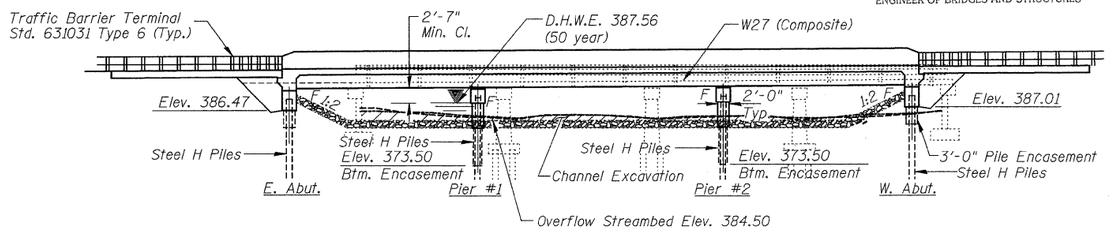
Bench Mark: Chiseled "□" in the top of the N.E. headwall S.N. 096-0017. Elevation 391.03.

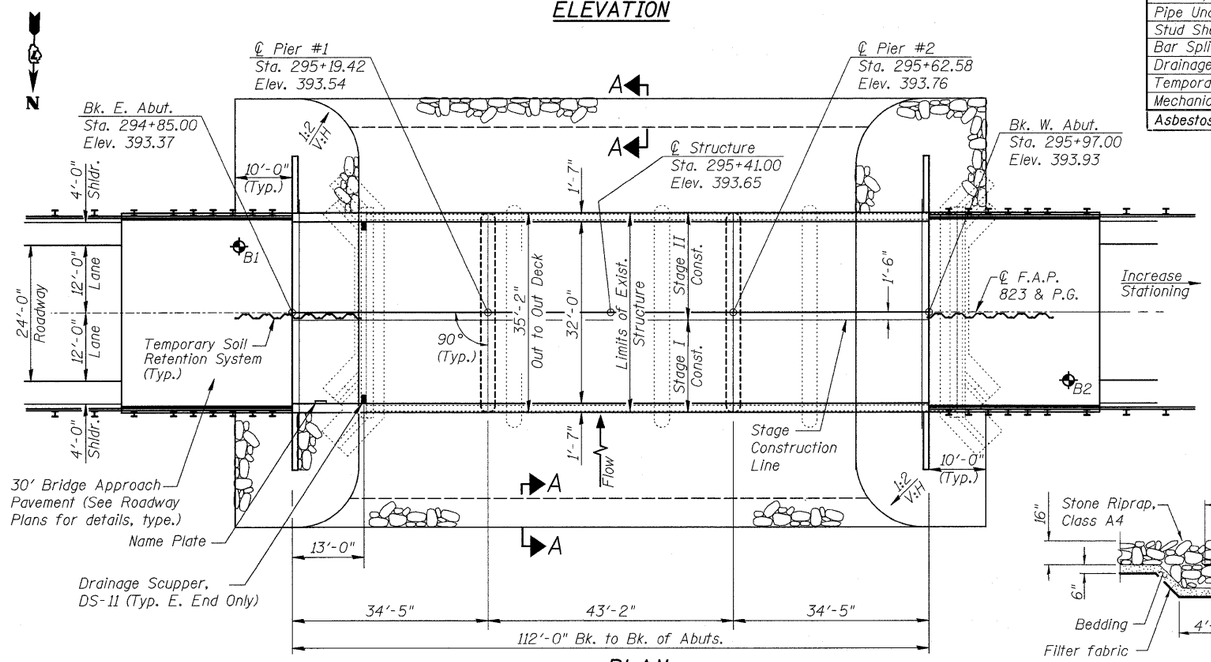
Existing Structure: S.N. 096-0017 The original structure was built in 1922 at Station 296+00 as a 104' long, four span reinforced concrete slab on closed abutments with no skew. The Structure was widened in 1954 to 28'-0" roadway under revised Station 295+50. The structure was widened again in 1978 to 34'-8" out to out of deck, the superstructure was also replaced with PPC deck beams. Road is to remain open and traffic will be staged during construction. No Salvage.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

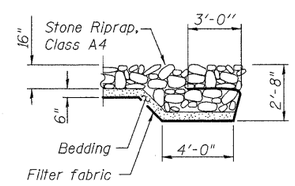
APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Ralph E. Anderson (TJD)
ENGINEER OF BRIDGES AND STRUCTURES



ELEVATION



PLAN



SECTION A-A

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment, Special	Cu. Yd.		123	123
Stone Riprap, Class A4	Sq. Yd.		1029	1029
Filter Fabric	Sq. Yd.		1029	1029
Removal of Existing Structures	Each	1		1
Structure Excavation	Cu. Yd.		108	108
Concrete Structures	Cu. Yd.		82.7	82.7
Concrete Superstructure	Cu. Yd.	145.2		145.2
Bridge Deck Grooving	Sq. Yd.	373		373
Concrete Encasement	Cu. Yd.		38.0	38.0
Protective Coat	Sq. Yd.	492		492
Furnishing and Erecting Structural Steel **Bridge No. 2**	L. Sum	1		1
Reinforcement Bars, Epoxy Coated	Pound	33770	7780	41550
Furnishing Steel Piles HP 14 x 73	Foot		1638	1638
Driving Piles	Foot		1638	1638
Test Pile Steel HP 14x73	Each		4	4
Name Plates	Each	1		1
Anchor Bolts, 1"	Each	48		48
Geocomposite Wall Drain	Sq. Yd.		65	65
Pipe Underdrains for Structures 4"	Foot		127	127
Stud Shear Connectors	Each	2448		2448
Bar Splicers	Each	409	28	437
Drainage Scuppers DS-11	Each	2		2
Temporary Soil Retention System	Sq. Ft.		255	255
Mechanical Splice	Each		48	48
Asbestos Bearing Pad Removal	**Each**			32

LOADING HL 93

Allow 50#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS

2007 AASHTO LRFD Bridge Design Specifications with 2008 Interims

SEISMIC DATA

Seismic Performance Category (SPZ)=2
Design Spectral Acceleration at 1.0 sec. (SD1)=0.278g
Design Spectral Acceleration at 0.2 sec. (SDs)=0.618g
Soil Site Class=D

DESIGN STRESSES

FIELD UNITS
f'_c = 3,500 psi
f_y = 60,000 psi (reinforcement)
f_y = 50,000 psi (M270 Grade 50W)

INDEX OF SHEETS

1 General Plan, Notes and Bill of Materials
2 Stage Construction Details
3 Temporary Concrete Barrier
4-5 Top of Slab Elevations
6-7 Top of Approach Elevations
8 Superstructure Plan
9 Superstructure Details
10 Abutment Diaphragm Details
11 Drainage Scupper DS-11
12 Framing Plan & Beam Details
13 Structural Steel Details
14 East Abutment
15 West Abutment
16 Pier 1
17 Pier 2
18 Bar Splicer Assembly Details
19 H-Pile & Encasement Details
20 Cantilever Forming Bracket Detail
21-23 Soil Borings

GENERAL NOTES

Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts in painted areas and M164 Type 3 in unpainted areas. Bolts 3/4 in.ϕ, holes 13/16 in.ϕ, unless otherwise noted.

Calculated weight of Structural Steel = 64,600 lbs.

All structural steel shall be AASHTO M270 Grade 50W.

No field welding is permitted except as specified in the contract documents.

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.

Reinforcement bars designated (E) shall be epoxy coated.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8" (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.

Structural steel shall only be painted for a distance equal to the depth of embedment into the concrete cap plus 3". Those areas shall be primed in the shop with a Department approved zinc rich primer. No field painting shall be required. All structural steel shall be cleaned as specified in the Special Provision for "Surface Preparation and Painting Requirements for Weathering Steel".

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

The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at substructures specified or approved by the Engineer before ordering the remainder of piles.

If the Contractor's procedures for existing beam removal or placement of new beams involves placement of heavy equipment on the existing 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 Removal of Existing Structures.

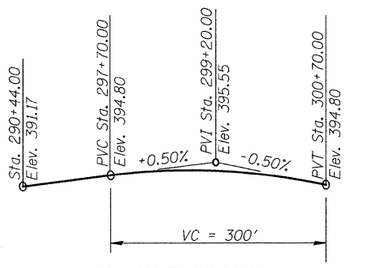
Slipforming of parapets is not allowed.

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 elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.

PETER B. BAYLES 081-006042 LICENSED STRUCTURAL ENGINEER ILLINOIS

Peter B. Bayles, P.E., S.E.
Structural Engineer License No. 081-006042
Expiration Date: 11/30/2010



PROFILE GRADE
(along ℄ roadway)

WATERWAY INFORMATION

Drainage Area = 1802.67 mi²
Exist. Low Grade Elev. 390.59 @ Sta. 290+50
Prop. Low Grade Elev. 390.59 @ Sta. 290+50

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	164	78	81	385.92	0.50	0.49	386.42	386.41
Design	50	758	230	264	387.56	0.57	0.56	388.13	388.12
Base	100	1095	287	334	388.16	0.64	0.63	388.80	388.79
Max. Calc.	500	1931	412	484	389.49	0.64	0.63	390.13	390.12

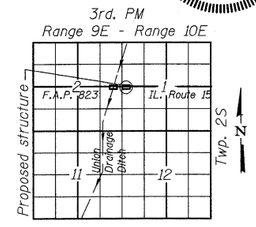
10 year velocity through existing bridge = 1.64 fps
10 year velocity through prop. bridge = 1.70 fps

DESIGN SCOUR ELEVATION TABLE

	E. Abut.	Pier 1	Pier 2	W. Abut.
Design Scour Elevation	386.47	373.50	373.50	387.01

STATION 295+41.00
BUILT 20__ BY
STATE OF ILLINOIS
F.A.P. RT. 823 SEC. (22BY2) B-1
LOADING HL93
STR. NO. 096-0072

NAME PLATE
See Std. 515001



LOCATION SKETCH

GENERAL PLAN
IL 15 OVER UNION DRAINAGE DITCH OVERFLOW
WAYNE COUNTY
STATION 295+41.00
STRUCTURE NO. 096-0072

SHEET NO. 1	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
23 SHEETS	823	(22BY2) B-1	WAYNE	142	38
			CONTRACT NO. 74238		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

BLANK, WESSELINK, COOK & ASSOCIATES ENGINEERS - CONSULTANTS DECATUR, ILLINOIS DESIGN FIRM NO. 184000894