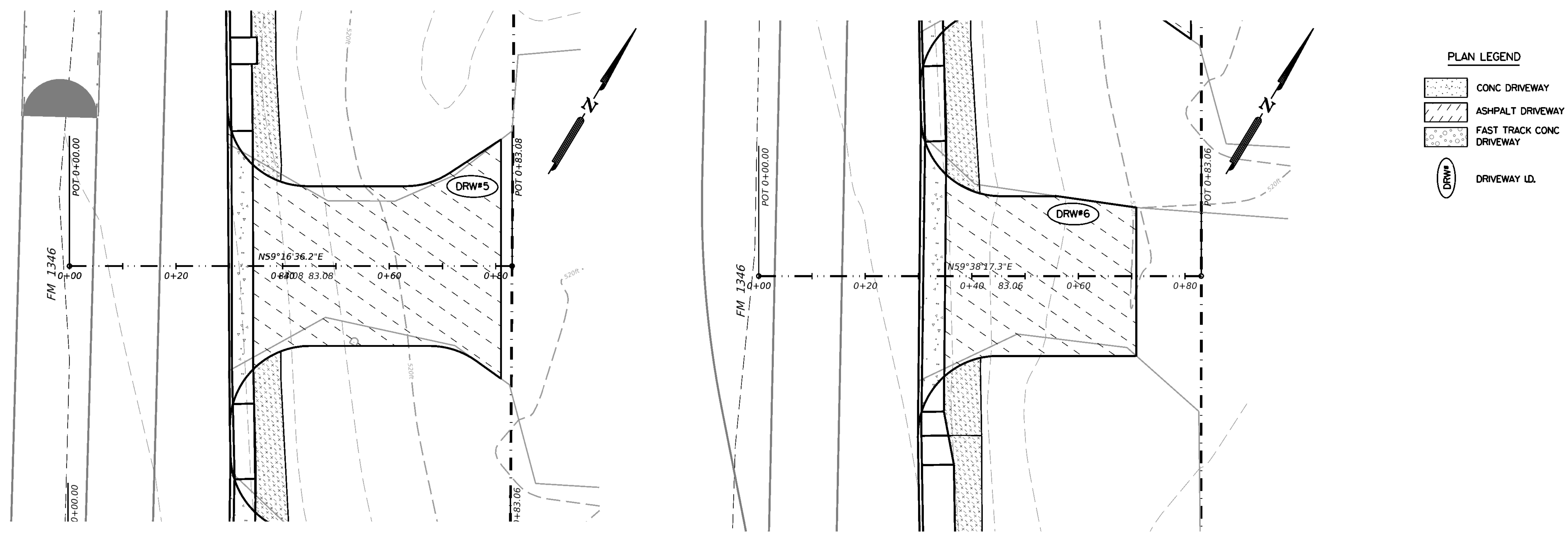
SCALE: VERTICAL 1"=2'

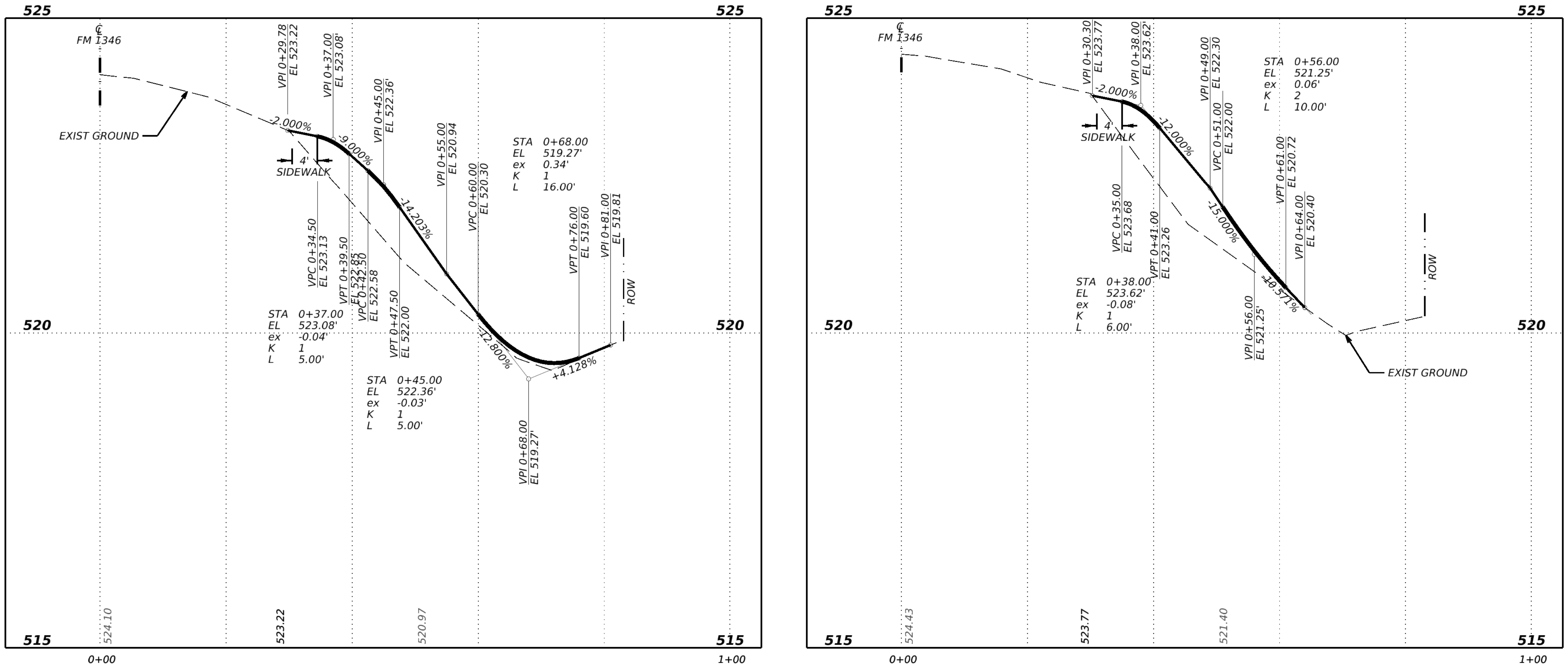
Texas Department of Transportation

DL VEST STREET DRIVEWAY PLAN AND PROFILE

SHEET: 2 OF 5

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		91





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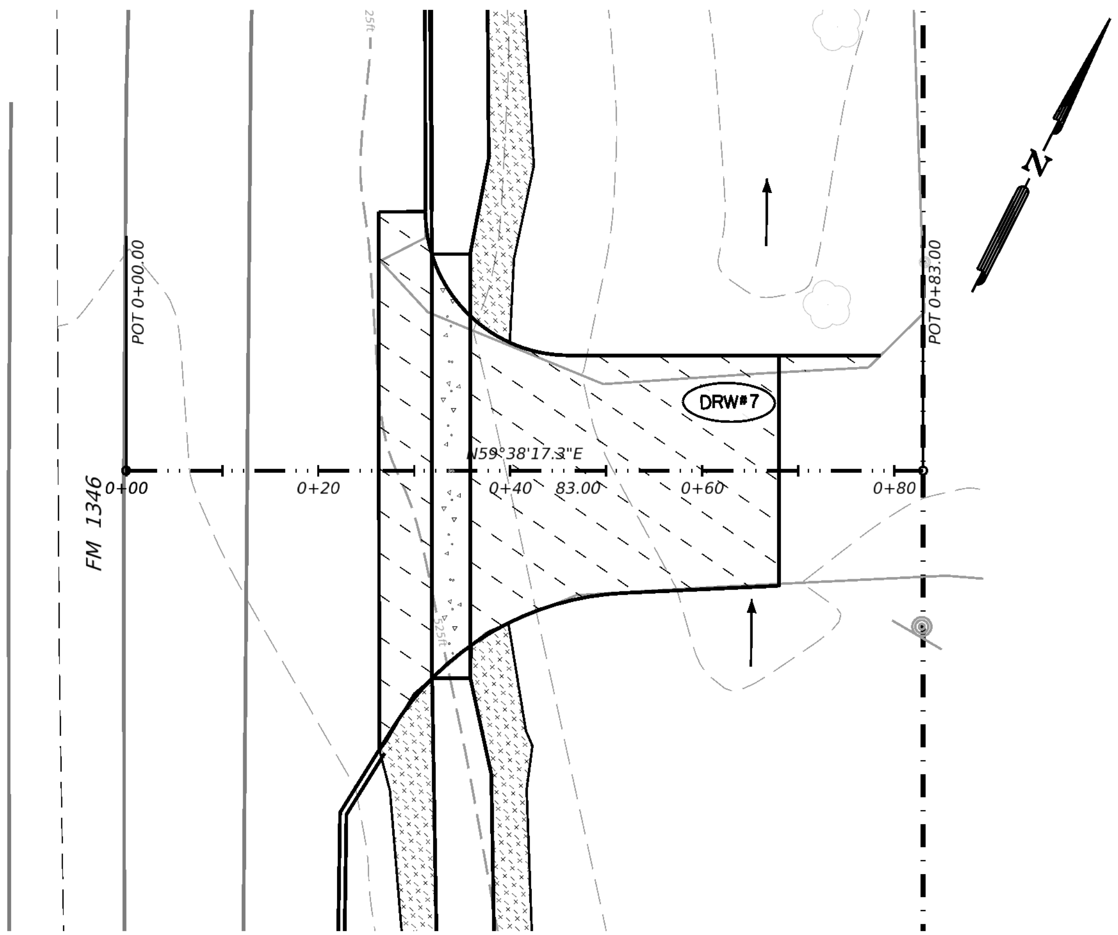
SCALE: HORIZONTAL 1"=20'
SCALE: VERTICAL 1"=2'

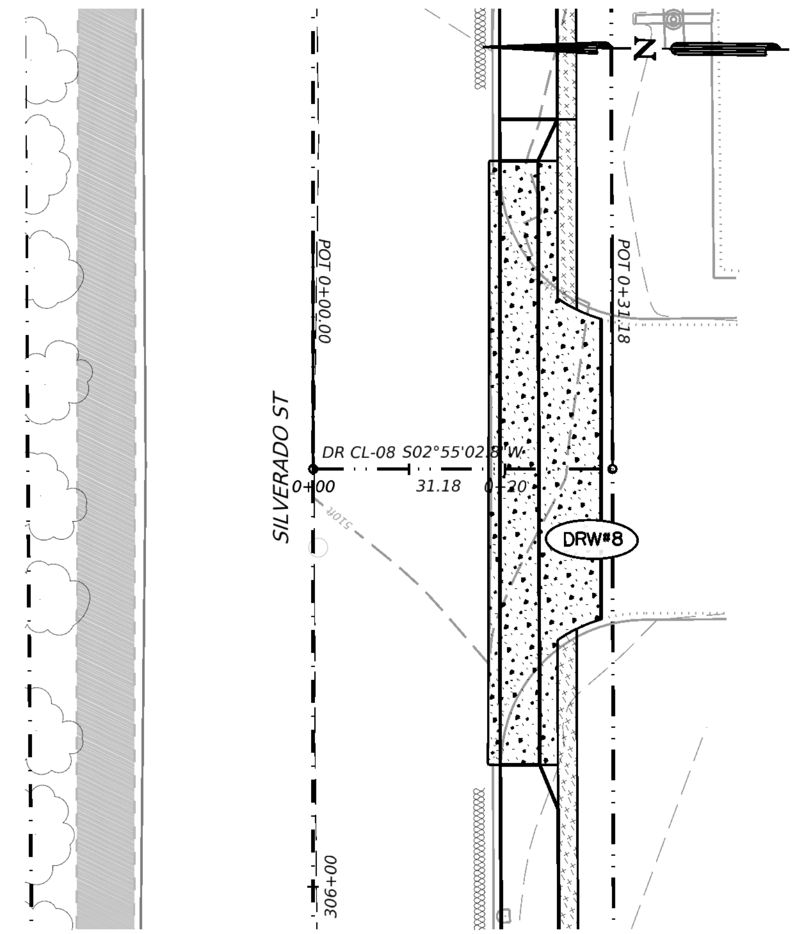
Texas Department of Transportation

DL VEST STREET DRIVEWAY PLAN AND PROFILE

SHEET: 3 OF 5

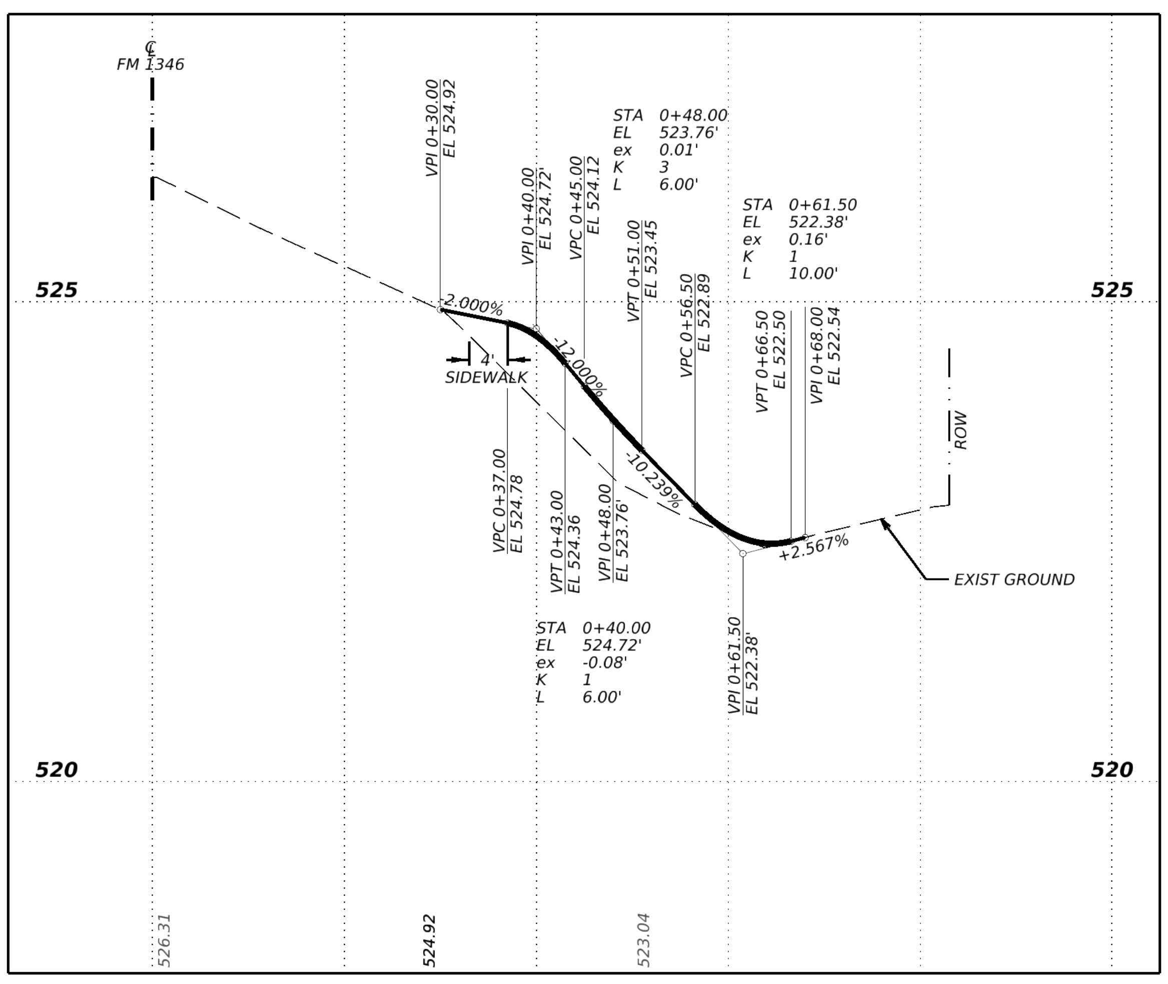
CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST		COUNTY	SHEET NO.
SAT		WILSON	92

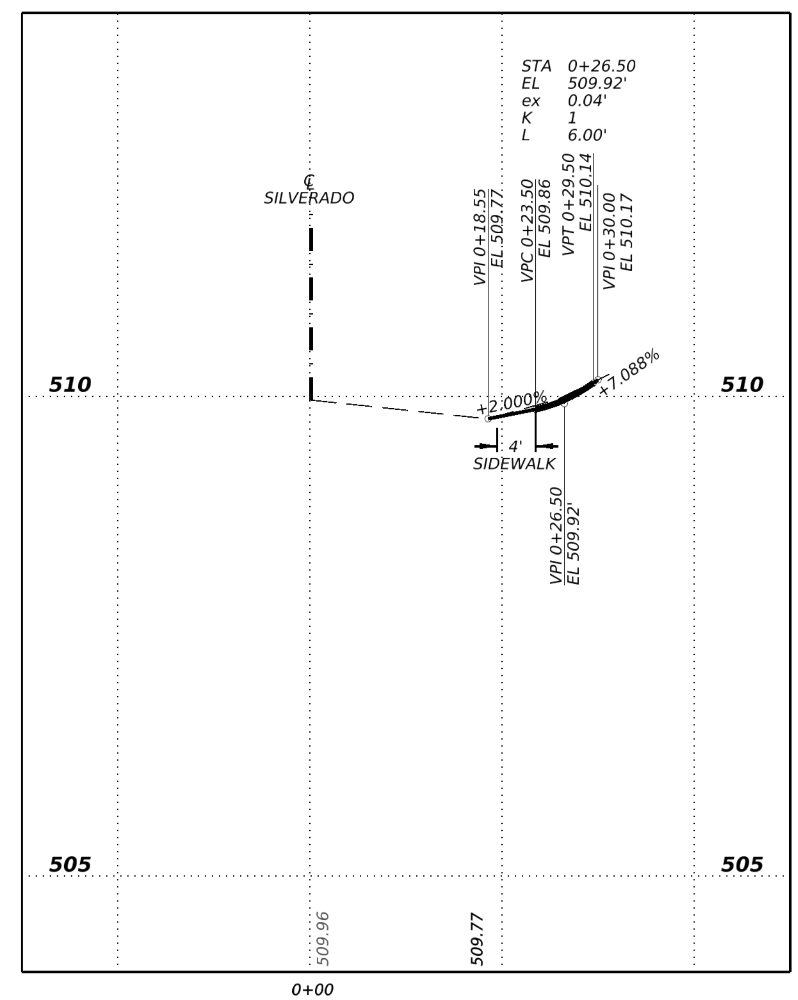


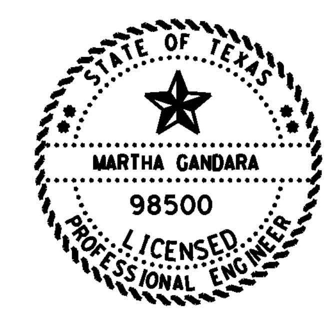


PLAN LEGEND

- CONC DRIVEWAY
- ASHPALT DRIVEWAY
- FAST TRACK CONC DRIVEWAY
- DRW# DRIVEWAY I.D.







Martha Gandara

DATE: 2/21/2024

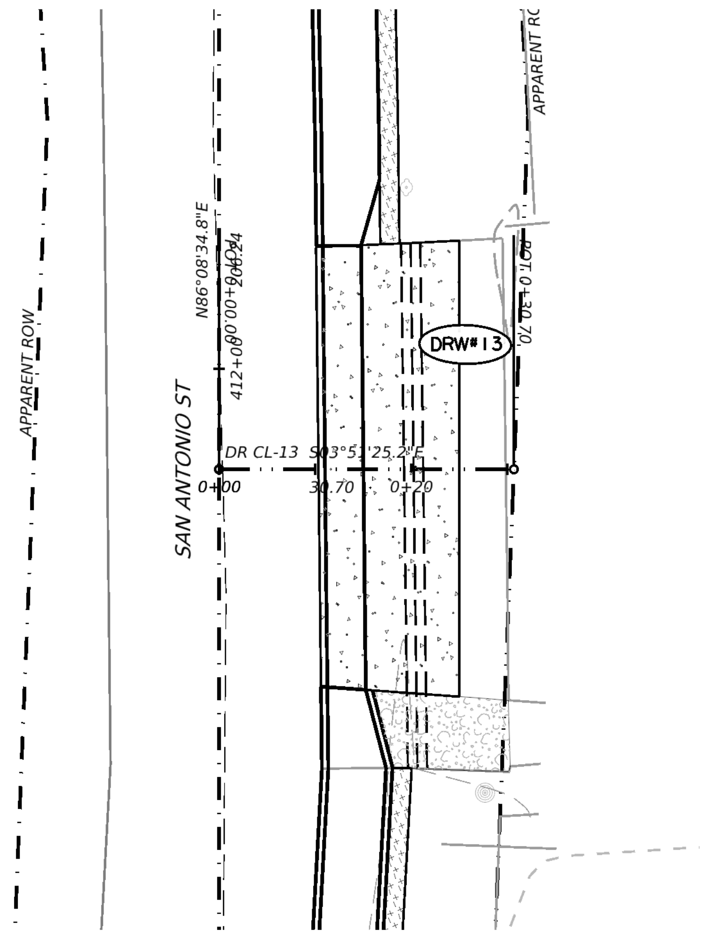
SCALE: HORIZONTAL 1"=20'
SCALE: VERTICAL 1"=2'

Texas Department of Transportation

DL VEST STREET DRIVEWAY PLAN AND PROFILE

SHEET: 4 OF 5

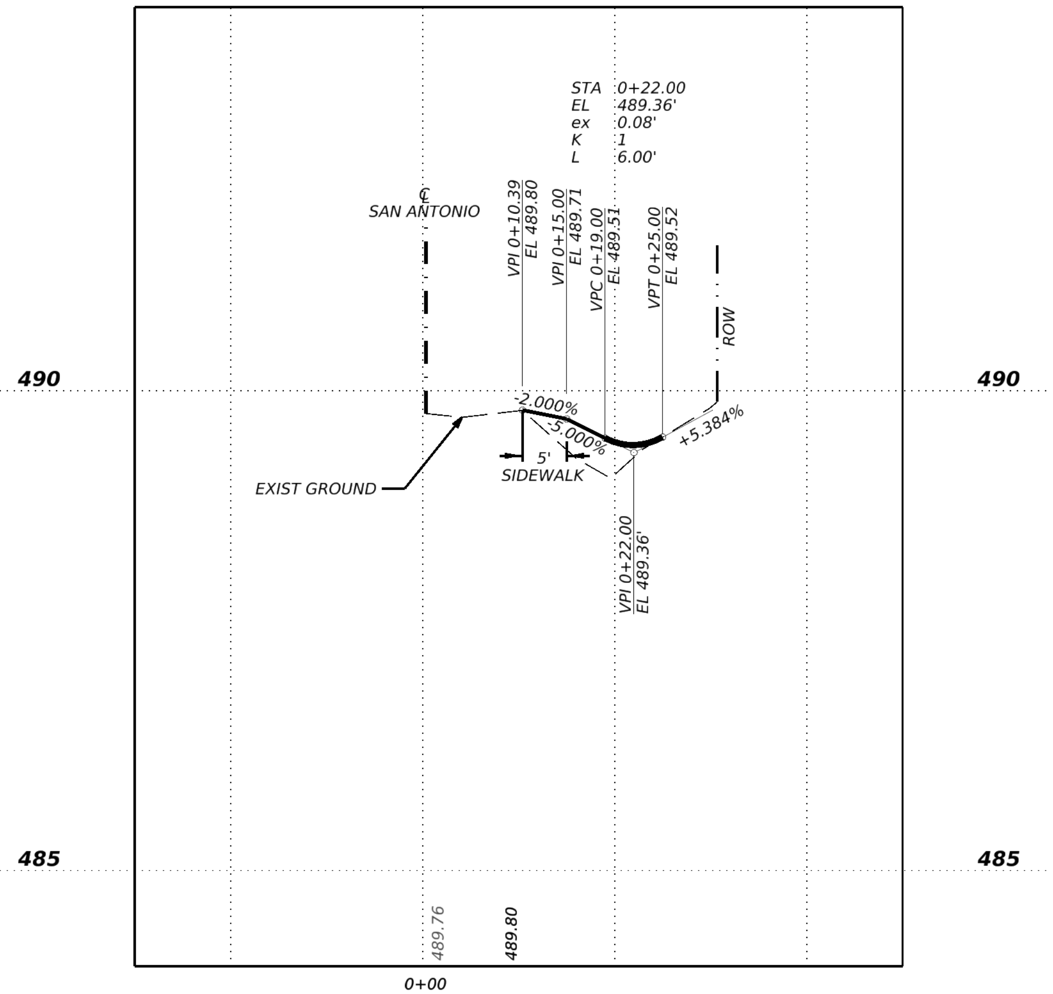
CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST		COUNTY	SHEET NO.
SAT		WILSON	93



PLAN LEGEND

- CONC DRIVEWAY
- ASHPALT DRIVEWAY
- FAST TRACK CONC DRIVEWAY
- DRIVEWAY I.D.

SHEET NO.		DRIVEWAY	WIDTH OF SIDEWALK	SLOPE 1	LENGTH 1	SLOPE 2	LENGTH 2
C.S.J. --- 0915-14-050		#	ft	%	ft	%	ft
4 of 7	WARREN & SILVERADO ST	9	6	2.00	6.00	2.32	1.00
5 of 7	WARREN & SILVERADO ST	10	6	2.00	4.00	3.39	3.00
6 of 7	WARREN & SILVERADO ST	11	6	2.00	4.00	7.09	4.00
3 of 6	SAN ANTONIO ST	12	6	-2.00	6.00	-3.04	1.00



STATE OF TEXAS
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98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

SCALE: HORIZONTAL 1"=20'
SCALE: VERTICAL 1"=2'

Texas Department of Transportation

DL VEST STREET DRIVEWAY PLAN AND PROFILE

SHEET: 5 OF 5

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		94

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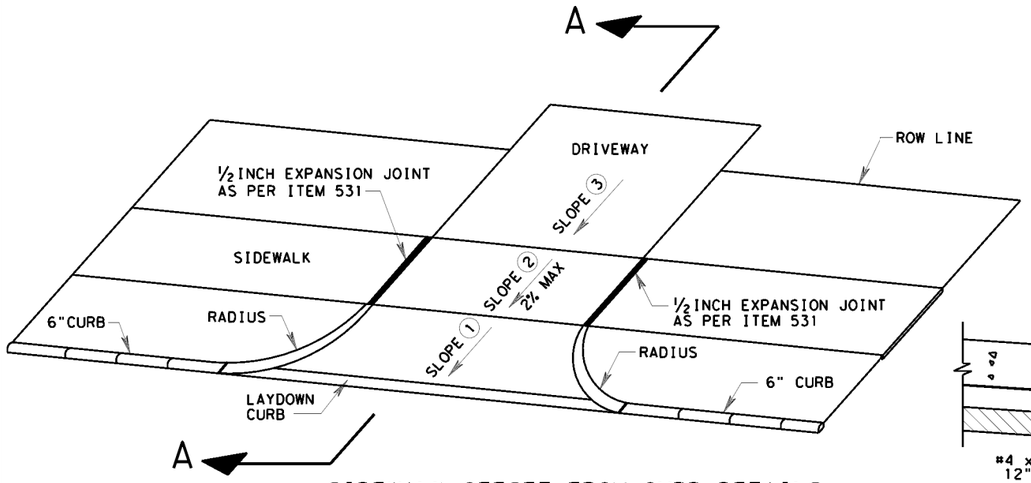
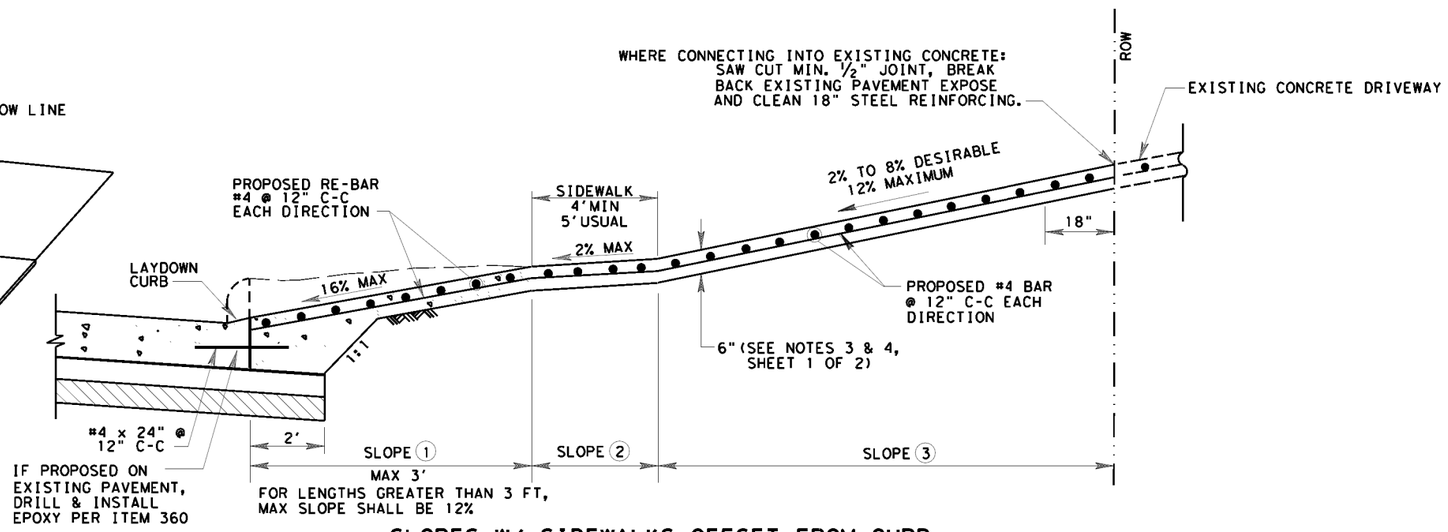
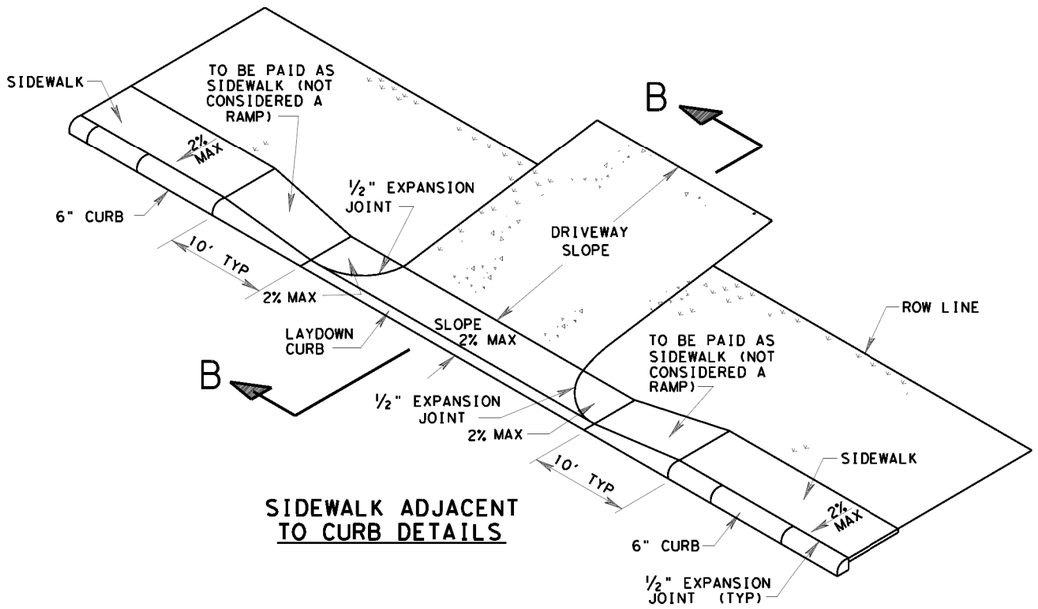


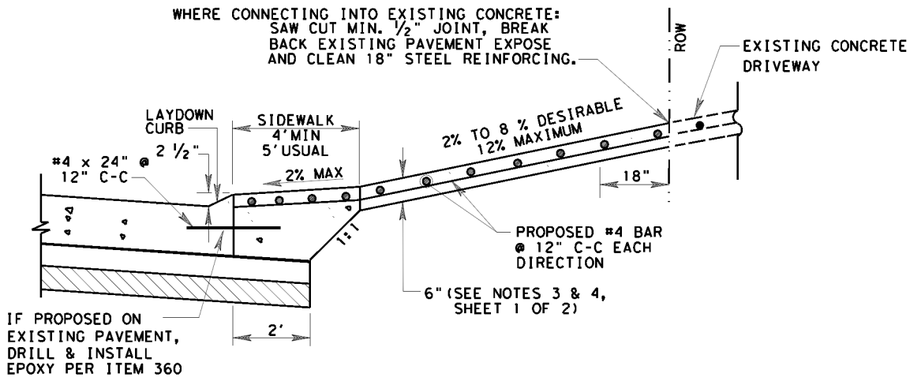
SIDEWALK OFFSET FROM CURB DETAILS



SLOPES W/ SIDEWALKS OFFSET FROM CURB (SECTION A-A)



SIDEWALK ADJACENT TO CURB DETAILS



DRIVEWAY SLOPES W/ SIDEWALKS ADJACENT TO CURB (SECTION B-B)

STATE OF TEXAS
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98500
LICENSED PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

SCALE: NTS

Texas Department of Transportation

DL VEST STREET DETAILS

SHEET: 1 OF 3

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		95

DESIGN: DRAFT: CHECK:

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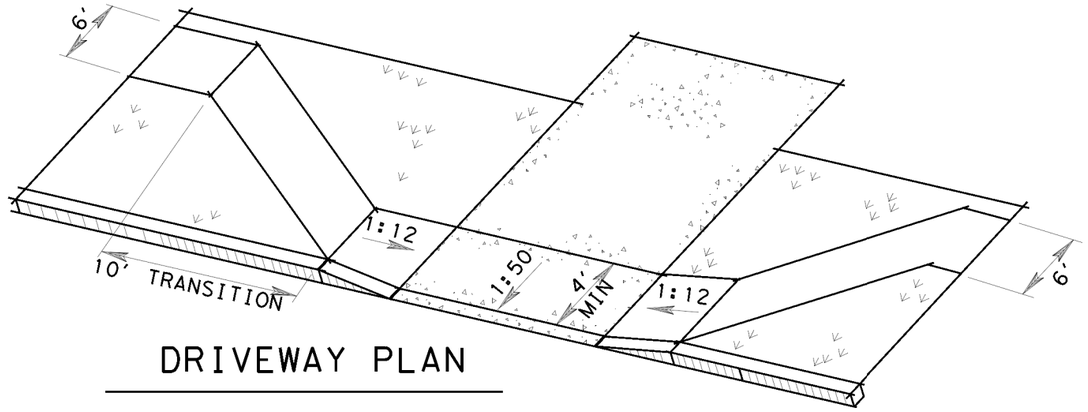
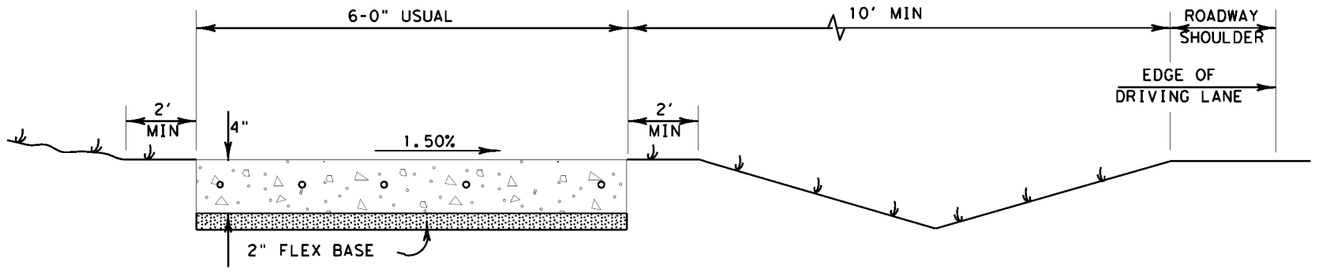


DRIVEWAY PLAN



CONCRETE SIDEWALK
(ROADWAY W/O CURB)

NOTES

1. ITEM 531, "SIDEWALKS" SHALL GOVERN FOR THIS WORK.

2. REMOVE EXISTING SIDEWALKS AS SHOWN IN PLANS OR AS DIRECTED BY ENGINEER.

3. SIDEWALK WIDTH - 5-0", REPLACE LENGTH JOINT TO JOINT.

4. RECOMPACT BASE.

5. CONSTRUCT PROPOSED IMPROVEMENTS AS SHOWN IN TXDOT SAN ANTONIO DISTRICT MISCELLANEOUS CURB AND SIDEWALK DETAILS, TYPICAL CURB EXPANSION JOINT DETAIL AND TYPICAL SIDEWALK SECTION. TIE PROPOSED SIDEWALK TO EXISTING CURB, IF APPLICABLE.

