

Existing Structure: Existing Structure is a one span wrought iron through truss with a timber plank deck on stone masonry abutments. There is no skew.

**BORING DATA**

CONTRACT # 87374

ROUTE NO.	SECTION	TAQ	POST	SHEET NO.
CH 48	*	KANKAKEE	56	29

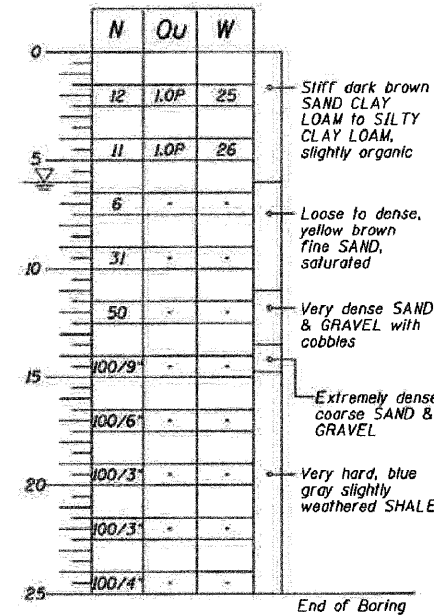
\*85-00221-00-BR

**BORING B-1**

Location: STA 15+12, 20' RT  
Elev. 561 (+)

**Water Levels**

At Completion: 6' down

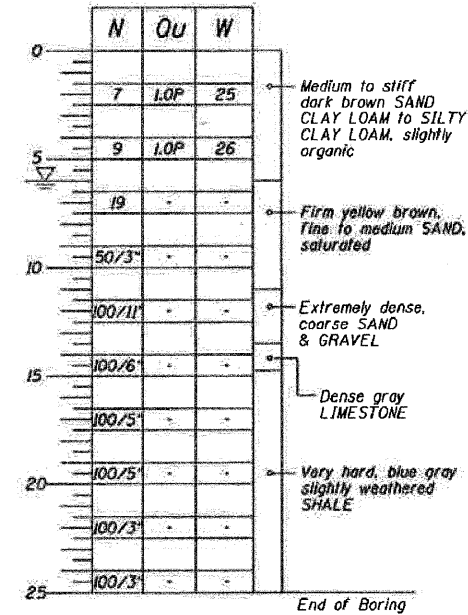


**BORING B-2**

Location: STA 15+00, 20' RT  
Elev. 560.5 (+)

**Water Levels**

At Completion: 6' down

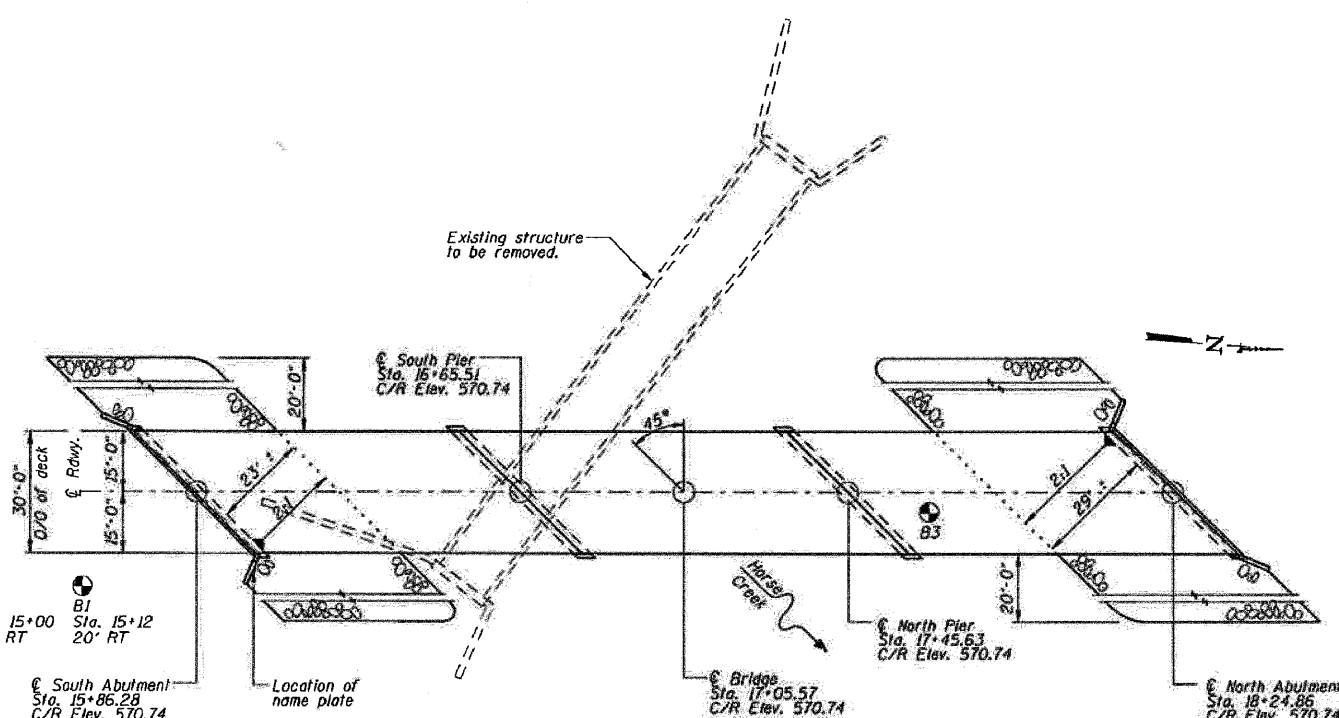
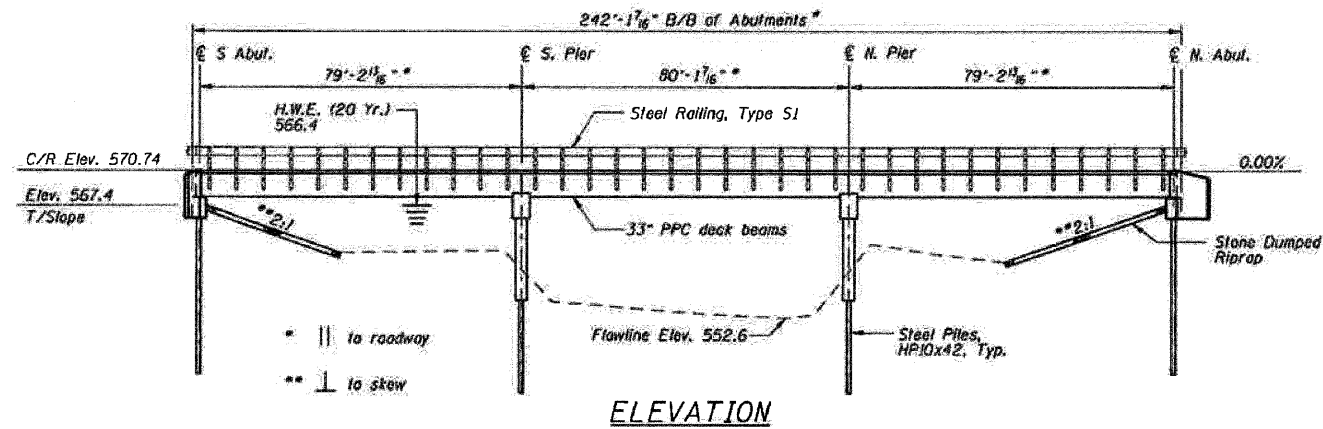
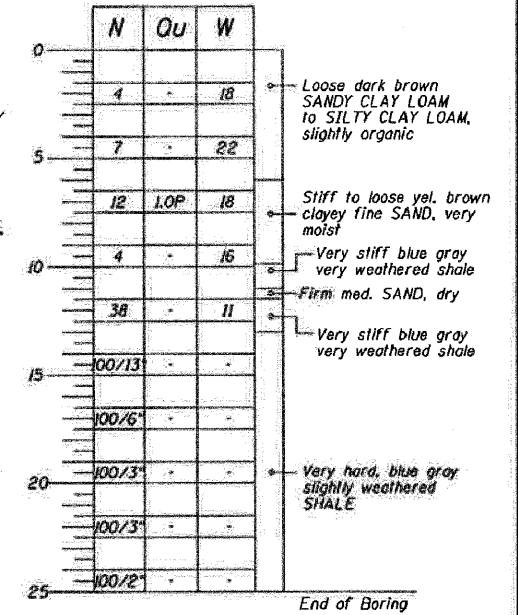


