

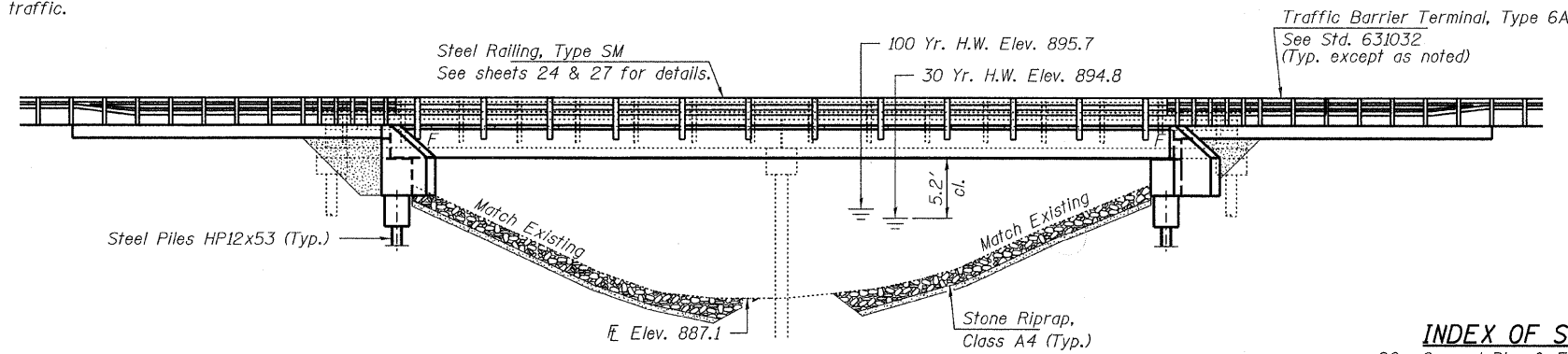
BENCHMARK: BM#1 - CHISLED "X" IN NW WINGWALL 15' LT. STA. 95+89.09 ELEV. 903.59

EXISTING STRUCTURE: Two span precast prestressed concrete deck beam bridge with steel railing on pile bent concrete abutments and piers. 87.83' bk.-bk. abuts.; 30.00' o.-o. deck Structure closed to traffic.