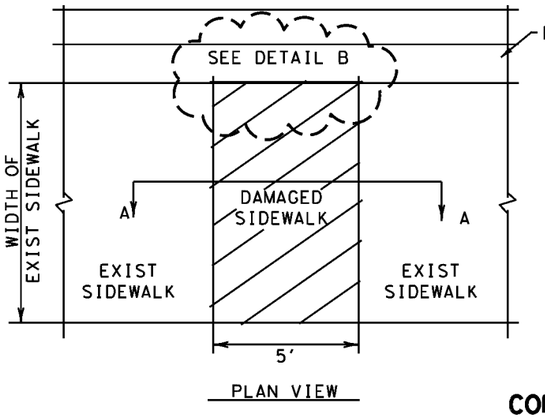
6. 5' SIDEWALK, 2" FLEX BASE CUSHION, MATERIALS AND COMPACTION OF BASE IS PAID UNDER ITEM 531.

7. EXPANSION JOINTS ARE TO BE AT A MAX. SPACING OF 40' AND COINCIDE WITH THE CURB EXPANSION JOINTS (WHEN ADJACENT TO CURB).

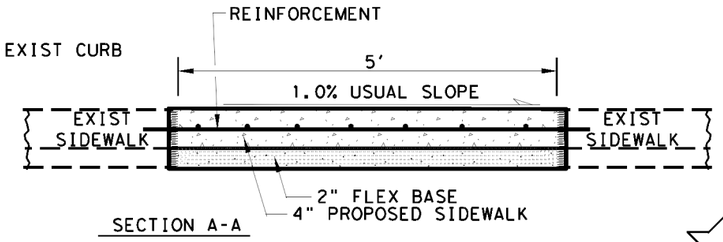
SIDEWALK
REINFORCEMENT WILL BE IN ACCORDANCE WITH ITEM 432.3.1. FIBER REINFORCEMENT IS NOT ALLOWED. CLASS A AND B CONCRETE ARE ALLOWED TO USE COARSE AGGREGATE GRADES 1-8.

BEDDING MAY BE SAND, BASE, OR RAP BEDDING. FURNISH BASE MEETING THE REQUIREMENT FOR ANY TYPE OR GRADE IN ACCORDANCE WITH ITEM 247. BASE COMPRESSIVE STRENGTHS ARE WAIVED. RAP MUST BE 100% PASSING A 1 IN. SIEVE. BEDDING MUST BE PLACED USING ORDINARY COMPACTION.

IF ROOTS ARE ENCOUNTERED VERIFY WITH THE ENGINEER PRIOR TO ACCOMMODATING OR REMOVING 2 IN. DIAMETER OR LARGER ROOTS. ROOT REMOVAL MUST BE IN ACCORDANCE WITH ITEM 752.4.2. ROOTS MAY REMAIN IN THE BEDDING OR BASE. FOR IMPROVEMENTS WITHIN 6 IN. OF A ROOT, THE CONCRETE THICKNESS MAY BE REDUCED BY 1 IN. AND THE BEDDING INCREASED BY 1 IN. TO MINIMIZE IMPACTS TO THE ROOTS. ADJUST BEDDING AND SURFACE PROFILE TO PROVIDE A 1 IN. BEDDING CUSHION AROUND THE ROOTS. THE SURFACE PROFILE MAY BE ADJUSTED TO THE EXTENT ALLOWED BY ADA. THIS WORK IS SUBSIDIARY TO ITEM 531.

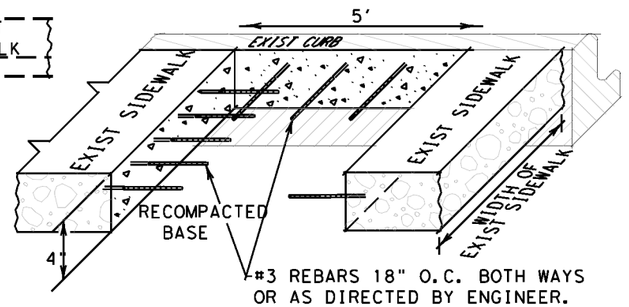


PLAN VIEW



SECTION A-A

CONCRETE SIDEWALK SPOT REPAIR DETAIL



DETAIL B
GROUTED TIEBARS & DOWELS

STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

SCALE: NTS

Texas Department of Transportation

DL VEST STREET DETAILS

SHEET: 2 OF 3

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		96

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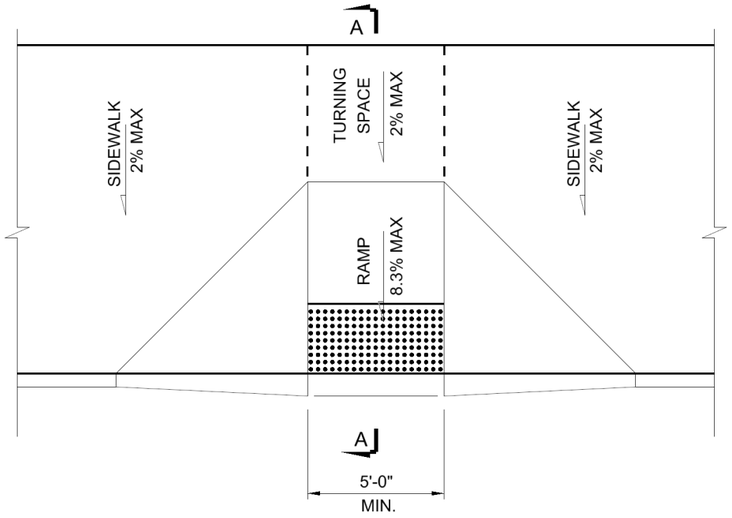
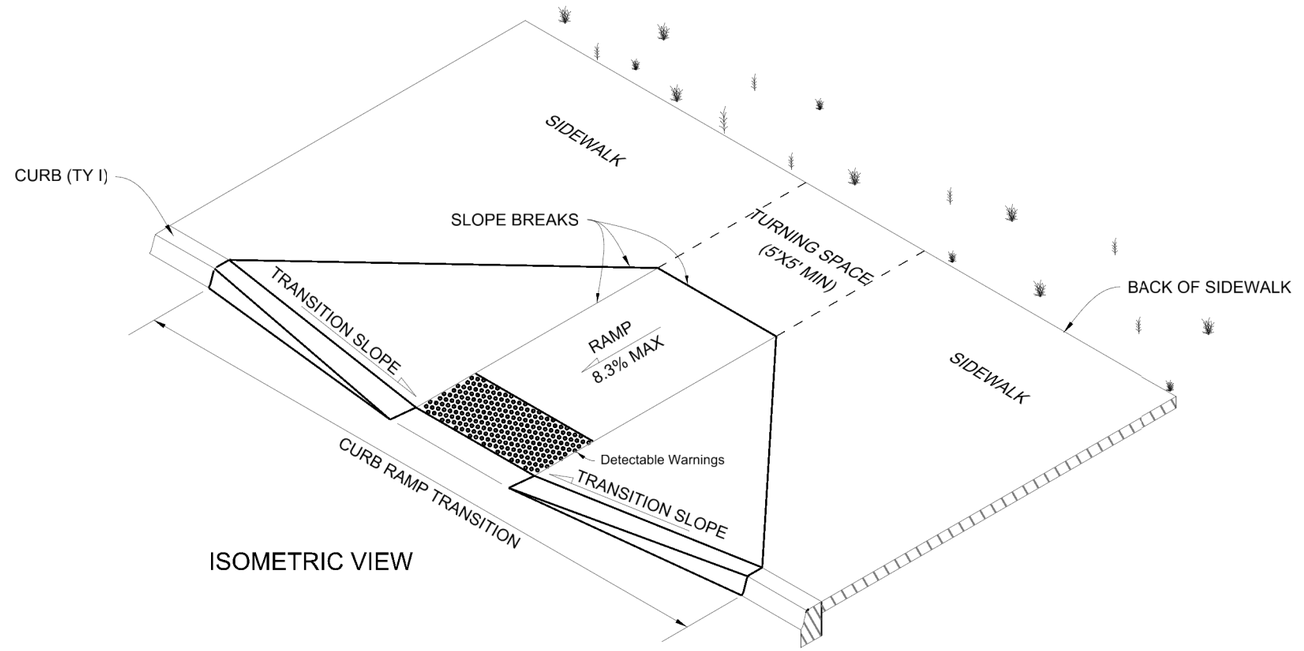
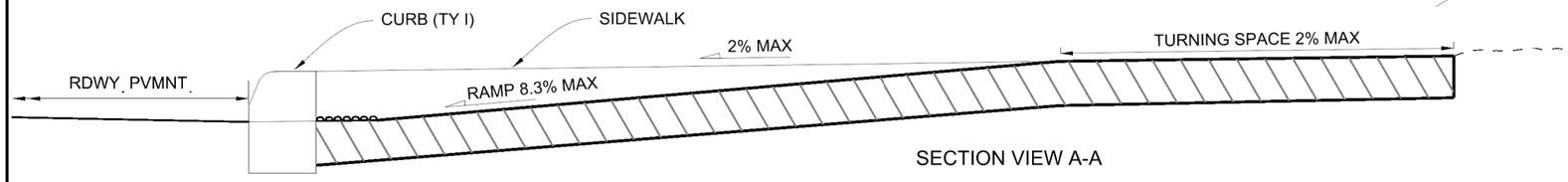


PLAN VIEW

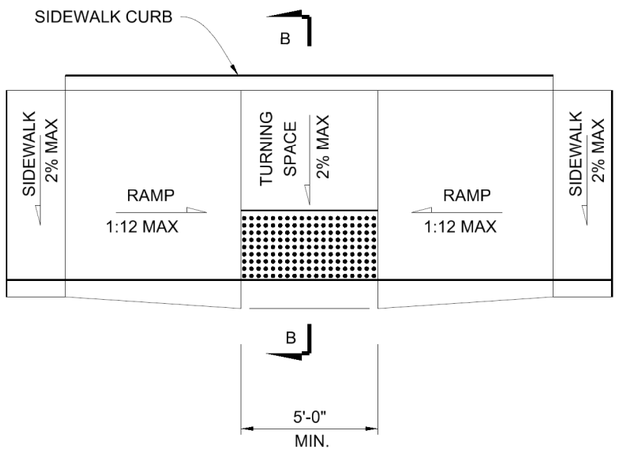


ISOMETRIC VIEW

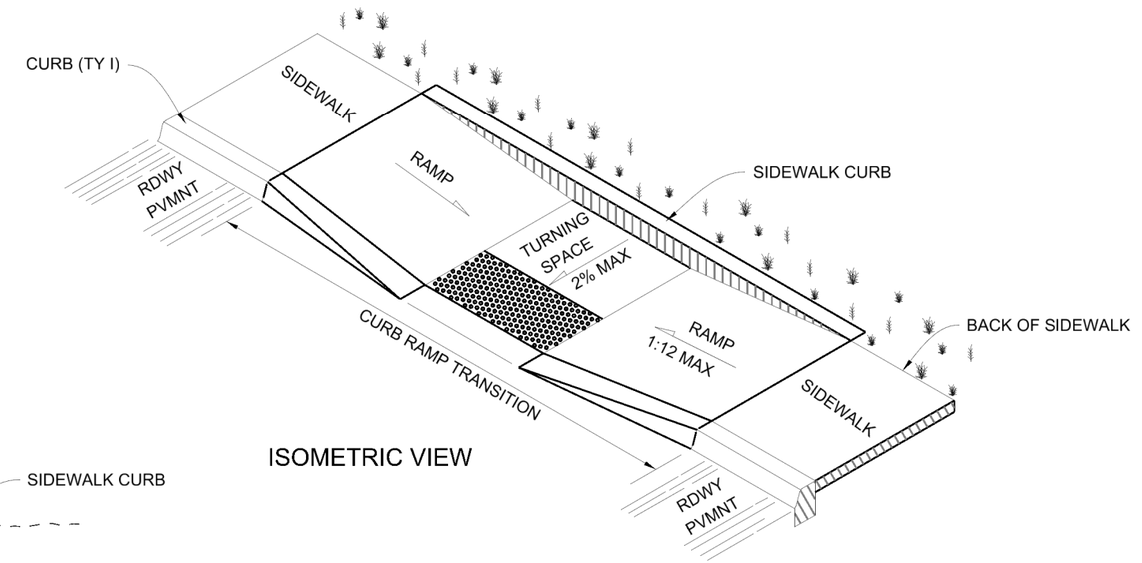


SECTION VIEW A-A

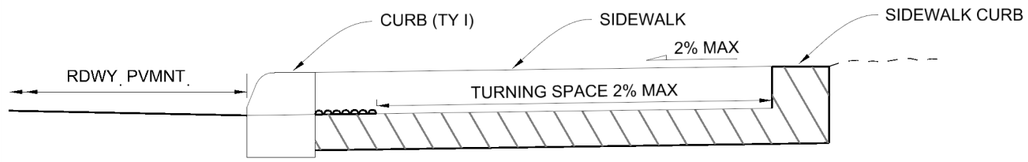
CURB TRANSITION FOR PERPENDICULAR CURB RAMP



PLAN VIEW



ISOMETRIC VIEW



SECTION VIEW B-B

CURB TRANSITION FOR PARALLEL CURB RAMP

STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

SCALE: NTS

Texas Department of Transportation

DL VEST STREET DETAILS

SHEET: 3 OF 3

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST
DIST	COUNTY		SHEET NO.
SAT	WILSON		97

DESIGN: DRAFT: CHECK:

2/21/2024 8:05:02 AM
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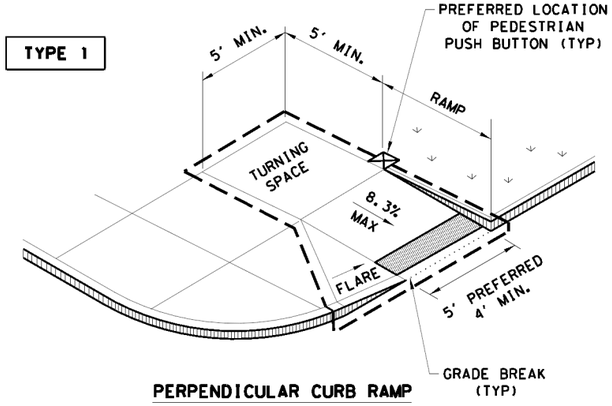
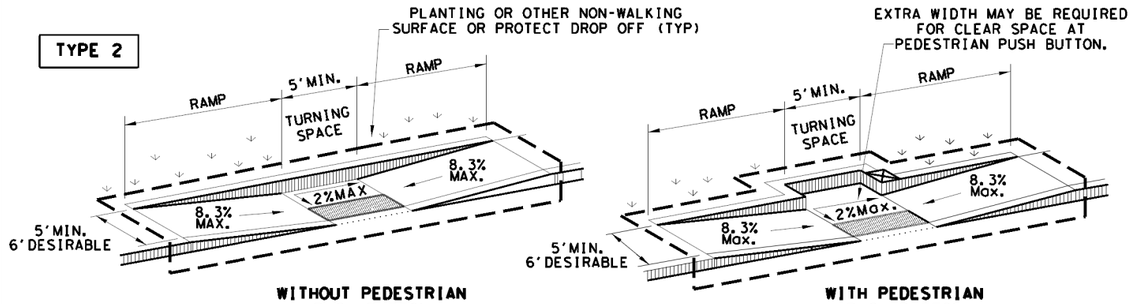
DATE:
FILE:

TYPE 1



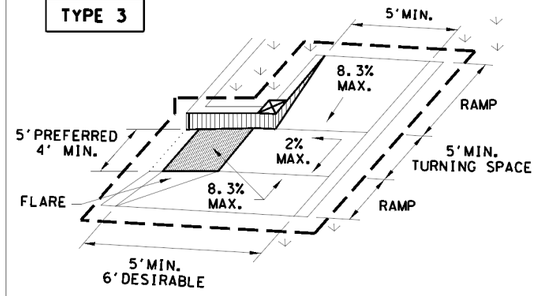
PERPENDICULAR CURB RAMP

TYPE 2

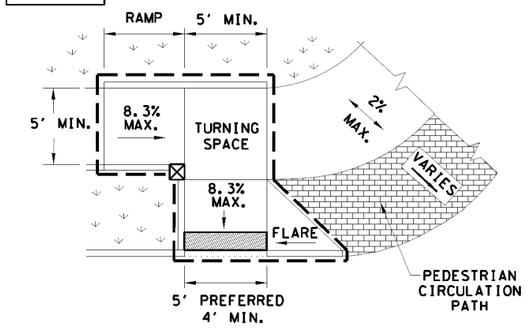


PARALLEL CURB RAMP

TYPE 3

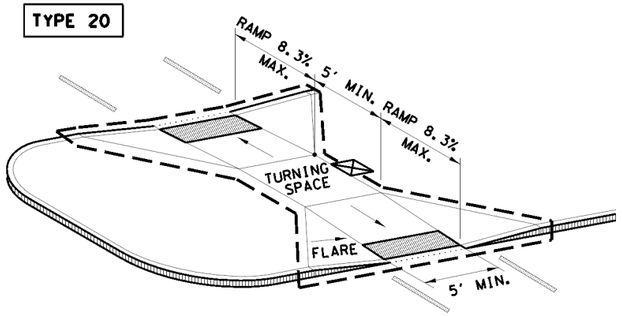


TYPE 6



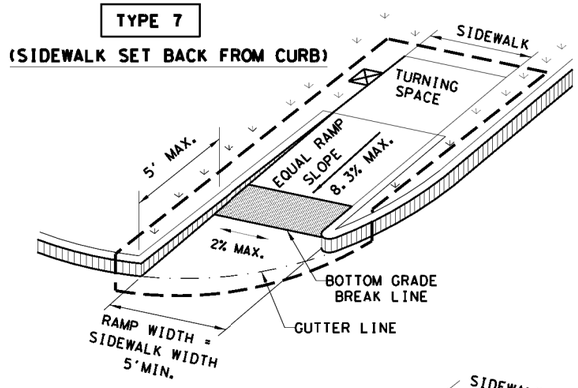
COMBINATION CURB RAMPS

TYPE 20

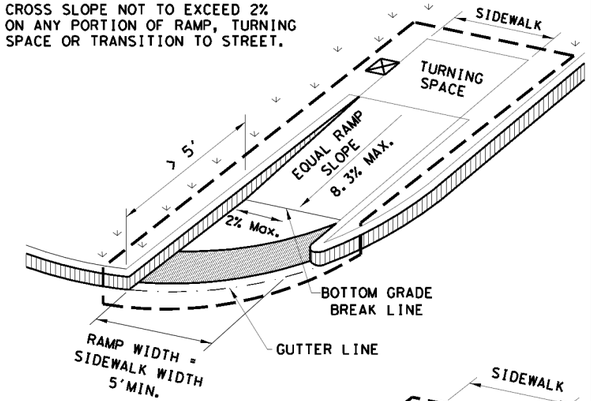


CURB RAMPS AT MEDIAN ISLANDS

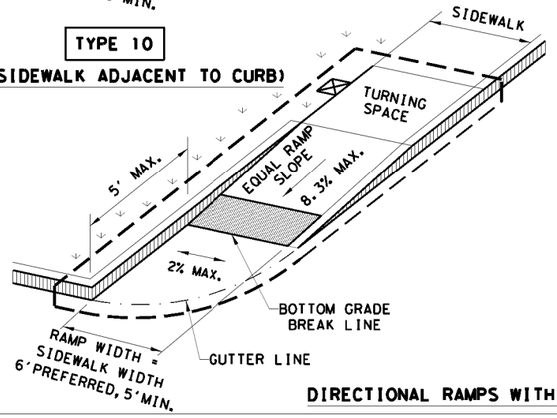
TYPE 7
(SIDEWALK SET BACK FROM CURB)



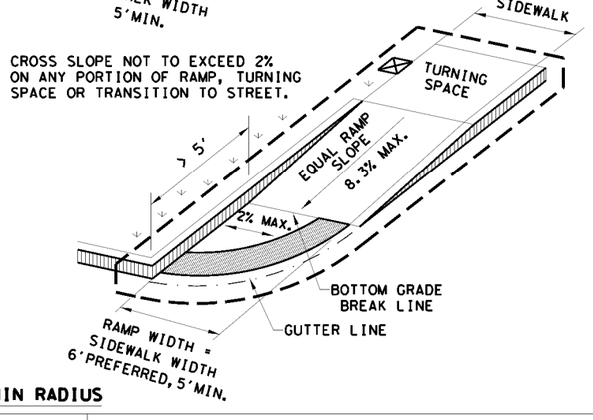
CROSS SLOPE NOT TO EXCEED 2% ON ANY PORTION OF RAMP, TURNING SPACE OR TRANSITION TO STREET.



TYPE 10
(SIDEWALK ADJACENT TO CURB)

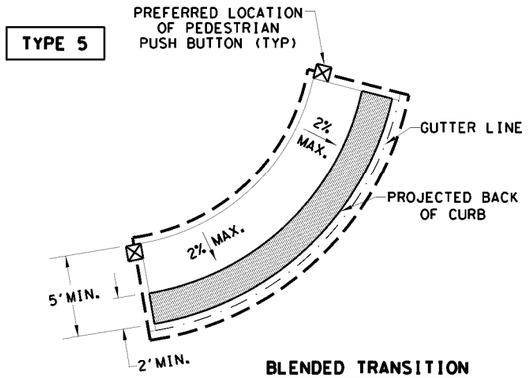


CROSS SLOPE NOT TO EXCEED 2% ON ANY PORTION OF RAMP, TURNING SPACE OR TRANSITION TO STREET.



DIRECTIONAL RAMPS WITHIN RADIUS

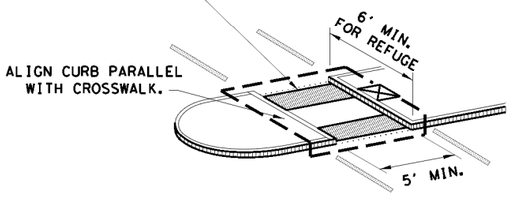
TYPE 5



BLENDED TRANSITION
(FLUSH LANDING)

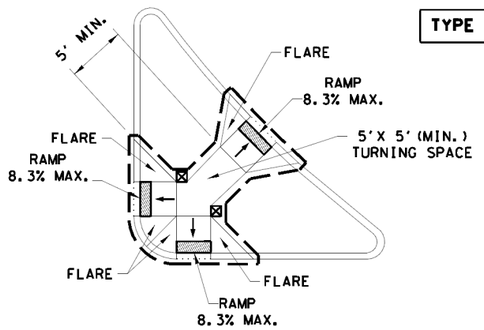
INSTALL DETECTABLE WARNING SURFACE AT EACH END OF THE CUT-THROUGH RAMP WITH A MINIMUM 2' USUAL SIDEWALK SURFACE BETWEEN. IF MEDIAN IS LESS THAN 6' WIDE, ELIMINATE DETECTABLE WARNING SURFACES.

TYPE 21



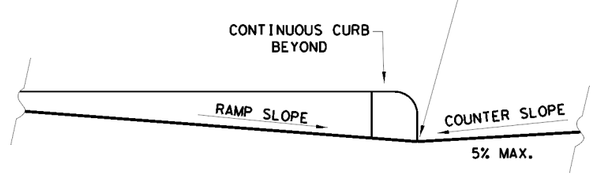
NOTE: CURB DETAILS ARE SHOWN ELSEWHERE IN THE PLANS.

TYPE 22



COMBINATION ISLAND RAMPS

BOTTOM GRADE BREAK OF CURB RAMP WILL NORMALLY BE AT GUTTER LINE. SURFACE SLOPES AT GRADE BREAKS SHALL BE FLUSH.



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.

DETECTABLE WARNING SURFACE

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON IF APPLICABLE.

GUTTER LINE

GRADE BREAK

RAMP LIMITS OF PAYMENT

Texas Department of Transportation

Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18	DN: TxDOT	CK: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	14	050	DL VEST ST
REVISED 08, 2005	DIST	COUNTY		SHEET NO.
REVISED 06, 2012	SAT	WILSON		98
REVISED 01, 2018				

DATE:
FILE:

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 cut 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 applicalble standards may remain in place unless otherwise shown on the plans.

DETECTABLE WARNING MATERIAL

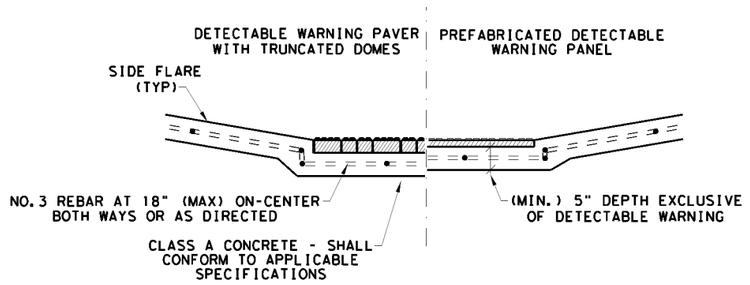
19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material 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.

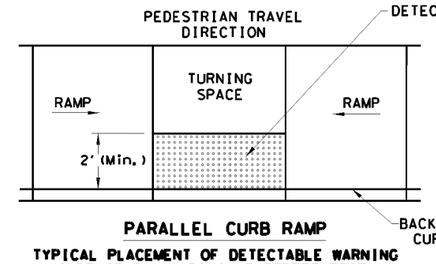
SIDEWALKS

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.



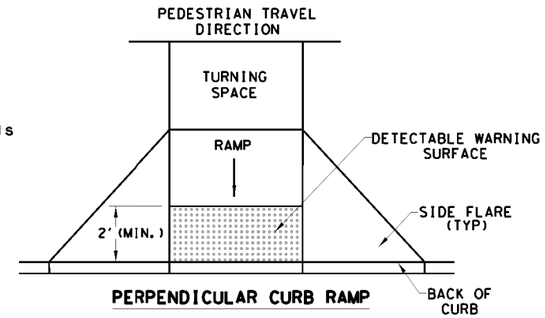
SECTION VIEW DETAIL
CURB RAMP AT DETECTIBLE WARNINGS

DETECTABLE WARNING SURFACE DETAILS



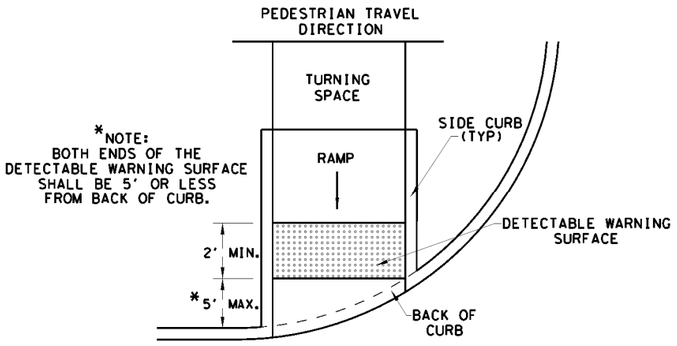
PARALLEL CURB RAMP

TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING AT STREET EDGE.



PERPENDICULAR CURB RAMP

TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.



DIRECTIONAL CURB RAMP

TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.

Texas Department of Transportation | Design Division Standard

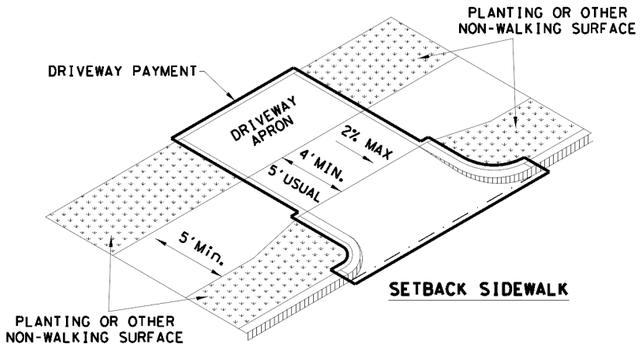
PEDESTRIAN FACILITIES CURB RAMPS

PED-18

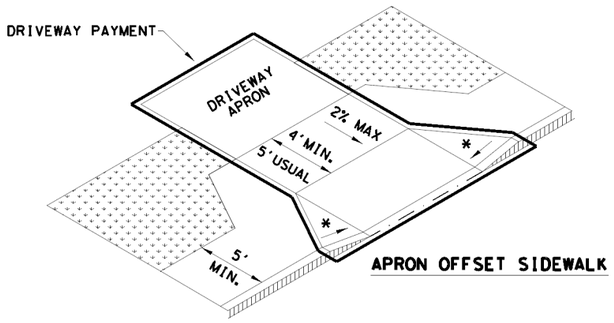
FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	14	050	DL VEST ST
REVISED 08, 2005 REVISED 06, 2012 REVISED 01, 2018	DIST	COUNTY		SHEET NO.
	SAT	WILSON		99

DATE:
FILE:

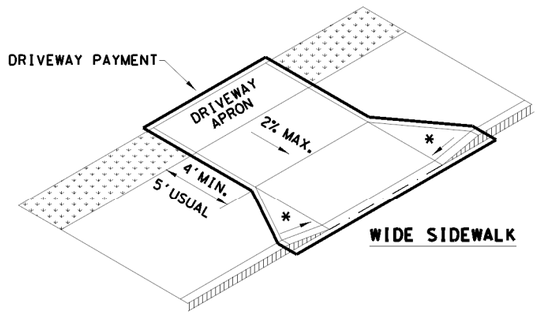
SIDEWALK TREATMENT AT DRIVEWAYS



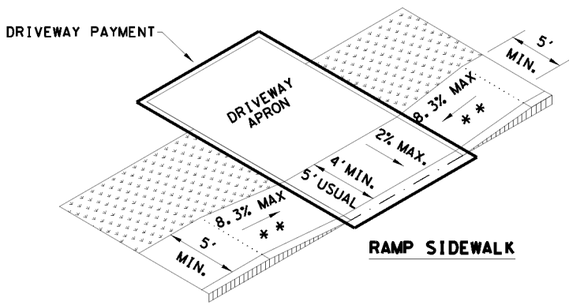
SETBACK SIDEWALK



APRON OFFSET SIDEWALK



WIDE SIDEWALK

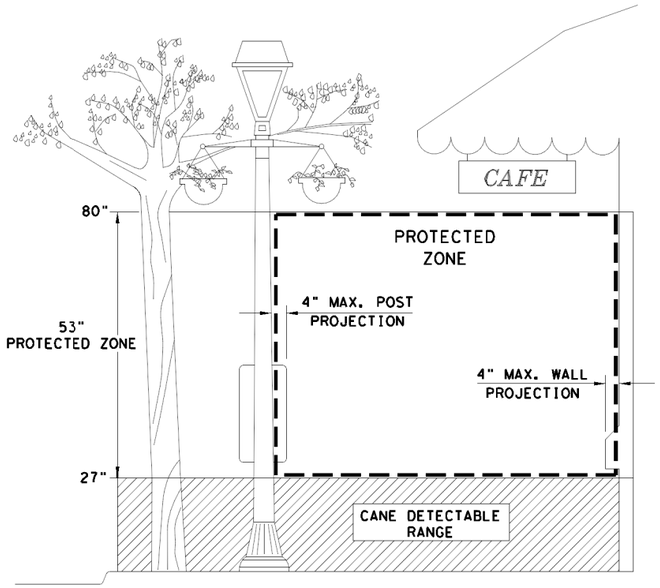


RAMP SIDEWALK

NOTES:

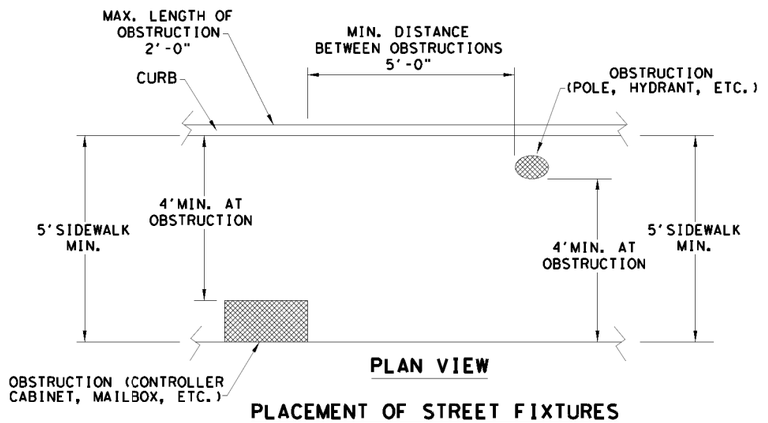
* WHERE DRIVEWAYS CROSS THE PEDESTRIAN ROUTE, SIDES SHALL BE FLARED AT 10% MAX SLOPE.

