100% SUBMITTAL

SEE SHEET 2 FOR INDEX OF SHEETS

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		1

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
STATE HIGHWAY IMPROVEMENT

FEDERAL PROJECT NUMBER: **STP 2B24(023)**

CSJ: 0043-17-035

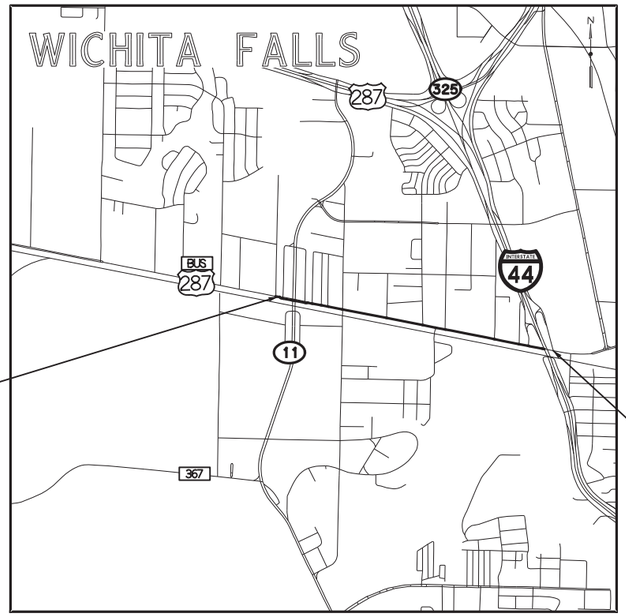
WICHITA FALLS DISTRICT
BU 287J
(OLD IOWA PARK ROAD)
WICHITA COUNTY

FROM: SL 11

TO: IH 44

FOR THE CONSTRUCTION OF PEDESTRIAN INFRASTRUCTURE INCLUDING SIDEWALKS AND PEDESTRIAN CURB RAMPS ALONG BU 287J

DESIGN SPEEDS: 45 MPH
ADT: 9700 VPD



EXCEPTIONS: NONE
EQUATIONS: NONE
RAILROAD CROSSINGS: NONE

SIDEWALK LOCATION	BRIDGE LENGTH (FT)	BRIDGE LENGTH (MI)	LENGTH OF SIDEWALK (FT)	LENGTH OF SIDEWALK (MI)	TOTAL LENGTH
ALONG OLD IOWA PARK ROAD (BU 287J)	00.00 FT	0.000 MI	7480.00 FT	1.417 MI	7480.00 FT = 1.417 MI
TOTALS	00.00 FT	0.000 MI	7480.00 FT	1.417 MI	7480.00 FT = 1.417 MI

Registered Accessibility Specialist (RAS) Inspection Required

TDLR No. TABS 2024005459

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION ON 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, 10/23/2023)

** THE CITY OF WICHITA FALLS HEREBY CONSENTS TO THE MANNER OF CONSTRUCTION AS INDICATED ON THESE PLANS.

CITY MANAGER DATE

FINAL PLANS

DATE OF LETTING: _____

DATE WORK BEGAN: _____

DATE WORK COMPLETED AND ACCEPTED: _____

FINAL CONTRACT COST: $_____

CONTRACTOR: _____

LIST OF APPROVED CHANGE ORDERS:

HDR Engineering, Inc.
710 Hesters Crossing, Suite 150
Round Rock, Texas 78681
Texas Registered Engineering Firm F-754

PREPARED BY:
HDR ENGINEERING, INC.
TBPE FIRM NO. F-754

STATE OF TEXAS · LESLIE D. POLLACK · 101285 · LICENSED PROFESSIONAL ENGINEER

Leslie D Pollack 01.31.24
LESLIE D. POLLACK DATE
PROJECT MANAGER

SUBMITTED FOR LETTING: 02/20/2024

Byron Lawrence, P.E.
DISTRICT DESIGN ENGINEER

RECOMMENDED FOR LETTING: 02/15/2024

James S Reaves P.E.
DIRECTOR OF TRANSPORTATION, PLANNING AND DEVELOPMENT

RECOMMENDED FOR LETTING: 02/15/2024

Michael D. Barnes P.E.
DISTRICT ENGINEER

Texas Department of Transportation

PLOT DRIVER: TXDOT_PDF_BW.pltcfg
USER: LGOMEZGONZ
FILE: WF-TITLE.dgn.DGN
PENTABLE: I0368602_WF.tbl
DATE: 12/13/2023 TIME: 9:49:11 AM
SCALE: 1:1

100% PLANS SUBMITTAL

SHEET NUMBERS	DESCRIPTION
	I. GENERAL
1	TITLE SHEET
2	INDEX OF SHEETS
3, 3A-3C	GENERAL NOTES
4, 4A	ESTIMATE AND QUANTITY
5 - 6	SUMMARIES
7	PROJECT LAYOUT
	II. TRAFFIC CONTROL PLAN
8	TRAFFIC CONTROL PLAN NARRATIVE
	TRAFFIC CONTROL STANDARDS
9 - 20	BC(1)-21 - BC(12)-21*
21	TCP(1-1)-18*
22	TCP(1-4)-18*
23	TCP(2-1)-18*
24	WZ(BTS-1)-13*
25	WZ(BTS-2)-13*
	III. ROADWAY PLANS
26 - 59	REMOVAL PLAN
60	ALIGNMENT DATA
61 - 94	SIDEWALK PLAN
95	SIDEWALK DETAILS
96	DRIVEWAY DETAILS
97	CONC (SPECIAL) (TY A) DETAILS
	ROADWAY STANDARDS
98	CCCG-22*
99 - 102	PED-18*
102A	SSCC-16*
	TRAFFIC STANDARDS
103	PM(1)-22*
104	PM(4)-22A*
104A	SMD(GEN)-08*
104B	SMD(SLIP-1)-08*
104C	SMD(SLIP-2)-08*
104D	SMD(SLIP-3)-08*
	BRIDGE DETAILS
105 - 106	OMITTED
107 - 108	CD-RAC-R-20***
109 - 112	RL-C1W-19***
113	RL-TRF-20***
	IV. SIGNAL PLANS
114 - 116	SIGNAL PLAN
117	ED(1)-14**
118	ED(3)-14**
119	ED(4)-14**
120	TS-FD-12**
	V. ENVIRONMENTAL
121	EPIC*
122 - 123	SWP3*
	ENVIRONMENTAL STANDARDS
124 - 126	EC(9)-16*

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

RYAN A. WHITNEY, P.E. (NO. 130723) — DATE: 2/13/2024

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

KEVIN A. MARSH, P.E. (NO 132803) — DATE: 2/13/2024

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

KEDAR R. HALBE, P.E. (NO 129548) — DATE: 2/13/2024

STATE OF TEXAS — RYAN A. WHITNEY — 130723 — REGISTERED PROFESSIONAL ENGINEER — 2/13/2024

STATE OF TEXAS — KEVIN A. MARSH — 132803 — LICENSED PROFESSIONAL ENGINEER — 2/13/2024

NO.	DATE	REVISION	APPR BY

STATE OF TEXAS — KEDAR R. HALBE — 129548 — LICENSED PROFESSIONAL ENGINEER — 2/13/2024

HDR Engineering, Inc
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
INDEX OF SHEETS

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		2

DATE: 2/12/2024 11:36:13 AM
FILE: WF-INDEX.dgn

GENERAL NOTES

General Requirements

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

Callan Coltharp, P.E.: Callan.Coltharp@txdot.gov
Cody Bates, P.E.: Cody.Bates@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.

Bid Item Specific General Notes

Item 4 - Scope of Work

For the preconstruction conference submit a work schedule; temporary water pollution control plan; material sources; the person responsible for the SW3P; written utility coordination plan; certification statements; request for proposed subcontractors and letters designating the project superintendent, safety officer, and payroll officer at the preconstruction conference.

Item 5 - Control of the Work

Provide the Engineer a minimum 24 hours' notice for work requiring inspection or testing.

The progress schedule format shall be critical path method unless otherwise directed.

Item 6 - Control of Materials
To comply with the latest provisions of Build America, Buy America Act (BABA Act) of the Bipartisan Infrastructure Law, the contractor must submit 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 - Legal Relations and Responsibilities

- No significant traffic generator events identified for this project.

Use an all-weather material in conjunction with item 7.2.4. This work will not be paid for directly, but will be subsidiary to various bid items.

The Contractor's responsible person as described in item 7.2.6.1 must be able to respond within 45 minutes of being notified.

Item 8 - Prosecution and Progress

Working days will be computed and charged in accordance with Section 8.3.1.4, 'Standard Workweek.'

Item Specific

Item 502 - Barricades, Signs, and Traffic Handling

Contractor shall store all traffic control devices not currently being used at a location approved by the Engineer.

The Traffic Control Plan (TCP) for this project includes the plans, the Texas Manual on Traffic Control Devices, Barricade and Construction Standard Sheets, Standard TCP Sheets, and as otherwise required by the Engineer.

~~The Contractor's person responsible for TCP compliance is available by local telephone 24 hours a day and must respond to traffic control needs within 45 minutes of being notified.~~

Work will not be permitted without adequate traffic control devices in place. Work will only be permitted on one side of the roadway at any time.

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.

Work vehicles within 30 feet of the traveled way shall have strobe lights or rotating beacons in use.

Wear appropriate personal protective equipment at all times while outside of vehicles and equipment on the project.

Contractor shall not set up traffic control at multiple locations. All work and traffic control operations shall be complete prior to advancing to next location unless otherwise directed by the Engineer.

Provide adequate flagging on side roads to ensure that traffic flow is not compromised during one way traffic control operations.

Repair barricades within 48 hours after barricade report has been delivered to the Contractor. Failure to comply will cease all work until barricades are repaired to the satisfaction of the Department. Replace all damaged traffic control devices immediately. Remove any damaged traffic control devices from the project within 24 hours.

Failure to make necessary corrections to Traffic Control items based on barricade inspections will be cause for withholding the monthly estimate until such corrections are made.

Remove from the roadway and store in a central location approved by the Engineer all temporary traffic control devices, such as cones, barrels, portable signs, vertical panels, etc., which will not be used within 24 hours. This includes removal of temporary traffic control devices from the roadway over the weekend.

Refer to the “Worksheet for Edge Condition Treatment Types” for the proper traffic control devices to be used for the various edge conditions.

Item 506 - Temporary Erosion, Sedimentation, and Environmental Controls

The disturbed area for this project, as shown on the plans, is 1.06 acres. The total disturbed area (TDA) will establish the required authorization for storm water discharges. The TDA of the project will be determined as described by the Environmental Permits Issues and Commitments (EPIC) sheet.

Contractor shall meet the requirements for the Project SW3P binder as described on the SW3P sheet.

The Contractor shall collect and dispose of all waste material as required by the Storm Water Pollution Prevention Plan (SW3P).

If sediment escapes the construction site, immediately stop all work on the project, remove the sediment, and modify the SW3P site plan to prevent future non-compliance issues.

The storm water pollution and prevention plan (SW3P) for this project shall consist of using the following items:

Biodegradable Erosion Control Logs

If it is determined that other erosion control devices are needed, payment will be handled by Force Account.

Item 530 - Intersections, Driveways, and Turnouts

Removal of existing asphalt driveways will not be paid for directly but will be considered subsidiary to this pay item.

Coordinate the replacement of driveways with the property owners prior to performing work. Driveway locations and widths will be verified by the Engineer before placement.

Saw cut existing concrete and asphaltic concrete drives to create a smooth joint with the proposed driveway or street.

When intersections of roadways are encountered extend final 2” overlay to the ROW line regardless of existing pavement structure.

Item 531 – Sidewalks

Install an approved cast in place detectable warning surface on all new curb ramps.

Construct compliant curb ramps based upon referenced design criteria, Texas Accessibility Standards and TxDOT Pedestrian Facilities Standards. Consider the locations of existing traffic and pedestrian control devices including loop detectors and pedestrian push buttons during curb ramp construction at signalized intersections, and construct ramps to allow such existing facilities to remain undisturbed and reused to the fullest extent possible while providing for full ADA compliance. All corners are unique and it may be necessary to use various combinations of ramp elements to achieve a compliant ramp configuration.

Review the curb ramp location and layout with TxDOT’s inspector prior to demolition so that both parties agree that the curb ramp can be installed properly. Should it become apparent at any time during the ramp layout and construction process that a curb ramp cannot be installed as indicated on the Project Drawings, promptly notify the TxDOT inspector.

Any approval, inspection, or checking of the contractor’s layout by TxDOT and the acceptance of all or any part of it shall not relieve the contractor of his responsibility to secure the proper dimensions, grades and elevations of the various parts of the work.

Construction of each curb ramp is to be completed within seven (7) working days after start of construction process. Construction process of curb ramps shall include: demolition of existing conditions, placement of concrete or brick, removal of lips, street surface patching in front of the curb or ramp, adjustment of counter slope within 24-inches of the bottom of the ramp or curb and gutter, street level landings, backfill, placement of topsoil, grading and sodding, and clean-up. All other related work such as adjustment of crosswalk, special heat-welds, asphalt overlays, and other work that does not affect accessibility shall be completed per a schedule pre-approved by TxDOT.

Furnish and install #3 dia. reinforcing steel bars @ 18” O.C./B.W. for sidewalk, curb ramps and curb ramp components.

Proposed curb ramps, sidewalks, curbs, and riprap is to be doweled 8in minimum into existing, using 1/2in reinforcement placed on 12in centers.

Areas labeled with a “T” on the construction drawings allow the contractor to transition to existing conditions. Slope and grade of all transitions must be approved by the engineer.

The curb ramp locations shown in the plans have taken into account 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 PROWAG requirements.

Contractor is to match existing concrete color and texturing at various locations which, as directed by the engineer, require matching.

Item 618 – Conduit

Install pits for jacking and boring PVC conduit a minimum of 3 feet from the back of the curb or the outside edge of the shoulder.

Where PVC, duct cable, and HDPE conduit 1” and larger is allowed and installed as per TxDOT standards, provide a PVC elbow in place of the galvanized rigid metal elbow required by the Electrical Detail standards. Ensure the PVC elbow is of the same schedule rating as the conduit to which it is connected.

Ensure only a flat, high tensile strength polyester fiber pull tape is used for pulling conductors through the PVC conduit system. Leave one non-metallic pull string in each conduit for future use. This will be considered subsidiary to Item 618.

The location of conduits and ground boxes are diagrammatic only and may be shifted to accommodate field conditions as directed.

Secure permission and approval from the Engineer prior to cutting into or removing any sidewalks or curbs for installation of this Item.

Do not use a pneumatically driven device for punching holes beneath the pavement (commonly known as a "missile").

Use a colored cleaner-primer on all PVC to PVC joints before application of PVC cement.
Seal all conduit ends with lighting circuits with polyurethane foam approved by the Engineer that will not adversely affect other plastic materials or corrode metals.

Avoid crossing high and low voltage cables in ground boxes where possible.

Item 620 – Electrical Conductors

Where conductors are spliced in ground boxes, provide Tyco Gel splices or equivalent, and use option 3 as shown on ED(3)-14.

Maintain conductor color continuity throughout the entire system.

Item 644 – Small Roadside Sign Assemblies

Triangular slip bases must be the clamp style to secure the post to the slip base. Set screw style slip bases will not be allowed. Construction of required concrete footings shall be subsidiary to item 644.

Item 666 - Reflectorized Pavement Markings

Use Type II beads on all striping.

Remove temporary tabs from all roads prior to striping. Removal of tabs will be subsidiary to pertinent items.

Item 677 – Eliminating Existing Pavement Markings and Markers

The Engineer may elect to offset the existing centerline after the completion of Phase 1 widening for safety purposes. Removal of existing stripe will be paid for under Item 677, Eliminate Existing Pavement Markings and Markers. Use Surface Treatment Method at the rates shown in the Basis of Estimate for the removal of existing striping. Polydot the locations of the proposed work zone pavement markings and obtain approval from the Engineer prior to placement.

Coordinate the installation of the service drop with the Wichita Falls District Traffic Office @ (940) 720-7844.

Item 680 – Highway Traffic Signals

Notify Wichita Falls District Traffic Office @ (940) 720-7844 one week before beginning any work involving traffic signals.

The contractor shall field verify the location of all existing underground / overhead utilities and all underground drainage structures before construction. If there is any conflict or if the required clearance is not satisfied, the contractor shall contact the engineer.

Provide submittal literature for all traffic signal equipment before installation.

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0043-17-035 **DISTRICT** Wichita Falls **COUNTY** Wichita
HIGHWAY BU 287J

				CONTROL SECTION JOB	0043-17-035		TOTAL EST.	TOTAL FINAL
				PROJECT ID	A00201427			
				COUNTY	Wichita			
				HIGHWAY	BU 287J			
ALT	BID CODE	DESCRIPTION	UNIT		EST.	FINAL		
	104-6017	REMOVING CONC (DRIVEWAYS)	SY		1,486.000		1,486.000	
	104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF		684.000		684.000	
	104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY		183.000		183.000	
	105-6011	REMOVING STAB BASE AND ASPH PAV (2"-6")	SY		826.000		826.000	
	420-6007	CL A CONC (FLUME)	CY		5.000		5.000	
	420-6066	CL C CONC (RAIL FOUNDATION)	CY		13.000		13.000	
	432-6006	RIPRAP (CONC)(CL B)	CY		0.400		0.400	
	450-6029	RAIL (TY C1W)	LF		66.000		66.000	
	451-6030	RETROFIT RAIL (TY C1W)	LF		32.000		32.000	
	464-6003	RC PIPE (CL III)(18 IN)	LF		8.000		8.000	
	479-6001	ADJUSTING MANHOLES	EA		11.000		11.000	
	479-6005	ADJUSTING MANHOLES (WATER VALVE BOX)	EA		7.000		7.000	
	479-6008	ADJUSTING MANHOLES (WATER METER)	EA		4.000		4.000	
	496-6099	REMOVE STR (RAIL)	LF		135.000		135.000	
	500-6001	MOBILIZATION	LS		1.000		1.000	
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO		10.000		10.000	
	506-6040	BIODEG EROSN CONT LOGS (INSTL) (8")	LF		40.000		40.000	
	506-6043	BIODEG EROSN CONT LOGS (REMOVE)	LF		40.000		40.000	
	529-6008	CONC CURB & GUTTER (TY II)	LF		567.000		567.000	
	530-6004	DRIVEWAYS (CONC)	SY		2,256.000		2,256.000	
	531-6002	CONC SIDEWALKS (5")	SY		2,999.000		2,999.000	
	531-6006	CURB RAMPS (TY 3)	EA		6.000		6.000	
	531-6010	CURB RAMPS (TY 7)	EA		20.000		20.000	
	531-6032	CONC SIDEWALKS (SPECIAL) (TYPE A)	SY		20.000		20.000	
	545-6018	CRASH CUSH ATTEN (INSTL)(S)(N)(TL2)	EA		1.000		1.000	
	618-6029	CONDT (PVC) (SCH 40) (3")	LF		130.000		130.000	
	618-6059	CONDT (PVC) (SCH 80) (4") (BORE)	LF		220.000		220.000	
	620-6007	ELEC CONDR (NO.8) BARE	LF		350.000		350.000	
	624-6010	GROUND BOX TY D (162922)W/APRON	EA		8.000		8.000	
	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		492.000		492.000	
	666-6182	REFL PAV MRK TY II (W) 24" (SLD)	LF		492.000		492.000	
	678-6008	PAV SURF PREP FOR MRK (24")	LF		492.000		492.000	
	682-6018	PED SIG SEC (LED)(COUNTDOWN)	EA		6.000		6.000	
	684-6031	TRF SIG CBL (TY A)(14 AWG)(5 CONDR)	LF		1,885.000		1,885.000	
	684-6079	TRF SIG CBL (TY C)(12 AWG)(2 CONDR)	LF		1,885.000		1,885.000	
	687-6001	PED POLE ASSEMBLY	EA		5.000		5.000	

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0043-17-035 **DISTRICT** Wichita Falls **COUNTY** Wichita
HIGHWAY BU 287J

						TOTAL EST.	TOTAL FINAL
		CONTROL SECTION JOB		**0043-17-035**			
		PROJECT ID		**A00201427**			
		COUNTY		**Wichita**			
		HIGHWAY		**BU 287J**			
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL		
	688-6001	PED DETECT PUSH BUTTON (APS)	EA	6.000		6.000	
	688-6003	PED DETECTOR CONTROLLER UNIT	EA	2.000		2.000	
	6001-6001	PORTABLE CHANGEABLE MESSAGE SIGN	DAY	167.000		167.000	
	6185-6002	TMA (STATIONARY)	DAY	167.000		167.000	
	18	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	

100% PLANS SUBMITTAL

DW: RW | CK: DR | DW: RD | CK: KM

SIDEWALK QUANTITIES

LOCATION	340 6110	420 6007	432 6006	464 6003	479 6001	479 6005	479 6008	502 6001	506 6040	529 6008	530 6004	531 6002	531 6006	531 6010	531 6032	644 6068	666 6048	666 6182	678 6008	6001 6001	6185 6002
	D-GR HMA (SQ) TY-D PG64-28*	CL A CONC (FLUME)	RIP RAP	RC PIPE (CL III)(18 IN)	ADJUSTING MANHOLES	ADJUSTING MANHOLES (WATER VALVE BOX)	ADJUSTING MANHOLES (WATER METER)	BARRICADES, SIGNS AND TRAFFIC HANDLING	BIODEG EROSN CONT LOGS (INSTL) (8")	CONC CURB & GUTTER (TY II)	DRIVEWAYS (CONC)	CONC SIDEWALKS (5")	CURB RAMPS (TY 3)	CURB RAMPS (TY 7)	CONC SIDEWALKS (SPECIAL) (TYPE A)	RELOCATE SM RD SN SUP&AM TY 10BWG	REFL PAV MRK TY I (W) 24" (SLD) (100 MIL)	REFL PAV MRK TY II (W) 24" (SLD)	PAV SURF PREP FOR MRK (24")	PORTABLE CHANGEABLE MESSAGE SIGN	TMA (STATIONARY)
	TON	CY	CY	LF	EA	EA	EA	MO	LF	LF	SY	SY	EA	EA	SY	EA	LF	LF	LF	DAY	DAY
Sheet 1 of 34	0.9	-	-	-	-	-	3	-	-	-	-	64	-	2	-	-	90	90	90	-	-
Sheet 2 of 34	4.6	-	-	-	-	-	-	-	-	205	-	169	-	-	-	-	-	-	-	-	-
Sheet 3 of 34	1.1	-	-	-	3	-	-	-	5	34	-	91	-	1	5	-	74	74	74	-	-
Sheet 4 of 34	0.4	-	0.4	8	-	-	-	-	-	-	66	67	-	3	3	1	20	20	20	-	-
Sheet 5 of 34	-	-	-	-	-	-	-	-	-	-	49	94	-	2	-	-	-	-	-	-	-
Sheet 6 of 34	-	-	-	-	3	-	-	-	-	-	90	56	-	2	3	-	-	-	-	-	-
Sheet 7 of 34	-	-	-	-	1	-	-	-	-	-	114	41	-	-	-	-	-	-	-	-	-
Sheet 8 of 34	2.3	-	-	-	-	1	-	-	-	90	93	55	1	1	-	1	53	53	53	-	-
Sheet 9 of 34	0.6	-	-	-	2	-	-	-	-	26	85	91	-	-	-	-	-	-	-	-	-
Sheet 10 of 34	-	-	-	-	-	-	-	-	-	-	16	116	-	-	-	-	-	-	-	-	-
Sheet 11 of 34	-	-	-	-	-	-	-	-	-	-	142	83	-	-	-	-	-	-	-	-	-
Sheet 12 of 34	-	-	-	-	-	-	-	-	-	-	33	116	-	-	-	-	-	-	-	-	-
Sheet 13 of 34	0.4	-	-	-	-	-	-	-	-	21	90	85	-	-	-	-	-	-	-	-	-
Sheet 14 of 34	0.6	-	-	-	-	1	-	-	-	19	64	60	-	2	-	-	-	-	-	-	-
Sheet 15 of 34	-	-	-	-		-	-	-	-	-	21	133	-	-	-	-	-	-	-	-	-
Sheet 16 of 34	-	-	-	-	-	1	-	-	-	-	20	108	-	-	-	-	-	-	-	-	-
Sheet 17 of 34	-	-	-	-	1	-	-	-	-	-	54	138	-	-	-	-	-	-	-	-	-
Sheet 18 of 34	1.6	-	-	-	-	-	-	-	-	57	148	59	2	-	-	1	-	-	-	-	-
Sheet 19 of 34	-	-	-	-	-	-	-	-	5	20	108	93	-	-	-	-	-	-	-	-	-
Sheet 20 of 34	-	-	-	-	-	-	-	-	-	-	73	102	-	-	-	-	-	-	-	-	-
Sheet 21 of 34	0.8	-	-	-	-	-	-	-	-	5	58	69	2	-	-	1	-	-	-	-	-
Sheet 22 of 34	-	-	-	-	1	-	-	-	-	5	142	102	-	-	-	-	-	-	-	-	-
Sheet 23 of 34	-	-	-	-	-	-	-	-	5	-	20	108	-	-	-	-	-	-	-	-	-
Sheet 24 of 34	-	-	-	-	-	-	-	-	-	-	173	75	-	-	-	-	-	-	-	-	-
Sheet 25 of 34	-	-	-	-	-	-	-	-	-	-	48	94	-	-	-	-	-	-	-	-	-
Sheet 26 of 34	0.9	-	-	-	-	-	1	-	5	40	166	78	-	-	-	-	-	-	-	-	-
Sheet 27 of 34	2	-	-	-	-	3	-	-	-	45	31	103	-	2	-	-	-	-	-	-	-
Sheet 28 of 34	-	-	-	-	-	-	-	-	-	-	74	94	-	-	-	-	-	-	-	-	-
Sheet 29 of 34	-	-	-	-	-	-	-	-	-	0	120	69	-	-	3	-	-	-	-	-	-
Sheet 30 of 34	0.6	-	-	-	-	-	-	-	-	0	129	64	1	1	-	1	-	-	-	-	-
Sheet 31 of 34	0.9	-	-	-	-	-	-	-	-	0	29	55	-	2	-	-	120	120	120	-	-
Sheet 32 of 34	-	-	-	-	-	-	-	-	5	0	-	108	-	-	-	-	-	-	-	-	-
Sheet 33 of 34	-	2.5	-	-	-	-	-	-	-	0	-	120	-	-	3	-	-	-	-	-	-
Sheet 34 of 34	0.8	2.5	-	-	-	1	-	-	15	0	-	39	-	2	3	-	135	135	135	-	-
PHASE 1	18.5	5	0.4	8	11	7	4	10	40	567	2256	2999	6	20	20	5	492	492	492	167	167

*SUBSIDIARY TO ITEM 531. QUANTITY IS PROVIDED FOR CONTRACTOR'S INFORMATION ONLY

REMOVAL QUANTITIES

LOCATION	104 6017	### ####**	104 6029	104 6036	104 6036*	105 6011	496 6099	506 6043
	REMOVING CONC (DRIVEWAYS)	REMOVING GRAVEL (DRIVEWAYS)	REMOVING CONC (CURB OR CURB & GUTTER)	REMOVING CONC (SIDEWALK OR RAMP)	REMOVING CONC (SIDEWALK OR RAMP)*	REMOVING STAB BASE AND ASPH PAV (2"-6")	REMOVE STR (RAIL)	BIODEG EROSN CONT LOGS (REMOVE)
	SY	SY	LF	SY	SY	SY	LF	LF
Sheet 1 of 34	-		45	-	-	-	-	-
Sheet 2 of 34	-		210	-	-	-	-	-
Sheet 3 of 34	-		59	-	-	-	-	5
Sheet 4 of 34	36	30	17	-	51	-	-	-
Sheet 5 of 34	-	17	-	-	12	32	-	-
Sheet 6 of 34	-		-	-	25	90	-	-
Sheet 7 of 34	-	9	-	9	22	105	-	-
Sheet 8 of 34	-		37	21	60	94	-	-
Sheet 9 of 34	-	29	-	-	42	56	-	-
Sheet 10 of 34	-	16	-	-	23	-	-	-
Sheet 11 of 34	115		-	10	59	27	-	-
Sheet 12 of 34	-	33	-	-	67	-	-	-
Sheet 13 of 34	-		-	-	43	90	-	-
Sheet 14 of 34	-		9	4	52	64	-	-
Sheet 15 of 34	70		-	1	83	70	135	-
Sheet 16 of 34	-	20	-	-	109	-	-	-
Sheet 17 of 34	-		-	-	89	54	-	-
Sheet 18 of 34	97		75	12	71	66	-	-
Sheet 19 of 34	53		11	25	41	78	-	5
Sheet 20 of 34	74		-	31	51	-	-	-
Sheet 21 of 34	68		21	7	61	-	-	-
Sheet 22 of 34	148		-	-	78	-	-	-
Sheet 23 of 34	22		-	-	85	-	-	5
Sheet 24 of 34	187		-	-	61	-	-	-
Sheet 25 of 34	51		-	-	75	-	-	-
Sheet 26 of 34	170		31	4	69	-	-	5
Sheet 27 of 34	32		78	1	86	-	-	-
Sheet 28 of 34	76		-	-	74	-	-	-
Sheet 29 of 34	121		-	-	52	-	-	-
Sheet 30 of 34	137		24	-	63	-	-	-
Sheet 31 of 34	29		38	6	53	-	-	-
Sheet 32 of 34	-		-	36	52	-	-	5
Sheet 33 of 34	-		-	-	101	-	-	-
Sheet 34 of 34	-		29	16	41	-	-	15
PHASE 1	1,486	154	684	183	1,851	826	135	40

*SUBSIDIARY TO ITEM 531. QUANTITY IS PROVIDED FOR CONTRACTOR'S INFORMATION ONLY **SUBSIDIARY TO ITEM 531 6002, QUANTITY PROVIDED FOR CONTRACTOR INFORMATION ONLY

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710 Hester Crossing, Suite 150
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Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SUMMARIES

SHEET 1 OF 2

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		5

DATE: 1/31/2024 10:50:42 AM
FILE: WF-SUMMARIES01.dgn

100% PLANS SUBMITTAL

DW: RW | CK: DR | DW: RD | CK: KM

SIGNAL QUANTITIES

LOCATION	0416 6002*	0618 6029	0618 6059	0620 6007	0624 6010	0682 6018	0684 6031	0684 6079	0687 6001	0688 6001	0688 6003
	DRILL SHAFT (24 IN)	CONDT (PVC) (SCH 40) (3")	CONDT (PVC) (SCH 80) (4")(BORE)	ELEC CONDR (NO.8) BARE	GROUND BOX TY D (162922)W/APRON	PED SIG SEC (LED)(COUNTDOWN)	TRF SIG CBL (TY A) (14 AWG) (5 CONDR)	TRF SIG CBL (TY C) (12 AWG) (2 CONDR)	PED POLE ASSEMBLY	PED DETECT PUSH BUTTON (APS)	PED DETECTOR CONTROLLER UNIT
	LF	LF	LF	LF	EA	EA	LF	LF	EA	EA	EA
Sheet 1 of 3	6	10	60	70	2	2	305	305	1	2	1
Sheet 2 of 3	12	60	80	140	3	2	960	960	2	2	1
Sheet 3 of 3	12	60	80	140	3	2	620	620	2	2	-
Phase 1	30	130	220	350	8	6	1885	1885	5	6	2

*SUBSIDIARY TO ITEM 687. QUANTITY IS PROVIDED FOR CONTRACTOR'S INFORMATION ONLY

BRIDGE QUANTITIES

LOCATION	0420 6066	0450 6029	0451 6030	0545 6018
	CL C CONC (RAIL FOUNDATION)	RAIL(TY C1W)	RETROFIT RAIL (TY C1W)	CRASH CUSH ATTEN (INSTL) (S) (N) (TL2)
	CY	LF	LF	EA
Sheet 1 of 34	-	-	-	-
Sheet 2 of 34	-	-	-	-
Sheet 3 of 34	-	-	-	-
Sheet 4 of 34	-	-	-	-
Sheet 5 of 34	-	-	-	-
Sheet 6 of 34	-	-	-	-
Sheet 7 of 34	-	-	-	-
Sheet 8 of 34	-	-	-	-
Sheet 9 of 34	-	-	-	-
Sheet 10 of 34	-	-	-	-
Sheet 11 of 34	-	-	-	-
Sheet 12 of 34	-	-	-	-
Sheet 13 of 34	-	-	-	-
Sheet 14 of 34	-	-	-	-
Sheet 15 of 34	13	66	32	1
Sheet 16 of 34	-	-	-	-
Sheet 17 of 34	-	-	-	-
Sheet 18 of 34	-	-	-	-
Sheet 19 of 34	-	-	-	-
Sheet 20 of 34	-	-	-	-
Sheet 21 of 34	-	-	-	-
Sheet 22 of 34	-	-	-	-
Sheet 23 of 34	-	-	-	-
Sheet 24 of 34	-	-	-	-
Sheet 25 of 34	-	-	-	-
Sheet 26 of 34	-	-	-	-
Sheet 27 of 34	-	-	-	-
Sheet 28 of 34	-	-	-	-
Sheet 29 of 34	-	-	-	-
Sheet 30 of 34	-	-	-	-
Sheet 31 of 34	-	-	-	-
Sheet 32 of 34	-	-	-	-
Sheet 33 of 34	-	-	-	-
Sheet 34 of 34	-	-	-	-
PHASE 1	13	66	32	1

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Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SUMMARIES

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		6

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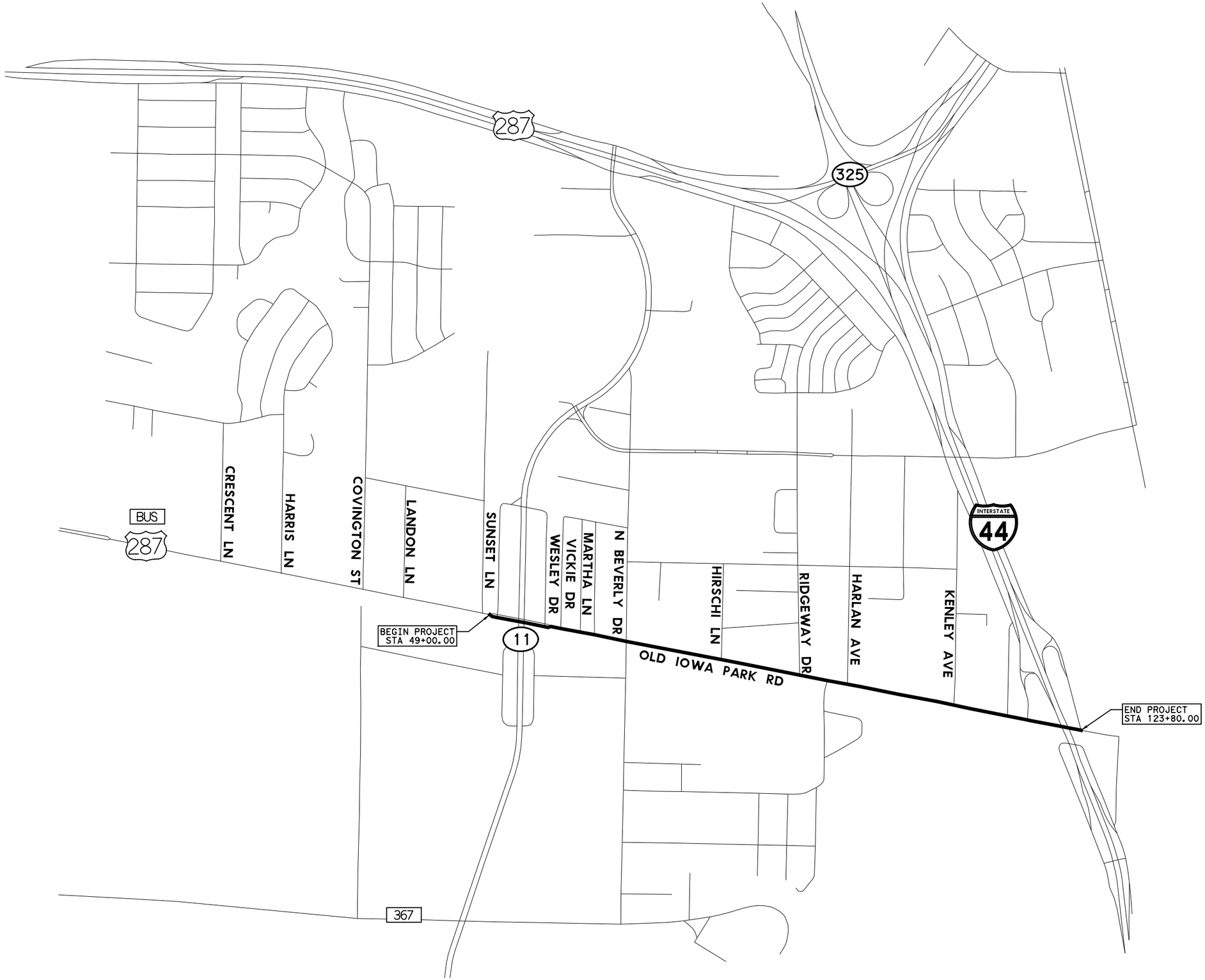

NO.	DATE	REVISION	APPR BY

12/13/2023

STATE OF TEXAS
RYAN A. WHITNEY
130723
REGISTERED
PROFESSIONAL ENGINEER

HDR Engineering, Inc
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Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
PROJECT LAYOUT

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		7

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FILE: WF-PROJ-LAY.dgn

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DW:	RW
CK:	DR
DW:	RD
CK:	KM

TCP NARRATIVE

BARRICADES, WARNING SIGNS, SEQUENCE OF WORK, ETC.

1. TRAFFIC MUST BE HANDLED THROUGHOUT THE PROJECT DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A SAFE AND COMFORTABLE PASSAGE FOR VEHICULAR, PEDESTRIAN, AND BICYCLE TRAFFIC WITH MINIMAL INCONVENIENCE TO THE PUBLIC, AS SHOWN IN THE PLANS OR AS DIRECTED/APPROVED BY THE ENGINEER. ALL TRAFFIC HANDLING SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
2. TRAFFIC CONTROL PHASING MUST BE COMPLETED IN THE SEQUENCE OF CONSTRUCTION AS SHOWN ON THE PLAN SET UNLESS DIRECTED OTHERWISE BY THE ENGINEER AND APPROVED BY THE CITY.
3. THE CONTRACTOR MAY PROPOSE/RECOMMEND MODIFICATIONS TO THE SEQUENCE OF WORK FOR CONSIDERATION BY THE ENGINEER. ANY MAJOR RECOMMENDED MODIFICATION BY THE CONTRACTOR SHALL INCLUDE ANY CHANGES TO THE VARIOUS BID ITEMS, IMPACT TO TRAFFIC, EFFECT OF OVERALL PROJECT IN TIME AND COST, ETC. IF THE PROPOSAL IS IMPLEMENTED, THE CONTRACTOR WILL BE RESPONSIBLE FOR DEVELOPING DETAILED PLAN SHEETS TO BE SEALED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS FOR INCLUSION WITH THE CHANGE ORDER. THE CONTRACTOR CANNOT PROCEED WITH ANY CONSTRUCTION OPERATIONS BASED ON A REVISED PHASE/SEQUENCE UNTIL WRITTEN APPROVAL IS OBTAINED FROM THE ENGINEER. IF AT ANY TIME DURING CONSTRUCTION THE CONTRACTOR'S PROPOSED PLAN OF OPERATION FOR HANDLING TRAFFIC DOES NOT PROVIDE FOR SAFE AND COMFORTABLE MOVEMENT, THE CONTRACTOR WILL IMMEDIATELY CHANGE THEIR OPERATION TO CORRECT THE UNSATISFACTORY CONDITION.
4. THIS PROJECT WILL CONSIST OF LINEAR SHIFTING TCP, STARTING FROM ONE END AND MOVING THROUGHOUT THE PROJECT LIMITS TO THE OTHER END. BEFORE ANY CONSTRUCTION BEGINS, INSTALL ADVANCE WARNING SIGNS, MODIFY EXISTING/PROPOSED SIGNS, INSTALL EROSION CONTROL MEASURES FOLLOWING THE REQUIREMENTS OF THE STORM WATER POLLUTION PREVENTION PLANS AND INSTALL TEMPORARY SIGNING AND BARRICADES, AND WORK ZONE PAVEMENT MARKINGS AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.
5. DURING VARIOUS PHASES OF WORK, COVER EXISTING AND/OR NEWLY ERECTED SIGNS THAT MAY BE IN CONFLICT WITH APPLICABLE TRAFFIC CONTROL DEVICES DURING THAT PHASE.
6. CONSTRUCTION OF PROPOSED DRIVEWAYS MUST BE STEPPED IN ORDER TO PROVIDE LOCAL ACCESS TO PROPERTIES AND BUSINESSES ADJACENT TO THE RIGHT OF WAY AT ALL TIMES. PROPERTIES WITH MULTIPLE DRIVEWAY ACCESS CAN BE CLOSED, ONE AT A TIME, TO COMPLETE PROPOSED CONSTRUCTION. PROPERTIES WITH A SINGLE ACCESS DRIVEWAY WILL BE PHASED UNLESS OTHERWISE APPROVED. FLAGGERS WILL BE REQUIRED TO SAFELY DIRECT TRAFFIC THROUGH THE DRIVEWAY, WHEN NECESSARY.
7. AT NO TIME WILL TWO CONSECUTIVE INTERSECTING ROADWAYS BE CLOSED AT ONE TIME DURING CONSTRUCTION, UNLESS APPROVED BY THE ENGINEER.
8. NOTIFY THE ENGINEER IN WRITING OF IMPENDING/UPCOMING LANE CLOSURES FIVE WORKING DAYS IN ADVANCE OF LANE CLOSURES.

GENERAL

1. BEFORE THE COMMENCEMENT OF EACH PHASE, INSTALL ADVANCE WARNING SIGNS, TEMPORARY SIGNS, BARRICADES AND SWP3 ITEMS AS SHOWN ON THE PLANS AND/OR AS DIRECTED/APPROVED BY THE ENGINEER. PROVIDE 7 DAY ADVANCE NOTICE OF ANY WORK THROUGH THE USE OF PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS). THE ENGINEER MUST APPROVE ANY MODIFICATIONS TO THE PCMS.
2. MINIMIZE LANE CLOSURES AND REOPEN TRAVEL LANES TO VEHICULAR TRAFFIC WHEN POSSIBLE. AFTER COMPLETION OF CURB AND GUTTER CONSTRUCTION; REOPEN TRAVEL LANES TO TRAFFIC DURING CONSTRUCTION OF PEDESTRIAN FACILITIES.
3. MINIMIZE IMPACT TO PEDESTRIAN TRAFFIC AND REOPEN CROSSWALKS WHEN POSSIBLE.
4. MAINTAIN ACCESS TO RESIDENTIAL AND COMMERCIAL PROPERTIES AT ALL TIMES DURING CONSTRUCTION OF THE DRIVEWAYS. COORDINATE WITH PROPERTY OWNERS TO SCHEDULE CONSTRUCTION OF DRIVEWAYS.
5. MAINTAIN ACCESS TO BUSINESSES DURING CONSTRUCTION OF SIDEWALKS IN FRONT OF THE BUSINESSES. COORDINATE WITH BUSINESS OWNERS TO SCHEDULE TIMES TO CONSTRUCT SIDEWALKS DIRECTLY IN FRONT OF THE BUSINESSES THAT WOULD OBSTRUCT ACCESS.
6. WHEN DEMOING AND REPLACING SIDEWALK IN KIND, SIDEWALK MUST NOT BE CLOSED FOR MORE THAN 3 CONSECUTIVE DAYS.
7. IF SIDEWALK IS CLOSED FOR CONSTRUCTION, CONTRACTOR MUST PROVIDE COMPETENT/TRAINED PERSONNEL TO ASSIST PEDESTRIANS IN TRAVERSING THROUGH THE WORK ZONE SAFELY. THE PREFERRED SIDEWALK DIVERSION DIRECTION IS BETWEEN THE WORK ACTIVITY AND ROW/PROPERTY LINE OR ON SHOULDER, PROVIDED THIS IS WITH ASSISTANCE OF COMPETENT CONTRACTOR PERSONNEL. USE WATER-FILLED BARRIER TO PROTECT PEDESTRIANS ON SHOULDER (SUBSIDIARY TO 502-6001). IN EVERY CASE, A PEDESTRIAN TRAVERSING THROUGH A WORK ZONE EITHER ON EXISTING SIDEWALK OR BEATEN PATH, OR DIVERTED THROUGH A WORK ZONE MUST BE ASSISTED BY CONTRACTOR'S COMPETENT/TRAINED PERSONNEL.
8. SAFETY OF PEDESTRIANS IN WORK ZONES IS CONTRACTOR'S RESPONSIBILITY. IF CONTRACTOR OBSERVES ANY SAFETY CONCERNS, THEY SHOULD CEASE WORK ACTIVITY, RESTORE PEDESTRIAN TRAFFIC, AND CONTACT THE ENGINEER IMMEDIATELY.
9. PERFORM WORK IN A LINEAR FASHION AND PROCEED IN THE DIRECTION OF TRAFFIC.
10. TRAFFIC CONTROL TO FOLLOW TXDOT STANDARD DETIALS TCP(1-4)-18 ONE LANE CLOSURE DETAIL, TCP(2-1)-18 WORK SPACE ON SHOULDER DETAIL, AND WZ(BTS-1)-13 AND WZ(BTS-2)-13 FOR ALL TRAFFIC SIGNAL WORK AT INTERSECTIONS.
11. COORDINATE WITH THE CITY OF WICHITA FALLS REGARDING WORK ALONG BU 287J AS PART OF THE CITY-WIDE BUS SHELTER PROJECT. POINT OF CONTACT FOR THIS PROJECT IS CALLAN COLTHARP, P.E. (940-397-2074). COORDINATE WITH THE CONTRACTOR TO AVOID OVERLAPPING WORK AND UNNECESSARY DISRUPTION. DO NOT INSTALL CONFLICTING WORK ZONES.

SAFETY

1. PROVIDE, CONSTRUCT, AND MAINTAIN BARRICADES, AND SIGNS IN ACCORDANCE WITH STATE STANDARDS BC(1-12)-21. ANY SIGNS REQUIRED THAT ARE NOT DETAILED IN THE STANDARDS SHEETS MUST BE IN CONFORMANCE WITH THE "TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" AND THE "STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS."
2. BARRICADES AND WARNING SIGNS MUST BE PLACED AS INDICATED ON THE PLANS, IN THE STANDARD DETAILS, OR PER THE LATEST TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD). THIS WILL BE CONSIDERED THE MINIMUM REQUIRED TO PROVIDE FOR THE SAFETY OF TRAFFIC DURING CONSTRUCTION. PROVIDE AND MAINTAIN OTHER SUCH BARRICADES AND SIGNS DEEMED NECESSARY BY THE ENGINEER OR AS DIRECTED BY FIELD CONDITIONS, TO PROVIDE FOR THE PASSAGE OF TRAFFIC IN SAFETY AT ALL TIMES.
3. 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.
4. DO NOT STORE ANY CONSTRUCTION MATERIAL OR EQUIPMENT AT ANY LOCATION THAT WILL CONSTITUTE A HAZARD AND WILL ENDANGER TRAFFIC.
5. KEEP THE ROADWAY CLEAN AND FREE OF DIRT OR OTHER MATERIAL AT ALL TIMES. THE ENGINEER WILL CEASE CONSTRUCTION OPERATIONS IF THE CONTRACTOR DOES NOT MAINTAIN A CLEAN ROADWAY.
6. 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. THROUGHOUT CONSTRUCTION OPERATIONS, CONDUCT HAULING OPERATIONS IN A MANNER SUCH THAT VEHICLES WILL NOT HAUL OVER PREVIOUSLY RE-COMPACTED SUBGRADE OR COMPACTED BASE MATERIAL, EXCEPT IN SHORT SECTIONS FOR DUMPING MANIPULATIONS.

TYPE OF WORK PERFORMED	TCP STANDARDS	APPLICATION
SIDEWALK CONSTRUCTION	TCP(1-4a)	FOR WORK ADJACENT TO EOP REQUIRING ADDITIONAL SPACE AND FOR ALL CURB & GUTTER WORK
	TCP(2-1)-18	FOR WORK ADJACENT TO ROADWAY
	WZ(BTS-1)-13	FOR WORK IN INTERSECTION
	WZ(BTS-2)-13	FOR SIDEWALK CLOSURES (SIDEWALK DIVERSION)
DRIVEWAY CONSTRUCTION	TCP(1-4a)	FOR WORK ADJACENT TO EOP REQUIRING ADDITIONAL SPACE
	TCP(2-1)-18	FOR WORK ADJACENT TO ROADWAY
CROSSWALK RESTRIPING	WZ(BTS-2)-13	FOR CROSSWALK CLOSURES
ASPHALT PATCHING	TCP(1-4a)	FOR WORK ADJACENT TO EOP REQUIRING ADDITIONAL SPACE
SIGNAL WORK AT INTERSECTIONS	WZ(BTS-1)-13, WZ(BTS-2)-13	FOR TRAFFIC SIGNAL WORK
REMOVALS	TCP(1-4a)	FOR WORK ADJACENT TO EOP REQUIRING ADDITIONAL SPACE
	TCP(2-1)-18	FOR WORK ADJACENT TO ROADWAY

NO.	DATE	REVISION	APPR BY

12/13/2023

STATE OF TEXAS
RYAN A. WHITNEY
130723
REGISTERED
PROFESSIONAL ENGINEER

HDR Engineering, Inc
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Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS
BU 287J
(OLD IOWA PARK ROAD)
TRAFFIC CONTROL NARRATIVE

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		8

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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

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0043	17	035	BU 287J
4-03 7-13	DIST	COUNTY		SHEET NO.
9-07 8-14	WFS	WICHITA		9
5-10 5-21				

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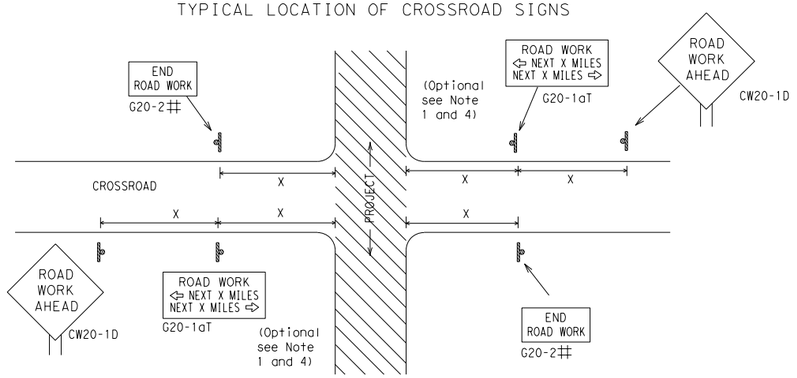
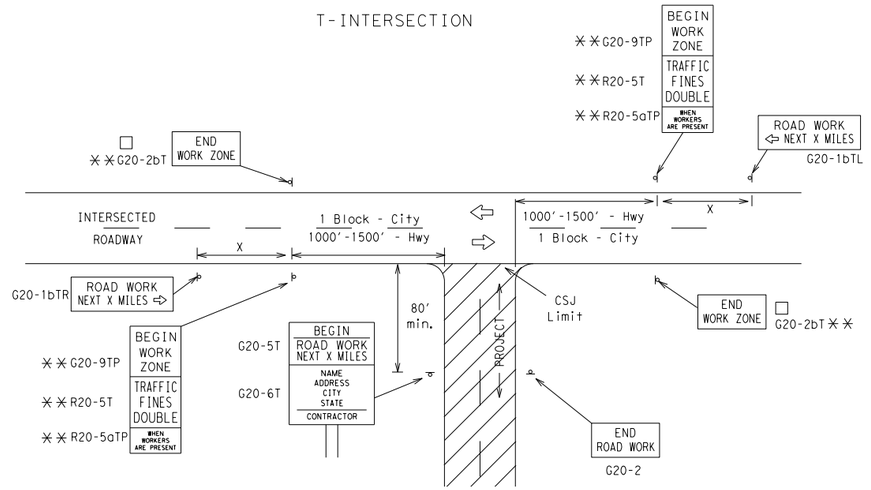
TYPICAL LOCATION OF CROSSROAD SIGNS



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]

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

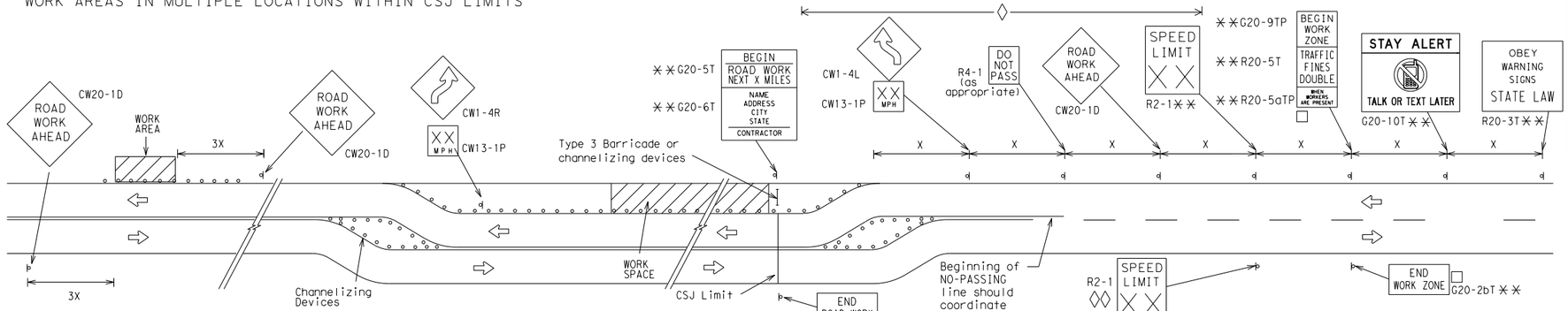
△ Minimum distance from work area to first Advance Warning sign nearest the work area and/or distance between each additional sign.

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.

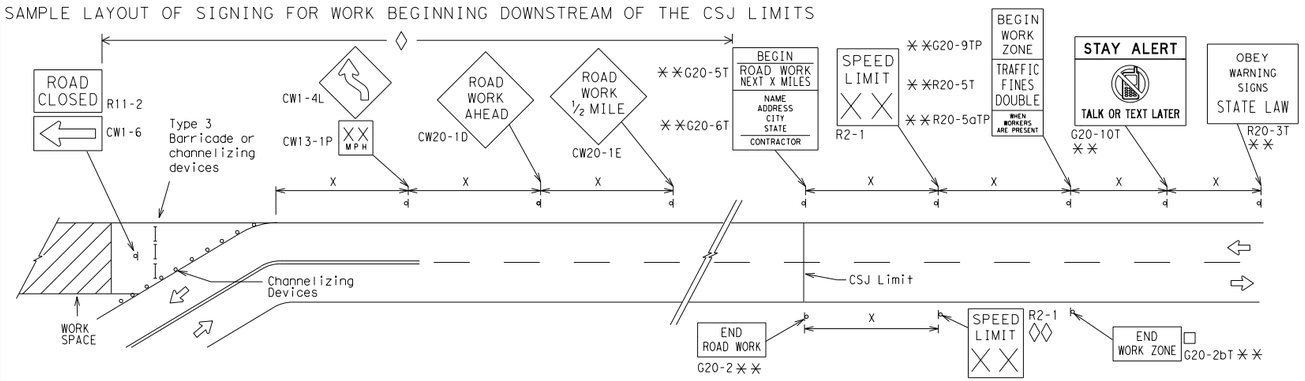
WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS



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

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



NOTES

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

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

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

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

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

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0043	17	035	BU 287J
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	WFS	WICHITA		10

DATE: 12/13/2023 9:51:41 AM
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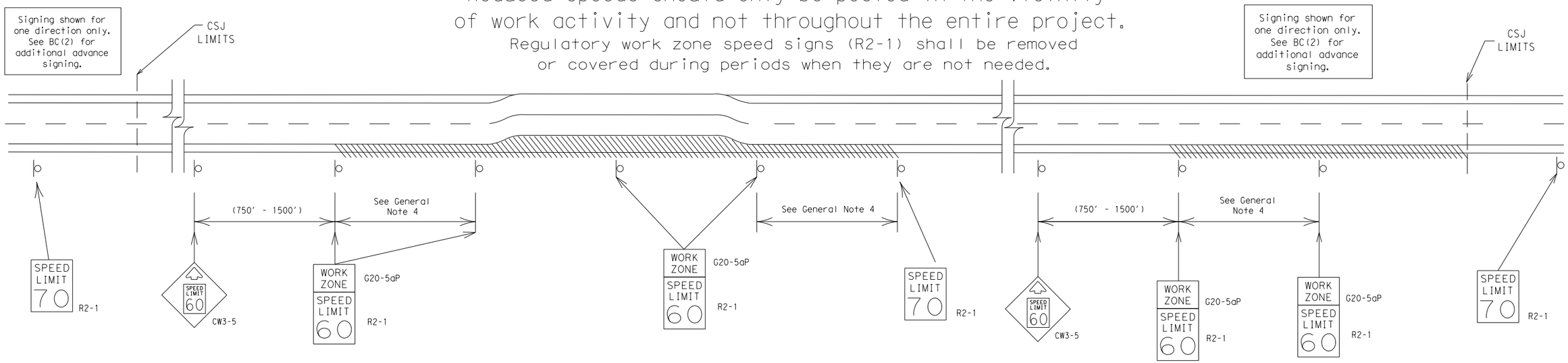
TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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

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

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



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

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

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

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

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

SHORT TERM WORK ZONE SPEED LIMITS

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

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

GENERAL NOTES

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

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7-13 5-21	WFS	WICHITA		11

DATE: 12/13/2023 9:51:41 AM
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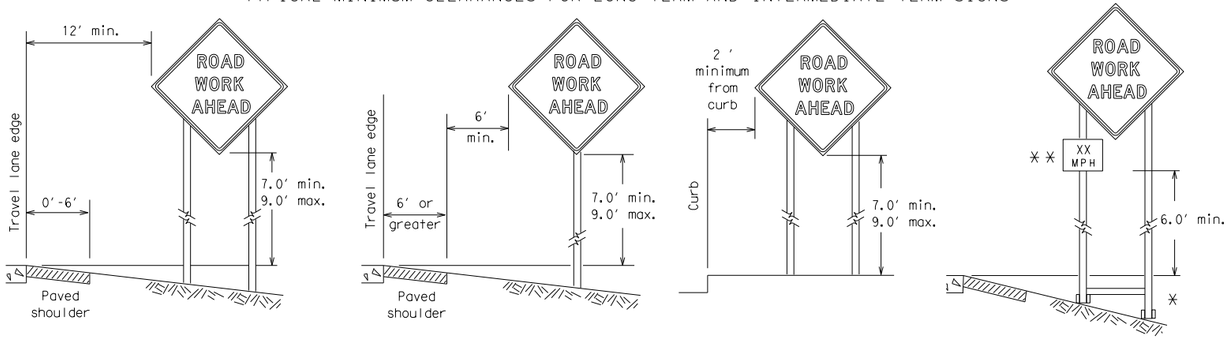
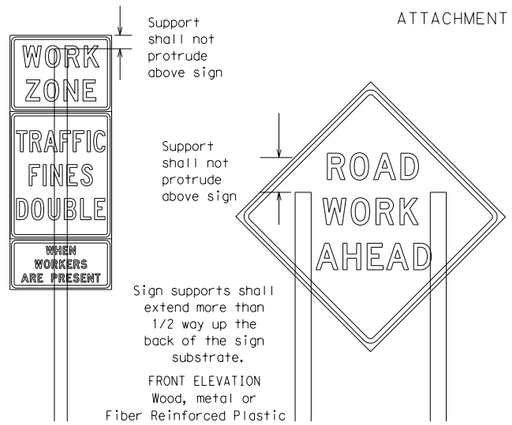
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



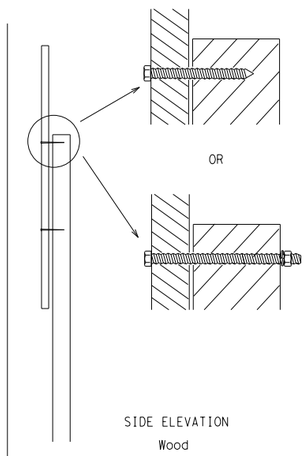
⁎ When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

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

ATTACHMENT FOR SIGN SUPPORTS



FRONT ELEVATION
Wood, metal or
Fiber Reinforced Plastic



SIDE ELEVATION
Wood

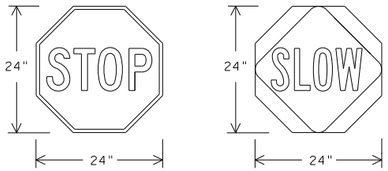
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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.



Background - Red
Legend & Border - White

Background - Orange
Legend & Border - Black

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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9-07 8-14	DIST	COUNTY		SHEET NO.
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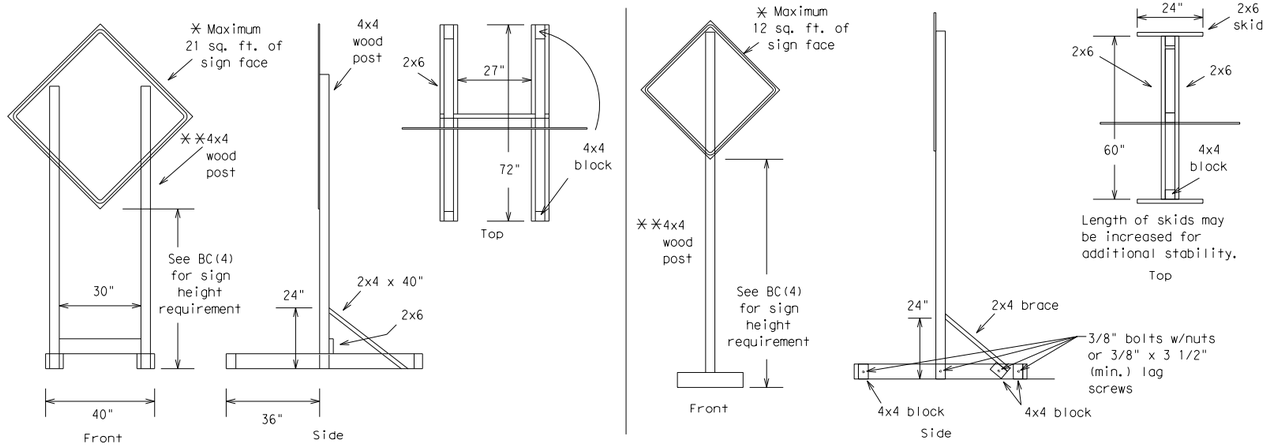
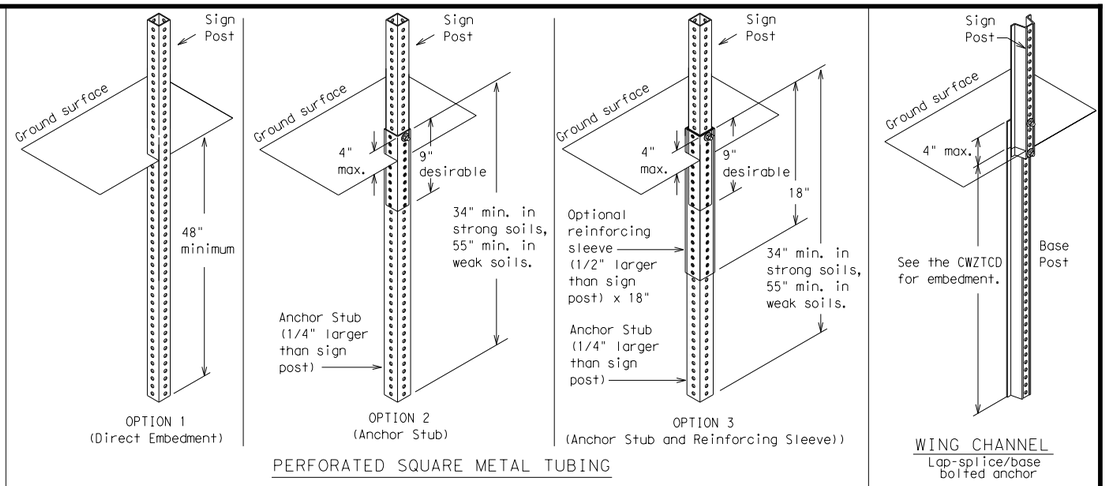


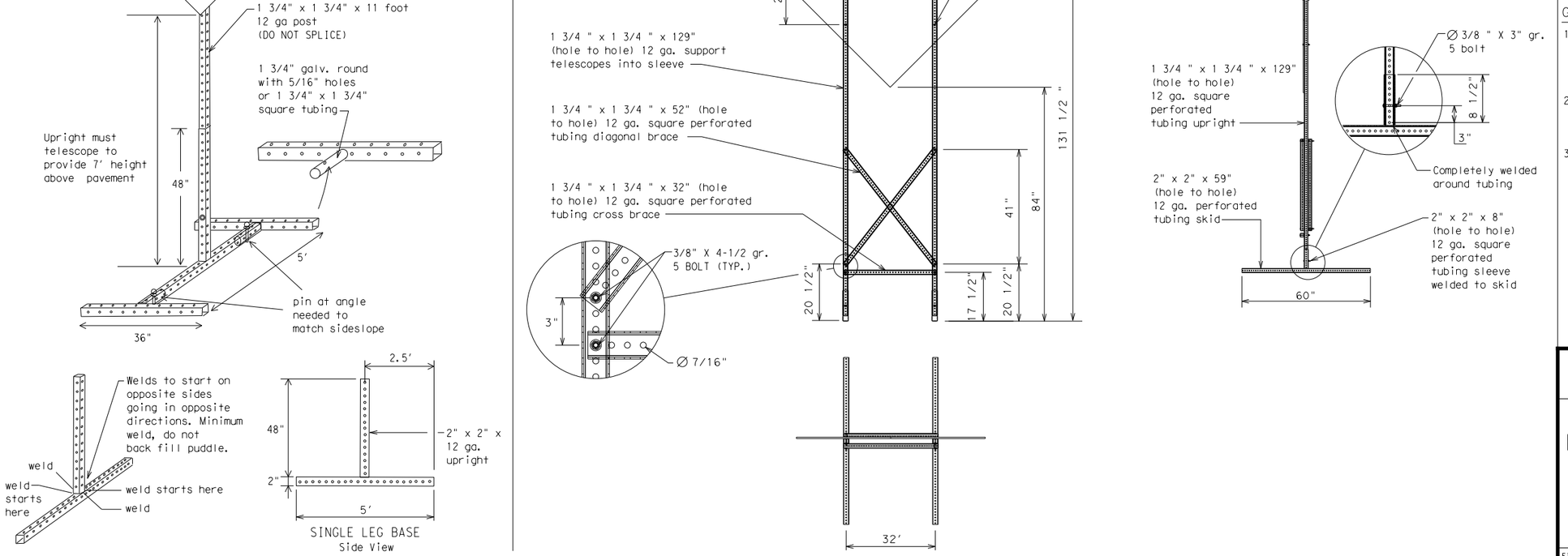
SKID MOUNTED WOOD SIGN SUPPORTS

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



GROUND MOUNTED SIGN SUPPORTS

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



SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

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

WEDGE ANCHORS

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

OTHER DESIGNS

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

GENERAL NOTES

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

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

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

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

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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9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	WFS	WICHITA		13

DATE: 12/13/2023 9:51:42 AM
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WHEN NOT IN USE, REMOVE THE PCMS FROM THE RIGHT-OF-WAY OR PLACE THE PCMS BEHIND BARRIER OR GUARDRAIL WITH SIGN PANEL TURNED PARALLEL TO TRAFFIC

PORTABLE CHANGEABLE MESSAGE SIGNS

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

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

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

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

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

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

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

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

Other Condition List

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

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

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

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

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

Location List

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

Warning List

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

** Advance Notice List

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

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

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

WORDING ALTERNATIVES

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

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

FULL MATRIX PCMS SIGNS

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0043	17	035	BU 287J
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	WFS	WICHITA		14

100

DATE: 12/13/2023 9:51:42 AM
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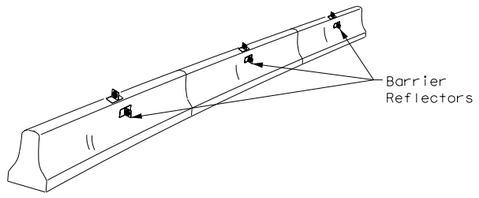
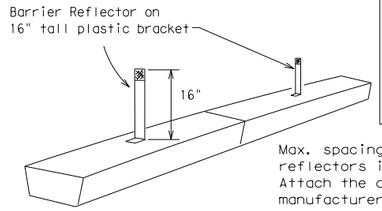
1. Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
2. Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.



CONCRETE TRAFFIC BARRIER (CTB)

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

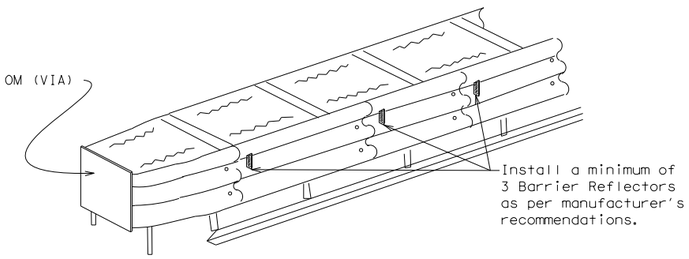


Max. spacing of barrier reflectors is 20 feet. Attach the delineators as per manufacturer's recommendations.

LOW PROFILE CONCRETE BARRIER (LPCB)

LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES

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

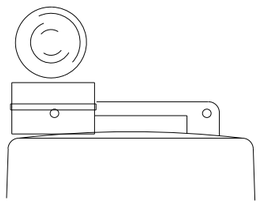


DELINEATION OF END TREATMENTS

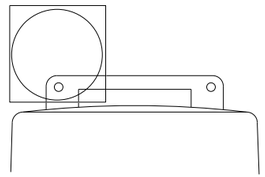
END TREATMENTS FOR CTB'S USED IN WORK ZONES

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

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS



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



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

WARNING LIGHTS

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

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

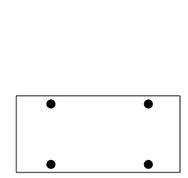
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing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

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

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

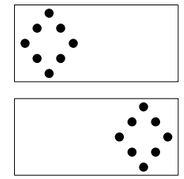
Arrow Boards may be located behind channelizing devices in place for a shoulder taper or merging taper, otherwise they shall be delineated with four (4) channelizing devices placed perpendicular to traffic on the upstream side of traffic.

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

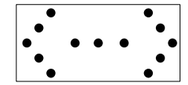


4 CORNER CAUTION

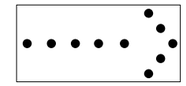
OR



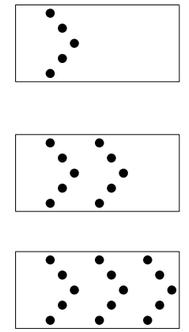
ALTERNATING DIAMOND CAUTION



DOUBLE ARROW



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



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

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

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

ATTENTION

Flashing Arrow Boards shall be equipped with automatic dimming devices.

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

FLASHING ARROW BOARDS

TRUCK-MOUNTED ATTENUATORS

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

Texas Department of Transportation — Traffic Safety Division Standard

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

BC(7)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0043	17	035	BU 287J
9-07 8-14 7-13 5-21	DIST	COUNTY		SHEET NO.
	WFS	WICHITA		15

101

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GENERAL NOTES

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

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

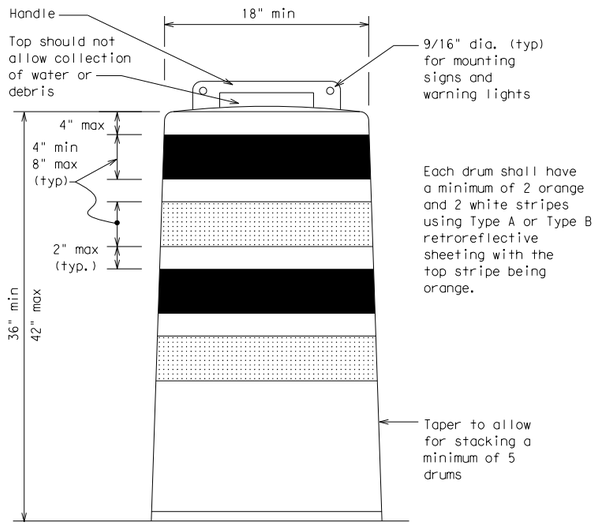
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents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

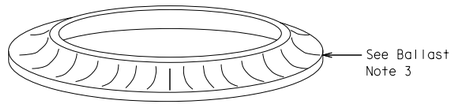
RETROREFLECTIVE SHEETING

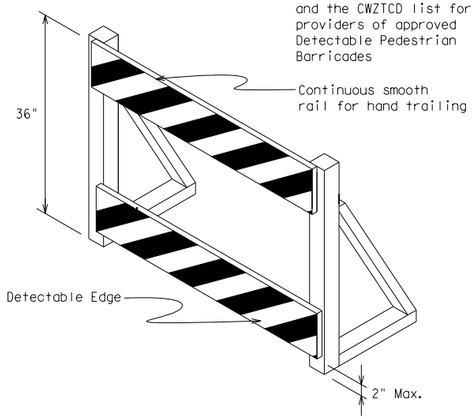
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall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

BALLAST

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

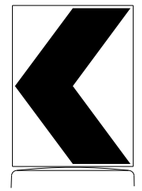




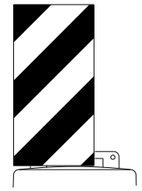


DETECTABLE PEDESTRIAN BARRICADES

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



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



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

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

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	0043	17	035	BU 287J
4-03 8-14	DIST	COUNTY		SHEET NO.
9-07 5-21	WFS	WICHITA		16
7-13				

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DATE: 12/13/2023 9:51:42 AM
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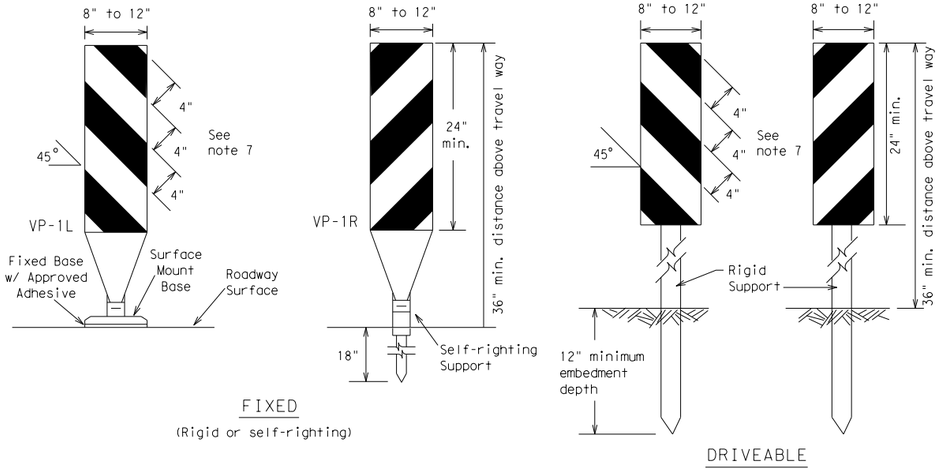
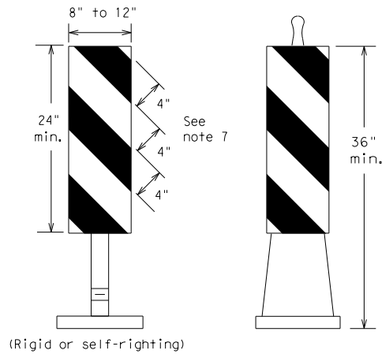


FIXED

(Rigid or self-righting)

DRIVEABLE

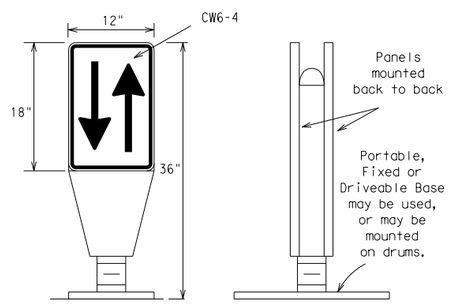


(Rigid or self-righting)

PORTABLE

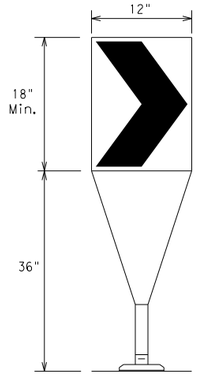
1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is 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)



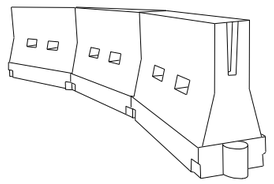
Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

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 ✳✳			Suggested Maximum Spacing of Channelizing Devices	
		10′ Offset	11′ Offset	12′ Offset	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

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	0043	17	035	BU 287J
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	WFS	WICHITA		17

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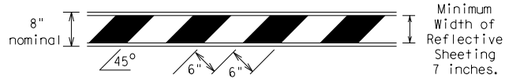
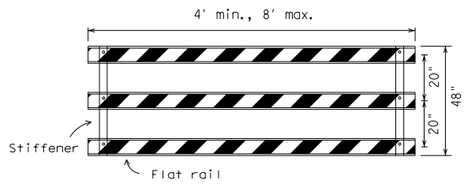
TYPE 3 BARRICADES

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

Barricades shall NOT be used as a sign support.



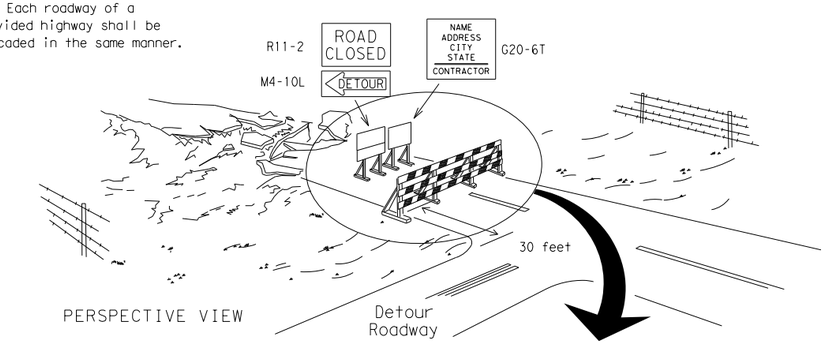
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



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

TYPICAL PANEL DETAIL
FOR SKID OR POST TYPE BARRICADES

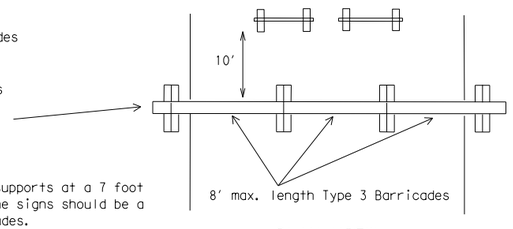
Each roadway of a divided highway shall be barricaded in the same manner.



PERSPECTIVE VIEW

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

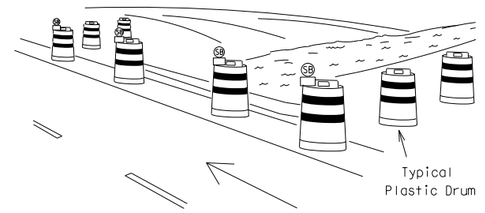
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

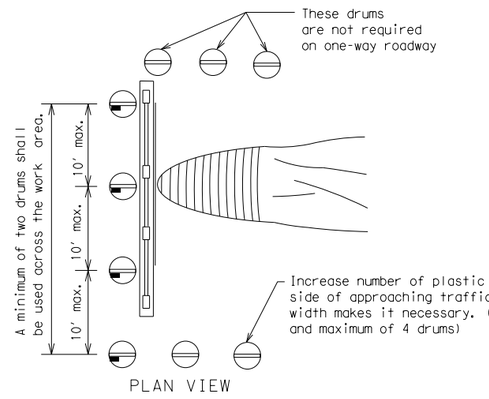
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

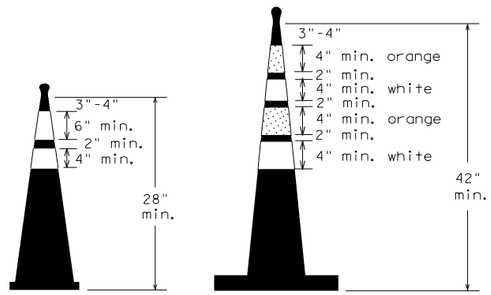
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder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



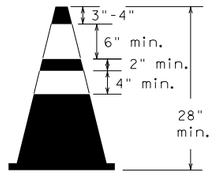
PLAN VIEW

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

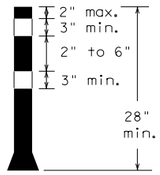
CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



Two-Piece cones



One-Piece cones

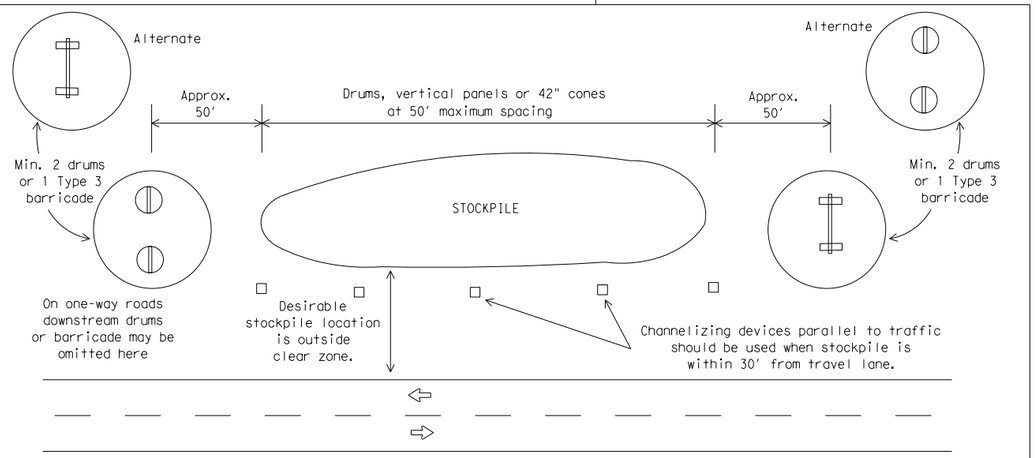


Tubular Marker

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

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

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



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

SHEET 10 OF 12

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	WFS	WICHITA		18

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WORK ZONE PAVEMENT MARKINGS

GENERAL

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

RAISED PAVEMENT MARKERS

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

PREFABRICATED PAVEMENT MARKINGS

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

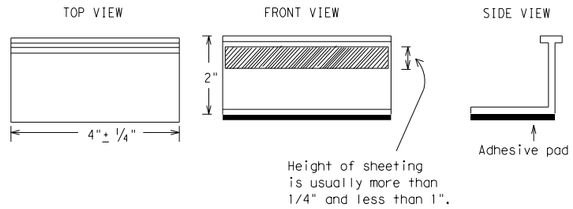
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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

REMOVAL OF PAVEMENT MARKINGS

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

Temporary Flexible-Reflective Roadway Marker Tabs



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

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

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

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

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

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

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

Texas Department of Transportation — Traffic Safety Division Standard

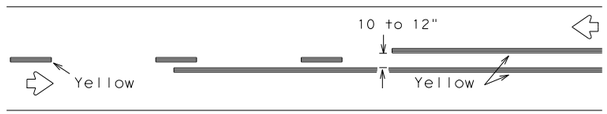
BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-21

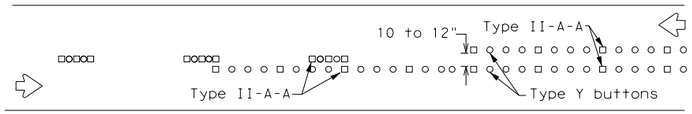
FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-98 9-07 5-21 1-02 7-13 11-02 8-14	0043	17	035	BU 287J
	DIST	COUNTY		SHEET NO.
	WFS	WICHITA		19

DATE: 12/13/2023 9:51:43 AM
FILE: bc-21.dgn

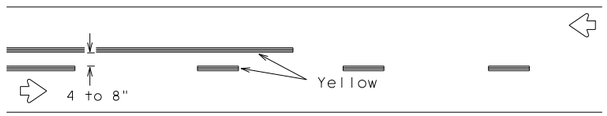
PAVEMENT MARKING PATTERNS



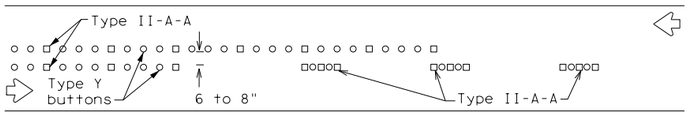
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



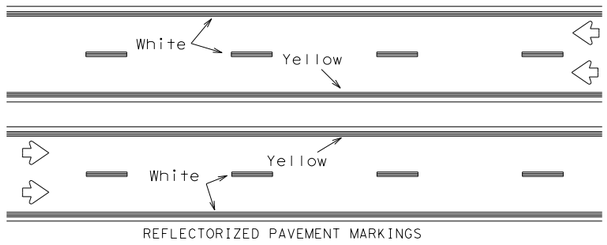
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



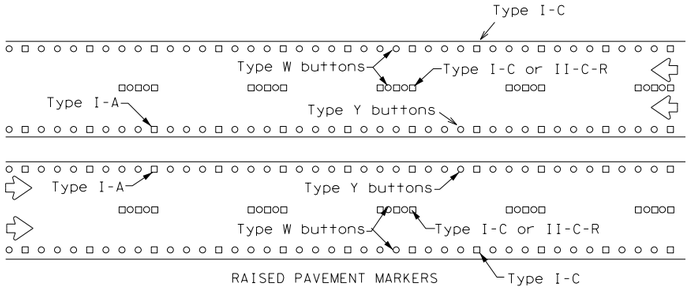
RAISED PAVEMENT MARKERS - PATTERN B

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



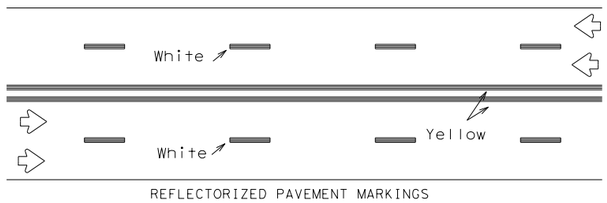
REFLECTORIZED PAVEMENT MARKINGS



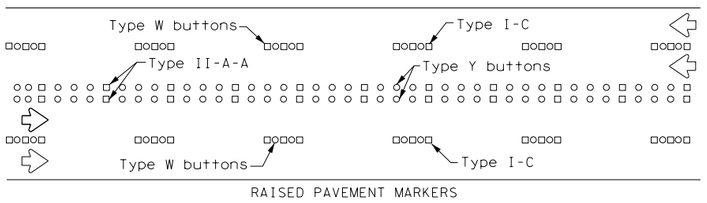
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



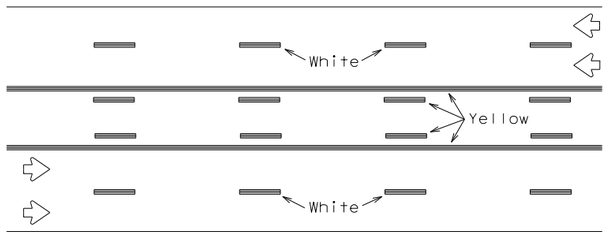
REFLECTORIZED PAVEMENT MARKINGS



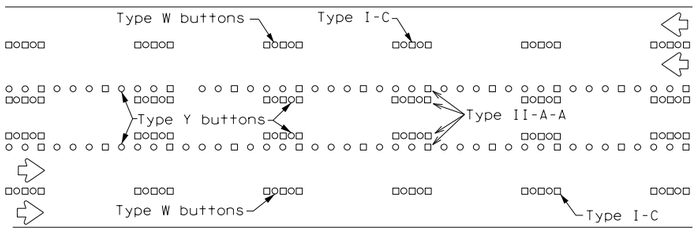
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

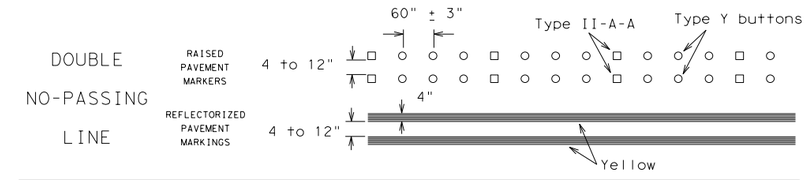
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

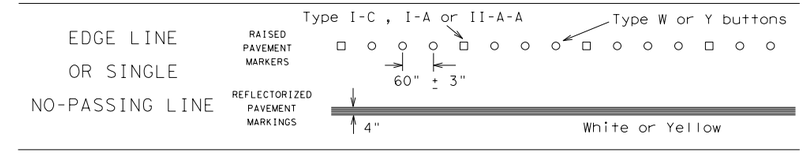
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

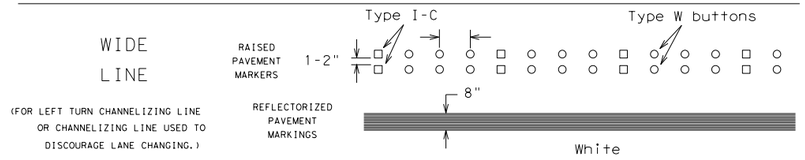


EDGE LINE OR SINGLE NO-PASSING LINE



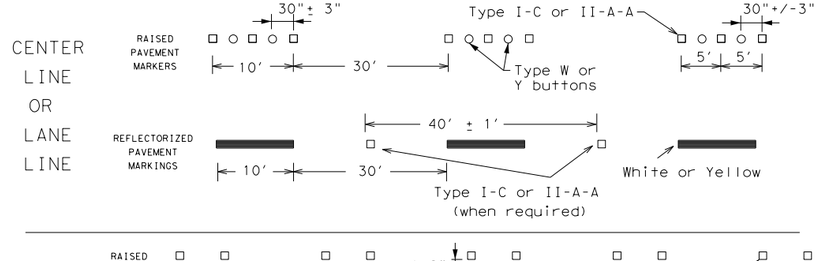
WIDE LINE

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

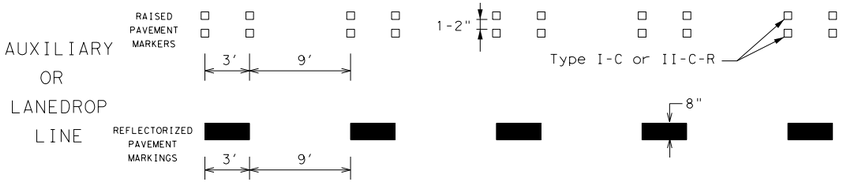


BROKEN LINES

CENTER LINE OR LANE LINE

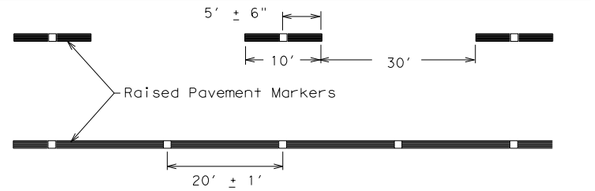


AUXILIARY OR LANEDROP LINE



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
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REVISIONS 1-97 9-07 5-21	0043	17	035	BU 287J
2-98 7-13	DIST	COUNTY		SHEET NO.
11-02 8-14	WFS	WICHITA		20

106

DATE: 12/13/2023 9:51:43 AM
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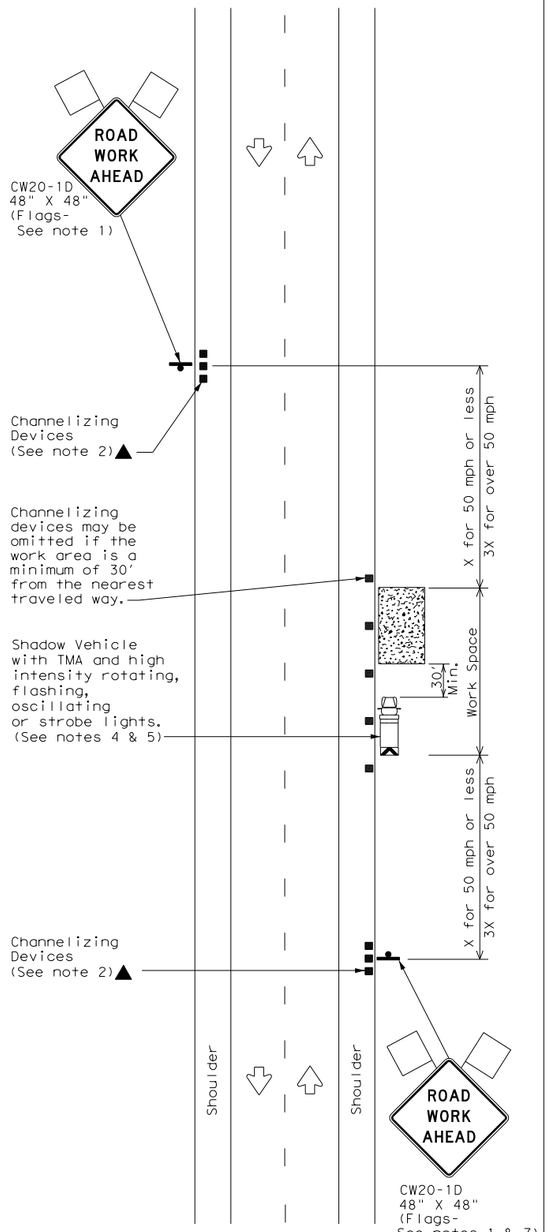
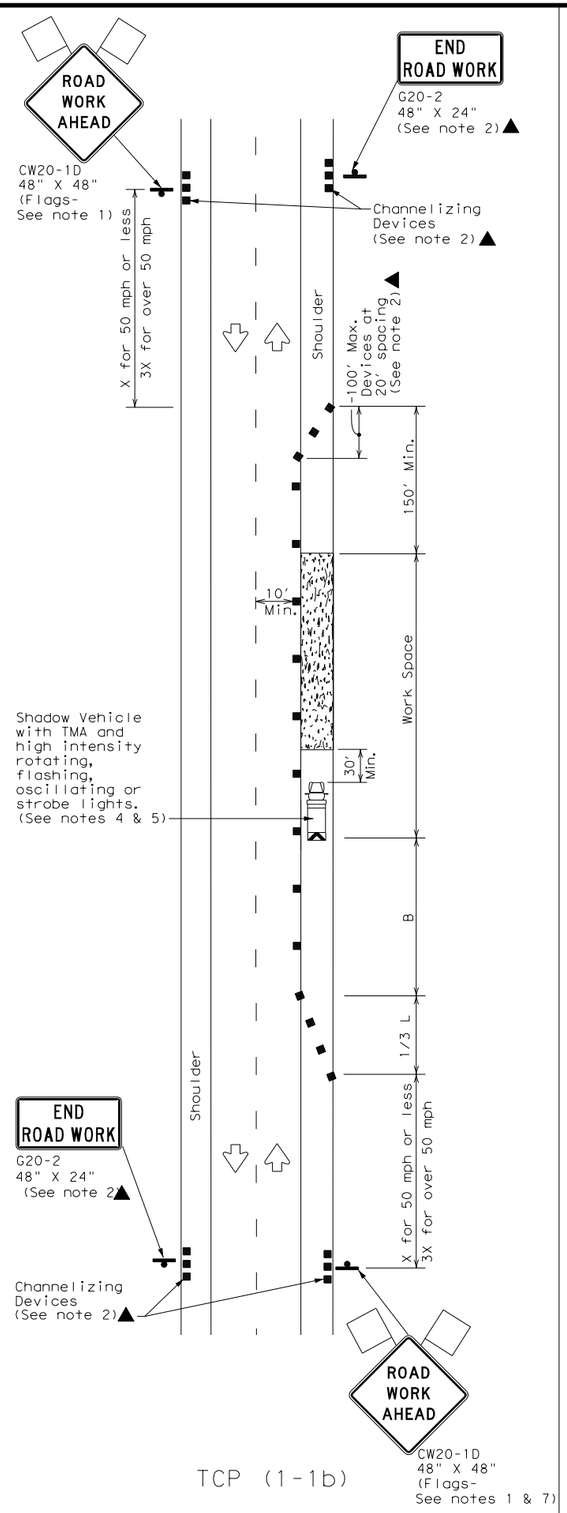


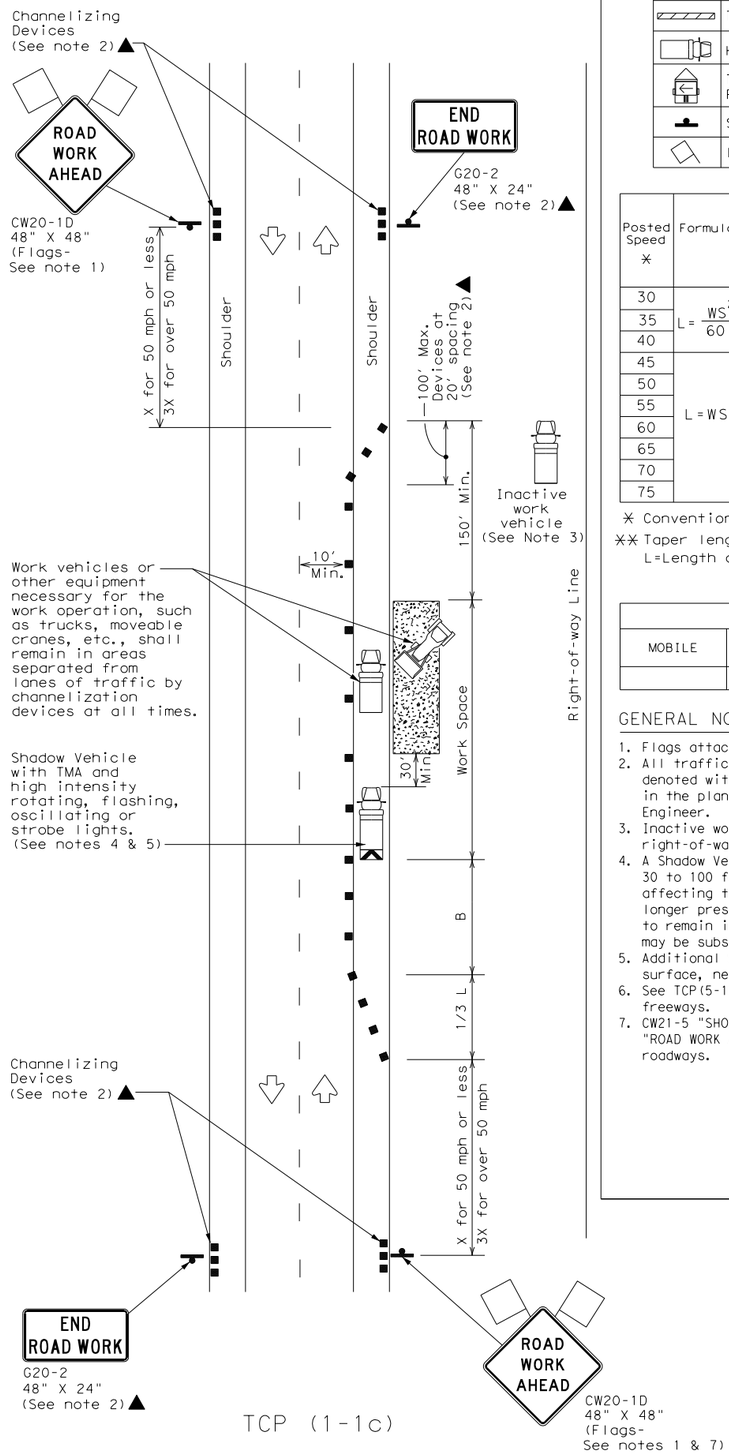
TCP (1-1a)

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	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

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

* Conventional Roads Only

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

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

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated 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:
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REVISIONS	0043	17	035	BU 287J
2-94 4-98	DIST	COUNTY		SHEET NO.
8-95 2-12	WFS	WICHITA		21
1-97 2-18				

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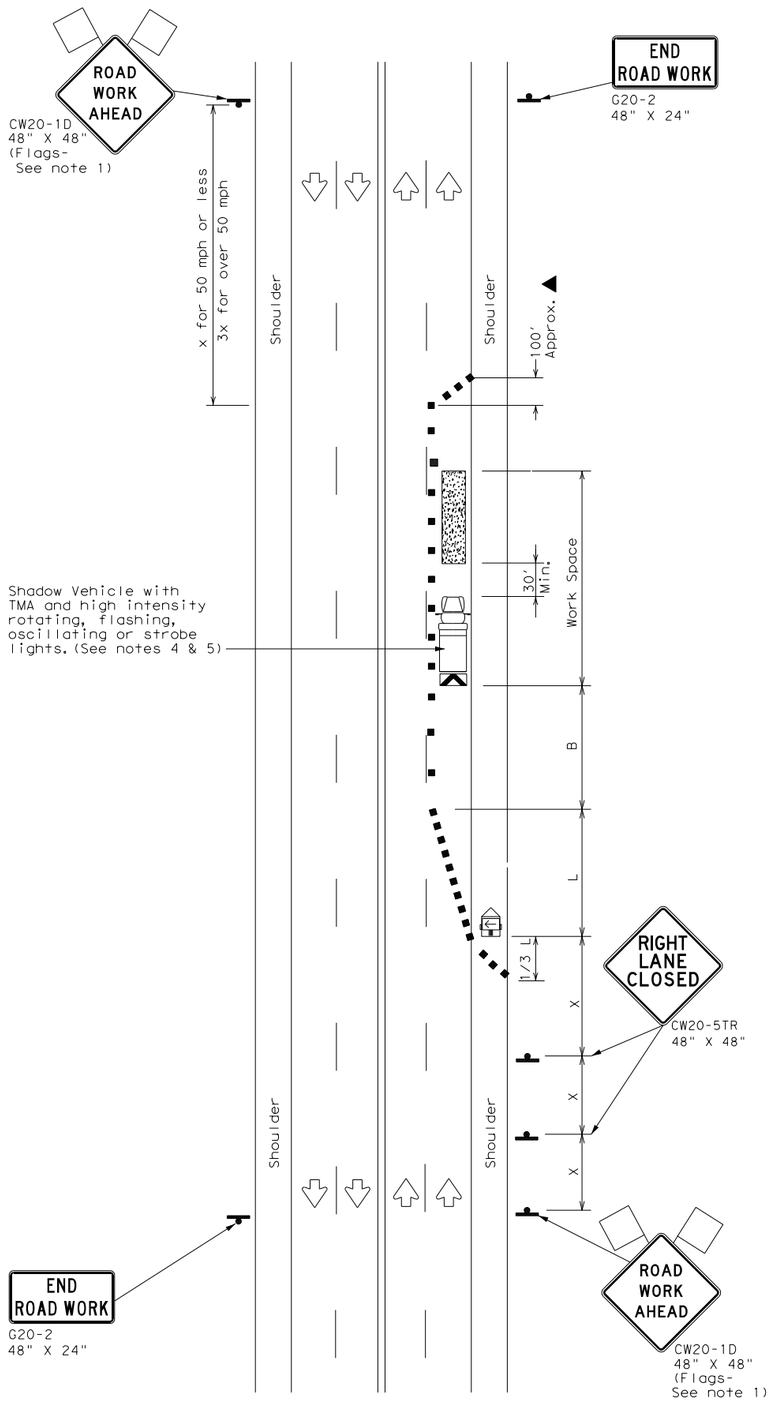
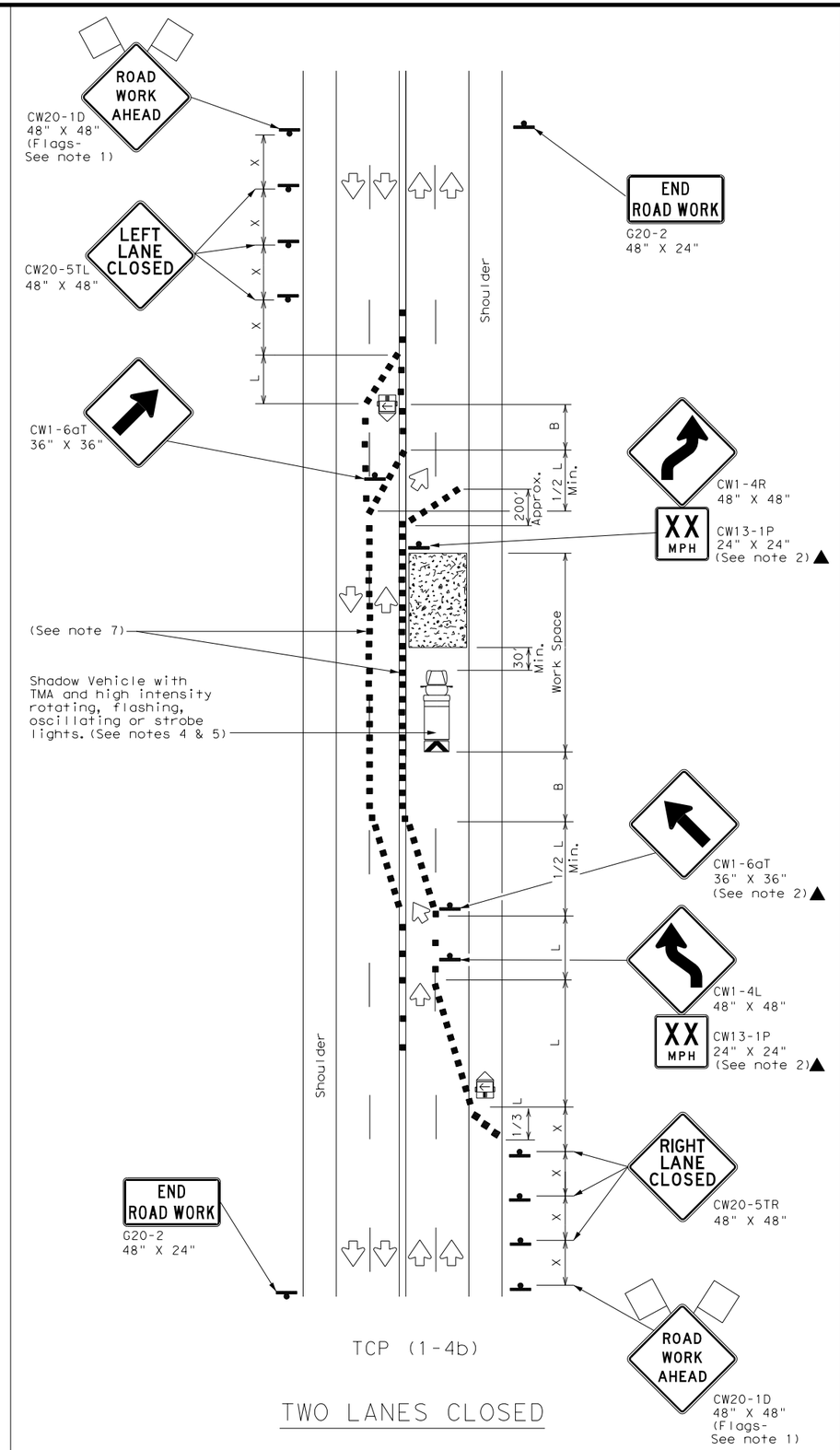


TCP (1-4a)

ONE LANE CLOSED



TCP (1-4b)

TWO LANES CLOSED

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

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

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

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

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. The CW20-1D "ROAD WORK AHEAD" sign may be repeated if the visibility of the work zone is less than 1500 feet.
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.

TCP (1-4a)

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

TCP (1-4b)

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

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN LANE CLOSURES ON MULTILANE CONVENTIONAL ROADS

TCP(1-4)-18

FILE: tcp1-4-18.dgn	DN:	CK:	DW:	CK:
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REVISIONS 2-94 4-98 8-95 2-12 1-97 2-18	0043	17	035	BU 287J
	DIST	COUNTY		SHEET NO.
	WFS	WICHITA		22

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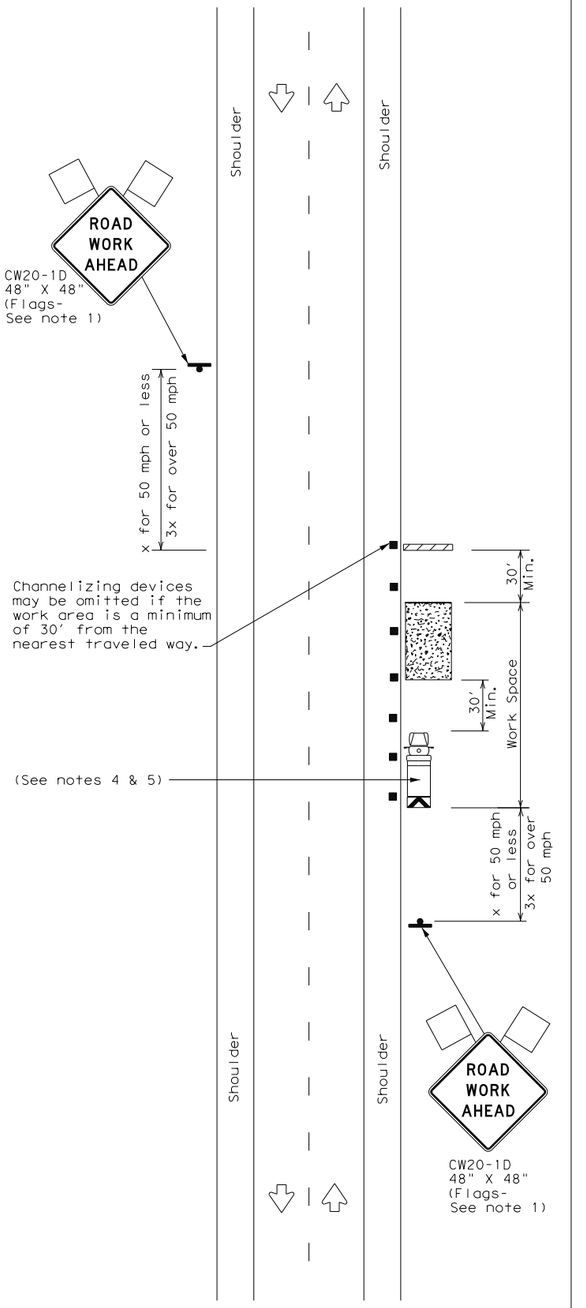
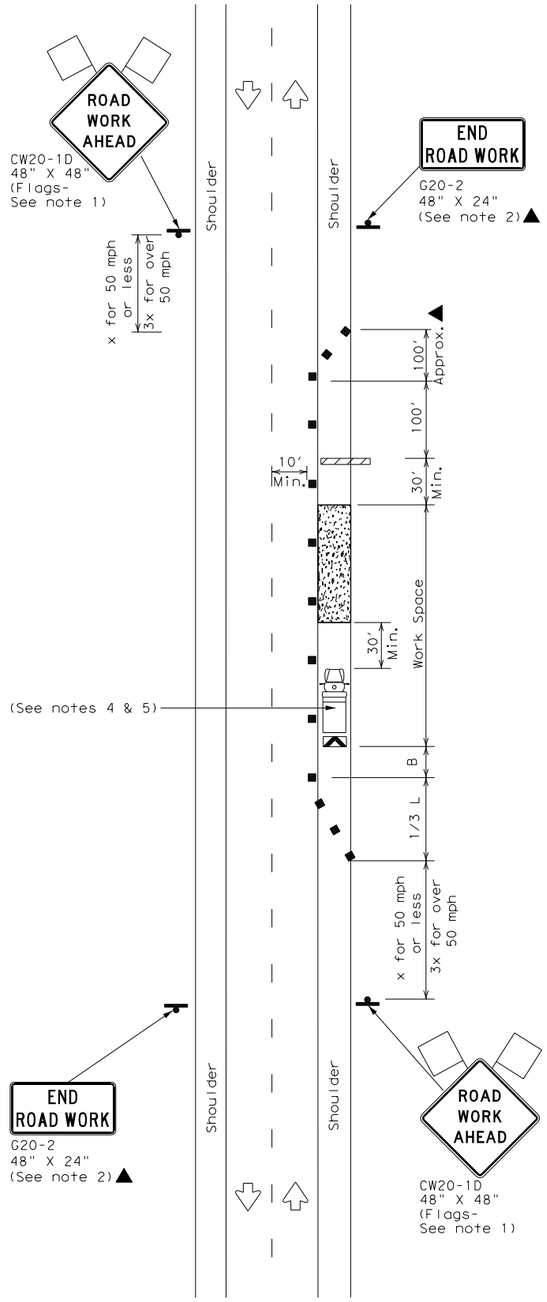


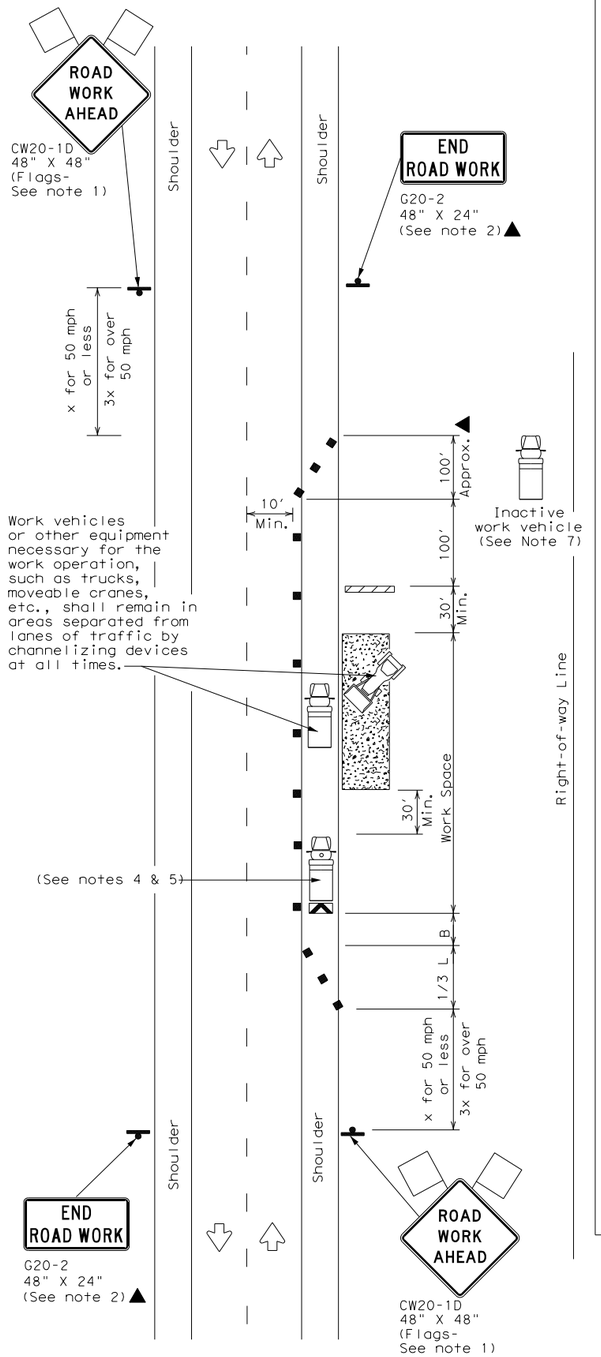
TCP (2-1a)

WORK SPACE NEAR SHOULDER
Conventional Roads



TCP (2-1b)

WORK SPACE ON SHOULDER
Conventional Roads



TCP (2-1c)

WORK VEHICLES ON SHOULDER
Conventional Roads

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

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

* Conventional Roads Only

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

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

GENERAL NOTES

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

Texas Department of Transportation — Traffic Operations Division Standard

TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK

TCP(2-1)-18

FILE: tcp2-1-18.dgn	DN:	CK:	DW:	CK:
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REVISIONS	0043	17	035	BU 287J
2-94 4-98	DIST	COUNTY		SHEET NO.
8-95 2-12	WFS	WICHITA		23
1-97 2-18				

161

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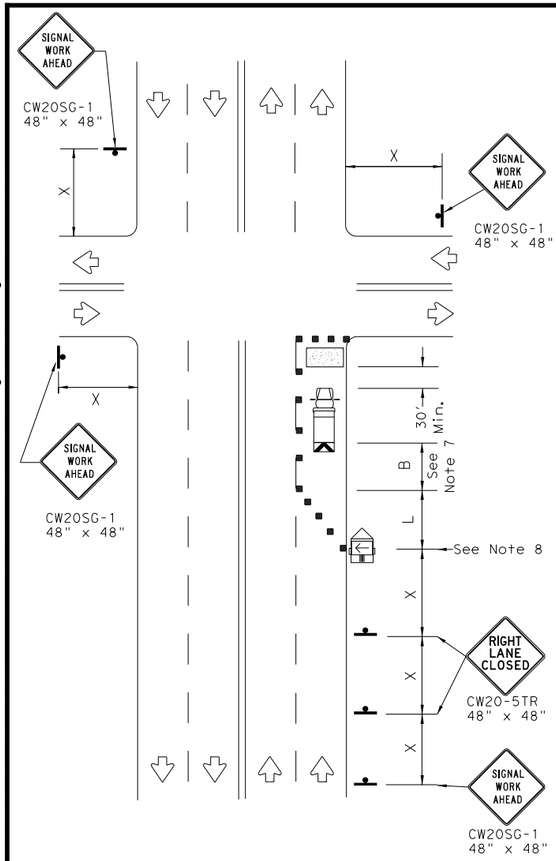

NEAR SIDE LANE CLOSURE

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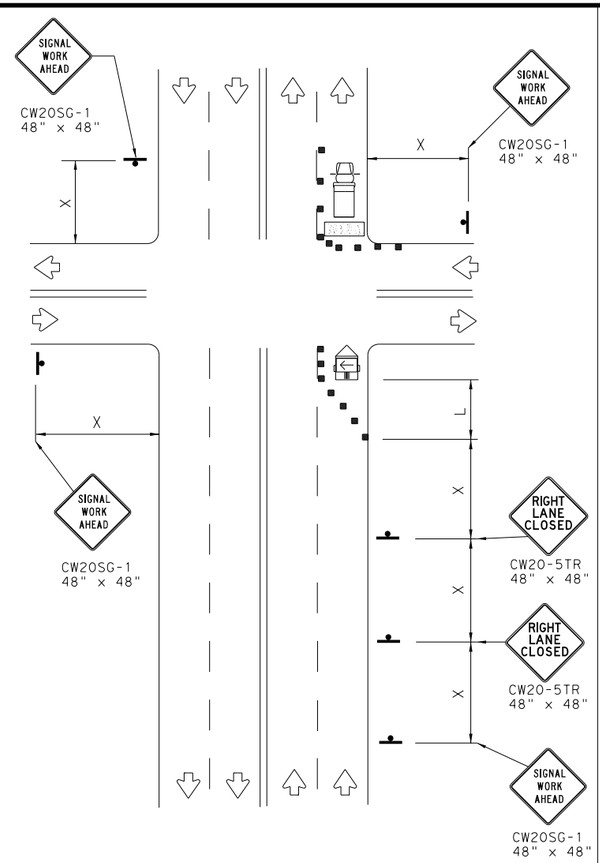

FAR SIDE RIGHT LANE CLOSURE

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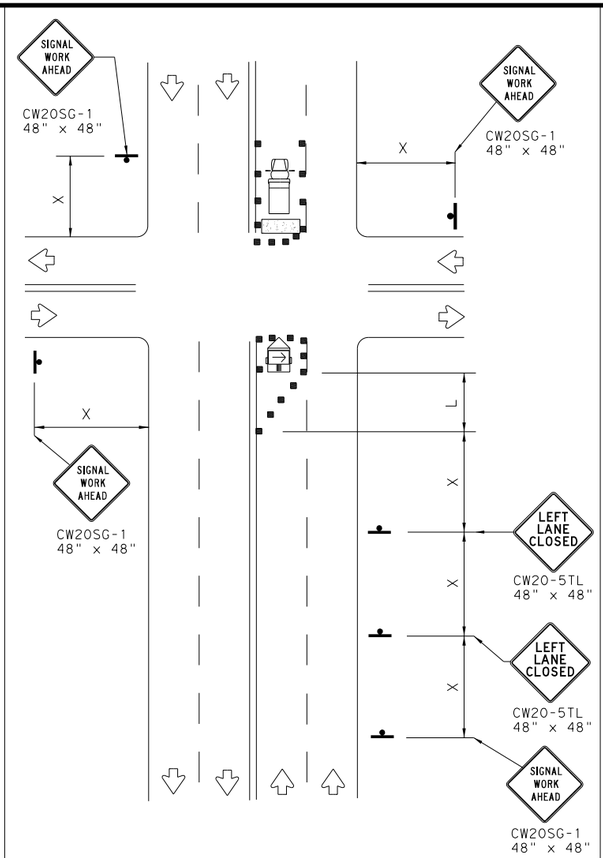
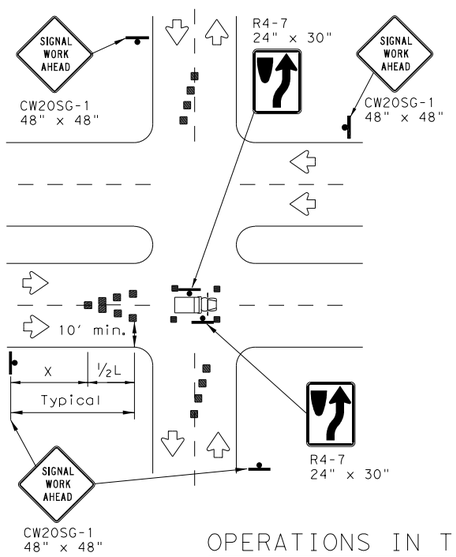
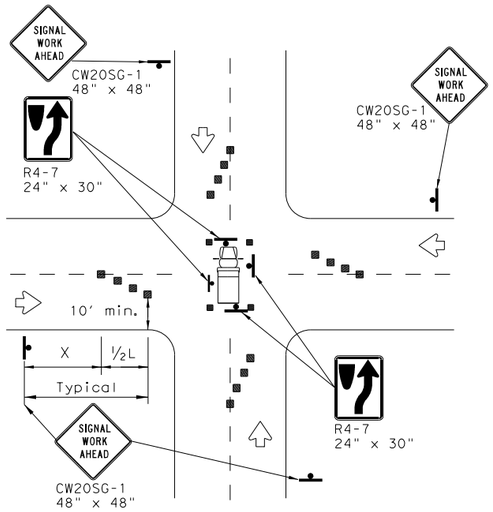


FAR SIDE LEFT LANE CLOSURE

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

FILE: wzbts-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT April 1992	CONT	SECT	JOB	HIGHWAY
REVISIONS	0043	17	035	BU 287J
2-98 10-99 7-13	DIST	COUNTY		SHEET NO.
4-98 3-03	WFS	WICHITA		24

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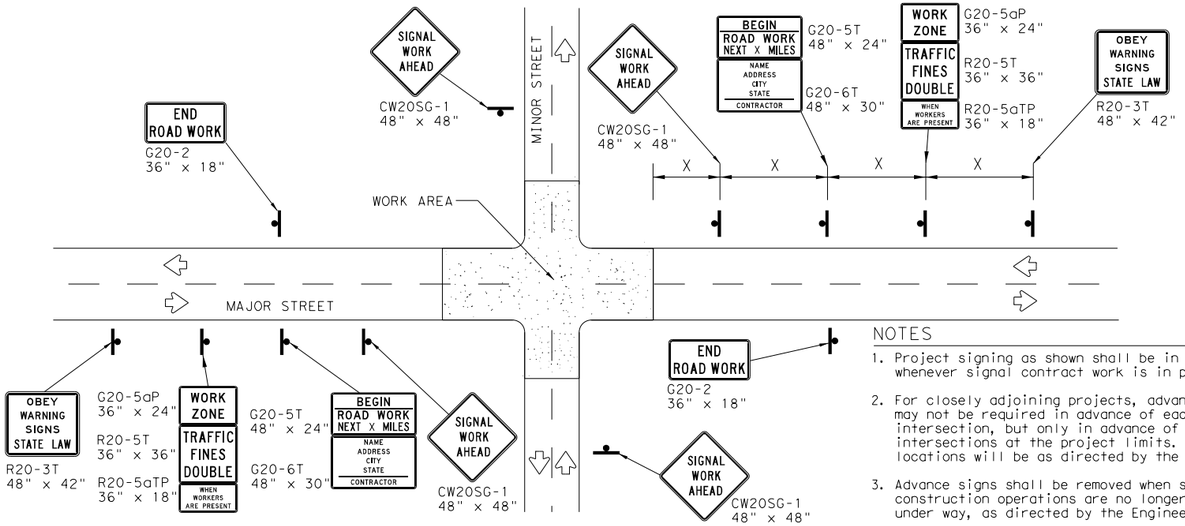


TYPICAL ADVANCE SIGNAL PROJECT SIGNING

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

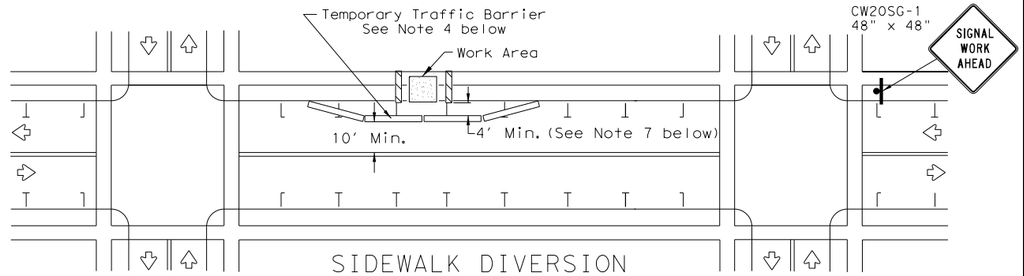
1. Weights used to keep signs from turning over should be sandbags filled with dry, cohesionless material.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects will not be permitted for use as sign support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

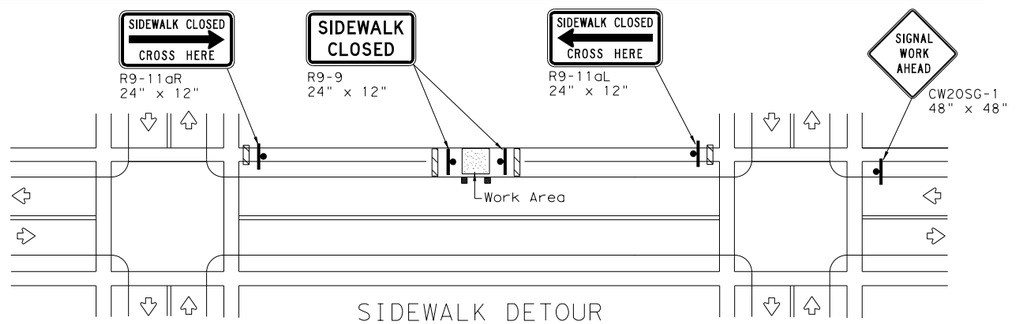
DEPARTMENTAL MATERIAL SPECIFICATIONS	
SIGN FACE MATERIALS	DMS-8300
FLEXIBLE ROLL-UP REFLECTIVE SIGNS	DMS-8310

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

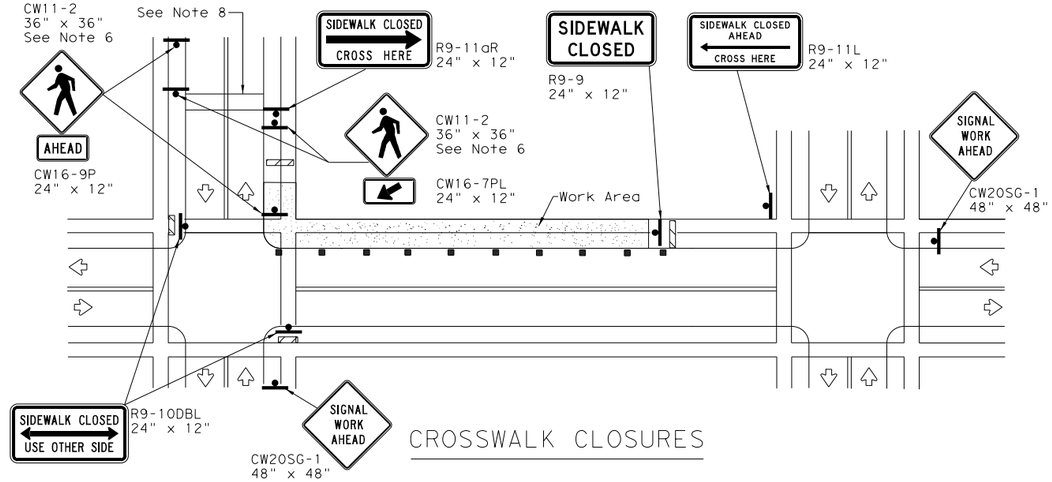
Only pre-qualified products shall be used. A copy of the "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be found at the following web address:
http://www.txdot.gov/txdot_library/publications/construction.htm



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

FILE: wzbts-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	0043	17	035	BU 287J
2-98 10-99 7-13	DIST	COUNTY		SHEET NO.
4-98 3-03	WFS	WICHITA		25

DATE: 12/13/2023 9:52:29 AM
FILE: wzbts-13.dgn

100% PLANS SUBMITTAL

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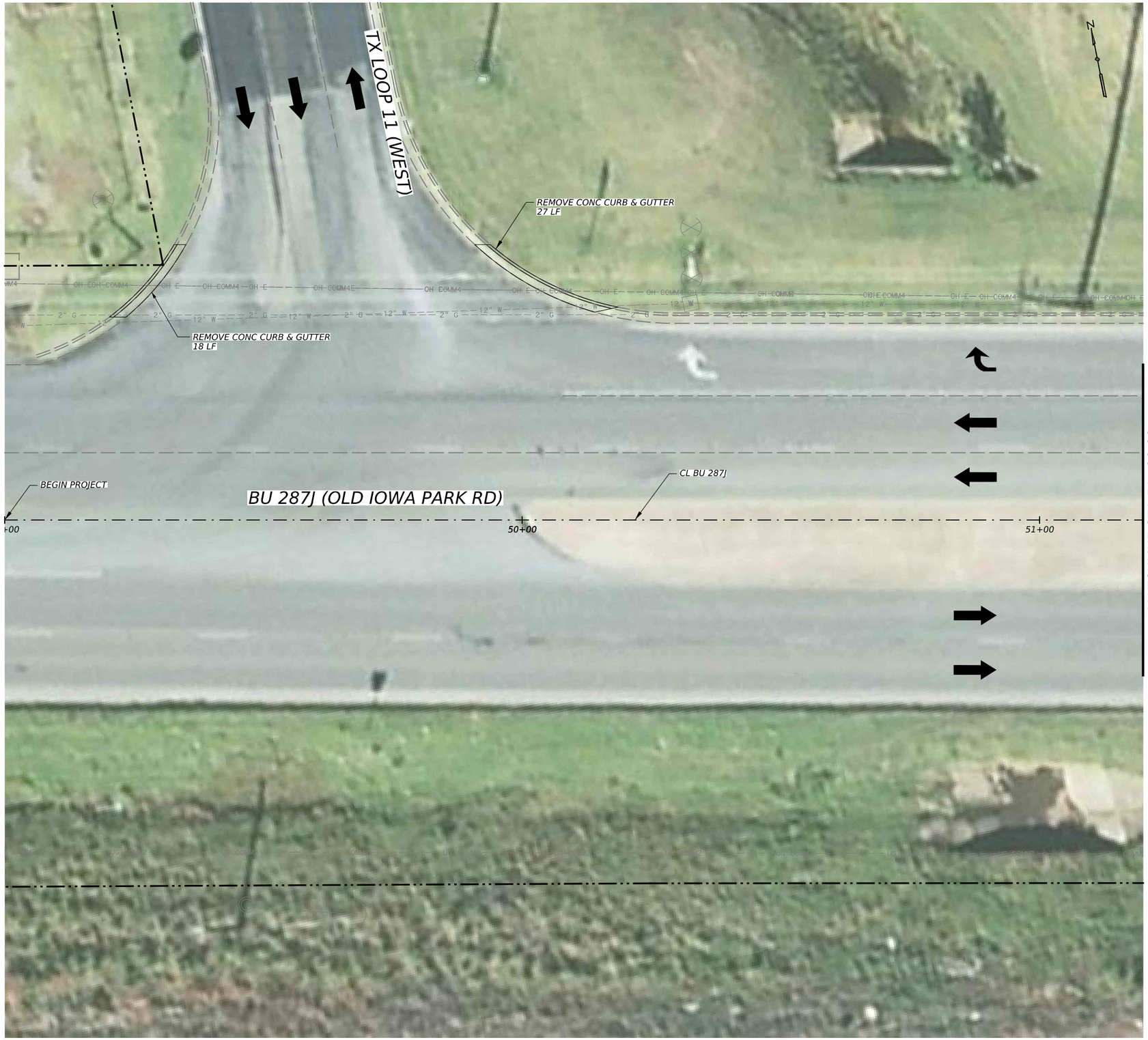

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
- REMOVE SIDEWALK OR RAMP
- REMOVE DRIVEWAY
- GUARDRAIL
- PEDESTRIAN RAIL

0 10 20 30 40

SCALE IN FEET

NO.	DATE	REVISION	APPR BY

STATE OF TEXAS
RYAN A. WHITNEY
130723
LICENSED
PROFESSIONAL ENGINEER

1/30/2024

HDR Engineering, Inc
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
BEGIN TO STA 51+20.00

SHEET 1 OF 34

CONT	SECT	JOB	HIGHWAY
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DIST	COUNTY		SHEET NO.
WFS	WICHITA		26

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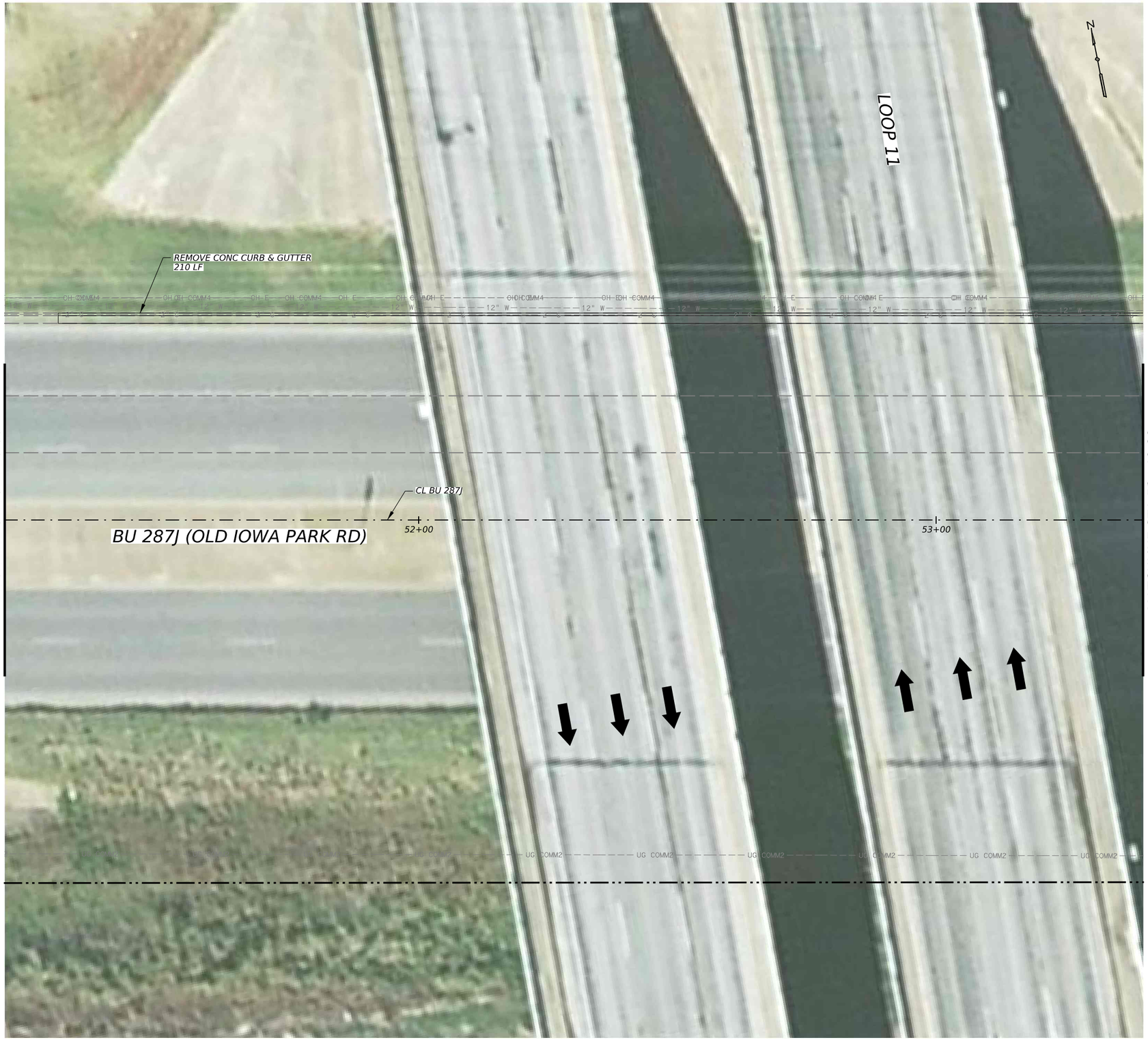

LEGEND

- *APPARENT ROW*
- *CENTERLINE*
- *APPARENT PERMANENT SIDEWALK EASEMENT*
- *PROPOSED TEMPORARY CONSTRUCTION LICENSE*
- *DIRECTION OF TRAVEL*
- *REMOVE SIDEWALK OR RAMP*
- *REMOVE DRIVEWAY*
- *GUARDRAIL*
- *PEDESTRIAN RAIL*

0 10 20 30 40

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Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 51+20.00 TO STA 53+40.00

SHEET 2 OF 34

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DIST	COUNTY		SHEET NO.
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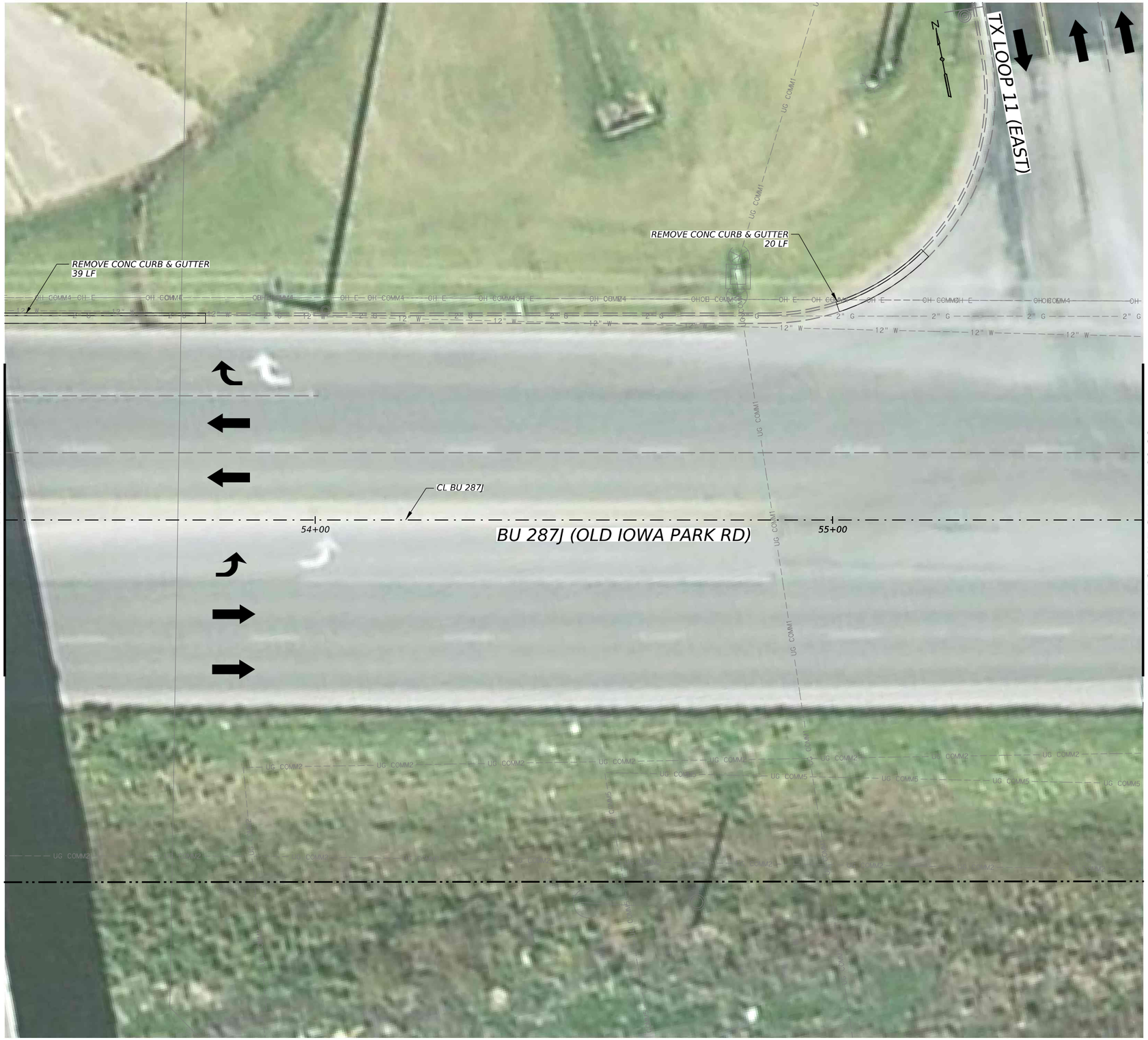

LEGEND

- *APPARENT ROW*
- *CENTERLINE*
- *APPARENT PERMANENT SIDEWALK EASEMENT*
- *PROPOSED TEMPORARY CONSTRUCTION LICENSE*
- *DIRECTION OF TRAVEL*
- *REMOVE SIDEWALK OR RAMP*
- *REMOVE DRIVEWAY*
- *GUARDRAIL*
- *PEDESTRIAN RAIL*

0 10 20 30 40

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WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 53+40.00 TO STA 55+60.00

SHEET 3 OF 34

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DIST	COUNTY		SHEET NO.
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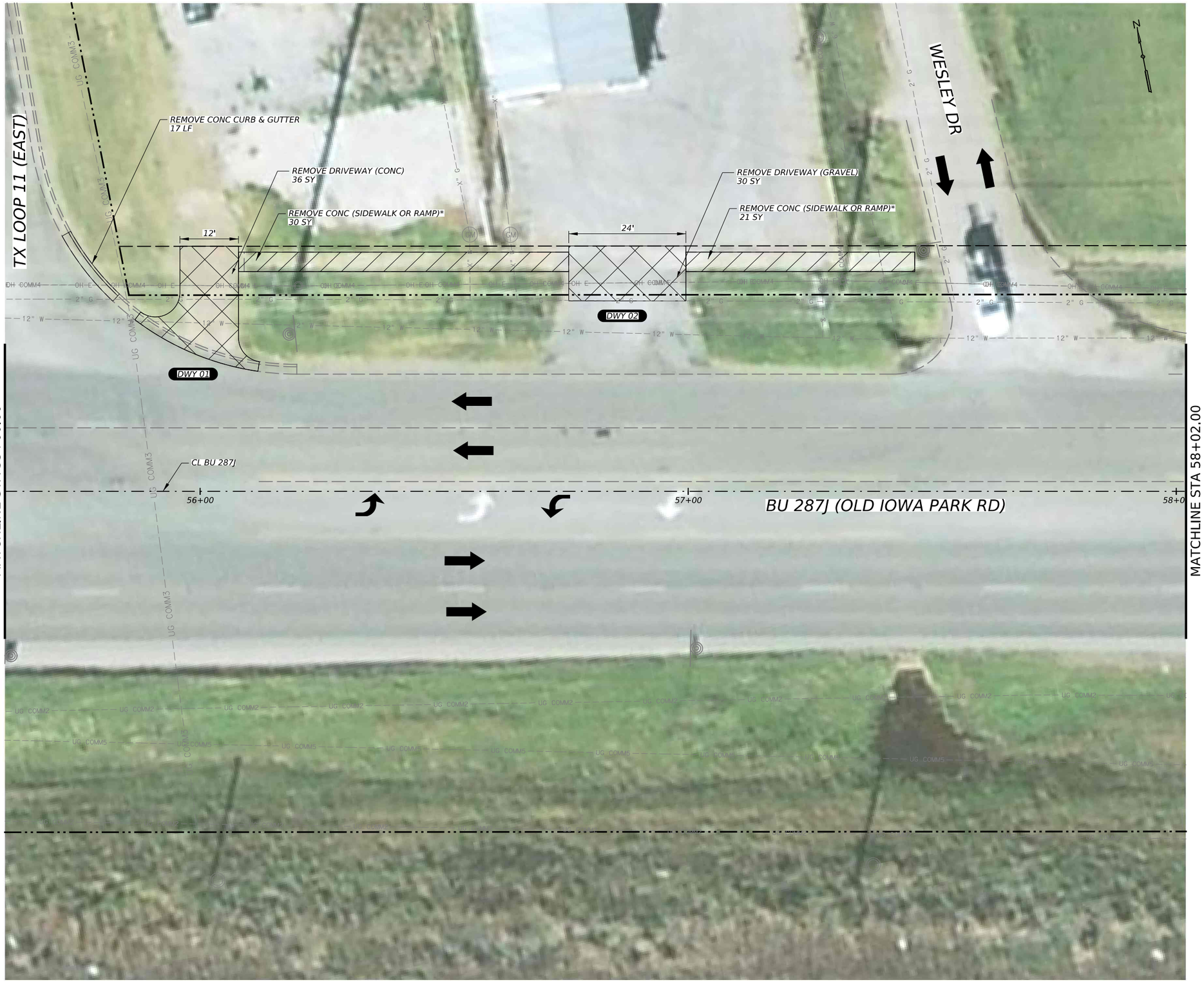

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
- REMOVE SIDEWALK OR RAMP
- REMOVE DRIVEWAY
- GUARDRAIL
- PEDESTRIAN RAIL

0 10 20 30 40

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REMOVAL PLAN
STA 55+60.00 TO STA 58+02.00

SHEET 4 OF 34

CONT	SECT	JOB	HIGHWAY
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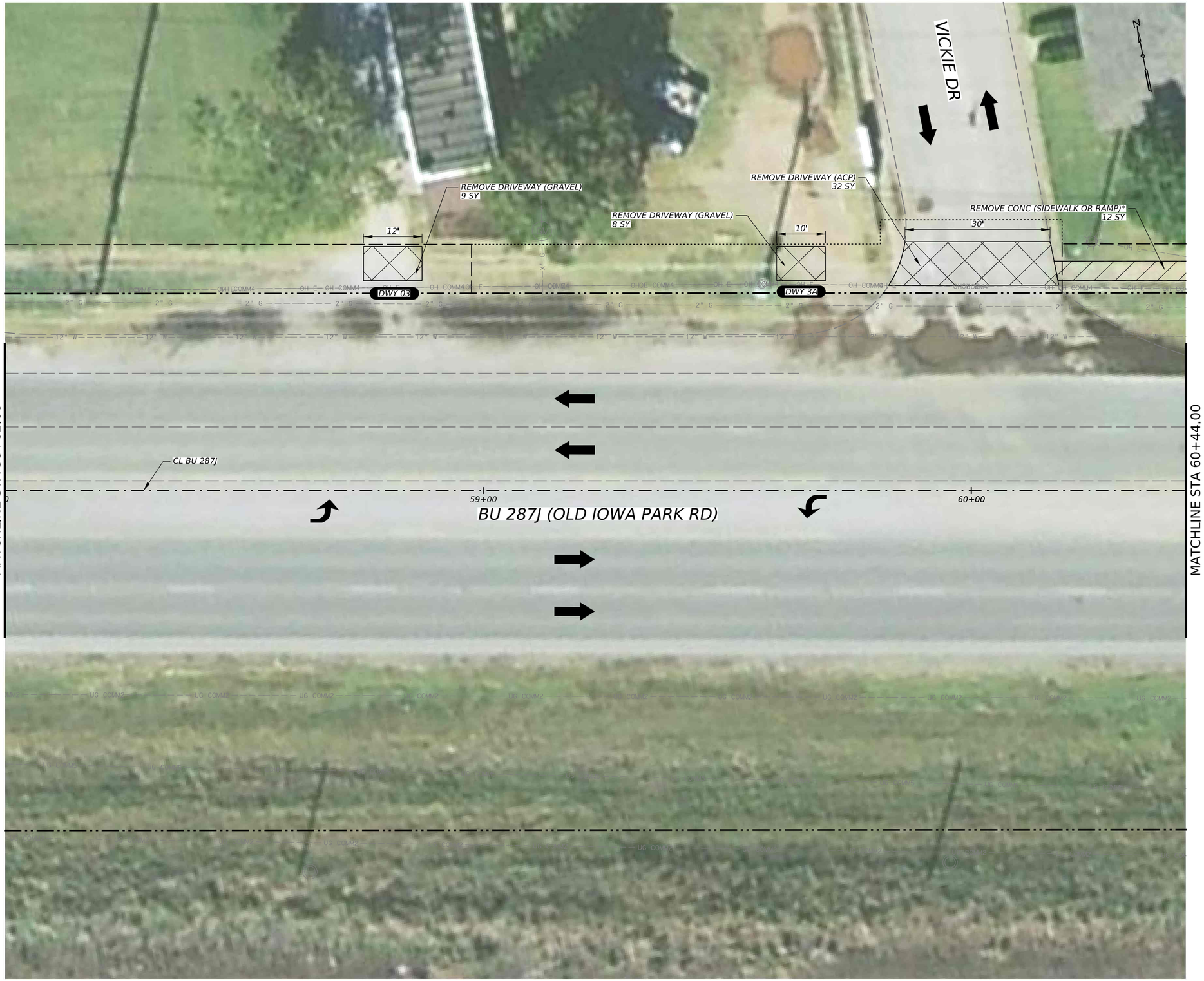

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
- REMOVE SIDEWALK OR RAMP
- REMOVE DRIVEWAY
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- PEDESTRIAN RAIL

0 10 20 30 40

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BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 58+02.00 TO STA 60+44.00

SHEET 5 OF 34

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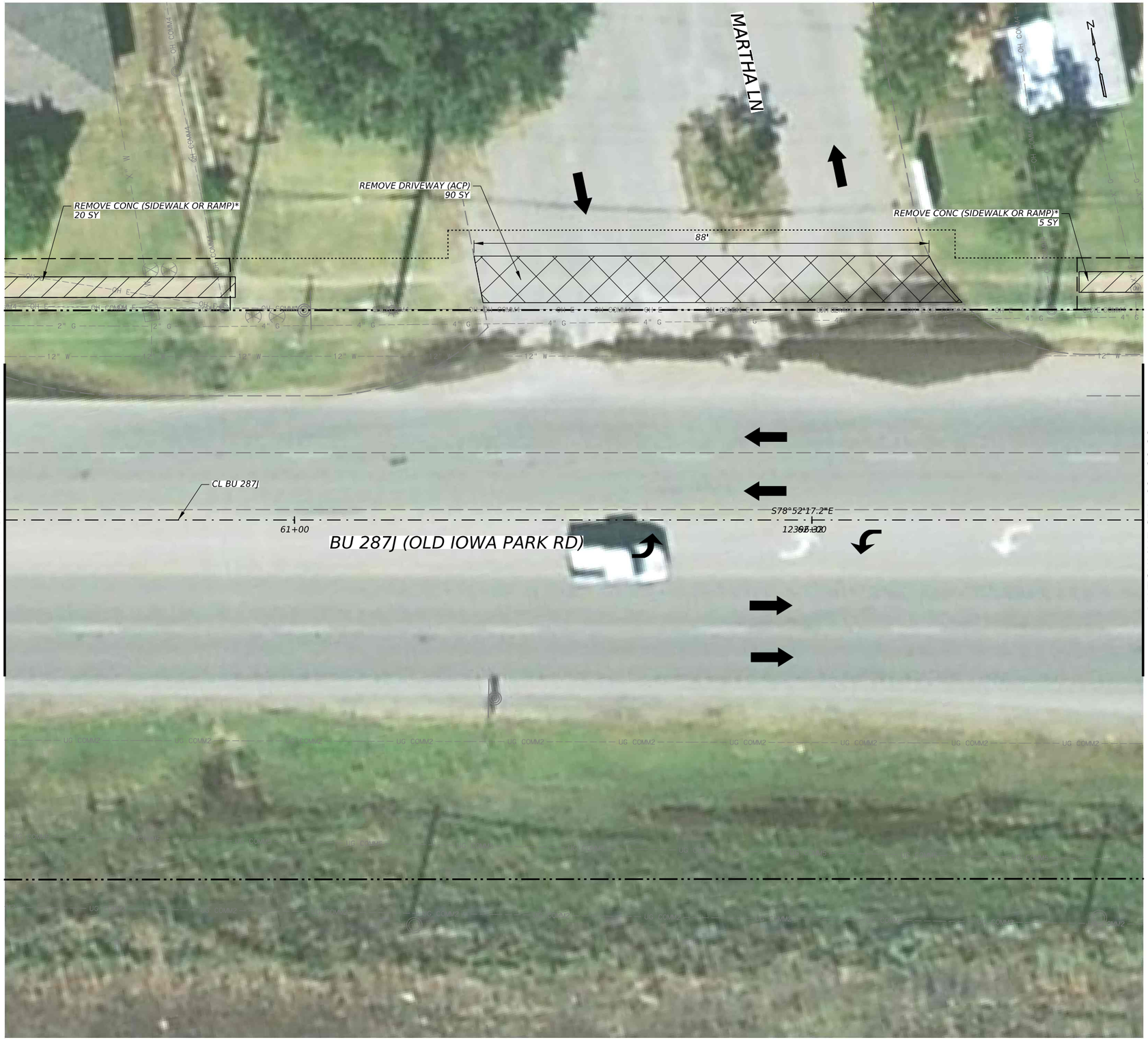

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
- REMOVE SIDEWALK OR RAMP
- REMOVE DRIVEWAY
- GUARDRAIL
- PEDESTRIAN RAIL

0 10 20 30 40
SCALE IN FEET

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Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 60+44.00 TO STA 62+64.00

SHEET 6 OF 34

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DIST	COUNTY		SHEET NO.
WFS	WICHITA		31

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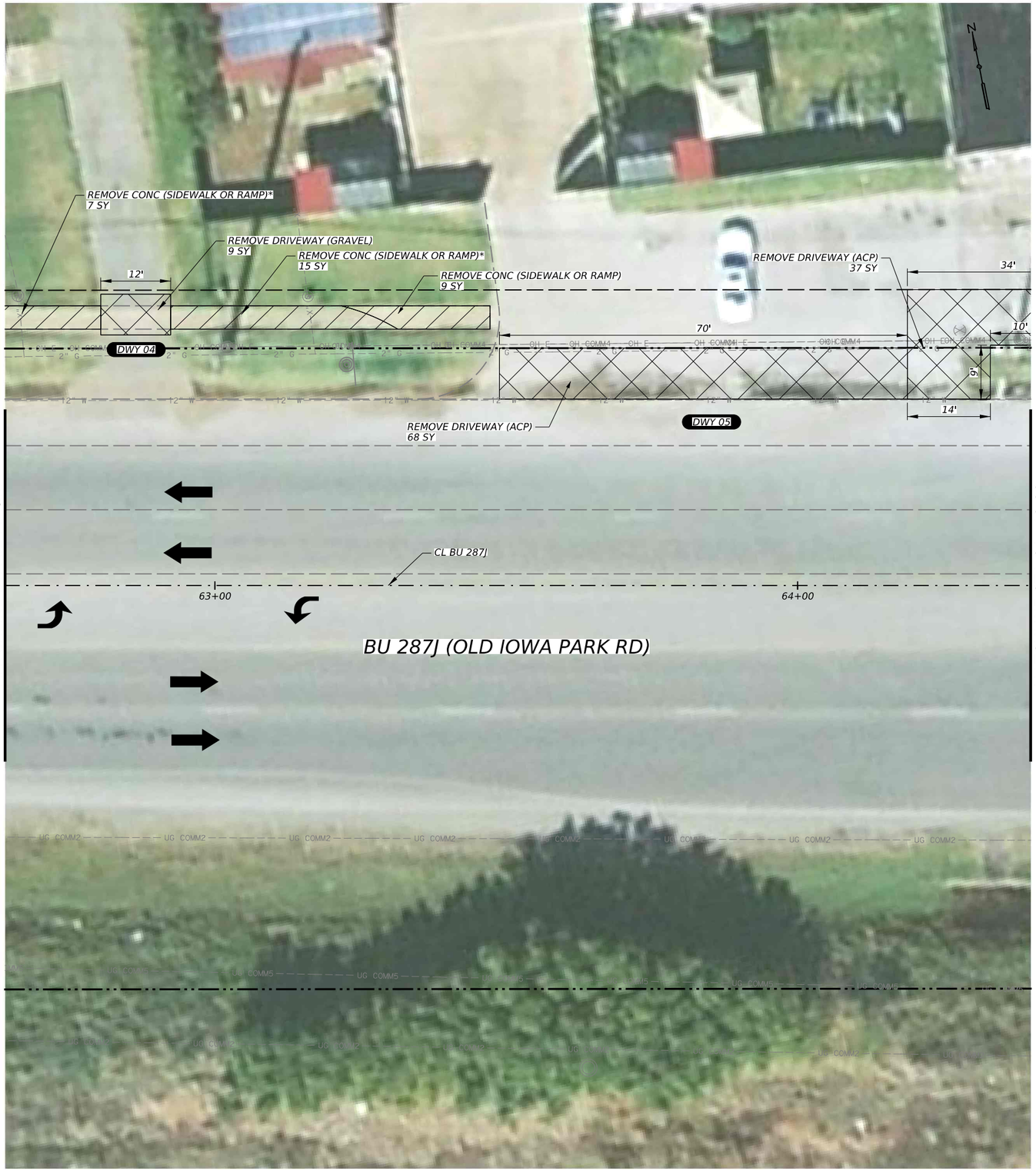

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
- REMOVE SIDEWALK OR RAMP
- REMOVE DRIVEWAY
- GUARDRAIL
- PEDESTRIAN RAIL

0 10 20 30 40

SCALE IN FEET

NO.	DATE	REVISION	APPR BY

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Texas Department of Transportation

WICHITA FALLS

BU 287J
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REMOVAL PLAN
STA 62+64.00 TO STA 64+40.00

SHEET 7 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		32

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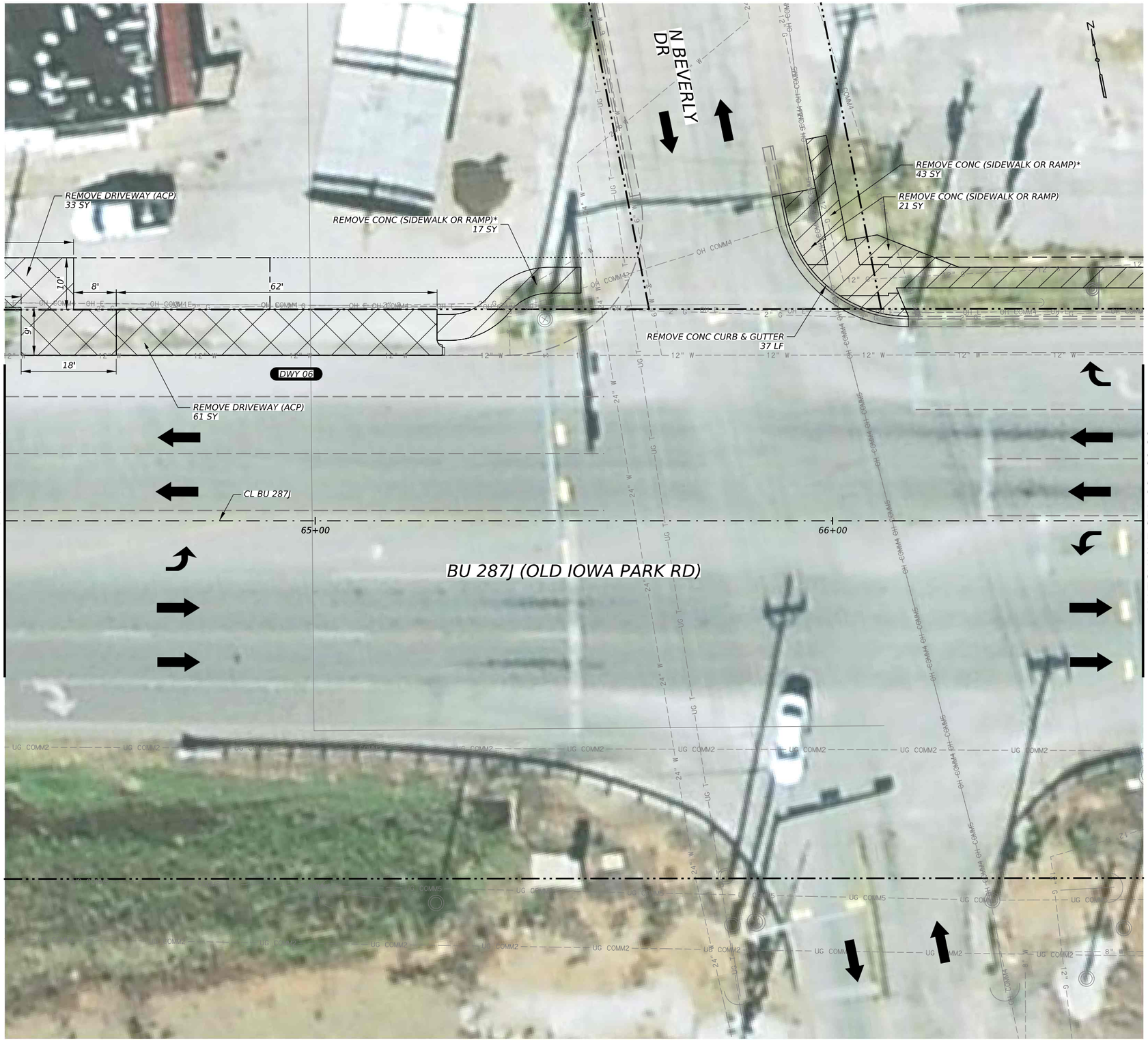

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
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0 10 20 30 40

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(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 64+40.00 TO STA 66+60.00

SHEET 8 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		33

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100% PLANS SUBMITTAL

DW:	RW
CK:	DR
DW:	RD
CK:	KM

LEGEND

- *APPARENT ROW*
- *CENTERLINE*
- *APPARENT PERMANENT SIDEWALK EASEMENT*
- *PROPOSED TEMPORARY CONSTRUCTION LICENSE*
- *DIRECTION OF TRAVEL*
- *REMOVE SIDEWALK OR RAMP*
- *REMOVE DRIVEWAY*
- *GUARDRAIL*
- *PEDESTRIAN RAIL*

0 10 20 30 40

SCALE IN FEET

NO.	DATE	REVISION	APPR BY

STATE OF TEXAS
RYAN A. WHITNEY
130723
LICENSED
PROFESSIONAL ENGINEER

1/30/2024

HDR Engineering, Inc
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 66+60.00 TO STA 68+80.00

SHEET 9 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		34

DATE: 1/30/2024 2:33:01 PM
FILE: WF_P1_RMV_09.dgn

100% PLANS SUBMITTAL

DW: RW	CK: DR	DW: RD	CK: KM

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
- REMOVE SIDEWALK OR RAMP
- REMOVE DRIVEWAY
- GUARDRAIL
- PEDESTRIAN RAIL

0 10 20 30 40

SCALE IN FEET

NO.	DATE	REVISION	APPR BY

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1/30/2024

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Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 68+80.00 TO STA 71+00.00

SHEET 10 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		35

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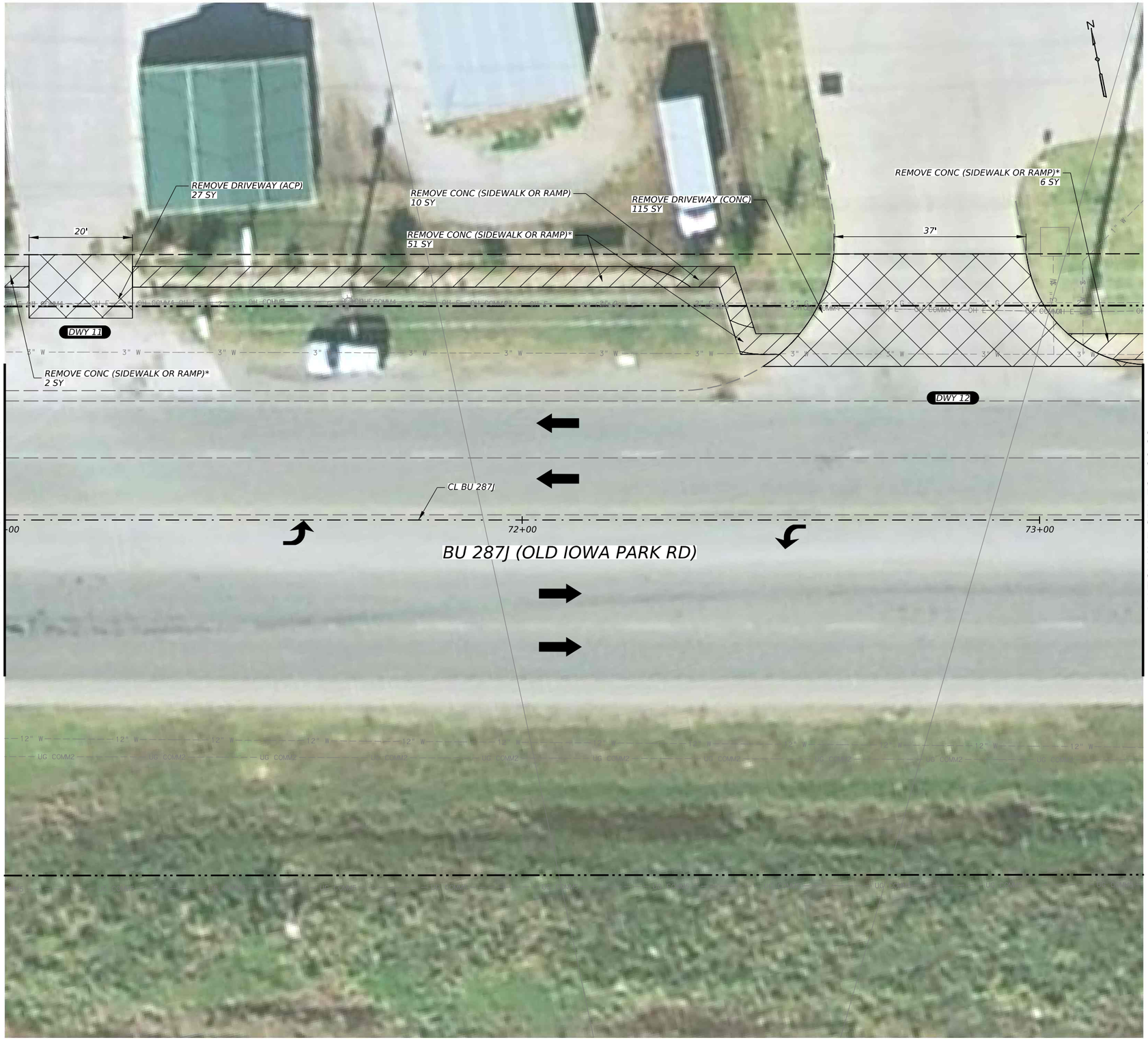

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
- REMOVE SIDEWALK OR RAMP
- REMOVE DRIVEWAY
- GUARDRAIL
- PEDESTRIAN RAIL

0 10 20 30 40

SCALE IN FEET

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Round Rock, Texas 78681

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 71+00.00 TO STA 73+20.00

SHEET 11 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		36

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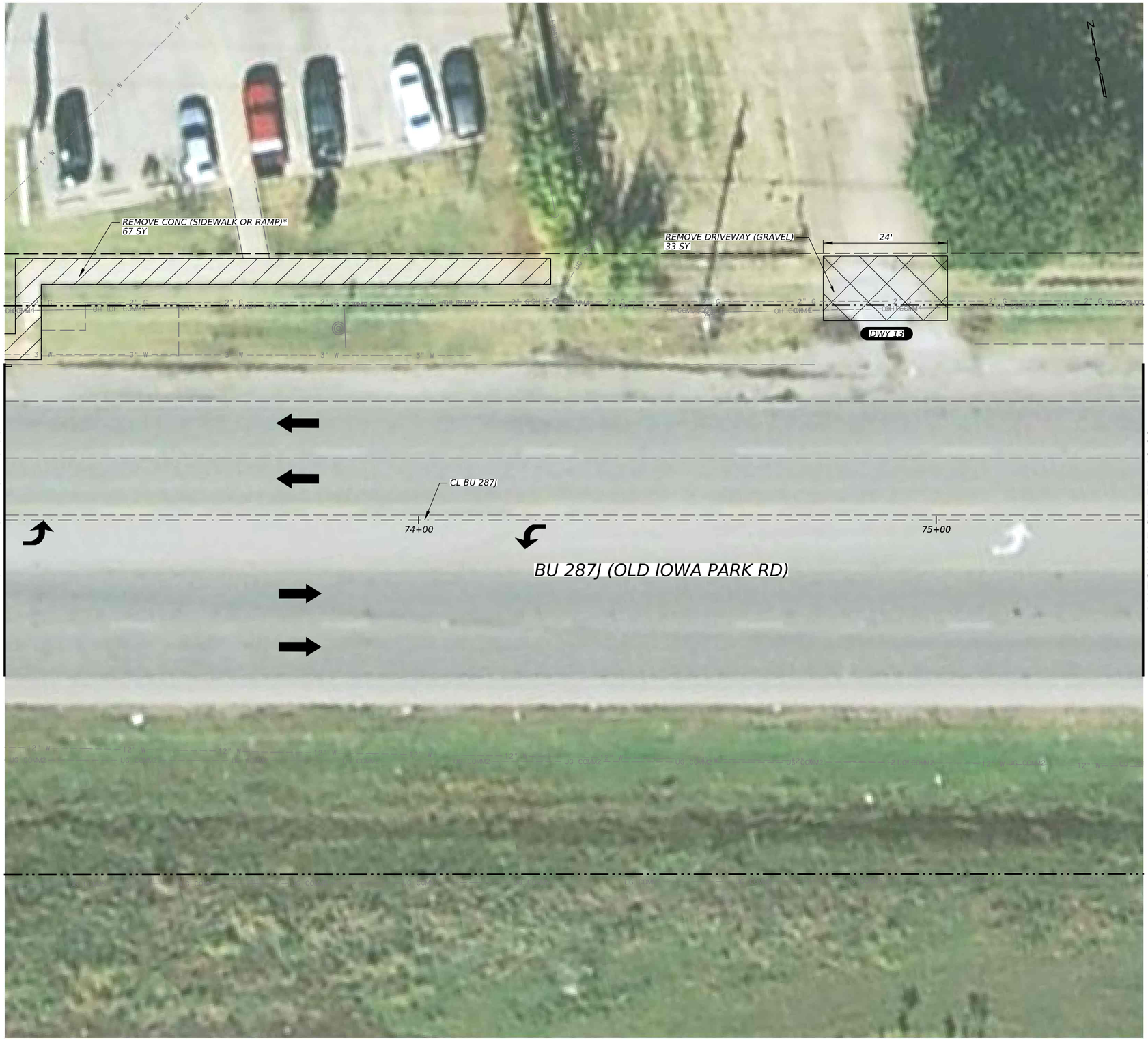
DR	RD



LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
- REMOVE SIDEWALK OR RAMP
- REMOVE DRIVEWAY
- GUARDRAIL
- PEDESTRIAN RAIL

0 10 20 30 40
SCALE IN FEET

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WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 73+20.00 TO STA 75+40.00

SHEET 12 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		37

DATE: 1/30/2024 2:33:34 PM
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100% PLANS SUBMITTAL

DW: RW	CK: DR	DW: RD	CK: KM

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
- REMOVE SIDEWALK OR RAMP
- REMOVE DRIVEWAY
- GUARDRAIL
- PEDESTRIAN RAIL

0 10 20 30 40

SCALE IN FEET

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WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 75+40.00 TO STA 77+60.00

SHEET 13 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		38

DATE: 1/30/2024 2:33:45 PM
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100% PLANS SUBMITTAL

DW: RW	CK: DR	DW: RD	CK: KM

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
- REMOVE SIDEWALK OR RAMP
- REMOVE DRIVEWAY
- GUARDRAIL
- PEDESTRIAN RAIL

0 10 20 30 40

SCALE IN FEET

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WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 77+60.00 TO STA 79+58.00

SHEET 14 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		39

DATE: 1/30/2024 2:33:56 PM
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100% PLANS SUBMITTAL

DW: RW	CK: DR	DW: RD	CK: KM

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
- REMOVE SIDEWALK OR RAMP
- REMOVE DRIVEWAY
- GUARDRAIL
- PEDESTRIAN RAIL

0 10 20 30 40

SCALE IN FEET

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WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 79+58.00 TO STA 82+00.00

SHEET 15 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		40

DATE: 1/30/2024 2:34:06 PM
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100% PLANS SUBMITTAL

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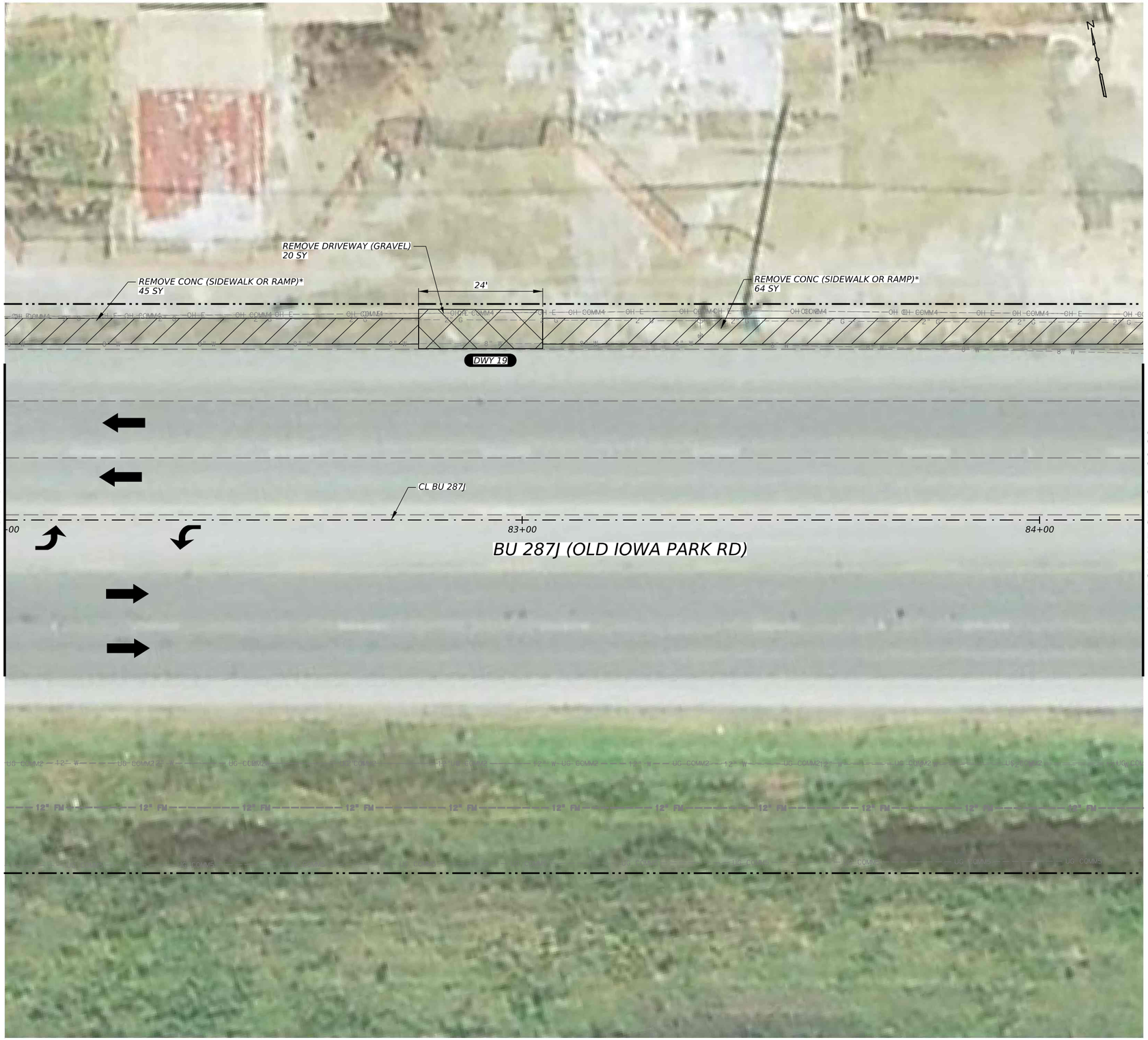

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
- REMOVE SIDEWALK OR RAMP
- REMOVE DRIVEWAY
- GUARDRAIL
- PEDESTRIAN RAIL

0 10 20 30 40
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WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 82+00.00 TO STA 84+20.00

SHEET 16 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		41

DATE: 1/30/2024 2:34:16 PM
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100% PLANS SUBMITTAL

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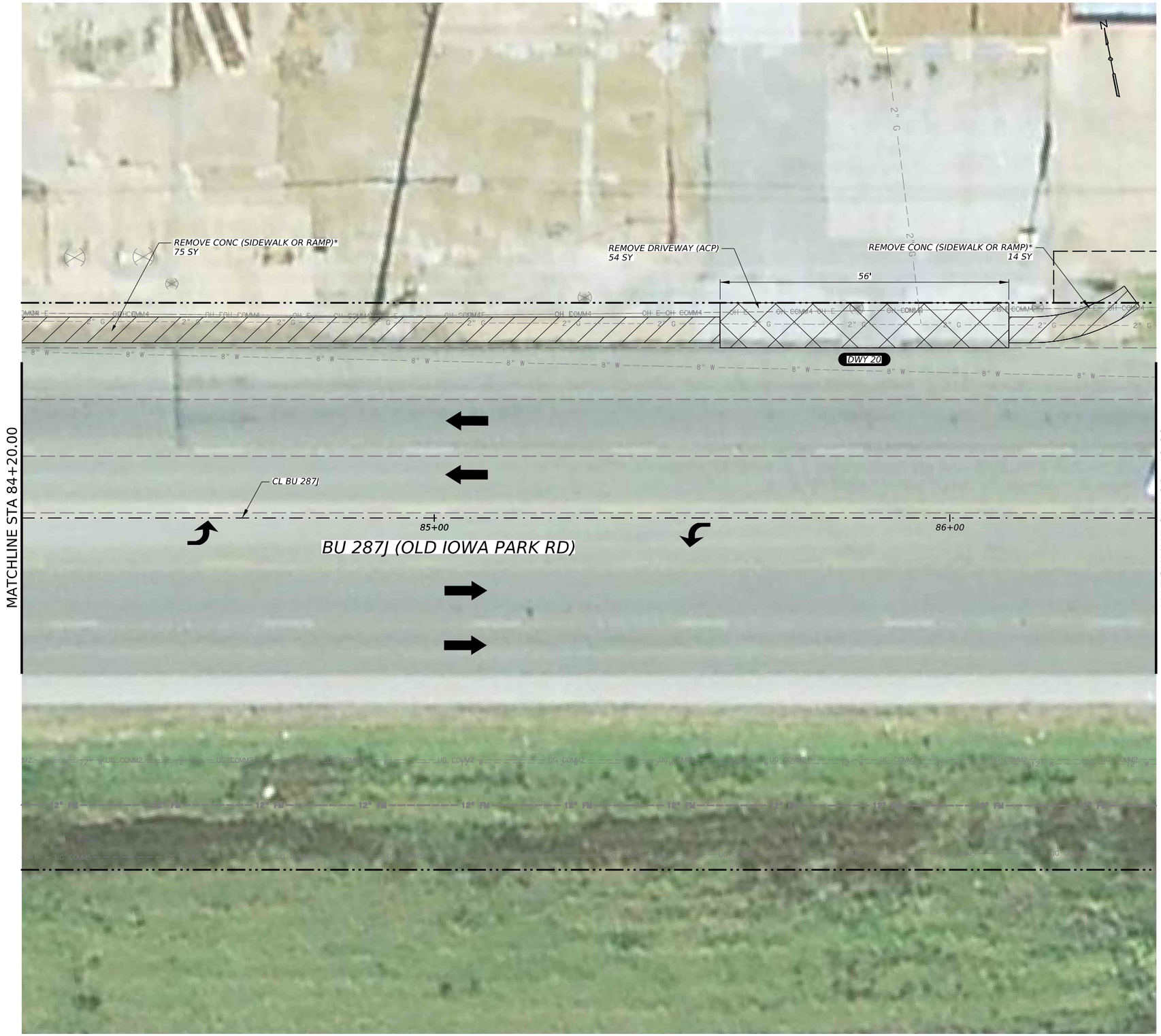

LEGEND

- *APPARENT ROW*
- *CENTERLINE*
- *APPARENT PERMANENT SIDEWALK EASEMENT*
- *PROPOSED TEMPORARY CONSTRUCTION LICENSE*
- *DIRECTION OF TRAVEL*
- *REMOVE SIDEWALK OR RAMP*
- *REMOVE DRIVEWAY*
- *GUARDRAIL*
- *PEDESTRIAN RAIL*

0 10 20 30 40

SCALE IN FEET

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WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 84+20.00 TO STA 86+40.00

SHEET 17 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		42

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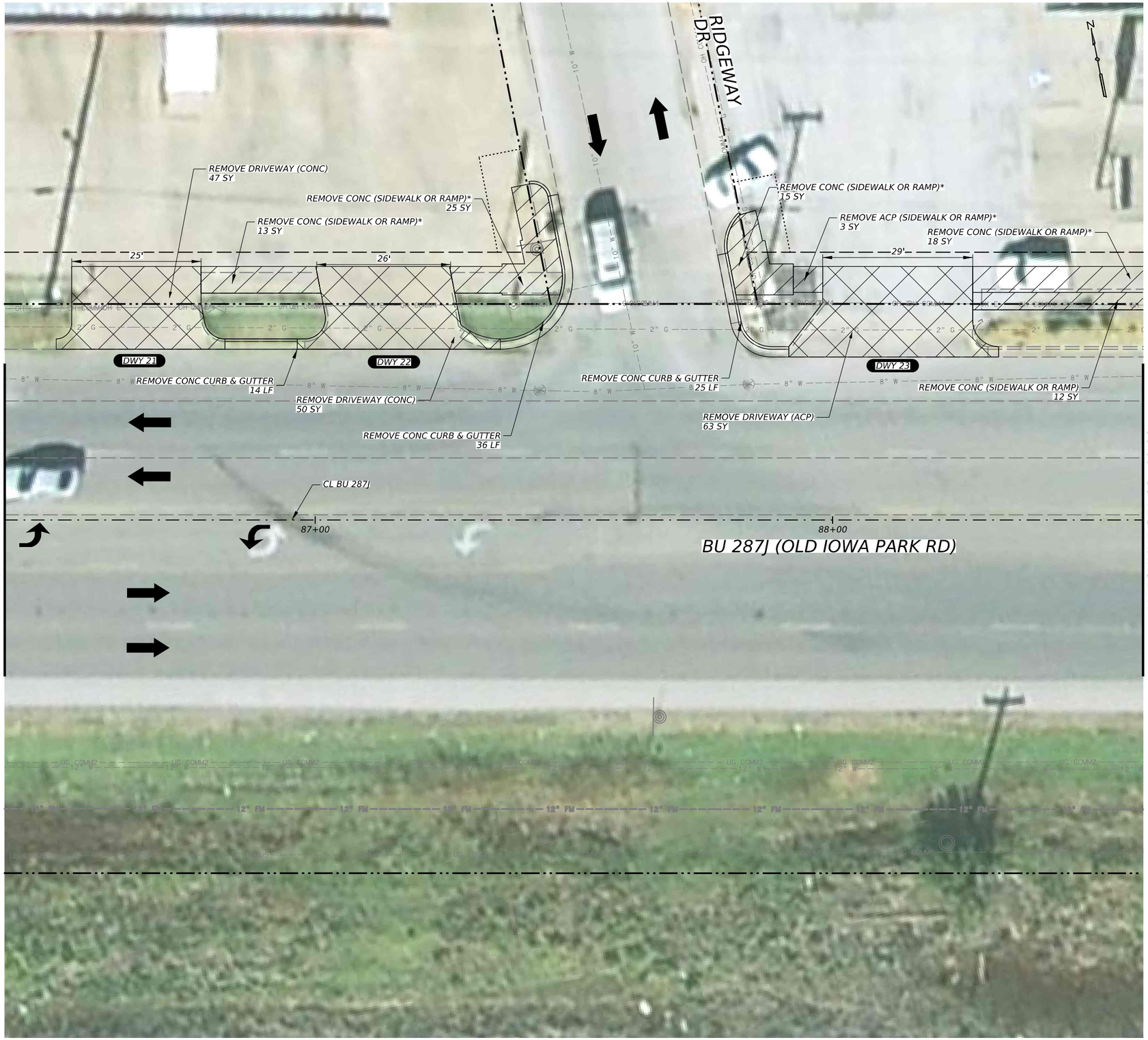

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
- REMOVE SIDEWALK OR RAMP
- REMOVE DRIVEWAY
- GUARDRAIL
- PEDESTRIAN RAIL

0 10 20 30 40

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Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 86+40.00 TO STA 88+60.00

SHEET 18 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		43

DATE: 1/30/2024 2:34:38 PM
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100% PLANS SUBMITTAL

DW: RW	CK: DR	DW: RD	CK: KM

LEGEND

- *APPARENT ROW*
- *CENTERLINE*
- *APPARENT PERMANENT SIDEWALK EASEMENT*
- *PROPOSED TEMPORARY CONSTRUCTION LICENSE*
- *DIRECTION OF TRAVEL*
- *REMOVE SIDEWALK OR RAMP*
- *REMOVE DRIVEWAY*
- *GUARDRAIL*
- *PEDESTRIAN RAIL*

0 10 20 30 40

SCALE IN FEET

NO.	DATE	REVISION	APPR BY

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Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 88+60.00 TO STA 90+80.00

SHEET 19 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		44

DATE: 1/30/2024 2:34:49 PM
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100% PLANS SUBMITTAL

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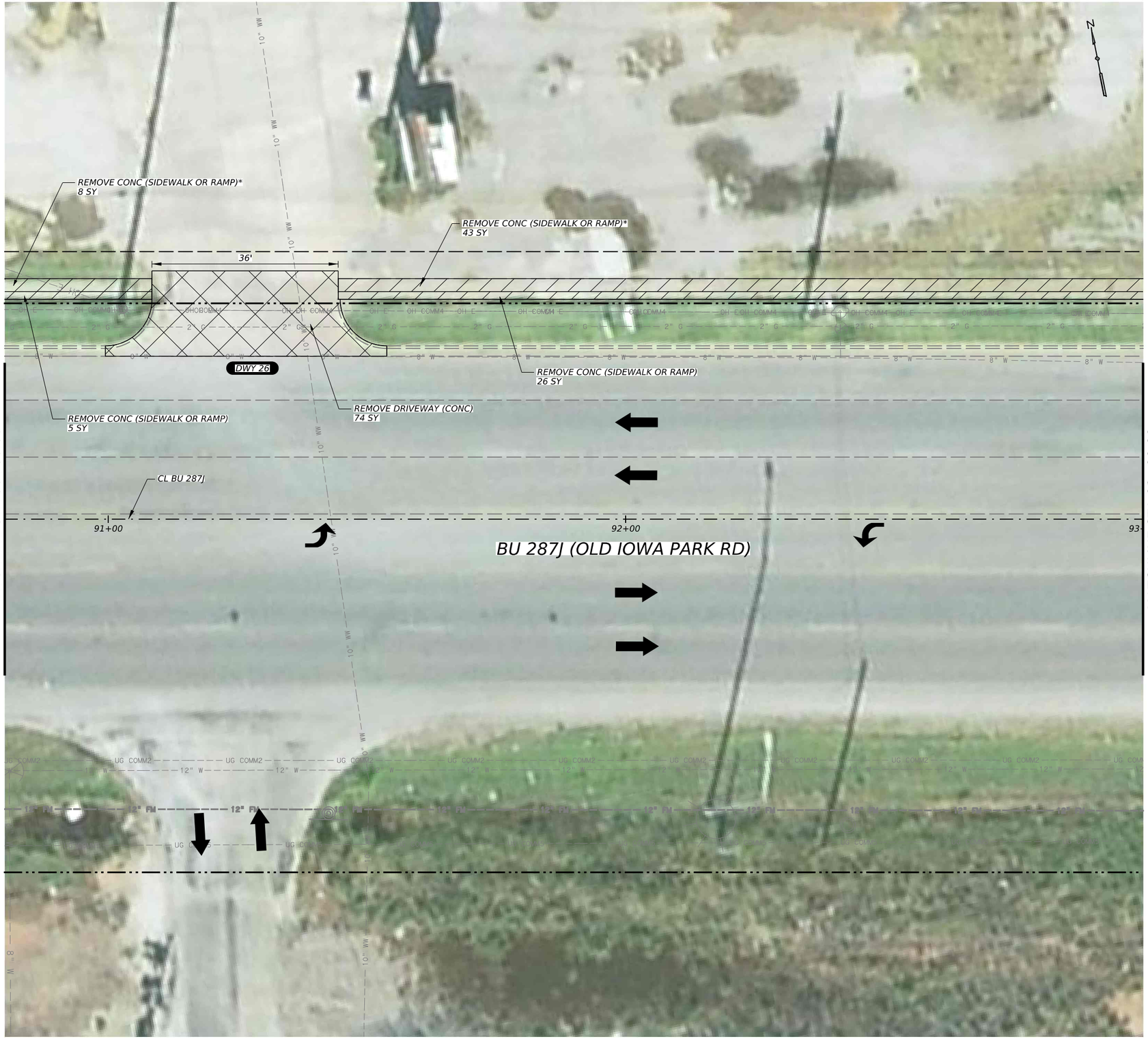

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
- REMOVE SIDEWALK OR RAMP
- REMOVE DRIVEWAY
- GUARDRAIL
- PEDESTRIAN RAIL

0 10 20 30 40

SCALE IN FEET

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Round Rock, Texas 78681

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 90+80.00 TO STA 93+00.00

SHEET 20 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		45

DATE: 1/30/2024 2:35:01 PM
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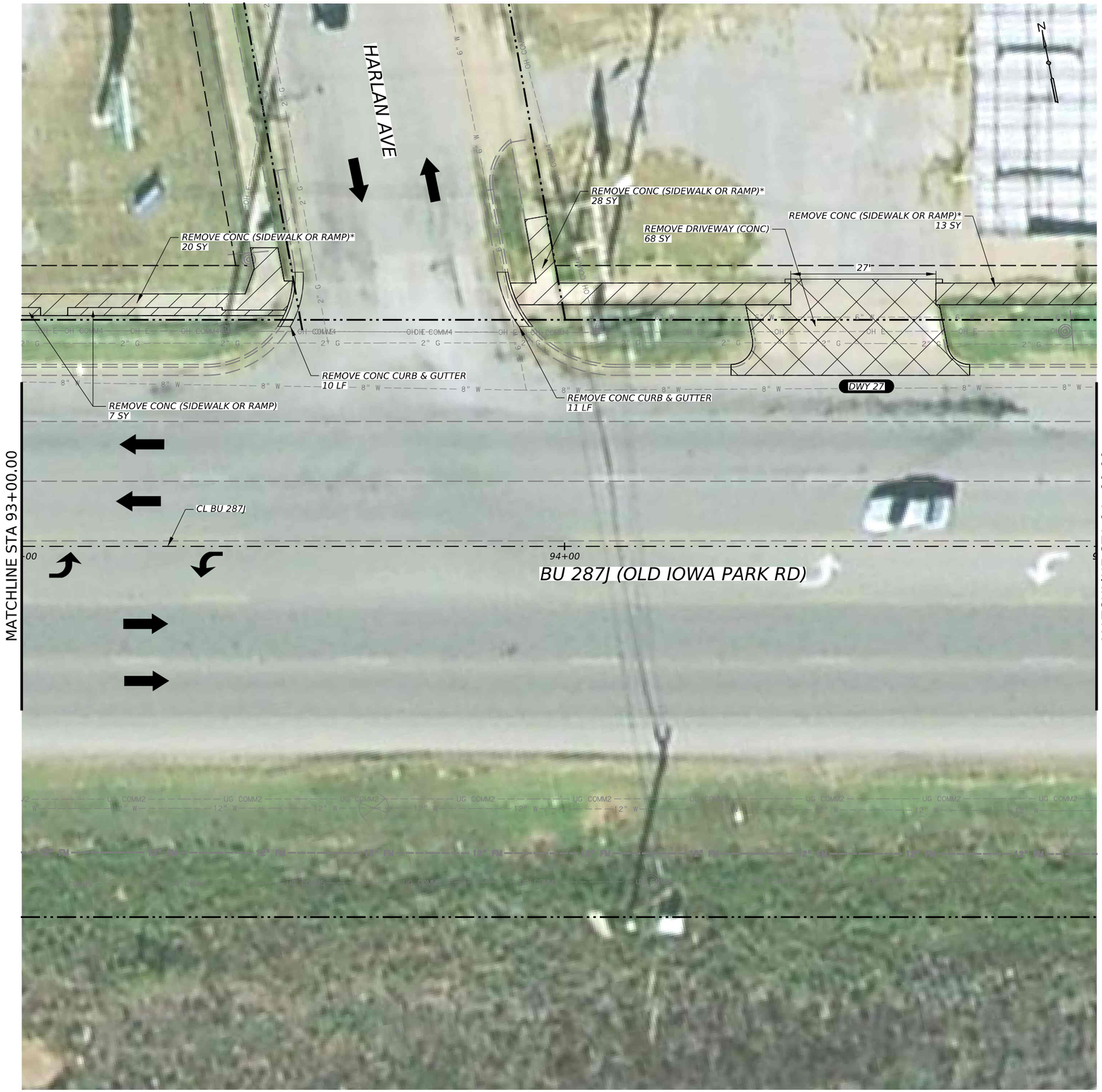
100% PLANS SUBMITTAL

DW:	RW	CK:	DR	DW:	RD	CK:	KM



MATCHLINE STA 93+00.00

MATCHLINE STA 94+80.00

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
- REMOVE SIDEWALK OR RAMP
- REMOVE DRIVEWAY
- GUARDRAIL
- PEDESTRIAN RAIL

0 10 20 30 40

SCALE IN FEET

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WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 93+00.00 TO STA 94+80.00

SHEET 21 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		46

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100% PLANS SUBMITTAL

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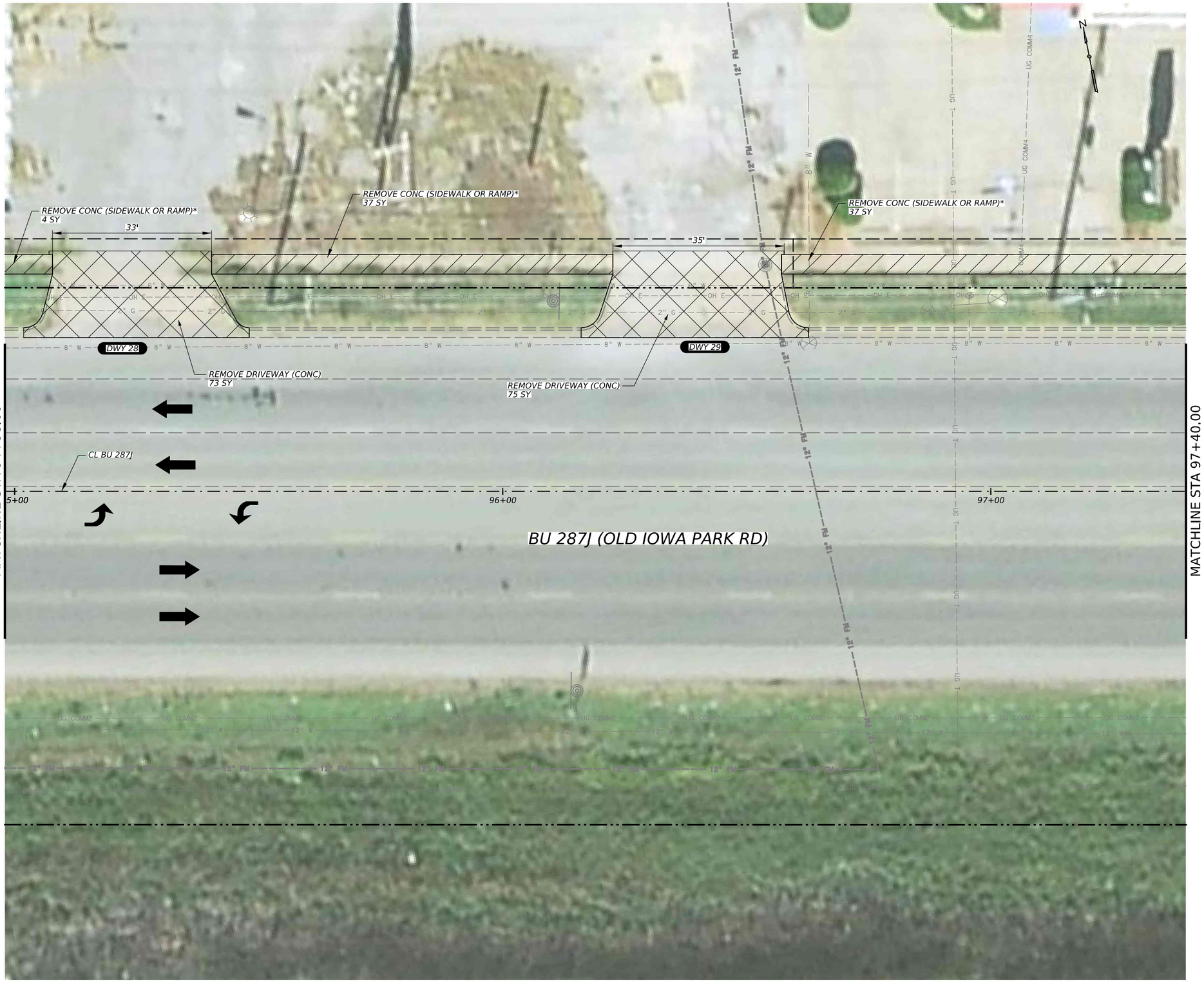

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
- REMOVE SIDEWALK OR RAMP
- REMOVE DRIVEWAY
- GUARDRAIL
- PEDESTRIAN RAIL

0 10 20 30 40

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Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 94+98.00 TO STA 97+40.00

SHEET 22 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		47

DATE: 1/30/2024 2:35:37 PM
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100% PLANS SUBMITTAL

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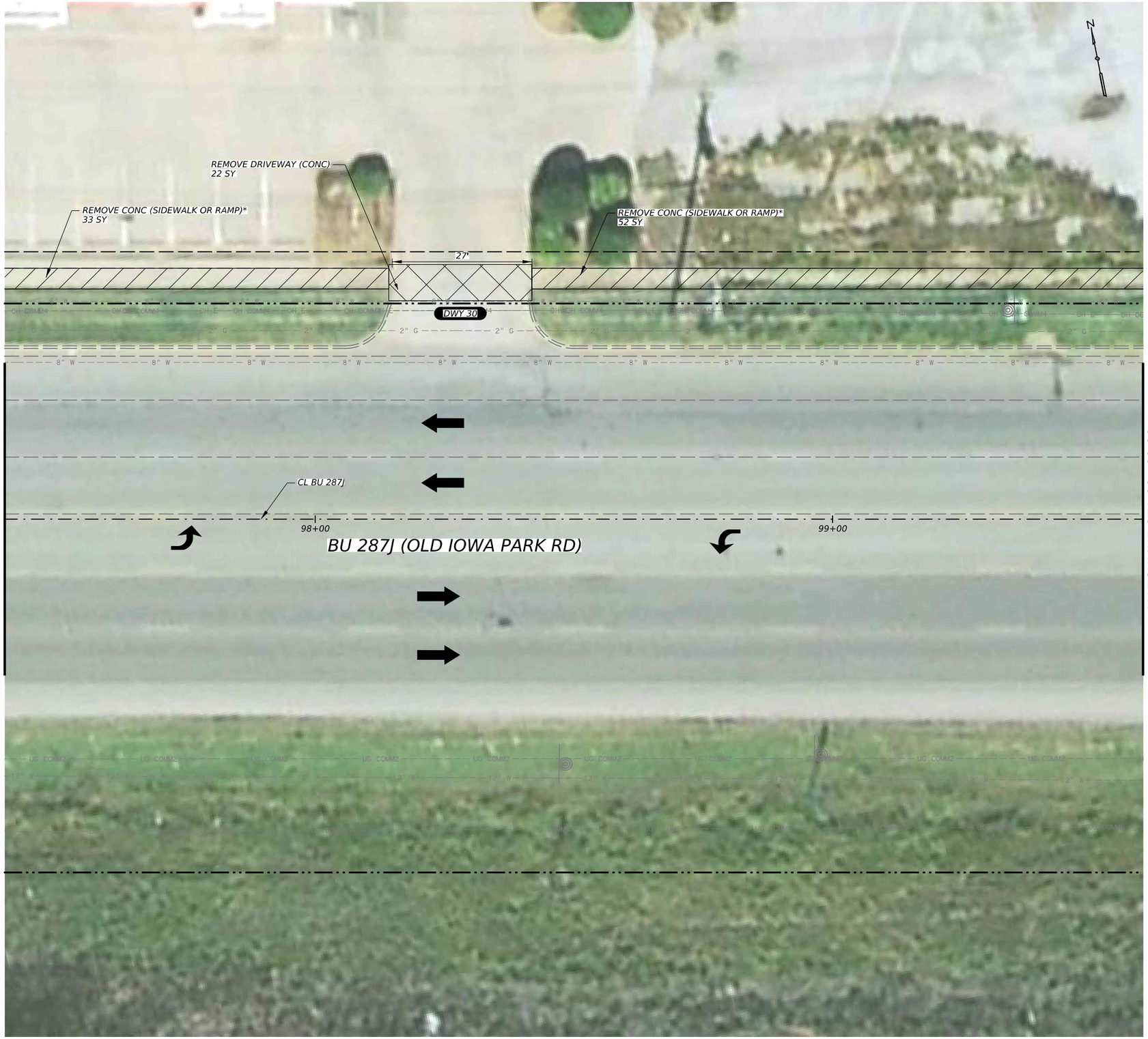

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
- REMOVE SIDEWALK OR RAMP
- REMOVE DRIVEWAY
- GUARDRAIL
- PEDESTRIAN RAIL

0 10 20 30 40

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WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 97+40.00 TO STA 99+60.00

SHEET 23 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		48

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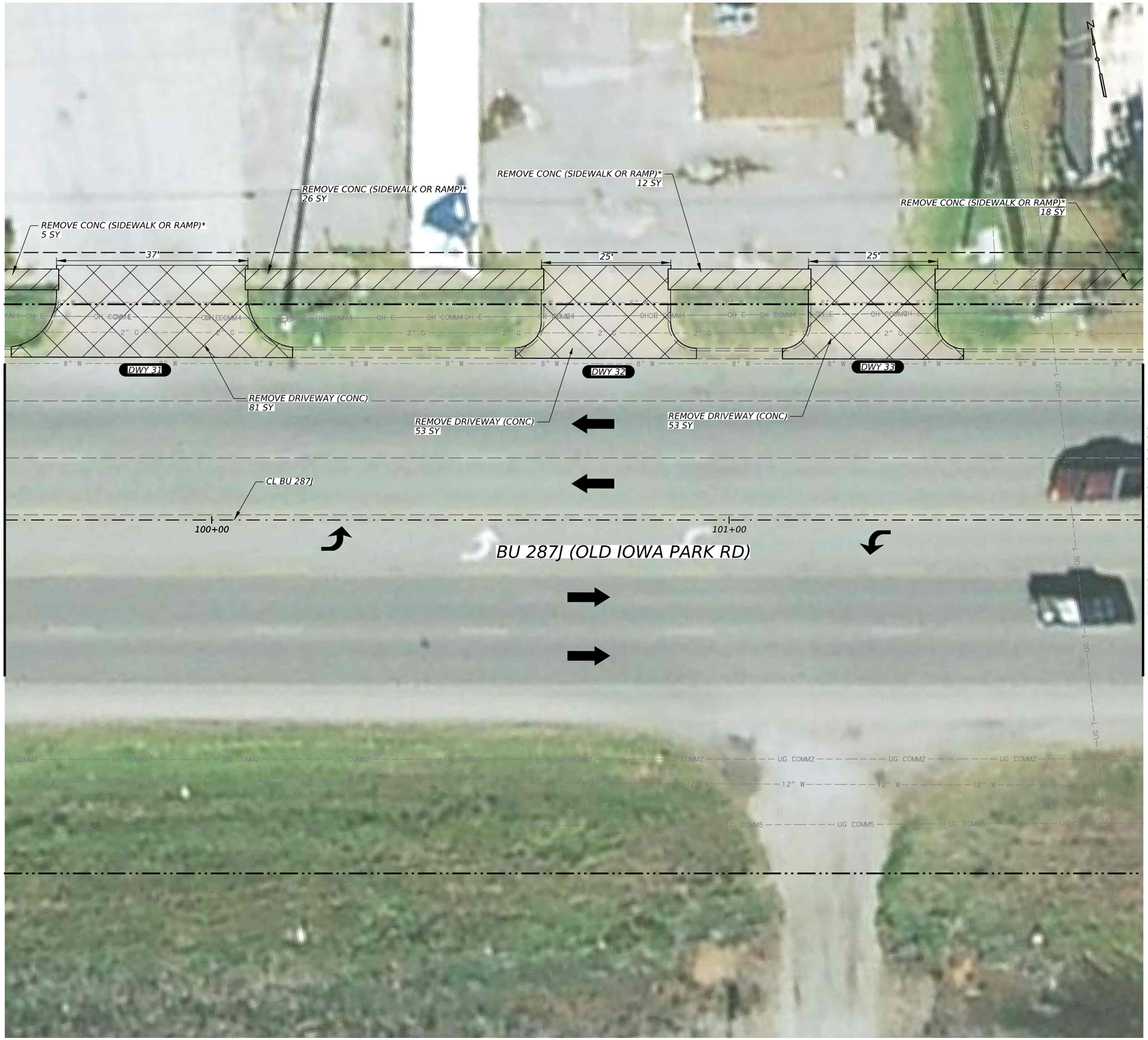
FILE: WF_P1_RMV_23.dgn

100% PLANS SUBMITTAL

DW: RW	CK: DR	DW: RD	CK: KM



LEGEND

- *APPARENT ROW*
- *CENTERLINE*
- *APPARENT PERMANENT SIDEWALK EASEMENT*
- *PROPOSED TEMPORARY CONSTRUCTION LICENSE*
- *DIRECTION OF TRAVEL*
- *REMOVE SIDEWALK OR RAMP*
- *REMOVE DRIVEWAY*
- *GUARDRAIL*
- *PEDESTRIAN RAIL*

0 10 20 30 40

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WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 99+60.00 TO STA 101+80.00

SHEET 24 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		49

DATE: 1/30/2024 2:37:38 PM
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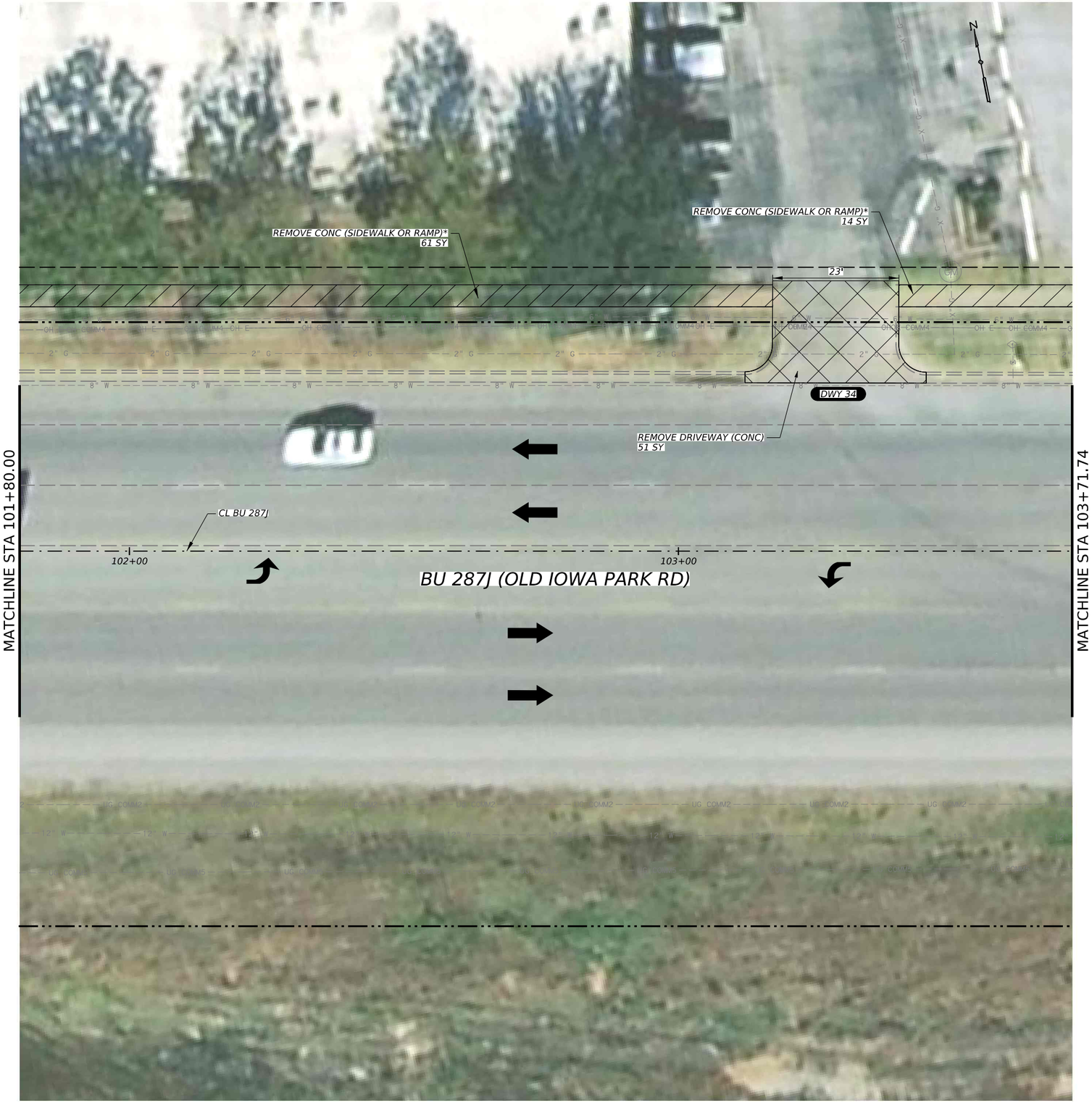
100% PLANS SUBMITTAL

DW: RW	CK: DR	DW: RD	CK: KM



LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
- REMOVE SIDEWALK OR RAMP
- REMOVE DRIVEWAY
- GUARDRAIL
- PEDESTRIAN RAIL

0 10 20 30 40

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WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 101+80.00 TO STA 103+71.74

SHEET 25 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		50

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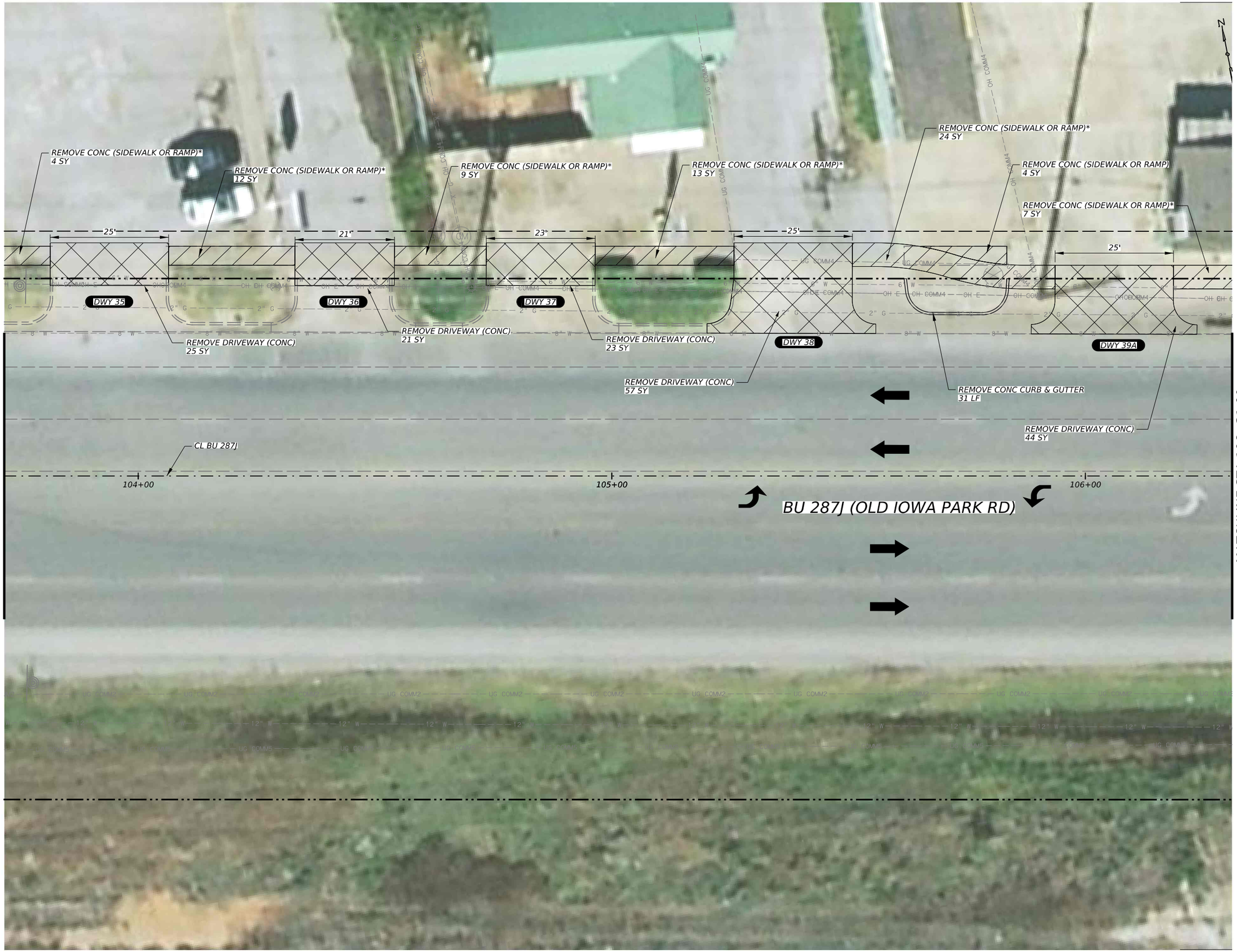

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
- REMOVE SIDEWALK OR RAMP
- REMOVE DRIVEWAY
- GUARDRAIL
- PEDESTRIAN RAIL

0 10 20 30 40

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WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 103+71.74 TO STA 106+31.00

SHEET 26 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		51

DATE: 1/30/2024 2:38:07 PM
FILE: WF_P1_RMV_26.dgn

100% PLANS SUBMITTAL

DW: RW	CK: DR	DW: RD	CK: KM

LEGEND

- *APPARENT ROW*
- *CENTERLINE*
- *APPARENT PERMANENT SIDEWALK EASEMENT*
- *PROPOSED TEMPORARY CONSTRUCTION LICENSE*
- *DIRECTION OF TRAVEL*
- *REMOVE SIDEWALK OR RAMP*
- *REMOVE DRIVEWAY*
- *GUARDRAIL*
- *PEDESTRIAN RAIL*

0 10 20 30 40

SCALE IN FEET

NO.	DATE	REVISION	APPR BY

STATE OF TEXAS
RYAN A. WHITNEY
130723
LICENSED
PROFESSIONAL ENGINEER

1/30/2024

HDR Engineering, Inc
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

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WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 106+31.00 TO STA 108+40.00

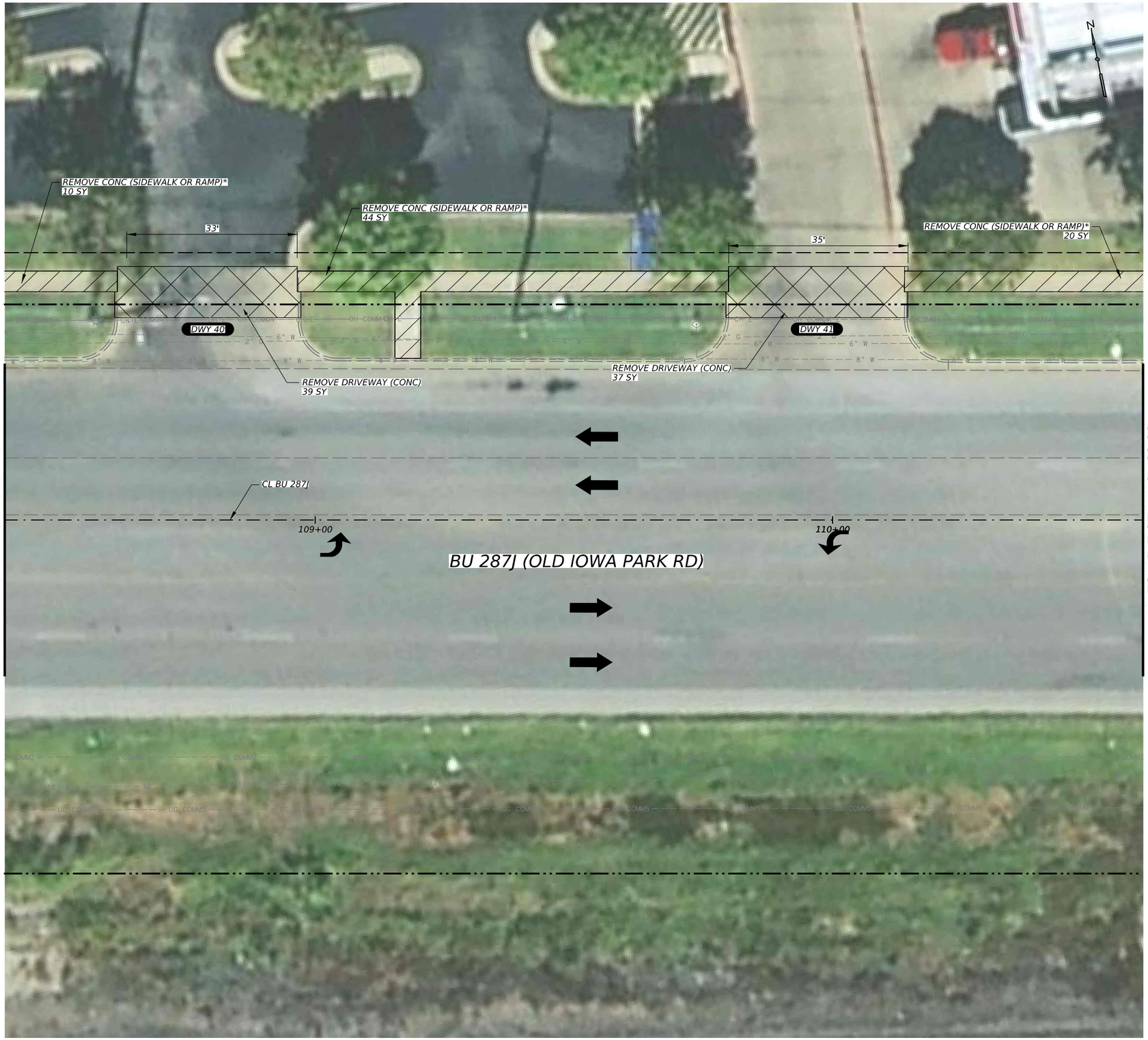
SHEET 27 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		52

DATE: 1/30/2024 2:38:17 PM
FILE: WF_P1_RMV_27.dgn

100% PLANS SUBMITTAL

DW: RW | CK: DR | DW: RD | CK: KM



LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
- REMOVE SIDEWALK OR RAMP
- REMOVE DRIVEWAY
- GUARDRAIL
- PEDESTRIAN RAIL

0 10 20 30 40

SCALE IN FEET

NO.	DATE	REVISION	APPR BY

STATE OF TEXAS
RYAN A. WHITNEY
130723
LICENSED
PROFESSIONAL ENGINEER

1/30/2024

HDR Engineering, Inc
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 108+40.00 TO STA 110+60.00

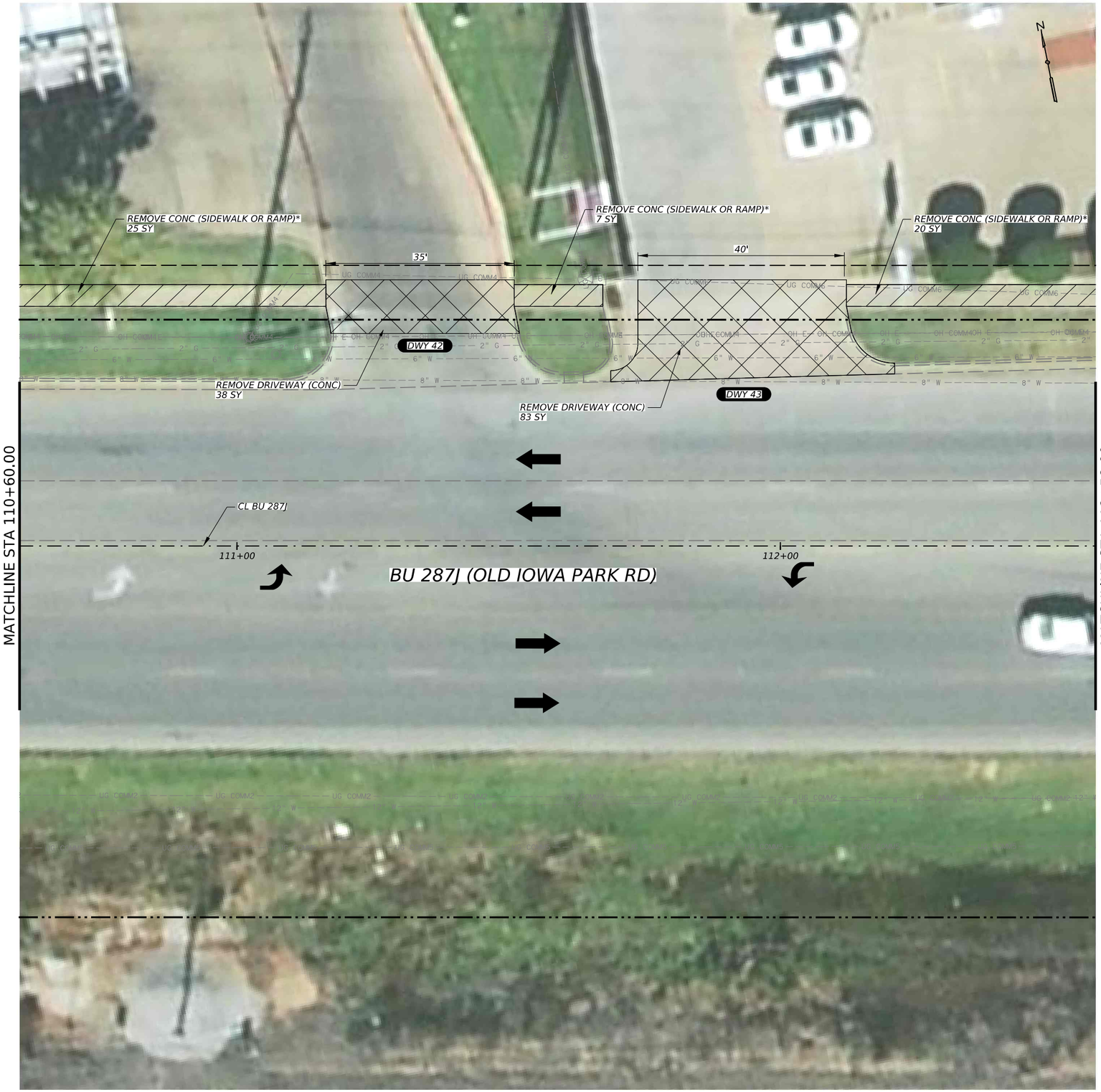
SHEET 28 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		53

DATE: 1/30/2024 2:38:32 PM
FILE: WF_P1_RMV_28.dgn

100% PLANS SUBMITTAL

DW:	RW	CK:	KM
DW:	DR	CK:	RD



LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
- REMOVE SIDEWALK OR RAMP
- REMOVE DRIVEWAY
- GUARDRAIL
- PEDESTRIAN RAIL

0 10 20 30 40

SCALE IN FEET

NO.	DATE	REVISION	APPR BY

STATE OF TEXAS
RYAN A. WHITNEY
130723
LICENSED
PROFESSIONAL ENGINEER

1/30/2024

HDR Engineering, Inc
Firm Registration No. F-754
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Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 110+60.00 TO STA 112+58.00

SHEET 29 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		54

DATE: 1/30/2024 2:38:45 PM
FILE: WF_P1_RMV_29.dgn

100% PLANS SUBMITTAL

DW: RW | CK: DR | DW: RD | CK: KM

MATCHLINE STA 112+58.00

MATCHLINE STA 115+03.67

WOLCOTT LN

BU 287J (OLD IOWA PARK RD)

REMOVE CONC (SIDEWALK OR RAMP)* 7 SY

REMOVE CONC (SIDEWALK OR RAMP)* 6 SY

REMOVE CONC (SIDEWALK OR RAMP)* 23 SY

REMOVE CONC (SIDEWALK OR RAMP)* 24 SY

REMOVE CONC (SIDEWALK OR RAMP)* 3 SY

26'

29'

30'

DWY 44

DWY 45

DWY 46

REMOVE DRIVEWAY (CONC) 52 SY

REMOVE DRIVEWAY (CONC) 50 SY

REMOVE CONC CURB & GUTTER 24 LF

REMOVE DRIVEWAY (CONC) 35 SY

CL BU 287J

113+00

114+00

115+00

N

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
- REMOVE SIDEWALK OR RAMP
- REMOVE DRIVEWAY
- GUARDRAIL
- PEDESTRIAN RAIL

0 10 20 30 40

SCALE IN FEET

NO.	DATE	REVISION	APPR BY

STATE OF TEXAS
RYAN A. WHITNEY
130723
LICENSED
PROFESSIONAL ENGINEER

1/30/2024

HDR Engineering, Inc
Firm Registration No. F-754
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Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 112+58.00 TO STA 115+03.67

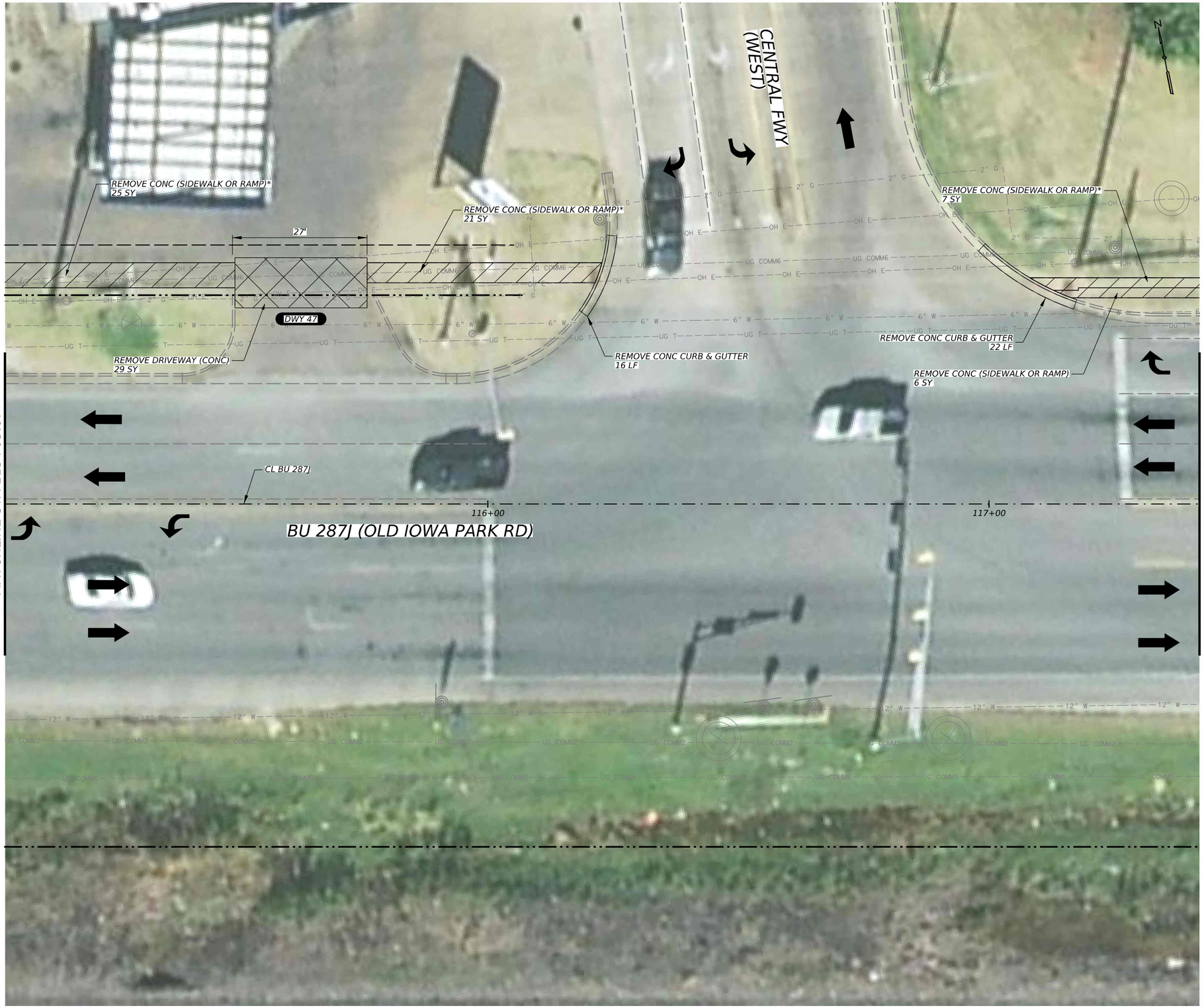
SHEET 30 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		55

DATE: 1/30/2024 2:38:56 PM
FILE: WF_P1_RMV_30.dgn

100% PLANS SUBMITTAL

DW: RW	CK: DR	DW: RD	CK: KM



LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
- REMOVE SIDEWALK OR RAMP
- REMOVE DRIVEWAY
- GUARDRAIL
- PEDESTRIAN RAIL

