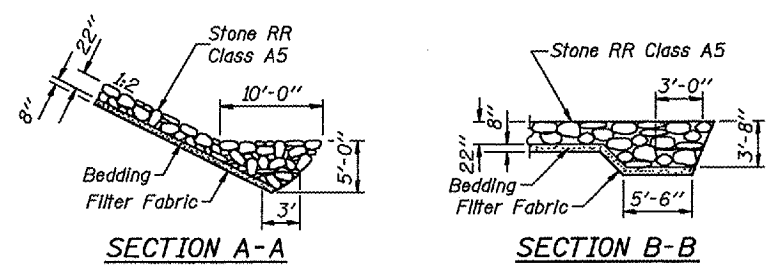
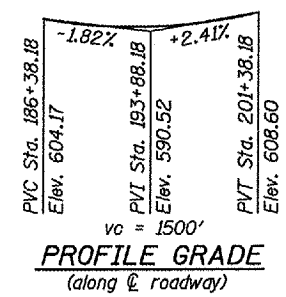
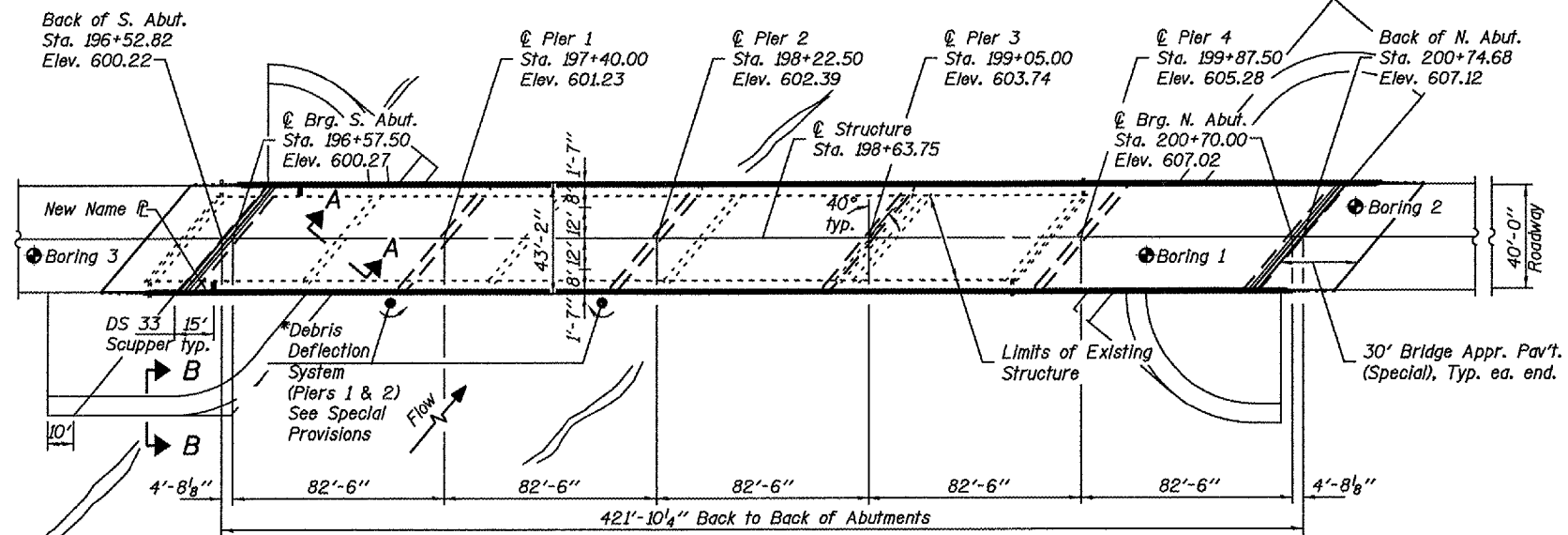
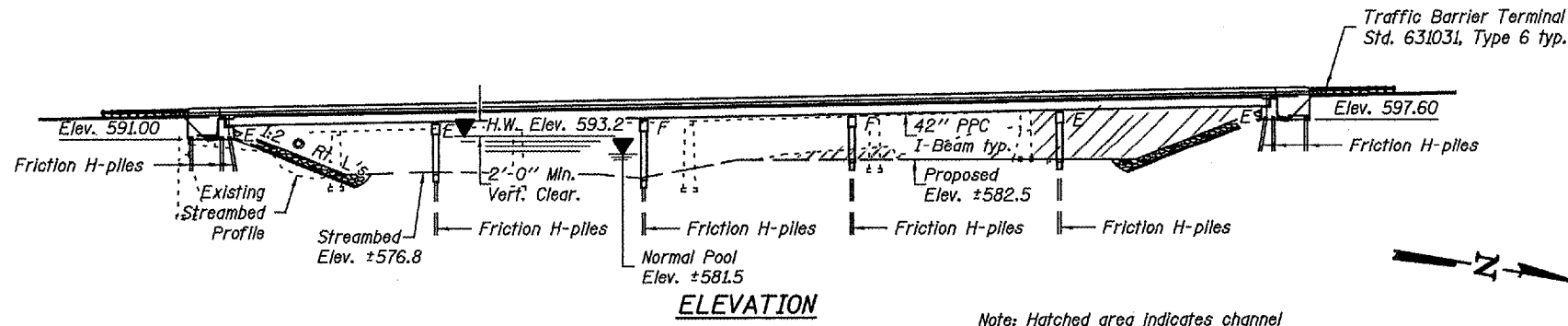


