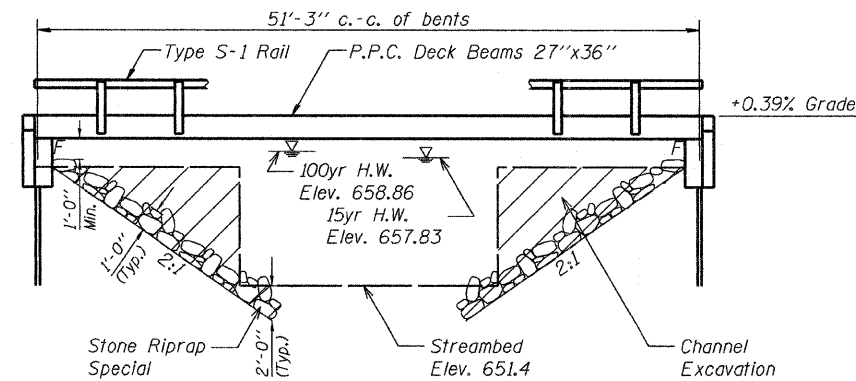


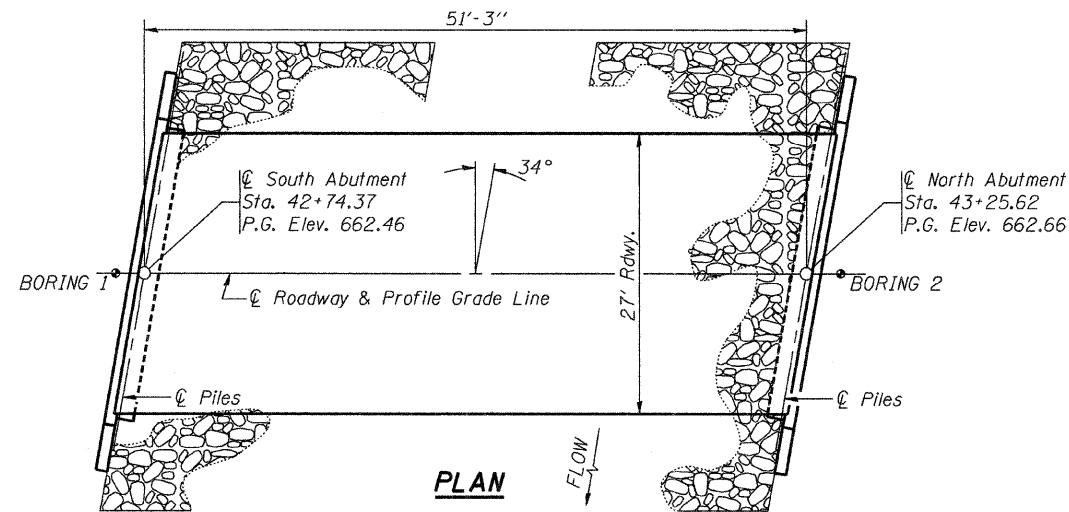
B.M. - Sta. 41+38.16, 23.85' Right, railroad spike in power pole, elev. 661.26.

Existing Structure - Structure 092-3125 consists of single span reinforced concrete deck on steel I-beams on closed concrete abutments. The bk. to bk. of abutments length is 30' and the out-to-out width is 18'. The existing structure shall be completely replaced. Road closure shall be used during construction.

Salvage - Any material deemed salvageable by the Engineer shall be stockpiled on the R.O.W. and shall become the property of Vermilion County. The Contractor shall dispose of all remaining material.