No Salvage

**GENERAL NOTES**

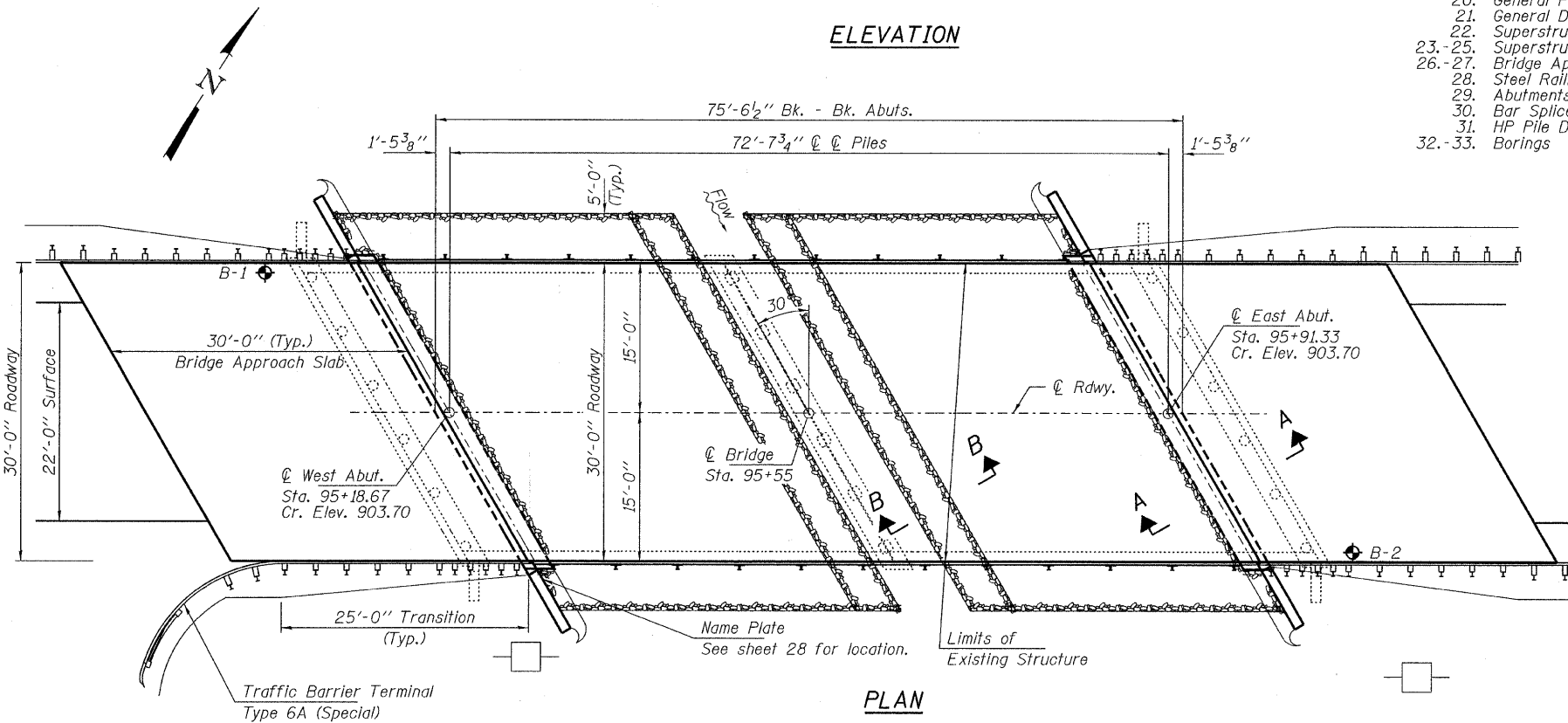
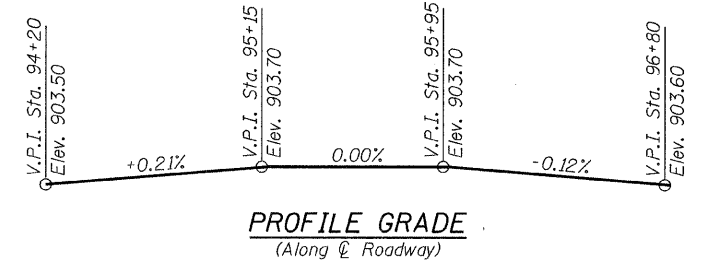
Layout of riprap may be varied in the field to suit ground conditions as directed by the Engineer.  
 The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at West Abutment or approved by the Engineer before ordering the remainder of piles.  
 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.  
 Excavation required to construct the Abutments shall be included in the cost of Concrete Structures. No additional compensation will be allowed for Structure Excavation.  
 All proposed construction activities shall be in accordance with Nationwide Permit number 14 of the Department of the Army authorized under Section 404 of the Clean Water Act.  
 The IEPA has issued Section 401 Water Quality Certification for this activity. See Special Provisions for conditions.  
 See sheets 31 & 32 for Borings.



**ELEVATION**

**INDEX OF STRUCTURE SHEETS**

- 20. General Plan & Elevation
- 21. General Details
- 22. Superstructure
- 23.-25. Superstructure Details
- 26.-27. Bridge Approach Slab Details
- 28. Steel Railing, Type SM
- 29. Abutments
- 30. Bar Splicer Assembly and Mechanical Splicer Details
- 31. HP Pile Details
- 32.-33. Borings



**PLAN**

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment, Special	Cu. Yd.		85	85
Stone Riprap, Class A4 (Special)	Ton		245	245
Filter Fabric	Sq. Yd.		320	320
Removal of Existing Structures	Each		1	1
Concrete Structures	Cu. Yd.		49.0	49.0
Concrete Superstructure	Cu. Yd.	86.1		86.1
Bridge Deck Grooving	Sq. Yd.	417		417
Concrete Encasement	Cu. Yd.		4.0	4.0
Protective Coat	Sq. Yd.	457		457
Precast Prestressed Concrete Deck Beams (33" Depth)	Sq. Ft.	2,220		2,220
Reinforcement Bars, Epoxy Coated	Pound	26,600	3,580	30,180
Bar Splicers	Each	62		62
Steel Railing, Type SM	Foot	146		146
Furnishing Steel Piles HP12x53	Foot		605	605
Driving Piles	Foot		605	605
Test Pile Steel HP12x53	Each		1	1
Name Plates	Each		1	1
Geocomposite Wall Drain	Sq. Yd.		42	42
Pipe Underdrains For Structures 4"	Foot		126	126
Concrete Wearing Surface, 5"	Sq. Yd.	247		247

**DESIGN SCOUR TABLE**

	W. Abut.	E. Abut.
Design Scour Elevation	896.51	896.51

**DESIGN STRESSES**

**FIELD UNITS**

f'c = 3,500 psi (All Concrete except CWS)  
 f'c = 5,000 psi (CWS)  
 fy = 60,000 psi (Reinf.)

**PRECAST PRESTRESSED UNITS**

f'c = 6,000 psi  
 f'ci = 5,000 psi  
 fpu = 270,000 psi (1/2" low lax. strands)  
 fpbt = 201,960 psi (1/2" low lax. strands)  
 fy = 60,000 psi (Reinf.)

**LOADING HL-93**

Design Specifications: 2007 AASHTO LRFD with all applicable interims.  
 50#/Sq. Ft. included in dead load for future wearing surface.

**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 1  
 Design Spectral Acceleration at 1.0 sec. (SD1) = 0.148g  
 Design Spectral Acceleration at 0.2 sec. (SDS) = 0.083g  
 Soil Site Class = D

**WATERWAY INFORMATION**

Flood	Freq. Yr.	C.F.S.	Opening Sq. Ft.		Head - Ft.		Headwater El.		
			Exist.	Prop.	Natural H.W.E.	Prop. Exist.	Prop. Exist.	Prop.	
	10	361	215	214	893.77	0.02	0.00	893.79	893.77
Design	30	500	267	266	894.76	0.02	0.00	894.78	894.76
Base	50	548	283	282	895.05	0.02	0.00	895.07	895.05
Base	100	672	323	322	895.73	0.02	0.00	895.75	895.73
Overtopping									
Max. Calc.	500	869	381	380	896.65	0.02	0.00	896.67	896.65

Drainage Area = 10.0± Sq. Mi. Existing Low Grade Elev. 903.25 @ Sta. 94+80  
 Proposed Low Grade Elev. 903.5 @ Sta. 94+20

10 Year Velocity through Existing Bridge = 1.7 fps      10 Year Velocity through Proposed Bridge = 1.7 fps

I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current "AASHTO LRFD Specifications."

Steven W. Megginson 2/10/2010  
 ILLINOIS STRUCTURAL NO. 081-6064



Expires 11-30-2010

**GENERAL PLAN AND ELEVATION  
 STRUCTURE NO. 045-6302**

DESIGNED - S.W.M.
CHECKED - A.S.L.
DRAWN - D.A.B.
CHECKED - S.W.M.

**HAMPTON, LENZINI & RENWICK, INC.**  
 CIVIL & STRUCTURAL ENGINEERS  
 LAND SURVEYORS

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 SPRINGFIELD, ILLINOIS 62703  
 (217) 546-3400

PROJECT NUMBER: 08.0043.130      DATE: 01/07/10

FAS	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
132	07-00358-00-BR	KANE	33	20
DAMISCH ROAD OVER TYLER CREEK			CONTRACT NO. 63444	
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	