0 10 20 30 40

SCALE IN FEET

NO.	DATE	REVISION	APPR BY

STATE OF TEXAS
RYAN A. WHITNEY
130723
LICENSED
PROFESSIONAL ENGINEER

1/30/2024

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Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 115+03.67 TO STA 117+42.00

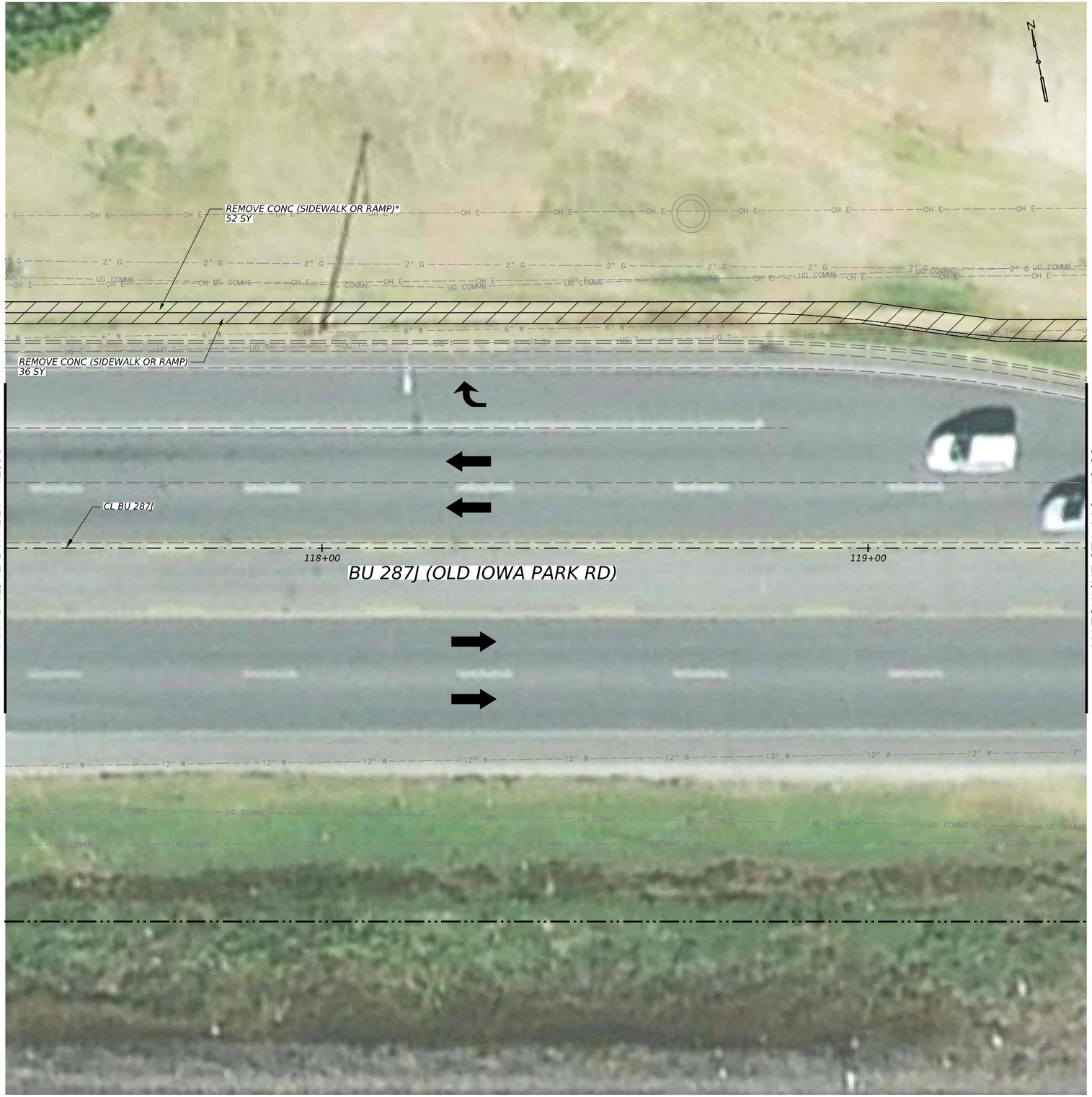
SHEET 31 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		56

DATE: 1/30/2024 2:39:08 PM
FILE: WF_P1_RMV_31.dgn

100% PLANS SUBMITTAL

DW: RW | CK: DR | DW: RD | CK: KM



MATCHLINE STA 117+42.00

MATCHLINE STA 119+40.00

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
- REMOVE SIDEWALK OR RAMP
- REMOVE DRIVEWAY
- GUARDRAIL
- PEDESTRIAN RAIL

0 10 20 30 40

SCALE IN FEET

NO.	DATE	REVISION	APPR BY

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1/30/2024

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Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 117+42.00 TO STA 119+40.00

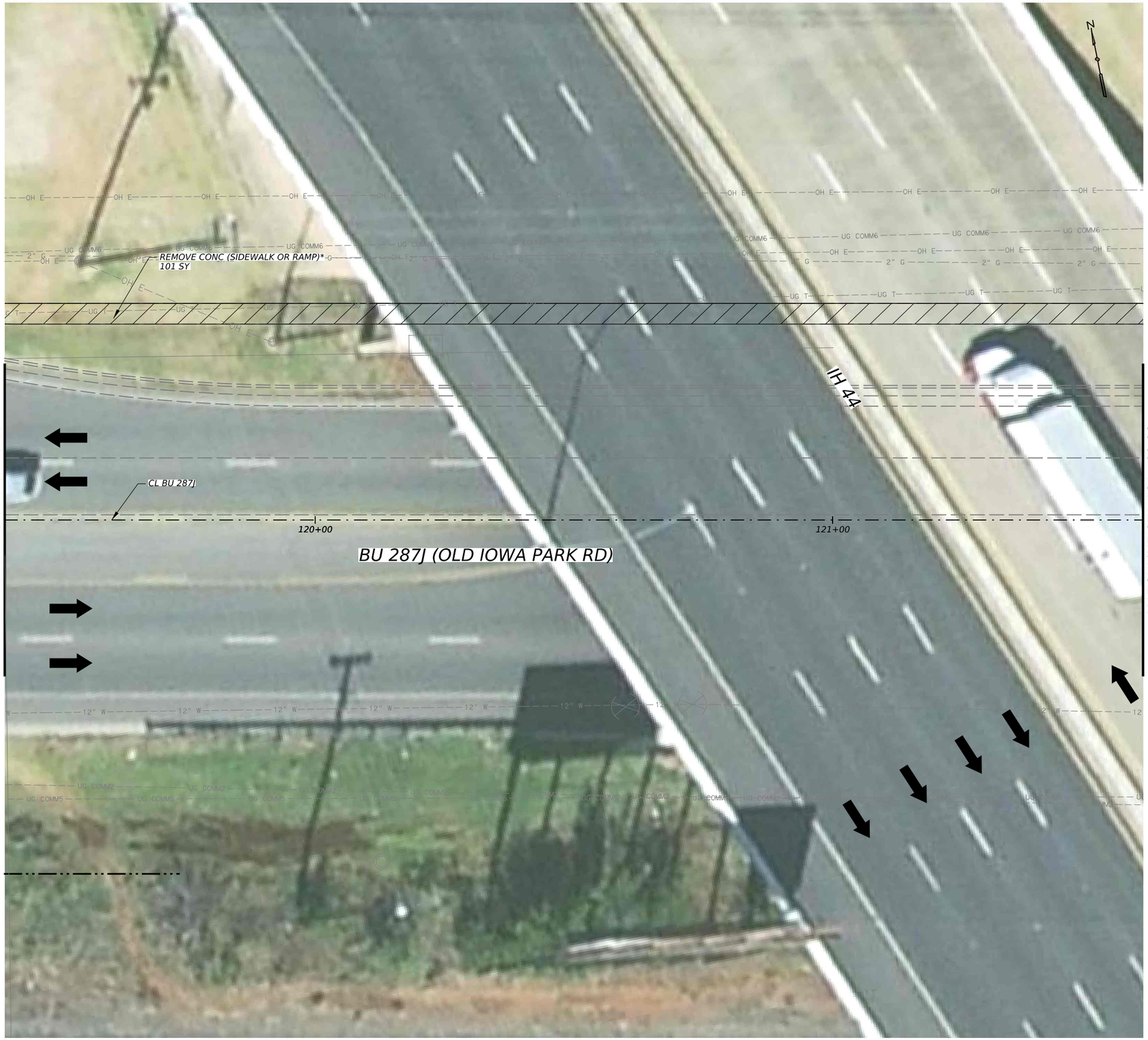
SHEET 32 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		57

DATE: 1/30/2024 2:39:20 PM
FILE: WF_P1_RMV_32.dgn

100% PLANS SUBMITTAL

DW:	CK:
RW	KM
DR	RD



LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
- REMOVE SIDEWALK OR RAMP
- REMOVE DRIVEWAY
- GUARDRAIL
- PEDESTRIAN RAIL

0 10 20 30 40

SCALE IN FEET

NO.	DATE	REVISION	APPR BY

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PROFESSIONAL ENGINEER

1/30/2024

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Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 119+40.00 TO STA 121+60.00

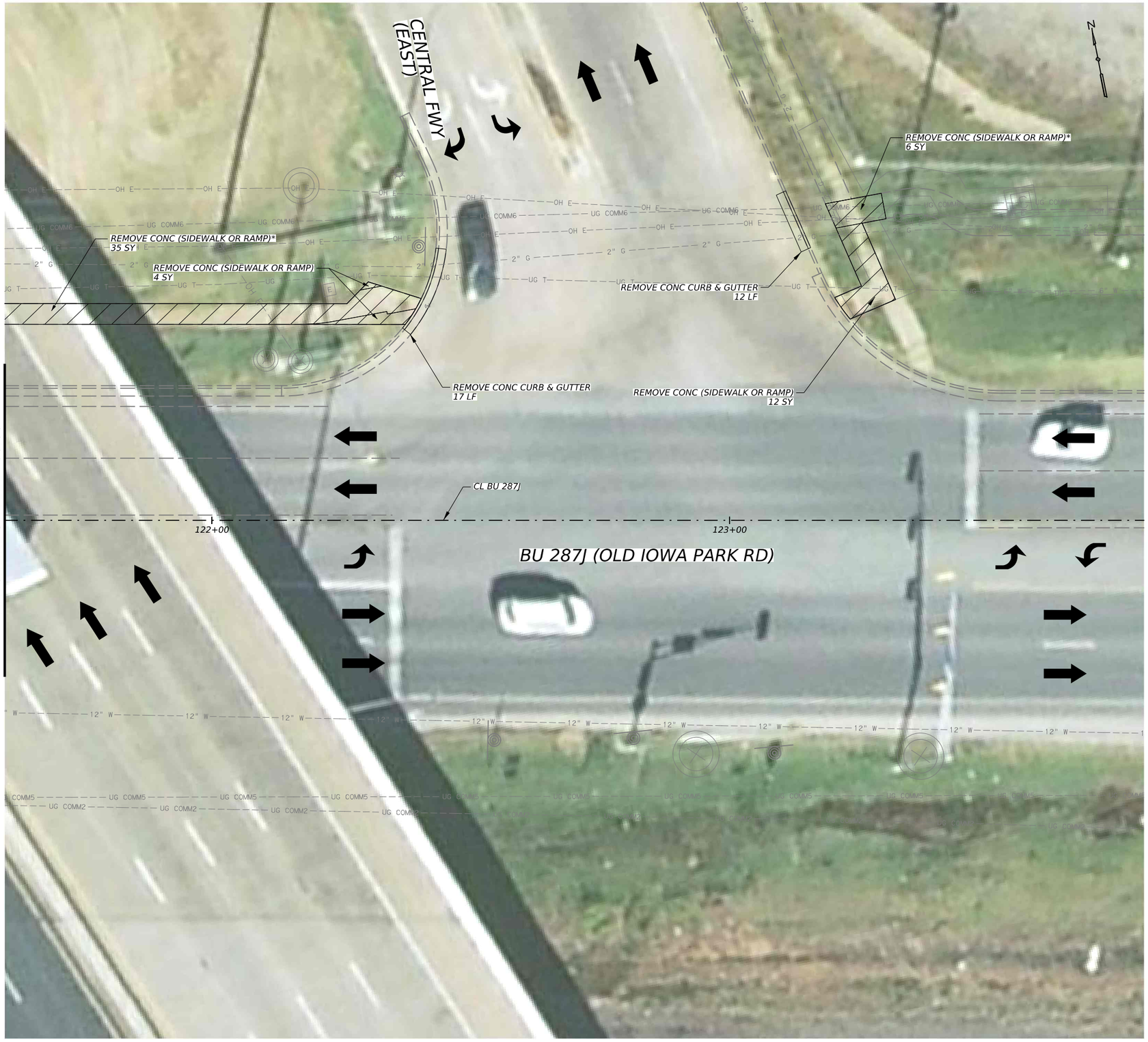
SHEET 33 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		58

DATE: 1/30/2024 2:39:30 PM
FILE: WF P1 RMV 33.dgn

100% PLANS SUBMITTAL

DW:	RW	CK:	KM
DW:	DR	CK:	RD



LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- DIRECTION OF TRAVEL
- REMOVE SIDEWALK OR RAMP
- REMOVE DRIVEWAY
- GUARDRAIL
- PEDESTRIAN RAIL

0 10 20 30 40

SCALE IN FEET

NO.	DATE	REVISION	APPR BY

STATE OF TEXAS
RYAN A. WHITNEY
130723
LICENSED
PROFESSIONAL ENGINEER

1/30/2024

HDR Engineering, Inc
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
REMOVAL PLAN
STA 121+60.00 TO END

SHEET 34 OF 34

CONT.	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		59

DATE: 1/30/2024 2:39:40 PM
FILE: WF_P1_RMV_34.dgn

100% PLANS SUBMITTAL

DW: RW | CK: DR | DW: RD | CK: KM

Alignment Name:	*BL CL-*		
Alignment Description:			
Alignment Style:	*Alignment\Baseline*		
	Station	*Northing*	*Easting*
Element: Linear			
POT	*( )* *0+00.000*	*826185.558*	*1680597.882*
POT	*( )* *123+96.318*	*823792.93*	*1692761.106*
Tangential Direction:	*S78.871°E*		
Tangential Length:	*12396.318*		

NO.	DATE	REVISION	APPR BY

12/13/2023

STATE OF TEXAS
RYAN A. WHITNEY
130723
REGISTERED
PROFESSIONAL ENGINEER

HDR Engineering, Inc
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

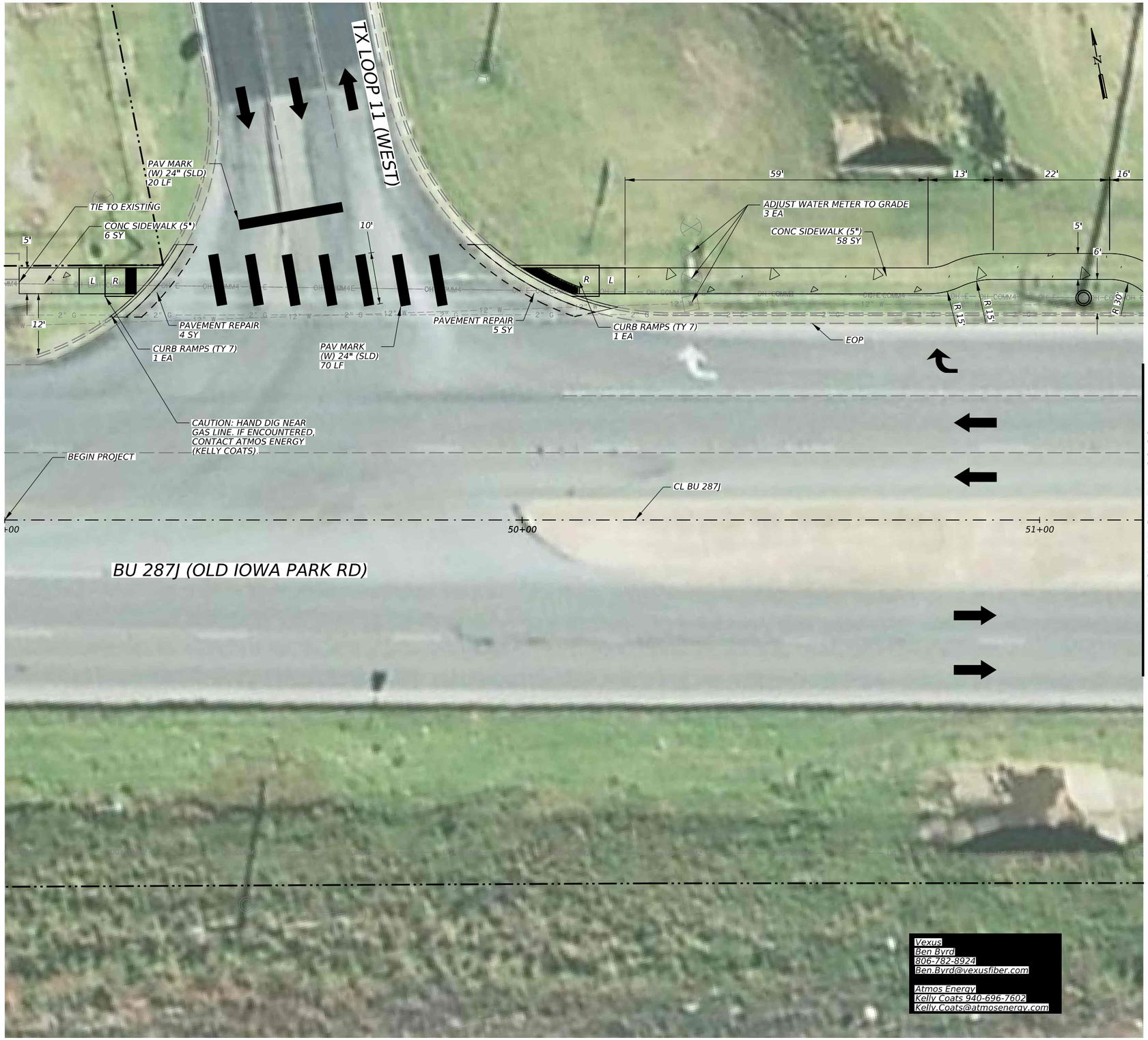
BU 287J
(OLD IOWA PARK ROAD)
ALIGNMENT DATA SHEET

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		60

DATE: 12/13/2023 11:54:26 AM
FILE: WF_PHASE1_ALIGN_DATA.dgn

100% PLANS SUBMITTAL

DW:	RW
CK:	DR
DW:	RD
CK:	KM



LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- COMBINATION RAIL
- PEDESTRIAN RAIL
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY CONCRETE SIDEWALK (SPECIAL) (TYPE A)
- DRIVEWAY (ACP)
- DIRECTION OF TRAVEL

NOTE

SIDEWALK OFFSET IS MEASURED FROM BACK OF CURB IN AREAS WITH CURB & GUTTER AND MEASURED FROM EDGE OF PAVEMENT FOR AREAS WITHOUT CURB.

CURB RAMP LEGEND:-
R : RAMP
L : LANDING
F : FLARE
T : TRANSITION

UTILITY NOTE

UTILITY INFORMATION BASED ON AVAILABLE RECORD DATA AND INFORMATION MAY NOT BE RELIABLE. HDR, INC. DISCLAIMS RESPONSIBILITY FOR THE ACCURACY OR RELIABILITY OF UTILITY INFORMATION DEPICTED. THE LOCATIONS OF UTILITIES SHOWN DO NOT RELIEVE THE CONTRACTOR FROM THE DUTY TO COMPLY WITH THE APPLICABLE UTILITY DAMAGE PREVENTION LAWS AND REGULATIONS, INCLUDING, BUT NOT LIMITED TO, GIVING NOTIFICATION TO UTILITY OWNER'S "ONE-CALL" CENTERS BEFORE EXCAVATION.

0 10 20 30 40
SCALE IN FEET
1"=20'

NO.	DATE	REVISION	APPR BY

STATE OF TEXAS
RYAN A. WHITNEY
130723
LICENSED
PROFESSIONAL ENGINEER
1/30/2024

HDR Engineering, Inc
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
BEGIN TO STA 51+20.00

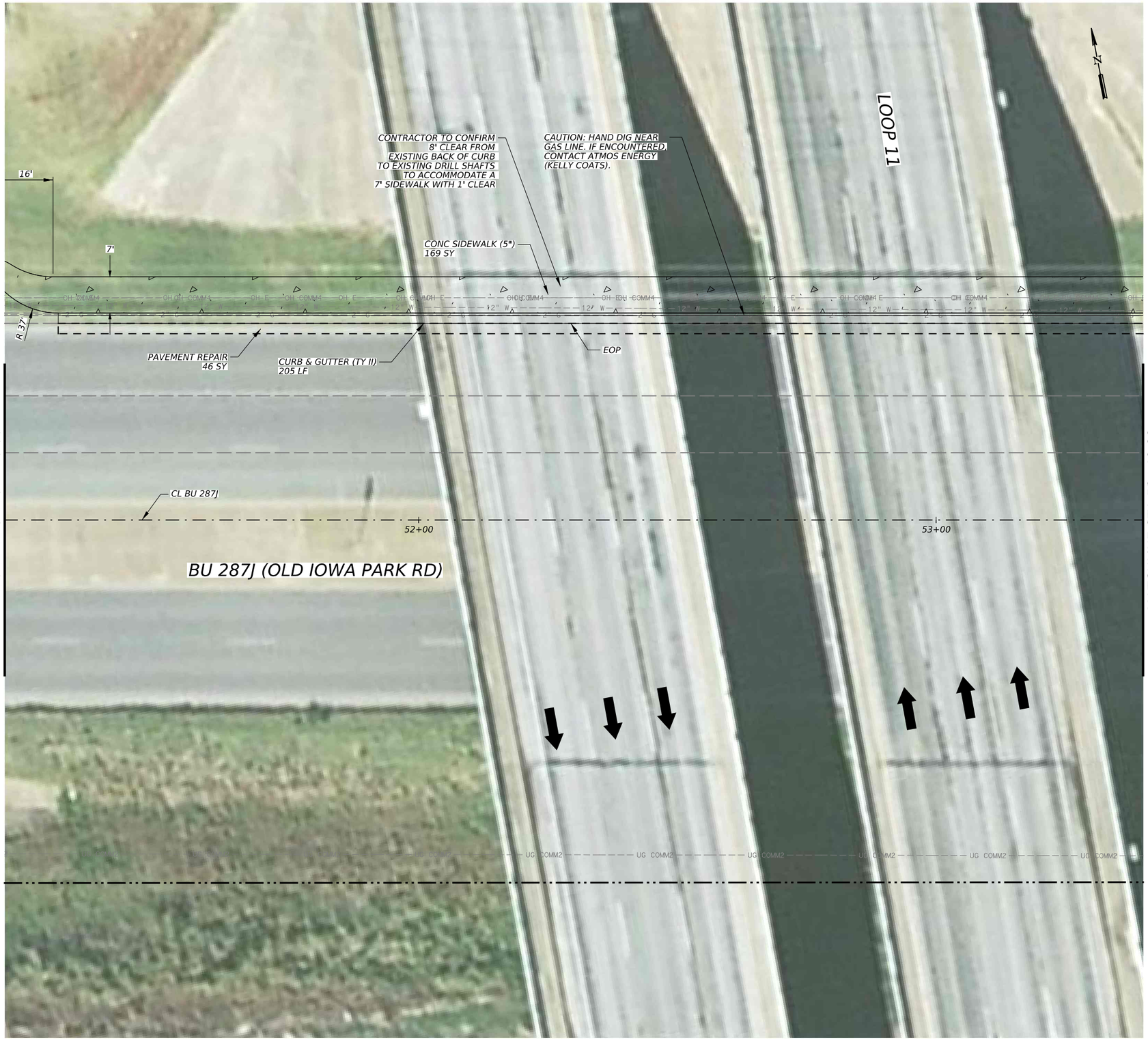
SHEET 1 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		61

DATE: 1/31/2024 10:55:15 AM
FILE: WF_P1 SDWK_01.dgn

100% PLANS SUBMITTAL

DW: RW	CK: DR	DW: RD	CK: KM



LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- COMBINATION RAIL
- PEDESTRIAN RAIL
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY CONCRETE SIDEWALK (SPECIAL) (TYPE A)
- DRIVEWAY (ACP)
- DIRECTION OF TRAVEL

NOTE

SIDEWALK OFFSET IS MEASURED FROM BACK OF CURB IN AREAS WITH CURB & GUTTER AND MEASURED FROM EDGE OF PAVEMENT FOR AREAS WITHOUT CURB.

CURB RAMP LEGEND:-
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L : LANDING
F : FLARE
T : TRANSITION

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0 10 20 30 40
SCALE IN FEET
1"=20'

NO.	DATE	REVISION	APPR BY

STATE OF TEXAS
RYAN A. WHITNEY
130723
LICENSED
PROFESSIONAL ENGINEER
1/30/2024

HDR Engineering, Inc
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 51+20.00 TO STA 53+40.00

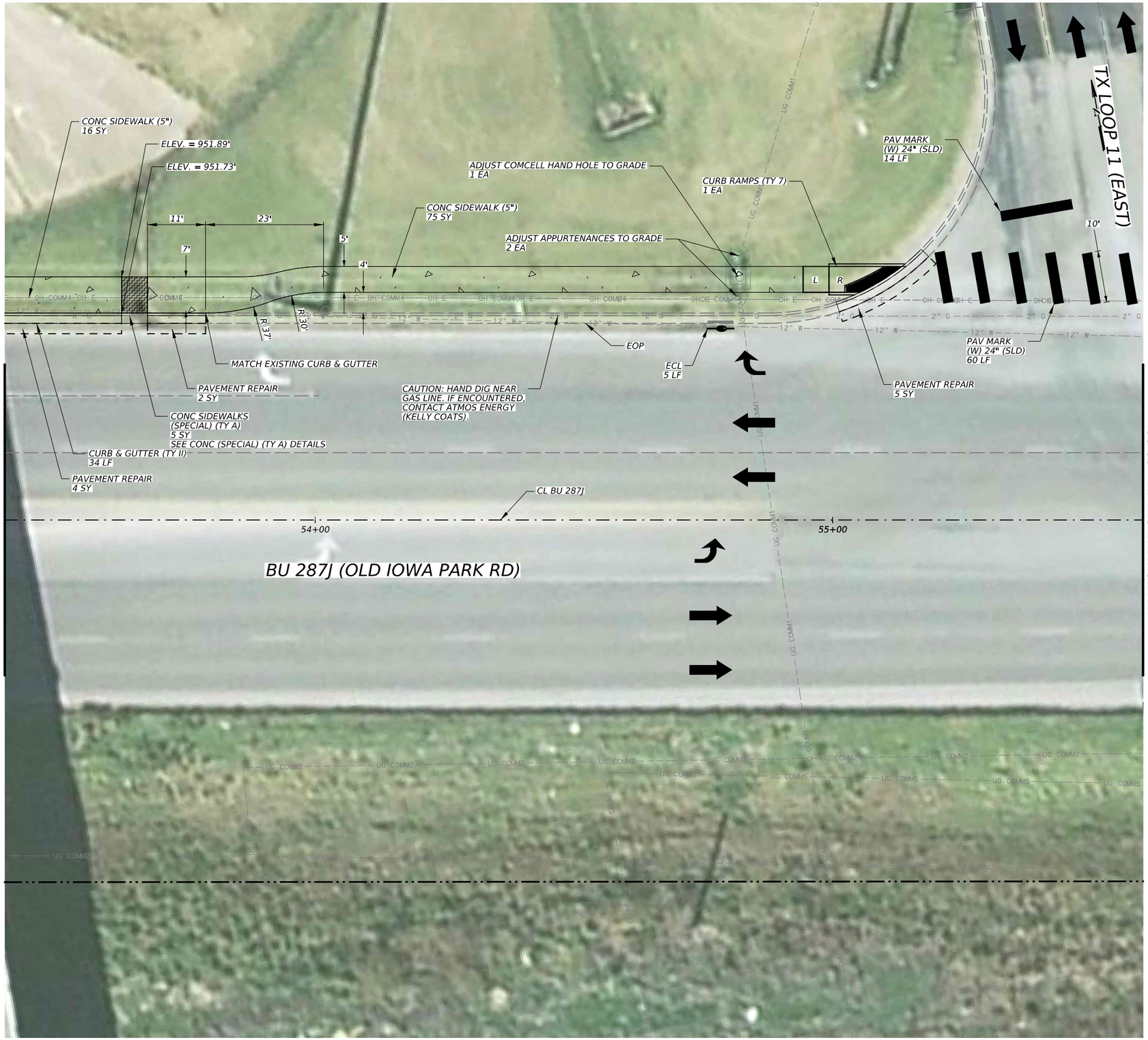
SHEET 2 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		62

DATE: 1/31/2024 10:55:34 AM
FILE: WF_P1_SDWK_02.dgn

100% PLANS SUBMITTAL

DW:	RW
CK:	DR
DW:	RD
CK:	KM



LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- COMBINATION RAIL
- PEDESTRIAN RAIL
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY CONCRETE SIDEWALK (SPECIAL) (TYPE A)
- DRIVEWAY (ACP)
- DIRECTION OF TRAVEL

NOTE

SIDEWALK OFFSET IS MEASURED FROM BACK OF CURB IN AREAS WITH CURB & GUTTER AND MEASURED FROM EDGE OF PAVEMENT FOR AREAS WITHOUT CURB.

CURB RAMP LEGEND:-
R : RAMP
L : LANDING
F : FLARE
T : TRANSITION

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0 10 20 30 40
SCALE IN FEET
1"=20'

NO.	DATE	REVISION	APPR BY

STATE OF TEXAS
RYAN A. WHITNEY
130723
LICENSED
PROFESSIONAL ENGINEER
1/30/2024

HDR Engineering, Inc
Firm Registration No. F-754
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Round Rock, Texas 78681

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 53+40.00 TO STA 55+60.00

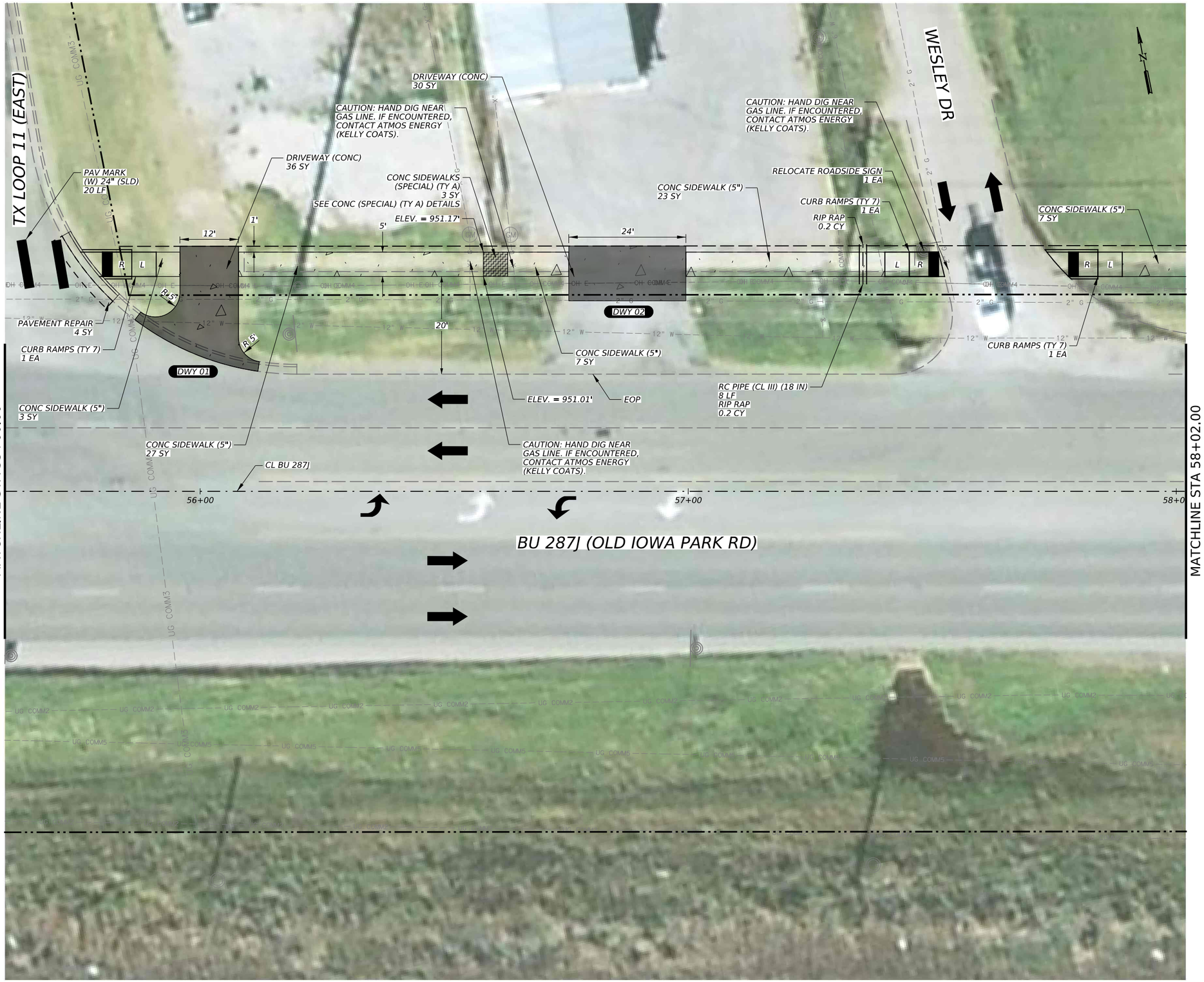
SHEET 3 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		63

DATE: 1/31/2024 10:56:07 AM
FILE: WF_P1_SDWK_03.dgn

100% PLANS SUBMITTAL

DW: RW	CK: DR	DW: RD	CK: KM



LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- COMBINATION RAIL
- PEDESTRIAN RAIL
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY
- CONCRETE SIDEWALK (SPECIAL) (TYPE A)
- DRIVEWAY (ACP)
- DIRECTION OF TRAVEL

NOTE

SIDEWALK OFFSET IS MEASURED FROM BACK OF CURB IN AREAS WITH CURB & GUTTER AND MEASURED FROM EDGE OF PAVEMENT FOR AREAS WITHOUT CURB.

CURB RAMP LEGEND:-
R : RAMP
L : LANDING
F : FLARE
T : TRANSITION

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0 10 20 30 40
SCALE IN FEET
1"=20'

NO.	DATE	REVISION	APPR BY

STATE OF TEXAS
RYAN A. WHITNEY
130723
LICENSED
PROFESSIONAL ENGINEER
1/30/2024

HDR Engineering, Inc
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 55+60.00 TO STA 58+02.00

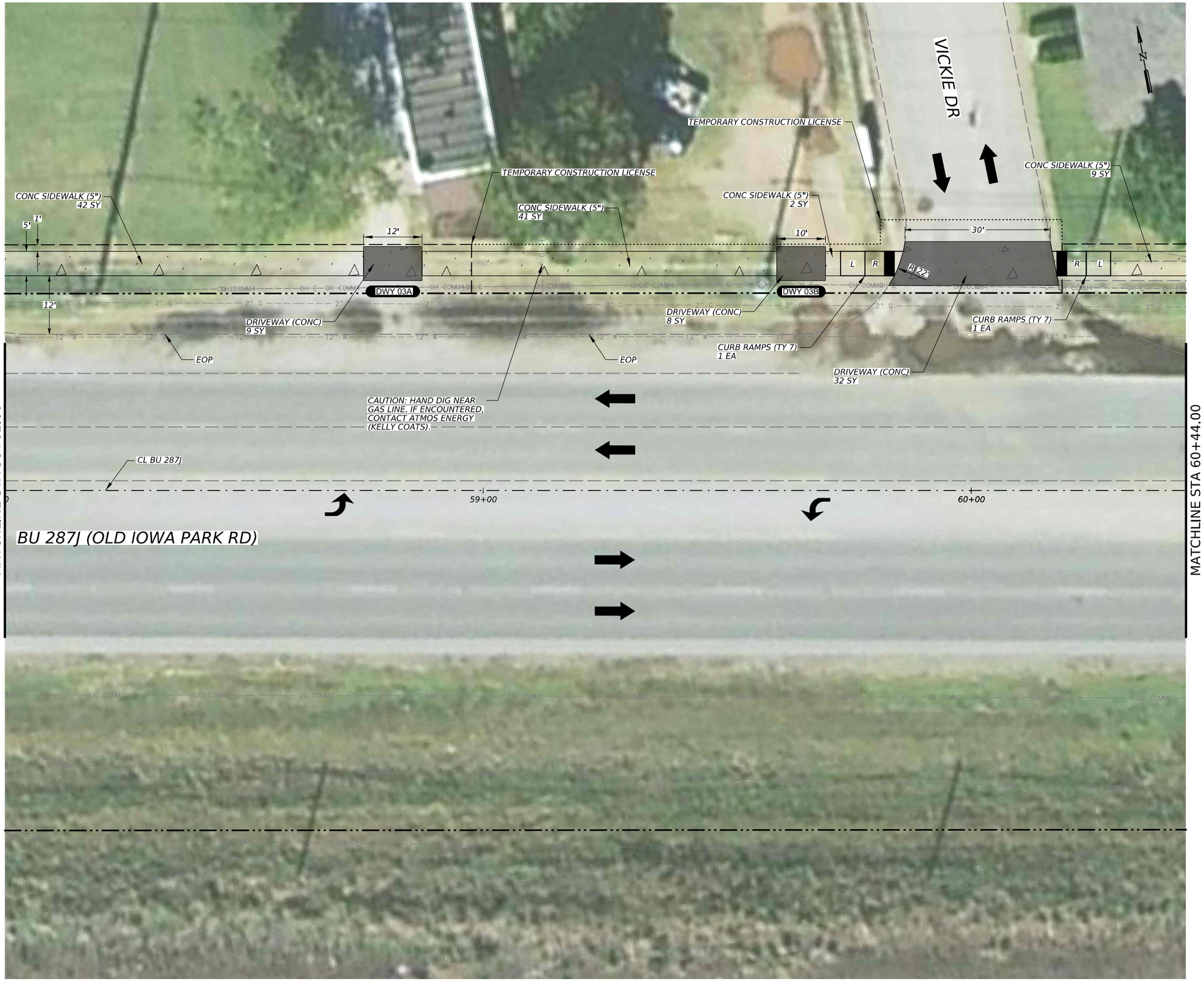
SHEET 4 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		64

DATE: 1/31/2024 10:56:24 AM
FILE: WF_P1_SDWK_04.dgn

100% PLANS SUBMITTAL

DW:	CK:
RW	DR
DR	RD
RD	KM



LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- COMBINATION RAIL
- PEDESTRIAN RAIL
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY
- CONCRETE SIDEWALK (SPECIAL) (TYPE A)
- DRIVEWAY (ACP)
- DIRECTION OF TRAVEL

NOTE

SIDEWALK OFFSET IS MEASURED FROM BACK OF CURB IN AREAS WITH CURB & GUTTER AND MEASURED FROM EDGE OF PAVEMENT FOR AREAS WITHOUT CURB.

CURB RAMP LEGEND:-
R : RAMP
L : LANDING
F : FLARE
T : TRANSITION

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0 10 20 30 40

SCALE IN FEET
1"=20'

NO.	DATE	REVISION	APPR BY

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RYAN A. WHITNEY
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LICENSED
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1/30/2024

HDR Engineering, Inc
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 58+02.00 TO STA 60+44.00

SHEET 5 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		65

DATE: 1/31/2024 10:56:38 AM
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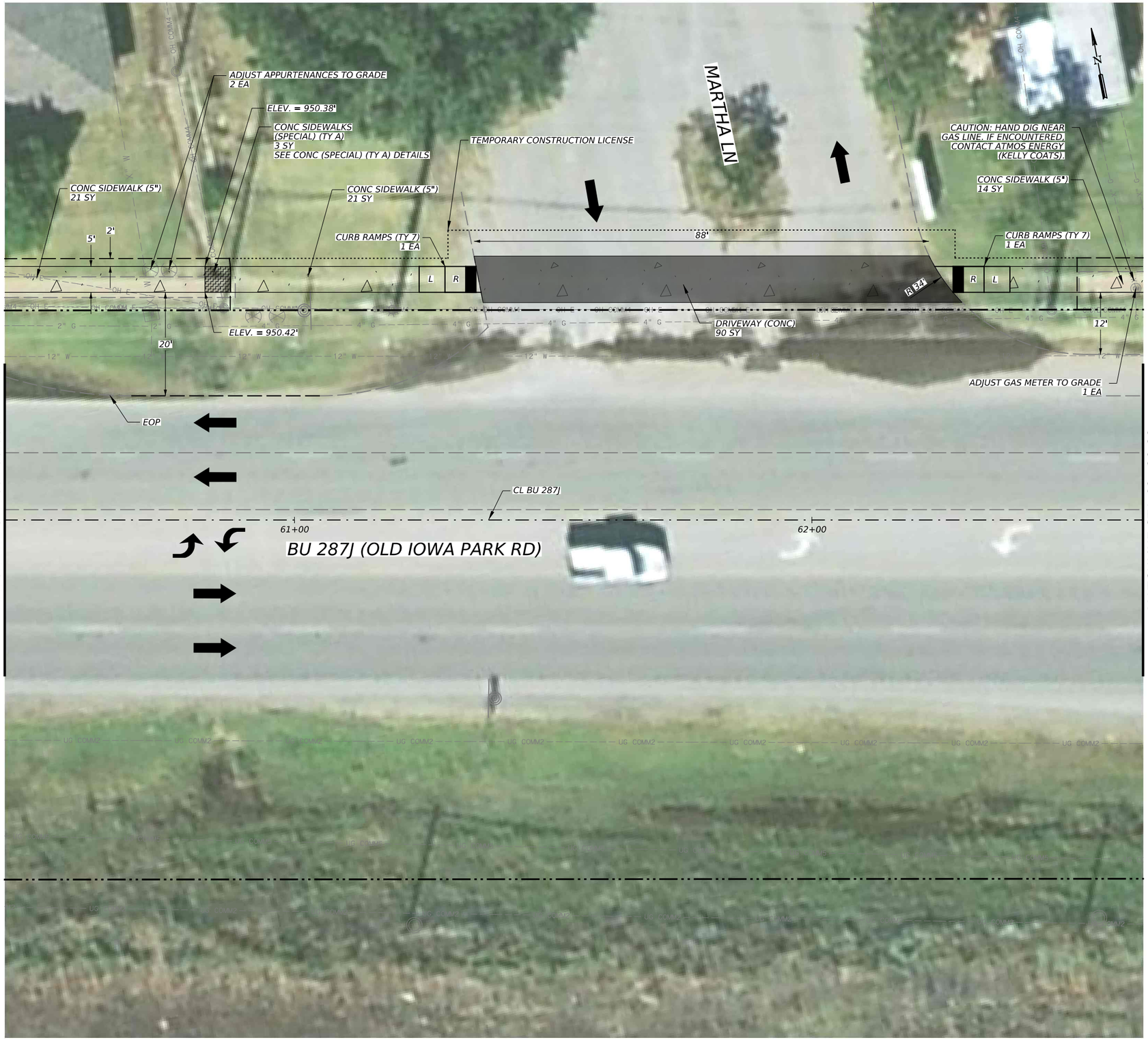
100% PLANS SUBMITTAL

DW: RW	CK: DR	DW: RD	CK: KM



LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- COMBINATION RAIL
- PEDESTRIAN RAIL
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY CONCRETE SIDEWALK (SPECIAL) (TYPE A)
- DRIVEWAY (ACP)
- DIRECTION OF TRAVEL

NOTE

SIDEWALK OFFSET IS MEASURED FROM BACK OF CURB IN AREAS WITH CURB & GUTTER AND MEASURED FROM EDGE OF PAVEMENT FOR AREAS WITHOUT CURB.

CURB RAMP LEGEND:-
R : RAMP
L : LANDING
F : FLARE
T : TRANSITION

UTILITY NOTE

UTILITY INFORMATION BASED ON AVAILABLE RECORD DATA AND INFORMATION MAY NOT BE RELIABLE. HDR, INC. DISCLAIMS RESPONSIBILITY FOR THE ACCURACY OR RELIABILITY OF UTILITY INFORMATION DEPICTED. THE LOCATIONS OF UTILITIES SHOWN DO NOT RELIEVE THE CONTRACTOR FROM THE DUTY TO COMPLY WITH THE APPLICABLE UTILITY DAMAGE PREVENTION LAWS AND REGULATIONS, INCLUDING, BUT NOT LIMITED TO, GIVING NOTIFICATION TO UTILITY OWNER'S "ONE-CALL" CENTERS BEFORE EXCAVATION.

0 10 20 30 40
SCALE IN FEET
1"=20'

NO.	DATE	REVISION	APPR BY

STATE OF TEXAS
RYAN A. WHITNEY
130723
LICENSED
PROFESSIONAL ENGINEER
1/30/2024

HDR Engineering, Inc
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 60+44.00 TO STA 62+64.00

SHEET 6 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		66

DATE: 1/31/2024 10:56:52 AM
FILE: WF_P1_SDWK_06.dgn

100% PLANS SUBMITTAL

DW:	RW	CK:	KM
DW:	DR	CK:	RD

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- COMBINATION RAIL
- PEDESTRIAN RAIL
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY
- CONCRETE SIDEWALK (SPECIAL) (TYPE A)
- DRIVEWAY (ACP)
- DIRECTION OF TRAVEL

NOTE

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1"=20'

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Round Rock, Texas 78681

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 62+64.00 TO STA 64+40.00

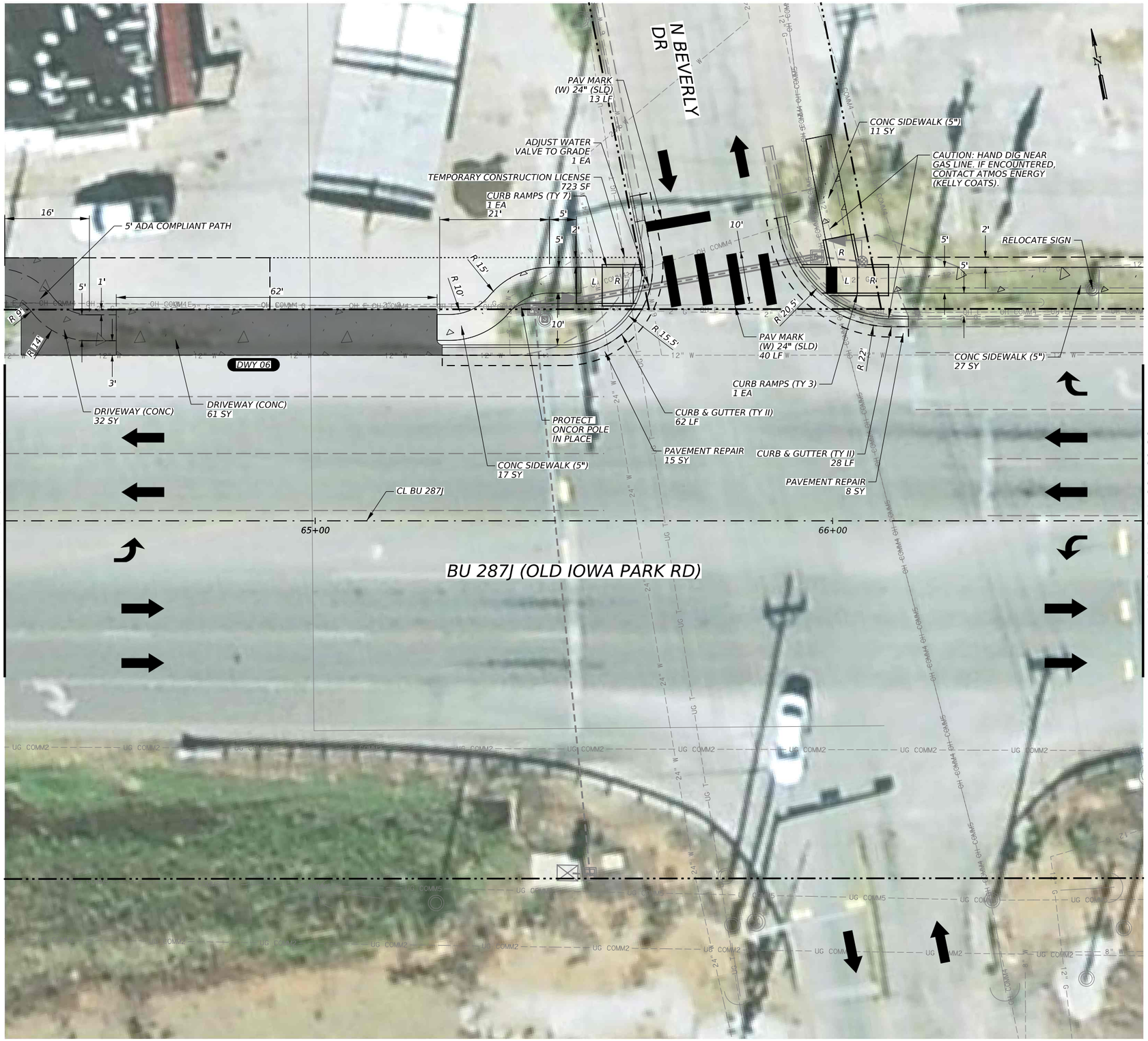
SHEET 7 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		67

DATE: 1/31/2024 10:57:08 AM
FILE: WF_P1_SDWK_07.dgn

100% PLANS SUBMITTAL

DW: RW	CK: DR	DW: RD	CK: KM



LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- COMBINATION RAIL
- PEDESTRIAN RAIL
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY CONCRETE SIDEWALK (SPECIAL) (TYPE A)
- DRIVEWAY (ACP)
- DIRECTION OF TRAVEL

NOTE

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0 10 20 30 40

SCALE IN FEET
1"=20'

NO.	DATE	REVISION	APPR BY

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1/30/2024

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Round Rock, Texas 78681

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 64+40.00 TO STA 66+60.00

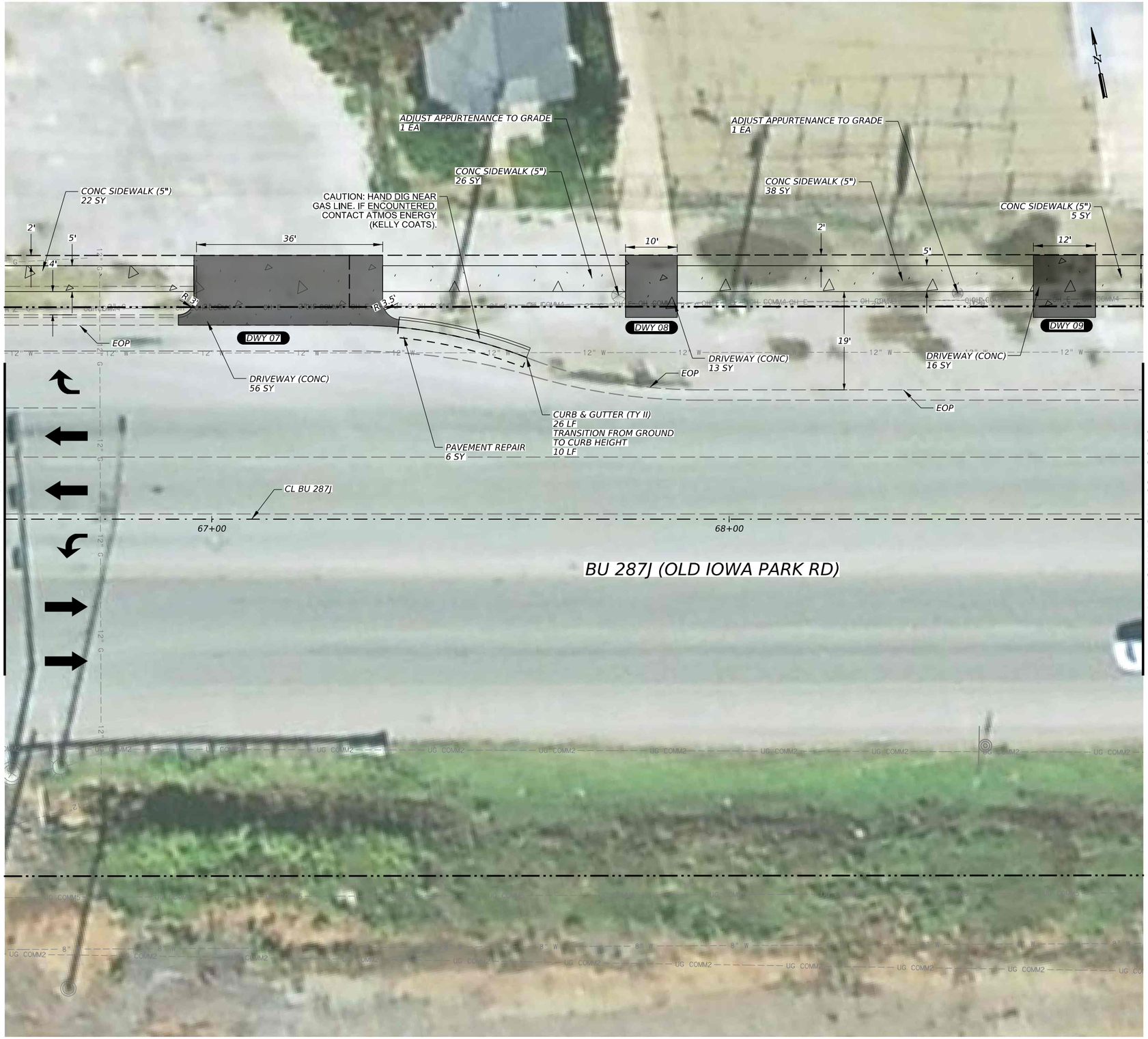
SHEET 8 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		68

DATE: 1/31/2024 10:57:22 AM
FILE: WF P1 SDWK 08.dgn

100% PLANS SUBMITTAL

dw: RW | cc: DR | dw: RD | cc: KM



LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- COMBINATION RAIL
- PEDESTRIAN RAIL
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY
- CONCRETE SIDEWALK (SPECIAL) (TYPE A)
- DRIVEWAY (ACP)
- DIRECTION OF TRAVEL

NOTE

SIDEWALK OFFSET IS MEASURED FROM BACK OF CURB IN AREAS WITH CURB & GUTTER AND MEASURED FROM EDGE OF PAVEMENT FOR AREAS WITHOUT CURB.

CURB RAMP LEGEND:-
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L : LANDING
F : FLARE
T : TRANSITION

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0 10 20 30 40

SCALE IN FEET
1"=20'

NO.	DATE	REVISION	APPR BY

STATE OF TEXAS
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1/30/2024

HDR Engineering, Inc
Firm Registration No. F-754
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Round Rock, Texas 78681

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 66+60.00 TO STA 68+80.00

SHEET 9 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		69

DATE: 1/31/2024 10:57:35 AM
FILE: WF_P1_SDWK_09.dgn

100% PLANS SUBMITTAL

DW:	CK:
RW	KM
DR	RD

LEGEND

- *APPARENT ROW*
- *CENTERLINE*
- *APPARENT PERMANENT SIDEWALK EASEMENT*
- *PROPOSED TEMPORARY CONSTRUCTION LICENSE*
- *COMBINATION RAIL*
- *PEDESTRIAN RAIL*
- *PROPOSED SIDEWALK*
- *PROPOSED DRIVEWAY CONCRETE SIDEWALK (SPECIAL) (TYPE A)*
- *DRIVEWAY (ACP)*
- *DIRECTION OF TRAVEL*

NOTE

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0 10 20 30 40
SCALE IN FEET
1"=20'

NO.	DATE	REVISION	APPR BY

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1/30/2024

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Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 68+80.00 TO STA 71+00.00

SHEET 10 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		70

DATE: 1/31/2024 10:57:49 AM
FILE: WF P1 SDWK 10.dgn

100% PLANS SUBMITTAL

DW: RW	CK: DR	DW: RD	CK: KM

LEGEND

- *APPARENT ROW*
- *CENTERLINE*
- *APPARENT PERMANENT SIDEWALK EASEMENT*
- *PROPOSED TEMPORARY CONSTRUCTION LICENSE*
- *COMBINATION RAIL*
- *PEDESTRIAN RAIL*
- *PROPOSED SIDEWALK*
- *PROPOSED DRIVEWAY*
- *CONCRETE SIDEWALK (SPECIAL) (TYPE A)*
- *DRIVEWAY (ACP)*
- *DIRECTION OF TRAVEL*

NOTE

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0 10 20 30 40
SCALE IN FEET
1"=20'

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Round Rock, Texas 78681

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 71+00.00 TO STA 73+20.00

SHEET 11 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		71

DATE: 1/31/2024 10:58:04 AM
FILE: WF_P1_SDWK_11.dgn

100% PLANS SUBMITTAL

DW: RW | CK: DR | DW: RD | CK: KM

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- COMBINATION RAIL
- PEDESTRIAN RAIL
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY
- CONCRETE SIDEWALK (SPECIAL) (TYPE A)
- DRIVEWAY (ACP)
- DIRECTION OF TRAVEL

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0 10 20 30 40

SCALE IN FEET
1"=20'

NO.	DATE	REVISION	APPR BY

STATE OF TEXAS
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1/30/2024

HDR Engineering, Inc
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 73+20.00 TO STA 75+40.00

SHEET 12 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		72

DATE: 1/31/2024 10:58:18 AM
FILE: WF_P1_SDWK_12.dgn

100% PLANS SUBMITTAL

DW: RW	CK: DR	DW: RD	CK: KM

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- COMBINATION RAIL
- PEDESTRIAN RAIL
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY
- CONCRETE SIDEWALK (SPECIAL) (TYPE A)
- DRIVEWAY (ACP)
- DIRECTION OF TRAVEL

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0 10 20 30 40
SCALE IN FEET
1"=20'

NO.	DATE	REVISION	APPR BY

STATE OF TEXAS
RYAN A. WHITNEY
130723
LICENSED
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1/30/2024

HDR Engineering, Inc
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 75+40.00 TO STA 77+60.00

SHEET 13 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		73

DATE: 1/31/2024 10:58:31 AM
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100% PLANS SUBMITTAL

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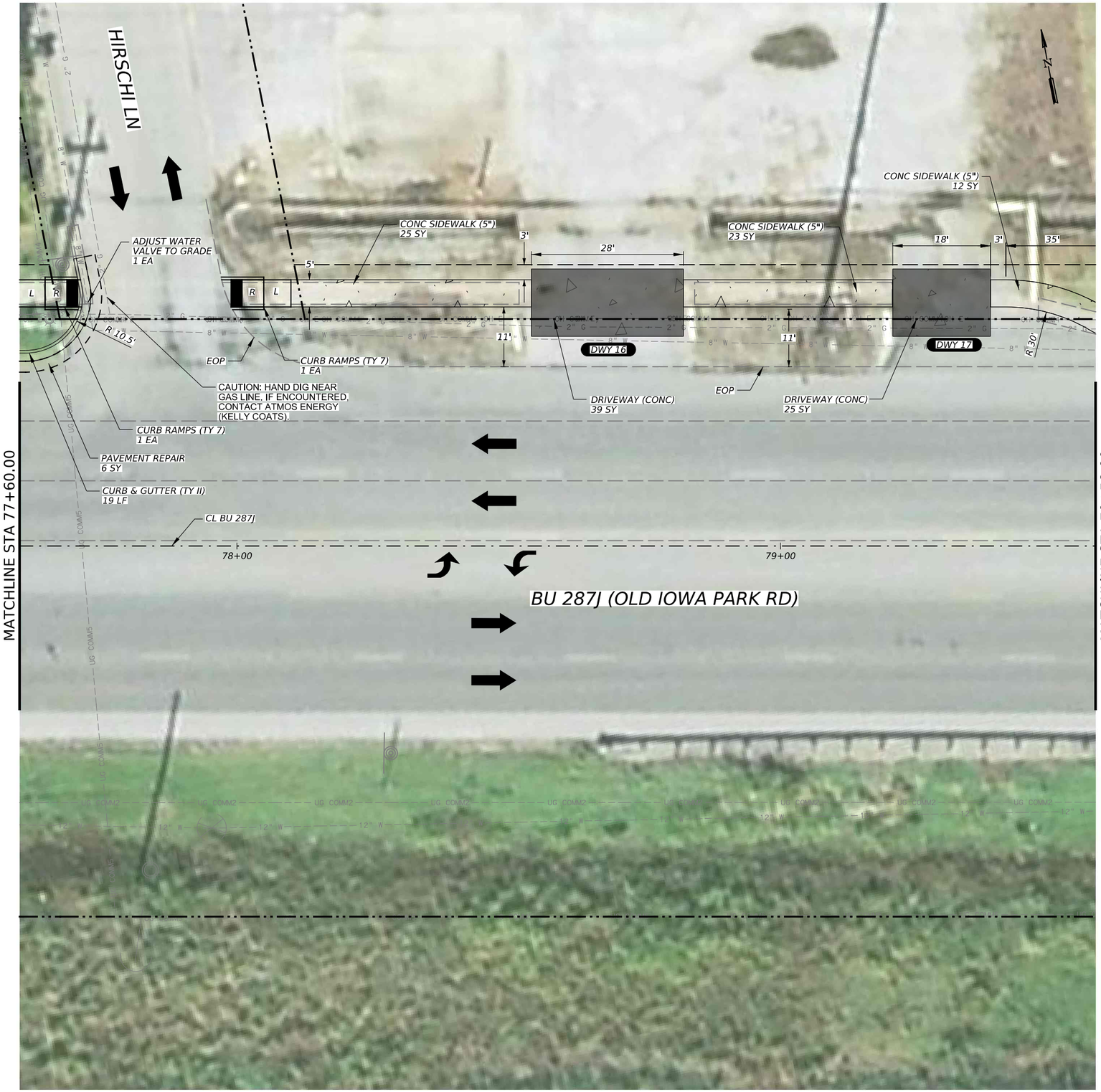

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- COMBINATION RAIL
- PEDESTRIAN RAIL
- PROPOSED SIDEWALK
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SCALE IN FEET
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NO.	DATE	REVISION	APPR BY

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1/30/2024

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Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 77+60.00 TO STA 79+58.00

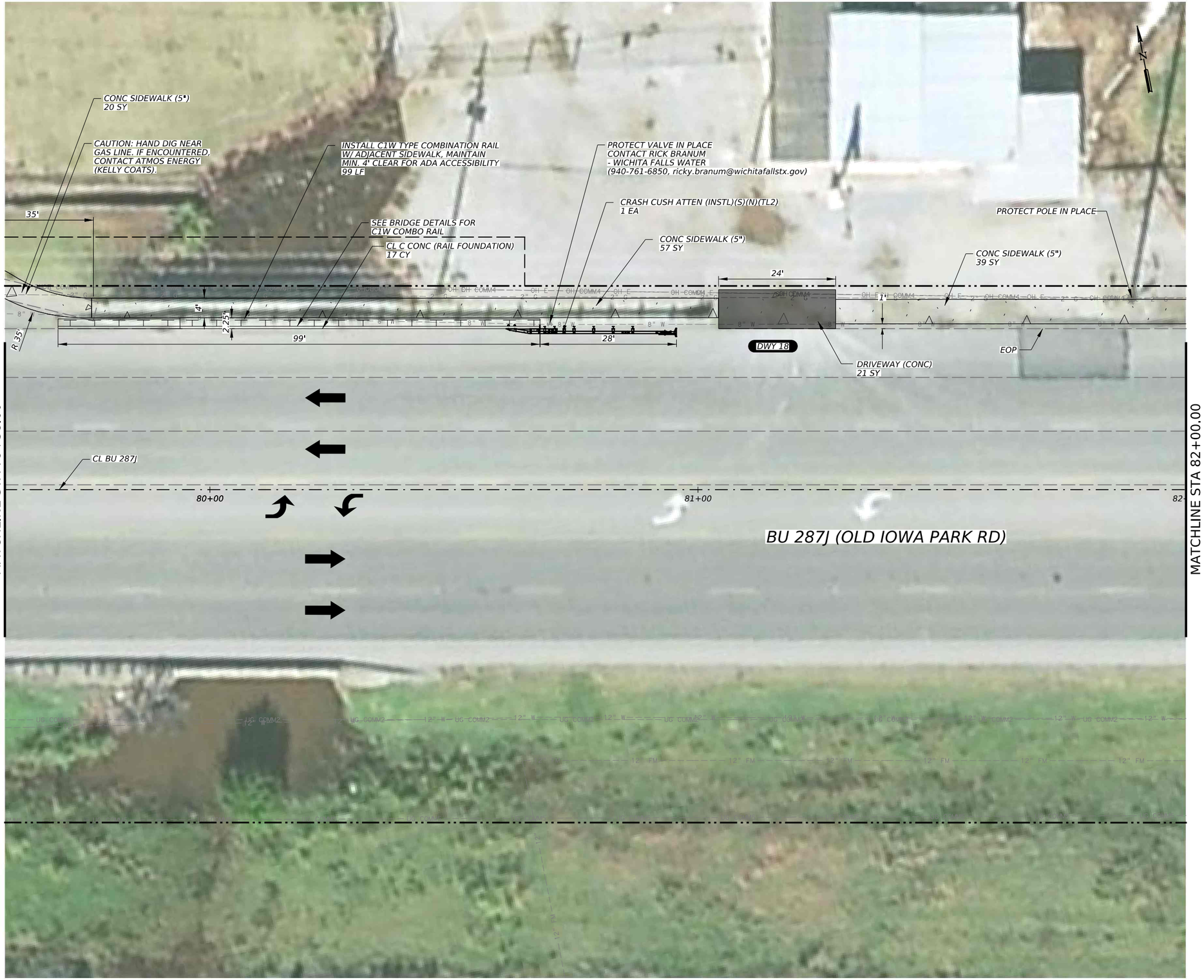
SHEET 14 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		74

DATE: 1/31/2024 10:58:48 AM
FILE: WF P1 SDWK 14.dgn

100% PLANS SUBMITTAL

DW: RW | CK: DR | DW: RD | CK: KM



LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- COMBINATION RAIL
- PEDESTRIAN RAIL
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY CONCRETE SIDEWALK (SPECIAL) (TYPE A)
- DRIVEWAY (ACP)
- DIRECTION OF TRAVEL

NOTE

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1/30/2024

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Round Rock, Texas 78681

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 79+58.00 TO STA 82+00.00

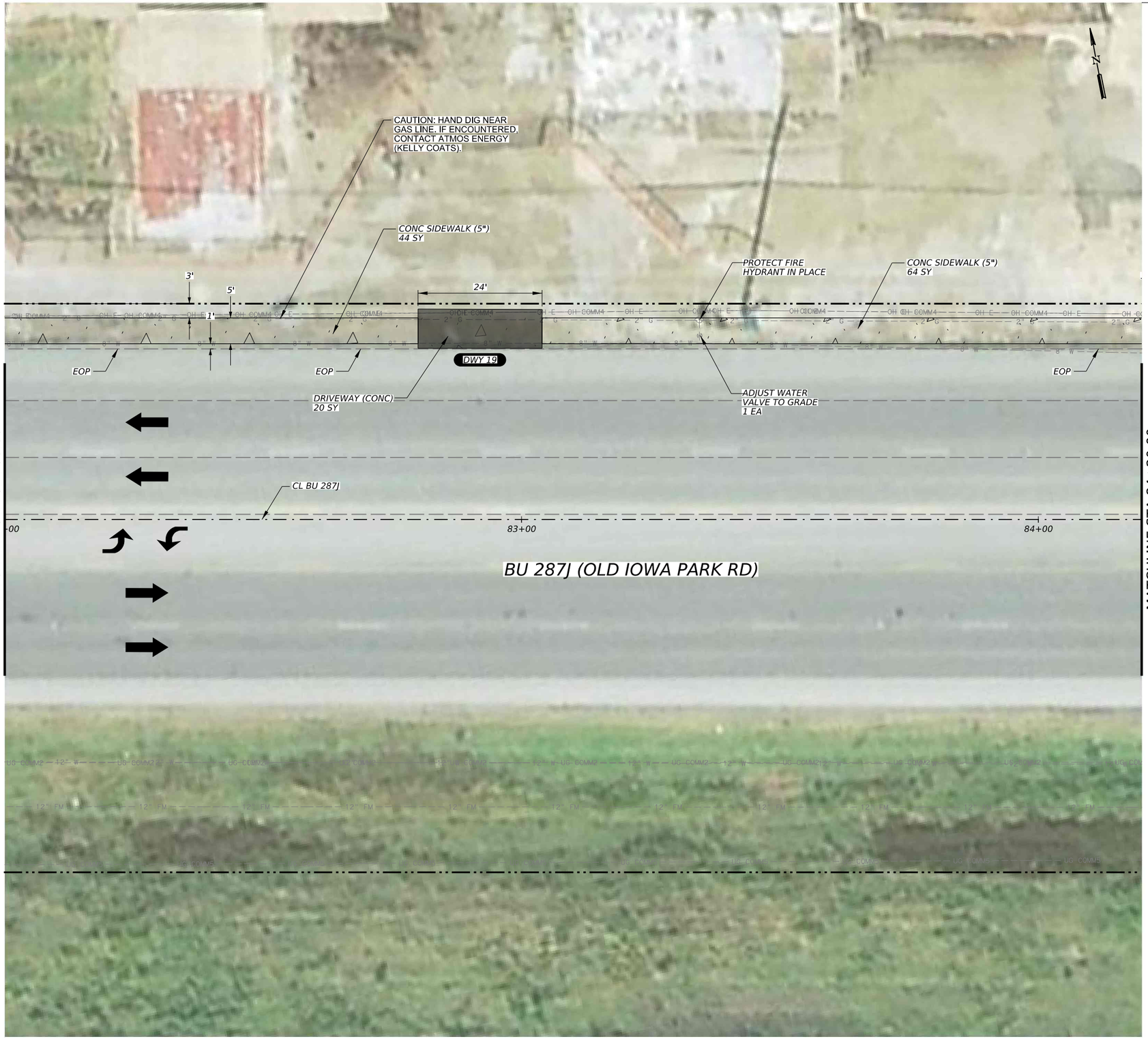
SHEET 15 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		75

DATE: 1/31/2024 10:59:03 AM
FILE: WF P1 SDWK 15.dgn

100% PLANS SUBMITTAL

DW: RW	CK: DR	DW: RD	CK: KM



LEGEND

- *APPARENT ROW*
- *CENTERLINE*
- *APPARENT PERMANENT SIDEWALK EASEMENT*
- *PROPOSED TEMPORARY CONSTRUCTION LICENSE*
- *COMBINATION RAIL*
- *PEDESTRIAN RAIL*
- *PROPOSED SIDEWALK*
- *PROPOSED DRIVEWAY CONCRETE SIDEWALK (SPECIAL) (TYPE A)*
- *DRIVEWAY (ACP)*
- *DIRECTION OF TRAVEL*

NOTE

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L : LANDING
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SCALE IN FEET
1"=20'

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WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 82+00.00 TO STA 84+20.00

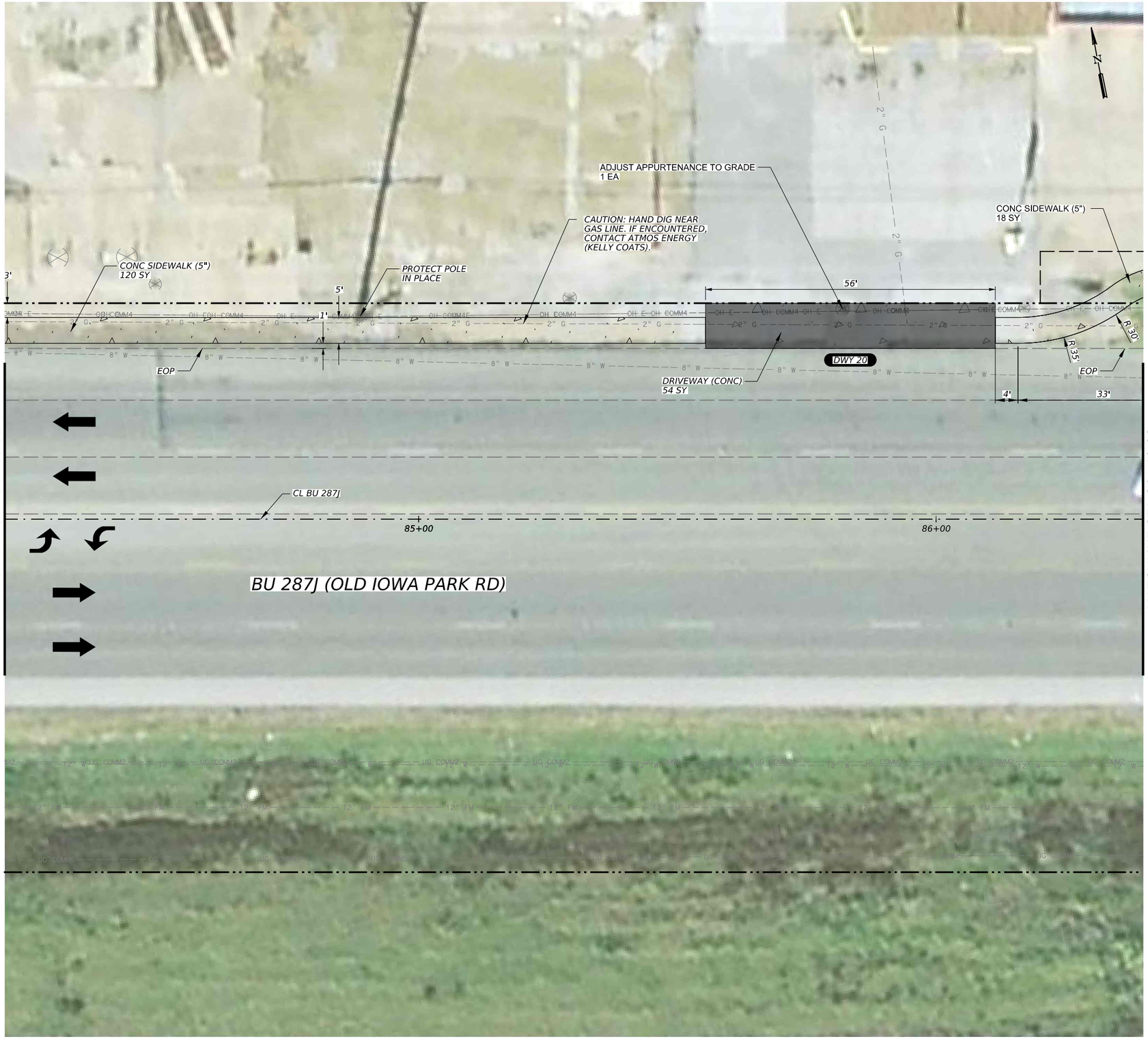
SHEET 16 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		76

DATE: 1/31/2024 10:59:21 AM
FILE: WF_P1_SDWK_16.dgn

100% PLANS SUBMITTAL

DW: RW	CK: DR	DW: RD	CK: KM



LEGEND

- *APPARENT ROW*
- *CENTERLINE*
- *APPARENT PERMANENT SIDEWALK EASEMENT*
- *PROPOSED TEMPORARY CONSTRUCTION LICENSE*
- *COMBINATION RAIL*
- *PEDESTRIAN RAIL*
- *PROPOSED SIDEWALK*
- *PROPOSED DRIVEWAY*
- *CONCRETE SIDEWALK (SPECIAL) (TYPE A)*
- *DRIVEWAY (ACP)*
- *DIRECTION OF TRAVEL*

NOTE

SIDEWALK OFFSET IS MEASURED FROM BACK OF CURB IN AREAS WITH CURB & GUTTER AND MEASURED FROM EDGE OF PAVEMENT FOR AREAS WITHOUT CURB.

CURB RAMP LEGEND:-
R : RAMP
L : LANDING
F : FLARE
T : TRANSITION

UTILITY NOTE

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0 10 20 30 40
SCALE IN FEET
1"=20'

NO.	DATE	REVISION	APPR BY

STATE OF TEXAS
RYAN A. WHITNEY
130723
LICENSED
PROFESSIONAL ENGINEER

1/30/2024

HDR Engineering, Inc
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 84+20.00 TO STA 86+40.00

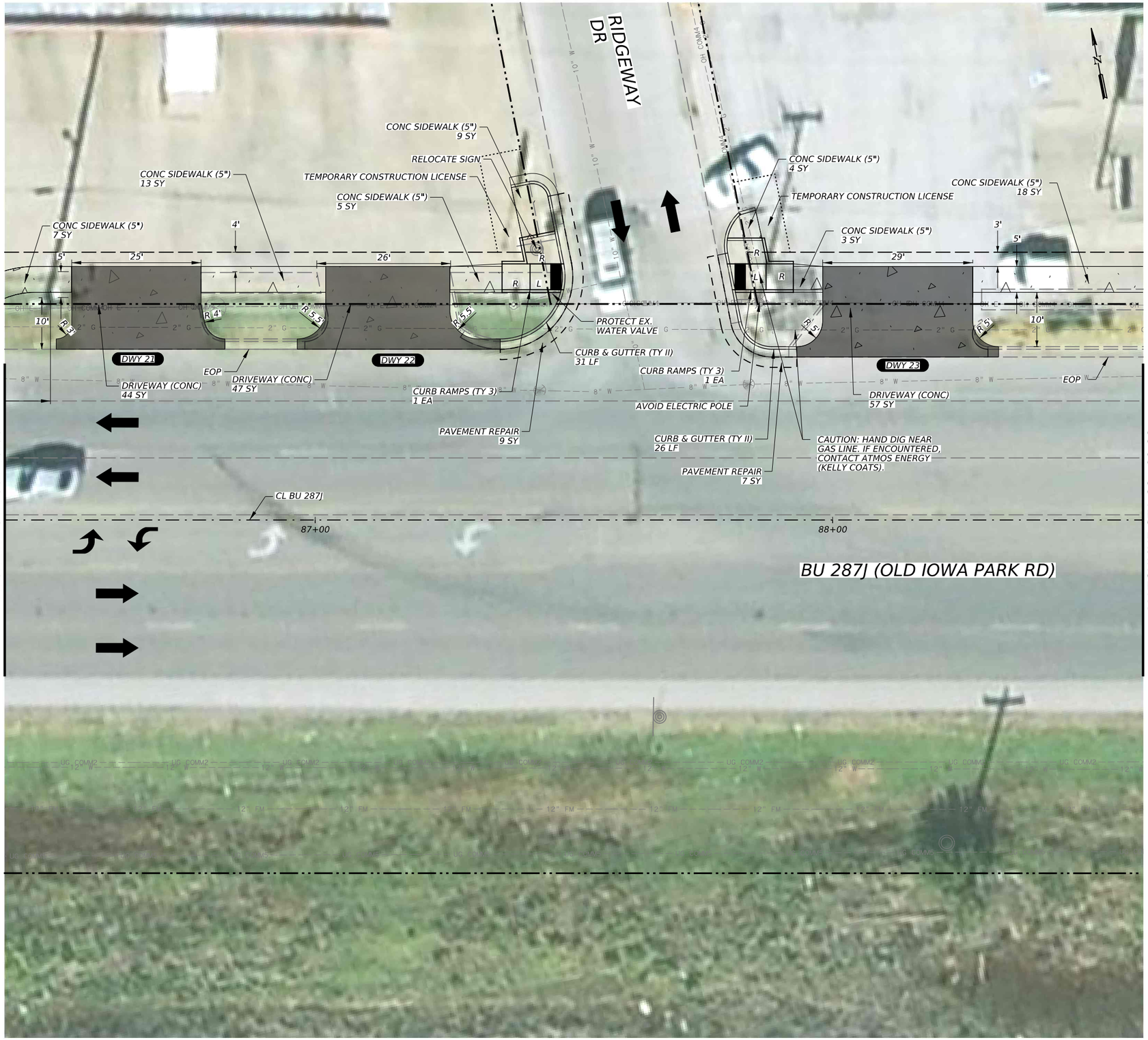
SHEET 17 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		77

DATE: 1/31/2024 10:59:37 AM
FILE: WF_P1_SDWK_17.dgn

100% PLANS SUBMITTAL

DW:	CK:
RW	KM
DR	RD



LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- COMBINATION RAIL
- PEDESTRIAN RAIL
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY CONCRETE SIDEWALK (SPECIAL) (TYPE A)
- DRIVEWAY (ACP)
- DIRECTION OF TRAVEL

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SCALE IN FEET
1"=20'

NO.	DATE	REVISION	APPR BY

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1/30/2024

HDR Engineering, Inc
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Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 86+40.00 TO STA 88+60.00

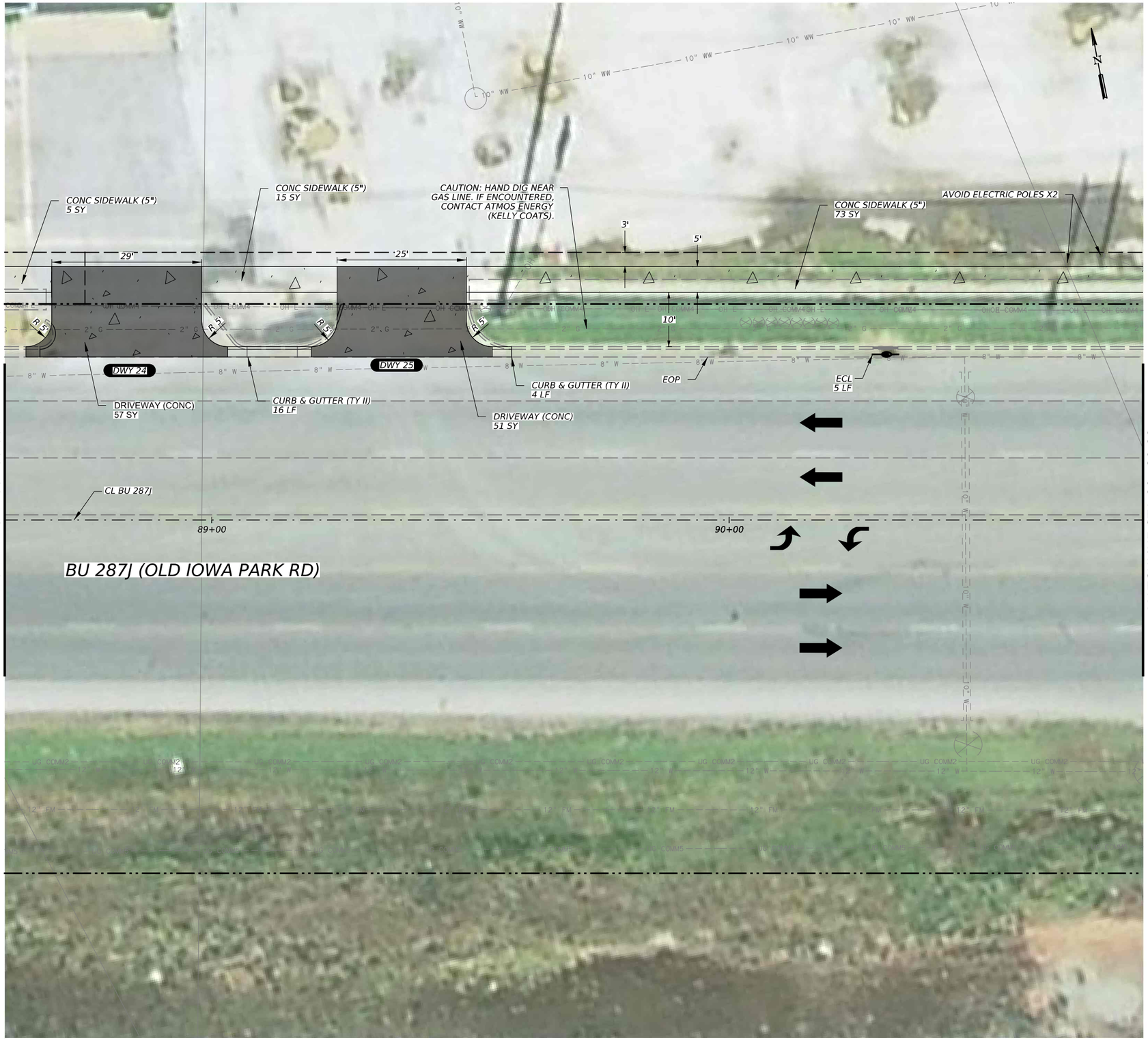
SHEET 18 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		78

DATE: 1/31/2024 11:00:04 AM
FILE: WF_P1_SDWK_18.dgn

100% PLANS SUBMITTAL

DW:	CK:
RW	DR
DR	RD
RD	KM



LEGEND

- *APPARENT ROW*
- *CENTERLINE*
- *APPARENT PERMANENT SIDEWALK EASEMENT*
- *PROPOSED TEMPORARY CONSTRUCTION LICENSE*
- *COMBINATION RAIL*
- *PEDESTRIAN RAIL*
- *PROPOSED SIDEWALK*
- *PROPOSED DRIVEWAY*
- *CONCRETE SIDEWALK (SPECIAL) (TYPE A)*
- *DRIVEWAY (ACP)*
- *DIRECTION OF TRAVEL*

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0 10 20 30 40
SCALE IN FEET
1"=20'

NO.	DATE	REVISION	APPR BY

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RYAN A. WHITNEY
130723
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1/30/2024

HDR Engineering, Inc
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 88+60.00 TO STA 90+80.00

SHEET 19 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		79

DATE: 1/31/2024 11:00:18 AM
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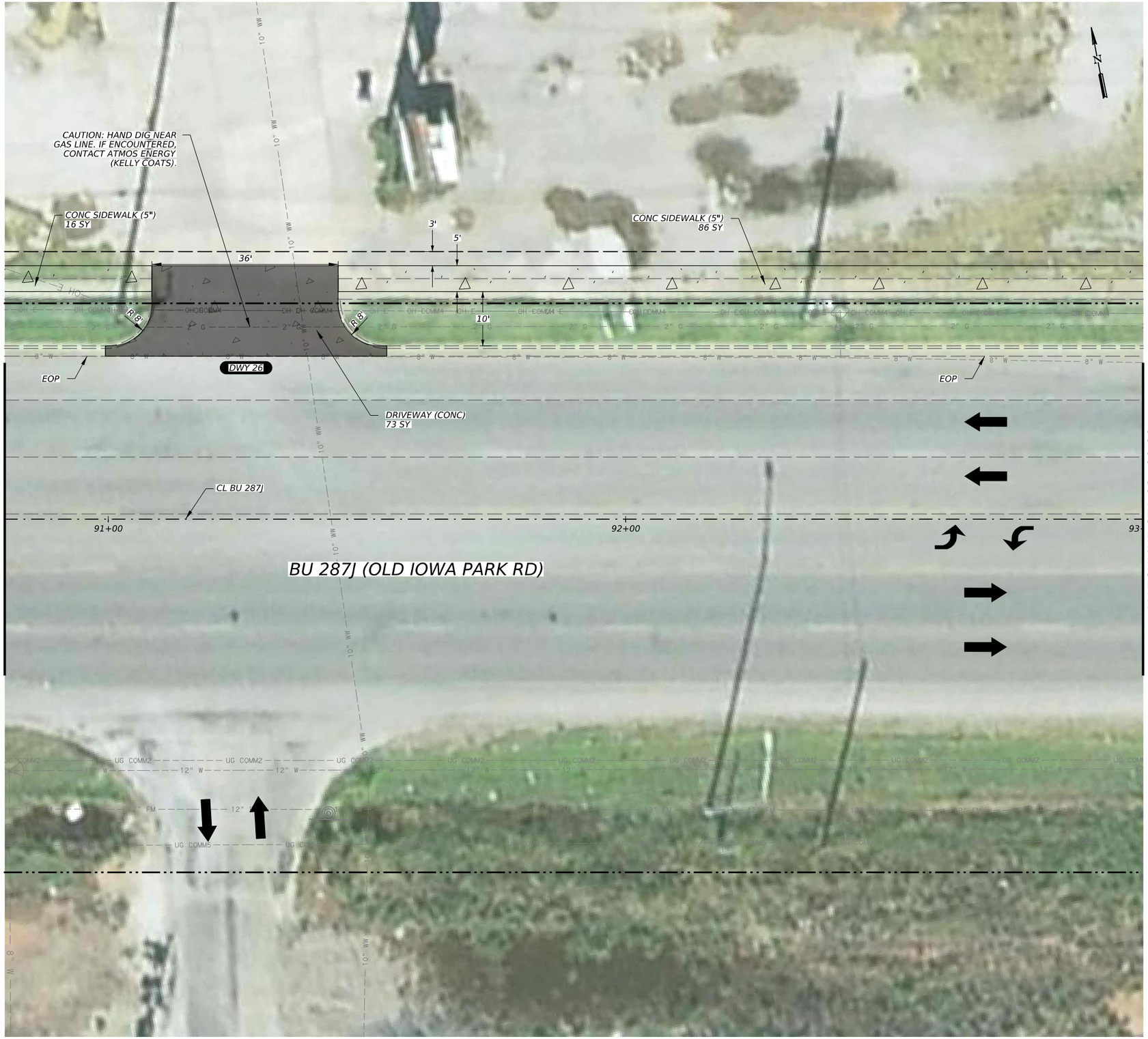
100% PLANS SUBMITTAL

DW: RW	CK: DR	DW: RD	CK: KM



LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- COMBINATION RAIL
- PEDESTRIAN RAIL
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY CONCRETE SIDEWALK (SPECIAL) (TYPE A)
- DRIVEWAY (ACP)
- DIRECTION OF TRAVEL

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0 10 20 30 40

SCALE IN FEET
1"=20'

NO.	DATE	REVISION	APPR BY

STATE OF TEXAS
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130723
LICENSED PROFESSIONAL ENGINEER

1/30/2024

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Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 90+80.00 TO STA 93+00.00

SHEET 20 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		80

DATE: 1/31/2024 11:00:39 AM
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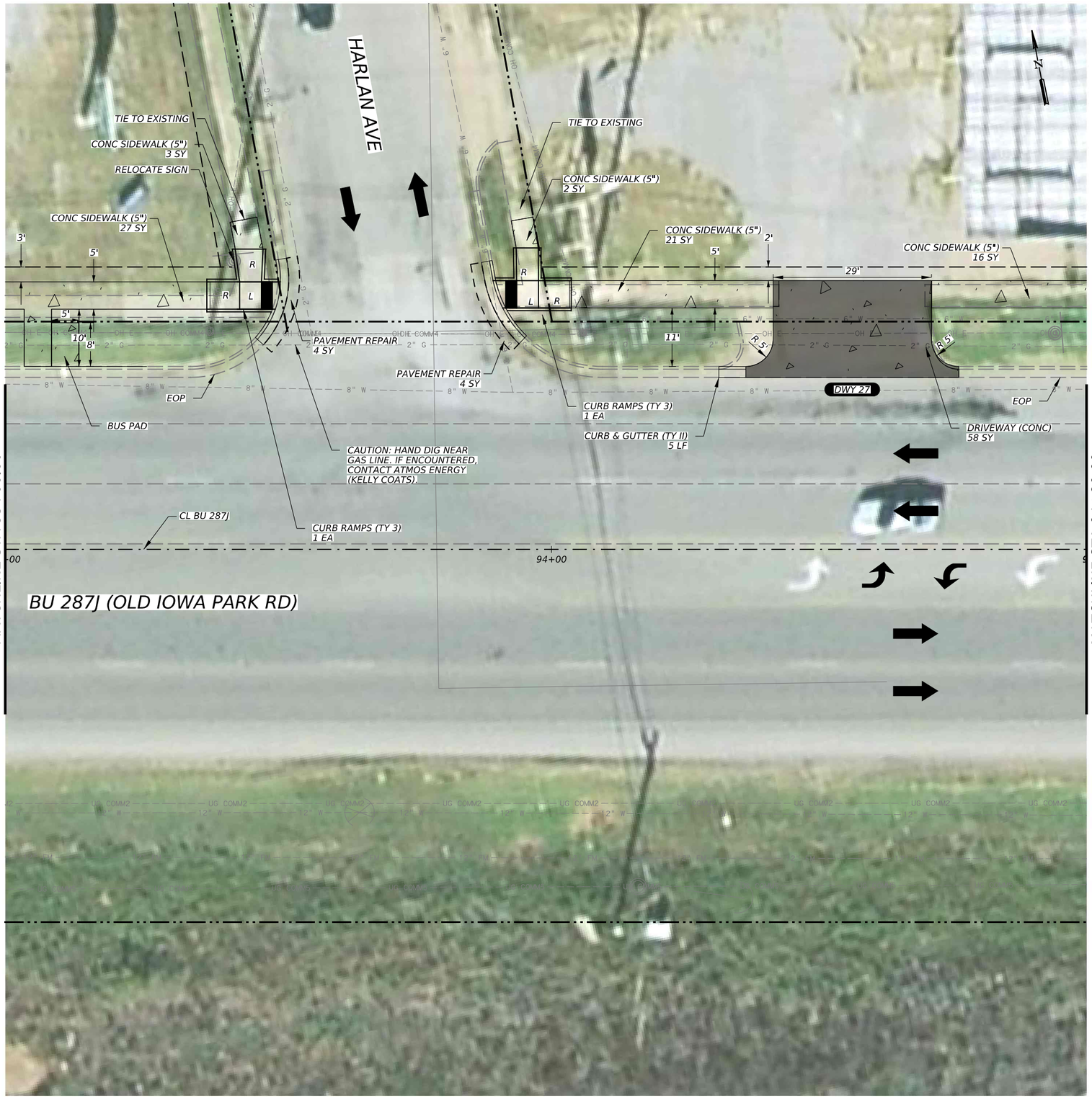
100% PLANS SUBMITTAL

DW: RW	CK: DR	DW: RD	CK: KM



LEGEND

- *APPARENT ROW*
- *CENTERLINE*
- *APPARENT PERMANENT SIDEWALK EASEMENT*
- *PROPOSED TEMPORARY CONSTRUCTION LICENSE*
- *COMBINATION RAIL*
- *PEDESTRIAN RAIL*
- *PROPOSED SIDEWALK*
- *PROPOSED DRIVEWAY CONCRETE SIDEWALK (SPECIAL) (TYPE A)*
- *DRIVEWAY (ACP)*
- *DIRECTION OF TRAVEL*

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1"=20'

NO.	DATE	REVISION	APPR BY

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Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 93+00.00 TO STA 94+80.00

SHEET 21 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		81

DATE: 1/31/2024 11:00:53 AM
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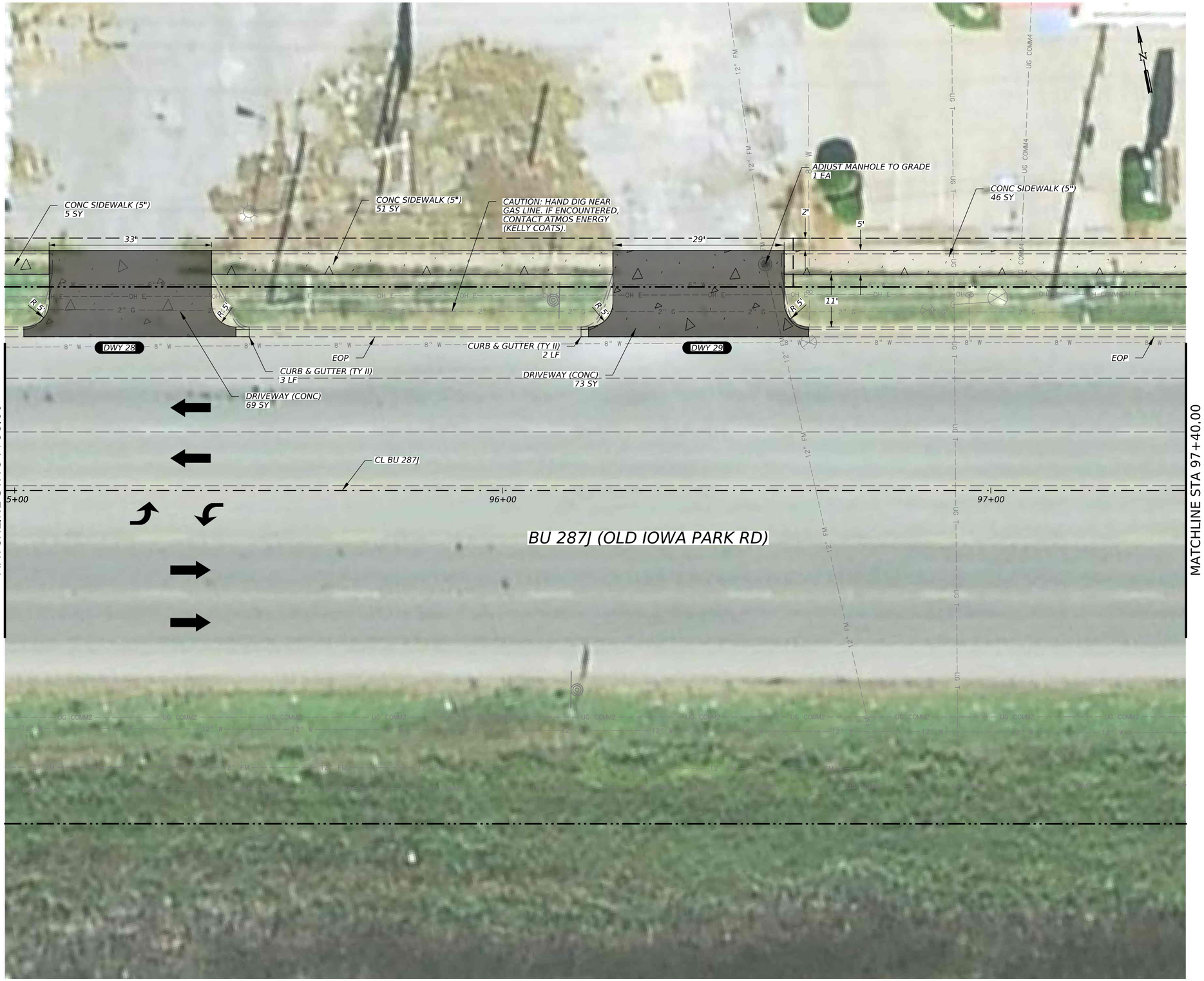
100% PLANS SUBMITTAL

DW:	CK:
RW	DR
DR	RD
RD	KM



LEGEND

- *APPARENT ROW*
- *CENTERLINE*
- *APPARENT PERMANENT SIDEWALK EASEMENT*
- *PROPOSED TEMPORARY CONSTRUCTION LICENSE*
- *COMBINATION RAIL*
- *PEDESTRIAN RAIL*
- *PROPOSED SIDEWALK*
- *PROPOSED DRIVEWAY CONCRETE SIDEWALK (SPECIAL) (TYPE A)*
- *DRIVEWAY (ACP)*
- *DIRECTION OF TRAVEL*

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1"=20'

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Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 94+98.00 TO STA 97+40.00

SHEET 22 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		82

DATE: 1/31/2024 11:01:07 AM
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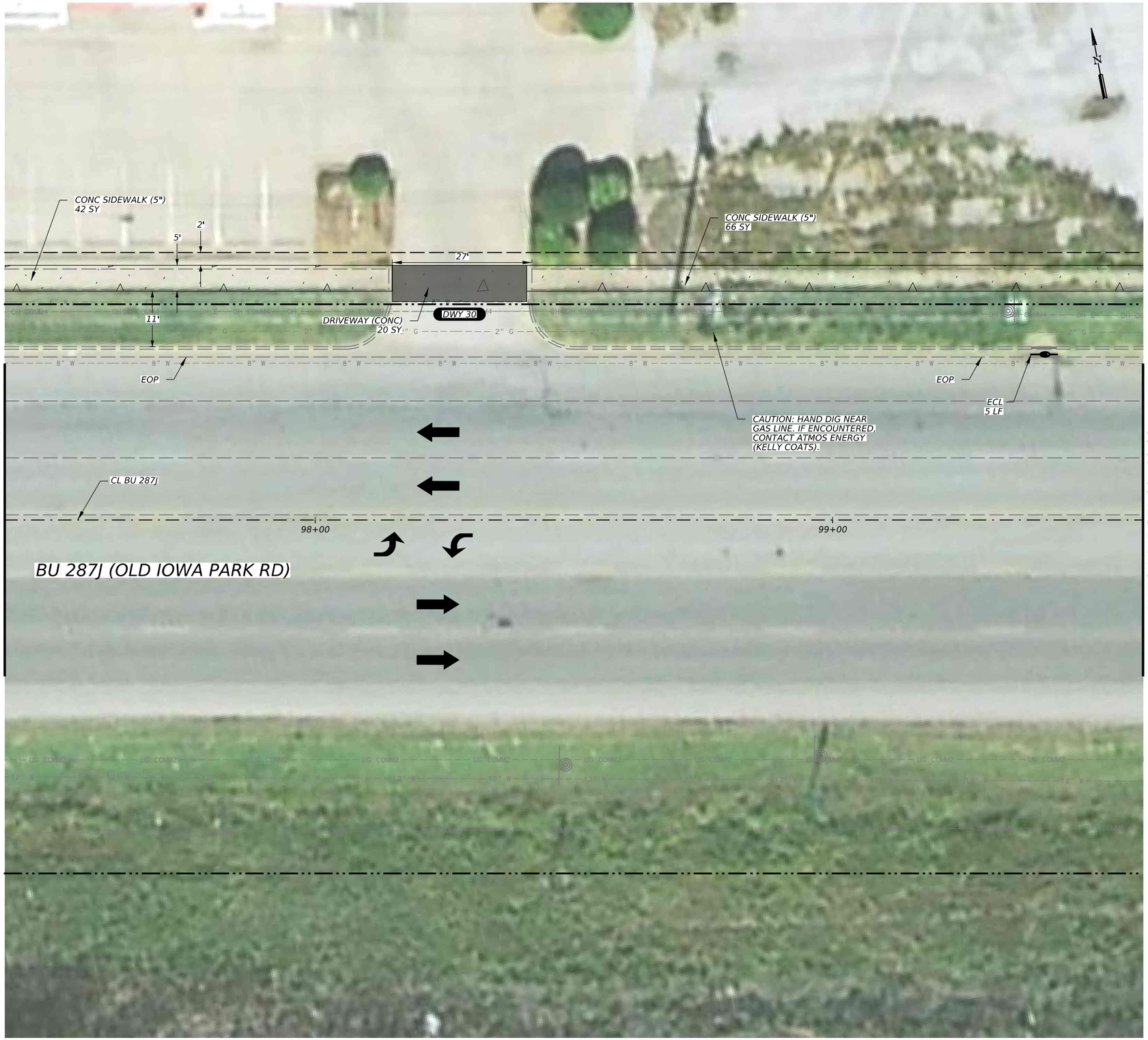
100% PLANS SUBMITTAL

DW: RW	CK: DR	DW: RD	CK: KM



LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- COMBINATION RAIL
- PEDESTRIAN RAIL
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY CONCRETE SIDEWALK (SPECIAL) (TYPE A)
- DRIVEWAY (ACP)
- DIRECTION OF TRAVEL

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0 10 20 30 40
SCALE IN FEET
1"=20'

NO.	DATE	REVISION	APPR BY

STATE OF TEXAS
RYAN A. WHITNEY
130723
LICENSED
PROFESSIONAL ENGINEER
1/30/2024

HDR Engineering, Inc
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 97+40.00 TO STA 99+60.00

SHEET 23 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		83

DATE: 1/31/2024 11:01:21 AM
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100% PLANS SUBMITTAL

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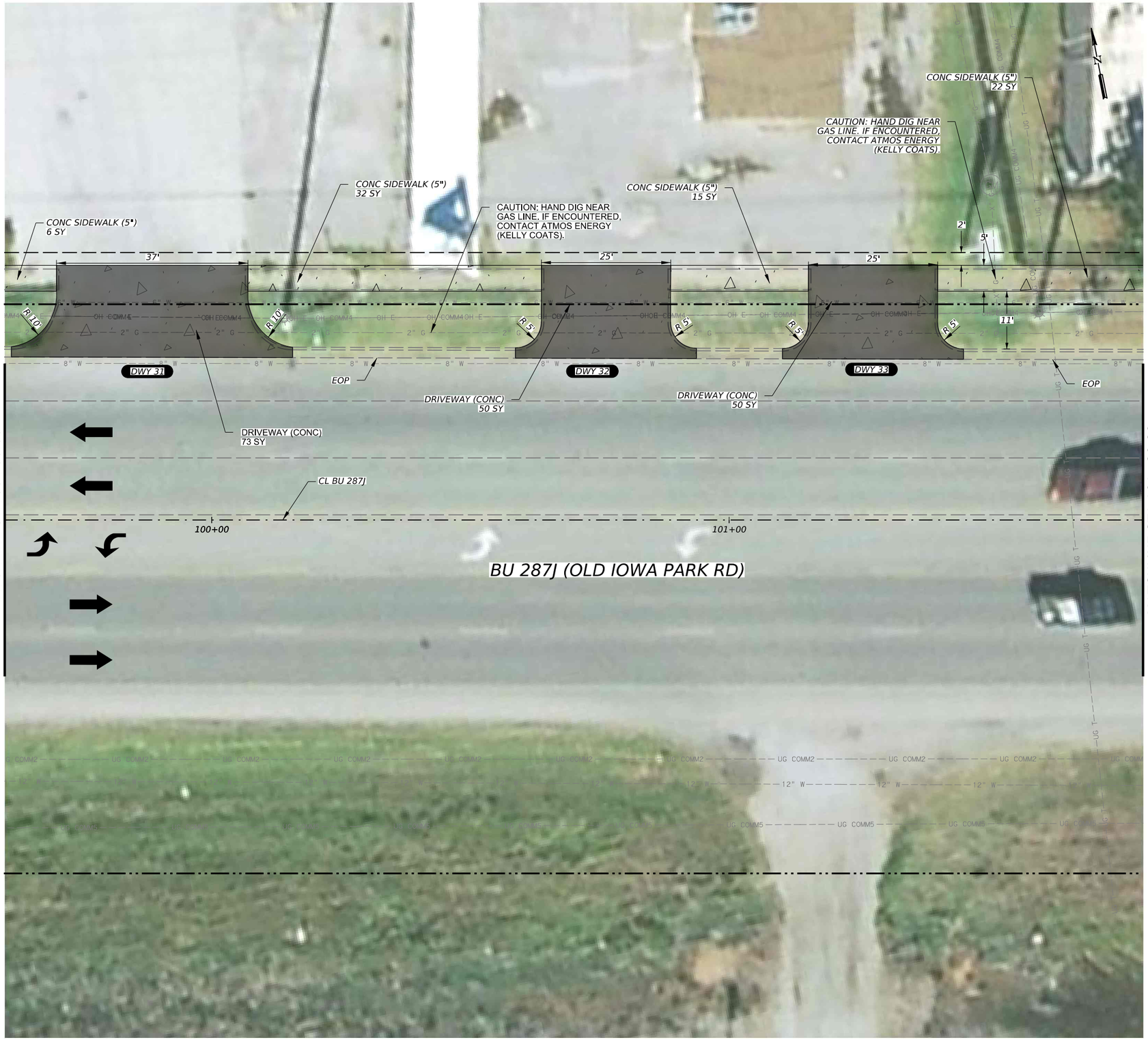
CK:	KM



LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- COMBINATION RAIL
- PEDESTRIAN RAIL
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0 10 20 30 40
SCALE IN FEET
1"=20'

NO.	DATE	REVISION	APPR BY

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1/30/2024

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Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 99+60.00 TO STA 101+80.00

SHEET 24 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		84

DATE: 1/31/2024 11:01:35 AM
FILE: WF_P1_SDWK_24.dgn

100% PLANS SUBMITTAL

DW: RW	CK: DR	DW: RD	CK: KM

LEGEND

- *APPARENT ROW*
- *CENTERLINE*
- *APPARENT PERMANENT SIDEWALK EASEMENT*
- *PROPOSED TEMPORARY CONSTRUCTION LICENSE*
- *COMBINATION RAIL*
- *PEDESTRIAN RAIL*
- *PROPOSED SIDEWALK*
- *PROPOSED DRIVEWAY CONCRETE SIDEWALK (SPECIAL) (TYPE A)*
- *DRIVEWAY (ACP)*
- *DIRECTION OF TRAVEL*

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0 10 20 30 40

SCALE IN FEET
1"=20'

NO.	DATE	REVISION	APPR BY

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1/30/2024

HDR Engineering, Inc
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Round Rock, Texas 78681

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 101+80.00 TO STA 103+71.74

SHEET 25 OF 34

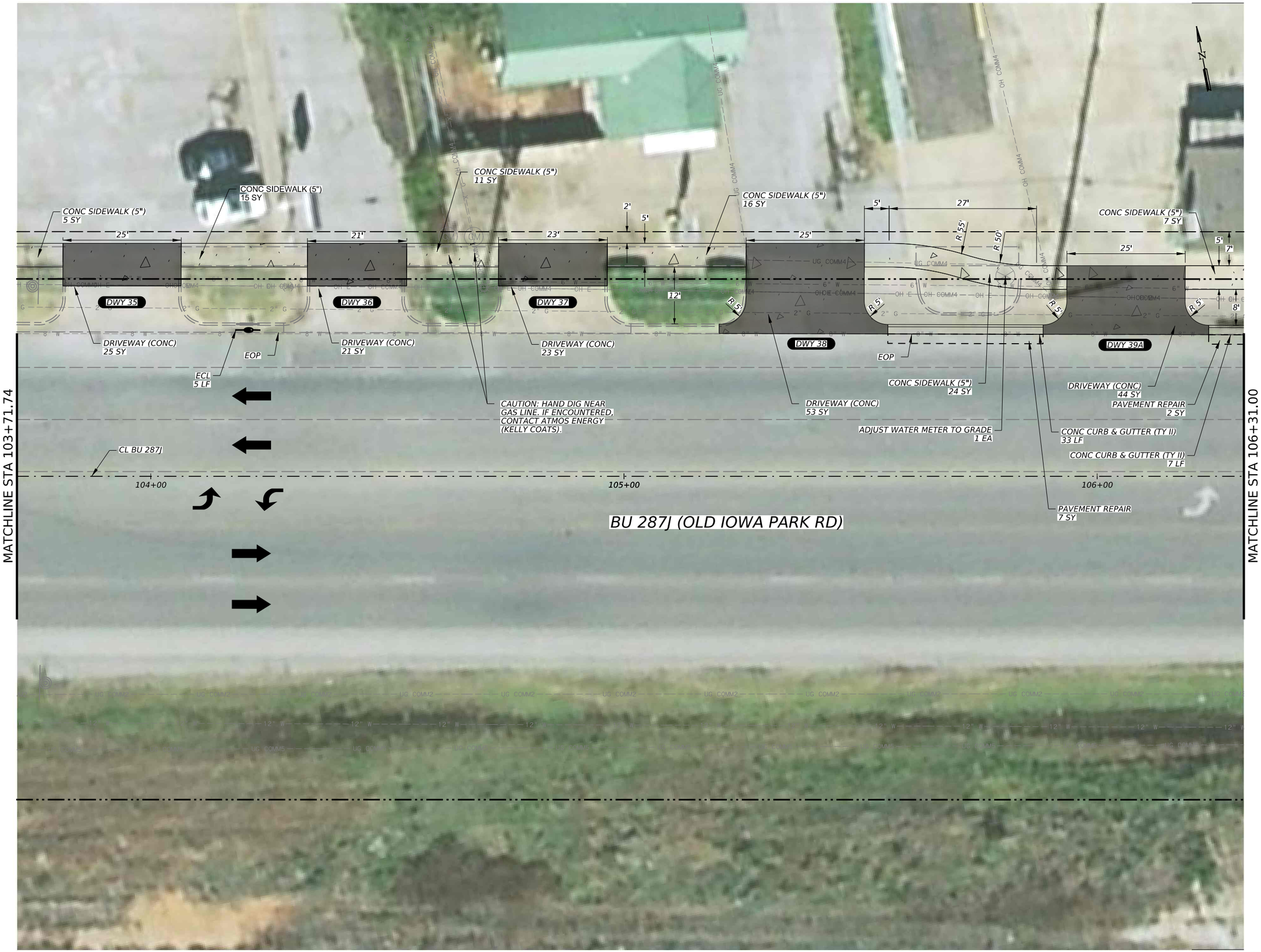
CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		85

DATE: 1/31/2024 11:01:50 AM
FILE: WF_P1_SDWK_25.dgn

100% PLANS SUBMITTAL

DW:	CK:
RW	KM
DR	RD

MATCHLINE STA 103+71.74



MATCHLINE STA 106+31.00

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- COMBINATION RAIL
- PEDESTRIAN RAIL
- PROPOSED SIDEWALK
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- DRIVEWAY (ACP)
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Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 103+71.74 TO STA 106+31.00

SHEET 26 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		86

DATE: 1/31/2024 11:02:03 AM
FILE: WF_P1_SDWK_26.dgn

100% PLANS SUBMITTAL

DW:	RW	CK:	KM
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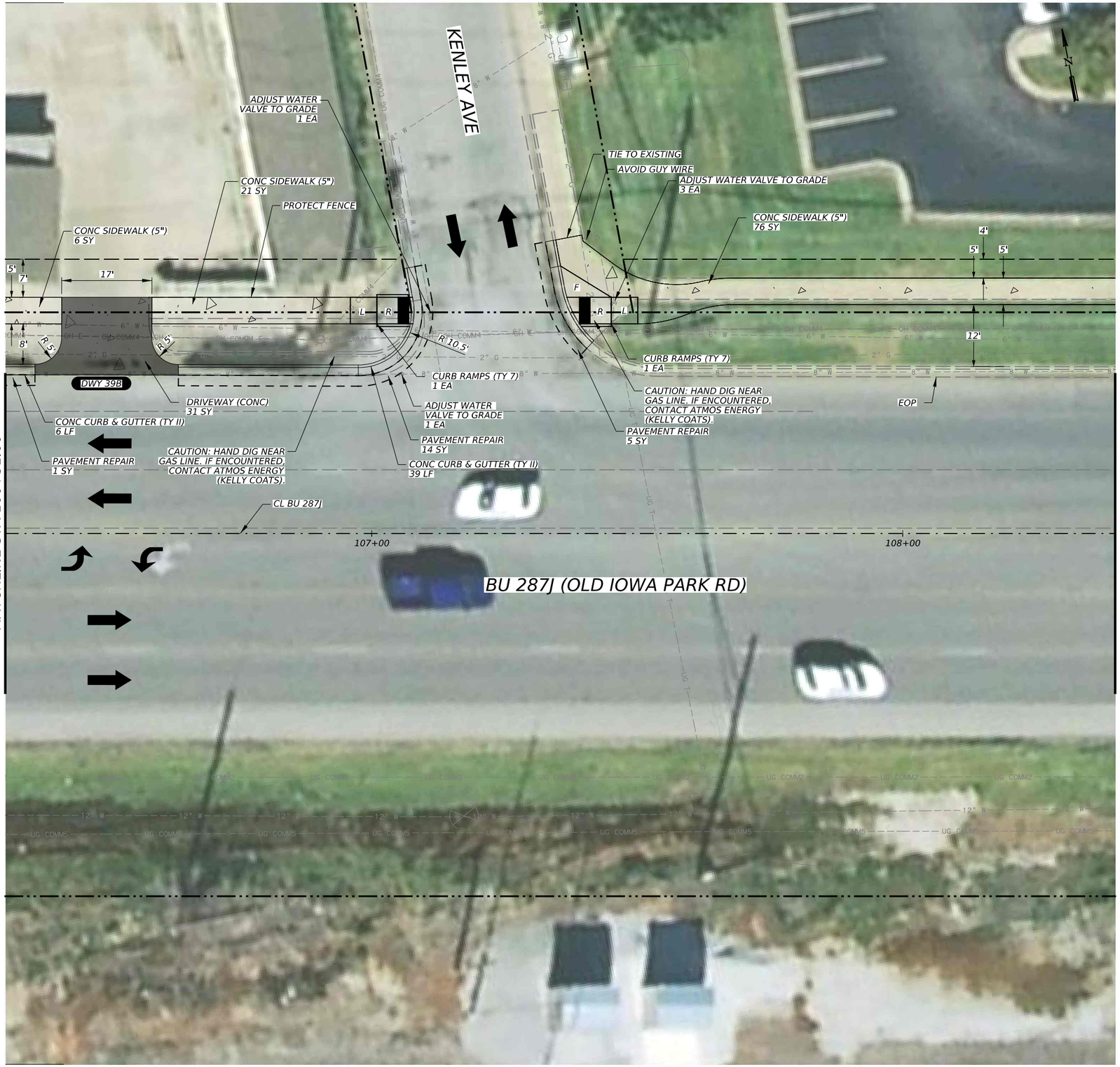

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- COMBINATION RAIL
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SCALE IN FEET
1"=20'

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Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 106+31.00 TO STA 108+40.00

SHEET 27 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		87

DATE: 1/31/2024 11:02:20 AM
FILE: WF P1 SDWK 27.dgn

100% PLANS SUBMITTAL

DW: RW | CK: DR | DW: RD | CK: KM

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- COMBINATION RAIL
- PEDESTRIAN RAIL
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY CONCRETE SIDEWALK (SPECIAL) (TYPE A)
- DRIVEWAY (ACP)
- DIRECTION OF TRAVEL

NOTE

SIDEWALK OFFSET IS MEASURED FROM BACK OF CURB IN AREAS WITH CURB & GUTTER AND MEASURED FROM EDGE OF PAVEMENT FOR AREAS WITHOUT CURB.

CURB RAMP LEGEND:-
R : RAMP
L : LANDING
F : FLARE
T : TRANSITION

UTILITY NOTE

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0 10 20 30 40

SCALE IN FEET
1"=20'

NO.	DATE	REVISION	APPR BY

STATE OF TEXAS
RYAN A. WHITNEY
130723
LICENSED
PROFESSIONAL ENGINEER

1/30/2024

HDR Engineering, Inc
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 108+40.00 TO STA 110+60.00

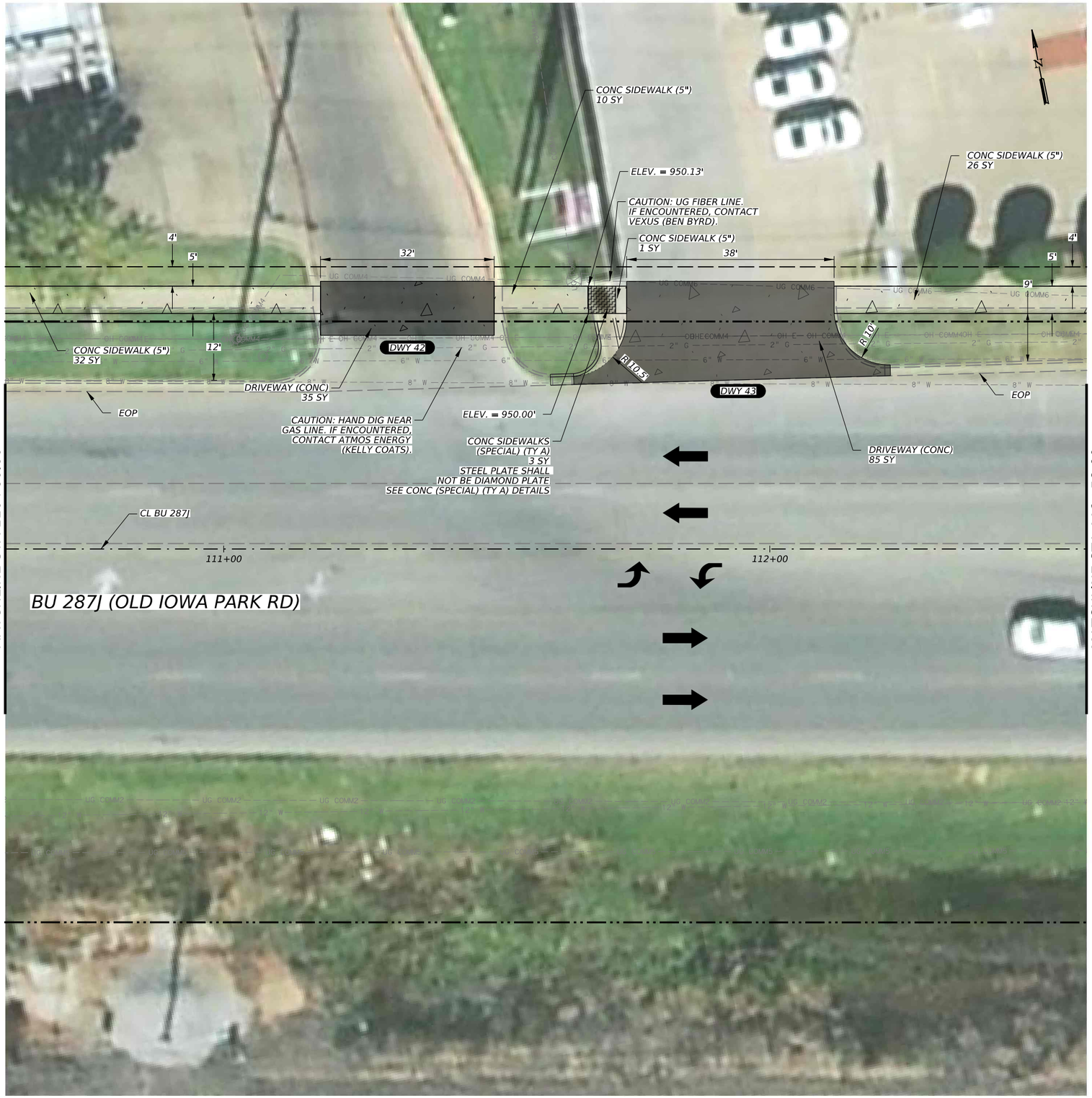
SHEET 28 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		88

DATE: 1/31/2024 11:02:37 AM
FILE: WF P1 SDWK 28.dgn

100% PLANS SUBMITTAL

DW:	RW
CK:	DR
DW:	RD
CK:	KM



LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- COMBINATION RAIL
- PEDESTRIAN RAIL
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY CONCRETE SIDEWALK (SPECIAL) (TYPE A)
- DRIVEWAY (ACP)
- DIRECTION OF TRAVEL

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0 10 20 30 40
SCALE IN FEET
1"=20'

NO.	DATE	REVISION	APPR BY

STATE OF TEXAS
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130723
LICENSED
PROFESSIONAL ENGINEER
1/30/2024

HDR Engineering, Inc
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 110+60.00 TO STA 112+58.00

SHEET 29 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		89

DATE: 1/31/2024 11:02:56 AM
FILE: WF_P1_SDWK_29.dgn

100% PLANS SUBMITTAL

DW:	RW
CK:	DR
DW:	RD
CK:	KM

MATCHLINE STA 112+58.00

MATCHLINE STA 115+03.67

WOLCOTT LN

PROTECT EXISTING METAL FLAG POSTS

CONC SIDEWALK (5")
9 SY

CONC SIDEWALK (5")
9 SY

TIE TO EXISTING

4' RELOCATE SIGN

CAUTION: HAND DIG NEAR GAS LINE. IF ENCOUNTERED, CONTACT ATMOS ENERGY (KELLY COATS).

CURB RAMPS (TY 7)
1 EA

AVOID VEXUS HAND HOLE

CONC SIDEWALK (5")
24 SY

CONC SIDEWALK (5")
3 SY

5' 23' 7' 5' 27' 5' 4' 5' 30'

R 8.5' R 6.5' R 6.5' R 6.5' R 5.5'

R L R L

DWY 44

DRIVEWAY (CONC)
48 SY

DWY 45

DRIVEWAY (CONC)
48 SY

EOP

CONC SIDEWALK (5")
19 SY

DWY 46

19'

DRIVEWAY (CONC)
33 SY

EOP

PAVEMENT REPAIR
6 SY

CAUTION: HAND DIG NEAR GAS LINE. IF ENCOUNTERED, CONTACT ATMOS ENERGY (KELLY COATS).

CURB RAMPS (TY 3)
1 EA

CAUTION: UG FIBER LINE. IF ENCOUNTERED, CONTACT VEXUS (BEN BYRD).

CL BU 287J

113+00 114+00 115+00

BU 287J (OLD IOWA PARK RD)

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- COMBINATION RAIL
- PEDESTRIAN RAIL
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY CONCRETE SIDEWALK (SPECIAL) (TYPE A)
- DRIVEWAY (ACP)
- DIRECTION OF TRAVEL

NOTE

SIDEWALK OFFSET IS MEASURED FROM BACK OF CURB IN AREAS WITH CURB & GUTTER AND MEASURED FROM EDGE OF PAVEMENT FOR AREAS WITHOUT CURB.

CURB RAMP LEGEND:-
R : RAMP
L : LANDING
F : FLARE
T : TRANSITION

UTILITY NOTE

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0 10 20 30 40

SCALE IN FEET
1"=20'

NO.	DATE	REVISION	APPR BY

STATE OF TEXAS
RYAN A. WHITNEY
130723
LICENSED
PROFESSIONAL ENGINEER

1/30/2024

HDR Engineering, Inc
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 112+58.00 TO STA 115+03.67

SHEET 30 OF 34

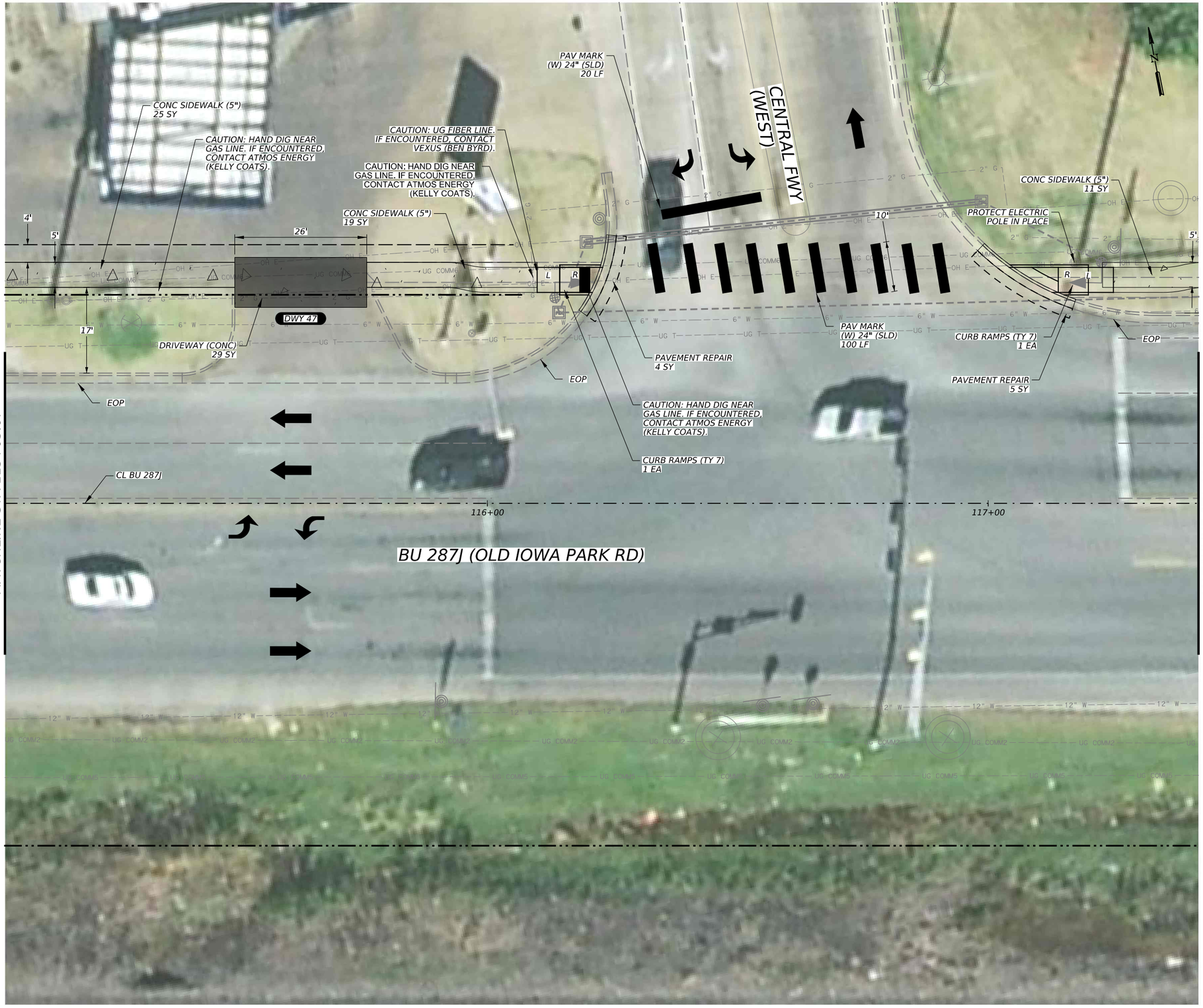
CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		90

DATE: 1/31/2024 11:03:14 AM
FILE: WF P1 SDWK 30.dgn

100% PLANS SUBMITTAL

DW: RW	Cc: DR	DW: RD	Cc: KM

MATCHLINE STA 115+03.67



MATCHLINE STA 117+42.00

LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
- COMBINATION RAIL
- PEDESTRIAN RAIL
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY
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- DRIVEWAY (ACP)
- DIRECTION OF TRAVEL

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SCALE IN FEET
1"=20'

NO.	DATE	REVISION	APPR BY

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1/30/2024

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Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 115+03.67 TO STA 117+42.00

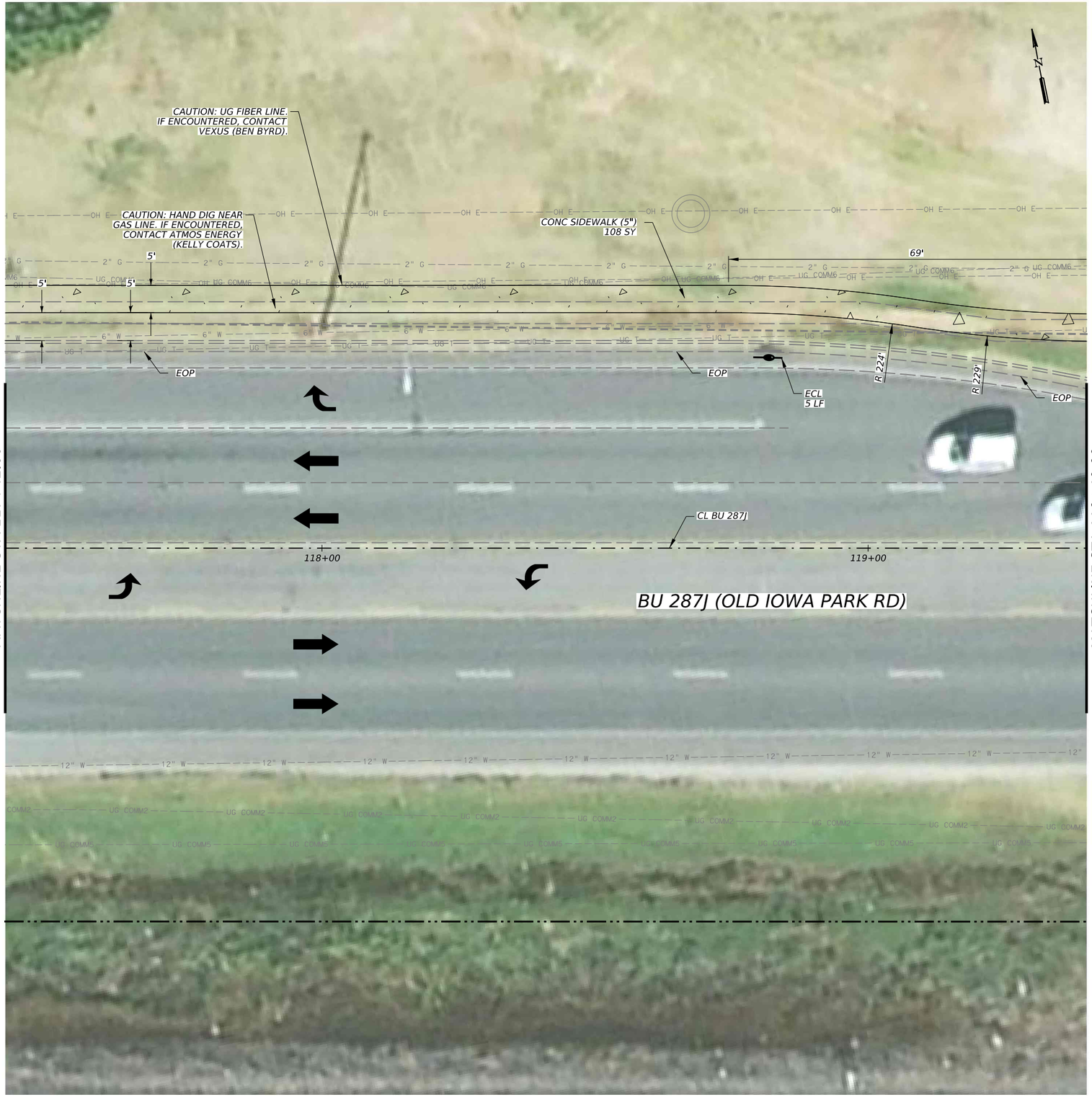
SHEET 31 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		91

DATE: 1/31/2024 11:03:29 AM
FILE: WF P1 SDWK 31.dgn

100% PLANS SUBMITTAL

DW: RW	CK: DR	DW: RD	CK: KM



LEGEND

- *APPARENT ROW*
- *CENTERLINE*
- *APPARENT PERMANENT SIDEWALK EASEMENT*
- *PROPOSED TEMPORARY CONSTRUCTION LICENSE*
- *COMBINATION RAIL*
- *PEDESTRIAN RAIL*
- *PROPOSED SIDEWALK*
- *PROPOSED DRIVEWAY*
- *CONCRETE SIDEWALK (SPECIAL) (TYPE A)*
- *DRIVEWAY (ACP)*
- *DIRECTION OF TRAVEL*

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0 10 20 30 40
SCALE IN FEET
1"=20'

NO.	DATE	REVISION	APPR BY

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Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 117+42.00 TO STA 119+40.00

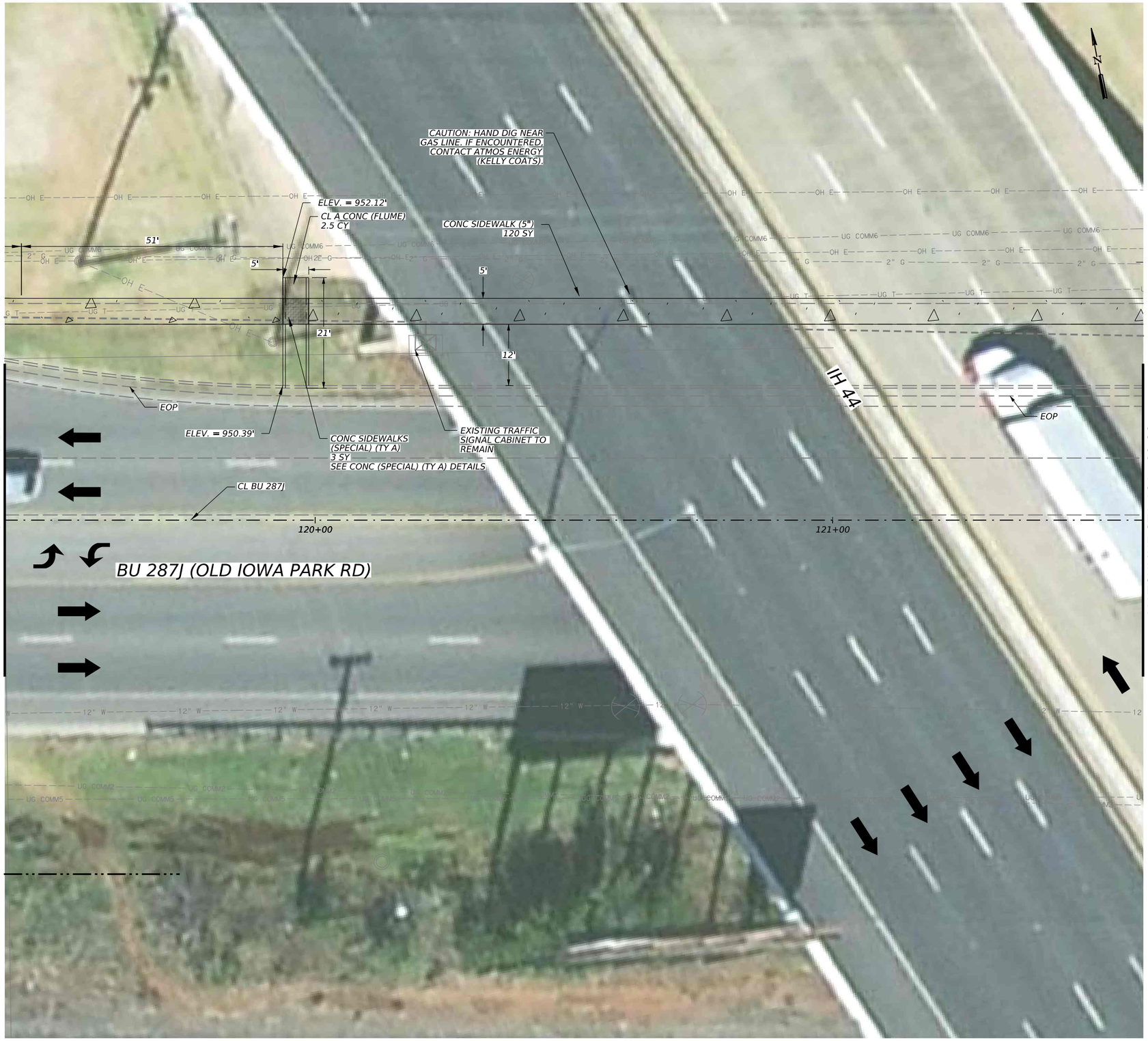
SHEET 32 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		92

DATE: 1/31/2024 11:03:45 AM
FILE: WF_P1_SDWK_32.dgn

100% PLANS SUBMITTAL

DW:	CK:
RW	KM
DR	RD



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- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
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SCALE IN FEET
1"=20'

NO.	DATE	REVISION	APPR BY

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PROFESSIONAL ENGINEER
1/30/2024

HDR Engineering, Inc
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 119+40.00 TO STA 121+60.00

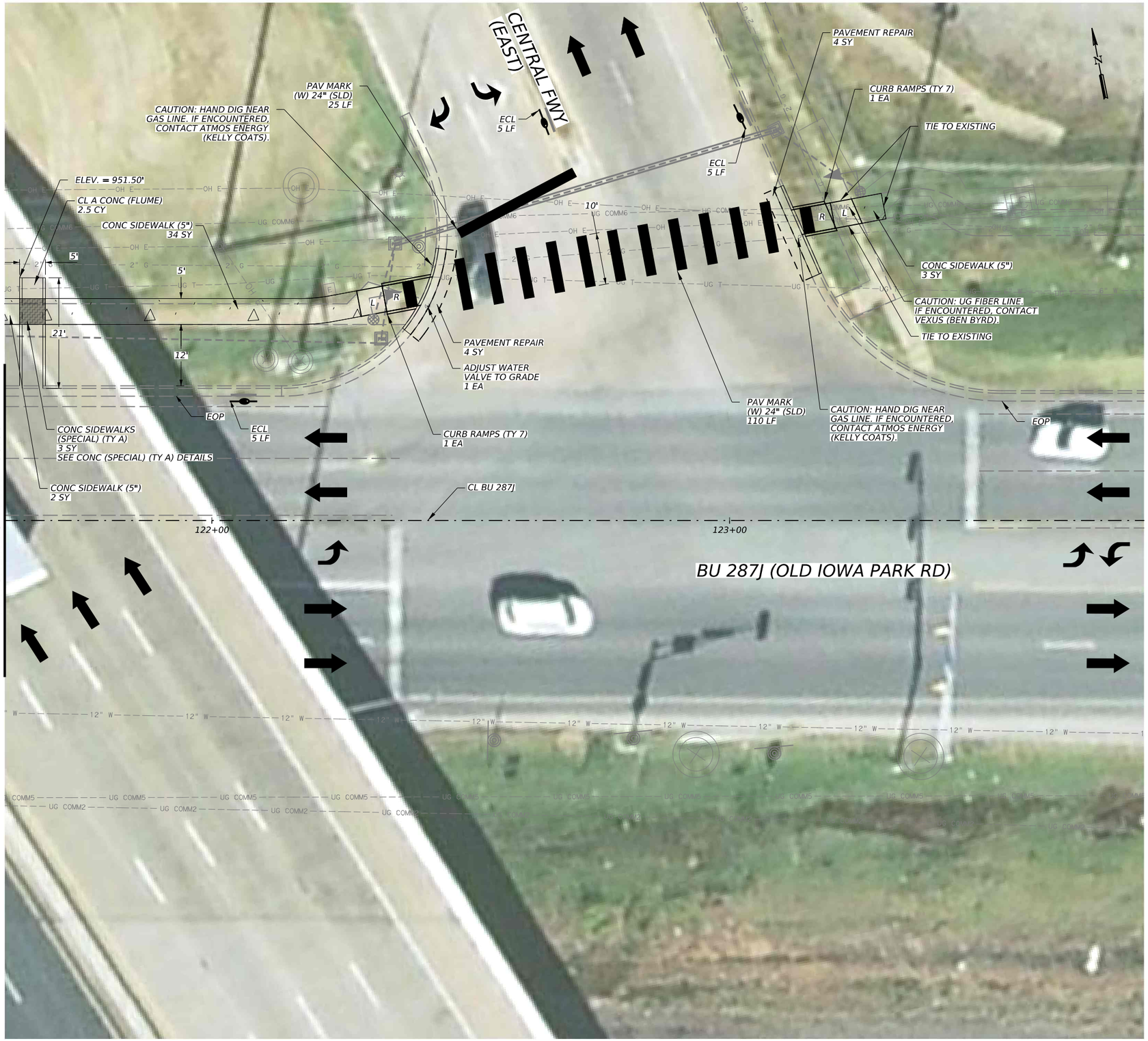
SHEET 33 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		93

DATE: 1/31/2024 11:04:01 AM
FILE: WF_P1_SDWK_33.dgn

100% PLANS SUBMITTAL

DW:	RW	CK:	DR	DW:	RD	CK:	KM



LEGEND

- APPARENT ROW
- CENTERLINE
- APPARENT PERMANENT SIDEWALK EASEMENT
- PROPOSED TEMPORARY CONSTRUCTION LICENSE
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0 10 20 30 40
SCALE IN FEET
1"=20'

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1/30/2024

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Round Rock, Texas 78681

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIDEWALK PLAN
STA 121+60.00 TO END

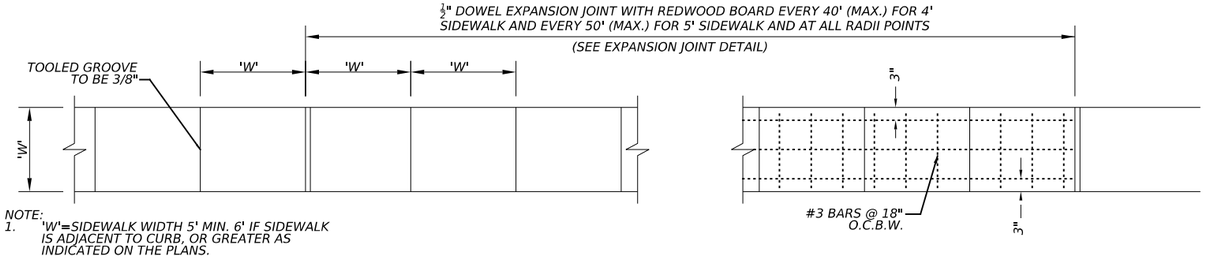
SHEET 34 OF 34

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		94

DATE: 1/31/2024 11:04:18 AM
FILE: WF_P1_SDWK_34.dgn

100% PLANS SUBMITTAL

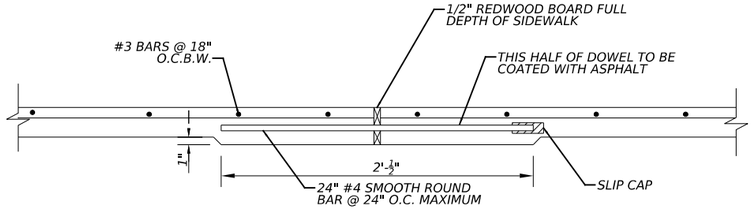
DW:	CK:	DW:	CK:
RD	DR	RD	RW



NOTE:
1. 'W'=SIDEWALK WIDTH 5' MIN. 6' IF SIDEWALK IS ADJACENT TO CURB, OR GREATER AS INDICATED ON THE PLANS.

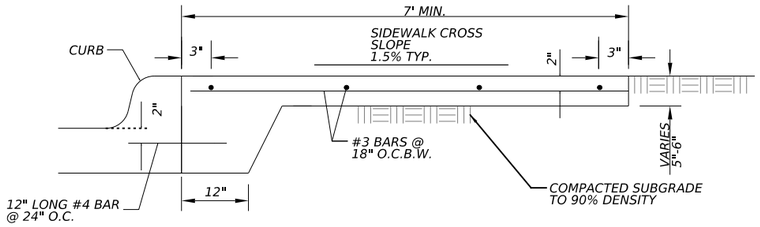
PLAN
REINFORCED CONCRETE SIDEWALK

NOT TO SCALE



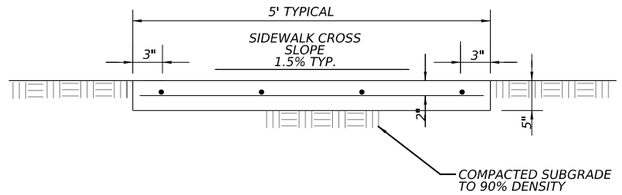
EXPANSION JOINT DETAIL

NOT TO SCALE



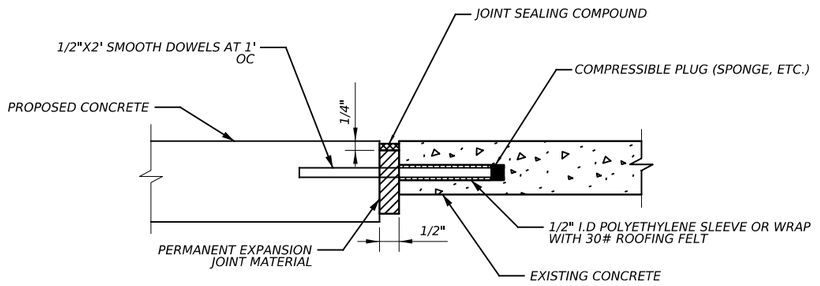
SECTION VIEW
SIDEWALK ADJACENT TO CURB

NOT TO SCALE



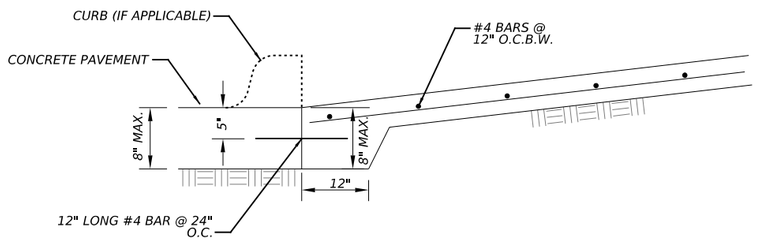
SECTION VIEW
SIDEWALK WITH NO CURB

NOT TO SCALE



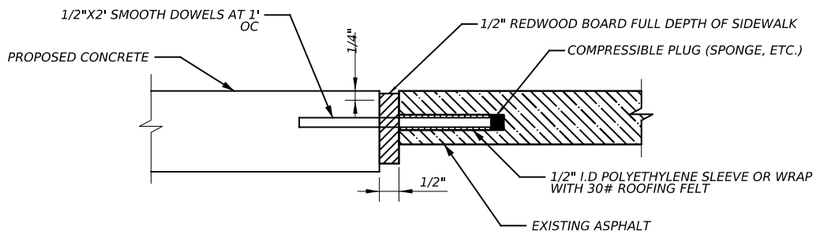
EXISTING CONCRETE DOWEL JOINT DETAIL

NOT TO SCALE



SECTION VIEW
RAMP TIE-IN AT PAVEMENT

NOT TO SCALE



EXISTING ASPHALT JOINT DETAIL

NOT TO SCALE

NO.	DATE	REVISION	APPR BY

12/13/2023

STATE OF TEXAS
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130723
REGISTERED
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Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)

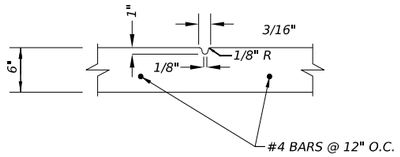
SIDEWALK DETAILS

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		95

DATE: 12/13/2023 12:01:57 PM
FILE: WF_DET01.dgn

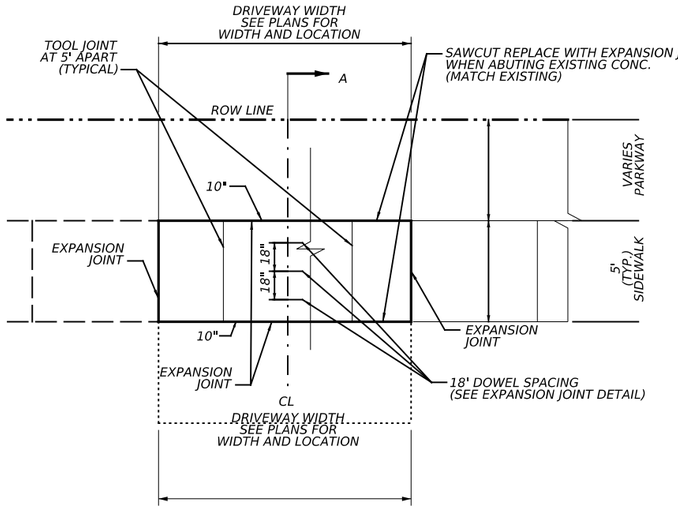
100% PLANS SUBMITTAL

DW:	CK:	DW:	CK:
RD	DR	RD	RW



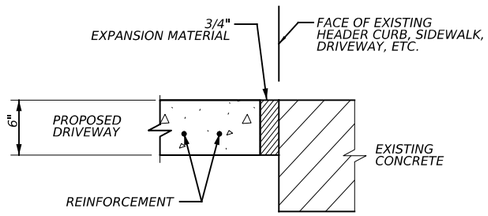
TOOL JOINT

NOT TO SCALE



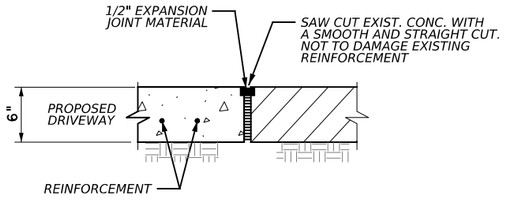
TYPICAL DRIVEWAY DETAIL

NOT TO SCALE



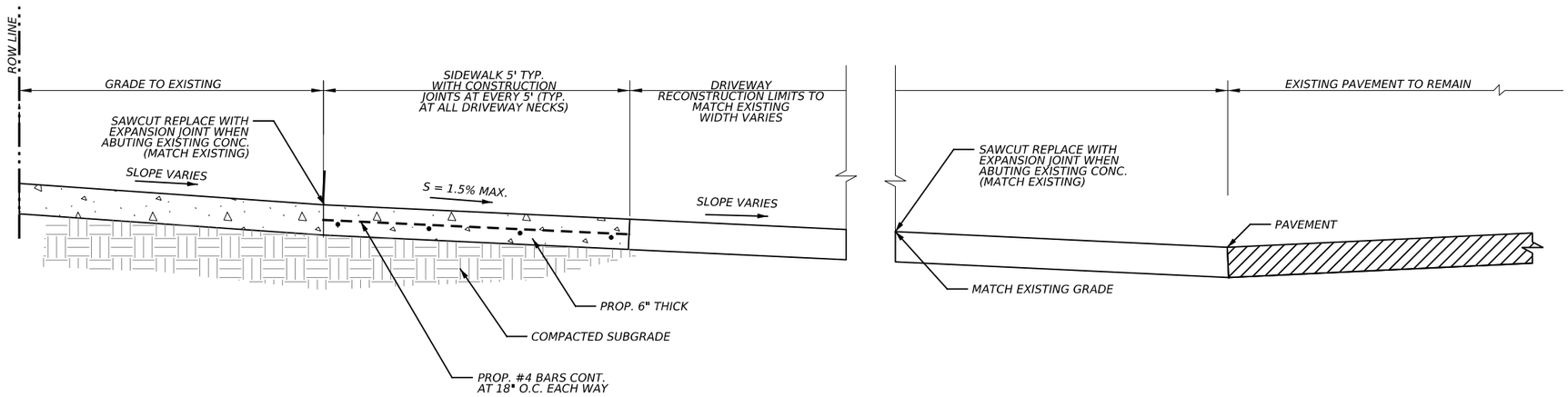
SECTION THRU DRIVEWAY
MATCH EXISTING CONCRETE
(INCLUDES SAW CUTS)

NOT TO SCALE



SAWCUT DETAIL

NOT TO SCALE



SECTION A-A

NOT TO SCALE

NO.	DATE	REVISION	APPR BY

12/13/2023

STATE OF TEXAS
RYAN A. WHITNEY
130723
REGISTERED
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Texas Department of Transportation

WICHITA FALLS

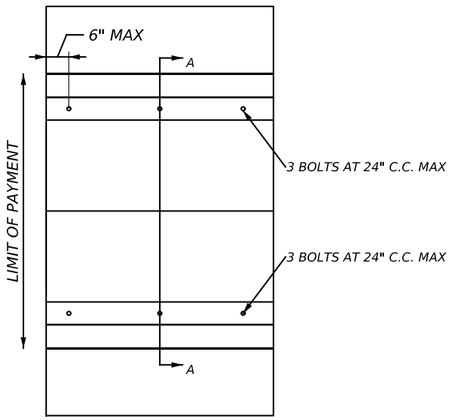
BU 287J
(OLD IOWA PARK ROAD)

DRIVEWAY DETAILS

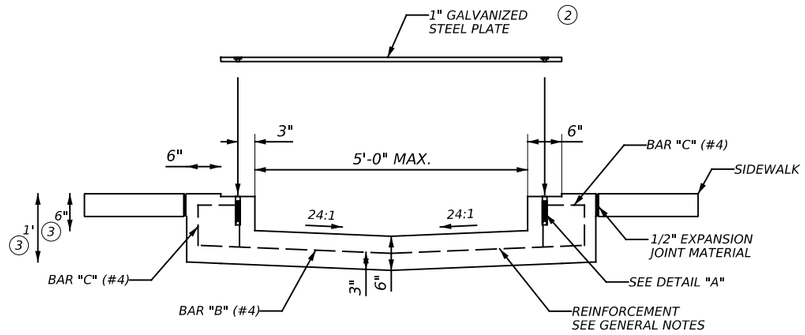
CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		96

DATE: 12/13/2023 12:02:07 PM
FILE: WF_DET02.dgn

100% PLANS SUBMITTAL
DW: RW | CK: DR | DW: RD | CK: KM



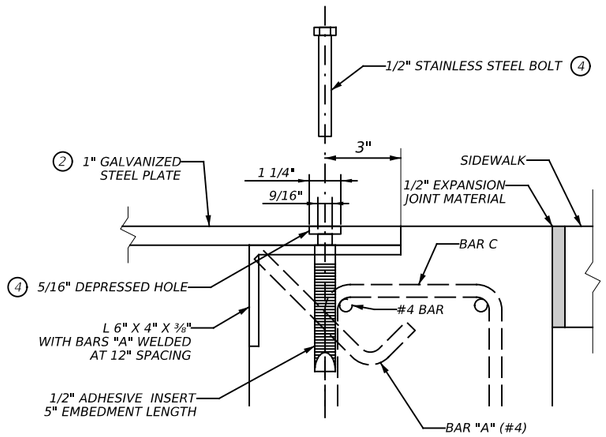
PLAN



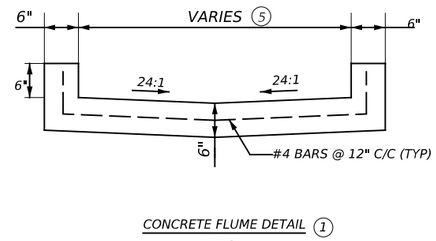
SECTION A-A
1.5 CY/10 LF*

* FOR CONTRACTORS INFORMATION ONLY

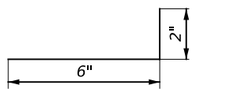
CONC SIDEWALKS (SPECIAL)(TYPE A)



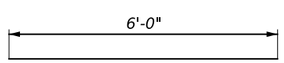
DETAIL "A"
N.T.S.



