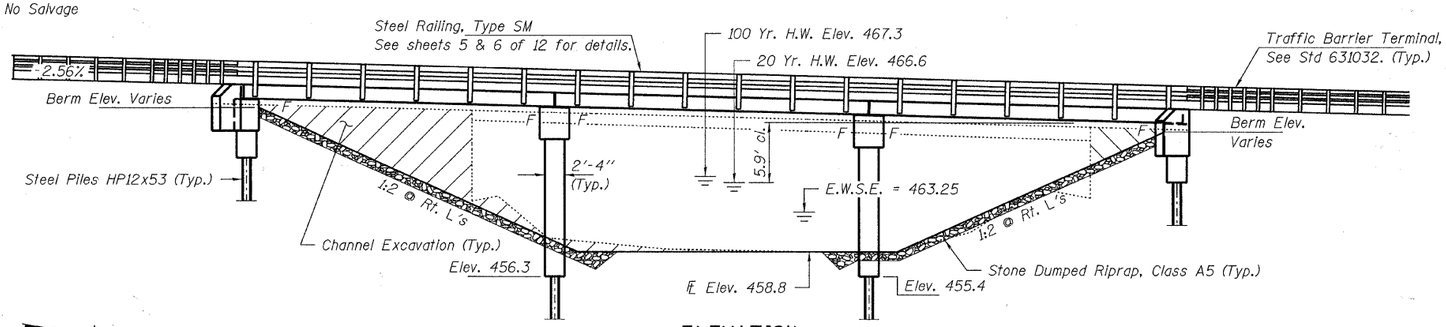
BENCHMARK:

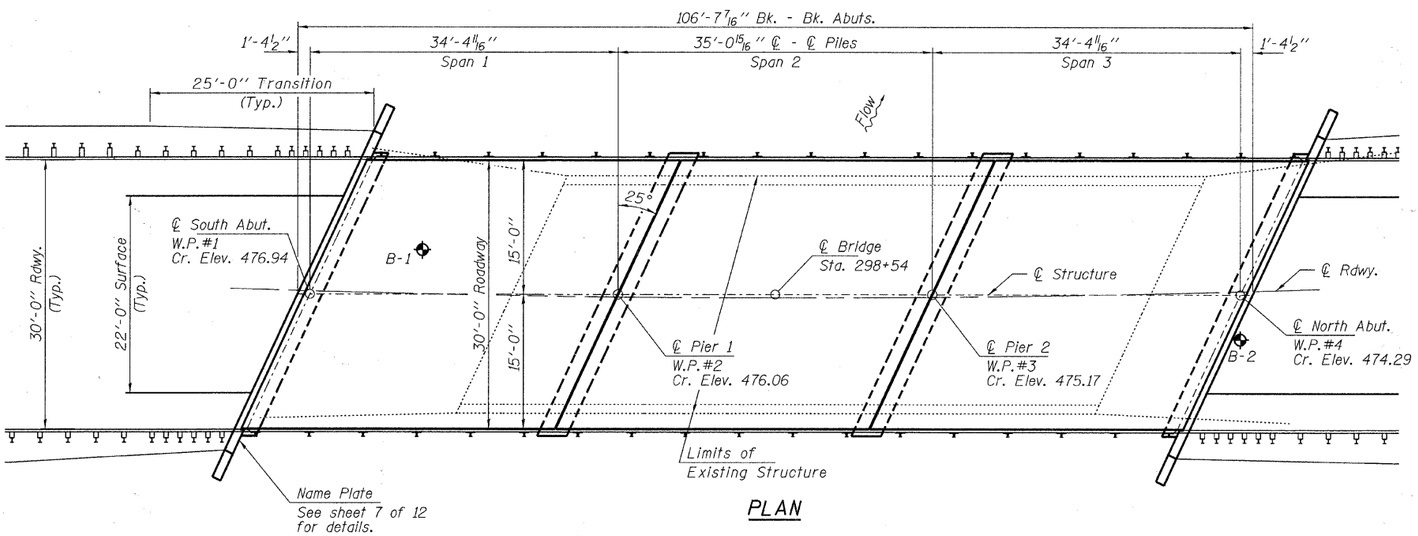
EXISTING STRUCTURE NO. 017-3010: Sta. 298+60 - Three span concrete deck beam bridge on concrete abutment and pier caps with closed timber abutments, timber piling and wingwalls. 73.0' bk.-bk. abuts.; 26.2' o.-o. deck.

Structure closed to traffic during construction.

No Salvage



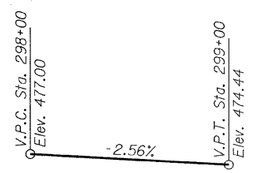

## ELEVATION




## PLAN

## INDEX OF STRUCTURE SHEETS

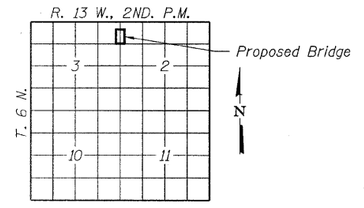




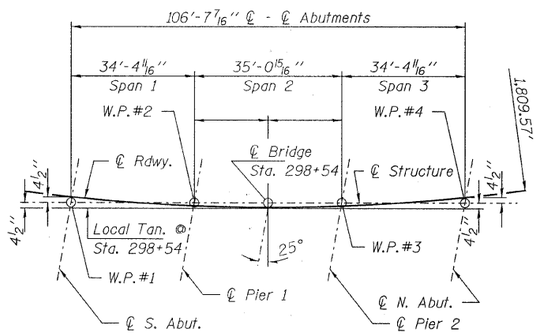

## PROFILE GRADE

## CURVE DATA

P.I. Sta. 297+50
Δ = 16°06'00" (Lt.)
D = 3°10'00"
R = 1,809.57'
T = 255.92'
L = 508.42'
E = 18.01'
S.E. = 0.03 Ft/Ft. Attained 110'




## LOCATION SKETCH




## OFFSET SKETCH

## 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) = 1
Design Spectral Acceleration at 1.0 sec. ($S_{D1}$) = 0.148g
Design Spectral Acceleration at 0.2 sec. ($S_{DS}$) = 0.366g
Soil Site Class = C

## WATERWAY INFORMATION

Drainage Area = 8.51 Sq. Mi. — Existing Low Grade Elev. @ Sta. — Proposed Low Grade Elev. @ Sta.

| 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 | 2160 | 361 | 405 | 466.6 | | 0.6 | - | 467.2 |
| Base | 100 | 3320 | 405 | 453 | 467.3 | 1.1 | 1.0 | 468.4 | 468.3 |
| Max. Calc. | 500 | - | - | - | - | - | - | | |

## DESIGN SCOUR TABLE

| Location | S. Abut. | Pier 1 | Pier 2 | N. Abut. |
|---|---|---|---|---|
| Elevation | 471.0 | 454.8 | 454.8 | 468.4 |

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 Megginson 3/29/2012
ILLINOIS STRUCTURAL NO. 081-6064 Expires 11-30-2012

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

## TOTAL BILL OF MATERIAL

| ITEM | UNIT | SUPER | SUB | TOTAL |
|---|---|---|---|---|
| Channel Excavation | Cu. Yd. | | | 100 |
| Stone Dumped Riprap, Class A5 | Ton | | | 630 |
| ~~Hot Mix Asphalt Surface Course, Mix C, N50~~ | ~~Ton~~ | | | ~~44~~ |
| Removal of Existing Structures | Each | | | 1 |
| Cofferdam Excavation | Cu. Yd. | | | 75 |
| Cofferdam (Type 2) (Location-1) | Each | | | 1 |
| Cofferdam (Type 2) (Location-2) | Each | | | 1 |
| Concrete Structures | Cu. Yd. | | 139.1 | 139.1 |
| Concrete Encasement | Cu. Yd. | | 3.4 | 3.4 |
| Precast Prestressed Concrete Deck Beams (17" Depth) | Sq. Ft. | 3,150 | | 3,150 |
| Reinforcement Bars | Pound | | 10,300 | 10,300 |
| Steel Railing, Type SM | Foot | 213 | | 213 |
| Furnishing Steel Piles HP12x53 | Foot | | 1,145 | 1,145 |
| Driving Piles | Foot | | 1,145 | 1,145 |
| Test Pile Steel HP12x53 | Each | | 2 | 2 |
| Name Plates | Each | | 1 | 1 |

| | | | |
|---|---|---|---|
| FILE NAME = 112368-sht-bridge.dgn | USER NAME = | DESIGNED - D.W.T. | REVISED - |
| HAMPTON, LENZINI AND RENWICK, INC. 3083 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 | | CHECKED - S.M.S. | REVISED - |
| ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP 184.000869 | PLOT SCALE = | DRAWN - D.A.B. | REVISED - |
| | PLOT DATE = 3/29/2012 | CHECKED - S.W.M. | REVISED - |

**STATE OF ILLINOIS**
**CRAWFORD COUNTY HIGHWAY DEPARTMENT**

**GENERAL PLAN & ELEVATION**
**STRUCTURE NO. 017-3061**
SHEET NO. 1 OF 12 SHEETS

| C.H. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 3 | 11-00096-00-BR | CRAWFORD | 16 | 5 |
| | | CONTRACT NO. 95682 | | |
| | ILLINOIS FED. AID PROJECT | | | |