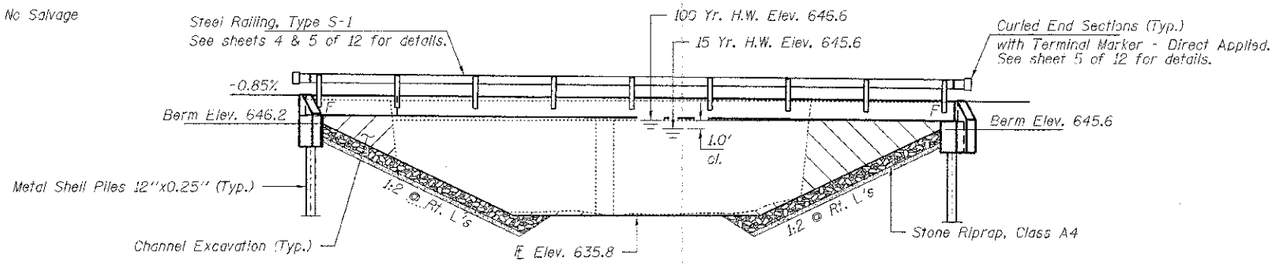
BENCHMARK: Top of Railroad Spike in Tree. 28' Rt., Sta. 9+59, Elev. 645.42

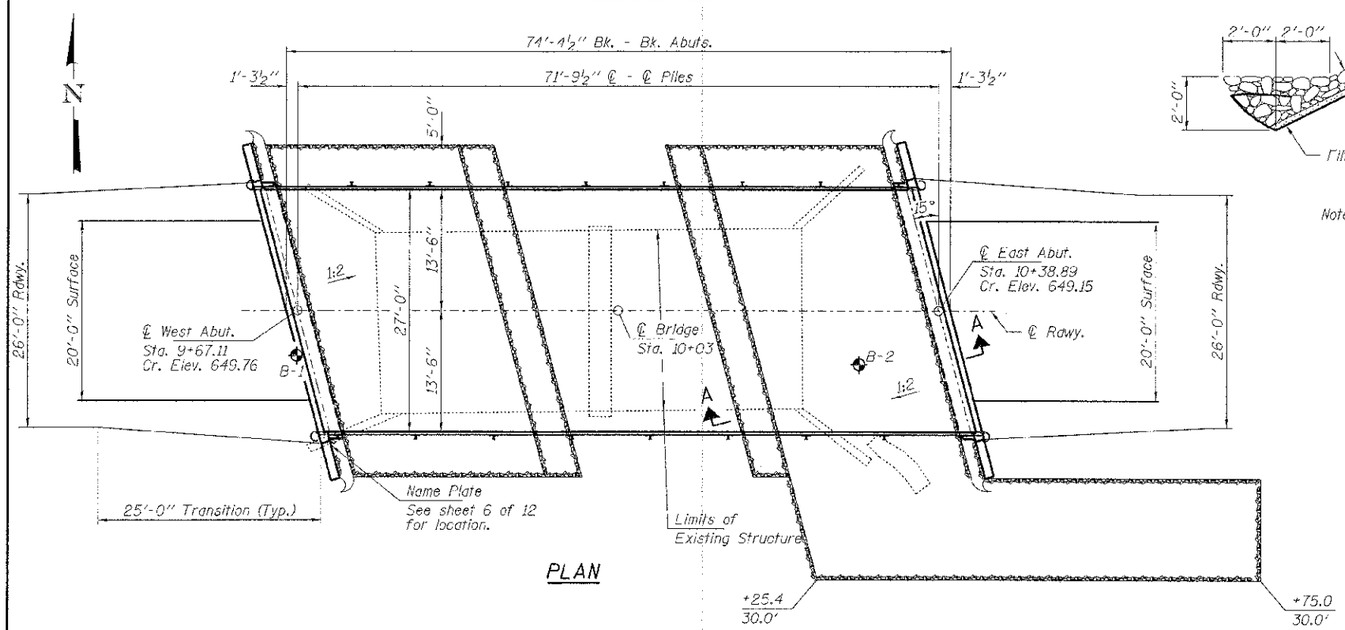
EXISTING STRUCTURE: Sta. 10+00 - Two span I-beam bridge with concrete parapets on closed concrete abutments and wingwalls. 45.45' Fc.-Fc. Abuts.; 20.55' o.-o. Deck.

