

# STATE OF TEXAS DEPARTMENT OF TRANSPORTATION

## PLANS OF PROPOSED STATE HIGHWAY BRIDGE PREVENTATIVE MAINTENANCE

PROJECT NUMBER 6447-71-001

PROJECT NO.		SHEET NO.	
BPM 644771001		1	
STATE	DIST	COUNTY	
TEXAS	14	BASTROP, ETC.	
CONT	SECT	JOB	HIGHWAY
6447	71	001	US 290, ETC.

NET LENGTH OF PROJECT = 558.66 FEET = 0.1058 MILES

- US 290 EB OVER DRAW (WESTERN BRIDGE) = 50.00 FT = 0.0095 MILES
- SH 71 WB OVER SHIPPS LAKE = 78.66 FT = 0.0149 MILES
- US 290 EB OVER DRAW (EASTERN BRIDGE) = 50.00 FT = 0.0095 MILES
- SH 71 WB OVER HALFWAY CREEK = 50.00 FT = 0.0095 MILES
- FM 671 OVER PIN OAK CREEK = 100.00 FT = 0.0189 MILES
- SH 95 OVER PRICKLY PEAR CREEK = 80.00 FT = 0.0152 MILES
- FM 20 AT LENTZ BRANCH = 150.00 FT = 0.0284 MILES

### BASTROP, ETC.

### US 290, ETC.

LIMITS: VARIOUS LOCATIONS IN BASTROP, LEE & CALDWELL COUNTIES  
PILE COLLAR REPLACEMENTS, PILE COLLAR ADDITIONS, STEEL PILE PAINTING,  
SCOUR COUNTERMEASURES, CONCRETE SPALL, AND RAIL REPAIR

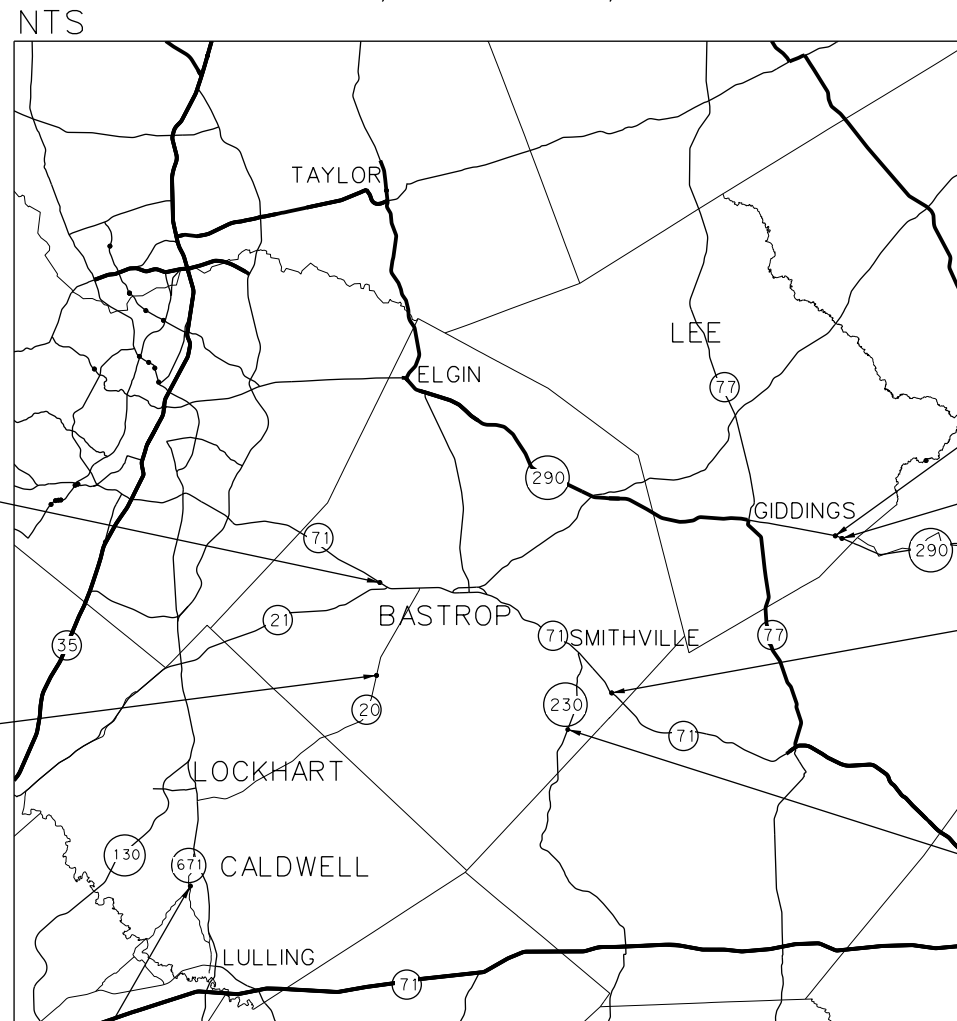
### FINAL PLANS

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

#### FINAL PLANS STATEMENT:

THE CONSTRUCTION WORK WAS PERFORMED  
IN ACCORDANCE WITH THE PLANS:

P.E. \_\_\_\_\_  
 AREA ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_  
 TEXAS DEPARTMENT OF TRANSPORTATION



LOCATION 4  
STR: 140110026503048  
SH 71 OVER HALFWAY CREEK

LOCATION 7  
STR: 140110011504023  
FM 20 AT LENTZ BRANCH

LOCATION 5  
STR: 140280106001009  
FM 671 OVER PIN OAK CREEK

LOCATION 1  
STR: 141440011407085  
US 290 EB OVER DRAW (WESTERN)

LOCATION 3  
STR: 141440011407086  
US 290 EB OVER DRAW (EASTERN)

LOCATION 2  
STR: 140110026506031  
SH 71 WB OVER SHIPPS LAKE

LOCATION 6  
STR: 140110032301014  
SH 95 OVER PRICKLY PEAR CREEK

LOCATION MAP NOT TO SCALE

EXCEPTIONS: N/A  
EQUATIONS: N/A  
R.R. CROSSINGS: N/A

I CERTIFY THAT THIS PROJECT  
WAS CONSTRUCTED IN SUBSTANTIAL  
COMPLIANCE WITH THE FINAL AS-BUILT  
PLANS AND SPECIFICATIONS.

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION,  
NOVEMBER 1, 2014 AND SPECIFICATION ITEMS LISTED AND DATED AS  
FOLLOWS, SHALL GOVERN ON THIS PROJECT: REQUIRED CONTRACT PROVISIONS  
FOR ALL FEDERAL-AID CONSTRUCTION CONTRACTS (FORM FHWA 1273, MAY, 2012).



SUBMITTED FOR LETTING: 1/16/2024  
 DocuSigned by:  
 Diana K. Schulzes P.E.  
 AREA ENGINEER

RECOMMENDED FOR LETTING: 1/15/2024  
 DocuSigned by:  
 Gisel Carrasco  
 DISTRICT MAINTENANCE ENGINEER  
 APPROVED FOR LETTING: 1/15/2024  
 DocuSigned by:  
 Omar X. De Leon, P.E.  
 DIRECTOR OF MAINTENANCE

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		BPM 644771001		US 290, ETC.
DESIGNED: DNP	STATE	STATE DIST. NO.	COUNTY	SHEET NO.
CHECKED: WD	TEXAS	AUSTIN	BASTROP, ETC.	
DRAWN: MS	CONT.	SECT.	JOB	
CHECKED: DNP	6447	71	001	2

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**Highway:** US 290, ETC.

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## GENERAL NOTES:

### GENERAL

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

Bastrop Area [Tanli.Sun@txdot.gov](mailto:Tanli.Sun@txdot.gov)  
Bastrop Area [Diana.Schulze@txdot.gov](mailto:Diana.Schulze@txdot.gov)

Questions and requests for documents will be accepted via the Letting Pre-Bid Q&A web page. 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. This webpage can be accessed from the Notice to Contractors dashboard located at the following Address:

<https://tableau.txdot.gov/views/ProjectInformationDashboard/NoticetoContractors>

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.

Written notice will be given to begin work on this project.

Work must begin within seven (7) calendar days after such notification. Time charges will begin when work begins regardless if it falls within seven (7) calendar days of the notification to begin work.

The contractor will have **“one hundred forty-six” (146)** working days to complete all work under this contract.

Work under this contract shall consist of **pile collar replacements, pile collar additions, steel pile painting, scour countermeasures, concrete spall repair, and rail repair** at various locations in **Bastrop, Lee, and Caldwell Counties**.

References to manufacturer's trade name or catalog numbers are for the purpose of identification only. Similar materials from other manufacturers are permitted if they are of equal quality, comply with the specifications for this project, and are approved.

If work is performed at Contractor's option, when inclement weather is impending, and the work is damaged by subsequent precipitation, the Contractor is responsible for all costs associated with replacing the work, if required.

Contact the supervisor for the passenger facility at Capital Metro and request the relocation of Capital Metro signs. Contact the supervisor at (512) 385-0190.

Equip all construction equipment used in roadway work with highly visible omnidirectional flashing warning lights.

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Intelligent Transportation Systems (ITS) Infrastructure may exist within the limits of this project and that the system must remain operational throughout construction. The exact location of ITS Infrastructure is not known. Contact the TxDOT Area Engineer's or Inspection Team's Office for the location(s) at least 48 hours before commencing any work that might affect present ITS Infrastructure. Use caution if working in these areas to avoid damaging or interfering with existing facilities. Repair any damage to this system within 8 hours of occurrence at no cost to the Department. In the event of system damage, notify TxDOT/CTECC at (512) 974-0883 within one hour of occurrence. Failure of the Contractor to repair damage to any infrastructure that conveys any corridor information to TxDOT/CTECC will result in the Contractor being billed for the full cost of emergency repairs.

Provide a smooth, clean sawcut along the existing asphalt (or concrete) pavement structure, as directed. Consider subsidiary to the pertinent Items.

Use a self-contained vacuum broom to sweep the roadway and keep it free of sediment as directed. The contractor will be responsible for any sweeping above and beyond the normal maintenance required to keep fugitive sediment off the roadway as directed by the Engineer.

Damage to existing pipes and SET's due to Contractor operations will be repaired at Contractor's expense.

The Contractor is responsible for any damage done to the existing utilities while working on this project. The Contractor is responsible for reporting the damage to the utility company as soon as possible.

All locations used for storing construction equipment, materials, and stockpiles of any type, within the right of way, will be as directed. Use of right of way for these purposes will be restricted to those locations where driver sight distance to businesses and side street intersections is not obstructed and at other locations where an unsightly appearance will not exist. The Contractor will not have exclusive use of right of way but will cooperate in the use of the right of way with the city/county and various public utility companies as required.

Each contract is considered separate and individual from others. Requirements to complete work on any or all contracts may occur at the same time. If requests are issued at the same time, it is expected that the work will be completed in the time frame allowed.

Coordinate and obtain approval for all bridgework over existing roadways.

### Bridge Vertical Clearance and Traffic Handling

Notify TxDOT project staff and the local bridge engineer 10 business days prior to the following: change in vertical clearance, placing beams/girders over traffic, opening or removing traffic from a bridge or portion of a bridge, and completion of bridge work. This requirement includes bridge class culverts. Provide vertical clearance for all structures (including signal mast arms, span wires, and overhead sign bridge structures) within the project limit. Submit information and notices to local bridge engineer at [AUS\\_BRG\\_Notify@txdot.gov](mailto:AUS_BRG_Notify@txdot.gov).

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During evacuation periods for Hurricane events the Contractor will cooperate with Department for the restricting of Lane Closures and arranging for Traffic Control to facilitate Coastal Evacuation Efforts.

#### **ITEM 5 – CONTROL OF THE WORK**

Place construction stakes at intervals of no more than 100 ft. This work is subsidiary.

Provide a 72-hour advance email notice to [AUS\\_Locate@TxDOT.gov](mailto:AUS_Locate@TxDOT.gov) to request illumination, traffic signal, ITS, or toll equipment utility locates. Provide [AUS\\_Locate@TxDOT.gov](mailto:AUS_Locate@TxDOT.gov) an electronic pdf of as-builts within 21 calendar days of illumination, traffic signal, ITS, or toll equipment being placed into operation. As-built shall include GPS coordinates of manholes and junction boxes. Include final version of RFI's and revised plan sheets.

#### **Electronic Shop Drawing Submittals:**

Submit electronic shop drawing submittals according to the current [Guide to Electronic Shop Drawing Submittal](https://www.txdot.gov/business/resources/specifications/shop-drawings.html) (<https://www.txdot.gov/business/resources/specifications/shop-drawings.html>) (TxDOT.gov Business > Resources - General > Shop Drawings). Pre-approved producers can be found online at TxDOT.gov > Business > Resources - Material Producer List. Use the following contact list for all submittals that are not required to be sent to Bridge Division and to copy the Engineer for all submittals to the Bridge Division.

#### Submittal Contact List

Bastrop Area      [Diana.Schulze@txdot.gov](mailto:Diana.Schulze@txdot.gov)      AUS\_BA-ShopReview@txdot.gov

#### **ITEM 6 - CONTROL OF MATERIALS**

The Contractor is responsible for furnishing all materials included in this contract. Materials provided by Contractor will be new unless otherwise shown on the plans or approved. The Contractor must receive approval from the Engineer prior to ordering materials for this contract.

The Contractor is required to have sufficient supply of material to complete repair work within the allotted time.

Give a minimum of 1 business day notice for materials, which require inspection at the Plant.

For structures with paint containing hazardous materials, provide locations of paint removal 60 days prior to begin removal.

The area designated as the potential habitat for the Houston Toad will not be allowed as a source for embankment unless approved by the Engineer. The general area is Bastrop County north of the Colorado River and east of SH 95 unless provided in the plans.

#### **ITEM 7 – LEGAL RELATIONS AND RESPONSIBILITIES**

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TxDOT will coordinate with TDLR regarding pedestrian elements and sidewalks. The contractor will procure and provide all permits, licenses, and inspections; pay all charges, fees, and taxes regarding TDLR rules governing industrialized housing and buildings.

No significant traffic generator events identified.

Refer to the Environmental Permits, Issues and Commitments (EPIC) plan sheets for additional requirements and permits.

When any abandoned well is encountered, cease construction operations in this area and notify the Engineer who will coordinate the proper plugging procedures. A water well driller licensed in the State of Texas must be used to plug a well.

Erosion control and stabilization measures must be initiated immediately in portions of the site where construction activities have temporarily ceased and will not resume for a period exceeding 14 calendar days. Track all exposed soil, stockpiles, and slopes. Tracking consists of operating a tracked vehicle or equipment up and down the slope, leaving track marks perpendicular to the direction of the slope. Re-track slopes and stockpiles after each rain event or every 14 days, whichever occurs first. This work is subsidiary.

Perform maintenance of vehicles or equipment at designated maintenance sites. Keep a spill kit on-site during fueling and maintenance. This work is subsidiary.

Maintain positive drainage for permanent and temporary work for the duration of the project. Be responsible for any items associated with the temporary or interim drainage and all related maintenance. This work is subsidiary.

Suspend all activities near any significant recharge features, such as sinkholes, caves, or any other subterranean openings that are discovered during construction or core sampling. Do not proceed until the designated Geologist or TCEQ representative is present to evaluate and approve remedial action.

Locate aboveground storage tanks kept on-site for construction purposes in a contained area as to not allow any exposure to soils. The containment will be sized to capture 150% of the total capacity of the storage tanks.

#### **PSL in Edwards Aquifer Recharge and Contributing Zone.**

Obtain written approval from the Engineer for all on or off right of way PSLs not specifically addressed in the plans. Provide a signed SW3P sketch of the location 30 business days prior to use of the PSL. Include a list of materials, equipment and portable facilities that will be stored at the PSL.

#### **PSL in USACE Jurisdictional Area.**

Do not initiate activities in a PSL associated with a U.S. Army Corps of Engineers (USACE) jurisdictional area that have not been previously evaluated by the USACE as part of the permit review of this project. Such activities include, but are not limited to, haul roads, equipment staging

areas, borrow and disposal sites. Associated defined here means materials are delivered to or from the PSL. The jurisdictional area includes all waters of the U.S. including wetlands or associated wetlands affected by activities associated with this project. Special restrictions may be required for such work. Consult with the USACE regarding activities, including PSLs that have not been previously evaluated by the USACE. Provide the Department with a copy of all USACE coordination and approvals before initiating activities.

Proceed with activities in PSLs that do not affect a USACE jurisdictional area if self-determination has been made that the PSL is non-jurisdictional or proper clearances have been obtained in USACE jurisdictional areas or have been previously evaluated by the USACE as part of the permit review of this project. Document any determinations that PSL activities do not affect a USACE jurisdictional area. Maintain copies of PSL determinations for review by the Department or any regulatory agency. The Contractor must document and coordinate with the USACE, if required, before any excavation material hauled from or embankment material hauled into a USACE jurisdictional area by either (1) or (2) below.

1. **Restricted Use of Materials for the Previously Evaluated Permit Areas.** When an area within the project limits has been evaluated by the USACE as part of the permit process for this project:
  - a. suitable excavation of required material in the areas shown on the plans and cross sections as specified in Standard Specification Item 110, Excavation is used for permanent or temporary fill within a USACE jurisdictional area;
  - b. suitable embankment from within the USACE jurisdictional area is used as fill within a USACE evaluated area;
  - c. Unsuitable excavation or excess excavation that is disposed of at an approved location within a USACE evaluated area.
2. **Contractor Materials from Areas Other than Previously Evaluated Areas.** Provide the Department with a copy of all USACE coordination and approvals before initiating any activities in a jurisdictional area within the project limits that has not been evaluated by the USACE or for any off right of way locations used for the following, but not limited to, haul roads, equipment staging areas, borrow and disposal sites:
  - a. Standard Specification Item 132, Embankment is used for temporary or permanent fill within a USACE jurisdictional area;
  - b. Unsuitable excavation or excess excavation that is disposed of outside a USACE evaluated area.

**Work over or near Bodies of Water (Lakes, Rivers, Ponds, Creeks, etc.).**

Keep on site a universal spill kit adequate for the body of water and the work being performed. Debris is not allowed to fall into the ordinary high-water level (OHWL). Debris that falls into the OHWL must be removed at the end of each work day. Debris that falls into the floodway must be removed at the end of each work week or prior to a rain event. Install and maintain traffic control devices to maintain a navigable corridor for water traffic, except during bridge demo and beam placement. This work is subsidiary.

**DSHS Asbestos and Demolition Notification.**

Complete and provide the Texas Department of State Health Services (DSHS) notification form to TxDOT and [AUS BRG Notify@txdot.gov](mailto:AUS_BRG_Notify@txdot.gov) at least 30 calendar days prior to bridge removal or renovation. Notify the Engineer via email of any changes to the work start and end dates.

**Migratory Birds and Bats.**

Migratory birds and bats may be nesting within the project limits and concentrated on roadway structures such as bridges and culverts. Remove all old and unoccupied migratory bird nests from any structures, trees, etc. between September 16 and February 28. Prevent migratory birds from re-nesting between March 1 and September 15. Prevention shall include all areas within 25 ft. of proposed work. All methods used for the removal of old nesting areas and the prevention of re-nesting must be submitted to TxDOT 30 business days prior to begin work. This work is subsidiary.

If active nests are encountered on-site during construction, all construction activity within 25 ft. of the nest must stop. Contact the Engineer to determine how to proceed.

**Law Enforcement Personnel.**

Submit charge summary and invoices using the Department forms.

Patrol vehicles must be clearly marked to correspond with the officer's agency and equipped with appropriate lights to identify them as law enforcement. For patrol vehicles not owned by a law enforcement agency, markings will be retroreflective and legible from 100 ft. from both sides and the rear of the vehicle. Lights will be high intensity and visible from all angles.

No payment will be made for law enforcement personnel needed for moving equipment or payment for drive time to/from the event site. A minimum number of hours is not guaranteed. Payment is for work performed. If the Contractor has a field office, provide an office location for a supervisory officer when event requires a supervising officer. This work is subsidiary.

A maximum combined rate of \$70 per hour for the law enforcement personnel and the patrol vehicle will be allowed. Any scheduling fee is subsidiary per Standard Specification 502.4.2.

Cancel law enforcement personnel when the event is canceled. Cancellation, minimums or "show up" fees will not be paid when cancellation is made 12 hours prior to beginning of the event. Failure to cancel within 12 hours will not be cause for payment for cancellation, minimums, or "show up" time. Payment of actual "show up" time to the event site due to cancellation will be on a case-by-case basis at a maximum of 2 hours per officer.

Alterations to the cancellation and maximum rate must be approved by the Engineer or pre-determined by official policy of the officer's governing authority.

**ITEM 8 – PROSECUTION AND PROGRESS**

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

**ITEM 100 - PREPARING RIGHT OF WAY**

Prep ROW must not begin until accessible trees designated for preservation have been protected, items listed in the EPIC have been addressed, and SW3P controls installed in accessible areas.

**ITEM 420, 425, 441, & 462 - STRUCTURES**

**Bridge Vertical Clearance and Traffic Handling**

Notify TxDOT project staff and the local bridge engineer 10 business days prior to the following: change in vertical clearance, placing beams/girders over traffic, opening or removing traffic from a bridge or portion of a bridge, and completion of bridge work. This requirement includes bridge class culverts. Provide vertical clearance for all structures (including signal mast arms, span wires, and overhead sign bridge structures) within the project limit. Submit information and notices to local bridge engineer at [AUS\\_BRG\\_Notify@txdot.gov](mailto:AUS_BRG_Notify@txdot.gov).

**ITEM 420 – CONCRETE SUBSTRUCTURES**

Do not use PMDF in areas where a “Free Joint” is indicated in the plans. Perform work during good weather unless otherwise directed. If work is performed at Contractor’s option, when inclement weather is impending, and the work is damaged by the weather, the Contractor is responsible for all costs associated with repairs/replacement.

Upon completion of the structure, stencil the National Bridge Inventory (NBI) number (structure number) using black paint and 4 in. tall numbers at 4 locations designated by TxDOT. This work is subsidiary.

Bonding agents are required at construction joints. Do not use membrane curing for structural concrete as defined in Item 421, Table 8.

Remove all loose Formwork and other Materials from the floodplain or drainage areas daily.

**ITEM 429 - CONCRETE STRUCTURE REPAIR**

Refer to TxDOT Concrete Repair Manual (2021) for all concrete structure repair requirements and details.

**ITEM 496 - REMOVING STRUCTURES**

No debris is allowed to fall into a body of water. Debris that falls into the water must be removed at the end of each work day. Debris that falls into the floodway must be removed at the end of each work week or prior to a rain event.

**ITEM 502 - BARRICADES, SIGNS, AND TRAFFIC HANDLING**

Table 1

<u>Roadway</u>	<u>Limits</u>	<u>Allowable Closure Time</u>
IH 35	All (1 lane closed)	9 P to 5 A
IH 35	All (2 lanes closed, see allowable work below)	9 P to 5 A
IH 35	All (2 lanes closed, all work)	11 P to 5 A
SH 45	US 183 to SH130	8 P to 5 A
LP 1	William Cannon to Parmer Lane	8 P to 5 A
US 183	SH 29 to FM 1327	8 P to 5 A

SH 71	SH 130 to IH 35	8 P to 5 A
SH 71	SH 304 to Tahitian Drive	8 P to 5 A
SH 71	US 290 W to RM 3238	8 P to 5 A
US 290 W	IH 35 to Nutty Brown Rd	8 P to 5 A
US 290 E	IH 35 to SH 95	8 P to 5 A
FM 734	FM 1431 to US 290 E	8 P to 5 A
US 79	IH 35 to Bus 79 in Taylor	8 P to 5 A
RM 1431	Lohmans Ford Rd to IH 35	8 P to 5 A
SH 29	LP 332 western terminus to SH 130	8 P to 5 A
SH 80	Charles Austin to River Road	8 P to 5 A
RM 2222	All	8 P to 5 A
RM 620	All	8 P to 5 A
RM 2244	All	8 P to 5 A
SPUR 69	All	8 P to 5 A
LP 360	All	8 P to 5 A
LP 343	All	8 P to 5 A
LP 275	All	8 P to 5 A
FM 1325	All	8 P to 5 A
All	Within 200’ of a signalized intersection	9 P to 5 A
All	All (Full Closure, see allowable work below)	11 P to 4 A

For roadways without defined allowable closure times, nighttime lane closures will be allowed from 7 P to 6 A. Unless stated, daytime or Friday night lane closures will not be allowed and one lane in each direction will remain open at all times for all roadways.

Full closures only allowed Sunday Night thru Friday morning for bridge beam installation, bridge demolition, or OSB truss removal/installation. Full closures only allowed for roadways with frontage roads or if a designated detour route is provided in the plans.

No closures will be allowed on the weekends, working day prior, and working day after the National Holidays defined in the Standard Specifications, Good Friday, and Easter weekend. Closures the Sunday of the Super Bowl will not be allowed from 1 P to 11 P. No closures will be allowed on Friday and the weekends for projects within 20 miles of Formula 1 at COTA, ACL Fest, SXSW, ROT Rally, UT home football games (includes games not on a Friday or weekend), sales tax holiday, Dell Match Play (includes Thursday) or other special events that could be impacted by the construction. All lanes will be open by noon of the day before these special events.

To account for directional traffic volumes, begin and end times of closures may be shifted equally by the Engineer. The closure duration will remain. Added compensation is not allowed.

Submit an emailed request for a lane closure (LCN) to TxDOT. The email will be submitted in the format provided. Receive concurrence prior to implementation. Submit a cancellation of lane closures a minimum of 18 hours prior to implementation. Blanket requests for extended periods are not allowed. Max duration of a request is 2 weeks prior to requiring resubmittal. Provide 2-hour notice prior to implementation and immediately upon removal of the closure.

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For roadways listed in Table 1: Submit the request 96 hours prior to implementation.

For roadways not listed in Table 1: Submit the request a minimum of 48 hours prior to the closure and by the following deadline immediately prior to the closure: 11A on Tuesday or 11A on Friday.

For all roadways: Submit request for traffic detours and full roadway closures 168 hours prior to implementation. Submit request for nighttime work 96 hours to implementation date. Cancellations of accepted closures (not applicable to full closures or detours) due to weather will not require resubmission in accordance with the above restrictions if the work is completed during the next allowable closure time.

Closures that conflict with adjacent contractor will be prioritized according to critical path work per latest schedule. Conflicting critical path or non-critical work will be approved for first LCN submitted. Denial of a closure due to prioritization or other reasons will not be reason for time suspension, delay, overhead, etc.

Cover, relocate or remove existing signs that conflict with traffic control. Install all permanent signs, delineation, and object markers required for the operation of the roadway before opening to traffic. Use of temporary mounts is allowed or may be required until the permanent mounts are installed or not impacted by construction. Maintain the temporary mounts. This work is subsidiary.

Meet with the Engineer prior to lane closures to ensure that sufficient equipment, materials, devices, and workers will be used. Take immediate action to modify traffic control, if at any time the queue becomes greater than 20 minutes. Have a contingency plan of how modification will occur. Consider inclement weather prior to implementing the lane closures. Do not set up traffic control when the pavement is wet.

Place a 28-inch cone, meeting requirements of BC (10), on top of foundations that have protruding studs. This work is subsidiary.

Edge condition treatment types must be in accordance with the TxDOT standard. Installation and removal of a safety slope is subsidiary.

To determine a speed limit or an advisory speed limit, submit a request to TxDOT 60 business days prior to manufacture of the sign.

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.

One-way Traffic Control will be subsidiary.

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**ITEM 778 – CONCRETE RAIL REPAIR**

Repair may require rail re-alignment and re-anchoring to supporting structure.

**ITEM 6185 – TRUCK MOUNTED ATTENUATOR AND TRAILER ATTENUATOR**

The TMA/TA used for installation/removal of traffic control for a work area will be subsidiary to the TMA/TA used to perform the work.

The contractor will be responsible for determining if one or more operations will be ongoing at the same time to determine the total number of TMA/TA required for the work. TMA/TAs paid by the day is full compensation for all worksite locations during an entire day.

TMA/TAs used to protect damaged attenuators will be paid by the day using the force account item for the repair.

2:20:46 PM 1/2/2024  
 c:\working\jlp-pw-bentley.com\jlp-pw-01\David Pretorius\dms84224\BBR Bridge ESTIMATES - CSJ Package 6447-71-001.dgn

ESTIMATE SUMMARY																				
CONTROL 14-144-0-0114-07-085		CONTROL 14-011-0-0265-06-031		CONTROL 14-144-0-0114-07-086		CONTROL 14-011-0-0265-03-048		CONTROL 14-028-0-1060-01-009		CONTROL 14-011-0-0323-01-014		CONTROL 14-011-0-0115-04-023		ITEM CODE			DESCRIPTION	UNIT	TOTAL	
EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	ITEM CODE	DESC CODE	SP NO			EST	FINAL
2.8				0.4						9.3				401	6001		FLOWABLE BACKFILL	CY	12.5	
		1.5		3.2		0.6		1.7						420	6070		CL C CONC (PILE ENCASEMENT)	CY	7.0	
												10.0		429	6005		CONC STR REPAIR (DECK REP (FULL DEPTH))	SF	10.0	
59.0		6.0		10.9								10.0		429	6007		CONC STR REPAIR (VERTICAL & OVERHEAD)	SF	85.9	
315.0		256.0												432	6031		RIPRAP (STONE PROTECTION) (12 IN)	CY	571.0	
				598.0										432	6035		RIPRAP (STONE PROTECTION) (24 IN)	CY	598.0	
		1		1		1		1						446	6022		CLEAN & PAINT EXIST PILING (SYSTEM I-A)	LS	4	
												40.0		450	6006		RAIL (TY T223)	LF	40.0	
		1				2		2						496	6018		REMOVE STR (CONC)	EA	5	
1														500	6001		MOBILIZATION	LS	1	
1		1		1		1		1		1		1		502	6001		BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	7	
30		30		30		15		20		5		16		6185	6002		TMA (STATIONARY)	DAY	146	



ESTIMATE SHEET

FED. RD. DIV. NO.	PROJECT NO.			HIGHWAY NO.
	BPM 644771001			US 290, ETC.
DESIGNED: DNP	STATE	STATE DIST. NO.	COUNTY	SHEET NO.
CHECKED: WD	TEXAS	AUSTIN	BASTROP, ETC.	
DRAWN: MS	CONT.	SECT.	JOB	
CHECKED: DNP	6447	71	001	4



2:20:50 PM 1/2/2024  
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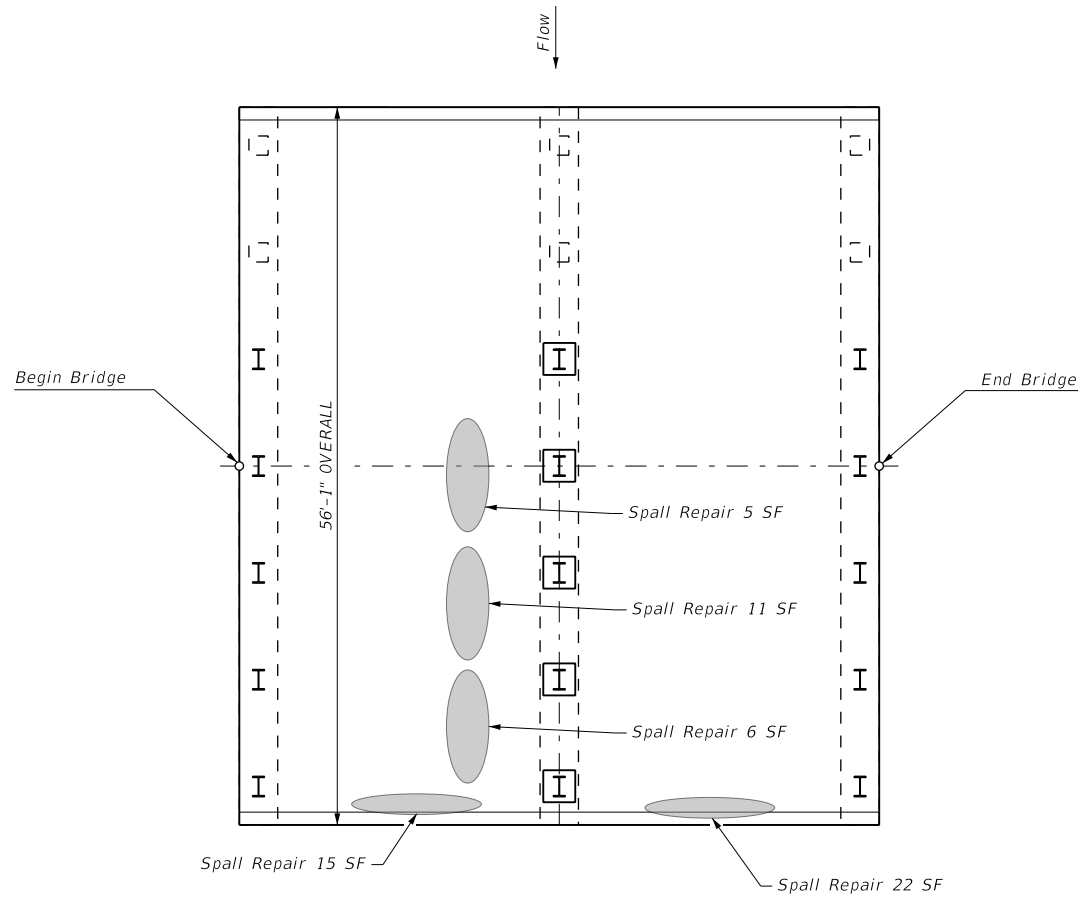
Project 6447-71-001				ESTIMATED QUANTITIES							PROJECT TOTALS
				STRUCTURE	STRUCTURE	STRUCTURE	STRUCTURE	STRUCTURE	STRUCTURE	STRUCTURE	
				14-144-0-0114-07-085 LEE CO	14-011-0-0265-06-031 BASTROP CO	14-144-0-0114-07-086 LEE CO	14-011-0-0265-03-048 BASTROP CO	14-028-0-1060-01-009 CALDWELL CO	14-011-0-0323-01-014 BASTROP CO	14-011-0-0115-04-023 BASTROP CO	
ITEM	CODE	DESCRIPTION	UNIT	US 290 EB OVER DRAW (WESTERN)	SH 71 WB OVER SHIPPS LAKE	US 290 EB OVER DRAW (EASTERN)	SH 71 WB OVER HALFWAY CREEK	FM 671 OVER PIN OAK CREEK	SH 95 OVER PRICKLY PEAR CREEK	FM 20 AT LENTZ BRANCH	QUANTITIES
401	6001	FLOWABLE BACKFILL	CY	2.8		0.4			9.3		12.5
420	6070	CL C CONC (PILE ENCASEMENT)	CY		1.5	3.2	0.6	1.7			7.0
429	6005	CONC STR REPAIR (DECK REP (FULL DEPTH))	SF							10.0	10.0
429	6007	CONC STR REPAIR (VERTICAL & OVERHEAD)	SF	59.0	6.0	10.9				10.0	85.9
432	6031	RIPRAP (STONE PROTECTION) (12 IN)	CY	315.0	256.0						571.0
432	6035	RIPRAP (STONE PROTECTION) (24 IN)	CY			598					598.0
446	6022	CLEAN & PAINT EXIST PILING (SYSTEM I-A)	LS		1	1	1	1			4
450	6006	RAIL (TY T223)	LF							40.0	40.0
496	6018	REMOVE STR (CONC)	EA		1		2	2			5
500	6001	MOBILIZATION	LS	1							1
502	6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	1	1	1	1	1	1	1	7
6185	6002	TMA (STATIONARY)	DAY	30	30	30	15	20	5	16	146



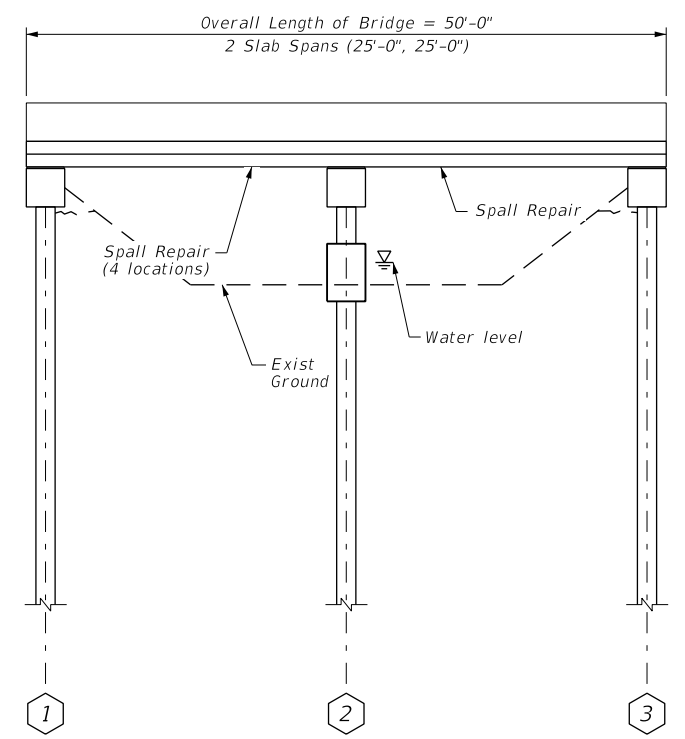
ESTIMATED QUANTITIES

FED. RD. DIV. NO.	PROJECT NO.			HIGHWAY NO.
	BPM 644771001			US 290, ETC.
DESIGNED: DNP	STATE	STATE DIST. NO.	COUNTY	SHEET NO.
CHECKED: WD	TEXAS	AUSTIN	BASTROP, ETC.	5
DRAWN: MS	CONT.	SECT.	JOB	
CHECKED: DNP	6447	71	001	

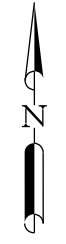
TABLE OF ESTIMATED QUANTITIES			
ITEM	DESCRIPTION	QUANTITY	UNIT
429 6007	CONC STR REPAIR (VERTICAL & OVERHEAD)	59.0	SF



PLAN



ELEVATION



**GENERAL NOTES**

Note that there are 2 bridges named "US 290 EB over DRAW". Refer to NBI located on this sheet to differentiate these structures.

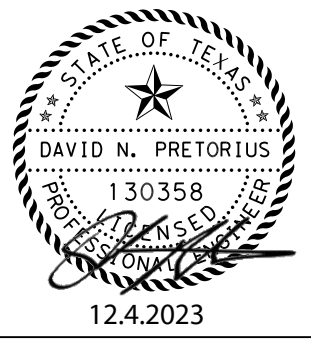
Existing Structure Number is missing or illegible. Include a new Structure number. See "PAINTING STRUCTURE NUMBERS (PSN-19 (AUS))" standard sheet for more information.

Refer to Spall Repair Details sheet.

**TRAFFIC CONTROL NOTES**

Road closures are not anticipated for the bridge repair work at this location. Implement all essential measures to reduce and prevent traffic disruptions while carrying out the work. Adhere to industry best practices to ensure a seamless flow of vehicles and pedestrians in the area of the work. Schedule work during periods of lower traffic volume. Conform to TxDOT TCP (1-1)-18 for work near or on roadway shoulders. Promptly remove traffic control devices upon the completion of the repair work. Payment for traffic control devices at this location will be subsidiary to the repair work.

NBI: 14-144-0-0114-07-085

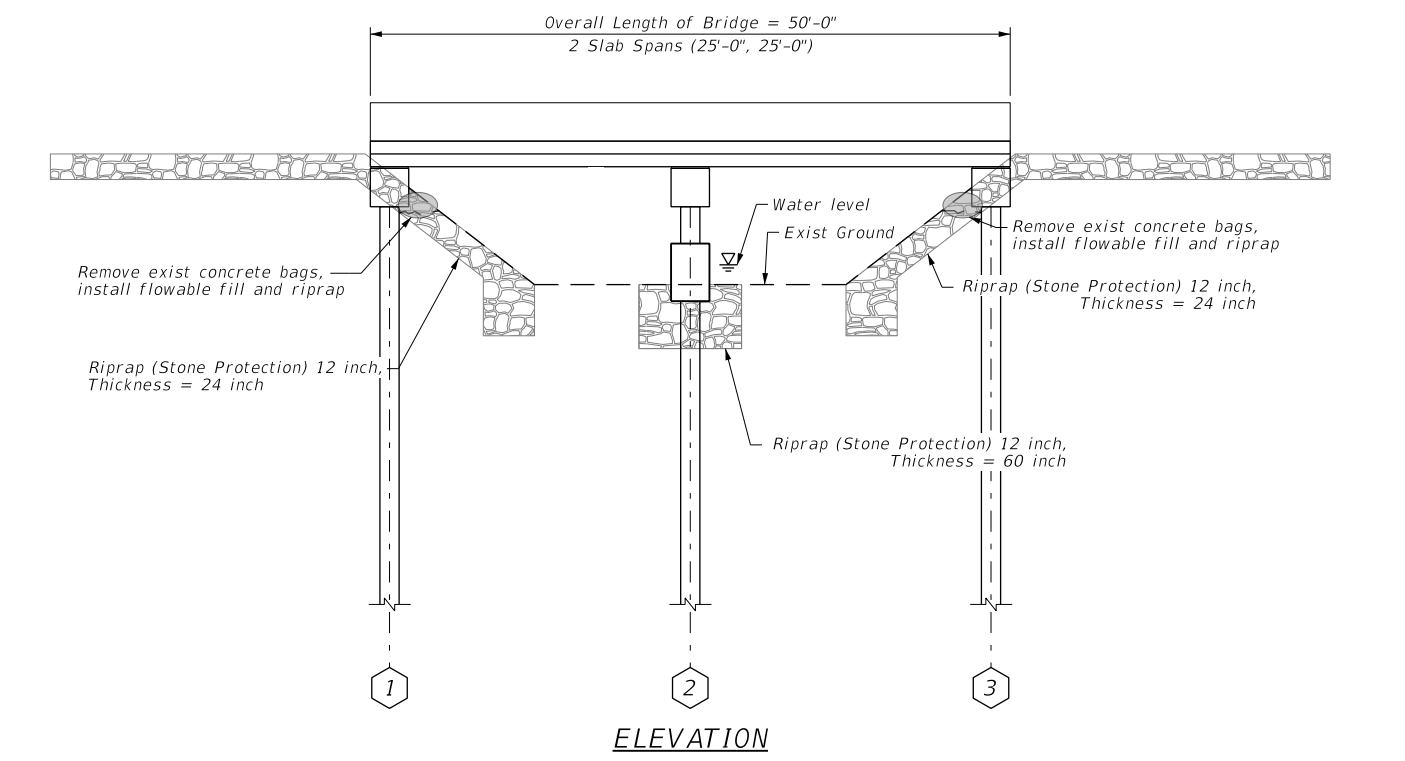
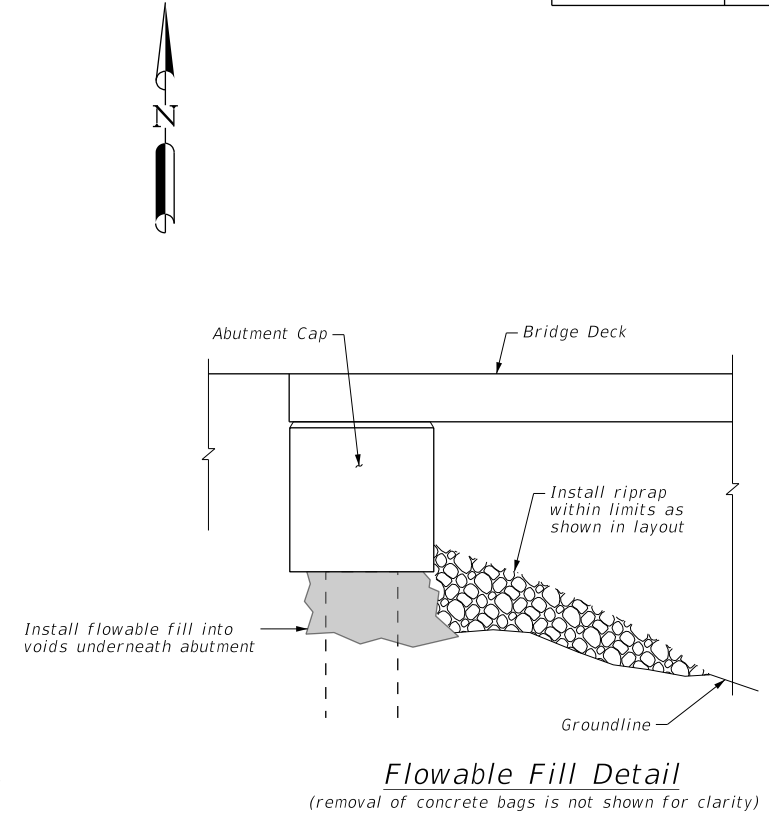
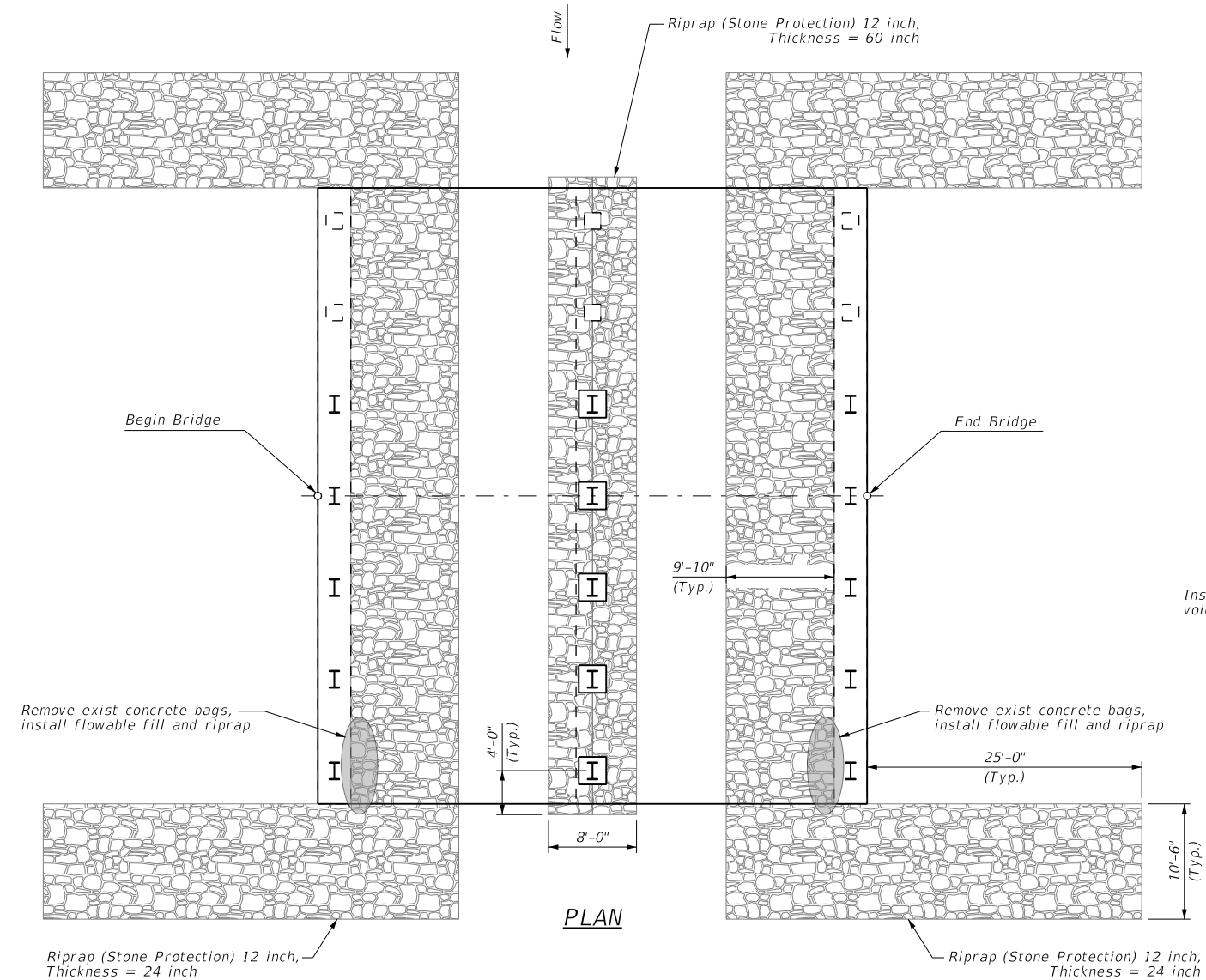


US 290 EB over Draw (Western Bridge) Bridge Layout

FED. RD. DIV. NO.		PROJECT NO.		HIGHWAY NO.
		BPM 644771001		
DESIGNED: DNP	STATE	STATE DIST. NO.	COUNTY	SHEET NO.
CHECKED: WD	TEXAS	AUSTIN	LEE	
DRAWN: MS	CONT.	SECT.	JOB	
CHECKED: DNP	6447	71	001	6

8/4/23 12:41:23 AM c:\working\jlp-pw-bentley.com\jlp-pw-01\georgette.zhong\dms84223\Brg-1\US 290 EB over Draw.dgn

TABLE OF ESTIMATED QUANTITIES				
ITEM	DESCRIPTION		QUANTITY	UNIT
401 6001	FLOWABLE BACKFILL		2.8	CY
432 6031	RIPRAP (STONE PROTECTION) (12 IN)		315.0	CY



**SCOUR COUNTERMEASURE NOTES:**  
 Install riprap in accordance to Item 432.  
 Refer to Stone Riprap (SRR) Standard sheets for details not shown.  
 Cost of removing existing concrete bags shall be subsidiary to bid item 0432 6031 Riprap (Stone Protection) (12 in).  
 Install flowable fill in accordance to Item 401.

NBI: 14-144-0-0114-07-085

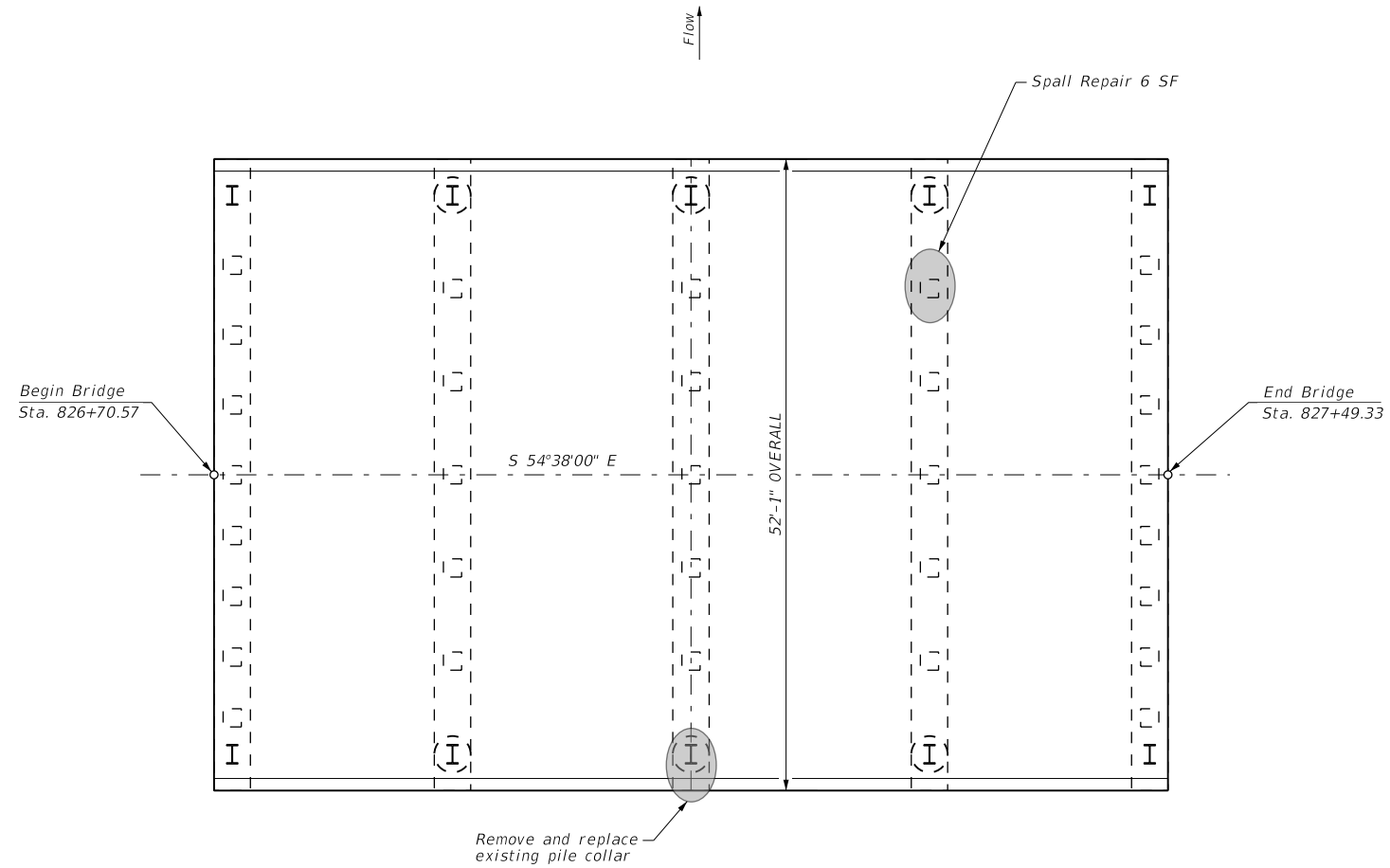


US 290 EB over Draw (Western Bridge)  
 Scour Countermeasure Layout

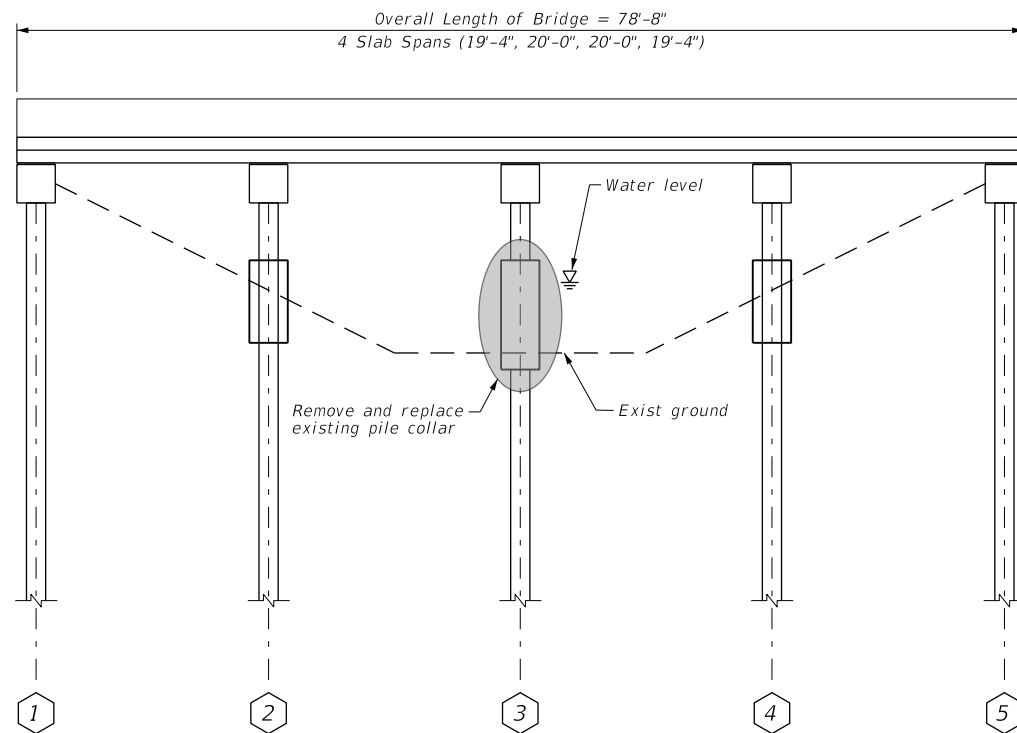
FED. RD. DIV. NO.		PROJECT NO.			HIGHWAY NO.
		BPM 644771001			
DESIGNED: DNP	STATE	STATE DIST. NO.	COUNTY	SHEET NO.	
CHECKED: WD	TEXAS	AUSTIN	LEE		
DRAWN: MS	CONT.	SECT.	JOB		
CHECKED: DNP	6447	71	001	7	

8/4/31 AM 12/4/2023 c:\working\jlp-pw-bentley.com\jlp-pw-01\george\pette.zhong\dms84223\Brg-1\US 290 EB over Draw Scour.dgn

TABLE OF ESTIMATED QUANTITIES			
ITEM	DESCRIPTION	QUANTITY	UNIT
420 6070	CL C CONC (PILE ENCASEMENT)	1.5	CY
429 6007	CONC STR REPAIR (VERTICAL & OVERHEAD)	6.0	SF
446 6022	CLEAN & PAINT EXIST PILING (SYSTEM I-A)	1.0	LS
496 6018	REMOVE STR (CONC)	1.0	EA



PLAN



ELEVATION

**GENERAL NOTES**

Existing Structure Number is missing or illegible. Include a new Structure Number, see "PAINTING STRUCTURE NUMBERS (PSN-19 (AUS))" standard sheet for more information.

Existing steel piles may contain lead based paint. Contractor to coordinate with TxDOT and separate contract involving environmental abatement during the cleaning of the existing steel.

Refer to SH 71 WB over Shipps Lake - Repair Details sheet.

Refer to Spall Repair Details sheet.

