

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET	SHEET NO.
F.A.P. 753	142 BR-4	SANGAMON	24	14	11 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

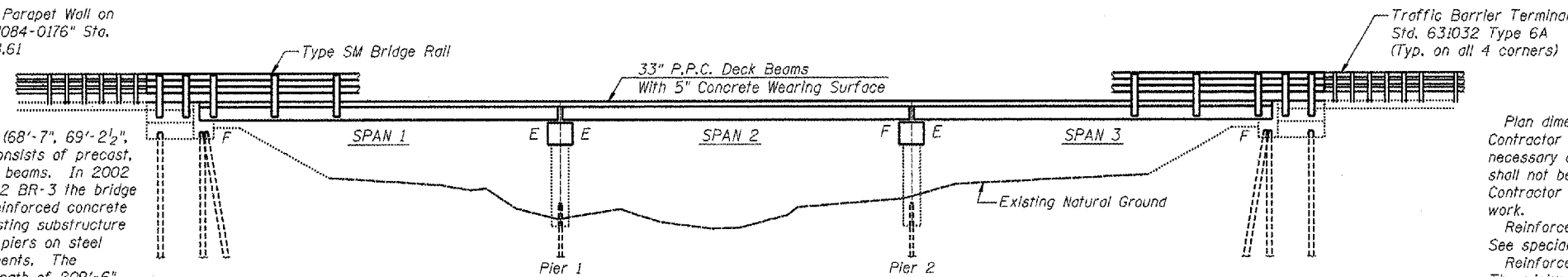
B.M. -  
Chiseled "□" on Top of Parapet Wall on  
S.E. Corner of Structure "084-0176" Sta.  
990+04, 24' Rt. Elev. 588.61

**Existing Structure -**

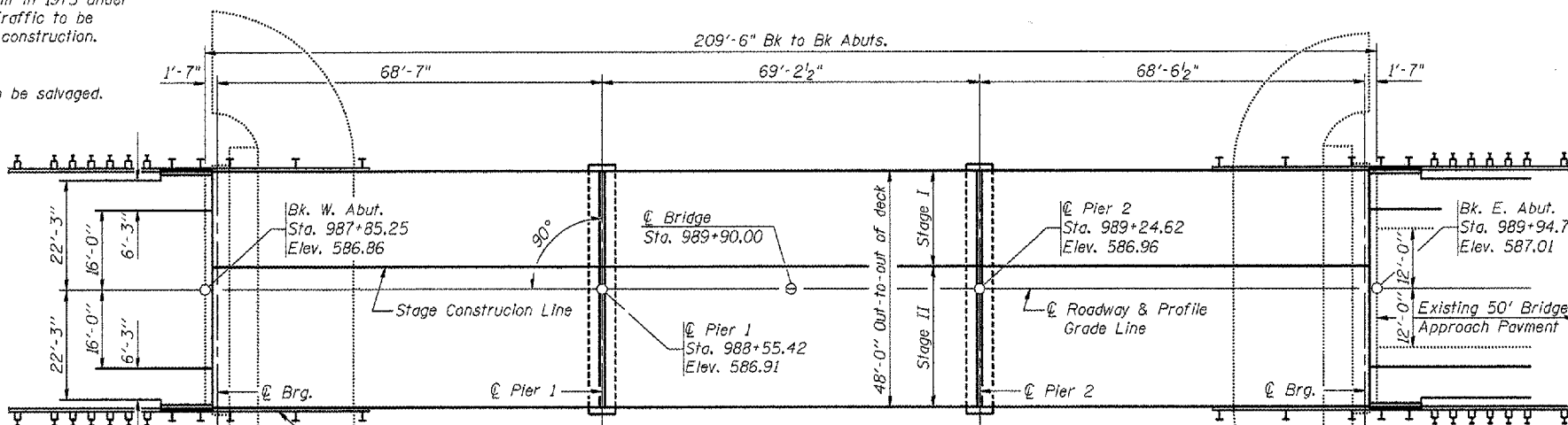
The existing three-span (68'-7", 69'-2½", 68'-6½") superstructure consists of precast, prestressed concrete deck beams. In 2002 under FAP 753 Section 142 BR-3 the bridge was overlaid with a 5" reinforced concrete wearing surface. The existing substructure consists of solid concrete piers on steel piling and open stub abutments. The structure has an overall length of 209'-6" measured from back-to-back of abutments and a measured bridge roadway width of 44'-6" with an out-to-out deck width of 48'-0". S.N. 084-0176, Built In 1975 under FA92, Section 142 BR. Traffic to be maintained utilizing staged construction.

**Salvage -**

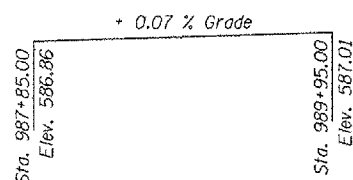
Deck drain extensions to be salvaged.



**ELEVATION**



**PLAN**



**PROFILE GRADE**

(Along @ Roadway)

**DESIGN STRESSES**

**FIELD UNITS**

Concrete Wearing Surface  $f'c = 5,000$  psi  
Substructure  $f'c = 3,500$  psi  
 $F_y = 60,000$  psi (reinforcement)

**PRECAST PRESTRESSED UNITS**

$f'c = 5,000$  psi  
 $f'ci = 4,000$  psi  
 $F's = 270,000$  psi (½" low relax. strands)  
 $F'si = 201,960$  psi (½" low relax. strands)

**APPROVED**  
For Structural Adequacy Only

*Ralph E. Anderson (TJD)*  
Engineer of Bridges & Structures

**DESIGN SPECIFICATIONS**

(New Construction)  
2002 AASHTO Standard Specifications - 17th ed.