**ELEVATION**



**PLAN**

STA 41+50 ELEV 661.98	STA 43+00 ELEV 662.56	STA 44+50 ELEV 663.14
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**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  
 $F'_s = 270,000$  psi ( $\frac{1}{2}$ " low relax. strands)  
 $F_{si} = 201,960$  psi ( $\frac{1}{2}$ " 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) = 1  
Bedrock Acceleration Coefficient (A) = 0.075g  
Site Coefficient (S) = 1.0

**PILE DATA (2-ABUTS.)**

Type STEEL HP 12x53  
Nominal Required Bearing 258 kips  
Factored Resistance Available 129 kips  
Estimated Pile Length 31 Feet North Abut. and 36 Feet South Abut.  
Number of Production Piles 12  
Number of Test Piles 2 (1 In Each Abutment)

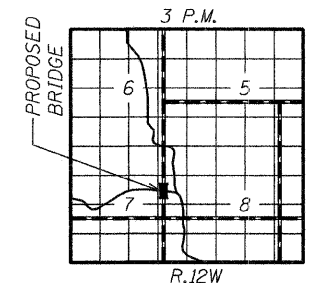
SWANK CREEK  
BUILT 200\_ BY  
VERMILION COUNTY  
SEC. 01-03131-00-BR  
PROJECT NO. BROS-183(092)  
TR 164 STA. 43+00  
STR. NO. 092-3494 LOADING HL-93

**LETTERING FOR NAME PLATE**

Locate Name Plate at Corner of Bridge (See Std. 515001)

**WATERWAY INFORMATION**

Drainage Area = 5.5 SQ MI		Low Grade Elev. = 495.9 @ Sta. 5+00							
Flood	Freq. Yr.	0 C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater EL.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	15	489	103	134	657.83	0.3	0.1	658.13	657.93
Base	100	761	126	171	658.86	0.5	0.1	659.36	658.96
Overtopping									
Max. Calc.	500								



**LOCATION SKETCH**

**GENERAL NOTES**

- The Contractor shall drive 1 test pile, as specified, in a permanent location as directed by the Engineer before ordering the remaining piles.
- See Bridge Plan Sheet 7 for boring logs.
- A Corrosion inhibitor, as covered in the Special Provisions, shall be used in the concrete for precast prestressed concrete deck beams.
- Concrete sealer shall be applied to exterior face of each fascia beam. Reinforcement bars shall conform to the requirements of AASHTO M31 or M322 Grade 60.
- The Steel H-piles shall be according to AASHTO M270 grade 50.
- The test pile(s) shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.
- Reinforcement bars shall conform to the requirements of ASTM A 706 Fr 60 (IL Modified). See Special Provisions.
- Reinforcement bars designated (E) shall be epoxy coated.
- 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.		Total
			Piers	Abuts.	
Removal of Existing Structures	Each	-	-	-	1
Concrete Structures	Cu. Yd.	-	-	23.9	23.9
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	1410	-	-	1410
Steel Bridge Railing, Type S-1	Foot	105	-	-	105
Reinforcement Bars, Epoxy Coated	Pound	-	-	2970	2970
Furnishing Steel Piles HP 12x53	Foot	-	-	402	402
Driving Piles	Foot	-	402	-	402
Test Piles Steel HP 12x53	Each	-	-	2	2
Name Plates	Each	1	-	-	1
Concrete Cut-off Wall	Cu. Yd.	-	-	7.8	7.8
Structure Excavation	Cu. Yd.	-	-	117.0	117.0
Stone Riprap Class A4 (Special)	Ton	-	-	222.0	222.0
Channel Excavation	Cu. Yd.	-	-	68.0	68.0
Controlled Low-Strength Material	Cu. Yd.	-	-	44.8	44.8

**INDEX OF SHEETS**

- General Plan & Elevation
- Superstructure
- Superstructure Details
- Steel Railing
- Abutment Details
- Pile Details
- Boring Logs



Daniel Feuerborn  
License Expires 11-30-2008

11.24.2008  
Date

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  
TR 164 OVER SWANK CREEK**

DATE: 09-29-2008 DRAWN BY: ADG CHECKED BY: DF

SHEET NO. 1 OF 7 SHEETS	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		01-03131-00-BR	VERMILION	13	4
		SN 092-3494	CONTRACT NO. 91365		
FED. ROAD DIST. NO. -		ILLINOIS FED. AID PROJECT			