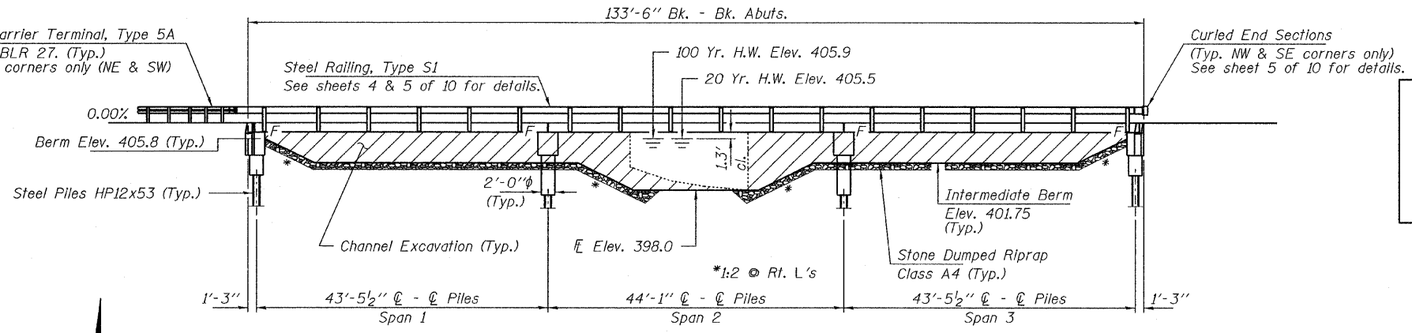
BENCHMARK: Nail & Washer in 4" tree. 45' Rt., Sta. 10+15, Elev. 407.77

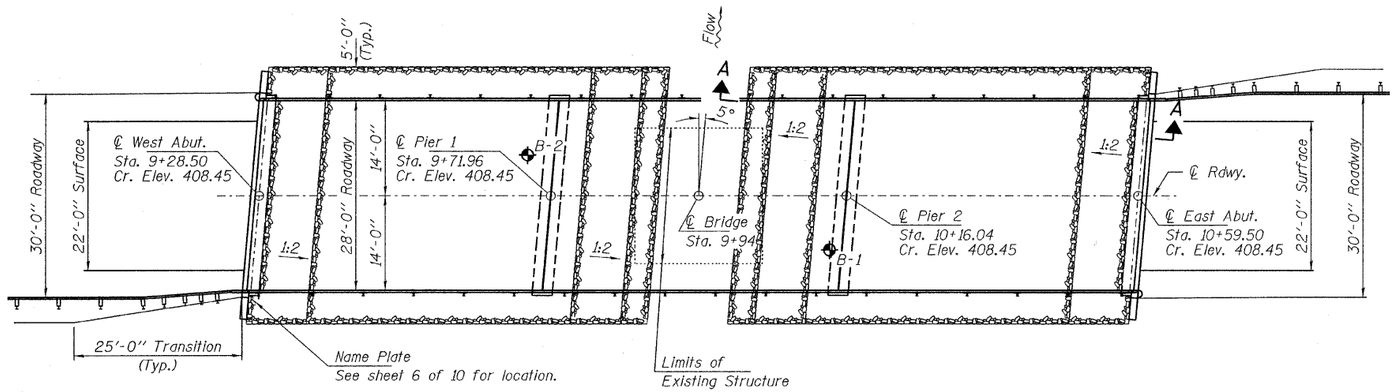
EXISTING STRUCTURE: Single span I-Beam bridge with a concrete deck on closed concrete abutments. 17.5' fc.-fc. abuts.; 20.0' o.-o. deck. Structure closed to traffic.

No Salvage

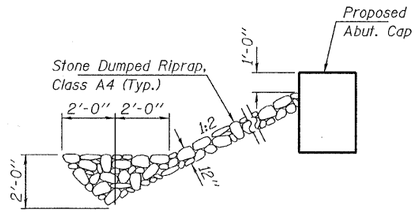


ELEVATION

N

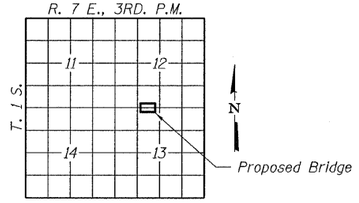


PLAN



SECTION A-A

Note: See Special Provisions for Stone Riprap, Class A4.



LOCATION SKETCH

GENERAL NOTES

Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at East Abutment and Pier 1 or approved by the Engineer before ordering the remainder of piles.

Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure.

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (IL Modified). See Special Provisions.

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 9 & 10 of 10 for Borings.

MARTIN CREEK
BUILT 200_ BY
WAYNE COUNTY
SEC. 07-00116-00-BR
FAS 2821 (C.H. 7)
STR. NO. 096-3446
LOADING HL-93

NAME PLATE
See Std. 515001

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			615
Stone Dumped Riprap, Class A4	Ton			300
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		48.6	48.6
Concrete Encasement	Cu. Yd.		9.6	9.6
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	3,696		3,696
Reinforcement Bars	Pound		5,020	5,020
Steel Railing, Type S1	Foot	268		268
Furnishing Steel Piles HP12x53	Foot		960	960
Driving Piles	Foot		960	960
Test Pile Steel HP12x53	Each		2	2
Name Plates	Each		1	1

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinf.)

PRECAST PRESTRESSED UNITS

f'c = 6,000 psi
f'ci = 5,000 psi
fpu = 270,000 psi (½"ϕ low lax. strands)
fpbt = 201,960 psi (½"ϕ 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) = 2
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.277g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.669g
Soil Site Class = D

WATERWAY INFORMATION

Drainage Area = 12.64 Sq. Mi.
Existing Low Grade Elev. 406.00 @ Sta. 8+00
Proposed Low Grade Elev. 408.45 @ Sta. 9+94

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Natural H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	20	2,032	111	515	405.5	1.5	0.5	407.0	406.0
Overtopping	100	2,962	122	565	405.9	1.4	0.9	407.3	406.8
Max. Calc.	500	3,843	122	606	406.2	1.3	1.2	407.5	407.4

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 8/18/2009
ILLINOIS STRUCTURAL NO. 081-6064

LICENSED STRUCTURAL ENGINEER
STEVEN W. MEGGINSON
081-6064
SPRINGFIELD, IL
STATE OF ILLINOIS

Expires 11-30-2010

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

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 096-3446

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400
PROJECT NUMBER: 08.0219.130 DATE: 06/17/09

SHEET NO. 1
10 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
7	07-00116-00-BR	WAYNE	16	7
		CONTRACT NO. 95589		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		