

B.M. 204: Chiseled square located on the NE wing wall of SN 031-0017, Sta. 223+35.4, 20.8' Rt., Elev. 579.96.

EXISTING STRUCTURE: S.N. 031-0017, originally constructed in 1938 as FA Route 164 Sec. 3-BY at Station 222+94, using W21x59 steel beam with 6 1/2" concrete deck, 3 spans, 104'-0 1/2" back-back abutments, 30'-4" out-out width, pile bent abutments and piers on concrete piles. In 1970 it was widened with an additional W21x62 steel beam and new 7" concrete deck, 32'-6" out-out width. The abutments had partial backwall replacements and new wings. In 1988 a 2 1/2" concrete wearing surface was added.

Existing structure shall be removed and replaced using staged construction to maintain one lane of traffic.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

STATION 222+94.00  
BUILT BY  
STATE OF ILLINOIS  
F.A.P. RTE. 10 SEC. 3B-1  
LOADING HL-93  
STR. NO. 031-0044

NAME PLATE  
See Std. 515001

INDEX OF SHEETS

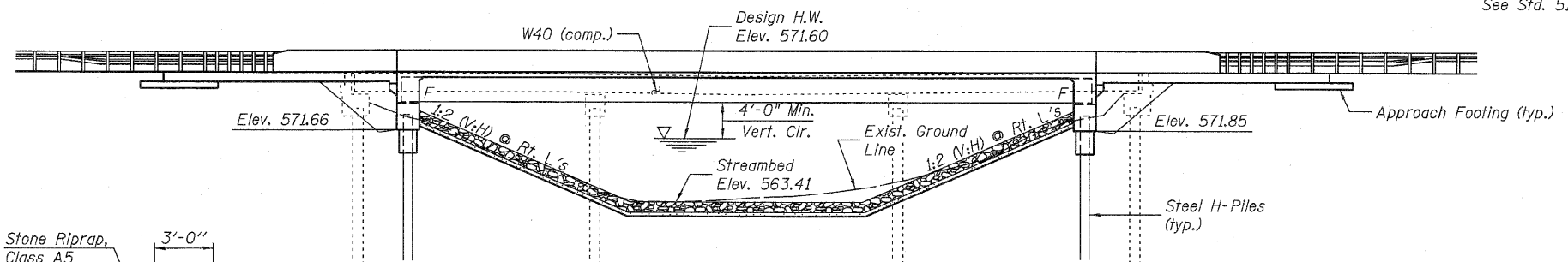
Sheet No.	Description
1	General Plan, General Notes, Bill of Material
2	Stage Construction & Temporary Sheet Piling
3	Temporary Concrete Barrier
4-6	Top of Slab Elevations
7-9	Superstructure Details
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19-20	Soil Borings

GENERAL NOTES

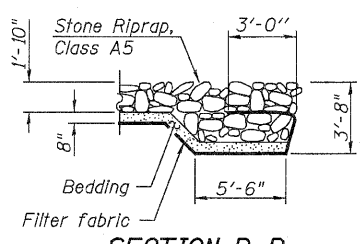
Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts in painted areas and M164 Type 3 in unpainted areas. Bolts 7/8 in.  $\phi$ , holes 1 1/8 in.  $\phi$ , unless otherwise noted.  
Calculated weight of Structural Steel = 93900 lbs.  
All structural steel shall be AASHTO M 270 Grade 50W. All structural steel shall be cleaned as specified in the Special Provision for "Surface Preparation and Painting Requirements for Weathering Steel".  
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.  
The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.  
Structural steel shall only be painted for a distance equal to the depth of embedment into the concrete cap plus 3 in. Painted areas shall be primed in the shop with a Department approved zinc rich primer. Field painting will not be required.  
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.

