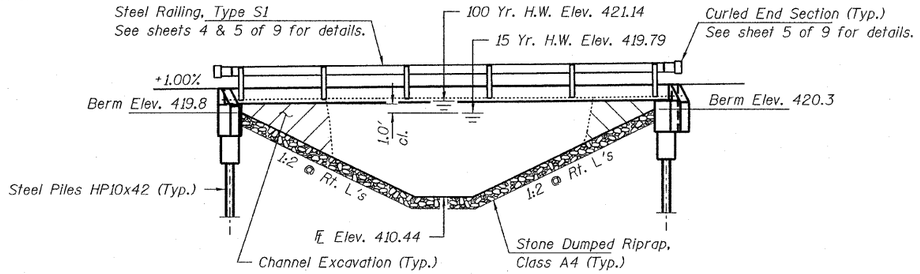
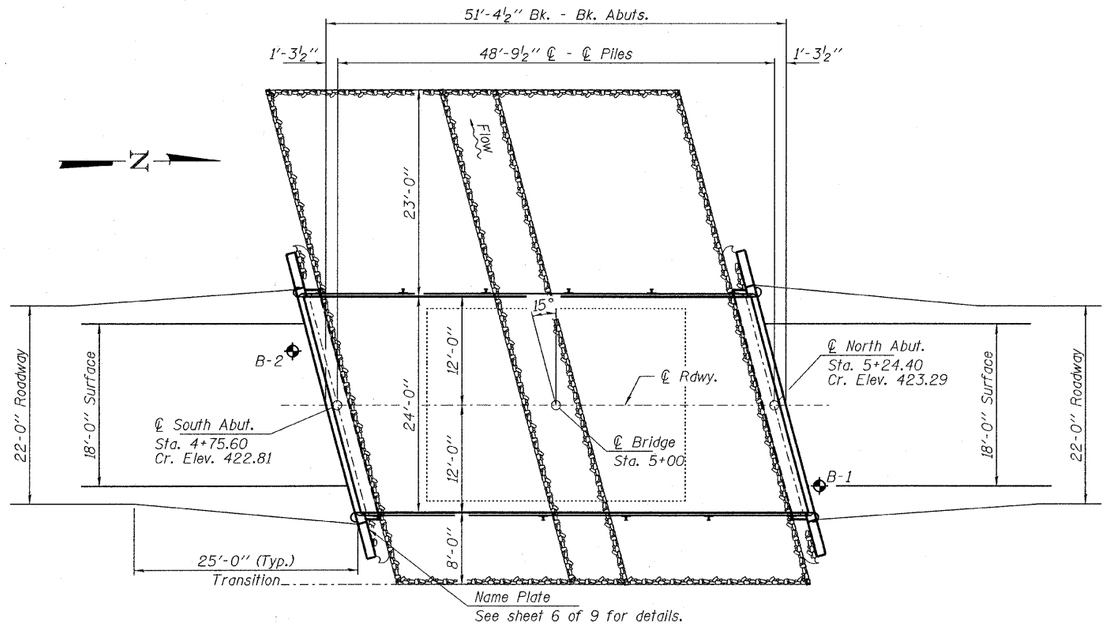
EXISTING STRUCTURE: Sta. 5+00.2 - Single span precast deck beam bridge on closed timber abutments and timber wingwalls.
30.0' bk.-bk. abuts.; 22.5' o.-o. deck.
Structure closed to traffic.

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.

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.

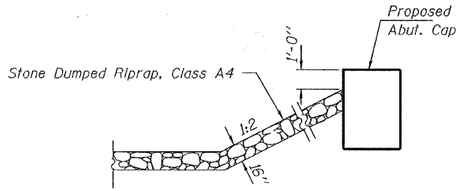
All proposed construction activities shall be in accordance with Nationwide Permit number 14 of the Department of the Army authorized under Section 404 of the Clean Water Act. The IEPA has issued Section 401 Water Quality Certification for this activity. See Special Provisions for conditions.

See sheet 9 of 9 for Borings.

BEAR CREEK
BUILT 20__ BY
EDWARDS COUNTY
SEC. 07-00064-00-BR
C.H. 4
STR. NO. 024-3137
LOADING HL-93

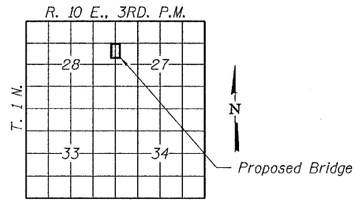
## NAME PLATE

See Std. 515001




## SECTION A-A

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




## LOCATION SKETCH

## TOTAL BILL OF MATERIAL

| ITEM | UNIT | SUPER | SUB | TOTAL |
|---|---|---|---|---|
| Channel Excavation | Cu. Yd. | | | 95 |
| Stone Dumped Riprap, Class A4 | Ton | | | 244 |
| Removal of Existing Structures | Each | | | 1 |
| Concrete Structures | Cu. Yd. | | 23.4 | 23.4 |
| Concrete Encasement | Cu. Yd. | | 2.8 | 2.8 |
| Precast Prestressed Concrete Deck Beams (21" Depth) | Sq. Ft. | 1,200 | | 1,200 |
| Reinforcement Bars | Pound | | 2,510 | 2,510 |
| Steel Railing, Type S1 | Foot | 97 | | 97 |
| Furnishing Steel Piles HP10x42 | Foot | | 360 | 360 |
| Driving Piles | Foot | | 360 | 360 |
| 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. ($S_{D1}$) = 0.264g
Design Spectral Acceleration at 0.2 sec. ($S_{DS}$) = 0.632g
Soil Site Class = D

## WATERWAY INFORMATION

Drainage Area = 2.4 Sq. Mi.
Existing Low Grade Elev.420.60 @ Sta. 4+00
Proposed Low Grade Elev. 420.83 @ Sta. 3+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 | 1247 | 206 | 250 | 419.79 | 0.24 | 0.13 | 420.03 | 419.92 |
| Max. Calc. | 100 | 2200 | 206 | 295 | 421.14 | 1.00 | 0.45 | 422.14 | 421.59 |
| | | | | | | | | | |

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

Steven W. Megginson 10/20/2009
ILLINOIS STRUCTURAL NO. 081-6064

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

Expires 11-30-2010

## GENERAL PLAN AND ELEVATION STRUCTURE NO. 024-3137


HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
HLR
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400


PROJECT NUMBER: 09.0047.130 | DATE: 10/15/09

SHEET NO. 1
9 SHEETS

| C.H. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 4 | 07-00064-00-BR | EDWARDS | 13 | 5 |
| | | CONTRACT NO. 95606 | | |
| FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT | | |