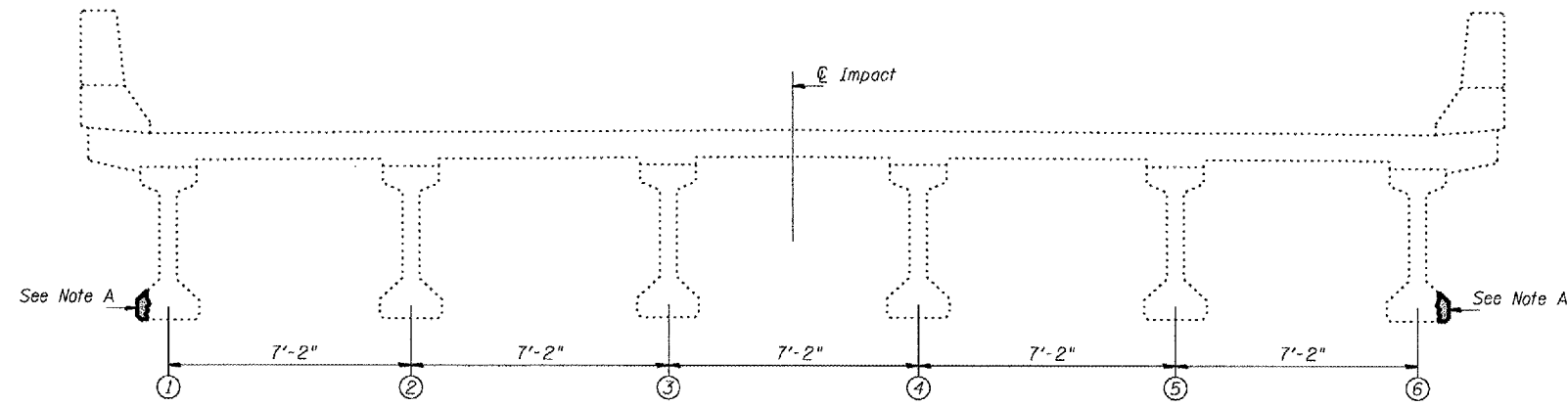


F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	(50-6VB)1	LASALLE	25	13A
FED. ROAD DIST. NO. ILLINOIS		NON-FED. AID PROJECT		



CROSS SECTION
(Looking North)

Note A:
PPC I-Beams to be repaired as detailed.

NOTES

Prior to beginning any repair work, the contractor shall be responsible for providing a preloading system on the bridge deck over the existing damaged beam at the specified locations. The preloading system should produce a total maximum service load moment as shown at the centerline of the damaged area.

Preloading shall be kept in place for at least three (3) days after completion of concrete repair or until the concrete has reached an ultimate strength of 5,000 psi.

The contractor's proposed preloading system, with computations, sealed and signed by an Illinois Structural Engineer shall be submitted to the Bureau of Bridges and Structures for approval. The preloading system shall be placed shortly after bridge closure for repairs.

Separate preload sequences may be necessary for repair of different areas in one span. It may not be possible to use one preload within a span for repair of all areas within that span without overstressing the beam. The calculations submitted must ensure that any preload system proposed for use during repair of multiple locations does not overstress the beam.

PRELOADING FOR PPC I-BEAM REPAIRS
(Service Moment)

WEST FASCIA

Span	Location		*Moment (kip-ft)
	From	Distance	
2	Pier 2	27'-6"	300
2	Pier 2	39'-6"	240
3	Pier 1	39'-3"	340

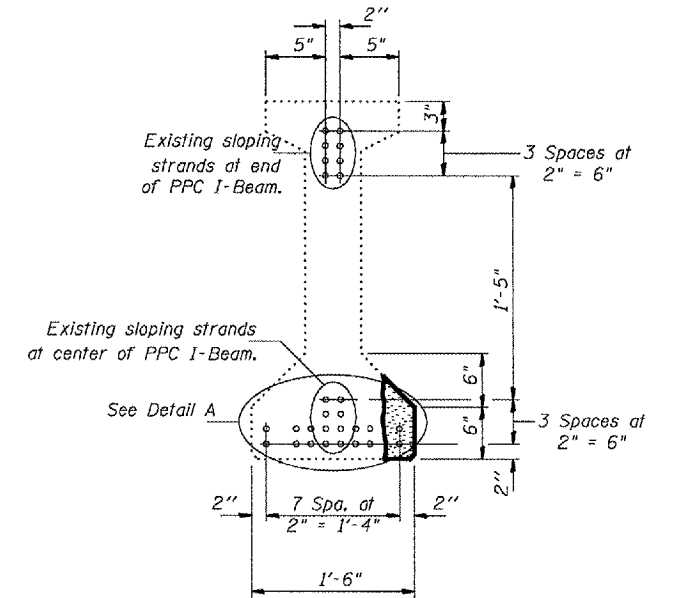
EAST FASCIA

Span	Location		*Moment (kip-ft)
	From	Distance	
2	Pier 1	46'-0"	160
3	Pier 2	12'-6"	170

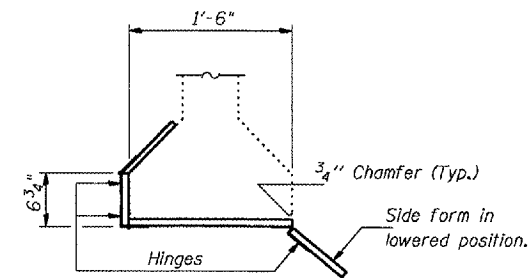
*The magnitude of the moments to be applied were obtained by assuming a simple span behavior between the fascia and first interior beams (AASHTO 3.23.2.3.1.2) for Live Load + Impact. The effect of the proposed preload system shall be determined using the same assumption.

REPAIR PROCEDURES FOR WEST AND EAST FASCIA BEAMS

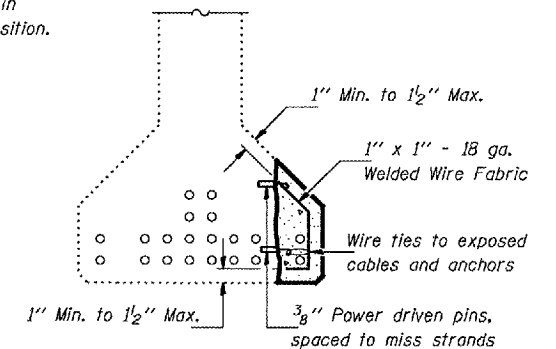
- The damaged area of the beam shall be cleaned of all loose and spalled concrete, and sealant. Hand tools shall be used for the removal of concrete adjacent to the prestressing strands. While a 15 pound chipping hammer may be used away from prestressing strands, extreme care shall be taken not to damage the exposed prestressing strands. Any exposed portions of the strands shall be sandblasted.
- Using the same tools, remove the existing concrete to sound concrete along the edges of the damaged area to a depth of 1" min. to 1 1/2" max. The edges shall be saw cut 3/4" deep or less.
- Power driven pins as shown in Detail A shall be placed at 9" alternate centers horizontally and located vertically 3" and 7" up from bottom of Fascia Beams. Use wire ties in areas where the strands are exposed as 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.
- All surfaces of existing concrete in the area to be repaired shall be coated with an epoxy-resin primer bonding agent. The concrete beam to be repaired or crack sealed must be at a temperature of at least 50° F. or higher.
- The repair shall be made using a concrete meeting all the requirements specified in Section 1020 of the Standard Specifications for Class PS Concrete for precast prestressed concrete members, except the maximum size of the aggregate shall be 1/2". Place the lower form on the bottom of the beam and compact by vibrating (or other approved methods) the concrete mix into the voids. After accessible voids have been filled and compacted, the top vertical form shall be raised into position and the remaining voids filled and compacted. The sloping upper surface shall be finished to the configuration of the existing PPC I-Beam flange. The cost of concrete removal, Class PS Concrete, power driven pins, wire ties, wire mesh, epoxy bonding agent, and all other work required to perform any repairs on East and West Fascia beams is included in the Lump Sum price for PPC I-Beam Repairs. The preloading system will not be paid separately but will be included in the unit bid for this item.



PATCHING DETAIL
Beam 5, Span 3.



SUGGESTED FORM DETAIL



DETAIL A

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
PPC I Beam Repairs	L.S.	1

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
FORMED CONCRETE REPAIR
PPC I-BEAMS
S.N. 050-0167 (SB)
F.A.I. 412 OVER C. & N.W. RAILROAD
SECTION (50-6VB)1-1
STA. 1429+12.74