**LOADING HS20-44**

(New Construction)  
Allow 25# / sq. ft. for future wearing surface.

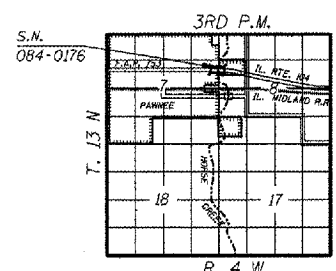
**SEISMIC DATA**

Seismic Performance Category (SPC) = A  
Bedrock Acceleration Coefficient (A) = 0.05 g  
Site Coefficient (S) = 1.2

STATION 988+90  
REBUILT BY  
STATE OF ILLINOIS  
F.A.P. RT. 753 SEC. 142BR-4  
LOADING HS20  
STR. NO. 084-0176

**LETTERING FOR NAME PLATE**

(See Std. 515001)



**LOCATION SKETCH**

**INDEX OF SHEETS**

1. General Plan
2. Stage Construction Details
3. Temporary Concrete Barrier
4. Superstructure
5. Superstructure Details
6. Superstructure Details
7. Steel Railing, Type SM
8. Substructure Details
9. Concrete Removal - Piers
10. Pier Details
11. Bar Splicer Assembly Details

**GENERAL NOTES**

Plan dimensions and details relative to existing plans are subject to routine variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished based upon the unit price bid for the work.

Reinforcement bars shall conform to the requirements of ASTM A706 Grade 60 (IL Modified). See special provisions.

Reinforcement bars designated (E) shall be epoxy coated. The minimum thickness of Concrete Overlay is 5" and varies as required to adjust for the profile grade and beam camber.

A concrete sealer meeting the requirements of Section 587 of the Standard Specifications shall be applied to the fascia deck beam on the side exposed to view, and the adjacent side underneath for a distance extending 9 in. Cost included with PPC Deck Beams (33" Depth).

The Contractor is advised that the existing PPC Deck Beams are in a deteriorated condition with reduced load carrying capacity. It is the Contractor's responsibility to account for the condition of the beams when developing construction procedures for removal and replacement of the superstructure.

If the Contractor's procedure for existing beam removal or placement of new beams involves placement of cranes or other heavy equipment on new beams, a detailed procedure shall be submitted to the Engineer for approval. The procedure shall include calculations, prepared and sealed by an Illinois Licensed Structural Engineer, verifying that the equipment and procedure used will not overstress the new beams. To distribute load to multiple beams and protect the concrete, in all cases a double layer mat of heavy timbers shall be used at all times under crane tracks or wheels and any outriggers in the down position. If necessary, shims shall be used under the crane mat to ensure uniform contact with the underlying beams. Prior to placement of the timber mats the following shall be done: Placement and tightening of transverse tie assemblies, grouting and curing the dowel rods 24 hours minimum and grouting and curing the shear keys. A temporary means of lateral restraint will be required for fascia beams at expansion ends of beams to prevent movement of the beams.

The cut strands at each beam end shall be given two coats of zinc dust spray or paint meeting the requirements of ASTM A 780. The zinc dust spray or paint shall be applied before corrosion appears and allowed to dry according to the manufacturer's specifications prior to another coat of zinc. A concrete sealer meeting the requirements of Section 587 of the Standard Specifications shall be applied to the exterior face and 9" in on the underside of the fascia beams. The sealer shall be applied after visible crack growth has subsided. This work shall be performed by the producer and included with the cost of the beam.

**TOTAL BILL OF MATERIAL**

Item	Unit	Super	Sub.		Total
			Piers	Abuts.	
Protective Coat	Sq. Yd.	1105	-	-	1105
Removal of Existing Superstructures	Each	-	-	-	1
Concrete Removal	Cu. Yd.	-	28.0	3.4	31.4
Concrete Structures	Cu. Yd.	-	28.0	-	28.0
Bridge Deck Grooving	Sq. Yd.	1056	-	-	1056
Precast Prestressed Concrete Deck Beams (33" Depth)	Sq. Ft.	9945	-	-	9945
Reinforcement Bars, Epoxy Coated	Pound	13760	2910	-	16670
Bar Splicers	Each	207	16	-	223
Steel Railing, Type SM	Foot	462	-	-	462
Name Plates	Each	1	-	-	1
Concrete Wearing Surface, 5"	Sq. Yd.	1105	-	-	1105
Preformed Joint Strip Seal	Foot	96	-	-	96
Asbestos Bearing Pad Removal	Each	96	-	-	96

**K+ K-Plus Engineering, Ltd.**

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REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION	
NAME	DATE		
		<b>GENERAL PLAN</b>	
IL RTE. 104 OVER HORSE CREEK FAP 753 - SECTION 142BR-4 SANGAMON COUNTY STA 989+90.00 SN 084-0176			
		DRAWN BY: ADG CHECKED BY: DF	



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Daniel Feuerborn  
Licensed Structural Engineer  
State of Illinois No. 81-5933  
Date **8.3.2007**