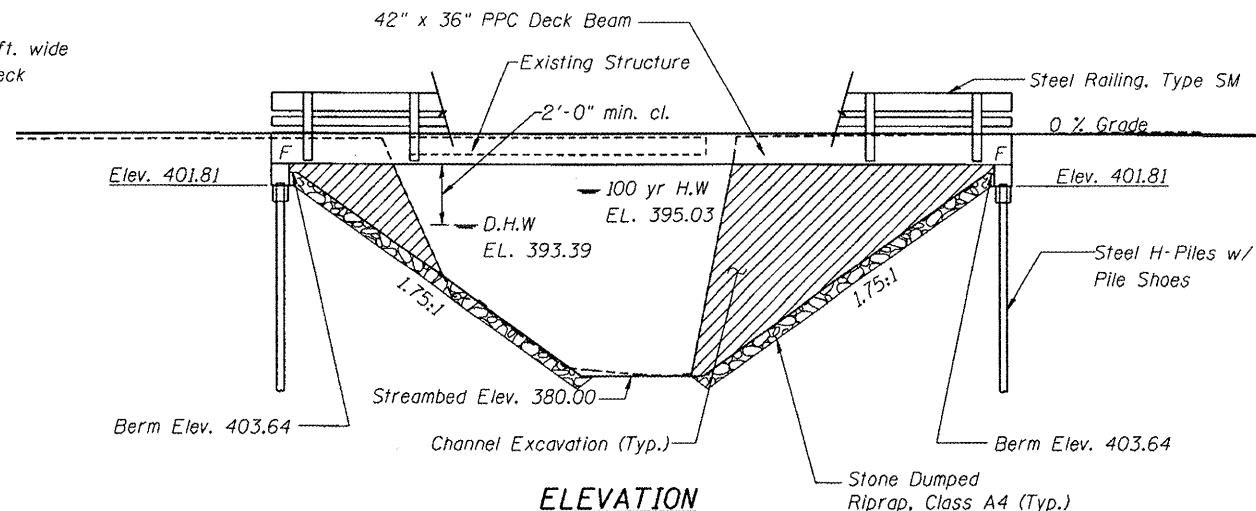


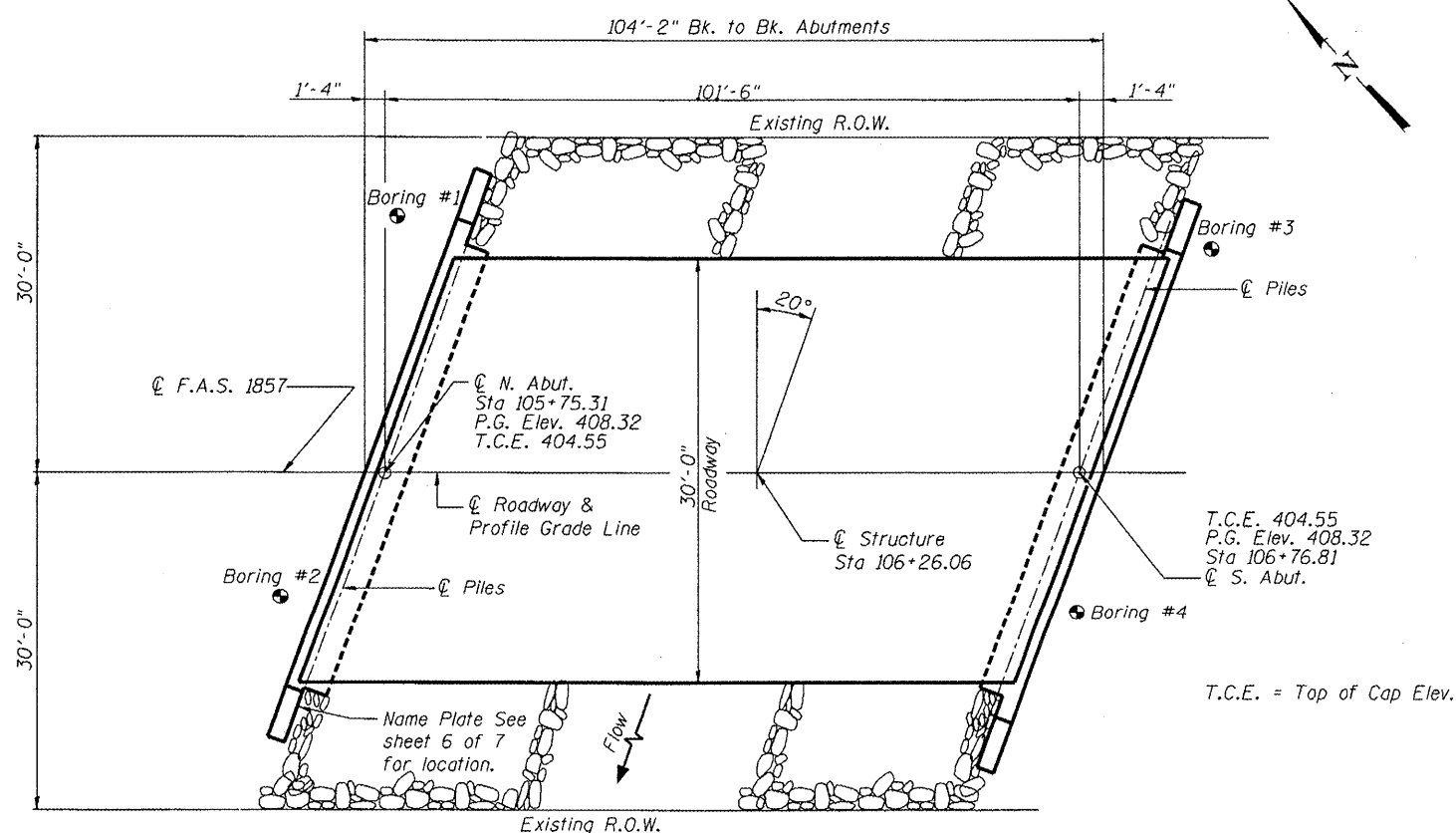
BM#1 - NGSC-286 Benchmark located near a Power Pole at Sta. 107+40 Rt. Elev. = 406.81

Existing Structure:  
Single Span, 50 ft. long, 25 ft. wide  
Steel I-Beam and Concrete Deck  
Structure on Timber Piling.

Salvage - None



**ELEVATION**



**PLAN**

**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 2  
Design Spectral Acceleration at 1.0 sec. ( $S_{D1}$ ) = 0.28g  
Design Spectral Acceleration at 0.2 sec. ( $S_{D5}$ ) = 0.65g  
Soil Site Class = D

**DESIGN SPECIFICATIONS**

2007 AASHTO LRFD Bridge Design Specifications with 2008 interims.

**LOADING HL-93**

Allow 25#/sq.ft. for future wearing surface

**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 ( $\frac{1}{2}$ "  $\phi$  low lax. strands)  
 $f'_{si}$  = 201,960 psi ( $\frac{1}{2}$ "  $\phi$  low lax. strands)

PRAIRIE DU ROCHER CREEK  
BUILT 20 BY  
RANDOLPH COUNTY  
SECTION 99-00073-00-BR  
FAS 1857 STA 106+26.06  
STR. NO 079-3072 LOADING HL93

**LETTERING FOR NAME PLATE**  
See STD. 515001

**GENERAL NOTES**

- The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at substructures specified or approved by the Engineer before ordering the remainder of piles.
- See Special Provisions for boring data.
- Reinforcement bars shall conform to the requirements of ASTM A706 Grade 60. See Special Provisions.
- Reinforcement bars designated (E) shall be epoxy coated.
- The top surface of the beams shall be finished according to the IDOT Manual for the Fabrication of Precast Prestressed Concrete Products.
- Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure.
- Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.

- INDEX OF SHEETS**
- General Plan & Elevation
  - Superstructure
  - Deck Beam
  - Deck Beam Details
  - Steel Railing
  - Pile Bent Abutments
  - Pile Details

**WATERWAY INFORMATION**

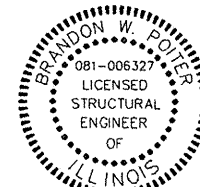
Drainage Area = 7.65 SQ MI		Low Grade Elev = 407.20			Sta. 104+00				
Flood	Freq. Yr.	Q C.F.S.	Opening Sq.Ft.		Nat. H.W.E.	Head - Ft.		Headwater Elev.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	20	3828	403	515	393.39	0.87	0.11	394.26	393.50
Base	100	5912	484	621	395.03	1.76	0.36	396.79	395.39
Overtopping									
Max. Calc	500								

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			852
Stone Dumped Riprap, Class A4	Ton			461
Hot-Mix Asphalt Surface Course, Mix "C", N70	Ton	46		46
Removal of Existing Structures	L. Sum			1
Concrete Structures	Cu. Yd.		27.8	27.8
Concrete Encasement	Cu. Yd.		4.2	4.2
Steel Railing, Type SM	Foot	205		205
Reinforcement Bars	Pound		3140	3140
Furnishing Steel Piles HP 12x53	Foot		450	450
Driving Steel Piles	Foot		450	450
Test Piles Steel HP 12x53	Each		2	2
Pile Shoes	Each		12	12
Name Plates	Each			1
Waterproofing Membrane System	Sq. Yd.	341		341
Portland Cement Mortar	Foot	922		922
Fairing Course	Foot			
Precast Prestressed Concrete Deck Beams (42" Depth)	Sq. Ft.	3073		3073
<b>Structure Excavation (Cu. Yd.)</b>			<b>83</b>	<b>83</b>

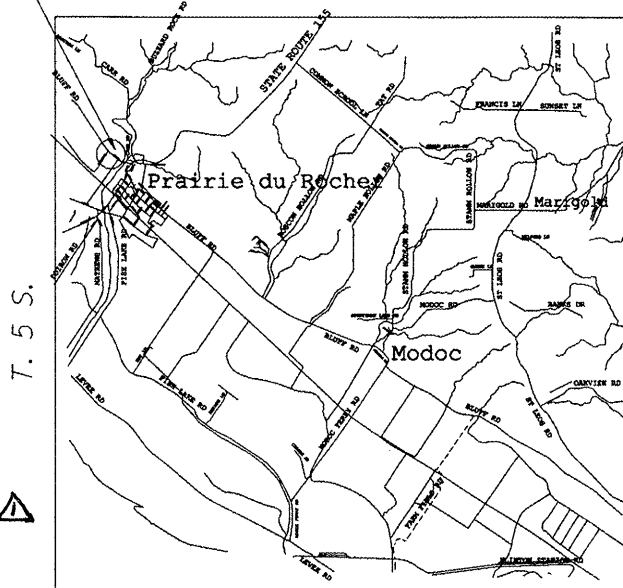
Revised 2-19-09

I certify that to the best of my knowledge, information and belief, this bridge 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 Bridge Design Specifications".



Brandon W. Porter  
DATE: 11/5/08  
EXP: 11/30/08


**PROJECT LOCATION**  
3RD P.M.



**LOCATION SKETCH**

**GENERAL PLAN & ELEVATION**  
BLUFF ROAD OVER  
PRAIRIE DU ROCHER CRK.  
STATION 106+26.06  
SN 079-3072

DESIGNED ASW
CHECKED BWP
DRAWN ASW
CHECKED BWP

<b>THOUVENOT, WADE &amp; MOERCHEN, INC.</b>		CORPORATE OFFICE 4940 Old Collinsville Road Swansea, Illinois 62226 Tel: 618.624.4488 Fax: 618.624.6688			
SWANSEA • WATERLOO • EDWARDSVILLE • CARBONDALE • ST. CHARLES		ENGINEERS • SURVEYORS • PLANNERS			
SHEET NO. 1	F.A.S. RTE. 1857	SECTION 99-00073-00-BR	COUNTY RANDOLPH	TOTAL SHEETS 11	SHEET NO. 5
7 SHEETS		CONTRACT NO. 97363			
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			