

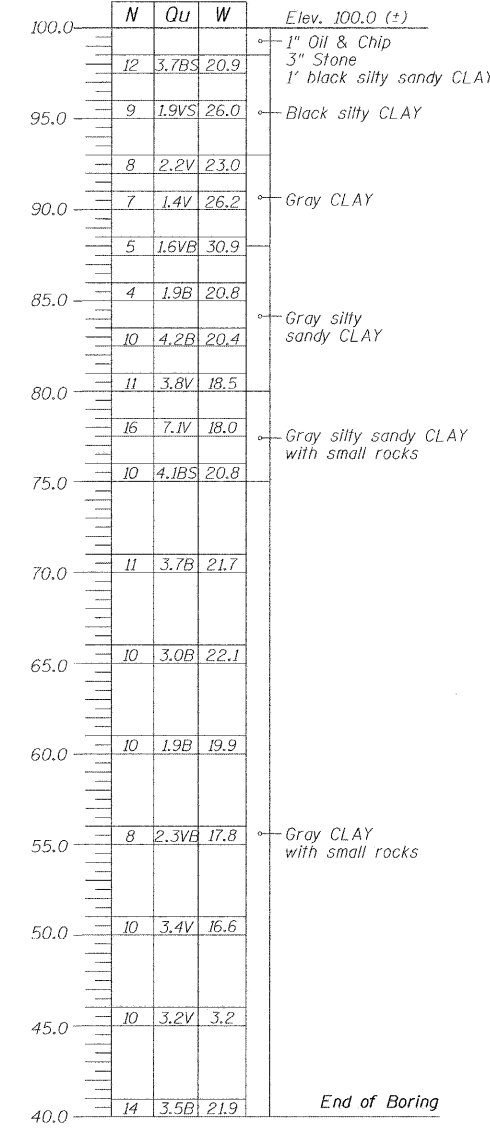
BORING DATA

N - Standard Penetration Test - Blows per foot to drive 2" O.D. split spoon sampler 12" with 140 lb. hammer falling 30".
 Qu - Unconfined Compressive Strength - Tons/Sq. Ft.
 W - Water Content - Percentage of oven dry weight - %

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 16	*	Vermilion	12	5
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	
* 10-02146-00-BR				

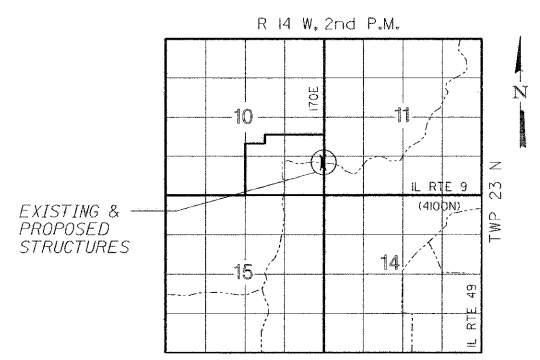
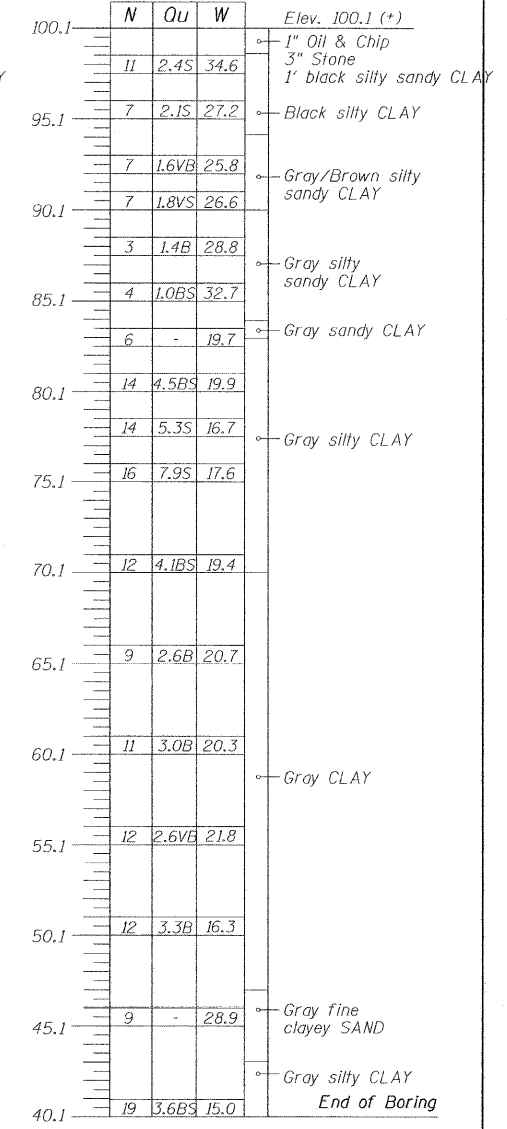
BORING B-1

