

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 1832	5BR-2	WASHINGTON	97	27
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

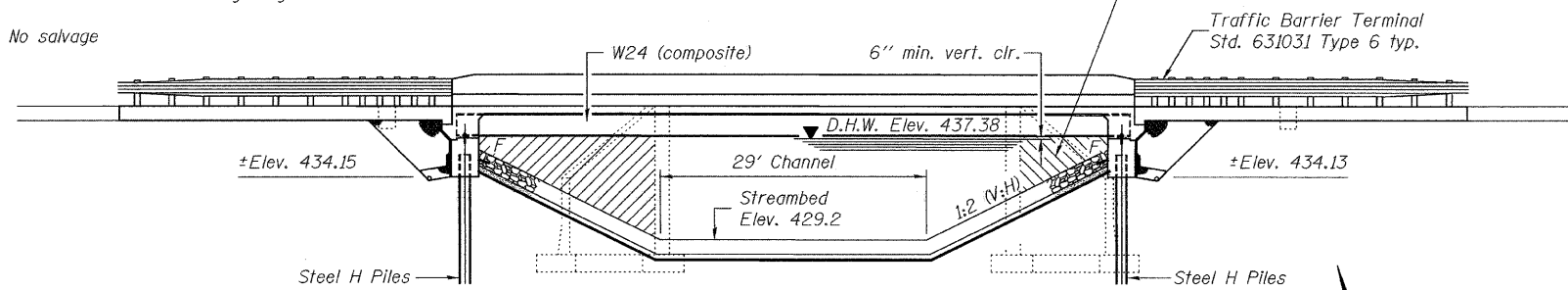
SHEET NO. 1  
18 SHEETS

Bench Mark: R.R. spike in power pole on the south side of IL. 160, ±440' east of the center of structure 095-0006; Station 1458+02, 32' Rt. Elevation 444.48.

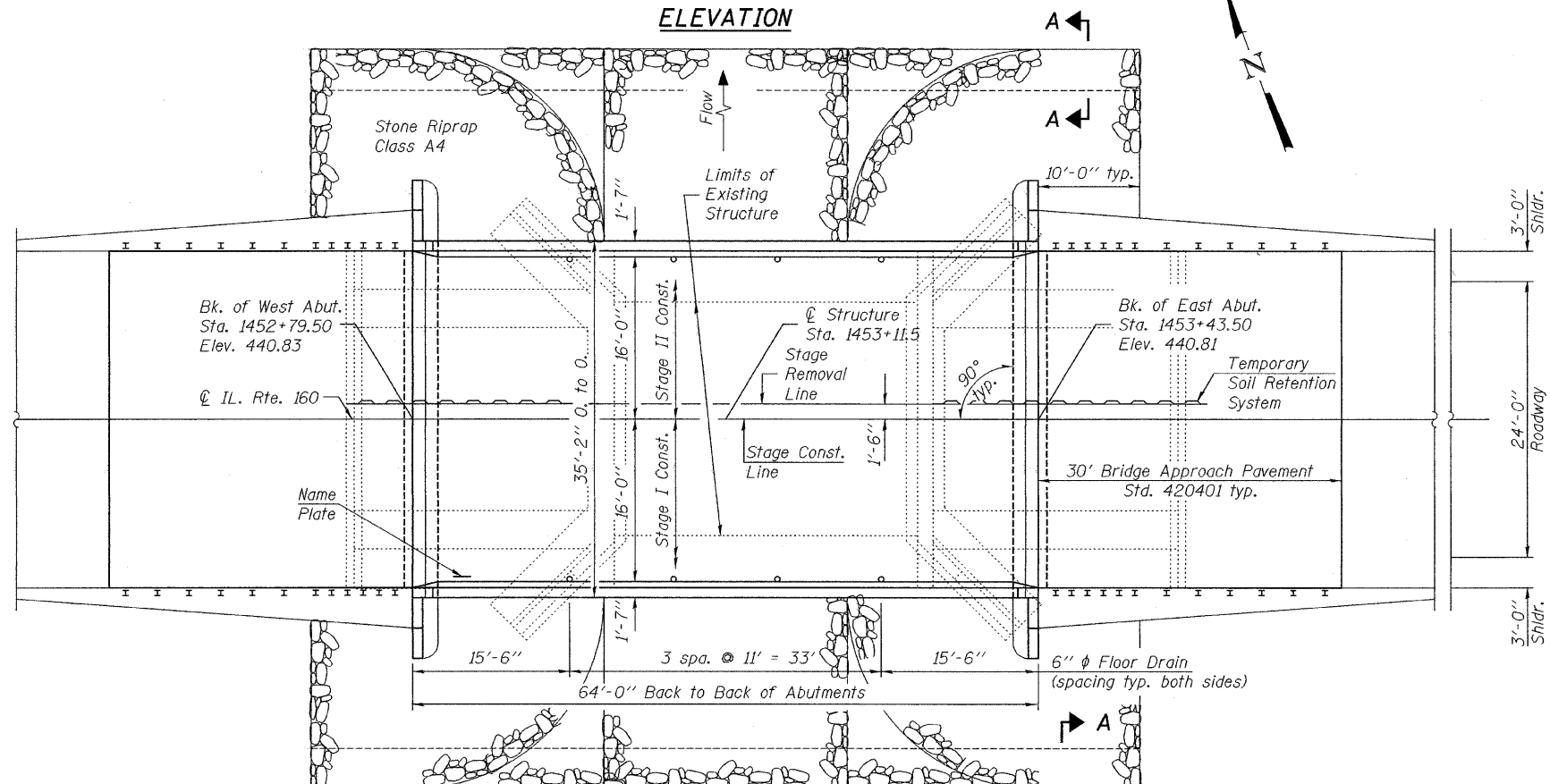
Existing Structure: S.N. 095-0006 Built 1921 as F.A. Route 16, Section 5BR-1 at Station 1453+15.0. A reinforced concrete slab bridge, 33'-0" bk.-to-bk. abutments supported on spread footing. Superstructure replacement & widening in 1971 with PPC deck beams and bituminous wearing surface. Existing bridge to be removed and replaced. Traffic maintained utilizing stage construction.

