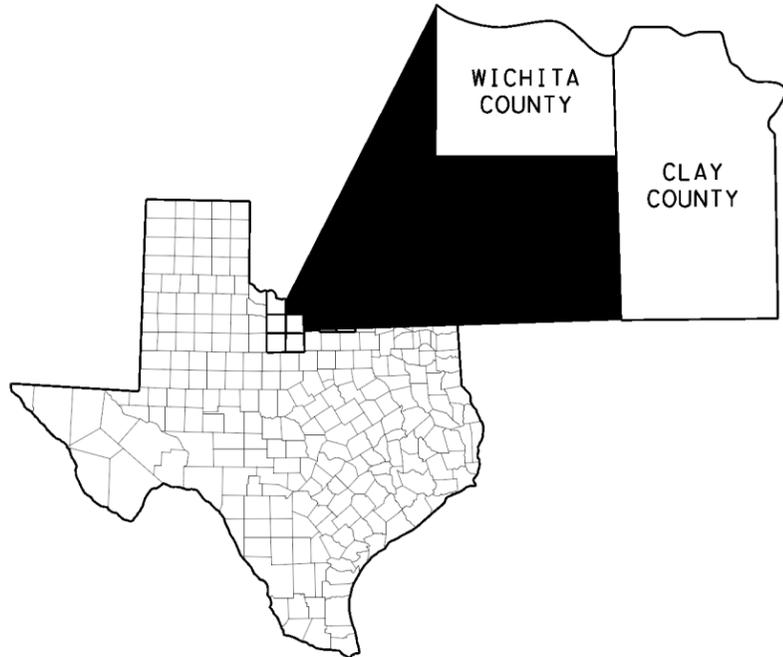


STATE OF TEXAS DEPARTMENT OF TRANSPORTATION

| | | | |
|-----------------------|---------------|-----|-------------|
| STATE AID PROJECT NO. | | | |
| C 903-00-123 | | | |
| CONT | SECT | JOB | HIGHWAY |
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | | SHEET NO. |
| WFS | WICHITA, ETC. | | 1 |



PLANS OF PROPOSED STATE HIGHWAY IMPROVEMENT

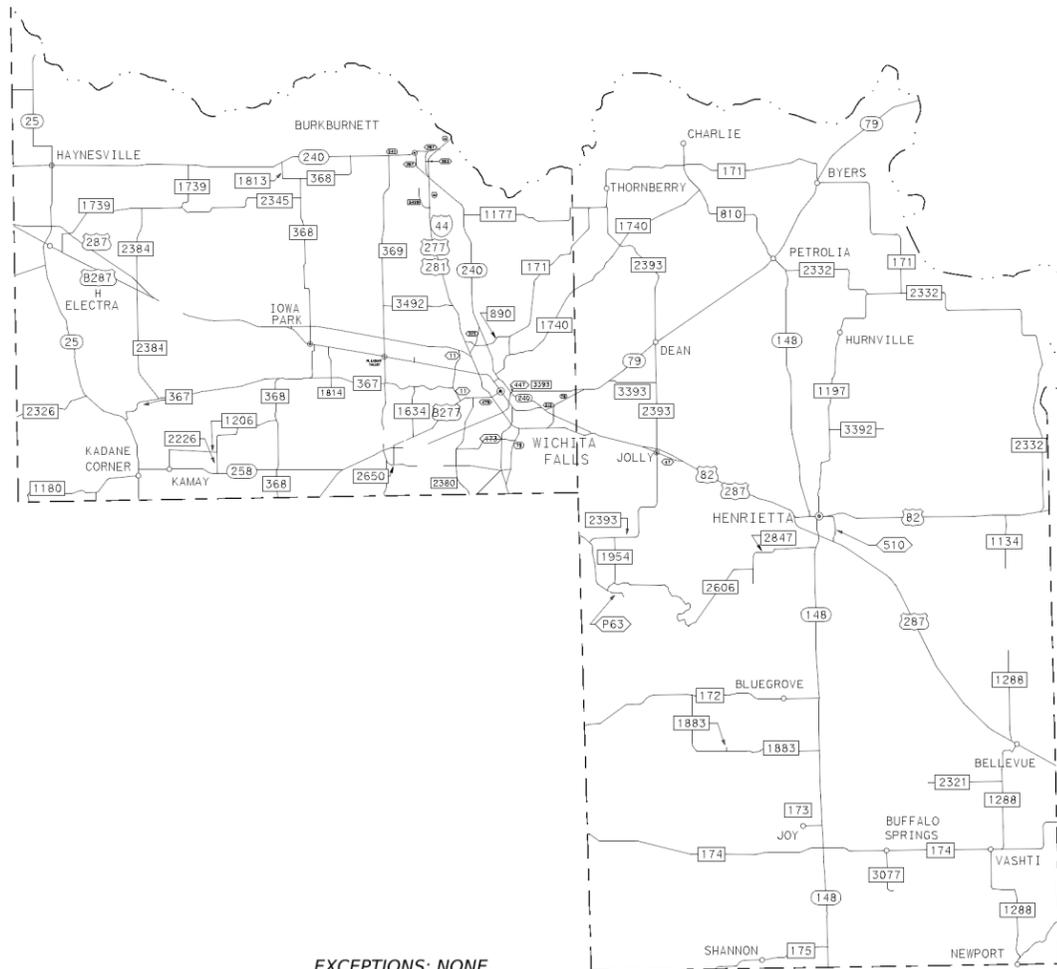
STATE AID PROJECT NO. : C 903-00-123

US 82, ETC. WICHITA COUNTY, ETC.

LIMITS: VARIOUS LOCATIONS IN THE WICHITA AND CLAY COUNTIES

NET LENGTH OF ROADWAY = 0.00 FT. = 0.000 MI.
NET LENGTH OF BRIDGE = 12,707.00 FT. = 2.407 MI.
NET LENGTH OF PROJECT = 12,707.00 FT. = 2.407 MI.

FOR THE CONSTRUCTION OF BRIDGE MAINTENANCE CONSISTING OF BRIDGE PREVENTATIVE MAINTENANCE AT VARIOUS LOCATIONS IN THE WICHITA FALLS DISTRICT.



FINAL PLANS

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

| REF # | COUNTY | ROADWAY | FEATURE CROSSED |
|-------|---------|--------------------|--------------------------|
| * 1 | CLAY | US 82 WB/US 287 NB | BNSF RR/B 287J (SH 240) |
| * 2 | CLAY | US 82 EB/US 287 SB | BNSF RR/B 287J (SH 240) |
| 3 | CLAY | US 287 NB | BNSF RR & US 82 EB |
| 4 | CLAY | US 287 SB | BNSF RR & US 82 EB |
| 5 | CLAY | US 287 SB | SH 148 |
| 6 | CLAY | US 287 NB | E FK LTL WICHITA RIV REL |
| 7 | CLAY | SH 148 | TURKEY CREEK |
| 8 | CLAY | FM 171 | WICHITA RIVER |
| * 9 | CLAY | FM 2606 | LAKE ARROWHEAD SPWY |
| 10 | WICHITA | MIDWAY CHURCH RD | US 287 |
| 11 | WICHITA | FM 2384 | US 287 |
| 12 | WICHITA | US 287 NB | BUS 287 |
| 13 | WICHITA | US 287 SB | BUS 287/LOOP 477 |
| 14 | WICHITA | IH 44 NB EXIT RAMP | 6TH STREET |
| 15 | WICHITA | IH 44 NB | 5TH STREET |
| 16 | WICHITA | IH 44 SB | WICHITA RIVER |
| 17 | WICHITA | HAMMON RD | US 82/US 287 |
| * 18 | WICHITA | FISHER RD | US 82/US 287 |
| * 19 | WICHITA | SH 79 NB | US 82 WB/US 287 NB |
| 20 | WICHITA | BUS 287J (LP 370) | HOLLIDAY CREEK |
| 21 | WICHITA | US 82 EB/US 277 NB | BN RR(FUT ALEXANDRIA ST) |
| 22 | WICHITA | US 82 EB (KELL) | TAFT BLVD. |
| * 23 | WICHITA | US 82 WB (KELL) | HARRISON STREET |
| 24 | WICHITA | MISSILE RD EB | IH 44 EB |
| 25 | WICHITA | IH 44 NB | SP 325 SB CONN H |
| 26 | WICHITA | IH 44 SB | LOOP 267/SH 240 |
| 27 | WICHITA | IH 44 NB | LOOP 267/SH 240 |
| 28 | WICHITA | IH 44 SB | SPUR 383/GLENDALE ST |
| 29 | WICHITA | IH 44 NB | SPUR 383/GLENDALE ST |
| 30 | WICHITA | FM 890 | IH 44 |
| 31 | WICHITA | BUS 277 | BNSF RR |
| 32 | WICHITA | US 281 NB | SH 79 SB CONN/FM 369 WB |
| 33 | WICHITA | SH 79 SB | MKT RAILROAD |
| 34 | WICHITA | SH 79 NB | MKT RAILROAD |
| * 35 | WICHITA | SH 79 SB | BNSF RR & BUS 287 |
| * 36 | WICHITA | SPUR 325 SB | MKT RAILROAD |

* PROJECT LIMIT SIGNS AS SHOWN ON BC(2)-21 ARE REQUIRED
SEE SHEETS 7-8 FOR MAP OF BRIDGE LOCATIONS



SUBMITTED FOR LETTING: _____
Byron Jarama, P.E.
DISTRICT DESIGN ENGINEER

RECOMMENDED FOR LETTING: _____
James L. Reaver, P.E.
DISTRICT DIRECTOR OF TRANSPORTATION
PLANNING AND DEVELOPMENT

RECOMMENDED FOR LETTING: _____
Nicholas P. Baum, P.E.
DISTRICT ENGINEER

EXCEPTIONS: NONE
EQUATIONS: NONE
RAILROAD CROSSINGS:
REFERENCE #1 US 82 WB/US 287 NB HIGHWAY OVERPASS
REFERENCE #2 US 82 EB/US 287 SB HIGHWAY OVERPASS
REFERENCE #3 US 287 NB HIGHWAY OVERPASS
REFERENCE #4 US 287 SB HIGHWAY OVERPASS
REFERENCE #21 US 82 EB/US 277 NB HIGHWAY OVERPASS
REFERENCE #31 BUS 277 HIGHWAY OVERPASS
REFERENCE #33 SH 79 SB HIGHWAY OVERPASS
REFERENCE #34 SH 79 NB HIGHWAY OVERPASS
REFERENCE #35 SH 79 SB HIGHWAY OVERPASS
REFERENCE #36 SPUR 325 HIGHWAY OVERPASS

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION, NOVEMBER 1, 2014 AND SPECIFICATION ITEMS LISTED AND DATED AS FOLLOWS, SHALL GOVERN ON THIS PROJECT:
REQUIRED SPECIAL LABOR PROVISIONS FOR ALL STATE CONSTRUCTION PROJECTS (SP000-008)

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.

The following standard detail sheets have been modified:
 Clean and Seal Joints (MOD)

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

The following references contain hazardous materials in locations adjacent to or near work areas. The Contractor shall not disturb these locations.

| Reference No. | NBI # | Roadway/Channel | Hazardous Containing Material | Location |
|---------------|----------------------|---|--|---|
| 3 | 03-039-0-0044-03-117 | US 287 NB/BNSF RR & US 82 EB | asbestos containing material in texture on concrete surfaces | wingwall, abutment, bridge rail, pier cap, column |
| 4 | 03-039-0-0044-03-118 | US 287 SB/BNSF RR & US 82 EB | asbestos containing material in texture on concrete surfaces | wingwall, abutment, bridge rail, pier cap, column |
| 5 | 03-039-0-0224-01-060 | US 287 SB/SH 148 | asbestos containing material in texture on concrete surfaces | wingwall, abutment, bridge rail, outer beam, column |
| 9 | 03-039-0-3429-01-001 | FM 2606/Lake Arrowhead Spillway | asbestos containing material in texture on concrete surfaces | bridge rail |
| 11 | 03-243-0-0043-08-125 | FM 2384/US 287 | lead containing paint in silver paint | steel beams |
| 16 | 03-243-0-0043-09-202 | IH 44 NB/5th Street | lead containing paint in white paint | steel beams, cross beams |
| 17 | 03-243-0-0044-01-108 | Hammon Rd/US 82_US 287 | asbestos containing material in isolator pads | pads at steel guardrails |
| 18 | 03-243-0-0044-01-109 | Fisher Rd/US 82_US 287 | asbestos containing material in isolator pads | pads at steel guardrails |
| 19 | 03-243-0-0044-01-120 | SH 79 NB/US 82 WB_US 287 NB | asbestos containing material in texture on concrete surfaces | wingwall, abutment, bridge rail, rip rap |
| 19 | 03-243-0-0044-01-120 | SH 79 NB/US 82 WB_US 287 NB | lead containing paint in silver paint | steel guardrails |
| 21 | 03-243-0-0156-04-061 | US 82 EB_US 277 NB/BN RR(FUT Alexandria St) | asbestos containing material in texture on concrete surfaces | Southside (only) - wingwall, abutment, guardrail |
| 21 | 03-243-0-0156-04-061 | US 82 EB_US 277 NB/BN RR(FUT Alexandria St) | lead containing paint in silver paint | Southside (only) - steel guardrail |
| 24 | 03-243-0-0156-07-034 | Missile Road EB/IH 44 EB | asbestos containing material in 3/4" felt | riprap/wingwall joint |
| 24 | 03-243-0-0156-07-034 | Missile Road EB/IH 44 EB | lead containing paint in silver paint | steel guardrails |
| 25 | 03-243-0-0156-07-039 | IH 44 NB/SP 325 SB Conn H | asbestos containing material in 3/4" felt | riprap/wingwall joint |
| 33 | 03-243-0-0282-04-009 | SH 79 SB/MKT Railroad | asbestos containing material in texture on concrete surfaces | wingwall, abutment, guardrail |
| 33 | 03-243-0-0282-04-009 | SH 79 SB/MKT Railroad | lead containing paint in silver paint | steel guardrails |
| 34 | 03-243-0-0282-04-010 | SH 79 NB/MKT Railroad | asbestos containing material in texture on concrete surfaces | wingwall, abutment, guardrail |
| 34 | 03-243-0-0282-04-010 | SH 79 NB/MKT Railroad | lead containing paint in silver paint | steel guardrails |
| 35 | 03-243-0-0282-04-122 | SH 79 SB/BNSF RR & BUS 287 | asbestos containing material in texture on concrete surfaces | wingwall, abutment, guardrail, rip rap |
| 35 | 03-243-0-0282-04-122 | SH 79 SB/BNSF RR & BUS 287 | lead containing paint in silver paint | steel guardrails |
| 36 | 03-243-0-0685-01-003 | SPUR 325 SB/MKT Railroad | asbestos containing material in gray felt | abutment/wingwall joint |
| 36 | 03-243-0-0685-01-003 | SPUR 325 SB/MKT Railroad | lead containing paint in gray paint | steel guardrails |

County: Wichita, Etc.
Highway: US 82, Etc.

Control: 0903-00-123

Item 7 - Legal Relations and Responsibilities

Roadway closures during the following key dates and/or special events are prohibited:

Reference 11 and Reference 24 – Hotter’N Hell Hundred Bicycle Race, August 23, 2024 to August 25, 2024.

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

Progress schedule format shall be critical path method unless otherwise directed.

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.

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.

The Contractor shall not set up traffic control at multiple locations unless a written request is submitted and approved by the respective engineer, 48 hours prior to work occurring. All work and traffic control operations shall be completed 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.

County: Wichita, Etc.
Highway: US 82, Etc.

Control: 0903-00-123

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.

The use of Automated Flagger Assistance Devices is not required, but may be used as an option to the contractor. This will be considered subsidiary to Item 502.

The use of Portable Traffic Signals is not required, but may be used as an option to the contractor on references 7, 8, 9, 10, 11, 17, 18, and 31. This will be considered subsidiary to Item 502.

Item 506 - Temporary Erosion, Sedimentation, and Environmental Controls

It is not anticipated that any erosion control devices will be required for this project. However, in the event that erosion control measures are needed, the storm water pollution and prevention plan (SW3P) for this project shall consist of using the following items:

- Sediment control fence
- Permanent seeding
- Vegetative watering

If it is determined that other erosion control devices are needed, payment for the work will be determined in accordance with Article 4.4, "Changes in the Work".

The Contractor shall not stage equipment within or disturb any recreational area or park located within or adjacent to project areas. These areas shall not be utilized for any constructive purpose. The following parks and recreational areas are within or adjacent to project limits:

| Park / Recreational Area | Affected Reference |
|---|--|
| Lake Arrowhead State Park | Reference 9 (FM 2606 @ Lake Arrowhead Spwy) |
| Bellevue Park | Reference 14 (IH 44 NB Exit Ramp @ 6 th Street) |
| Wichita Rivers Trail Recreational Area | Reference 16 (IH 44 SB @ Wichita River) |
| Wichita Falls (waterfall) Recreational Area | Reference 16 (IH 44 SB @ Wichita River) |
| Lucy Park | Reference 16 (IH 44 SB @ Wichita River) |
| Circle Trail Recreational Area | Reference 20 (BUS 287J (LP 370) @ Holliday Creek) |
| Northwest Trail Recreational Area | Reference 31 (BUS 277 @ BNSF RR) |



Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0903-00-123

DISTRICT Wichita Falls

COUNTY Wichita

HIGHWAY Various

| CONTROL SECTION JOB | | | | 0903-00-123 | | TOTAL EST. | TOTAL FINAL |
|---------------------|-----------|---|------|-------------|-------|------------|-------------|
| PROJECT ID | | | | A00191079 | | | |
| COUNTY | | | | Wichita | | | |
| HIGHWAY | | | | Various | | | |
| ALT | BID CODE | DESCRIPTION | UNIT | EST. | FINAL | | |
| | 104-6009 | REMOVING CONC (RIPRAP) | SY | 20.000 | | 20.000 | |
| | 401-6001 | FLOWABLE BACKFILL | CY | 50.000 | | 50.000 | |
| | 429-6003 | CONC STR REPAIR(DECK REP(PART DEPTH)) | SF | 642.000 | | 642.000 | |
| | 429-6007 | CONC STR REPAIR (VERTICAL & OVERHEAD) | SF | 322.000 | | 322.000 | |
| | 432-6006 | RIPRAP (CONC)(CL B) | CY | 8.000 | | 8.000 | |
| | 438-6002 | CLEANING AND SEALING EXIST JOINTS(CL3) | LF | 2,480.000 | | 2,480.000 | |
| | 438-6003 | CLEANING AND SEALING EXIST JOINTS(CL5) | LF | 120.000 | | 120.000 | |
| | 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL7) | LF | 8,159.000 | | 8,159.000 | |
| | 438-6009 | CLEANING EXISTING JOINTS | LF | 1,082.000 | | 1,082.000 | |
| | 500-6001 | MOBILIZATION | LS | 1.000 | | 1.000 | |
| | 502-6001 | BARRICADES, SIGNS AND TRAFFIC HANDLING | MO | 9.000 | | 9.000 | |
| | 752-6005 | TREE REMOVAL (4" - 12" DIA) | EA | 4.000 | | 4.000 | |
| | 780-6002 | CNC CRACK REPAIR (DISCRETE)(INJECT) | LF | 25.000 | | 25.000 | |
| | 780-6004 | CONC CRCK REPR(DISCRETE)(ROUT AND SEAL) | LF | 60.000 | | 60.000 | |
| | 785-6006 | BRIDGE JOINT REPAIR (HEADER) | LF | 60.000 | | 60.000 | |
| | 785-6013 | BRIDGE JOINT REPLACEMENT (HEADER) | LF | 1,921.000 | | 1,921.000 | |
| | 6001-6002 | PORTABLE CHANGEABLE MESSAGE SIGN | EA | 2.000 | | 2.000 | |
| | 6185-6002 | TMA (STATIONARY) | DAY | 247.000 | | 247.000 | |
| 18 | | SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING) | LS | 1.000 | | 1.000 | |
| | | EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART) | LS | 1.000 | | 1.000 | |
| | | RAILROAD FLAGGING: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING) | LS | 1.000 | | 1.000 | |

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| SUMMARY OF ROADWAY ITEMS | | | | | | | | | | | | | | | |
|------------------------------------|------------------------------|----------------------|--|--|------------------------|---|---|---|--------------------------------|---------------------------------|---|---|------------------------------------|--|-------------------------|
| LOCATION | 104 6009 | 401 6001 | 429 6003 | 429 6007 | 432 6006 | 438 6002 | 438 6003 | 438 6004 | 438 6009 | 752 6005 | 780 6002 | 780 6004 | 785 6006 | 785 6013 | 6185 6002 |
| | REMOVING CONC (RIPRAP) | FLOWABLE BACKFILL | CONC STR REPAIR(DECK REP(PART DEPTH)) | CONC STR REPAIR (VERTICAL & OVERHEAD) | RIPRAP (CONC)(CL B) | CLEANING AND SEALING EXIST JOINTS(CL3) | CLEANING AND SEALING EXIST JOINTS(CL5) | CLEANING AND SEALING EXIST JOINTS(CL7) | CLEANING EXISTING JOINTS | TREE REMOVAL (4" 12" DIA) | CNC CRACK REPAIR (DISCRETE)(I NJECT) | CONC CRCK REPR(DISCRE TE)(ROUT AND SEAL) | BRIDGE JOINT REPAIR (HEADER) | BRIDGE JOINT REPLACEMEN T (HEADER) | TMA (STATIONAR Y) |
| | SY | CY | SF | SF | CY | LF | LF | LF | LF | EA | LF | LF | LF | LF | DAY |
| CLAY | | | | | | | | | | | | | | | |
| REF 1 - NBI: 03-039-0-0044-02-110 | | | | | | | | 1051 | | | | | | | 16 |
| REF 2 - NBI: 03-039-0-0044-02-111 | | | | | | | | 1051 | | | | | | | 14 |
| REF 3 - NBI: 03-039-0-0044-03-117 | | | | | | 48 | | 480 | | | | | | | 8 |
| REF 4 - NBI: 03-039-0-0044-03-118 | | | | | | 96 | | 432 | | 25 | | | | | 4 |
| REF 5 - NBI: 03-039-0-0224-01-060 | | | | 112 | | 80 | | 250 | | | | 20 | | | 8 |
| REF 6 - NBI: 03-039-0-0224-01-121 | | | 2 | | | | | 240 | | | | | | | 4 |
| REF 7 - NBI: 03-039-0-0391-03-067 | | | | | | 88 | | | 88 | | | | | | 2 |
| REF 8 - NBI: 03-039-0-0681-03-025 | | 3 | | | | | | | 62 | 4 | | | | | 4 |
| REF 9 - NBI: 03-039-0-3429-01-001 | | | 532 | | | 22 | | 682 | | | | | | 22 | 18 |
| WICHITA | | | | | | | | | | | | | | | |
| REF 10 - NBI: 03-243-0-0043-08-123 | | | | 45 | | 52 | | 96 | | | | | | 64 | 4 |
| REF 11 - NBI: 03-243-0-0043-08-125 | | | | | | 52 | | 195 | | | | | | | 3 |
| REF 12 - NBI: 03-243-0-0043-08-126 | | | | 15 | | | | 40 | | | | | | 200 | 6 |
| REF 13 - NBI: 03-243-0-0043-08-127 | | | 34 | 50 | | 40 | | 200 | | | | 40 | | | 8 |
| REF 14 - NBI: 03-243-0-0043-09-187 | | | 6 | | | | | 96 | 326 | | | | | | 3 |
| REF 15 - NBI: 03-243-0-0043-09-189 | | | | | | | | 153 | 153 | | | | | | 6 |
| REF 16 - NBI: 03-243-0-0043-09-202 | | | | | | | | 143 | 335 | | | | | | 8 |
| REF 17 - NBI: 03-243-0-0044-01-108 | | | 3 | | | 60 | | 90 | | | | | | 30 | 4 |
| REF 18 - NBI: 03-243-0-0044-01-109 | | | | | | 52 | | | | | | | | 280 | 6 |
| REF 19 - NBI: 03-243-0-0044-01-120 | | | | | | 84 | | | | | | | | 281 | 12 |
| REF 20 - NBI: 03-243-0-0044-10-125 | | | 45 | | | | | 148 | | | | | | | 4 |
| REF 21 - NBI: 03-243-0-0156-04-061 | | | | | | | | 559 | | | | | | | 8 |
| REF 22 - NBI: 03-243-0-0156-04-082 | | | | | | | | 112 | 118 | | | | | | 6 |
| REF 23 - NBI: 03-243-0-0156-04-087 | | | | | | | | 136 | | | | | | 152 | 10 |
| REF 24 - NBI: 03-243-0-0156-07-034 | 5 | 6 | | | 2 | | | 493 | | | | | | | 2 |
| REF 25 - NBI: 03-243-0-0156-07-039 | 5 | 6 | | | 2 | 512 | 40 | | | | | 60 | | | 6 |
| REF 26 - NBI: 03-243-0-0156-07-040 | 5 | 6 | | | 2 | | 40 | 240 | | | | | | | 6 |
| REF 27 - NBI: 03-243-0-0156-07-041 | 5 | 6 | | | 2 | | 40 | 240 | | | | | | | 6 |
| REF 28 - NBI: 03-243-0-0156-07-043 | | | 15 | | | 80 | | 240 | | | | | | | 6 |
| REF 29 - NBI: 03-243-0-0156-07-044 | | | | | | 80 | | 240 | | | | | | | 6 |
| REF 30 - NBI: 03-243-0-0156-07-203 | | | | | | | | 360 | | | | | | | 3 |
| REF 31 - NBI: 03-243-0-0156-14-065 | | 3 | | | | 402 | | | | | | | | | 4 |
| REF 32 - NBI: 03-243-0-0249-01-059 | | | 5 | | | 80 | | 192 | | | | | | | 6 |
| REF 33 - NBI: 03-243-0-0282-04-009 | | 15 | | | | 90 | | | | | | | | 270 | 6 |
| REF 34 - NBI: 03-243-0-0282-04-010 | | 5 | | | | 82 | | | | | | | | 286 | 6 |
| REF 35 - NBI: 03-243-0-0282-04-122 | | | | | | 84 | | | | | | | | 336 | 14 |
| REF 36 - NBI: 03-243-0-0685-01-003 | | | | 100 | | 396 | | | | | | | | | 10 |
| PROJECT TOTALS | 20 | 50 | 642 | 322 | 8 | 2480 | 120 | 8159 | 1082 | 4 | 25 | 60 | 60 | 1921 | 247 |

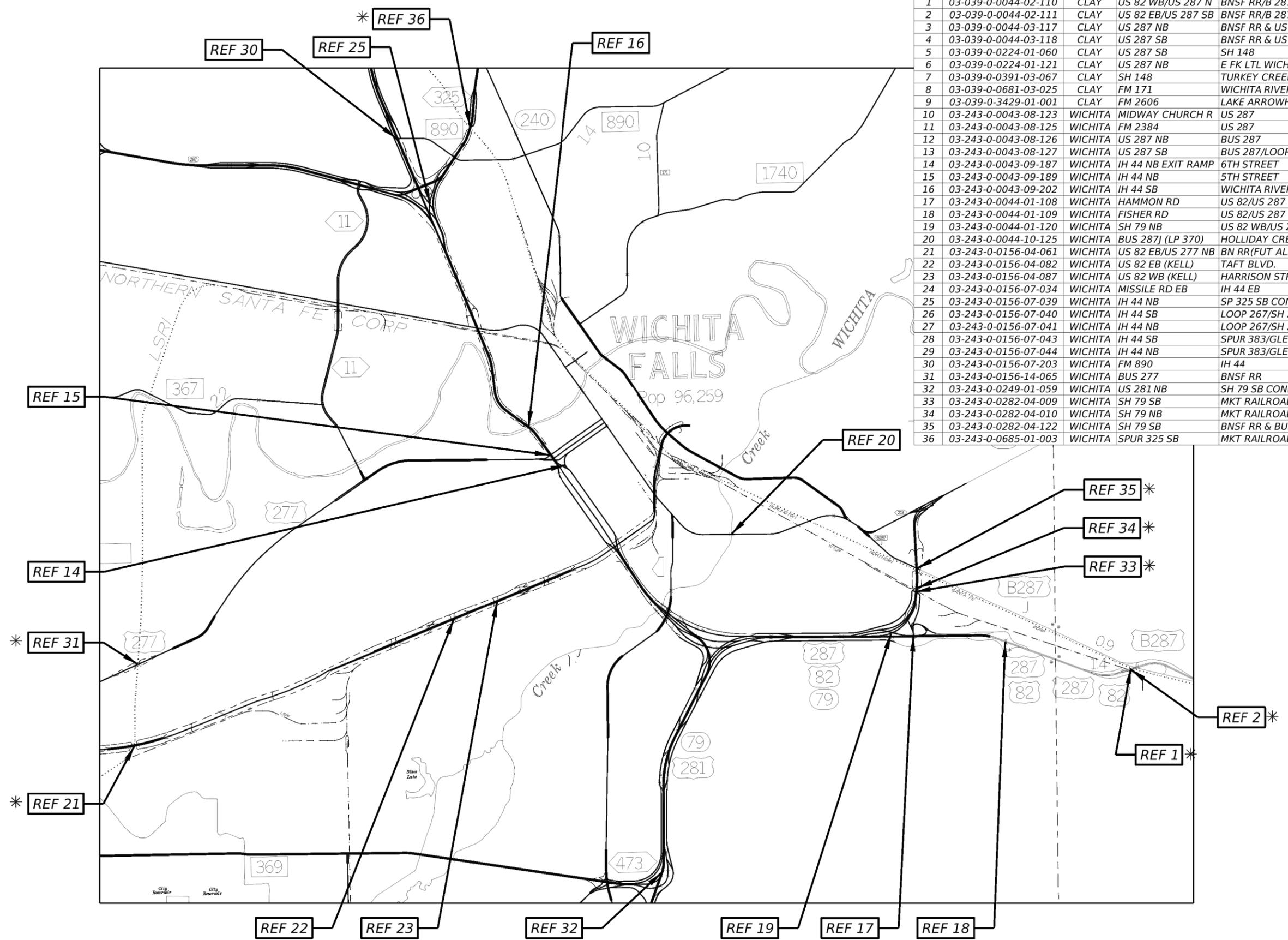


US 82, ETC.
QUANTITY SUMMARY

| | | | |
|--------------|---------------|--------------|-------------|
| © TxDOT 2024 | | SHEET 1 OF 1 | |
| CONT | SECT | JOB | HIGHWAY |
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 6 | |

DATE: 12/18/2023 10:29:47 AM
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CK
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| REF # | NBI | COUNTY | ROADWAY | FEATURE CROSSED | LAT | LONG |
|-------|----------------------|---------|--------------------|--------------------------|-------------|--------------|
| 1 | 03-039-0-0044-02-110 | CLAY | US 82 WB/US 287 N | BNSF RR/B 287J (SH 240) | 33.88083033 | -98.41063693 |
| 2 | 03-039-0-0044-02-111 | CLAY | US 82 EB/US 287 SB | BNSF RR/B 287J (SH 240) | 33.88056733 | -98.41093194 |
| 3 | 03-039-0-0044-03-117 | CLAY | US 287 NB | BNSF RR & US 82 EB | 33.81417625 | -98.21900091 |
| 4 | 03-039-0-0044-03-118 | CLAY | US 287 SB | BNSF RR & US 82 EB | 33.81425425 | -98.21922892 |
| 5 | 03-039-0-0224-01-060 | CLAY | US 287 SB | SH 148 | 33.799538 | -98.196963 |
| 6 | 03-039-0-0224-01-121 | CLAY | US 287 NB | E FK LTL WICHITA RIV REL | 33.727394 | -98.104454 |
| 7 | 03-039-0-0391-03-067 | CLAY | SH 148 | TURKEY CREEK | 33.87407796 | -98.21749962 |
| 8 | 03-039-0-0681-03-025 | CLAY | FM 171 | WICHITA RIVER | 34.088147 | -98.202725 |
| 9 | 03-039-0-3429-01-001 | CLAY | FM 2606 | LAKE ARROWHEAD SPWY | 33.7648794 | -98.3857404 |
| 10 | 03-243-0-0043-08-123 | WICHITA | MIDWAY CHURCH R | US 287 | 34.022048 | -98.87141 |
| 11 | 03-243-0-0043-08-125 | WICHITA | FM 2384 | US 287 | 34.001779 | -98.837217 |
| 12 | 03-243-0-0043-08-126 | WICHITA | US 287 NB | BUS 287 | 33.990235 | -98.824272 |
| 13 | 03-243-0-0043-08-127 | WICHITA | US 287 SB | BUS 287/LOOP 477 | 33.990087 | -98.824395 |
| 14 | 03-243-0-0043-09-187 | WICHITA | IH 44 NB EXIT RAMP | 6TH STREET | 33.90791144 | -98.49960256 |
| 15 | 03-243-0-0043-09-189 | WICHITA | IH 44 NB | 5TH STREET | 33.91023736 | -98.50224377 |
| 16 | 03-243-0-0043-09-202 | WICHITA | IH 44 SB | WICHITA RIVER | 33.91369709 | -98.50604827 |
| 17 | 03-243-0-0044-01-108 | WICHITA | HAMMON RD | US 82/US 287 | 33.885504 | -98.445487 |
| 18 | 03-243-0-0044-01-109 | WICHITA | FISHER RD | US 82/US 287 | 33.884594 | -98.430776 |
| 19 | 03-243-0-0044-01-120 | WICHITA | SH 79 NB | US 82 WB/US 287 NB | 33.8859 | -98.449378 |
| 20 | 03-243-0-0044-10-125 | WICHITA | BUS 287J (LP 370) | HOLLIDAY CREEK | 33.89933878 | -98.474097 |
| 21 | 03-243-0-0156-04-061 | WICHITA | US 82 EB/US 277 NB | BN RR(FUT ALEXANDRIA ST | 33.872198 | -98.569926 |
| 22 | 03-243-0-0156-04-082 | WICHITA | US 82 EB (KELL) | TAFT BLVD. | 33.88848885 | -98.51862843 |
| 23 | 03-243-0-0156-04-087 | WICHITA | US 82 WB (KELL) | HARRISON STREET | 33.89106 | -98.511832 |
| 24 | 03-243-0-0156-07-034 | WICHITA | MISSILE RD EB | IH 44 EB | 33.9822068 | -98.5386063 |
| 25 | 03-243-0-0156-07-039 | WICHITA | IH 44 NB | SP 325 SB CONN H | 33.94366569 | -98.52149663 |
| 26 | 03-243-0-0156-07-040 | WICHITA | IH 44 SB | LOOP 267/SH 240 | 34.10024439 | -98.54696686 |
| 27 | 03-243-0-0156-07-041 | WICHITA | IH 44 NB | LOOP 267/SH 240 | 34.10010339 | -98.54683885 |
| 28 | 03-243-0-0156-07-043 | WICHITA | IH 44 SB | SPUR 383/GLENDALE ST | 34.091407 | -98.557522 |
| 29 | 03-243-0-0156-07-044 | WICHITA | IH 44 NB | SPUR 383/GLENDALE ST | 34.091394 | -98.557292 |
| 30 | 03-243-0-0156-07-203 | WICHITA | FM 890 | IH 44 | 33.95236648 | -98.52649981 |
| 31 | 03-243-0-0156-14-065 | WICHITA | BUS 277 | BNSF RR | 33.883215 | -98.568973 |
| 32 | 03-243-0-0249-01-059 | WICHITA | US 281 NB | SH 79 SB CONN/FM 369 WB | 33.854572 | -98.485619 |
| 33 | 03-243-0-0282-04-009 | WICHITA | SH 79 SB | MKT RAILROAD | 33.891633 | -98.444954 |
| 34 | 03-243-0-0282-04-010 | WICHITA | SH 79 NB | MKT RAILROAD | 33.891522 | -98.444717 |
| 35 | 03-243-0-0282-04-122 | WICHITA | SH 79 SB | BNSF RR & BUS 287 | 33.894357 | -98.444834 |
| 36 | 03-243-0-0685-01-003 | WICHITA | SPUR 325 SB | MKT RAILROAD | 33.95373951 | -98.51493543 |

* RAILROAD COORDINATION REQUIRED

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MAP OF BRIDGE LOCATIONS
 NOT TO SCALE

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| CONT | SECT | JOB | HIGHWAY |
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| REF # | STRUCTURE ID | COUNTY | ROADWAY | FEATURE CROSSED | TCP STANDARD |
|-------|----------------------|---------|--------------------|--------------------------|--------------|
| 1 | 03-039-0-0044-02-110 | CLAY | US 82 WB/US 287 NB | BNSF RR/B 287J (SH 240) | TCP(6-1)-12 |
| 2 | 03-039-0-0044-02-111 | CLAY | US 82 EB/US 287 SB | BNSF RR/B 287J (SH 240) | TCP(6-1)-12 |
| 3 | 03-039-0-0044-03-117 | CLAY | US 287 NB | BNSF RR & US 82 EB | TCP(6-1)-12 |
| 4 | 03-039-0-0044-03-118 | CLAY | US 287 SB | BNSF RR & US 82 EB | TCP(6-1)-12 |
| 5 | 03-039-0-0224-01-060 | CLAY | US 287 SB | SH 148 | TCP(6-1)-12 |
| 6 | 03-039-0-0224-01-121 | CLAY | US 287 NB | E FK LTL WICHITA RIV REL | TCP(6-1)-12 |
| 7 | 03-039-0-0391-03-067 | CLAY | SH 148 | TURKEY CREEK | TCP(1-2)-18 |
| 8 | 03-039-0-0681-03-025 | CLAY | FM 171 | WICHITA RIVER | TCP(1-2)-18 |
| 9 | 03-039-0-3429-01-001 | CLAY | FM 2606 | LAKE ARROWHEAD SPWY | TCP(1-2)-18 |
| 10 | 03-243-0-0043-08-123 | WICHITA | MIDWAY CHURCH RD | US 287 | TCP(1-2)-18 |
| 11 | 03-243-0-0043-08-125 | WICHITA | FM 2384 | US 287 | TCP(1-2)-18 |
| 12 | 03-243-0-0043-08-126 | WICHITA | US 287 NB | BUS 287 | TCP(6-1)-12 |
| 13 | 03-243-0-0043-08-127 | WICHITA | US 287 SB | BUS 287/LOOP 477 | TCP(6-1)-12 |
| 14 | 03-243-0-0043-09-187 | WICHITA | IH 44 NB EXIT RAMP | 6TH STREET | TCP(6-4)-12 |
| 15 | 03-243-0-0043-09-189 | WICHITA | IH 44 NB | 5TH STREET | TCP(6-1)-12 |
| 16 | 03-243-0-0043-09-202 | WICHITA | IH 44 SB | WICHITA RIVER | TCP(6-1)-12 |
| 17 | 03-243-0-0044-01-108 | WICHITA | HAMMON RD | US 82/US 287 | TCP(1-2)-18 |
| 18 | 03-243-0-0044-01-109 | WICHITA | FISHER RD | US 82/US 287 | TCP(1-2)-18 |
| 19 | 03-243-0-0044-01-120 | WICHITA | SH 79 NB | US 82 WB/US 287 NB | TCP(6-1)-12 |
| 20 | 03-243-0-0044-10-125 | WICHITA | BUS 287J (LP 370) | HOLLIDAY CREEK | TCP(1-4)-18 |
| 21 | 03-243-0-0156-04-061 | WICHITA | US 82 EB/US 277 NB | BN RR(FUT ALEXANDRIA ST) | TCP(6-1)-12 |
| 22 | 03-243-0-0156-04-082 | WICHITA | US 82 EB (KELL) | TAFT BLVD. | TCP(6-1)-12 |
| 23 | 03-243-0-0156-04-087 | WICHITA | US 82 WB (KELL) | HARRISON STREET | TCP(6-1)-12 |
| 24 | 03-243-0-0156-07-034 | WICHITA | MISSILE RD EB | IH 44 EB | TCP(1-4)-18 |
| 25 | 03-243-0-0156-07-039 | WICHITA | IH 44 NB | SP 325 SB CONN H | TCP(6-1)-12 |
| 26 | 03-243-0-0156-07-040 | WICHITA | IH 44 SB | LOOP 267/SH 240 | TCP(6-1)-12 |
| 27 | 03-243-0-0156-07-041 | WICHITA | IH 44 NB | LOOP 267/SH 240 | TCP(6-1)-12 |
| 28 | 03-243-0-0156-07-043 | WICHITA | IH 44 SB | SPUR 383/GLENDALE ST | TCP(6-1)-12 |
| 29 | 03-243-0-0156-07-044 | WICHITA | IH 44 NB | SPUR 383/GLENDALE ST | TCP(6-1)-12 |
| 30 | 03-243-0-0156-07-203 | WICHITA | FM 890 | IH 44 | TCP(1-4)-18 |
| 31 | 03-243-0-0156-14-065 | WICHITA | BUS 277 | BNSF RR | TCP(1-3)-18 |
| 32 | 03-243-0-0249-01-059 | WICHITA | US 281 NB | SH 79 SB CONN/FM 369 WB | TCP(6-1)-12 |
| 33 | 03-243-0-0282-04-009 | WICHITA | SH 79 SB | MKT RAILROAD | TCP(6-1)-12 |
| 34 | 03-243-0-0282-04-010 | WICHITA | SH 79 NB | MKT RAILROAD | TCP(6-1)-12 |
| 35 | 03-243-0-0282-04-122 | WICHITA | SH 79 SB | BNSF RR & BUS 287 | TCP(6-1)-12 |
| 36 | 03-243-0-0685-01-003 | WICHITA | SPUR 325 SB | MKT RAILROAD | TCP(6-1)-12 |



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TCP REFERENCE GUIDE

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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).

| |
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| 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 |



**BARRICADE AND CONSTRUCTION
GENERAL NOTES
AND REQUIREMENTS**

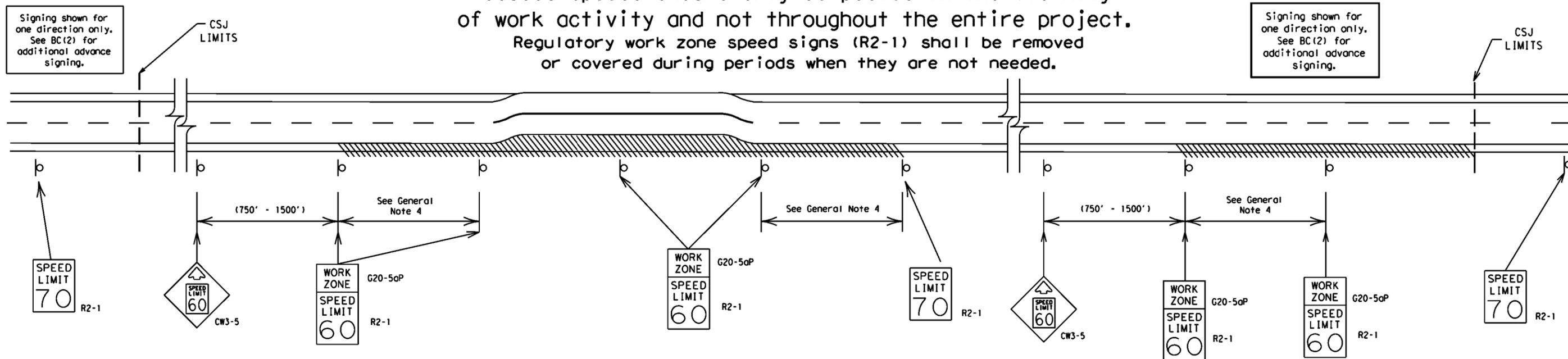
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TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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

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



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

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

Long/Intermediate Term Work Zone Speed Limit signs, when approved as described above, should be posted and visible to the motorist when work activity is present.