TOTAL BILL OF MATERIAL

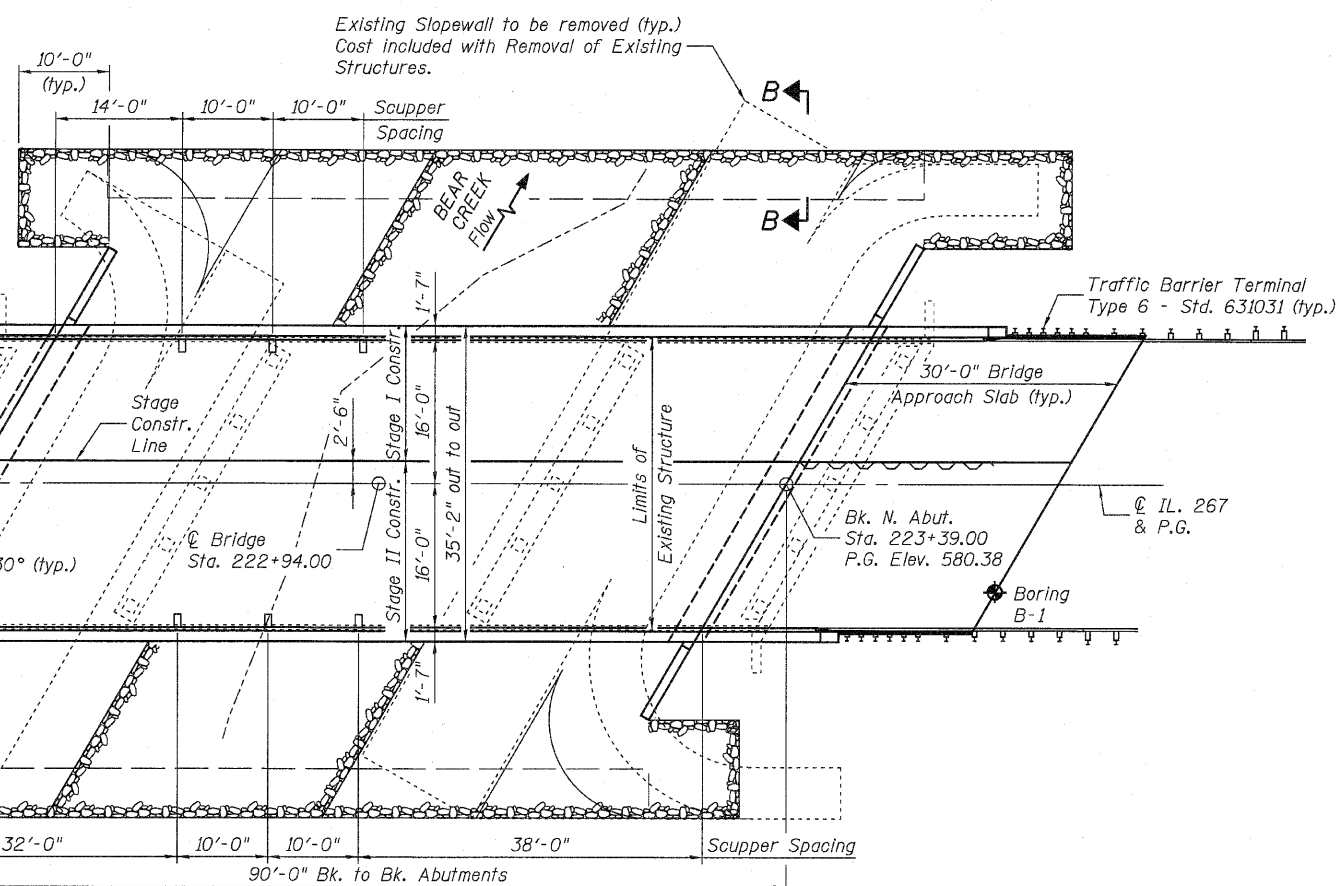
ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment, Special	Cu Yd	--	176	176
Stone Riprap, Class A5	Sq Yd	--	844	844
Filter Fabric	Sq Yd	--	844	844
Removal of Existing Structures	Each	1	--	1
Structure Excavation	Cu Yd	--	152	152
Concrete Structures	Cu Yd	--	65.3	65.3
Concrete Superstructure	Cu Yd	234.8	--	234.8
Bridge Deck Grooving	Sq Yd	500	--	500
Concrete Encasement	Cu Yd	--	4.2	4.2
Protective Coat	Sq Yd	639	--	639
Furnishing and Erecting Structural Steel	L Sum	1	--	1
Stud Shear Connectors	Each	1314	--	1314
Reinforcement Bars, Epoxy Coated	Pound	51190	9530	60720
Bar Splicers	Each	586	12	598
Furnishing Steel Piles HP12x53	Foot	--	352	352
Driving Piles	Foot	--	352	352
Test Pile Steel HP12x53	Each	--	1	1
Pile Shoes	Each	--	12	12
Temporary Sheet Piling	Sq Ft	--	437	437
Name Plates	Each	1	--	1
Anchor Bolts, 1"	Each	--	24	24
Geocomposite Wall Drain	Sq Yd	--	94	94
Pipe Underdrains for Structures 4"	Foot	--	158	158
Drainage Scuppers, DS-11	Each	6	--	6



