B.M.: Chiseled square on top of the northwest wingwall. Elev. 700.77

Existing Structure: S.N. 074-0003 built in 1932 as SBI 120, Section 115B. The structure was reconstructed in 1980 as FAP 721, Section 115BR with precast prestressed concrete deck beams with bituminous overlay on widened abutments. In 2001, repairs to the structure included bituminous wearing surface removal and construction of a 5 inch reinforced concrete overlay. The existing structure is 41'-10½" back to back of abutments and 41'-0" out to out of deck. Existing deck beams and concrete wearing surface are to be removed and be replaced with a proposed structure having a width of 33'-0". Traffic to be maintained using Stage Construction.

No Salvage.

SEISMIC DATA

LFD SEISMIC DATA-EXISTING CONSTRUCTION
Seismic Performance Category (SPC) = A
Horizontal Bedrock Acceleration Coefficient (A) = 0.045g
Site Coefficient (S) = 1.2

LRFD SEISMIC DATA-NEW CONSTRUCTION
Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.096g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.18g
Soil Site Class = C

LOADING HL-93 (NEW CONST.)
LOADING HS20-44 (EXIST. CONST.)

No allowance for future wearing surface.

DESIGN SPECIFICATIONS

NEW CONSTRUCTION
2010 AASHTO LRFD Bridge Design Specifications

EXISTING CONSTRUCTION
2002 AASHTO Bridge Design Specifications
1995 FHWA Seismic Retrofitting Manual for Highway Bridges

DESIGN STRESSES

NEW CONSTRUCTION

FIELD UNITS
f'c = 3,500 psi
f'c = 5,000 psi (CWS only)
fy = 60,000 psi

PRECAST PRESTRESSED UNITS
f'c = 6,000 psi
f'ci = 5,000 psi
fpu = 270,000 psi (1/2"ϕ low lax strands)
fpbt = 201,960 psi (1/2"ϕ low lax strands)

EXISTING CONSTRUCTION

FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement - 1980 Construction)
fy = 33,000 psi (Reinforcement - 1932 Construction)

INDEX OF SHEETS

1 General Plan and Elevation
2 Stage Construction Details
3 Temporary Concrete Barrier
4 Superstructure
5 Superstructure Details
6-8 Bridge Approach Slab Details
9 Preformed Joint Strip Seal
10-11 Deck Beam Details
12 Steel Railing, Type SM
13 East Abutment Concrete Removal Details
14 Abutment Details
15 Abutment Repair Details
16 Bar Splicer Assembly Details
17 Boring Logs
18 As Built GP&E Sheet (1979) For Info Only

GENERAL NOTES

Reinforcement bars designated (E) shall be epoxy coated.

Plan dimensions and details relative to existing plans are subject to nominal construction 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 at the unit price bid for the work.

Layout of slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

Concrete Removal and Structural Repair of Concrete shall occur prior to placement of the new deck beams.

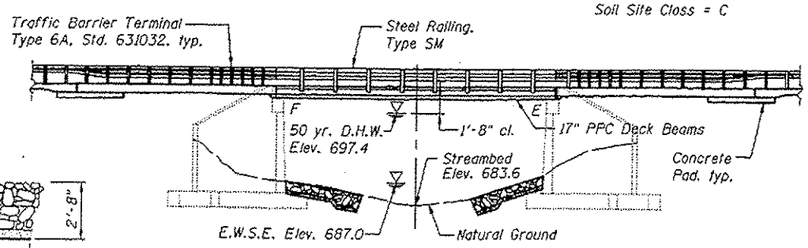
A concrete sealer meeting the requirements of Section 587 of the Standard Specifications shall be applied to the exterior face and 9" in on the underside of the fascia beams. The sealer shall be applied after visible crack growth has subsided. This work shall be performed by the producer and included 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 the beams when developing construction procedures for removal and replacement of the superstructure.

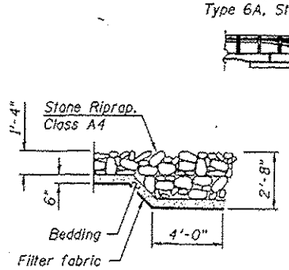
No drilling shall be permitted into the existing precast deck beams to be used for Stage I traffic lane or into any of the proposed deck beams.

If the Contractor's procedures for existing beam removal or placement of new beams involves placement of heavy equipment on the new deck beams, a detailed procedure shall be submitted to the Engineer for approval. The procedure shall include calculations, sealed by an Illinois Licensed Structural Engineer, verifying the structural adequacy of the beams for the proposed loads. Cost included with Precast Prestressed Concrete Deck Beams (17" Depth).

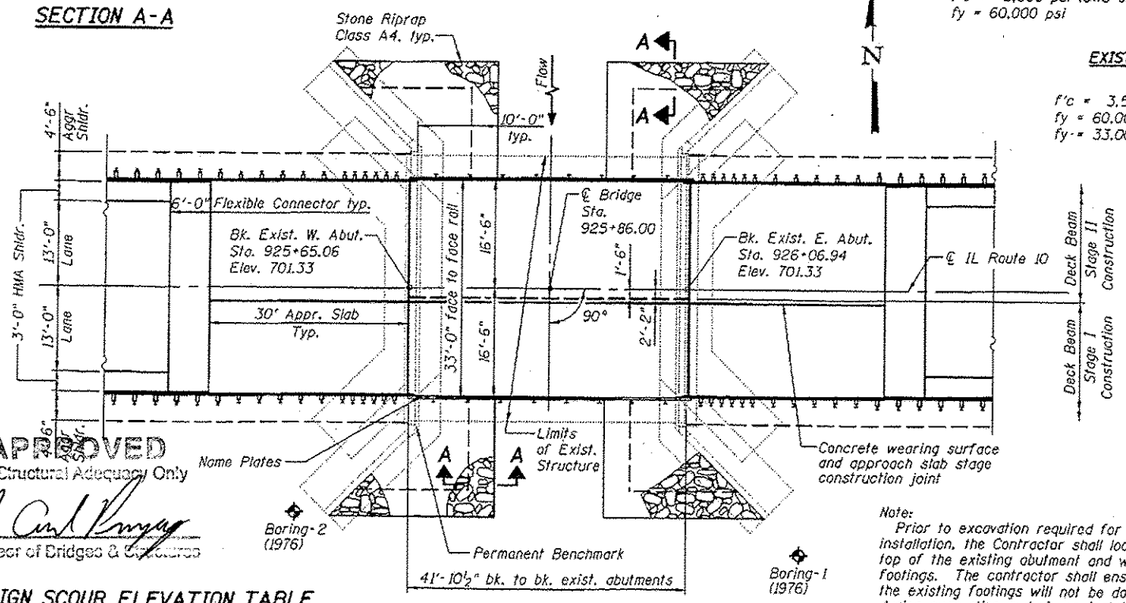
Any damage done to the bridge during beam removal shall be repaired by the Contractor. Cost to be included in the cost of Removal of Existing Superstructures.



ELEVATION



SECTION A-A



PLAN

Note:
Prior to excavation required for riprap installation, the Contractor shall locate the top of the existing abutment and wingwall footings. The contractor shall ensure that the existing footings will not be damaged during excavation and riprap installation. Cost included with Stone Riprap, Class A4.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A4	Sq. Yd.			193
Filter Fabric	Sq. Yd.			193
Removal of Existing Superstructures	Each			1
Concrete Removal	Cu. Yd.	2.6		2.6
Concrete Structures	Cu. Yd.		21.0	21.0
Concrete Superstructure	Cu. Yd.	99.2		99.2
** Bridge Deck Grooving	Sq. Yd.	375		375
** Protective Coat	Sq. Yd.	375		375
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	1393		1393
Reinforcement Bars, Epoxy Coated	Pound	23,170	3710	26,880
Bar Splicers	Each	185	80	265
Steel Railing, Type SM	Foot	85		85
Name Plates	Each	1		1
Preformed Joint Strip Seal	Foot	33		33
Epoxy Crack Injection	Foot		8	8
Structural Repair of Concrete (Depth equal to or less than 5 inches)	Sq. Ft.		23	23
Concrete Wearing Surface, 5"	Sq. Yd.	155		155
Asbestos Bearing Pad Removal	Each	26		26
** Diamond Grinding (Bridge Section)	Sq. Yd.		375	375

** Includes Approach Slabs

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	W. Abut.	E. Abut.
	679.9	679.9

WATERWAY INFORMATION

Drainage Area = 17.5 sq. mi. Low Grade Elev. 699.4 @ Sta. 917+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	1284	436	436	696.1	0.0	0.0	696.1	696.1
Design	50	2009	491	491	697.4	0.2	0.2	697.6	697.6
Base	100	2325	505	505	697.8	0.2	0.2	698.0	698.0
Max. Calc.	500	3079	534	534	698.6	0.5	0.5	699.1	699.1

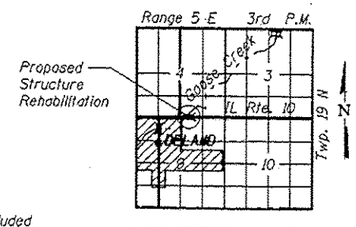
10 year velocity through existing and proposed structure = 2.9 fps

STATION 925+86.00
RE-BUILT 20__ BY
STATE OF ILLINOIS
FAP RTE 721 SEC. (115BR)BR
LOADING HL 93
STRUCTURE NO. 074-0003

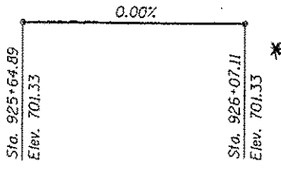
NAME PLATE

See Std. 515001

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



LOCATION SKETCH



PROFILE GRADE

(Along ℄ Roadway)
(elevations after grinding)

Note:
Up to ¼ inch will be ground off the bridge concrete wearing surface and the bridge approach slabs.

GENERAL PLAN AND ELEVATION
ILLINOIS ROUTE 10 OVER GOOSE CREEK
F.A.P. 721 SECTION (115BR)BR
PIATT COUNTY
STATION 925+86.00
STRUCTURE NO. 074-0003

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

LICENSED STRUCTURAL ENGINEER MARY COOMBE BLOXDORF 4859 SPRINGFIELD STATE OF ILLINOIS

ILLINOIS STRUCTURAL NO. 4859
EXPIRES 11/30/14
DATE: 1/24/14

Coombe-Bloxdorf P.C.
-CIVIL ENGINEERS-
-STRUCTURAL ENGINEERS-
-LAND SURVEYORS-
Design Firm License No. 184-002703

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
721	(115BR)BR	PIATT	39	12

CONTRACT NO. 70432
ILLINOIS FED. AID PROJECT

FILE NAME = c:\pw_work\pwidot\kayerb\d0134598\874000(3-70432-001-GPE.dgn	USER NAME = kayerb	DESIGNED CME	REVISED -
		CHECKED GJB	REVISED -
	PLOT SCALE = 214.0000 ' / in.	DRAWN MML	REVISED -
CB PROJECT NO. 068844-2	PLOT DATE = 1/24/2014	CHECKED MCB	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 18 SHEETS