

Benchmark: Chiseled "□" on northwest wingwall of S.M. 092-0174
Elevation 716.46.

Existing Structure: Structure Number 092-0174 was built in 1976 as FA-840, Section 122 BR.
The structure consists of single span PPC-deck beams on closed abutments.
The bk. to bk. abutments is 37'-0" and the o.-o. width is 33'-0". The existing
superstructure shall be replaced with PPC deck beams. Road closure shall be
used during construction.

No Salvage.

Traffic Barrier Terminal Std. 631032
Type 6A (Typ. all four corners)

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET NO.
840	(122BR)BR	VERMILION	25	8

6 SHEETS

Contract #70381

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Superstructure	Each	1		1
Concrete Removal	Cu. Yd.		0.5	0.5
Concrete Structures	Cu. Yd.		0.5	0.5
Bridge Deck Grooving	Sq. Yd.	134		134
Protective Coat	Sq. Yd.	147		147
Concrete Wearing Surface, 5"	Sq. Yd.	144		144
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	1230		1230
Reinforcement Bars, Epoxy Coated	Pound	1900	20	1920
Steel Bridge Rail, Type SM	Foot	75		75
Name Plates	Each		1	1

GENERAL NOTES

Reinforcement bars shall conform to the requirements of AASHTO M 31 or M 322 Grade 60.
Plan dimensions and details relative to existing structure have been taken from existing plans and are
subject to nominal construction variations. It shall be the Contractor's responsibility to verify such
dimensions and details in the field 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 the
scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit
price for the work.

All construction joints shall be bonded.
Removal of existing bridge rail included in the cost of Removal of Existing Superstructures.
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
along the entire length of fascia beams to both the exterior vertical face and 9" in on the underside
surface of the 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.
No in-stream work will be allowed on this project.
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.
The Contractor shall temporarily brace the top of abutments prior to the removal of the existing
superstructure. The Contractor shall submit the bracing system to the Engineer for approval prior to
fabrication or installation. Cost included in the cost of Removal of Existing Superstructure.

DESIGN SPECIFICATIONS

2002 AASHTO

LOADING HS-20-44

(No allowance for future wearing surface)

SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = 0.046g
Site Coefficient (S) = 1.5 (Assumed)

DESIGN STRESSES

FIELD UNITS $f_c = 5,000$ p.s.i. (Concrete Wearing Surface)
 $f'_c = 3,500$ 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 ($\frac{1}{2}$ " ϕ Low Relax. strands)
 $f_{si} = 201,960$ psi ($\frac{1}{2}$ " ϕ Low Relax. strands)

EXISTING SUBSTRUCTURE FIELD UNITS

$f'_c = 1,000$ psi
 $f_s = 20,000$ psi (Reinforcement)

INDEX OF SHEETS

- 1 General Plan
- 2 Type SM Steel Bridge Rail Side Mounted
- 3 Superstructure
- 4-5 Superstructure Details
- 6 Abutments

STATION 1281+10.00
REBUILT 20__ BY
STATE OF ILLINOIS
F.A.P. ROUTE 840
SECTION (122BR)BR
LOADING HS20
STR. NO. 092-0174

NAME PLATE

See Std. 5J5001

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

EXISTING WATERWAY INFORMATION

Drainage Area 960 Acres
Character : level, rolling, sand, clay, cultivated
Req'd opening (50 yr. fl. freq.) 170 Sq. Ft.
Present Opening 170 Sq. Ft.
Proposed Opening 170 Sq. Ft.
Ordinary Water Elev. 708.41
Design H.W. Elev. 713.34
 $Q(50) = 4.32$ cfs