Work activity may also be defined as a change in the roadway that requires a reduced speed for motorists to safely negotiate the work area, including:

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

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

SHORT TERM WORK ZONE SPEED LIMITS

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

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

GENERAL NOTES

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

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

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BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

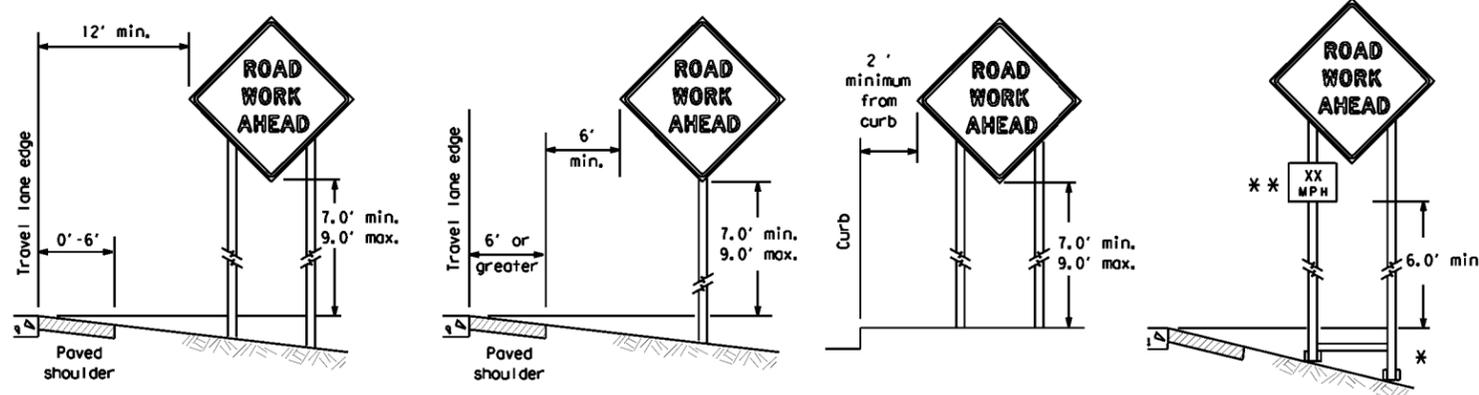
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TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



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

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

GENERAL NOTES FOR WORK ZONE SIGNS

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

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

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

SIGN MOUNTING HEIGHT

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

SIZE OF SIGNS

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

SIGN SUBSTRATES

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

REFLECTIVE SHEETING

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

SIGN LETTERS

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

REMOVING OR COVERING

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

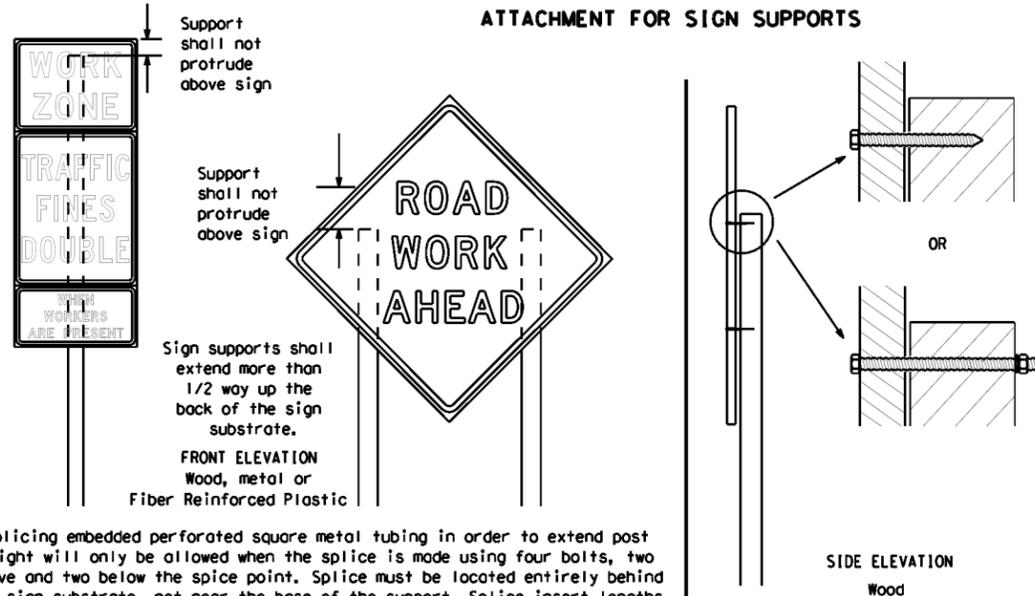
SIGN SUPPORT WEIGHTS

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

FLAGS ON SIGNS

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

ATTACHMENT FOR SIGN SUPPORTS



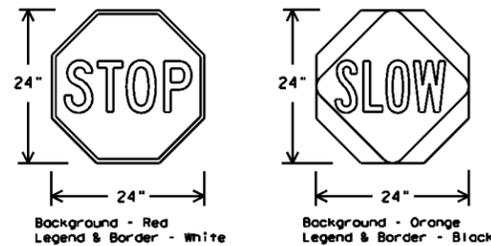
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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

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

STOP/SLOW PADDLES

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



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

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

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

SHEET 4 OF 12

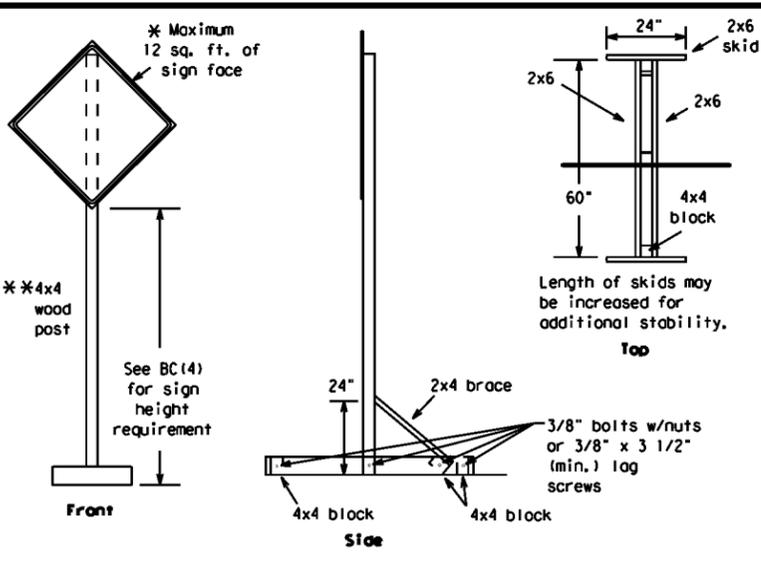
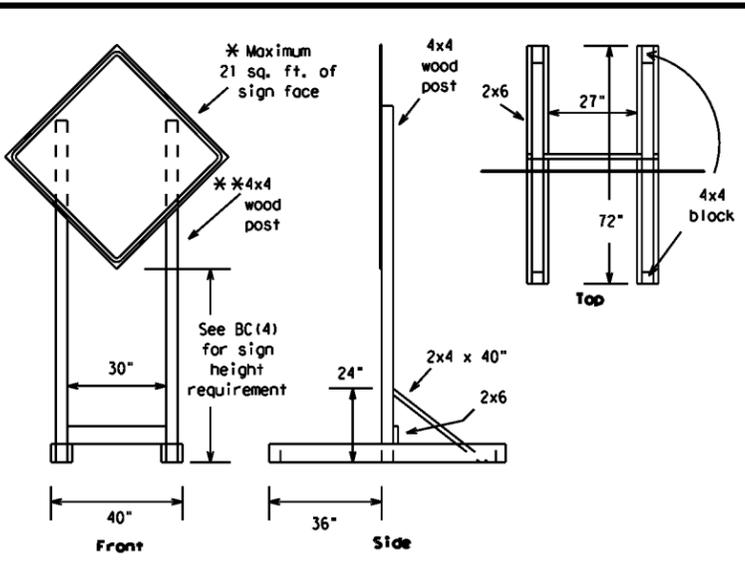


BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC (4) - 21

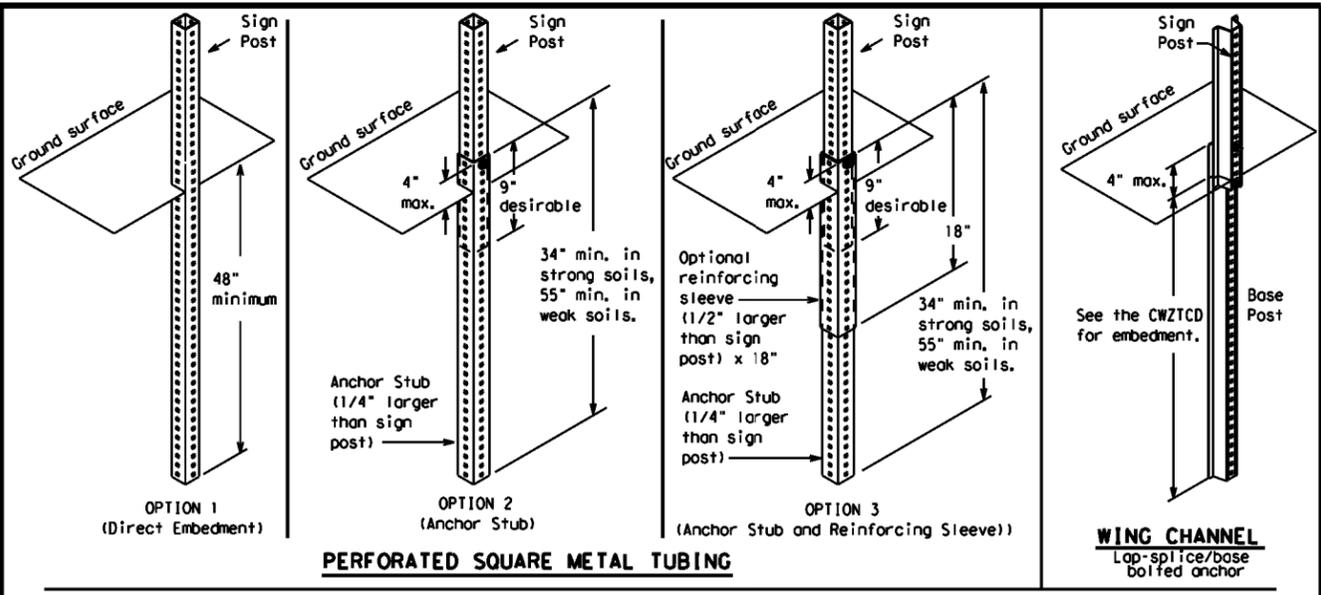
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| © TxDOT November 2002 | CONT: 0903 00 | SECT: 123 | JOB: US 82, ETC. | HIGHWAY: 13 |
| REVISIONS: 9-07 8-14 | DIST: WFS | COUNTY: WICHITA, ETC. | SHEET NO.: 13 | |
| 7-13 5-21 | | | | |

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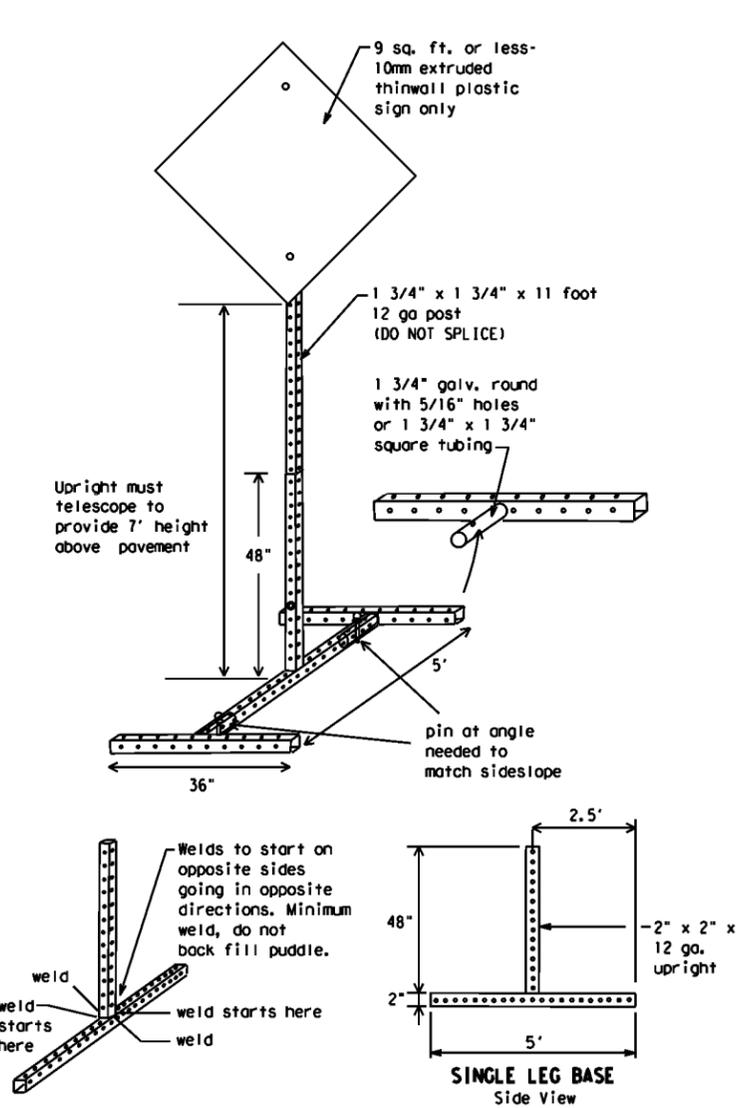
SKID MOUNTED WOOD SIGN SUPPORTS

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



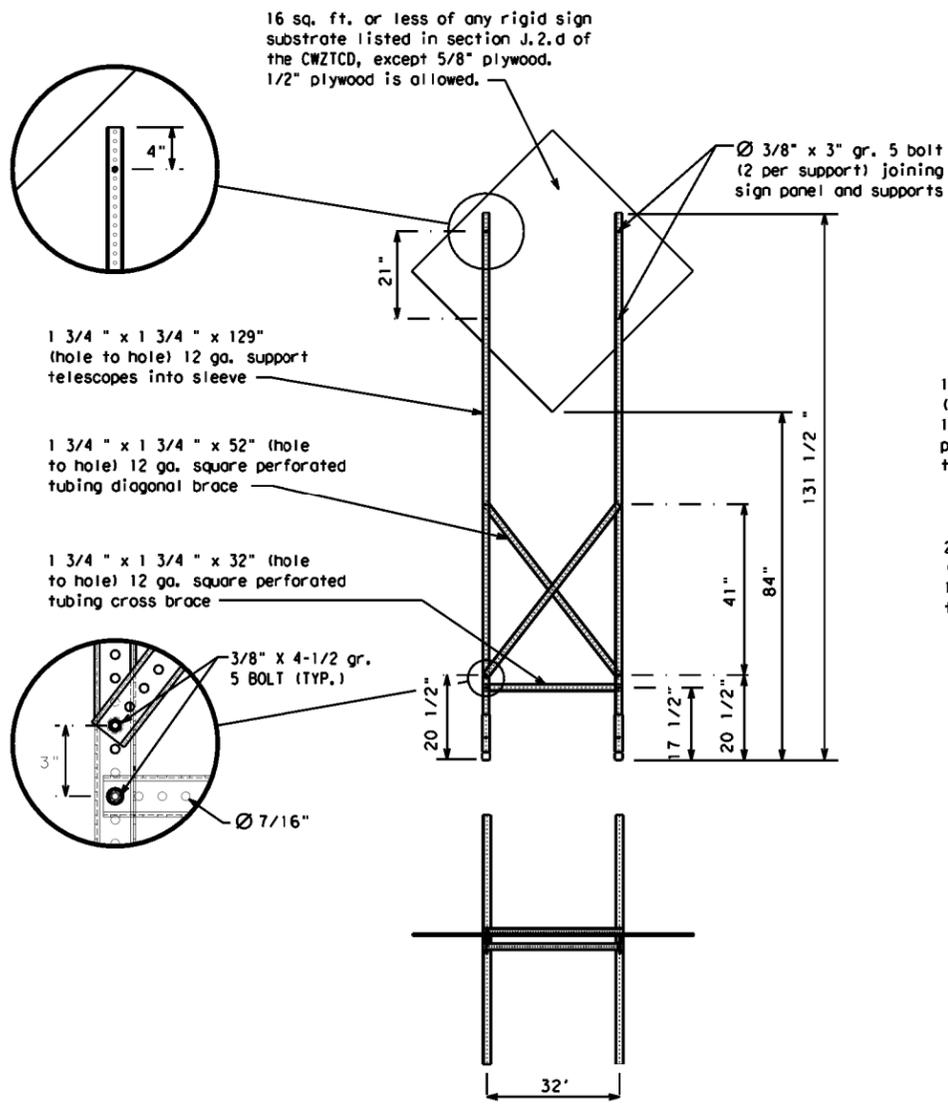
GROUND MOUNTED SIGN SUPPORTS

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



SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

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



WEDGE ANCHORS

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

OTHER DESIGNS

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

GENERAL NOTES

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

- * See BC(4) for definition of "Work Duration."
- ** Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.
- See the CWZTCD for the type of sign substrate that can be used for each approved sign support.

SHEET 5 OF 12



BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5) - 21

| | | | | |
|-----------------------|-----------|---------------|-------------|-----------|
| FILE: bc-21.dgn | DNR TxDOT | CR: TxDOT | DW: TxDOT | CR: TxDOT |
| © TxDOT November 2002 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0903 00 | 123 | US 82, ETC. | |
| 9-07 8-14 | DIST | COUNTY | SHEET NO. | |
| 7-13 5-21 | WFS | WICHITA, ETC. | 14 | |

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

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

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

PORTABLE CHANGEABLE MESSAGE SIGNS

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

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

| |
|-----------------------|
| FREEWAY CLOSED X MILE |
| ROAD CLOSED AT SH XXX |
| ROAD CLSD AT FM XXXX |
| RIGHT X LANES CLOSED |
| CENTER LANE CLOSED |
| NIGHT LANE CLOSURES |
| VARIOUS LANES CLOSED |
| EXIT CLOSED |
| MALL DRIVEWAY CLOSED |
| XXXXXXXX BLVD CLOSED |

Other Condition List

| |
|--------------------------|
| FRONTAGE ROAD CLOSED |
| SHOULDER CLOSED XXX FT |
| RIGHT LN CLOSED XXX FT |
| RIGHT X LANES OPEN |
| DAYTIME LANE CLOSURES |
| I-XX SOUTH EXIT CLOSED |
| EXIT XXX CLOSED X MILE |
| RIGHT LN TO BE CLOSED |
| X LANES CLOSED TUE - FRI |
| ROADWORK XXX FT |
| FLAGGER XXXX FT |
| RIGHT LN NARROWS XXXX FT |
| MERGING TRAFFIC XXXX FT |
| LOOSE GRAVEL XXXX FT |
| DETOUR X MILE |
| ROADWORK PAST SH XXXX |
| BUMP XXXX FT |
| TRAFFIC SIGNAL XXXX FT |
| ROAD REPAIRS XXXX FT |
| LANE NARROWS XXXX FT |
| TWO-WAY TRAFFIC XX MILE |
| CONST TRAFFIC XXX FT |
| UNEVEN LANES XXXX FT |
| ROUGH ROAD XXXX FT |
| ROADWORK NEXT FRI-SUN |
| US XXX EXIT X MILES |
| LANES SHIFT * |

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

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

| |
|----------------------|
| MERGE RIGHT |
| DETOUR NEXT X EXITS |
| USE EXIT XXX |
| STAY ON US XXX SOUTH |
| TRUCKS USE US XXX N |
| WATCH FOR TRUCKS |
| EXPECT DELAYS |
| REDUCE SPEED XXX FT |
| USE OTHER ROUTES |
| STAY IN LANE * |

Location List

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

Warning List

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

** Advance Notice List

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

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

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

WORDING ALTERNATIVES

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

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

FULL MATRIX PCMS SIGNS

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

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

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



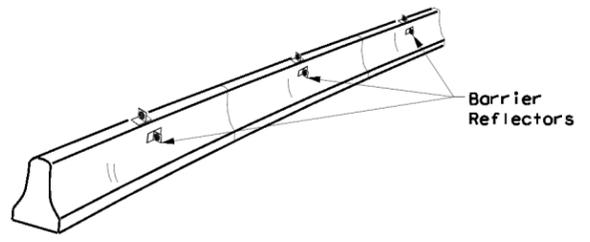
BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC (6) - 21

| | | | | |
|-----------------------|---------------|-----------------------|------------------|-----------|
| FILE: bc-21.dgn | DWG: TxDOT | CHK: TxDOT | DRW: TxDOT | CR: TxDOT |
| © TxDOT November 2002 | CONT: 0903 00 | SECT: 123 | JOB: US 82, ETC. | HIGHWAY |
| REVISIONS | 0903 00 | 123 | US 82, ETC. | |
| 9-07 8-14 | DIST: WFS | COUNTY: WICHITA, ETC. | SHEET NO.: 15 | |
| 7-13 5-21 | | | | |

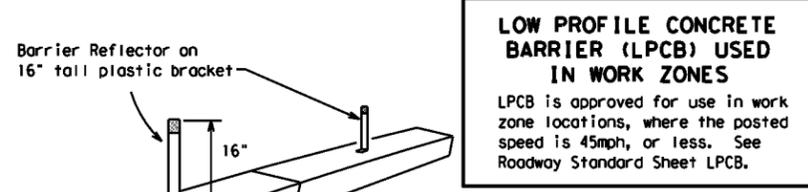
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- Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
- Color of Barrier Reflectors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



CONCRETE TRAFFIC BARRIER (CTB)

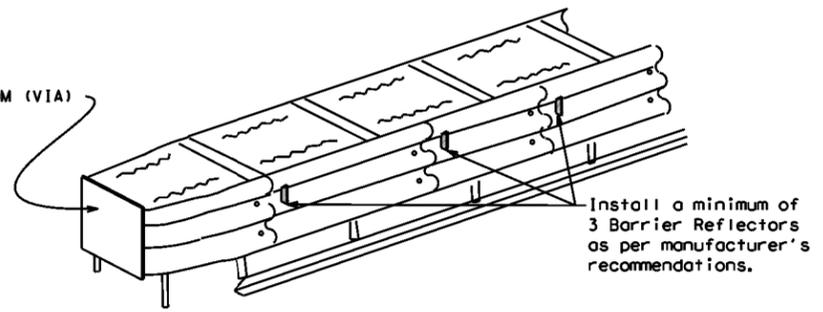
- Where traffic is on one side of the CTB, two (2) Barrier Reflectors shall be mounted in approximately the midsection of each section of CTB. An alternate mounting location is uniformly spaced at one end of each CTB. This will allow for attachment of a barrier grapple without damaging the reflector.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



LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES

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

LOW PROFILE CONCRETE BARRIER (LPCB)



DELINEATION OF END TREATMENTS

END TREATMENTS FOR CTB'S USED IN WORK ZONES

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

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS

WARNING LIGHTS

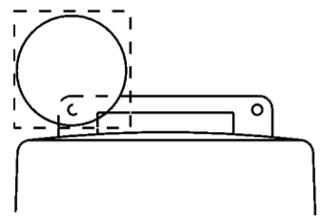
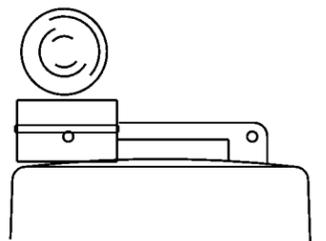
- Warning lights shall meet the requirements of the TMUTCD.
- Warning lights shall NOT be installed on barricades.
- Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet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

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

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

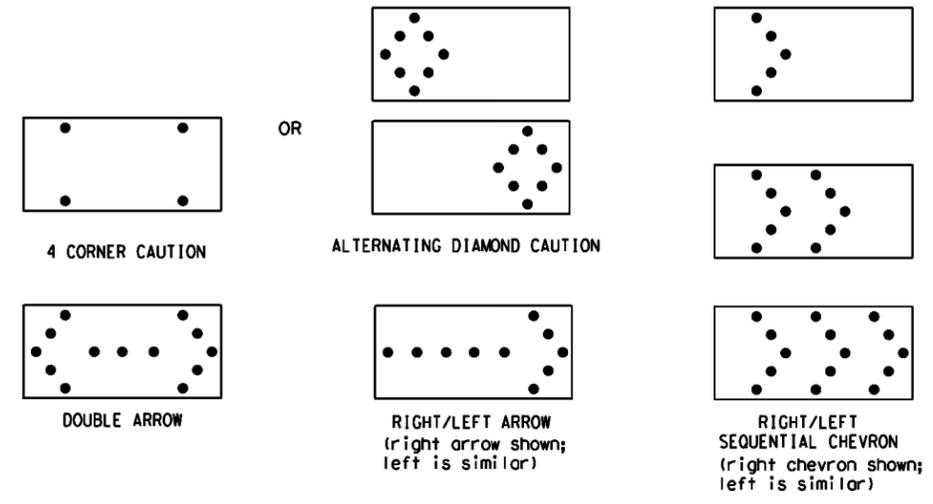
WARNING REFLECTORS MOUNTED ON PLASTIC DRUMS AS A SUBSTITUTE FOR TYPE C (STEADY BURN) WARNING LIGHTS

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



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

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



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

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

ATTENTION

Flashing Arrow Boards shall be equipped with automatic dimming devices.

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

FLASHING ARROW BOARDS

TRUCK-MOUNTED ATTENUATORS

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

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

BC (7) - 21

| | | | | | | | | | |
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| REVISIONS | | 0903 | 00 | 123 | US 82, ETC. | | | | |
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GENERAL NOTES

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

GENERAL DESIGN REQUIREMENTS

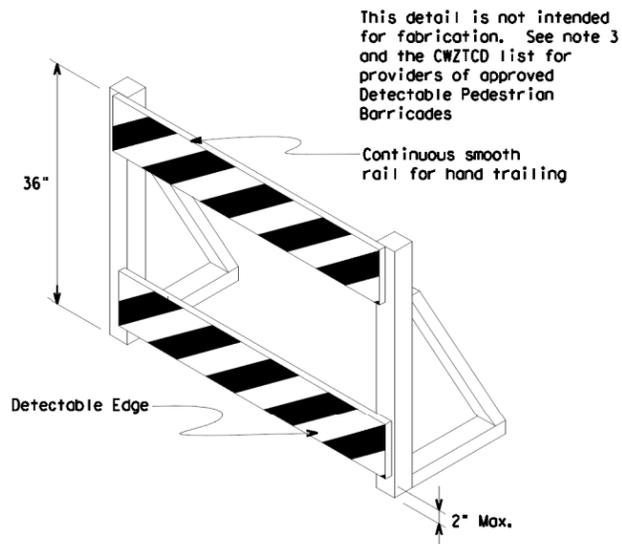
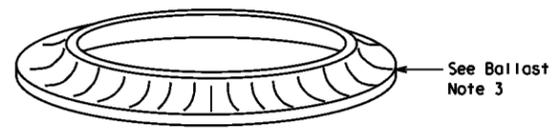
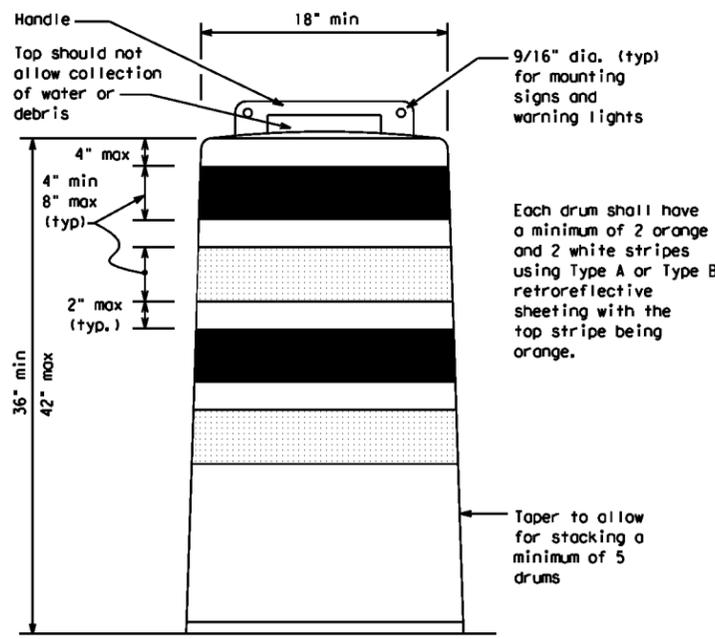
- Pre-qualified plastic drums shall meet the following requirements:
- Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
 - The body and base shall lock together in such a manner that the body separates from the base when impacted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

RETROREFLECTIVE SHEETING

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

BALLAST

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



DETECTABLE PEDESTRIAN BARRICADES

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



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



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

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

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

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

SHEET 8 OF 12



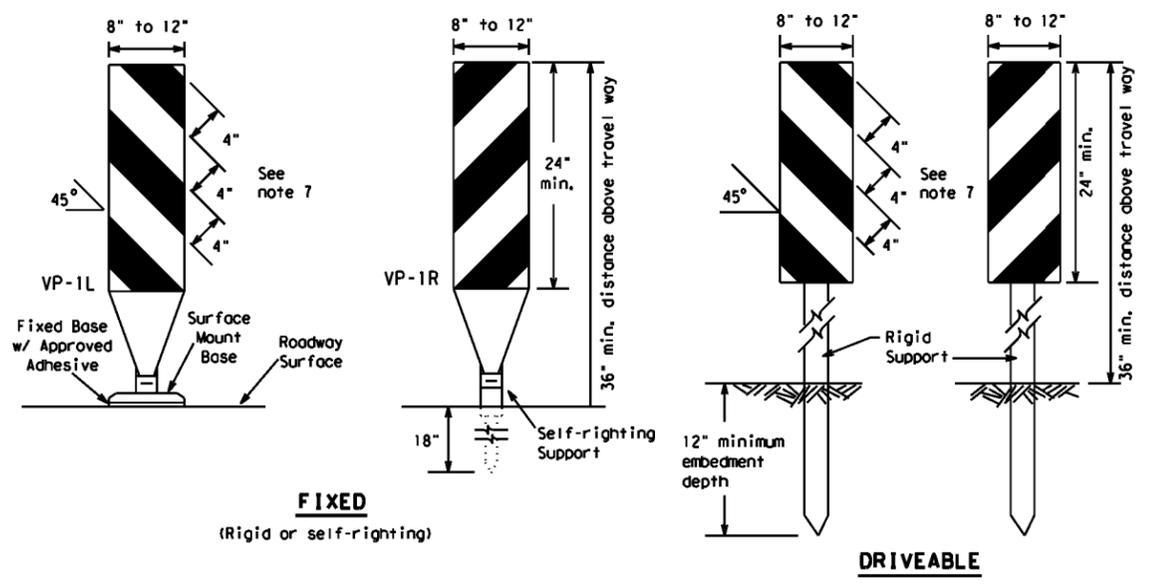
BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC (8) - 21

| | | | | | | | | | |
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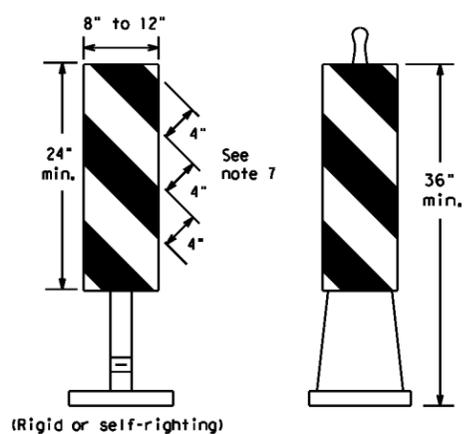
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FIXED
(Rigid or self-righting)

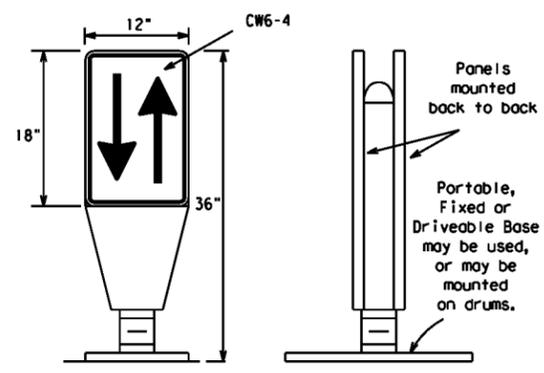
DRIVEABLE



PORTABLE

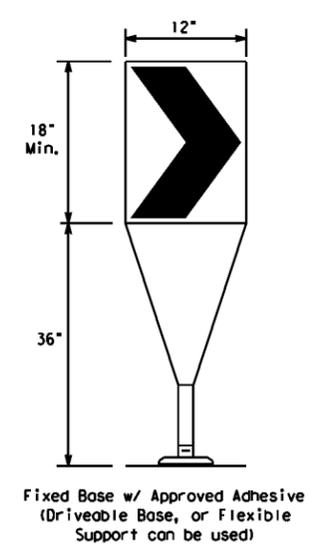
VERTICAL PANELS (VPs)

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



OPPOSING TRAFFIC LANE DIVIDERS (OTLD)

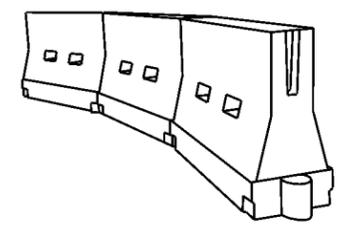
- Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upward and downward arrows on the sign's face indicate the direction of traffic on either side of the divider. The base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



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

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

CHEVRONS



LONGITUDINAL CHANNELIZING DEVICES (LCD)

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

WATER BALLASTED SYSTEMS USED AS BARRIERS

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

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

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

GENERAL NOTES

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

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

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

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

SHEET 9 OF 12



BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC (9) - 21

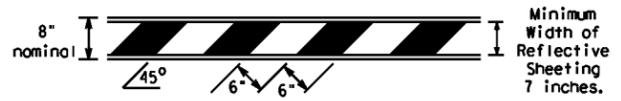
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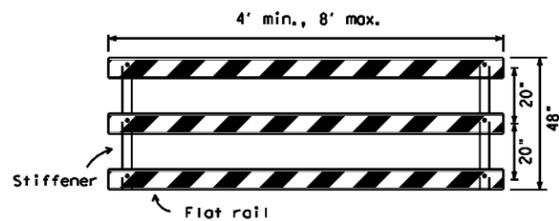
TYPE 3 BARRICADES

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.

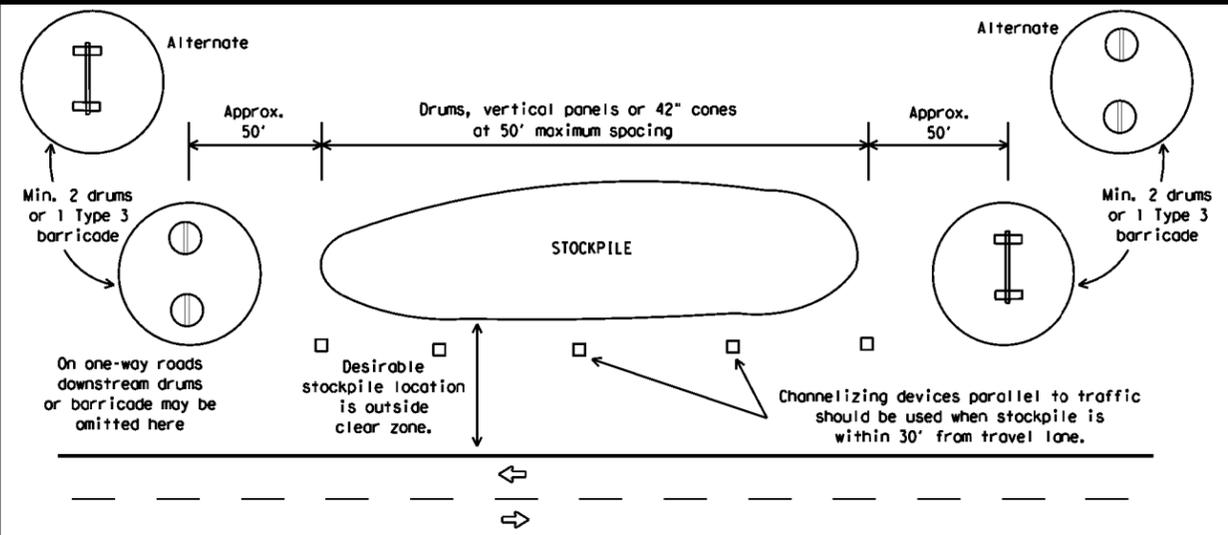


TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



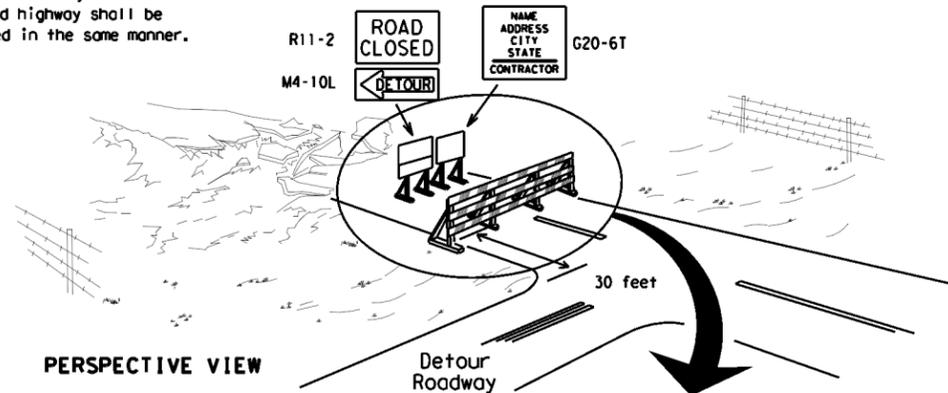
Stiffener may be inside or outside of support, but no more than 2 stiffeners shall be allowed on one barricade.

TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES



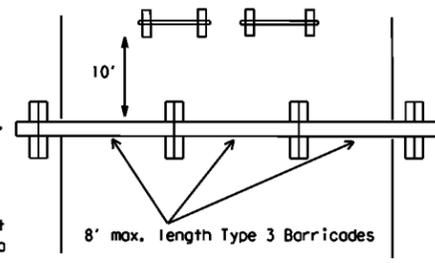
TRAFFIC CONTROL FOR MATERIAL STOCKPILES

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



PERSPECTIVE VIEW

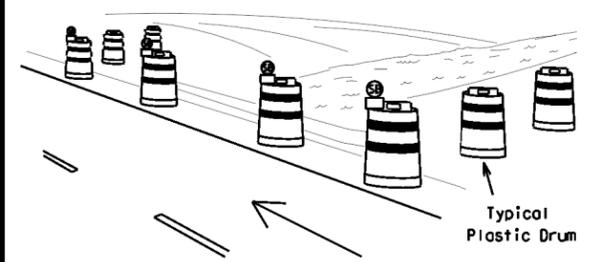
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic. Barricade striping should slant downward in the direction of detour.



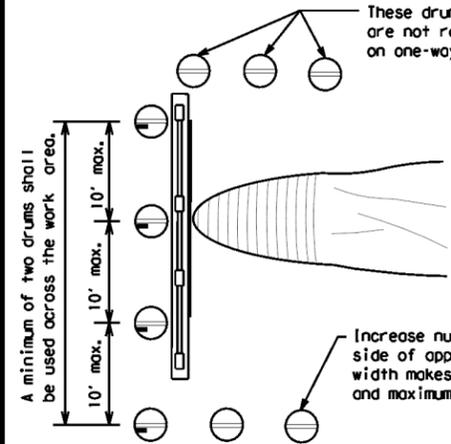
PLAN VIEW

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

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

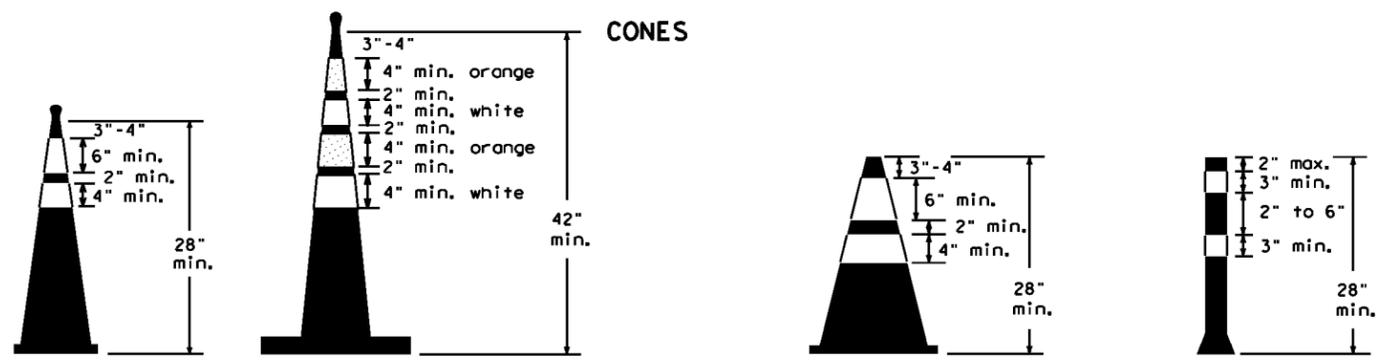


PLAN VIEW

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

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

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



Two-Piece cones

One-Piece cones

Tubular Marker

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

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



BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC (10) - 21

| | | | | |
|-----------------------|------------|---------------|-------------|-----------|
| FILE: bc-21.dgn | DWG: TxDOT | CR: TxDOT | REV: TxDOT | CR: TxDOT |
| © TxDOT November 2002 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0903 00 | 123 | US 82, ETC. | |
| 9-07 8-14 | DIST | COUNTY | SHEET NO. | |
| 7-13 5-21 | WFS | WICHITA, ETC. | 19 | |

WORK ZONE PAVEMENT MARKINGS

GENERAL

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

RAISED PAVEMENT MARKERS

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

PREFABRICATED PAVEMENT MARKINGS

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

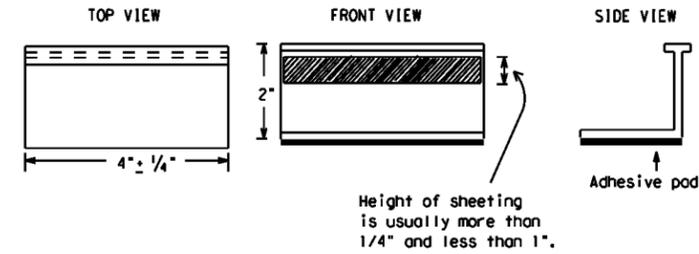
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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

REMOVAL OF PAVEMENT MARKINGS

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

Temporary Flexible-Reflective Roadway Marker Tabs



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

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

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

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

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

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

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

SHEET 11 OF 12



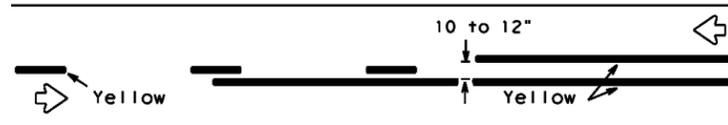
BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-21

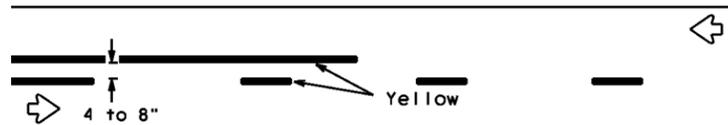
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| © TxDOT February 1998 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | | 0903 00 | 123 | US 82, ETC. |
| 2-98 9-07 5-21 | DIST | COUNTY | SHEET NO. | |
| 1-02 7-13 | WFS | WICHITA, ETC. | 20 | |
| 11-02 8-14 | | | | |

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PAVEMENT MARKING PATTERNS

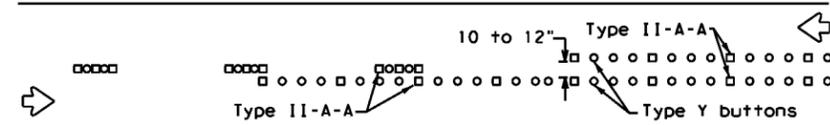


REFLECTORIZED PAVEMENT MARKINGS - PATTERN A

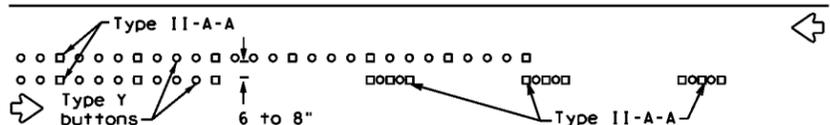


REFLECTORIZED PAVEMENT MARKINGS - PATTERN B

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

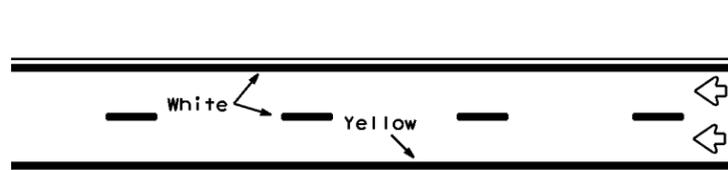


RAISED PAVEMENT MARKERS - PATTERN A



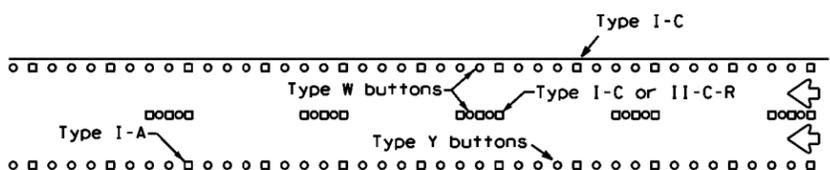
RAISED PAVEMENT MARKERS - PATTERN B

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



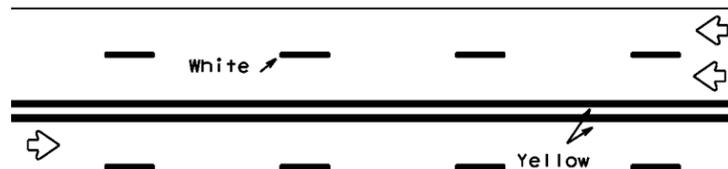
REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectORIZED pavement markings.



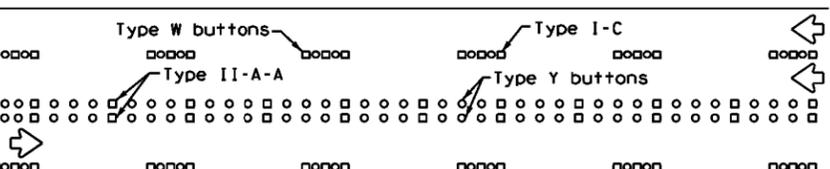
RAISED PAVEMENT MARKERS

EDGE & LANE LINES FOR DIVIDED HIGHWAY



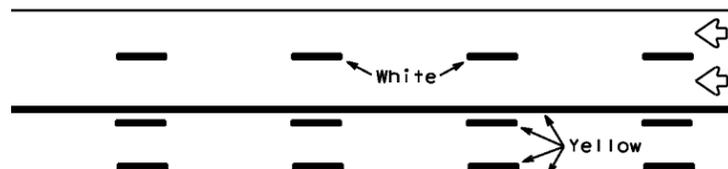
REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectORIZED pavement markings.



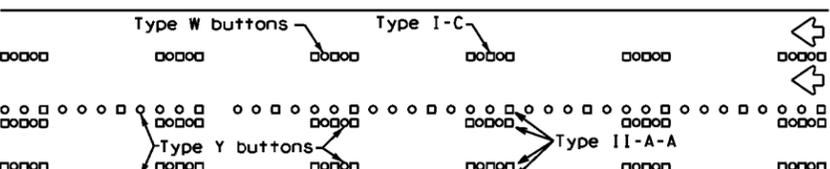
RAISED PAVEMENT MARKERS

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS

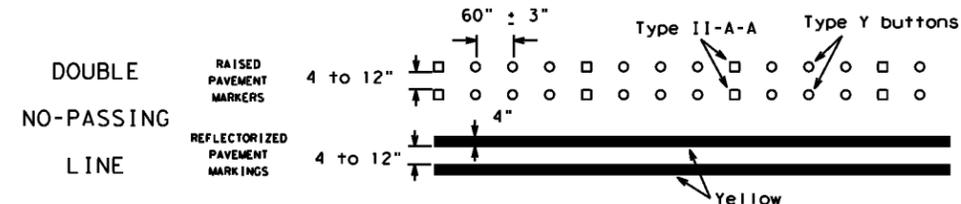
Prefabricated markings may be substituted for reflectORIZED pavement markings.



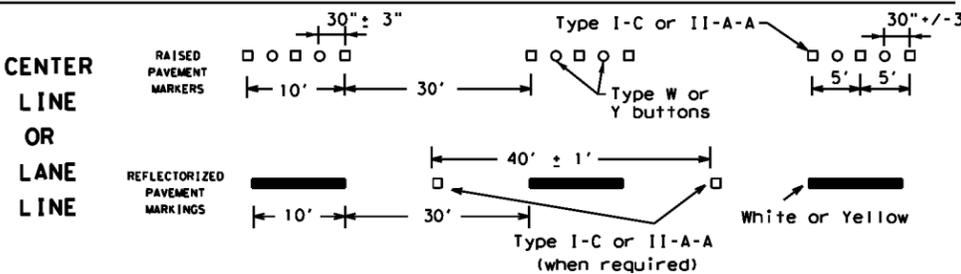
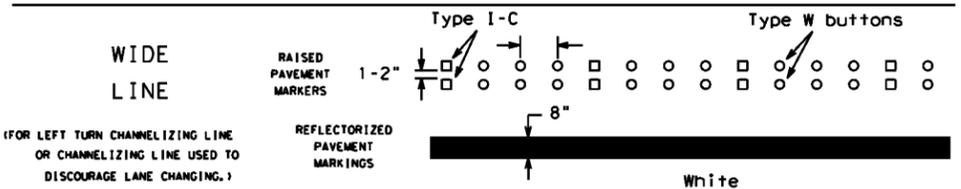
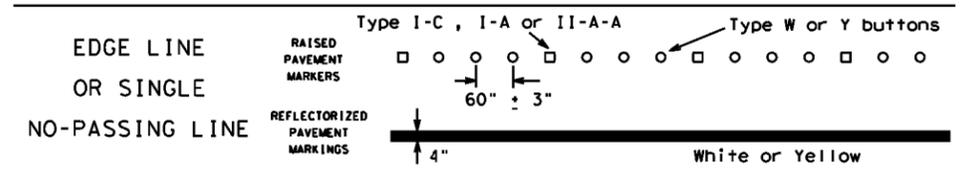
RAISED PAVEMENT MARKERS

TWO-WAY LEFT TURN LANE

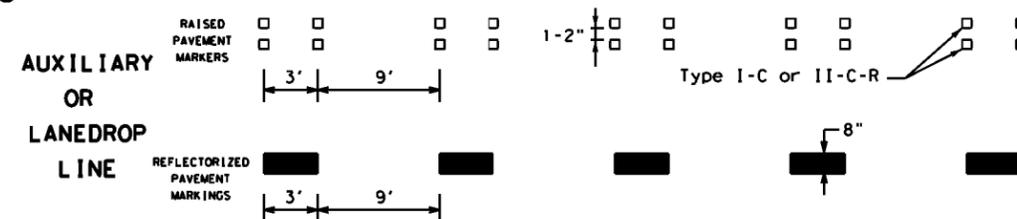
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS



SOLID LINES

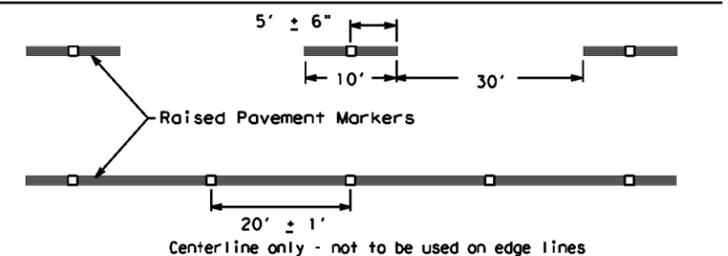


BROKEN LINES



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

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



SHEET 12 OF 12



BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

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

| | | | | |
|----------------------|------------|---------------|------------|------------------|
| FILE: bc-21.dgn | DWG: TxDOT | CHK: TxDOT | DRW: TxDOT | CR: TxDOT |
| ©TxDOT February 1998 | | CONT: 0903 00 | SECT: 123 | JOB: US 82, ETC. |
| REVISIONS | | SHEET NO. | | |
| 1-97 9-07 5-21 | 2-98 7-13 | 11-02 8-14 | WFS | WICHITA, ETC. |
| | | | | 21 |

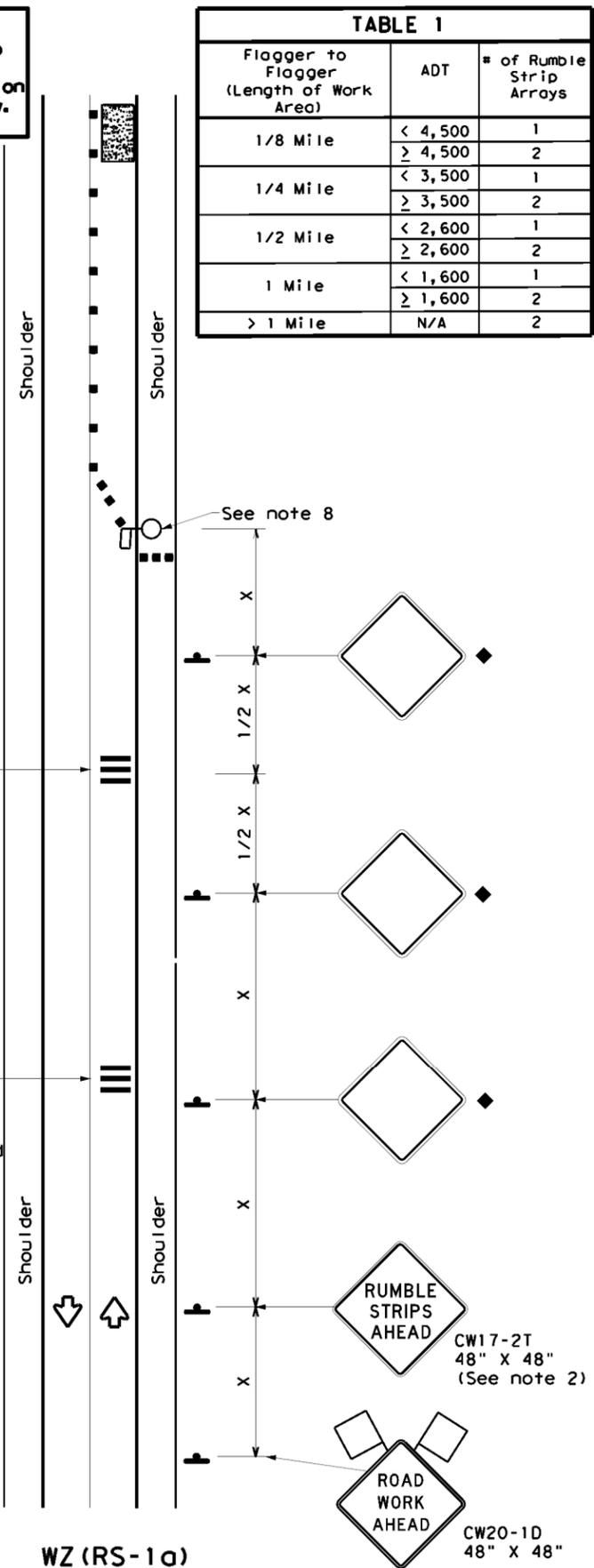
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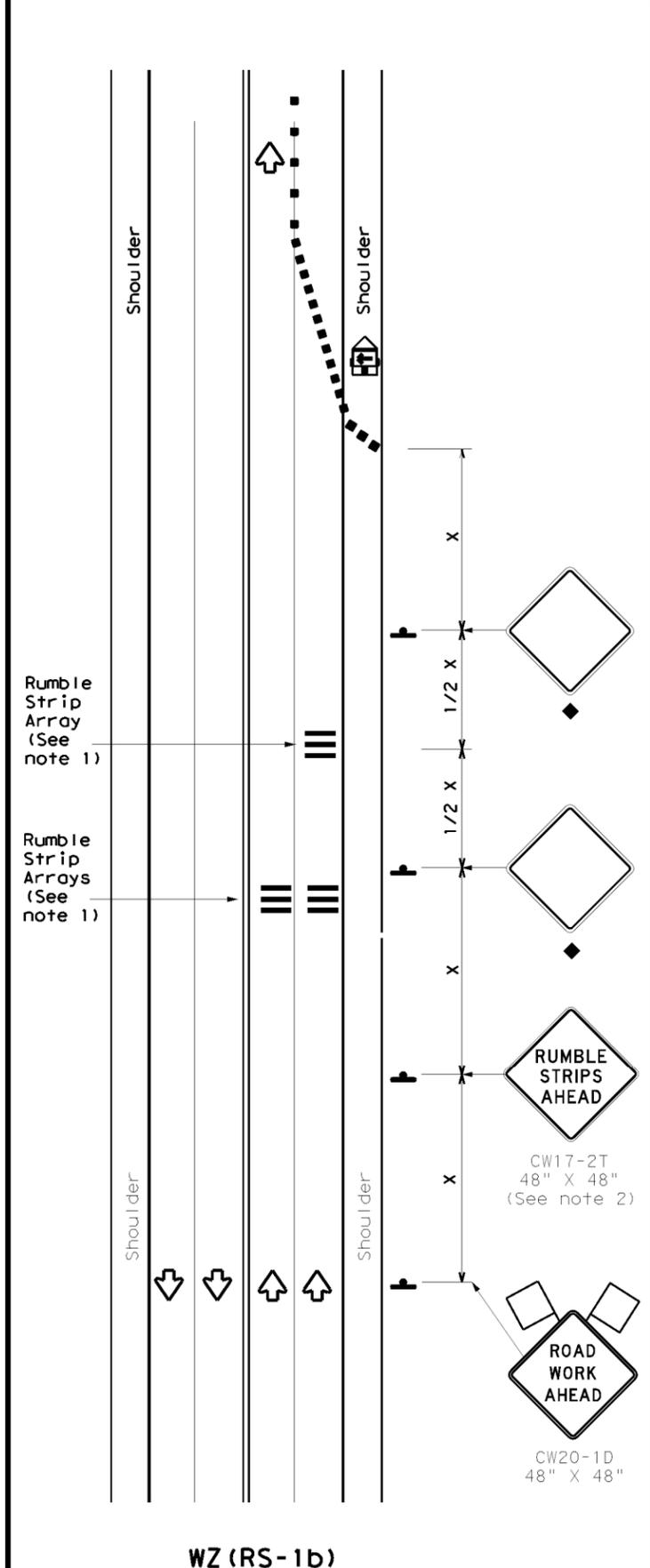
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Warning sign and rumble strip sequence in opposite direction is same as below.

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



RUMBLE STRIPS ON ONE-LANE TWO-WAY APPLICATION



RUMBLE STRIPS FOR LANE CLOSURE ON CONVENTIONAL ROADWAY

GENERAL NOTES

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

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

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

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

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

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

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

Texas Department of Transportation Traffic Safety Division Standard

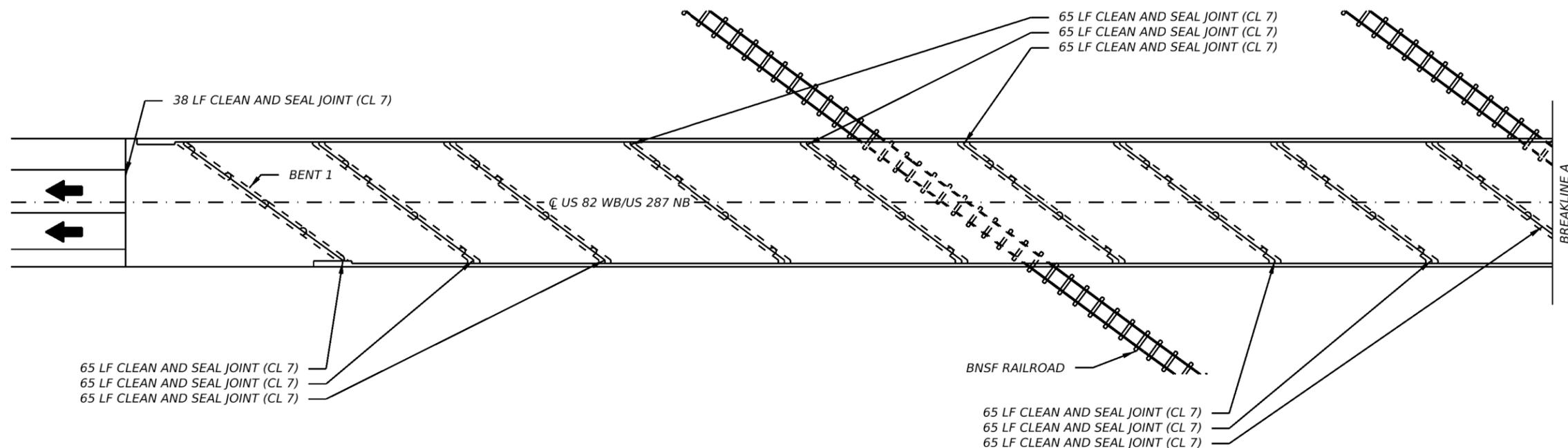
TEMPORARY RUMBLE STRIPS

WZ (RS) - 22

| | | | | |
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| © TxDOT November 2012 | CONT | SECT | JOB | HIGHWAY |
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| 2-14 1-22 | DIST | COUNTY | SHEET NO. | |
| 4-16 | WFS | WICHITA, ETC. | 29 | |

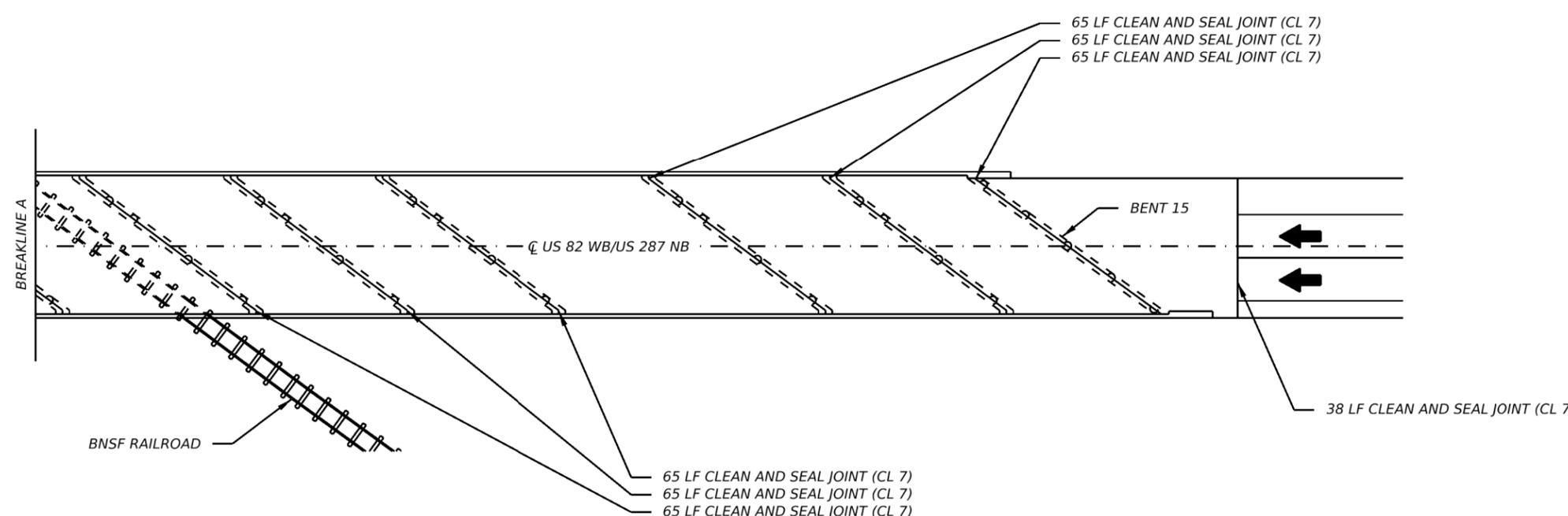


| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL7) | 1,051 LF |



65 LF CLEAN AND SEAL JOINT (CL 7)
 65 LF CLEAN AND SEAL JOINT (CL 7)
 65 LF CLEAN AND SEAL JOINT (CL 7)

65 LF CLEAN AND SEAL JOINT (CL 7)
 65 LF CLEAN AND SEAL JOINT (CL 7)
 65 LF CLEAN AND SEAL JOINT (CL 7)



65 LF CLEAN AND SEAL JOINT (CL 7)
 65 LF CLEAN AND SEAL JOINT (CL 7)
 65 LF CLEAN AND SEAL JOINT (CL 7)

EXISTING - 14 SPAN CONCRETE BRIDGE (54° RF SKEW)
 SPANS W TO E: 42.6', 42.6', 57', 57', 50', 50',
 50', 50', 50', 42.6', 42.6', 75', 50', 42.6'

NBI: 03-039-0-0044-02-110



Christian J. Sierra, P.E.
 12/20/2023



**REFERENCE #1
 BRIDGE LAYOUT
 US 82 WB/US 287 NB
 OVER BNSF RR/
 BUS 287J (SH 240)**
 NOT TO SCALE

| FOR AREA OFFICE USE ONLY | | | |
|--------------------------|----------------|----------------|-------------------|
| FUA ID | DATE COMPLETED | PICTURES TAKEN | ASSETWISE UPDATED |
| 542925 | | | |

| CONT | | SECT | JOB | HIGHWAY |
|------|----|---------------|-----------|-------------|
| 0903 | 00 | | 123 | US 82, ETC. |
| DIST | | COUNTY | SHEET NO. | |
| WFS | | WICHITA, ETC. | 30 | |

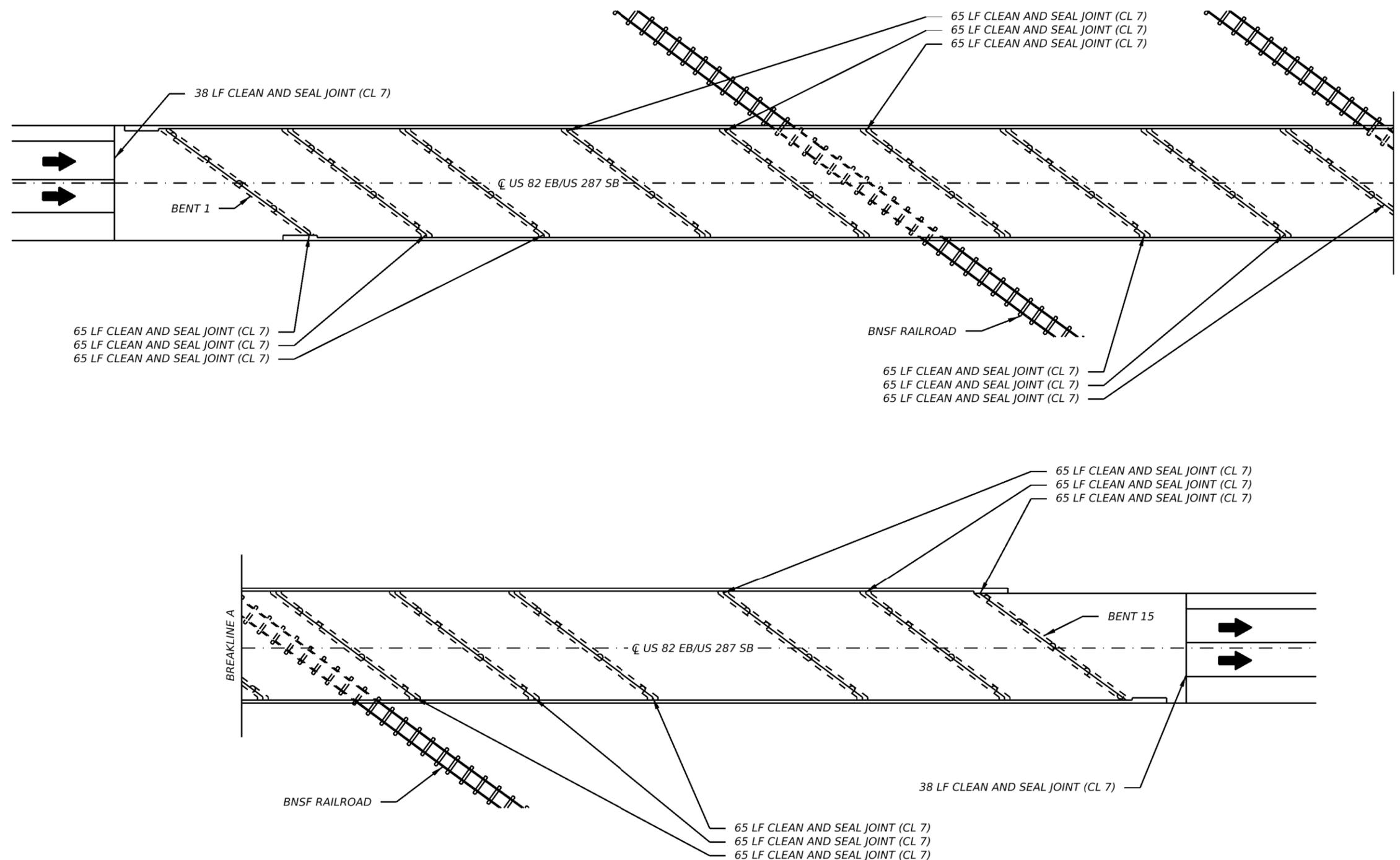
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| ITEM | DESCRIPTION | QUANTITY |
|----------|---|----------|
| 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL 7) | 1,051 LF |

NOTES:

1. QUANTITIES ARE APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO BEGINNING WORK.
2. APPROVAL FROM THE ENGINEER SHALL BE OBTAINED FOR ALL MATERIAL AND METHODS OF APPLICATION PRIOR TO THE BEGINNING OF THE REPAIR WORK.



EXISTING - 14 SPAN CONCRETE BRIDGE (54° RF SKEW)
 SPANS W TO E: 42.6', 42.6', 57', 57', 50', 50',
 50', 50', 50', 42.6', 42.6', 75', 50', 42.6'

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NBI: 03-039-0-0044-02-111



Christian J. Sierra, P.E.
 12/20/2023



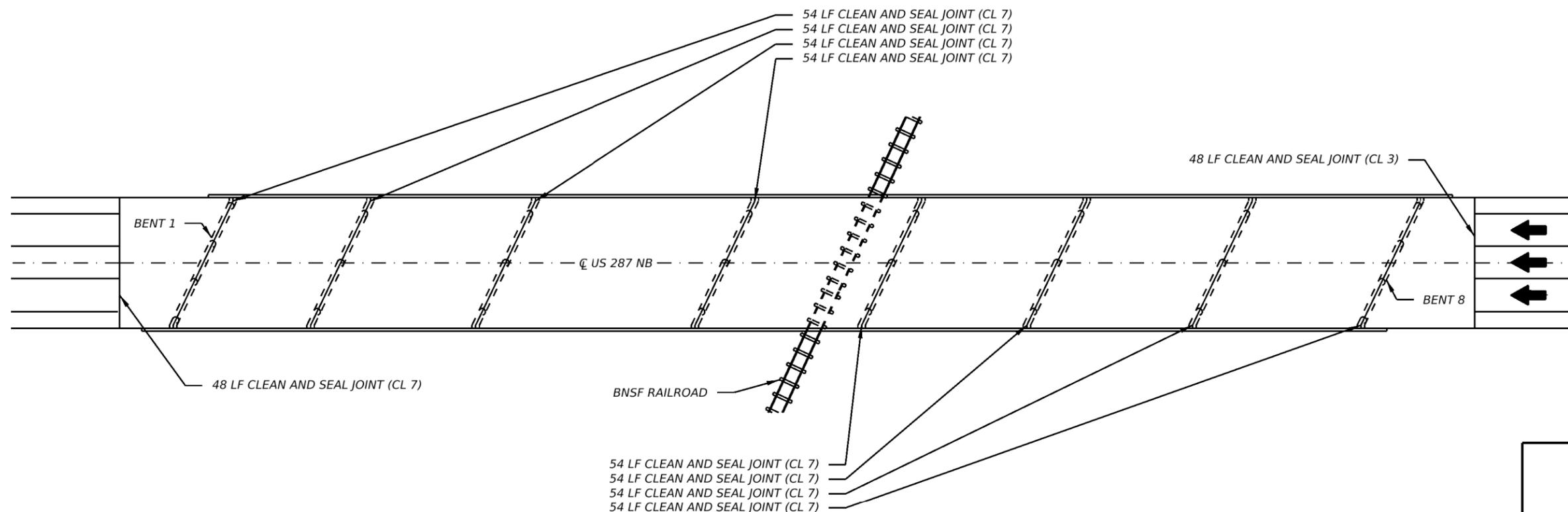
**REFERENCE #2
 BRIDGE LAYOUT
 US 82 EB/US 287 SB
 OVER BNSF RR/
 BUS 287J (SH 240)**
 NOT TO SCALE

| FOR AREA OFFICE USE ONLY | | | |
|--------------------------|----------------|----------------|-------------------|
| FUA ID | DATE COMPLETED | PICTURES TAKEN | ASSETWISE UPDATED |
| 542928 | | | |

| CONT | | JOB | | HIGHWAY | |
|------|----|---------------|--|-------------|--|
| 0903 | 00 | 123 | | US 82, ETC. | |
| DIST | | COUNTY | | SHEET NO. | |
| WFS | | WICHITA, ETC. | | 31 | |

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| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 438-6002 | CLEANING AND SEALING EXIST JOINTS(CL3) | 48 LF |
| 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL7) | 480 LF |



EXISTING - 7 SPAN CONCRETE BRIDGE (25° LF SKEW)
 SPANS N TO S: 50', 60', 80', 60', 60', 60', 60'

NBI: 03-039-0-0044-03-117



Christian J. Sierra, P.E.