**TRAFFIC CONTROL NOTES**

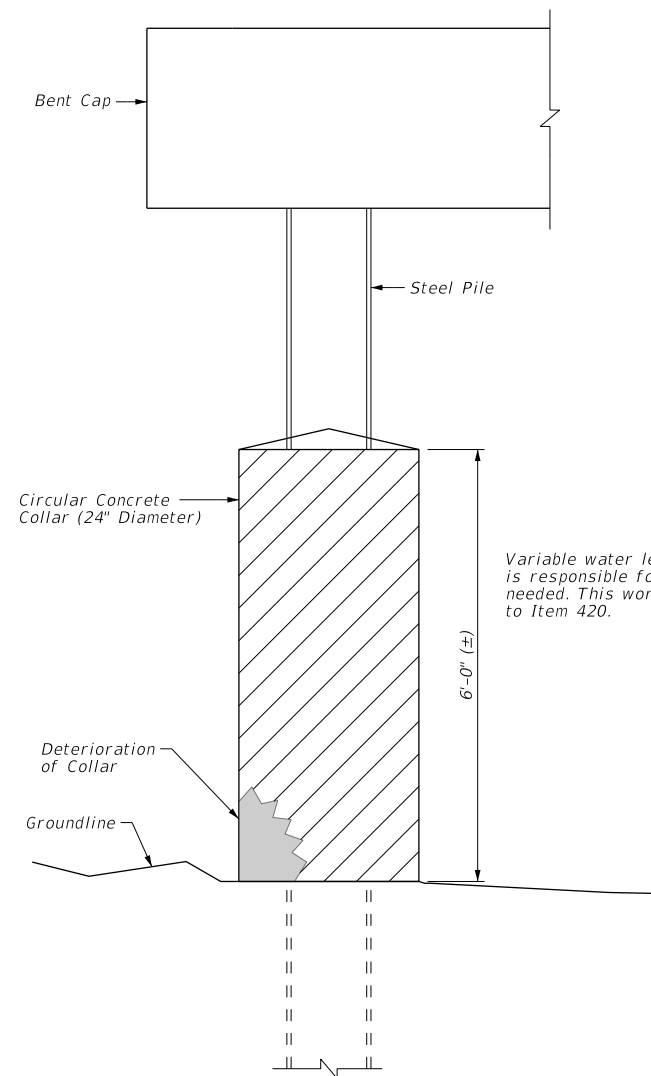
Road closures are not anticipated for the bridge repair work at this location. Implement all essential measures to reduce and prevent traffic disruptions while carrying out the work. Adhere to industry best practices to ensure a seamless flow of vehicles and pedestrians in the area of the work. Schedule work during periods of lower traffic volume. Conform to TxDOT TCP (1-1)-18 for work near or on roadway shoulders. Promptly remove traffic control devices upon the completion of the repair work. Payment for traffic control devices at this location will be subsidiary to the repair work.

NBI: 14-011-0-0265-06-031

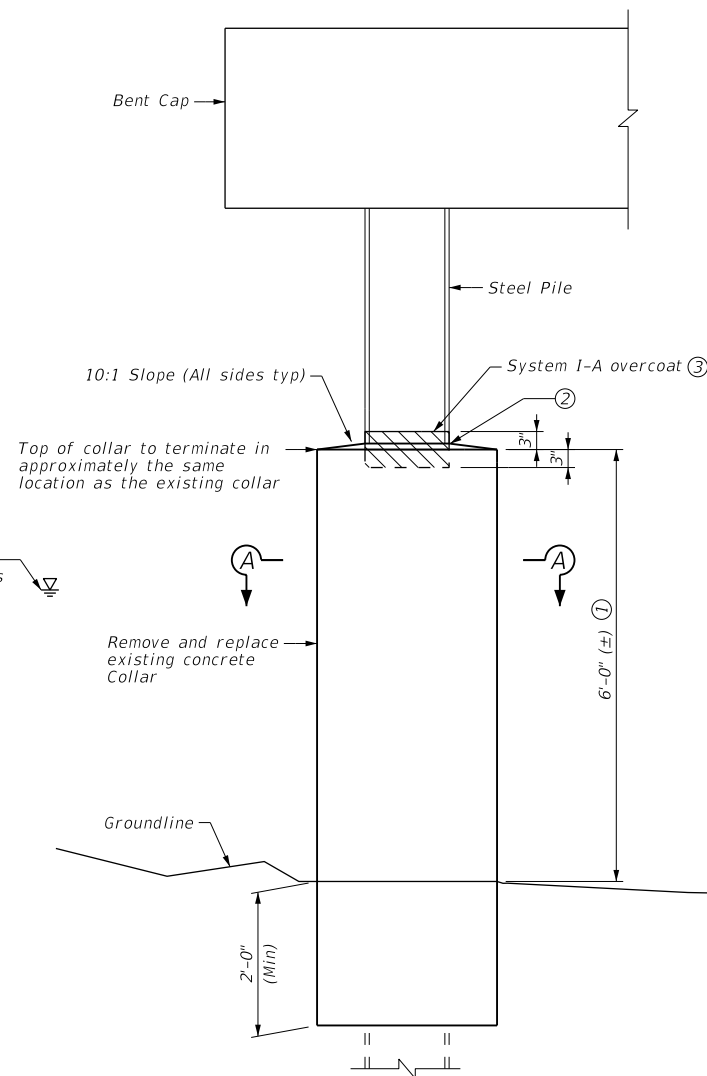


SH 71 WB over Shipps Lake Bridge Layout

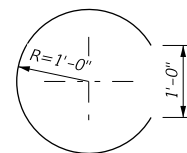
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		BPM 644771001		
DESIGNED: DNP	STATE	STATE DIST. NO.	COUNTY	SHEET NO.
CHECKED: WO	TEXAS	AUSTIN	BASTROP	
DRAWN: MS	CONT.	SECT.	JOB	
CHECKED: DNP	6447	71	001	8



**EXISTING CONDITION**

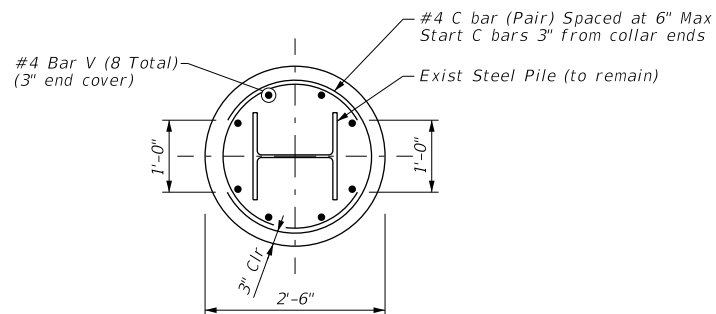


**PROPOSED CONDITION**



**C Bar (#4)**

Arrange Bar C pairs to provide 1'-0" opening on opposite faces



**SECTION A-A**

**GENERAL NOTES:**

Installation of new concrete collar shall be in accordance with Item 420, "Concrete Substructures".

Removal of existing concrete collar will be paid under 496-6018 REMOVE STR (CONC).

Existing conditions may be under water. Contractor is responsible for dewatering. Payment for dewatering is subsidiary to Item 420, "Concrete Substructures". The Contractor may submit a plan that adequately demonstrates the ability to perform construction without dewatering to the Engineer for approval. If approved, dewatering may be waived.

Obtain approval for the mix design and the construction procedures before beginning work.

If underwater placement is approved, concrete mix should be designed for underwater placement and may require the use of anti-washout admixtures.

Provide concrete for the H-piling collar capable of attaining an average concrete compressive strength of 3,000 psi within 24 hours and consisting of coarse aggregate grades not greater than No. 5 (3/4"). Provide a concrete mix with 2 gallons of corrosion inhibitor per CY

Provide Class "C" Concrete ( $f'_c = 3,600$  psi)

Provide Grade 60 reinforcing steel.

Contractor to provide compressive strength testing of class "C" concrete.

**PAINTING NOTES:**

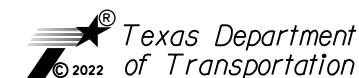
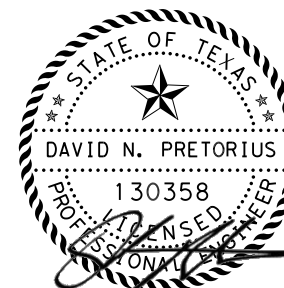
- 1) Clean the area to be painted with hand tools and high pressure water blasting.
- 2) Apply a minimum of 4.0 mils DFT coating conforming to DMS-8105 as shown.
- 3) Allow coating to cure a minimum of 24 hours prior to placing concrete.

**PILE ENCASEMENT PROCEDURE:**

- 1) Clean mud, grease, loose rust, and paint off the selection of H-piling to be encased with hand tools and high pressure water.
- 2) Place and secure the steel reinforcement and install formwork.
- 3) Place the concrete in the encasement per approved procedures and in accordance with item 420, "Concrete Substructures".
- 4) Leave forms in-place for at least 48 hours.

- ① Field adjust encasement length based on actual conditions.
- ② Seal gap with Class 4 or Clas 7 joint sealant (DMS-6310).
- ③ Apply System I-A overcoat (or alternate coating system, as specified) per Item 446, "Field Cleaning and Painting Steel" to an area covering 3" above and 3" below the top of concrete collar as shown. Refer to painting notes for more information.

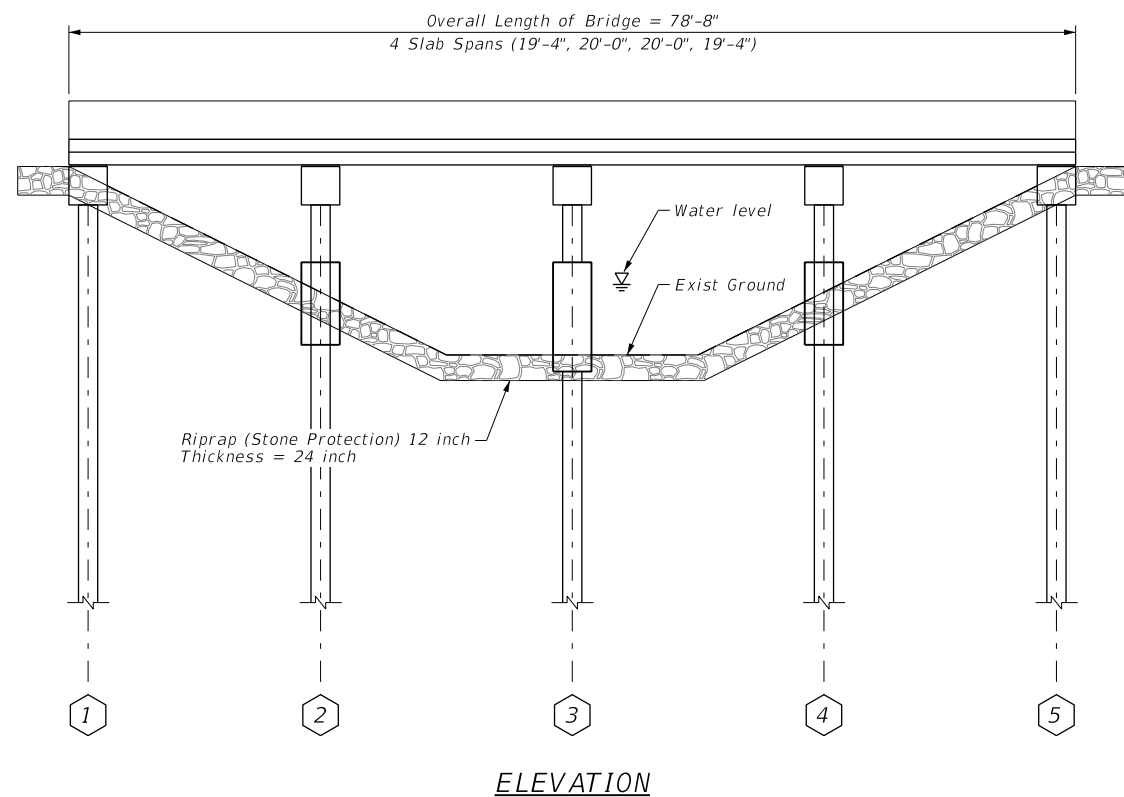
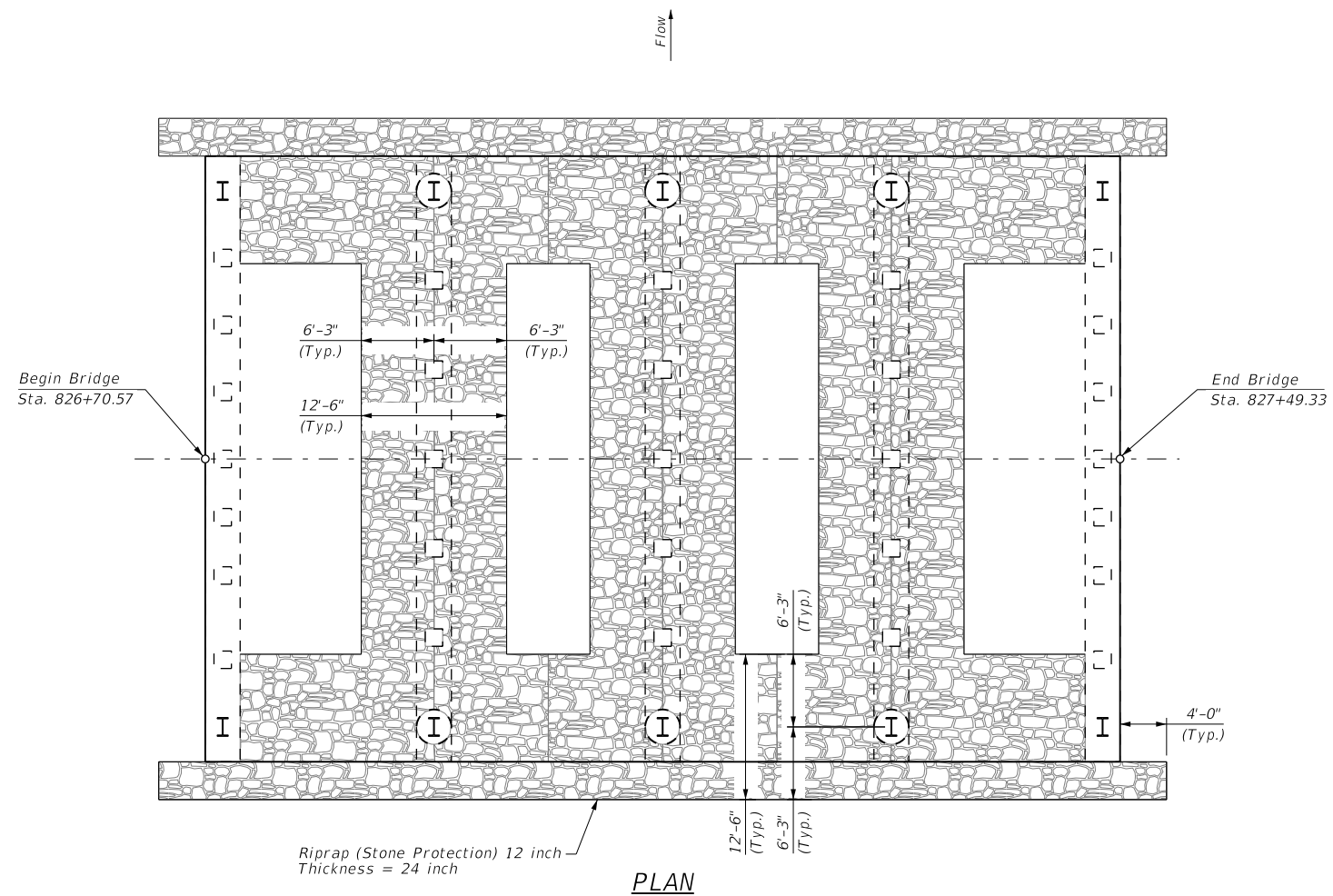
NBI: 14-011-0-0265-06-031



SH 71 WB over Shippo Lake Repair Details

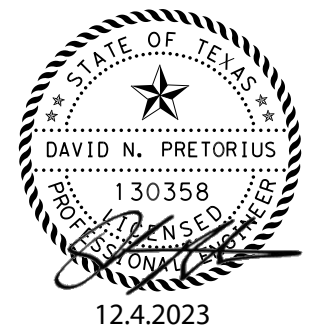
FED. RD. DIV. NO.		PROJECT NO.		HIGHWAY NO.	
		BPM 644771001			
DESIGNED: DNP	STATE	STATE DIST. NO.	COUNTY	SHEET NO.	
CHECKED: WO	TEXAS	AUSTIN	BASTROP		
DRAWN: MS	CONT.	SECT.	JOB		
CHECKED: DNP	6447	71	001	9	

TABLE OF ESTIMATED QUANTITIES			
ITEM	DESCRIPTION	QUANTITY	UNIT
432 6031	RIPRAP (STONE PROTECTION) (12 IN)	256	CY



**SCOUR COUNTERMEASURE NOTES:**  
 Install riprap in accordance to Item 432.  
 Refer to Stone Riprap (SRR) Standard sheets for details not shown.

NBI: 14-011-0-0265-06-031



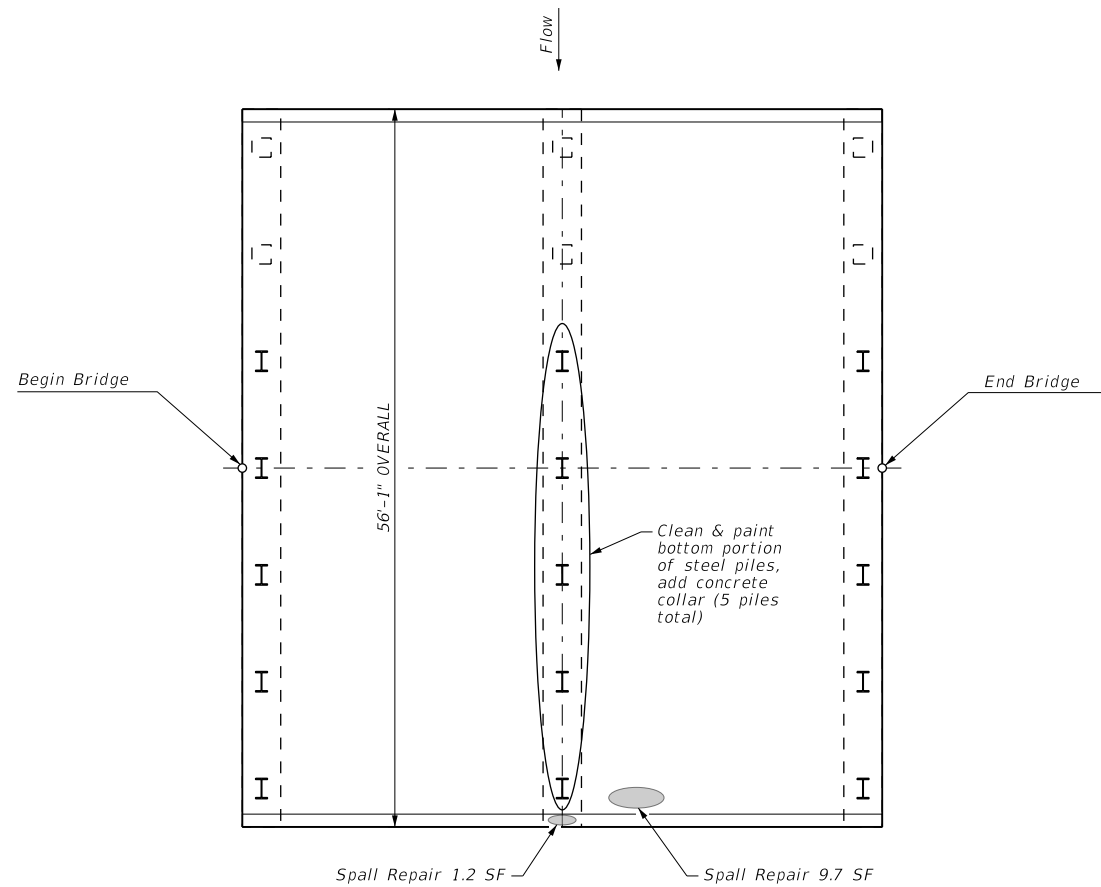
**LJA Engineering, Inc.**  
 FRN - F-1386



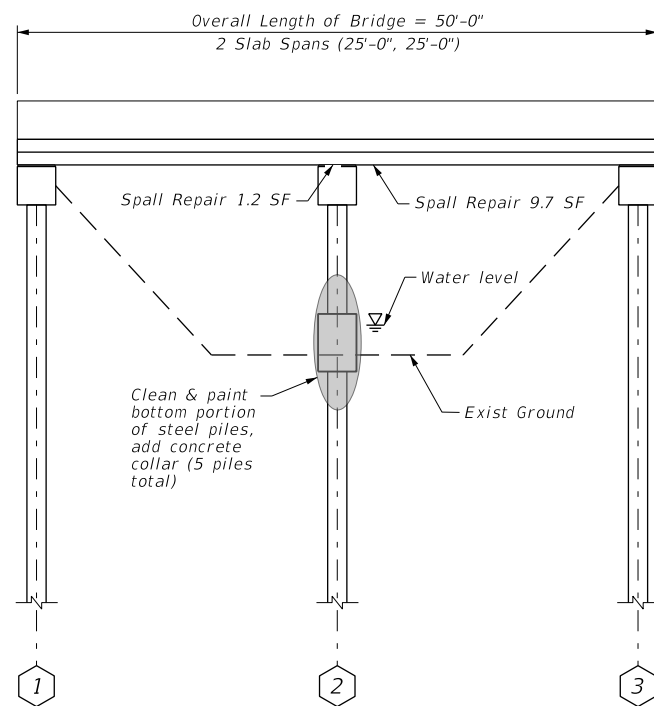
SH 71 WB over  
 Shippis Lake  
 Scour Countermeasure Layout

FED. RD. DIV. NO.	PROJECT NO.	HIGHWAY NO.
	BPM 644771001	
DESIGNED: DNP	STATE	STATE DIST. NO.
CHECKED: W0	TEXAS	AUSTIN
DRAWN: MS	CONT.	SECT.
CHECKED: DNP	6447	71
		COUNTY
		BASTROP
		SECT.
		001
		JOB
		10

TABLE OF ESTIMATED QUANTITIES			
ITEM	DESCRIPTION	QUANTITY	UNIT
420 6070	CL C CONC (PILE ENCASEMENT)	3.2	CY
429 6007	CONC STR REPAIR (VERTICAL & OVERHEAD)	10.9	SF
446 6022	CLEAN & PAINT EXIST PILING (SYSTEM I-A)	1.0 ①	LS



PLAN



ELEVATION



GENERAL NOTES

Note that there are 2 bridges named "US 290 EB over DRAW". Refer to NBI located on this sheet to differentiate these structures.

Existing Structure Number is missing or illegible. Include a new Structure Number, see "PAINTING STRUCTURE NUMBERS (PSN-19 (AUS))" standard sheet for more information.

Existing steel piles may contain lead based paint. Contractor to coordinate with TxDOT and separate contract involving environmental abatement during the cleaning of the existing steel.

Refer to US 290 EB Over Draw (Eastern Bridge) - Repair Details sheet.

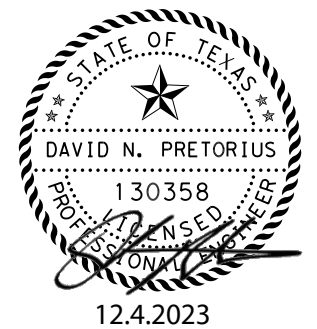
Refer to Spall Repair Details sheet.

① Approximately 18 SF paint required for piles. Contractor to verify prior to construction.

TRAFFIC CONTROL NOTES

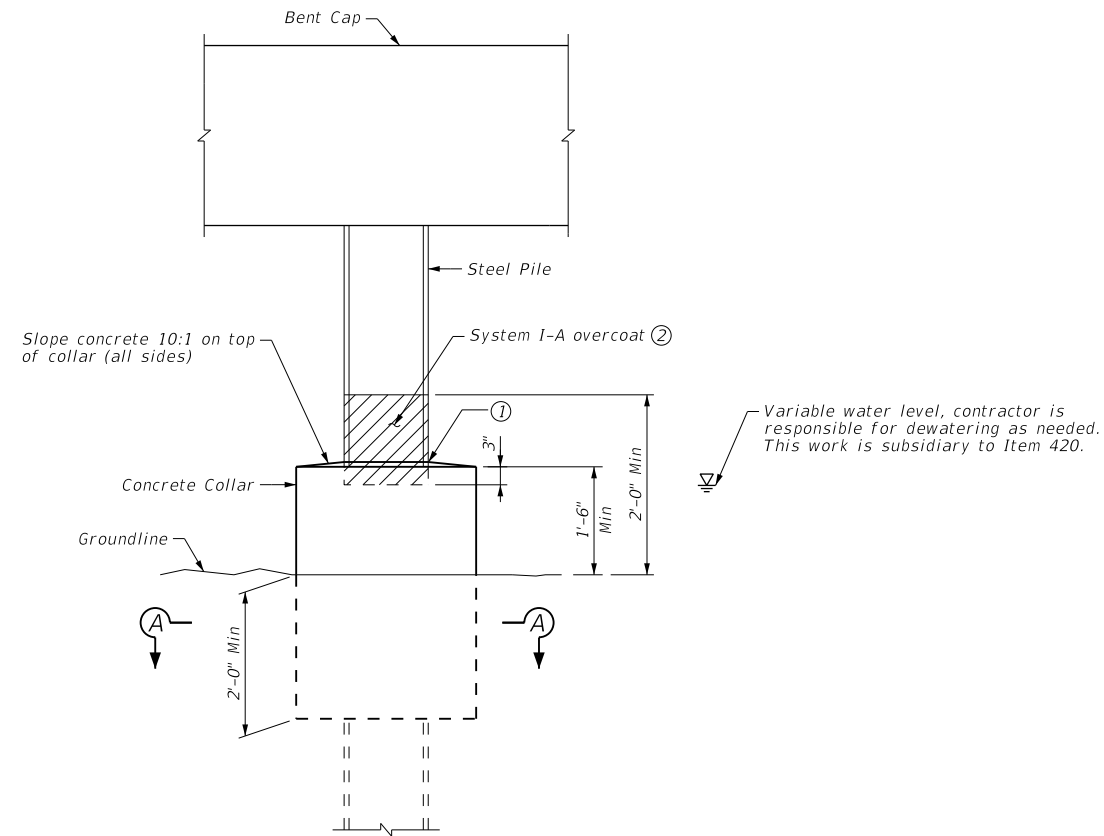
Road closures are not anticipated for the bridge repair work at this location. Implement all essential measures to reduce and prevent traffic disruptions while carrying out the work. Adhere to industry best practices to ensure a seamless flow of vehicles and pedestrians in the area of the work. Schedule work during periods of lower traffic volume. Conform to TxDOT TCP (1-1)-18 for work near or on roadway shoulders. Promptly remove traffic control devices upon the completion of the repair work. Payment for traffic control devices at this location will be subsidiary to the repair work.

NBI: 14-144-0-0114-07-086

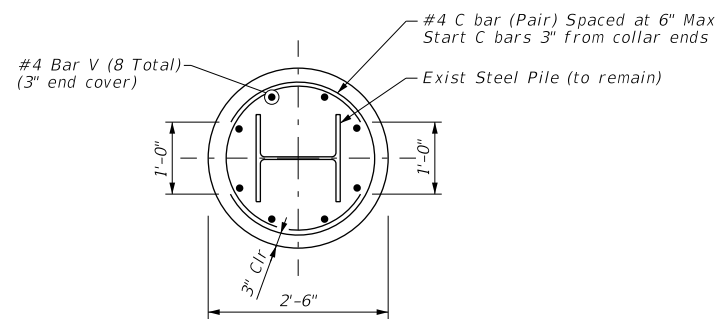


US 290 EB over Draw (Eastern Bridge) Bridge Layout

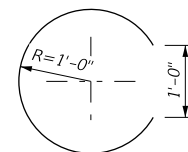
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		BPM 644771001		
DESIGNED: DNP	STATE	STATE DIST. NO.	COUNTY	SHEET NO.
CHECKED: WD	TEXAS	AUSTIN	LEE	
DRAWN: MS	CONT.	SECT.	JOB	
CHECKED: DNP	6447	71	001	11



**CONCRETE COLLAR DETAIL**



**SECTION A-A**



**C Bar (#4)**

Arrange Bar C pairs to provide 1'-0" opening on opposite faces

**GENERAL NOTES:**

Installation of new concrete collar shall be in accordance with Item 420, "Concrete Substructures".

Existing conditions may be under water. Contractor is responsible for dewatering. Payment for dewatering is subsidiary to Item 420, "Concrete Substructures". The Contractor may submit a plan that adequately demonstrates the ability to perform construction without dewatering to the Engineer for approval. If approved, dewatering may be waived.

Obtain approval for the mix design and the construction procedures before beginning work.

If underwater placement is approved, concrete mix should be designed for underwater placement and may require the use of anti-washout admixtures.

Provide concrete for the H-piling collar capable of attaining an average concrete compressive strength of 3,000 psi within 24 hours and consisting of coarse aggregate grades not greater than No. 5 (3/4"). Provide a concrete mix with 2 gallons of corrosion inhibitor per CY.

Provide Class "C" Concrete ( $f'c = 3,600$  psi)

Provide Grade 60 reinforcing steel.

Contractor to provide compressive strength testing of class "C" concrete.

**PAINTING NOTES:**

- 1) Clean the area to be painted with hand tools and high pressure water blasting.
- 2) Apply a minimum of 4.0 mils DFT coating conforming to DMS-8105 as shown.
- 3) Allow coating to cure a minimum of 24 hours prior to placing concrete.

**PILE ENCASEMENT PROCEDURE:**

- 1) Clean mud, grease, loose rust, and paint off the selection of H-piling to be encased with hand tools and high pressure water.
- 2) Place and secure the steel reinforcement and install formwork.
- 3) Place the concrete in the encasement per approved procedures and in accordance with item 420, "Concrete Substructures".
- 4) Leave forms in-place for at least 48 hours.