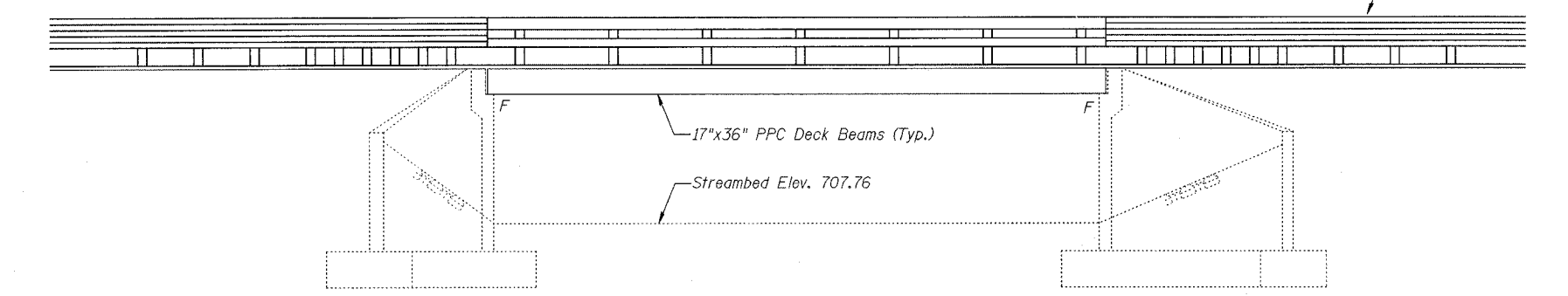
ILLINOIS DEPARTMENT OF TRANSPORTATION

GENERAL PLAN

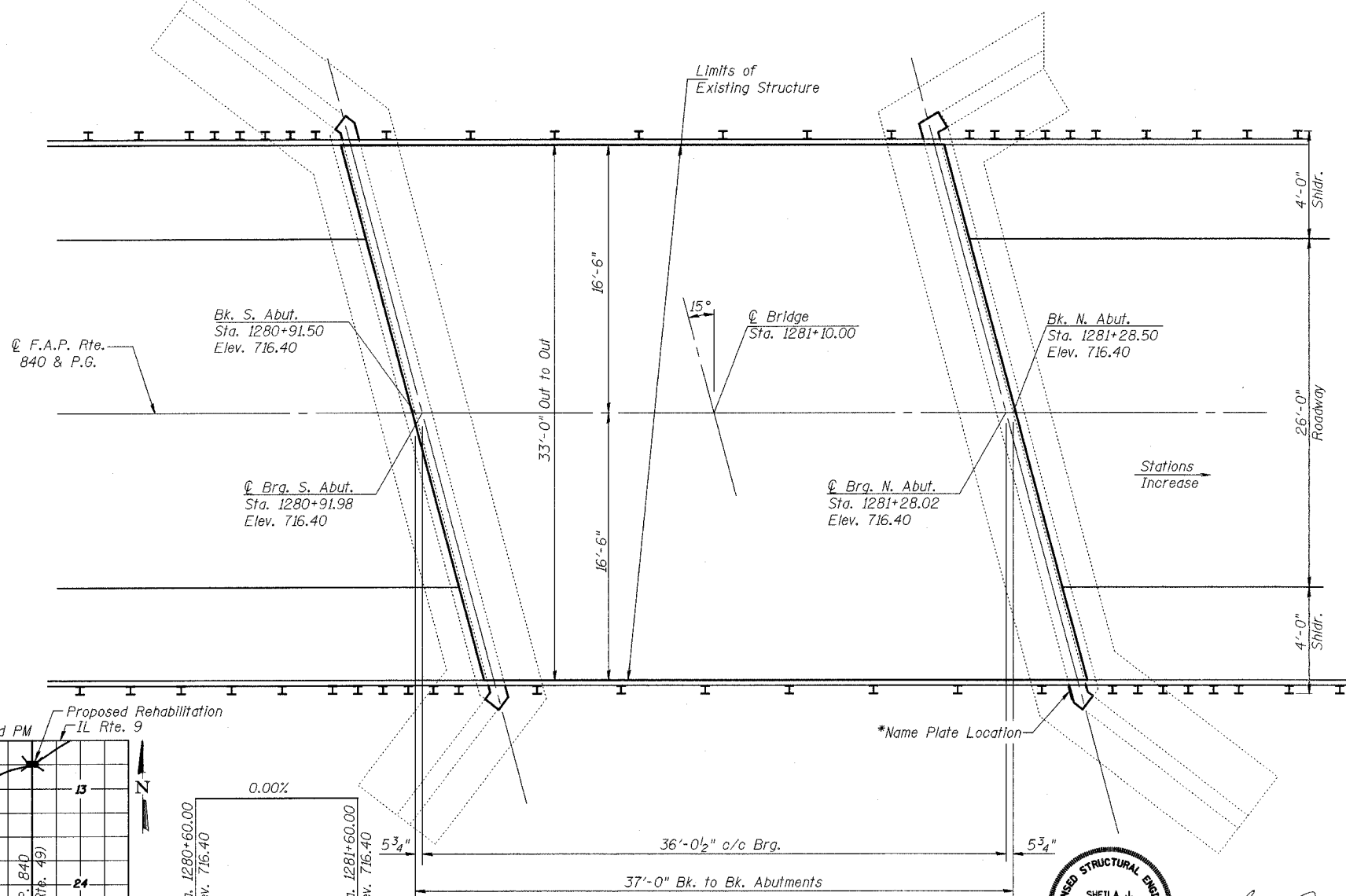
IL ROUTE 49 OVER
FAST CREEK
F.A.P. ROUTE 840 SECTION (122BR)BR
VERMILION COUNTY
STATION 1281+10.00
STRUCTURE NO. 092-0174

DATE: JUNE 2005

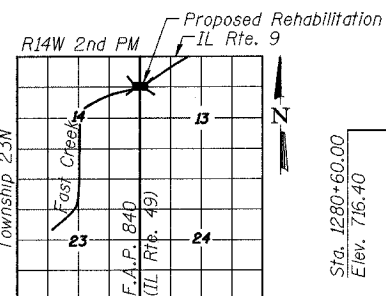
DRAWN BY: NJV/MLD
CHECKED BY: SJK



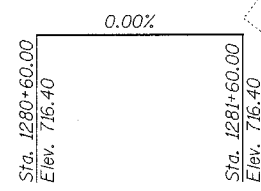
ELEVATION



PLAN

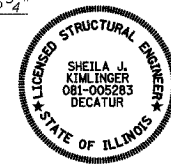


LOCATION SKETCH



PROFILE GRADE

(along ϕ F.A.P. 840)



Sheila J. Kimlinger 10/7/05
Date
Sheila J. Kimlinger, S.E.
Structural Engineer License No. 081-005283
Expiration Date: 11/30/2006