Structure closed to traffic during construction.

No Salvage



ELEVATION



PLAN

GENERAL NOTES

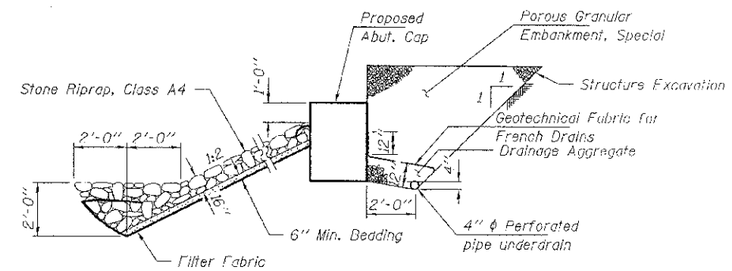
Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

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

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

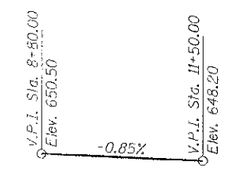
Excavation required to construct the Abutments shall be included in the cost of Concrete Structures. No additional compensation will be allowed for Structure Excavation.

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.



SECTION A-A

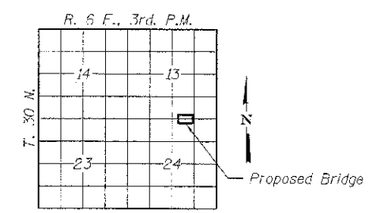
Note: See Special Provisions for Stone Riprap, Class A4.



PROFILE GRADE

INDEX OF STRUCTURE SHEETS

1. General Plan & Elevation
2. 27"x36" PPC Deck Beam
3. 27"x36" PPC Deck Beam Details
4. Superstructure Details
5. Steel Railing, Type S-1
6. West Abutment
7. East Abutment
8. Metal Shell Details
9-12. Borings



LOCATION SKETCH

BUILT 201_ BY
LIVINGSTON COUNTY
SEC. 11-16105-05-BR
NEVADA ROAD DISTRICT
STR. NO. 053-4207
LOADING HL-93

NAME PLATE

See Std. 515001

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: 2012 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. (S_{D1}) = 0.130g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.076g
Soil Site Class = C

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	W. Abut.	E. Abut.
	643.6	643.0

WATERWAY INFORMATION

Drainage Area = 18.0 Sq. Mi.
Existing Low Grade Elev. 648.1 @ Sta. 11+00
Proposed Low Grade Elev. 648.4 @ Sta. 11+50

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.
	10	845	400	420	645.31	0.05	0.05	645.36	645.36
Design	15	940	410	440	645.62	0.05	0.05	645.67	645.67
Base	100	1370	450	510	646.63	0.21	0.16	646.84	646.79
Max. Calc.	500	1720	450	530	647.19	0.19	0.27	647.38	647.46

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. Meggenson 12/26/2012
ILLINOIS STRUCTURAL NO. 081-6064

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

Expires 11-30-2014

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			185
Stone Riprap, Class A4	Sq. Yd.			300
Filter Fabric	Sq. Yd.			300
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		26.6	26.6
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	1,971		1,971
Reinforcement Bars	Pound		2,760	2,760
Steel Railing, Type S1	Foot	144		144
Metal Shell Piles 12"x0.25"	Foot		450	450
Driving Piles	Foot		450	450
Test Pile Metal Shell 12"x0.25"	Each		1	1
Name Plates	Each		1	1
Porous Granular Embankment, Special	Ton		120	120
Pipe Underdrains for Structures 4"	Foot		90	90

FILE NAME = 110246-sht-bridge.dgn	USER NAME =	DESIGNED - D.A.B.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3605 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LICENSE NO. 184-000576		CHECKED - S.W.M.	REVISED -
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -
	PLOT DATE = 12/26/2012	CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
LIVINGSTON COUNTY HIGHWAY DEPARTMENT

GENERAL PLAN & ELEVATION
STRUCTURE NO. 053-4207
SHEET NO. 1 OF 12 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
29	11-16105-05-BR	LIVINGSTON	21	10
NEVADA ROAD DISTRICT		CONTRACT NO. 87536		
		ILLINOIS FED. AID PROJECT		