- ① Seal gap with Class 4 or Class 7 joint sealant (DMS-6310).
- ② Apply System I-A overcoat (or alternate coating system, as specified) per Item 446, "Field Cleaning and Painting Steel" to the pile starting 3" below the top of concrete collar to a minimum of 2'-0" above the groundline as shown. Refer to painting notes for more information.

NBI: 14-144-0-0114-07-086



12.4.2023



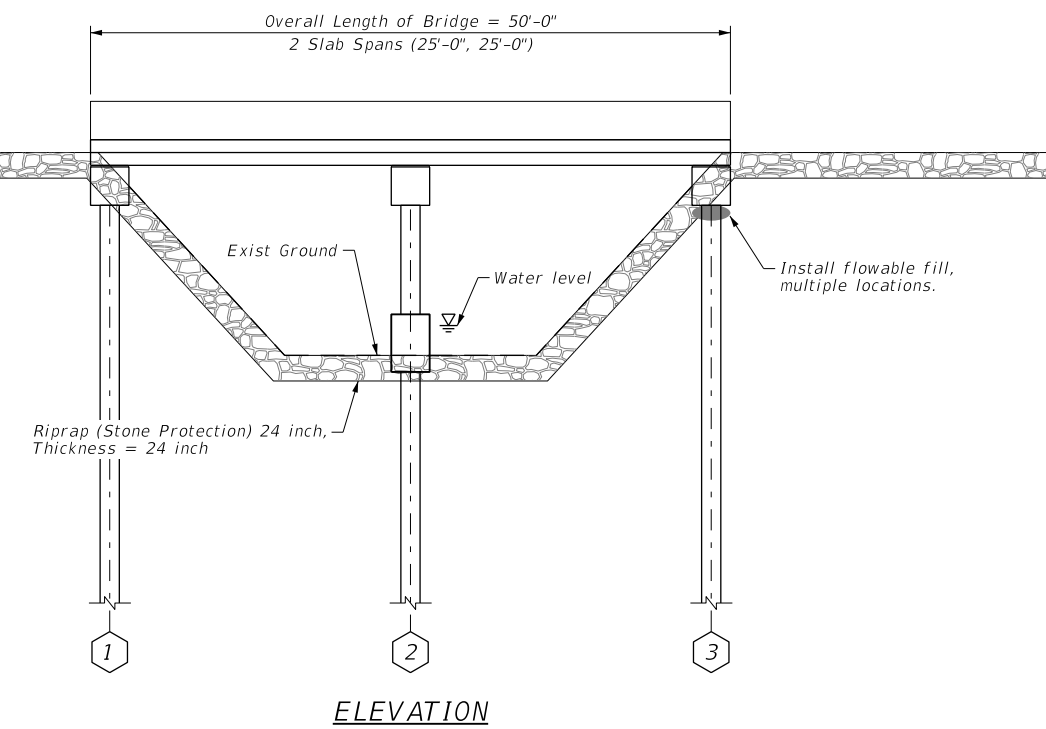
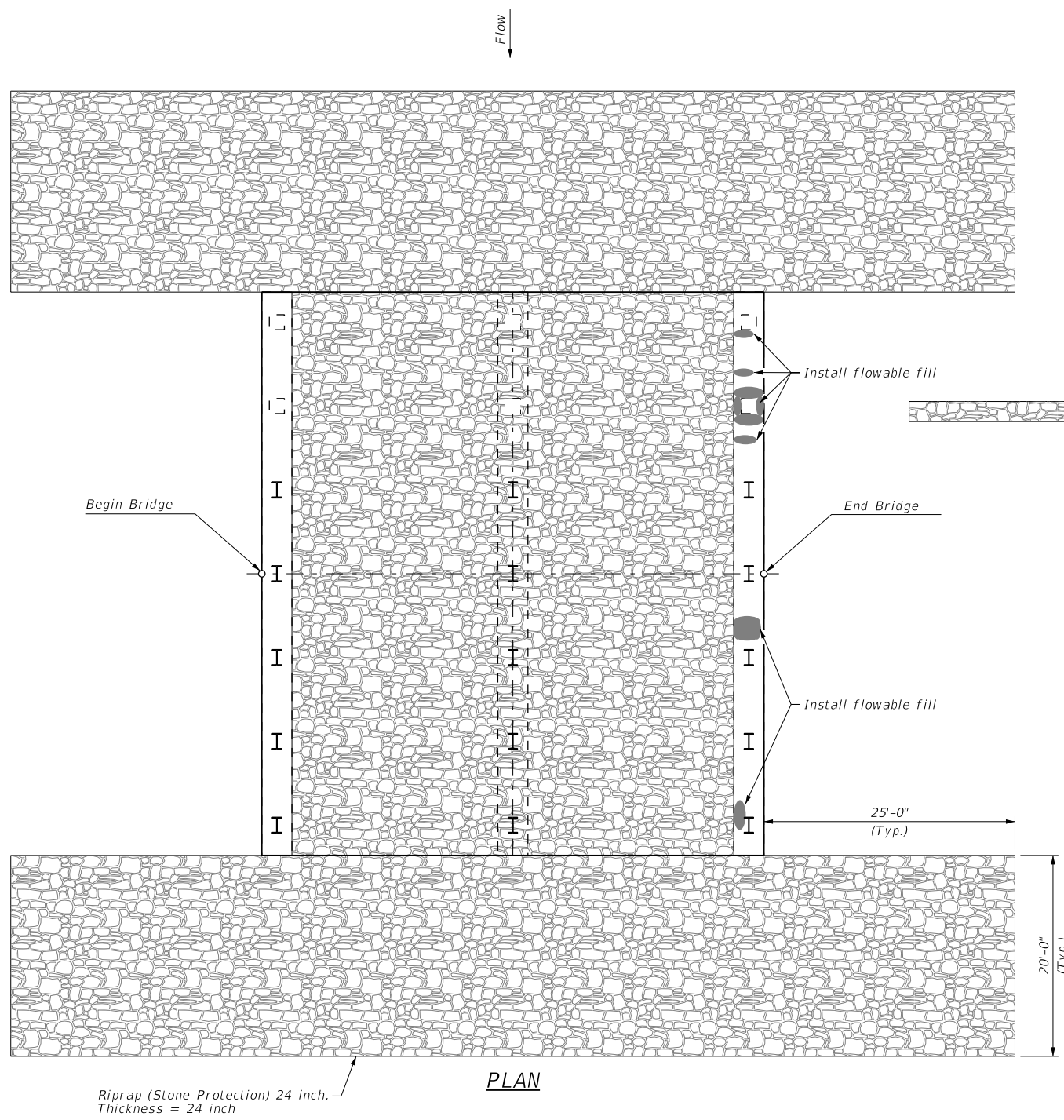
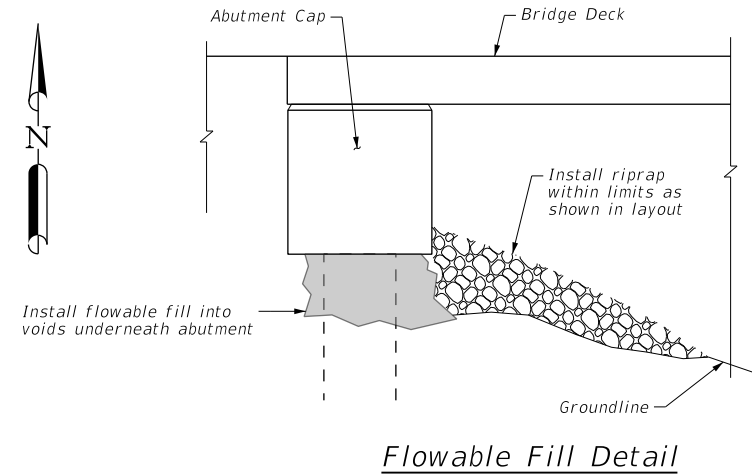
US 290 EB over Draw (Eastern Bridge) Repair Details

FED. RD. DIV. NO.		PROJECT NO.			HIGHWAY NO.
		BPM 644771001			
DESIGNED: DNP	STATE	STATE DIST. NO.	COUNTY	SHEET NO.	
CHECKED: WD	TEXAS	AUSTIN	LEE		
DRAWN: MS	CONT.	SECT.	JOB		
CHECKED: DNP	6447	71	001	12	

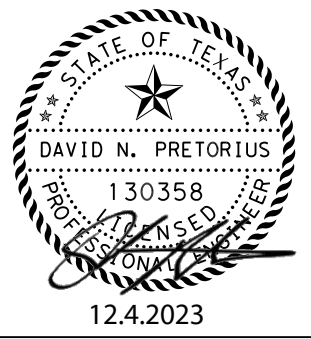


TABLE OF ESTIMATED QUANTITIES			
ITEM	DESCRIPTION	QUANTITY	UNIT
401 6001	FLOWABLE BACKFILL	0.4	CY
432 6035	RIPRAP (STONE PROTECTION) (24 IN)	598.0	CY

**SCOUR COUNTERMEASURE NOTES:**  
 Install riprap in accordance to Item 432  
 Refer to Stone Riptap (SRR) Standard sheets for details not shown.  
 Install flowable fill in accordance to Item 401.



NBI: 14-144-0-0114-07-086

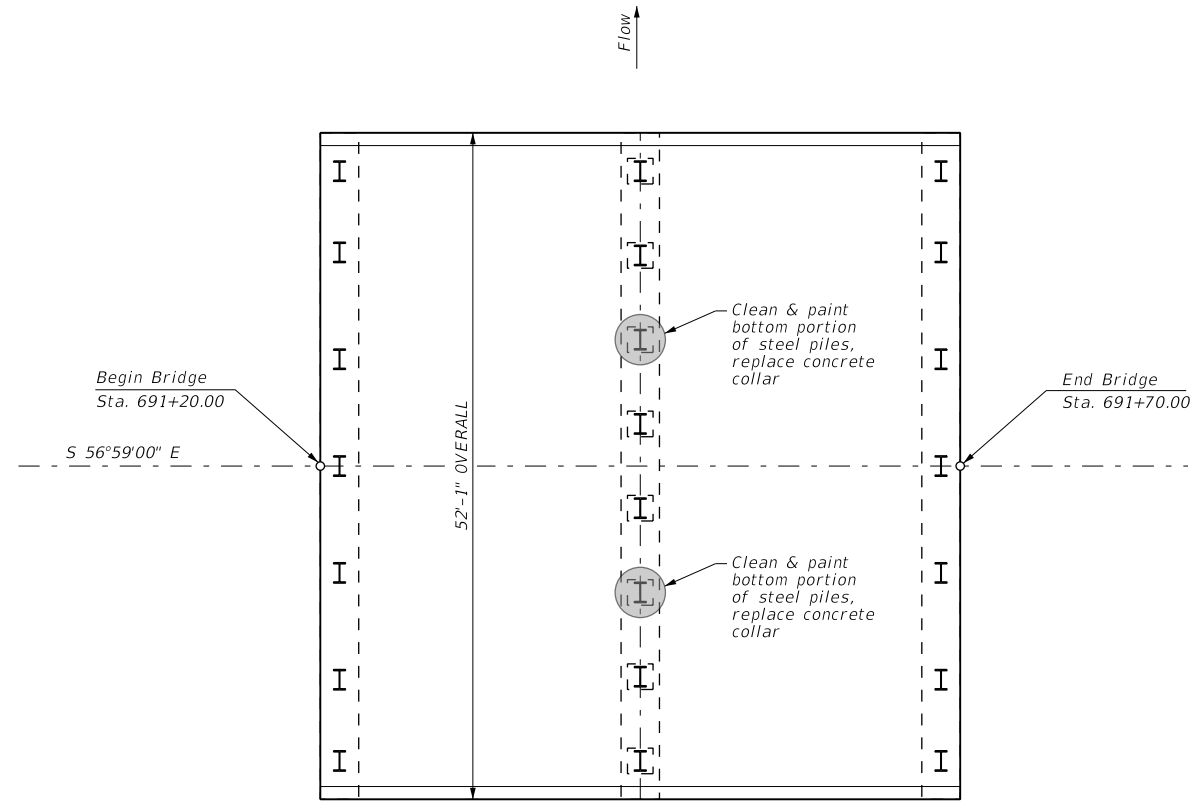


US 290 EB over Draw (Eastern Bridge)  
 Scour Countermeasure Layout

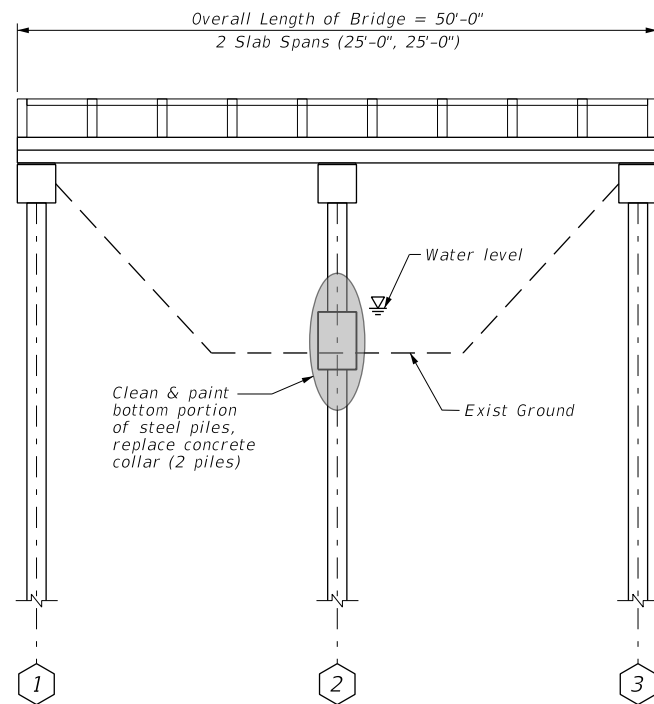
FED. RD. DIV. NO.		PROJECT NO.		HIGHWAY NO.
		BPM 644771001		
DESIGNED: DNP	STATE	STATE DIST. NO.	COUNTY	SHEET NO.
CHECKED: WD	TEXAS	AUSTIN	LEE	
DRAWN: MS	CONT.	SECT.	JOB	
CHECKED: DNP	6447	71	001	13

8:44:17 AM 12/14/2023 c:\working\jlp-pw-bentley.com\jlp-pw-01\georgette\_zhong\dms83278\Brg-3\_US\_290\_EB\_over\_Draw\_scour.dgn

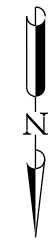
TABLE OF ESTIMATED QUANTITIES			
ITEM	DESCRIPTION	QUANTITY	UNIT
420 6070	CL C CONC (PILE ENCASEMENT)	0.6	CY
446 6022	CLEAN & PAINT EXIST PILING (SYSTEM I-A)	① 1.0	LS
496 6018	REMOVE STR (CONC)	2.0	EA



PLAN



ELEVATION



GENERAL NOTES

Existing Structure Number is missing or illegible. Include a new Structure Number, see "PAINTING STRUCTURE NUMBERS (PSN-19 (AUS))" standard sheet for more information.

Existing steel piles may contain lead based paint. Contractor to coordinate with TxDOT and separate contract involving environmental abatement during the cleaning of the existing steel.

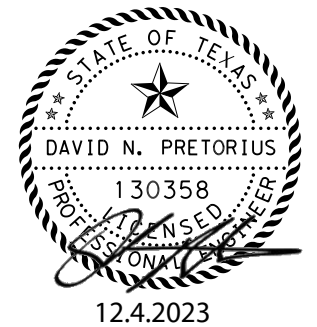
Refer to SH 71 WB Over Halfway Creek - Repair Details sheet.

① Approximately 11 SF paint required for piles. Contractor to verify prior to construction.

TRAFFIC CONTROL NOTES

Road closures are not anticipated for the bridge repair work at this location. Implement all essential measures to reduce and prevent traffic disruptions while carrying out the work. Adhere to industry best practices to ensure a seamless flow of vehicles and pedestrians in the area of the work. Schedule work during periods of lower traffic volume. Conform to TxDOT TCP (1-1)-18 for work near or on roadway shoulders. Promptly remove traffic control devices upon the completion of the repair work. Payment for traffic control devices at this location will be subsidiary to the repair work.

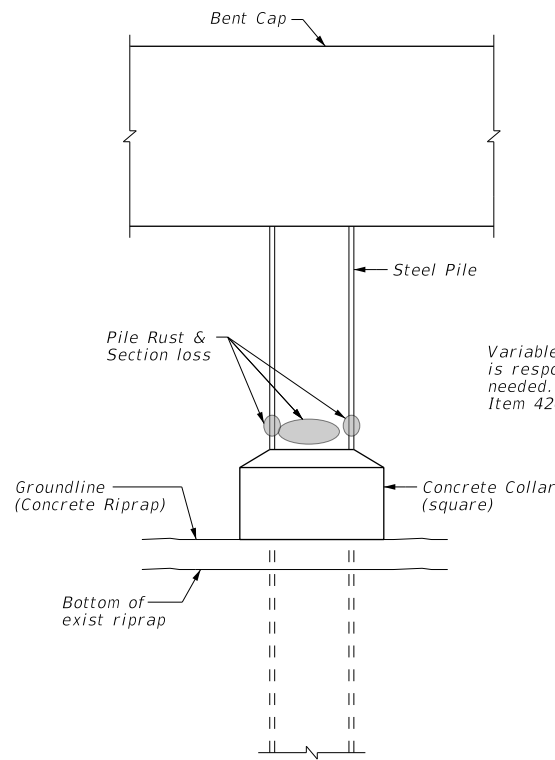
NBI: 14-011-0-0265-03-048



SH 71 WB over Halfway Creek Bridge Layout

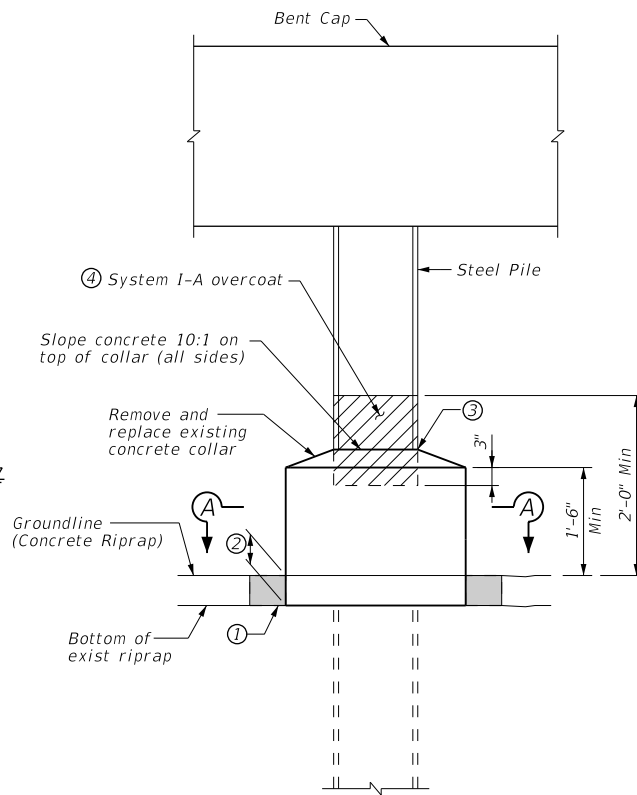
FED. RD. DIV. NO.		PROJECT NO.		HIGHWAY NO.
		BPM 644771001		
DESIGNED: DNP	STATE	STATE DIST. NO.	COUNTY	SHEET NO.
CHECKED: WO	TEXAS	AUSTIN	BASTROP	
DRAWN: MS	CONT.	SECT.	JOB	
CHECKED: DNP	6447	71	001	14

8/4/24 AM 12/4/2023 c:\working\jlp-pw-bentley.com\jlp-pw-01\georgette.zhong\dms83279\Brq-4\_SH\_71WB\_over\_halfway\_creek.dgn

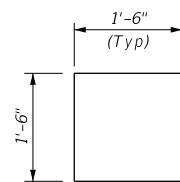


EXISTING CONDITION

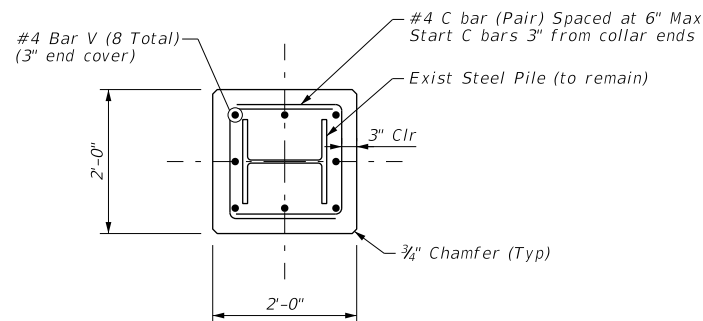
Variable water level, contractor is responsible for dewatering as needed. This work is subsidiary to Item 420.



PROPOSED CONDITION



Bar C (#3)



SECTION "A-A"

**GENERAL NOTES:**

Installation of new concrete collar shall be in accordance with Item 420, "Concrete Substructures".

Removal of existing concrete collar will be paid under 496-6018 REMOVE STR (CONC).

Existing conditions may be under water. Contractor is responsible for dewatering. Payment for dewatering is subsidiary to Item 420, "Concrete Substructures". The Contractor may submit a plan that adequately demonstrates the ability to perform construction without dewatering to the Engineer for approval. If approved, dewatering may be waived.

Obtain approval for the mix design and the construction procedures before beginning work.

If underwater placement is approved, concrete mix should be designed for underwater placement and may require the use of anti-washout admixtures.

Provide concrete for the H-piling collar capable of attaining an average concrete compressive strength of 3,000 psi within 24 hours and consisting of coarse aggregate grades not greater than No. 5 (3/4"). Provide a concrete mix with 2 gallons of corrosion inhibitor per CY.

Provide Class "C" Concrete (f'c = 3,600 psi)

Provide Grade 60 reinforcing steel.

Contractor to provide compressive strength testing of class "C" concrete.

Concrete riprap at mudline will need to be removed and replaced.

**PAINTING NOTES:**

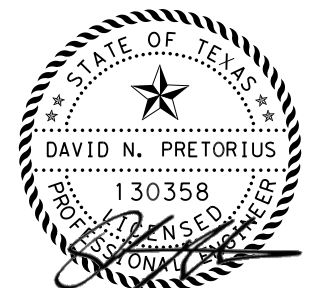
- 1) Clean the area to be painted with hand tools and high pressure water blasting.
- 2) Apply a minimum of 4.0 mils DFT coating conforming to DMS-8105 as shown.
- 3) Allow coating to cure a minimum of 24 hours prior to placing concrete.

**PILE ENCASEMENT PROCEDURE:**

- 1) Clean mud, grease, loose rust, and paint off the selection of H-piling to be encased with hand tools and high pressure water.
- 2) Place and secure the steel reinforcement and install formwork.
- 3) Place the concrete in the encasement per approved procedures and in accordance with item 420, "Concrete Substructures".
- 4) Leave forms in-place for at least 48 hours.

- ① Saw cut (2" deep) and remove exist concrete riprap 6" from face of new collar. Riprap to be replaced after installation of new collar.
- ② Extend collar to bottom of exist. riprap, 5" expected
- ③ Seal gap with Class 4 or Class 7 joint sealant (DMS-6310).
- ④ Apply System I-A overcoat (or alternate coating system, as specified) per Item 446, "Field Cleaning and Painting Steel" to the pile starting 3" below the top of concrete collar to a minimum of 2'-0" above groundline as shown. Refer to painting notes for more information.

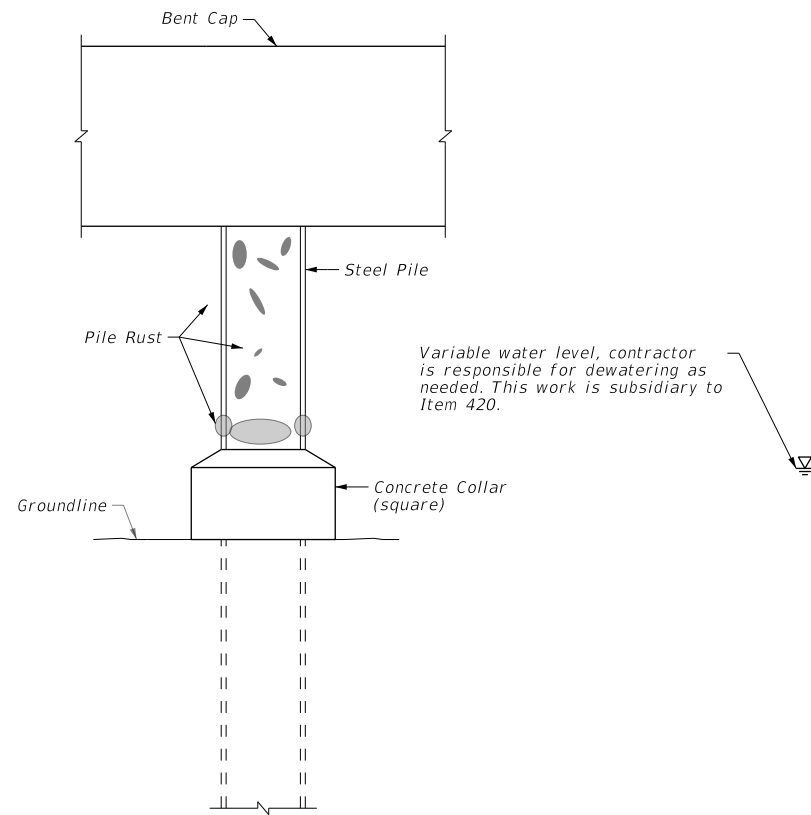
NBI: 14-011-0-0265-03-048



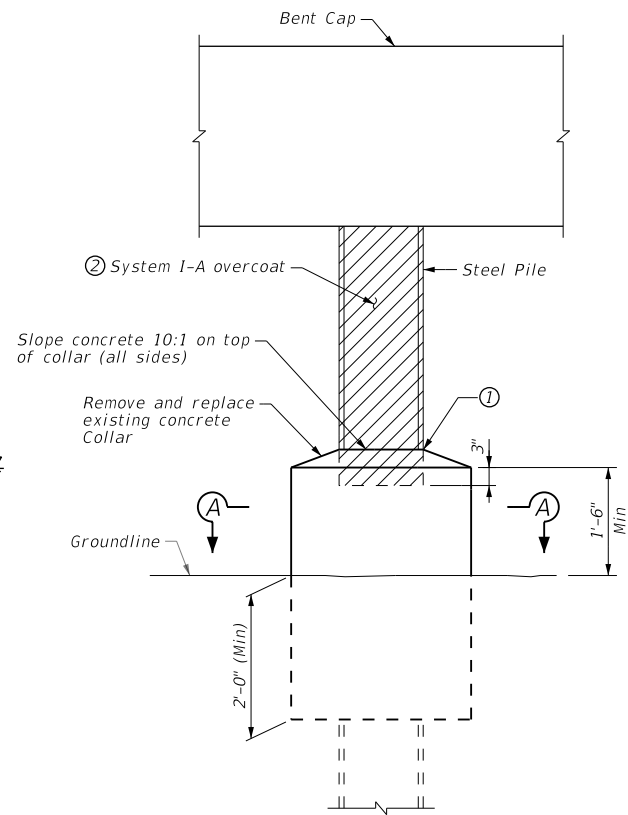
SH 71 WB over  
Halfway Creek  
Repair Details

FED. RD. DIV. NO.		PROJECT NO.			HIGHWAY NO.
		BPM 644771001			
DESIGNED: DNP	STATE	STATE DIST. NO.	COUNTY	SHEET NO.	
CHECKED: WO	TEXAS	AUSTIN	BASTROP		
DRAWN: MS	CONT.	SECT.	JOB		
CHECKED: DNP	6447	71	001	15	

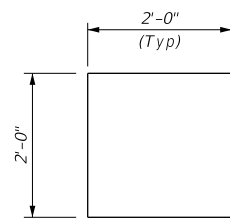




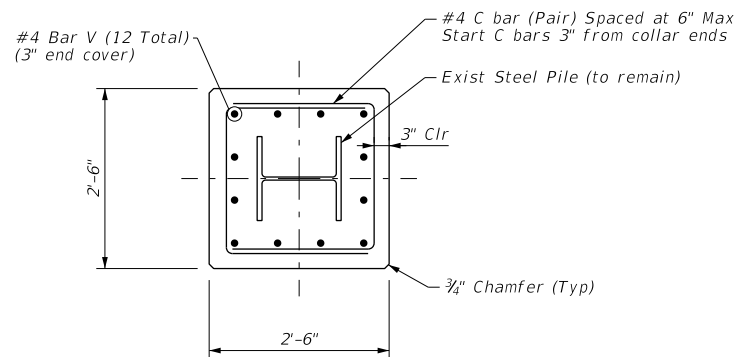
**EXISTING CONDITION**  
(Bent 4, two interior piles)



**PROPOSED CONDITION**  
(Bent 4, two interior piles)



**Bar C (#3)**



**SECTION "A-A"**

**GENERAL NOTES:**

For piles that do not need collar replacement, clean and paint entire exposed steel pile from top of existing pile collar to bottom of bent cap.

Installation of new concrete collar shall be in accordance with Item 420, "Concrete Substructures".

Removal of existing concrete collar will be paid under 496-6018 REMOVE STR (CONC).

Existing conditions may be under water. Contractor is responsible for dewatering. Payment for dewatering is subsidiary to Item 420, "Concrete Substructures". The Contractor may submit a plan that adequately demonstrates the ability to perform construction without dewatering to the Engineer for approval. If approved, dewatering may be waived.

Obtain approval for the mix design and the construction procedures before beginning work.

If underwater placement is approved, concrete mix should be designed for underwater placement and may require the use of anti-washout admixtures.

Provide concrete for the H-piling collar capable of attaining an average concrete compressive strength of 3,000 psi within 24 hours and consisting of coarse aggregate grades not greater than No. 5 (3/4"). Provide a concrete mix with 2 gallons of corrosion inhibitor per CY.

Provide Class "C" Concrete ( $f'_c = 3,600$  psi)

Provide Grade 60 reinforcing steel.

Contractor to provide compressive strength testing of class "C" concrete.

**PAINTING NOTES:**

1) Clean the area to be painted with hand tools and high pressure water blasting.

2) Apply a minimum of 4.0 mils DFT coating conforming to DMS-8105 as shown.

3) Allow coating to cure a minimum of 24 hours prior to placing concrete.

**PILE ENCASEMENT PROCEDURE:**

1) Clean mud, grease, loose rust, and paint off the selection of H-piling to be encased with hand tools and high pressure water.

2) Place and secure the steel reinforcement and install formwork.

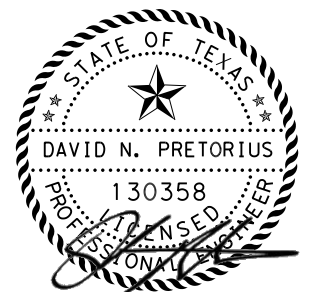
3) Place the concrete in the encasement per approved procedures and in accordance with item 420, "Concrete Substructures".

4) Leave forms in-place for at least 48 hours.

① Seal gap with Class 4 or Class 7 joint sealant (DMS-6310).

② Apply System I-A overcoat (or alternate coating system, as specified) per Item 446, "Field Cleaning and Painting Steel" to the exposed length of the pile starting 3" below the top of concrete collar as shown. Refer to painting notes for more information.

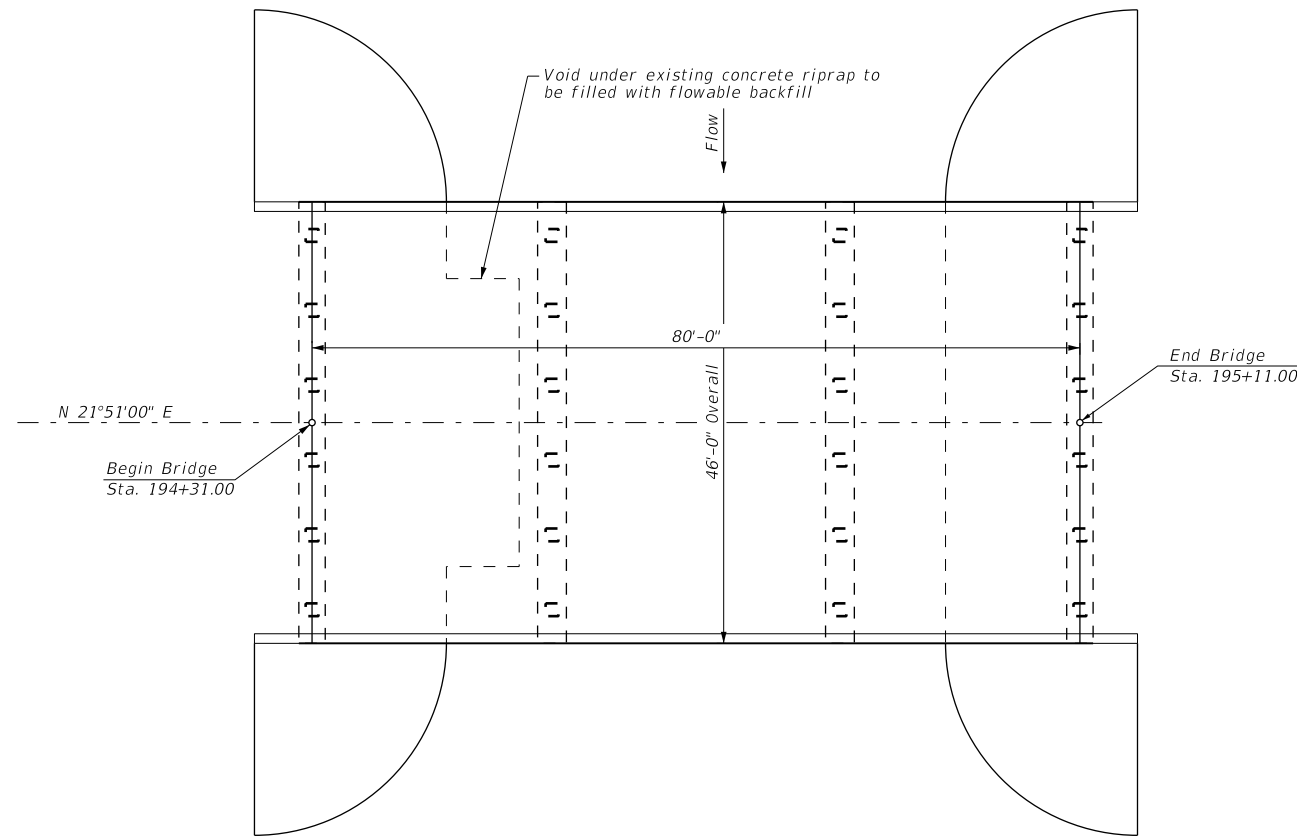
NBI: 14-028-0-1060-01-009



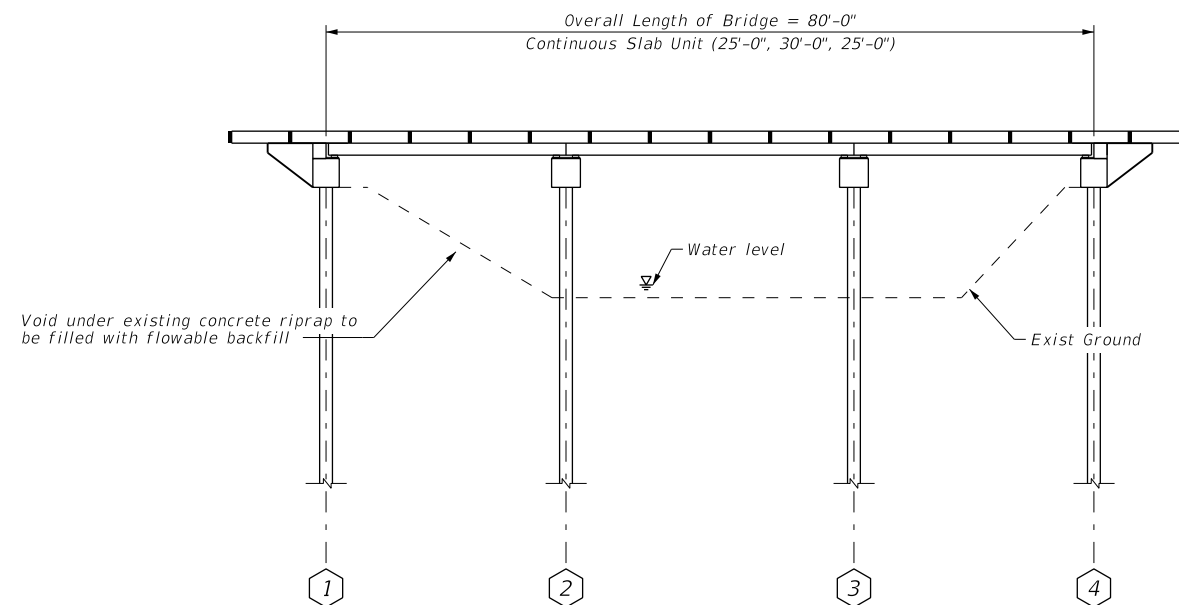
FM 671 over Pin Oak Creek  
Repair Details

FED. RD. DIV. NO.		PROJECT NO.			HIGHWAY NO.
		BPM 644771001			
DESIGNED: DNP	STATE	STATE DIST. NO.	COUNTY	SHEET NO.	
CHECKED: WO	TEXAS	AUSTIN	CALDWELL		
DRAWN: MS	CONT.	SECT.	JOB		
CHECKED: DNP	6447	71	001	17	

TABLE OF ESTIMATED QUANTITIES			
ITEM	DESCRIPTION	QUANTITY	UNIT
401 6001	FLOWABLE BACKFILL	9.3 ①	CY



PLAN



ELEVATION

GENERAL NOTES

Contractor may core holes through existing concrete riprap to determine extent of void. Backfill cored holes with flowable backfill flush with surface of existing concrete riprap.

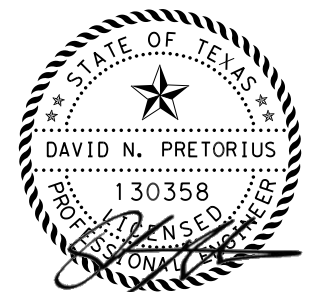
Install flowable backfill per approved procedures in accordance with Item 401 Flowable Backfill.

① Contractor to verify extent of void and quantity of flowable backfill required.

TRAFFIC CONTROL PLAN NOTES

Road closures are not anticipated for the bridge repair work at this location. Implement all essential measures to reduce and prevent traffic disruptions while carrying out the work. Adhere to industry best practices to ensure a seamless flow of vehicles and pedestrians in the area of the work. Schedule work during periods of lower traffic volume. Conform to TxDOT TCP (1-1)-18 for work near or on roadway shoulders. Promptly remove traffic control devices upon the completion of the repair work. Payment for traffic control devices at this location will be subsidiary to the repair work.

NBI: 14-011-0-0323-01-014

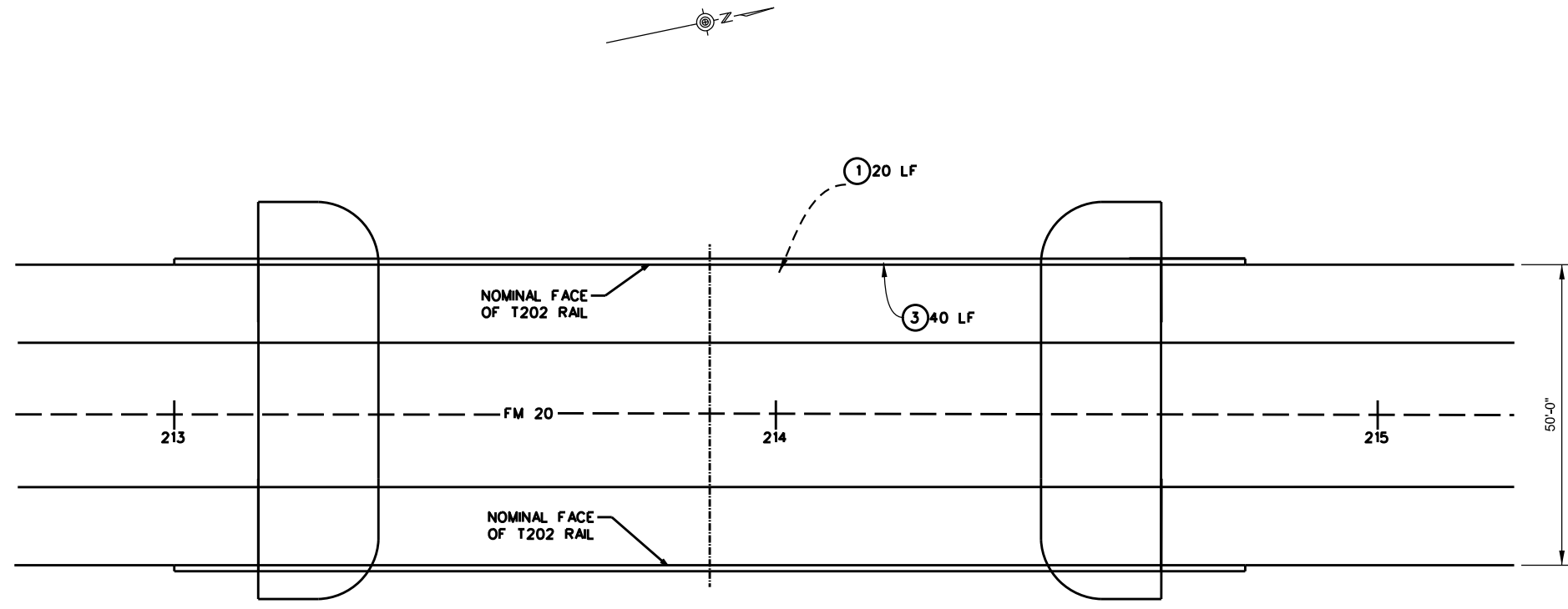


12.4.2023

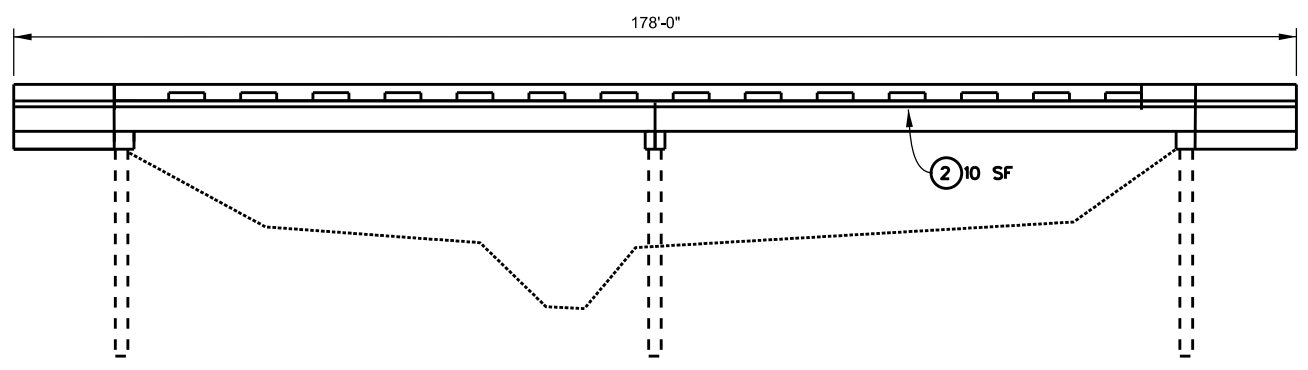


SH 95 over Prickly Pear Creek  
Bridge Layout

FED. RD. DIV. NO.	PROJECT NO.			HIGHWAY NO.
	BPM 644771001			
DESIGNED: DNP	STATE	STATE DIST. NO.	COUNTY	SHEET NO.
CHECKED: CTH	TEXAS	AUSTIN	BASTROP	
DRAWN: GZ	CONT.	SECT.	JOB	
CHECKED: DNP	6453	45	001	18



**PLAN**



**ELEVATION**

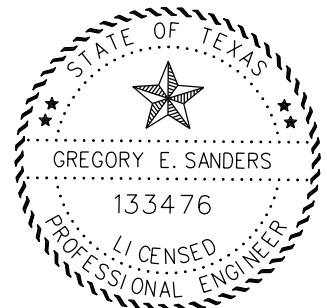
## ## ##  
 UNIT OF QUANTITY  
 ESTIMATED REPAIR QUANTITY  
 AT THE LOCATION  
 REPAIR NO. - SEE REPAIR TABLE

**GENERAL NOTES:**

POST AND OPENING ARE BOTH 5 FT WIDE.  
 BRIDGE RAIL REPAIR SHOULD BE MADE FROM POST TO POST.  
 FIELD VERIFY LOCATION, EXTENT, AND DIMENSIONS OF DAMAGE BEFORE COMMENCING AND/OR ORDERING MATERIALS.  
 LOCATIONS AND QUANTITY OF REPAIR WORK INDICATED ARE FOR INFORMATION AND VISUAL AIDS.  
 SEEK APPROVAL OF ENGINEER PRIOR TO COMMENCEMENT OF WORK.  
 BRIDGE ELEMENTS DAMAGED BY CONTRACTOR SHALL BE REPAIRED AS DIRECTED BY ENGINEER AT CONTRACTOR'S EXPENSE.

NOT TO SCALE

TABLE OF REPAIRS					
REPAIR NO.	REPAIR DESCRIPTION/LOCATION	BID CODE	BID ITEM DESCRIPTION	QUANTITY	UNIT
1	REPAIR DAMAGED DECK ON EDGE OF BRIDGE	429-6005	CONC STR REPAIR(DECK REP(FULL DEPTH))	10	SF
2	REPAIR DAMAGED SOFFIT UNDER BRIDGE RAIL	429-6007	CONC STR REPAIR (VERTICAL & OVERHEAD)	10	SF
3	REPAIR DAMAGED T202 RAIL IN KIND	450-6006	RAIL (TY T223)	40	LF



*Gregory E Sanders 12/4/23*

				Austin District	
<b>BRIDGE RAIL REPAIR          FM 20 AT LENTZ BRANCH</b>					
NBI:14-011-0-0115-04-023					
FILE:	DN: HF	CK: GS	DW: HF	CK: GS	
©TxDOT 2023	CONT	SECT	JOB	HIGHWAY	
REVISIONS	6447	71	001	FM 20	
	DIST	COUNTY	SHEET NO.		
	AUS	BASTROP	19		

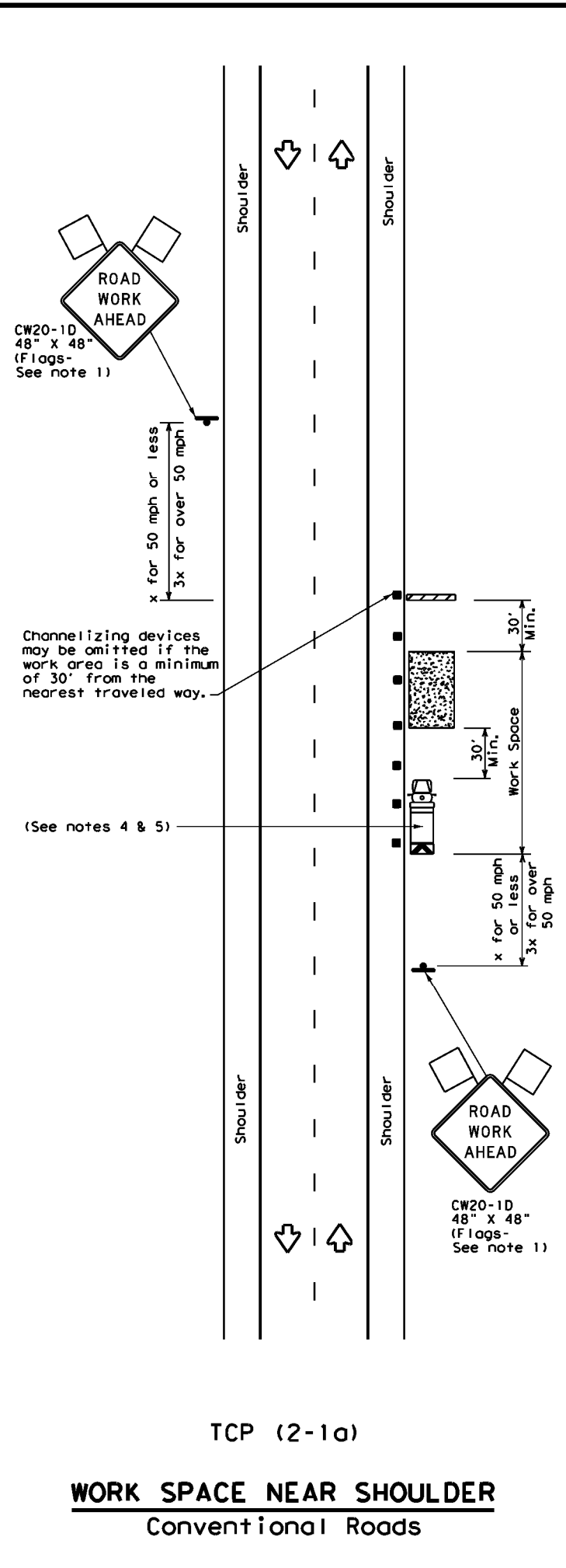
DATE TIME DOCUMENT NAME





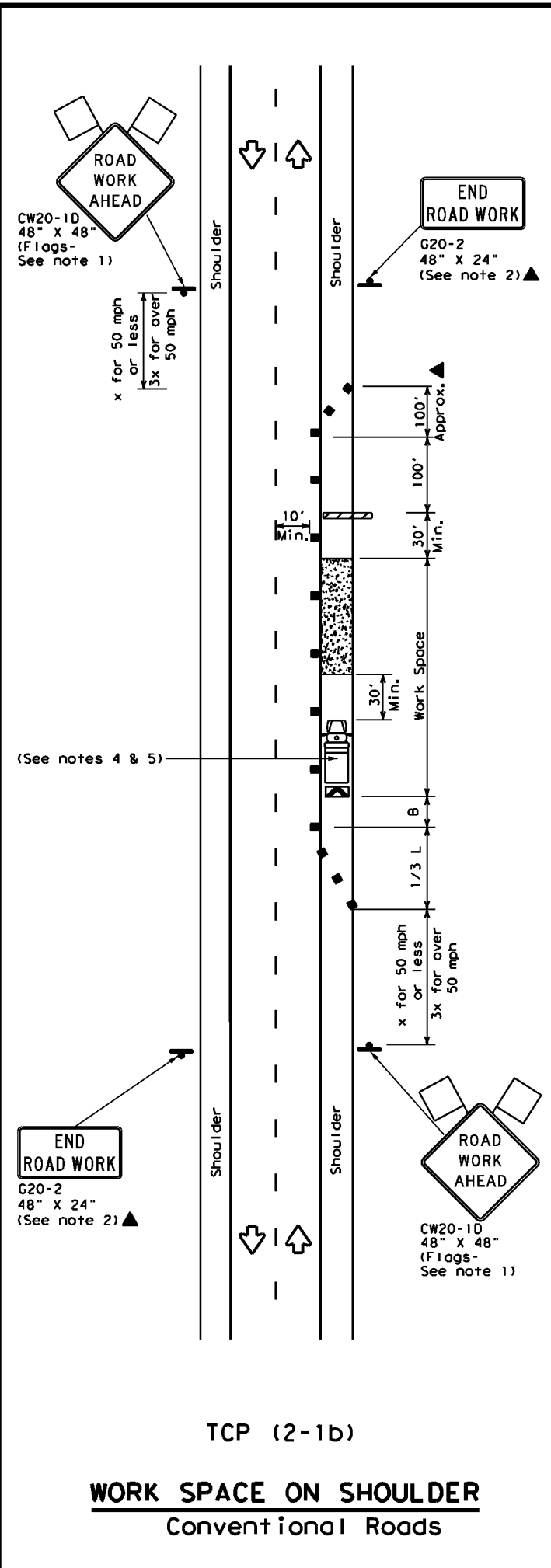
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DATE:  
FILE:



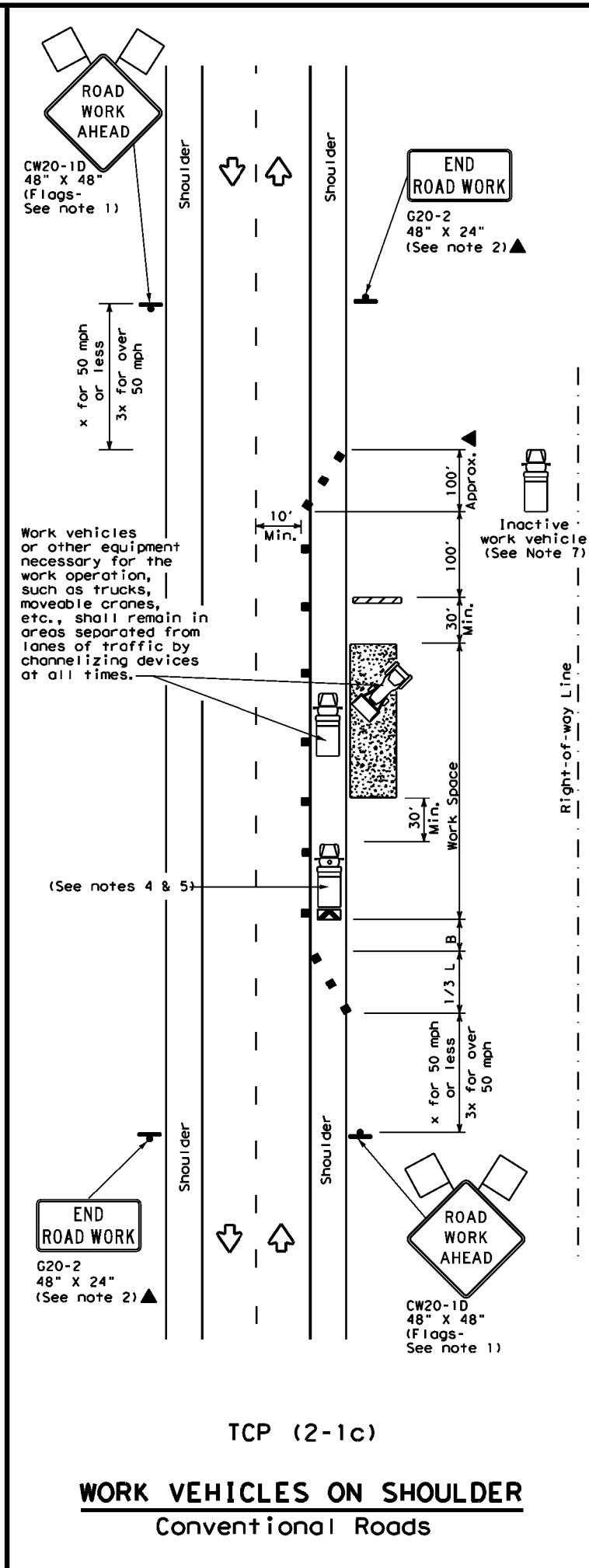
TCP (2-1a)

**WORK SPACE NEAR SHOULDER**  
Conventional Roads



TCP (2-1b)

**WORK SPACE ON SHOULDER**  
Conventional Roads



TCP (2-1c)

**WORK VEHICLES ON SHOULDER**  
Conventional Roads

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

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

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

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

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

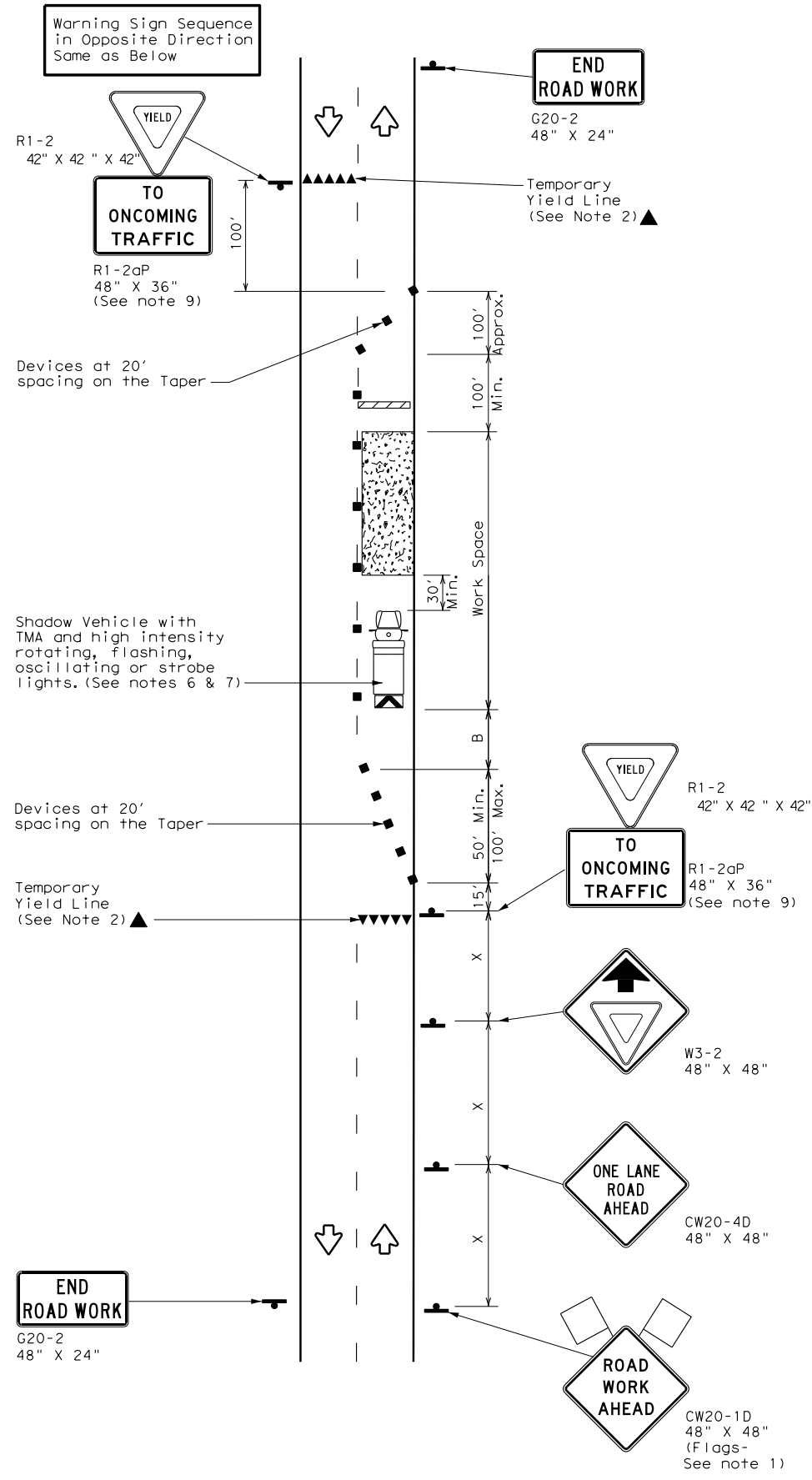
Texas Department of Transportation  
Traffic Operations Division Standard

**TRAFFIC CONTROL PLAN**  
**CONVENTIONAL ROAD**  
**SHOULDER WORK**

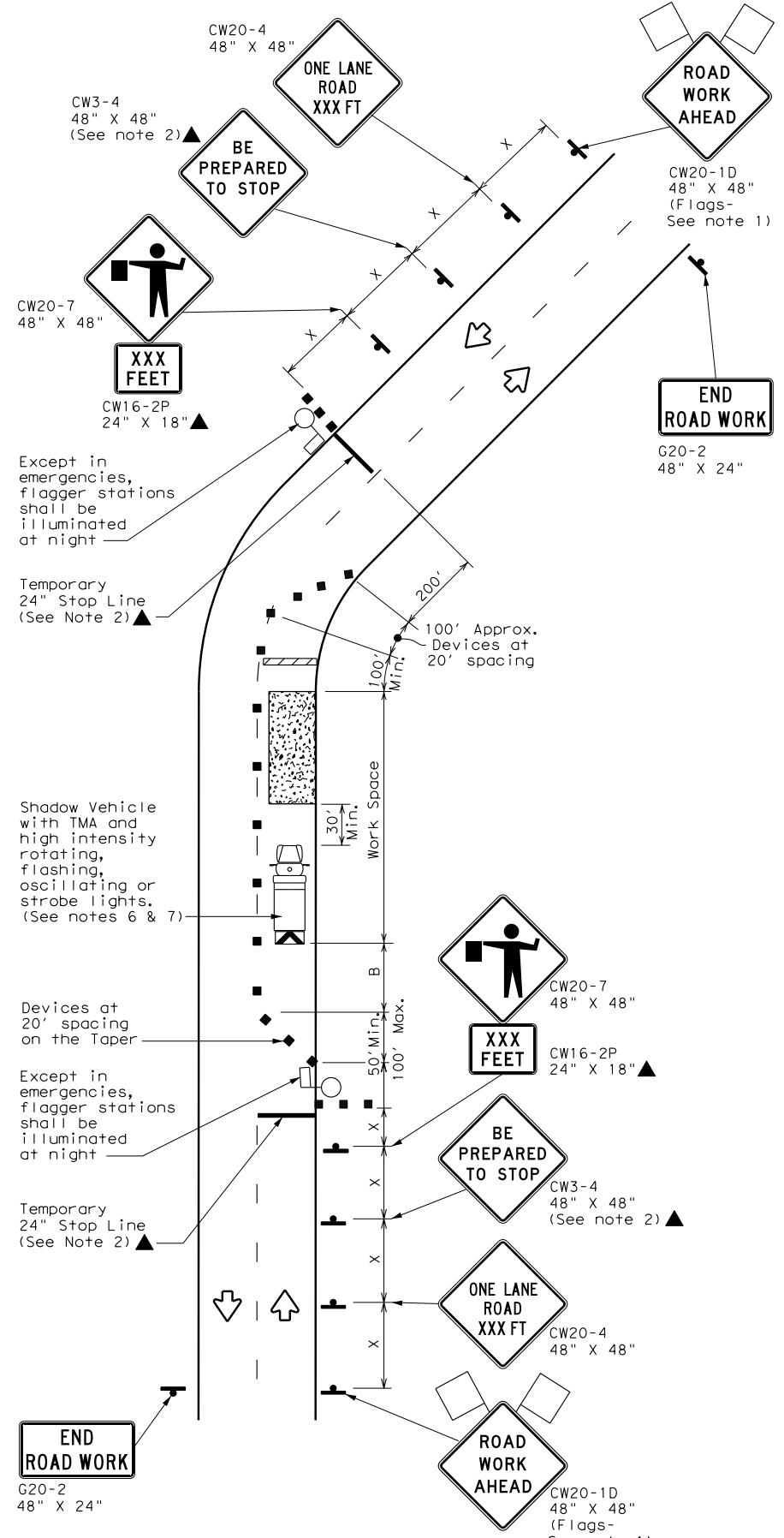
**TCP (2-1) - 18**

FILE: tcp2-1-18.dgn	DN:	CKI:	DN:	CKI:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	6447	71	001	US 290, ETC.
2-94 4-98	DIST	COUNTY		SHEET NO.
8-95 2-12	14	BASTROP, ETC.		27
1-97 2-18				

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TCP (2-2a)  
2-LANE ROADWAY WITHOUT PAVED SHOULDERS  
ONE LANE TWO-WAY  
CONTROL WITH YIELD SIGNS  
(Less than 2000 ADT - See Note 9)



TCP (2-2b)  
2-LANE ROADWAY WITHOUT PAVED SHOULDERS  
ONE LANE TWO-WAY  
CONTROL WITH FLAGGERS

**LEGEND**

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

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "x" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent			
30	L = WS <sup>2</sup> / 60	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45	L = WS	450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	575'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

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

**TYPICAL USAGE**

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

**GENERAL NOTES**

- Flags attached to signs where shown, are REQUIRED.
  - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
  - The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4 "ONE LANE ROAD XXX FT" sign, but proper sign spacing shall be maintained.
  - Flaggers should use two-way radios or other methods of communication to control traffic.
  - Length of work space should be based on the ability of flaggers to communicate.
  - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
  - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
- TCP (2-2a)**
- The R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work space should be no longer than one half city block. In rural areas, roadways with less than 2000 ADT, work space should be no longer than 400 feet.
  - The R1-2aP "YIELD TO ONCOMING TRAFFIC" sign shall be placed on a support at a 7 foot minimum mounting height.
- TCP (2-2b)**
- Channelizing devices on the center line may be omitted when a pilot car is leading traffic and approved by the Engineer.
  - If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain stopping sight distance to the flagger and a queue of stopped vehicles. (See table above).
  - Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.



**TRAFFIC CONTROL PLAN  
ONE-LANE TWO-WAY  
TRAFFIC CONTROL**

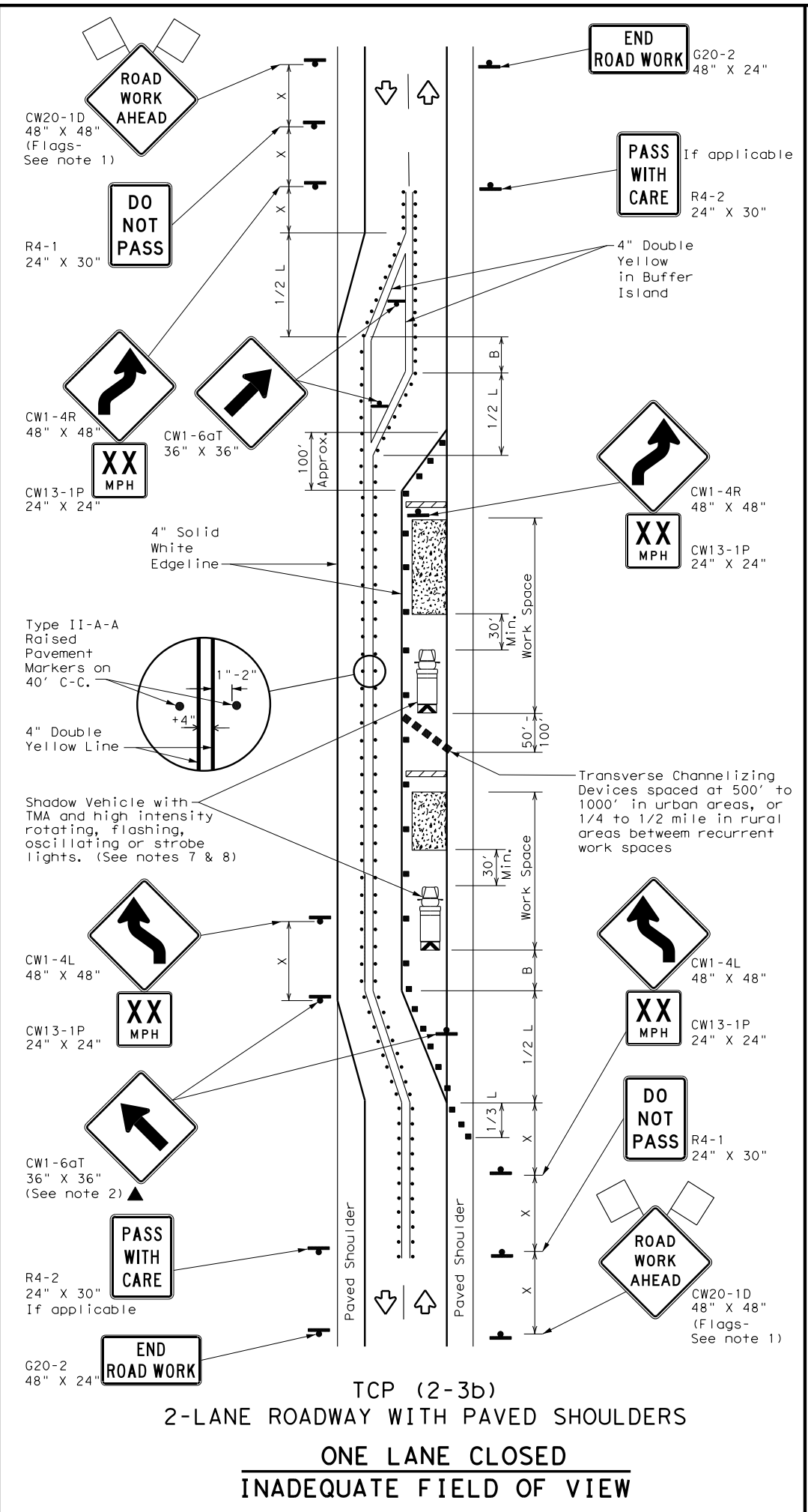
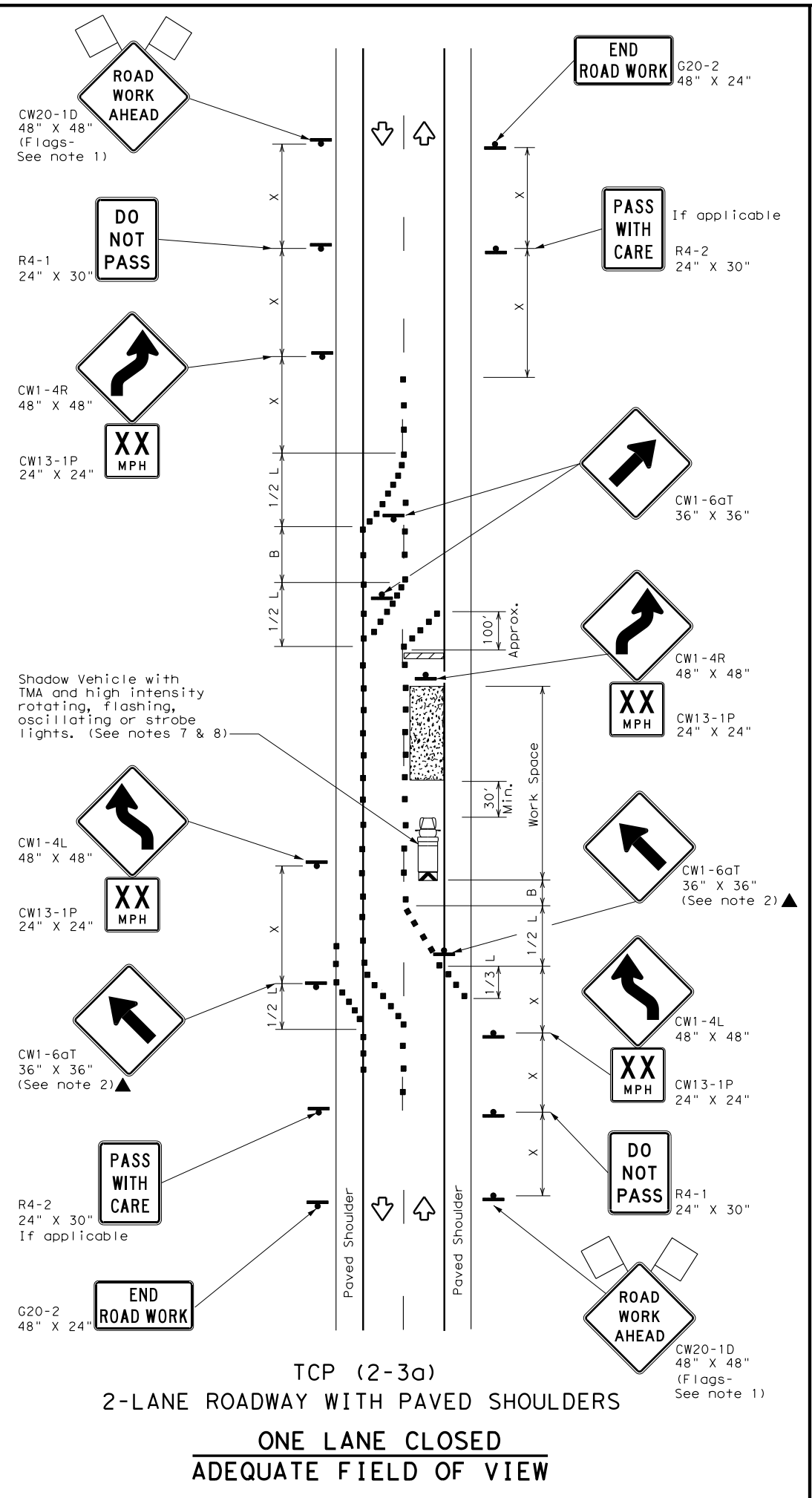
**TCP (2-2) - 18**

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© TxDOT	December 1985	CON:		SECT:		JOB:		HIGHWAY:	
REVISIONS		6447	71	001	US 290, ETC.				
8-95	3-03			DIST:	COUNTY:	SHEET NO.			
1-97	2-12			14	BASTROP, ETC.	22			
4-98	2-18								

DATE:  
FILE:

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DATE: FILE:



LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Raised Pavement Markers Ty II-AA
	Sign		Traffic Flow
	Flag		Flagger

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

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

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
			✓	✓
				TCP (2-3b) ONLY

- GENERAL NOTES**
- Flags attached to signs where shown, are REQUIRED.
  - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
  - When work space will be in place less than three days existing pavement markings may remain in place. Channelizing devices shall be used to separate traffic.
  - Flagger control should NOT be used unless roadway conditions or heavy traffic volume require additional emphasis to safely control traffic. Flagger should be positioned at end of traffic queue.
  - The R4-1 "DO NOT PASS," R4-2 "PASS WITH CARE" and construction regulatory speed zone signs may be installed within CW20-1D "ROAD WORK AHEAD" signs. Proper spacing of signs shall be maintained.
  - Conflicting pavement marking shall be removed for long term projects.
  - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted.
  - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
- TCP (2-3a)**
- Conflicting pavement markings shall be removed for long-term projects. For shorter durations where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20' or 15' if posted speeds are 35 mph or slower, and for tangent sections, at 1/2(S) where S is the speed in mph. This tighter device spacing is intended for the area of the conflicting markings, not the entire work zone.

**Texas Department of Transportation**  
Traffic Operations Division Standard

**TRAFFIC CONTROL PLAN**  
**TRAFFIC SHIFTS ON**  
**TWO-LANE ROADS**

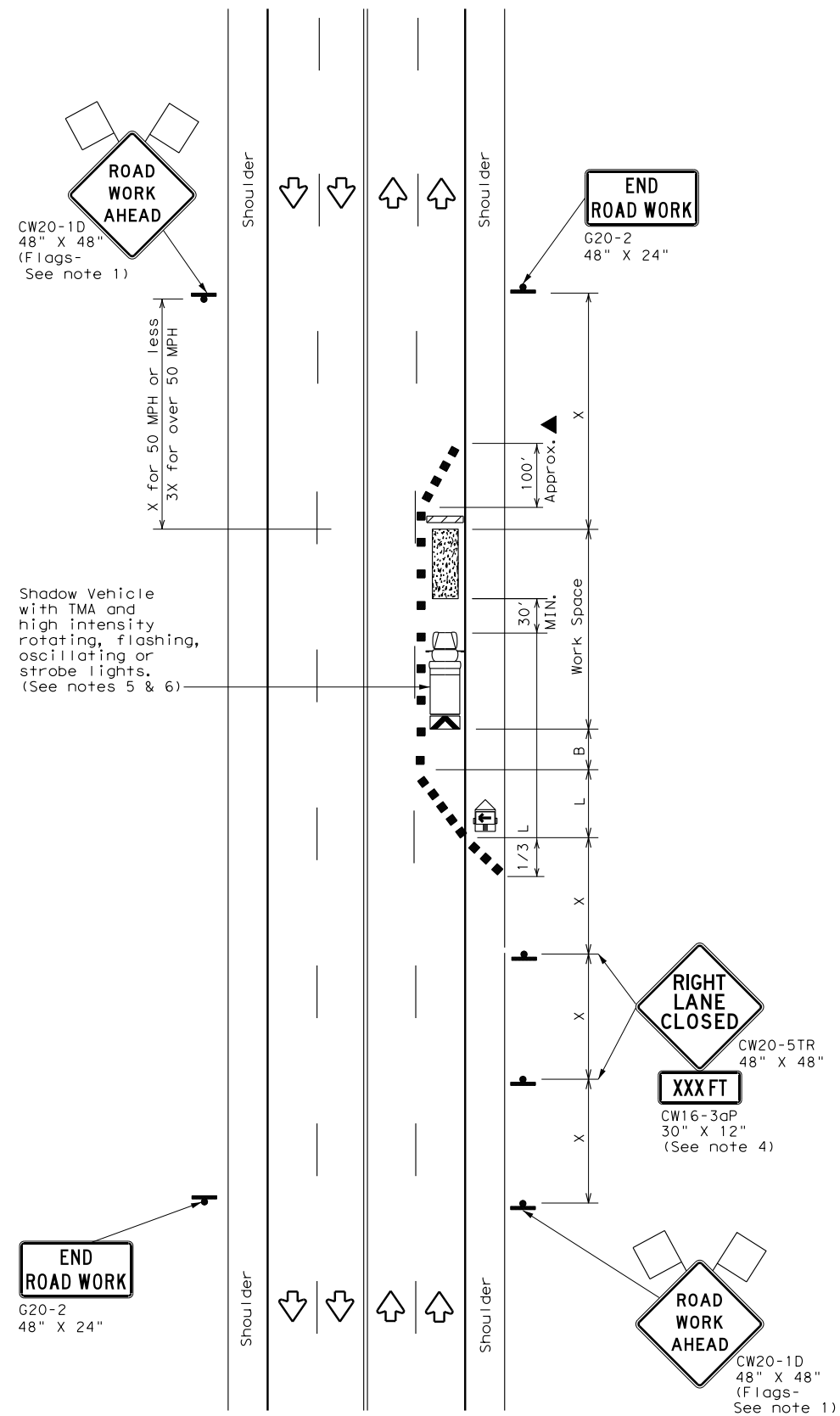
**TCP (2-3) - 18**

FILE:	tcp(2-3)-18.dgn	DN:	CK:	DW:	CK:
© TxDOT	December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS		6447	71	001	US 290, ETC.
8-95	3-03	DIST	COUNTY	SHEET NO.	
1-97	2-12	14	BASTROP, ETC.	23	
4-98	2-18				

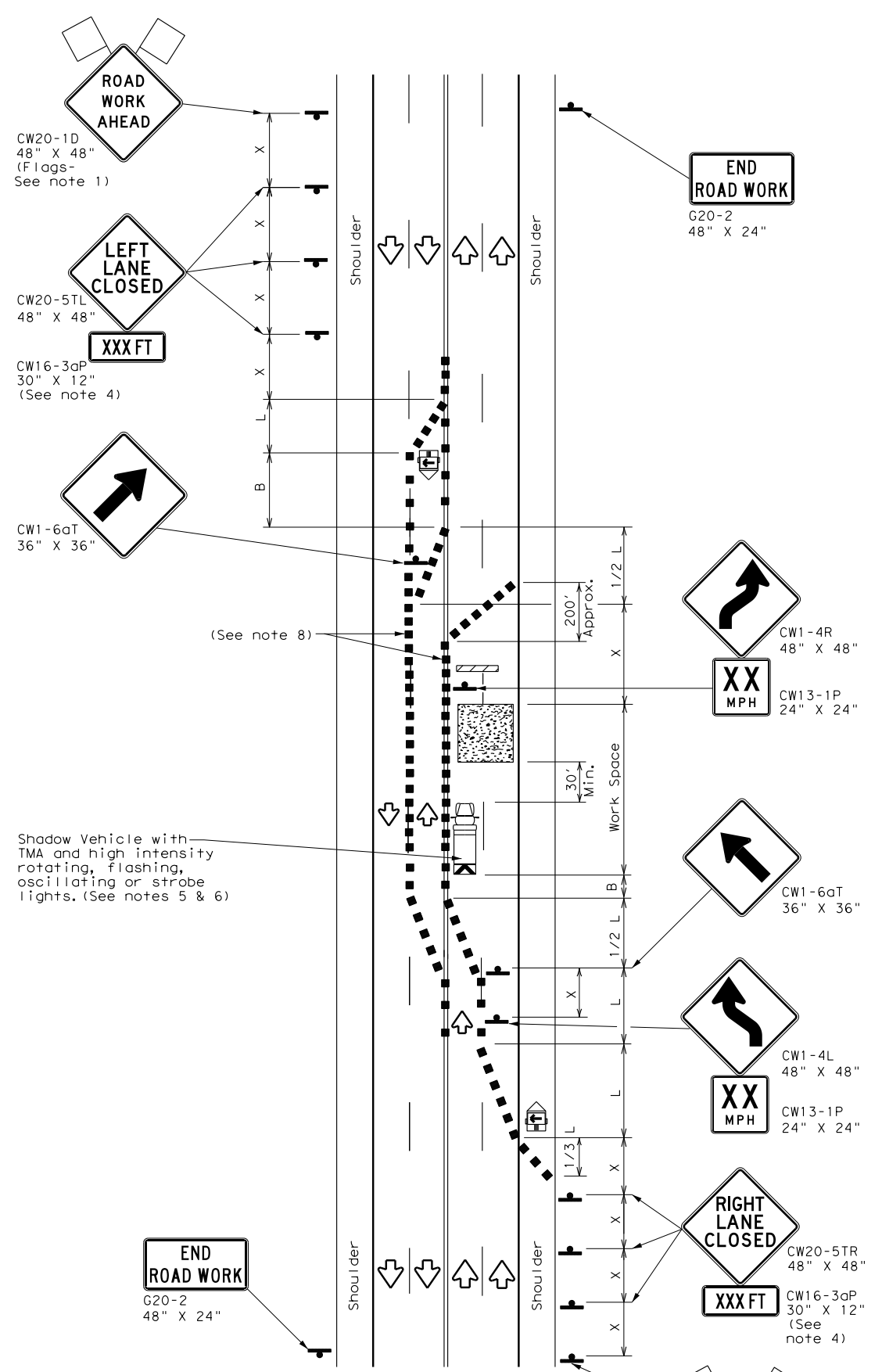
163

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DATE: FILE:



TCP (2-4a)  
**ONE LANE CLOSED**



TCP (2-4b)  
**TWO LANES CLOSED**

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

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

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

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

**GENERAL NOTES**

- Flags attached to signs where shown, are REQUIRED.
- All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
- The downstream taper is optional. When used, it should be 100 feet minimum length per lane.
- For short term applications, when post mounted signs are not used, the distance legend may be shown on the sign face rather than on a CW16-3aP supplemental plaque.
- A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
- Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.

**TCP (2-4a)**

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

**TCP (2-4b)**

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



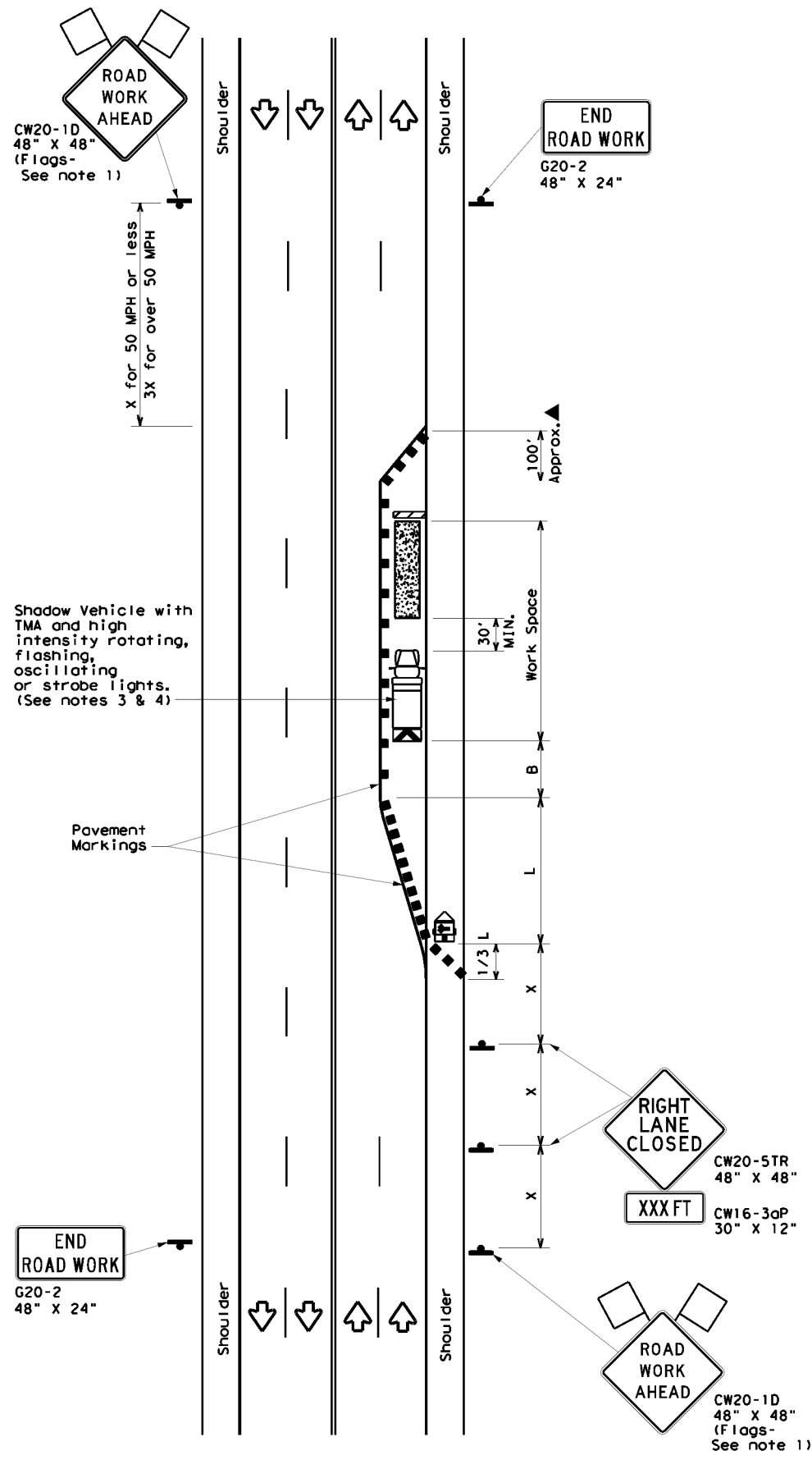
**TRAFFIC CONTROL PLAN  
LANE CLOSURES ON MULTILANE  
CONVENTIONAL ROADS**

**TCP (2-4) - 18**

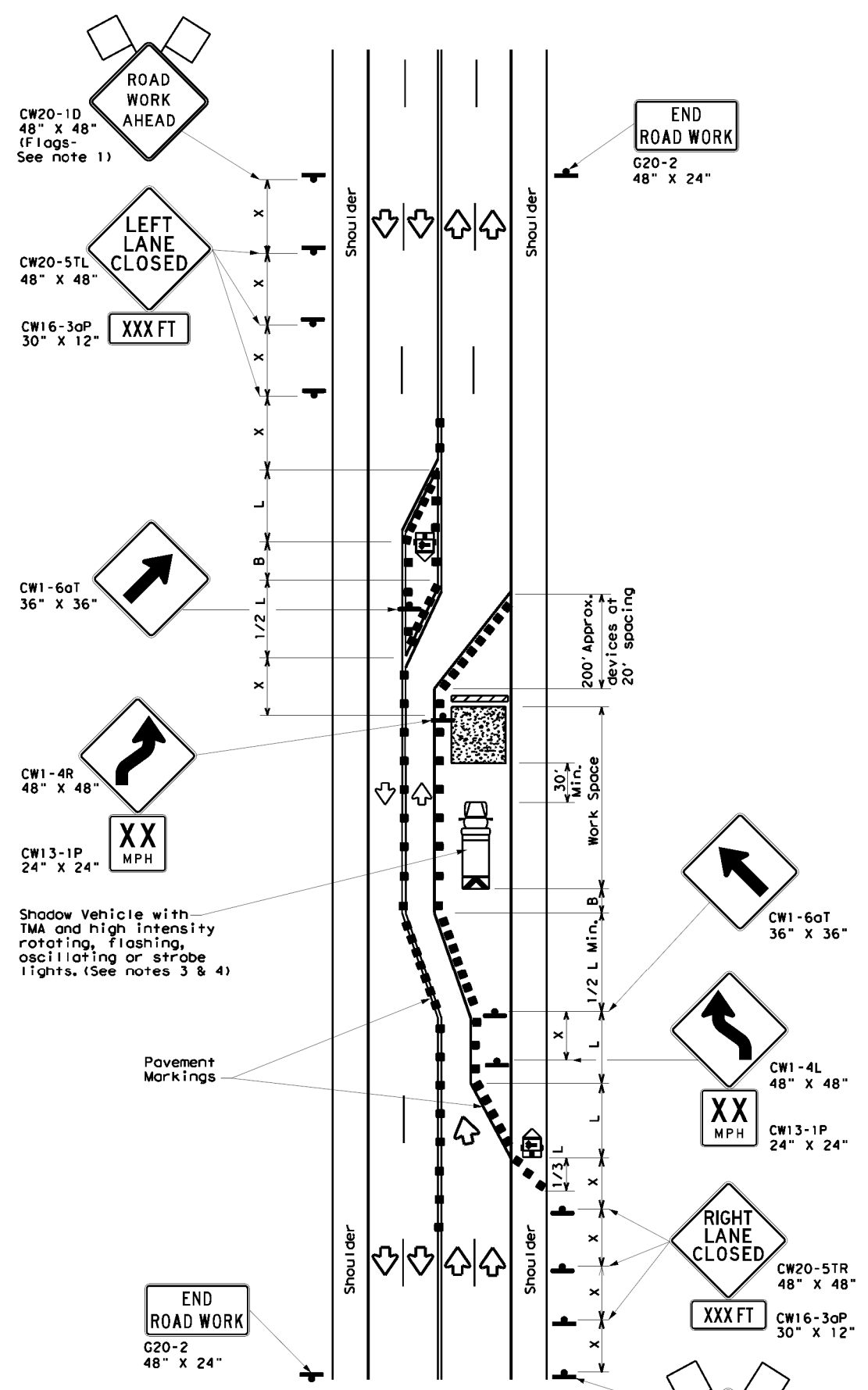
FILE: tcp2-4-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	6447	71	001	US 290, ETC.
8-95 3-03	DIST	COUNTY	SHEET NO.	
1-97 2-12	14	BASTROP, ETC.	24	
4-98 2-18				

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DATE: FILE:



TCP (2-5a)  
**ONE LANE CLOSED**



TCP (2-5b)  
**TWO LANES CLOSED**

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

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

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

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

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

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

Texas Department of Transportation  
 Traffic Operations Division Standard

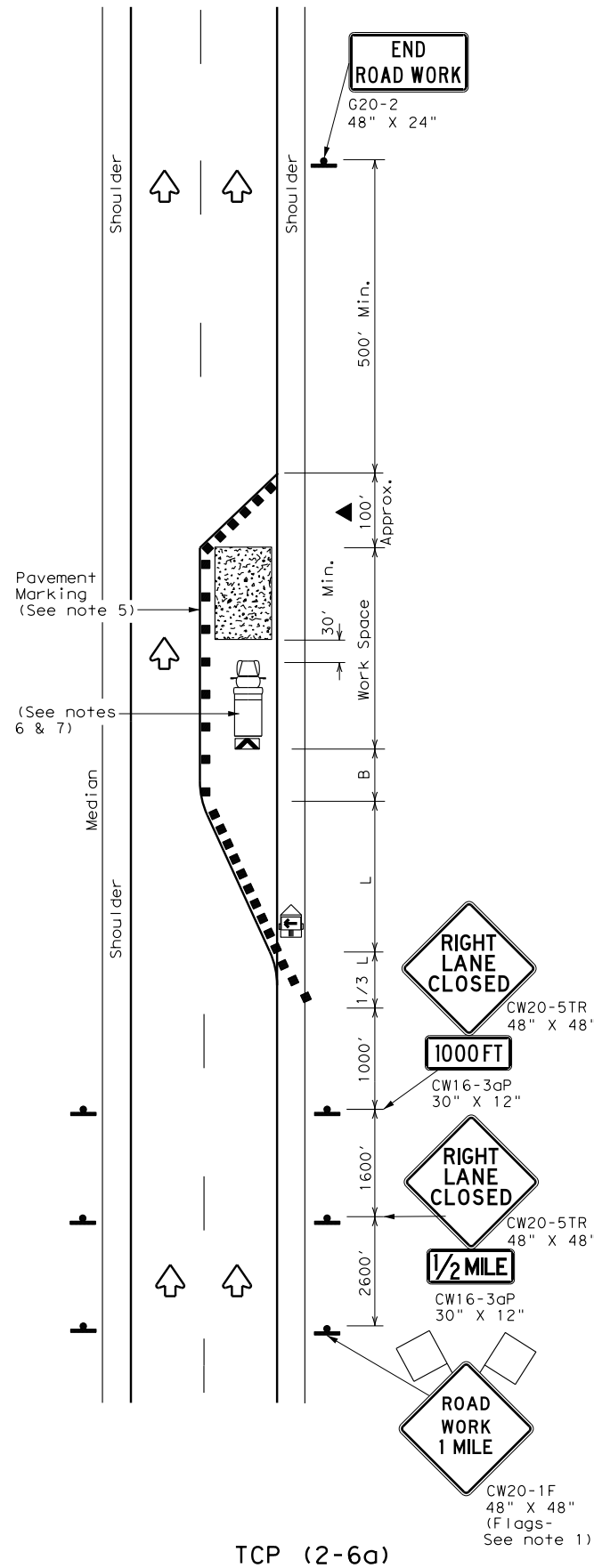
**TRAFFIC CONTROL PLAN**  
**LONG TERM LANE CLOSURES**  
**MULTILANE CONVENTIONAL RDS.**

**TCP (2-5) - 18**

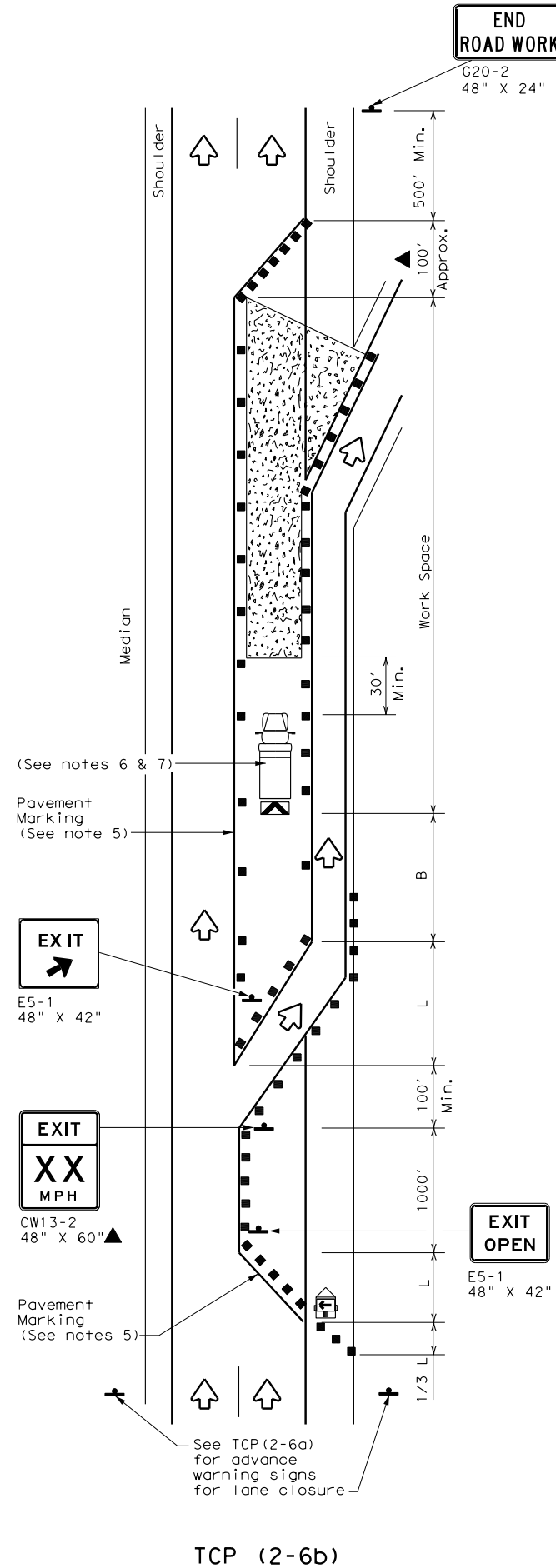
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© TxDOT December 1985	CONT:	SECT:	JOB:	HIGHWAY:
REVISIONS	6447	71	001	US 290, ETC.
8-95 2-12	DIST:	COUNTY:	SHEET NO.	
1-97 3-03	14	BASTROP, ETC.	25	
4-98 2-18				

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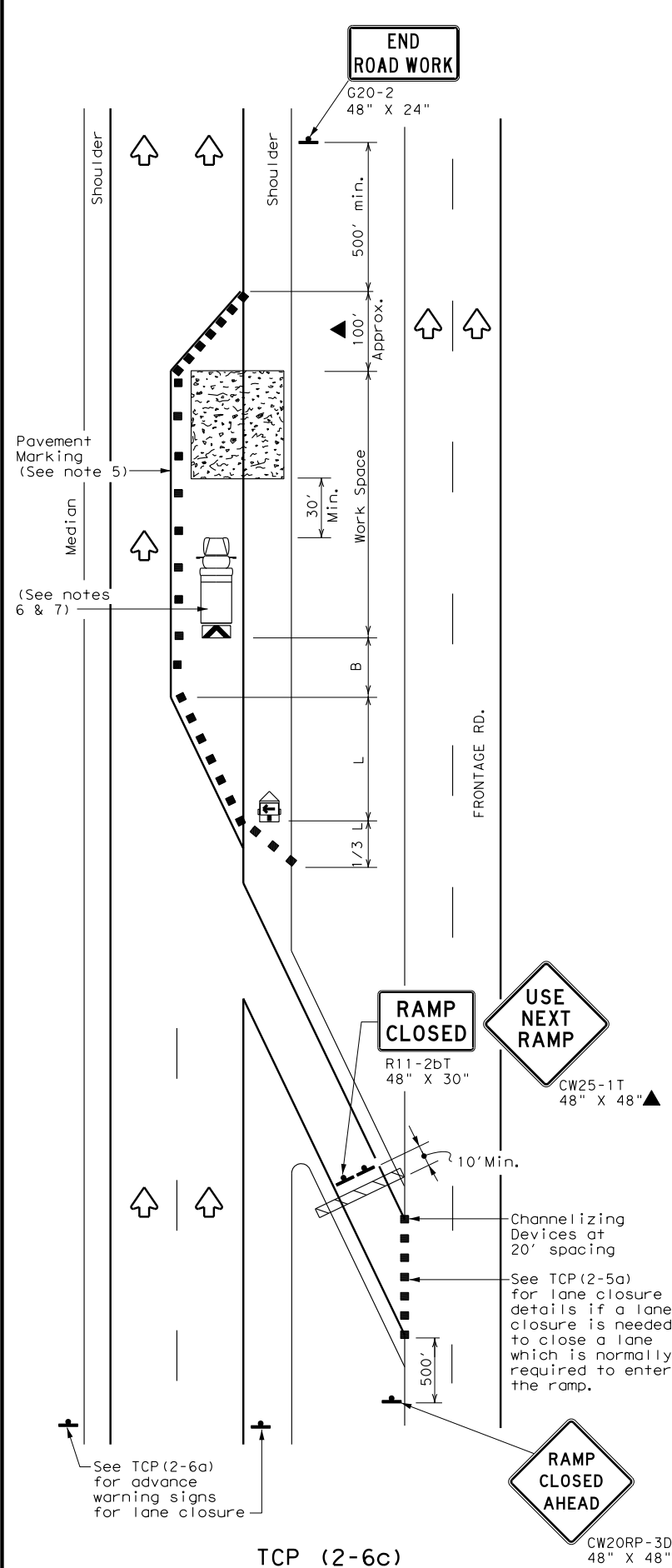
DATE:  
FILE:



TCP (2-6a)  
**ONE LANE CLOSURE**



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



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

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

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

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

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

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



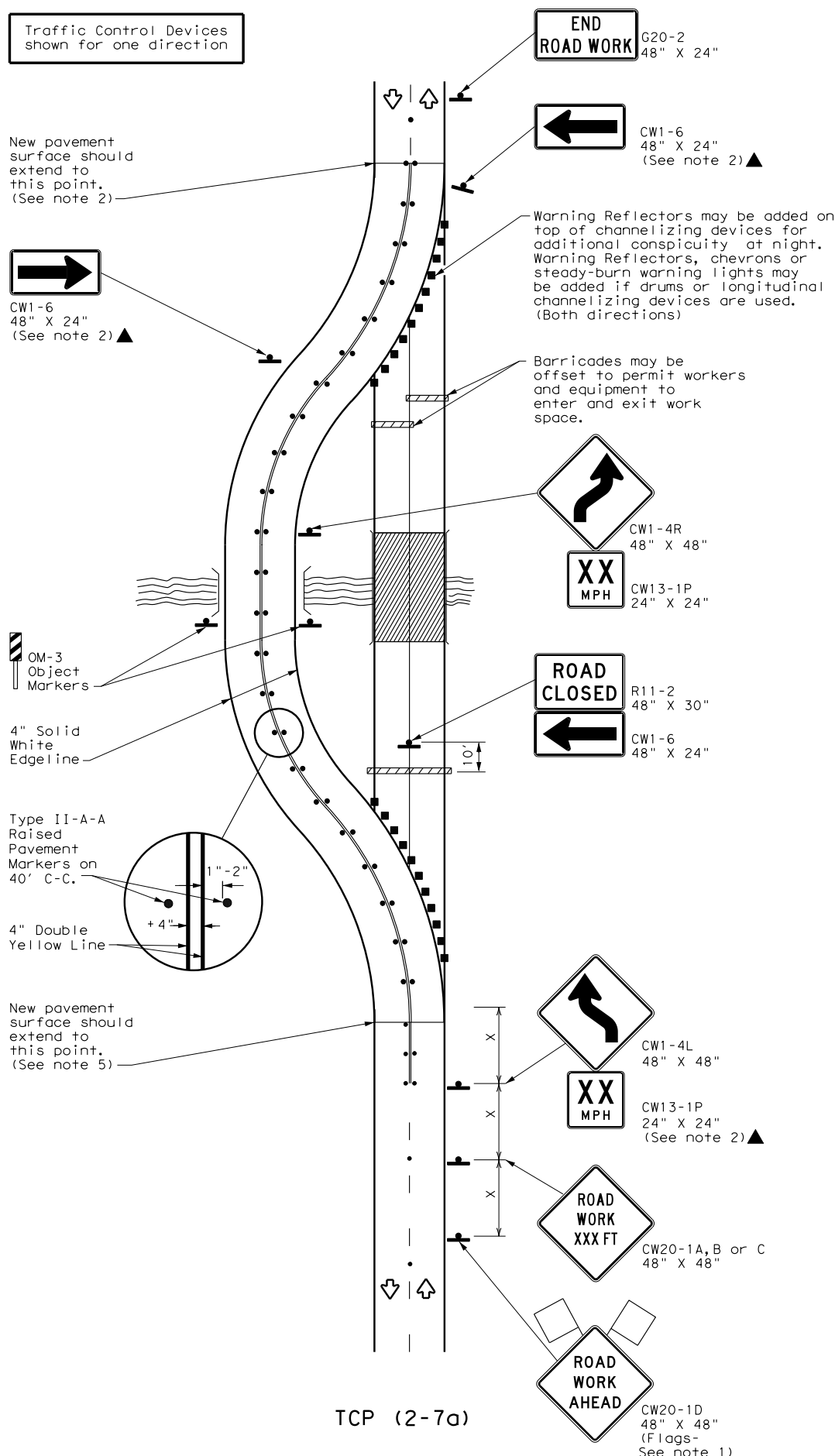
**TRAFFIC CONTROL PLAN  
LANE CLOSURES ON  
DIVIDED HIGHWAYS**

**TCP (2-6) - 18**

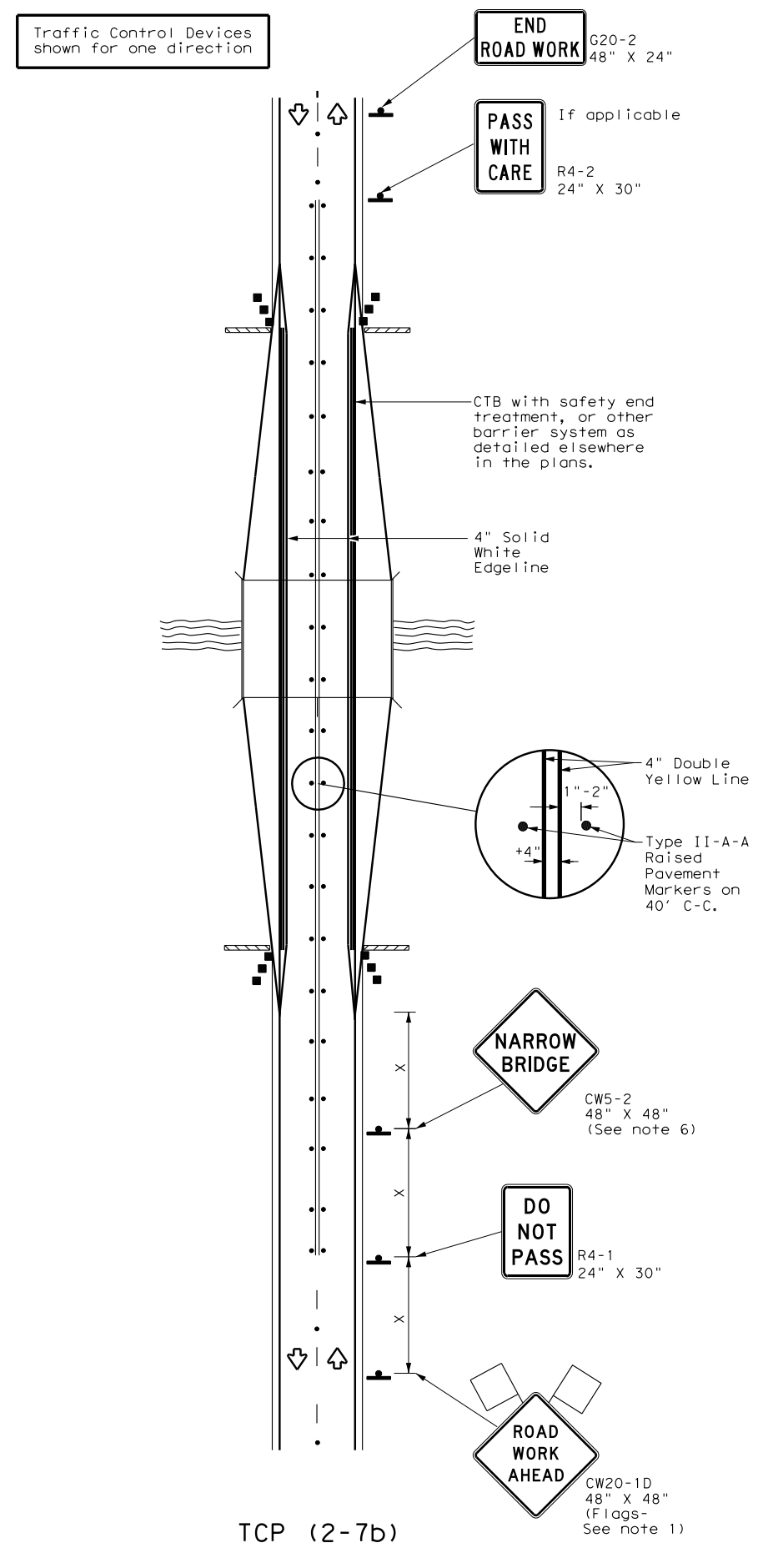
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© TxDOT December 1985	CON:	SECT:	JOB:	HIGHWAY:
REVISIONS	6447	71	001	US 290, ETC.
2-94 4-98	DIST:	COUNTY:	SHEET NO.:	
8-95 2-12	14	BASTROP, ETC.	26	
1-97 2-18				

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DATE: FILE:



**ROADWAY DIVERSION**



**BRIDGE WIDENING**

**LEGEND**

	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Raised Pavement Markers Ty II-AA
	Sign		Traffic Flow
	Flag		Flagger

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

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

**TYPICAL USAGE**

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

- GENERAL NOTES**
- Flags attached to signs where shown are REQUIRED.
  - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
- TCP (2-7a)**
- Raised pavement markers shall be placed 40 feet c-c on centerline throughout project.
  - Roadway diversion design requirements should be based on posted speed limit or prevailing speed.
  - New pavement surface should be extended across existing roadway edge to a point where existing pavement markings left in place during project do not conflict with construction area pavement marking.
- TCP (2-7b)**
- The CW5-2 "Narrow Bridge" sign may be omitted if lane and shoulder widths are maintained.



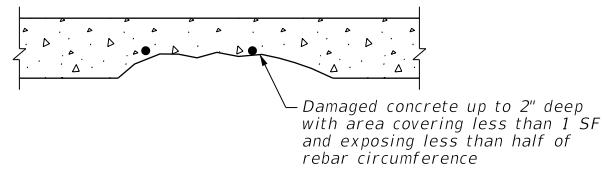
**TRAFFIC CONTROL PLAN  
 DIVERSIONS AND  
 NARROW BRIDGES**

**TCP (2-7) - 18**

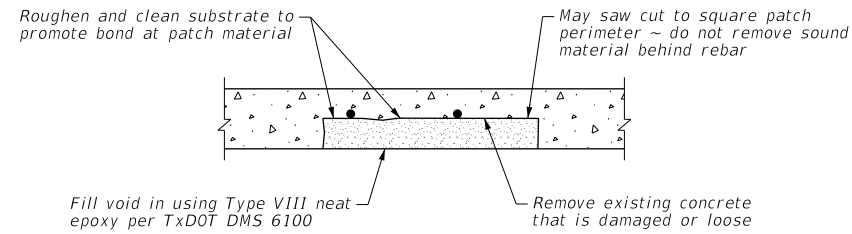
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© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	6447	71	001	US 290, ETC.
8-95 3-03	DIST	COUNTY	SHEET NO.	
1-97 2-12	14	BASTROP, ETC.	27	
4-98 2-18				





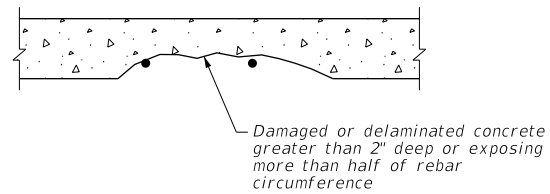


**STEP 1 - DAMAGE CONDITION**

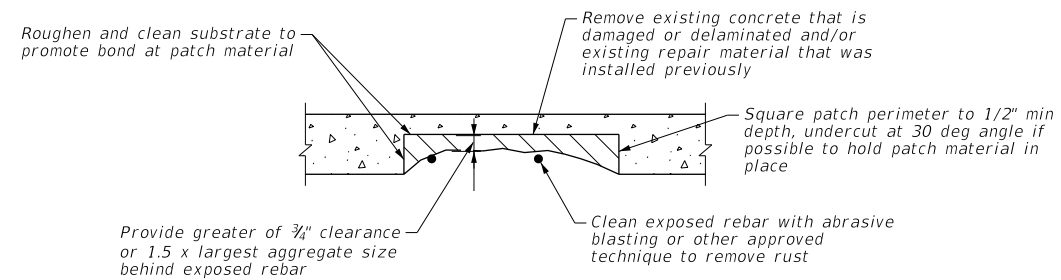


**STEP 2 - EXCAVATION, PREPARATION AND PATCH**

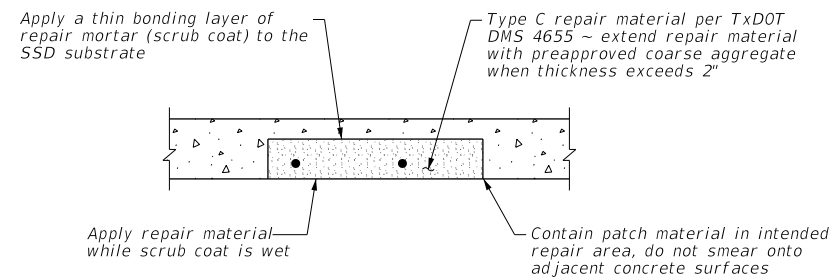
**MINOR SPALL REPAIR DETAIL**  
(TxDOT Concrete Repair Manual Section 3.1)



**STEP 1 - DAMAGED CONDITION**



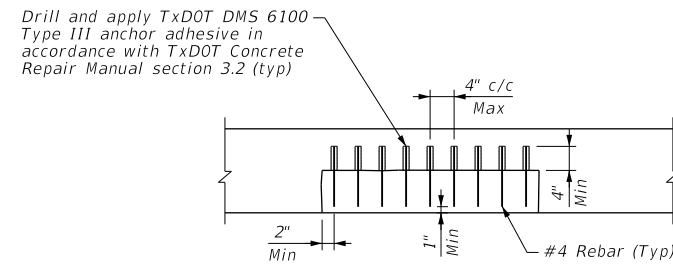
**STEP 2 - EXCAVATION AND PREPARATION**



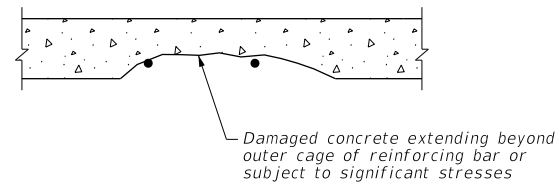
**STEP 3 - PATCH DAMAGED AREA**

**MINOR SPALL REPAIR DETAIL**  
(TxDOT Concrete Repair Manual Section 3.2)

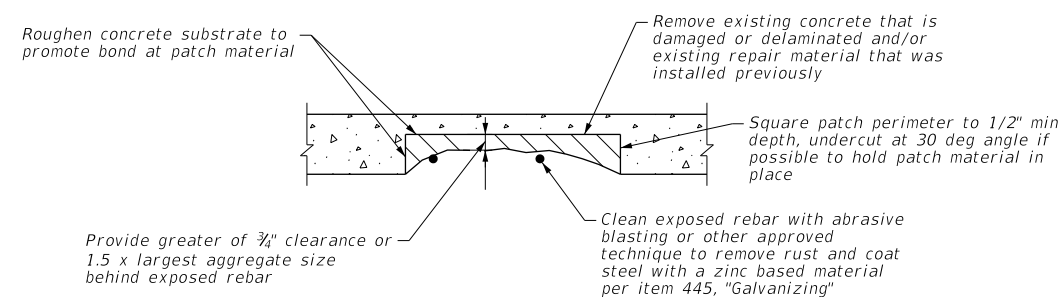
If batched concrete is selected as the repair material, follow the provisions of TxDOT Concrete Repair Manual Section 3.3



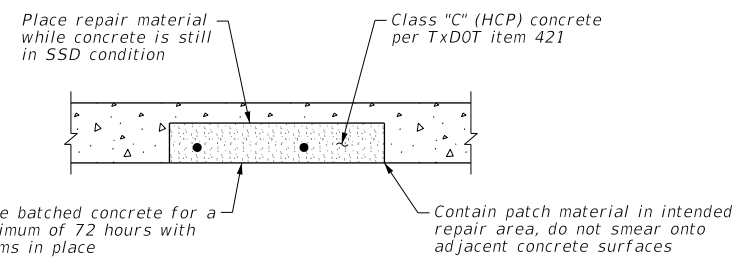
**MECHANICAL TIE DETAIL**



**STEP 1 - DAMAGED CONDITION**



**STEP 2 - EXCAVATION AND PREPARATION**



**STEP 3 - PATCH DAMAGED AREA**

**MAJOR SPALL REPAIR DETAIL**  
(TxDOT Concrete Repair Manual Section 3.3)

Remove aggregate larger than 3/4" from Class "C" (HPC) concrete mix design when repair thickness will be less than 3" over a significant portion of the damaged area

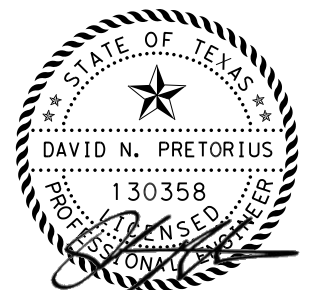
**REPAIR NOTES**

Perform repair in accordance with TxDOT item 429, "Concrete structure repair", and the TxDOT Concrete Repair Manual, 2021. In addition to details shown on this sheet, the manual includes criteria for application, surface preparation, forms, and curing.

Contractor to submit all materials and methods of application for approval.

Contractor to provide compressive strength testing of Type C repair material and Class "C" (HPC) concrete.

Apply mechanical tie detail in the event existing rebar is corroded to the point of not sufficiently anchoring intermediate and major spall repair material to the substrate.



12.4.2023

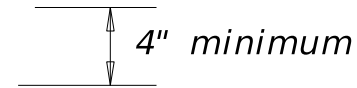


**Spall Repair Details**

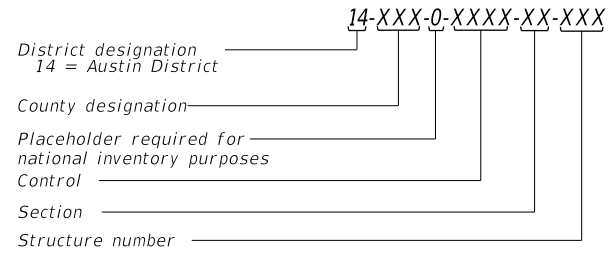
FED. RD. DIV. NO.		PROJECT NO.		HIGHWAY NO.
		8001-1904		US 290, ETC.
DESIGNED: DNP	STATE	STATE DIST. NO.	COUNTY	SHEET NO.
CHECKED: WD	TEXAS	AUSTIN	BASTROP, ETC.	
DRAWN: MS	CONT.	SECT.	JOB	
CHECKED: DNP	6447	71	001	29

# 14-XXX-0-XXXX-XX-XXX

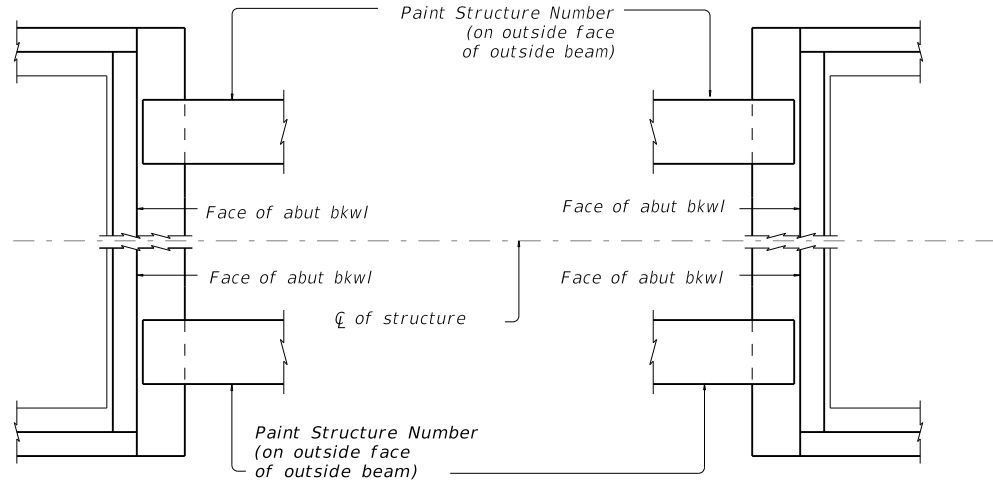
District designation      County designation      Placeholder      Control      Section      Structure number



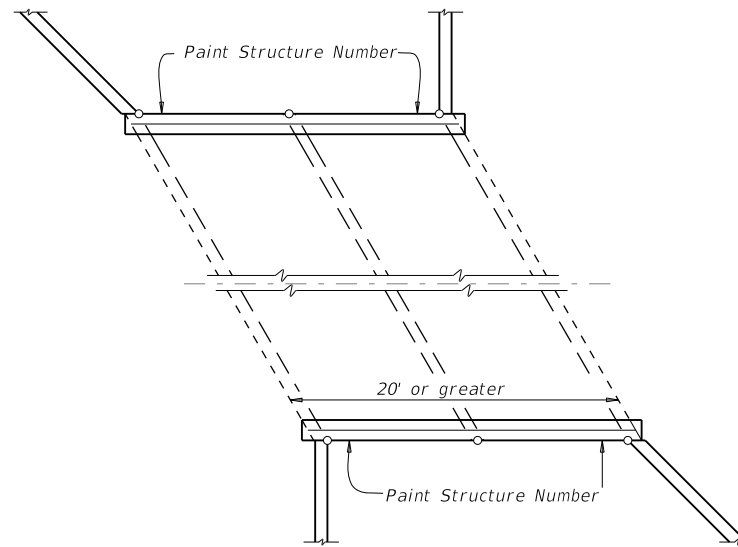
## PAINTED STRUCTURE NUMBER LEGEND



- 011 = Bastrop
- 016 = Blanco
- 027 = Burnet
- 028 = Caldwell
- 087 = Gillespie
- 106 = Hays
- 144 = Lee
- 150 = Llano
- 157 = Mason
- 227 = Travis
- 246 = Williamson



AT BRIDGE LOCATIONS



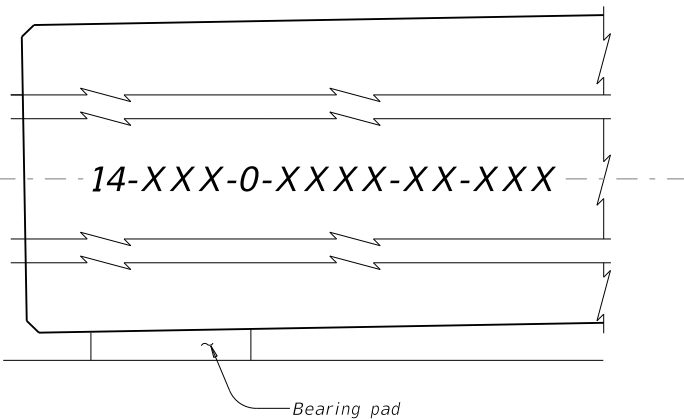
AT CULVERT LOCATIONS

### GENERAL NOTES:

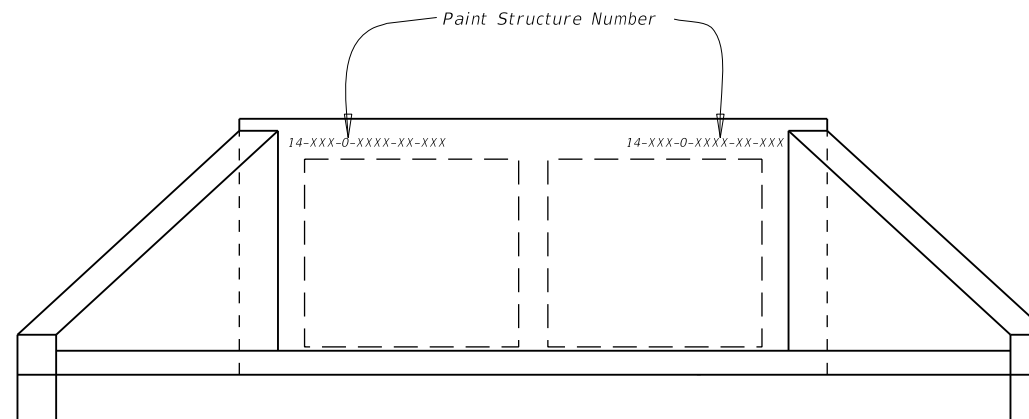
Permanently mark each structure with the painted structure number in accordance with the plans.  
Each Structure shall have 4 (four) Structure numbers painted per structure.  
Painting structure number work will not be measured or paid for directly but will be considered subsidiary to other pertinent items.

### MATERIAL:

Provide black, lead free, CFC free, and CFHC free paint that is water proof, weather resistant, and dries instantly on all surfaces without smearing, smudging, or rippling



ELEVATION VIEW DETAIL



ELEVATION VIEW DETAIL

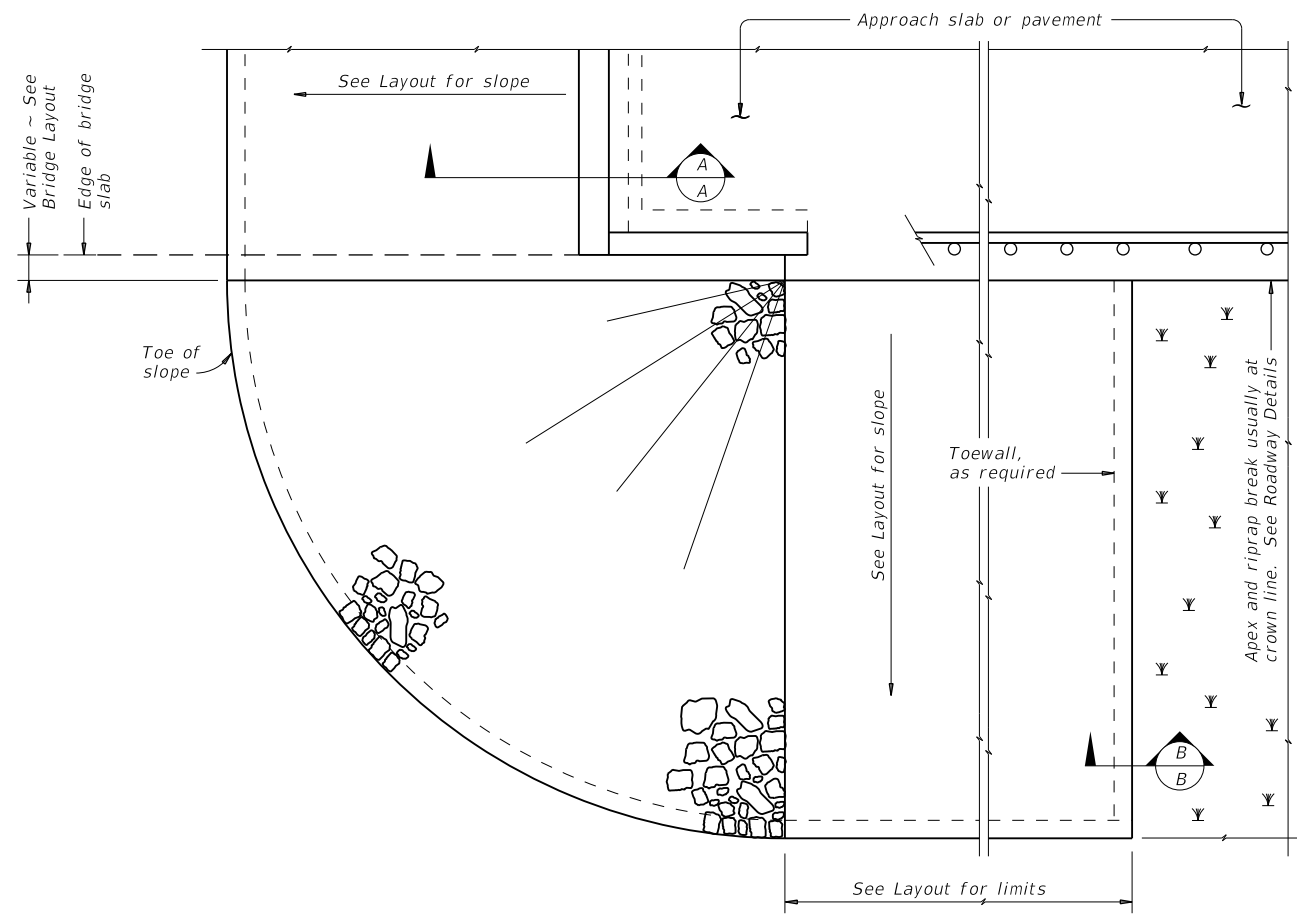


## PAINTING STRUCTURE NUMBERS

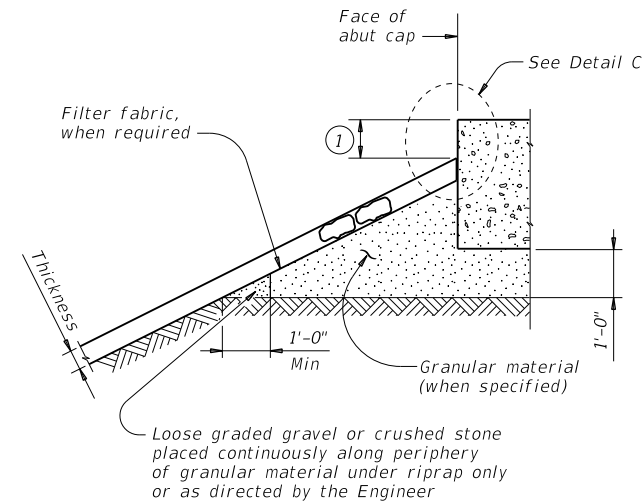
PSN-19 (AUS)

CONT	SECT	JOB	HIGHWAY
6447	71	001	US 290, ETC.
DIST	COUNTY	SHEET NO.	
14	BASTROP, ETC.	30	

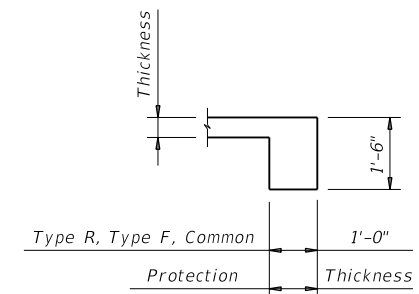
DISCLAIMER: This standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



**PLAN**

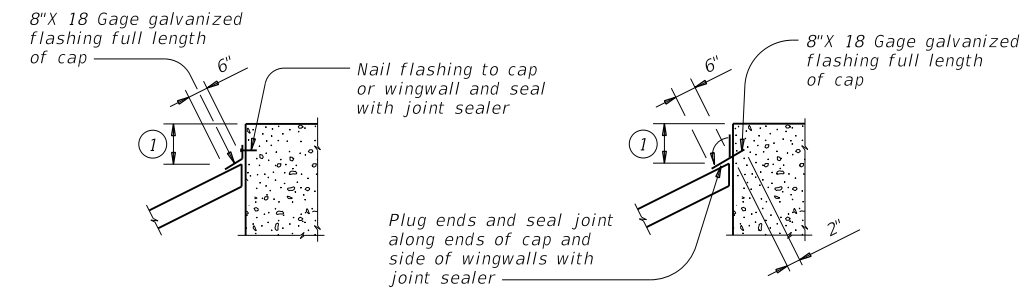


**SECTION A-A AT CAP**



**SECTION B-B**

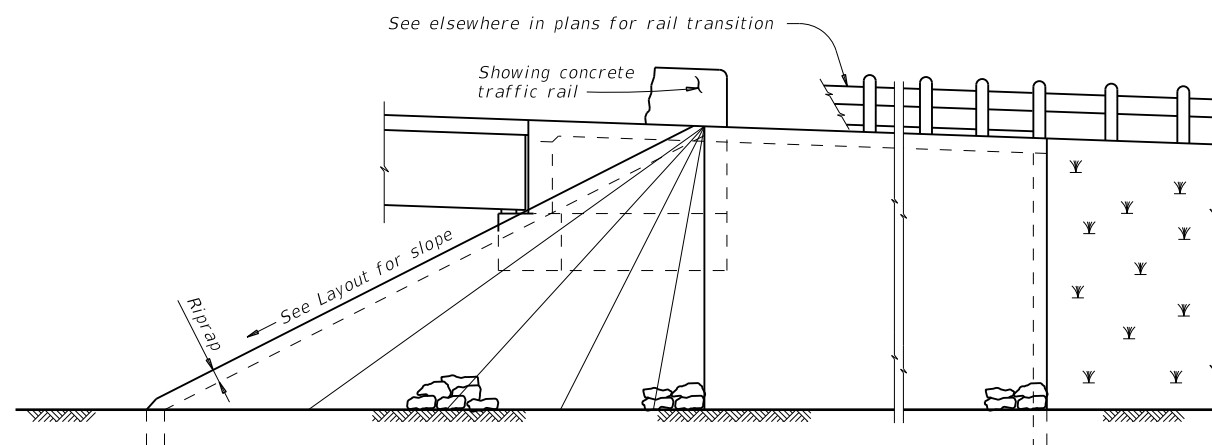
Provide toewall when shoulder drain is located adjacent to limits of stone riprap. Omit toewall when thickness of protection riprap is greater than 18".



**CAP OPTION A**

**CAP OPTION B**

**DETAIL C**



**ELEVATION**

**GENERAL NOTES:**

Refer to Item 432, "Riprap" for stone size and gradation, and construction details. See Layout for limits and thickness of riprap specified.  
See elsewhere in plans for locations and details of shoulder drains.

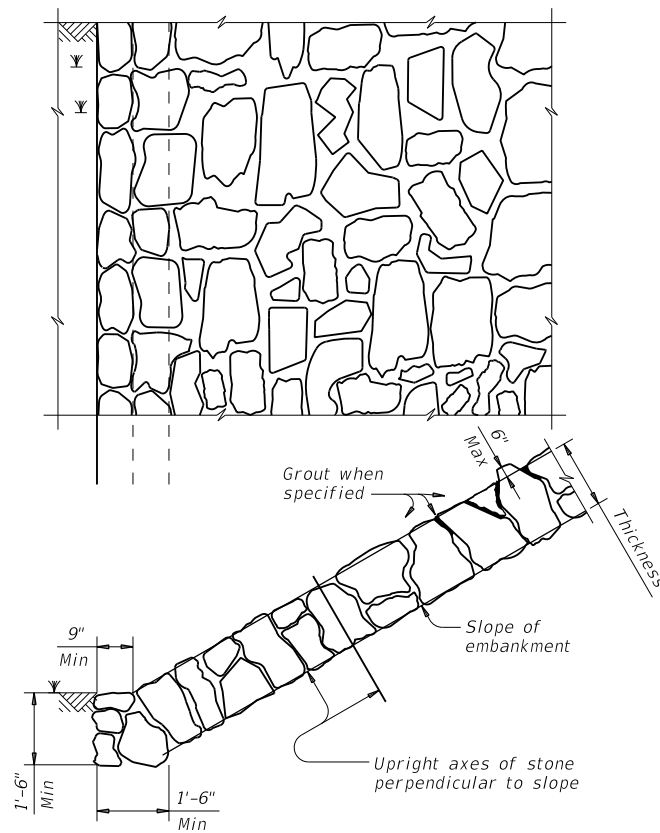
① Top of cap to top of riprap dimension varies as directed by the Engineer. Provide 9" Min for beam/slab type bridges and 1'-6" for slab span, box beam, or slab beam bridges.

SHEET 1 OF 2

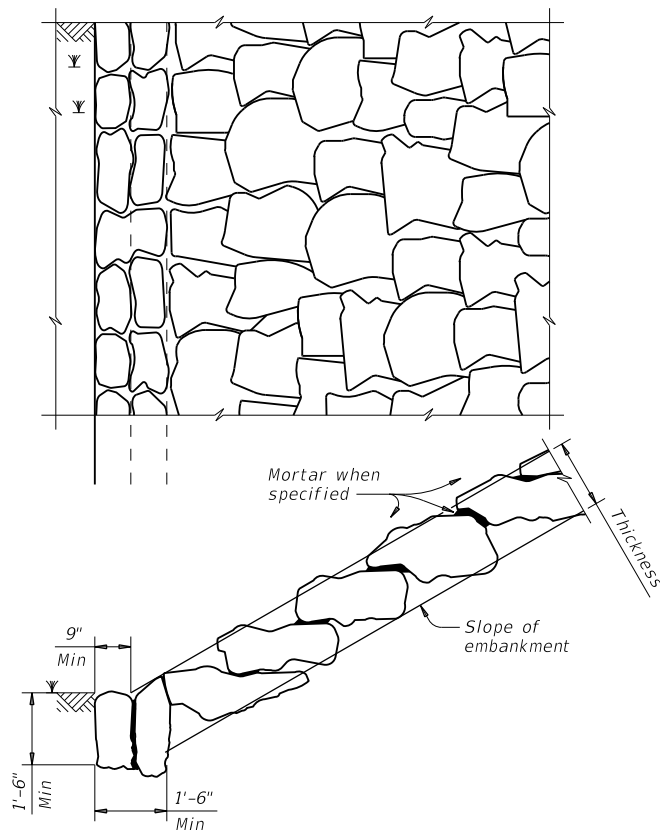
		<b>Bridge Division Standard</b>	
<h2>STONE RIPRAP</h2>			
<h3>SRR</h3>			
FILE: MS-SRR-19.dgn	DN: AES	CK: JGD	DW: BWH
©TxDOT April 2019	CONT: 6447	SECT: 71	JOB: 001
REVISIONS	DIST: 14		COUNTY: BASTROP, ETC.
	SHEET NO. 31		HIGHWAY: US 290, ETC.

DATE:  
FILE:

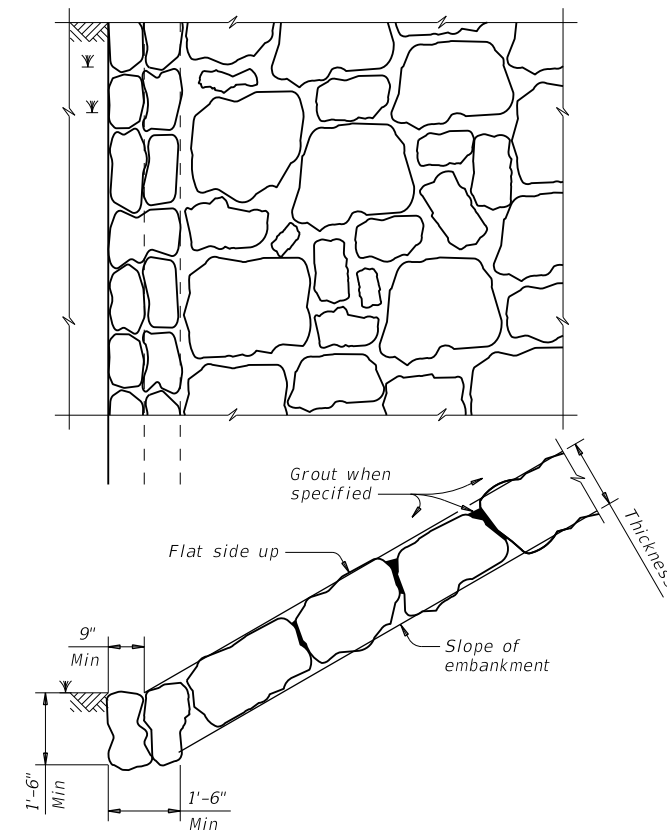
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**FIGURE 1 ~ TYPE R STONE RIPRAP**  
dry or grouted

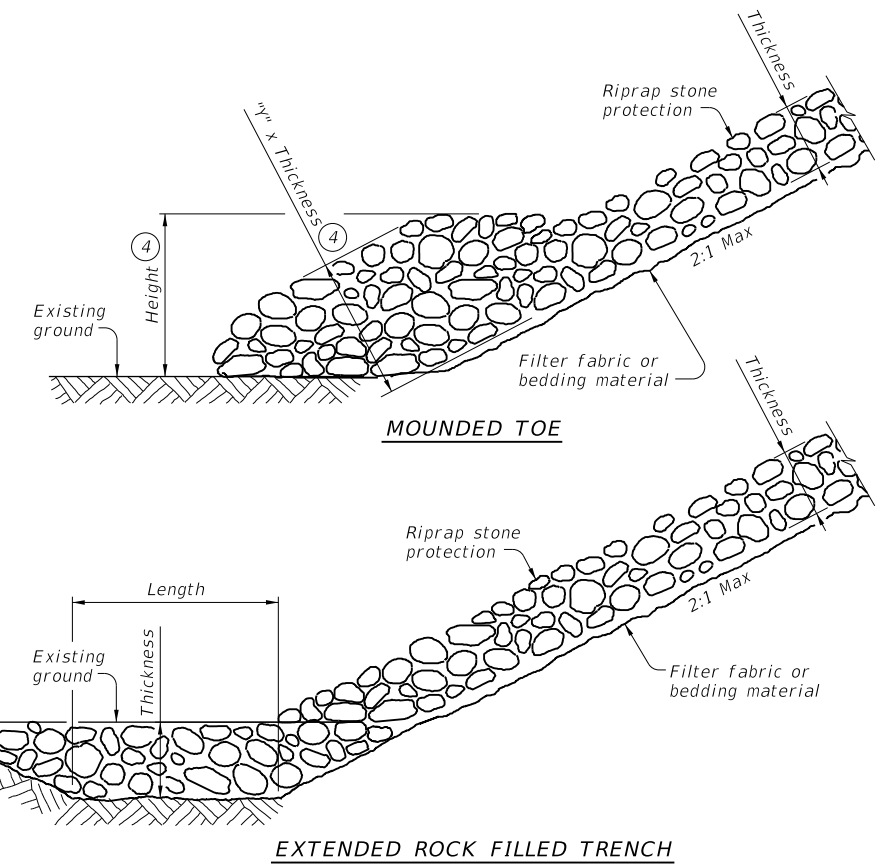


**FIGURE 2 ~ TYPE F STONE RIPRAP**  
dry or mortared

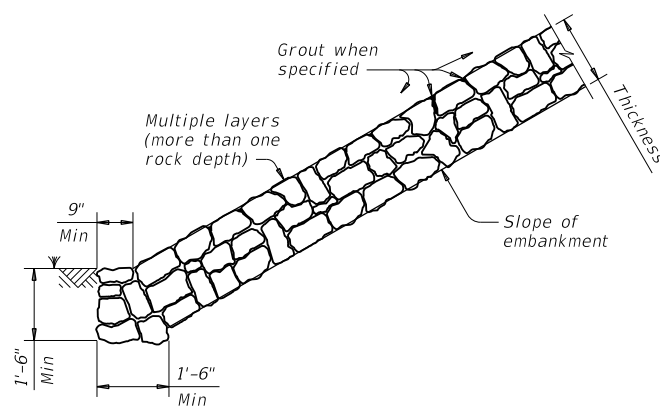
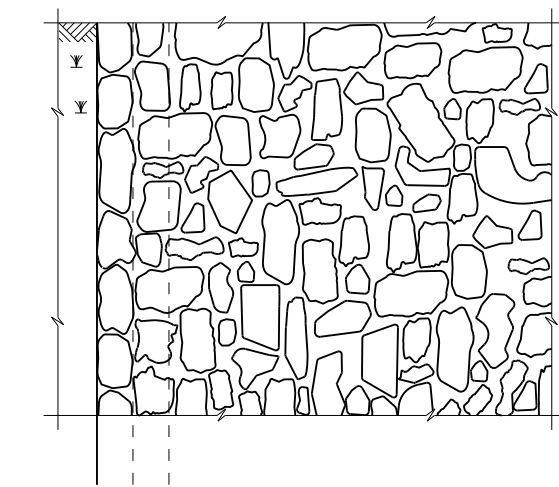


**FIGURE 3 ~ TYPE F STONE RIPRAP**  
grouted

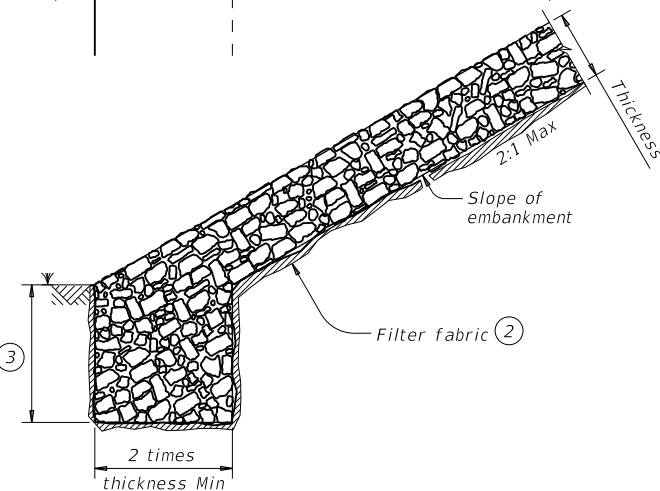
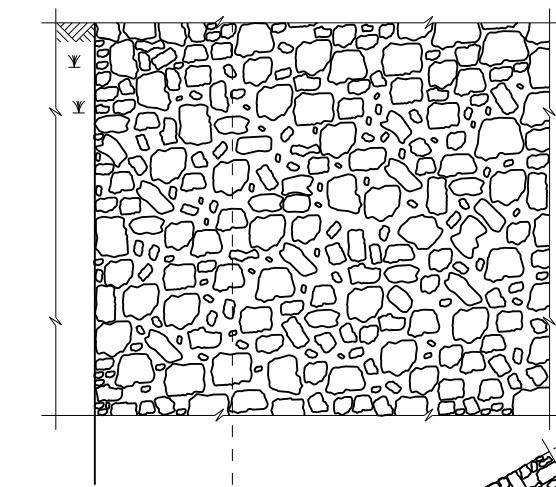
- ② Provide bedding material instead of filter fabric if shown elsewhere in plans. See Layout for thickness of bedding material.
- ③ Minimum toe depth is the larger of the maximum scour depth or 2 times the riprap thickness.
- ④ "Y" and Height need to be defined. See layout or detail sheet for values if this option is used.
- ⑤ List Stone Protection as size (XX inch) and thickness (YY inch) on the layout.  
Example: Riprap (Stone Protection) XX inch, Thickness = YY inch.



**PROTECTION STONE RIPRAP TOE OPTIONS ⑤**



**FIGURE 4 ~ COMMON STONE RIPRAP**  
dry or grouted



**FIGURE 5 ~ PROTECTION STONE RIPRAP ⑤**

SHEET 2 OF 2



**STONE RIPRAP**

**SRR**

FILE: MS-SRR-19.dgn	DN: AES	CK: JGD	DW: BWH	CK: AES
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	DIST 14	COUNTY BASTROP, ETC.	SHEET NO. 32	

DATE: FILE:

