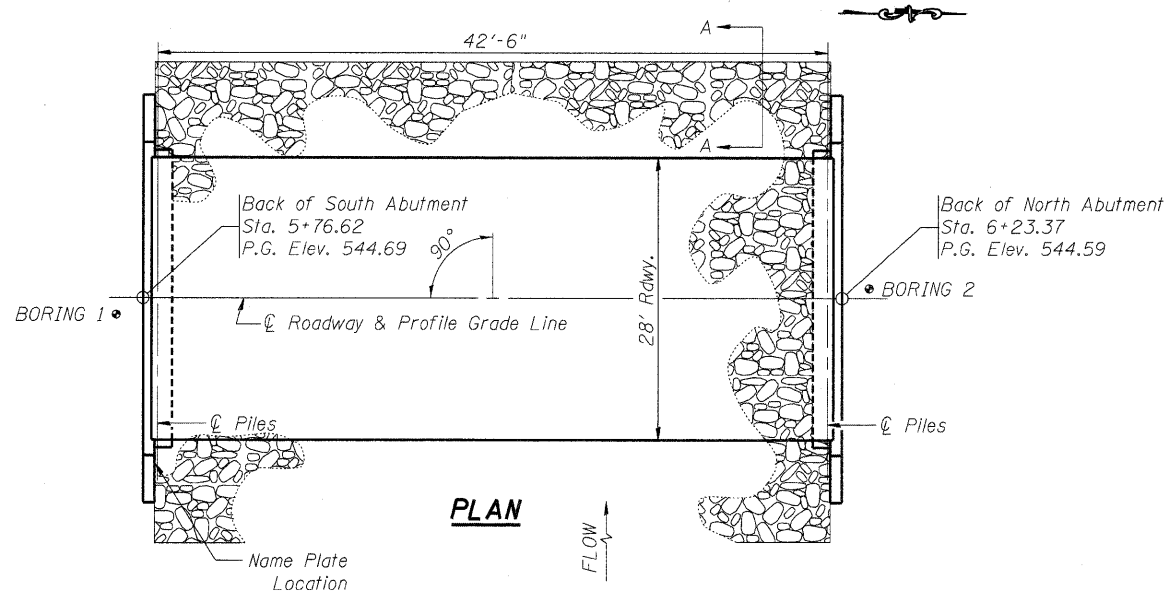
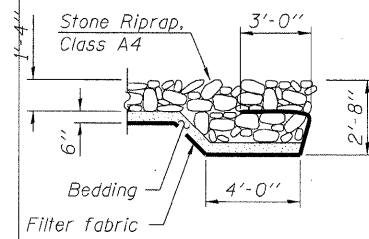
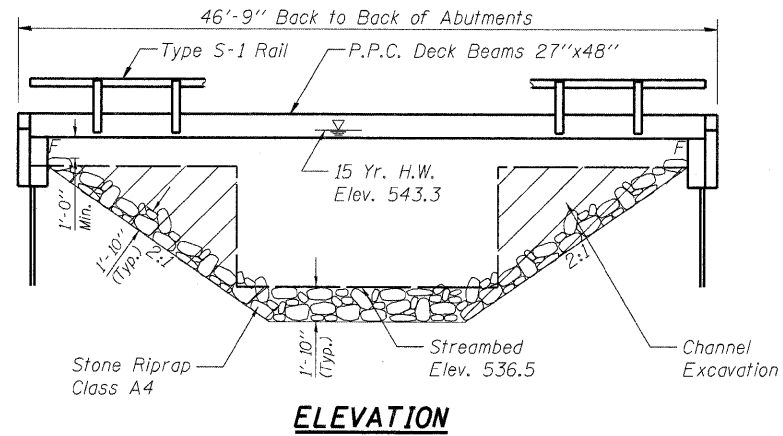


B.M. #1 : Sta. 2+65, 22' Left, RR Spike in Power Pole, Elev. 543.36  
 B.M. #2 : Sta. 11+41, 17' Right, RR Spike in Power Pole, Elev. 558.67

Existing Structure: Structure 015-3170 consists of a single span reinforced concrete deck on steel I-beams on closed concrete abutments. The bk. to bk. of abutments length is 22' and the out-to-out width is 20.4'. The existing structure shall be completely replaced. Road closure shall be used during construction.



**GENERAL NOTES**

1. The Contractor shall drive 1 test pile at each abutment, as specified, in a permanent location as directed by the Engineer before ordering the remaining piles.
2. Concrete sealer shall be applied to exterior face of each fascia beam.
3. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60.
4. Reinforcement bars designated (E) shall be epoxy coated.
5. Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