* * IF CURB HEIGHT IS GREATER THAN 6 INCHES, USE GRADE LESS THAN OR EQUAL TO 5%. HANDRAIL AND DETECTABLE WARNING ARE NOT REQUIRED.



PROTECTED ZONE

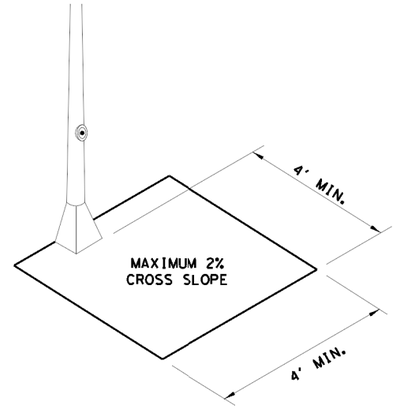
NOTE: IN PEDESTRIAN CIRCULATION AREA, MAXIMUM 4" PROJECTION FOR POST OR WALL MOUNTED OBJECTS BETWEEN 27" AND 80" ABOVE THE SURFACE.



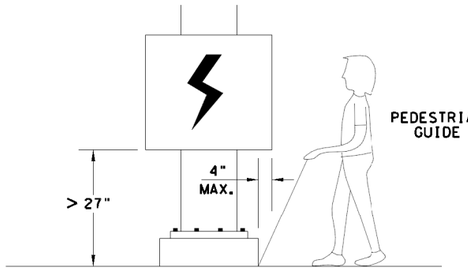
PLAN VIEW

PLACEMENT OF STREET FIXTURES

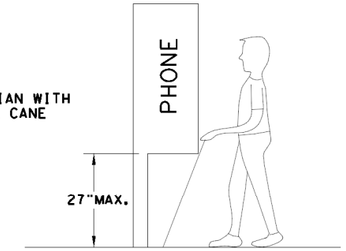
NOTE: ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' X 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.



CLEAR SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON



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.

DETECTION BARRIER FOR VERTICAL CLEARANCE < 80"

Texas Department of Transportation

Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

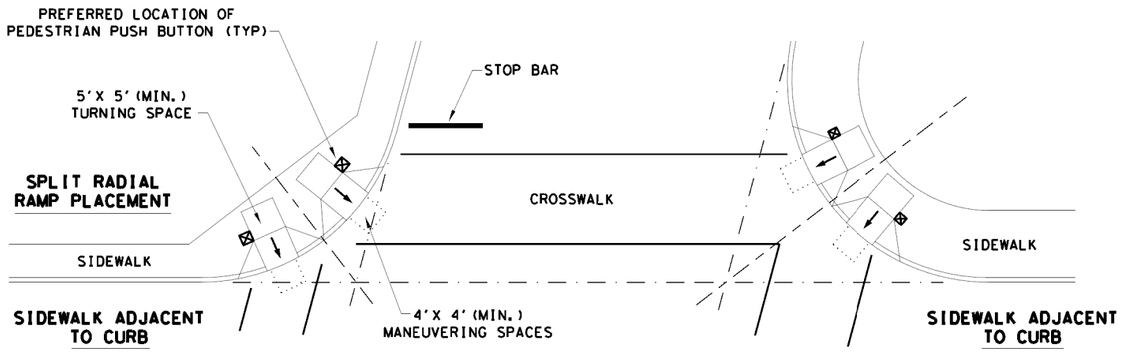
PED-18

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	14	050	DL VEST ST
REVISED 08, 2005 REVISED 06, 2012 REVISED 01, 2018	DIST	COUNTY		SHEET NO.
	SAT	WILSON		100

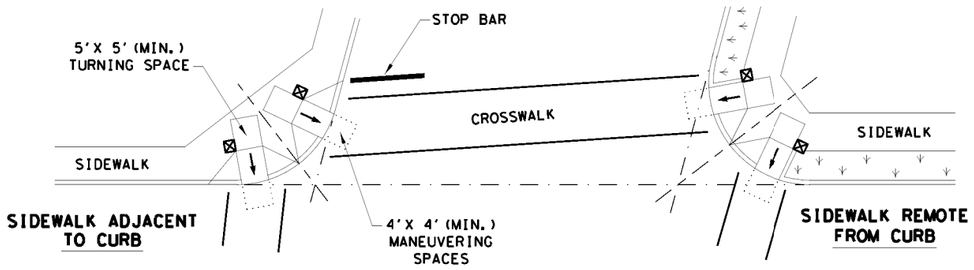
DATE:
FILE:

TYPICAL CROSSING LAYOUTS

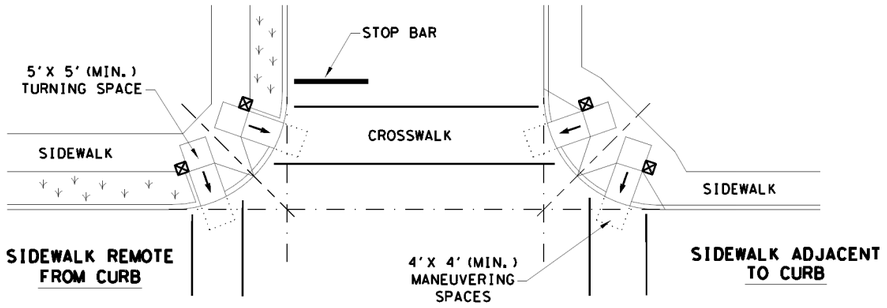
SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS



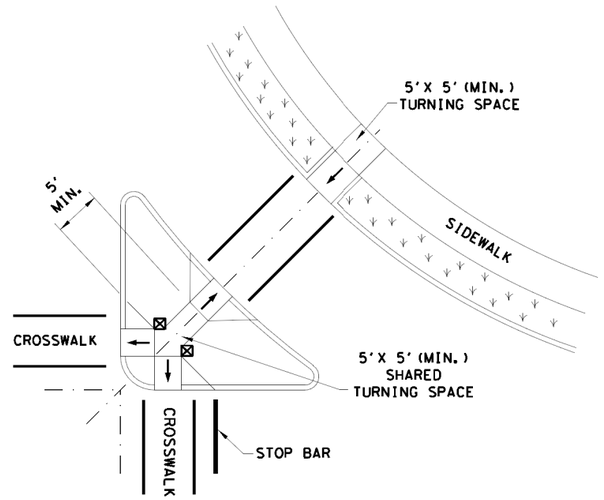
SKEWED INTERSECTION WITH "LARGE" RADIUS



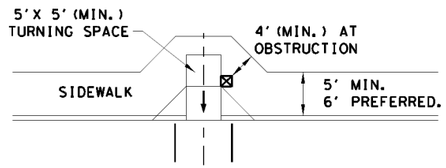
SKEWED INTERSECTION WITH "SMALL" RADIUS

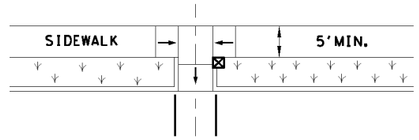


NORMAL INTERSECTION WITH "SMALL" RADIUS



AT INTERSECTION
W/FREE RIGHT TURN & ISLAND





MID-BLOCK PLACEMENT
PERPENDICULAR RAMPS

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.

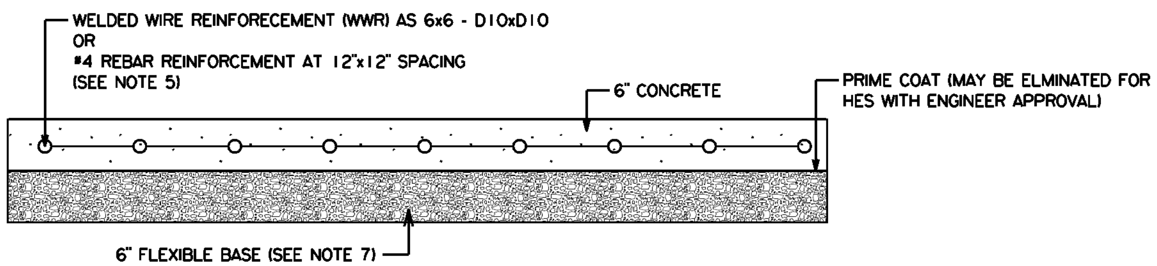
Texas Department of Transportation

Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

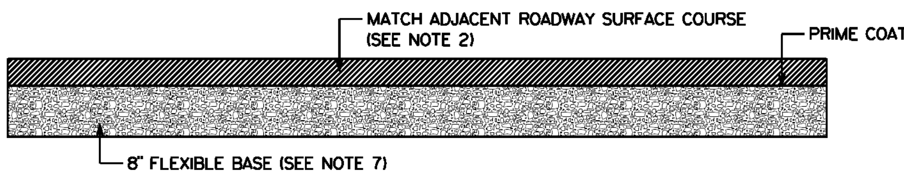
PED-18

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	14	050	DL VEST ST
REVISED 08, 2005 REVISED 06, 2012 REVISED 01, 2018	DIST	COUNTY		SHEET NO.
	SAT	WILSON		101



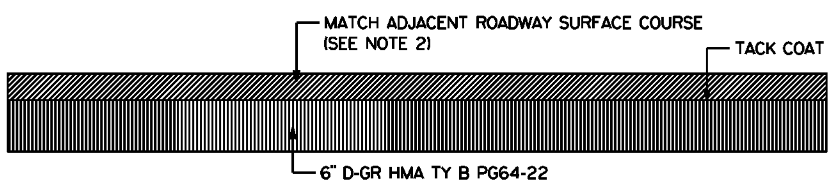
TYPICAL CONCRETE DRIVEWAY

• NOTE: STEEL SHALL BE CENTERED VERTICALLY IN CONCRETE.
PAID AS 'DRIVEWAYS CONC (HES)' OR 'DRIVEWAYS (CONC)'



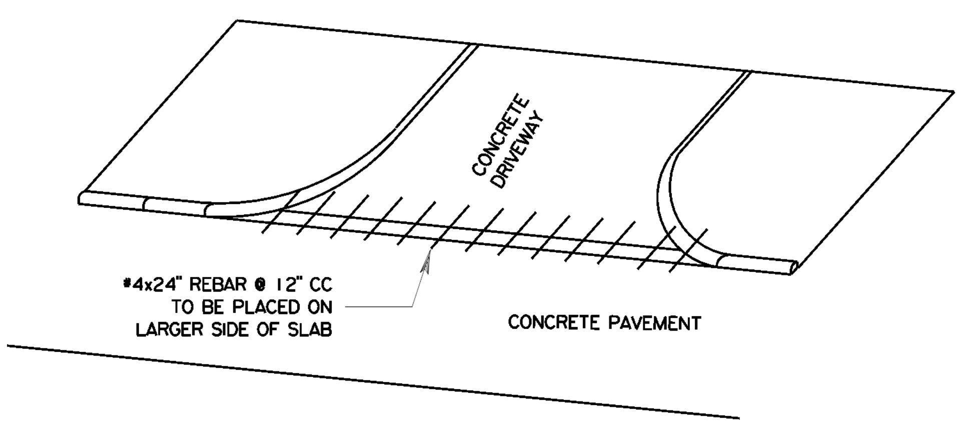
TYPICAL ROADWAY DRIVEWAY (TYPE 1)

PAID AS DRIVEWAYS ACP (TYPE 1)

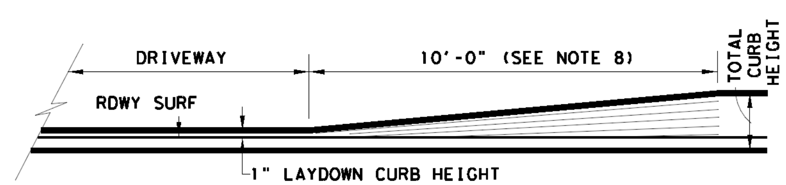


TYPICAL ROADWAY DRIVEWAY (TYPE 2)

PAID AS DRIVEWAYS ACP (TYPE 2)



TIE BAR PLACEMENT WITH CRCP



LAYDOWN CURB AT DRIVEWAYS DETAIL

NOTES:

1. USE CLASS A CONCRETE UNLESS OTHERWISE NOTED.
2. DENSE GRADED HMA MAY BE USED WHEN APPROVED BY THE ENGINEER IF THE ROADWAY SURFACE COURSE IS A PERFORMANCE MIX.
3. REFER TO PLAN SHEETS FOR GEOMETRIC DESIGN DETAILS.
4. FOR CONCRETE DRIVEWAYS, PROVIDE EXPANSION JOINT 20 FT C-C FOR WIDTH OR LENGTH OVER 25 FT.
5. FIBER REINFORCEMNT IS NOT ALLOWED.
6. MACHINE LAID HMA IS REQUIRED UNLESS OTHERWISE APPROVED BY THE ENGINEER.
7. FURNISH BASE MEETING THE REQUIREMENTS FOR ANY TYPE OF GRADE IN ACCORDANCE WITH ITEM 247. FLEXIBLE BASE COMPRESSIVE STRENGTHS ARE WAIVED. BASE IS SUBSIDIARY TO THE ITEM.
8. WHERE SIDEWALK IS PRESENT, SLOPE AND LENGTH OF CURB TRANSITION SHOULD MATCH THE SIDEWALK AND MEET ADA REQUIREMENTS.
9. IF ROOTS ARE ENCOUNTERED VERIFY WITH THE ENGINEER PRIOR TO ACCOMODATING OR REMOVING 2 IN. DIAMETER OR LARGER ROOTS. ROOT REMOVAL MUST BE IN ACCORDANCE WITH ITEM 752.4.2. ROOTS MAY REMAIN IN THE BASE. FOR IMPROVEMENTS WITHIN 6 IN. OF A ROOT, THE CONCRETE THICKNESS MAY BE REDUCED BY 1 IN. AND THE BASE INCREASED BY 1 IN. TO MINIMIZE THE IMPACT TO THE ROOTS. ADJUST BASE AND SURFACE PROFILE TO PROVIDE A 1 IN. BASE CUSHION AROUND THE ROOTS. THE SURFACE PROFILE MAY BE ADJUSTED TO THE EXTENT ALLOWED BY ADA. THIS WORK IS SUBSIDIARY.

 Texas Department of Transportation
San Antonio District

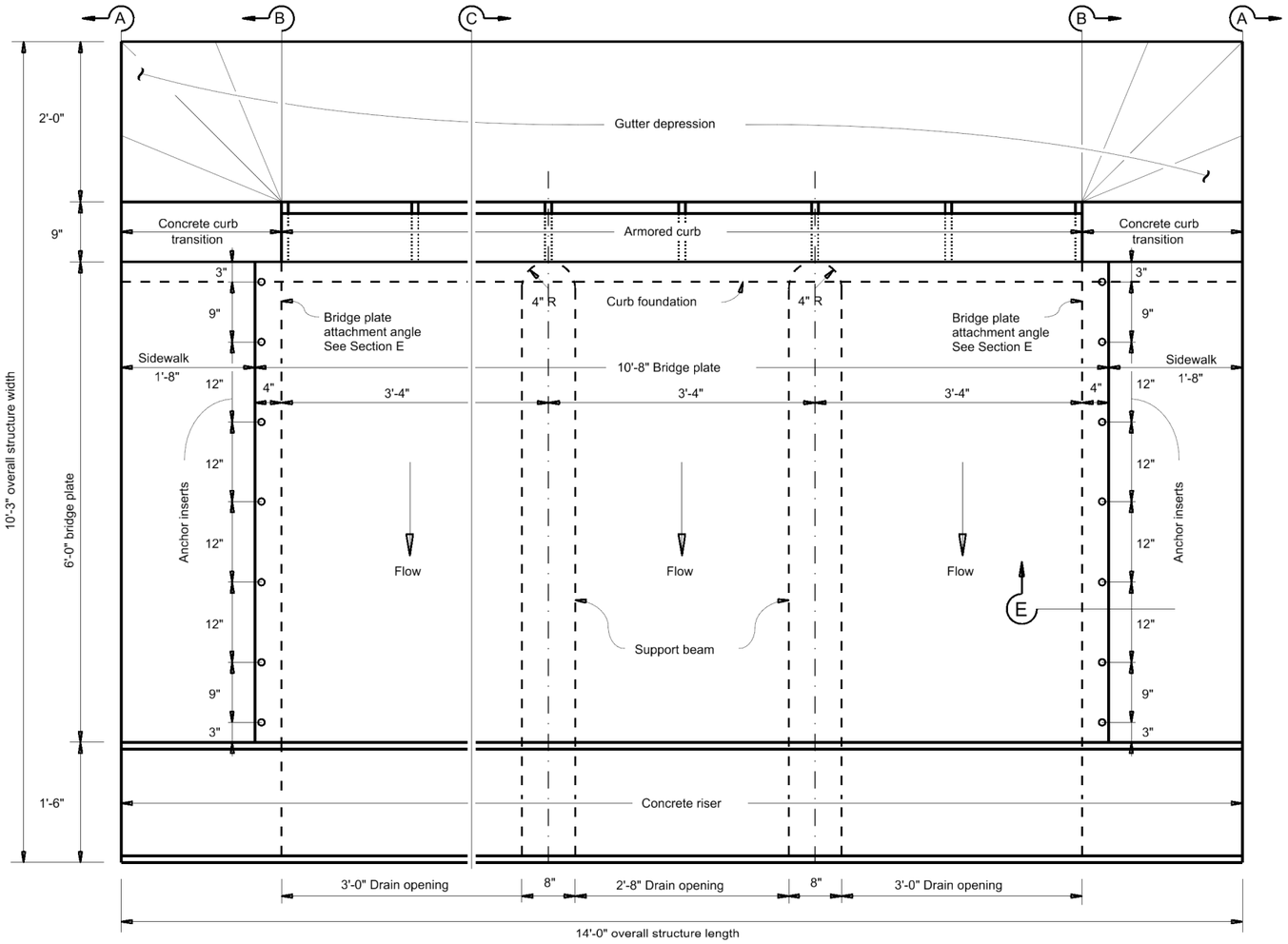
DRIVEWAY DETAILS

San Antonio District Standard
Sheet (1 of 1)

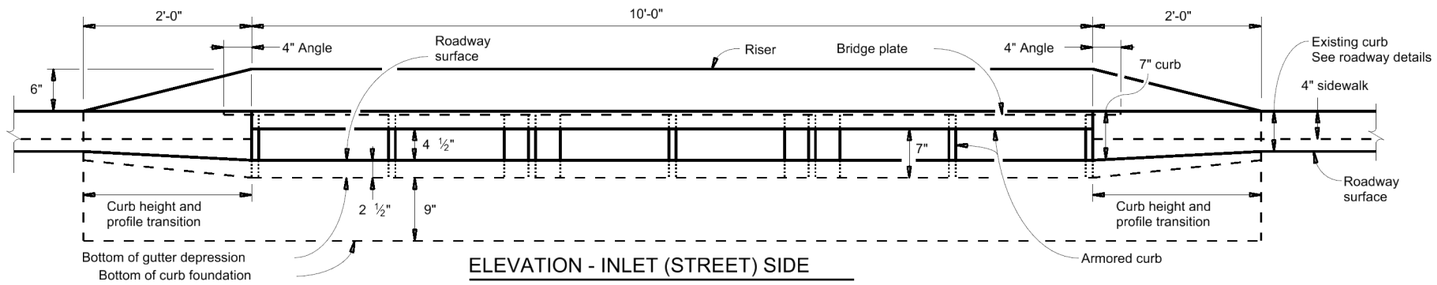
T:Engdata/Standards/Drivewaydetails.dgn
ORIGINAL DRAWING DATE: 8/1/2020
REVISIONS

PREPARED BY AND FOR USE OF TxDoT.

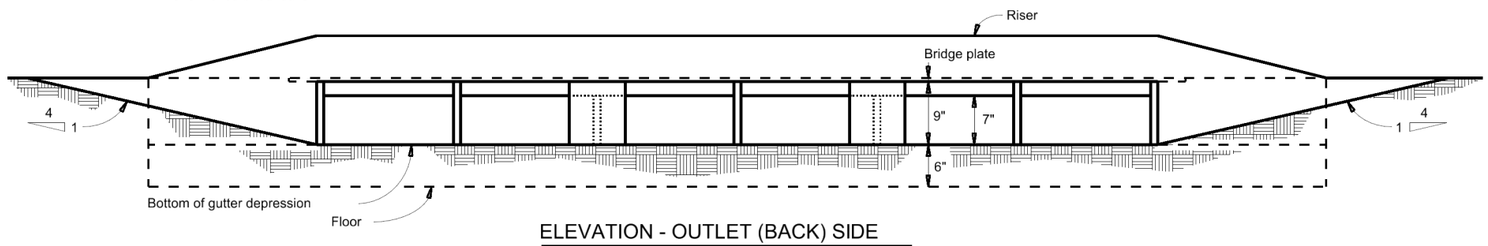
STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT #			SHEET
SAT	6	SEE TITLE SHEET			102
COUNTY		CONTROL	SECTION	JOB	HIGHWAY
WILSON		0915	14	050	VEST ST



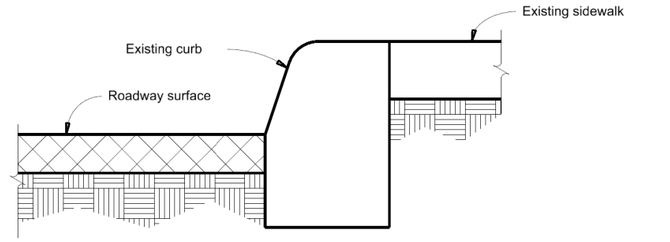
PLAN



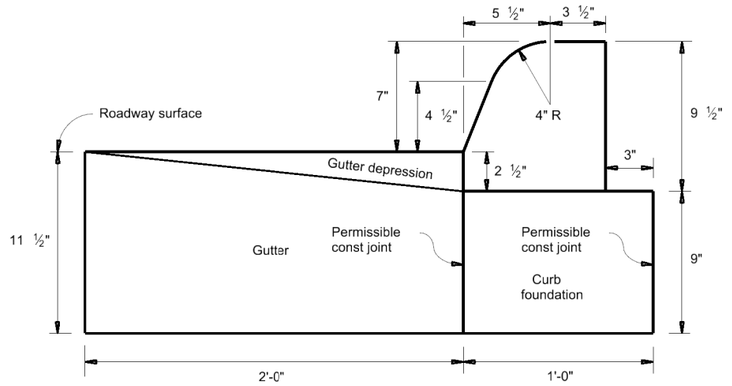
ELEVATION - INLET (STREET) SIDE



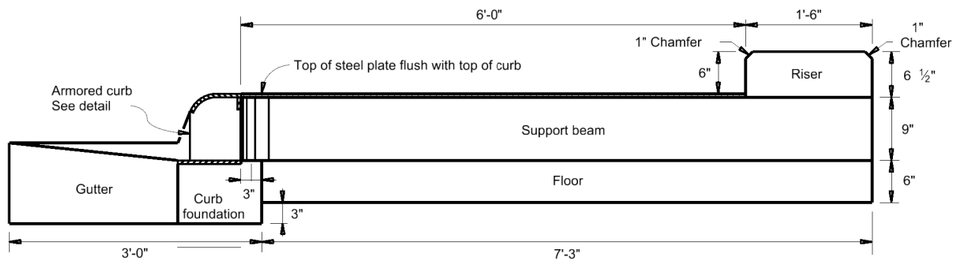
ELEVATION - OUTLET (BACK) SIDE



SECTION A



SECTION B DIMENSIONS



SECTION C DIMENSIONS

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing bar dimensions are out-to-out of bar.

Contractor is responsible for verifying all dimensions and quantities in the field before beginning work.

SHEET 1 OF 3

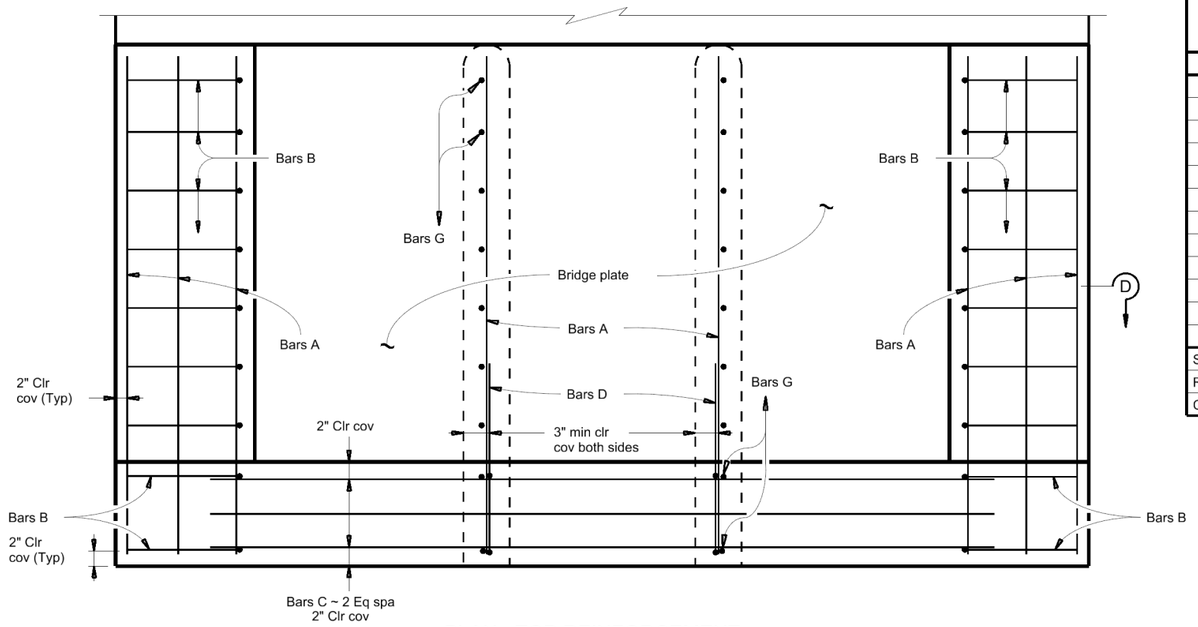
Texas Department of Transportation
San Antonio District (Structural Design)
Prepared by and for the use of TxDOT

SIDEWALK BRIDGE

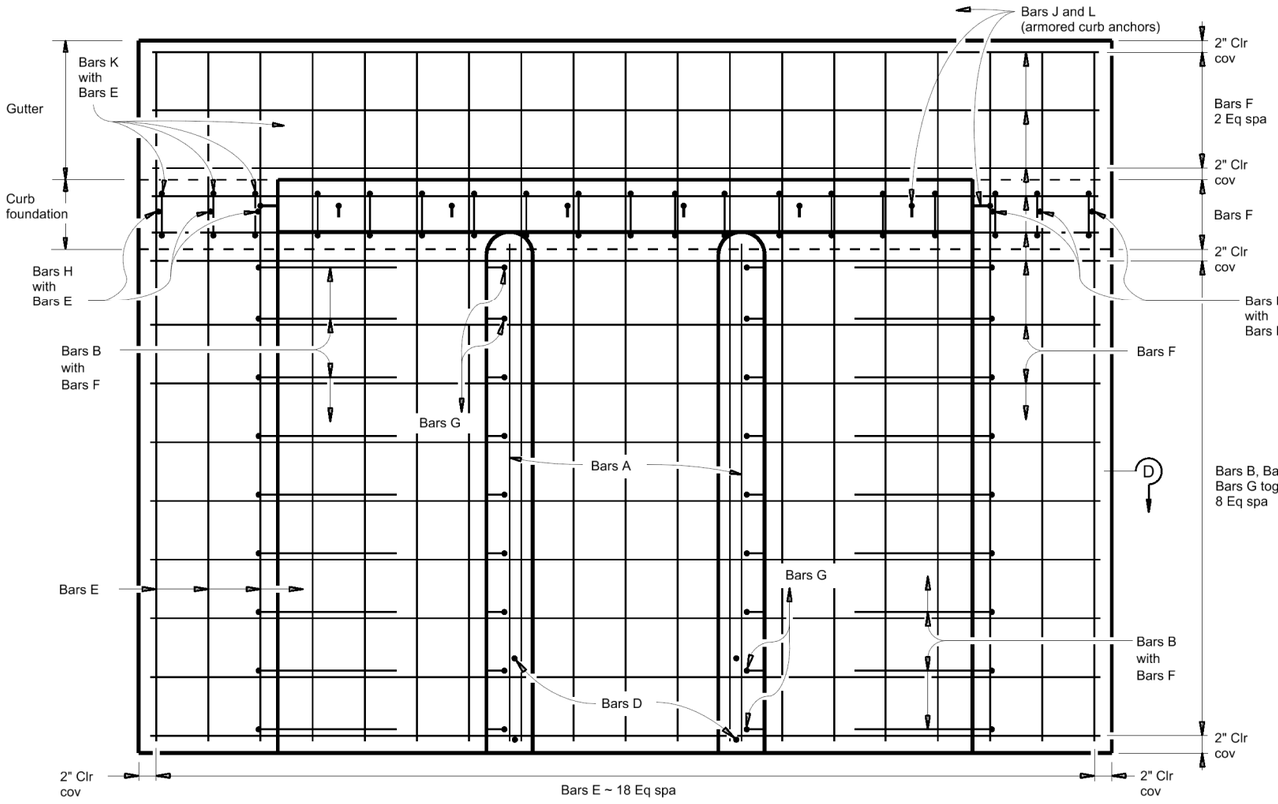
SAN ANTONIO DISTRICT STANDARD

DN: BCL	CK:	FILENAME: SA District Sidewalk Bridge.dgn	
DW: SRF	CK:	ORIGINAL DRAWING DATE: January 2020	
DIST	FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	COUNTY
SAT	6	SEE TITLE SHT	WILSON
CONTROL	SECTION	JOB / SHEET NO.	ROUTE
0915	14	050 / 103	DL VEST ST

REVISIONS:



PLAN - TOP REINFORCEMENT

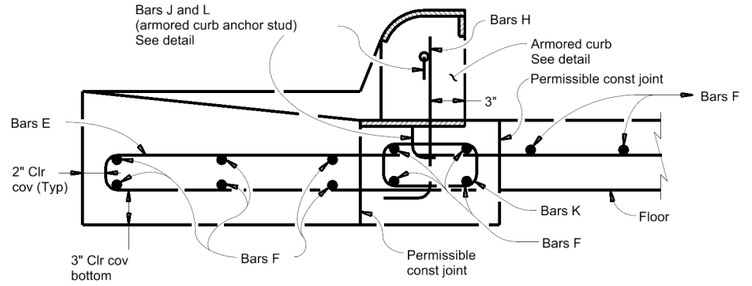


PLAN - BOTTOM REINFORCEMENT

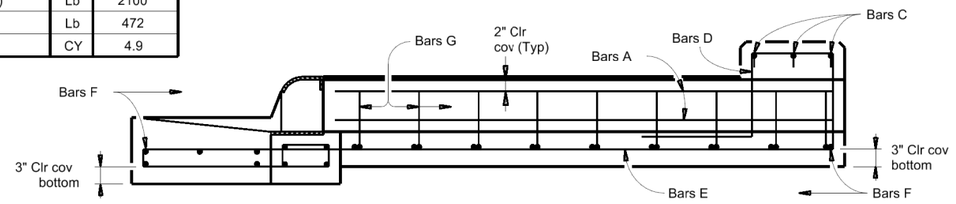
TABLE OF ESTIMATED QUANTITIES

For Contractor information only.

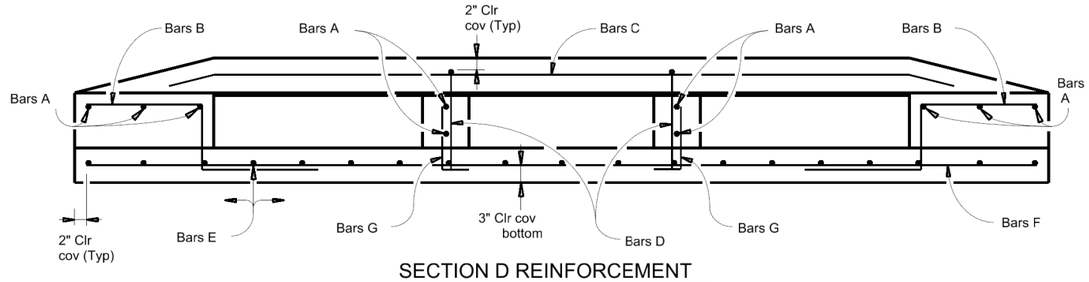
Bar	No.	Size	Length	Weight
A	10	#4	7'-2"	48
B	18	#4	4'-3"	52
C	3	#4	11'-4"	23
D	2	#4	5'-6"	8
E	19	#4	12'-10"	163
F	14	#4	13'-8"	128
G	18	#4	1'-6"	18
H	6	#4	1'-10"	8
I	6	#4	0'-8"	3
J	2	#4	0'-9"	1
K	19	#3	2'-6"	18
L	6	#4	0'-5"	2
Struct. steel (Misc. non bridge)			Lb	2100
Reinforcing Steel			Lb	472
Class "C" Concrete			CY	4.9



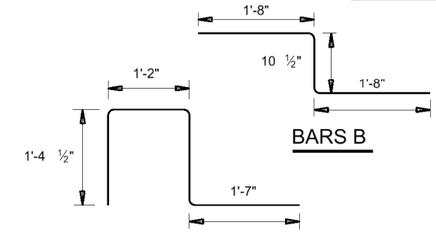
SECTION B REINFORCEMENT



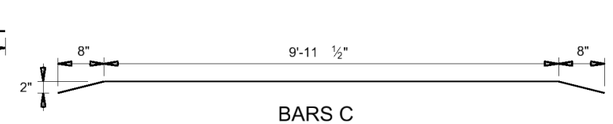
SECTION C REINFORCEMENT



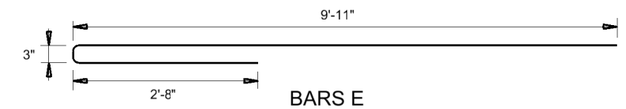
SECTION D REINFORCEMENT



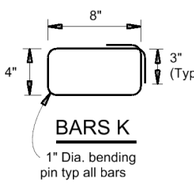
BARS B



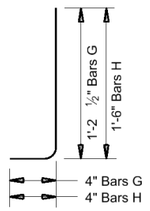
BARS C



BARS E



BARS K



BARS G AND H

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing bar dimensions are out-to-out of bar.

Contractor is responsible for verifying all dimensions and quantities in the field before beginning work.

SHEET 2 OF 3

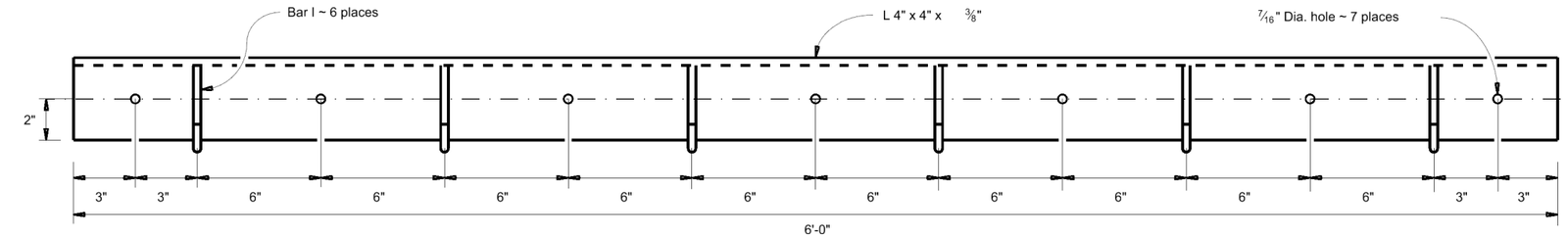
Texas Department of Transportation
San Antonio District (Structural Design)

SIDEWALK BRIDGE

SAN ANTONIO DISTRICT STANDARD

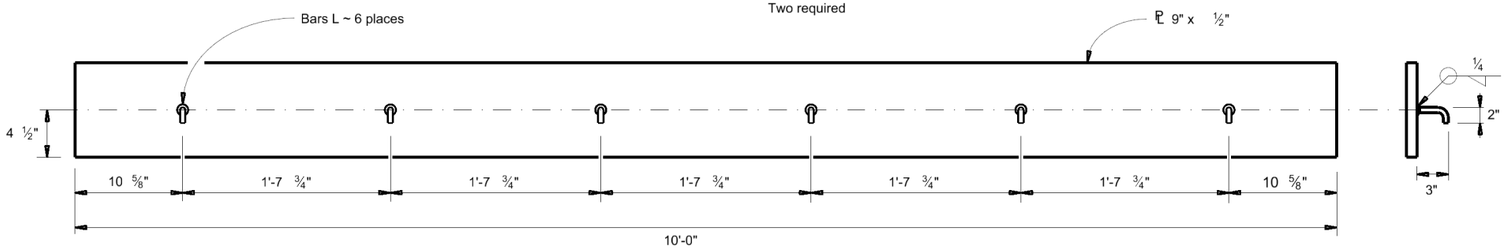
DN: BCL	CK:	FILENAME: SA District Sidewalk Bridge.dgn	
DW: SRF	CK:	ORIGINAL DRAWING DATE: January 2020	
DIST	FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	COUNTY
SAT	6	SEE TITLE SHT	WILSON
CONTROL	SECTION	JOB / SHEET NO.	ROUTE
0915	14	050 / 104	DL VEST ST

REVISIONS:

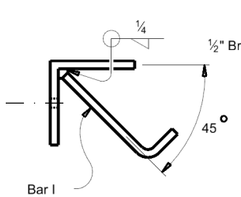


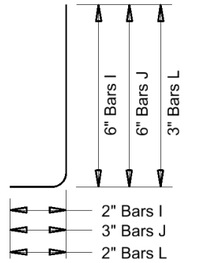
BRIDGE PLATE ATTACHMENT ANGLE

Two required

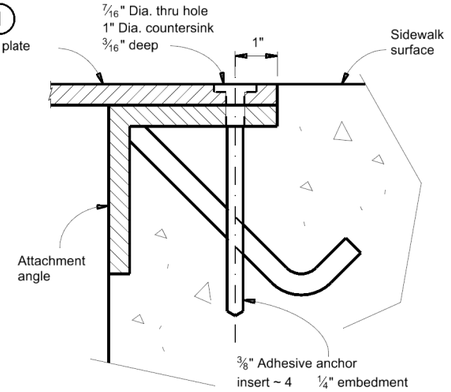


FLOOR PLATE





BARS I, J, AND L



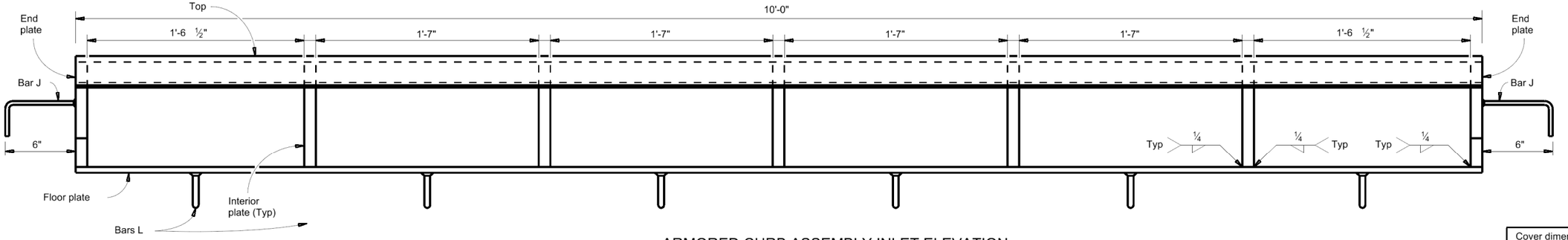
SECTION E

APPROVED SLIP RESISTANT PLATE	
Product	Manufacturer Website
Algrip ,™Steel	www.algrip.com
Mebac ®#3, Steel	www.harscoikg.com
SlipNOT ®Grade 2, Steel	www.slipnot.com

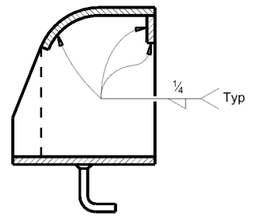
(1) Provide cover plates fabricated with a product from this list. No exceptions are permitted.

GENERAL NOTES:

Provide Class A concrete (f'c = 3000 psi).
Provide Grade 60 reinforcing steel.
Structural steel components must be Grade A36.
All exposed edges of the armored curb must receive a ⅛" bevel.
All structural steel components must be galvanized after fabrication in accordance with Item 445, "Galvanizing".
Galvanizing damaged during transport or construction must be repaired in accordance with the Specification.
The bridge plate must be hot-dip galvanized slip resistant steel (see table). Checker or diamond plate is not allowed, nor are slip resistant tapes, films, or non-metallic coatings.
Adhesive anchor system must be HIT HY 150 H.I.S. internally threaded inserts as furnished by Hilti, Inc., Tulsa, OK, or approved equivalent.
Sidewalk bridge, including all labor, armored curb, bridge plate, and other material complete and in place must be paid for under Item 465, "Inlet (Comp) (Ty Sidewalk Bridge)" by location.
Shop drawings will not require the Engineer's approval if fabrication is in accordance with the details shown.



ARMORED CURB ASSEMBLY INLET ELEVATION



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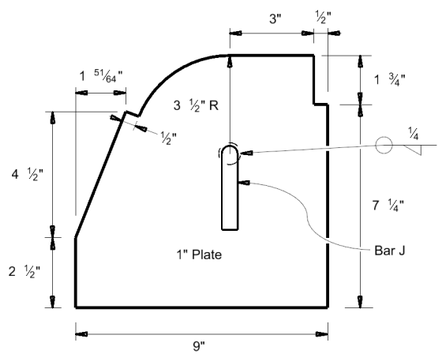
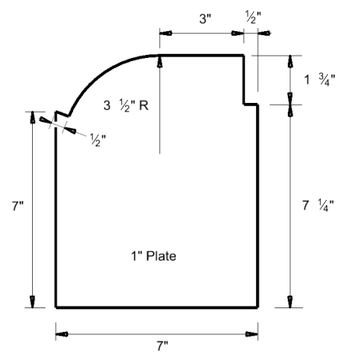


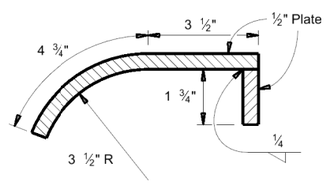
END PLATE

Two required



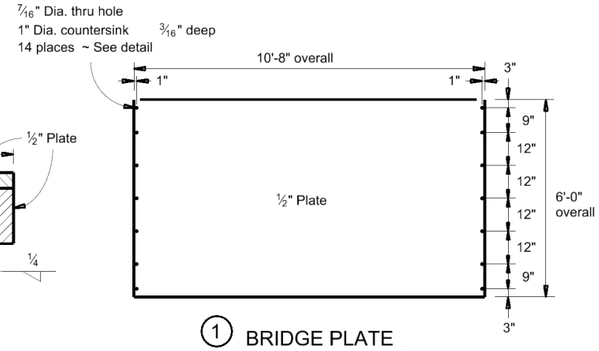
INTERIOR PLATE

Five required



TOP (SECTION)

10'-0" length



(1) BRIDGE PLATE

Hole location dimensions to center of hole

SHEET 3 OF 3

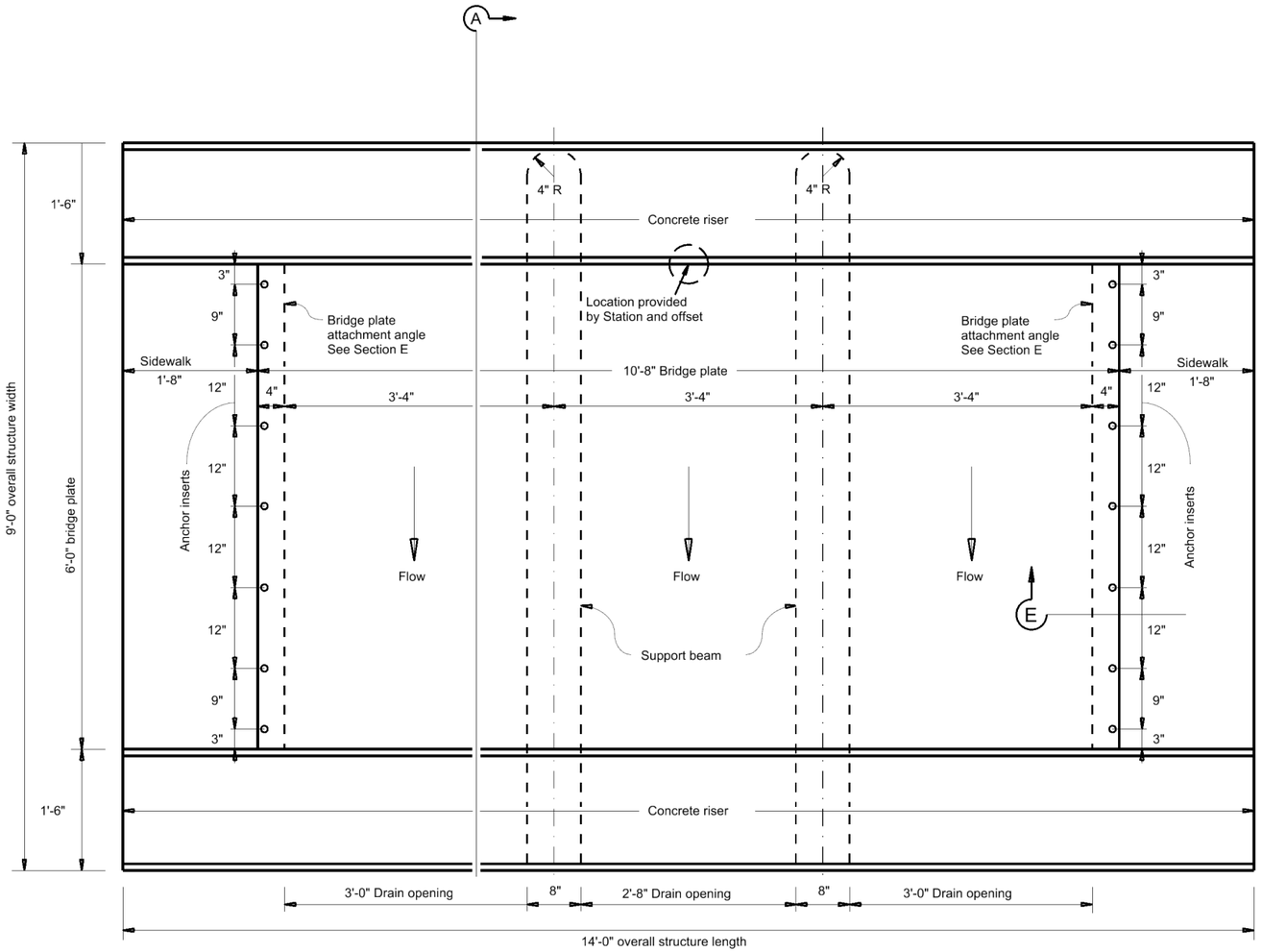
Texas Department of Transportation
San Antonio District (Structural Design)
Prepared by and for the use of TxDOT

SIDEWALK BRIDGE

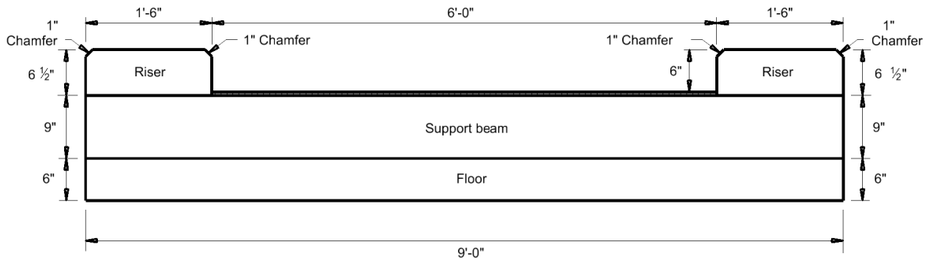
SAN ANTONIO DISTRICT STANDARD

DN: BCL	CK:	FILENAME: SA District Sidewalk Bridge.dgn		
DW: SRF	CK:	ORIGINAL DRAWING DATE: January 2020		
DIST	FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		COUNTY
SAT	6	SEE TITLE SHT		WILSON
CONTROL	SECTION	JOB	SHEET NO.	ROUTE
0915	14	050	105	DL VEST ST

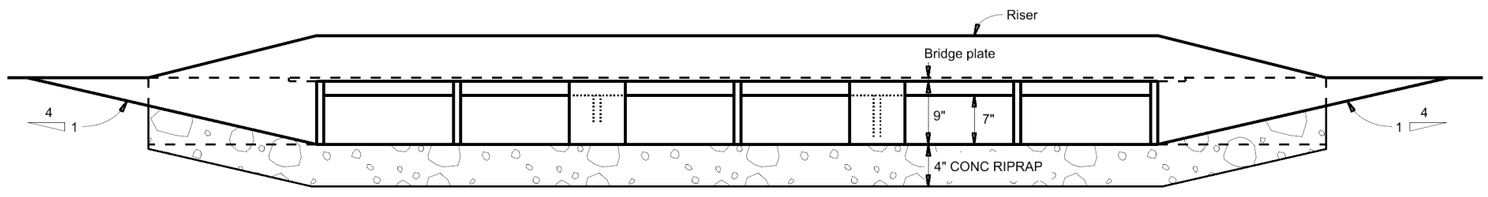
REVISIONS:



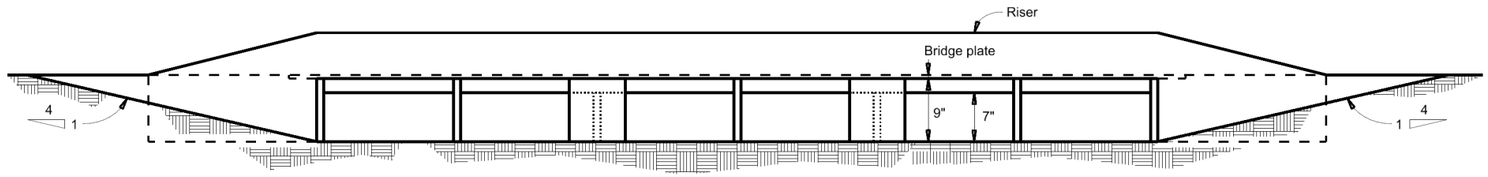
PLAN



SECTION A DIMENSIONS



ELEVATION - INLET (UPSTREAM) SIDE



ELEVATION - OUTLET (DOWNSTREAM) SIDE

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing bar dimensions are out-to-out of bar.

Contractor is responsible for verifying all dimensions and quantities in the field before beginning work.

SHEET 1 OF 3

STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

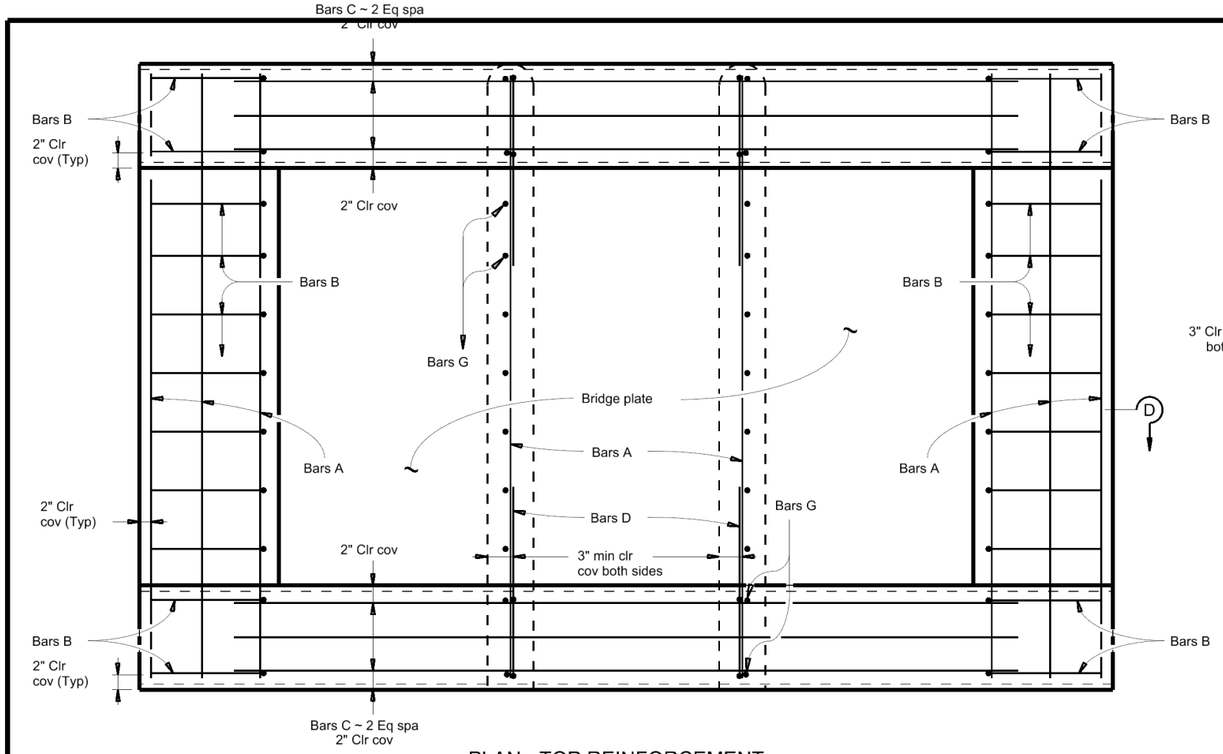
Martha Gandara
DATE: 2/21/2024

Texas Department of Transportation
San Antonio District (Structural Design)

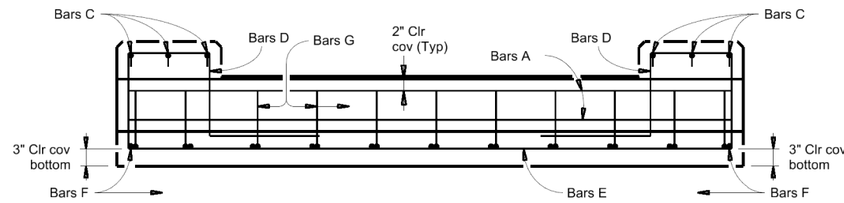
SIDEWALK BRIDGE
SAN ANTONIO DISTRICT STANDARD
(MOD)

DN:	CK:	FILENAME: SA District Sidewalk Bridge-MOD.dgn		
DW:	CK:	ORIGINAL DRAWING DATE: January 2020		
DIST	FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		COUNTY
SAT	6	SEE TITLE SHT		WILSON
CONTROL	SECTION	JOB	SHEET NO.	ROUTE
0915	14	050	106	DL VEST ST

REVISIONS: MODIFIED ON 2023.09.14. REMOVED ARMOR CURB ASSEMBLY, CURB AND GUTTER. MODIFIED PED BRIDGE IS TO BE USED OUTSIDE OF CLEAR ZONE.



PLAN - TOP REINFORCEMENT



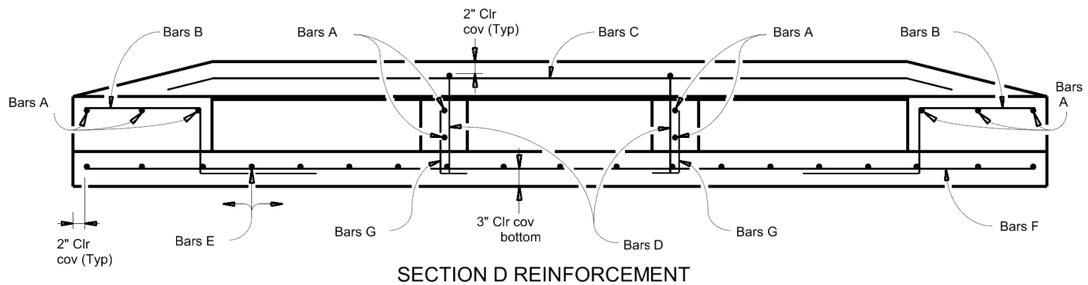
SECTION C REINFORCEMENT

TABLE OF ESTIMATED QUANTITIES

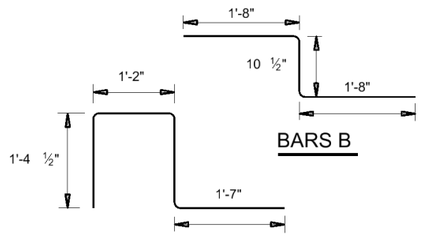
For Contractor information only.

Bar	No.	Size	Length	Weight
A	10	#4	7'-2"	48
B	18	#4	4'-3"	52
C	3	#4	11'-4"	23
D	2	#4	5'-6"	8
E	19	#4	12'-10"	163
F	14	#4	13'-8"	128
G	18	#4	1'-6"	18
I	6	#4	0'-8"	3
J	2	#4	0'-9"	1
L	6	#4	0'-5"	2

Struct. steel (Misc. non bridge)	Lb	2100
Reinforcing Steel	Lb	472
Class "C" Concrete	CY	5.2

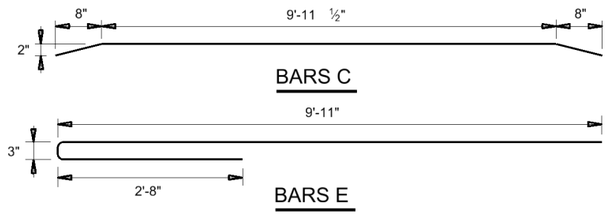


SECTION D REINFORCEMENT



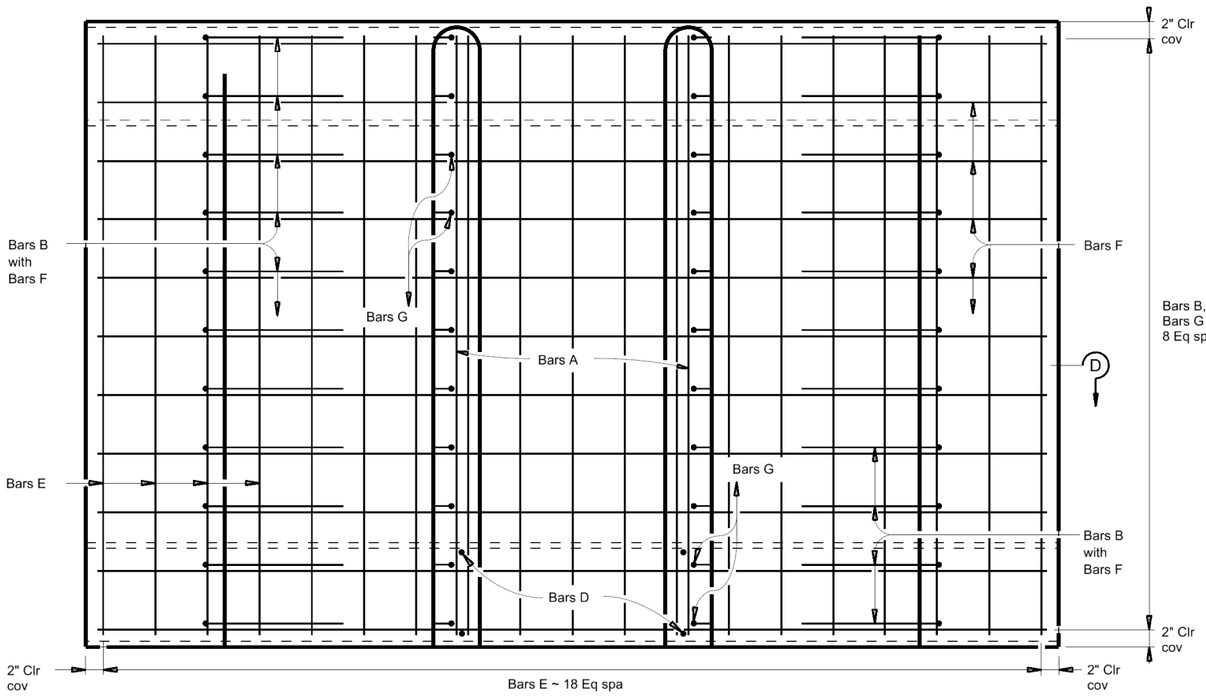
BARS B

BARS D

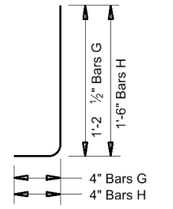


BARS C

BARS E



PLAN - BOTTOM REINFORCEMENT



BARS G AND H

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing bar dimensions are out-to-out of bar.

Contractor is responsible for verifying all dimensions and quantities in the field before beginning work.

STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED
PROFESSIONAL ENGINEER

Martha Gandara

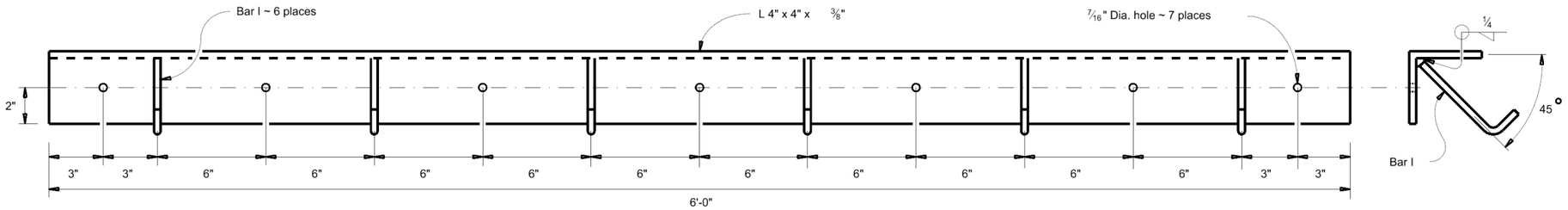
DATE: 2/21/2024

Texas Department of Transportation
San Antonio District (Structural Design)
Prepared by and for the use of TxDOT

SIDEWALK BRIDGE
SAN ANTONIO DISTRICT STANDARD
(MOD)

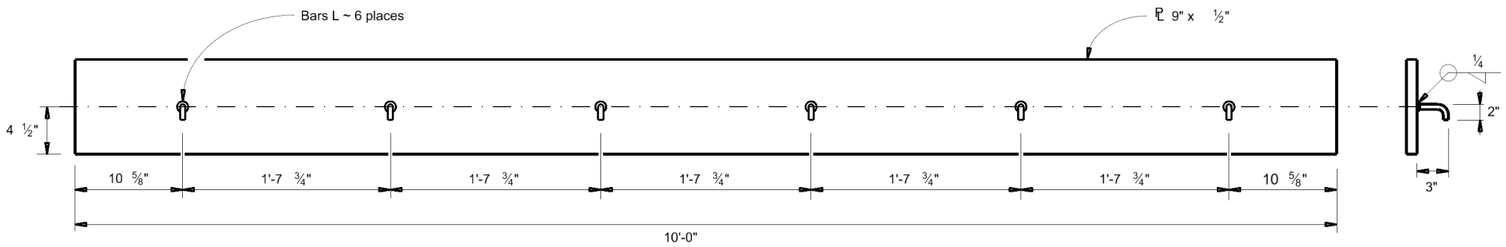
DN:	CK:	FILENAME: SA District Sidewalk Bridge-MOD.dgn		
DW:	CK:	ORIGINAL DRAWING DATE: January 2020		
DIST	FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		COUNTY
SAT	6	SEE TITLE SHT		WILSON
CONTROL	SECTION	JOB	SHEET NO.	ROUTE
0915	14	050	107	DL VEST ST

REVISIONS: MODIFIED ON 2023.09.14. REMOVED ARMOR CURB ASSEMBLY, CURB AND GUTTER. MODIFIED PED BRIDGE IS TO BE USED OUTSIDE OF CLEAR ZONE.

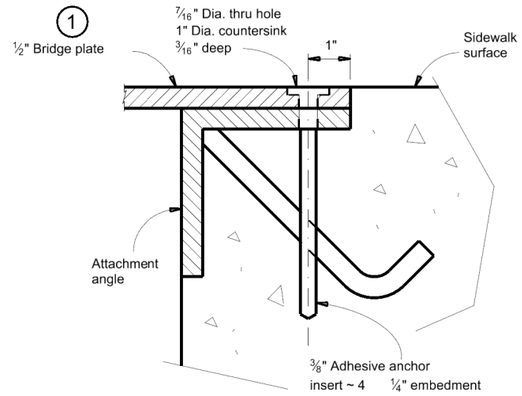


BRIDGE PLATE ATTACHMENT ANGLE

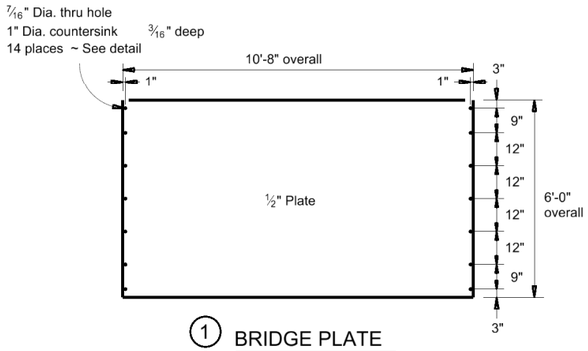
Two required



FLOOR PLATE

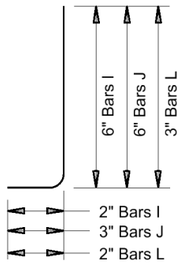


SECTION E



1 BRIDGE PLATE

Hole location dimensions to center of hole



BARS I, J, AND L

GENERAL NOTES:

Provide Class A concrete (f'c = 3000 psi).
Provide Grade 60 reinforcing steel.
Structural steel components must be Grade A36.
All structural steel components must be galvanized after fabrication in accordance with Item 445, "Galvanizing".
Galvanizing damaged during transport or construction must be repaired in accordance with the Specification.
The bridge plate must be hot-dip galvanized slip resistant steel (see table). Checker or diamond plate is not allowed, nor are slip resistant tapes, films, or non-metallic coatings.
Adhesive anchor system must be HIT HY 150 H.I.S. internally threaded inserts as furnished by Hilti, Inc., Tulsa, OK, or approved equivalent.
Sidewalk bridge, including all labor, bridge plate, and other material complete and in place must be paid for under Item 465, "Inlet (Comp) (Ty Sidewalk Bridge)" by location.

Shop drawings will not require the Engineer's approval if fabrication is in accordance with the details shown.

APPROVED SLIP RESISTANT PLATE	
Product	Manufacturer Website
Algrip ,Steel	www.algrip.com
Mebac #3, Steel	www.harscoikg.com
SlipNOT Grade 2, Steel	www.slipnot.com

1 Provide cover plates fabricated with a product from this list. No exceptions are permitted.

STATE OF TEXAS
MARTHA GANDARA
98500
LICENSED PROFESSIONAL ENGINEER

Martha Gandara

DATE: 2/21/2024

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing bar dimensions are out-to-out of bar.

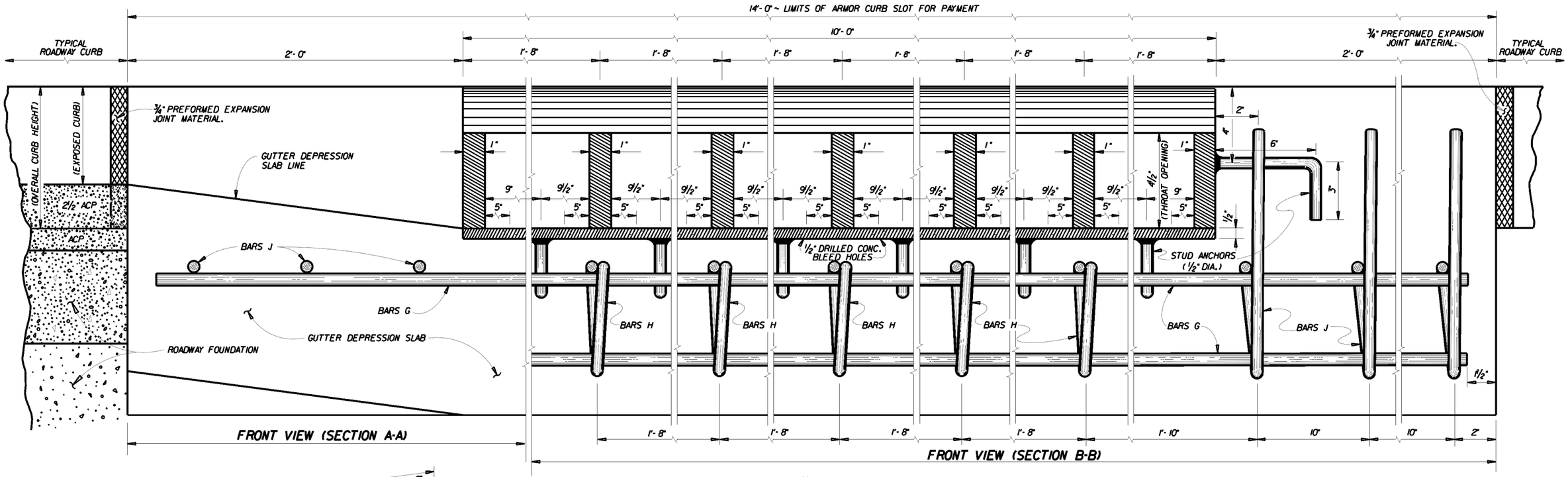
Contractor is responsible for verifying all dimensions and quantities in the field before beginning work.

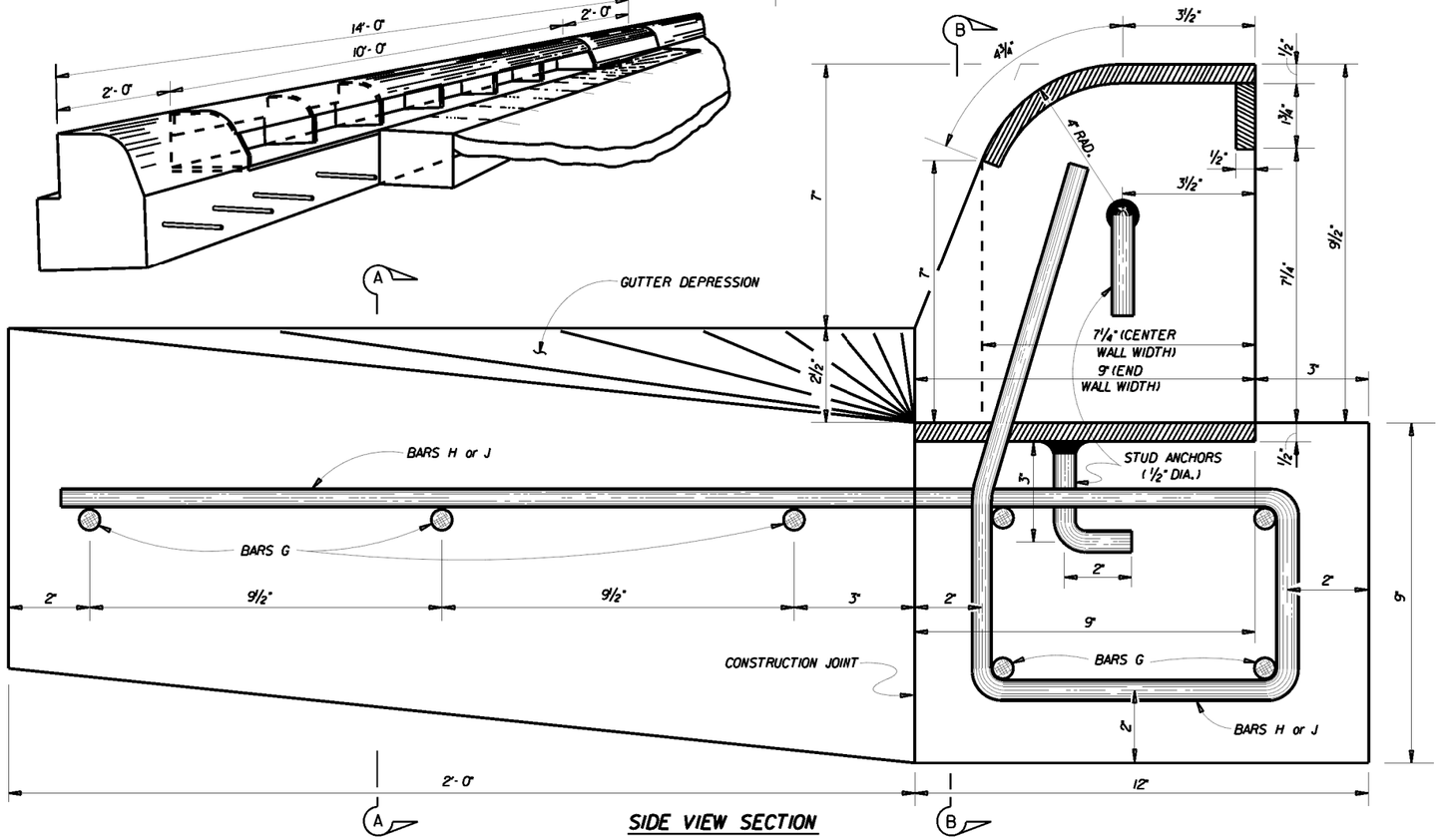
Texas Department of Transportation
San Antonio District (Structural Design)
Prepared by and for the use of TxDOT

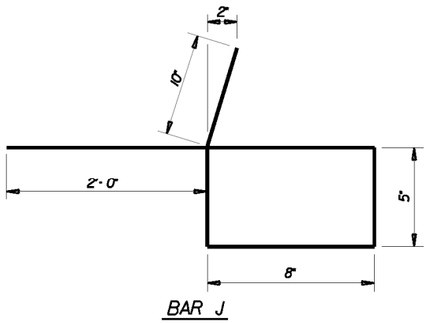
SIDEWALK BRIDGE
SAN ANTONIO DISTRICT STANDARD
(MOD)

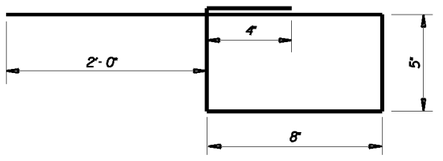
DN:	CK:	FILENAME: SA District Sidewalk Bridge-MOD.dgn		
DW:	CK:	ORIGINAL DRAWING DATE: January 2020		
DIST	FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		COUNTY
SAT	6	SEE TITLE SHT		WILSON
CONTROL	SECTION	JOB	SHEET NO.	ROUTE
0915	14	050	108	DL VEST ST

REVISIONS: MODIFIED ON 2023.09.14. REMOVED ARMOR CURB ASSEMBLY, CURB AND GUTTER. MODIFIED PED BRIDGE IS TO BE USED OUTSIDE OF CLEAR ZONE.









ESTIMATED QUANTITIES
FOR REINFORCING STEEL & CONCRETE

BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
G	7	#4	SHOWN	13'-9"	64
H	5	#4	1'-8"	4'-6"	15
J	6	#4	8"	5'-0"	20
TOTAL WEIGHT *				LBS.	99
CONCRETE FOR FOUNDATION *				C.Y.	0.47
CONCRETE FOR GUTTER DEPRESSION *				C.Y.	0.78

STRUCTURAL STEEL FOR ARMOR CURB SLOT		
STUD ANCHORS (½"DIA.)	LBS.	3.5
STEEL PLATE	LBS.	451
TOTAL WEIGHT *	LBS.	454.5

* FOR CONTRACTORS INFO ONLY.

GENERAL NOTES:

ALL CONCRETE SHALL BE CL."A".

ALL STEEL SHALL BE ASTM A36.

ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.

ALL SIDES OF ARMOR CURB SLOT AND STUD ANCHORS SHALL BE ¼" FILLET WELDS.

ALL EXPOSED STRUCTURAL STEEL (ARMOR) SHALL BE GALVANIZED UNDER ITEM 445.

ALL EXPOSED EDGES ON ARMOR CURB SHALL RECEIVE A ⅛" BEVEL.

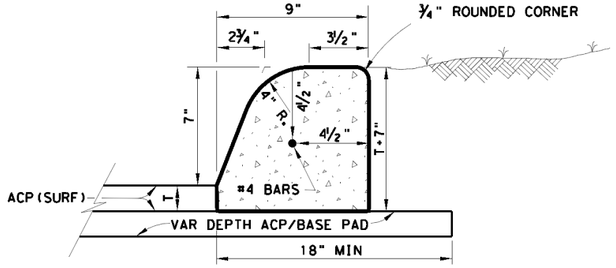
THE SHAPE OF THE TYPICAL ROADWAY CURB SHALL TRANSITION TO THE ARMOR CURB AS APPROVED BY THE ENGINEER.

ARMOR CURB SLOT
WITH CONCRETE FOUNDATION
SAN ANTONIO DISTRICT STANDARDS

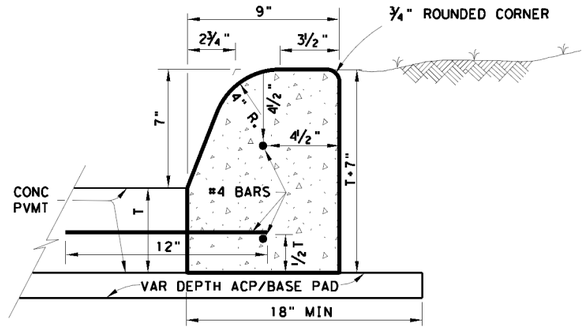
10/95
REV. 07/01
REV. 12/04

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6	SEE TITLE SHEET		109
STATE	STATE DISTRICT	COUNTY	
TEXAS	SAT	WILSON	
CONT.	SECT.	JOB	HIGHWAY NO.
0915	14	050	DL VEST ST

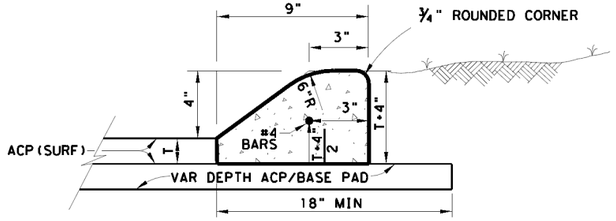
STRUCTURE DESIGN
/BRIDGE/STDS/ARMORCURB.DGN



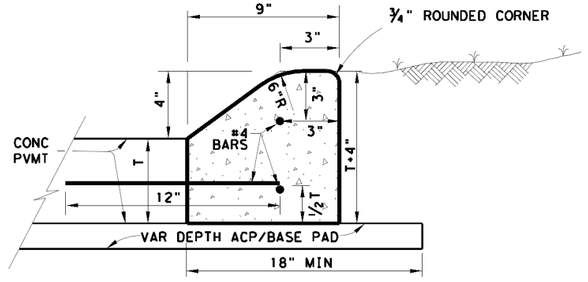
CONCRETE CURB (TYPE 1)
W/ ACP



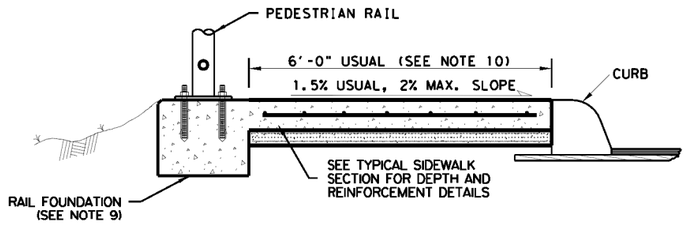
CONCRETE CURB (TYPE 1)
W/ CONC PAVEMENT



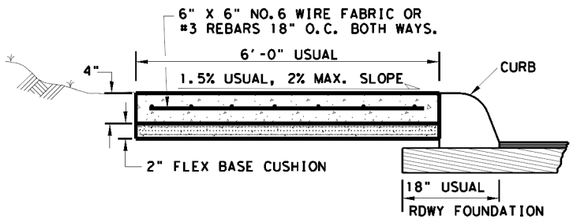
CONCRETE CURB (TYPE 2)
W/ ACP



CONCRETE CURB (TYPE 2)
W/ CONC PAVEMENT

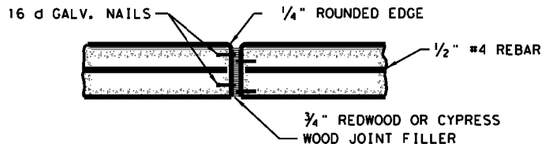


TYPICAL SIDEWALK SECTION WITH PEDESTRIAN RAIL



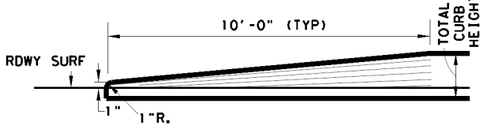
TYPICAL SIDEWALK SECTION

GROOVED JOINTS IN THE SIDE WALK SHALL BE AT A MAX. SPACING OF 10 FT. AND SHALL HAVE ¾" EXPANSION JOINTS AT A MAX. SPACING OF 60' AND TO COINSIDE WITH THE CURB EXP. JOINTS.



TYPICAL CURB EXPANSION JOINT DETAIL

EXPANSION JOINTS TO BE PLACED AT BEGINNING AND END OF CURVES, DRIVEWAYS WHEELCHAIR RAMPS, INLETS, ILLUMINATION/ SIGNAL FOUNDATIONS AND OTHER FIXED OBJECTS.



TRANSITION FOR CONCRETE CURB ENDS

SEE CURB DETAIL FOR REINFORCEMENT

GENERAL NOTES:

1. CONCRETE CURB TYPE 1 AND 2 SHOWN SHALL MEET THE MINIMUM SPECIFICATION REQUIREMENTS OF CLASS "A" CONCRETE PER ITEM 529 AND 421.
2. ALL REINFORCING STEEL SHALL BE GRADE 60
3. WHERE CONCRETE CURB IS PLACED ON EXISTING CONCRETE PAVEMENT, THE PAVEMENT SHALL BE DRILLED AND THE REINFORCING BARS GROUTED IN PLACE.
4. 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.
5. VERTICAL AND HORIZONTAL DOWEL BARS AND TRANSVERSE REINFORCING BARS SHALL BE PLACED AT 4 FEET C-C, UNLESS OTHERWISE SHOWN.
6. ONE-HALF INCH EXPANSION JOINT MATERIAL SHALL BE PROVIDED WHERE CURB OR CURB AND GUTTER IS ADJACENT TO SIDEWALK OR RIPRAP. THIS IS SUBSIDIARY TO THE CURB, ITEM 529.
7. LAYDOWN CURB AT DRIVEWAYS WILL BE PAID AS SUBSIDIARY TO ITEM 530.
8. FOR SIDEWALK DETAILS AT DRIVEWAYS, SEE SAN ANTONIO DISTRICT STANDARD "DRIVEWAY DETAILS".
9. SEE PEDESTRIAN HANDRAIL DETAILS STANDARD "PRD" FOR MORE INFORMATION. CONCRETE RAIL FOUNDATION TO BE POURED WITH THE SIDEWALK BUT PAYMENT IS SUBSIDIARY TO ITEM 450 "RAILING".
10. CLEAR SIDEWALK WIDTH EXCLUDING THE PEDESTRIAN RAIL FOUNDATION SHALL BE 6' UNLESS OTHERWISE SPECIFIED IN THE PLANS

Texas Department of Transportation
San Antonio District

MISCELLANEOUS CURB AND SIDEWALK DETAILS

San Antonio District Standard
Sheet (1 of 2)

T:\Engdata\Standards\MiscCurbdetails.dgn

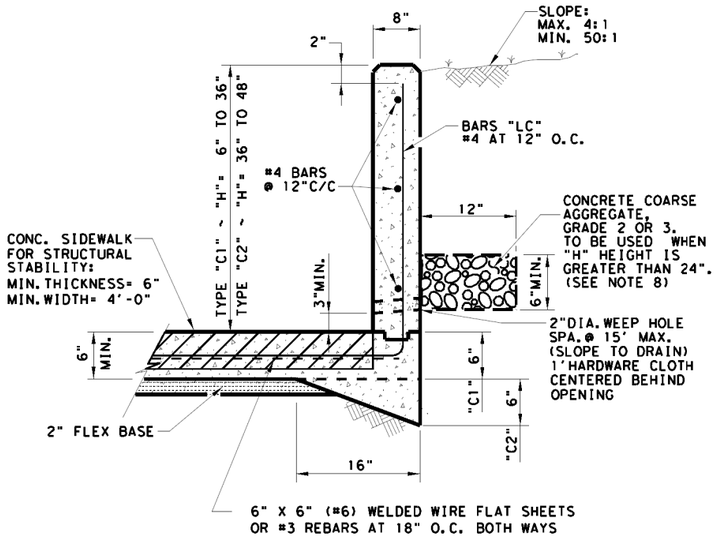
ORIGINAL DRAWING DATE:

REVISIONS
09-01-08
10-10-17 sidewalk width equals 6' usual
07-22-20 9" curb + curb w/ conc pvmt det.

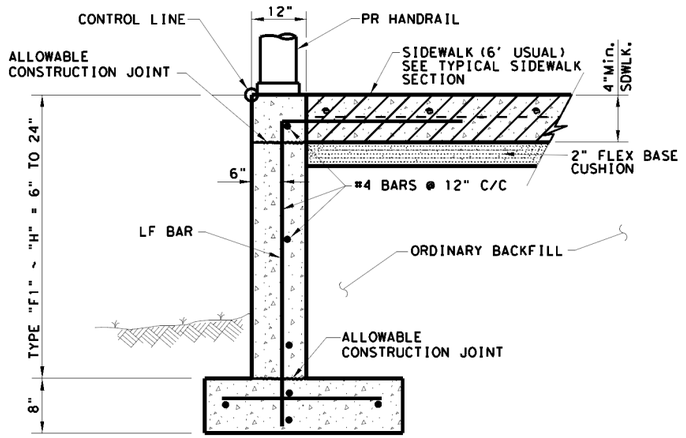
PREPARED BY AND FOR USE OF TxDoT.

STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT #	SHEET
SAT	6	SEE TITLE SHEET	110

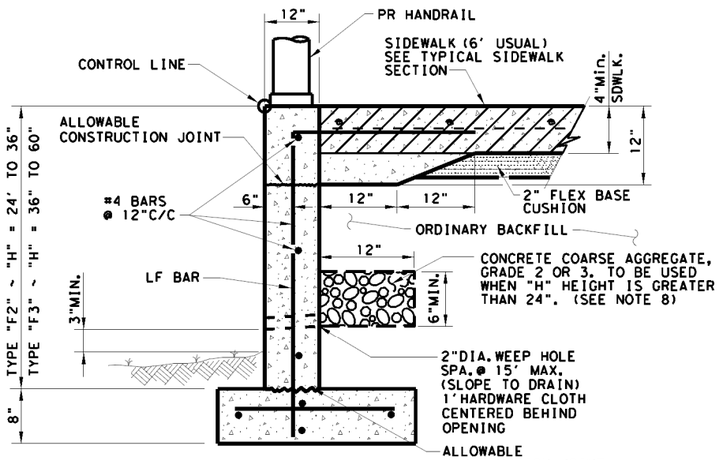
COUNTY	CONTROL	SECTION	JOB	HIGHWAY
WILSON	0915	14	050	SQ VEST ST



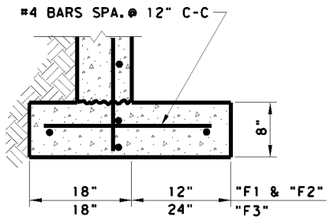
TYPE "C1" & "C2" CURB



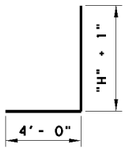
TYPE "F1" CURB



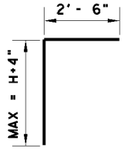
TYPE "F2" & "F3" CURB



FOOTING DETAIL



BAR "LC"



BAR "LF"

GENERAL NOTES:

1. CONCRETE FOR CURB TYPE F AND C SHOWN SHALL MEET THE MINIMUM SPECIFICATION REQUIREMENTS OF CLASS "C" CONCRETE PER ITEM 421
2. ALL REINFORCING STEEL SHALL BE GRADE 60
3. EXPANSION AND CONTRACTION JOINTS SHALL BE CONSTRUCTED TO MATCH PAVEMENT JOINITS 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.
4. VERTICAL AND HORIZONTAL DOWEL BARS AND TRANSVERSE REINFORCING BARS SHALL BE PLACED AT 4 FEET C-C, UNLESS OTHERWISE SHOWN.
5. UNTIL THE SIDEWALK IS COMPLETE, LATERAL SUPPORT FOR THE "F" CURBS WILL BE REQUIRED.
6. IF AGGREGATE IS REQUIRED PER THE DETAIL, IT IS PAID AS SUBSIDIARY TO THE CURB, ITEM 529.

DESIGN SOIL PARAMETERS:
Soil Unit Wt. = 120 pcf
Phi = 30 Degrees
Cohesion = 50 psf
Min. PI = 15
Max. PI = 30
SURCHARGE:
TYPE F CURB q = 2' Adjacent to sidewalk
Max. slope behind TYPE C Curb = 4:1
Min. Factor of Safety against sliding is 1.5.
Designed in accordance with current AASHTO Standards and Interim Specifications.

CLASS C CONCRETE PAID UNDER ITEM 531, SIDEWALK. (NOTE. ADDITIONAL CONCRETE TO MEET THE THICKENED SECTIONS REQUIRED BY THESE DETAILS IS SUBSIDIARY TO ITEM 531, CURB.)

Texas Department of Transportation
San Antonio District

MISCELLANEOUS CURB AND SIDEWALK DETAILS

San Antonio District Standard
Sheet (2 of 2)

T:Engdata/Standards/MiscCurbdetails.dgn

ORIGINAL DRAWING DATE:

REVISIONS
09-01-08
10-10-17 sidewalk width equals 6' usual
07-22-20 9" curb + curb w/ conc pvmt det.
- -

PREPARED BY AND FOR USE OF TxDoT.

STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT #	SHEET
SAT	6	SEE TITLE SHEET	111

COUNTY	CONTROL	SECTION	JOB	HIGHWAY
WILSON	0915	14	050	VEST ST

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.

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)

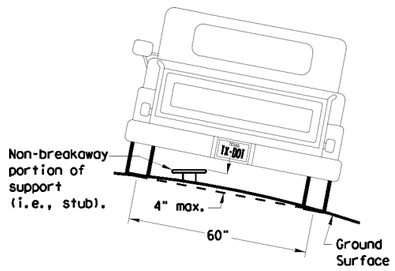
Anchor Type

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))

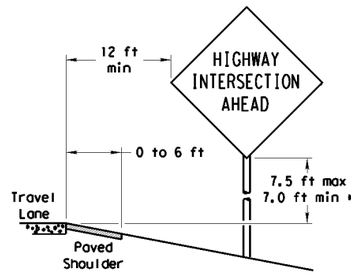
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



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).

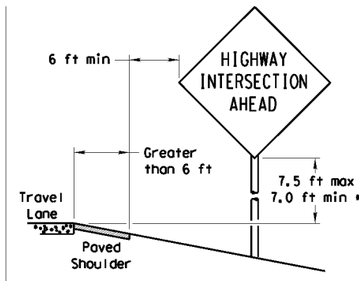
SIGN LOCATION

PAVED SHOULDERS



LESS THAN 6 FT. WIDE

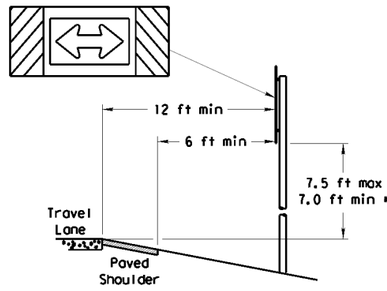
When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.



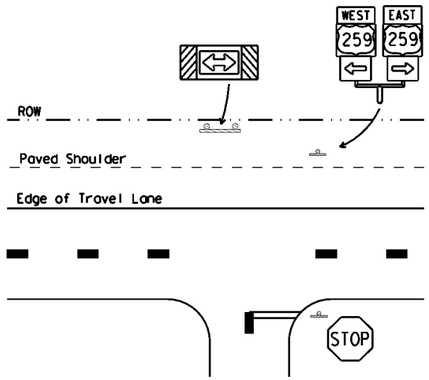
GREATER THAN 6 FT. WIDE

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.

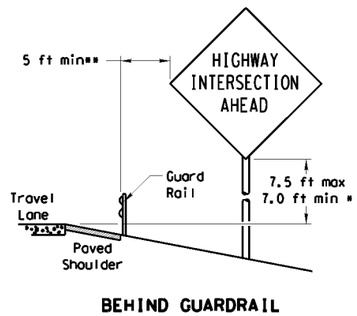
T-INTERSECTION



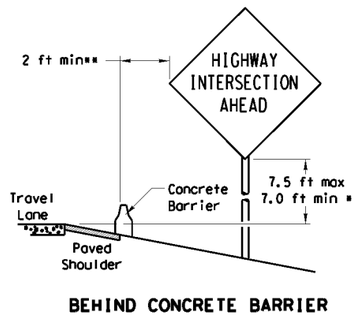
When this sign is needed at the end of a two-lane, two way roadway, the right edge of the sign should be in line with the centerline of the roadway. Place as close to ROW as practical.



BEHIND BARRIER



BEHIND GUARDRAIL



BEHIND CONCRETE BARRIER

**Sign clearance based on distance required for proper guard rail or concrete barrier performance.

* 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

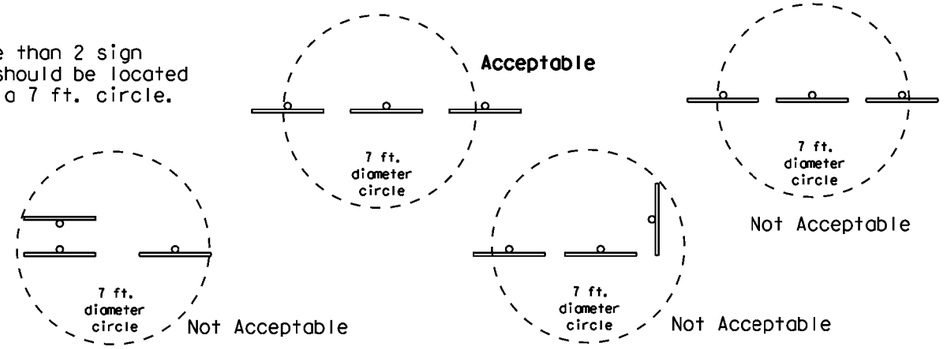
(2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

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.

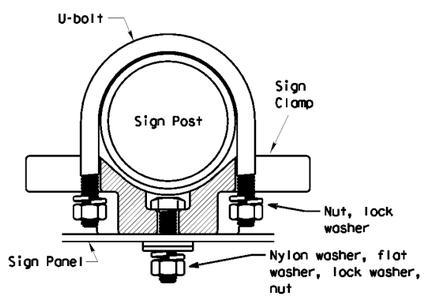
The website address is:
http://www.txdot.gov/publications/traffic.htm

No more than 2 sign posts should be located within a 7 ft. circle.



TYPICAL SIGN ATTACHMENT DETAIL

Single Signs

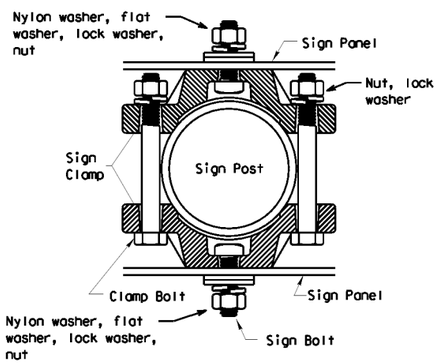


Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

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.

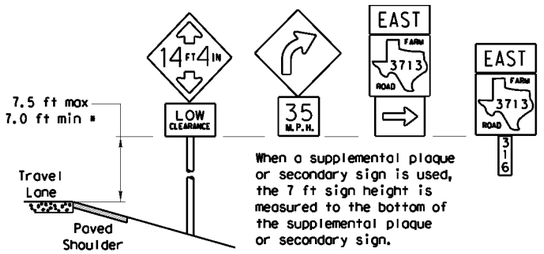
Sign clamps may be either the specific size clamp or the universal clamp.

Back-to-Back Signs



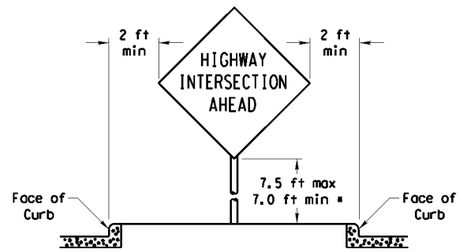
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES



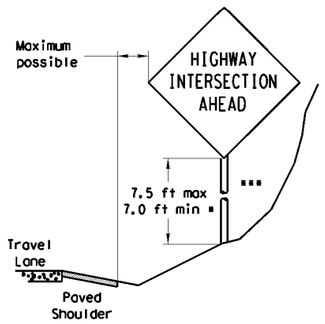
When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

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.

Texas Department of Transportation
Traffic Operations Division

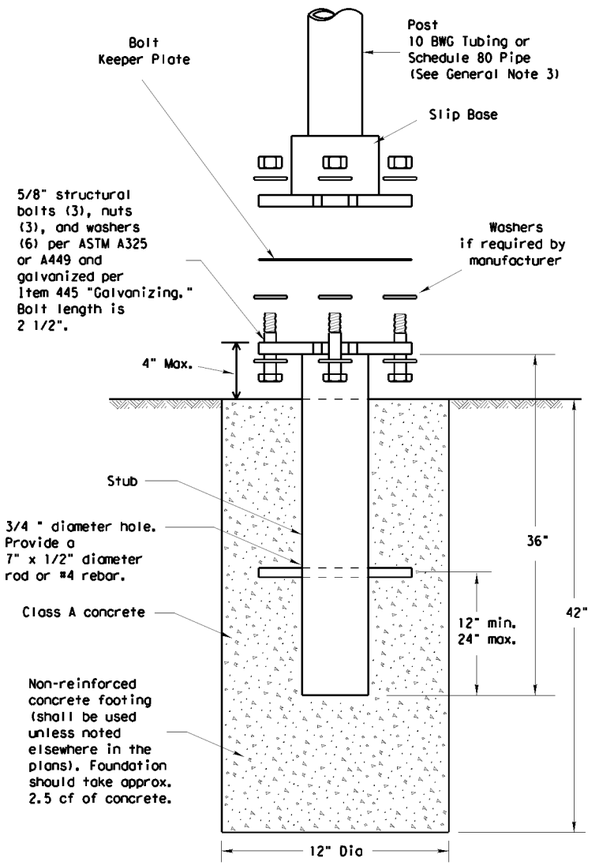
SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

SMD(GEN)-08

REVISIONS	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
9-08	CONT	SECT	JOB	HIGHWAY
	0915	14	050	DL VEST ST
	DIST	COUNTY		SHEET NO.
	SAT	WILSON		112

DATE:
FILE:

TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



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

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:

1. 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.
2. 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.

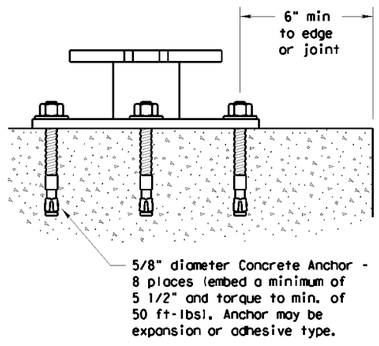
   Schedule 80 Pipe (2.875" outside diameter)
   - 0.276" nominal wall thickness
   - Steel tubing per ASTM A500 Gr C
   - Other seamless or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the following:
     - 46,000 PSI minimum 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
3. 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
4. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.

ASSEMBLY PROCEDURE

Foundation
1. 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.
2. 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.
3. 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.
4. Plumb the stub. Allow a minimum of 4 days to set, unless otherwise directed by the Engineer.
5. The triangular slipbase system is multidirectional and is designed to release when struck from any direction.

Support
1. 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.
2. 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, "Epoxies 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

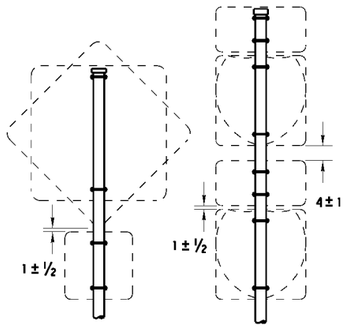
DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT

REVISIONS
9-08

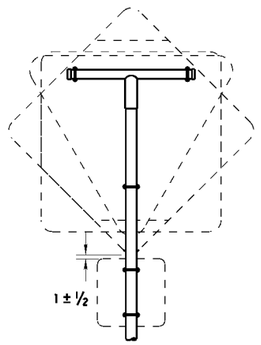
CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST

DIST	COUNTY	SHEET NO.
SAT	WILSON	113

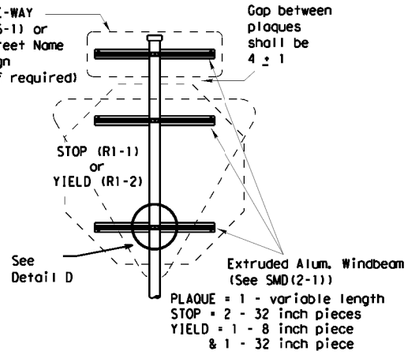
DATE:
FILE:



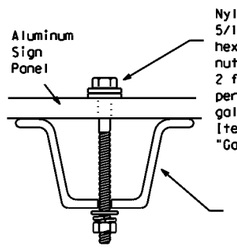
SM RD SGN ASSM TY XXXXX(1)XX(P)



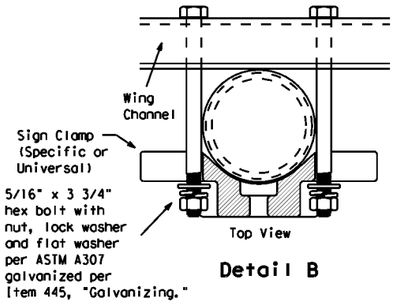
SM RD SGN ASSM TY XXXXX(1)XX(T)



SM RD SGN ASSM TY XXXXX(1)XX(P-BM)



Detail A



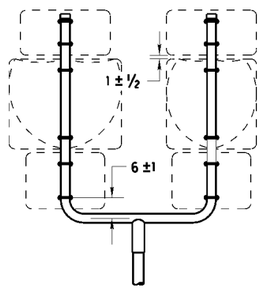
Detail B

GENERAL NOTES:

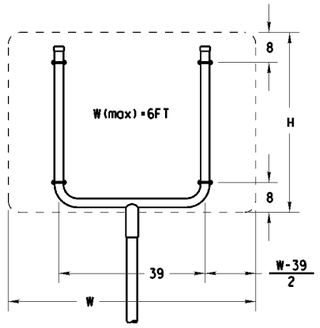
1.

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

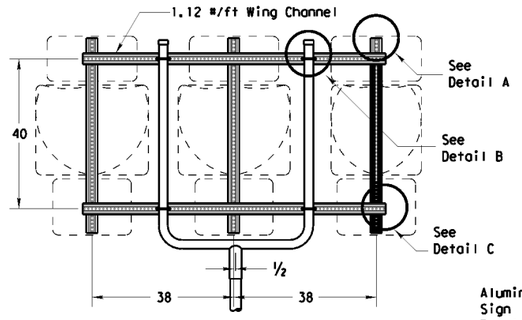
2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material 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.



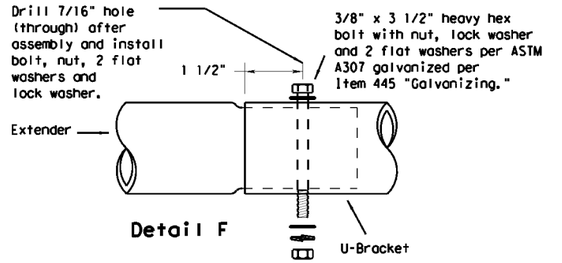
SM RD SGN ASSM TY XXXXX(1)XX(U)



SM RD SGN ASSM TY XXXXX(1)XX(U)

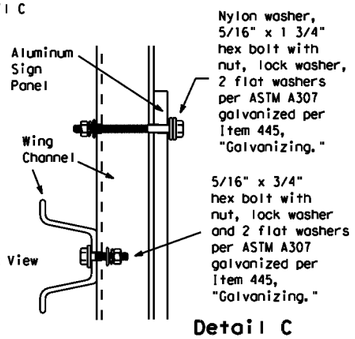


SM RD SGN ASSM TY XXXXX(1)XX(U-WC)
(See Note 11)

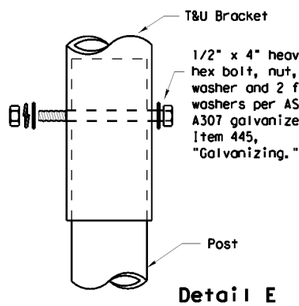


Detail F

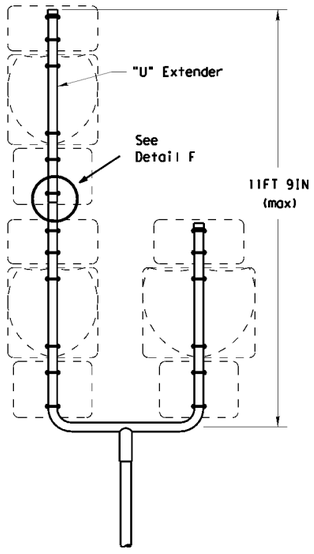
Splices shall only be allowed behind the sign substrate.



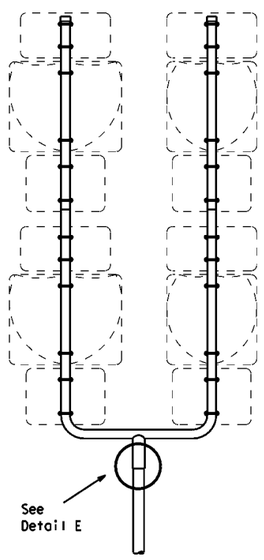
Detail C



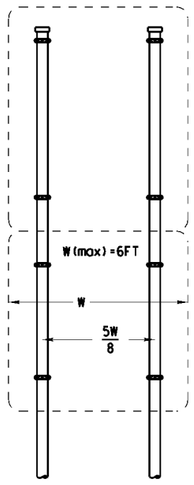
Detail E



SM RD SGN ASSM TY S80(1)XX(U-1EXT)

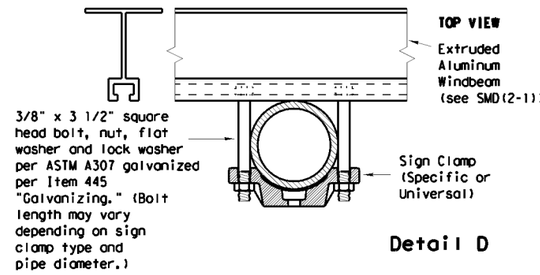


SM RD SGN ASSM TY S80(1)XX(U-2EXT)

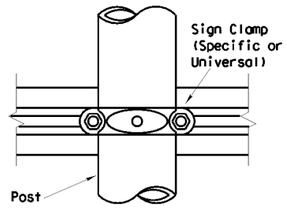


SM RD SGN ASSYM TY XXXXX(2)XX(P)

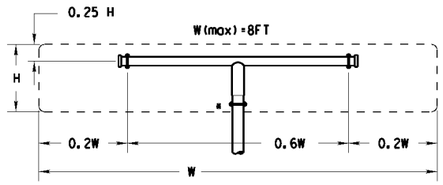
SIDE VIEW



Detail D



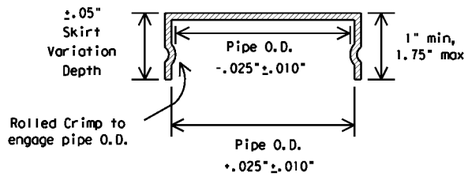
REQUIRED SUPPORT		
	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
Warning	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)



SM RD SGN ASSM TY XXXXX(1)XX(T)
(* - See Note 12)

All dimensions are in english unless detailed otherwise.

FRICTION CAP DETAIL



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

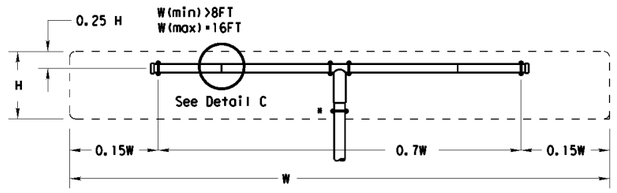
SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-2)-08

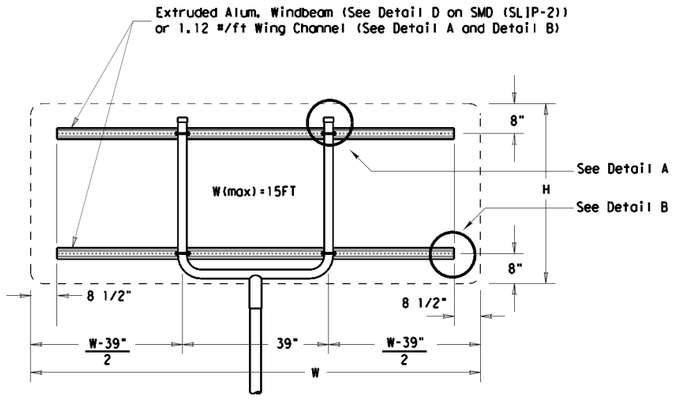
REVISIONS	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
9-08	CONT	SECT	JOB	HIGHWAY
	0915	14	050	DL VEST ST
	DIST	COUNTY		SHEET NO.
	SAT	WILSON		114

DATE:
FILE:

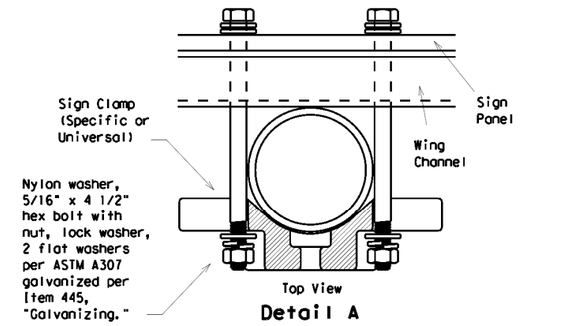
DATE:
FILE:



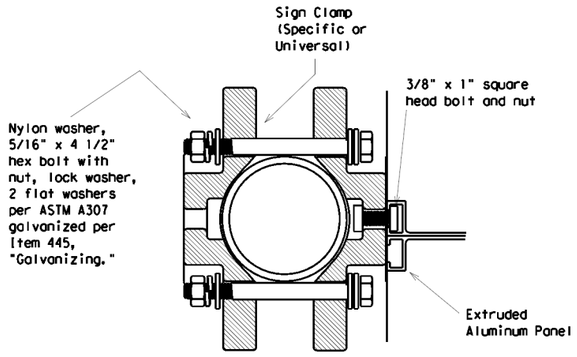
SM RD SGN ASSM TY XXXXX(1)XX(T-2EXT)
(* - See Note 12)



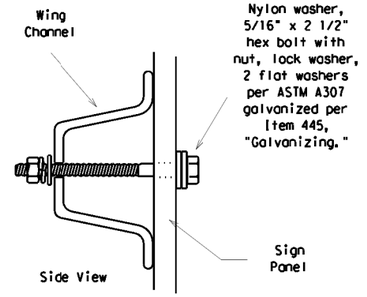
SM RD SGN ASSM TY XXXXX(1)XX(U-XX)



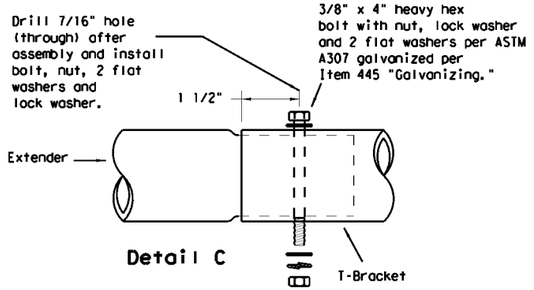
Detail A



Detail D
EXTRUDED ALUMINUM SIGN WITH T BRACKET

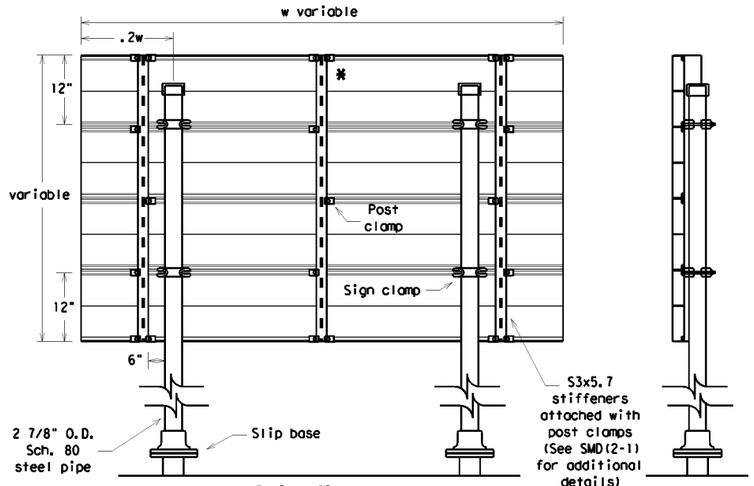


Detail B



Detail C

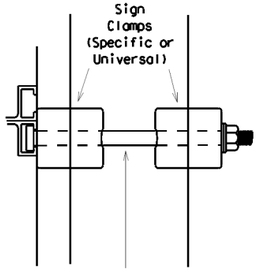
Splices shall only be allowed behind the sign substrate.



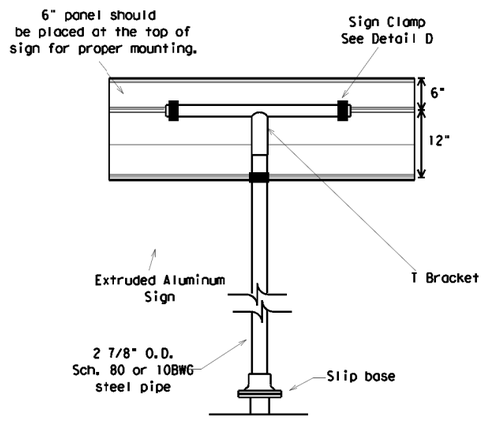
Typical Sign Mount

SM RD SGN ASSM TY S80(2)XX(P-EXAL)

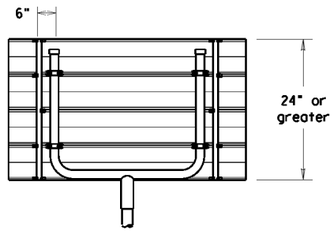
* Additional stiffener placed at approximate center of signs when sign width is greater than 10'.



Detail E



Extruded Aluminum Sign
With T Bracket



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

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. Sign blanks shall be the sizes and shapes shown on the plans.
11. 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.
12. 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)
	48x60-inch signs	TY S80(1)XX(T)
Warning	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

REVISIONS
9-08

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT

CONT	SECT	JOB	HIGHWAY
0915	14	050	DL VEST ST

DIST	COUNTY	SHEET NO.
SAT	WILSON	115

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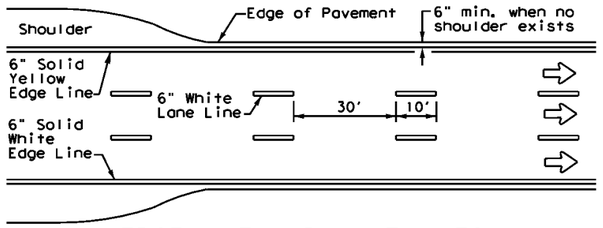
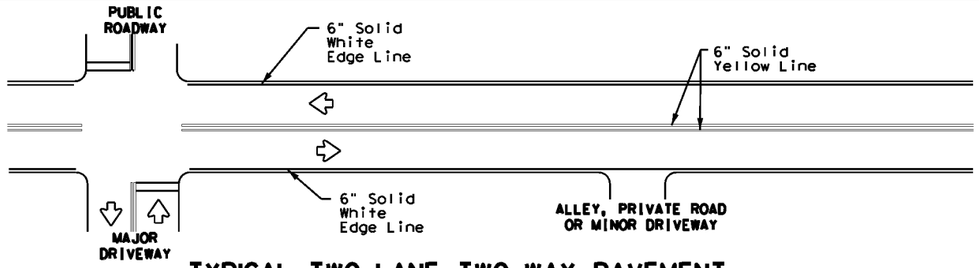
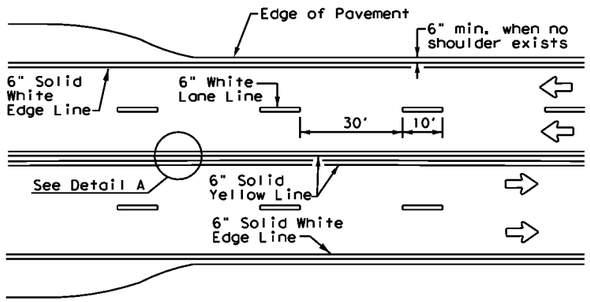
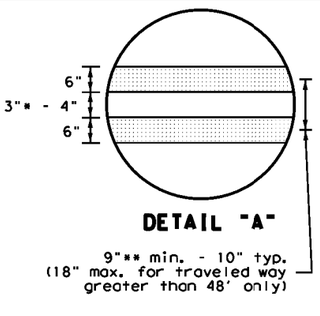


EDGE LINE AND LANE LINES ONE-WAY ROADWAY WITH OR WITHOUT SHOULDERS



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

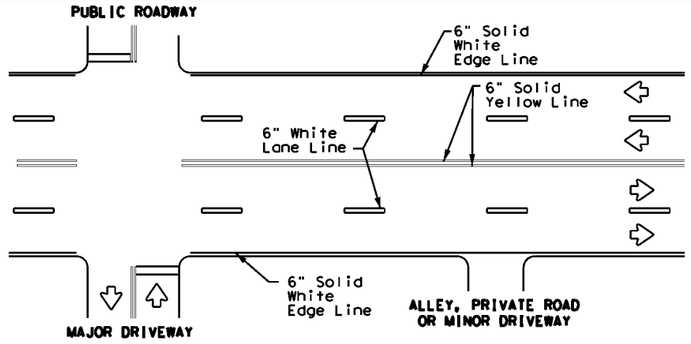




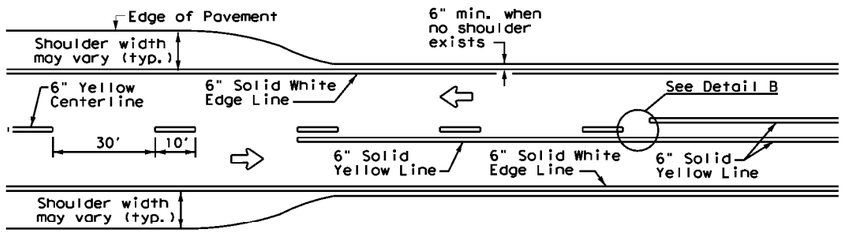
CENTERLINE AND LANE LINES FOUR LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS

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

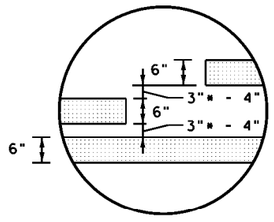
** 8" minimum for restripe projects when approved by the Engineer.



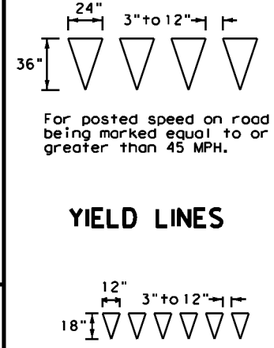
TYPICAL MULTI-LANE, TWO-WAY PAVEMENT MARKINGS THROUGH INTERSECTIONS

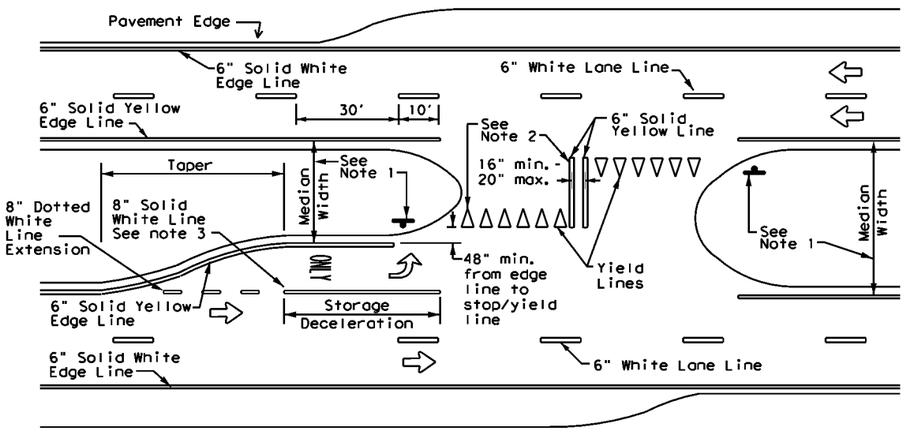


TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



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





FOUR LANE DIVIDED ROADWAY CROSSOVERS

NOTES

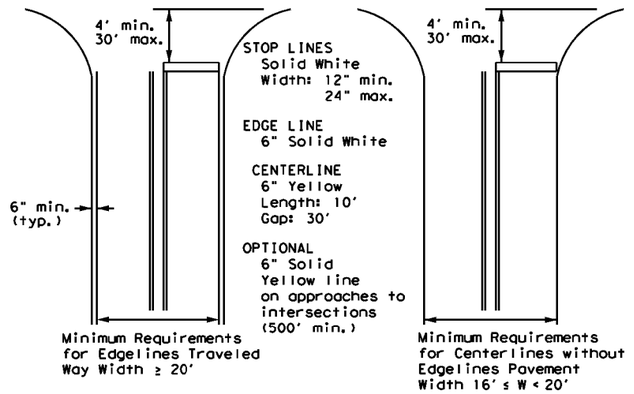
1. Where divided highways are separated by median widths at the median opening itself of 30 feet or more, median openings shall be signed as two separate intersections. Each median opening has two width measurements, with one measurement for each approach. The narrow median width will be the controlling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

GENERAL NOTES

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

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

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



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

GUIDE FOR PLACEMENT OF STOP LINES, EDGE LINE & CENTERLINE

Based on Traveled Way and Pavement Widths for Undivided Roadways

Texas Department of Transportation

Traffic Safety Division Standard

TYPICAL STANDARD PAVEMENT MARKINGS

PM(1)-22

FILE: pm1-22.dgn	DN:	CK:	DW:	CK:
©TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
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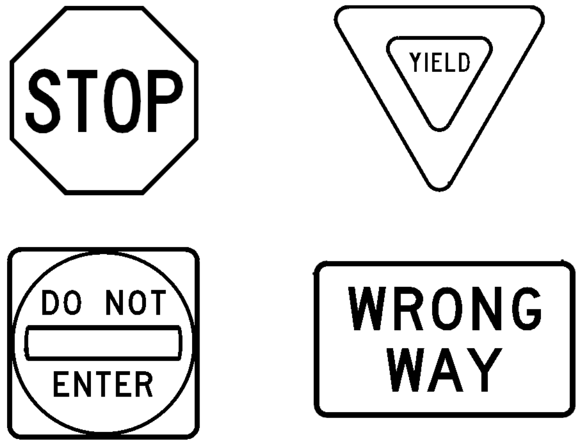
11-78 8-00 6-20	DIST	COUNTY		SHEET NO.
8-95 3-03 12-22	SAT	WILSON		116
5-00 2-12				

22A

DATE: 2/21/2024 8:06:44 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT4/Documents/15 - SAT/Design Projects/...

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

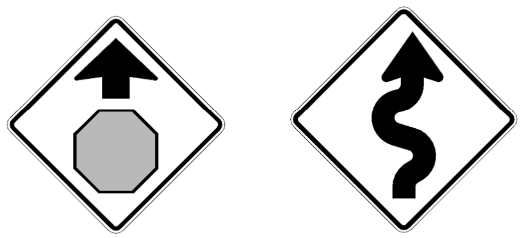
REQUIREMENTS FOR WHITE BACKGROUND REGULATORY SIGNS

(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

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

GENERAL NOTES

1. 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).
2. Sign legend shall use the Federal Highway Administration (FHWA) Standard Highway Alphabets (B, C, D, E, Emod or F).
3. 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.
4. Black legend and borders shall be applied by screening process or cut-out acrylic non-reflective black film to background sheeting, or combination thereof.
5. 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.
6. 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.
7. Sign substrate shall be any material that meets the Departmental Material Specification requirements of DMS-7110 or approved alternative.
8. 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/

Texas Department of Transportation
Traffic Operations Division Standard

TYPICAL SIGN REQUIREMENTS

TSR(4)-13

FILE: tsr4-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT October 2003	CONT	SECT	JOB	HIGHWAY
REVISIONS 12-03 7-13 9-08	0915	14	050	DL VEST ST
	DIST	COUNTY		SHEET NO.
	SAT	WILSON		117

4

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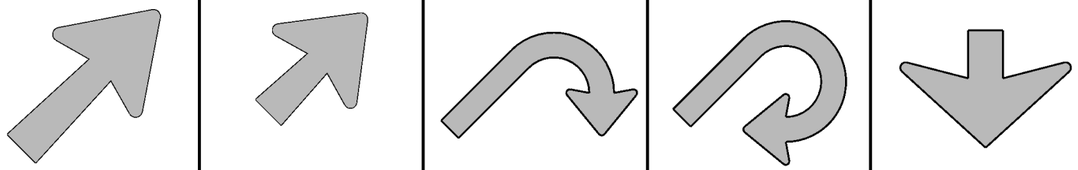
ARROW DETAILS

for Large Ground-Mounted and Overhead Guide Signs



TYPE	LETTER SIZE	USE
A-1	10.67" U/L and 10" Caps	Single Lane Exits
A-2	13.33" U/L and 12" Caps	
A-3	16" & 20" U/L	
B-1	10.67" U/L and 10" Caps	Multiple Lane Exits
B-2	13.33" U/L and 12" Caps	
B-3	16" & 20" U/L	

CODE	USED ON SIGN NO.
E-3	E5-1aT
E-4	E5-1bT

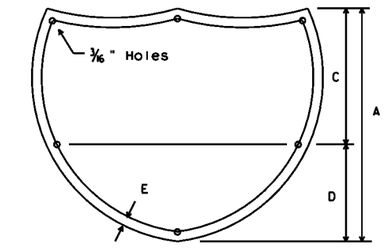
NOTE

Arrow dimensions are shown in the "Standard Highway Sign Designs for Texas" manual.

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

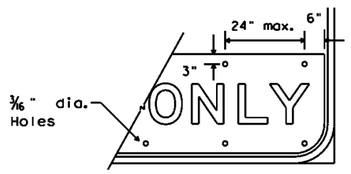
http://www.txdot.gov/

SIGN BLANK PUNCHING DETAILS FOR ATTACHMENTS WHEN SPECIFIED TO BE TYPE A ALUMINUM SIGNS (FOR MOUNTING TO GUIDE SIGN FACE)

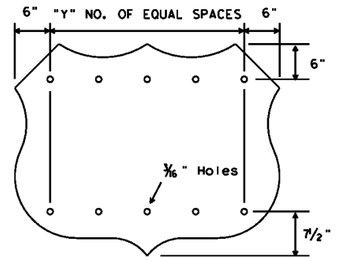


INTERSTATE ROUTE MARKERS

A	C	D	E
36	21	15	1 1/2
48	28	20	1 3/4

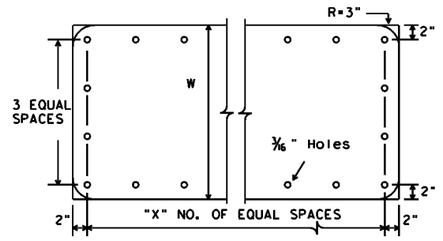


EXIT ONLY PANEL



U.S. ROUTE MARKERS

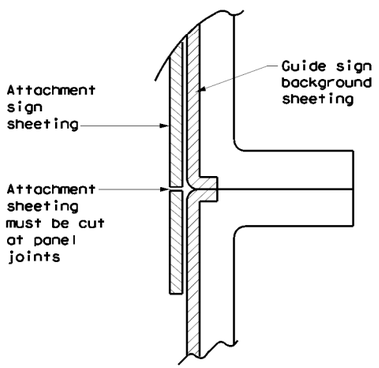
Sign Size	"Y"
24x24	2
30x24	3
36x36	3
45x36	4
48x48	4
60x48	5



STATE ROUTE MARKERS

No. of Digits	W	X
4	24	4
4	36	5
4	48	6
3	24	3
3	36	4
3	48	5

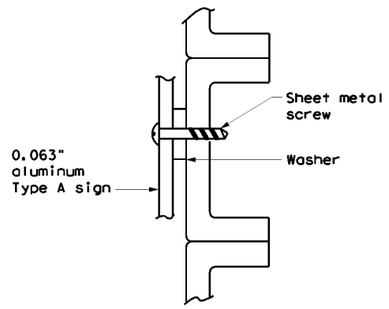
MOUNTING DETAILS OF ATTACHMENTS TO GUIDE SIGN FACE ("EXIT ONLY" AND "LEFT EXIT" PANELS, ROUTE MARKERS AND OTHER ATTACHMENTS)



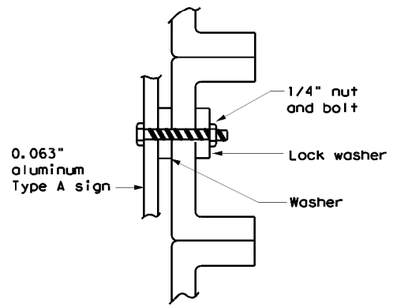
DIRECT APPLIED ATTACHMENT

NOTE:

1. Sheeting for legend, symbols, and borders must be cut at panel joints.
2. Direct applied attachment signs will be subsidiary to "Aluminum Signs" or "Fiberglass Signs".



SCREW ATTACHMENT



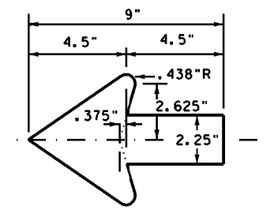
NUT/BOLT ATTACHMENT

NOTE:

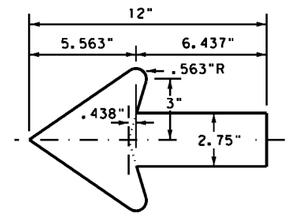
Furnish Type A aluminum sign attachments only when specified in the plans. These signs will be paid for under "Aluminum Signs".

ARROW DETAILS

for Destination Signs (Type D)



Standard arrow to be used with 6 inch letters.



Standard arrow to be used with 8 inch letters.

Texas Department of Transportation

Traffic Operations Division Standard

TYPICAL SIGN REQUIREMENTS

TSR(5)-13

FILE: tsr5-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT October 2003	CONT	SECT	JOB	HIGHWAY
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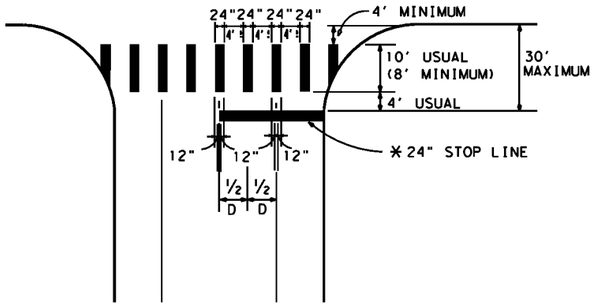
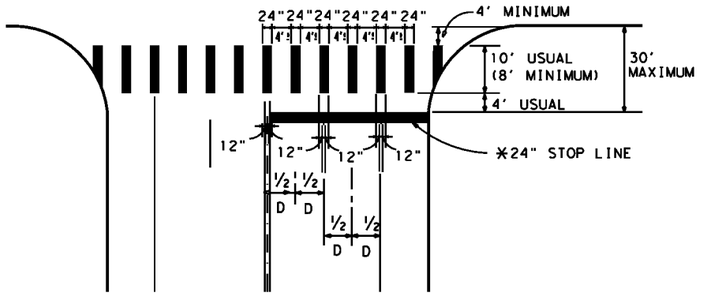
12-03 7-13	DIST	COUNTY		SHEET NO.
9-08	SAT	WILSON		118

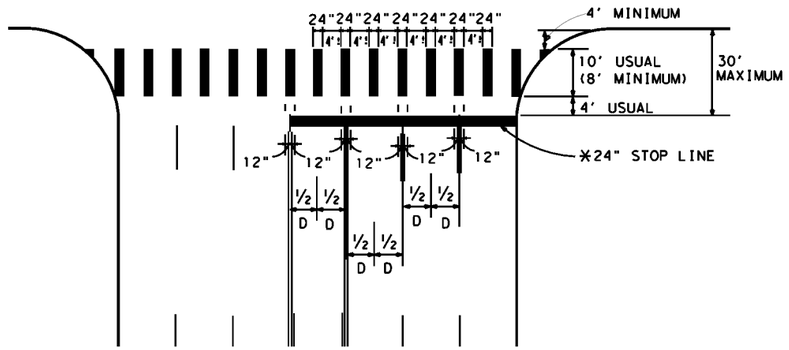
5



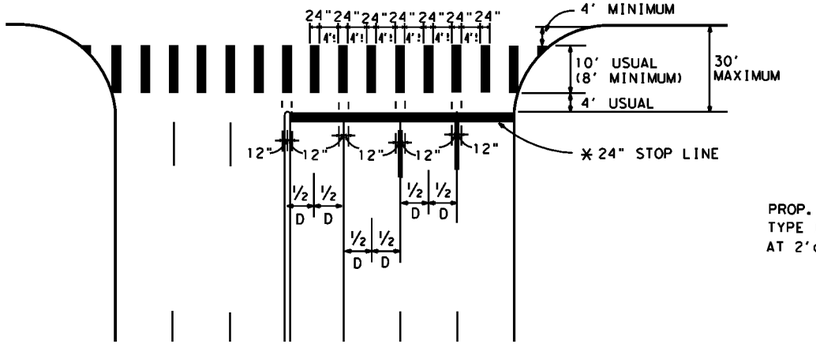
TWO LANES WITH SHOULDERS



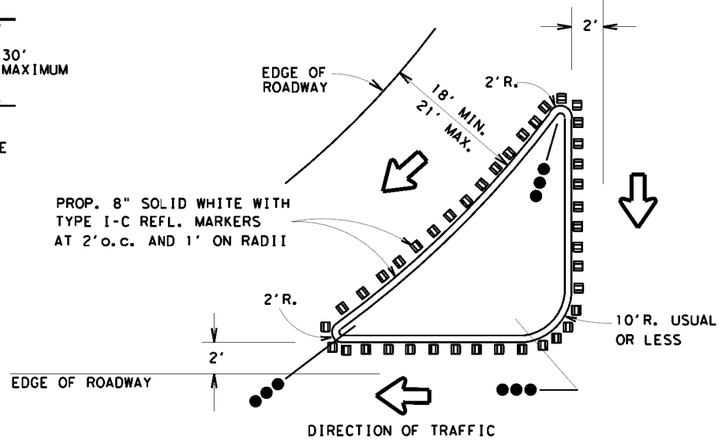
FOUR LANES WITH SHOULDERS



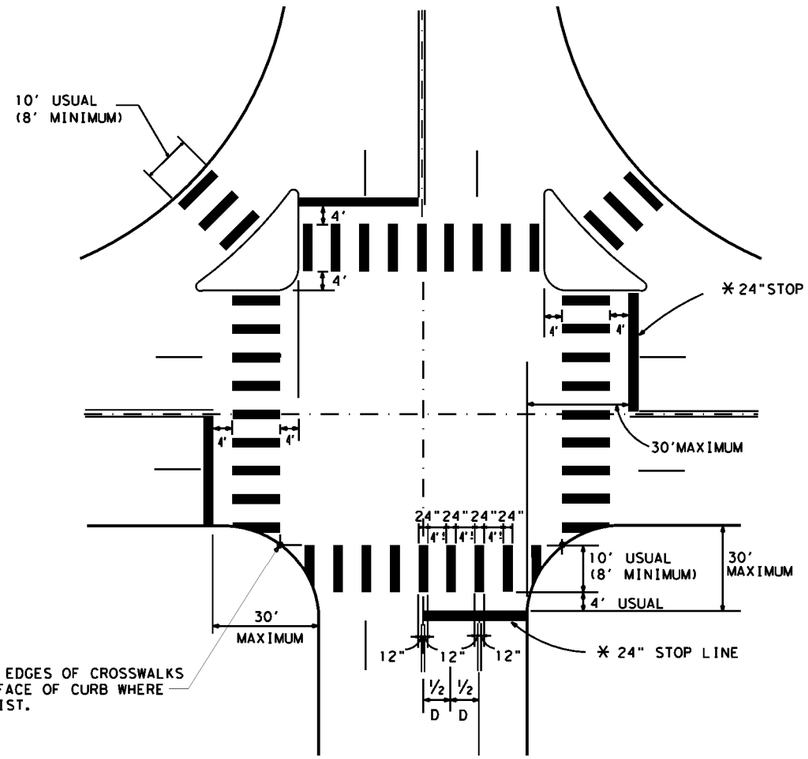
MULTI - LANES



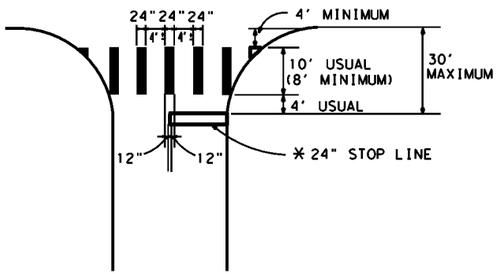
MULTI - LANE WITH MEDIAN



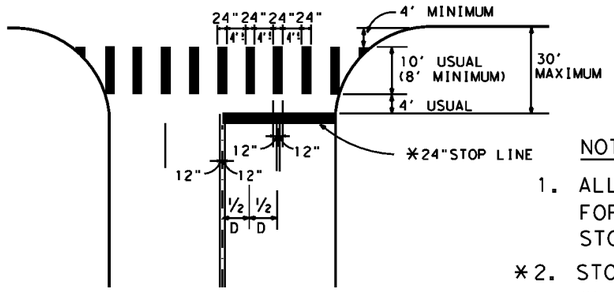
TYPICAL RIGHT TURN ISLAND
WITH DELINEATION



INTERSECTION WITH RIGHT - TURN ISLANDS



TWO LANES



FOUR LANES

NOTES:

1. ALL LONGITUDINAL LINES FORMING CROSSWALK AND STOP LINES SHALL BE WHITE
2. * STOP LINES AS REQUIRED ON DETAILED PAVEMENT MARKING PLANS.
3. "D" IS EQUAL TO ONE HALF THE DISTANCE.

San Antonio District Standard

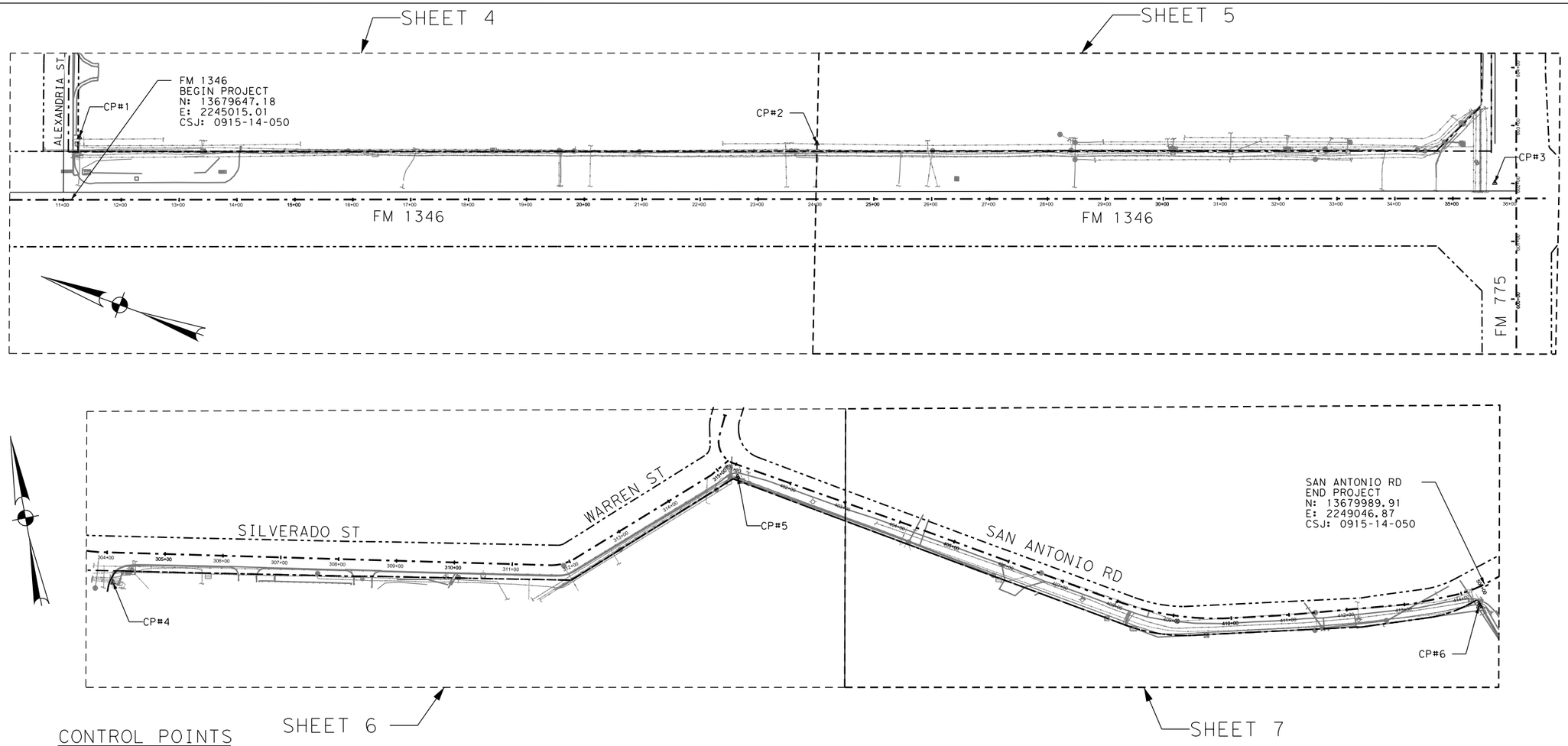
TYPICAL CROSSWALK DETAILS

TCD-05

 Texas Department of Transportation

REVISIONS	FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	SHEET NO.
DEC 1999	6	SEE TITLE SHEET	119
AUG 2005	STATE	DIST.	COUNTY
	TEXAS	SAT	WILSON
	CONT.	SECT.	JOB / HIGHWAY NO.
	0915	14	050 DI VEST ST

LEVELS DISPLAYED 1 2 3 4 5 6 7 8 31 ACC:



0 100 200

1" = 200'

INDEX

TOTAL QUANTITIES	
LEVEL "B"=	11,940'
LEVEL "C"=	0'
OVERHEAD	3,960'
LEVEL "D"=	18,719
TOTAL=	34,619'

OVERHEAD UTILITY LEGEND	
NO.	OWNER
1	GUADALUPE VALLEY ELECTRIC COOPERATIVE

CONTROL POINTS

ALL COORDINATES ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM OF 1983 (NAD 83, 2010), SOUTH CENTRAL ZONE (4204).

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 1.00016 (PROJECT SAF).

CP 1		CP 2	
NORTHING:	13679280.988	NORTHING:	13678175.933
EASTING:	2245047.023	EASTING:	2245680.614
ELEVATION:	518.24'	ELEVATION:	523.06'
CP 3		CP 4	
NORTHING:	13677130.967	NORTHING:	13679631.974
EASTING:	2246213.274	EASTING:	2246607.079
ELEVATION:	530.35'	ELEVATION:	513.88'
CP 5		CP 6	
NORTHING:	13679790.813	NORTHING:	13679539.234
EASTING:	2247689.992	EASTING:	2248964.623
ELEVATION:	494.80'	ELEVATION:	492.59'

UTILITY CONTACT LIST

COMPANY	CONTACT	PHONE	EMAIL
AT&T	NORTH TEXAS RECORDS REQUEST	469-662-4601	G11289@ATT.COM
CITY OF LA VERNIA	LINDSEY BOYD	830-779-4541	LBOYD@LAVERNIA-TX.GOV
COMMZOOM	RECORDS REQUEST	N/A	SUPPORT@COMMZOOM.COM
FIBER LIGHT LLC	RECORDS REQUEST	682-321-8437	MAINTENANCE@FIBERLIGHT.COM
FLORESVILLE ELECTRIC	KYLE DUNN	830-216-7000	KYLE.DUNN@FELPS.US
FRONTIER	BILLY HARPER	325-213-0141	BILLY.G.HARPER@FTR.COM
GVEC	RECORDS REQUEST	830-857-8658	CUSTOMERSERVICEREPRESENTATIVES@GVEC.ORG
SPECTRUM	RECORDS REQUEST	903-546-5330	FORCERELOS@KINETIC-ENG.COM
WEST TEXAS GAS	RECORDS REQUEST	N/A	INFO@WESTTEXASGAS.COM
ZAYO GROUP	RECORDS REQUEST	817-665-4702	ZAYO.RELO.TEXAS@ZAYO.COM

STATE OF TEXAS
ANEIL M. SANDHU
114532
LICENSED
PROFESSIONAL ENGINEER

1/22/2024

NO.	REVISIONS	BY	DATE

ARS ENGINEERS, INC.

Texas Department of Transportation

D L VEST STREET TO FM 1346 SIDEWALKS

D L VEST STREET
EXISTING UTILITY LAYOUT

DSN: --	FED.RD. DIV.NO.	STATE	PROJECT NO.			HIGHWAY NO.
DRN: JLS		TEXAS	STP:2023(123)TAPS			D L VEST
CK: AC	STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
APRV: AMS	SAT	WILSON	0915	14	050	120

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SUE LEGEND

OVERHEAD	OH	SEE OH LEGEND
ELECTRIC	E1 (B)	GUADALUPE VALLEY ELECTRIC COOPERATIVE
ELECTRIC	E1 (C)	GUADALUPE VALLEY ELECTRIC COOPERATIVE
ELECTRIC	E1 (D)	GUADALUPE VALLEY ELECTRIC COOPERATIVE
TELEPHONE	T1 (B)	FRONTIER
TELEPHONE	T1 (C)	FRONTIER
TELEPHONE	T1 (D)	FRONTIER
FIBER OPTIC	FOC1 (B)	FIBERLIGHT
FIBER OPTIC	FOC1 (C)	FIBERLIGHT
FIBER OPTIC	FOC1 (D)	FIBERLIGHT
FIBER OPTIC	FOC2 (B)	GUADALUPE VALLEY ELECTRIC COOPERATIVE
FIBER OPTIC	FOC2 (C)	GUADALUPE VALLEY ELECTRIC COOPERATIVE
FIBER OPTIC	FOC2 (D)	GUADALUPE VALLEY ELECTRIC COOPERATIVE
FIBER OPTIC	FOC3 (B)	FRONTIER
FIBER OPTIC	FOC3 (C)	FRONTIER
FIBER OPTIC	FOC3 (D)	FRONTIER
FIBER OPTIC	FOC4 (B)	ZAYO
FIBER OPTIC	FOC4 (C)	ZAYO
FIBER OPTIC	FOC4 (D)	ZAYO
CABLE	CATV1 (B)	COMMZOOM
CABLE	CATV1 (C)	COMMZOOM
CABLE	CATV1 (D)	COMMZOOM
GAS	G1 (B)	WEST TEXAS GAS
GAS	G1 (C)	WEST TEXAS GAS
GAS	G1 (D)	WEST TEXAS GAS
WATER	W1 (B)	CITY OF LA VERNIA
WATER	W1 (C)	CITY OF LA VERNIA
WATER	W1 (D)	CITY OF LA VERNIA
WASTEWATER	WW1 (B)	CITY OF LA VERNIA
WASTEWATER	WW1 (C)	CITY OF LA VERNIA
WASTEWATER	WW1 (D)	CITY OF LA VERNIA
STORM	STM1 (B)	CITY OF LA VERNIA
STORM	STM1 (C)	CITY OF LA VERNIA
STORM	STM1 (D)	CITY OF LA VERNIA

SUE QUALITY LEGEND

T1 (B)	QUALITY LEVEL "B"
T1 (C)	QUALITY LEVEL "C"
T1 (D)	QUALITY LEVEL "D"

OVERHEAD LEGEND

OH (1) — GUADALUPE VALLEY ELECTRIC COOPERATIVE

- TRANSMISSION TOWER
- CELL TOWER
- POWER POLE
- POWER POLE WITH LIGHT
- POWER MANHOLE
- PULL/TRANSFORMER BOX
- ELECTRIC METER
- UG ELECTRIC MARKER
- LIGHT POLE
- TRAFFIC SIGNAL POLE
- TRAFFIC SIGNAL CONTROL BOX
- SIGNAL PEDESTAL
- TELEPHONE HAND HOLE
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- CATV PEDESTAL
- UG TELEPHONE MARKER
- UG FIBER MARKER
- GAS MANHOLE
- GAS METER
- GAS APPURTENANCE
- UG GAS MARKER
- GAS VENT
- GAS TEST VALVE
- WATER VALVE
- FIRE HYDRANT
- WATER METER
- WATER MANHOLE
- WASTEWATER MANHOLE
- WASTEWATER CLEANOUT
- UG WASTEWATER MARKER
- STORM SEWER MANHOLE
- STORM OUTFALL
- STORM INLET
- CONTROL POINT
- CONTINUATION MARK
- QUALITY LEVEL CHANGE

GENERAL NOTES

QUALITY LEVEL "D":

QUALITY LEVEL VALUE ASSIGNED TO A UTILITY SEGMENT OR UTILITY FEATURE AFTER A REVIEW AND COMPILATION OF DATA SOURCES SUCH AS EXISTING RECORDS, ORAL RECOLLECTIONS, ONE-CALL MARKINGS, AND DATA REPOSITORIES.

QUALITY LEVEL "C":

QUALITY LEVEL VALUE ASSIGNED TO A UTILITY SEGMENT OR UTILITY FEATURE AFTER SURVEYING ABOVEGROUND (I.E., VISIBLE) UTILITY FEATURES AND USING PROFESSIONAL JUDGMENT TO CORRELATE THE SURVEYED LOCATIONS OF THESE FEATURES WITH THOSE FROM EXISTING UTILITY RECORDS.

QUALITY LEVEL "B":

DESIGNATE: QUALITY LEVEL VALUE ASSIGNED TO A UTILITY SEGMENT OR SUBSURFACE UTILITY FEATURE WHOSE EXISTENCE AND POSITION IS BASED UPON APPROPRIATE SURFACE GEOPHYSICAL METHODS COMBINED WITH PROFESSIONAL JUDGMENT AND WHOSE LOCATION IS TIED TO THE PROJECT SURVEY DATUM. HORIZONTAL ACCURACY OF DESIGNATED UTILITIES IS WITHIN A REASONABLE TOLERANCE OF THE ACTUAL UTILITY SEGMENT, WHENEVER POSSIBLE.

QUALITY LEVEL "A":

QUALITY LEVEL VALUE ASSIGNED TO A PORTION (X, Y, AND Z GEOMETRY) OF A POINT OF A SUBSURFACE UTILITY FEATURE THAT IS DIRECTLY EXPOSED, MEASURED, AND WHOSE LOCATION AND DIMENSIONS ARE TIED TO THE PROJECT SURVEY DATUM.

NOTES:
SUBSURFACE UTILITY ENGINEERING (SUE) CERTIFICATION
THE ENGINEER'S SEAL HEREON IS TO CERTIFY THAT THE UTILITIES SHOWN HAVE BEEN INVESTIGATED IN ACCORDANCE WITH STANDARD SUE INDUSTRY PRACTICES. WHERE INDICATED UTILITY SIZES AND MATERIALS TAKEN FROM BEST AVAILABLE RECORDS. ALL OTHER INFORMATION HEREON HAS BEEN PROVIDED BY OTHERS AND IS NOT A PART OF THIS CERTIFICATION.

UTILITY LOCATIONS REPRESENTED IN THESE DRAWING ARE INTENDED FOR DESIGN PURPOSES AND NOT FOR CONSTRUCTION. CONTRACTORS MUST CALL TEXAS 811, 48 HOURS PRIOR TO EXCAVATION.

ARS ENGINEERS, INC. IS NOT RESPONSIBLE FOR REPRESENTING PROPOSED OR NEW UTILITY INSTALLATIONS, OR MODIFICATIONS AND ADJUSTMENTS TO EXISTING UTILITIES, AFTER THE SUE INVESTIGATION COMPLETION DATE.

ALL LOW WIRE CLEARANCE MEASUREMENTS ARE FROM SINGLE DAY, ON-SITE SURVEY VISITS AND WILL VARY BASED ON CHANGES IN TEMPERATURE, WEATHER CONDITIONS, OR ANY MAINTENANCE OR MODIFICATIONS OF THE UTILITIES THEMSELVES.

ELECTRONIC DEPTHS (ED) SHOWN ARE SUBJECT TO VARIABLE CONDITIONS AND ARE NOT RELIABLE FOR ACCURATE DEPTH DETERMINATIONS WITHOUT QUALITY LEVEL A TEST HOLES.

UTILITY LINE LIMITS DEPICTED HEREIN REPRESENT FIELD DESIGNATING LIMITS AND NOT END POINTS OF UTILITIES UNLESS OTHERWISE NOTED.

WITHOUT VISUAL VERIFICATION, UTILITIES LOCATED BY MEANS OF TRACER WIRE MAY NOT DEPICT THE ACTUAL LOCATION OF THE UTILITY AS THE TRACER WIRE MAY NOT BE DIRECTLY ON OR ABOVE THE UTILITY.

FLOWLINE INFORMATION SHOWN HEREIN IS BASED ON FIELD MEASURED DEPTHS AND IS APPROXIMATE.

UTILITY SERVICE LINES ARE NOT IDENTIFIED HEREIN UNLESS OTHERWISE DEPICTED.

IRRIGATION LINES ARE NOT IDENTIFIED HEREIN UNLESS OTHERWISE DEPICTED.

STATE OF TEXAS
ANEIL M. SANDHU
114532
LICENSED
PROFESSIONAL ENGINEER
1/22/2024

NO.	REVISIONS	BY	DATE

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D L VEST STREET TO FM 1346 SIDEWALKS

D L VEST STREET
EXISTING UTILITY LEGEND

DSN: --	FED. RD. DIV. NO.	STATE	PROJECT NO.			HIGHWAY NO.
DRN: JLS		TEXAS	STP:2023(123)TAPS			D L VEST
CK: AC	STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
APRV: AMS	SAT	WILSON	0915	14	050	121

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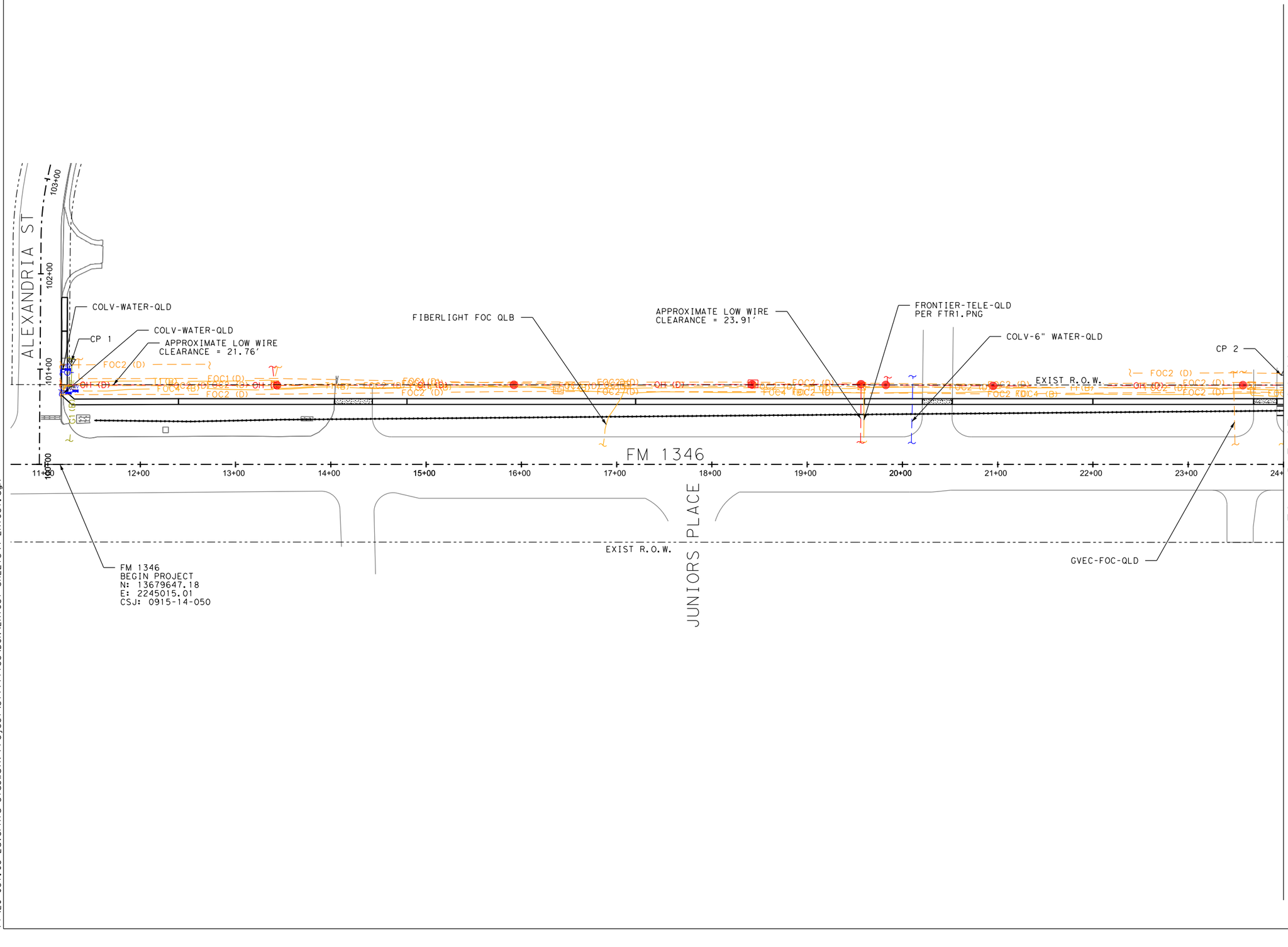

0 50 100

1" = 100'

QUALITY LEVEL LEGEND

	QL "A"
T1 (B)	QL "B"
T1 (C)	QL "C"
T1 (D)	QL "D"

SUE QUANTITIES	
LEVEL "B"	2,822'
LEVEL "C"	0
OVERHEAD	1,345'
LEVEL "D"	6,497'
TOTAL=	10,664'

OVERHEAD UTILITY LEGEND

NO.	OWNER
1	GUADALUPE VALLEY ELECTRIC COOP

STATE OF TEXAS
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D L VEST STREET TO FM 1346 SIDEWALKS

D L VEST STREET
EXISTING UTILITY PLAN

DSN: --	FED. RD. DIV. NO.	STATE	PROJECT NO.			HIGHWAY NO.
DRN: JLS		TEXAS	STP:2023(123)TAPS			D L VEST
CK: AC	STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
APRV: AMS	SAT	WILSON	0915	14	050	122

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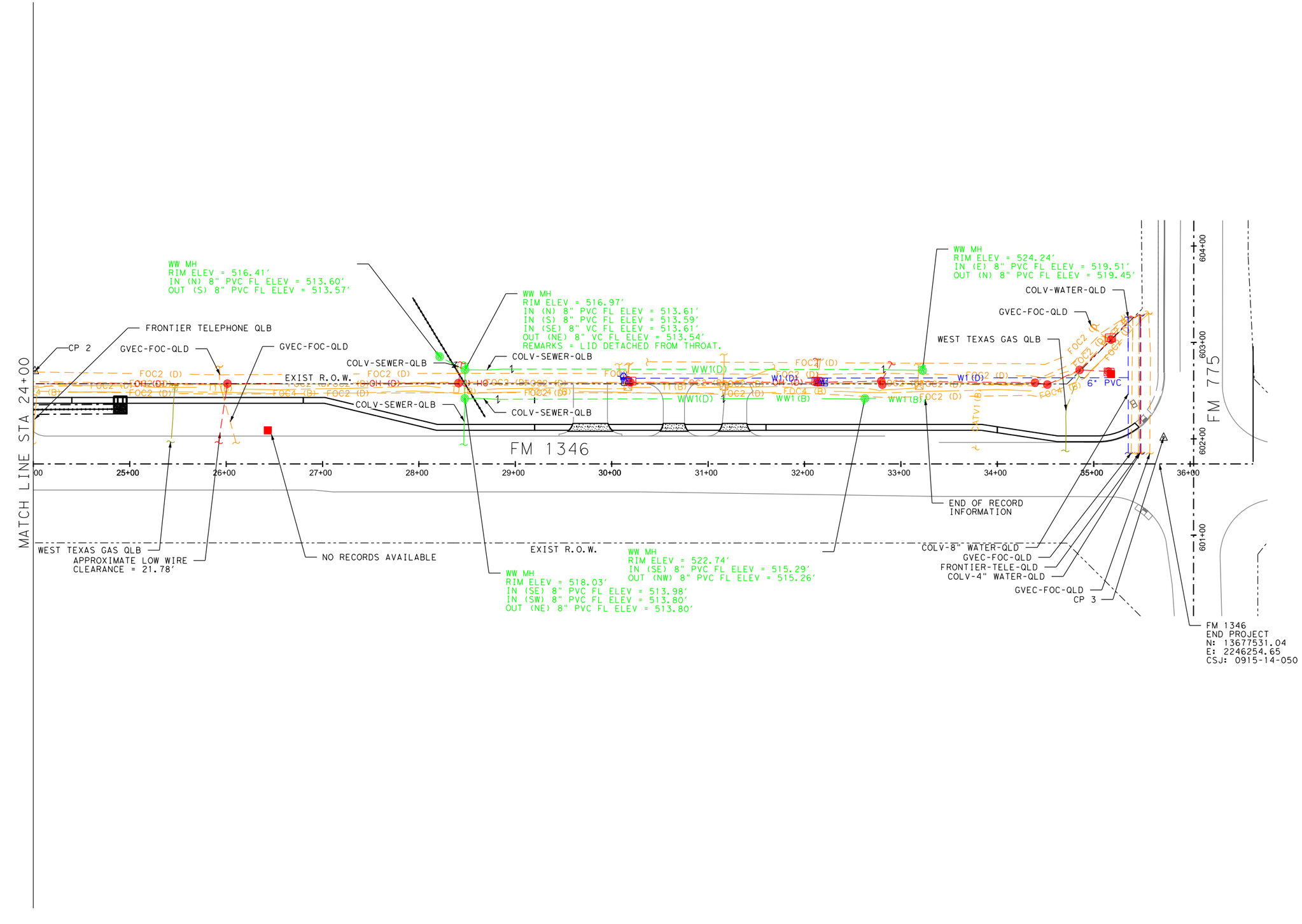

0 50 100

1" = 100'

QUALITY LEVEL LEGEND

	QL "A"
T1 (B)	QL "B"
T1 (C)	QL "C"
T1 (D)	QL "D"

SUE QUANTITIES	
LEVEL "B"	2,981'
LEVEL "C"	0'
OVERHEAD	1,480'
LEVEL "D"	8,541'
TOTAL=	13,002'

OVERHEAD UTILITY LEGEND

NO.	OWNER
1	GUADALUPE VALLEY ELECTRIC COOP

STATE OF TEXAS
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D L VEST STREET TO FM 1346 SIDEWALKS

D L VEST STREET
EXISTING UTILITY PLAN

DSN: --	FED. RD. DIV. NO.	STATE	PROJECT NO.			HIGHWAY NO.
DRN: JLS		TEXAS	STP:2023(123)TAPS			D L VEST
CK: AC	STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
APRV: AMS	SAT	WILSON	0915	14	050	123

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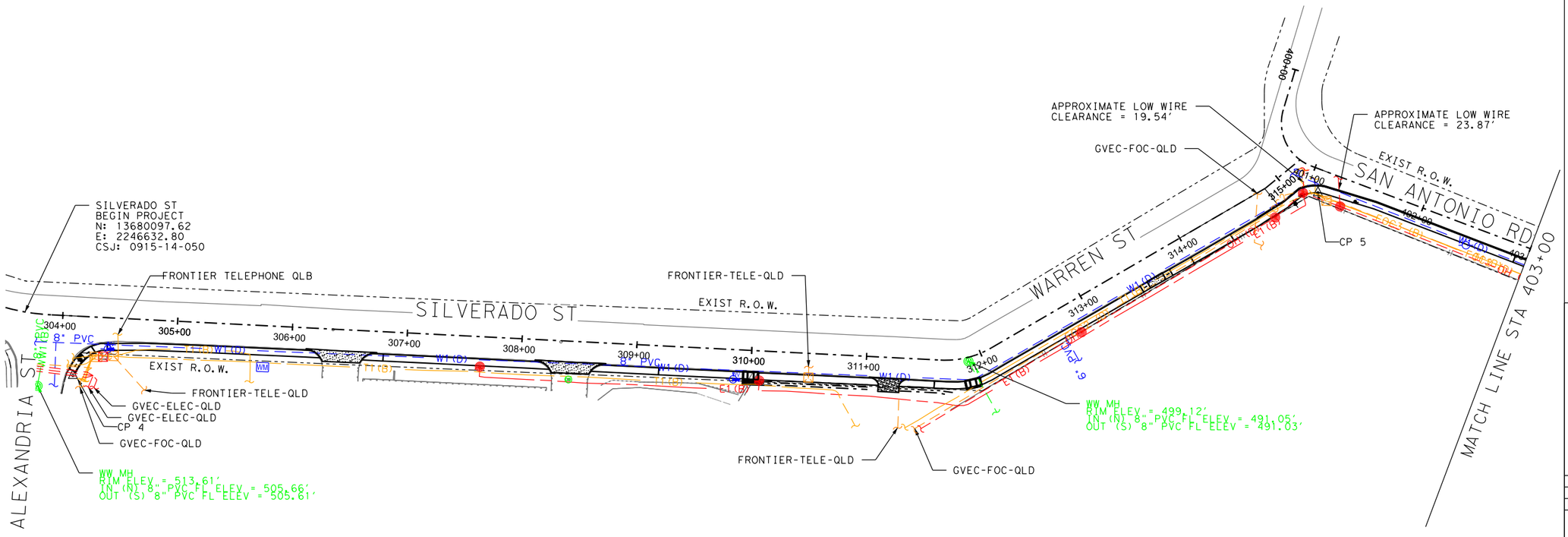

0 50 100

1" = 100'

QUALITY LEVEL LEGEND

	QL "A"
T1 (B)	QL "B"
T1 (C)	QL "C"
T1 (D)	QL "D"

SUE QUANTITIES	
LEVEL "B"	2,678'
LEVEL "C"	0'
OVERHEAD	639'
LEVEL "D"	2,518'
TOTAL=	5,835'

OVERHEAD UTILITY LEGEND

NO.	OWNER
1	GUADALUPE VALLEY ELECTRIC COOP

STATE OF TEXAS
ANEIL M. SANDHU
114532
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1/22/2024

NO.	REVISIONS	BY	DATE

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Texas Department of Transportation

D L VEST STREET TO FM 1346 SIDEWALKS

D L VEST STREET
EXISTING UTILITY PLAN

DSN: --	FED. RD. DIV. NO.	STATE	PROJECT NO.			HIGHWAY NO.
DRN: JLS		TEXAS	STP:2023(123)TAPS			D L VEST
CK: AC	STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
APRV: AMS	SAT	WILSON	0915	14	050	124

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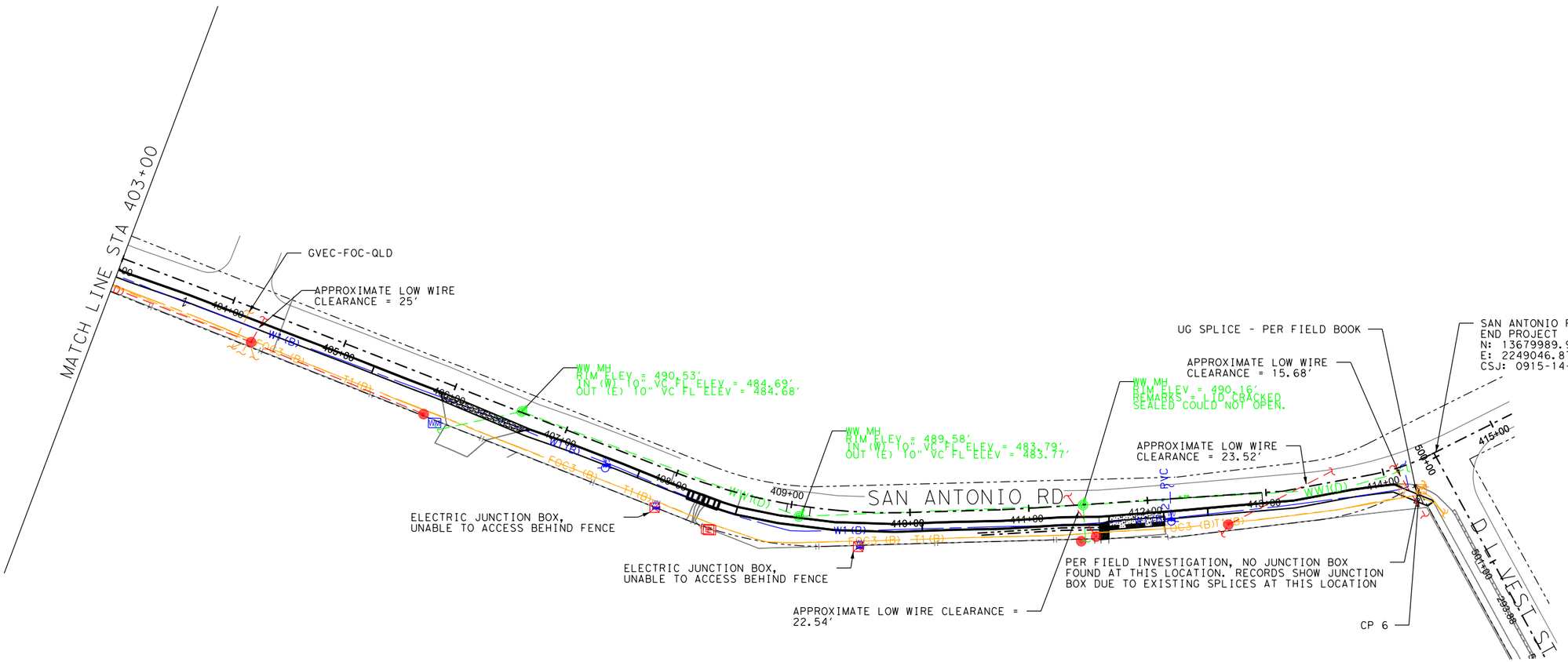

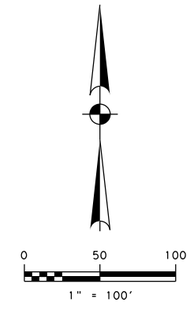

QUALITY LEVEL LEGEND

- QL "A"
- T1 (B) — QL "B"
- T1 (C) — QL "C"
- T1 (D) — QL "D"

SUE QUANTITIES	
LEVEL "B"	3,459'
LEVEL "C"	0
OVERHEAD	496'
LEVEL "D"	1,164'
TOTAL=	5,119'

OVERHEAD UTILITY LEGEND

NO.	OWNER
1	GUADALUPE VALLEY ELECTRIC COOP

STATE OF TEXAS
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D L VEST STREET TO FM 1346 SIDEWALKS

D L VEST STREET EXISTING UTILITY PLAN

DSN: --	FED. RD. DIV. NO.	STATE	PROJECT NO.			HIGHWAY NO.
DRN: JLS		TEXAS	STP:2023(123)TAPS			D L VEST
CK: AC	STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
APRV: AMS	SAT	WILSON	0915	14	050	125

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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.

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):
0915-14-050

1.2 PROJECT LIMITS:
From: **DL VEST STREET**

To: **FM 1346**

1.3 PROJECT COORDINATES:
BEGIN: (Lat) **29.3533859°** ,(Long) **-98.1191340°**

END: (Lat) **29.3533859°** ,(Long) **-98.1191340°**

1.4 TOTAL PROJECT AREA (Acres): _____

1.5 TOTAL AREA TO BE DISTURBED (Acres): 1.8

1.6 NATURE OF CONSTRUCTION ACTIVITY:
Construction of pedestrian sidewalks, curb ramps pedestrian bridges and driveways.

1.7 MAJOR SOIL TYPES:

Soil Type	Description
Floresville fine sandy loam, 1% to 3% slopes	Well drained, high rate of runoff
Miguel fine sandy loam, 1% to 3% slopes	Well drained, medium rate of runoff
Nocken stony soils and rock outcrop, 1% to 8% slopes	Well drained, high rate of runoff
Wilco loamy fine sand, 0% to 3% slopes	Well drained, high rate of runoff
Wilco loamy fine sand, 3% to 8% slopes	Well drained, high rate of runoff

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.)

X Mobilization
X Install sediment and erosion controls
X Blade existing topsoil into windrows, prep ROW, clear and grub
X Remove existing pavement
X 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
X Install proposed pavement per plans
☐ Install culverts, culvert extensions, SETs
☐ Install mow strip, MBGF, bridge rail
☐ Place flex base
X Rework slopes, grade ditches
☐ Blade windrowed material back across slopes
☐ Revegetation of unpaved areas
☐ Achieve site stabilization and remove sediment and erosion control measures
☐ Other: _____
☐ Other: _____
☐ Other: _____

1.10 POTENTIAL POLLUTANTS AND SOURCES:

X Sediment laden stormwater from stormwater conveyance over disturbed area
X Fuels, oils, and lubricants from construction vehicles, equipment, and storage
X Solvents, paints, adhesives, etc. from various construction activities
X Transported soils from offsite vehicle tracking
X Construction debris and waste from various construction activities
X Contaminated water from excavation or dewatering pump-out water
X Sanitary waste from onsite restroom facilities
X Trash from various construction activities/receptacles
X Long-term stockpiles of material and waste
☐
☐ Other: _____
☐ Other: _____
☐ Other: _____

1.11 RECEIVING WATERS:
Receiving waters must be depicted on the Environmental Layout Sheets in Attachment 1.2 of this SWP3. Include Segment # for receiving waters.

Tributaries	Classified Waterbody

* Add (*) for impaired waterbodies with pollutant in ().

1.12 ROLES AND RESPONSIBILITIES: TxDOT

X Development of plans and specifications
X Submit Notice of Intent (NOI) to TCEQ (≥5 acres)
X Post Construction Site Notice
X Submit NOI/CSN to local MS4
X Perform SWP3 inspections
X Maintain SWP3 records and update to reflect daily operations
X Complete and submit Notice of Termination to TCEQ
X Maintain SWP3 records for 3 years
☐ Other: _____
☐ Other: _____
☐ Other: _____

1.13 ROLES AND RESPONSIBILITIES: CONTRACTOR

X Day To Day Operational Control
X Submit Notice of Intent (NOI) to TCEQ (≥5 acres)
X Post Construction Site Notice
X Submit NOI/CSN to local MS4
X Maintain schedule of major construction activities
X Install, maintain and modify BMPs
X Complete and submit Notice of Termination to TCEQ
X Maintain SWP3 records for 3 years
☐ Other: _____
☐ Other: _____
☐ Other: _____

1.14 LOCAL MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) OPERATOR COORDINATION:

MS4 Entity

STORMWATER POLLUTION PREVENTION PLAN (SWP3)

July 2023 Sheet 1 of 2

Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6	STP 2023(123) TAPS		126
STATE	STATE DIST.	COUNTY	
TEXAS	SAT	WILSON	
CONT.	SECT.	JOB	HIGHWAY NO.
0915	14	050	DL VEST

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
- ☐ X Permanent Planting, Sodding or Seeding
- X ☐ Biodegradable Erosion Control Logs
- ☐ ☐ Rock Filter Dams/ Rock Check Dams
- ☐ ☐ Vertical Tracking
- ☐ ☐ Interceptor Swale
- ☐ X Riprap
- ☐ ☐ Diversion Dike
- ☐ ☐ Temporary Pipe Slope Drain
- ☐ ☐ Embankment for Erosion Control
- ☐ X Paved Flumes
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____

2.2 SEDIMENT CONTROL BMPs:

T / P

- X ☐ Biodegradable Erosion Control Logs
- ☐ ☐ Dewatering Controls
- ☐ ☐ Inlet Protection
- ☐ ☐ Rock Filter Dams/ Rock Check Dams
- ☐ ☐ Sandbag Berms
- X ☐ Sediment Control Fence
- ☐ ☐ Stabilized Construction Exit
- ☐ ☐ Floating Turbidity Barrier
- ☐ ☐ Vegetated Buffer Zones
- ☐ ☐ Vegetated Filter Strips
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____

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

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

T / P

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

2.3 PERMANENT CONTROLS:

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

BMPs To Be Left In Place Post Construction:

Type	Stationing	
	From	To

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

2.4 OFFSITE VEHICLE TRACKING CONTROLS:

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

2.5 POLLUTION PREVENTION MEASURES:

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

2.6 VEGETATED BUFFER ZONES:

Natural vegetated buffers shall be maintained as feasible to protect adjacent surface waters. If vegetated natural buffer zones are not feasible due to site geometry, the appropriate additional sediment control measures have been incorporated into this SWP3.

Type	Stationing	
	From	To
Vegetated buffer zones are not planned		

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

2.7 ALLOWABLE NON-STORMWATER DISCHARGES:

- X Fire hydrant flushings
- X Irrigation drainage
- X Pavement washwater (where spills or leaks have not occurred, and detergents are not used)
- X Potable water sources
- X Springs
- X Uncontaminated groundwater
- X Water used to wash vehicles or control dust
- X Other allowable non-stormwater discharges as allowed by TPDES GP TXR150000.

2.8 DEWATERING:

2.9 INSPECTIONS:

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.

STORMWATER POLLUTION PREVENTION PLAN (SWP3)

July 2023 Sheet 2 of 2

Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6	STP 2023(123) TAPS		127
STATE	STATE DIST.	COUNTY	
TEXAS	SAT	WILSON	
CONT.	SECT.	JOB	HIGHWAY NO.
0915	14	050	DL VEST

I. STORMWATER POLLUTION PREVENTION-CLEAN WATER ACT SECTION 402

Texas Pollutant Discharge Elimination System (TPDES) TXR 150000: Stormwater Discharge Permit or Construction General Permit (CGP) required for projects with 1 or more acres distrubed soil. Projects with any disturbed soil must protect for erosion and sedimentation in accordance with Item 506.

☐ 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 Storm Water Pollution Prevention Plan (SW3P) and revise when necessary to control pollution or required by the Engineer.
3. Post Construction Site Notice (CSN) with SW3P information on or near the site, accessible to the public and Texas Commission on Environmental Quality (TCEQ), Environmental Protection Agency (EPA) or other inspectors.
4. When Contractor project specific locations (PSL's) increase disturbed soil area to 5 acres or more, Contractor shall submit Notice of Intent (NOI) to TCEQ and the Engineer.
5. NOI required: ☒ Yes ☐ No

Note: If amount of soil disturbance changes, permit requirements may change.

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

US Army Corps of Engineers (USACE) Permit required for filling, dredging, excavating or other work in any potential USACE jurisdictional water, such as, rivers, creeks, streams, or wetlands.

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

☐ No Permit Required
☐ Nationwide Permit (NWP) 14 - Pre-construction Notice (PCN) not Required
☐ Nationwide Permit 14 - PCN Required
☐ 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 (BMPs) planned to control erosion, sedimentation and post-project total suspended solids (TSS).

1. NA
2.
3.
4.

401 Best Management Practices: (Not applicable if no USACE permit)

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

III. CULTURAL RESOURCES

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

☐ No Action Required ☐ Required Action

Action No.

1.
2.
3.
4.

IV. VEGETATION RESOURCES

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

☐ No Action Required ☐ Required Action

Action No.

1.
2.
3.
4.

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

☐ No Action Required ☒ Required Action

Action No.

1. MIGRATORY BIRD NESTS: Schedule construction activities as needed to meet the following requirements:

   A. Do not remove or destroy any active migratory bird nests (nests containing eggs and/or flightless birds) at any time of year. If there are any active nests, they shall not be removed until the nests become inactive.

   B. On/in structures, if there are any active nests, they shall not be removed until all nests become inactive. After inactive nests are removed and/or before nest activity begins, deterrent materials may be applied to the structures to prevent future nest building.

2. See Item 5 in General Notes.
3.
4.

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

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

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

Contact the Engineer if any of the follwing 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

Hazardous Materials or Contamination Issues Specific to this Project:

☐ No Action Required ☐ Required Action

Action No.

1.
2.
3.

Does the project involve the demolition of a span bridge?

☐ Yes ☒ No (No further action required)

If "Yes", a pre- demolition notification must be submitted to the Texas Department of State Health Services. The contractor shall contact TxDOT's Project Engineer 25 calendar days prior to the demolition of the bridges(s) on the project to assist with the notification.

VII. OTHER ENVIRONMENTAL ISSUES

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

☐ No Action Required ☐ Required Action

Action No.

1.
2.
3.

Texas Department of Transportation
San Antonio District Standard

ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS

EPIC

FILE: epic_2015-10-09_SAT.dgn	DN: TxDOT	CK: TxDOT	DW: BW	CK: GAG
© TxDOT OCTOBER 2015	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	14	050	DL VEST ST
	DIST	COUNTY		SHEET NO.
	SAT	WILSON		128

DATE: 2/21/2024
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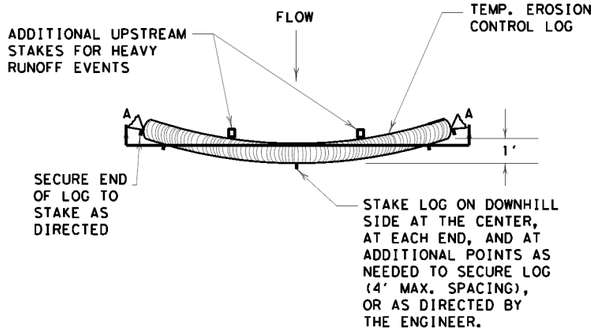
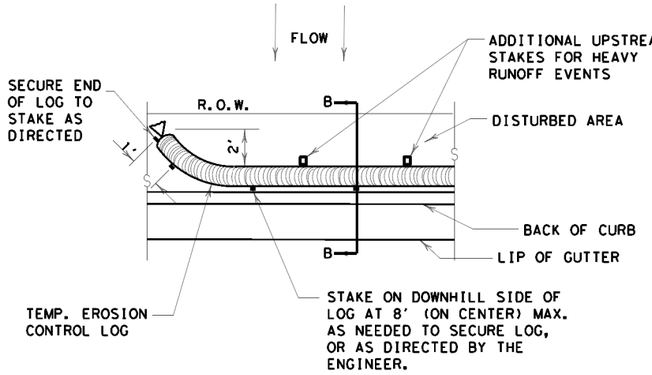
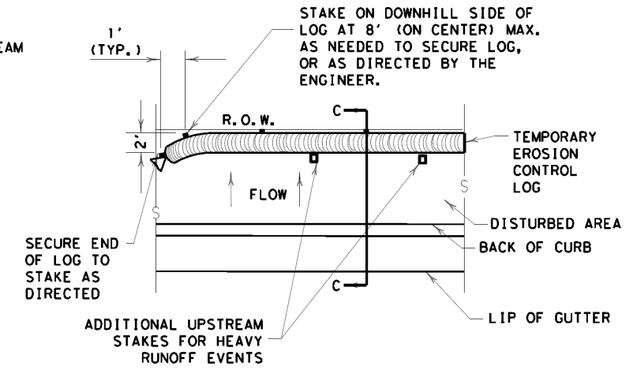


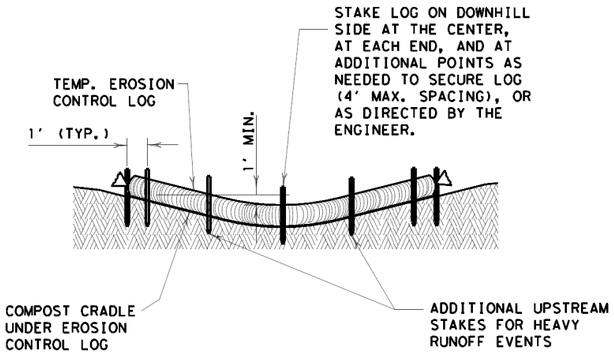
PLAN VIEW



PLAN VIEW



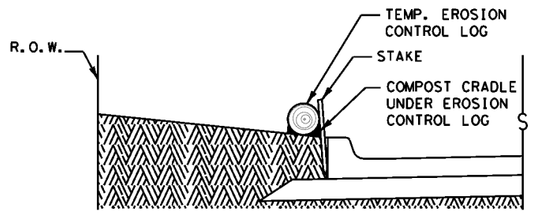
PLAN VIEW



SECTION A-A

EROSION CONTROL LOG DAM

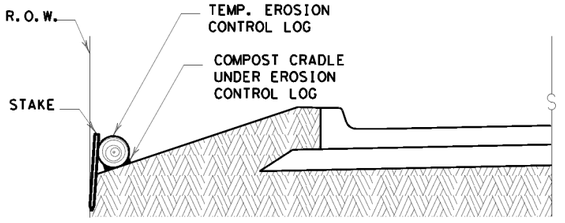
CL-D



SECTION B-B

EROSION CONTROL LOG AT BACK OF CURB

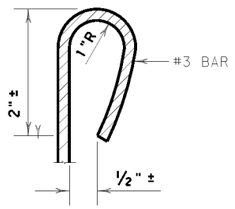
CL-BOC



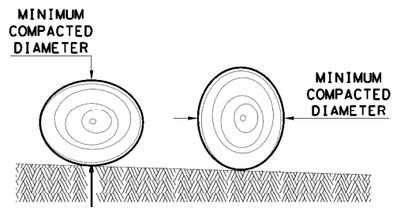
SECTION C-C

EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY

CL-ROW



REBAR STAKE DETAIL



DIAMETER MEASUREMENTS OF EROSION CONTROL LOGS SPECIFIED IN PLANS

GENERAL NOTES:

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

LEGEND

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

SEDIMENT BASIN & TRAP USAGE GUIDELINES

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

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

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

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

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

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

EROSION CONTROL LOG

EC(9)-16

FILE: ec916	DN: TxDOT	CK: KM	DW: LS/PT	CK: LS			
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY			
REVISIONS	0915	14	050	DL VEST ST			
	DIST	COUNTY		SHEET NO.			
	SAT	WILSON		129			

DATE: 2/21/2024
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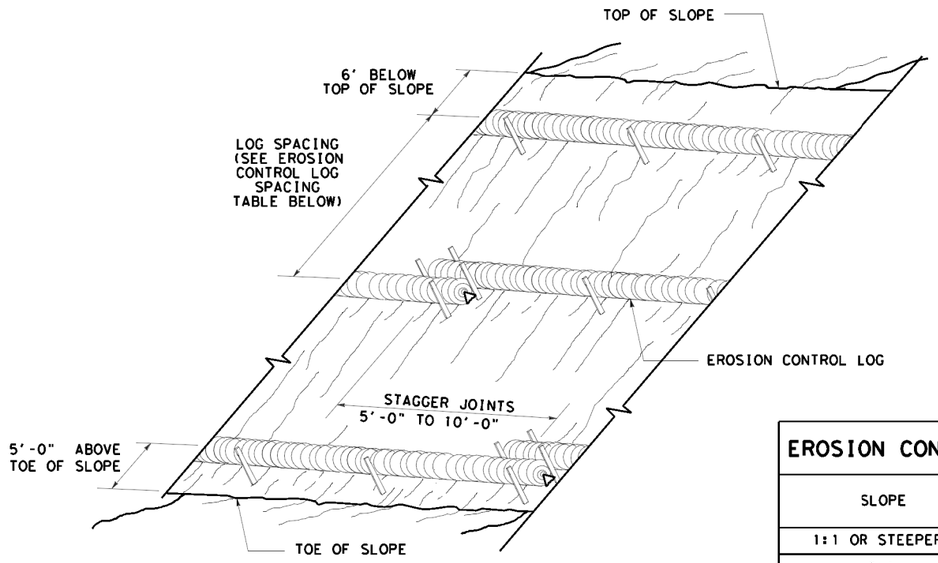
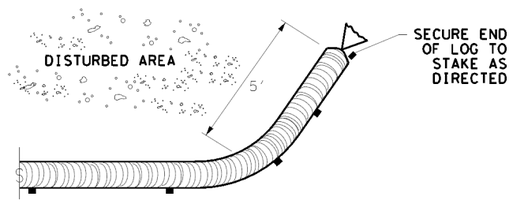


EROSION CONTROL LOGS ON SLOPES
STAKE AND TRENCHING ANCHORING

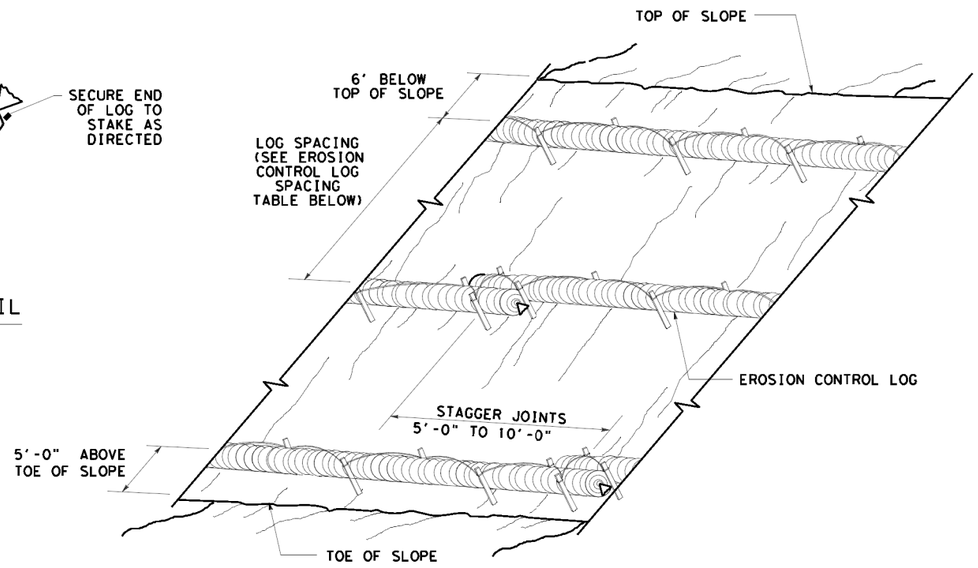
CL-SST



END SECTION RAP DETAIL

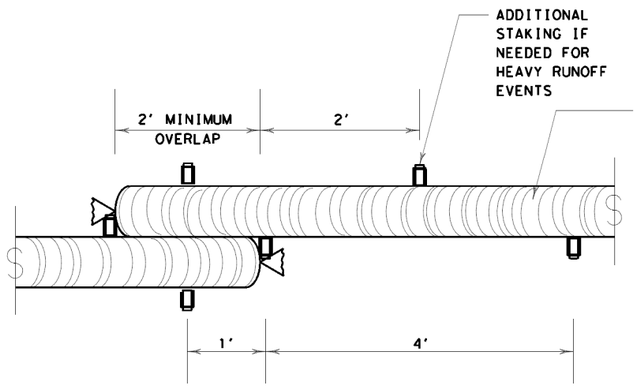
EROSION CONTROL LOG SPACING TABLE				
SLOPE	LOG DIAMETER			
	6"	8"	12"	18"
1:1 OR STEEPER	5'	10'	15'	20'
2:1	10'	20'	30'	40'
3:1	15'	30'	45'	60'
4:1 OR FLATTER	20'	40'	60'	80'

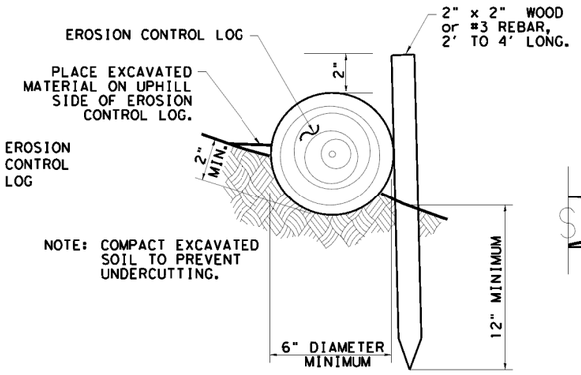
* ADJUSTMENTS CAN BE MADE FOR SOIL TYPE:
SOFT, LOAMY SOILS-ADJUST ROWS CLOSER TOGETHER;
HARD, ROCKY SOILS- ADJUST ROWS FARTHER APART



EROSION CONTROL LOGS ON SLOPES
STAKE AND LASHING ANCHORING

CL-SSL

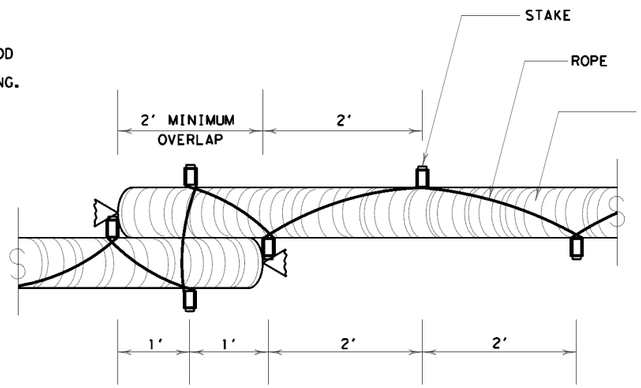


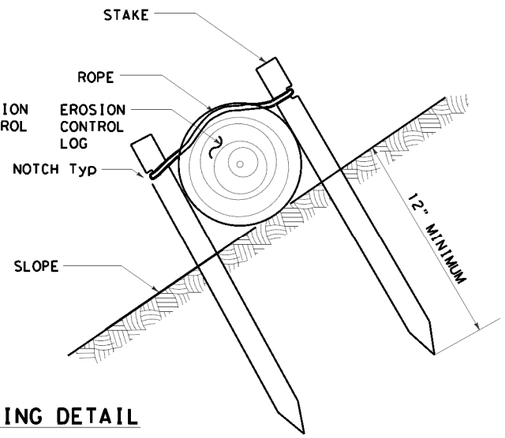


STAKE AND TRENCHING ANCHORING DETAIL

CL-SST

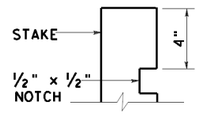
TRENCH DEPTH TABLE	
LOG DIAMETER	DEPTH
6"	2"
8"	3"
12"	4"
18"	5"





STAKE AND LASHING ANCHORING DETAIL

CL-SSL



STAKE NOTCH DETAIL

Texas Department of Transportation

Design Division Standard

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

FILE: ec116	DN: TxDOT	CK: KM	DW: LS/PT	CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	14	050	DL VEST ST
	DIST	COUNTY		SHEET NO.
	SAT	WILSON		130

DATE: 2/21/2024
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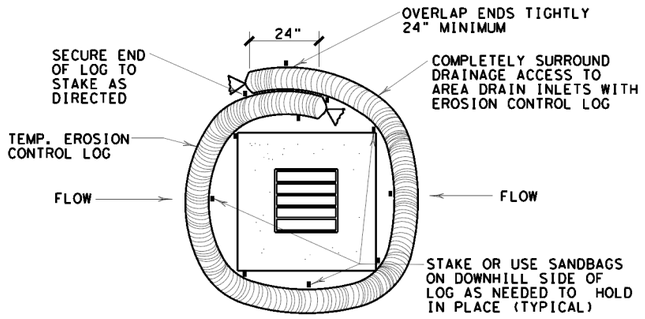
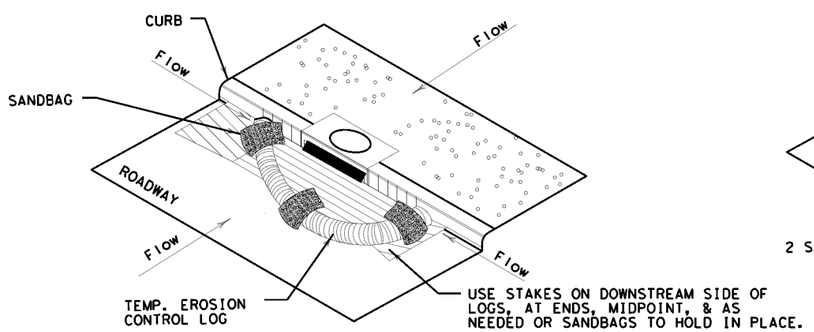


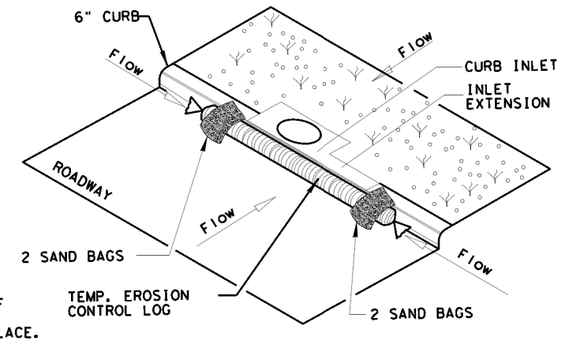
EROSION CONTROL LOG AT DROP INLET

CL-DI



EROSION CONTROL LOG AT CURB INLET

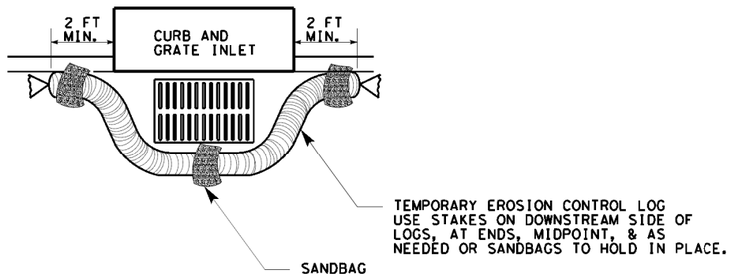
CL-CI



EROSION CONTROL LOG AT CURB INLET

CL-CI

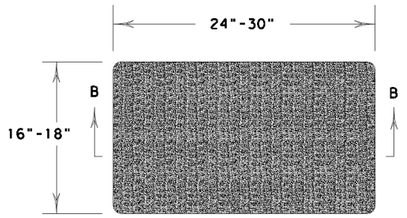
NOTE:
EROSION CONTROL LOGS USED AT CURB INLETS SHOULD ONLY BE USED IF THEY WILL NOT IMPEDE TRAFFIC OR FLOOD THE ROADWAY OR WHEN THE STORM SEWER SYSTEM IS NOT FULLY FUNCTIONAL.



EROSION CONTROL LOG AT CURB & GRADE INLET

CL-GI

SECTION B-B



SANDBAG DETAIL

SHEET 3 OF 3

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

EROSION CONTROL LOG

EC(9)-16

FILE: ec916	DN: TxDOT	CK: KM	DW: LS/PT	CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	14	050	DL VEST ST
	DIST	COUNTY		SHEET NO.
	SAT	WILSON		131