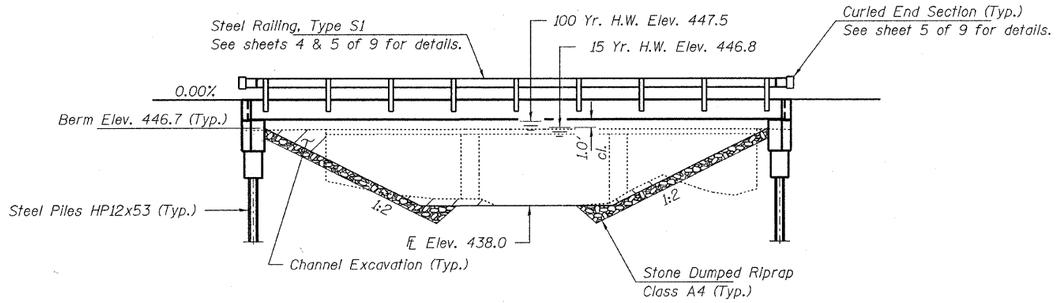
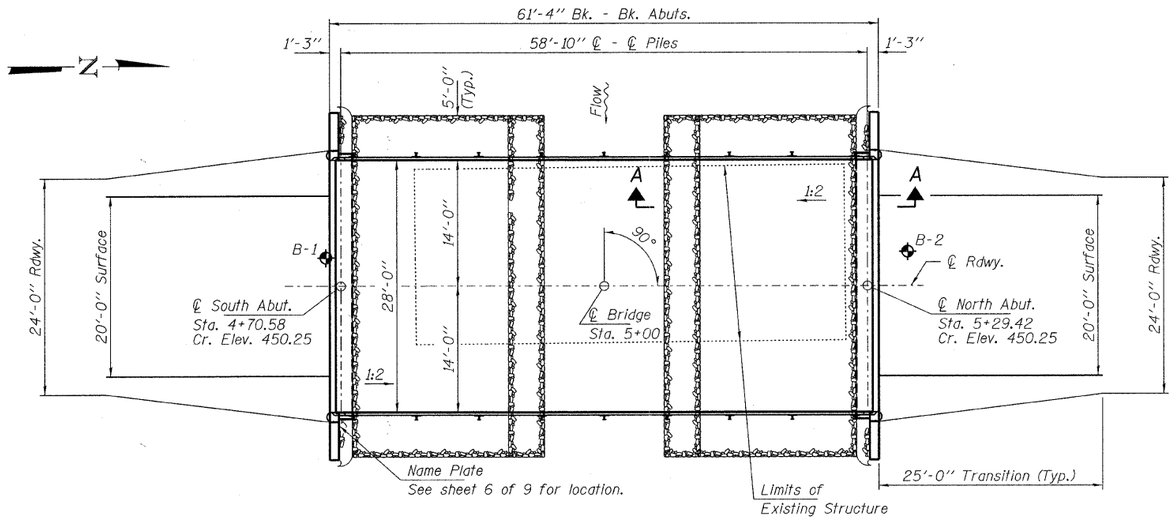
BENCHMARK: P.K. nail in power pole. 24' Rt., Sta. 10+50. Elev. 455.91

EXISTING STRUCTURE NO. 051-3041: Sta. 5+03, Three span reinforced concrete slab bridge on closed concrete abutments and wingwalls. 51.0' bk.-bk. abuts.; 19.4' o.-o. deck Structure closed to traffic.

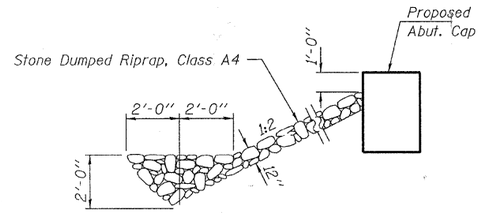
No Salvage




## ELEVATION




## PLAN




## SECTION A-A

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

## 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 pile to 110% of the nominal required bearing specified in production locations at North Abutment 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. 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.

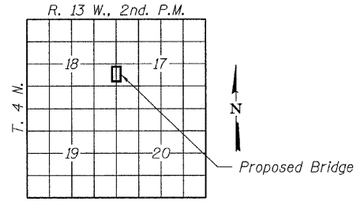
## INDEX OF STRUCTURE SHEETS



PAUL CREEK
BUILT 201_ BY
LAWRENCE COUNTY
SEC. 09-08134-00-BR
PETTY ROAD DISTRICT
STR. NO. 051-3298
LOADING HL-93

## NAME PLATE

See Std. 515001




## LOCATION SKETCH

## TOTAL BILL OF MATERIAL

| ITEM | UNIT | SUPER | SUB | TOTAL |
|---|---|---|---|---|
| Channel Excavation | Cu. Yd. | | | 25 |
| Stone Dumped Riprap, Class A4 | Ton | | | 125 |
| Removal of Existing Structures | Each | | | 1 |
| Concrete Structures | Cu. Yd. | | 26.8 | 26.8 |
| Concrete Encasement | Cu. Yd. | | 2.6 | 2.6 |
| Precast Prestressed Concrete Deck Beams (27" Depth) | Sq. Ft. | 1,680 | | 1,680 |
| Reinforcement Bars | Pound | | 2,730 | 2,730 |
| Steel Railing, Type S1 | Foot | 116 | | 116 |
| Furnishing Steel Piles HP12x53 | Foot | | 490 | 490 |
| Driving Piles | Foot | | 490 | 490 |
| Test Pile Steel HP12x53 | Each | | 1 | 1 |
| 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: 2010 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. ($S_{D1}$) = 0.232g
Design Spectral Acceleration at 0.2 sec. ($S_{DS}$) = 0.538g
Soil Site Class = D

## WATERWAY INFORMATION

Drainage Area = 14.6 Sq. Mi. — Existing Low Grade Elev. 445.1 @ Sta. 6+00; Proposed Low Grade Elev. 445.8 @ Sta. 2+00

| 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 | 15 | 3080 | 292 | 314 | 446.8 | 0.1 | 0.6 | 446.9 | 447.4 |
| Base | 100 | 5230 | 292 | 353 | 447.5 | 0.1 | 0.6 | 447.6 | 448.1 |
| Max. Calc. | 500 | 7130 | 292 | 371 | 447.9 | 0.1 | 0.6 | 448.0 | 448.5 |

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

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."

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

Steven W. Meggenson 11/21/2010
ILLINOIS STRUCTURAL ENG. NO. 081-6064 Expires 11-30-2012

## GENERAL PLAN AND ELEVATION
## STRUCTURE NO. 051-3298


HAMPTON, LENZINI AND RENWICK, INC.
CIVIL ENGINEERS · STRUCTURAL ENGINEERS · LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
217.546.3400 www.hlrengineering.com
184.000959
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION
PROJECT NUMBER: 10.0092.130 DATE: 04/14/10


SHEET NO. 1
9 SHEETS

| T.R. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 10A | 09-08134-00-BR | LAWRENCE | 13 | 5 |
| PETTY ROAD DISTRICT | | CONTRACT NO. 95638 | | |
| FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT | | |