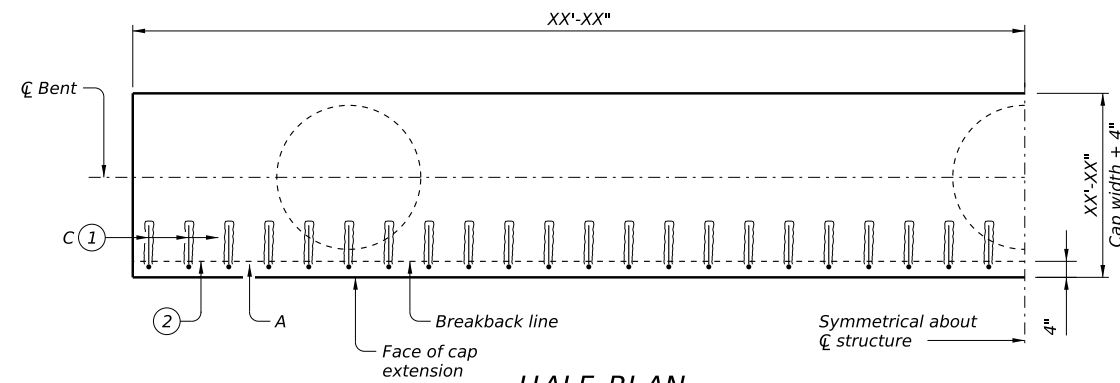
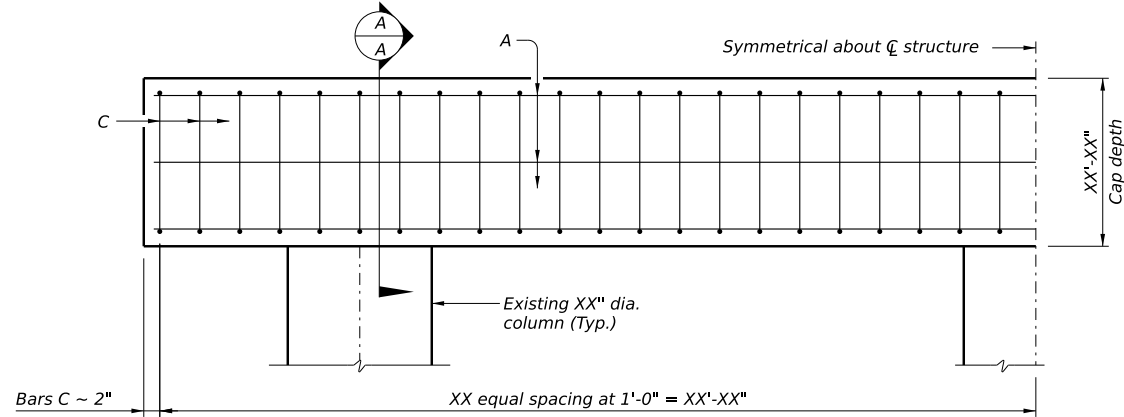


DISCLAIMER: This standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



HALF-PLAN

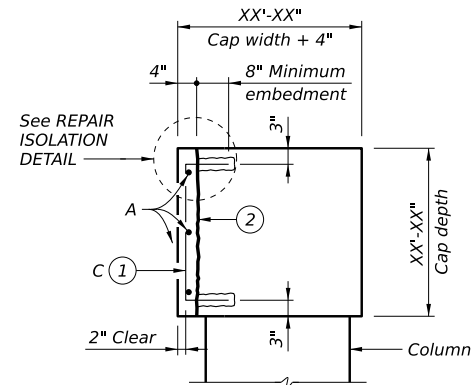


HALF-ELEVATION

REPAIR PROCEDURE:

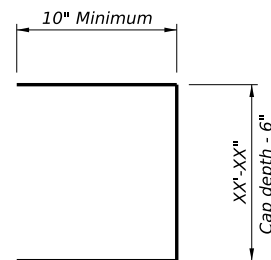
1. Raise stem or beam ends in accordance with Item 495, "Raising Existing Structures" to allow repairs to be made to the bent cap. Unfactored loads are as follows:
DL - XX kips per stem or beam
LL - YY kips per stem or beam (impact included)
2. Remove loose and delaminated concrete from cap face. Breakback face of cap to 1" beyond existing stirrups.
3. Clean and roughen cap face by an approved method to obtain a minimum 1/8" amplitude surface.
4. Drill and epoxy Bars C into cap.
5. Install reinforcing steel as shown. Allow anchoring epoxy to properly cure prior to proceeding with repairs.
6. Form cap extension and isolate the bearings or superstructure as shown.
7. Lower the span to the point where beam ends are in contact with existing bent cap. Keep jacks engaged and do not remove jacks or shoring system until repairs are complete.
8. Achieve a saturated surface dry (SSD) substrate immediately before placing concrete. Place and cure concrete in accordance with Item 420, "Concrete Substructures."
9. Open bridge to traffic when repair material has reached a minimum of 3,600 psi compressive strength.

For other repairs associated with the bent cap repair, see appropriate details (e.g. BEAM END REPAIR DETAILS or BEARING PAD REPLACEMENT DETAILS).

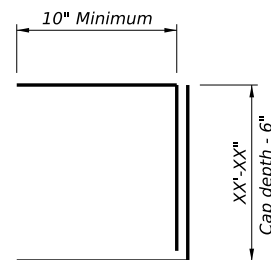


SECTION A-A

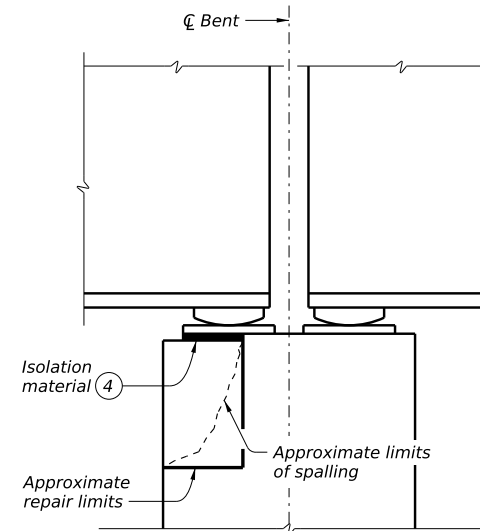
(Showing full-height side repair; partial-height similar. Existing reinforcement not shown for clarity. See as-built plans for cap reinforcement details.)



BARS C

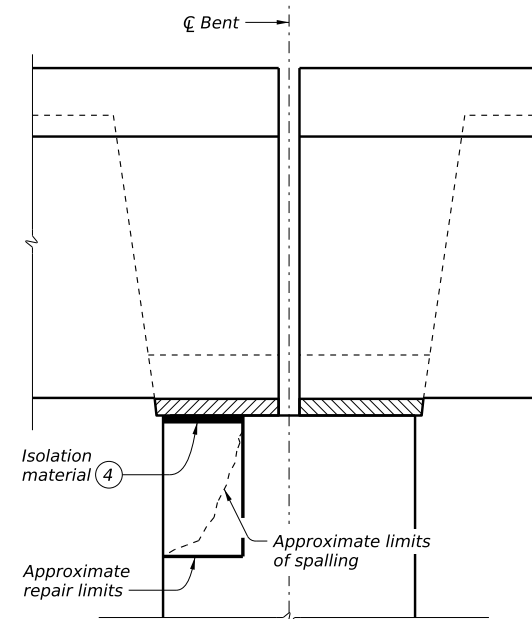


BARS C (ALTERNATE OPTION)



REPAIR ISOLATION DETAIL

Showing steel beams/bearings. Other beams and bearing systems similar.



REPAIR ISOLATION DETAIL

Showing pan girders. T beams similar.

TABLE OF ESTIMATED QUANTITIES (3)

Bar	No.	Size	Length	Weight
A		#5		
C		#5		
Reinforcing Steel				Lb
Class "C" Concrete				CY

- 1 Embed Bar C minimum of 8" into existing face of cap with an approved Type III Class C, D, E, or F epoxy adhesive meeting the requirements of DMS-6100, "Epoxyes and Adhesives." Follow manufacturer's directions for installing the epoxy anchor bars. Adjust spacing as needed to avoid existing stirrups.
- 2 Breakback existing face of cap 1" beyond existing stirrups in accordance with TxDOT's Concrete Repair Manual - Chapter 3, Section 3.
- 3 For Contractor's information only.
- 4 1/4" Neoprene pad or other material, as approved by the Engineer. Attach to the bottom of the bearing or beam end with an adhesive compatible with the material.

NOTE TO DESIGNER:

This sheet is to be used as a guide for repairing concrete bent caps with full-height or partial-height major spalls occurring across the majority of the cap face. Details with appropriate notes from this guide should be prepared for the specific application. Particular care should be taken in identifying other repairs associated with repairing the concrete bent cap (e.g. girder end repairs, bearing pad replacement) and separate repair details should be prepared to address all other repair items. Details shown are of half plan and elevation assuming repair is full-length of bent cap. Modify accordingly. This sheet cannot be used without modification. The details shown may need to be amended if the exact existing conditions are not covered. In all cases, details and notes not required must be deleted. This note and the phrase "Not to be used as a standard" must be removed and the sheet must be signed and sealed by a Professional Engineer.

GENERAL NOTES:

Perform all repairs in accordance with Item 429, "Concrete Structure Repair" and the TxDOT Concrete Repair Manual. A copy of this manual must be available on site during all repair operations. Additional damage caused to the structure during lifting or repair operations must be repaired at the Contractor's expense. Provide Class C concrete (f'c = 3,600 psi). Provide Grade 60 reinforcing steel.



BENT CAP REPAIR DETAILS
BENT NO. XX

(Not to be used as a standard)
NBI: XX-XXX-XXXX-XX-XXX

P.E. SEAL REQUIRED
PRELIMINARY
SUBJECT TO REVISION

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