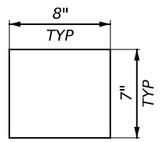
CONCRETE FLUME DETAIL 1
N.T.S.



BARS "A" (#4)



BARS B (#4)



BARS C (#4)

GENERAL NOTES:

DRAINAGE PLAN TO ADDRESS MINOR CURB ALTERATIONS ONLY. PROPOSED WORK DOES NOT SUBSTANTIALLY ALTER DRAINAGE PATTERNS OR IMPERVIOUS COVER. EXISTING CONDITIONS TO REMAIN. ALL REMOVED STRUCTURES TO BE REPLACED IN KIND.

SEE "SIDEWALK PLAN" FOR CURB LOCATIONS, QUANTITIES, AND OTHER INFORMATION NOT SHOWN.

REINFORCEMENT FOR FLUMES MUST CONFORM TO ITEM 432 CONCRETE RIPRAP.

ALL REINFORCING STEEL MUST HAVE A MINIMUM COVER OF 2".

CURB FLUMES WILL BE PAID FOR IN CUBIC YARDS OF CONCRETE UNDER ITEM 420 CL A CONC (FLUME).

CURB AND GUTTER TO BE PAID IN ACCORDANCE WITH ITEM 529, "CONCRETE CURB, GUTTER, AND COMBINED CURB AND GUTTER".

CONC SIDEWALK (SPECIAL) TYPE A GENERAL NOTES:

SIDEWALK BRIDGE WILL SUPPORT HL-93 LOADING.

ALL CONCRETE MUST BE CLASS "A".

STRUCTURAL PLATE MUST BE A572 GR. 50 GALVANIZED STEEL

REINFORCEMENT MUST CONSIST OF #4 BARS SPACED AT A MAXIMUM OF 12" IN EACH DIRECTION. PROVIDE A MINIMUM 6" LAP AT ALL SPLICES. FIELD BEND #4 BARS AS REQUIRED TO FIT. PLACE FIRST TRANSVERSE BAR 3" FROM END. PLACE FIRST PARALLEL BAR AS SHOWN IN DETAIL "A". ALL REINFORCING STEEL MUST BE GRADE 60.

ALL REINFORCING STEEL MUST HAVE A MINIMUM COVER OF 2".

ADHESIVE ANCHOR SYSTEM MUST BE HIS-RN INTERNALLY THREADED INSERTS (316 STAINLESS STEEL), AS FURNISHED BY HILTI, INC. OR APPROVED EQUIVALENT.

ALL METAL COMPONENTS MUST BE GALVANIZED AFTER FABRICATION. GALVANIZING DAMAGED DURING TRANSPORT OR CONSTRUCTION MUST BE REPAIRED IN ACCORDANCE WITH THE SPECIFICATIONS.

TOP OF STEEL PLATE MUST HAVE SLIP-RESISTANT COATING. SLIP-RESISTANT COATING AND PLATE PATTERN MUST BE APPROVED BY THE ENGINEER.

SIDEWALK AT FLUME AREA COMPLETE AND IN PLACE WILL BE PAID FOR BY THE LINEAR FOOT UNDER ITEM 531 "CONC SIDEWALK (SPECIAL) TYPE A. ALL REINFORCEMENT, METAL PLATE, AND ANCHOR SYSTEM SUBSIDIARY TO ITEM 531.

SIDEWALK MUST BE ADA COMPLIANT.

NOTES:

1. QUANTIFIED AS 0420 6007 CONC (FLUME).
2. 5' MINIMUM PLATE WIDTH.
3. DEPTH VARIES. REFER TO PLAN FOR ELEVATIONS.
4. ENSURE TOP OF BOLT IS FLUSH WITH TOP OF PLATE. DIMENSIONS SHOWN ASSUME 5/16" BOLT HEAD HEIGHT.
5. SEE SIDEWALK PLAN FOR WIDTH OF CONCRETE FLUME.

APPROVED SLIP RESISTANT PLATE	
PRODUCT NAME	MANUFACTURER WEBSITE
MEBAC ® #3, STEEL	www.harscoikg.com
ALGRIP ™ , STEEL	www.algrip.com
SLIPNOT ® GRADE 2, STEEL	www.slipnot.com

NO.	DATE	REVISION	APPR BY

12/13/2023

STATE OF TEXAS
RYAN A. WHITNEY
130723
REGISTERED PROFESSIONAL ENGINEER

HDR Engineering, Inc
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

Texas Department of Transportation

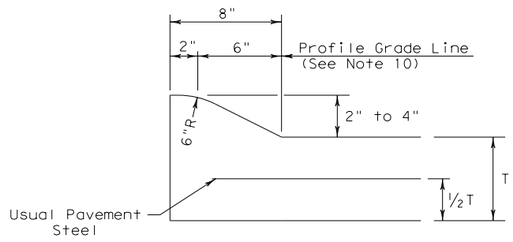
WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)

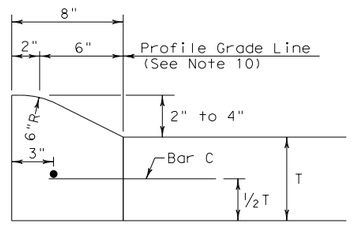
CONC (SPECIAL) (TY A) DETAILS

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		97

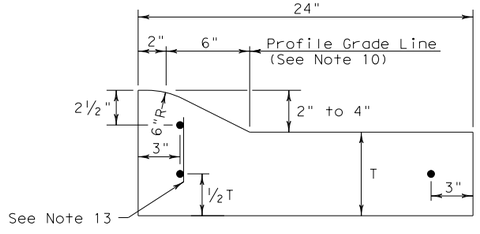
DATE: 12/13/2023 12:02:19 PM
FILE: WF_DET03.dgn



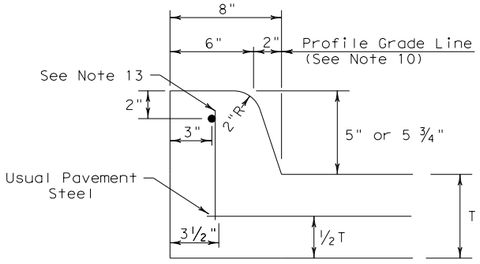
TYPE I CURB (MONOLITHIC)
2" - 4" HEIGHT



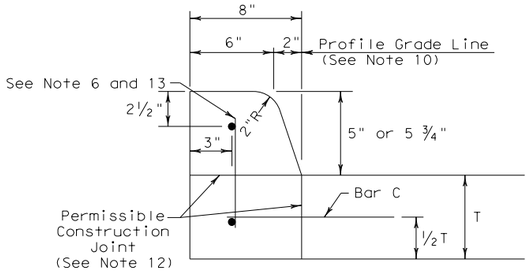
TYPE I CURB
2" - 4" HEIGHT



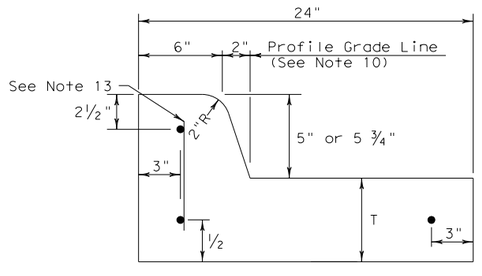
TYPE I CURB AND GUTTER
2" - 4" HEIGHT



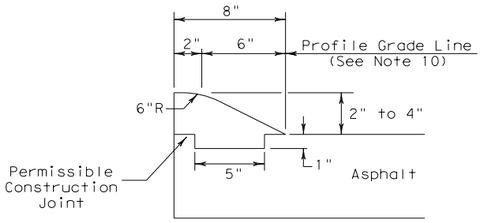
TYPE II CURB (MONOLITHIC)
5" - 5 ¾" HEIGHT



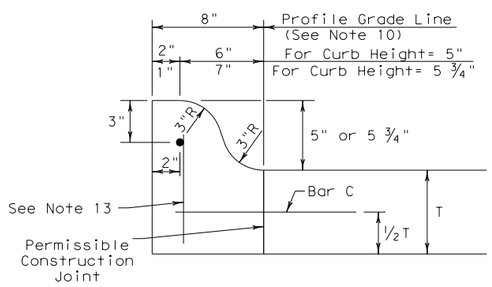
TYPE II CURB
5" - 5 ¾" HEIGHT



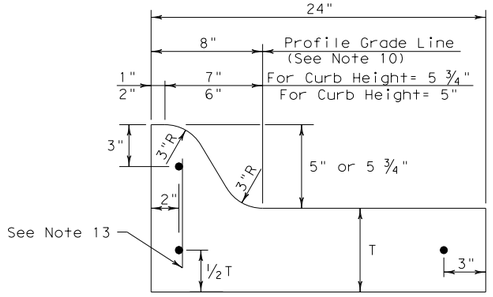
TYPE II CURB AND GUTTER
5" - 5 ¾" HEIGHT



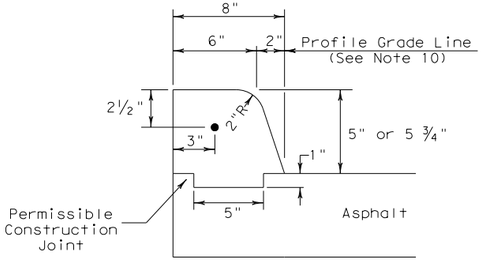
TYPE III CURB (KEYED)
2" - 4" HEIGHT



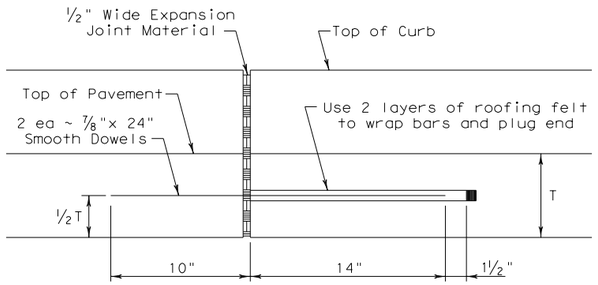
TYPE IIa CURB
5" - 5 ¾" HEIGHT



TYPE IIa CURB AND GUTTER
5" - 5 ¾" HEIGHT

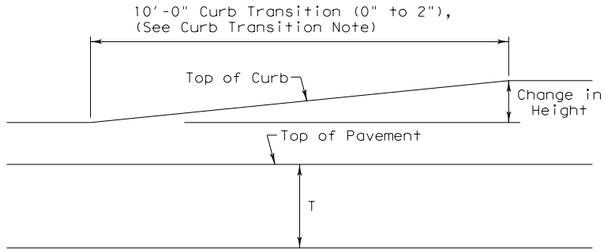


TYPE IV CURB (KEYED)
5" - 5 ¾" HEIGHT



EXPANSION JOINT DETAIL

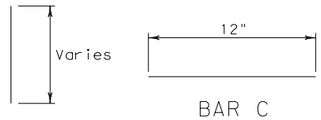
CURB TRANSITION NOTE:
Field conditions may require a longer or shorter transition, and shall be shown elsewhere in the plans, or as directed by the Engineer.



CURB TRANSITION
Note: To be paid for as Highest Curb

GENERAL NOTES

1. All materials and construction shall be in accordance with Item 529, "Concrete Curb, Gutter, and Combined Curb and Gutter."
2. Concrete shall be Class A.
3. When reinforcing bars are used, they shall be No.4 unless otherwise shown. The use of fiber reinforced concrete in lieu of reinforcing steel is acceptable. Use fibers meeting the requirements of DMS 4550, "Fibers for Concrete," and dose fibers in accordance with Material Producers List (MPL) "Fibers for Class A and B Concrete Applications."
4. Round exposed sharp edges with a rounding tool, to a minimum radius of ¼ inch.
5. All existing curbs and driveways to be removed shall be sawed or removed at existing joints.
6. Where concrete curb is to be placed on existing concrete pavement, Bar B may be drilled and grouted in place, or may be inserted into fresh concrete.
7. 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.
8. Vertical and horizontal dowel bars and transverse reinforcing bars shall be placed at four feet C~C.
9. Dimension 'T' shown is the thickness of concrete pavement. When curb is installed adjacent to flexible pavement dimension 'T' is 8" maximum.
10. Usual profile grade line. Refer to typical sections and plan-profile sheets for exact locations.
11. One-half inch expansion joint material shall be provided where curb or curb and gutter is adjacent to sidewalk or riprap.
12. When horizontal permissible construction joints are used, the longitudinal pavement steel shall be placed in accordance with pavement details shown elsewhere in the plans. Reinforcing steel for curb section shall then conform to that required for concrete curb.
13. Bar B placement as needed (typically at four ft. C-C) to support curb reinforcing steel during concrete placement.



BAR B

BAR C

Texas Department of Transportation

Design Division Standard

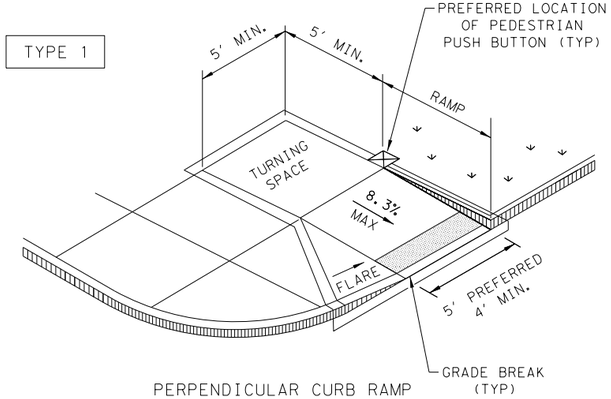
CONCRETE CURB AND CURB AND GUTTER

CCCG-22

FILE: cccg21.dgn	DN: TXDOT	CK: AN	DW: CS	CK: KM
© TxDOT: JUNE 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0043	17	035	BU 287J
	DIST	COUNTY		SHEET NO.
	WFS	WICHITA		98

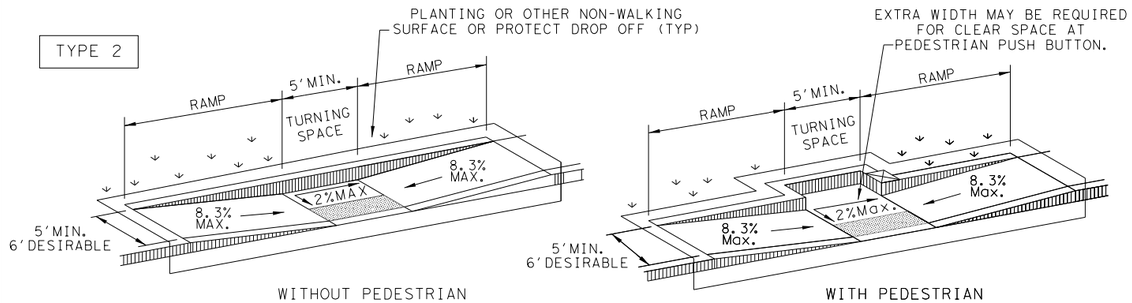
DATE: 12/13/2023
FILE: cccg22.dgn

TYPE 1



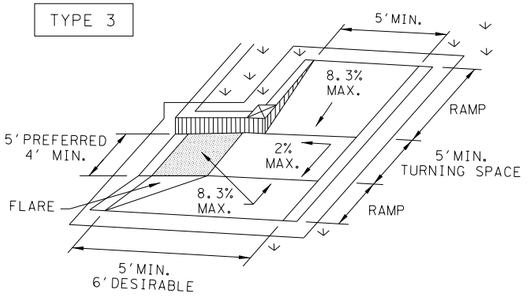
PERPENDICULAR CURB RAMP

TYPE 2

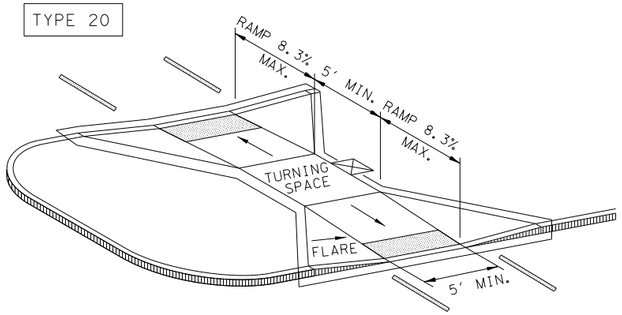


PARALLEL CURB RAMP

TYPE 3



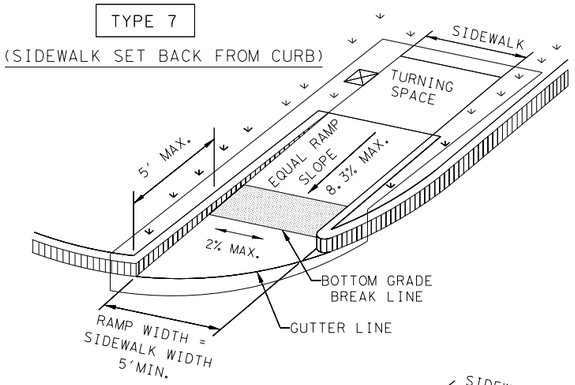
TYPE 20



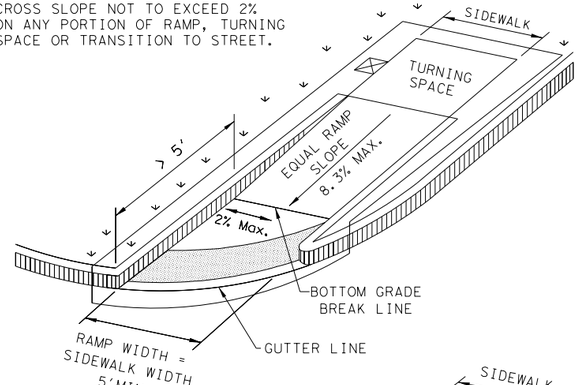
CURB RAMPS AT MEDIAN ISLANDS

TYPE 7

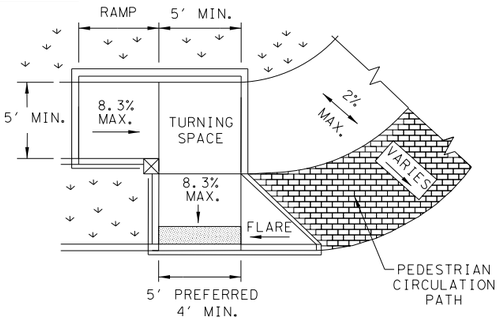
(SIDEWALK SET BACK FROM CURB)



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



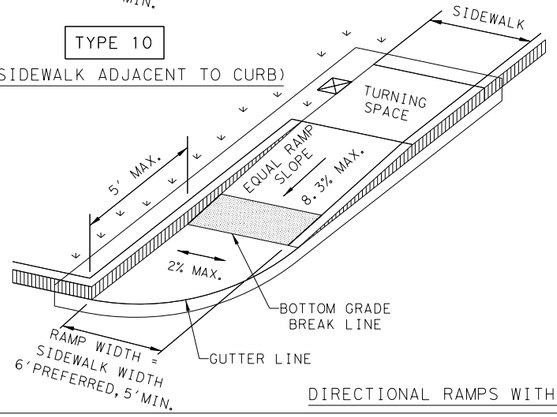
TYPE 6



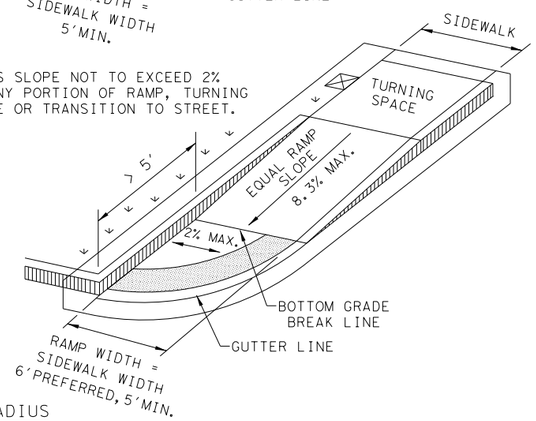
COMBINATION CURB RAMPS

TYPE 10

(SIDEWALK ADJACENT TO CURB)

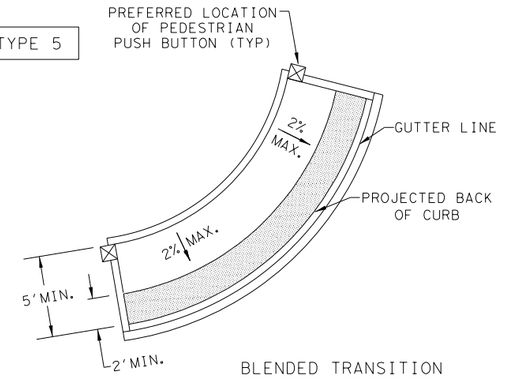


CROSS SLOPE NOT TO EXCEED 2% ON ANY PORTION OF RAMP, TURNING SPACE OR TRANSITION TO STREET.



DIRECTIONAL RAMPS WITHIN RADIUS

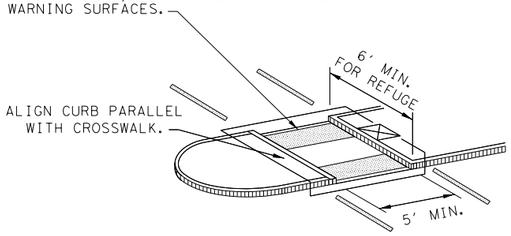
TYPE 5



BLENDED TRANSITION
(FLUSH LANDING)

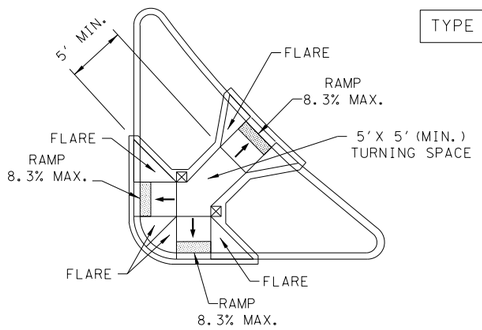
INSTALL DETECTABLE WARNING SURFACE AT EACH END OF THE CUT-THROUGH RAMP WITH A MINIMUM 2' USUAL SIDEWALK SURFACE BETWEEN. IF MEDIAN IS LESS THAN 6' WIDE, ELIMINATE DETECTABLE WARNING SURFACES.

TYPE 21

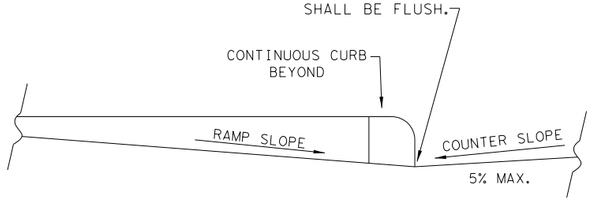


NOTE: CURB DETAILS ARE SHOWN ELSEWHERE IN THE PLANS.

TYPE 22



COMBINATION ISLAND RAMPS



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

SHEET 1 OF 4

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	0043	17	035		BU 287J
REVISED 08, 2005 REVISED 06, 2012 REVISED 01, 2018	DIST	COUNTY			SHEET NO.
	WFS	WICHITA			99

DATE: 12/13/2023
FILE: ped18.dgn

DATE: 12/13/2023
FILE: ped18.dgn

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

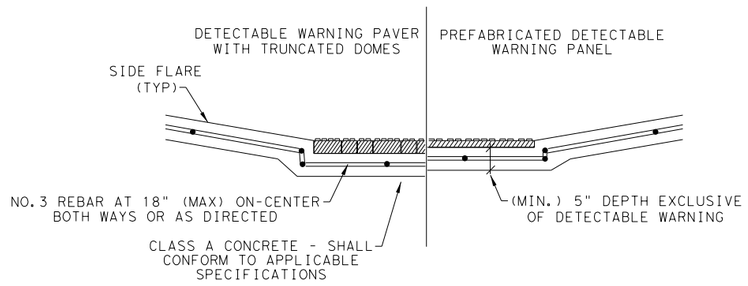
19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material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

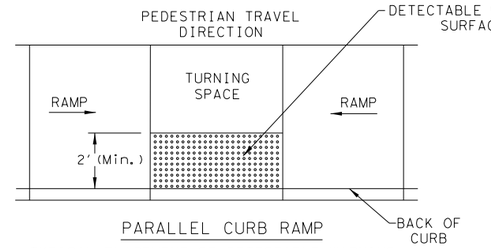
SIDEWALKS

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.



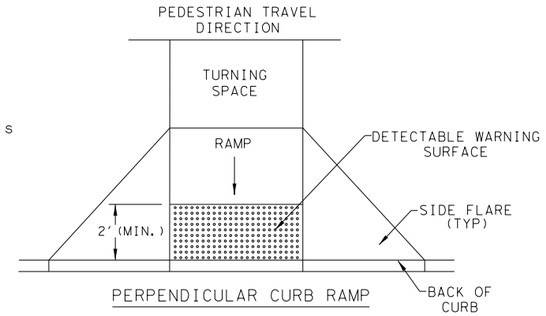
SECTION VIEW DETAIL
CURB RAMP AT DETECTIBLE WARNINGS

DETECTABLE WARNING SURFACE DETAILS



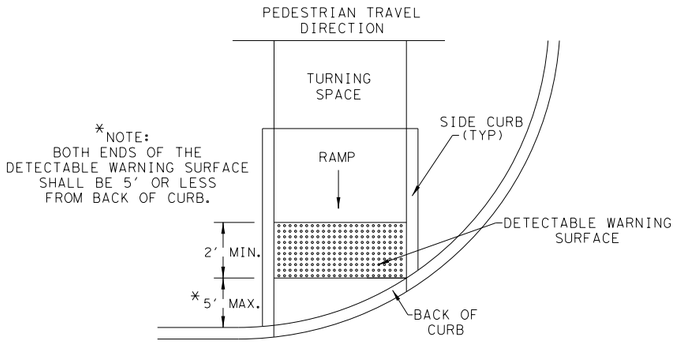
PARALLEL CURB RAMP

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.

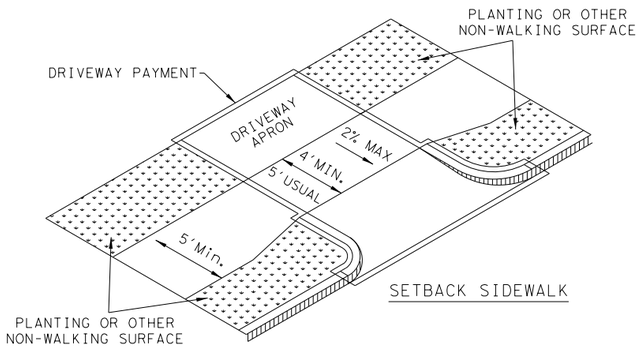
Texas Department of Transportation | Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

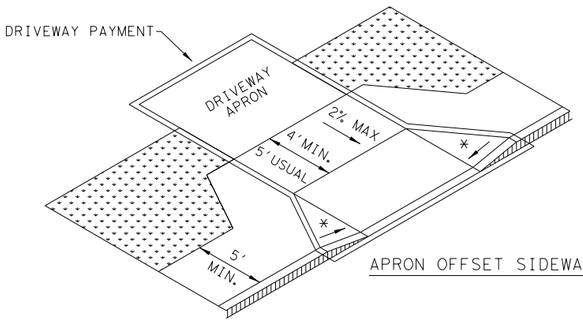
PED-18

FILE: ped18	DN: TxDOT		DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB		HIGHWAY
REVISIONS	0043	17	035		BU 287J
REVISED 08,2005 REVISED 06,2012 REVISED 01,2018	DIST	COUNTY			SHEET NO.
	WFS	WICHITA			100

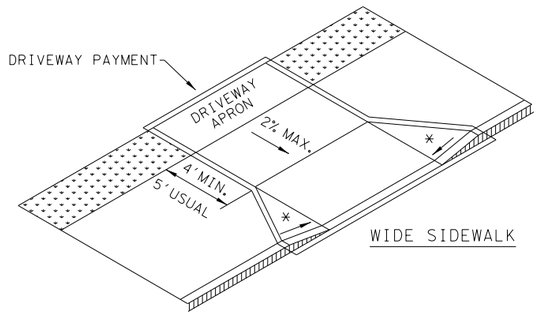
SIDEWALK TREATMENT AT DRIVEWAYS



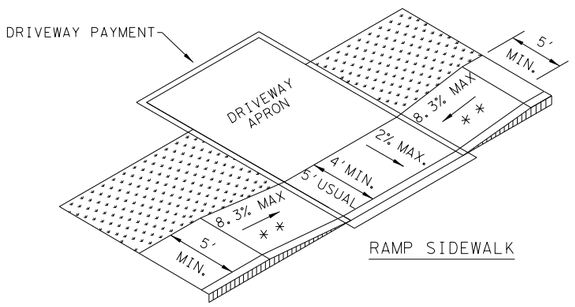
SETBACK SIDEWALK



APRON OFFSET SIDEWALK



WIDE SIDEWALK

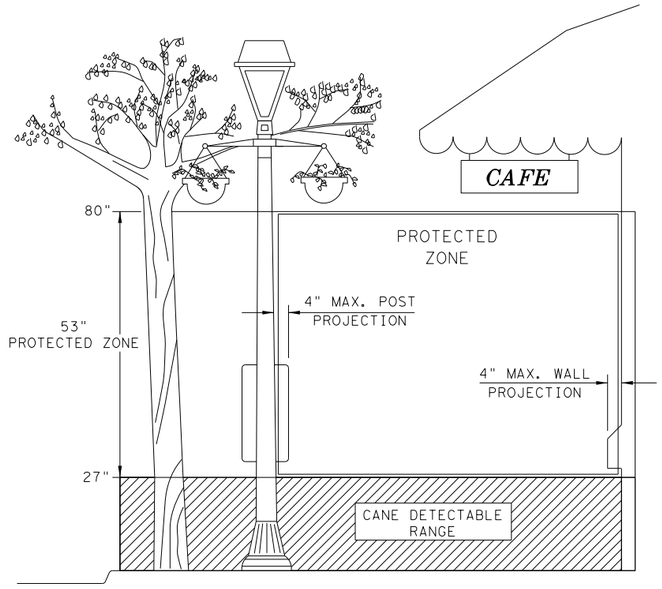


RAMP SIDEWALK

NOTES:

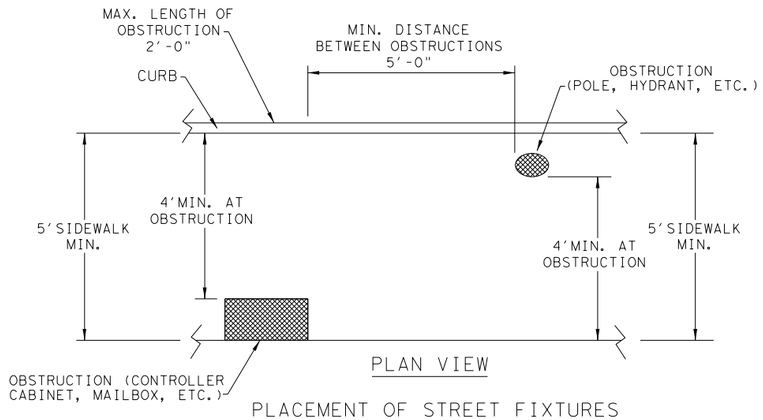
* WHERE DRIVEWAYS CROSS THE PEDESTRIAN ROUTE, SIDES SHALL BE FLARED AT 10% MAX SLOPE.

* * 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

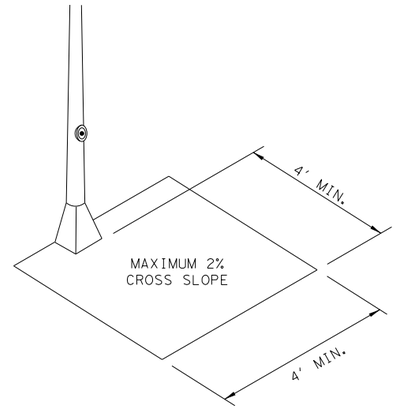
NOTE: IN PEDESTRIAN CIRCULATION AREA, MAXIMUM 4" PROJECTION FOR POST OR WALL MOUNTED OBJECTS BETWEEN 27" AND 80" ABOVE THE SURFACE.



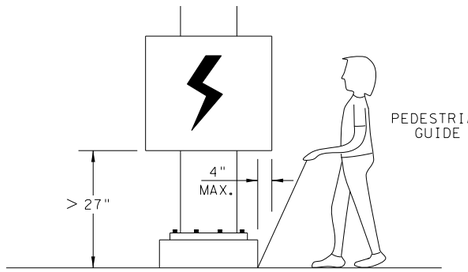
PLAN VIEW

PLACEMENT OF STREET FIXTURES

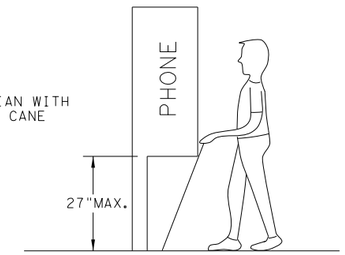
NOTE: ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' X 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.



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"

DATE: 12/13/2023
FILE: ped18.dgn

Texas Department of Transportation

Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

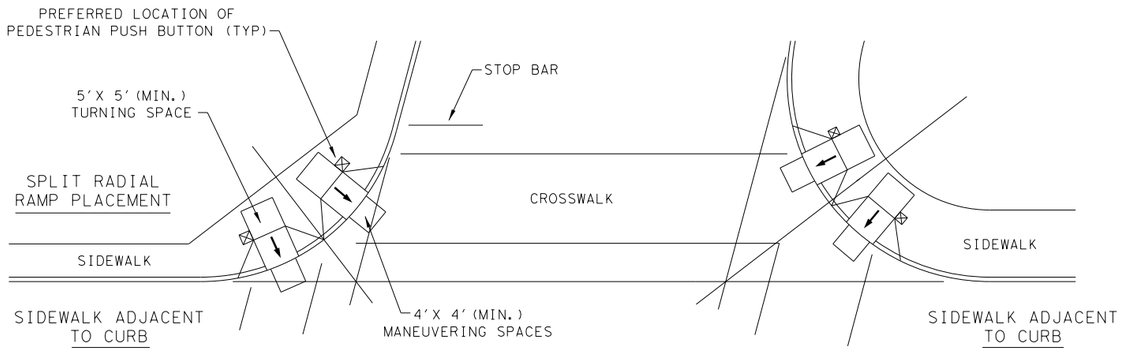
PED-18

FILE: ped18	DN: TxDOT		DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB		HIGHWAY
REVISIONS	0043	17	035		BU 287J
REVISED 08,2005 REVISED 06,2012 REVISED 01,2018	DIST		COUNTY		SHEET NO.
	WFS		WICHITA		101

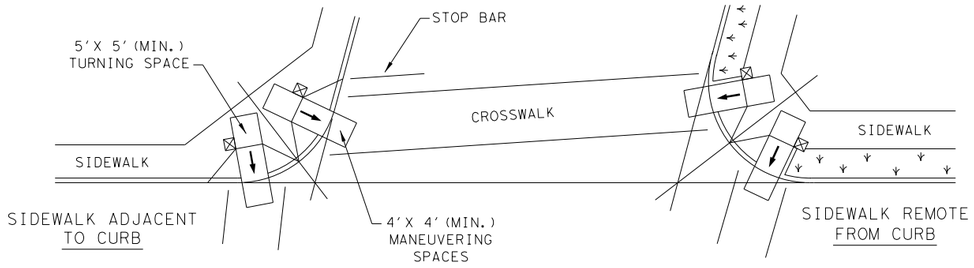
DATE: 12/13/2023
FILE: ped18.dgn

TYPICAL CROSSING LAYOUTS

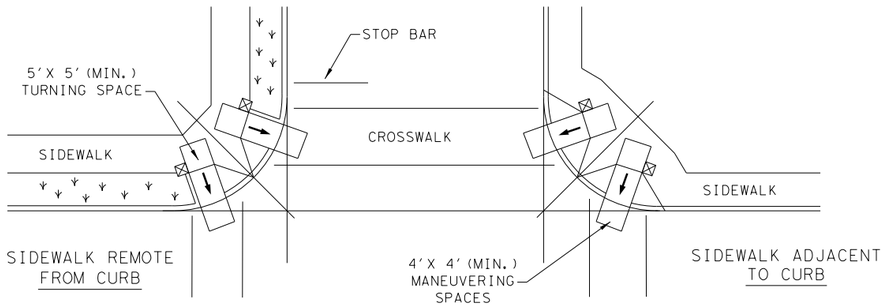
SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS



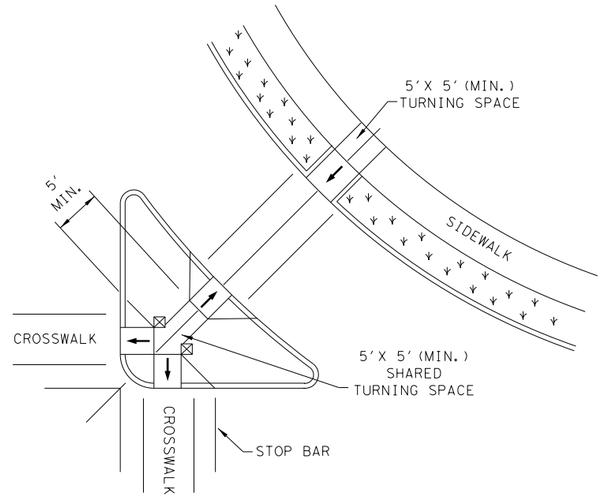
SKEWED INTERSECTION WITH "LARGE" RADIUS



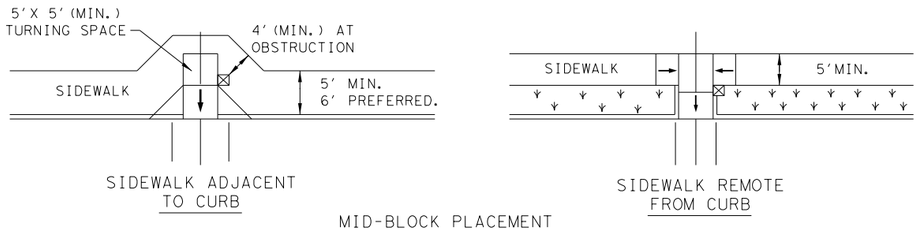
SKEWED INTERSECTION WITH "SMALL" RADIUS



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.

SHEET 4 OF 4

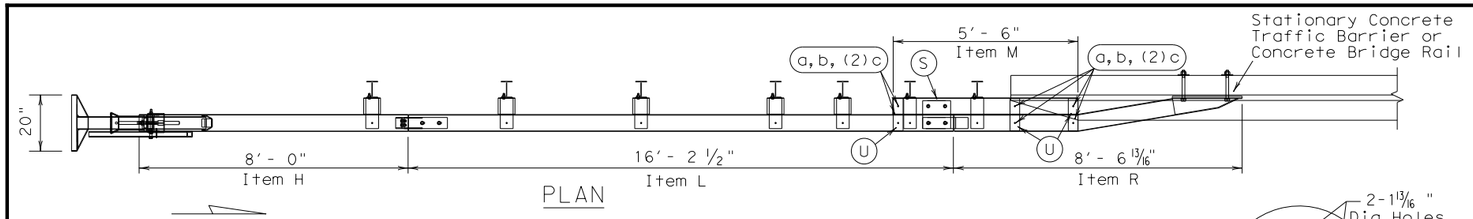
Texas Department of Transportation

Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

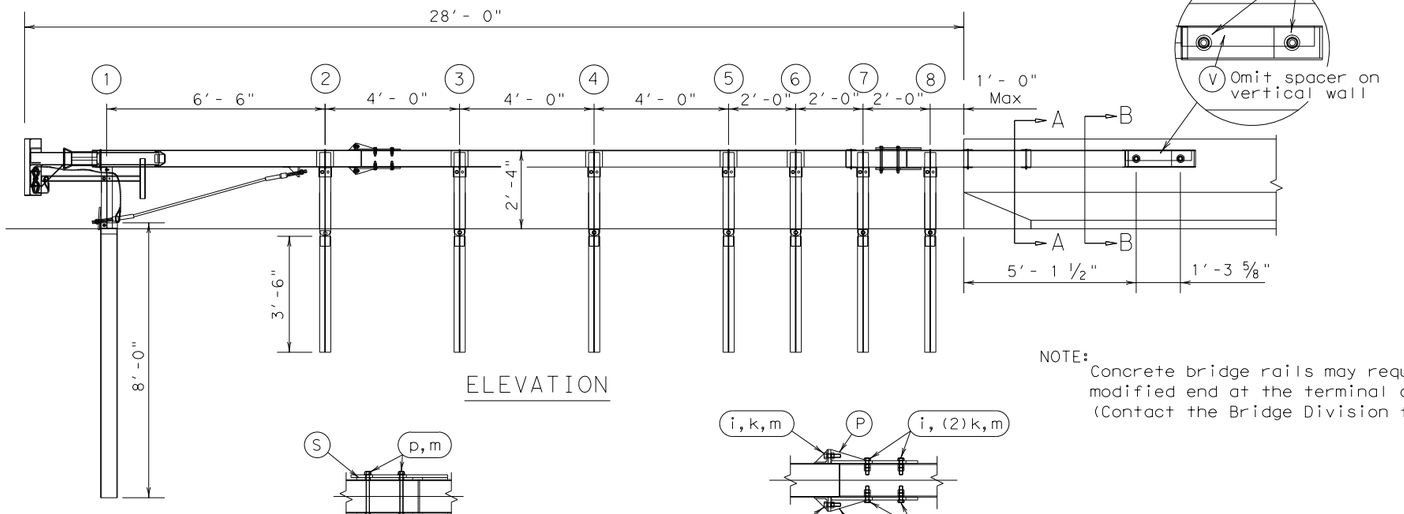
PED-18

FILE: ped18	DN: TxDOT		DW: VP	CK: KM	CK: PK & JG
	CONT	SECT	JOB		HIGHWAY
REVISIONS	0043	17	035		BU 287J
REVISED 08,2005 REVISED 06,2012 REVISED 01,2018	DIST	COUNTY			SHEET NO.
	WFS	WICHITA			102



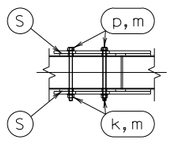
PLAN

Direction of Traffic

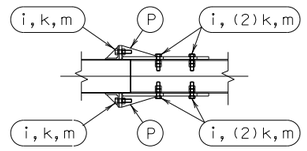


ELEVATION

NOTE:
Concrete bridge rails may require a modified end at the terminal connection. (Contact the Bridge Division for details.)



SPLICE PLATE DETAIL

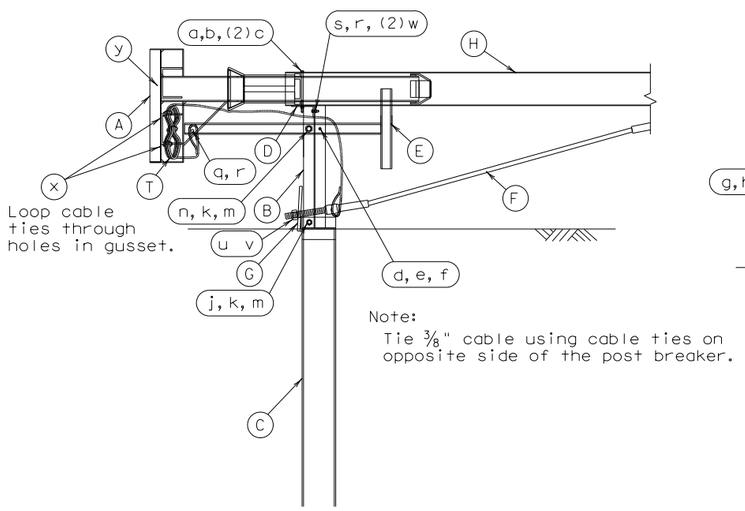


END SPLICE PLATE DETAIL

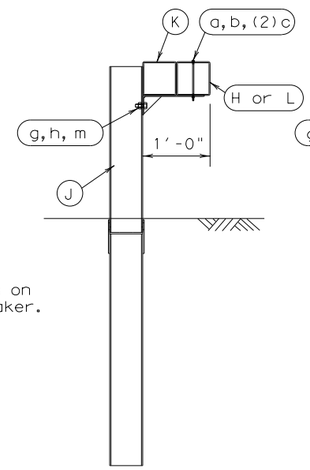
GENERAL NOTES

1. For specific information regarding installation and technical guidance of the system, contact: Road Systems, Inc., at (330)346-0721. 3616 Old Howard County Airport. Big Springs, TX 79720
2. Due to the Single-Sided design, the BEAT-SSCC is not appropriate for use at locations where backside hits towards the rigid concrete barrier are possible, e.g. In gore areas, or in narrow median locations where backside opposite direction hits are likely.
3. All bolts, nuts, cable assemblies, cable anchors, bearing plate, tubing, post, impact heads, and other steel components shall be galvanized, unless otherwise noted.
4. The breakaway cable assembly must be taut. A locking device, (vice grips or channel lock pliers) should be used to prevent the cable from twisting when tightening the nuts.
5. When site conditions permit, posts may be driven. The lower section of post #1 should not be driven with the upper post section attached. If posts are placed in a drilled hole, the backfill material must be satisfactorily compacted to prevent settlement.
6. If rock excavation is encountered, see manufacturer's installation booklet for installation recommendations.
7. Post shall not be set full depth in concrete.
8. The appropriate connection of the SSCC to the stationary rigid structure is a critical component to insure proper performance of the system. The length of the 1" bolts used to attach the system to the rigid structure will vary with the wall thickness and will need to be determined in the field.
9. The approach area in front of the SSCC and the area within the system itself shall be free of fixed obstacles greater than 4 inches in height and have a fill slope or a cut slope of 1V:10H or flatter.
10. Unless otherwise shown in the plans, SSCC rail placed in the vicinity of curbs shall be blocked out so that the face of curb is located directly below the face of rail. The steel posts shall be installed at the proper ground elevation above the gutter pan or roadway surface. Curbs located along or in front of the SSCC system shall not be greater than 4 inches in height.
11. An object marker shall be installed on the front of the impact head as detailed on D & OM(VIA).

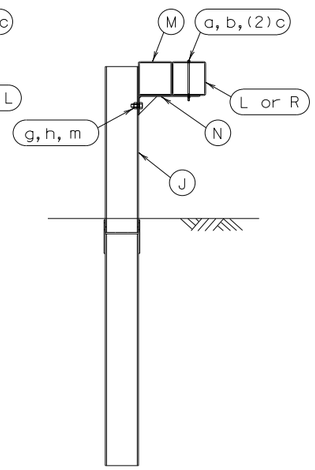
ITEM	QTY	DESCRIPTION
A	1	Box-Beam Impact Head
B	1	Upper End Post (A1) W6 x 9 x 1′-9 ½" LG.
C	1	Lower End Post (A4) W6 x 15 x 8′-0" LG.
D	1	Support Bracket (B1) L4 x 2 x 4" LG.
E	1	Post Breaker (A2) Welded TS2 x 2 x ¼"
F	1	Cable Anchor Assembly
G	1	Cable Anchor Bearing Plate
H	1	End Tube Rail (A5) x 8′-0" LG.
J	7	Steel Breakaway Post W6 x 9 x 6′-0" LG.
K	5	Support Bracket w/ Blockout (A9) TS6 x 6 w/ Bent PL.
L	1	Second Rail (A11) x 16′-2 ½" LG.
M	1	Transition Blockout (A6) x 5′-6" LG.
N	2	Trans. Support Bracket (A10) 3/16" Bent PL. w/ Gusset
P	2	End Section Splice Plate (A3) - Detail Below
Q	2	1" Square Washer (B10) PL 4 x 4 x ¼"
R	1	Anchor Rail (A13) x 8′-6 13/16 "LG.
S	2	Splice Plate (A12) PL 10 x 10 x ⅜" Detail Below
T	1	⅜" GALV. Cable x 20′-0" (A14)
U	6	Tie Plate (C10) PL 11 ½" x 3 ½"x 3/16"
V	1	Spacer (D10) (OMIT ON VERTICAL WALL)
		HARDWARE
a	14	5/16" x 7 ½" Hex Bolt (A449)
b	14	5/16" Hex Nut
c	28	5/16" Washer
d	1	¼" x 3" Hex Bolt (A449)
e	1	¼" Hex Nut
f	1	¼" Washer
g	7	⅝" x 1 ½" Bolt (A307)
h	7	⅝" Recess Nut
i	8	⅝" x 2" Hex Bolt (A325 or A449)
j	1	⅝" x 8" Hex Bolt (A325 or A449)
k	18	⅝" Hex Nut
m	25	⅝" Washer
n	1	⅝" x 3" Hex Bolt (A325 or A449)
p	4	⅝" x 9" Hex Bolt (A325 or A449)
q	1	½" x 5" Hex Bolt (A325 or A449)
r	2	½" Hex Nut
s	1	½" x 2" Hex Bolt (A307, A325 or A449)
t	2	1" x 10"Hex Bolt(A325 or A449)(Length Varies w/Wall Sect)
u	4	1" Hex Nut (2H Heavy Hex Nut)
v	4	1" Washer Structural Washer
w	2	½" Washer
x	2	Cable Tie
y	1	Object Marker



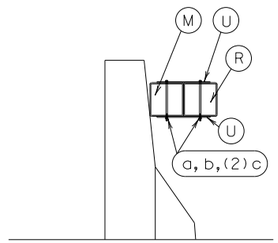
POSTS 1
IMPACT HEAD DETAIL



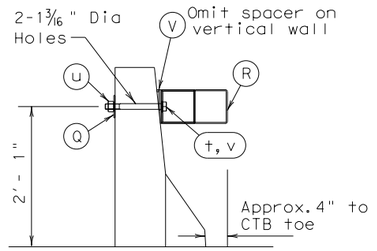
POSTS 2 THRU 6



POSTS 7 & 8



SECTION A-A



SECTION B-B

Texas Department of Transportation

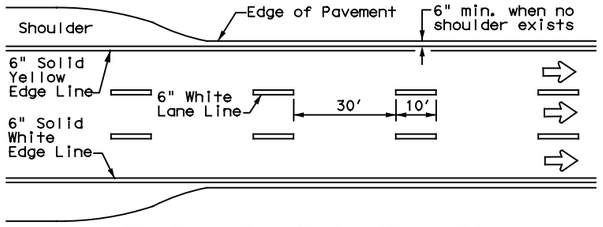
Design Division Standard

ROAD SYSTEMS INC CRASH CUSHION (BEAT)

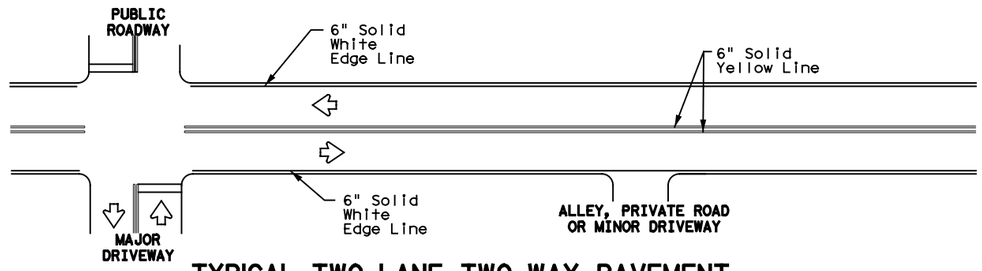
SSCC-16

FILE: sscc16.dgn	DN: TxDOT	CK: KM	DW: BD	CK: VP
©TxDOT April 2003	CONT	SECT	JOB	HIGHWAY
REVISIONS	0043	17	035	BU 287J
REVISED 03,2016 (VP)	DIST	COUNTY		SHEET NO.
	WFS	WICHITA		102A

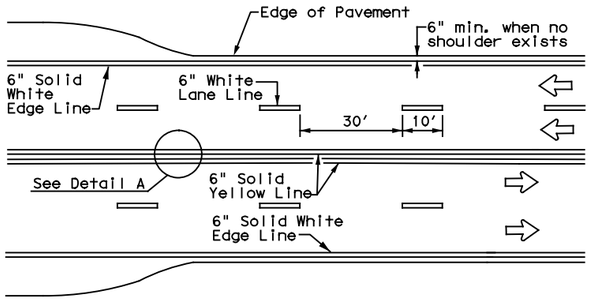
DATE: 2/12/2024
FILE: sscc16 (1).dgn

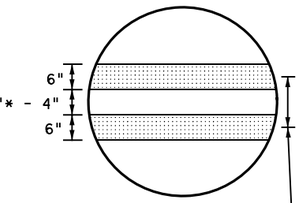


EDGE LINE AND LANE LINES ONE-WAY ROADWAY WITH OR WITHOUT SHOULDERS



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





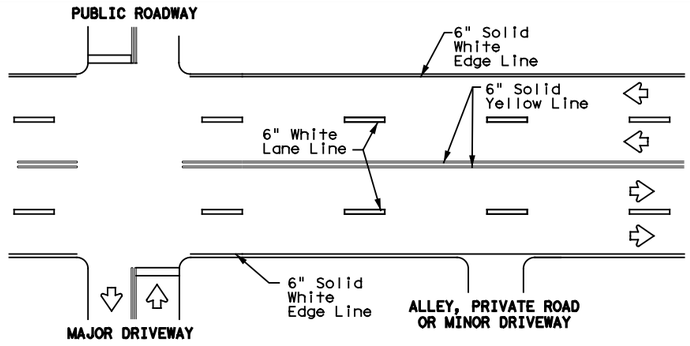
DETAIL "A"

9"** min. - 10" typ.
(18" max. for traveled way greater than 48' only)

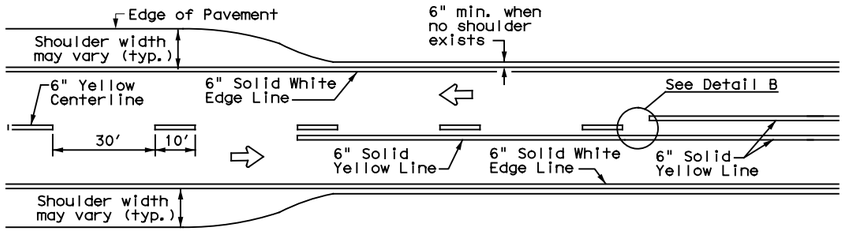
CENTERLINE AND LANE LINES FOUR LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS

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

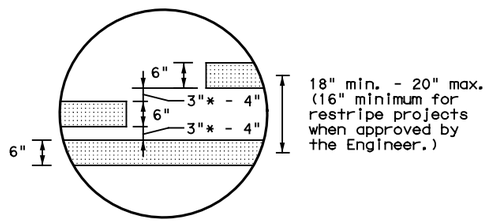
** 8" minimum for restripe projects when approved by the Engineer.



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

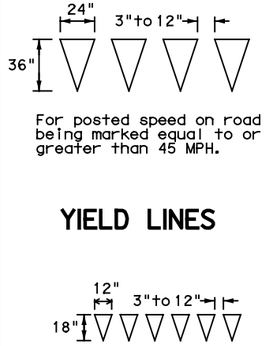


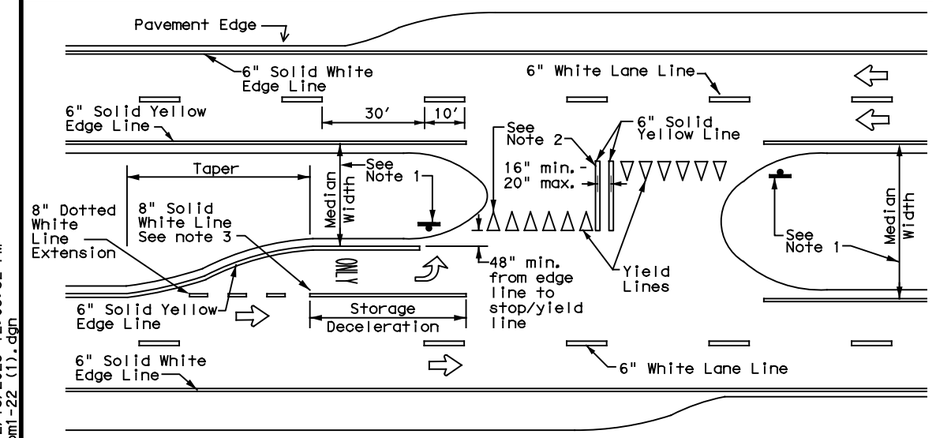
TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



DETAIL "B"

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





FOUR LANE DIVIDED ROADWAY CROSSOVERS

NOTES

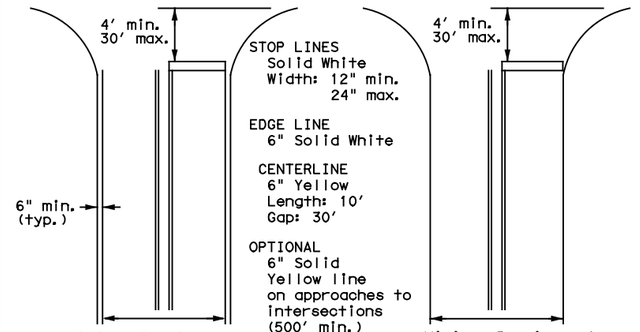
1. Where divided highways are separated by median widths at the median opening itself of 30 feet or more, median openings shall be signed as two separate intersections. Each median opening has two width measurements, with one measurement for each approach. The narrow median width will be the controlling 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
REVISIONS 11-78 8-00 6-20	0043	17	035	BU 287J
8-95 3-03 12-22	DIST	COUNTY		SHEET NO.
5-00 2-12	WFS	WICHITA		103

22A

DATE: 12/13/2023 12:09:32 PM
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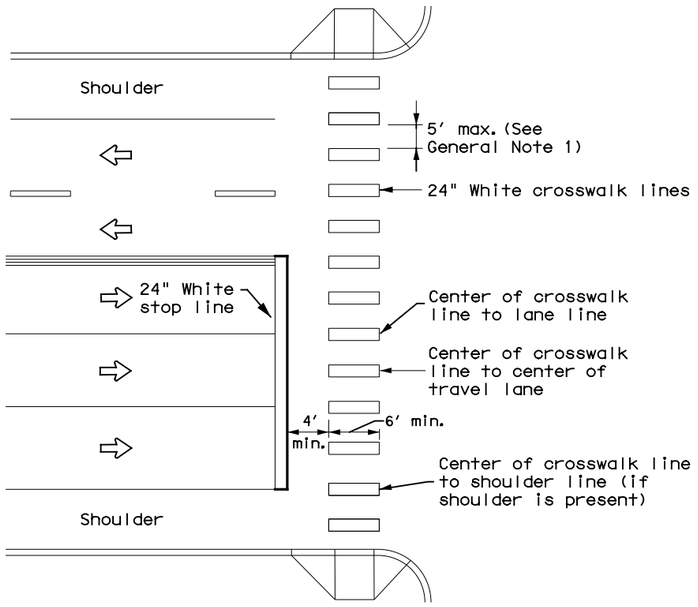


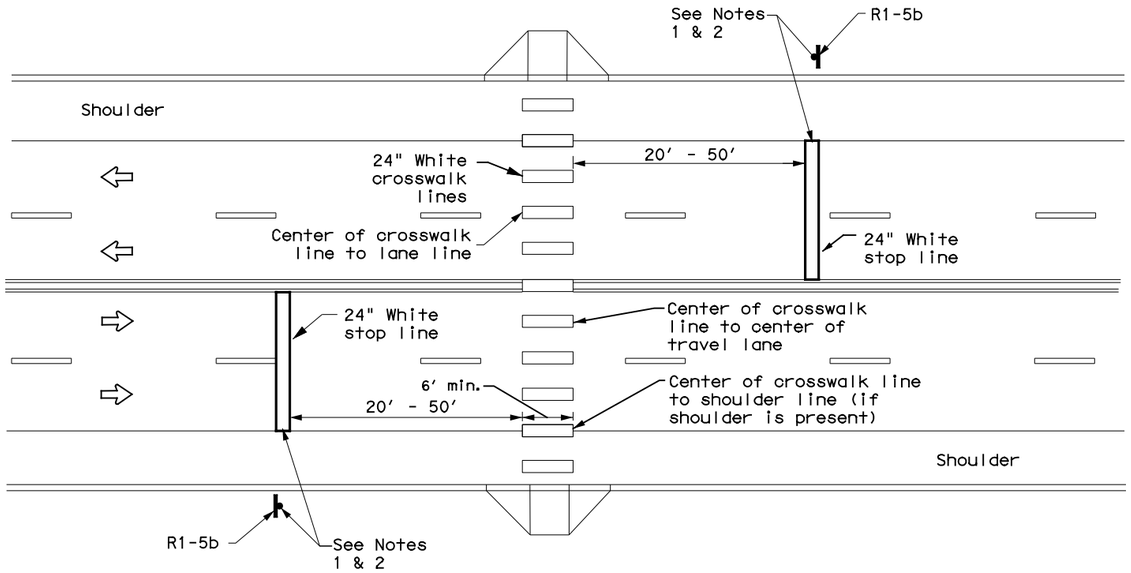
HIGH-VISIBILITY LONGITUDINAL CROSSWALK AT CONTROLLED APPROACH

GENERAL NOTES

1. Longitudinal crosswalk lines should not be placed in the wheel path of vehicles. Center the crosswalk lines on travel lanes, lane lines, and shoulder lines (if present).
2. A minimum 6" clear distance shall be provided to the curb face. If the last crosswalk line falls into this distance it must be omitted.
3. For divided roadways, adjustments in spacing of the crosswalk lines should be made in the median so that the crosswalk lines are maintained in their proper location across the travel portion of the roadway.
4. At skewed crosswalks, the crosswalk lines are to remain parallel to the lane lines.
5. Each crosswalk shall be a minimum of 6′ wide.
6. The High-Visibility Longitudinal Crosswalk is the preferred crosswalk pattern on State Highways. Other crosswalk patterns as shown in the "Texas Manual on Uniform Traffic Control Devices" may be used. All crosswalk designs and dimension shall comply with the "Texas Manual on Uniform Traffic Control Devices."
7. Final placement of Stop Bar and Crosswalk shall be approved by the Engineer in the field.

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

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



UNSIGNALIZED MIDBLOCK HIGH-VISIBILITY LONGITUDINAL CROSSWALK

NOTES:

1. Use stop bars with Stop Here For Pedestrians (R1-5b) signs at unsignalized midblock cross walks.
2. Use stop bars with STOP HERE ON RED (R10-6 or R10-6a) signs at mid block crosswalks controlled by traffic signals or pedestrian hybrid beacons.

Texas Department of Transportation

Traffic Safety Division Standard

CROSSWALK PAVEMENT MARKINGS

PM(4)-22A

FILE: pm4-22a.dgn	DN:	CK:	DW:	CK:
© TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0043	17	035	BU 287J
6-20	DIST	COUNTY		SHEET NO.
6-22	WFS	WICHITA		104
12-22				

22D

DATE: 12/13/2023 12:09:48 PM
FILE: pm4-22a (2).dgn

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)

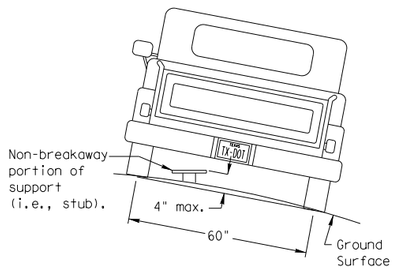
Anchor Type

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

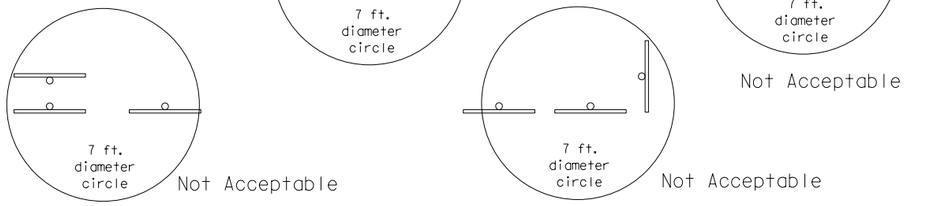
P = Prefab. "Plain" (see SMD(SLIP-1) to (SLIP-3), (TWT), (FRP))
T = Prefab. "T" (see SMD(SLIP-1) to (SLIP-3), (TWT))
U = Prefab. "U" (see SMD(SLIP-1) to (SLIP-3))
IF REQUIRED
1EXT or 2EXT = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))
BM = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))
WC = 1.12 #/ft Wing Channel (see SMD(SLIP-1) to (SLIP-3))
EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-1))

REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



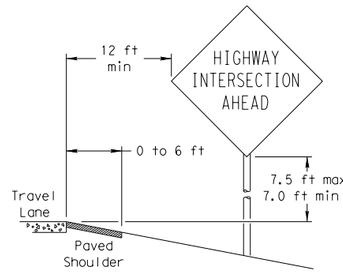
To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, when it is broken away, should not project more than 4 inches above a 60-inch chord (i.e., typical space between wheel paths).

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



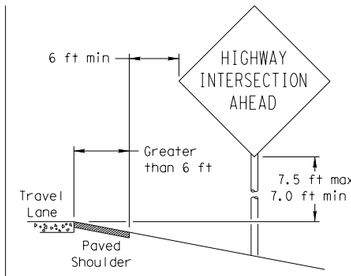
SIGN LOCATION

PAVED SHOULDERS



LESS THAN 6 FT. WIDE

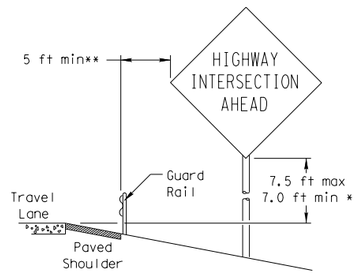
When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.



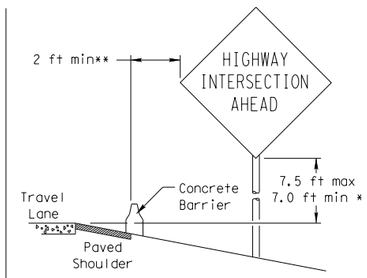
GREATER THAN 6 FT. WIDE

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.

BEHIND BARRIER



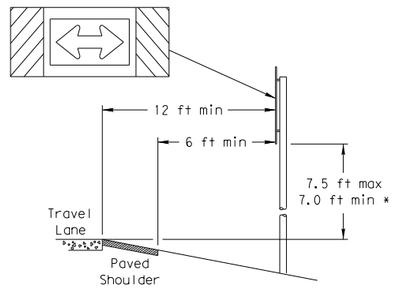
BEHIND GUARDRAIL



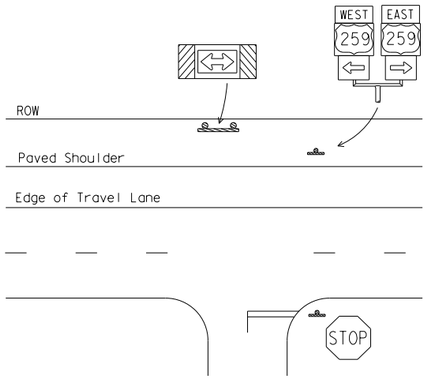
BEHIND CONCRETE BARRIER

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

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.



* Signs shall be mounted using the following condition that results in the greatest sign elevation:

(1) a minimum of 7 to a maximum of 7.5 feet above the edge of the travel lane or

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

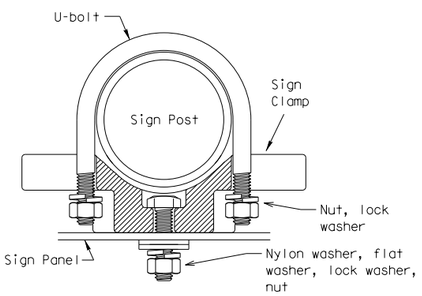
The maximum values may be increased when directed by the Engineer.

See the Traffic Operations Division website for detailed drawings of sign clamps, Triangular Slipbase System components and Wedge Anchor System components.

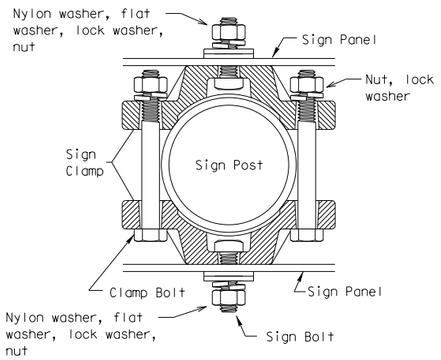
The website address is:
http://www.txdot.gov/publications/traffic.htm

TYPICAL SIGN ATTACHMENT DETAIL

Single Signs



Back-to-Back Signs



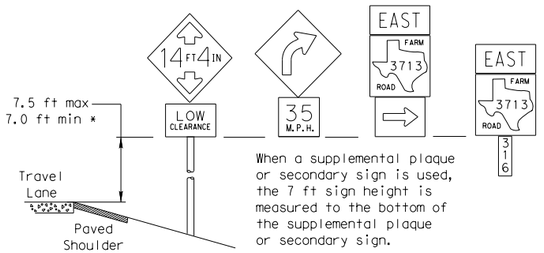
Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

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.

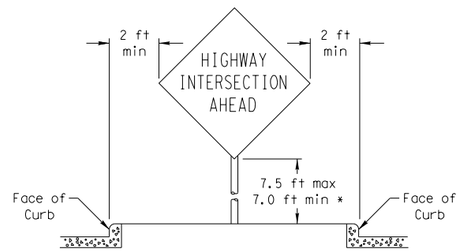
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES



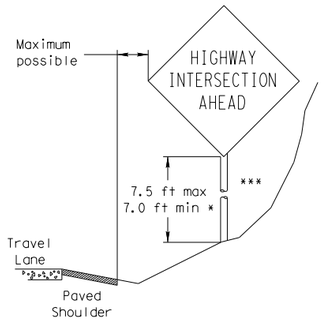
When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

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

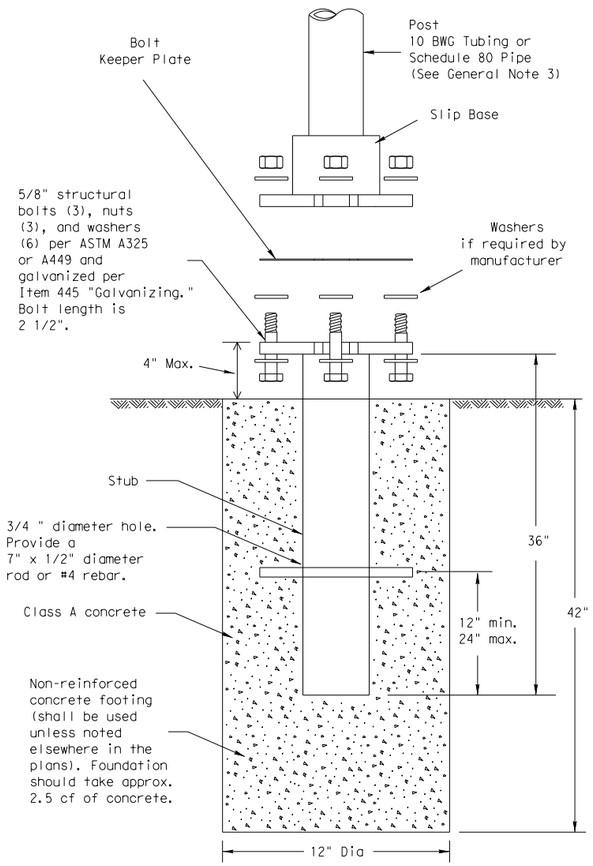
SMD(GEN)-08

REVISIONS	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
9-08	CONT	SECT	JOB	HIGHWAY
	0043	17	035	BU 287J
	DIST	COUNTY		SHEET NO.
	WFS	WICHITA		104A

26A

DATE: 2/12/2024 11:54:01 AM
FILE: smdgen.dgn

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.

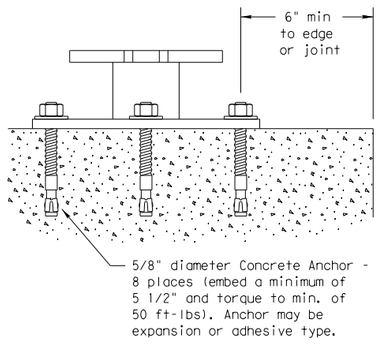
   Schedule 80 Pipe (2.875" outside diameter)
   - 0.276" nominal wall thickness
   - Steel tubing per ASTM A500 Gr C
   - Other seamless or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the following:
     - 46,000 PSI minimum 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

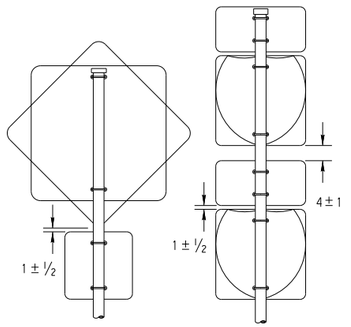
DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT

REVISIONS
9-08

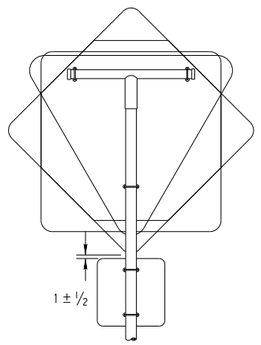
CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J

DIST	COUNTY	SHEET NO.
WFS	WICHITA	104B

DATE: 2/12/2024 11:54:09 AM
FILE: smds1.dgn



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



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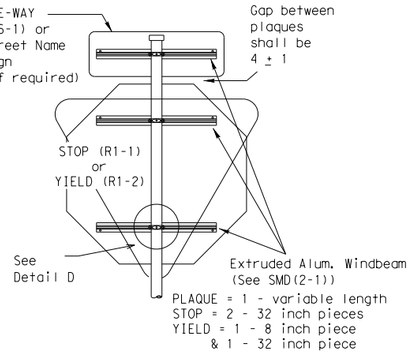

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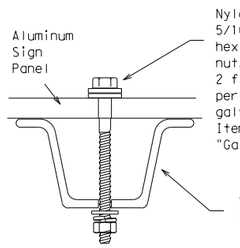
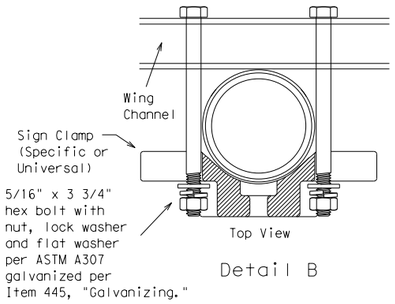


Detail A



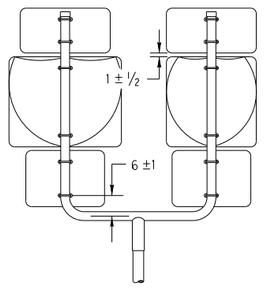
Detail B

GENERAL NOTES:

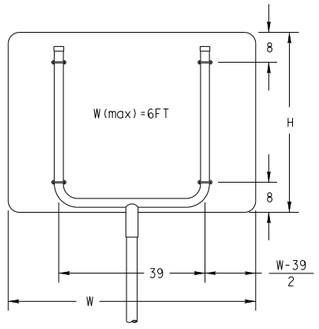
1.

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

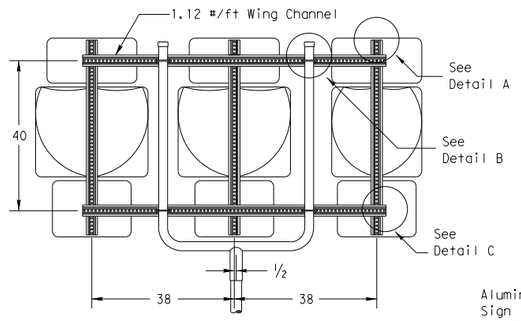
2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material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



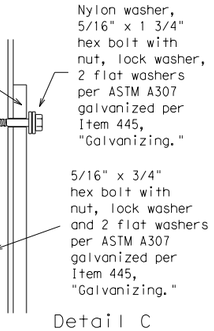
SM RD SGN ASSM TY XXXXX(1)XX(U)



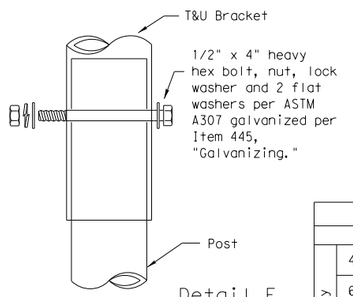
SM RD SGN ASSM TY XXXXX(1)XX(U)



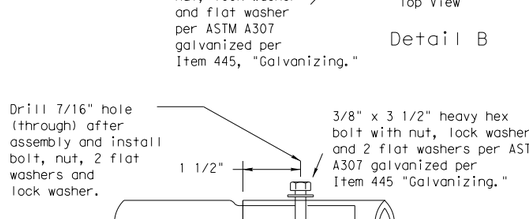
SM RD SGN ASSM TY XXXXX(1)XX(U-WC)
(See Note 11)



Detail C

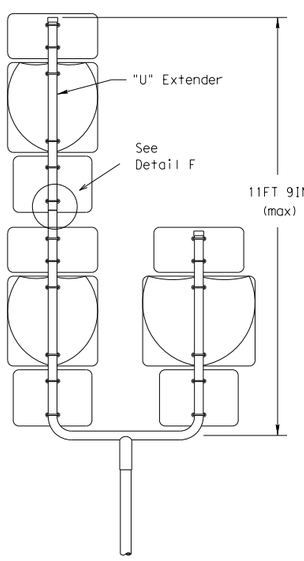


Detail E

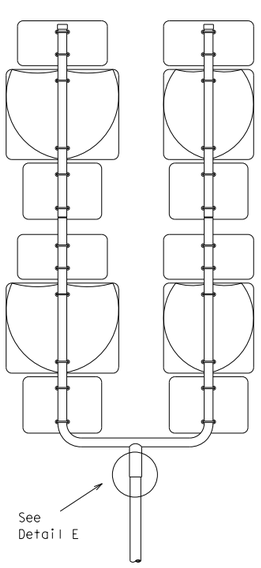


Detail F

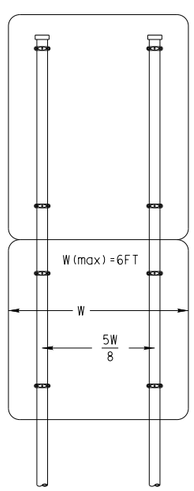
Splices shall only be allowed behind the sign substrate.



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

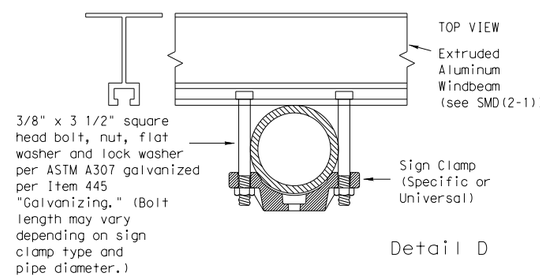


SM RD SGN ASSM TY S80(1)XX(U-2EXT)

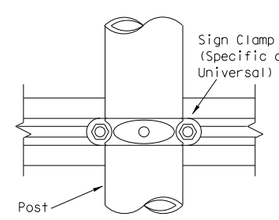


SM RD SGN ASSYM TY XXXXX(2)XX(P)

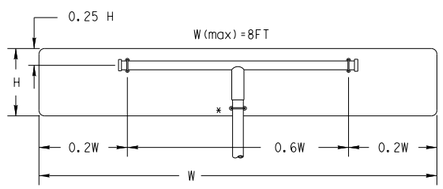
SIDE VIEW



Detail D



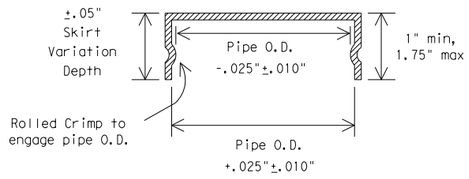
REQUIRED SUPPORT		
	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	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
	0043	17	035	BU 287J
	DIST	COUNTY		SHEET NO.
	WFS	WICHITA		104C

26C

DATE: 2/12/2024 11:54:14 AM
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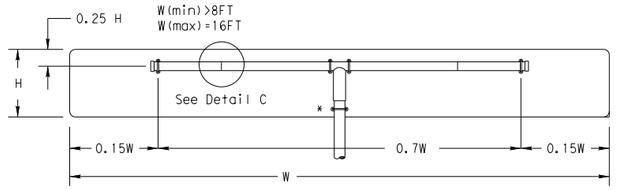
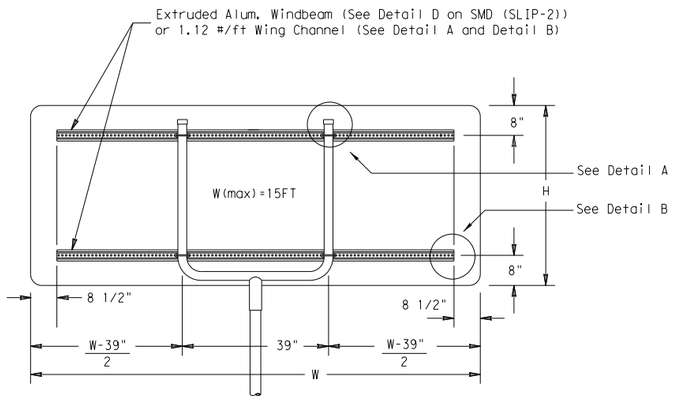
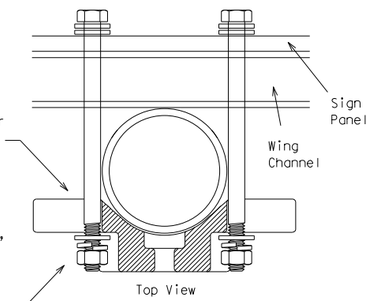


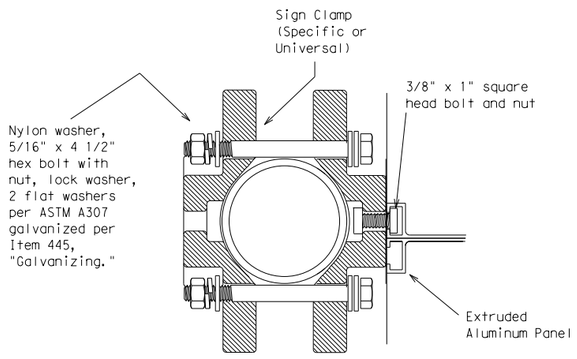
SM RD SGN ASSM TY XXXXX(1)XX(T-2EXT)
(* - See Note 12)



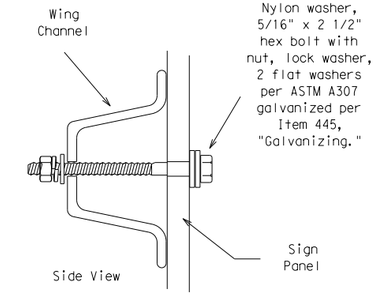
SM RD SGN ASSM TY XXXXX(1)XX(U-XX)



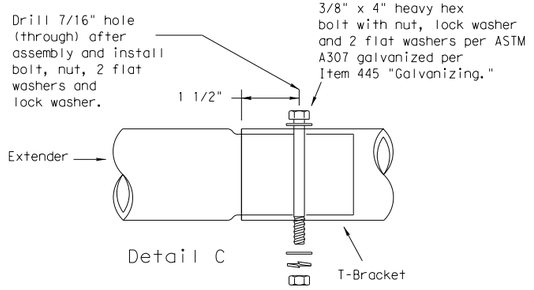
Detail A



Detail D
EXTRUDED ALUMINUM SIGN WITH T BRACKET

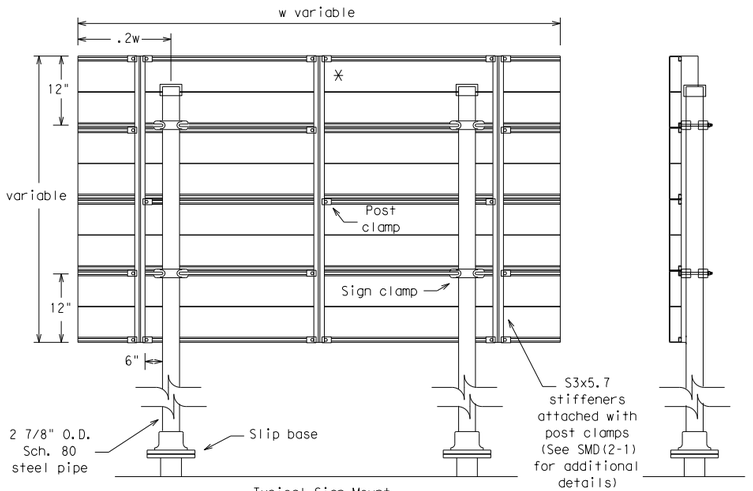


Detail B



Detail C

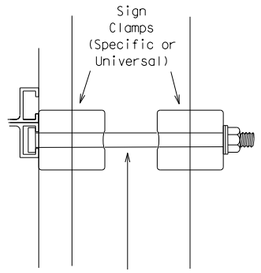
Splices shall only be allowed behind the sign substrate.



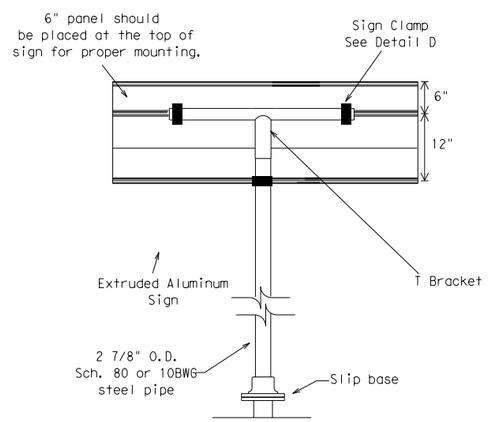
Typical Sign Mount
SM RD SGN ASSM TY S80(2)XX(P-EXAL)

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

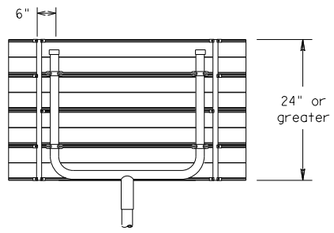
See Detail E
for clamp installation



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

1. 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.
2. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
3. 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.
4. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
5. 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.
6. 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.
7. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
8. 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."
9. Sign blanks shall be the sizes and shapes shown on the plans.
10. 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.
11. 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

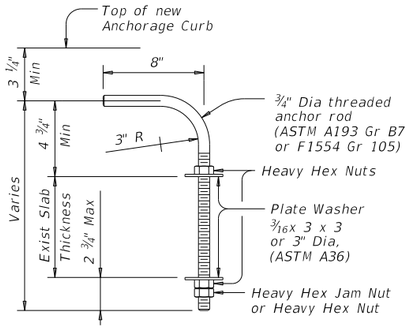
REVISIONS
9-08

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		104D

26D

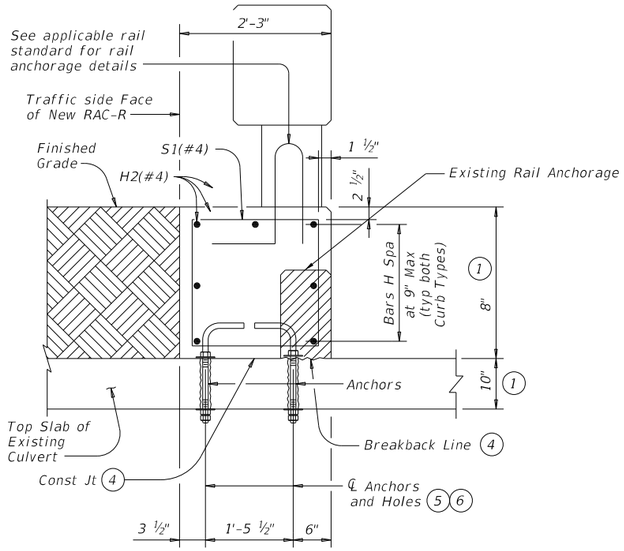
DATE: 2/12/2024 11:54:19 AM
FILE: smds3.dgn

DATE:
FILE:

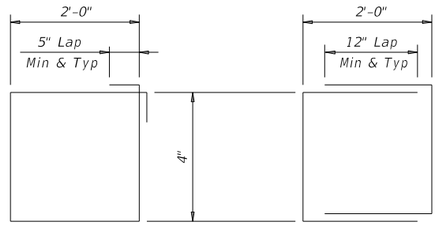


HOOKED ANCHOR

ANCHOR DETAIL



TYPICAL SECTION



BARS S (#4)

OPTIONAL BARS S (#4)

1. Contractor to verify depth of fill and top slab thickness of existing culvert.
2. The total thickness ("T" plus "C") must be 8" minimum in order to properly install the railing anchorage reinforcing.
3. Remove shaded portion of existing concrete to Breakback Line shown. Care must be taken so as to not damage existing reinforcing. Replace damaged reinforcing with new, like reinforcing. Clean existing reinforcing and incorporate into new concrete construction.
4. Saw cut (score) 1" deep flush with top of existing culvert slab, on the field side face of existing curb, if present. After scoring, remove shaded portion of existing concrete to Breakback Line shown. Do not damage existing reinforcing. Clean, bend and incorporate existing reinforcing into new concrete construction. Note that new anchors, as shown in the detail, are required even when existing reinforcing remains in use. Remove existing overlay and/or base material to flush with top of culvert in areas of new construction. Care must be taken to not damage the existing slab. In order to prevent existing asphalt remnants from acting as a bond breaker between the exposed, existing concrete and the retrofitted concrete curb, clean the newly exposed concrete with abrasive blasting or shot blasting. Remove all loose debris prior to placing new anchorage curb.
5. Core drill 1" diameter holes through existing slab. Percussion drilling is not permitted. Patch spalls, when directed by the Engineer, in accordance with Item 429, "Concrete Structure Repair", at the Contractor's expense. Tighten nuts snug tight.
6. Space field side anchors at 36" maximum. Space traffic side anchors at 11" maximum. Do not align field side and traffic side anchors transversely.

CONSTRUCTION NOTES:

Field verify dimensions before commencing work and ordering materials.

MATERIAL NOTES:

Provide Class "C" concrete (f'c=3,600 psi). Provide Class "C" (HPC) concrete if shown elsewhere in the plans.
Chamfer all exposed corners ¾" unless shown otherwise.
Provide Grade 60 reinforcing steel.
Galvanize all reinforcing steel if required elsewhere.
Provide bar laps, where required, as follows: Uncoated or galvanized ~ #4 = 1'-11"
Galvanize ¾" Dia threaded rods, heavy hex nuts and plate washers, unless otherwise shown on plans.

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.
The rail anchorage curb details have sufficient strength for use with all standard rail types.
See appropriate rail standard for approved speed restrictions, notes and details not shown.
For vehicle safety, the top of the new curb must be flush with the finished grade.
Removal and replacement of backfill, subgrade, and asphalt or concrete pavement necessary for this installation is considered subsidiary to the rail anchorage curb.
Payment for rail anchorage curb (including wingwall curb slab) will be by CY of Class "C" or Class "C" (HPC) concrete.

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

SHEET 1 OF 2

1/30/2024

Texas Department of Transportation

Bridge Division Standard

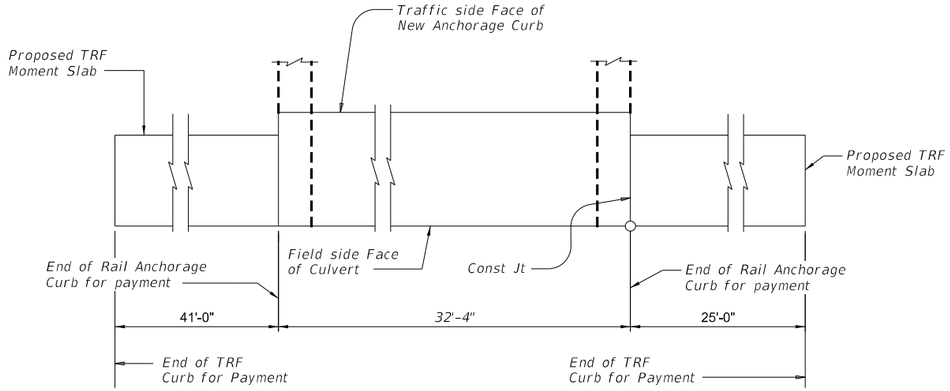
RAIL ANCHORAGE CURB RETROFIT GUIDE

BOX CULVERT RAIL MOUNTING DETAILS (CURBS 2'-0" TALL AND LESS ONLY)

RAC-R

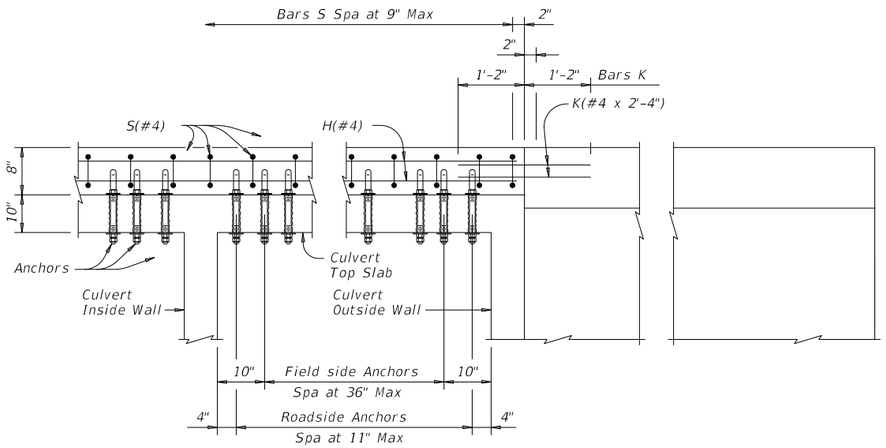
FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	0043	17	035	BUS US 287
	DIST	COUNTY		SHEET NO.
	WFS	WICHITA		107

DATE:
FILE:



TYPICAL CURB PLAN

Showing Geometry only. Reinforcing, Curb Anchors, and Railing not shown for clarity.



SHOWING CULVERT ANCHORAGE CURB

SHOWING TRF MOMENT SLAB

TRF Moment slab reinforcing not shown for clarity.

TYPICAL ELEVATIONS OF INSTALLATION

1/30/2024

Texas Department of Transportation

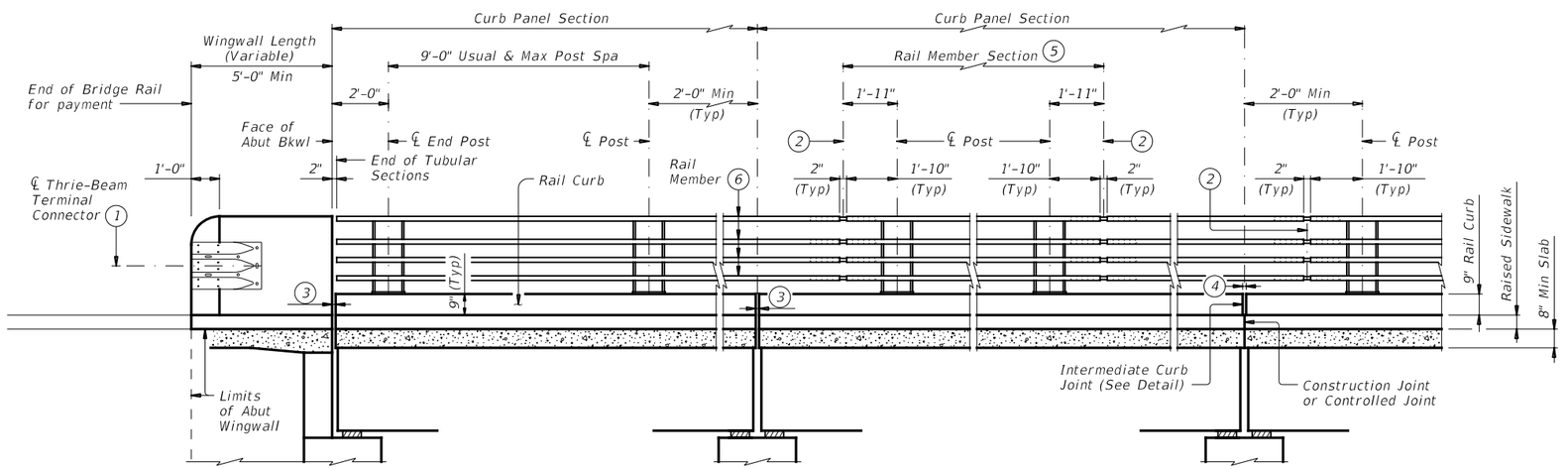
Bridge Division Standard

RAIL ANCHORAGE CURB RETROFIT GUIDE

BOX CULVERT RAIL MOUNTING DETAILS (CURBS 2'-0" TALL AND LESS ONLY)

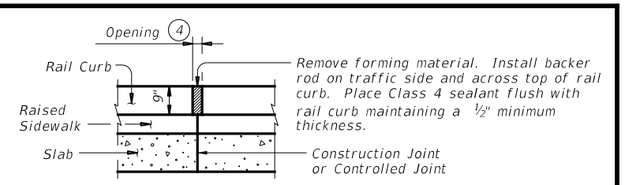
RAC-R

FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020 REVISIONS	CONT	SECT	JOB	HIGHWAY
	0043	17	035	BUS US 287
	DIST	COUNTY		SHEET NO.
	WFS	WICHITA		108



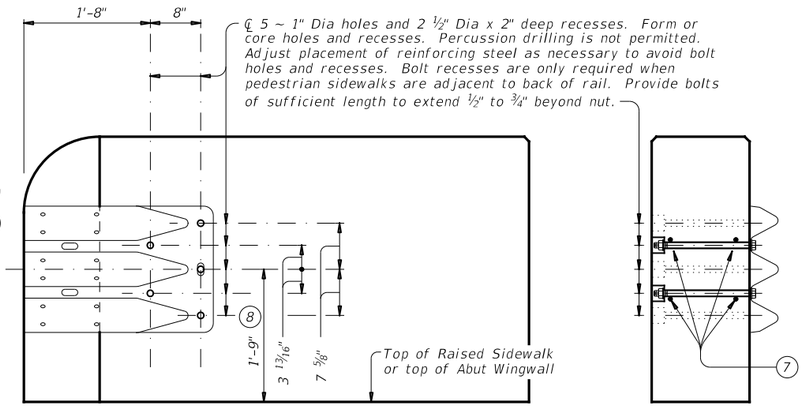
ROADWAY ELEVATION OF RAIL

Showing combination rail on a raised sidewalk.

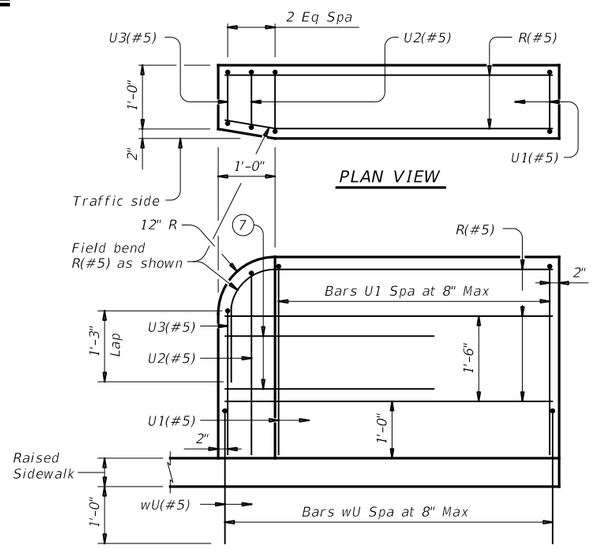


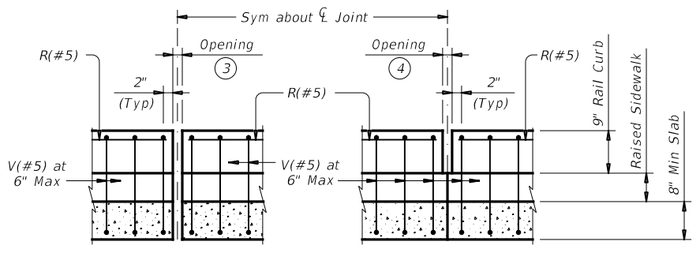
INTERMEDIATE CURB JOINT DETAIL

Provide at all interior bents without slab expansion joints.



TERMINAL CONNECTION DETAILS





ELEVATION SHOWING TYPICAL REINFORCING PLACEMENT

Showing with raised sidewalk

1. Terminal Connectors and associated hardware are to be paid for under the Item "Metal Beam Guard Fence." Attach Metal Beam Guard Fence Transitions to the bridge rail and extend along the embankment unless otherwise shown in the plans.
2. ℄ Expansion Joint or Splice Joint as required.
3. Same as slab joint opening. (5" Max Expansion Joint).
4. ¼" Min, ¾" Max.
5. Rail member sections must have at least two posts but not more than four.
6. HSS 6 x 2 x ¼ (ASTM-A1085 or A500 Grade B).
7. Place 4 additional Bars R(#5) 3'-8" in length inside Bars U(#5) and centered 2'-0" from end of rail when Terminal Connections are required. Field bend as needed.
8. Increase 2" for structures with Overlay.

Texas Department of Transportation

Bridge Division Standard

COMBINATION RAIL

TYPE C1W

FILE: RL-C1W-19.dgn	DN: TxDOT	CK: TxDOT	DW: JTR	CK: JMH
©TxDOT September 2019	CONT	SECT	JOB	HIGHWAY
REVISIONS	0043	17	035	BU 287J
	DIST	COUNTY		SHEET NO.
	WFS	WICHITA		109

DATE: 12/13/2023 12:11:43 PM
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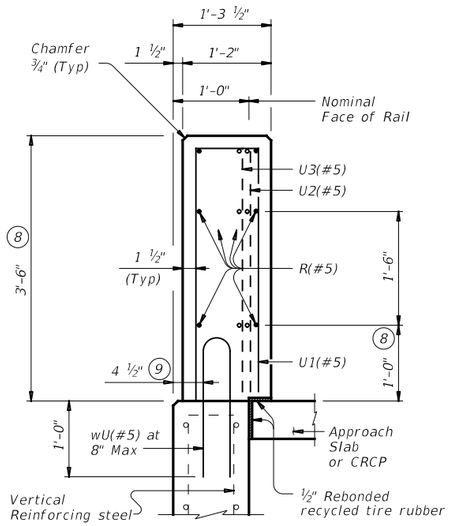
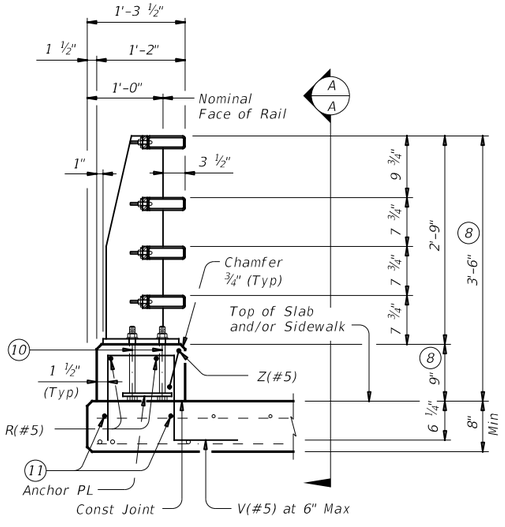
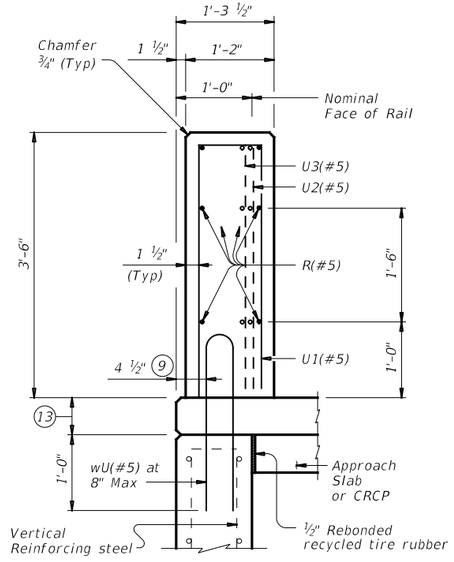


ON ABUTMENT WINGWALLS OR CIP RETAINING WALLS

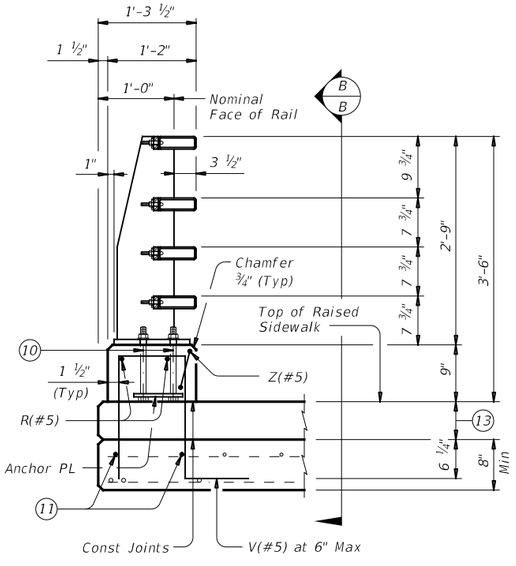


ON BRIDGE SLAB

SECTIONS THRU RAIL WITHOUT RAISED SIDEWALK

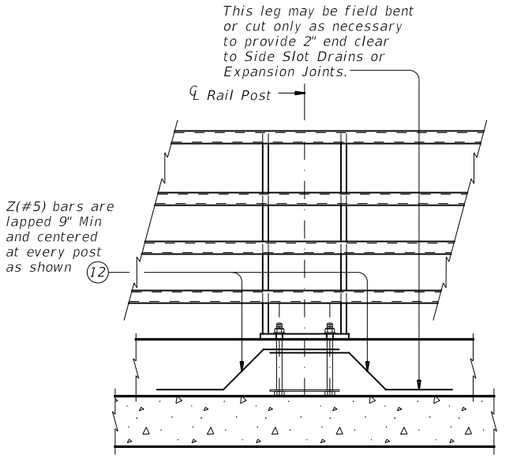


ON ABUTMENT WINGWALLS OR CIP RETAINING WALLS



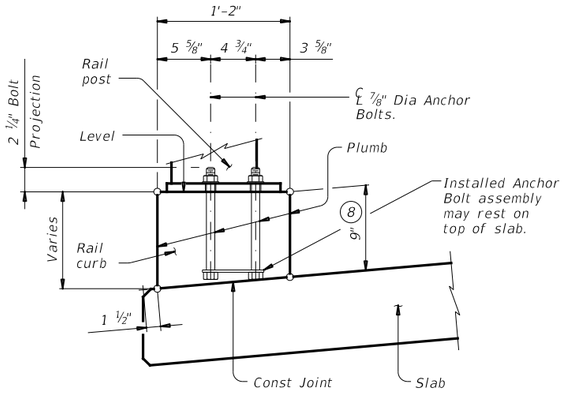
ON BRIDGE SLAB

SECTIONS THRU RAIL WITH RAISED SIDEWALK

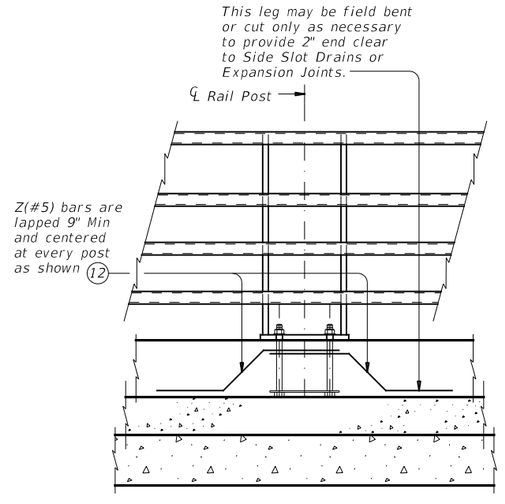


VIEW A-A

Bars V and R omitted for clarity.
Showing without raised sidewalk.

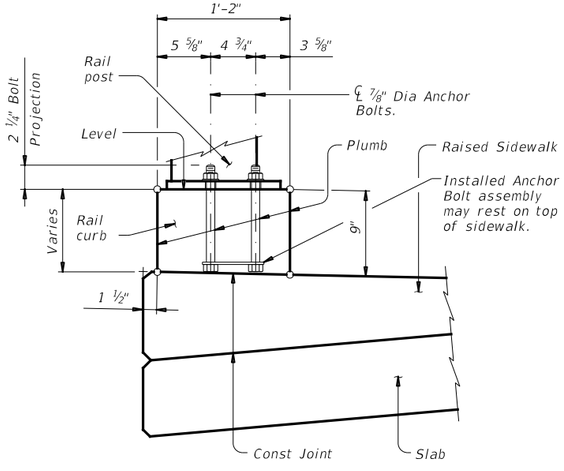


WITHOUT RAISED SIDEWALK



VIEW B-B

Bars V and R omitted for clarity.
Showing with raised sidewalk.



WITH RAISED SIDEWALK

RAIL CURB FORMING DETAIL

Reinforcing steel and rail curb chamfers not shown for clarity.

(8) Increase 2" for structures with Overlay.

(9) 5 ¼" when vertical reinforcing has closer clear cover over horizontal reinforcing in abutment wingwalls or retaining walls on traffic side of wall.

(10) ℄ ⅞" Dia Anchor Bolts. See "Anchor Bolt Assembly Details."

(11) Top longitudinal slab bar may be adjusted laterally 3" plus or minus to tie reinforcing.

(12) Adjust Bars Z(#5) as necessary to avoid Bars V(#5).

(13) Raised Sidewalk.

Texas Department of Transportation

Bridge Division Standard

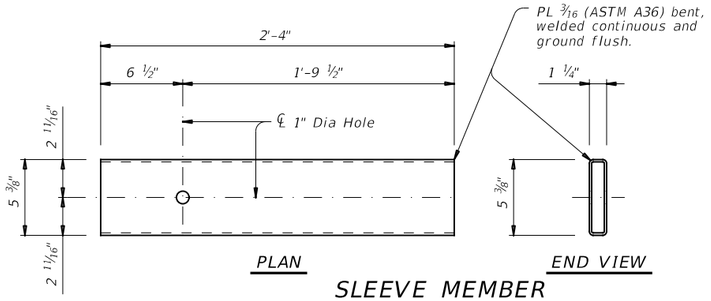
COMBINATION RAIL

TYPE C1W

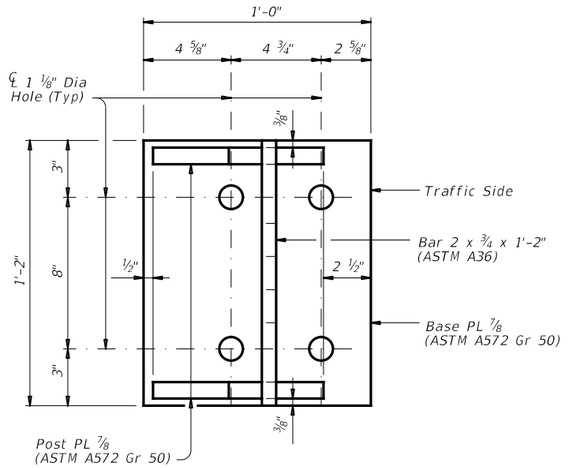
FILE: RL-C1W-19.dgn	DN: TxDOT	CK: TxDOT	DW: JTR	CK: JMH
©TxDOT September 2019	CONT	SECT	JOB	HIGHWAY
REVISIONS	0043	17	035	BU 287J
	DIST	COUNTY		SHEET NO.
	WFS	WICHITA		110

DATE: 12/13/2023 12:11:44 PM
FILE: RL-C1W-19.dgn

DATE: 12/13/2023 12:11:44 PM
FILE: RL-C1W-19.dgn

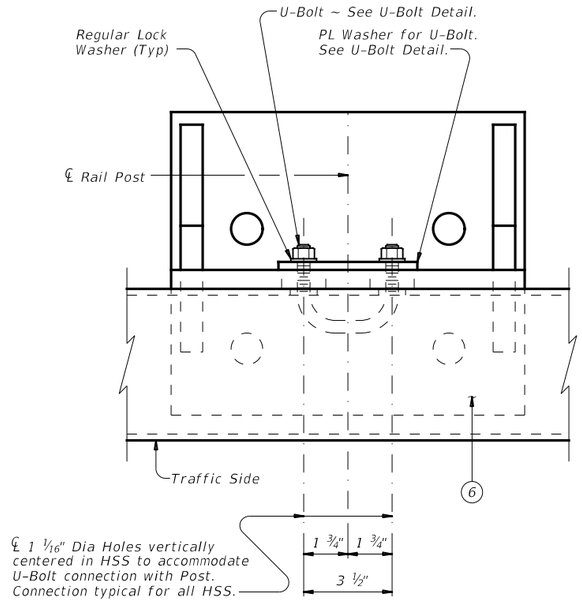


SLEEVE MEMBER



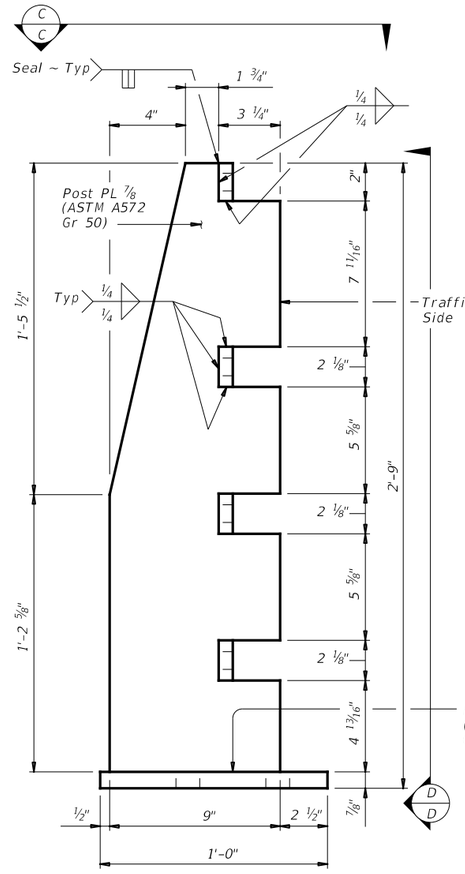
VIEW C-C

(Showing Hole location in Base PL)

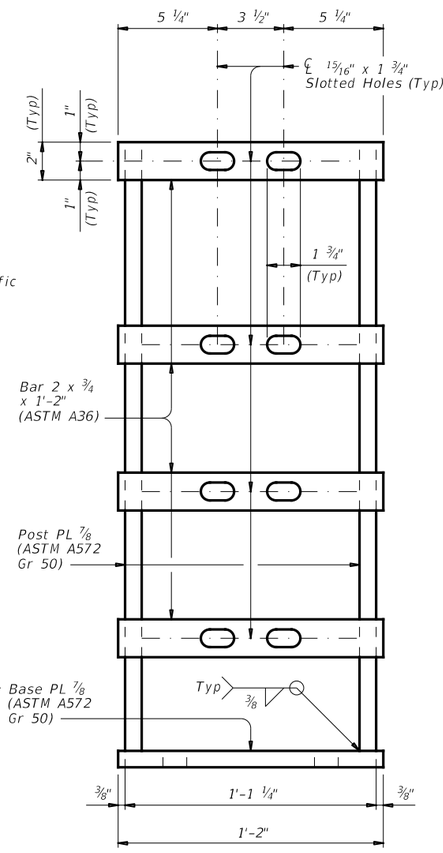


TOP VIEW OF RAIL POST

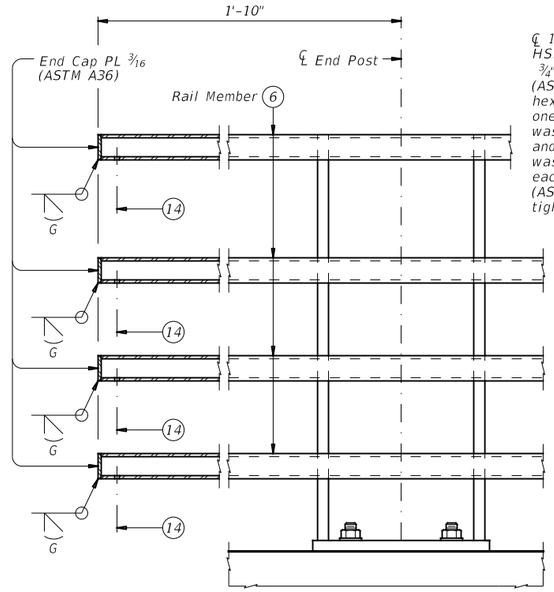
(Showing connection for rail post and HSS.)



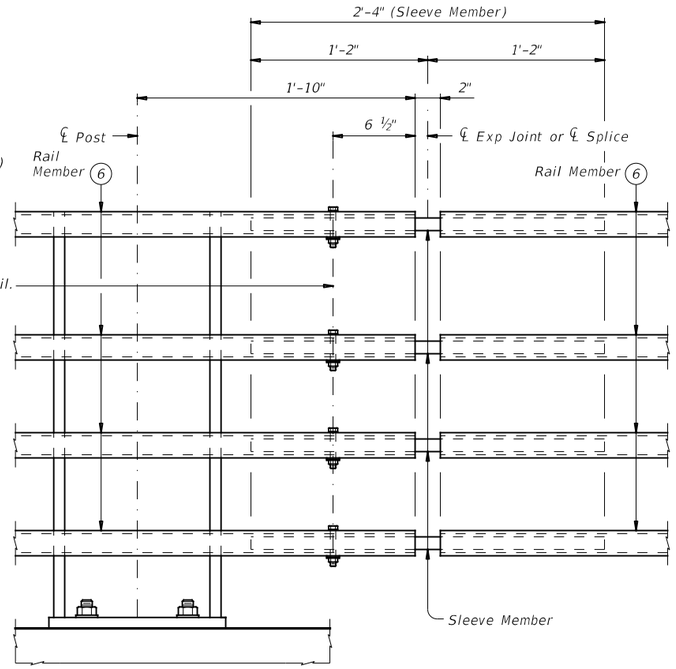
POST DETAIL



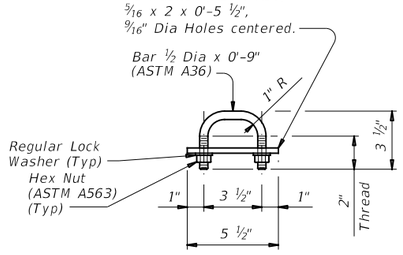
VIEW D-D



END CAPS ON HSS AT END POST



EXPANSION JOINT OR SPLICE



U-BOLT DETAIL

(Showing U-Bolt for rail post and HSS.)

⑥ HSS 6 x 2 x ¼ (ASTM A1085 or A500 Grade B).

⑭ ℄ ⅜" Dia Drain Hole in bottom of HSS.

SHEET 3 OF 4

Texas Department of Transportation

Bridge Division Standard

COMBINATION RAIL

TYPE C1W

FILE: RL-C1W-19.dgn	DN: TxDOT	CK: TxDOT	DW: JTR	CK: JMH		
©TxDOT September 2019	CONT	SECT	JOB		HIGHWAY	
REVISIONS	0043	17	035		BU 287J	
	DIST	COUNTY			SHEET NO.	
	WFS	WICHITA			111	

DATE: 12/13/2023 12:11:45 PM
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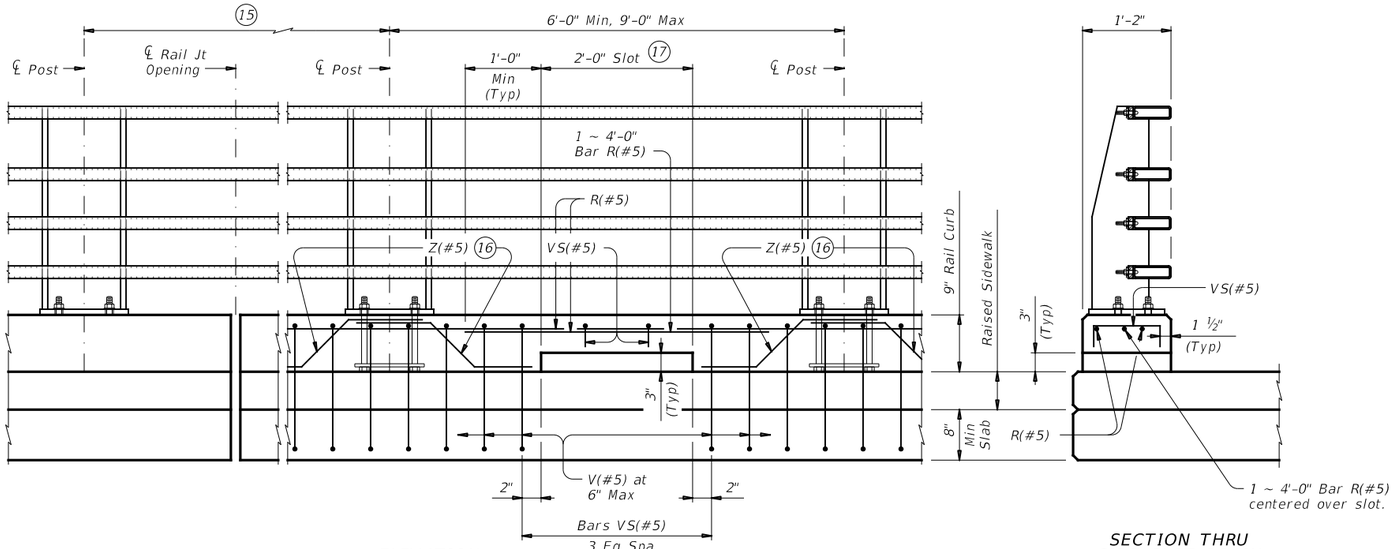
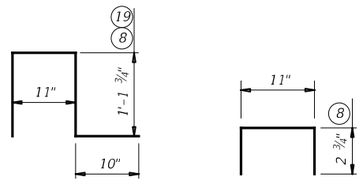


ELEVATION

SECTION THRU SIDE SLOT DRAIN

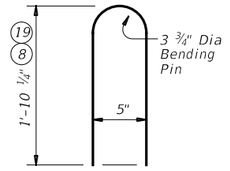
OPTIONAL SIDE SLOT DRAIN DETAILS 18

Showing side slot drain on raised sidewalk, without raised sidewalk similar.

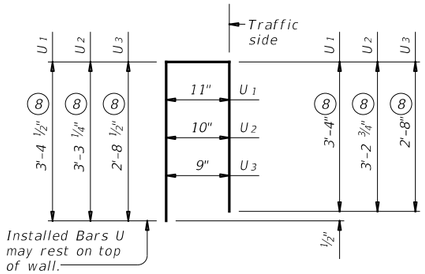


BARS V(#5)

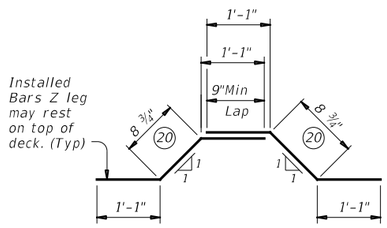
BARS VS(#5)



BARS wU(#5)



BARS U(#5)



BARS Z(#5)

CONSTRUCTION NOTES:

The face of tubular sections and rail curb must be plumb unless otherwise approved by the Engineer. Steel posts must be square to the top of curb. Use Type VIII epoxy mortar under post base plates if gaps larger than 1/16" exist.

Bend tubes to required radius for curved rails. Shop drawings for approval are required for curved rails.

One shop splice per rail member section is permitted with minimum 85 percent penetration. The weld may be square groove or single V groove. Grind smooth.

Round or chamfer exposed edges of rail members and rail posts must be rounded or chamfered to approximately 1/16" by grinding.

Chamfer all exposed concrete corners.

MATERIAL NOTES:

Provide ASTM A1085 or A500 Gr B for all HSS.

Provide Grade 60 reinforcing steel.

Epoxy coat or galvanize all reinforcing steel if slab bars are epoxy coated or galvanized.

Galvanize all metal components of steel rail system. Apply additional coatings when shown elsewhere on the plans. When plans require paint over galvanizing, follow the requirements for painting galvanized steel in Item 445, "Galvanizing" and when field painting, Item 446, "Field Cleaning and Painting Steel." Sleeve members and anchor bolts must receive galvanization prior to installation and only field paint after installation unless directed otherwise by Engineer.

Provide 7/8" Dia ASTM F3125 Gr A325 or A449 bolts (or ASTM A193 Gr B7 or F1554 Gr 105 threaded rods with one tack welded heavy hex nut each) with one hardened steel washer (ASTM F436) placed under each heavy hex nut that conforms to ASTM A563 requirements.

Provide ½" Dia round bar U-bolts (ASTM A36) with plate washer (ASTM A36) and regular lock washers placed under hex nuts that conform to ASTM A563 requirements. See "U-Bolt Detail."

Provide Class "S" concrete. When Class "S" concrete for slab is HPC, include a minimum of 3 gallons of calcium nitrite inorganic corrosion inhibitor per cubic yard of Class "S" concrete.

Provide bar laps, where required, as follows:

Uncoated or galvanized ~ #5 = 2'-0"
Epoxy coated ~ #5 = 3'-0"

GENERAL NOTES:

This rail has been successfully evaluated by full-scale crash test to meet MASH TL-4 criteria. This rail can be used for speeds of 50 mph and greater when a TL-3 rated guard fence transition is used. When a TL-2 rated guard fence transition is used, this rail can only be used for speeds of 45 mph and less.

This railing cannot be used on bridges with expansion joints providing more than 5" movement or on cast-in-place retaining walls, unless otherwise noted.

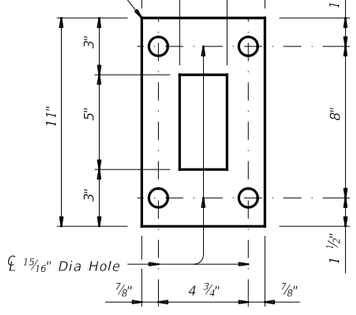
Rail anchorage details shown on this standard may require modification for select structure types. See appropriate details elsewhere in plans for these modifications.

Submit erection drawings showing panel lengths, rail post spacing, and anchor bolt setting, to the Engineer for approval.

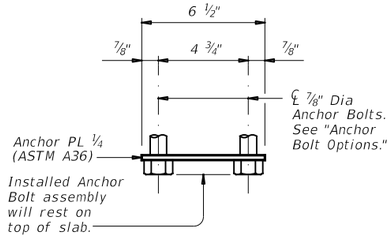
Average weight of railing with no overlay:

205 plf total
131 plf (Conc)
74 plf (Steel).

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

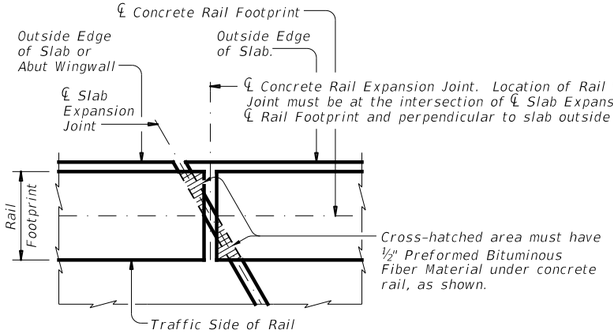


PLAN OF ANCHOR PLATE



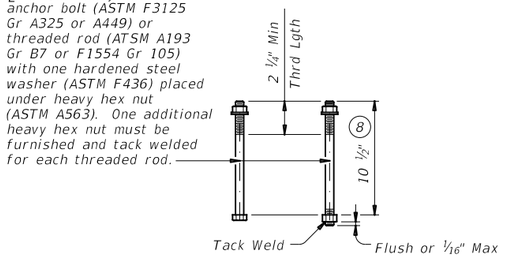
ELEVATION

ANCHOR BOLT ASSEMBLY DETAILS



PLAN OF RAIL AT EXPANSION JOINTS

Example showing Slab Expansion Joints without breakbacks.



ANCHOR BOLT OPTIONS

(Showing Anchor Bolts for Base Plate)

(8) Increase 2" for structures with Overlay.

(15) Side slot drains are not allowed in areas where there is a joint in the concrete curb between rail posts.

(16) Bars Z(#5). See "Section Thru Rail" and "View A-A or B-B" for Bar Z placement and spacing.

(17) Center side slot drain between posts within the limits shown.

(18) Side slot drains may be used where shown elsewhere on the plans or as directed by the Engineer. Do not place drains over railroad tracks, lower roadways, or sidewalks. When this rail is used as a separator between a roadway and a sidewalk, side slot drains are not permitted.

(19) For raised sidewalks, add sidewalk height to total bar height. Use sidewalk height at rail's location.

(20) Increase 2 ¾" for structures with Overlay.

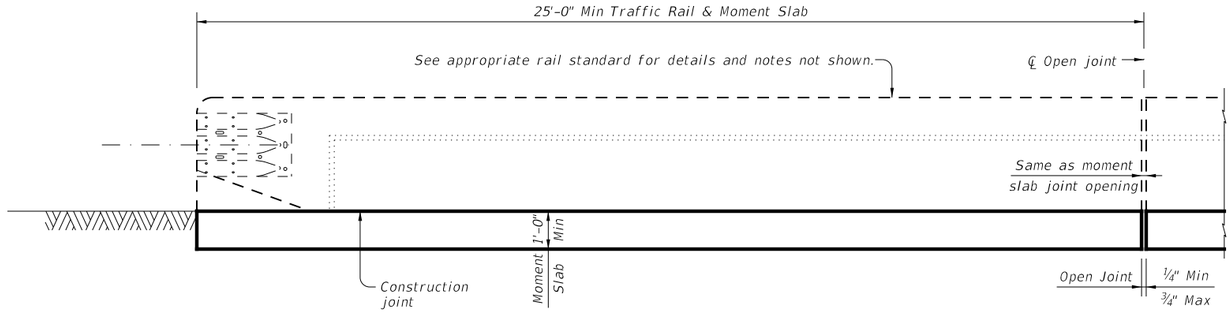
Texas Department of Transportation

Bridge Division Standard

COMBINATION RAIL

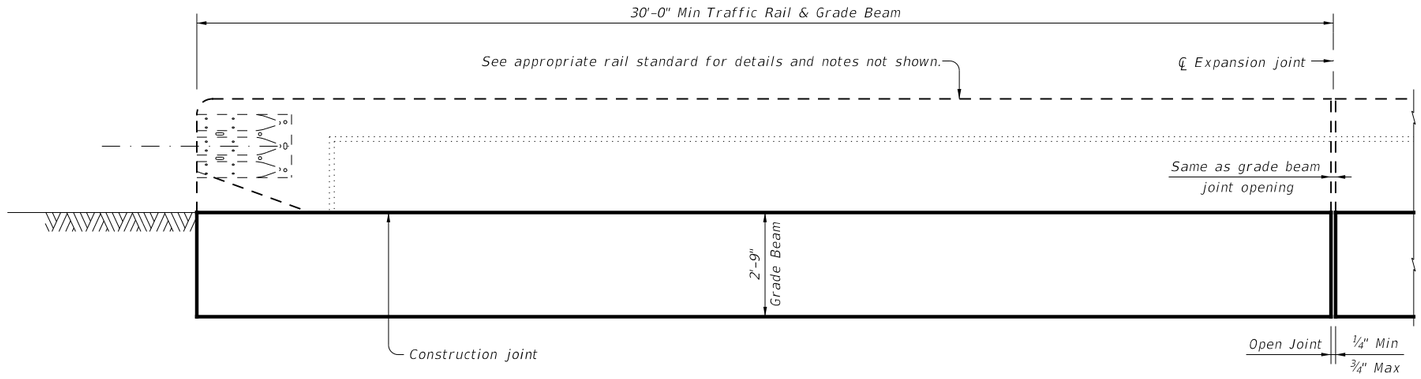
TYPE C1W

FILE: RL-C1W-19.dgn	DN: TxDOT	CK: TxDOT	DW: JTR	CK: JMH	
©TxDOT September 2019 REVISIONS	CONT	SECT	JOB	HIGHWAY	
	0043	17	035	BU 287J	
	DIST	COUNTY		SHEET NO.	
	WFS	WICHITA		112	



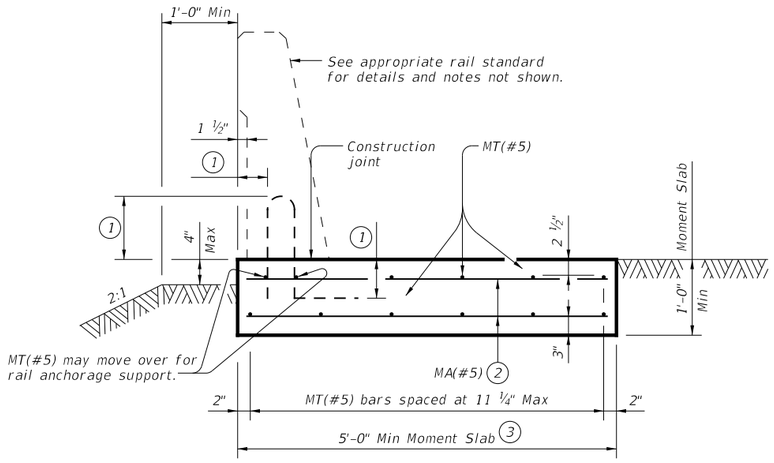
ROADWAY ELEVATION OF TRAFFIC RAIL ON MOMENT SLAB (TRF-MS)

(Showing SSTR rail other rails are similar. Reinforcing not shown for clarity.)



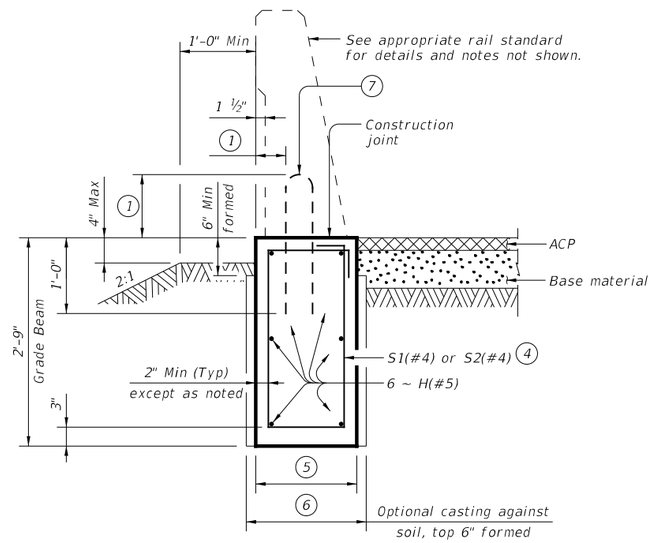
ROADWAY ELEVATION OF TRAFFIC RAIL ON GRADE BEAM (TRF-GB)

(Showing SSTR rail other rails are similar. Reinforcing not shown for clarity.)



SECTION OF TRAFFIC RAIL ON MOMENT SLAB (TRF-MS)

(Showing SSTR rail other rails are similar.)



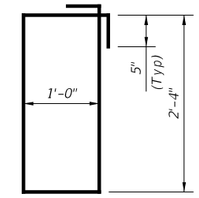
SECTION OF TRAFFIC RAIL ON GRADE BEAM (TRF-GB)

(Showing SSTR rail other rails are similar.)

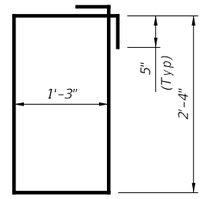
1. See applicable bridge rail standard.
2. MA(#5) space longitudinally along moment slab at 12" Max. (Spaced 2 ½" longitudinally from outside edge of moment slab).
3. Approximate moment slab concrete = 0.19 CY/LF and reinforcement = 22.4 LB/LF.
4. S1(#4) or S2(#4) spaced longitudinally along grade beam at 8" Max. (Spaced 2 ½" longitudinally from outside edge of grade beam).
5. Use bar S1(#4) with 1'-4" grade beam width and bridge rail types: All rails except for T224, C412, T66, C66, T80HT and T80SS.
   Approximate grade beam concrete = 0.14 CY/LF and reinforcement = 13.8 LB/LF.

   Use bar S2(#4) with 1'-7" grade beam width and bridge rail types: T66 and C66.
   Approximate grade beam concrete = 0.16 CY/LF and reinforcement = 14.2 LB/LF.
6. 1'-6" for bridge rail types: All rails except for T224, C412, T66, C66, T80HT and T80SS.

   1'-9" bridge rail types: T66 and C66.
7. Modify reinforcing on standard bridge rail anchorage if necessary by extending rail anchorage 12" Min, vertically into traffic rail



BARS S1(#4)



BARS S2(#4)

CONSTRUCTION NOTES:

Align moment slab (TRF-MS) or grade beam (TRF-GB) open joints with rail open joints maintaining no less than minimum rail length. Provide moment slab (TRF-MS) or grade beam (TRF-GB) with open joints at no greater than 100' spacing unless otherwise shown on the plans or approved by the Engineer.

MATERIAL NOTES:

Provide Class "C" concrete. Provide Class "C" (HPC) if required elsewhere.

Provide Grade 60 reinforcing steel.

Epoxy coat or galvanize all reinforcing steel if required elsewhere.

Deformed Welded Wire Reinforcement (WWR) (ASTM A1064) of equal size and spacing may be substituted for bars S1(#4), S2(#4) and H(#5) unless noted otherwise. Provide the same laps as required for reinforcing bars.

Provide bar laps, where required, as follows:

Uncoated or galvanized ~ #5 = 2'-4"
Epoxy coated ~ #5 = 3'-6"

GENERAL NOTES:

Use of these details will result in a moment slab (TRF-MS) or grade beam (TRF-GB) foundation that is acceptable for traffic rails which are MASH TL-2, TL-3, or TL-4 compliant.

See elsewhere in the plans for selected options between moment slab (TRF-MS) and/or grade beam (TRF-GB).

The foundation design resistance is based on the current AASHTO bridge railing requirements with the assumption of fair to good soil support conditions. Poor soil conditions will require suitably deeper and/or wider foundations.

See appropriate rail standard for details and notes not shown.

This detail is intended for use as a guide to unusual railing anchorage situations but may be included in the plans, modified as necessary to apply to specific installations required on the project.

Payment for moment slab (TRF-MS) and/or grade beam (TRF-GB) will be by Class "C" concrete or Class "C" (HPC) concrete for rail foundations.

The associated bridge railing will be paid for by the linear foot which includes the concrete and reinforcement.

Excavation will be subsidiary to other Items.

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

Texas Department of Transportation

Bridge Division Standard

TRAFFIC RAIL FOUNDATIONS
FOR MASH TL-2, TL-3 & TL-4 BRIDGE RAILS

TRF

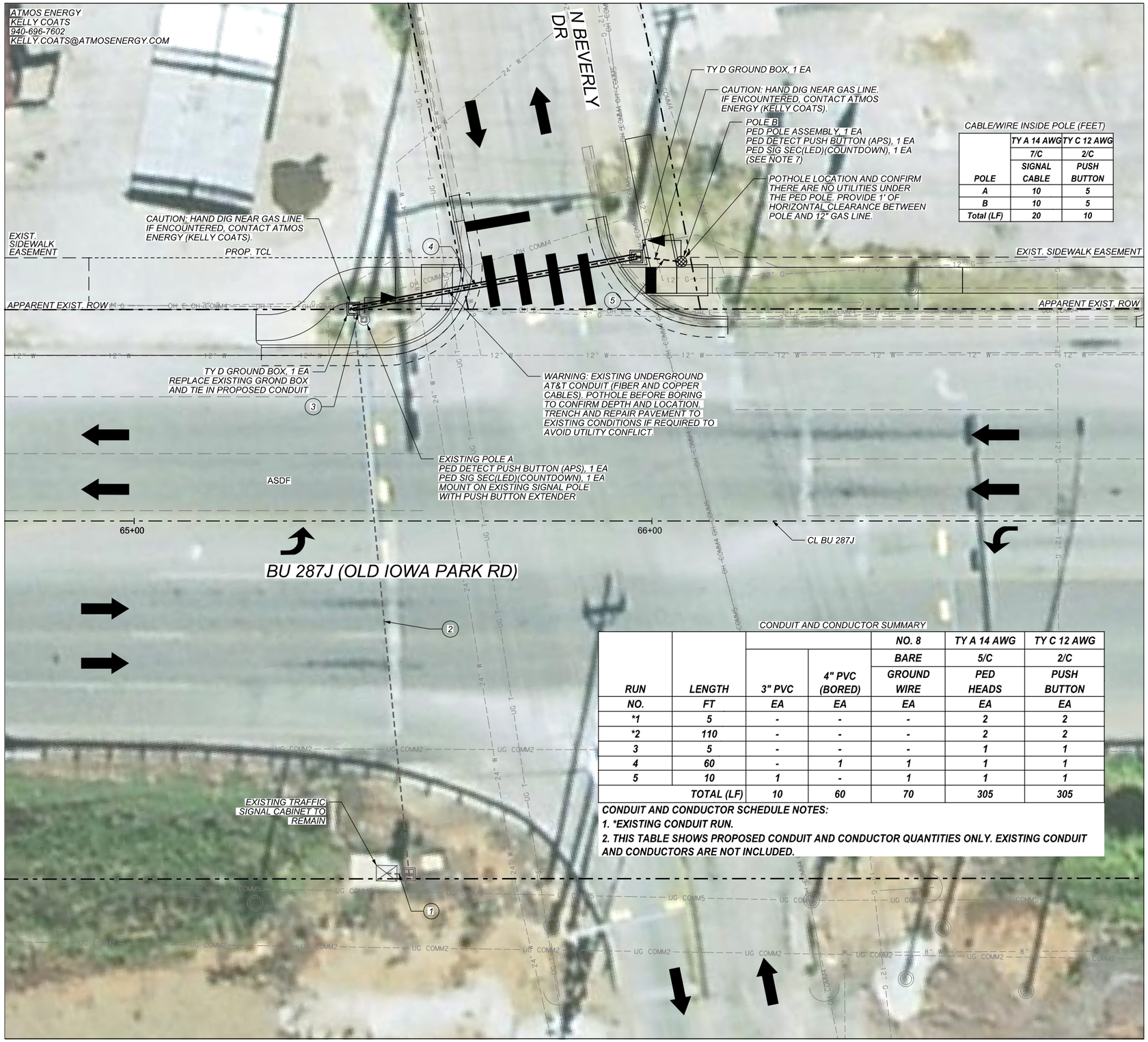
FILE: RL-TRF-20.dgn	DN: TxDOT	CK: TAR	DW: JTR	CK: TAR
©TxDOT September 2019	CONT	SECT	JOB	HIGHWAY
REVISIONS 07-20: Added moment slab with rail foundation lengths.	0043	17	035	BU 287J
	DIST	COUNTY		SHEET NO.
	WFS	WICHITA		113

DATE: 12/13/2023 12:11:56 PM
FILE: RL-TRF-20.dgn

100% PLANS SUBMITTAL

DES: KM DRN: SN CK: SN DW: SF CK: SN

ATMOS ENERGY
KELLY COATS
940-696-7602
KELLY.COATS@ATMOSENERGY.COM



CABLE/WIRE INSIDE POLE (FEET)

POLE	TY A 14 AWG 7/C SIGNAL CABLE	TY C 12 AWG 2/C PUSH BUTTON
A	10	5
B	10	5
Total (LF)	20	10

CONDUIT AND CONDUCTOR SUMMARY

RUN	LENGTH	3" PVC	4" PVC (BORED)	NO. 8 BARE GROUND WIRE	TY A 14 AWG 5/C PED HEADS	TY C 12 AWG 2/C PUSH BUTTON
NO.	FT	EA	EA	EA	EA	EA
*1	5	-	-	-	2	2
*2	110	-	-	-	2	2
3	5	-	-	-	1	1
4	60	-	1	1	1	1
5	10	1	-	1	1	1
TOTAL (LF)		10	60	70	305	305

CONDUIT AND CONDUCTOR SCHEDULE NOTES:
1. *EXISTING CONDUIT RUN.
2. THIS TABLE SHOWS PROPOSED CONDUIT AND CONDUCTOR QUANTITIES ONLY. EXISTING CONDUIT AND CONDUCTORS ARE NOT INCLUDED.

LEGEND

- ROW
- HANDRAIL
- DIRECTION OF TRAVEL
- EXIST. SIDEWALK
- PROP. PEDESTAL POLE
- PROP. PEDESTRIAN SIGNAL HEAD
- PROP. GROUND BOX
- EXIST. SIGNAL POLE
- EXIST. GROUND BOX
- EXIST. PEDESTAL POLE
- EXIST. PEDESTRIAN SIGNAL HEAD
- EXIST. UTILITY FEATURE
- EXIST. SIGN
- PROP. SIGNAL CONDUIT (TRENCH)
- PROP. SIGNAL CONDUIT (BORE)
- EXIST. SIGNAL CONDUIT
- (#) CONDUIT CALLOUT

NOTES:

1. EXISTENCE AND LOCATION OF UTILITIES, EITHER UNDERGROUND OR OVERHEAD, INDICATED ON THE PLANS ARE TAKEN FROM AVAILABLE RECORDS AND ARE APPROXIMATE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES (PRIVATE/PUBLIC AND SHOWN/NOT SHOWN) PRIOR TO COMMENCING WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS FAILURE TO LOCATE, PRESERVE, AND PROTECT THESE UTILITIES. POTHOLE BEFORE INSTALLING SIGNAL POLE FOUNDATIONS TO CONFIRM THERE ARE NO UTILITY CONFLICTS.
2. MAINTAIN A MINIMUM CLEARANCE OF 6' RADIUS FROM NEUTRAL AND 10' RADIUS FROM PRIMARY BETWEEN PROPOSED TRAFFIC SIGNAL EQUIPMENT AND ELECTRIC LINES.
3. NOTIFY THE DISTRICT SIGNAL MAINTENANCE OFFICE AND AREA OFFICE ONE WEEK BEFORE BEGINNING ANY WORK INVOLVING TRAFFIC SIGNALS.
4. ALL CONSTRUCTION SIGNS AND BARRICADES MUST CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND BE CONSISTENT WITH TXDOT BARRICADE, CONSTRUCTION, AND TRAFFIC CONTROL PLANS STANDARDS.
5. INSTALL CONDUIT, CONDUCTORS, AND PEDESTRIAN SIGNAL ITEMS AS NOTED ON PLANS. RUN NEW PEDESTRIAN SIGNAL CONDUCTORS RUN THROUGH NEW CONDUIT AND EXISTING CONDUIT FROM PEDESTRIAN SIGNALS TO THE CONTROLLER. FIELD VERIFY EXISTING CONDUIT FILL PROVIDES SUFFICIENT CAPACITY FOR PROPOSED CONDUCTORS. COORDINATE WITH TXDOT TO HAVE WIRING INSTALLED IN CONTROLLER. USE 14 AWG 5-CONDUCTOR CABLE FOR PEDESTRIAN HEADS AND 12 AWG 2-CONDUCTOR CABLE FOR PUSH BUTTONS.
6. FIELD VERIFY LOCATION OF EXISTING CONDUIT RUNS AND SIGNAL GROUND BOXES. LOCATIONS SHOWN ON PLANS ARE APPROXIMATE AND BASED ON AVAILABLE INFORMATION.
7. ENSURE PUSH BUTTON REACH RANGE FROM CLEAR SPACE IS LESS THAN OR EQUAL TO 10". USE PUSH BUTTON EXTENDERS TO ACHIEVE ADA COMPLIANCE IF NECESSARY.

0 10 20 30 40
SCALE IN FEET

STATE OF TEXAS
KEVIN A. MARSH
132803
LICENSED
PROFESSIONAL ENGINEER
01/30/2024

HDR Engineering, Inc
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIGNAL PLAN
BU 287J & N BEVERLY DR

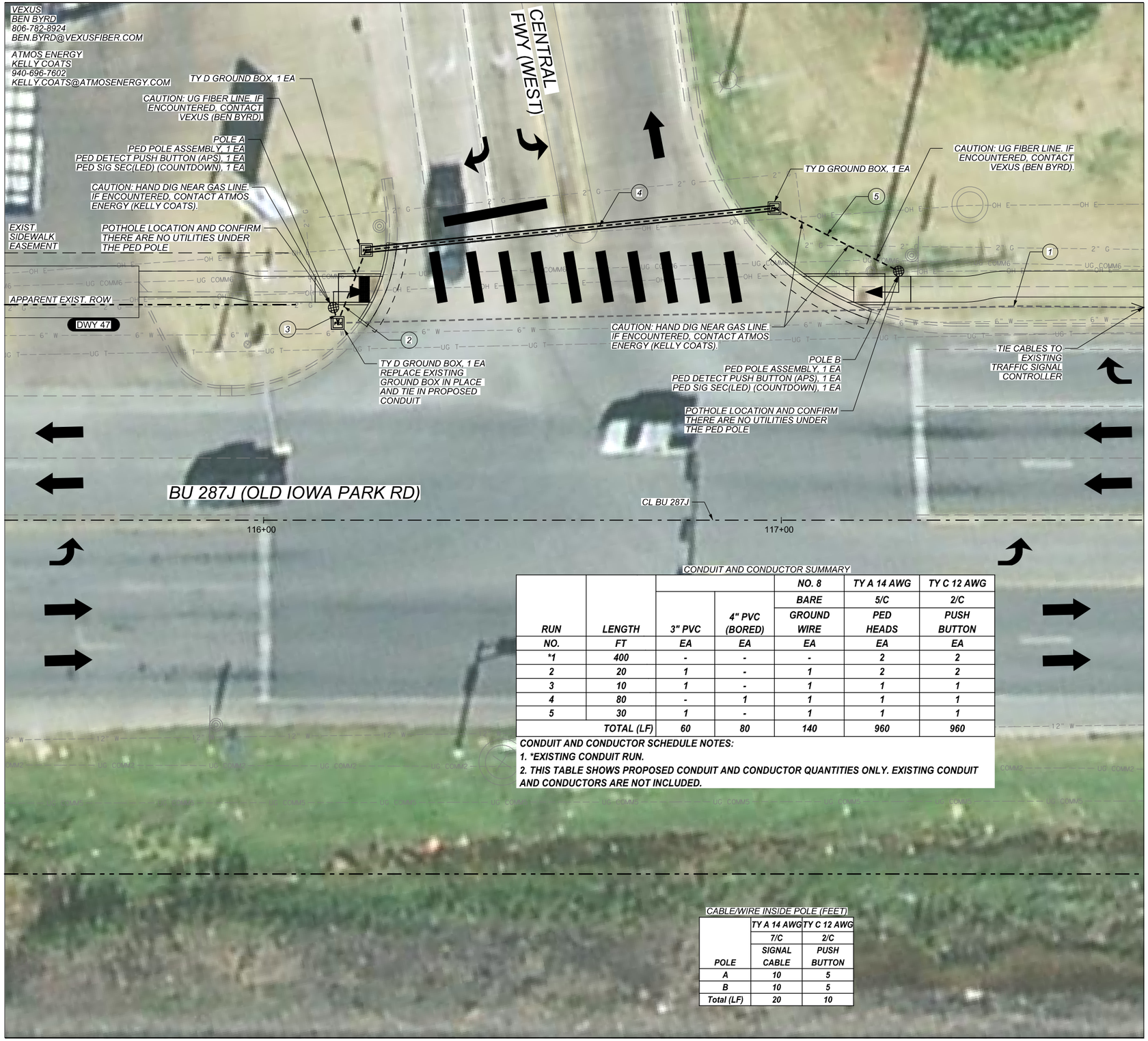
SCALE:1"=20' SHEET 1 OF 3

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		114

DATE: 1/30/2024 1:29:51 PM
FILE: Signal - 287 and Beverly

100% PLANS SUBMITTAL

DES: KM | DR: SN | CK: SN | DW: SF | CK: SN



CONDUIT AND CONDUCTOR SUMMARY

RUN NO.	LENGTH FT	3" PVC EA	4" PVC (BORED) EA	NO. 8 BARE GROUND WIRE EA	TY A 14 AWG 5/C PED HEADS EA	TY C 12 AWG 2/C PUSH BUTTON EA
*1	400	-	-	-	2	2
2	20	1	-	1	2	2
3	10	1	-	1	1	1
4	80	-	1	1	1	1
5	30	1	-	1	1	1
TOTAL (LF)		60	80	140	960	960

CONDUIT AND CONDUCTOR SCHEDULE NOTES:
1. *EXISTING CONDUIT RUN.
2. THIS TABLE SHOWS PROPOSED CONDUIT AND CONDUCTOR QUANTITIES ONLY. EXISTING CONDUIT AND CONDUCTORS ARE NOT INCLUDED.

CABLE/WIRE INSIDE POLE (FEET)

POLE	TY A 14 AWG 7/C SIGNAL CABLE	TY C 12 AWG 2/C PUSH BUTTON
A	10	5
B	10	5
Total (LF)	20	10

LEGEND

- ROW
- HANDRAIL
- DIRECTION OF TRAVEL
- EXIST. SIDEWALK
- PROP. PEDESTAL POLE
- PROP. PEDESTRIAN SIGNAL HEAD
- PROP. GROUND BOX
- EXIST. SIGNAL POLE
- EXIST. GROUND BOX
- EXIST. PEDESTAL POLE
- EXIST. PEDESTRIAN SIGNAL HEAD
- EXIST. UTILITY FEATURE
- EXIST. SIGN
- PROP. SIGNAL CONDUIT (TRENCH)
- PROP. SIGNAL CONDUIT (BORE)
- EXIST. SIGNAL CONDUIT
- (#) CONDUIT CALLOUT

NOTES:

1. EXISTENCE AND LOCATION OF UTILITIES, EITHER UNDERGROUND OR OVERHEAD, INDICATED ON THE PLANS ARE TAKEN FROM AVAILABLE RECORDS AND ARE APPROXIMATE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES (PRIVATE/PUBLIC AND SHOWN/NOT SHOWN) PRIOR TO COMMENCING WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS FAILURE TO LOCATE, PRESERVE, AND PROTECT THESE UTILITIES. POTHOLE BEFORE INSTALLING SIGNAL POLE FOUNDATIONS TO CONFIRM THERE ARE NO UTILITY CONFLICTS.
2. MAINTAIN A MINIMUM CLEARANCE OF 6' RADIUS FROM NEUTRAL AND 10' RADIUS FROM PRIMARY BETWEEN PROPOSED TRAFFIC SIGNAL EQUIPMENT AND ELECTRIC LINES.
3. NOTIFY THE DISTRICT SIGNAL MAINTENANCE OFFICE AND AREA OFFICE ONE WEEK BEFORE BEGINNING ANY WORK INVOLVING TRAFFIC SIGNALS.
4. ALL CONSTRUCTION SIGNS AND BARRICADES MUST CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND BE CONSISTENT WITH TXDOT BARRICADE, CONSTRUCTION, AND TRAFFIC CONTROL PLANS STANDARDS.
5. INSTALL CONDUIT, CONDUCTORS, AND PEDESTRIAN SIGNAL ITEMS AS NOTED ON PLANS. RUN NEW PEDESTRIAN SIGNAL CONDUCTORS RUN THROUGH NEW CONDUIT AND EXISTING CONDUIT FROM PEDESTRIAN SIGNALS TO THE CONTROLLER. FIELD VERIFY EXISTING CONDUIT FILL PROVIDES SUFFICIENT CAPACITY FOR PROPOSED CONDUCTORS. COORDINATE WITH TXDOT TO HAVE WIRING INSTALLED IN CONTROLLER. USE 14 AWG 5-CONDUCTOR CABLE FOR PEDESTRIAN HEADS AND 12 AWG 2-CONDUCTOR CABLE FOR PUSH BUTTONS.
6. FIELD VERIFY LOCATION OF EXISTING CONDUIT RUNS AND SIGNAL GROUND BOXES. LOCATIONS SHOWN ON PLANS ARE APPROXIMATE AND BASED ON AVAILABLE INFORMATION.
7. ENSURE PUSH BUTTON REACH RANGE FROM CLEAR SPACE IS LESS THAN OR EQUAL TO 10". USE PUSH BUTTON EXTENDERS TO ACHIEVE ADA COMPLIANCE IF NECESSARY.

0 10 20 30 40
SCALE IN FEET

STATE OF TEXAS
KEVIN A. MARSH
132803
LICENSED
PROFESSIONAL ENGINEER
01/30/2024

HDR Engineering, Inc
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIGNAL PLAN
BU 287J & CENTRAL FWY (WEST)

SCALE:1"=20' SHEET 2 OF 3

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		115

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FILE: Signal - E Central Frwy 1 of 2

100% PLANS SUBMITTAL

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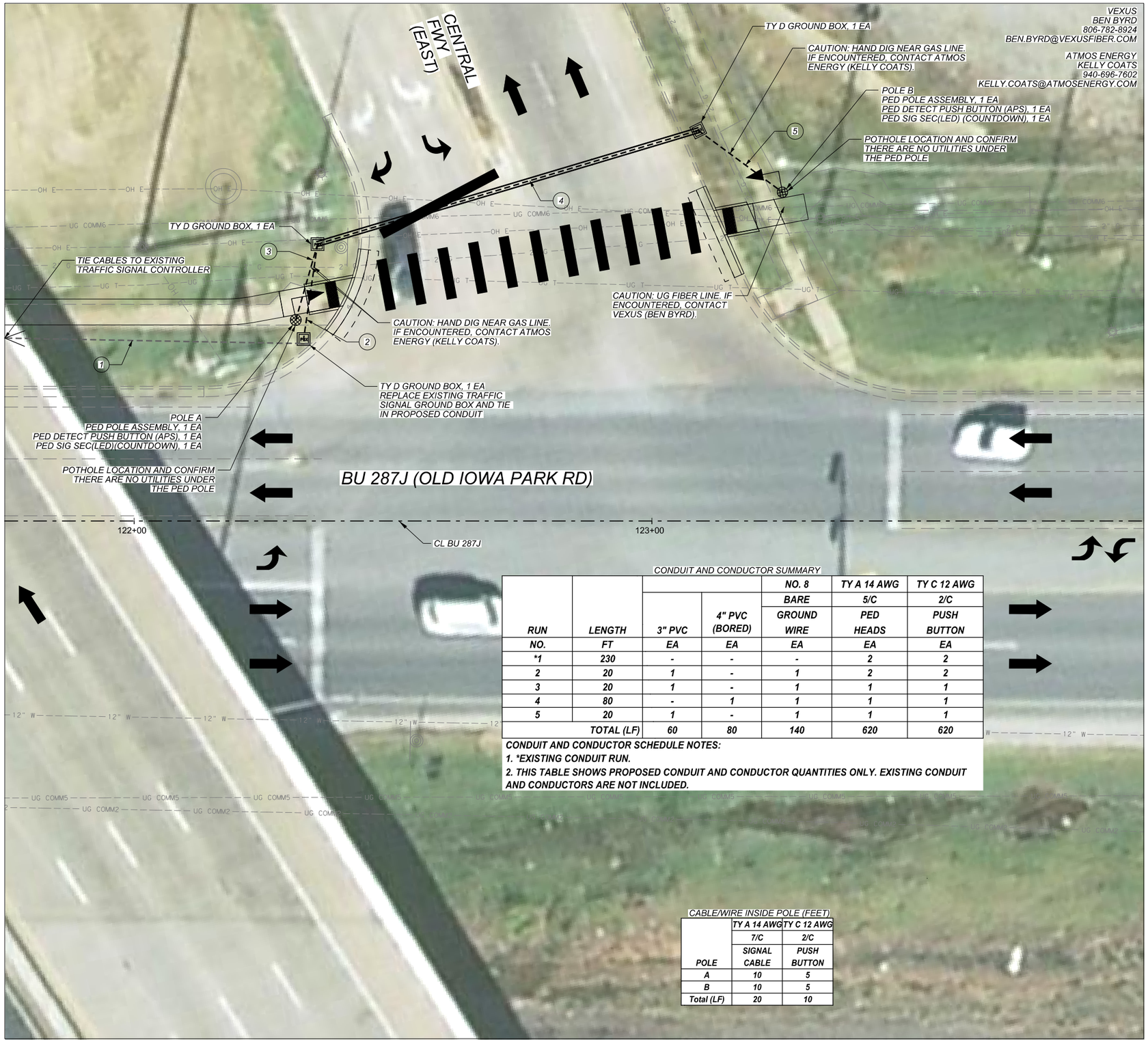

CONDUIT AND CONDUCTOR SUMMARY

RUN	LENGTH	3" PVC	4" PVC (BORED)	NO. 8 BARE GROUND WIRE	TY A 14 AWG 5/C PED HEADS	TY C 12 AWG 2/C PUSH BUTTON
NO.	FT	EA	EA	EA	EA	EA
*1	230	-	-	-	2	2
2	20	1	-	1	2	2
3	20	1	-	1	1	1
4	80	-	1	1	1	1
5	20	1	-	1	1	1
	TOTAL (LF)	60	80	140	620	620

CONDUIT AND CONDUCTOR SCHEDULE NOTES:
1. *EXISTING CONDUIT RUN.
2. THIS TABLE SHOWS PROPOSED CONDUIT AND CONDUCTOR QUANTITIES ONLY. EXISTING CONDUIT AND CONDUCTORS ARE NOT INCLUDED.

CABLE/WIRE INSIDE POLE (FEET)

POLE	TY A 14 AWG 7/C SIGNAL CABLE	TY C 12 AWG 2/C PUSH BUTTON
A	10	5
B	10	5
Total (LF)	20	10

LEGEND

- ROW
- HANDRAIL
- DIRECTION OF TRAVEL
- EXIST. SIDEWALK
- PROP. PEDESTAL POLE
- PROP. PEDESTRIAN SIGNAL HEAD
- PROP. GROUND BOX
- EXIST. SIGNAL POLE
- EXIST. GROUND BOX
- EXIST. PEDESTAL POLE
- EXIST. PEDESTRIAN SIGNAL HEAD
- EXIST. UTILITY FEATURE
- EXIST. SIGN
- PROP. SIGNAL CONDUIT (TRENCH)
- PROP. SIGNAL CONDUIT (BORE)
- EXIST. SIGNAL CONDUIT
- (#) CONDUIT CALLOUT

NOTES:

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SCALE IN FEET: 0 10 20 30 40

STATE OF TEXAS
KEVIN A. MARSH
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01/30/2024

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Texas Department of Transportation

WICHITA FALLS

BU 287J
(OLD IOWA PARK ROAD)
SIGNAL PLAN
BU 287J & CENTRAL FWY (EAST)

SCALE:1"=20' SHEET 3 OF 3

CONT	SECT	JOB	HIGHWAY
0043	17	035	BU 287J
DIST	COUNTY		SHEET NO.
WFS	WICHITA		116

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GENERAL NOTES FOR ALL ELECTRICAL WORK

1. The location of all conduits, junction boxes, ground boxes, and electrical services is diagrammatic and may be shifted to accommodate field conditions.

2. Provide new and unused materials. Ensure that all materials and installations comply with the applicable articles of the National Electrical Code (NEC), TxDOT standards and specifications, National Electrical Manufacturers Association (NEMA), and are listed by Underwriters Laboratories (UL) or a Nationally Recognized Testing Lab (NRTL). NRTLs such as Canadian Standard Association (CSA), Intertek Testing Services NA Inc., or FM Approvals LLC can be considered equivalent to UL. Where reference is made to NEMA listed devices, International Electrotechnical Commission (IEC) listed devices will not be considered an acceptable equal to a NEMA listed device. Acceptable devices may have both a NEMA and IEC listing. Faulty fabrication or poor workmanship in any material, equipment, or installation is justification for rejection. Replace or reinstall rejected material or equipment at no additional cost to the Department.

3. Miscellaneous nuts, bolts and hardware, except for high strength bolts, may be stainless steel when plans specify galvanized, provided the bolt size is ½ in. or less in diameter.

4. Provide the following test equipment as required by the Engineer to confirm compliance with the contract and the NEC: voltmeter, ammeter, megohm meter (1000 volt DC), ground resistance tester, torque wrenches, and torque screwdrivers. Ensure all equipment has been properly calibrated within the last year. Provide calibration certification to the Engineer upon request. Operate test equipment during inspection as requested by the Engineer.

5. Install grounding as shown on the plans and in accordance with the NEC. Ensure all metallic conduits; metal poles; luminaires; and metal enclosures are bonded to the equipment grounding conductor. Provide stranded bare copper or green insulated grounding conductors. Ground rods, connectors, and bonding jumpers are subsidiary to the various bid items.

6. When required by the Engineer, notify the Department in writing of materials from the Material Producers List (MPL) intended for use on each project. Prequalified materials are listed on the MPL on TxDOT's website under "Roadway Illumination and Electrical Supplies." No substitutions will be allowed for materials on this list.

CONDUIT

A. MATERIALS

1. Provide conduit, junction boxes, fittings, and hardware as per TxDOT Departmental Material Specification (DMS) 11030 "Conduit" and Item 618 "Conduit" of TxDOT's "Standard Specifications For Construction And Maintenance Of Highways, Streets, And Bridges," latest edition. Provide conduits listed under Item 618 on the MPL under "Roadway Illumination and Electrical Supplies." Provide conduit types according to the descriptive code or as shown on the plans. Do not substitute other types of conduits for those shown. Provide liquidtight flexible metal conduit (LFMC) when flexible conduit is called for on galvanized steel rigid metallic conduit (RMC) systems. Provide liquidtight flexible nonmetallic conduit (LFNC) when flexible conduit is called for on polyvinyl chloride (PVC) systems.

2. Provide galvanized steel RMC for all exposed conduits, unless otherwise shown on the plans. Properly bond all metal conduits.

3. Unless otherwise shown on the plans, provide junction boxes with a minimum size as shown in the following table, which applies to the greatest number of conductors entering the box through one conduit with no more than four conduits per box. When a mixture of conductor sizes is present, count the conductors as if all are of the larger size. For situations not applicable to the table, size junction boxes in accordance with NEC.

AWG	3 CONDUCTORS	5 CONDUCTORS	7 CONDUCTORS
#1	10" x 10" x 4"	12" x 12" x 4"	16" x 16" x 4"
#2	8" x 8" x 4"	10" x 10" x 4"	12" x 12" x 4"
#4	8" x 8" x 4"	10" x 10" x 4"	10" x 10" x 4"
#6	8" x 8" x 4"	8" x 8" x 4"	10" x 10" x 4"
#8	8" x 8" x 4"	8" x 8" x 4"	8" x 8" x 4"

4. Junction boxes with an internal volume of less than 100 cu. in. and supported by entering raceways must have threaded entries or hubs identified for the intended purpose and supported by connection of two or more rigid metal conduits. Secure conduit within 3 ft. of the enclosure or within 18 in. of the enclosure if all conduit entries are on the same side. Mechanically secure all junction boxes with an internal volume greater than 100 cu. inches.

5. Provide hot dipped galvanized cast iron or sand cast aluminum outlet boxes for junction boxes containing only 10 AWG or 12 AWG conductors. Do not use die cast aluminum boxes. Size outlet boxes according to the NEC.

6. Do not use intermediate metal conduit (IMC) or electrical metallic tubing (EMT) unless specifically required by the plan sheets. When EMT is called for, provide junction boxes made from galvanized steel sheeting, listed and approved for outdoor use, unless otherwise noted on the plans. Size all galvanized steel junction boxes in accordance with the NEC. Provide junction boxes for IMC conduit systems that meet the same requirements for junction boxes used with RMC systems.

7. Provide PVC junction boxes intended for outdoor use on PVC conduit systems, unless otherwise noted on the plans.

8. Provide PVC elbows in PVC conduit systems, unless otherwise shown on the plans. Use only a flat, high tensile strength polyester fiber pull tape for pulling conductors through the PVC conduit system. When galvanized steel RMC elbows are specifically called for in the plans and any portion of the RMC elbow is buried less than 18 in., ground the RMC elbow by means of a grounding bushing on a rigid metal extension. Grounding of the rigid metal elbow is not required if the entire RMC elbow is encased in a minimum of 2 in. of concrete. PVC extensions are allowed on these concrete encased rigid metal elbows. RMC or PVC elbows are subsidiary to various bid items.

9. When required, provide High-Density Polyethylene (HDPE) conduit with factory installed internal conductors according to Item 622 "Duct Cable." At the Contractor's request and with approval by the Engineer, substitute HDPE conduit with no conductors for bored schedule 40 or schedule 80 PVC conduit bid under Item 618. Ensure bored HDPE substituted for PVC is schedule 40 and of the same size PVC called for in the plans. Ensure the substituted HDPE meets the requirements of Item 622, except that the conduit is supplied without factory-installed conductors. Make the transition of the HDPE conduit to PVC (or RMC elbow when required) at the bore pit. Provide conduit of the size and schedule as shown on the plans. Do not extend substituted conduit into ground boxes or foundations. Provide PVC or galvanized steel RMC elbows as called for at all ground boxes and foundations.

10. Use two-hole straps when supporting 2 in. and larger conduits. On electrical service poles, properly sized stainless steel or hot dipped galvanized one-hole standoff straps are allowed on the service riser conduit.

B. CONSTRUCTION METHODS

1. Provide and install expansion joint conduit fittings on all structure-mounted conduits at the structure's expansion joints to allow for movement of the conduit. In addition, provide and install expansion joint fittings on all continuous runs of galvanized steel RMC conduit externally exposed on structures such as bridges at maximum intervals of 150 ft. When requested by the project Engineer, supply manufacturer's specification sheet for expansion joint conduit fittings. Repair or replace expansion joint fittings that do not allow for movement at no additional cost to the Department. Provide the method of determining the amount of expansion to the Engineer upon request. Do not use LFMC or LFNC as a substitute for the required expansion conduit fittings.

2. Space all conduit supports at maximum intervals of 5 ft. Install conduit spacers when attaching metal conduit to surface of concrete structures. See "Conduit Mounting Options" on ED(2). Install conduit support within 3 ft. of all enclosures and conduit terminations.

3. Do not attach conduit supports directly to pre-stressed concrete beams except as shown specifically in the plans or as approved by the Engineer.

4. Unless otherwise shown on the plans, jack or bore conduit placed beneath existing roadways, driveways, sidewalks, or after the base or surfacing operation has begun. Backfill and compact the bore pits below the conduit per Item 476 "Jacking, Boring, or Tunneling Pipe or Box" prior to installing conduit or duct cable to prevent bending of the connections.

5. When placing conduit in the sub-grade of new roadways, backfill all trenches with excavated material unless otherwise noted on the plans. When placing conduit in the sub-base of new roadways, backfill all trenches with cement-stabilized base as per requirements of Items 110 "Excavation", 400 "Excavation and Backfill for Structures", 401 "Flowable Backfill", 402 "Trench Excavation Protection", and 403 "Temporary Special Shoring."

6. Provide and place warning tape approximately 10 in. above all trenched conduit as per Item 618.

7. During construction, temporarily cap or plug open ends of all conduit and raceways immediately after installation to prevent entry of dirt, debris and animals. Temporary caps constructed of durable duct tape are allowed. Tightly fix the tape to the conduit opening. Clean out the conduit and prove it clear in accordance with Item 618 prior to installing any conductors.

8. Ensure conduit entry into the top of any enclosure is waterproof by installing conduit sealing hubs or using boxes with threaded bosses. This includes surface mounted safety switches, meter cans, service enclosures, auxiliary enclosures and junction boxes. Grounding bushings on water tight sealing hubs are not required.

9. Fit the ends of all PVC conduit terminations with bushings or bell end fittings. Provide and install a grounding type bushing on all metal conduit terminations.

10. Install a bonding jumper from each grounding bushing to the nearest ground rod, grounding lug, or equipment grounding conductor. Ensure all bonding jumpers are the same size as the equipment grounding conductor. Bonding of conduit used as a casing under roadways for duct cable is not required, if the duct extends the full length through the casing.

11. At all electrical services, install a 6 AWG solid copper grounding electrode conductor.

12. Place conduits entering ground boxes so that the conduit openings are between 3 in. and 6 in. from the bottom of the box. See the ground box detail on sheet ED(4).

13. Seal ends of all conduits with duct seal, expandable foam, or by other methods approved by the Engineer. Seal conduit immediately after completion of conductor installation and pull tests. Do not use duct tape as a permanent conduit sealant. Do not use silicone caulk as a conduit sealant.

14. File smooth the cut ends of all mounting strut and conduit. Before installing, paint the field cut ends of all mounting strut and RMC (threaded or non-threaded) with zinc rich paint (94% or more zinc content) to alleviate overspray. Use zinc rich paint to touch up galvanized material as allowed under Item 445 "Galvanizing." Do not paint non-galvanized material with a zinc rich paint as an alternative for materials required to be galvanized.

Texas Department of Transportation

Traffic Operations Division Standard

ELECTRICAL DETAILS CONDUITS & NOTES

ED(1)-14

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© TxDOT	October 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS		0043	17	035	BU 287J
		DIST	COUNTY		SHEET NO.
		WFS	WICHITA		117

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ELECTRICAL CONDUCTORS

A. MATERIAL INFORMATION

1. Provide Type XHHW insulated conductors in accordance with Departmental Material Specification (DMS)11040 "Conductors" and Item 620 "Electrical Conductors." Provide conductors as listed on the Material Producers List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies" Item 620. Color code insulated conductors in conformance with the NEC. Identify grounded (neutral) conductors with white insulation. Identify grounding conductors (ground wires) with green insulation or bare conductors. Identify ungrounded (hot) conductors with any color insulation except green, white, or gray. Keep color scheme consistent throughout the wiring system. Identify conductors 6 American Wire Gauge (AWG) and smaller by continuous color jacket. Identify electrical conductors 4 AWG and larger by continuous color jacket or by colored tape. When identifying conductors with colored tape, mark at least 6 in. of the conductor's insulation with half laps of tape.
2. Provide a solid copper 6 AWG grounding electrode conductor to bond the electrical service equipment to the concrete encased grounding electrode or the ground rod at the service location. Connect the grounding electrode conductor to the ground rod with a UL listed connector in accordance with DMS 11040. Connect the grounding electrode conductor to the concrete encased grounding electrode as shown in the plans.
3. Where two or more circuits are present in one conduit or enclosure, permanently identify the conductors of each branch circuit by attaching a non-metallic tag around both circuit conductors at each accessible location. Provide tags with two straps, large enough to indicate circuit number, letter, or other identification as shown in the plans. Print circuit identification on the tag with a permanent marker.
4. Use listed compression or screw type pressure connectors, terminal blocks, or split bolt connectors for splicing as specified in DMS 11040. Use hot melt adhesive tape to fill the gap and seal the ends of heat shrink tubing. Provide UL listed gel-filled insulating splice covers. Splicing materials, insulating materials, breakaway disconnects, splice covers, and fuse holders are subsidiary to various bid items.

B. CONSTRUCTION METHODS

1. Use only a flat, high tensile strength polyester fiber pull tape for pulling conductors through the conduit system. After installing conductors in conduit, perform conductor pull test. If a conductor cannot be freely pulled, make any needed alterations or repairs at no additional cost to the department. Perform insulation resistance tests in accordance with Item 620. Coordinate with the Engineer to witness the tests.
2. Leave 2 ft. minimum, 3 ft. maximum length for each conductor up to the splice in ground boxes. Leave 3 ft. minimum, 4 ft. maximum length of conductor in ground boxes when pulled through with no splice. Leave 1 ft. minimum, 1.5 ft. maximum length of conductor at enclosures, weatherheads and pole bases.
3. Make splices only in junction boxes, ground boxes, pole bases, or electrical enclosures and use only listed compression or screw type pressure connectors, terminal blocks, or split bolt connectors. Insulate splices with heavy wall heat shrink tubing or gel-filled insulating splice covers to provide a watertight splice. Overlap conductor insulation with heat shrink tubing a minimum of 2 in. past both sides of the splice. Where heat shrink tubing may not shrink sufficiently to provide a watertight seal around the individual conductors, prior to heating the tubing, increase the diameter of the conductor insulation using hot melt adhesive tape to provide a watertight seal between the individual conductors and the heat shrink tubing. Ensure the tape extends past the heat shrink tubing. Use hot melt adhesive tape to fill the gap and seal the ends of heat shrink tubing. Heat shrink tubing that appears to have been burned, or overheated, is considered defective and must be replaced.
4. Size and install gel-filled insulating splice covers according to manufacturer's specifications when used in place of heat shrink tubing.
5. Wire nuts with factory applied waterproof sealant may be used for 8 AWG or smaller conductors in above ground junction boxes, but not in pole bases or ground boxes. Install wire nuts in an upright position to prevent the accumulation of water.
6. Support conductors in illumination poles with a J-hook at the top of the pole.
7. When terminating conductors, remove the insulation and jacketing material without nicking the individual strands of the conductor. Conductors with nicked individual conductor strands or removed strands will be considered damaged.
8. Replace conductors and cables that are damaged beyond repair or that fail an insulation resistance test at no additional cost to the department.
9. Do not repair damaged conductors with duct tape, electrical tape, or wire nuts. Use only approved splicing methods.
10. Do not terminate more than one conductor under a single connector, unless the connector is rated for multiple conductors. Do not exceed the pressure connector's listing for maximum number and size of conductors allowed.
11. Install breakaway connectors on conductors bid under Item 620 whenever those conductors pass through a breakaway support device. Follow manufacturer's instructions when terminating conductors to breakaway connectors. Properly torque threaded connections. Proper terminations are critical to the safe operation of breakaway devices. Trim waterproofing boots on breakaway connectors to fit snugly around the conductor to ensure waterproof connection. Only one conductor may enter a single opening in a boot. Provide waterproof boots with the correct number of openings. Leave unused openings factory sealed. Use prequalified breakaway connectors as shown on the MPL.
12. Provide and install a separate stranded equipment grounding conductor (EGC) in all conduits that contain circuit wiring of 50 volts or more. Unless shown elsewhere, size the EGC to be the same size as the largest current carrying conductor contained in the conduit. Ensure all EGCs are bonded together at every accessible location. For traffic signal installations, provide a minimum size 8 AWG EGC. The EGC is paid for under Item 620.

C. TEMPORARY WIRING

1. Install temporary conductors and electrical equipment in accordance with the NEC article "Temporary Installations" and Department standard sheets.
2. Provide a ground fault circuit interrupter (GFCI) for power outlets for portable electrical equipment, power tools, ice machines, ice storage bins and refrigerators located outdoors at grade. GFCI may be any one of the following: molded cord and plug set, receptacle, or circuit breaker type.
3. Use listed wire nuts with factory applied sealant for temporary wiring where approved.
4. Enclose conductor splices within a listed enclosure or ground box, or ensure the splices are more than 10 ft. above grade vertically and more than 5 ft. horizontally from any metal structure. Where installing temporary conductors in areas subject to vehicle traffic or mobile construction equipment, ensure the vertical clearance to ground is at least 18 ft. when measured at the lowest point. Ground messenger wires that support power conductors in conformance with the NEC.
5. Protect and when necessary repair any existing electrical conduits uncovered during the construction process in a timely manner and in conformance with the NEC.

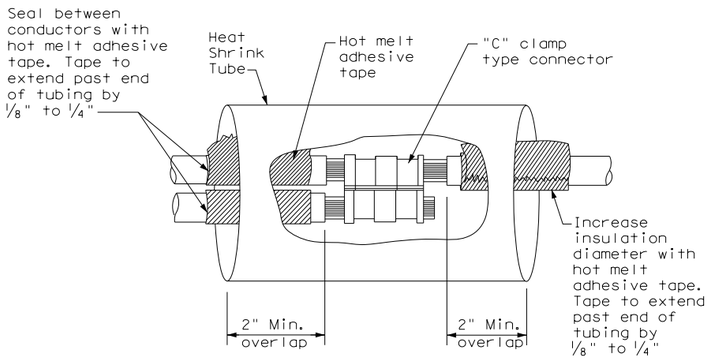
GROUND RODS & GROUNDING ELECTRODES

A. MATERIAL INFORMATION

1. Provide and install a grounding electrode at electrical services. Provide ground rods according to DMS 11040 and the plans. Larger diameter or longer length rods may be called for in some specific locations, see the individual plans sheets. Concrete encased grounding electrodes may be called for in specific locations including electrical service, see individual plan sheets.

B. CONSTRUCTION METHODS

1. Furnish auxiliary ground rods for lightning protection and install in soil, concrete, or both, as called for in the plans. For ground rods installed in concrete, ensure the connection of the conductor to the ground rod is readily accessible for inspection or repairs. For ground rods installed in soil, ensure that the upper end is between 2 to 4 in. below finished grade.
2. Do not place ground rods in the same drilled hole as a timber pole.
3. Install ground rods so the imprinted part number is at the upper end of the rod.
4. Remove all non-conductive coatings such as concrete splatter from the rod at the clamp location.
5. Route all conductors as short and straight as possible for connection to lightning protection ground rods. When a bend is required, ensure a minimum radius bend of four inches for these conductors.
6. Unless otherwise called for in the plans, protect grounding electrode conductors with non-metallic conduit. When protecting grounding electrode conductors with metal conduit, provide and install a grounding type bushing and properly sized bonding jumper on each end of the metal conduit.
7. Written authorization is required before installing a ground rod in a horizontal trench for rocky soil or a solid rock bottom.



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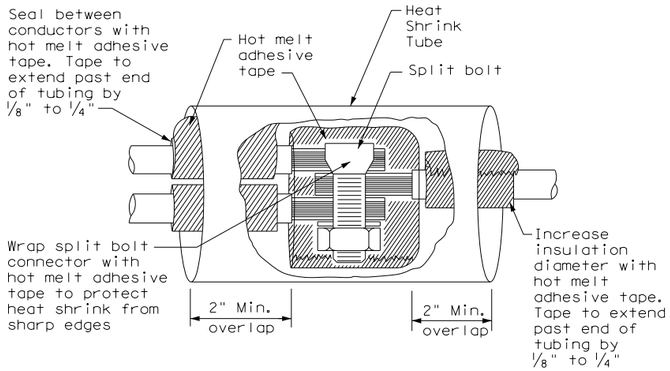
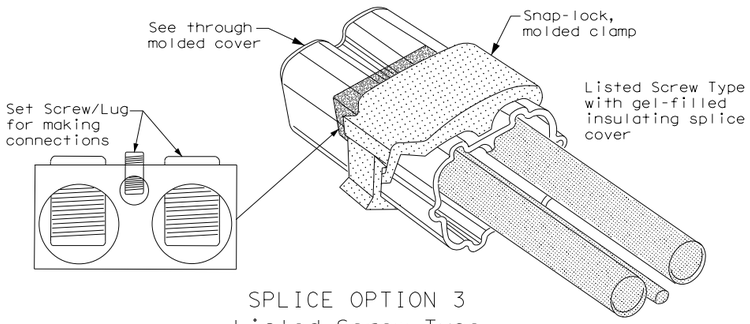
Compression Type



SPLICE OPTION 2
Split Bolt Type



SPLICE OPTION 3
Listed Screw Type

Texas Department of Transportation

Traffic Operations Division Standard

ELECTRICAL DETAILS CONDUCTORS

ED(3)-14

FILE:	ed3-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS		0043	17	035	BU 287J
		DIST	COUNTY		SHEET NO.
		WFS	WICHITA		118

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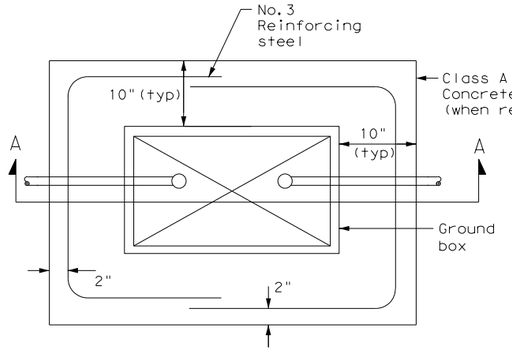
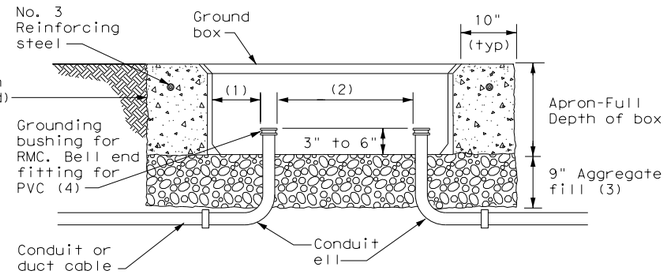


PLAN VIEW



SECTION A - A

APRON FOR GROUND BOX

(1) Uniformly space ends of conduits within the ground box. Position ends of conduits so that ground box walls do not interfere with the installation of grounding bushings or bell end fittings.

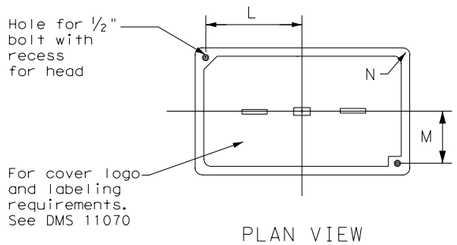
(2) Maintain sufficient space between conduits to allow for proper installation of bushing.

(3) Place aggregate under the box, not in the box. Aggregate should not encroach on the interior volume of the box.

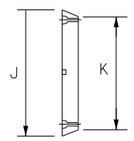
(4) Install a grounding bushing on the upper end of all RMC terminating in a ground box. Ground RMC elbows when any part of the elbow is less than 18 in. below the bottom of the ground box. Install a PVC bushing or bell end fitting on the upper end of all PVC conduits terminating in a ground box.

GROUND BOX DIMENSIONS	
TYPE	OUTSIDE DIMENSIONS (INCHES) (Width x Length X Depth)
A	12 X 23 X 11
B	12 X 23 X 22
C	16 X 29 X 11
D	16 X 29 X 22
E	12 X 23 X 17

GROUND BOX COVER DIMENSIONS								
TYPE	DIMENSIONS (INCHES)							
	H	I	J	K	L	M	N	P
A, B & E	23 1/4	23	13 3/4	13 1/2	9 7/8	5 1/8	1 3/8	2
C & D	30 1/2	30 1/4	17 1/2	17 1/4	13 1/4	6 3/4	1 3/8	2



PLAN VIEW



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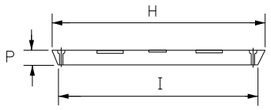


SIDE

GROUND BOX COVER

GROUND BOXES

A. MATERIALS

1. Provide polymer concrete ground boxes measuring 16x30x24 in. (WxLxD) or smaller in accordance with Departmental Material Specification (DMS) 11070 "Ground Boxes" and Item 624 "Ground Boxes."
2. Provide Type A, B, C, D, and E ground boxes as shown in the plans, and as listed on the Material Producers List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies," Item 624.
3. Ensure ground box cover is correctly labeled in accordance with DMS 11070.
4. Provide larger ground boxes in accordance with Item 624 and as shown in the plans.

B. CONSTRUCTION METHODS

1. Remove all gravel and dirt from conduit. Cap all conduits prior to placing aggregate and setting ground box. Provide Grade 3 or 4 coarse aggregate as shown on Table 2 of Item 302 "Aggregates for Surface Treatments." Ensure aggregate bed is in place and at least 9 inches deep, prior to setting the ground box. Install ground box on top of aggregate.
2. Cast ground box aprons in place. Reinforcing steel may be field bent. Ensure the depth of concrete for the apron extends from finished grade to the top of the aggregate bed under the box. Ground box aprons, including concrete and reinforcing steel, are subsidiary to ground boxes when called for by descriptive code.
3. Keep bolt holes in the box clear of dirt. Bolt covers down when not working in ground boxes.
4. Install all conduits and ells in a neat and workmanlike manner. Uniformly space conduits so grounding bushings and bell end fittings can easily be installed.
5. Temporarily seal all conduits in the ground box until conductors are installed.
6. Permanently seal conduits immediately after the completion of conductor installation and pull tests. Permanently seal the ends of all conduits with duct seal, expandable foam, or other method as approved. Do not use duct tape as a permanent conduit sealant. Do not use silicone caulk as a sealant.
7. When a ground rod is present in a ground box, bond all equipment grounding conductors together and to the ground rod with listed connectors.
8. When a type B or D ground box is stacked to meet volume requirements, it is allowable to cut an appropriately sized hole for conduit entry in the side wall at least 18 inches below grade.
9. If an existing ground box in the contract has a metal cover, bond the cover to the equipment grounding conductor with a 3 ft. long stranded bonding jumper the same size as the grounding conductor. The bonding jumper is subsidiary to various bid items. Verify existing ground boxes with metal covers are shown on the plans, with notes fully describing the work required.
10. If other ground boxes with metal covers are within the project limits but are not part of the contract, the Engineer may direct the Contractor to bond the metal covers, identifying the specific boxes in writing. This work will be paid for separately.
11. Bond metal ground box covers to the grounding conductor with a tank ground type lug.

Texas Department of Transportation

Traffic Operations Division Standard

ELECTRICAL DETAILS GROUND BOXES

ED(4)-14

FILE: ed4-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT October 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	0043	17	035	BU 287J
	DIST	COUNTY		SHEET NO.
	WFS	WICHITA		119

DATE: 12/13/2023 11:23:57 AM
FILE: ed4-14.dgn

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

DATE:
FILE:

FOUNDATION DESIGN TABLE

FDN TYPE	DRILLED SHAFT DIA	REINFORCING STEEL		EMBEDDED DRILLED SHAFT LENGTH-ft ④, ⑤, ⑥			ANCHOR BOLT DESIGN ①				FOUNDATION DESIGN LOAD ②		TYPICAL APPLICATION
		VERT BARS	SPIRAL & PITCH	TEXAS CONE PENETROMETER N blows/ft 10	15	40	ANCHOR BOLT DIA	Fy (ksi)	BOLT CIR DIA	ANCHOR TYPE	MOMENT K-ft	SHEAR Kips	
24-A	24"	4- #5	#2 at 12"	5.7	5.3	4.5	¾"	36	12 ¾"	1	10	1	Pedestal pole, pedestal mounted controller.
30-A	30"	8- #9	#3 at 6"	11.3	10.3	8.0	1 ½"	55	17"	2	87	3	Mast arm assembly. (see Selection Table)
36-A	36"	10- #9	#3 at 6"	13.2	12.0	9.4	1 ¾"	55	19"	2	131	5	Mast arm assembly. (see Selection Table) 30' strain pole with or without luminaire.
36-B	36"	12- #9	#3 at 6"	15.2	13.6	10.4	2"	55	21"	2	190	7	Mast arm assembly. (see Selection Table) Strain pole taller than 30' & strain pole with mast arm
42-A	42"	14- #9	#3 at 6"	17.4	15.6	11.9	2 ¼"	55	23"	2	271	9	Mast arm assembly. (see Selection Table)

NOTES:

① Anchor bolt design develops the foundation capacity given under Foundation Design Loads.

② Foundation Design Loads are the allowable moments and shears at the base of the structure.

③ Foundations may be listed separately or grouped according to similarity of location and type. Quantities are for the Contractor's information only.

④ Field Penetrometer readings at a depth of approximately 3 to 5 feet may be used to adjust shaft lengths.

⑤ If rock is encountered, the Drilled Shaft shall extend a minimum of two diameters into solid rock.

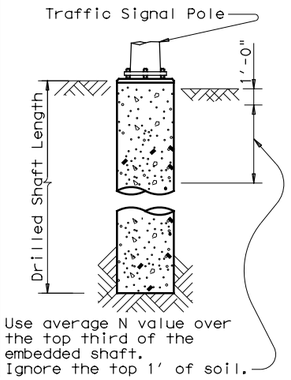
⑥ Decimal lengths in Design Table are to allow interpolation for other penetrometer values. Round to nearest foot for entry into Summary Table.

FOUNDATION SUMMARY TABLE ③

LOCATION IDENTIFICATION	AVG. N BLOW /ft.	FDN TYPE	NO. EA	DRILLED SHAFT LENGTH ⑥ (FEET) 24-A	30-A	36-A	36-B	42-A
@ BEVERLY, NE	10	24-A	1	6				
@ SB CEN FR, NW	10	24-A	1	6				
@ SB CEN FR, NE	10	24-A	1	6				
@ NB CEN FR, NW	10	24-A	1	6				
@ NB CEN FR, NE	10	24-A	1	6				
TOTAL DRILLED SHAFT LENGTHS				30				

FOUNDATION SELECTION TABLE FOR STANDARD MAST ARM PLUS ILSN SUPPORT ASSEMBLIES (ft)

		FDN 30-A	FDN 36-A	FDN 36-B	FDN 42-A
80 MPH DESIGN WIND SPEED	MAX SINGLE ARM LENGTH	32'	48'		
	MAXIMUM DOUBLE ARM LENGTH COMBINATIONS	24' X 24'			
		28' X 28'			
		32' X 28'	32' X 32'		
			36' X 36'		
			40' X 36'		
			44' X 28'	44' X 36'	
100 MPH DESIGN WIND SPEED	MAX SINGLE ARM LENGTH		36'	44'	
	MAXIMUM DOUBLE ARM LENGTH COMBINATIONS		24' X 24'		
			28' X 28'		
			32' X 24'	32' X 32'	
				36' X 36'	
				40' x24'	40' X 36'
					44' x 36'

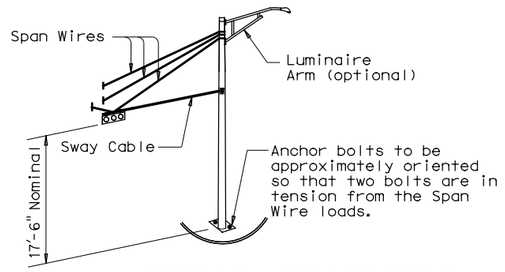


ANCHOR BOLT & TEMPLATE SIZES

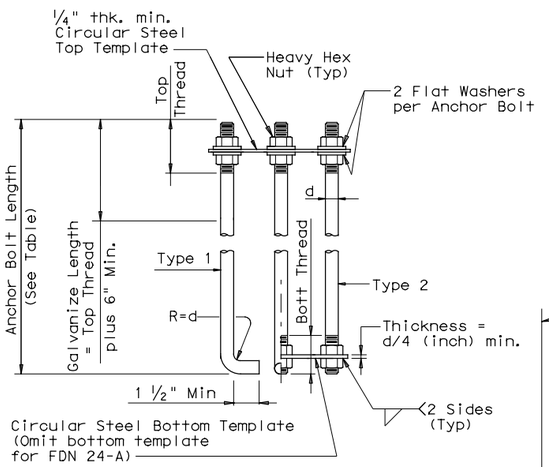
BOLT DIA IN.	⑦ BOLT LENGTH	TOP THREAD	BOTTOM THREAD	BOLT CIRCLE	R2	R1
¾"	1'-6"	3"	—	12 ¾"	7 ⅛"	5 ⅝"
1 ½"	3'-4"	6"	4"	17"	10"	7"
1 ¾"	3'-10"	7"	4 ½"	19"	11 ¼"	7 ¾"
2"	4'-3"	8"	5"	21"	12 ½"	8 ½"
2 ¼"	4'-9"	9"	5 ½"	23"	13 ¾"	9 ¼"

⑦ Min dimensions given, longer bolts are acceptable.

EXAMPLE:
1. For 80mph design wind speed, foundation 30-A can support up to a 32' arm with another arm up to 28'
2. For 100mph design wind speed, foundation 36-A can support a single 36' mast arm.



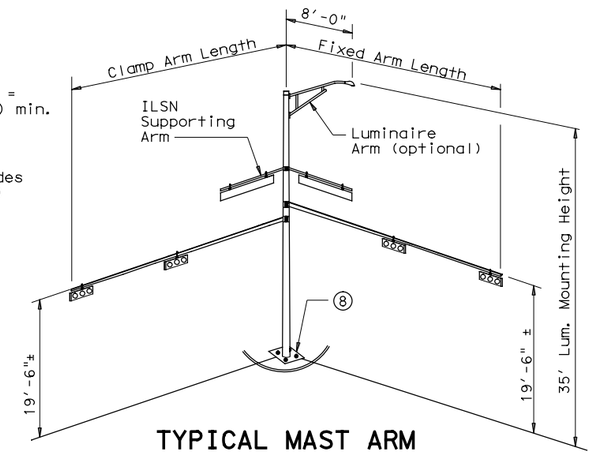
TYPICAL STRAIN POLE ASSEMBLY



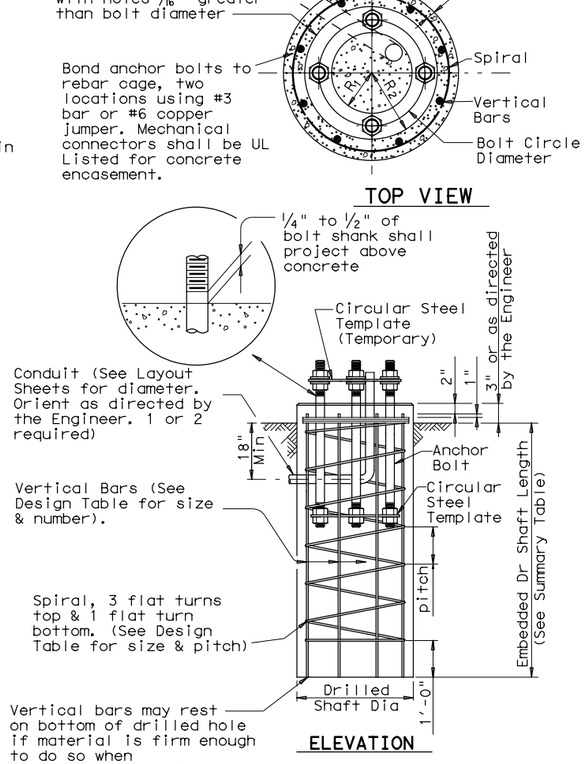
HOOKED ANCHOR (TYPE 1) NUT ANCHOR (TYPE 2)

ANCHOR BOLT ASSEMBLY

⑧ Orient anchor bolts orthogonal with the fixed arm direction to ensure that two bolts are in tension under dead load.



TYPICAL MAST ARM ASSEMBLY



FOUNDATION DETAILS

GENERAL NOTES:

Design conforms to 1994 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals and interim revisions thereto.

Reinforcing steel shall conform to Item 440, "Reinforcing Steel".

Concrete shall be Class "C".

Threads for anchor bolts and nuts shall be rolled or cut threads of 8UN series up to 2" in diameter or UNC series for all sizes. Bolts and nuts shall have Class 2A and 2B fit tolerances. Galvanized nuts shall be tapped after galvanizing.

Anchor bolts that are larger than 1" in diameter shall conform to "alloy steel" or "medium-strength mild steel" per Item 449, "Anchor Bolts". Anchor bolts that are 1" in diameter or less shall conform to ASTM A36. Galvanize a minimum of the top end thread length plus 6" for all anchor bolts unless otherwise noted. Exposed washers and exposed nuts shall be galvanized. All galvanizing shall be in accordance with Item 445, "Galvanizing".

Templates and embedded nuts need not be galvanized. Lubricate and tighten anchor bolts when erecting the structure in accordance with Item 449, "Anchor Bolts".

STATE OF TEXAS
KEVIN A. MARSH
132803
LICENSED PROFESSIONAL ENGINEER
01/30/2024

Texas Department of Transportation
Traffic Operations Division

TRAFFIC SIGNAL POLE FOUNDATION

TS-FD-12

REVISIONS	DN: MS	CK: JSY	DW: MAO/MMF	CK: JSY/TEB
5-96 11-98 1-12	CONT	SECT	JOB	HIGHWAY
	0043	17	035	BU 287J
	DIST	COUNTY		SHEET NO.
	WFS	WICHITA		120

I. STORMWATER POLLUTION PREVENTION-CLEAN WATER ACT SECTION 402

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

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

1.

2.

☐ No Action Required ☒ Required Action

Action No.

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

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

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

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

☒ No Permit Required

☐ Nationwide Permit 14 - PCN not Required (less than 1/10th acre waters or wetlands affected)

☐ Nationwide Permit 14 - PCN Required (1/10 to <1/2 acre, 1/3 in tidal waters)

☐ Individual 404 Permit Required

☐ Other Nationwide Permit Required: NWP# _____

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

1.

2.

3.

4.

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

Best Management Practices:

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

III. CULTURAL RESOURCES

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

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

4.

IV. VEGETATION RESOURCES

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

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

4.

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

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

4.

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

LIST OF ABBREVIATIONS

BMP:	Best Management Practice	SPCC:	Spill Prevention Control and Countermeasure
CGP:	Construction General Permit	SW3P:	Storm Water Pollution Prevention Plan
DSHS:	Texas Department of State Health Services	PCN:	Pre-Construction Notification
FHWA:	Federal Highway Administration	PSL:	Project Specific Location
MOA:	Memorandum of Agreement	TCEQ:	Texas Commission on Environmental Quality
MOU:	Memorandum of Understanding	TPDES:	Texas Pollutant Discharge Elimination System
MS4:	Municipal Separate Stormwater Sewer System	TPWD:	Texas Parks and Wildlife Department
MBTA:	Migratory Bird Treaty Act	TxDOT:	Texas Department of Transportation
NOT:	Notice of Termination	T&E:	Threatened and Endangered Species
NWP:	Nationwide Permit	USACE:	U.S. Army Corps of Engineers
NOI:	Notice of Intent	USFWS:	U.S. Fish and Wildlife Service

VI. HAZARDOUS MATERIALS OR CONTAMINATION ISSUES

General (applies to all projects):

Comply with the Hazard Communication Act (the Act) for personnel who will be working with hazardous materials by conducting safety meetings prior to beginning construction and making workers aware of potential hazards in the workplace. Ensure that all workers are provided with personal protective equipment appropriate for any hazardous materials used.

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

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

Contact the Engineer if any of the following are detected:

* Dead or distressed vegetation (not identified as normal)
* Trash piles, drums, canister, barrels, etc.
* Undesirable smells or odors
* Evidence of leaching or seepage of substances

Does the project involve any bridge class structure rehabilitation or replacements (bridge class structures not including box culverts)?

☐ Yes ☒ No

If "No", then no further action is required.
If "Yes", then TxDOT is responsible for completing asbestos assessment/inspection.

Are the results of the asbestos inspection positive (is asbestos present)?

☐ Yes ☒ No

If "Yes", then TxDOT must retain a DSHS licensed asbestos consultant to assist with the notification, develop abatement/mitigation procedures, and perform management activities as necessary. The notification form to DSHS must be postmarked at least 15 working days prior to scheduled demolition.

If "No", then TxDOT is still required to notify DSHS 15 working days prior to any scheduled demolition.

In either case, the Contractor is responsible for providing the date(s) for abatement activities and/or demolition with careful coordination between the Engineer and asbestos consultant in order to minimize construction delays and subsequent claims.

Any other evidence indicating possible hazardous materials or contamination discovered on site. Hazardous Materials or Contamination Issues Specific to this Project:

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

VII. OTHER ENVIRONMENTAL ISSUES

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

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

Texas Department of Transportation

Design Division Standard

ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS

EPIC

FILE: epic.dgn	DN: TxDOT	CK: RG	DW: VP	CK: AR
©TxDOT: February 2015	CONT	SECT	JOB	HIGHWAY
REVISIONS 12-12-2011 (DS)	0043	17	035	BU 287J
05-07-14 ADDED NOTE SECTION IV.	DIST	COUNTY		SHEET NO.
01-23-2015 SECTION I (CHANGED ITEM 1122 TO ITEM 506, ADDED GRASSY SWALES.	WFS	WICHITA		121

DATE: 1/25/2024
FILE: BMT_EPIC.dgn

STORMWATER POLLUTION PREVENTION PLAN (SWP3):

This SWP3 has been developed in accordance with the TPDES Construction General Permit TXR150000 (CGP). The Texas Department of Transportation (TxDOT) ensures that project specifications include adequate best management practices (BMPs) for this project.

For all projects with soil disturbing activity and for projects that have Environmental, Permits, Issues, and Commitments (EPICs) dependent on stormwater controls and water quality measures TxDOT will maintain a SWP3 with all pertinent records, correspondence, environmental documents, etc. at the project field office, Area Office, or electronically.

This SWP3 is consistent with requirements specified in applicable stormwater plans and the projects environmental permits, issues, and commitments (EPICs). A copy of the CGP is included in Attachment 2.12 of the SWP3 binder.

1.0 SITE/PROJECT DESCRIPTION

1.1 PROJECT CONTROL SECTION JOB (CSJ):
0043-17-035

1.2 PROJECT LIMITS:

From: **INTERSECTION OF BU 287J AND LOOP 11**

To: **INTERSECTION OF BU 287J AND IH 44**

1.3 PROJECT COORDINATES:

BEGIN: (Lat) **33°55'51.23" N** ,(Long) **98°32'14.38" W**

END: (Lat) **33°55'37.79" N** ,(Long) **98°30'47.85" W**

1.4 TOTAL PROJECT AREA (Acres): **3 AC**

1.5 TOTAL AREA TO BE DISTURBED (Acres): **1.06 AC**

1.6 NATURE OF CONSTRUCTION ACTIVITY:

CONSTRUCTION OF PEDESTRIAN INFRASTRUCTURE INCLUDING SIDEWALKS, CURB RAMPS, SIGNALS, SIGNING AND PAVEMENT MARKINGS

1.7 MAJOR SOIL TYPES:

Soil Type	Description
MAGNUM-URBAN LAND COMPLEX, 0-1% SLOPES	STA 54+00 TO STA 95+00 50% SILTY CLAY, WELL DRAINED, HIGH RATE OF RUNOFF HIGH EROSION POTENTIAL
CLAIREMONT-URBAN LAND COMPLEX, 0-1% SLOPES	STA 95+00 TO STA 114+00 30% SILT LOAM, WELL DRAINED, NEGLIGIBLE SURFACE RUNOFF, LOW EROSION POTENTIAL
DEANDALE-URBAN LAND COMPLEX, 0-1% SLOPES	BEGIN TO STA 54+00 30% SILT LOAM, MODERATELY WELL DRAINED, HIGH RATE OF RUNOFF, HIGH EROSION POTENTIAL

1.8 PROJECT SPECIFIC LOCATIONS (PSLs):

PSLs must be depicted on the Environmental Layout Sheets in Attachment 1.2 of this SWP3. PSLs may be identified during preconstruction meetings or during the construction process. Please choose from the options below:

☐ PSLs determined during preconstruction meeting
☒ PSLs determined during construction
☐ No PSLs planned for construction

Type	Sheet #s

All off-ROW PSLs required by the Contractor are the Contractor's responsibility. The Contractor shall secure all permits required by local, state, federal laws for off-ROW PSLs. The contractor shall provide diagrams, areas of disturbance, acreage, and BMPs for all off-ROW PSLs within one mile of the project.

1.9 CONSTRUCTION ACTIVITIES:

(Use the following list as a starting point when developing the Construction Activity Schedule and Ceasing Record in Attachment 2.5.)

☒ Mobilization
☒ Install sediment and erosion controls
☒ Blade existing topsoil into windrows, prep ROW, clear and grub
☐ Remove existing pavement
☐ Grading operations, excavation, and embankment
☐ Excavate and prepare subgrade for proposed pavement widening
☐ Remove existing culverts, safety end treatments (SETs)
☐ Remove existing metal beam guard fence (MBGF), bridge rail
☐ Install proposed pavement per plans
☐ Install culverts, culvert extensions, SETs
☐ Install mow strip, MBGF, bridge rail
☐ Place flex base
☐ Rework slopes, grade ditches
☐ Blade windrowed material back across slopes
☐ Revegetation of unpaved areas
☐ Achieve site stabilization and remove sediment and erosion control measures
☒ Other: **CONSTRUCT SIDEWALKS, DRIVEWAYS, AND PEDESTRIAN RAMPS,**
☐ Other: _____
☐ Other: _____

1.10 POTENTIAL POLLUTANTS AND SOURCES:

☒ Sediment laden stormwater from stormwater conveyance over disturbed area
☒ Fuels, oils, and lubricants from construction vehicles, equipment, and storage
☒ Solvents, paints, adhesives, etc. from various construction activities
☐ Transported soils from offsite vehicle tracking
☒ Construction debris and waste from various construction activities
☐ Contaminated water from excavation or dewatering pump-out water
☐ Sanitary waste from onsite restroom facilities
☐ Trash from various construction activities/receptacles
☐ Long-term stockpiles of material and waste
☒ Discharges from concrete washout activities, runoff from concrete cutting activities, and other concrete related activities.
☐ 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
WICHITA VALLEY IRRIGATION PROJECT	DIVERSION LAKE (0215)
	*WICHITA RIVER (0214); IMPAIRED FOR BACTERIA
NO TMDLs OR I-PLANS WERE IDENTIFIED	

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

1.12 ROLES AND RESPONSIBILITIES: TxDOT

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

1.13 ROLES AND RESPONSIBILITIES: CONTRACTOR

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

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

MS4 Entity
CITY OF WICHITA FALLS

STORMWATER POLLUTION PREVENTION PLAN (SWP3)

July 2023 Sheet 1 of 2

Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
	SEE TITLE SHEET		122
STATE	STATE DIST.	COUNTY	
TEXAS	WFS	WICHITA	
CONT.	SECT.	JOB	HIGHWAY NO.
0043	17	035	BU 287J

STORMWATER POLLUTION PREVENTION PLAN (SWP3):

2.0 BEST MANAGEMENT PRACTICES (BMPs) AND CONTROLS, INSPECTION, AND MAINTENANCE

The Contractor shall be the responsible party for implementing the BMPs described herein and for complying with the SWP3 for control of erosion and sedimentation during day-to-day operations. The Contractor shall implement changes to this SWP3 approved by TxDOT within the times specified in this SWP3 or the CGP.

2.1 EROSION CONTROL AND SOIL STABILIZATION BMPs:

T / P

- ☐ ☐ Protection of Existing Vegetation
- ☐ ☐ Vegetated Buffer Zones
- ☐ ☐ Soil Retention Blankets
- ☐ ☐ Geotextiles
- ☐ ☐ Mulching/ Hydromulching
- ☐ ☐ Soil Surface Treatments
- ☐ ☐ Temporary Seeding
- ☐ ☐ Permanent Planting, Sodding or Seeding
- ☒ ☐ Biodegradable Erosion Control Logs
- ☐ ☐ Rock Filter Dams/ Rock Check Dams
- ☐ ☐ Vertical Tracking
- ☐ ☐ Interceptor Swale
- ☐ ☐ Riprap
- ☐ ☐ Diversion Dike
- ☐ ☐ Temporary Pipe Slope Drain
- ☐ ☐ Embankment for Erosion Control
- ☐ ☐ Paved Flumes
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____

2.2 SEDIMENT CONTROL BMPs:

T / P

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

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

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

T / P

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

2.3 PERMANENT CONTROLS:

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

BMPs To Be Left In Place Post Construction:

Type	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:

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

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

2.7 ALLOWABLE NON-STORMWATER DISCHARGES:

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

2.8 DEWATERING:

Dewatering discharges of accumulated stormwater, groundwater, and surface water including discharges from dewatering of trenches, excavations, foundations, vaults, and other points of accumulation are prohibited unless managed by appropriate controls to prevent and minimize the offsite discharge of sediment and other pollutants.

2.9 INSPECTIONS:

All disturbed areas and erosion and sediment control devices shall be inspected at least once every seven (7) days. Inspections shall be performed by TxDOT as indicated on the Field Inspection and Maintenance Report Form 2118 and retained in Attachment 2.5 of this SWP3.

When dewatering activities are present, a daily inspection will be conducted once per day during those activities and documented in accordance with CGP and TxDOT requirements.

2.10 MAINTENANCE:

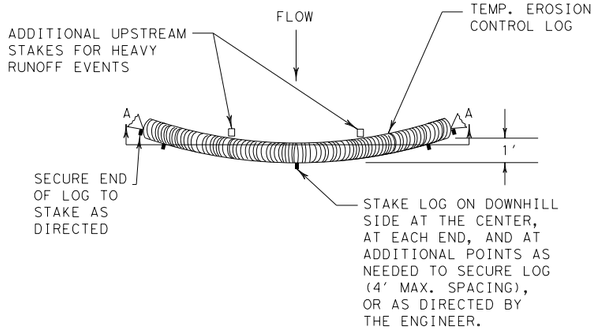
Control measures shall be properly installed according to specifications. If it is determined that a BMP or control measure is not operating effectively, maintenance must be accomplished as soon as possible and before the next anticipated rain event, but in no case later than 7 calendar days after being able to access the site. Maintenance shall be performed by the Contractor as indicated on the Field Inspection and Maintenance Report Form 2118 and retained in Attachment 2.5 of this SWP3.

STORMWATER POLLUTION PREVENTION PLAN (SWP3)

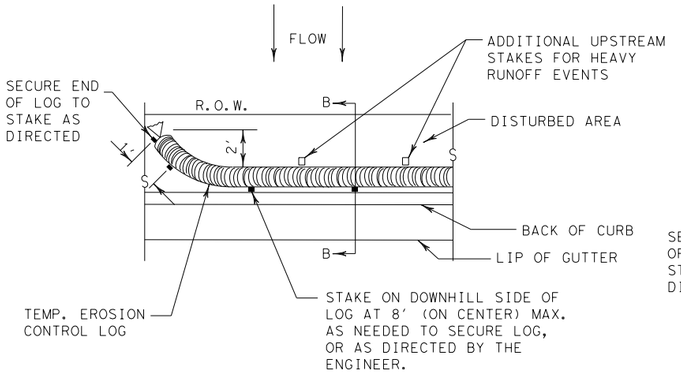
July 2023 Sheet 2 of 2

Texas Department of Transportation

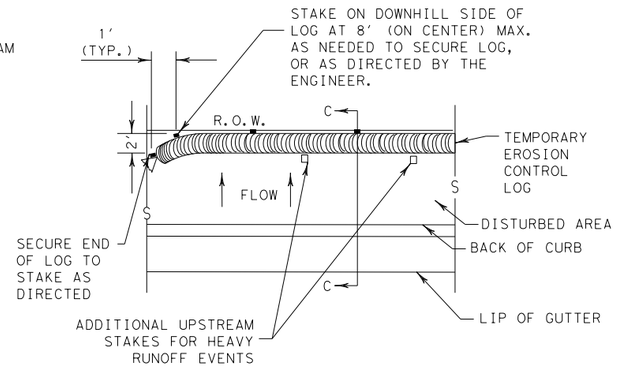
FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
	SEE TITLE SHEET		123
STATE	STATE DIST.	COUNTY	
TEXAS	WFS	WICHITA	
CONT.	SECT.	JOB	HIGHWAY NO.
0043	17	035	BU 287J



PLAN VIEW



PLAN VIEW



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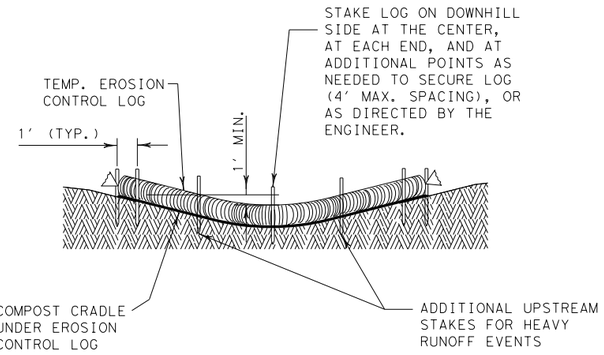
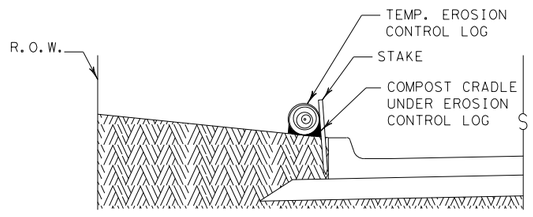


SECTION A-A

EROSION CONTROL LOG DAM

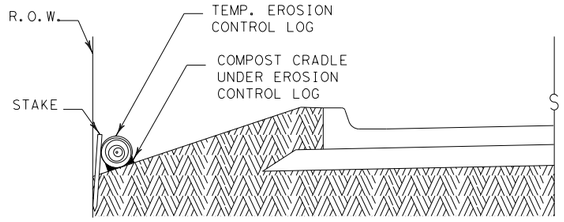
CL-D



SECTION B-B

EROSION CONTROL LOG AT BACK OF CURB

CL-BOC



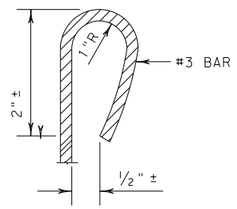
SECTION C-C

EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY

CL-ROW

LEGEND

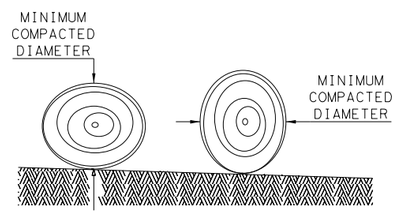
- CL-D — EROSION CONTROL LOG DAM
- CL-BOC — EROSION CONTROL LOG AT BACK OF CURB
- CL-ROW — EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY
- CL-SST — EROSION CONTROL LOGS ON SLOPES STAKE AND TRENCHING ANCHORING
- CL-SSL — EROSION CONTROL LOGS ON SLOPES STAKE AND LASHING ANCHORING
- CL-DI — EROSION CONTROL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



REBAR STAKE DETAIL

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.



DIAMETER MEASUREMENTS OF EROSION CONTROL LOGS SPECIFIED IN PLANS

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	0043	17	035		BU 287J		
	DIST	COUNTY				SHEET NO.	
	WFS	WICHITA				124	

DATE: 1/25/2024
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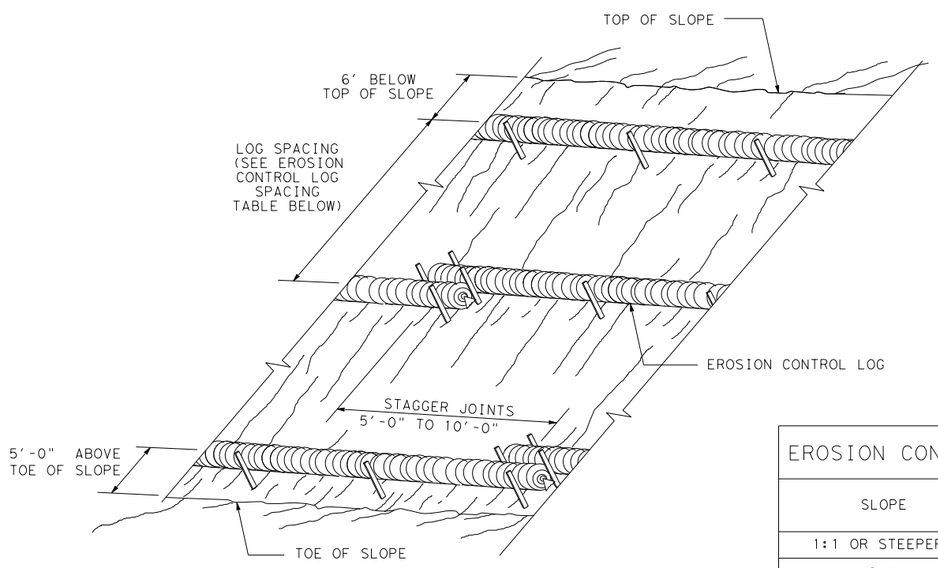
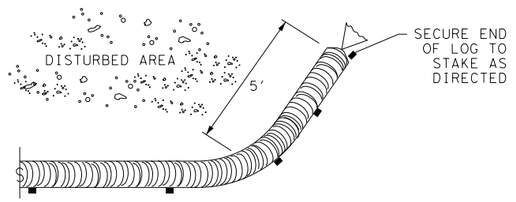


EROSION CONTROL LOGS ON SLOPES
STAKE AND TRENCHING ANCHORING

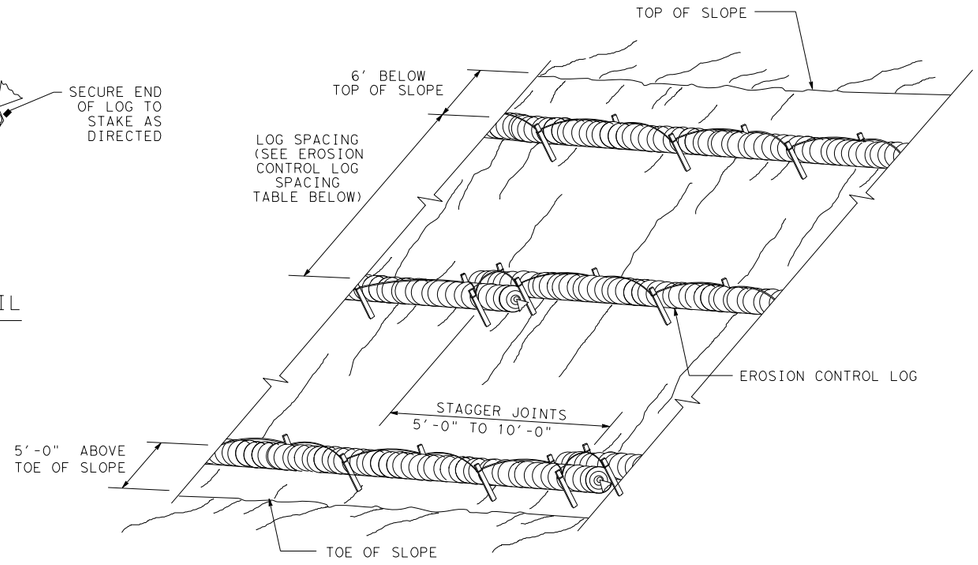
CL-SST



END SECTION RAP DETAIL

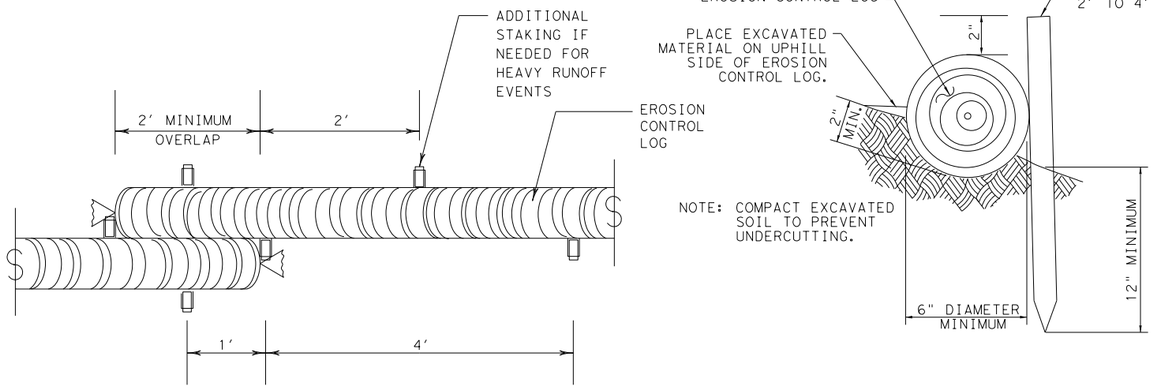
EROSION CONTROL LOG SPACING TABLE				
SLOPE	LOG DIAMETER			
	6"	8"	12"	18"
1:1 OR STEEPER	5'	10'	15'	20'
2:1	10'	20'	30'	40'
3:1	15'	30'	45'	60'
4:1 OR FLATTER	20'	40'	60'	80'

* 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

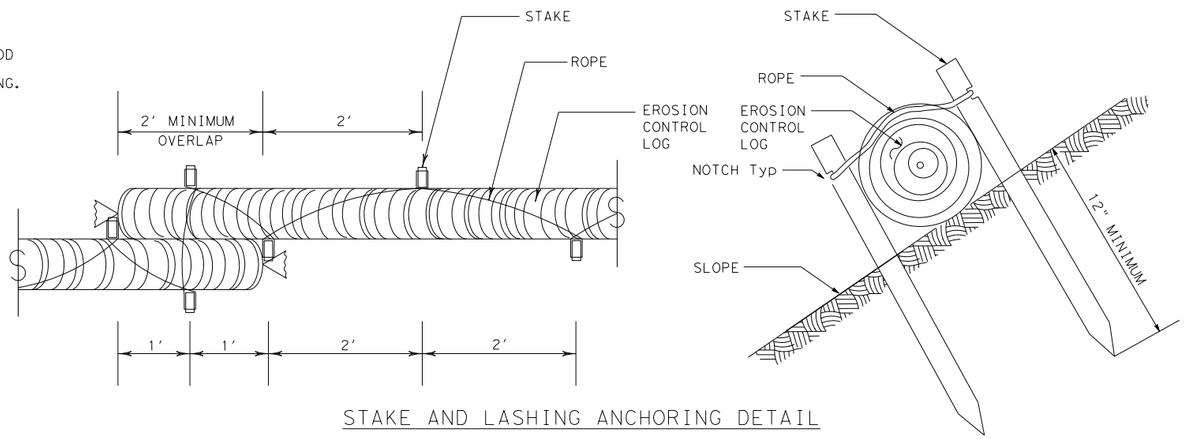
CL-SSL



STAKE AND TRENCHING ANCHORING DETAIL

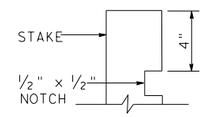
CL-SST

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	0043	17	035	BU 287J
	DIST	COUNTY		SHEET NO.
	WFS	WICHITA		125

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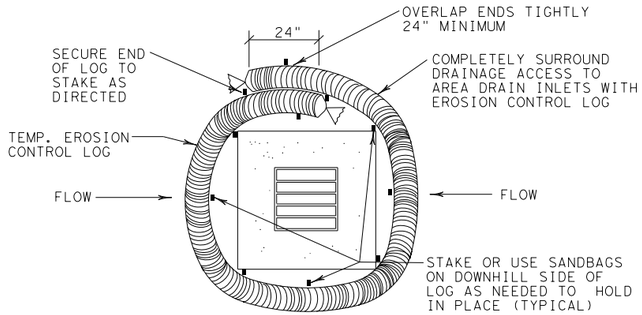
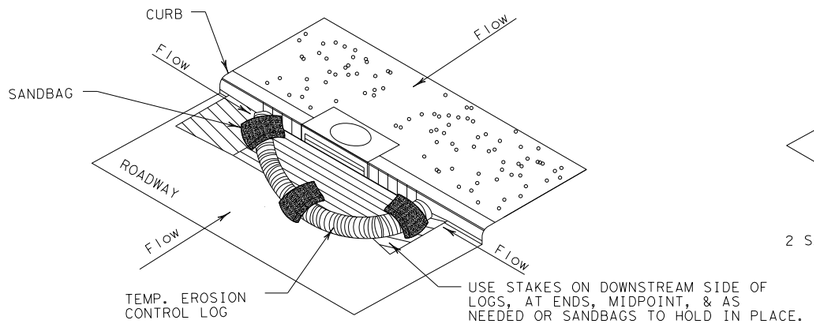


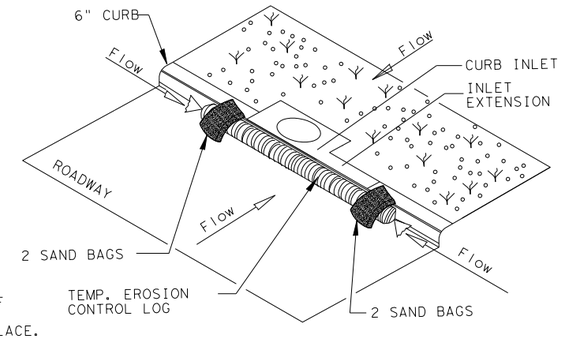
EROSION CONTROL LOG AT DROP INLET

CL-DI



EROSION CONTROL LOG AT CURB INLET

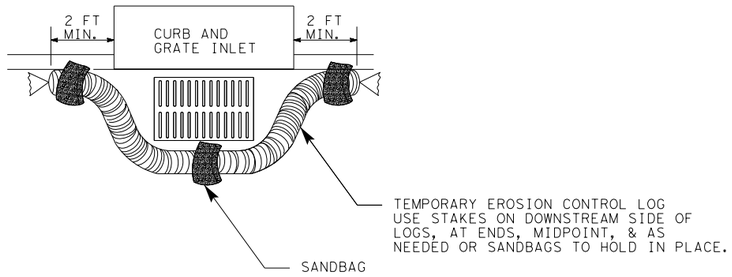
CL-CI



EROSION CONTROL LOG AT CURB INLET

CL-CI

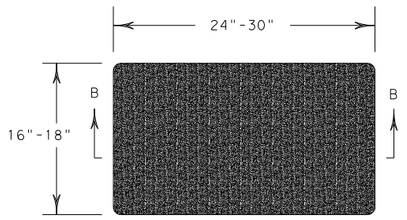
NOTE:
EROSION CONTROL LOGS USED AT CURB INLETS SHOULD ONLY BE USED IF THEY WILL NOT IMPEDE TRAFFIC OR FLOOD THE ROADWAY OR WHEN THE STORM SEWER SYSTEM IS NOT FULLY FUNCTIONAL.



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	0043	17	035		BU 287J		
	DIST	COUNTY			SHEET NO.		
	WFS	WICHITA			126		

DATE: 1/25/2024
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