Bench Mark: 4401-11 Chiseled square located on the East corner of the existing North Abutment. Elev. 603.94.

Existing Structure: S.N. 092-0035, originally built in 1937 as S.B.I. Route 1, Section RX-21B. In 1972, the superstructure was replaced and the substructure widened as F.A. 1, Section RX-1 BR. The existing structure is a five simple span PPC deck beam bridge supported on spill-thru counterforted abutments and solid stem piers on spread footings. The back to back abutments measures 339'-0" and 33'-0" out to out of deck. The existing structure is to be removed and replaced. Traffic will be detoured.

No salvage

|                 |  |           |  |       |             |
|-----------------|--|-----------|--|-------|-------------|
| F.A.P. 332      |  | VERMILION |  | 14042 | SHEET NO. - |
| F.A.P. 332      |  | VERMILION |  | 14042 | - SHEETS    |
| Contract #90841 |  |           |  |       |             |



**WATERWAY INFORMATION**

Drainage Area = 282 mi.<sup>2</sup>    Exist. Low Grade Elev. 592.9 ft.    Sta. 194+00  
 Prop. Low Grade Elev. 598.3 ft.    Sta. 193+00

| Flood      | Freq. Yr. | Q C.F.S. | Opening Sq. Ft. |       | Nat. Head - Ft. |       | Headwater El. |             |
|------------|-----------|----------|-----------------|-------|-----------------|-------|---------------|-------------|
|            |           |          | Exist.          | Prop. | Exist.          | Prop. | Exist.        | Prop.       |
| OverTop    | 25        | 15000    | 2295            | -     | 592.5           | 0.3   | -             | 592.9       |
| Design     | 50        | 17730    | 2549            | 3270  | 593.8           | 0.4   | 0.2           | 594.2 593.4 |
| Base       | 100       | 19800    | 2686            | 3439  | 594.9           | 0.3   | 0.2           | 594.9 594.0 |
| Max. Calc. | 500       | 24710    | 2926            | 3783  | 595.0           | 0.4   | 0.4           | 596.6 595.4 |

**LOADING HS20-44**  
 Allow 50#/sq. ft. for future wearing surface.  
**DESIGN SPECIFICATIONS**  
 2002 AASHTO

**DESIGN STRESSES**  
**FIELD UNITS**  
 $f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (reinforcement)  
**PRECAST PRESTRESSED UNITS**  
 $f'_c = 6,000$  psi  
 $f'_d = 5,000$  psi  
 $f'_s = 270,000$  psi ( $\frac{1}{2}$ "  $\phi$  low lax. strands)  
 $f'_{sl} = 201,960$  psi ( $\frac{1}{2}$ "  $\phi$  low lax. strands)

**SEISMIC DATA**  
 Seismic Performance Category (SPC) = A  
 Bedrock Acceleration Coefficient (A) = 0.047g  
 Site Coefficient (S) = 1.2

**INDEX OF SHEETS**

- S-1 GENERAL PLAN AND ELEVATION
- S-2 GENERAL NOTES
- S-3 TOP OF DECK AND POURING SEQUENCE
- S-4 TO S-6 TOP OF DECK ELEVATIONS
- S-7 DECK PLAN AND CROSS SECTION
- S-8 DECK PLAN
- S-9 PARAPET DETAILS
- S-10 DIAPHRAGM DETAILS
- S-11 MODIFIED CONTINUOUS SEAL TYPE NEOPRENE EXPANSION JOINTS
- S-12 FRAMING PLAN
- S-13 TO S-15 PPC I-BEAMS
- S-16 TO S-17 ELASTOMERIC BEARINGS
- S-18 TO S-21 ABUTMENTS
- S-22 TO S-25 PIERS
- S-26 DS-33 SCUPPER DETAILS
- S-27 BAR SPLICER ASSEMBLY DETAILS
- S-28 ANCHOR BOLT DETAILS
- S-29 TO S-31 SOIL BORINGS

**NOTES**

1. Up to  $\frac{1}{4}$  inch will be ground off the bridge slab and the bridge approach pavement.
2. The Profile Grade shows the final elevations after grinding.

**TOTAL BILL OF MATERIAL**

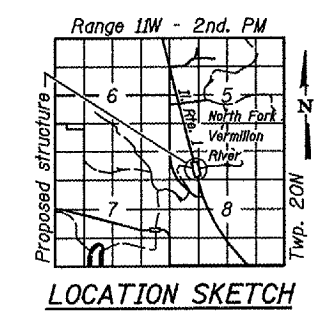
| ITEM  | UNIT    | SUPER   | SUB    | TOTAL   |
|---|---------|---------|--------|---------|
| Porous Granular Embankment (Special)                              | Cu. Yd. |         | 292    | 292     |
| Stone Riprap, Class A5  | Sq. Yd. |         | 1910   | 1910    |
| Filter Fabric   | Sq. Yd. |         | 1910   | 1910    |
| Removal of Existing Structures                                    | Each    |         | 1      | 1       |
| Structure Excavation  | Cu. Yd. |         | 678    | 678     |
| Driving Steel Piles   | Foot    |         | 7,606  | 7,606   |
| Concrete Structures   | Cu. Yd. |         | 573.8  | 573.8   |
| Concrete Superstructure   | Cu. Yd. | 609.8   |        | 609.8   |
| Protective Coat   | Sq. Yd. | 2205    |        | 2205    |
| Neoprene Expansion Joint, 4"                                      | Foot    | 108     |        | 108     |
| Elastomeric Bearing Assembly, Type I                              | Each    | 32      |        | 32      |
| Elastomeric Bearing Assembly, Type II                             | Each    | 16      |        | 16      |
| Furnishing and Erecting Precast Prestressed Concrete I Beams, 42" | Foot    | 3,295   |        | 3,295   |
| Reinforcing Bars, Epoxy Coated                                    | Pound   | 131,170 | 36,720 | 167,890 |
| Furnishing Steel Piles HP10x42                                    | Foot    |         | 2,574  | 2,574   |
| Furnishing Steel Piles HP12x53                                    | Foot    |         | 5,032  | 5,032   |
| Test Pile Steel HP10x42   | Each    |         | 2      | 2       |
| Test Pile Steel HP12x53   | Each    |         | 4      | 4       |
| Name Plates   | Each    | 1       |        | 1       |
| Drainage Scuppers, DS-33  | Each    | 2       |        | 2       |
| Bar Splicers  | Each    | 104     |        | 104     |
| Bridge Seat Sealer  | Sq. Ft. |         | 342    | 342     |
| Diamond Grinding (Bridge Section)                                 | Sq. Yd. | 1976    |        | 1976    |
| Underwater Structure Excavation Protection Location 1             | Each    |         | 1      | 1       |
| Underwater Structure Excavation Protection Location 2             | Each    |         | 1      | 1       |
| Underwater Structure Excavation Protection Location 3             | Each    |         | 1      | 1       |
| Underwater Structure Excavation Protection Location 4             | Each    |         | 1      | 1       |
| Metal Shoes   | Each    |         | 104    | 104     |
| Pipe Underdrains for Structures                                   | Foot    |         | 105    | 105     |
| Geocomposite Wall Drain   | Sq. Yd. |         | 128    | 128     |
| Debris Deflection System, Complete                                | L. Sum  |         |        | 1       |

STATION 198+63.75  
 BUILT BY  
 STATE OF ILLINOIS  
 F.A.P. RT. 332 SEC. RX-1-BR-1  
 LOADING HS20  
 STR. NO. 092-0205  
**NAME PLATE**  
 See Std. 515001

**APPROVED**  
 For Structural Adequacy Only  
*Ralph E. Anderson*  
 Engineer of Bridges & Structures



*Sean Margens*  
 Structural Engineer  
 Clark Dietz, Inc.  
 DATE: 9/7/2006  
 License Expires 11-30-2006



**GENERAL PLAN AND ELEVATION**

U.S. ROUTE 136/IL. ROUTE 1 OVER  
 NORTH FORK VERMILION RIVER  
 F.A.P. ROUTE 332 SEC. RX-1-BR-1  
 VERMILION COUNTY  
 STATION 198+63.75  
 STRUCTURE NO. 092-0205

CHICAGO, ILLINOIS  
 EVANSVILLE, INDIANA  
 INDIANAPOLIS, INDIANA  
 KENOSHA, WISCONSIN  
 SPRING GREEN, WISCONSIN

**REVISIONS**

| NAME | DATE |
|------|------|
|      |      |
|      |      |
|      |      |

DATE: 9/7/2006

**S-1**

10 Year Velocity through Existing Bridge = 6.1 fps 10 Year Velocity through Prop. bridge = 4.5 fps  
 \*Note: Existing natural WSE with existing downstream construction. Proposed natural WSE with modified downstream construction.