Hatched areas indicate excavation between existing abutments and the new abutments. For quantities of Pavement Removal and Excavation, see Roadway Plans.

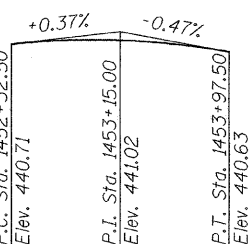
No salvage



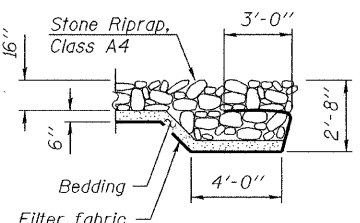
ELEVATION



PLAN



PROFILE GRADE  
(F.A.S. Rte. 1832)



SECTION A-A

DESIGN SCOUR TABLE

Design Scour Elevation	W. Abut. 434.15	E. Abut. 434.13
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WATERWAY INFORMATION

Drainage Area = 1.68 sq. mi. Low Grade Elev. 439.98\* @ Sta. 1455+50\*

Flood Yr.	Freq.	Q	Opening C.F.S.	Opening Sq. Ft.	Nat. H.W.E. Exist.	Prop. H.W.E. Exist.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	50	993	189.37	330.47	437.38	0.52	0.46	437.90	437.84	
Base	100	1,148	189.37	330.47	437.64	1.08	0.68	438.72	438.32	
Exist. Overtop.	185**	1,300	189.37	N/A	437.89	1.41	N/A	439.30		
Max. Calc.	500	1,523	N/A	330.47	437.96	N/A	1.30		439.26	
Scour	10	632	168.35	289.84	436.60	0.03	-0.04	436.63	436.56	

\*Proposed Condition (Existing Low Grade Elevation: 439.30 ft. @ Sta. 1453+44.76)  
\*\*The Proposed Condition Yielded No Overtopping through the 500-Year Frequency