ELEVATION



SECTION B-B



PLAN

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	S. Abut.	N. Abut.
	571.7	571.9

WATERWAY INFORMATION

		Exist. Low Grade Elev. 579.71 ft. @ Sta. 222+94		Prop. Low Grade Elev. 580.00 ft. @ Sta. 222+82	
Flood	Yr.	Q	Opening Sq. Ft.	Nat. Head - Ft.	Headwater El.
		C.F.S.	Exist. Prop.	H.W.E. Exist. Prop.	Exist. Prop.
Design	50	1700	274.50	370.19	571.60
Base	100	2010	299.45	395.77	572.01
Overtopping					
Max. Calc.	500	2770	353.92	451.62	572.87
				0.97	0.53
				573.84	573.40

LOADING HL-93

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

DESIGN SPECIFICATIONS

2007 AASHTO LRFD Bridge Design Specifications with 2008 & 2009 Interims

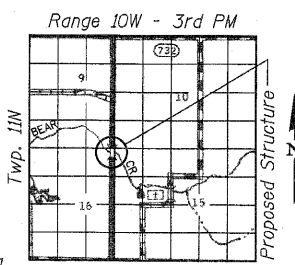
DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi  
fy = 60,000 psi (Reinforcement)  
fy = 50,000 psi (M270 Grade 50W)

SEISMIC DATA

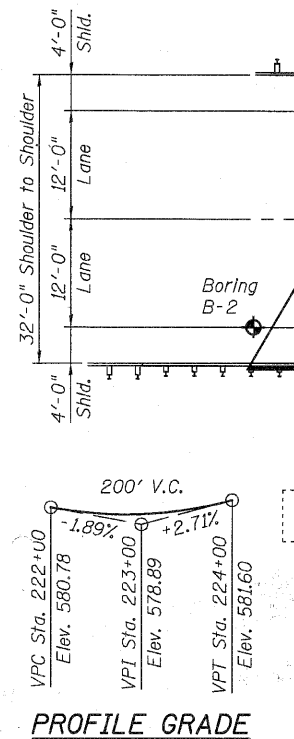
Seismic Performance Zone (SPZ) = 1  
Design Spectral Acceleration at 1.0 sec. (S<sub>1</sub>) = 0.12g  
Design Spectral Acceleration at 0.2 sec. (S<sub>0.2</sub>) = 0.24g  
Soil Site Class = C



LOCATION SKETCH

GENERAL PLAN & ELEVATION  
ILLINOIS 267 OVER BEAR CREEK  
F.A.P. RTE. 10 SECTION 3B-1  
GREENE COUNTY  
STATION 222+94.00  
STRUCTURE NO. 031-0044

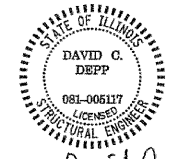
SHEET	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1 OF 20	10	3B-1	GREENE	59	26
		STA. 222+94.00		CONTRACT NO.	76C15
		FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT	



PROFILE GRADE

APPROVED FOR STRUCTURAL ADEQUACY ONLY

Signature: *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES



Signed: *David Depp*  
Date: 5-10-2010  
Lic. Expires: 11-30-2010

Johnson, Depp & Quisenberry  
CONSULTING ENGINEERS  
Springfield, Illinois

DESIGNED: JDD	DRAWN: P. Ray
CHECKED: DCD	CHECKED: DCD