12/20/2023



**REFERENCE #3
 BRIDGE LAYOUT
 US 287 NB OVER
 BNSF RR & US 82 EB
 NOT TO SCALE**

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| FOR AREA OFFICE USE ONLY | | | |
|--------------------------|----------------|----------------|-------------------|
| FUA ID | DATE COMPLETED | PICTURES TAKEN | ASSETWISE UPDATED |
| 543069 | | | |

| CONT | SECT | JOB | HIGHWAY |
|------|---------------|-----------|-------------|
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| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 32 | |

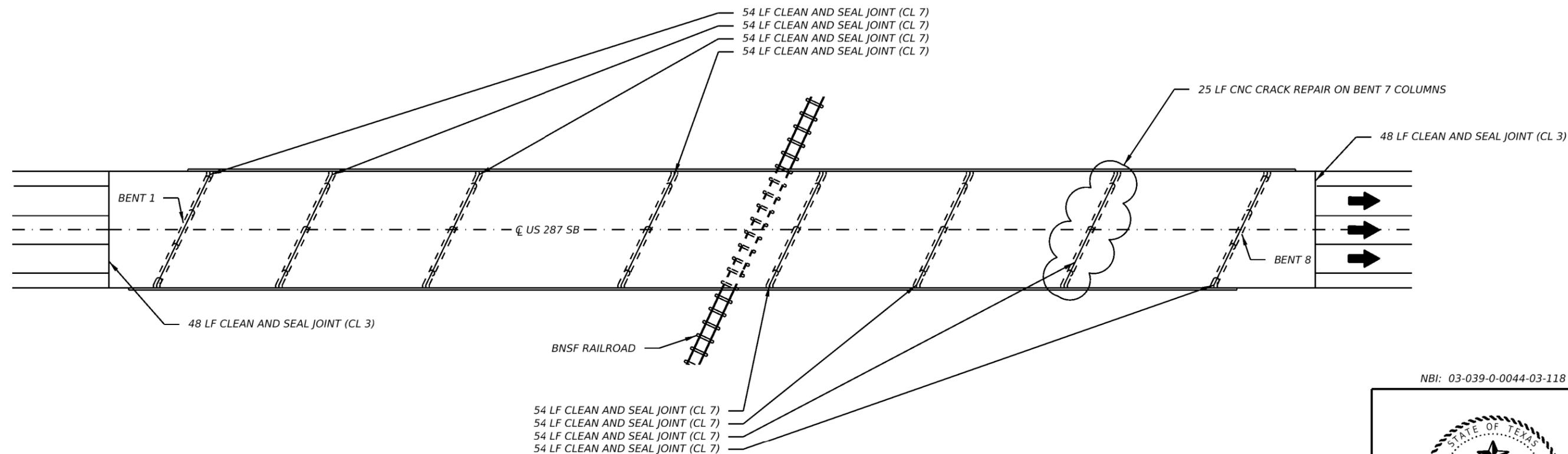
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| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 438-6002 | CLEANING AND SEALING EXIST JOINTS(CL3) | 96 LF |
| 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL7) | 432 LF |
| 780-6002 | CNC CRACK REPAIR (DISCRETE)(INJECT) | 25 LF |



NOTES:

1. QUANTITIES ARE APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO BEGINNING WORK.
2. APPROVAL FROM THE ENGINEER SHALL BE OBTAINED FOR ALL MATERIAL AND METHODS OF APPLICATION PRIOR TO THE BEGINNING OF THE REPAIR WORK.



EXISTING - 7 SPAN CONCRETE BRIDGE (25° LF SKEW)
 SPANS N TO S: 50', 60', 80', 60', 60', 60', 60'

NBI: 03-039-0-0044-03-118



Christian J. Sierra, P.E.

12/20/2023



**REFERENCE #4
 BRIDGE LAYOUT
 US 287 SB OVER
 BNSF RR & US 82 EB
 NOT TO SCALE**

| FOR AREA OFFICE USE ONLY | | | |
|--------------------------|----------------|----------------|-------------------|
| FUA ID | DATE COMPLETED | PICTURES TAKEN | ASSETWISE UPDATED |
| 543071 | | | |
| 579739 | | | |

| | | | |
|-------------|---------------|--------------|-------------|
| ©TxDOT 2024 | | SHEET 1 OF 1 | |
| CONT | SECT | JOB | HIGHWAY |
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 33 | |

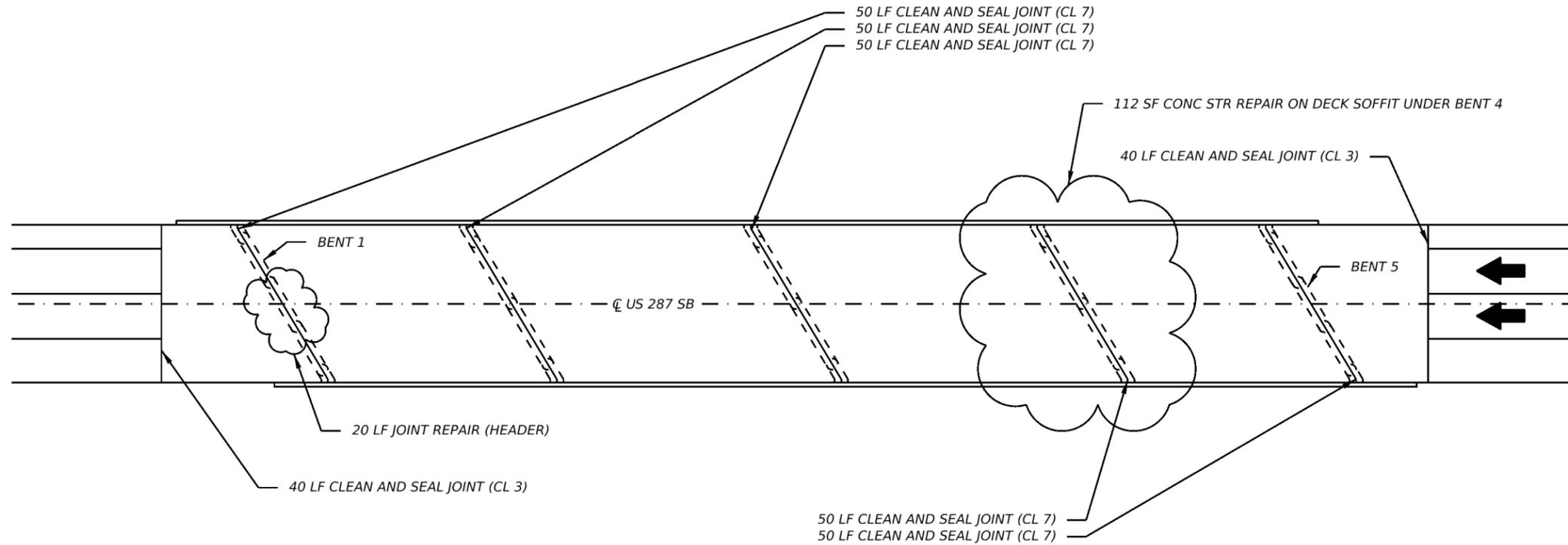
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| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 429-6007 | CONC STR REPAIR (VERTICAL & OVERHEAD) | 112 SF |
| 438-6002 | CLEANING AND SEALING EXIST JOINTS(CL3) | 80 LF |
| 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL7) | 250 LF |
| 785-6006 | BRIDGE JOINT REPAIR (HEADER) | 20 LF |

NOTES:

1. CONCRETE REPAIRS SHALL BE DONE IN ACCORDANCE WITH ITEM 429 AND AS SHOWN WITHIN THE "CONCRETE REPAIR MANUAL".
2. DAMAGE TO SOUND CONCRETE OR TO REINFORCEMENT OUTSIDE THE REPAIR AREA WILL BE REPAIRED AT NO COST TO THE DEPARTMENT.
3. QUANTITIES ARE APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO BEGINNING WORK.
4. APPROVAL FROM THE ENGINEER SHALL BE OBTAINED FOR ALL MATERIAL AND METHODS OF APPLICATION PRIOR TO THE BEGINNING OF THE REPAIR WORK.



EXISTING - 4 SPAN CONCRETE I-BEAM BRIDGE (30° RF SKEW)
SPANS W TO E: 60', 75', 75', 60'

NBI: 03-039-0-0224-01-060



Christian J. Sierra, P.E.

12/20/2023



REFERENCE #5
BRIDGE LAYOUT
US 287 SB OVER SH 148
NOT TO SCALE

| © TxDOT 2024 | | SHEET 1 OF 1 | |
|--------------|---------------|--------------|-------------|
| CONT | SECT | JOB | HIGHWAY |
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 34 | |

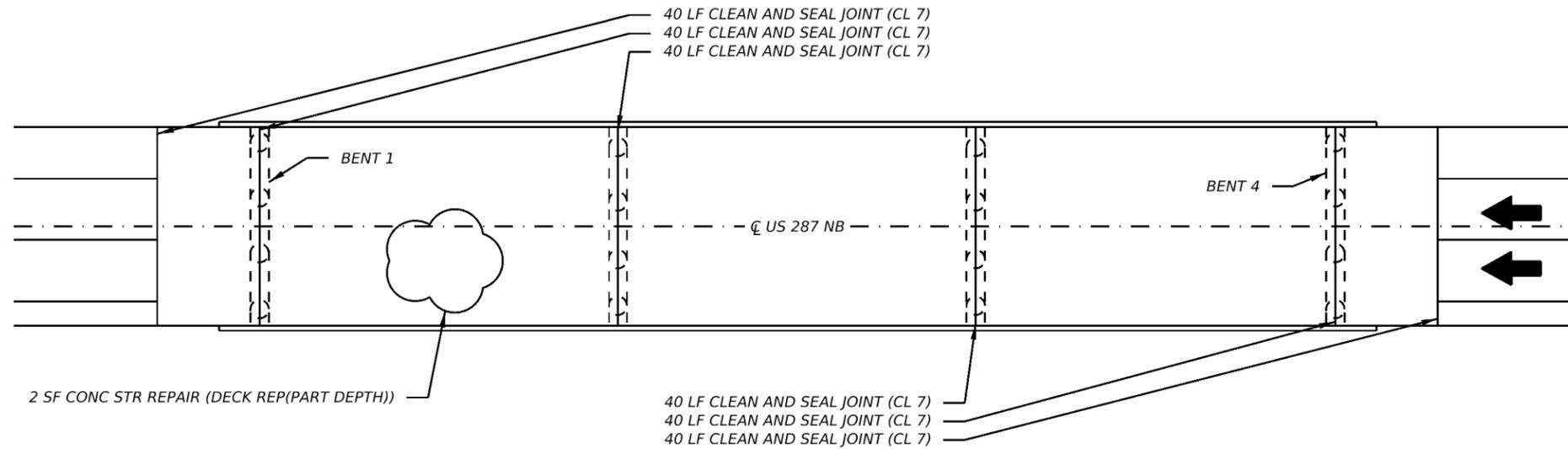
| FOR AREA OFFICE USE ONLY | | | |
|--------------------------|----------------|----------------|-------------------|
| FUA ID | DATE COMPLETED | PICTURES TAKEN | ASSETWISE UPDATED |
| 582259 | | | |



| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 429-6003 | CONC STR REPAIR(DECK REP(PART DEPTH)) | 2 SF |
| 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL7) | 240 LF |

NOTES:

1. CONCRETE REPAIRS SHALL BE DONE IN ACCORDANCE WITH ITEM 429 AND AS SHOWN WITHIN THE "CONCRETE REPAIR MANUAL".
2. DAMAGE TO SOUND CONCRETE OR TO REINFORCEMENT OUTSIDE THE REPAIR AREA WILL BE REPAIRED AT NO COST TO THE DEPARTMENT.
3. QUANTITIES ARE APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO BEGINNING WORK.
4. APPROVAL FROM THE ENGINEER SHALL BE OBTAINED FOR ALL MATERIAL AND METHODS OF APPLICATION PRIOR TO THE BEGINNING OF THE REPAIR WORK.



EXISTING - 3 CONTINUOUS SPAN PRESTRESSED CONCRETE I-BEAM BRIDGE
 SPANS N TO S: 70', 70', 70'

NBI: 03-039-0-0224-01-121



Christian J. Sierra, P.E.

12/20/2023



**REFERENCE #6
 BRIDGE LAYOUT
 US 287 NB OVER
 E FK LTL WICHITA RIV REL**
 NOT TO SCALE

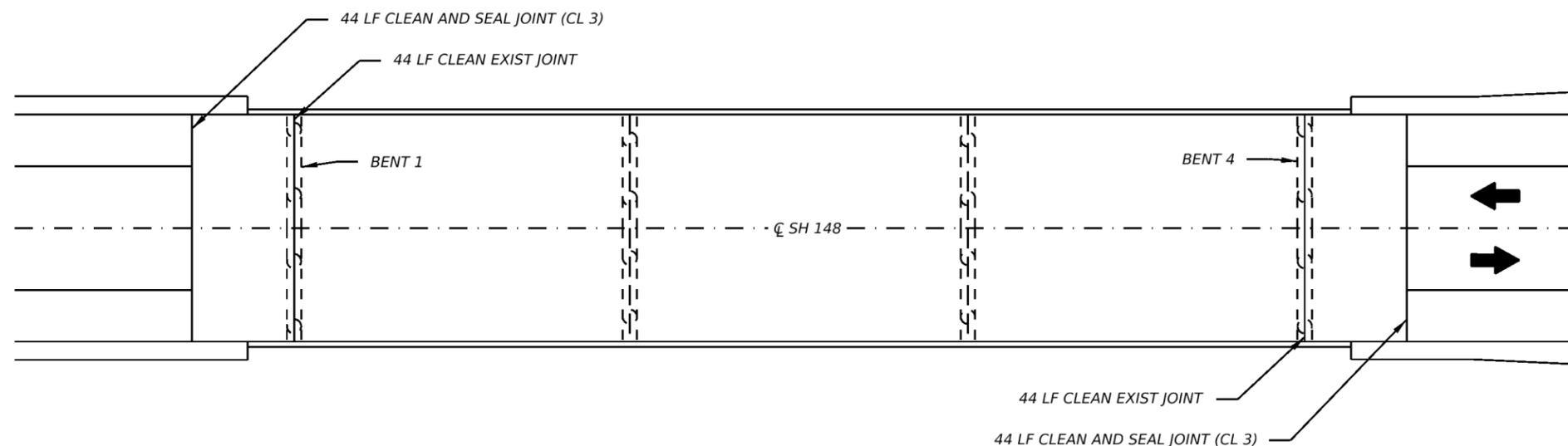
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| 584303 | | | |

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|-------------|---------------|--------------|-------------|
| ©TxDOT 2024 | | SHEET 1 OF 1 | |
| CONT | SECT | JOB | HIGHWAY |
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 35 | |

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| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 438-6002 | CLEANING AND SEALING EXIST JOINTS(CL3) | 88 LF |
| 438-6009 | CLEANING EXISTING JOINTS | 88 LF |



EXISTING - 3 SIMPLE SPAN PRESTRESSED CONCRETE BEAM BRIDGE
 SPANS N TO S: 65', 65', 65'

NBI: 03-039-0-0391-03-067



Christian J. Sierra, P.E.

12/20/2023



REFERENCE #7
 BRIDGE LAYOUT
 SH 148 OVER
 TURKEY CREEK
 NOT TO SCALE

© TxDOT 2024 SHEET 1 OF 1

| FOR AREA OFFICE USE ONLY | | | |
|--------------------------|----------------|----------------|-------------------|
| FUA ID | DATE COMPLETED | PICTURES TAKEN | ASSETWISE UPDATED |
| 575592 | | | |

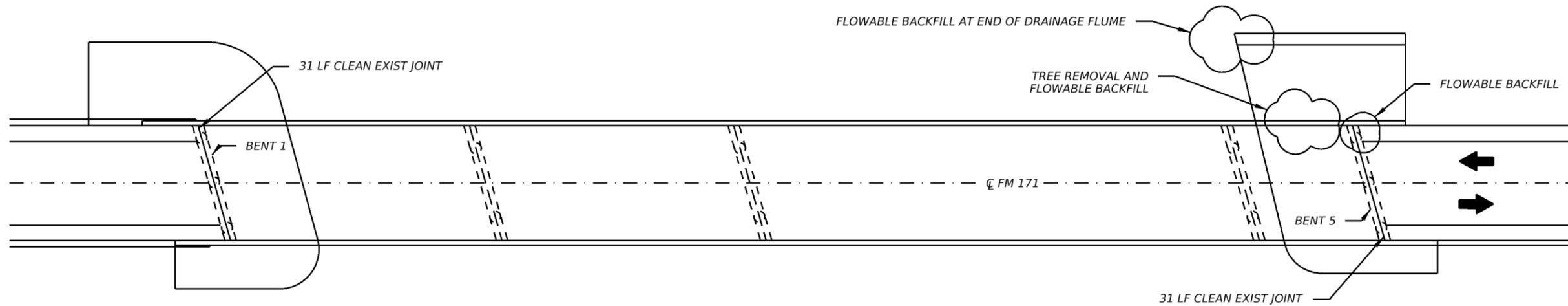
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| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 36 | |

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DW: _____
 CK: _____
 CK: _____



| ITEM | DESCRIPTION | QUANTITY |
|----------|-----------------------------|----------|
| 401-6001 | FLOWABLE BACKFILL | 3 CY |
| 438-6009 | CLEANING EXISTING JOINTS | 62 LF |
| 752-6005 | TREE REMOVAL (4" - 12" DIA) | 4 EA |



EXISTING - 4 SIMPLE SPAN PRESTRESSED CONCRETE I-BEAM BRIDGE (15° RF SKEW)
 SPANS W TO E: 70', 70', 130', 34'

NBI: 03-039-0-0681-03-025



Christian J. Sierra, P.E.
 12/20/2023



REFERENCE #8
 BRIDGE LAYOUT
 FM 171 OVER
 WICHITA RIVER
 NOT TO SCALE

| FOR AREA OFFICE USE ONLY | | | |
|--------------------------|----------------|----------------|-------------------|
| FUA ID | DATE COMPLETED | PICTURES TAKEN | ASSETWISE UPDATED |
| 581142 | | | |
| 581146 | | | |

| | | | |
|--------------|---------------|--------------|-------------|
| © TxDOT 2024 | | SHEET 1 OF 1 | |
| CONT | SECT | JOB | HIGHWAY |
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 37 | |

DATE: 12/18/2023 10:32:06 AM
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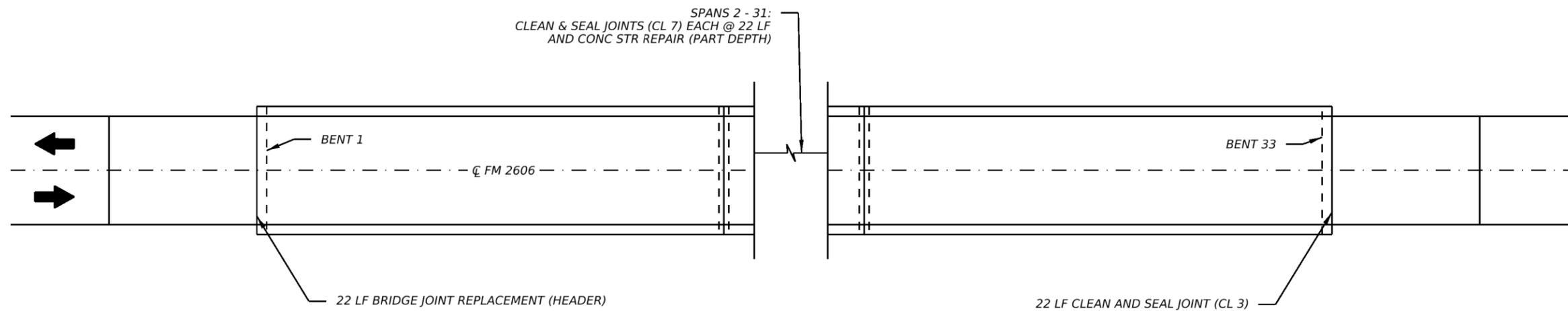
DW: _____
 CK: _____
 CK: _____



| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 429-6003 | CONC STR REPAIR(DECK REP(PART DEPTH)) | 532 SF |
| 438-6002 | CLEANING AND SEALING EXIST JOINTS(CL3) | 22 LF |
| 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL7) | 682 LF |
| 785-6013 | BRIDGE JOINT REPLACEMENT (HEADER) | 22 LF |

NOTES:

1. CONCRETE REPAIRS SHALL BE DONE IN ACCORDANCE WITH ITEM 429 AND AS SHOWN WITHIN THE "CONCRETE REPAIR MANUAL".
2. DAMAGE TO SOUND CONCRETE OR TO REINFORCEMENT OUTSIDE THE REPAIR AREA WILL BE REPAIRED AT NO COST TO THE DEPARTMENT.
3. QUANTITIES ARE APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO BEGINNING WORK.
4. APPROVAL FROM THE ENGINEER SHALL BE OBTAINED FOR ALL MATERIAL AND METHODS OF APPLICATION PRIOR TO THE BEGINNING OF THE REPAIR WORK.
5. REFER TO "BRIDGE EXPANSION JOINT MAINTENANCE" DETAIL FOR BRIDGE JOINT REPLACEMENT.



EXISTING - 32 SPAN PRESTRESSED CONCRETE T-BEAM BRIDGE
 SPANS W TO E: 47.5', 30 @ 50', 47.5'

NBI: 03-039-0-3429-01-001



Christian J. Sierra, P.E.
 12/20/2023



**REFERENCE #9
 BRIDGE LAYOUT
 FM 2606 OVER
 LAKE ARROWHEAD SPWY**
 NOT TO SCALE

| FOR AREA OFFICE USE ONLY | | | |
|--------------------------|----------------|----------------|-------------------|
| FUA ID | DATE COMPLETED | PICTURES TAKEN | ASSETWISE UPDATED |
| 576212 | | | |
| 576210 | | | |

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|-------------|---------------|--------------|-------------|
| ©TxDOT 2024 | | SHEET 1 OF 1 | |
| CONT | SECT | JOB | HIGHWAY |
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 38 | |

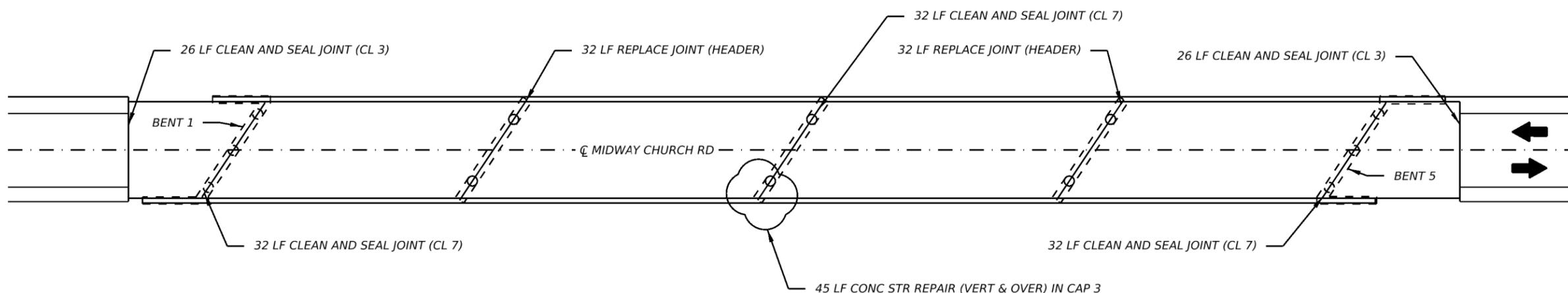
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| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 429-6007 | CONC STR REPAIR (VERTICAL & OVERHEAD) | 45 SF |
| 438-6002 | CLEANING AND SEALING EXIST JOINTS(CL3) | 52 LF |
| 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL7) | 96 LF |
| 785-6013 | BRIDGE JOINT REPLACEMENT (HEADER) | 64 LF |



NOTES:

1. CONCRETE REPAIRS SHALL BE DONE IN ACCORDANCE WITH ITEM 429 AND AS SHOWN WITHIN THE "CONCRETE REPAIR MANUAL".
2. DAMAGE TO SOUND CONCRETE OR TO REINFORCEMENT OUTSIDE THE REPAIR AREA WILL BE REPAIRED AT NO COST TO THE DEPARTMENT.
3. QUANTITIES ARE APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO BEGINNING WORK.
4. APPROVAL FROM THE ENGINEER SHALL BE OBTAINED FOR ALL MATERIAL AND METHODS OF APPLICATION PRIOR TO THE BEGINNING OF THE REPAIR WORK.
5. REFER TO "JOINT REPAIR DETAILS" FOR BRIDGE JOINT REPLACEMENT.



EXISTING - 4 SPAN PRESTRESSED CONCRETE BEAM BRIDGE (34° LF SKEW)
 SPANS N TO S: 70', 80', 80', 70'

NBI: 03-243-0-0043-08-123



Christian J. Sierra, P.E.

12/20/2023



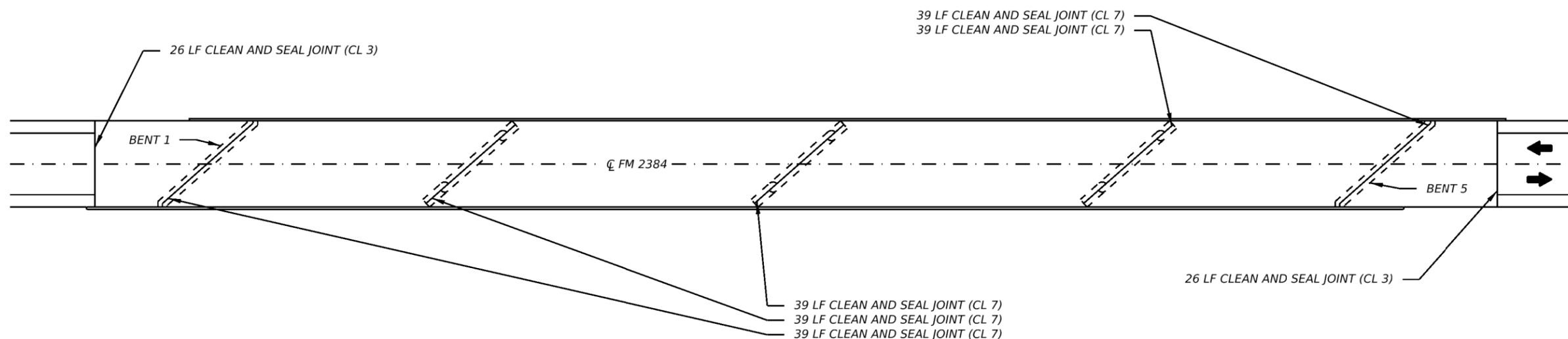
REFERENCE #10
 BRIDGE LAYOUT
 MIDWAY CHURCH RD
 OVER US 287
 NOT TO SCALE

| FOR AREA OFFICE USE ONLY | | | |
|--------------------------|----------------|----------------|-------------------|
| FUA ID | DATE COMPLETED | PICTURES TAKEN | ASSETWISE UPDATED |
| 543108 | | | |
| 543110 | | | |

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|-------------|---------------|--------------|-------------|
| ©TxDOT 2024 | | SHEET 1 OF 1 | |
| CONT | SECT | JOB | HIGHWAY |
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 39 | |

DATE: 12/18/2023 10:32:14 AM
 FILE: p:\w\projectwiseonline.com\TXDOT2\Documents\03 - WFS\Design Projects\090300123\4 - Design\Plan Set\7 - Bridge\REFERENCE LAYOUTS.dgn

| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 438-6002 | CLEANING AND SEALING EXIST JOINTS(CL3) | 52 LF |
| 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL7) | 195 LF |



EXISTING - 4 SPAN CONTINUOUS STEEL STRINGER BRIDGE (48.5° LF SKEW)
 SPANS N TO S: 80', 100', 100', 80'

NBI: 03-243-0-0043-08-125



Christian J. Sierra, P.E.

12/20/2023



**REFERENCE #11
 BRIDGE LAYOUT
 FM 2384 OVER US 287
 NOT TO SCALE**

| FOR AREA OFFICE USE ONLY | | | |
|--------------------------|----------------|----------------|-------------------|
| FUA ID | DATE COMPLETED | PICTURES TAKEN | ASSETWISE UPDATED |
| 543112 | | | |

| | | | |
|--------------|---------------|--------------|-------------|
| © TxDOT 2024 | | SHEET 1 OF 1 | |
| CONT | SECT | JOB | HIGHWAY |
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 40 | |

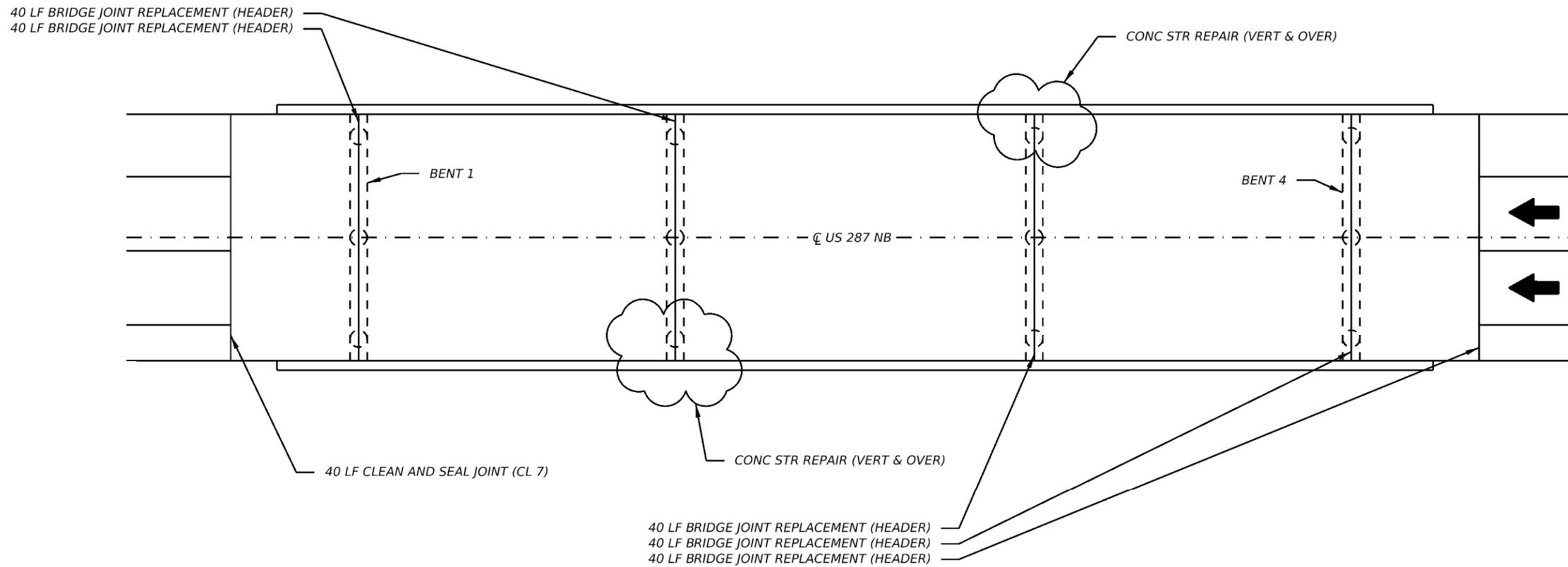
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| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 429-6007 | CONC STR REPAIR (VERTICAL & OVERHEAD) | 15 SF |
| 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL7) | 40 LF |
| 785-6013 | BRIDGE JOINT REPLACEMENT (HEADER) | 200 LF |

NOTES:

1. CONCRETE REPAIRS SHALL BE DONE IN ACCORDANCE WITH ITEM 429 AND AS SHOWN WITHIN THE "CONCRETE REPAIR MANUAL".
2. DAMAGE TO SOUND CONCRETE OR TO REINFORCEMENT OUTSIDE THE REPAIR AREA WILL BE REPAIRED AT NO COST TO THE DEPARTMENT.
3. QUANTITIES ARE APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO BEGINNING WORK.
4. APPROVAL FROM THE ENGINEER SHALL BE OBTAINED FOR ALL MATERIAL AND METHODS OF APPLICATION PRIOR TO THE BEGINNING OF THE REPAIR WORK.
5. REFER TO "BRIDGE EXPANSION JOINT MAINTENANCE" DETAIL FOR BRIDGE JOINT REPLACEMENT.



EXISTING - 3 SIMPLE SPAN PRESTRESSED CONCRETE BEAM BRIDGE
SPANS NW TO SE: 50', 55', 50'

NBI: NBI: 03-243-0-0043-08-126



Christian J. Sierra, P.E.
12/20/2023



REFERENCE #12
BRIDGE LAYOUT
US 287 NB OVER BUS 287
NOT TO SCALE

| FOR AREA OFFICE USE ONLY | | | |
|--------------------------|----------------|----------------|-------------------|
| FUA ID | DATE COMPLETED | PICTURES TAKEN | ASSETWISE UPDATED |
| 593326 | | | |
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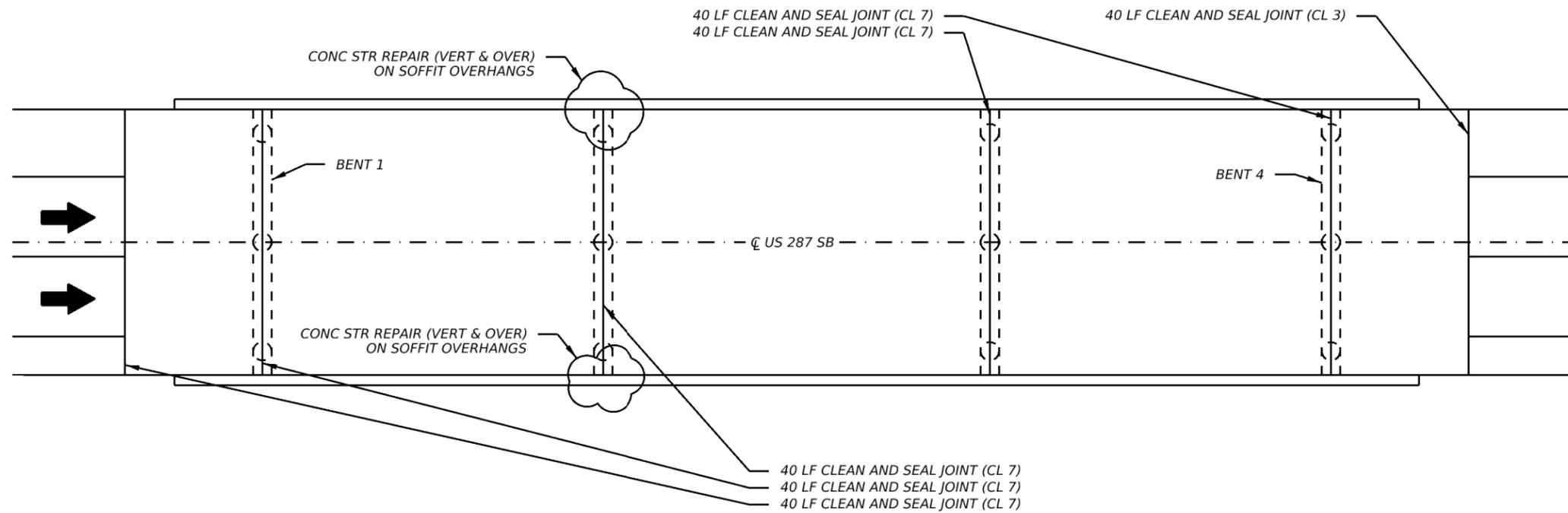
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| ©TxDOT 2024 | | SHEET 1 OF 1 | |
| CONT | SECT | JOB | HIGHWAY |
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 41 | |

DATE: 12/18/2023 10:32:23 AM
FILE: pw://txdot.projectwiseonline.com/TXDOT2/Documents/03 - WFS/Design Projects/090300123/4 - Design/Plan Set/7 - Bridge/REFERENCE LAYOUTS.dgn



| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 429-6003 | CONC STR REPAIR(DECK REP(PART DEPTH)) | 34 SF |
| 429-6007 | CONC STR REPAIR (VERTICAL & OVERHEAD) | 50 SF |
| 438-6002 | CLEANING AND SEALING EXIST JOINTS(CL3) | 40 LF |
| 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL7) | 200 LF |
| 785-6006 | BRIDGE JOINT REPAIR (HEADER) | 40 LF |

- NOTES:
1. CONCRETE REPAIRS SHALL BE DONE IN ACCORDANCE WITH ITEM 429 AND AS SHOWN WITHIN THE "CONCRETE REPAIR MANUAL".
 2. DAMAGE TO SOUND CONCRETE OR TO REINFORCEMENT OUTSIDE THE REPAIR AREA WILL BE REPAIRED AT NO COST TO THE DEPARTMENT.
 3. QUANTITIES ARE APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO BEGINNING WORK.
 4. APPROVAL FROM THE ENGINEER SHALL BE OBTAINED FOR ALL MATERIAL AND METHODS OF APPLICATION PRIOR TO THE BEGINNING OF THE REPAIR WORK.



EXISTING - 3 SIMPLE SPAN PRESTRESSED CONCRETE BEAM BRIDGE
SPANS NW TO SE: 50', 55', 50'

NBI: NBI: 03-243-0-0043-08-127



Christian J. Sierra, P.E.
12/20/2023



REFERENCE #13
BRIDGE LAYOUT
US 287 SB OVER
BUS 287/LOOP 477
NOT TO SCALE

| FOR AREA OFFICE USE ONLY | | | |
|--------------------------|----------------|----------------|-------------------|
| FUA ID | DATE COMPLETED | PICTURES TAKEN | ASSETWISE UPDATED |
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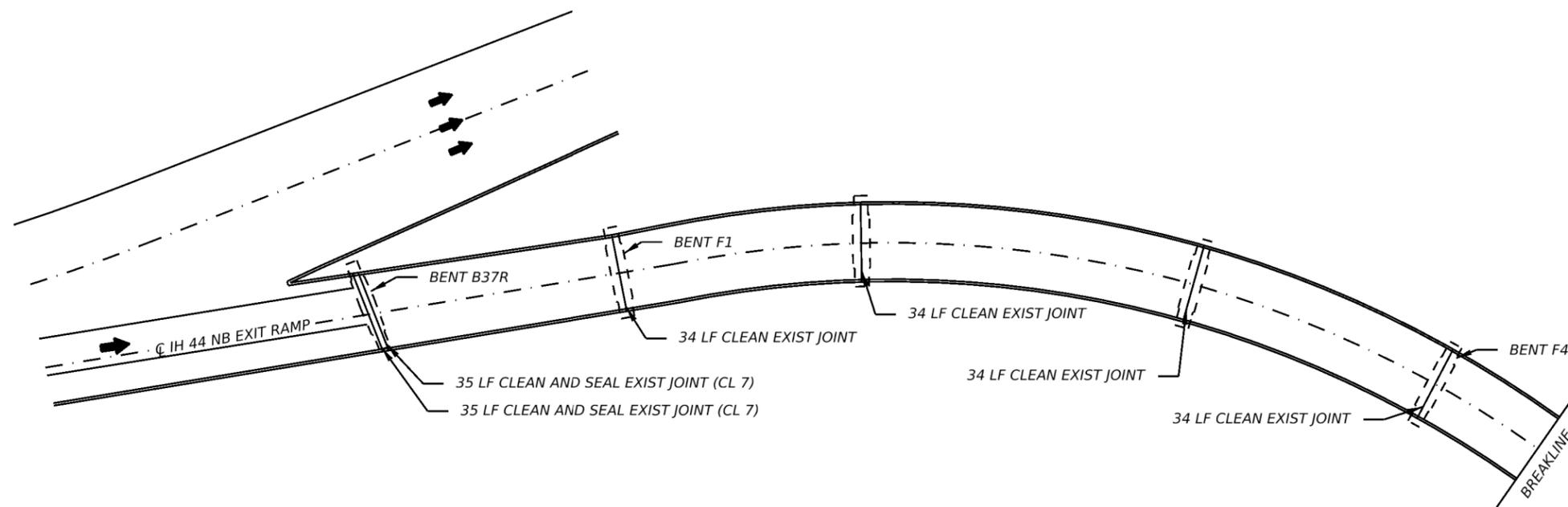
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| ©TxDOT 2024 | | SHEET 1 OF 1 | |
| CONT | SECT | JOB | HIGHWAY |
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 42 | |



| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 429-6003 | CONC STR REPAIR(DECK REP(PART DEPTH)) | 6 SF |
| 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL7) | 96 LF |
| 438-6009 | CLEANING EXISTING JOINTS | 326 LF |

NOTES:

1. CONCRETE REPAIRS SHALL BE DONE IN ACCORDANCE WITH ITEM 429 AND AS SHOWN WITHIN THE "CONCRETE REPAIR MANUAL".
2. DAMAGE TO SOUND CONCRETE OR TO REINFORCEMENT OUTSIDE THE REPAIR AREA WILL BE REPAIRED AT NO COST TO THE DEPARTMENT.
3. QUANTITIES ARE APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO BEGINNING WORK.
4. APPROVAL FROM THE ENGINEER SHALL BE OBTAINED FOR ALL MATERIAL AND METHODS OF APPLICATION PRIOR TO THE BEGINNING OF THE REPAIR WORK.
5. THE CONTRACTOR SHALL USE TWO MESSAGE BOARDS AT THIS LOCATION. INSTALL MESSAGE BOARDS DIRECTING TRAFFIC TO TAKE THE BROAD ST EXIT ON US 277 NORTHBOUND AND US 287 NORTHBOUND, OR AS OTHERWISE DIRECTED BY THE ENGINEER. THE RAMP SHALL OTHERWISE BE CLOSED IN ACCORDANCE WITH TCP (6-4)-12.



**EXISTING - 10 SPAN BRIDGE
(7 CONTINUOUS PLATE GIRDER & 3 PRESTRESSED CONCRETE U-BEAM SPANS)
(VA. SKEW)**

SPANS SE TO NE: 115.8', (111.5', 154.2', 121.4',
137.8', 137.8', 160.8', 160.8'), 106.6', 106.6'

NBI: 03-243-0-0043-09-187



Christian J. Sierra, P.E.

12/20/2023



**REFERENCE #14
BRIDGE LAYOUT
IH 44 NB EXIT RAMP
OVER 6TH ST
NOT TO SCALE**

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| FOR AREA OFFICE USE ONLY | | | |
|--------------------------|----------------|----------------|-------------------|
| FUA ID | DATE COMPLETED | PICTURES TAKEN | ASSETWISE UPDATED |
| 543363 | | | |

| CONT | SECT | JOB | HIGHWAY |
|------|---------------|-----------|-------------|
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 43 | |

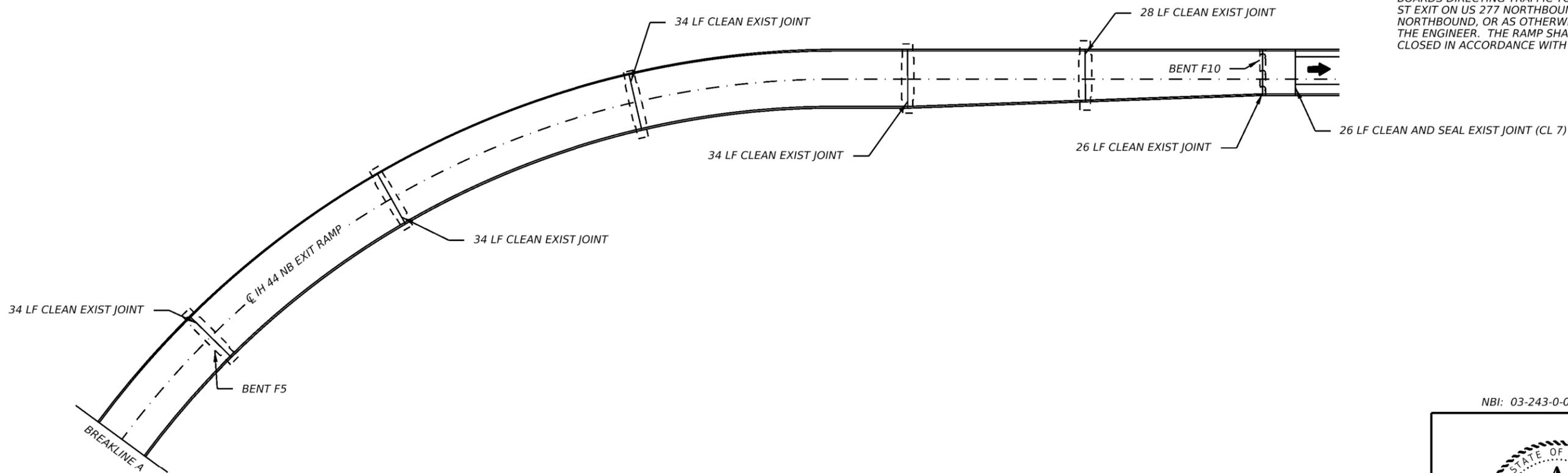
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| ITEM | DESCRIPTION | QUANTITY |
|-------------|-------------|----------|
| SEE SHEET 1 | | |



NOTES:

1. CONCRETE REPAIRS SHALL BE DONE IN ACCORDANCE WITH ITEM 429 AND AS SHOWN WITHIN THE "CONCRETE REPAIR MANUAL".
2. DAMAGE TO SOUND CONCRETE OR TO REINFORCEMENT OUTSIDE THE REPAIR AREA WILL BE REPAIRED AT NO COST TO THE DEPARTMENT.
3. QUANTITIES ARE APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO BEGINNING WORK.
4. APPROVAL FROM THE ENGINEER SHALL BE OBTAINED FOR ALL MATERIAL AND METHODS OF APPLICATION PRIOR TO THE BEGINNING OF THE REPAIR WORK.
5. THE CONTRACTOR SHALL USE TWO MESSAGE BOARDS AT THIS LOCATION. INSTALL MESSAGE BOARDS DIRECTING TRAFFIC TO TAKE THE BROAD ST EXIT ON US 277 NORTHBOUND AND US 287 NORTHBOUND, OR AS OTHERWISE DIRECTED BY THE ENGINEER. THE RAMP SHALL OTHERWISE BE CLOSED IN ACCORDANCE WITH TCP (6-4)-12.



EXISTING - 10 SPAN BRIDGE
(7 CONTINUOUS PLATE GIRDER & 3 PRESTRESSED CONCRETE U-BEAM SPANS)
(VA. SKEW)

SPANS SE TO NE: 115.8', (111.5', 154.2', 121.4',
 137.8', 137.8', 160.8', 160.8'), 106.6', 106.6'

NBI: 03-243-0-0043-09-187



Christian J. Sierra, P.E.

12/20/2023



REFERENCE #14
BRIDGE LAYOUT
IH 44 NB EXIT RAMP
OVER 6TH ST
 NOT TO SCALE

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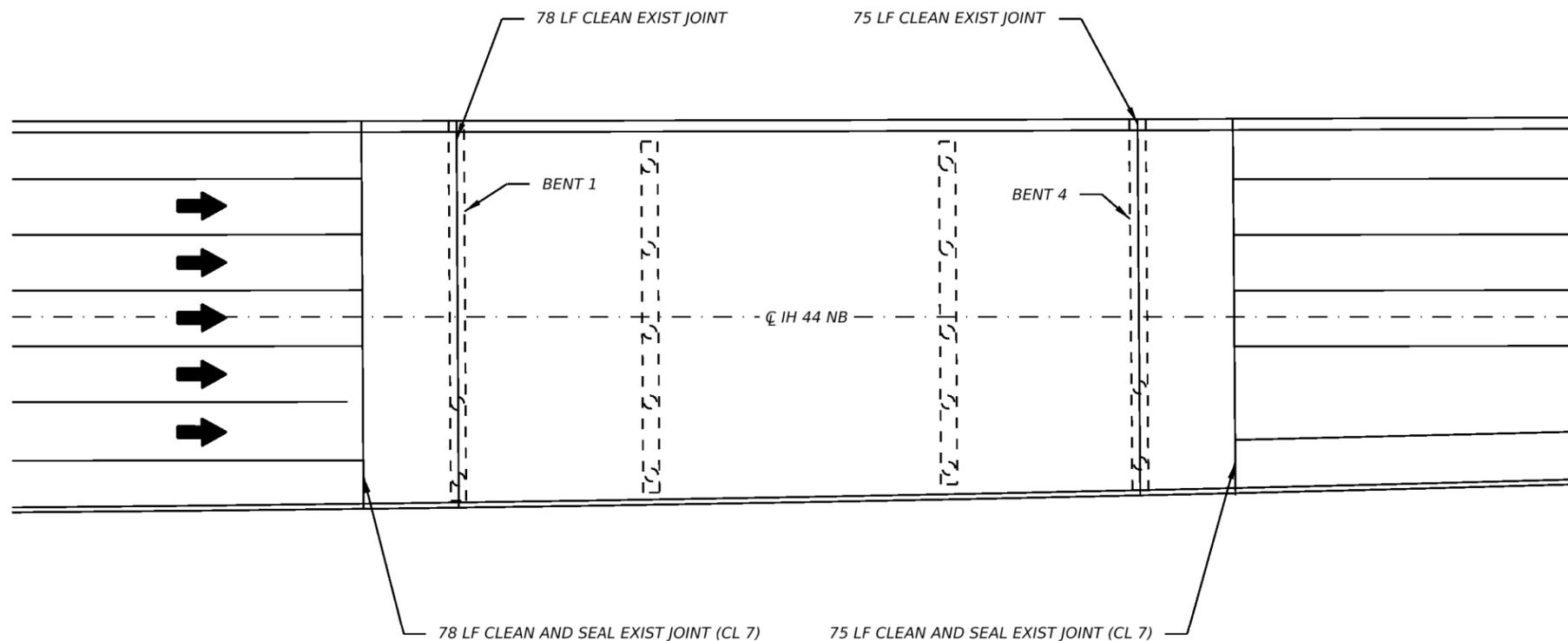
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| CONT | SECT | JOB | HIGHWAY |
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| DIST | COUNTY | SHEET NO. | |
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| ITEM | DESCRIPTION | QUANTITY |
|----------|---|----------|
| 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL 7) | 153 LF |
| 438-6009 | CLEANING EXISTING JOINTS | 153 LF |



EXISTING - 3 CONTINUOUS SPAN STEEL I-BEAM BRIDGE
 SPANS SE TO NW: 40', 62.5', 40'

NBI: 03-243-0-0043-09-189



Christian J. Sierra, P.E.

12/20/2023



**REFERENCE #15
 BRIDGE LAYOUT
 IH 44 NB OVER
 5TH STREET
 NOT TO SCALE**

| FOR AREA OFFICE USE ONLY | | | |
|--------------------------|----------------|----------------|-------------------|
| FUA ID | DATE COMPLETED | PICTURES TAKEN | ASSETWISE UPDATED |
| 543128 | | | |

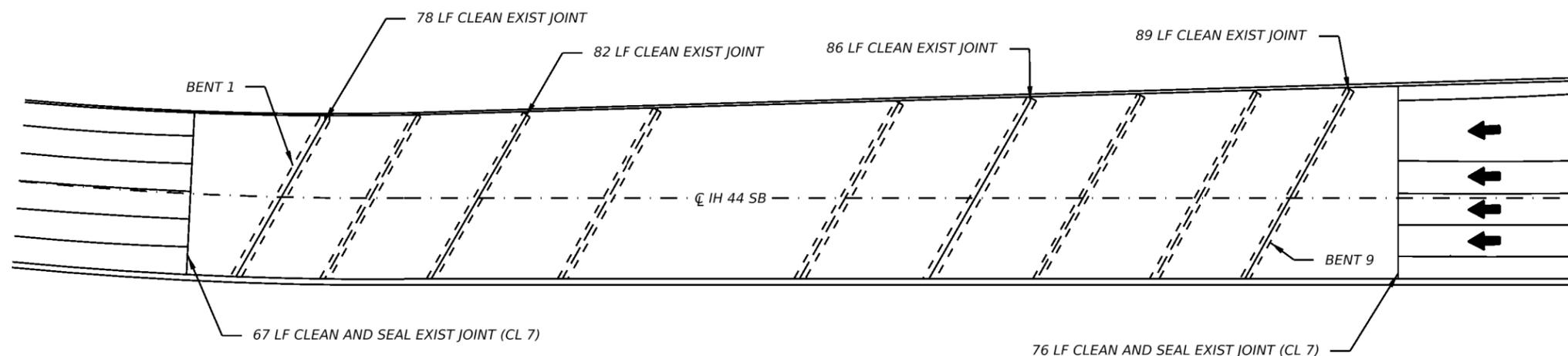
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| DIST | | COUNTY | | SHEET NO. | |
| WFS | | WICHITA, ETC. | | 45 | |

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| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL7) | 143 LF |
| 438-6009 | CLEANING EXISTING JOINTS | 335 LF |



EXISTING - 8 CONTINUOUS SPAN STEEL I-BEAM BRIDGE (30° LF SKEW)
 SPANS SE TO NW: (36.9', 45'), (55', 100', 55'), (45', 50', 36.9')

NBI: 03-243-0-0043-09-202



Christian J. Sierra, P.E.

12/20/2023



**REFERENCE #16
 BRIDGE LAYOUT
 IH 44 SB OVER
 WICHITA RIVER**
 NOT TO SCALE

© TxDOT 2024 SHEET 1 OF 1

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| FUA ID | DATE COMPLETED | PICTURES TAKEN | ASSETWISE UPDATED |
| 543134 | | | |

| CONT | SECT | JOB | HIGHWAY |
|------|---------------|-----------|-------------|
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 46 | |

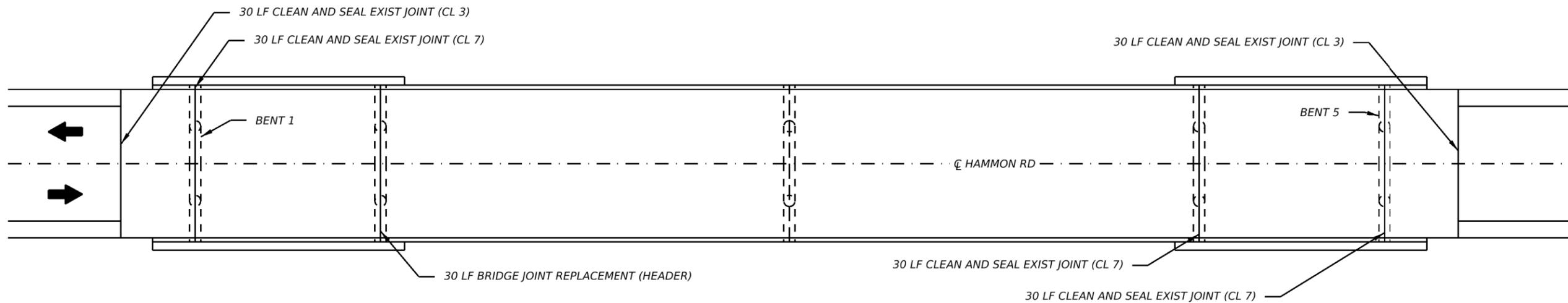
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NOTES:

1. CONCRETE REPAIRS SHALL BE DONE IN ACCORDANCE WITH ITEM 429 AND AS SHOWN WITHIN THE "CONCRETE REPAIR MANUAL".
2. DAMAGE TO SOUND CONCRETE OR TO REINFORCEMENT OUTSIDE THE REPAIR AREA WILL BE REPAIRED AT NO COST TO THE DEPARTMENT.
3. QUANTITIES ARE APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO BEGINNING WORK.
4. APPROVAL FROM THE ENGINEER SHALL BE OBTAINED FOR ALL MATERIAL AND METHODS OF APPLICATION PRIOR TO THE BEGINNING OF THE REPAIR WORK.
5. REFER TO "JOINT REPAIR DETAILS" FOR BRIDGE JOINT REPLACEMENT.

| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 429-6003 | CONC STR REPAIR(DECK REP(PART DEPTH)) | 3 SF |
| 438-6002 | CLEANING AND SEALING EXIST JOINTS(CL3) | 60 LF |
| 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL7) | 90 LF |
| 785-6013 | BRIDGE JOINT REPLACEMENT (HEADER) | 30 LF |



EXISTING - 4 SPAN PRESTRESSED CONCRETE GIRDER BRIDGE
 SPANS N TO S: 50', 73', 60', 50'

NBI: 03-243-0-0044-01-108



Christian J. Sierra, P.E.
 12/20/2023



REFERENCE #17
 BRIDGE LAYOUT
 HAMMON RD OVER
 US 82/US 287
 NOT TO SCALE

| | | | |
|--------------|---------------|--------------|-------------|
| © TxDOT 2024 | | SHEET 1 OF 1 | |
| CONT | SECT | JOB | HIGHWAY |
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 47 | |

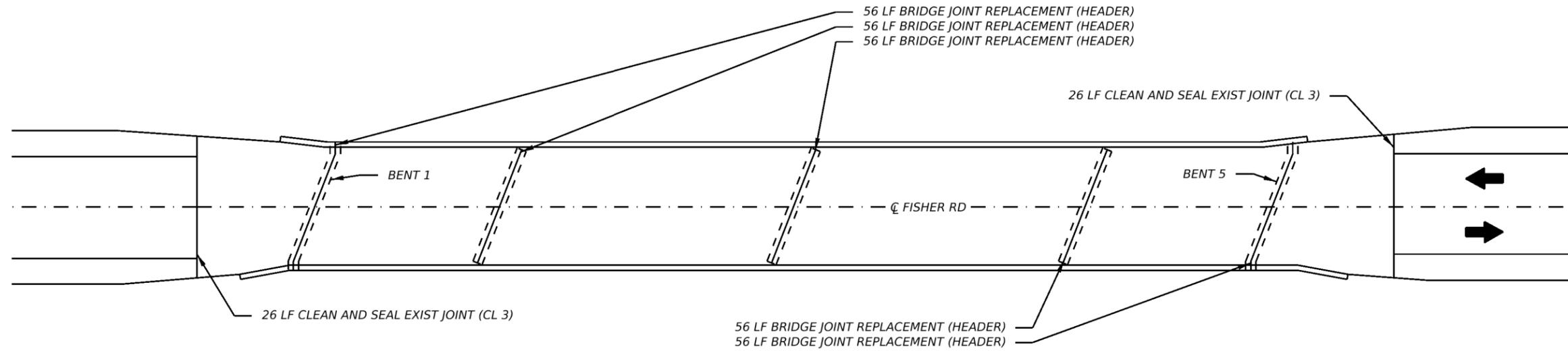
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NOTES:
 1. REFER TO "JOINT REPAIR DETAILS" FOR BRIDGE JOINT REPLACEMENT.

| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 438-6002 | CLEANING AND SEALING EXIST JOINTS(CL3) | 52 LF |
| 785-6013 | BRIDGE JOINT REPLACEMENT (HEADER) | 280 LF |



EXISTING - 4 SPAN PRESTRESSED CONCRETE BEAM BRIDGE (21° LF SKEW)
 SPANS S TO N: 40', 63', 63', 40'

NBI: 03-243-0-0044-01-109



Christian J. Sierra, P.E.

12/20/2023



REFERENCE #18
 BRIDGE LAYOUT
 FISHER RD OVER
 US 82/US 287
 NOT TO SCALE

| | | | |
|--------------|---------------|--------------|-------------|
| © TxDOT 2024 | | SHEET 1 OF 1 | |
| CONT | SECT | JOB | HIGHWAY |
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 48 | |

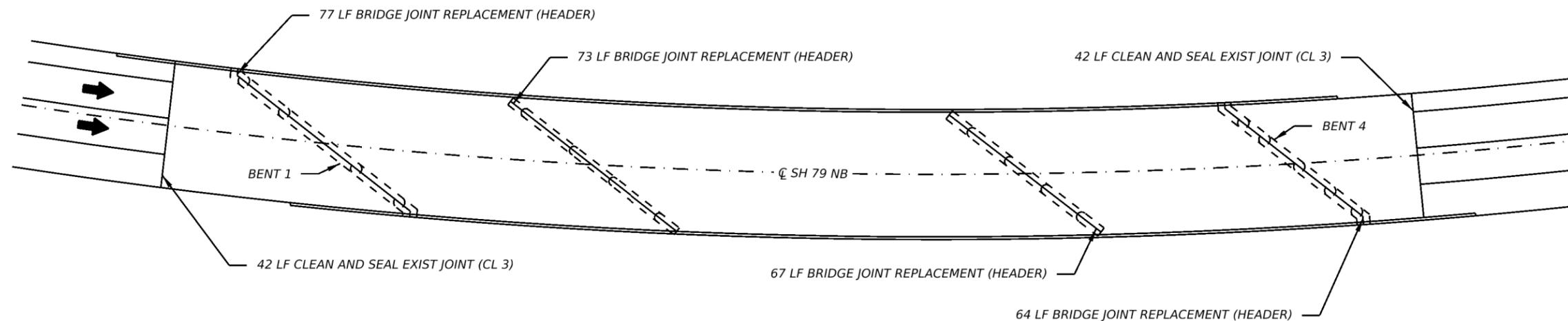
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NOTES:
1. REFER TO "JOINT REPAIR DETAILS" FOR BRIDGE JOINT REPLACEMENT.

| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 438-6002 | CLEANING AND SEALING EXIST JOINTS(CL3) | 84 LF |
| 785-6013 | BRIDGE JOINT REPLACEMENT (HEADER) | 281 LF |



EXISTING - 3 SIMPLE SPAN PRESTRESSED CONCRETE BEAM BRIDGE (VA. SKEW)
SPANS SW TO NE: 90', 128', 90'

NBI: 03-243-0-0044-01-120



Christian J. Sierra, P.E.
12/20/2023



REFERENCE #19
BRIDGE LAYOUT
SH 79 NB OVER
US 82 WB/US 287 NB
NOT TO SCALE

| FOR AREA OFFICE USE ONLY | | | |
|--------------------------|----------------|----------------|-------------------|
| FUA ID | DATE COMPLETED | PICTURES TAKEN | ASSETWISE UPDATED |
| 543179 | | | |

| CONT | | JOB | | HIGHWAY | |
|------|----|---------------|--|-------------|--|
| 0903 | 00 | 123 | | US 82, ETC. | |
| DIST | | COUNTY | | SHEET NO. | |
| WFS | | WICHITA, ETC. | | 49 | |

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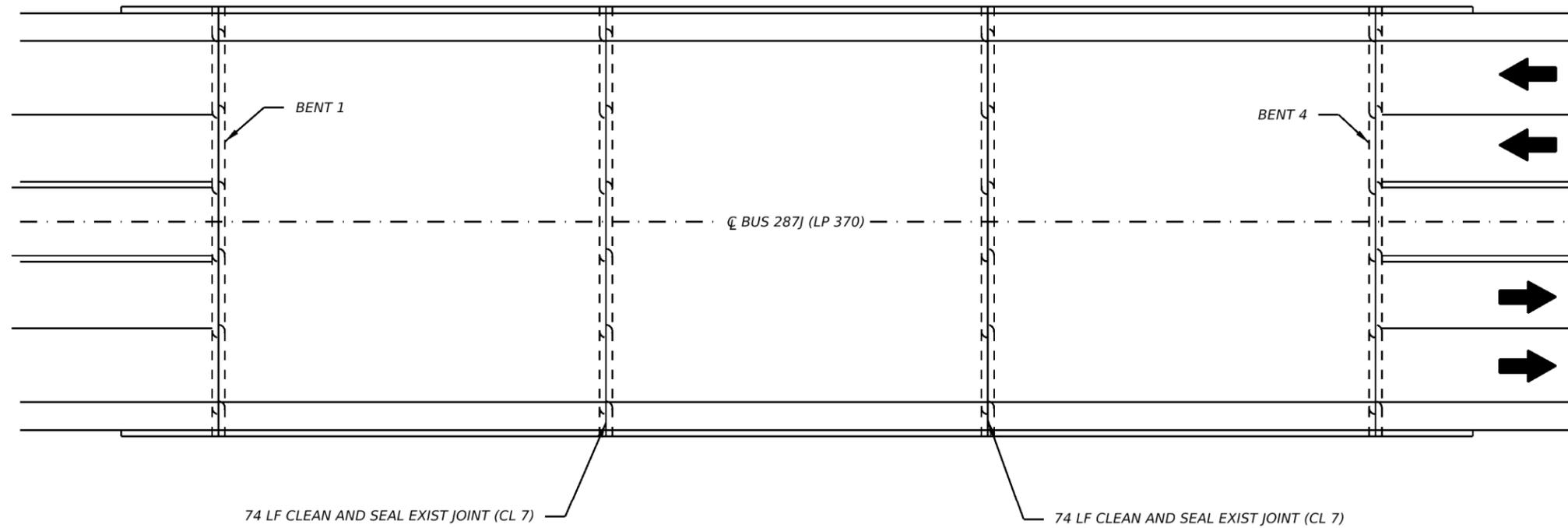
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| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 429-6003 | CONC STR REPAIR(DECK REP(PART DEPTH)) | 45 SF |
| 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL7) | 148 LF |

NOTES:

1. CONCRETE REPAIRS SHALL BE DONE IN ACCORDANCE WITH ITEM 429 AND AS SHOWN WITHIN THE "CONCRETE REPAIR MANUAL".
2. DAMAGE TO SOUND CONCRETE OR TO REINFORCEMENT OUTSIDE THE REPAIR AREA WILL BE REPAIRED AT NO COST TO THE DEPARTMENT.
3. QUANTITIES ARE APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO BEGINNING WORK.
4. APPROVAL FROM THE ENGINEER SHALL BE OBTAINED FOR ALL MATERIAL AND METHODS OF APPLICATION PRIOR TO THE BEGINNING OF THE REPAIR WORK.



EXISTING - 3 SIMPLE SPAN PRESTRESSED CONCRETE BEAM BRIDGE
SPANS W TO E: 70', 70', 70'

NBI: 03-243-0-0044-10-125



Christian J. Sierra, P.E.

12/20/2023



REFERENCE #20
BRIDGE LAYOUT
BUS 287J (LP 370)
OVER HOLLIDAY CREEK
NOT TO SCALE

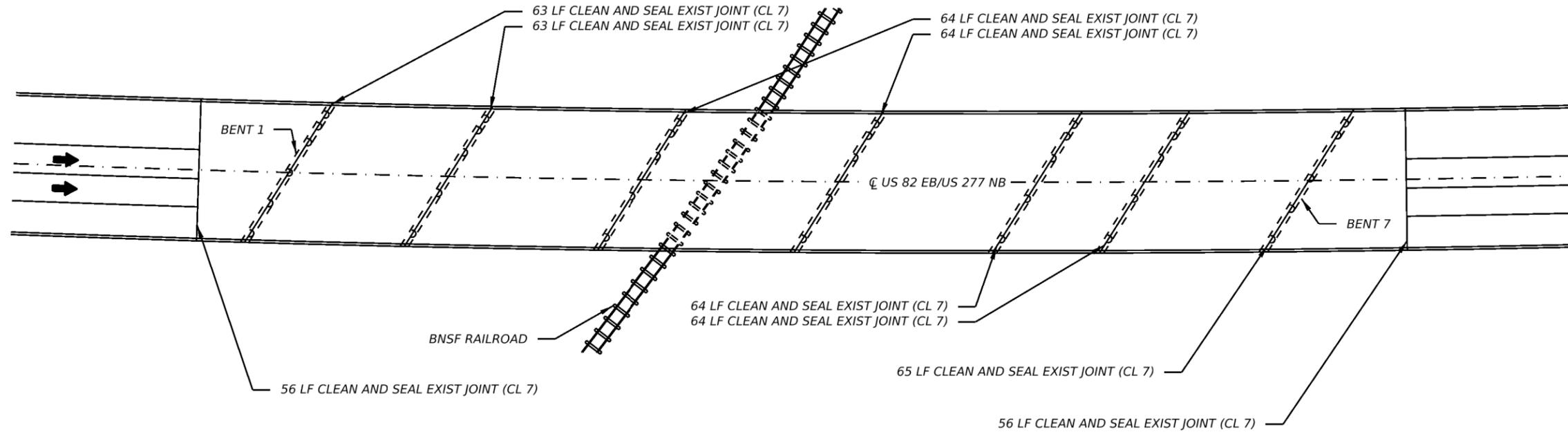
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| © TxDOT 2024 | | SHEET 1 OF 1 | |
| CONT | SECT | JOB | HIGHWAY |
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 50 | |

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| ITEM | DESCRIPTION | QUANTITY |
|----------|---|----------|
| 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL 7) | 559 LF |



EXISTING - 6 SIMPLE SPAN PRESTRESSED CONCRETE I-BEAM BRIDGE (32° LF SKEW)
 SPANS W TO E: 65.5', 79.5', 79.8', 80.2', 43.2', 66.8'

NBI: 03-243-0-0156-04-061



Christian J. Sierra, P.E.
 12/20/2023



**REFERENCE #21
 BRIDGE LAYOUT
 US 82 EB/US 277 NB
 OVER BN RR
 (FUT ALEXANDRIA ST)
 NOT TO SCALE**

| FOR AREA OFFICE USE ONLY | | | |
|--------------------------|----------------|----------------|-------------------|
| FUA ID | DATE COMPLETED | PICTURES TAKEN | ASSETWISE UPDATED |
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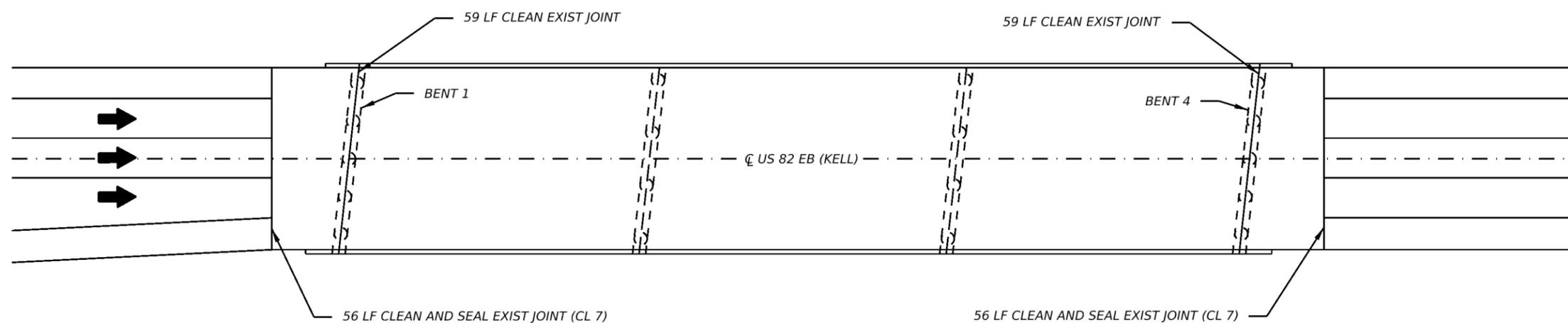
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| ITEM | DESCRIPTION | QUANTITY |
|----------|---|----------|
| 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL 7) | 112 LF |
| 438-6009 | CLEANING EXISTING JOINTS | 118 LF |



EXISTING - 3 CONTINUOUS POST TENSIONED CONCRETE SLAB SPANS BRIDGE (7° LF SKEW)
 SPANS W TO E: 90', 94.5', 90'

NBI: 03-243-0-0156-04-082



Christian J. Sierra, P.E.

12/20/2023



REFERENCE #22
 BRIDGE LAYOUT
 US 82 EB (KELL)
 OVER TAFT BLVD.
 NOT TO SCALE

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| 546801 | | | |

| CONT | SECT | JOB | HIGHWAY |
|------|---------------|-----------|-------------|
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
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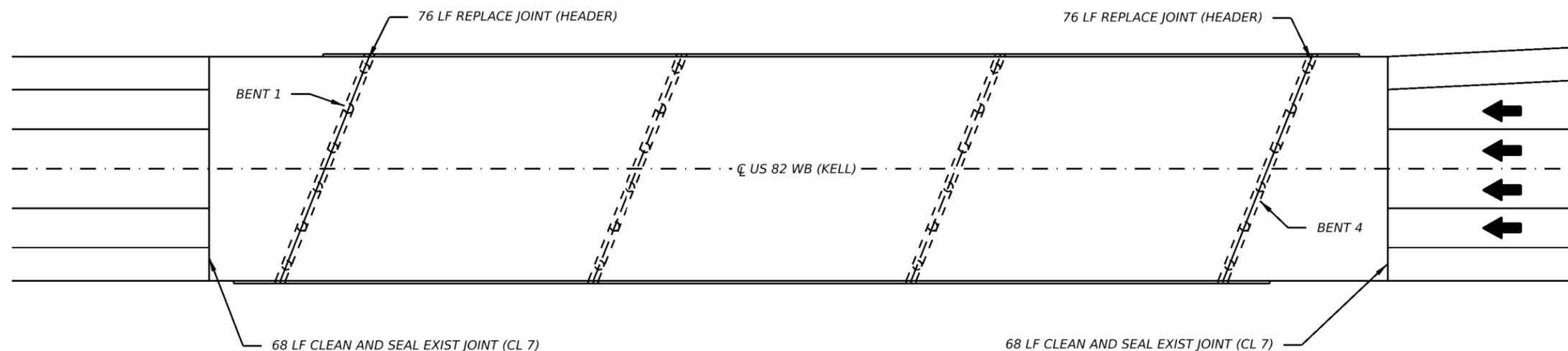
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- NOTES:
 1. REFER TO "JOINT REPAIR DETAILS" FOR BRIDGE JOINT REPLACEMENT.

| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL7) | 136 LF |
| 785-6013 | BRIDGE JOINT REPLACEMENT (HEADER) | 152 LF |



EXISTING - 3 CONTINUOUS POST TENSIONED CONCRETE SLAB SPANS BRIDGE (22° LF SKEW)
 SPANS W TO E: 95', 98', 95'

NBI: 03-243-0-0156-04-087



Christian J. Sierra, P.E.

12/20/2023



REFERENCE #23
 BRIDGE LAYOUT
 US 82 WB (KELL)
 OVER HARRISON STREET
 NOT TO SCALE

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| FUA ID | DATE COMPLETED | PICTURES TAKEN | ASSETWISE UPDATED |
| 543230 | | | |

| CONT | SECT | JOB | HIGHWAY |
|------|---------------|-----------|-------------|
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 53 | |

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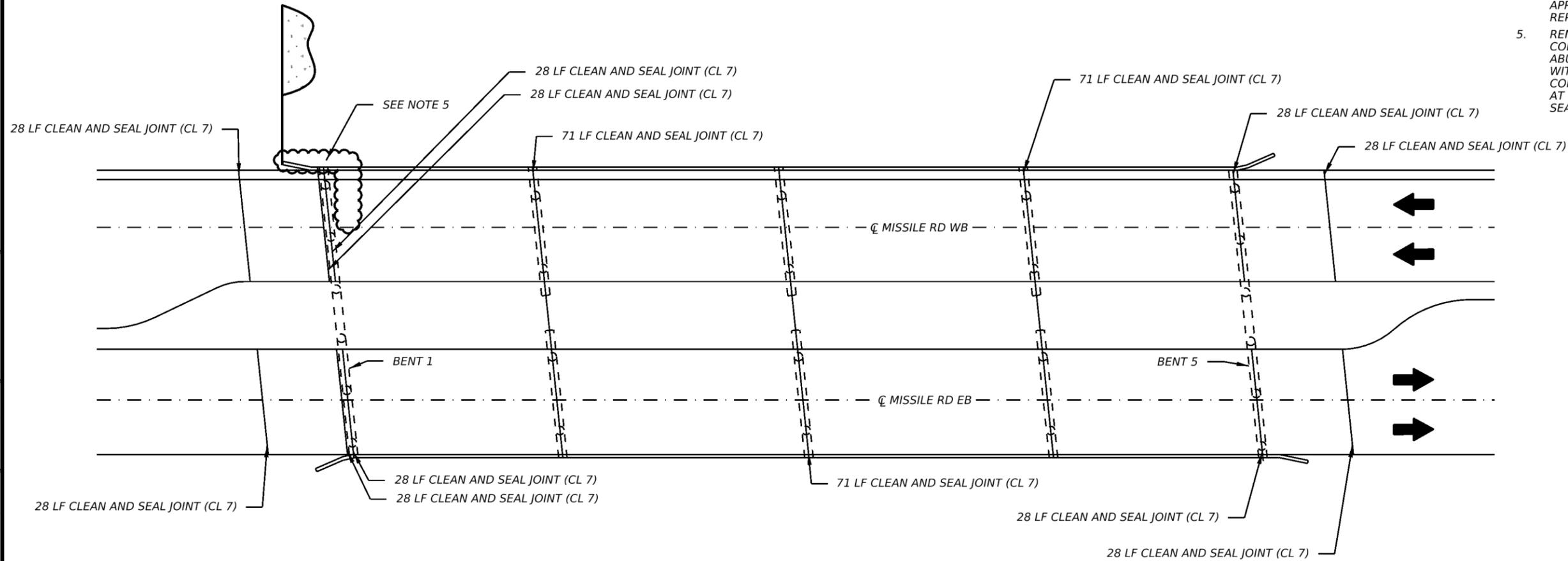
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| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 104-6009 | REMOVING CONC (RIPRAP) | 5 SY |
| 401-6001 | FLOWABLE BACKFILL | 6 CY |
| 432-6006 | RIPRAP (CONC)(CL B) | 2 CY |
| 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL7) | 493 LF |

NOTES:

1. CONCRETE REPAIRS SHALL BE DONE IN ACCORDANCE WITH ITEM 429 AND AS SHOWN WITHIN THE "CONCRETE REPAIR MANUAL".
2. DAMAGE TO SOUND CONCRETE OR TO REINFORCEMENT OUTSIDE THE REPAIR AREA WILL BE REPAIRED AT NO COST TO THE DEPARTMENT.
3. QUANTITIES ARE APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO BEGINNING WORK.
4. APPROVAL FROM THE ENGINEER SHALL BE OBTAINED FOR ALL MATERIAL AND METHODS OF APPLICATION PRIOR TO THE BEGINNING OF THE REPAIR WORK.
5. REMOVE 3 FT WIDE BY 4 IN THICK SECTION OF CONCRETE RIPRAP ALONG EXISTING JOINT AT ABUTMENT AT THE AREA SHOWN. FILL VOID WITH FLOWABLE BACKFILL. REPLACE REMOVED CONCRETE WITH NEW CL B CONCRETE RIPRAP AT 4 IN THICKNESS. SEAL JOINTS WITH CL 5 SEALANT IN ACCORDANCE WITH ITEM 438-6003.



EXISTING - 4 SIMPLE SPAN PRESTRESSED CONCRETE BEAM BRIDGE (6° RF SKEW)
 SPANS W TO E: 50', 58', 58', 50'

MISSILE RD WB NBI: 03-243-0-0156-07-035
 MISSILE RD EB NBI: 03-243-0-0156-07-034



Christian J. Sierra, P.E.

12/20/2023



REFERENCE #24
 BRIDGE LAYOUT
 MISSILE RD
 OVER IH 44 EB
 NOT TO SCALE

| FOR AREA OFFICE USE ONLY | | | |
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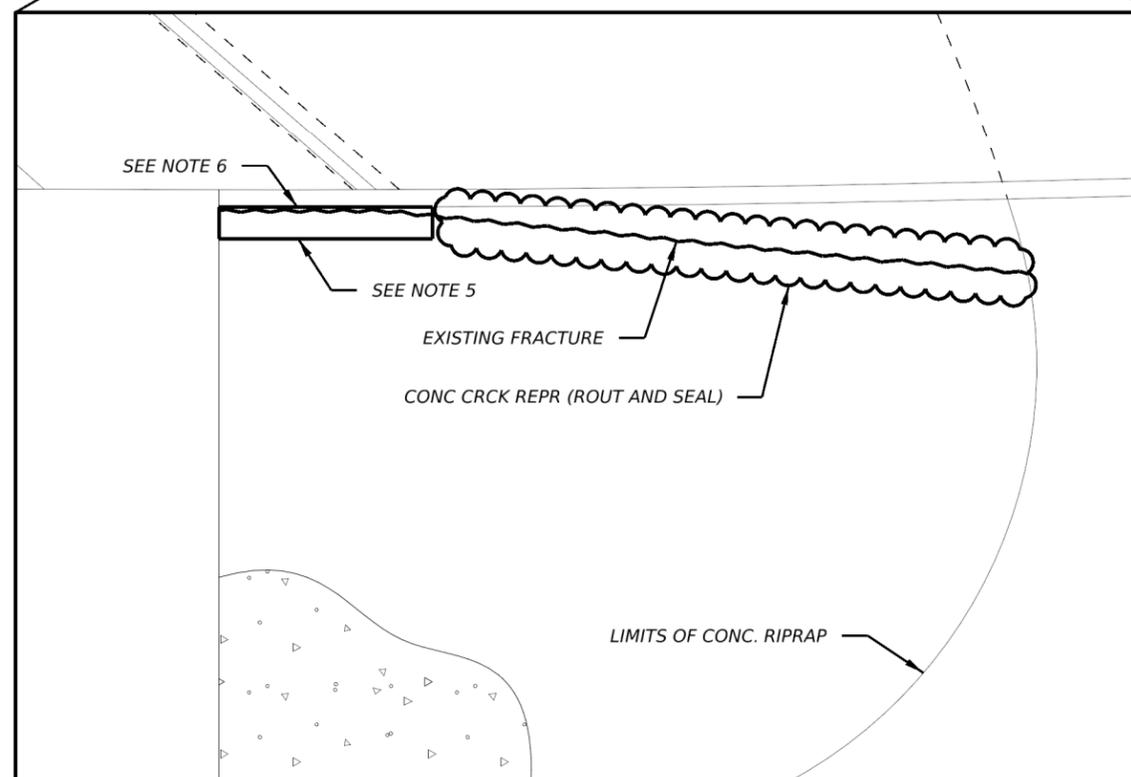
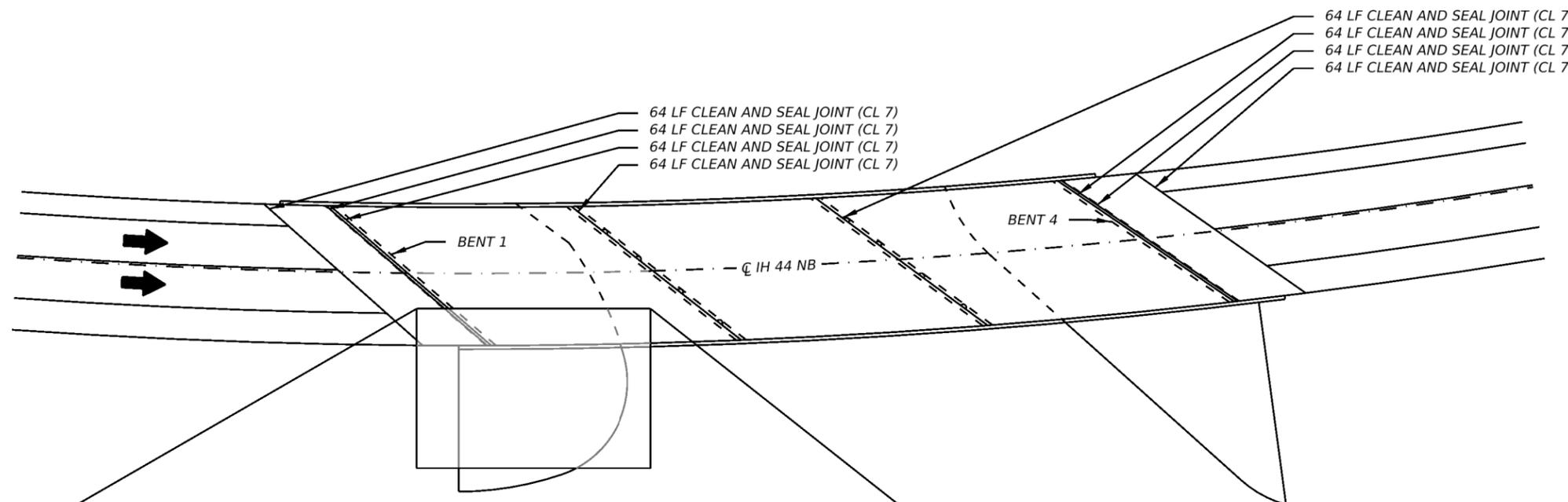
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| CONT | SECT | JOB | HIGHWAY |
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| ITEM | DESCRIPTION | QUANTITY |
|----------|---|----------|
| 104-6009 | REMOVING CONC (RIPRAP) | 5 SY |
| 401-6001 | FLOWABLE BACKFILL | 6 CY |
| 432-6006 | RIPRAP (CONC)(CL B) | 2 CY |
| 438-6002 | CLEANING AND SEALING EXIST JOINTS(CL3) | 512 LF |
| 438-6003 | CLEANING AND SEALING EXIST JOINTS(CL5) | 40 LF |
| 780-6004 | CONC CRCK REPR(DISCRETE)(ROUT AND SEAL) | 60 LF |

EXISTING - 3 SIMPLE SPAN PRESTRESSED CONCRETE BEAM BRIDGE (39° RF SKEW)
 SPANS SE TO NW: 75', 75', 75'



NOTES:

1. CONCRETE REPAIRS SHALL BE DONE IN ACCORDANCE WITH ITEM 429 AND AS SHOWN WITHIN THE "CONCRETE REPAIR MANUAL".
2. DAMAGE TO SOUND CONCRETE OR TO REINFORCEMENT OUTSIDE THE REPAIR AREA WILL BE REPAIRED AT NO COST TO THE DEPARTMENT.
3. QUANTITIES ARE APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO BEGINNING WORK.
4. APPROVAL FROM THE ENGINEER SHALL BE OBTAINED FOR ALL MATERIAL AND METHODS OF APPLICATION PRIOR TO THE BEGINNING OF THE REPAIR WORK.
5. REMOVE 3 FT WIDE BY 4 IN THICK SECTION OF CONCRETE RIPRAP ALONG EXISTING FRACTURE. FILL VOID WITH FLOWABLE BACKFILL. REPLACE REMOVED CONCRETE WITH NEW CL B CONCRETE RIPRAP AT 4 IN THICKNESS. SEAL JOINTS WITH CL 5 SEALANT IN ACCORDANCE WITH ITEM 438-6003.
6. THE EXISTING JOINT CONNECTING THE RIPRAP AND ABUTMENT HAVE ASBESTOS-CONTAINING MATERIALS (ACM). THE JOINT SHALL NOT BE DISTURBED.

NBI: 03-243-0-0156-07-039



Christian J. Sierra, P.E.

12/20/2023



**REFERENCE #25
 BRIDGE LAYOUT
 IH 44 NB OVER
 SP 325 SB CONN H**
 NOT TO SCALE

| FOR AREA OFFICE USE ONLY | | | |
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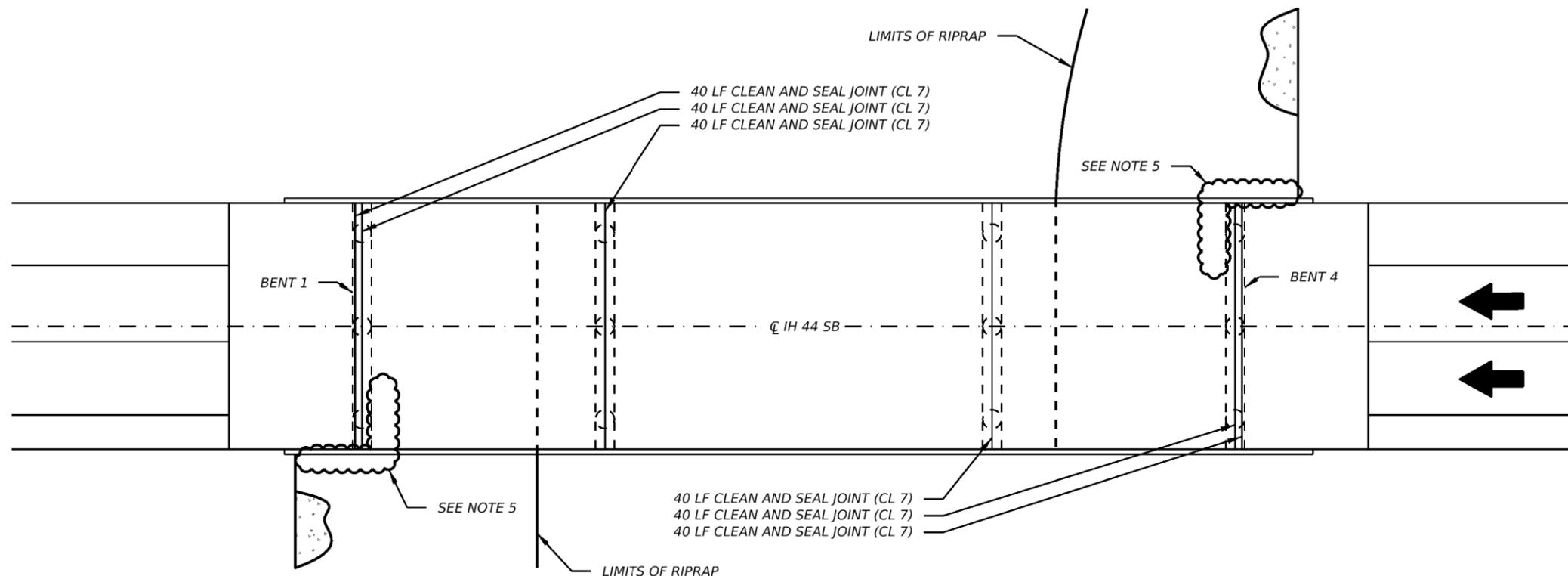
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| © TxDOT 2024 | | SHEET 1 OF 1 | |
| CONT | SECT | JOB | HIGHWAY |
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 55 | |

| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 104-6009 | REMOVING CONC (RIPRAP) | 5 SY |
| 401-6001 | FLOWABLE BACKFILL | 6 CY |
| 432-6006 | RIPRAP (CONC)(CL B) | 2 CY |
| 438-6003 | CLEANING AND SEALING EXIST JOINTS(CL5) | 40 LF |
| 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL7) | 240 LF |



NOTES:

1. CONCRETE REPAIRS SHALL BE DONE IN ACCORDANCE WITH ITEM 429 AND AS SHOWN WITHIN THE "CONCRETE REPAIR MANUAL".
2. DAMAGE TO SOUND CONCRETE OR TO REINFORCEMENT OUTSIDE THE REPAIR AREA WILL BE REPAIRED AT NO COST TO THE DEPARTMENT.
3. QUANTITIES ARE APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO BEGINNING WORK.
4. APPROVAL FROM THE ENGINEER SHALL BE OBTAINED FOR ALL MATERIAL AND METHODS OF APPLICATION PRIOR TO THE BEGINNING OF THE REPAIR WORK.
5. REMOVE 3 FT WIDE BY 4 IN THICK SECTION OF CONCRETE RIPRAP ALONG EXISTING JOINT AT ABUTMENT AT AREAS SHOWN. FILL VOID WITH FLOWABLE BACKFILL. REPLACE REMOVED CONCRETE WITH NEW CL B CONCRETE RIPRAP AT 4 IN THICKNESS. SEAL JOINTS WITH CL 5 SEALANT IN ACCORDANCE WITH ITEM 438-6003.



EXISTING - 3 SIMPLE SPAN PRESTRESSED CONCRETE BEAM BRIDGE
 SPANS SW TO NE: 40', 62.5', 40'

NBI: 03-243-0-0156-07-040



Christian J. Sierra, P.E.

12/20/2023



REFERENCE #26
 BRIDGE LAYOUT
 IH 44 SB OVER
 LOOP 267/SH 240
 NOT TO SCALE

| FOR AREA OFFICE USE ONLY | | | |
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| FUA ID | DATE COMPLETED | PICTURES TAKEN | ASSETWISE UPDATED |
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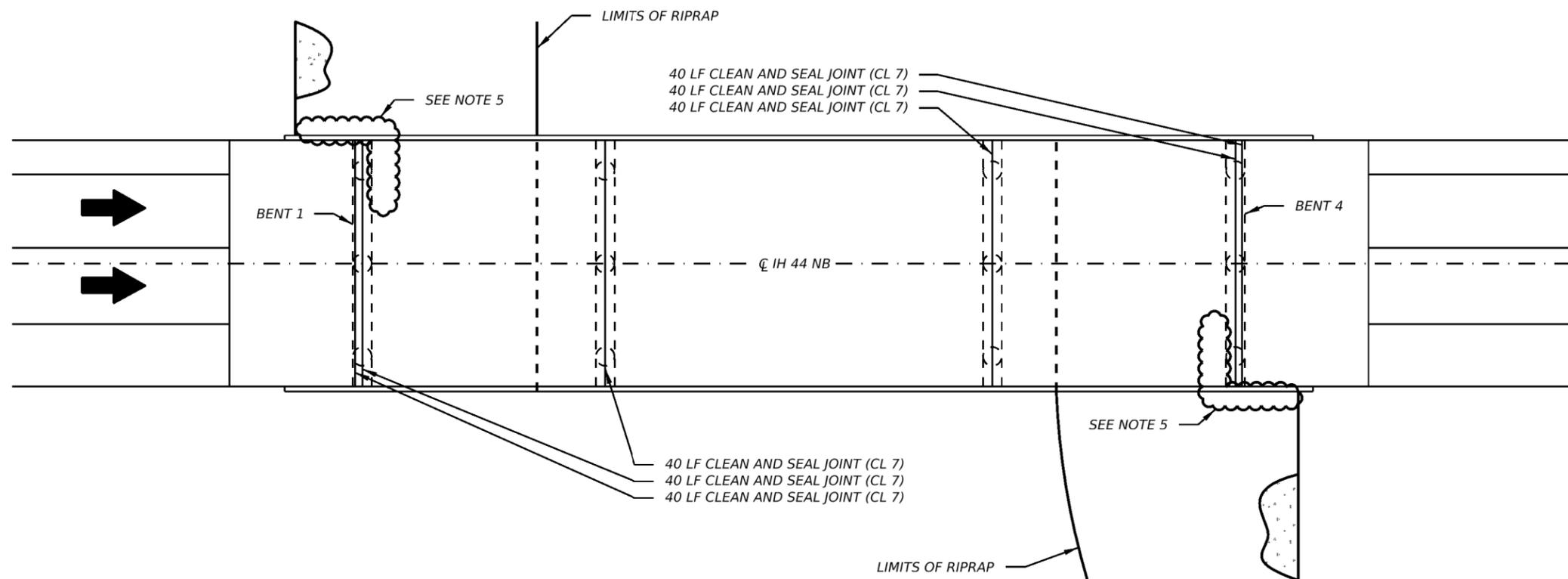
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| © TxDOT 2024 | | SHEET 1 OF 1 | |
| CONT | SECT | JOB | HIGHWAY |
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 56 | |



| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 104-6009 | REMOVING CONC (RIPRAP) | 5 SY |
| 401-6001 | FLOWABLE BACKFILL | 6 CY |
| 432-6006 | RIPRAP (CONC)(CL B) | 2 CY |
| 438-6003 | CLEANING AND SEALING EXIST JOINTS(CL5) | 40 LF |
| 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL7) | 240 LF |

NOTES:

1. CONCRETE REPAIRS SHALL BE DONE IN ACCORDANCE WITH ITEM 429 AND AS SHOWN WITHIN THE "CONCRETE REPAIR MANUAL".
2. DAMAGE TO SOUND CONCRETE OR TO REINFORCEMENT OUTSIDE THE REPAIR AREA WILL BE REPAIRED AT NO COST TO THE DEPARTMENT.
3. QUANTITIES ARE APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO BEGINNING WORK.
4. APPROVAL FROM THE ENGINEER SHALL BE OBTAINED FOR ALL MATERIAL AND METHODS OF APPLICATION PRIOR TO THE BEGINNING OF THE REPAIR WORK.
5. REMOVE 3 FT WIDE BY 4 IN THICK SECTION OF CONCRETE RIPRAP ALONG EXISTING JOINT AT ABUTMENT AT AREAS SHOWN. FILL VOID WITH FLOWABLE BACKFILL. REPLACE REMOVED CONCRETE WITH NEW CL B CONCRETE RIPRAP AT 4 IN THICKNESS. SEAL JOINTS WITH CL 5 SEALANT IN ACCORDANCE WITH ITEM 438-6003.



EXISTING - 3 SIMPLE SPAN PRESTRESSED CONCRETE BEAM BRIDGE
 SPANS SW TO NE: 40', 62.5', 40'

NBI: 03-243-0-0156-07-041



Christian J. Sierra, P.E.

12/20/2023



REFERENCE #27
 BRIDGE LAYOUT
 IH 44 NB OVER
 LOOP 267/SH 240
 NOT TO SCALE

| FOR AREA OFFICE USE ONLY | | | |
|--------------------------|----------------|----------------|-------------------|
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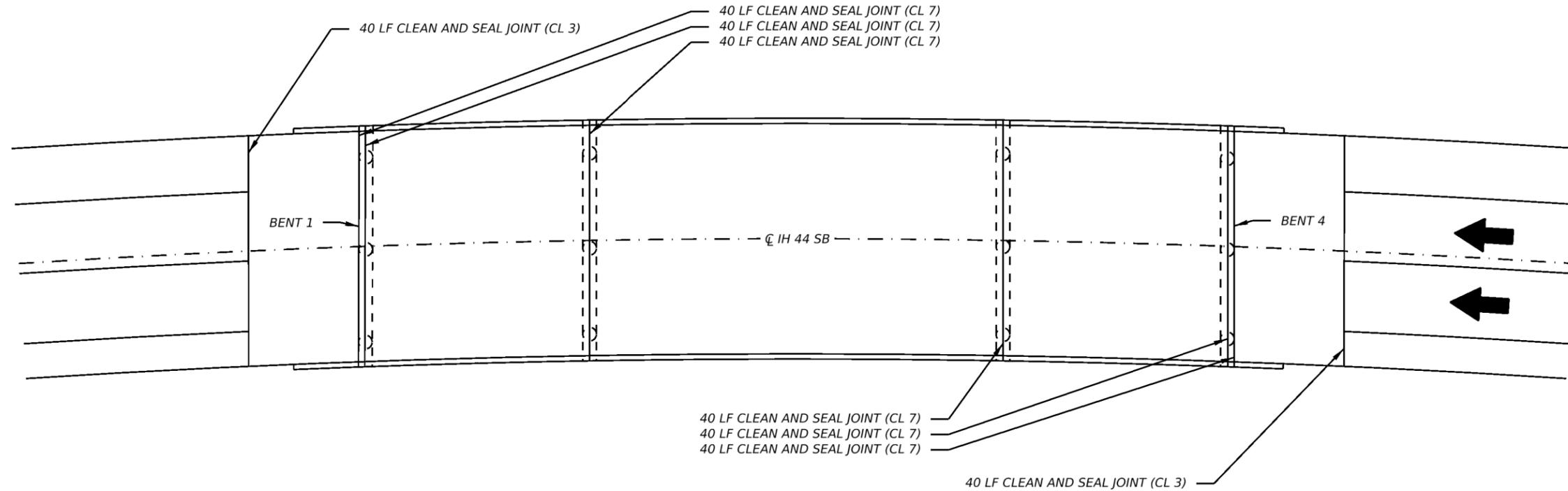
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| ©TxDOT 2024 | | SHEET 1 OF 1 | |
| CONT | SECT | JOB | HIGHWAY |
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 57 | |



| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 429-6003 | CONC STR REPAIR(DECK REP(PART DEPTH)) | 15 SF |
| 438-6002 | CLEANING AND SEALING EXIST JOINTS(CL3) | 80 LF |
| 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL7) | 240 LF |

NOTES:

1. CONCRETE REPAIRS SHALL BE DONE IN ACCORDANCE WITH ITEM 429 AND AS SHOWN WITHIN THE "CONCRETE REPAIR MANUAL".
2. DAMAGE TO SOUND CONCRETE OR TO REINFORCEMENT OUTSIDE THE REPAIR AREA WILL BE REPAIRED AT NO COST TO THE DEPARTMENT.
3. QUANTITIES ARE APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO BEGINNING WORK.
4. APPROVAL FROM THE ENGINEER SHALL BE OBTAINED FOR ALL MATERIAL AND METHODS OF APPLICATION PRIOR TO THE BEGINNING OF THE REPAIR WORK.



EXISTING - 3 SIMPLE SPAN PRESTRESSED CONCRETE BEAM BRIDGE
SPANS S TO N: 40', 72.5', 40'

NBI: 03-243-0-0156-07-043



Christian J. Sierra, P.E.

12/20/2023



REFERENCE #28
BRIDGE LAYOUT IH 44 SB
OVER SPUR 383/
GLENDALE ST
NOT TO SCALE

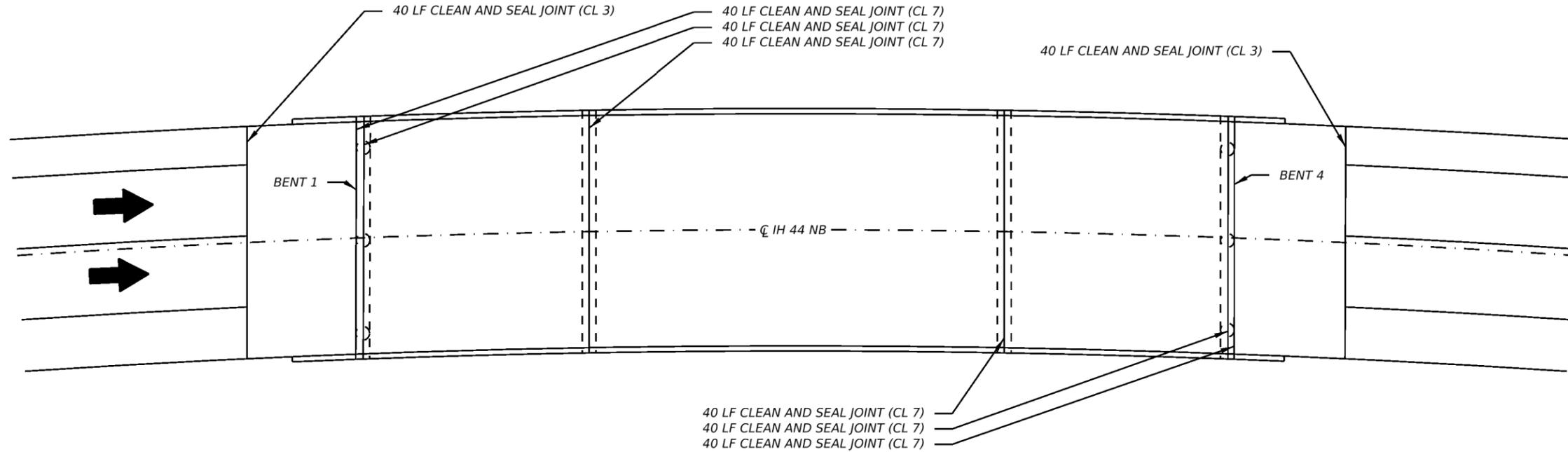
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| © TxDOT 2024 | | SHEET 1 OF 1 | |
| CONT | SECT | JOB | HIGHWAY |
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 58 | |

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| FUA ID | DATE COMPLETED | PICTURES TAKEN | ASSETWISE UPDATED |
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| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 438-6002 | CLEANING AND SEALING EXIST JOINTS(CL3) | 80 LF |
| 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL7) | 240 LF |



EXISTING - 3 SIMPLE SPAN PRESTRESSED CONCRETE BEAM BRIDGE
 SPANS S TO N: 40', 72.5', 40'

NBI: 03-243-0-0156-07-044



Christian J. Sierra, P.E.

12/20/2023



REFERENCE #29
BRIDGE LAYOUT IH 44 NB
OVER SPUR 383/
GLENDAL ST
 NOT TO SCALE

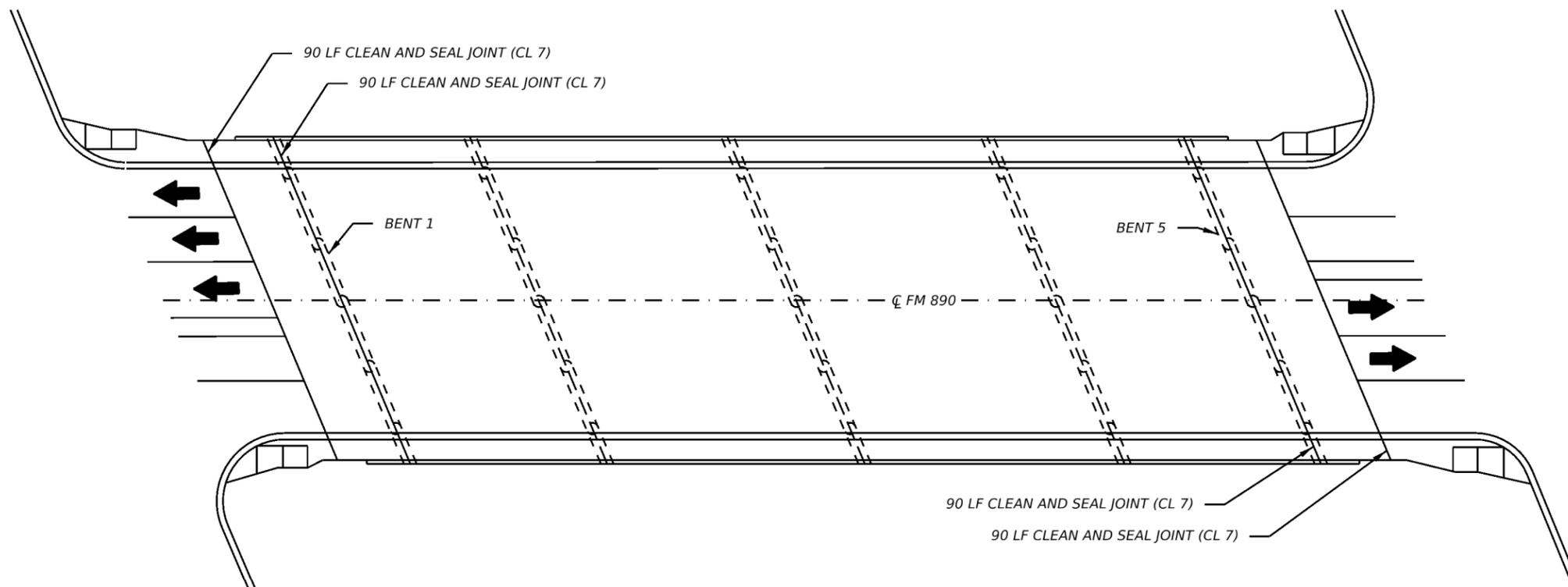
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| 543247 | | | |

| CONT | SECT | JOB | HIGHWAY |
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| WFS | WICHITA, ETC. | 59 | |

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| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL7) | 360 LF |



EXISTING - 4 SIMPLE SPAN PRESTRESSED CONCRETE BEAM BRIDGE (23° RF SKEW)
 SPANS W TO E: 50', 66', 66', 50'

NBI: 03-243-0-0156-07-203



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12/20/2023



REFERENCE #30
 BRIDGE LAYOUT
 FM 890 OVER IH 44
 NOT TO SCALE

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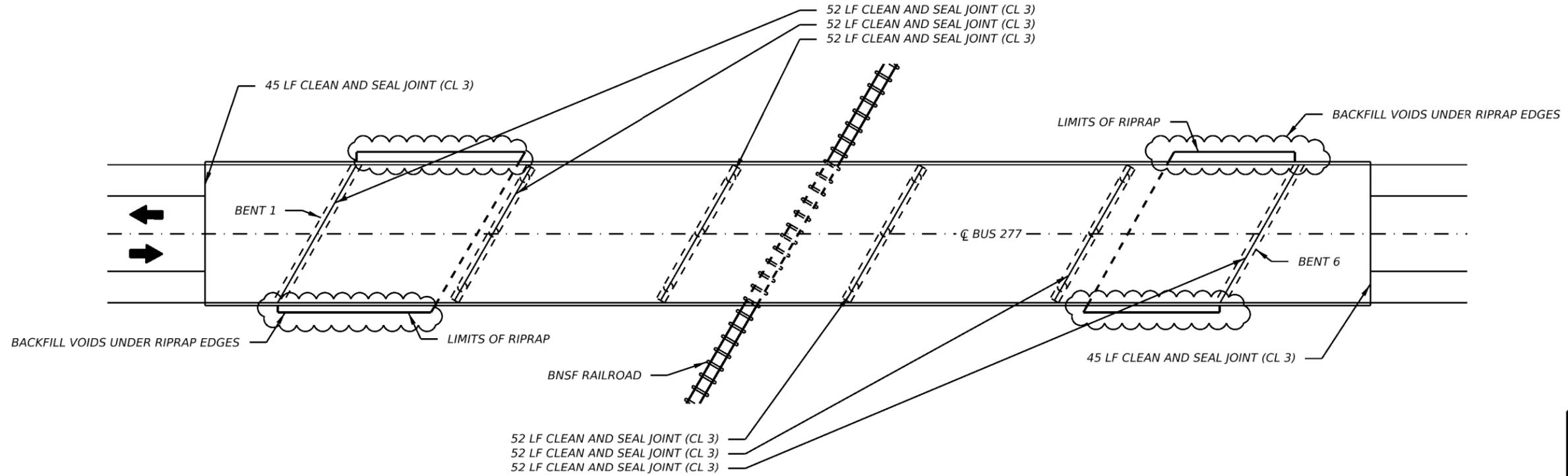
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| CONT | SECT | JOB | HIGHWAY |
|------|---------------|-----------|-------------|
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| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 60 | |

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| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 401-6001 | FLOWABLE BACKFILL | 3 CY |
| 438-6002 | CLEANING AND SEALING EXIST JOINTS(CL3) | 402 LF |



EXISTING - 5 SIMPLE SPAN PRESTRESSED CONCRETE BEAM BRIDGE (30° LF SKEW)
 SPANS W TO E: 55', 65', 60', 65', 55'

NBI: 03-243-0-0156-14-065



Christian J. Sierra, P.E.
 12/20/2023



**REFERENCE #31
 BRIDGE LAYOUT
 BUS 277 OVER BNSF RR**
 NOT TO SCALE

| FOR AREA OFFICE USE ONLY | | | |
|--------------------------|----------------|----------------|-------------------|
| FUA ID | DATE COMPLETED | PICTURES TAKEN | ASSETWISE UPDATED |
| 543270 | | | |
| 543272 | | | |

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| CONT | SECT | JOB | HIGHWAY |
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 61 | |

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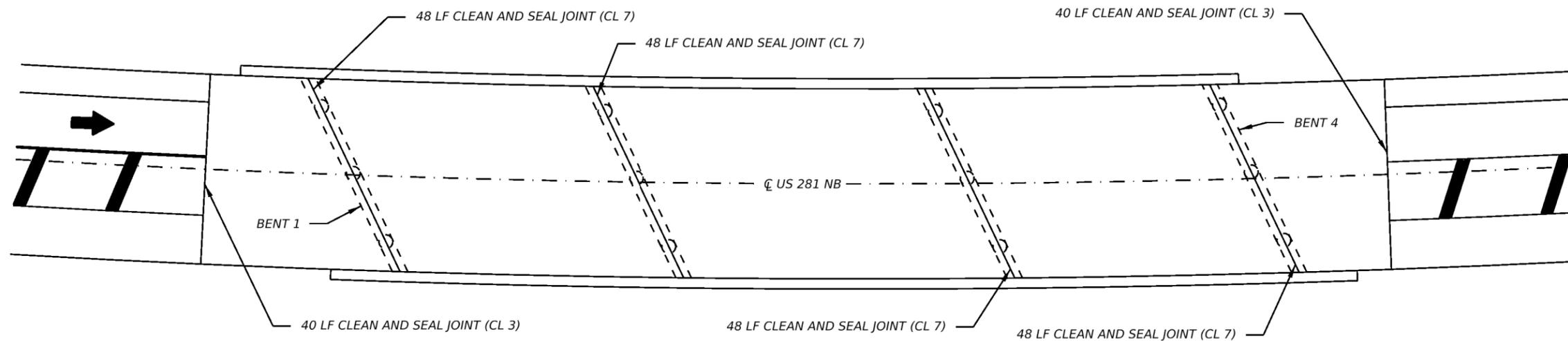
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| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 429-6003 | CONC STR REPAIR(DECK REP(PART DEPTH)) | 5 SF |
| 438-6002 | CLEANING AND SEALING EXIST JOINTS(CL3) | 80 LF |
| 438-6004 | CLEANING AND SEALING EXIST JOINTS(CL7) | 192 LF |

NOTES:

1. CONCRETE REPAIRS SHALL BE DONE IN ACCORDANCE WITH ITEM 429 AND AS SHOWN WITHIN THE "CONCRETE REPAIR MANUAL".
2. DAMAGE TO SOUND CONCRETE OR TO REINFORCEMENT OUTSIDE THE REPAIR AREA WILL BE REPAIRED AT NO COST TO THE DEPARTMENT.
3. QUANTITIES ARE APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO BEGINNING WORK.
4. APPROVAL FROM THE ENGINEER SHALL BE OBTAINED FOR ALL MATERIAL AND METHODS OF APPLICATION PRIOR TO THE BEGINNING OF THE REPAIR WORK.



EXISTING - 3 SIMPLE SPAN PRESTRESSED CONCRETE BEAM BRIDGE (26° RF SKEW)
 SPANS S TO N: 60', 70', 60'

NBI: 03-243-0-0249-01-059



Christian J. Sierra, P.E.
 12/20/2023



REFERENCE #32
 BRIDGE LAYOUT
 US 281 NB OVER
 SH 79 SB CONN/
 FM 369 WB
 NOT TO SCALE

| FOR AREA OFFICE USE ONLY | | | |
|--------------------------|----------------|----------------|-------------------|
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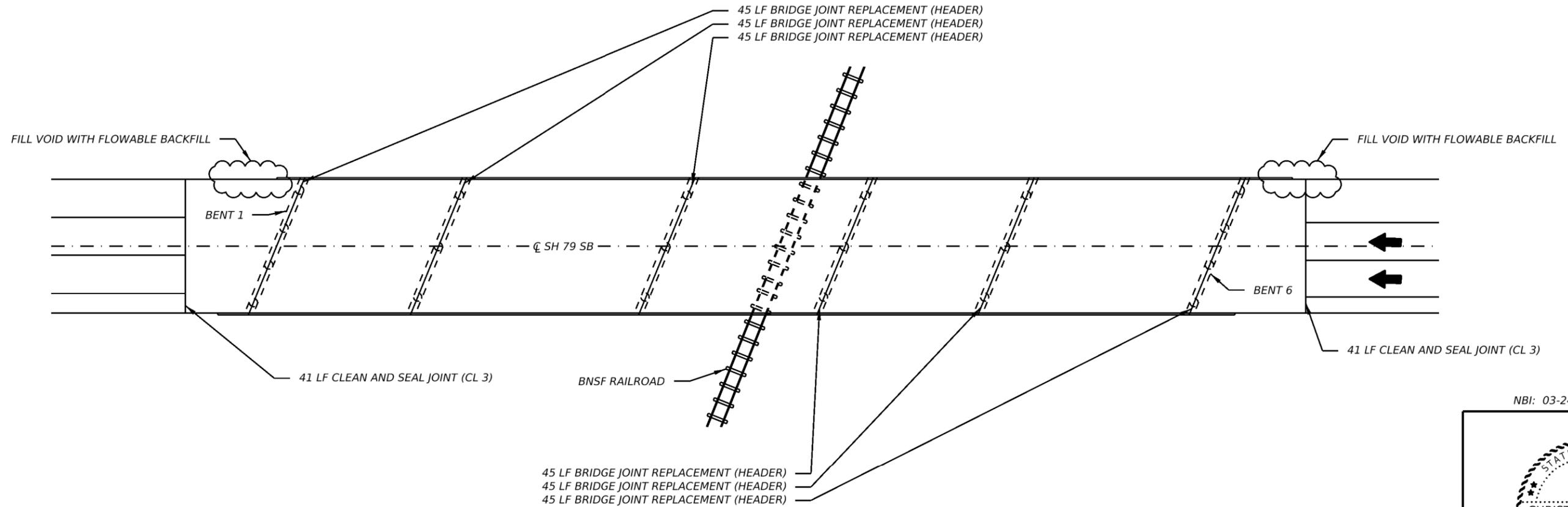
| CONT | | JOB | | HIGHWAY | |
|------|------|---------------|-------------|-----------|------|
| NO. | SECT | NO. | NAME | NO. | NAME |
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| DIST | | COUNTY | | SHEET NO. | |
| WFS | | WICHITA, ETC. | | 62 | |

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NOTES:
 1. REFER TO "JOINT REPAIR DETAILS" FOR BRIDGE JOINT REPLACEMENT.

| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 401-6001 | FLOWABLE BACKFILL | 15 CY |
| 438-6002 | CLEANING AND SEALING EXIST JOINTS(CL3) | 90 LF |
| 785-6013 | BRIDGE JOINT REPLACEMENT (HEADER) | 270 LF |



EXISTING - 5 SIMPLE SPAN PRESTRESSED CONCRETE I-BEAM BRIDGE (22° LF SKEW)
 SPANS S TO N: 50', 70', 55', 50', 65'

NBI: 03-243-0-0282-04-009



Christian J. Sierra, P.E.
 12/20/2023



**REFERENCE #33
 BRIDGE LAYOUT
 SH 79 SB OVER
 MKT RAILROAD**
 NOT TO SCALE

| FOR AREA OFFICE USE ONLY | | | |
|--------------------------|----------------|----------------|-------------------|
| FUA ID | DATE COMPLETED | PICTURES TAKEN | ASSETWISE UPDATED |
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| 543289 | | | |

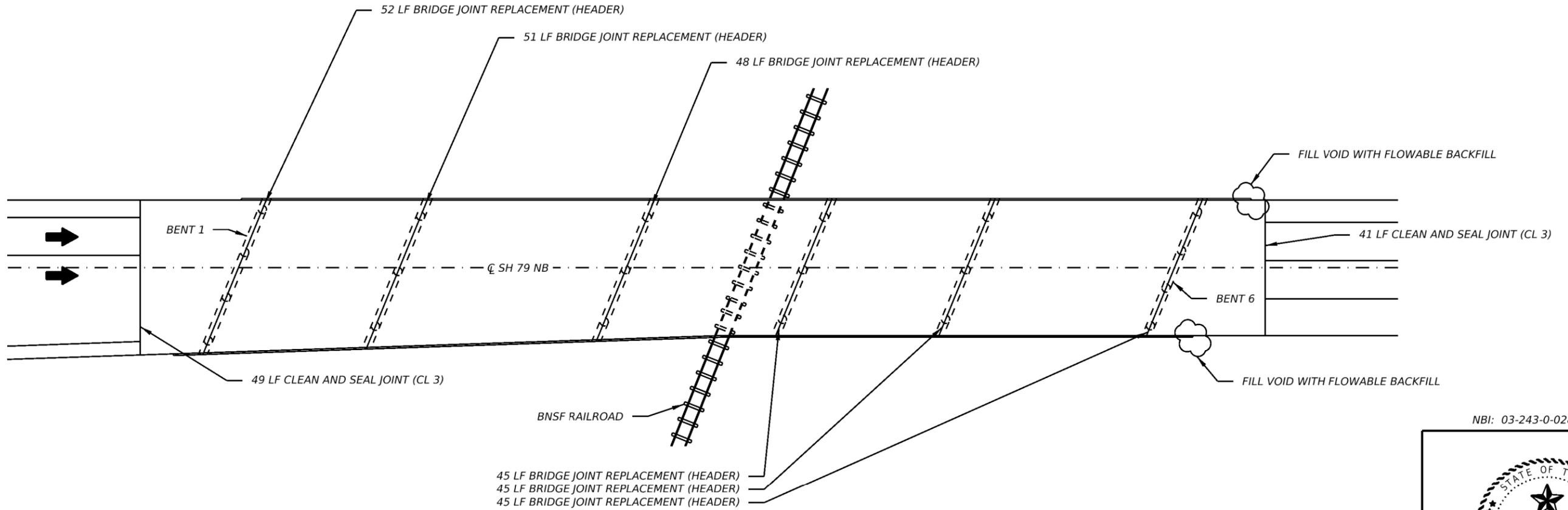
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| CONT | SECT | JOB | HIGHWAY |
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 63 | |

