

APPROVED
For Structural Adequacy Only

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Engineer of Bridges & Structures

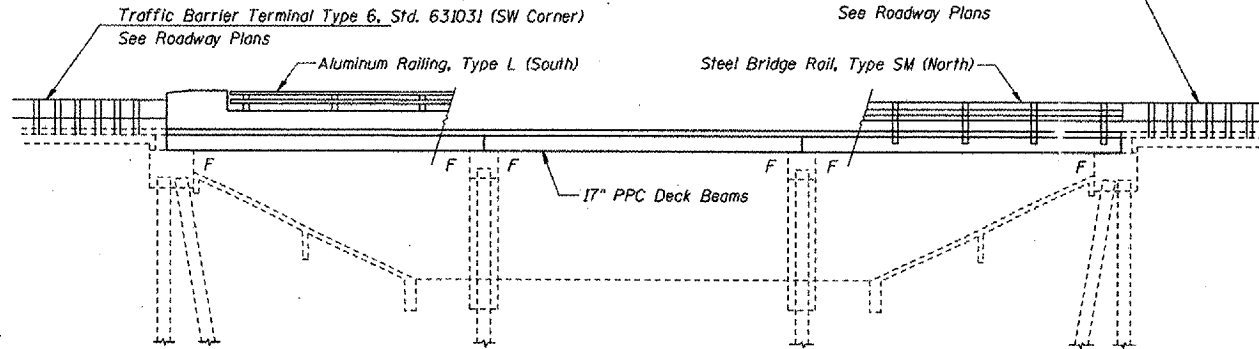
Bench Mark: B.M. 4751-2 Chiseled square on top of SE wingwall SN 057-0190, 39.24' RI, Sta. 68+32.44, Elev. 745.37

Existing Structure: The existing structure, SN 057-0190, is a 3-span precast prestressed deck beam bridge on pile bent abutments and piers. Out-to-out bridge width is 75'-0" and back-to-back abutment length is 89'-4 1/2". It was originally constructed in 1980 as FA RTE 693, Sec. 129B-1 at Sta. 67+94. The bituminous wearing surface was replaced in 1997 with a concrete wearing surface. The existing superstructure is to be removed and replaced as noted.

Traffic to be maintained at all times utilizing stage construction.

No Salvage

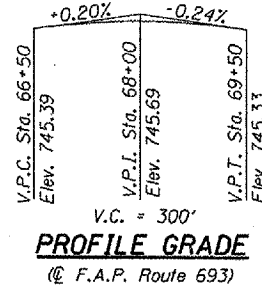
Traffic Barrier Terminal Type 6A, Std. 631032 (NE Corner)
See Roadway Plans



INDEX OF SHEETS

1. General Plan & Elevation
- 2.-3. Stage Construction Details
- 4.-9. Superstructure
10. Type SM Steel Bridge Rail
11. Type L Aluminum Railing
12. Bar Splicer Assembly Details
13. Temporary Concrete Barrier for Stage Construction

ELEVATION



STATION 67+94
REBUILT 200 BY
STATE OF ILLINOIS
F.A.P. RT. 693
SEC. 129 B-2
LOADING HS20
STR. NO. 057-0190

NAME PLATE

See Std. 515001
Existing Name Plate shall be cleaned and relocated adjacent to new Name Plate. Cost included with Name Plates.

GENERAL NOTES

No instream work will be allowed on this project. Reinforcement Bars designated (E) shall be epoxy coated. Reinforcement bars shall conform to the requirements of ASTM A 706 Grade 60 (IL Modified). See Special Provisions.

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 and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be a cause for additional compensation for a change in scope of work, however, the Contractor will be paid for the quantity actually furnished based upon the unit bid price for the work.