**TOTAL BILL OF MATERIAL**

| Item  | Unit    | Super | Sub. Abuts. | Total |
|---|---------|-------|-------------|-------|
| Removal of Existing Structures                      | Each    | -     | -           | 1     |
| Concrete Structures                                 | Cu. Yd. | -     | 22.4        | 22.4  |
| Precast Prestressed Concrete Deck Beams (27" Depth) | Sq. Ft. | 1253  | -           | 1253  |
| Steel Bridge Railing, Type S-1                      | Foot    | 92    | -           | 92    |
| Reinforcement Bars, Epoxy Coated                    | Pound   | -     | 3970        | 3970  |
| Furnishing Steel Piles HP 10x42                     | Foot    | -     | 160         | 160   |
| Driving Piles                                       | Foot    | -     | 160         | 160   |
| Test Pile Steel HP 10x42                            | Each    | -     | 2           | 2     |
| Name Plates   | Each    | 1     | -           | 1     |
| Structure Excavation                                | Cu. Yd. | -     | 120         | 120   |
| Stone Riprap Class A4                               | Sq. Yd. | -     | 300         | 300   |
| Channel Excavation                                  | Cu. Yd. | -     | 230         | 230   |
| Controlled Low-Strength Material                    | Cu. Yd. | -     | 36.3        | 36.3  |
| Concrete Encasement                                 | Cu. Yd. | -     | 3.5         | 3.5   |

**INDEX OF SHEETS**

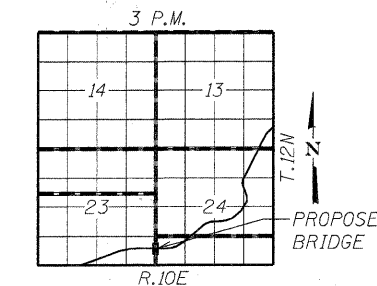
1. General Plan & Elevation
2. Superstructure
3. Superstructure Details
4. Steel Railing
5. Abutment Details
6. Pile Details
7. Boring Logs



*Daniel Feuerborn*  
 Daniel Feuerborn  
 License Expires 11-30-2012  
 Date 4/22/2012

I certify that to the best of 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 Standard Specifications for Highway Bridges.

**GENERAL PLAN & ELEVATION**  
**TOWNSHIP ROUTE 282 OVER CREEK**  
**SEC. 07-05136-00-BR**  
**COLES COUNTY**  
**STATION 6+00.00**  
**STRUCTURE NO. 015-3427**



**LOCATION SKETCH**

BUILT 2011 BY  
 COLES COUNTY  
 SEC. 07-05136-00-BR  
 PROJECT NO. BROS-029(293)  
 TR 282 STA. 6+00  
 STR. NO. 015-3427 LOADING HL-93

**LETTERING FOR NAME PLATE**

Locate Name Plate on the outside face of the Southeast Wingwall.

**WATERWAY INFORMATION**

Drainage Area = 3.39 SQ MI Low Grade Elev. = @ Sta. +

| Flood       | Freq. Yr. | Q C.F.S. | Opening Sq. Ft. |       | Nat. H.W.E. |       | Head - Ft. |       | Headwater El. |       |
|-------------|-----------|----------|-----------------|-------|-------------|-------|------------|-------|---------------|-------|
|             |           |          | Exist.          | Prop. | Exist.      | Prop. | Exist.     | Prop. | Exist.        | Prop. |
| Design      | 15        | 704      | 115             | 202   | 543.3       | 0.2   | 0.0        | 543.5 | 543.3         |       |
| Base        | 100       | 1163     | 115             | 202   | 544.0       | 1.0   | 0.5        | 545.0 | 544.5         |       |
| Overtopping |           |          |                 |       |             |       |            |       |               |       |
| Max. Calc.  |           |          |                 |       |             |       |            |       |               |       |

-0.20% Grade

|                            |                            |                            |
|----------------------------|----------------------------|----------------------------|
| STA 4+80.00<br>ELEV 544.88 | STA 6+00.00<br>ELEV 544.64 | STA 7+35.00<br>ELEV 544.37 |
|----------------------------|----------------------------|----------------------------|

**PROFILE GRADE**

**DESIGN STRESSES**

**FIELD UNITS**

$f'_c = 3,500$  psi  
 $F_y = 60,000$  psi (reinforcement)

**PRECAST PRESTRESSED UNITS**

$f'_c = 6,000$  psi  
 $f'_{ci} = 5,000$  psi  
 $f_{pu} = 270,000$  psi ( $1/2$ " low relax. strands)  
 $f_{bot} = 201,960$  psi ( $1/2$ " low relax. strands)

**DESIGN SPECIFICATIONS**

2007 AASHTO LRFD Bridge Design Specifications - 4th ed.

**LOADING HL-93**

Allow 50#/sq. ft. for future wearing surface.

**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 2  
 Design Spectral Acceleration at 1.0 sec. ( $S_{D1}$ ) = 0.181  
 Design Spectral Acceleration at 0.2 sec. ( $S_{D5}$ ) = 0.381  
 Site Soil Class = D

PRINTED DATE: 2/21/2012  
 FILE NAME: c:\p\projects\roads\co\_highway\dept\tr\_282\model\vr\tr282\sheet\05\_385\_015.dgn

|          |   |     |
|----------|---|-----|
| DESIGNED | - | DF  |
| CHECKED  | - |     |
| DRAWN    | - | ADG |
| CHECKED  | - |     |

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 753 WINDSOR ROAD  
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 ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184-003685

**TR 282**  
**COLES COUNTY**

SHEET NO. 1 OF 7 SHEETS

| TWP                          | SECTION        | COUNTY | TOTAL SHEETS | SHEET NO |
|------------------------------|----------------|--------|--------------|----------|
| 282                          | 07-05136-00-BR | COLES  | 13           | 05       |
| CONTRACT NO                  |                |        | -----        |          |
| ILLINOIS FEDERAL AID PROJECT |                |        |              |          |