INDEX OF SHEETS

- 1 General Plan and Elevation
- 2 Stage Construction Details
- 3 Temporary Concrete Barrier
- 4-7 Top of Slab Elevations
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- 12 Structural Steel Details
- 13 West Abutment
- 14 East Abutment
- 15 Pile Data
- 16 Cantilever Forming Brackets
- 17 Bar Splicer Details
- 18 Soil Boring Logs

GENERAL NOTES

Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts. Bolts 3/4 in. φ, holes 5/8 in. φ, unless otherwise noted. Calculated weight of Structural Steel = 59280 lb. 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 (IL Modified). See Special Provisions. Reinforcement bars designated (E) shall be epoxy coated. The Inorganic Zinc Rich Primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat for all interior steel surfaces shall be gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Gray, Munsell No. 5B 7/1. See Special Provision for "Cleaning and Painting New Metal Structures". Layout of slope protection system may be varied in the field to suit ground conditions 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. The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments. Slip forming of the parapets is not allowed. Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure. The Contractor shall sawcut the upper portion of the existing abutment at the stage removal line before Stage I removal to ensure the remaining portion will not be prematurely damaged.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment (Special)	Cu. Yd.		86	86
Stone Riprap, Class A4	Sq. Yd.			525
Filter Fabric	Sq. Yd.			525
Removal of Existing Structures No. 1	Each			1
Structure Excavation	Cu. Yd.		140	140
Concrete Structures	Cu. Yd.		28.8	28.8
Concrete Superstructure	Cu. Yd.	88.1		88.1
Bridge Deck Grooving	Sq. Yd.	213		213
Protective Coat	Sq. Yd.	281		281
Furnishing and Erecting Structural Steel	L. Sum	1		1
Stud Shear Connectors	Each	1134		1134
Reinforcement Bars, Epoxy Coated	Pound	18200	3760	21960
Bar Splicers	Each	267	18	285
Driving Piles	Foot		245	245
Test Pile Steel, HP12x53	Each		1	1
Furnishing Steel Piles, HP12x53	Foot		245	245
Name Plates	Each		1	1
Anchor Bolts, 1"	Each		24	24
Geocomposite Wall Drain	Sq. Yd.		51	51
Pipe Underdrains for Structures 4"	Foot		138	138
Floor Drains	Each		8	8
Temporary Soil Retention System	Sq. Ft.			364.3
Concrete Encasement	Cu. Yd.		4.2	4.2

STATION  
BUILT 20 BY  
STATE OF ILLINOIS  
F.A.S. RT. 1832 SEC.5BR-2  
LOADING HL93  
STRUCTURE NO. 095-0077

NAME PLATE  
See Std. 515001

LOADING HL-93

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

DESIGN SPECIFICATIONS

2007 LRFD Bridge Design Specifications 4th Edition

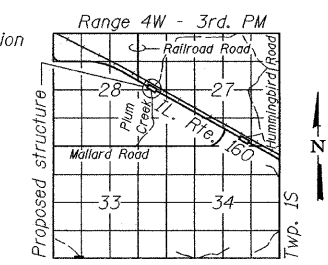
DESIGN STRESSES

FIELD UNITS

$f_c = 3,500$  psi  
 $f_y = 50,000$  psi (structural steel)  
 $f_y = 60,000$  psi (reinforcement)

SEISMIC DATA

Seismic Performance Category (SPC) = 2  
Bedrock Acceleration Coefficient (A) = .11g  
Site Coefficient (S) = 1.5



LOCATION SKETCH

GENERAL PLAN  
IL. RTE. 160 OVER PLUM CREEK  
F.A.S. RTE. 1832 - SEC. 5BR-2  
WASHINGTON CO.  
STATION 1453+11.50  
STRUCTURE NO. 095-0077

DESIGNED: [Signature]  
CHECKED: [Signature]  
DRAWN: [Signature]  
CHECKED: [Signature]

EXAMINED: [Signature] January 29, 2007  
PASSED: [Signature]



EXPIRES 11-30-2008