**BORING B-3**

Location: STA 17+60, 5' LT  
Elev. 560.6 (+)

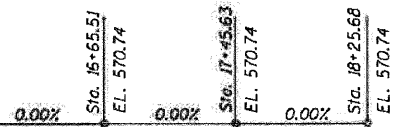
**Water Levels**

At Completion: Dry



STRUCTURE NO. 046-3441  
SEC. 85-00221-00-BR BUILT 200  
COUNTY HIGHWAY 48  
KANKAKEE COUNTY  
LOADING HL-93

**NAME PLATE**  
See Standard 515001



**PROFILE GRADE**

**WATERWAY DATA**

Drainage Area	108.8	Sq. Mi.
Existing Opening	1012	Sq. Ft.
Required Opening (20 Yr.)	1267	Sq. Ft.
Proposed Opening (20 Yr.)	1300	Sq. Ft.
Design Discharge (20 Yr.)	5391	C.F.S.
Computed Discharge (100 Yr.)	7503	C.F.S.
20 Yr. Head	0.00	Ft.
100 Yr. Head	0.15	Ft.

**DESIGN SPECIFICATIONS**

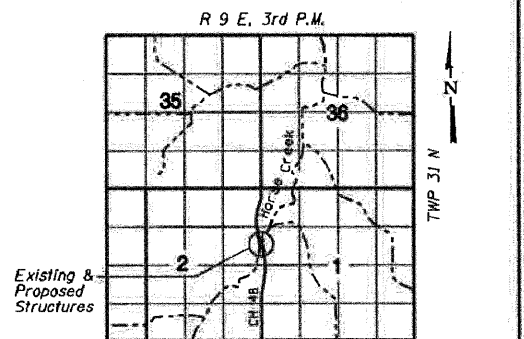
AASHTO LRFD 4th Edition

**DESIGN LOADING**

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

**DESIGN STRESSES**

$f'_c = 3,500$  psi (Cast in Place Concrete)  
 $f'_c = 6,000$  psi (P.P.C. Units)  
 $f'_{ci} = 5,000$  psi (P.P.C. Units)  
 $f_y = 60,000$  psi (Reinforcement)  
 $f_s = 270,000$  psi ( $1/2 \phi$  Strands)  
 $f_{si} = 201,960$  psi ( $1/2 \phi$  Strands)



**LOCATION SKETCH**

**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.
- The cost of preventing water from flowing into excavation and the cost of water and groundwater removal shall be incidental to the cost of Structural Excavation.



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 Standard Specifications for Highway Bridges."

*Kelly Jo Hoffmann*  
KELLY JO HOFFMANN  
Illinois Licensed Structural Engineer Number 6497  
License Expires 11/30/10

NO.	DATE	REVISION	BY	APVD
1			K.J. Hoffmann	
2			K.J. Hoffmann	
3			J.R. Wolf	
4			J.A. Frauenthoffer	

**FRAUENTHOFFER**  
Frauenthoffer and Associates, P.C. Consulting Engineers  
3002 Crossing Court Champaign, IL 61822 217-351-6268

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Stone Dumped Riprap, Class A4	Sq. Yds.		714	714
Removal of Existing Structures	Each			1
Structure Excavation	Cu. Yds.		52	52
Concrete Structures	Cu. Yds.		119.5	119.5
Precast Prestressed Concrete Deck Beams (33" Deep)	Sq. Ft.	7200		7200
Reinforcement Bars	Pound		8530	8530
Steel Railing, Type SI	Foot	481		481
Furnishing Steel Piles HPI0x42	Foot		720	720
Driving Piles	Foot		720	720
Test Pile Steel HPI0x42	Each		4	4
Pile Shoes	Each		42	42
Name Plates	Each		1	1
Waterproofing Membrane System	Sq. Yds.	800		800
Concrete Cul-off Wall	Cu. Yds.		8.5	8.5

**GENERAL PLAN AND ELEVATION**  
CH 48 OVER HORSE CREEK  
SECTION 85-00221-00-BR  
KANKAKEE COUNTY

SHEET 29  
DWG NO. gpe.dgn  
DATE JAN 2009  
PROJ NO. 85019