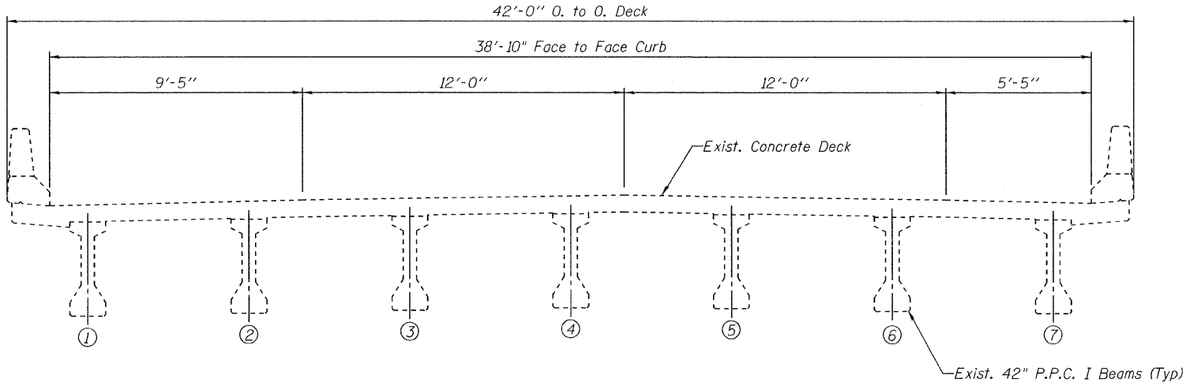
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 55	*	Will	72	39
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 11
19 SHEETS

Contract #62930 * 88(B&B-1)BR



EXISTING CROSS SECTION
(Looking South)

PRELOADING FOR PPC I-BEAM REPAIRS
(Service Moment)

BEAM 1

Span	Location		Moment (kip-ft)
	From	Distance*	
9	℄ Pier 9	19'-2"	320
9	℄ Pier 9	44'-0"	649
9	℄ Pier 8	21'-0"	547

*To center of repair area. If actual distance varies by more than 2' from distance shown notify the Engineer to determine Moment required to preload.

REPAIR PROCEDURES FOR BEAM 1 (SPANS 8 AND 9)

1. Beam repairs shall be done before addition of the Bridge Deck Overlay.

2. The damaged area of the beam shall be cleaned of all loose and spalled concrete and sealant. All loose material shall be removed to sound concrete until coarse aggregate will break under chipping rather than dislodging. Hand tools shall be used for the removal of concrete adjacent to the prestressing strands. While a 15 pound chipping hammer may be used away from prestressing strands, extreme care shall be taken not to damage the exposed prestressing strands.

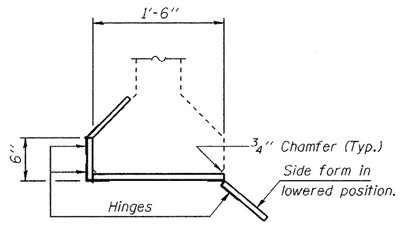
3. Using the same tools, remove the existing concrete to sound concrete, as described above, along the edges of the damaged area to a depth of 1" min. to 1½" max. The edges shall be saw cut ¾" deep. The entire area of existing concrete against which new concrete will be placed and any exposed portions of the prestressing strands shall be sandblasted. The concrete shall be sandblasted to expose clean, well bonded aggregate.

4. Power driven pins as shown in Detail A shall be placed at 9" alternate centers along damaged length of beam at locations shown in Detail A. Place 1" x 1" x 18 gauge welded wire fabric in repair areas and attach it to the pins or strands with wire ties. The clearance between the finished surface of the new concrete and the welded wire fabric shall be 1" minimum. All beams involved in this work shall be rebuilt to their original dimensions.

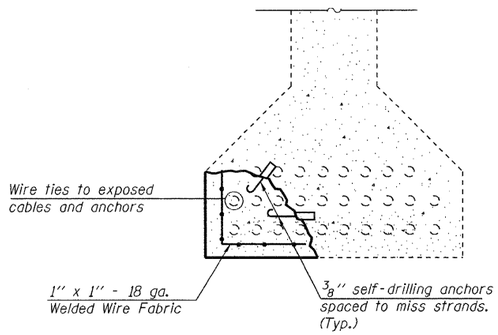
5. The surface of the existing concrete against which new concrete will be placed shall be prepared as a bonded construction joint according to Article 503.09(b) of the Standard Specifications. Other minor mortar repair, crack sealing or surface sealing of gouges on the beam shall be performed as directed by the Engineer.

6. The repair shall be made using a material from the "Approved List of Non-Shrink Grouts" maintained by the Bureau of Materials and Physical Research. The repair material chosen shall be appropriate for the thickness of repair to be made. Coarse aggregate with maximum size of ⅜" shall be added with the amount as specified by the manufacturer. Place the lower form on the bottom of the beam and compact by vibrating (or other approved methods) the mix into the voids.

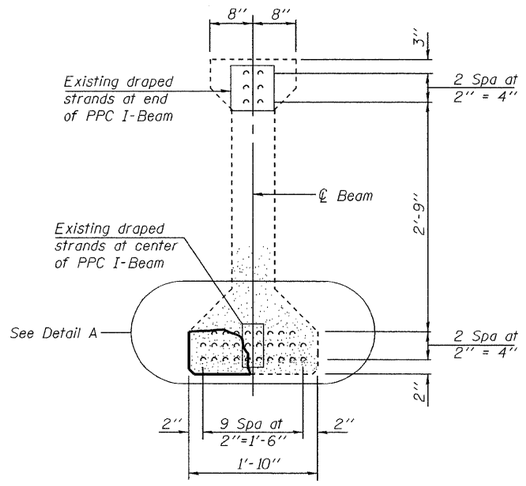
7. Preloading, if specified, and forms shall be kept in place until the repair material has reached an ultimate strength of 5,000 psi. Timing of form removal shall be modified as necessary to meet curing requirements as specified by the manufacturer.



SUGGESTED FORM DETAIL



DETAIL A



TYPICAL PATCHING DETAIL
Beam 1, Spans 8 and 9

NOTE

The cost of concrete removal, Class PS Concrete, power Driven pins, wire ties, wire mesh, epoxy bonding agent, Epoxy Crack Injection and all other work required to perform repairs on Beam 1 in Spans 8 and 9 shall be included in the unit cost per sq. ft. for Precast Prestressed Concrete I-beam repair

ILLINOIS DEPARTMENT OF TRANSPORTATION

SHEET TITLE: BEAM PRELOADING DETAILS

PROJECT: I-55 NB OVER KANKAKEE RIVER
FAI ROUTE 55, SECTION 88(B&B-1)BR
WILL COUNTY
SN 099-0001

PROJECT NO. 03095-16
SCALE
DATE 6/25/09
DRAWN BY TFG
CHECKED BY MCB
DRAWING NO. 11

COOMBE-BLOXDORF P.C.
Engineers / Land Surveyors
Springfield, Illinois
Design Firm License No. 184-002703

OF 19 SHTS

PLOT DATE = 6/25/2009
FILE NAME = ...\sn-099-0001-snt-11-beam-preloading-details.dgn
PLOT SCALE = 62.0588 '/' IN.
USER NAME = JML