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NOTES:
 1. REFER TO "JOINT REPAIR DETAILS" FOR BRIDGE JOINT REPLACEMENT.

| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 401-6001 | FLOWABLE BACKFILL | 5 CY |
| 438-6002 | CLEANING AND SEALING EXIST JOINTS(CL3) | 82 LF |
| 785-6013 | BRIDGE JOINT REPLACEMENT (HEADER) | 286 LF |



EXISTING - 5 SIMPLE SPAN PRESTRESSED CONCRETE I-BEAM BRIDGE (22° LF SKEW)
 SPANS S TO N: 50', 70', 55', 50', 65'

NBI: 03-243-0-0282-04-010



Christian J. Sierra, P.E.
 12/20/2023



**REFERENCE #34
 BRIDGE LAYOUT
 SH 79 NB OVER
 MKT RAILROAD**
 NOT TO SCALE

| FOR AREA OFFICE USE ONLY | | | |
|--------------------------|----------------|----------------|-------------------|
| FUA ID | DATE COMPLETED | PICTURES TAKEN | ASSETWISE UPDATED |
| 593172 | | | |
| 593174 | | | |
| 593176 | | | |

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| CONT | SECT | JOB | HIGHWAY |
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| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 64 | |

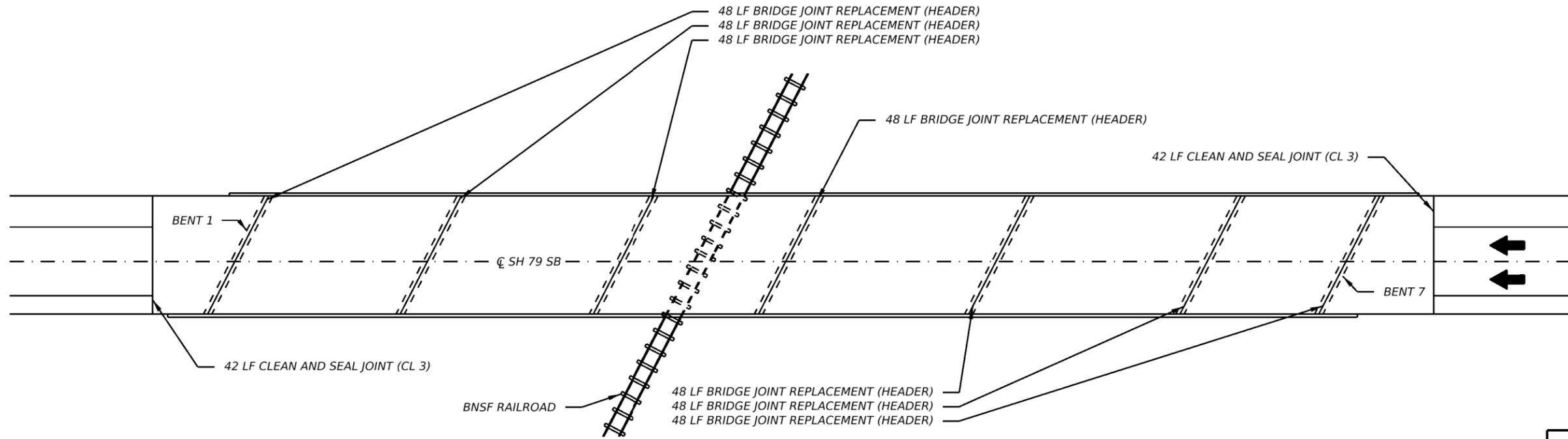
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DW: CK: CK: DW: CK: DW:



NOTES:
 1. REFER TO "JOINT REPAIR DETAILS" FOR BRIDGE JOINT REPLACEMENT.

| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 438-6002 | CLEANING AND SEALING EXIST JOINTS(CL3) | 84 LF |
| 785-6013 | BRIDGE JOINT REPLACEMENT (HEADER) | 336 LF |



EXISTING - 6 SIMPLE SPAN PRESTRESSED CONCRETE I-BEAM BRIDGE (28° LF SKEW)
 SPANS S TO N: 70', 70', 60', 76', 76', 50'

NBI: 03-243-0-0282-04-122



Christian J. Sierra, P.E.
 12/20/2023



**REFERENCE #35
 BRIDGE LAYOUT
 SH 79 SB OVER
 BNSF RR & BUS 287
 NOT TO SCALE**

| FOR AREA OFFICE USE ONLY | | | |
|--------------------------|----------------|----------------|-------------------|
| FUA ID | DATE COMPLETED | PICTURES TAKEN | ASSETWISE UPDATED |
| 543290 | | | |

| CONT | | JOB | | HIGHWAY | |
|------|------|---------------|-------------|-----------|------|
| NO. | SECT | NO. | NAME | NO. | NAME |
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| DIST | | COUNTY | | SHEET NO. | |
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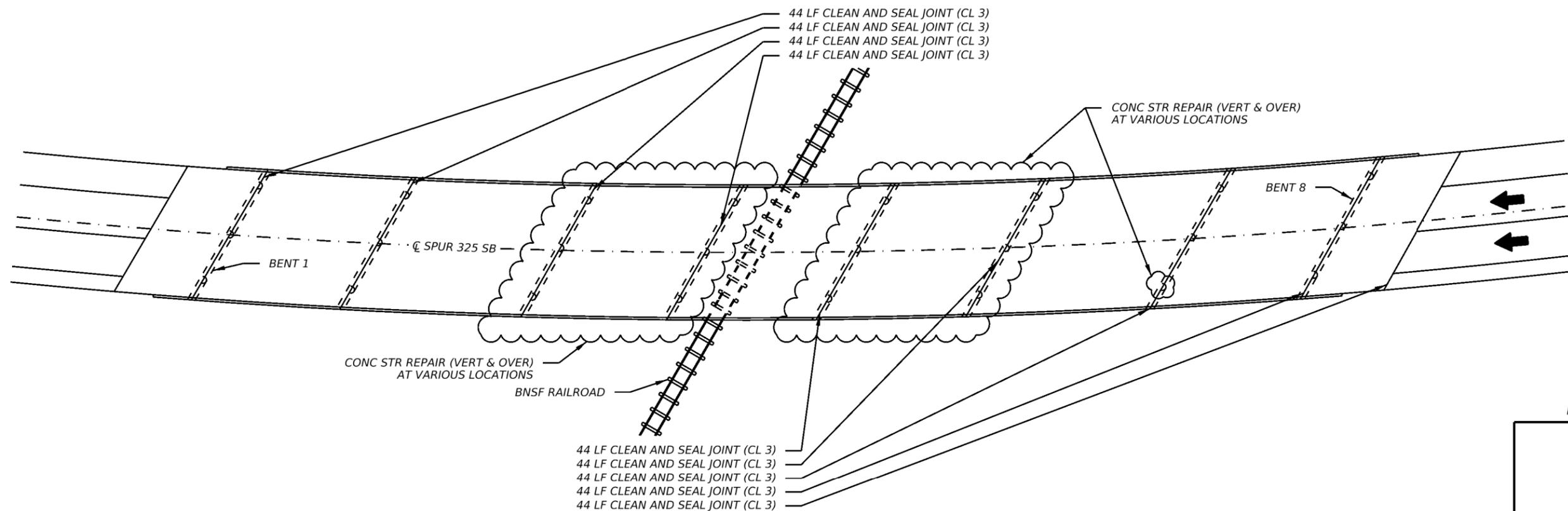
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| ITEM | DESCRIPTION | QUANTITY |
|----------|--|----------|
| 429-6007 | CONC STR REPAIR (VERTICAL & OVERHEAD) | 100 SF |
| 438-6002 | CLEANING AND SEALING EXIST JOINTS(CL3) | 396 LF |

NOTES:

1. CONCRETE REPAIRS SHALL BE DONE IN ACCORDANCE WITH ITEM 429 AND AS SHOWN WITHIN THE "CONCRETE REPAIR MANUAL".
2. DAMAGE TO SOUND CONCRETE OR TO REINFORCEMENT OUTSIDE THE REPAIR AREA WILL BE REPAIRED AT NO COST TO THE DEPARTMENT.
3. QUANTITIES ARE APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO BEGINNING WORK.
4. APPROVAL FROM THE ENGINEER SHALL BE OBTAINED FOR ALL MATERIAL AND METHODS OF APPLICATION PRIOR TO THE BEGINNING OF THE REPAIR WORK.



EXISTING - 7 SIMPLE PRESTRESSED CONCRETE I-BEAM SPANS BRIDGE (24° LF SKEW)
 SPANS S TO N: 45', 55', 45', 45', 45', 55', 45'

NBI: 03-243-0-0685-01-003



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12/20/2023

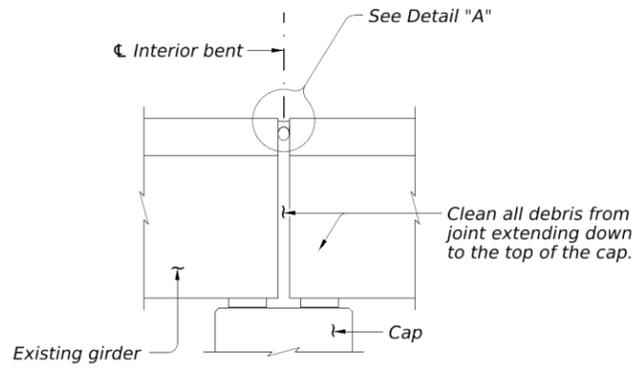


REFERENCE #36
 BRIDGE LAYOUT
 SPUR 325 SB OVER
 MKT RAILROAD
 NOT TO SCALE

| FOR AREA OFFICE USE ONLY | | | |
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| 543306 | | | |
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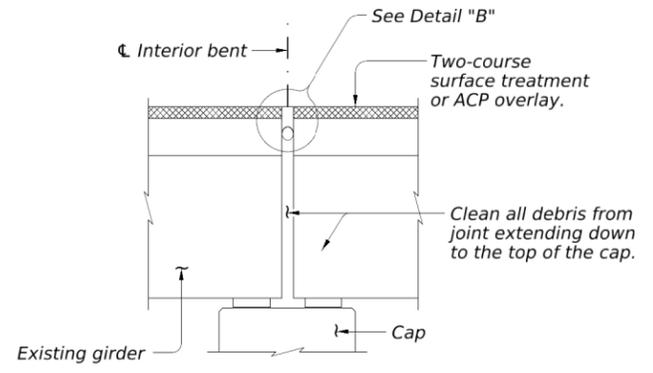
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| WFS | WICHITA, ETC. | 66 | |

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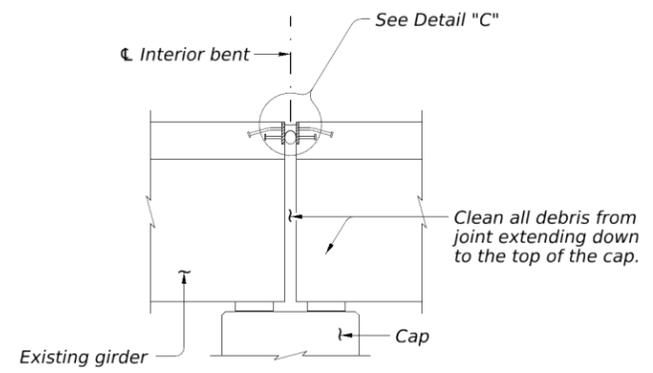
JOINT WITH SILICONE SEAL

(Used without ACP overlay)



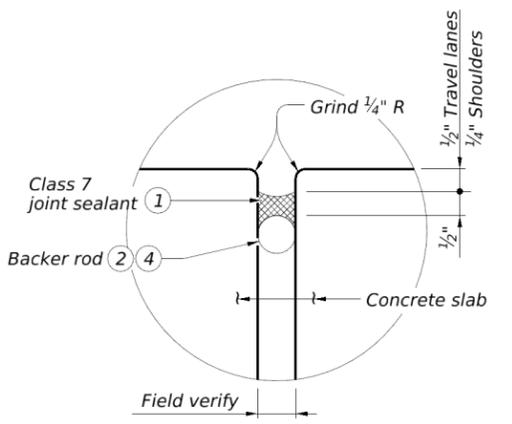
JOINT W/ HOT-POURED RUBBER SEAL

(Used with ACP overlay)

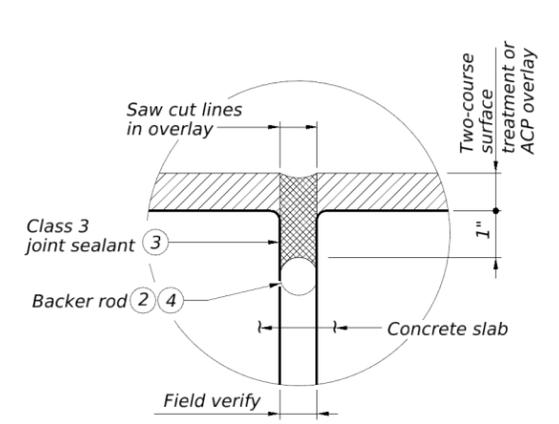


ARMOR JOINT

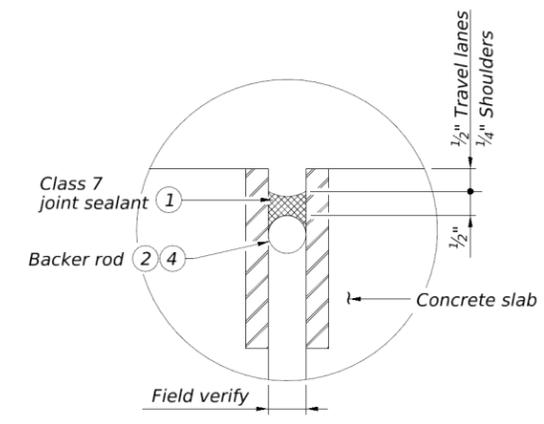
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DETAIL "A"



DETAIL "B"



DETAIL "C"

(Stud anchors not shown for clarity.)

GENERAL NOTES:
 Cleaning existing joint opening (full depth) of all debris, providing and placing backer rod, saw-cutting asphalt overlay, and sealing joint is paid for by Item 438, "Cleaning and Sealing Joints" and measured by the linear foot.
 Obtain approval for all tools, equipment, materials and techniques proposed to clean and seal the joint.
 Provide Class 3 joint sealant in accordance with DMS-6310, "Joint Sealants and Fillers" for joints in asphalt overlay.
 Provide Class 7 joint sealant in accordance with DMS-6310, "Joint Sealants and Fillers" for joints in concrete.
 Extend sealant up into rail or curb 3 inches on low side or sides of deck. If the Class 7 joint sealant cannot be effectively placed in the vertical position, a Class 4 joint sealant compatible with the Class 7 joint sealant is allowed for the extension of the seal into the curb or rail. Prepare surfaces where sealant is to be placed in accordance with Manufacturer's specifications.

- ① Use Class 7 joint sealant in accordance with DMS-6310, "Joint Sealants and Fillers." Prepare joint and seal in accordance with Item 438 "Cleaning and Sealing Joints."
- ② Provide backer rod 25% larger than joint opening and compatible with the sealant. Use of multiple pieces to create a backer rod cross section is not permitted. Top of backer rod must be convex as shown.
- ③ Use Class 3 joint sealant in accordance with DMS-6310, "Joint Sealants and Fillers". Prepare joint and seal in accordance with Item 438 "Cleaning and Sealing Joints."
- ④ Backer rod must be compatible with the hot poured rubber sealant and rated for a minimum of 400°F.

PROCEDURE FOR CLEANING AND SEALING EXISTING JOINT WITH SILICONE SEAL:

- 1) Clean joint opening of all existing expansion materials/devices, dirt, and all other deleterious materials in accordance with Item 438, "Cleaning and Sealing Joints." Clean joint out full depth of the joint.
- 2) Obtain approval of cleaned joint prior to proceeding with joint sealing operation.
- 3) Place backer rod into joint opening 1" below the top of concrete. When sealing joints for slab spans, slab beam spans, or box beam spans, fill void below backer rod with extruded polystyrene foam before placing backer rod.
- 4) Seal the joint opening with a Class 7 joint sealant. Recess seal 1/2" below top of concrete in travel lanes and 1/4" below top of concrete in shoulders.

PROCEDURE FOR CLEANING AND SEALING EXISTING JOINT WITH HOT-POURED RUBBER SEAL:

- 1) Saw cut through the asphalt at the centerline of joint. Make multiple saw cuts to create a 1/2" minimum joint opening or match the existing joint opening. Clean joint opening of all old expansion materials/devices, bituminous materials, dirt, grease and all other deleterious materials in accordance with Item 438, "Cleaning and Sealing Joints." Clean joint out full depth of the joint.
- 2) Obtain approval of cleaned joint prior to proceeding with joint sealing operation.
- 3) Place backer rod into joint opening 1" below the top of concrete. When sealing joints for slab spans, slab beam spans, or box beam spans, fill void below backer rod with extruded polystyrene foam before placing backer rod.
- 4) Seal the joint opening with a Class 3 joint sealant. Seal flush to the top of the asphaltic concrete pavement.

PROCEDURE FOR CLEANING AND SEALING EXISTING ARMOR JOINTS:

- 1) Remove existing seal, if present. Clean joint opening of all dirt and other deleterious materials in accordance with Item 438, "Cleaning and Sealing Joints." Clean joint out full depth of the joint.
- 2) Abrasive blast clean existing steel surface where silicone seal is to be placed.
- 3) Obtain approval of cleaned joint prior to proceeding with joint sealing operation.
- 4) Place backer rod into joint opening 1" below the top of concrete. When sealing joints for slab spans, slab beam spans, or box beam spans, fill void below backer rod with extruded polystyrene foam before placing backer rod.
- 5) Seal the joint opening with a Class 7 joint sealant. Recess seal 1/2" below top of concrete in travel lanes and 1/4" below top of concrete in shoulders.

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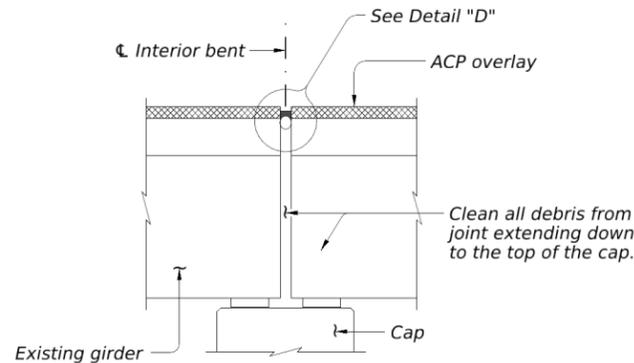
Christian J. Sierra, P.E.
12/20/2023



CLEANING AND SEALING EXISTING BRIDGE JOINTS

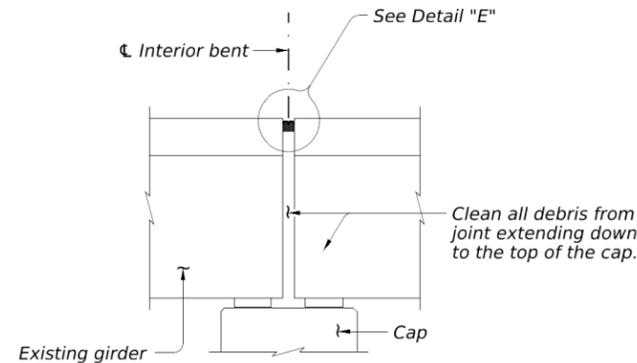
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| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 67 | |

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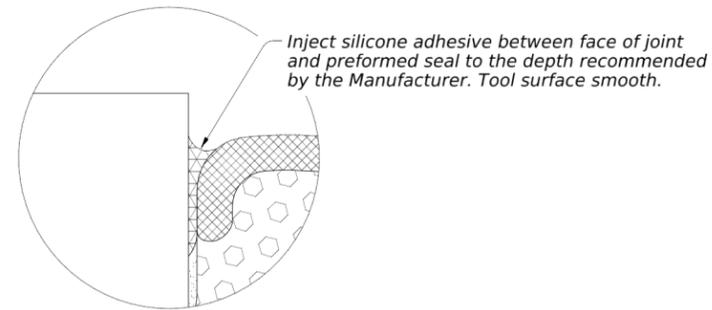
HEADER JOINT WITH SILICONE SEAL

(used with ACP overlay with joints more than 100 ft apart)

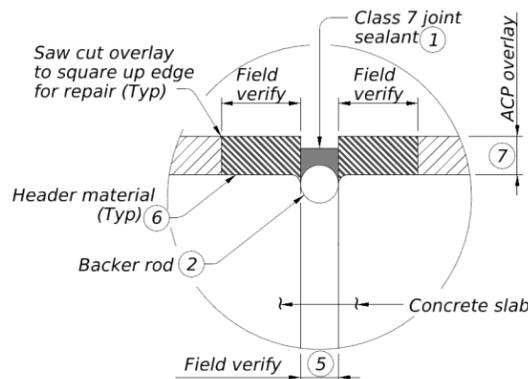


JOINT WITH PRECOMPRESSED FOAM AND SILICONE SEAL

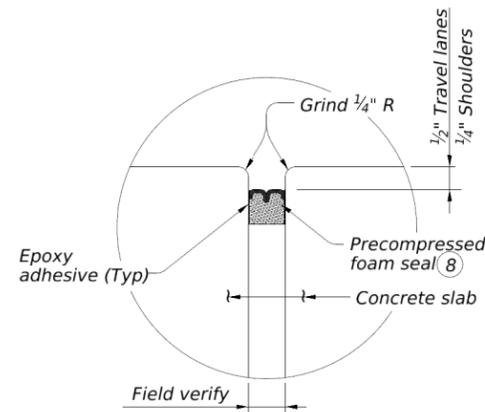
(used without ACP overlay)



SILICONE INJECTION



DETAIL "D"



DETAIL "E"

PROCEDURE FOR CLEANING AND SEALING HEADER JOINT WITH SILICONE SEAL AND HEADER JOINT REPAIR

- 1) Clean joint opening of all old expansion materials/devices, dirt, and all other deleterious materials in accordance with Item 438, "Cleaning and Sealing Joints."
- 2) Saw cut and remove damaged portions of existing header material to neat lines. Repair deck joint spalls greater than 2" deep in accordance with Item 785, "Bridge Joint Repair or Replacement." Shallower spalls may be filled with header material.
- 3) Clean the voided region of all materials that could inhibit the bond between header material and concrete or steel.
- 4) Form the joint opening to the required width and place header material to fill voided region. Repair header material in accordance with Item 785, "Bridge Joint Repair or Replacement."
- 5) Place backer rod into joint opening 1" below the top of header material. When sealing joints for slab spans, slab beam spans, or box beam spans, fill void below backer rod with extruded polystyrene foam before placing backer rod.
- 6) Seal the joint opening with a Class 7 joint sealant. Recess seal 1/2" below top of header in travel lanes and 1/4" below top of header in shoulders.

PROCEDURE FOR CLEANING AND SEALING JOINT WITH PRECOMPRESSED FOAM AND SILICONE SEAL

- 1) Clean joint opening of all old expansion materials/devices, dirt, and all other deleterious materials in accordance with Item 438, "Cleaning and Sealing Joints." When sealing joints for slab spans, slab beam spans, pan girder spans, or box beam spans, fill void below proposed seal with extruded polystyrene foam.
- 2) Correctly size joint seal based on field measurement and in accordance with Manufacturer's specifications. Multiple seal widths may be required. Ensure proper seal is selected for each joint.
- 3) Abrasive blast clean existing joint surfaces where seal is to be applied.
- 4) Wipe down joint surfaces to remove contaminants.
- 5) Mask areas adjacent to joint opening sufficiently to keep epoxy off deck surface.
- 6) Apply epoxy to joint opening side surfaces.
- 7) While epoxy is still tacky, remove shrink wrap from seal and install in joint opening.
- 8) Recess top of joint seal 1/2" in travel lanes and 1/4" in shoulders.
- 9) Inject silicone adhesive along top interface of seal with joint side surface according to Manufacturer's recommendations. Tool to spread adhesive as necessary. See Silicone Injection detail.

- 1) Use Class 7 joint sealant in accordance with DMS-6310, "Joint Sealants and Fillers." Prepare joint and seal in accordance with Item 438 "Cleaning and Sealing Joints."
- 2) Provide backer rod 25% larger than joint opening and compatible with the sealant. Use of multiple pieces to create a backer rod cross section is not permitted. Top of backer rod must be convex as shown.
- 5) Match existing joint opening or set at a minimum:
 - a. 1" at 70°F when the distance between joints is 150 ft or less
 - b. 2" at 70°F when the distance between joints is greater than 150 ft.
 - c. As directed by the Engineer.
- 6) Cleaning and sealing existing header joints does not necessitate replacement of existing header material. If replacement of header material is necessary, as determined by the Engineer, use header material in accordance with DMS-6140, "Polymer Concrete for Bridge Joint Systems." Match the thickness of the header material with the thickness of the overlay as shown in the plans, but do not exceed 4". Place header material flush with roadway surface. Do not cantilever header material over the joint opening. Repair of header material will be paid for in accordance with Item 785-6006, "Bridge Joint Repair (Header)."
- 7) Maximum thickness is 4".
- 8) See table of Approved Precompressed Foam Seal Manufacturers on Sheet 3 of 3.



Christian J. Sierra, P.E.
12/20/2023

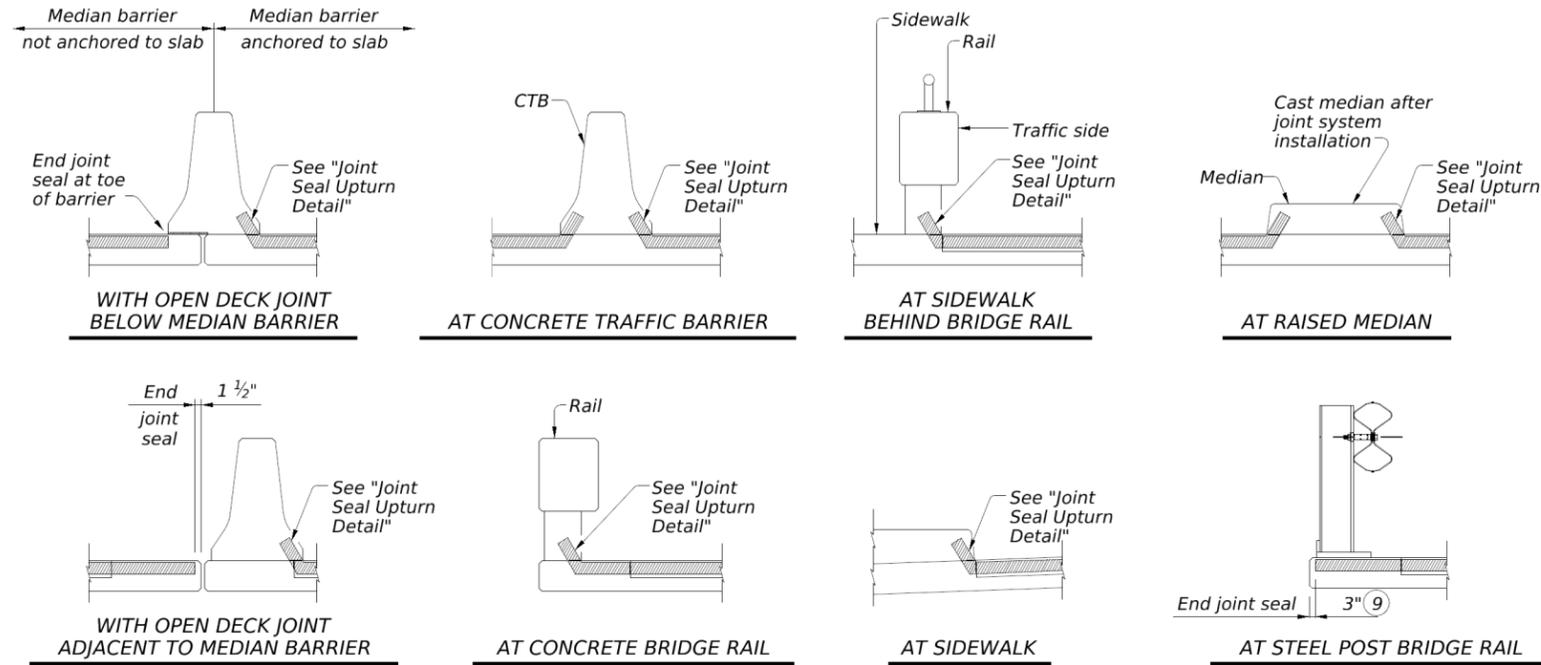


CLEANING AND SEALING EXISTING BRIDGE JOINTS

| | | | |
|-------------|---------------|--------------|-------------|
| ©TxDOT 2024 | | SHEET 2 OF 3 | |
| CONT | SECT | JOB | HIGHWAY |
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 68 | |

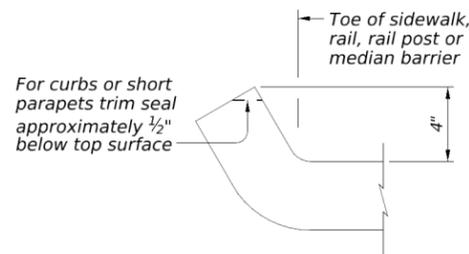
**APPROVED PRECOMPRESSED
FOAM SEAL MANUFACTURERS**

| MANUFACTURER | SEAL TYPE |
|--------------------|--------------|
| Watson Bowman Acme | Wabo FS |
| SSI | Silspec SES |
| Sealtite | Sealtite 50N |
| EMSEAL | BEJS |

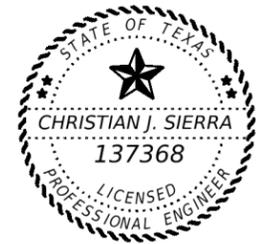


JOINT SEALANT TERMINATION DETAILS

⑨ 1 1/2" for precompressed foam and silicone seal



JOINT SEAL UPTURN DETAIL



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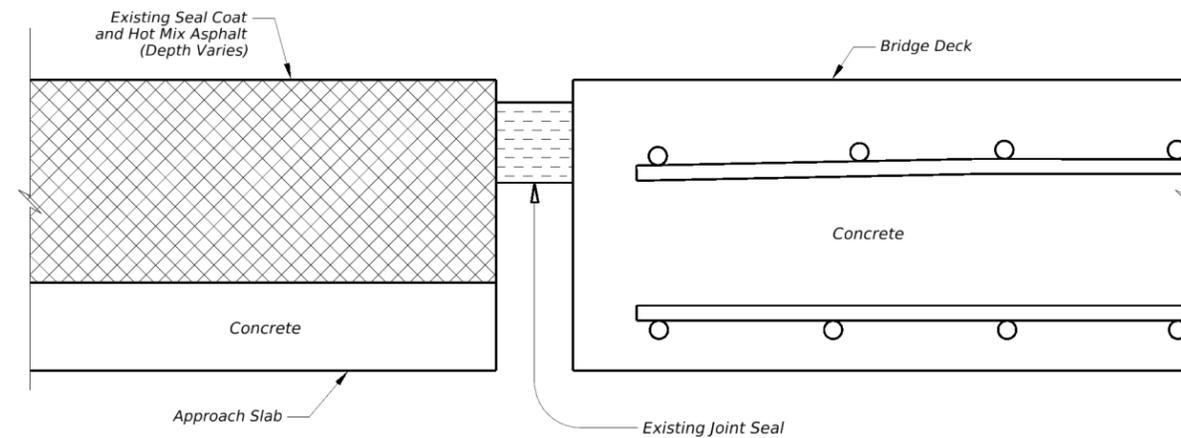


**CLEANING AND SEALING
EXISTING BRIDGE JOINTS**

| | | | |
|--------------|---------------|--------------|-------------|
| © TxDOT 2024 | | SHEET 3 OF 3 | |
| CONT | SECT | JOB | HIGHWAY |
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 69 | |

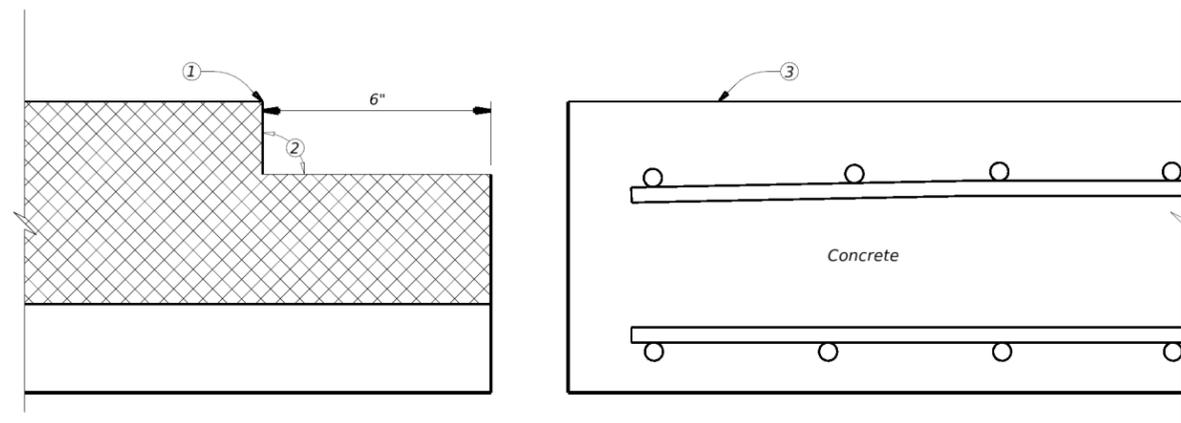
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DATE: 12/18/2023 10:34:35 AM
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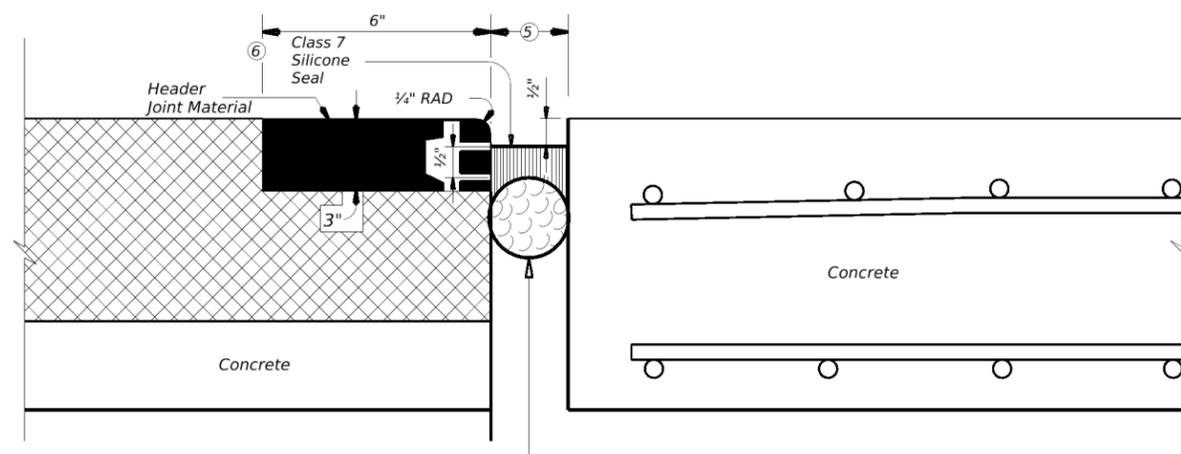
SECTION THRU EXISTING EXPANSION JOINT

(Actual Joint Configuration may be other than shown)



SECTION THRU EXISTING JOINT

Showing Removal



SECTION THRU EXISTING JOINT WITH NEW SEAL

Showing Proposal

NOTES

- ① SAW CUT EXISTING HOT MIX OVERLAY AND REMOVE MATERIAL OF EXISTING JOINT.
- ② SURFACES WHERE NOSING/HEADER MATERIAL IS TO BE PLACED WILL BE CLEAN AND DRY IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
- ③ HEADER JOINT SHALL NOT BE INSTALLED ON BRIDGE DECK.
- ④ THE MINIMUM THICKNESS OF NOSING/HEADER SHALL BE 3". THE THICKNESS OF OVERLAY VARIES.
- ⑤ JOINT OPENING SHALL BE AS DIRECTED BY THE ENGINEER.
- ⑥ SEAL WHEN REQUIRED AS DIRECTED BY THE ENGINEER. EXTEND SEALANT UP INTO RAIL OR CURB 6 INCHES ON LOW SIDE OR SIDES OF DECK.



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12/20/2023



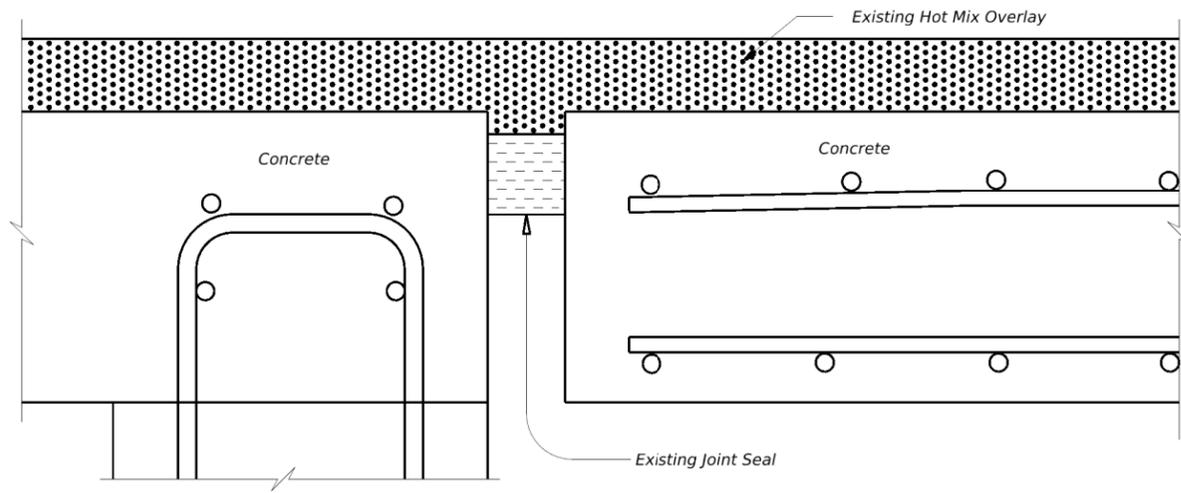
BRIDGE EXPANSION JOINT MAINTENANCE

| SUMMARY OF STRUCTURES TO BE REPAIRED | | | |
|--------------------------------------|----------------------|---------|---------------------|
| REF # | STRUCTURE ID | ROADWAY | FEATURE CROSSED |
| 9 | 03-039-0-3429-01-001 | FM 2606 | LAKE ARROWHEAD SPWY |

| | | | |
|-------------|---------------|--------------|-------------|
| ©TXDOT 2024 | | SHEET 1 OF 2 | |
| CONT | SECT | JOB | HIGHWAY |
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 70 | |

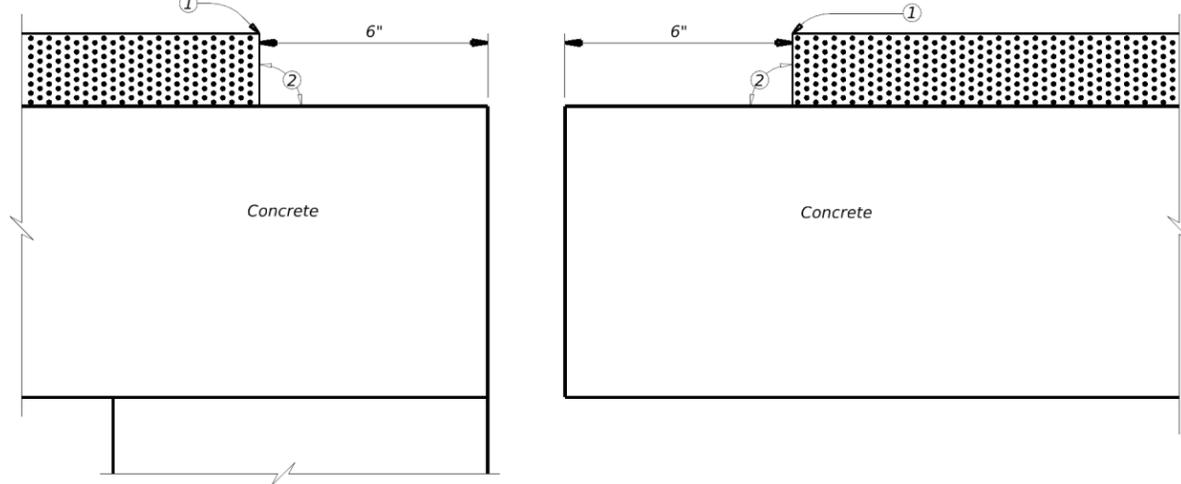
DATE: 12/18/2023 10:34:40 AM
 FILE: pw://ttdot.projectwiseonline.com/TXDOT2/Documents/03 - WFS/Design Projects/090300123/4 - Design/Plan Set/7 - Bridge/Header Joint Details.dgn

TYPICAL DETAIL - CLEAN AND SEAL EXPANSION JOINTS WITHOUT ARMOR



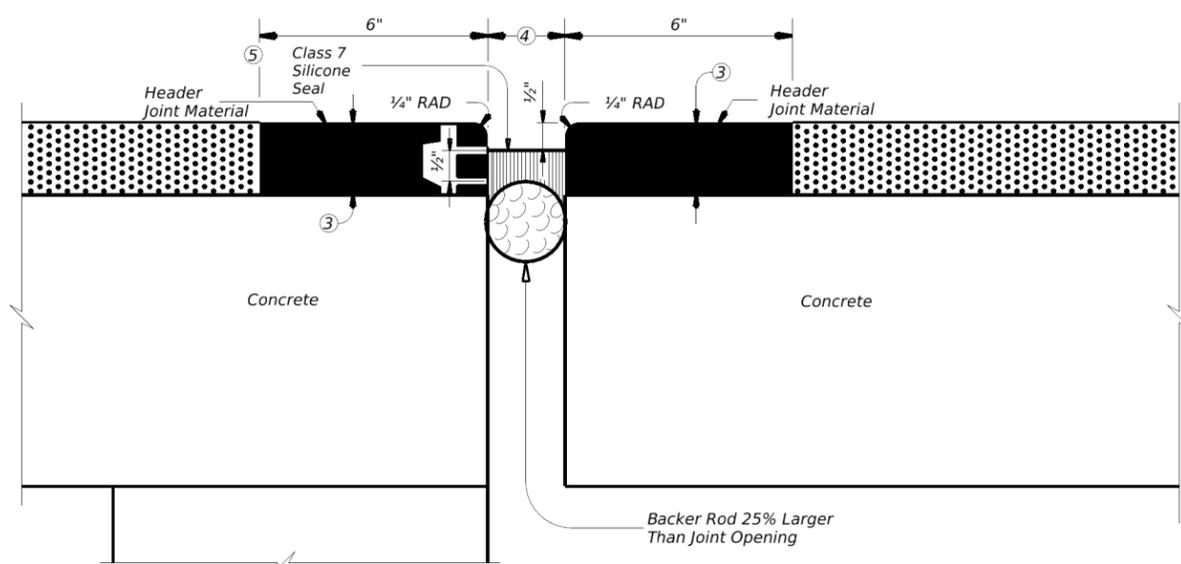
SECTION THRU EXISTING EXPANSION JOINT

(Actual Joint Configuration may be other than shown)



SECTION THRU EXISTING JOINT

Showing Removal



SECTION THRU EXISTING JOINT WITH NEW SEAL

Showing Proposal

NOTES

- ① SAW CUT EXISTING HOT MIX OVERLAY AND REMOVE MATERIAL OF EXISTING JOINT.
- ② SURFACES WHERE NOSING/HEADER MATERIAL IS TO BE PLACED WILL BE CLEAN AND DRY IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
- ③ HEADER JOINT SHALL NOT BE INSTALLED ON BRIDGE DECK.
- ④ THE MINIMUM THICKNESS OF NOSING/HEADER SHALL BE 1" OR AS SPECIFIED BY THE MANUFACTURER. THE THICKNESS OF OVERLAY VARIES.
- ⑤ JOINT OPENING SHALL BE AS DIRECTED BY THE ENGINEER.
- ⑥ SEAL WHEN REQUIRED AS DIRECTED BY THE ENGINEER. EXTEND SEALANT UP INTO RAIL OR CURB 6 INCHES ON LOW SIDE OR SIDES OF DECK.

GENERAL NOTES

USE THIS DETAIL IN ACCORDANCE WITH ITEM 454-2007 & ITEM 454-2008 "BRIDGE EXPANSION JOINTS". NOSING/HEADER AND SEALANT WILL BE IN ACCORDANCE WITH THIS ITEM. REPAIR BRIDGE JOINTS USING THE DETAILS SHOWN.

CONDITION OF EXISTING BRIDGE JOINT COMPONENTS WILL BE DETERMINED PRIOR TO PLACING NOSING/HEADER MATERIAL. THE ENTIRE LENGTH OF EXISTING JOINT WILL BE CHECKED AND ANY PORTION THAT IS DETERMINED UNSOUND BY THE ENGINEER WILL BE REMOVED AS DIRECTED BY THE ENGINEER.



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 12/20/2023

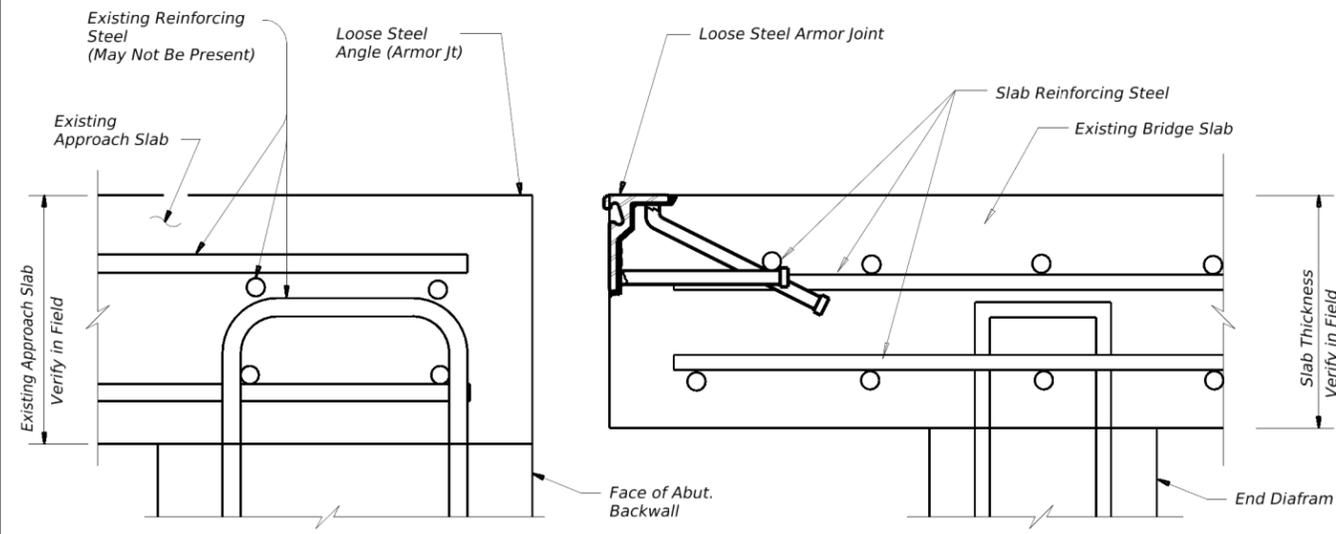


BRIDGE EXPANSION JOINT MAINTENANCE

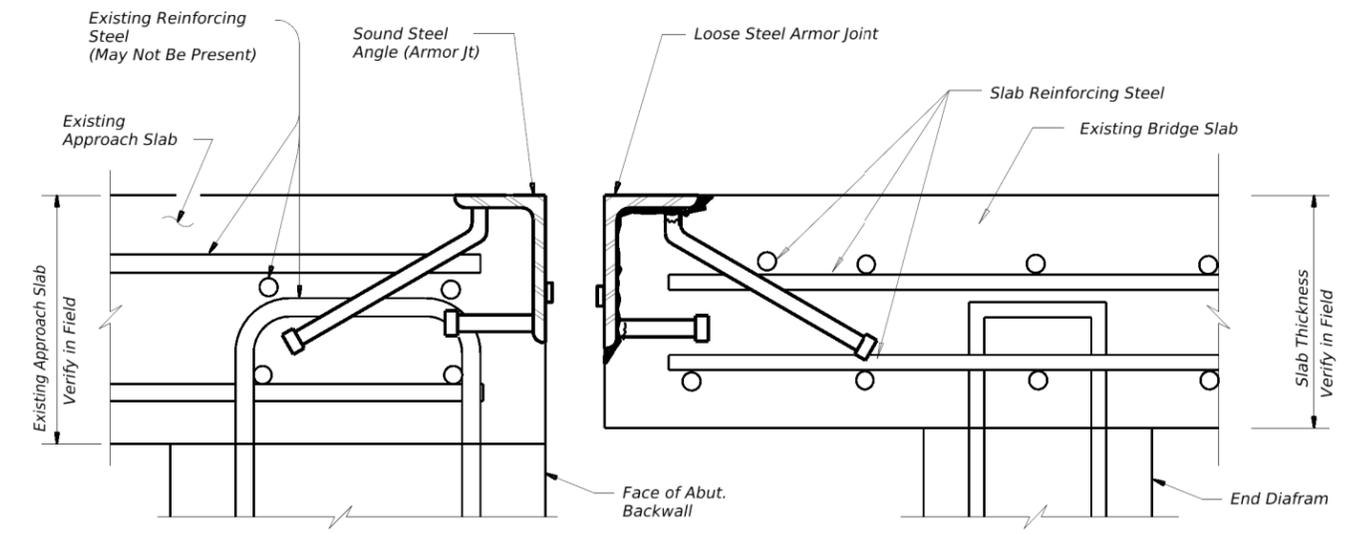
| SUMMARY OF STRUCTURES TO BE REPAIRED | | | |
|--------------------------------------|----------------------|-----------|-----------------|
| REF # | STRUCTURE ID | ROADWAY | FEATURE CROSSED |
| 12 | 03-243-0-0043-08-126 | US 287 NB | BUS 287 |

| | | | |
|-------------|---------------|--------------|-------------|
| ©TxDOT 2024 | | SHEET 2 OF 2 | |
| CONT | SECT | JOB | HIGHWAY |
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | COUNTY | SHEET NO. | |
| WFS | WICHITA, ETC. | 71 | |

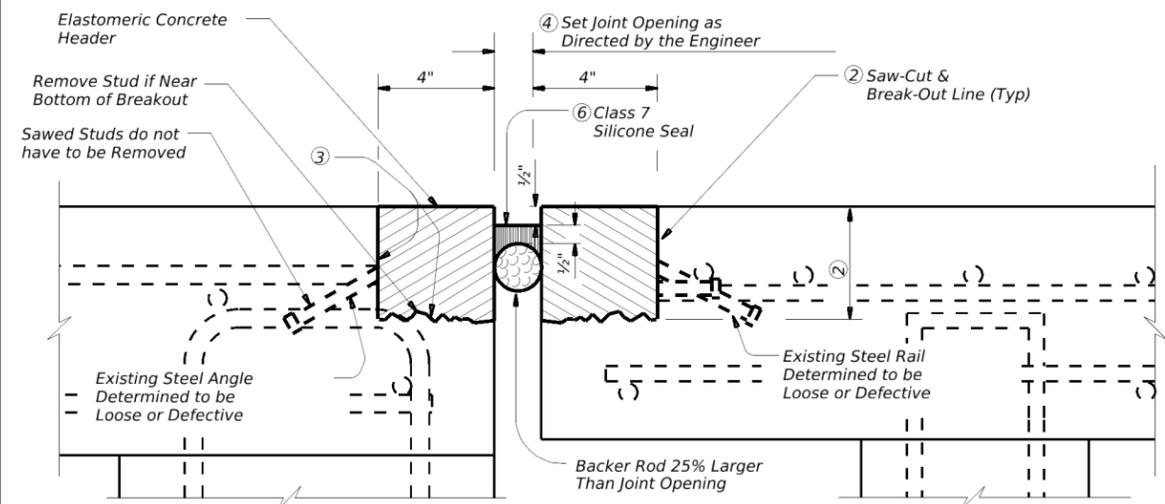
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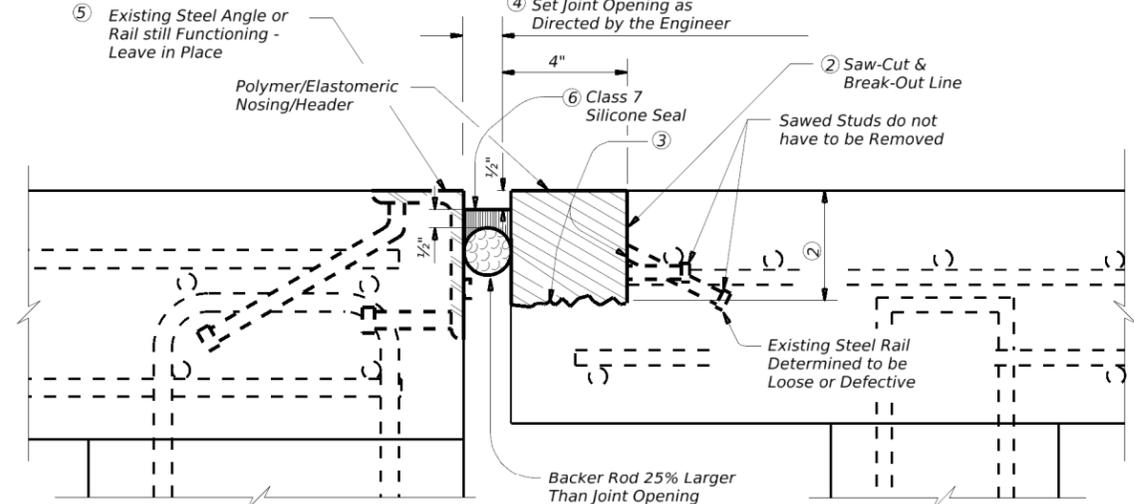
① EXISTING EXPANSION JOINT
 (Actual Joint Configuration may be other than shown)



① EXISTING EXPANSION JOINT
 (Actual Joint Configuration may be other than shown)



ELASTOMERIC CONCRETE HEADER REPAIR (BOTH SIDES)
 (Actual Joint Configuration may be other than shown)



ELASTOMERIC CONCRETE HEADER REPAIR (ONE SIDE)
 (Actual Joint Configuration may be other than shown)

NOTES

- ① VERIFY ACTUAL JOINT CONDITION AND BRIDGE CONFIGURATION PRIOR TO BEGINNING WORK.
- ② SAW CUT CONCRETE TO REMOVE EXISTING PORTIONS OF STEEL JOINTS THAT ARE LOOSE. DEPTH OF SAW CUT IS AS REQUIRED TO REMOVE STEEL JOINT AND ANY DEFECTIVE CONCRETE. THE MINIMUM THICKNESS OF NOSING/HEADER MATERIAL SHALL BE 1 1/2" OR AS SPECIFIED BY THE MANUFACTURER.
- ③ SURFACES WHERE ELASTOMERIC CONCRETE IS TO BE PLACED MUST BE CLEAN AND DRY IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
- ④ JOINT OPENING SHALL BE AS DIRECTED BY THE ENGINEER OR AS SHOWN ON THE EXPANSION JOINT STANDARD.
- ⑤ SANDBLAST EXISTING STEEL SURFACE WHERE SILICONE SEAL IS TO BE PLACED.
- ⑥ SEAL WHEN REQUIRED AS DIRECTED BY THE ENGINEER. EXTEND SEALANT UP INTO RAIL OR CURB 6 INCHES ON LOW SIDE OR SIDES OF DECK.

GENERAL NOTES

CONSTRUCTION IN ACCORDANCE WITH ALL RELEVANT STANDARD SPECIFICATIONS AND AS OUTLINED IN THE SPECIAL SPECIFICATION "EXPANSION JOINT REPAIR".
 MATERIAL FOR HEADER AND SILICONE SEALANT IN ACCORDANCE WITH ITEM 454, "BRIDGE EXPANSION JOINT".
 PAYMENT AS SPECIFIED BY ITEM 785-6002 BRIDGE JOINT REPAIR (POLYMER). SEE ITEM 785 BRIDGE JOINT REPAIR OR REPLACEMENT.

SUMMARY OF STRUCTURES TO BE REPAIRED

| REF # | STRUCTURE ID | ROADWAY | FEATURE CROSSED |
|-------|----------------------|------------------|--------------------|
| 10 | 03-243-0-0043-08-123 | MIDWAY CHURCH RD | US 287 |
| 17 | 03-243-0-0044-01-108 | HAMMON RD | US 82/US 287 |
| 18 | 03-243-0-0044-01-109 | FISHER RD | US 82/US 287 |
| 19 | 03-243-0-0044-01-120 | SH 79 NB | US 82 WB/US 287 NB |
| 23 | 03-243-0-0156-04-087 | US 82 WB (KELL) | HARRISON STREET |
| 33 | 03-243-0-0282-04-009 | SH 79 SB | MKT RAILROAD |
| 34 | 03-243-0-0282-04-010 | SH 79 NB | MKT RAILROAD |
| 35 | 03-243-0-0282-04-122 | SH 79 SB | BNSF RR & BUS 287 |



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JOINT REPAIR DETAILS
 (POLYMER)

| | | | |
|-------------|------|---------------|-------------|
| ©TxDOT 2024 | | SHEET 1 OF 1 | |
| CONT | SECT | JOB | HIGHWAY |
| 0903 | 00 | 123 | US 82, ETC. |
| DIST | | COUNTY | SHEET NO. |
| WFS | | WICHITA, ETC. | 72 |

DATE: 12/18/2023 10:34:54 AM
 FILE: pw://txdot-projectwiseonline.com:TXDOT2/Documents/03 - WFS/Design Projects/090300123/4 - Design/Plan Set/9 - Environmental/EPIC.dgn

I. STORMWATER POLLUTION PREVENTION-CLEAN WATER ACT SECTION 402

TPDES TXR 150000: Stormwater Discharge Permit or Construction General Permit required for projects with 1 or more acres disturbed soil. Projects with any disturbed soil must protect for erosion and sedimentation in accordance with Item 506.
 List MS4 Operator(s) that may receive discharges from this project.
 They may need to be notified prior to construction activities.

1. None
 No Action Required Action Required

- Action No.
 1. The project disturbs less than one acre of surface area. The contractor is responsible for the PSL as defined in the Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges. The total disturbed acreage is the combined acreage to be disturbed on the project and the contractors PSL.
 2. Prevent stormwater pollution by controlling erosion and sedimentation to the maximum extent practical. Comply with the SW3P and revise as necessary or as required by the Engineer.
 3. This EPIC must be updated if the disturbed area increases to one or more acres during the course of construction.
 4. It may become necessary to post a site notice and/or NOI for the project and/or PSL in a location accessible to the public and TCEQ, EPA, or other inspector if the disturbed area increases to more than 1 acre.

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. All channels, streams and draws are considered Waters of the U.S. (WOTUS). No impacts to WOTUS is authorized for this project.
 2. Equipment should not be placed in the channel
 3. If dewatering activities are necessary, contact TxDOT Environmental Specialist (940) 720-7733.

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.

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 Action Required

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 Action Required

- Action No.
 1. Impacts to vegetation should be kept to the minimum necessary. Associated impacts will be the minimum necessary for construction items.
 2. Disturbed areas would be re-vegetated according to TxDOT's standard practices for rural areas, which to the extent practicable, is in compliance with Executive Memorandum on Beneficial Landscaping, if applicable.

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

- No Action Required Action Required

Bird BMPs: Migratory birds may arrive in the project area to breed during construction of the proposed project. Per the Migratory Bird Treaty Act (MBTA), measures would be taken to avoid disturbing or killing of migratory birds. Prior to construction, perform daytime surveys for nests including under bridges and in culverts to determine if they are active before removal. Nests that are active should not be disturbed. Do not disturb, destroy, or remove active nests, including ground nesting birds, during the nesting season, March through August. Avoid the removal of unoccupied, inactive nests, as practicable. Prevent the establishment of active nests prior to nesting season on TxDOT owned and operated facilities and structures proposed for replacement or repair. Do not collect, capture, relocate, or transport birds, eggs, young, or active nests without a permit.

Bat BMP: In all instances, avoid harm or death to bats. If bats are encountered during construction stop work in the area and contact district environmental coordinator (Nellie Bennett) at 940 720 7733. Bats should only be handled as a last resort and after communication with TPWD.

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.

Any other evidence indicating possible hazardous materials or contamination discovered on site. Hazardous Materials or Contamination Issues Specific to this Project:

- No Action Required Action Required

1. If sheen or other contamination is visible in the waters of the U.S., or on the project site, the site shall be immediately cleaned up in accordance with local, state and federal regulations.

VII. OTHER ENVIRONMENTAL ISSUES

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

- No Action Required Action Required

- Action No.
 1. Keep noise to a minimum. Reduce idling of vehicles and equipment.
 2. Maintain project site. Minimize dust and airborne particles to the maximum extent practical.
 3. Collect sanitary waste in accordance with local regulations by a sanitary waste collector. Portable units shall not be placed in or near a waterway or drainage area
 4. Collect all waste materials, trash, and debris from the construction site daily and deposit into a metal dumpster having a secure cover.
 5. TxDOT EMS Policy Statement (English & Spanish) should be displayed at the construction site.

| | | | | |
|---|-----------|---------------------------------|-----------|-------------|
|  | | Design Division Standard | | |
| ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS EPIC | | | | |
| FILE: epic.dgn | DN: TxDOT | CK: RG | DW: VP | CK: AR |
| (C)TxDOT: February 2015 | CONT | SECT | JOB | HIGHWAY |
| 12-12-2013 (DS) | 0903 | 00 | 123 | US 82, ETC. |
| 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, ETC. | 73 | |

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

This project is adjacent or parallel work, not within RR ROW:
 DOT No.: See Railroad Scope of Work Sheet 2 of 3
 Crossing Type: See Railroad Scope of Work Sheet 2 of 3
 RR Company Operating Track at Crossing: See Railroad Scope of Work Sheet 2 of 3
 RR Company Owning Track at Crossing: See Railroad Scope of Work Sheet 2 of 3
 RR MP: See Railroad Scope of Work Sheet 2 of 3
 RR Subdivision: See Railroad Scope of Work Sheet 2 of 3
 City: See Railroad Scope of Work Sheet 2 of 3
 County: See Railroad Scope of Work Sheet 2 of 3
 CSJ at this Crossing: See Railroad Scope of Work Sheet 2 of 3
 Latitude: See Railroad Scope of Work Sheet 2 of 3
 Longitude: See Railroad Scope of Work Sheet 2 of 3

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

TCP only for DOT No. 274994B, 415442D, 274970M, and 276368R. Work will consist of cleaning and sealing bridge joints. No work will occur under structure.

For DOT No. 274970M, 276371Y, 415447M, 415447M, 274991F, and 415466S: repairs on riprap, columns, and beams beneath structure. See Sheet 2 of 3 for site specific information. Traffic control and concrete crew will need to enter RR ROW.

Scope of Work to be performed by Railroad Company:

N/A

II. FLAGGING & INSPECTION

No. of Days of Railroad Flagging Expected: 12

On this project, night or weekend flagging is:

Expected
 Not Expected

Flagging services will be provided by:

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

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

Contact Information for Flagging:

UPRR UP.info@railpros.com
 Call Center 877-315-0513, Select #1 for flagging
 UP.request@nrssinc.net
 Call Center 877-984-6777

BNSF BNSFinfo@railprofs.com
 Call Center 877-315-0513, Select #1 for flagging

CPKCR KCS.info@railpros.com
 Call Center 877-315-0513, Select #1 for flagging
 Bottom Line On-Track Safety Services
 bottomline076@aol.com, 903-767-7630

OTHERS:

Contractor must incorporate railroad construction inspection into anticipated construction schedule.

Not Required
 Required. Contact Information for Construction Inspection:

III. CONSTRUCTION WORK TO BE PERFORMED BY THE RAILROAD

Required.
 Not Required
 Railroad Point of Contact: _____

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

IV. RAILROAD INSURANCE REQUIREMENTS

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

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

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

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

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

V. CONTRACTOR'S RIGHT OF ENTRY (CROE)

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

- BNSF: BNSF Temporary Occupancy Permit with JLL
<https://bnsf.railpermitting.com>
- CPKCR
https://jllrpg.360works.com/fmi/webd/rpo_web_kcs.fmp12
- Other Railroads: _____

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

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

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

VI. RAILROAD COORDINATION MEETING

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

VII. RAILROAD SAFETY ORIENTATION

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

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

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

VIII. SUBCONTRACTORS

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

IX. EMERGENCY NOTIFICATION

In Case of Railroad Emergency
 Call: BNSF Railway Company
 Railroad Emergency Line at: (800) 832-5452
 Location: DOT See Sheet 2 of 3
 RR Milepost: See Sheet 2 of 3
 Subdivision: See Sheet 2 of 3

RRD Review Only
 Initials: EM
 Date: 12-6-2023

Rail Division

RAILROAD SCOPE OF WORK
 PROJECT SPECIFIC DETAILS

SHEET 1 OF 3

| | | | | |
|----------------------------|-----------|---------------|-----|-------------|
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| © TxDOT June 2014 | CONT | SECT | JOB | HIGHWAY |
| 6/2023 | 0903 | 00 | 123 | US 82, ETC. |
| REVISIONS | | | | |
| | DIST | COUNTY | | SHEET NO. |
| | 03 | WICHITA, ETC. | | 74 |

| Reference No. | DOT No. | Crossing Type | RR Company Operator | RR Company Owner | Railroad Milepost | Railroad Subdivision | City | County | Roadway | CSJ | Latitude | Longitude | Type of Work |
|---------------|---------|------------------|---------------------|------------------|-------------------|-----------------------|--------------------|---------|-----------|-------------|------------|-------------|--|
| 1 & 2 | 274994B | Highway Overpass | BNSF | BNSF | 109.032 | Wichita Falls | Near Wichita Falls | Wichita | US 287 | 0903-00-123 | 33.8806864 | -98.4103700 | Cleaning & Sealing Joints; Spall Repair on Rail |
| 1 & 2 | 415442D | Highway Overpass | BNSF | BNSF | 109.069 | Wichita Falls | Near Wichita Falls | Wichita | US 287 | 0903-00-123 | 33.8810479 | -98.4112560 | Cleaning & Sealing Joints; Spall Repair on Rail |
| 3 & 4 | 274970M | Highway Overpass | BNSF | BNSF | 97.000 | Wichita Falls | Near Henrietta | Clay | US 287 | 0903-00-123 | 33.8138103 | -98.2190410 | Cleaning & Sealing Joints; Spall Repair on Columns |
| 21 | 276368R | Highway Overpass | BNSF | BNSF | 6.057 | Valley Jct.-Allendale | Near Wichita Falls | Wichita | US 277 | 0903-00-123 | 33.8722483 | -98.5697870 | Cleaning & Sealing Joints |
| 31 | 276371Y | Highway Overpass | BNSF | BNSF | 5.298 | Valley Jct.-Allendale | Wichita Falls | Wichita | BUS 277 | 0903-00-123 | 33.8832433 | -98.5689900 | Cleaning & Sealing Joints; Riprap Repair |
| 33 & 34 | 415447M | Highway Overpass | BNSF | BNSF | 111.227 | Wichita Falls | Wichita Falls | Wichita | SH 79 | 0903-00-123 | 33.8919038 | -98.4453460 | Cleaning & Sealing Joints; Riprap Repair |
| 35 | 274991F | Highway Overpass | BNSF | BNSF | 111.130 | Wichita Falls | Wichita Falls | Wichita | SH 79 | 0903-00-123 | 33.8942114 | -98.4444860 | Joint Repair |
| 36 | 415466S | Highway Overpass | WTRJ | WTJR | 3.35 | Western | Wichita Falls | Wichita | SP 325 SB | 0903-00-123 | 33.953161 | -98.5142842 | Cleaning and Sealing Joints; Spall Repair on Beams |

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|  | | Rail Division | |
| RAILROAD SCOPE OF WORK ADDITIONAL CROSSINGS IN PROJECT LIMITS SHEET 2 OF 3 | | | |
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| © TxDOT June 2014 | CONT | SECT | JOB HIGHWAY |
| REVISIONS | 0903 | 00 | 123 US 82, ETC. |
| | DIST | COUNTY | SHEET NO. |
| | 03 | WICHITA, ETC. | 75 |

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

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

This project is adjacent or parallel work, not within RR ROW:
 DOT No.: 415466S
 Crossing Type: Highway Overpass
 RR Company Operating Track at Crossing: Wichita, Tillman & Jackson Railway Company, Inc.
 RR Company Owning Track at Crossing: Wichita, Tillman & Jackson Railway Company, Inc.
 RR MP: 3.35
 RR Subdivision: Western
 City: Wichita Falls
 County: Wichita
 CSJ at this Crossing: 0903-00-123
 Latitude: 33.9531610
 Longitude: -98.5142842

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

Repairs on riprap, columns, and beams. Traffic control and concrete crew will need to enter RR ROW.

Scope of Work to be performed by Railroad Company:

N/A

II. FLAGGING & INSPECTION

No. of Days of Railroad Flagging Expected: 3
 On this project, night or weekend flagging is:
 Expected
 Not Expected

Flagging services will be provided by:

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

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

Contact Information for Flagging:

UPRR UP.info@railpros.com
 Call Center 877-315-0513, Select #1 for flagging
 UP.request@nrssinc.net
 Call Center 877-984-6777

BNSF BNSFinfo@railprosfs.com
 Call Center 877-315-0513, Select #1 for flagging

CPKCR KCS.info@railpros.com
 Call Center 877-315-0513, Select #1 for flagging
 Bottom Line On-Track Safety Services
 bottomline076@aol.com, 903-767-7630

OTHERS:

Matthew Mattiza - Rio Grande Pacific - Call (817) 480-8042

Contractor must incorporate railroad construction inspection into anticipated construction schedule.

Not Required
 Required. Contact Information for Construction Inspection:

III. CONSTRUCTION WORK TO BE PERFORMED BY THE RAILROAD

Required.
 Not Required
 Railroad Point of Contact: _____

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

IV. RAILROAD INSURANCE REQUIREMENTS

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

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

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

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

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

V. CONTRACTOR'S RIGHT OF ENTRY (CROE)

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

- BNSF: _____
https://bnsf.railpermitting.com
- CPKCR
https://jllrpg.360works.com/fmi/webd/rpo_web_kcs.fmp12
- Other Railroads: Rio Grande Pacific (Wichita, Tillman & Jackson Railway Company)
https://rgpc.com/forms/right-of-entry-application/

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

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

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

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

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

VIII. SUBCONTRACTORS

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

IX. EMERGENCY NOTIFICATION

In Case of Railroad Emergency
 Call: Wichita, Tillman & Jackson Railway Company, Inc.
 Railroad Emergency Line at: (682) 703-8505
 Location: DOT 415466S
 RR Milepost: 3.35
 Subdivision: Wichita Falls

RRD Review Only
 Initials: EM
 Date: 10/18/2023

Rail Division

RAILROAD SCOPE OF WORK
 PROJECT SPECIFIC DETAILS

SHEET 3 OF 3

| | | | | |
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| | DIST | COUNTY | | SHEET NO. |
| | 03 | WICHITA, ETC. | | 76 |

PART 1 - GENERAL

1.01 DESCRIPTION

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

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

1.02 REQUEST FOR INFORMATION / CLARIFICATION

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

1.03 PLANS / SPECIFICATIONS

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

PART 2 - UTILITIES AND FIBER OPTIC

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

PART 3 - CONSTRUCTION

3.01 GENERAL

A. Perform all work in compliance with all applicable Railroad, Federal Railroad Administration (FRA), and TxDOT rules and regulations. Arrange and conduct work in a manner that does not endanger or interfere with the safe operation of the tracks and property of the Railroad and the traffic moving on such tracks, or the wires, signals and other property of the Railroad, its tenants or licensees, at or in the vicinity of the Work. The safe operation of railroad train movements takes precedence over any work to be performed by the Contractor. The Contractor is responsible for train delay cost and lost revenue claims due to any delays or interruption of train operations resulting from Contractor's construction or other activities.

B. Construction activities within 15 feet of the operational tracks will only be allowed if absolutely necessary and the Railroad's Designated Representative grants approval. Construction activities within 15 feet of the operational track(s) preferably allow the tracks to stay operational. In such cases, coordination and approval by the Railroad Track Manager is required with regard to schedule, flagging, and slow orders. See Sections 3.07 and 3.08 for additional information.

C. Provide track protection for all work equipment (including rubber tired equipment) operating within 25 feet from nearest rail. When not in use, keep Contractor machinery and materials at least 50 feet from the Railroad's nearest track.

D. Vehicular crossings of railroad track are allowed only at existing crossings, or haul road crossings developed with Railroad approval.

E. The Contractor is also advised that new railroad facilities within the project may be built by the Railroad. If applicable, these facilities are delineated in the plans. Be aware of the limits of responsibilities and coordinate efforts with the Railroad and TxDOT.

F. Railroad requirements do not allow work within 50 feet of track centers when a train passes the work site and all personnel must clear the area within 50 feet of the track centerline and secure all equipment. Additional allowances may be pursued as outlined in 3.02 and 3.03.

G. All permanent clearances shall be verified before project closing.

3.02 RAILROAD OPERATIONS

A. Trains and/or equipment are expected on any track, at any time, in either direction. Become familiar with the train schedules in this location and structure bid assuming intermittent track windows in this period, as defined in Paragraph B that follows.

B. All railroad tracks within and adjacent to the contract site are active, and rail traffic over these facilities shall be maintained throughout the Project. Activities may include both through moves and switching moves to local customers. railroad traffic and operations will occur continuously throughout the day and night on these tracks and shall be maintained at all times as defined herein. Coordinate and schedule the work so that construction activities do not interfere with railroad operations.

C. Coordinate work windows with TxDOT and the Railroad's Designated Representative. Types of work windows include Conditional Work Windows and Absolute Work Windows, as defined below:

1. Conditional Work Window: A Conditional Work Window is a period of time that railroad operations have priority over construction activities. When construction activities may occur on and/or adjacent to the railroad tracks within 25 feet of the nearest track, a railroad flag person will be required. At the direction of the railroad flag person, upon approach of a train, and when trains are present on the tracks, the tracks must be cleared (i.e., no construction equipment, materials or personnel within 25 feet, or as directed by the Railroad Designated Representative, from the tracks). Conditional Work Windows are available for the Project.

2. Absolute Work Window: An Absolute Work Window is a period of time that construction activities are given priority over railroad operations. During this time frame, the designated railroad track(s) will be inactive for train movements and may be fouled by the Contractor. At the end of an Absolute Work Window, the railroad tracks and/or signals must be completely operational for train operations and all Railroad, Public Utilities Commission (PUC) and FRA requirements, codes and regulations for operational tracks must be satisfied. In the situation where the operating tracks and/or signals have been affected, the Railroad will perform inspections of the work prior to placing that track back into service. Railroad flag persons will be required for construction activities requiring an Absolute Work Window. Absolute Work Windows will not generally be granted. Any request will require a detailed explanation for Railroad review.

3.03 RIGHT OF ENTRY, ADVANCE NOTICE AND WORK STOPPAGES

A. Do not perform any work within Railroad Right of Way without a valid executed Right of Entry Agreement if required on this project.

B. Give advance notice to the Railroad as required in the "Contractor's Right of Entry Agreement" before commencing work in connection with construction upon or over Railroad Right of Way and observe the Railroad's rules and regulations with respect thereto.

C. Perform all work upon Railroad Right of Way in a manner to avoid interference with or endanger the operations of the Railroad. Whenever work may affect the operations or safety of trains, submit the work method to the Railroad Designated Representative for approval. Approval does not relieve the Contractor from liability. Do not commence any work which requires flagging service or inspection service until the flagging protection required by the Railroad is available at the job site. See Section 3.15 for railroad flagging requirements.

D. Make requests in writing for both Absolute and Conditional Work Windows, at least 30 days in advance of any work. Include in the written request:

- 1. Exactly what the work entails.
- 2. The days and hours that work will be performed.
- 3. The exact location of work, and proximity to the tracks.
- 4. The type of window requested and the amount of time requested.
- 5. The designated contact person.

Provide a written confirmation notice to the Railroad at least 48 hours before commencing work in connection with approved work windows when work is within 25 feet of nearest rail. Perform all work in accordance with previously approved work plans.

E. Make provisions to protect operations and property of the Railroad should a condition arising from, or in connection with the work, require immediate and unusual action. If in the judgment of the Railroad Designated Representative such provisions are insufficient, the Railroad Designated Representative may require or provide such provisions as deemed necessary. In any event, such provisions shall be at the Contractor's expense and without cost to the Railroad or TxDOT. The Railroad or TxDOT shall have the right to order the Contractor to temporarily cease operations in the event of an emergency or, if in the opinion of the Railroad Designated Representative, the Contractor's operations could endanger railroad operations. In the event of such an order, immediately notify TxDOT of the order.

3.04 INSURANCE

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

3.05 RAILROAD SAFETY ORIENTATION

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

"UPRR,BNSF,KCS/TEXMEX will not accept on-track safety training certificates from other railroads. Refer to Railroad specific contractor right of entry for training information."

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

3.06 COOPERATION

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

3.07 MINIMUM CONSTRUCTION CLEARANCES FOR FALSEWORK AND OTHER TEMPORARY STRUCTURES

Abide by the following minimum temporary clearances during the course of construction:

- A. 15' - 0" (BNSF)(UPRR) and 14'-0" (KCS) horizontal from centerline of track
- B. 22' (KCS) and 21' - 6" (UPRR & BNSF) vertically above top of rail.

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

3.08 APPROVAL OF REDUCED CLEARANCES

A. Maintain minimum track clearances during construction as specified in Section 3.07.

B. Submit any proposed infringement on the specified minimum clearances to the Railroad Designated Representative through TxDOT at least 30 days in advance of the work. Do not proceed with such infringement without written approval by the Railroad Designated Representative.

C. Do not commence work involving an approved infringement without receiving written assurance from the Railroad Designated Representative that arrangements have been made for any necessary flagging service.

Texas Department of Transportation Rail Division RAILROAD REQUIREMENTS FOR NON-BRIDGE CONSTRUCTION PROJECTS

| | | | | | |
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| | March 2020 | DIST | | COUNTY | SHEET NO. |
| | | WFS | | WICHITA, ETC. | 77 |

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3.09 MAINTENANCE OF RAILROAD FACILITIES

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

3.10 SITE INSPECTIONS BY RAILROAD'S DESIGNATED REPRESENTATIVE

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

3.11 RAILROAD REPRESENTATIVES

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

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

3.12 COMMUNICATIONS AND SIGNAL LINES

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

3.13 TRAFFIC CONTROL

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

3.14 CONSTRUCTION EXCAVATIONS AND BORING ACTIVITIES UNDER TRACK

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

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

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

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

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

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

3.15 RAILROAD FLAGGING

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

3.16 CLEANING OF RIGHT-OF-WAY

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

| | | | | |
|---|--------------|----------------------|-----------|-------------|
| Texas Department of Transportation | | <i>Rail Division</i> | | |
| RAILROAD REQUIREMENTS FOR NON-BRIDGE CONSTRUCTION PROJECTS | | | | |
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| March 2020 | DIST | COUNTY | SHEET NO. | |
| | WFS | WICHITA, ETC. | 78 | |