

B.M. #402: Chiseled square on top of northeast wingwall of S.N. 007-0013, Sta. 475+93, 17' Lt., Elev. 512.99.

EXISTING STRUCTURE: S.N. 007-0013, originally constructed in 1948 as FAS Route 753 Sec. 5A at Station 475+15.50, using 24" Steel I-beams with 6 1/2" concrete deck, 3 spans, 137'-4 1/2" back-back abutments, 31'-5" out-out width, open pile bent abutments on concrete piles, pile bent piers on concrete piles. In 1990, bearings, bridge rail and floor drains were replaced.

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

No salvage.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STATION 475+19.62
BUILT _____ BY
STATE OF ILLINOIS
F.A.P. RTE. 304 SEC. 5A-BR
LOADING HL-93
STR. NO. 007-0028

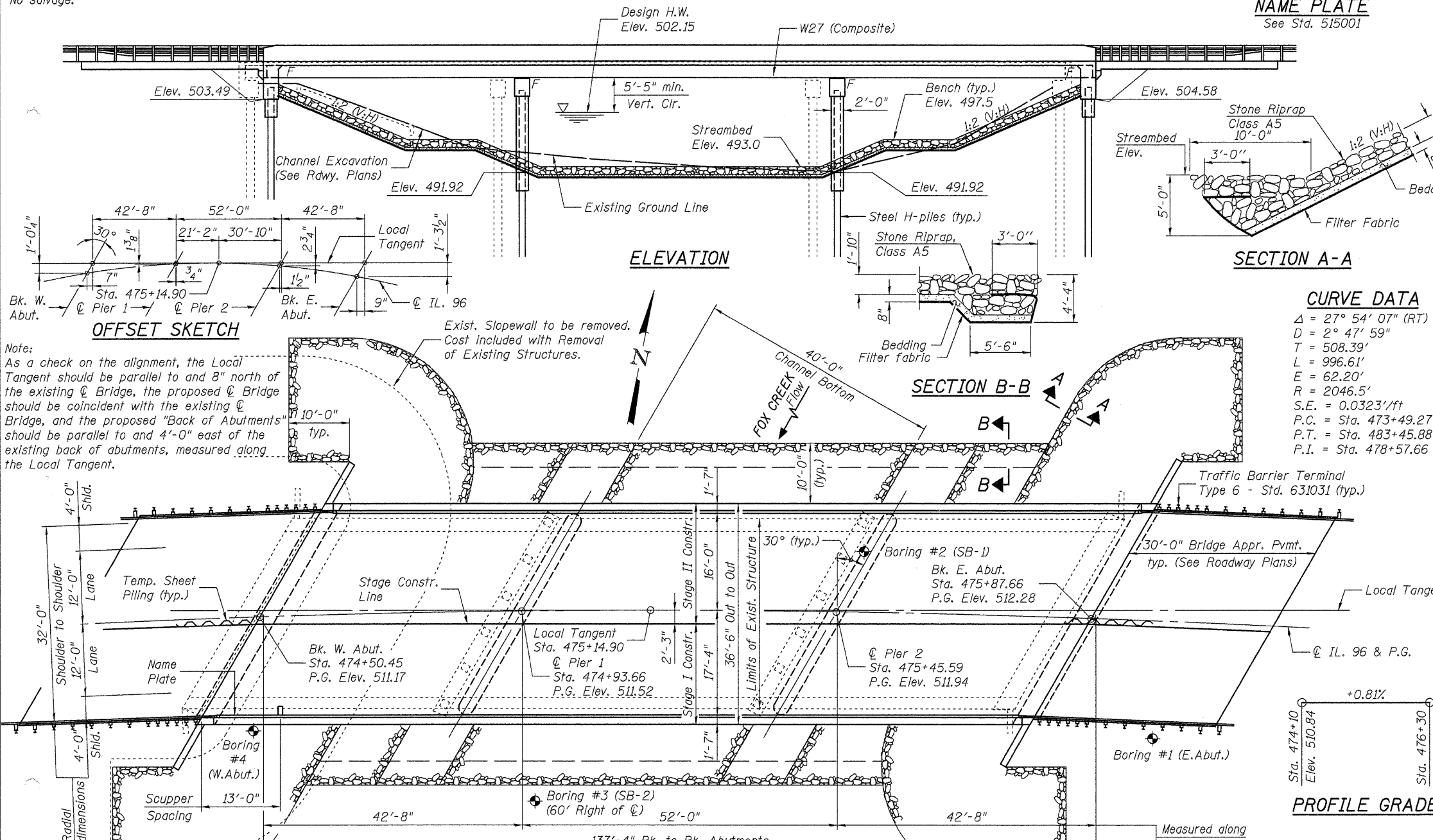
NAME PLATE
See Std. 515001

GENERAL NOTES

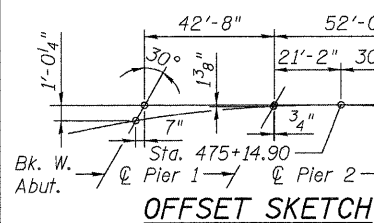
Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts in painted areas and M164 Type 3 in unpainted areas. Bolts 7/8 in. ϕ , holes 15/16 in. ϕ , unless otherwise noted.
All structural steel shall be AASHTO M 270 Grade 50W.
Calculated weight of Structural Steel = 77630 lbs.
No field welding 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.
Structural steel shall only be painted for a distance equal to the depth of embedment into the concrete cap plus 3 inches. 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".
The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
Bearing seat surfaces shall be constructed or adjusted to their designated elevations within a tolerance of 1/8 inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
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

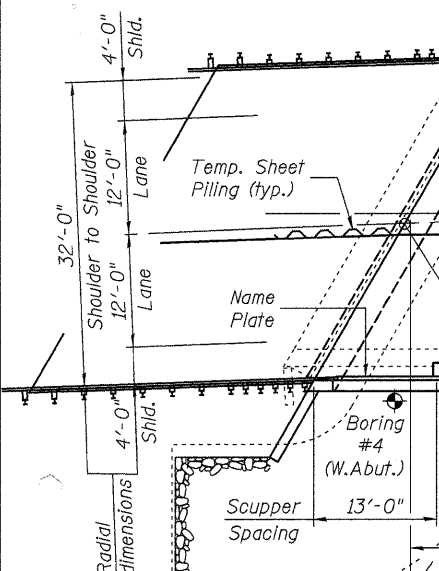
ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment, Special	Cu Yd	--	148	148
Stone Riprap, Class A5	Sq Yd	--	1056	1056
Filter Fabric	Sq Yd	--	1056	1056
Removal Of Existing Structures	Each	1	--	1
Structure Excavation	Cu Yd	--	231	231
Concrete Structures	Cu Yd	--	149.0	149.0
Concrete Superstructure	Cu Yd	177.5	--	177.5
Bridge Deck Grooving	Sq Yd	478	--	478
Concrete Encasement	Cu Yd	--	8.4	8.4
Protective Coat	Sq Yd	624	--	624
Furnishing And Erecting Structural Steel	L Sum	1	--	1
Stud Shear Connectors	Each	2304	--	2304
Reinforcement Bars, Epoxy Coated	Pound	42060	13320	55380
Bar Splicers	Each	491	76	567
Furnishing Steel Piles HP 12x53	Foot	--	1200	1200
Driving Piles	Foot	--	1200	1200
Test Pile Steel HP12x53	Each	--	4	4
Pile Shoes	Each	--	24	24
Temporary Sheet Piling	Sq Ft	--	507	507
Name Plates	Each	1	--	1
Anchor Bolts, 1"	Each	--	48	48
Geocomposite Wall Drain	Sq Yd	--	84	84
Pipe Underdrains For Structures 4"	Foot	--	160	160
Mechanical Splice	Each	--	36	36
Drainage Scuppers, DS-11	Each	1	--	1
Underwater Struct. Excav. Protection - Loc. 1	Each	--	1	1
Underwater Struct. Excav. Protection - Loc. 2	Each	--	1	1



CURVE DATA
 $\Delta = 27^\circ 54' 07''$ (RT)
 $D = 2^\circ 47' 59''$
 $T = 508.39'$
 $L = 996.61'$
 $E = 62.20'$
 $R = 2046.5'$
 $S.E. = 0.0323'/ft$
 $P.C. = Sta. 473+49.27$
 $P.T. = Sta. 483+45.88$
 $P.I. = Sta. 478+57.66$



Note:
As a check on the alignment, the Local Tangent should be parallel to and 8" north of the existing ϕ Bridge, the proposed ϕ Bridge should be coincident with the existing ϕ Bridge, and the proposed "Back of Abutments" should be parallel to and 4'-0" east of the existing back of abutments, measured along the Local Tangent.



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

PLAN

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	W. Abut.	Pier 1	Pier 2	E. Abut.
	503.5	488.9	488.9	504.6

WATERWAY INFORMATION

Existing Low Grade Elevation: 510.94 @ Sta. 474+50.03
 Prop. Low Grade Elevation: 510.94 @ Sta. 474+50.03

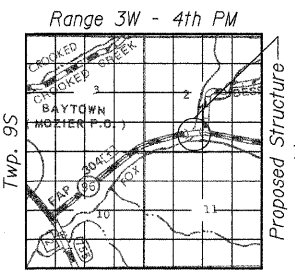
Flood	Freq. Yr.	Q	Opening Sq. Ft.		Nat. H.W.E.		Head - Ft.		Headwater El.	
			Exlst.	Prop.	Exlst.	Prop.	Exlst.	Prop.	Exlst.	Prop.
Design	10	1836	372.19	392.81	500.24	0.14	0.13	500.38	500.37	
Base	50	3086	533.08	551.96	502.15	0.19	0.18	502.34	502.33	
Overtopping	100	3680	600.67	619.34	502.91	0.19	0.18	503.10	503.09	
Max. Calc.	500	5154	752.81	772.61	504.55	0.14	0.14	504.69	504.69	

LOADING HL-93
Allow 50#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS
2007 AASHTO LRFD Bridge Design Specifications with 2008 Interims

DESIGN STRESSES
FIELD UNITS
 $f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 50,000$ psi (M270 Grade 50W)

SEISMIC DATA
 Seismic Performance Zone (SPZ) = 2
 Design Spectral Accel. at 1.0 sec. (SD1) = 0.16g
 Design Spectral Accel. at 0.2 sec. (SDS) = 0.29g
 Soil Site Class = D



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12	Structural Steel & Framing Plan
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GENERAL PLAN
ILLINOIS 96 OVER
FOX CREEK
STRUCTURE NO. 007-0028

SHEET	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1 OF 22	304	5A-BR	CALHOUN	60	24
STA. 475+19.62			CONTRACT NO. 76886		
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED: JDQ DRAWN: SJS/PTR
 CHECKED: DCD CHECKED: DCD

DAVID O. DEPP
081-008117
LICENSED STRUCTURAL ENGINEER

Signed: *David Depp*
 Date: 11-26-2008
 Lic. Expires: 11-30-2010

DATE: 11/26/2008 13:48:00