Bench Mark: Chiseled "□" on N.W. wingwall of structure 003-0026, Elev. 496.90

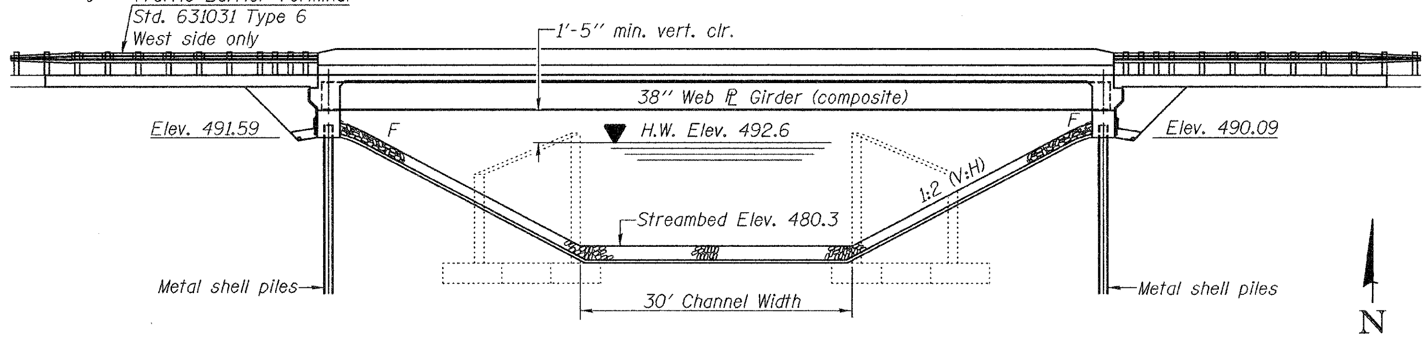
Existing Structure: S.N. 003-0026 Built 1931 as S.B.I. Rt. 160 Sec. 139B at Station 2049+35 as a simple span reinforced concrete slab bridge 32'-0" Bk.-Bk. abutments supported on untreated timber piles. Bridge repairs & bituminous overlay in 1988. Existing bridge to be removed & replaced.
Traffic to be maintained utilizing stage construction.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

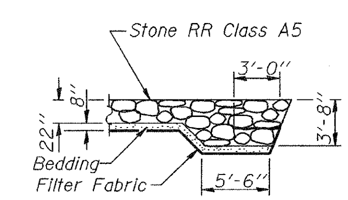
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 42	139BR	BOND	59	34
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 1
19 SHEETS