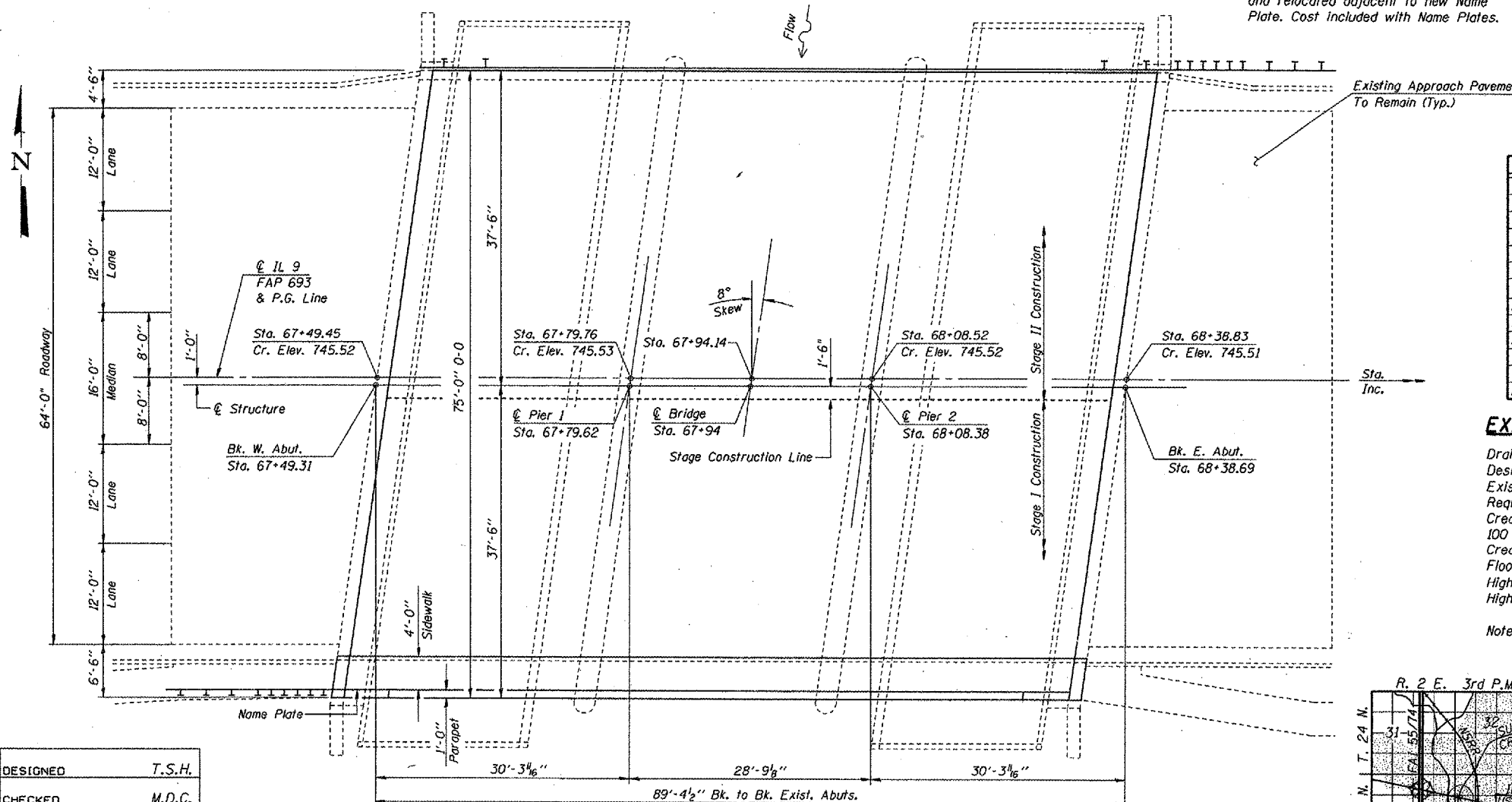
The minimum thickness of the Concrete overlay shall be 5" and varies as required to adjust for the new profile grade and beam camber.

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.

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 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.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 693	129 B-2	MCLEAN	34	22
FED. ROAD DIST. NO. 5 ILLINOIS PROJECT			Sheet 1 of 13 CONTRACT #70519	



PLAN

DESIGNED	T.S.H.
CHECKED	M.D.C.
DRAWN	A.A.M.
CHECKED	M.D.C.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Superstructures	Each	1		1
Concrete Removal	Cu. Yd.		0.3	0.3
Concrete Superstructure	Cu. Yd.	24.8		24.8
Bridge Deck Grooving	Sq. Yd.	661		661
Protective Coat	Sq. Yd.	746		746
Concrete Wearing Surface, 5"	Sq. Yd.	671		671
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	6453		6453
Reinforcement Bars, Epoxy Coated	Pound	10200		10200
Steel Railing, Type SM	Foot	87		87
Aluminum Railing, Type L	Foot	75		75
Name Plates	Each	1		1
Bar Splicers	Each	172		172
Floor Drains	Each	3		3

EXISTING WATERWAY INFORMATION

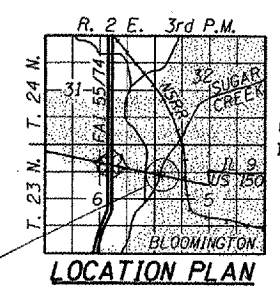
Drainage Area	27.0 sq. mi.
Design Discharge (50 year)	3833 c.f.s.
Existing Opening (below 50 year H.W.E.)	600 sq. ft.
Required Opening (below 50 year H.W.E.)	600 sq. ft.
Created Head for Design Flood	0.0'
100 year Discharge	4675 c.f.s.
Created Head for 100 year Flood	0.0'
Flood of Record	742.1
High Water Elevation (50 year)	742.0
High Water Elevation (100 year)	742.5

DESIGN STRESSES (NEW)

FIELD UNITS
$f'_c = 5,000$ p.s.i. (Concrete Wearing Surface)
$f'_c = 3,500$ p.s.i.
$f_y = 60,000$ p.s.i. (Reinf. Bars)
PRECAST PRESTRESSED UNITS
$f'_c = 5,000$ p.s.i.
$f'_{ci} = 4,000$ p.s.i.
$f'_s = 270,000$ p.s.i. (1/2" ϕ low relax strands)
$f'_{si} = 201,960$ p.s.i. (1/2" ϕ low relax strands)

DESIGN SPECIFICATIONS

2002 AASHTO
LOADING HS20-44
Allow 25#/Sq. Ft. for future wearing surface.



GENERAL PLAN & ELEVATION

ILLINOIS ROUTE 9 OVER SUGAR CREEK
F.A.P. ROUTE 693 - SEC. 129 B-2
MCLEAN COUNTY
STATION 67+94
STRUCTURE NO. 057-0190

CUMMINS ENGINEERING CORPORATION
JOB #: 2114.5
FILE: 21145gpe
DATE: 12/18/06