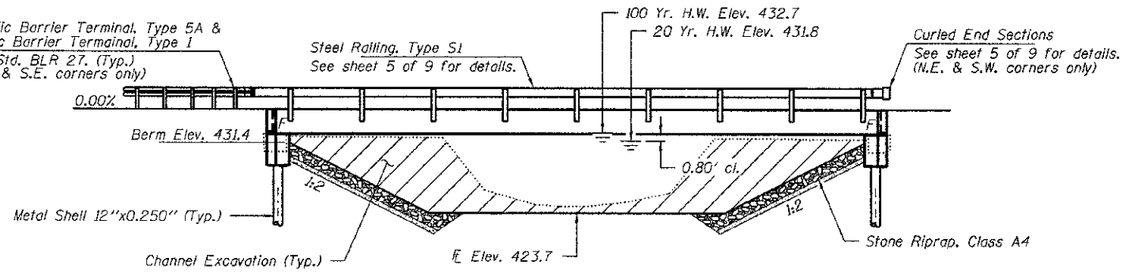
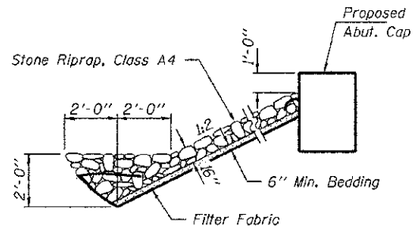
BENCHMARK: LT. STA. 3+90 spike in P.P. Elev. 435.54

EXISTING STRUCTURE: Sta. 6+00.00 - Single Span Steel Beam Bridge
25' Bk.-Bk. Abutments. Closed concrete abutments
25' concrete deck.

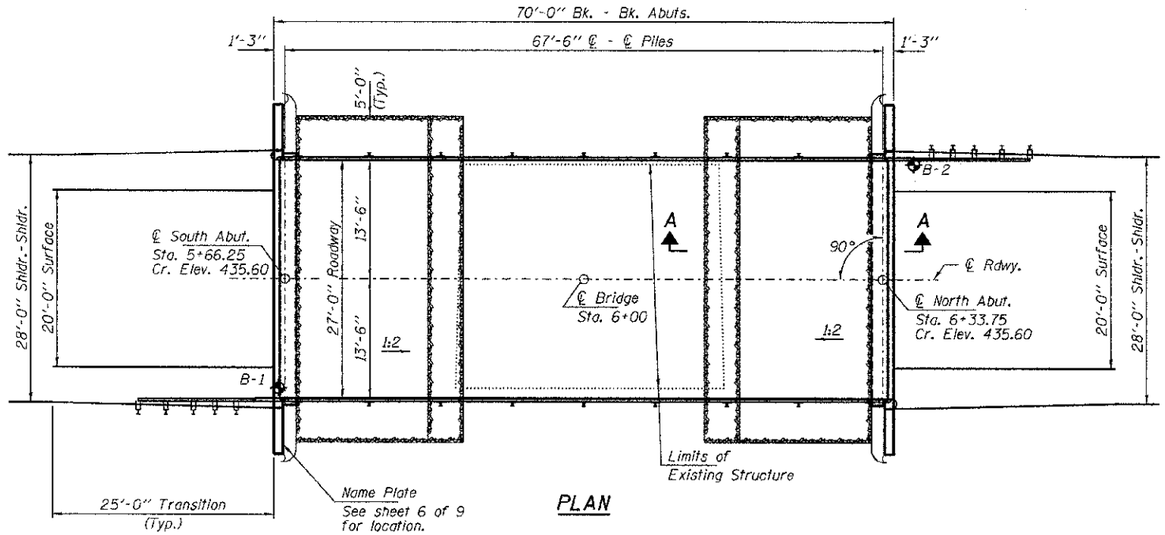
No Salvage




## ELEVATION




## SECTION A-A




## 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 South Abutment or approved by the Engineer before ordering the remainder of piles.

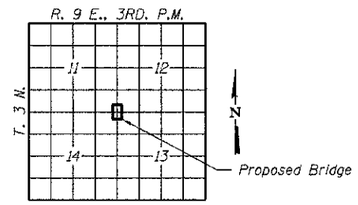
Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.

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.

## INDEX OF STRUCTURE SHEETS


1. General Plan & Elevation
2. 33"x36" PPC Deck Beam
3. 33"x36" PPC Deck Beam Details
4. Superstructure Details
5. Steel Railing, Type S-1
6. Abutments
7. Metal Shell Pile Details
8-9. Borings


## LOCATION SKETCH

BUILT 201_ BY
RICHLAND COUNTY
SEC. 11-00118-00-BR
STR. NO. 080-3221
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) = 2
Design Spectral Acceleration at 1.0 sec. ($S_{D1}$) = 0.249g
Design Spectral Acceleration at 0.2 sec. ($S_{DS}$) = 0.587g
Soil Site Class = D

## DESIGN SCOUR ELEVATION TABLE

| Design Scour Elevation (ft.) | S. Abut. | N. Abut. |
|---|---|---|
| | 429.0 | 429.0 |

## WATERWAY INFORMATION

Drainage Area = 3.63 Sq. Mi.
Existing Low Grade Elev. 431.6 @ Sta. 7+00
Proposed Low Grade Elev. 439.1 @ Sta. 10+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. |
|---|---|---|---|---|---|---|---|---|---|
| Design | 20 | 1476 | 200 | 380 | 431.8 | | | - | - |
| Base | 100 | 2200 | 214 | 435 | 432.7 | 0.65 | 0.0 | 433.35 | 432.70 |
| Max. Calc. | 500 | | | | | | | - | - |
| | | | | | | | | - | - |

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 11/29/2012
ILLINOIS STRUCTURAL ENGINEER 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 | Ton | | | 140 |
| Filter Fabric | Sq. Yd. | | | 200 |
| Removal of Existing Structures | Each | | | 1 |
| Concrete Structures | Cu. Yd. | | 27.4 | 27.4 |
| Precast Prestressed Concrete Deck Beams (33" Depth) | Sq. Ft. | 1,854 | | 1,854 |
| Reinforcement Bars | Pound | | 2,780 | 2,780 |
| Steel Railing, Type S-1 | Foot | 139 | | 139 |
| Furnishing Metal Shell Piles 12"x0.250" | Foot | | 225 | 225 |
| Driving Piles | Foot | | 225 | 225 |
| Test Pile Metal Shell | Each | | 1 | 1 |
| Name Plates | Each | | 1 | 1 |

| | | | | | |
|---|---|---|---|---|---|
| FILE NAME = ©FILEL© | USER NAME = | DESIGNED - D.W.T. | REVISED - | STATE OF ILLINOIS<br>RICHLAND COUNTY HIGHWAY DEPARTMENT | GENERAL PLAN & ELEVATION<br>STRUCTURE NO. 080-3221<br>SHEET NO. 1 OF 9 SHEETS |
| HAMPTON, LENZINI AND RENWICK, INC.<br>3535 STEVENSON DRIVE, SUITE 211<br>SPRINGFIELD, ILLINOIS 62703<br>ILLINOIS PROFESSIONAL DESIGN FIRM<br>LS / PE / SE CORP. 184.000558 | PLOT SCALE = | CHECKED - S.W.M. | REVISED - | | |
| | PLOT DATE = ©DATE© | DRAWN - R.D.H. | REVISED - | | |
| | | CHECKED - D.A.B. | REVISED - | | |

| F.A.S. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 1722 | 11-00118-00-BR | RICHLAND | 16 | 5 |
| | | CONTRACT NO. 95705 | | |
| | | ILLINOIS FED. AID PROJECT | | |