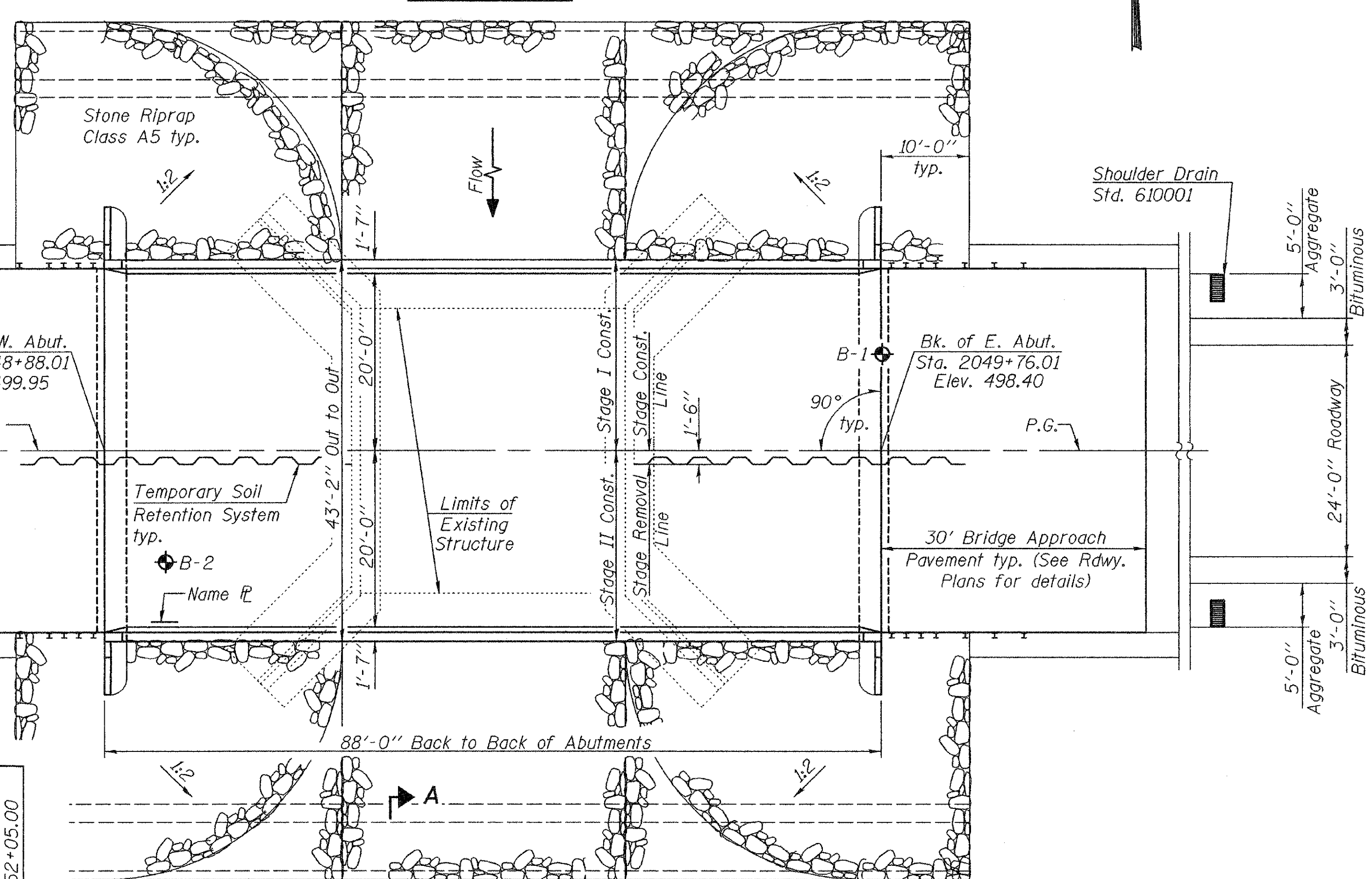
Contract #76391



ELEVATION



SECTION A-A



PLAN

INDEX OF SHEETS

STATION 2049+33.51
BUILT 200 BY
STATE OF ILLINOIS
F.A.P. RTE. 42 - SEC. 139BR
LOADING HL93
STR. NO. 003-0061

NAME PLATE

See Std. 515001

LOADING HL-93

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

DESIGN SPECIFICATIONS

AASHTO LRFD Bridge Design Specifications, US, 3rd. Edition - 2004

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 Zone (SPZ) = 2
Bedrock Acceleration Coefficient (A) = .085%g
Site Coefficient (S) = 1.0

GENERAL NOTES

Fasteners shall be AASHTO M164 Type I, mechanically galvanized bolts. Bolts $\frac{3}{4}$" ϕ, holes $\frac{15}{16}$" ϕ, unless otherwise noted.

Calculated weight of Structural Steel = 9,090 (M270 Grade 36).

Calculated weight of Structural Steel = 97,920 (M270 Grade 50).

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.

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.

If the Contractor elects to use cantilever forming brackets on the exterior 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.

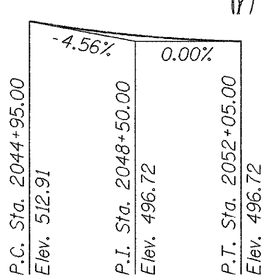
Reinforcement bars designated (E) shall be epoxy coated.

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 grey, Munsell No. 5B 7/1. See Special Provision for "Cleaning and Painting New Metal Structures".

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
Removal of Existing Structures	Each			1
Concrete Superstructure	Cu. Yd.	143		143
Concrete Structures	Cu. Yd.		39	39
Structure Excavation	Cu. Yd.		245	245
Furnishing and Erecting Structural Steel	L. Sum			1
Reinforcement Bars, Epoxy Coated	Pound	30,820	5,940	36,760
Test Pile Metal Shells	Each		2	2
Furnishing Metal Shell Piles 14" ϕ x 0.25"	Foot		749	749
Driving Piles	Foot		749	749
Name Plates	Each			1
Porous Granular Embankment (Special)	Cu. Yd.		196	196
Stone Riprap, Class A5	Sq. Yd.		1192	1192
Filter Fabric	Sq. Yd.		1192	1192
Protective Coat	Sq. Yd.	466		466
Bar Splicers	Each	377	18	395
Pipe Underdrains for Structures, 4"	Foot		158	158
Geocomposite Wall Drain	Sq. Yd.		83	83
Bridge Deck Grooving	Sq. Yd.	372		372
Stud Shear Connectors	Each	1782		1782
Temporary Soil Retention System	Sq. Ft.		772	772
Anchor Bolts, 1"	Each	24		24
Steel Railing, Temporary	Foot	32		32



PROFILE GRADE

(along ℄ roadway)

Design Scour Elevation (feet)	West Abut.	East Abut.
	491.59	490.09

WATERWAY INFORMATION

Exist. Low Grade Elev. 496.4 ft. @ Sta. 2064+13

Drainage Area = 170 mi.²			Prop. Low Grade Elev. 496.4 ft. @ Sta. 2064+13						
Flood	Freq. Yr.	Q ft³/s Exist./Prop.	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	1761/1839	310	545	491.0	1.3	1.1	492.3	492.1
Floodplain	Total	7550	1760	1958					
Design	50	3852/4832	358	667	492.6	1.9	1.5	494.5	494.1
Floodplain	Total	14250	2347	2664					
Base	100	2909/4566	391	760	493.7	2.6	2.1	496.3	495.8
Floodplain	Total	19456	2619	2941					
Overtop (E)	105	3086/6160	394	768	493.8	2.6		496.4	
Floodplain	Total	20050	2622	2980					
Overtop (P)	133	3658/6358	406	804	494.2		2.2		496.4
Floodplain	Total	22000	2622	2980					

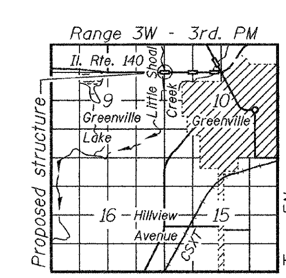
10 year velocity through Exist. Bridge = 4.7 fps 10 year velocity through Prop. Bridge = 3.5 fps

DESIGNED	
CHECKED	
DRAWN	R. Sommer BML
CHECKED	PRL / N.R.B.

November 7, 2008
EXAMINED
ENGINEER OF BRIDGE DESIGN
PASSED
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
RALPH E. ANDERSON
081-004625
LICENSED STRUCTURAL ENGINEER
SPRINGFIELD

EXPIRES 11-30-2010



LOCATION SKETCH

GENERAL PLAN
ILLINOIS ROUTE 140 OVER LITTLE SHOAL CREEK
F.A.P. ROUTE 42 - SECTION 139BR
BOND COUNTY
STATION 2049+33.51
STRUCTURE NO. 003-0061

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