Location: STA 9+58.5 (+), Elev. 100.0 (+)



BORING B-2

Location: STA 10+38 (+), Elev. 100.1 (+)

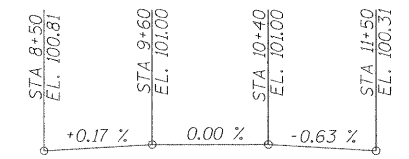


LOCATION MAP

Structure No. 092-3450
 Sec. 10-02146-00-BR
 Built 20____
 TR 16 / 170E
 Vermilion County
 Loading HL-93

NAME PLATE

See Standard 515001



PROFILE GRADE

DESIGN SPECIFICATIONS

AASHTO (2010) and applicable Interims

DESIGN LOADING

HL-93
 50 P.S.F Future Wearing Surface

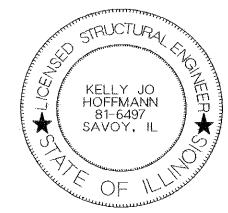
DESIGN STRESSES

$f'_c = 3,500$ psi (Cast in Place Concrete)
 $f'_c = 5,000$ psi (P.P.C. Units)
 $f'_{ci} = 4,000$ psi (P.P.C. Units)
 $f_y = 60,000$ psi (Reinforcement)
 $f'_s = 270,000$ psi ($\frac{1}{2}$ " ϕ Strands)
 $f'_{si} = 201,960$ psi ($\frac{1}{2}$ " ϕ Strands)

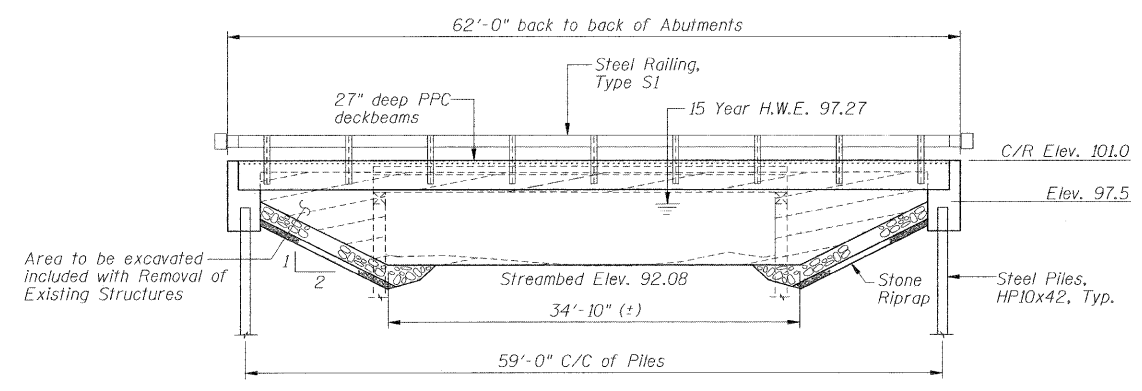
WATERWAY DATA

Drainage Area	3.18	Sq. Mi.
Existing Opening	145	Sq. Ft.
Required Opening (15 Yr.)	129	Sq. Ft.
Proposed Opening (15 Yr.)	234	Sq. Ft.
Design Discharge (15 Yr.)	391	C.F.S.
Computed Discharge (100 Yr.)	606	C.F.S.
15 Yr. Head	0.01	Ft.
100 Yr. Head	0.05	Ft.

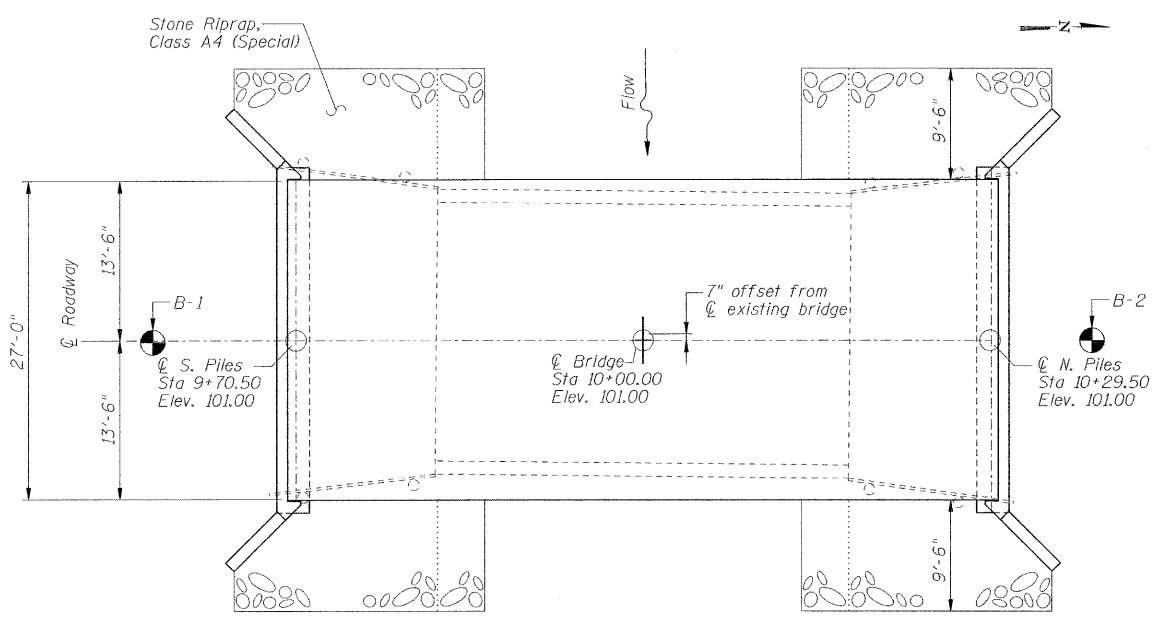
I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with the requirements of the current "AASHTO LRFD Bridge Design Specifications."



KELLY JO HOFFMANN
 Illinois Licensed Structural Engineer Number 6497
 License Expires 11/30/12



ELEVATION



PLAN

GENERAL NOTES

- The Contractor shall drive test piles to 110% of the Nominal Required Bearing specified in production locations at the substructures specified or approved by the Engineer before ordering the remainder of the piles.
- Boring Data is shown only as a guide to bidders in estimating soil conditions which may be encountered during construction.
- Class SI or MS Concrete shall be used in the abutments.
- Reinforcement bars shall conform to the requirements of ASTM A706, Grade 60 (IL Modified). See Special Provisions.
- Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Structures	Each	1	-	1
Structure Excavation	Cu. Yd.	-	150	150
Concrete Structures	Cu. Yd.	-	32.6	32.6
Precast Prestressed Concrete Deck Beams (27" depth)	Sq. Ft.	1625	-	1625
Reinforcement Bars	Pound	-	3590	3590
Steel Railing, Type S1	Foot	124	-	124
Furnishing Steel Piles HP10x42	Foot	-	500	500
Driving Piles	Foot	-	500	500
Test Pile Steel HP10x42	Each	-	2	2
Pile Shoes	Each	-	12	12
Name Plates	Each	-	1	1
Controlled Low-Strength Material	Cu. Yd.	-	67.5	67.5
Terminal Marker - Direct Applied	Each	4	-	4
Stone Riprap, Class A4 (Special)	Sq. Yd.	-	190	190
Concrete Cut-Off Wall	Cu. Yd.	-	5.4	5.4

GENERAL PLAN AND ELEVATION

TR16 (170E) OVER BRANCH OF PIGEON CREEK
 SEC 10-02146-00-BR
 VERMILION COUNTY

DSGN	K.J. Hoffmann				
DR	N.J. Liggett				
CHK	J.R. Wolf				
APVD	J.A. Fraenhoffer	NO.	DATE	REVISION	BY



FRAUENHOFFER & ASSOCIATES
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 CHAMPAIGN, IL 61822
 PHONE (217) 351-6268
 FAX (217) 356-1902

SHEET 5

DWG NO. 10050GPE.dgn
 DATE DEC 2011
 PROJ NO. 11050