

**EXISTING STRUCTURE: S.N. 099-3051**  
 A Single Span (42'-6") Concrete Girder Structure At Sta. 50+00, Skewed 25° Left Ahead To Be Removed, No Salvage.

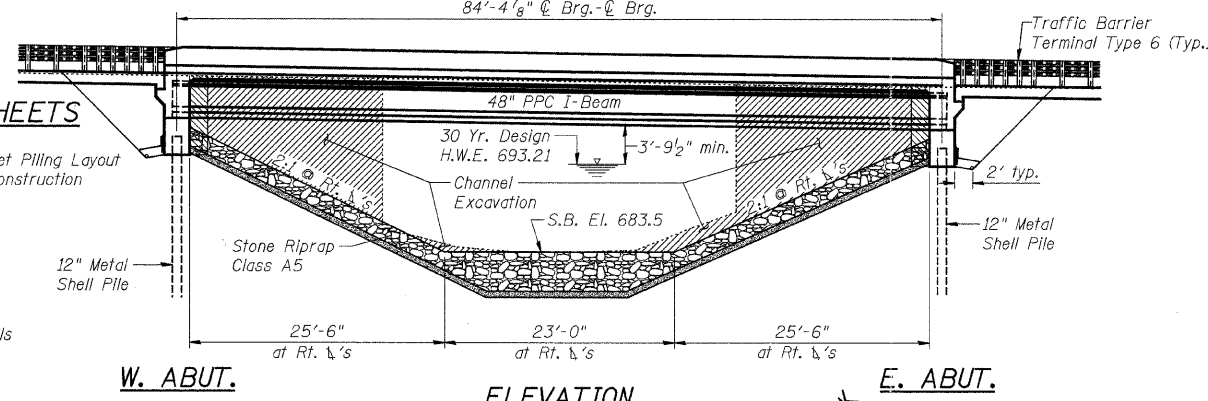
**Bench Mark:** Railroad Spike In 2nd Power Pole W. of Structure, 43.1' Lt. Sta. 47+54, El. 704.98

**Bench Mark:** Chis. "□" on the Southwest Wingwall 3.0' Rt. Sta. 49+73, El. 703.07

**Bench Mark:** Railroad Spike in 3rd. Power Pole E. of Structure, 43.9' Lt. Sta. 54+47, El. 697.38

**INDEX OF STRUCTURAL SHEETS**

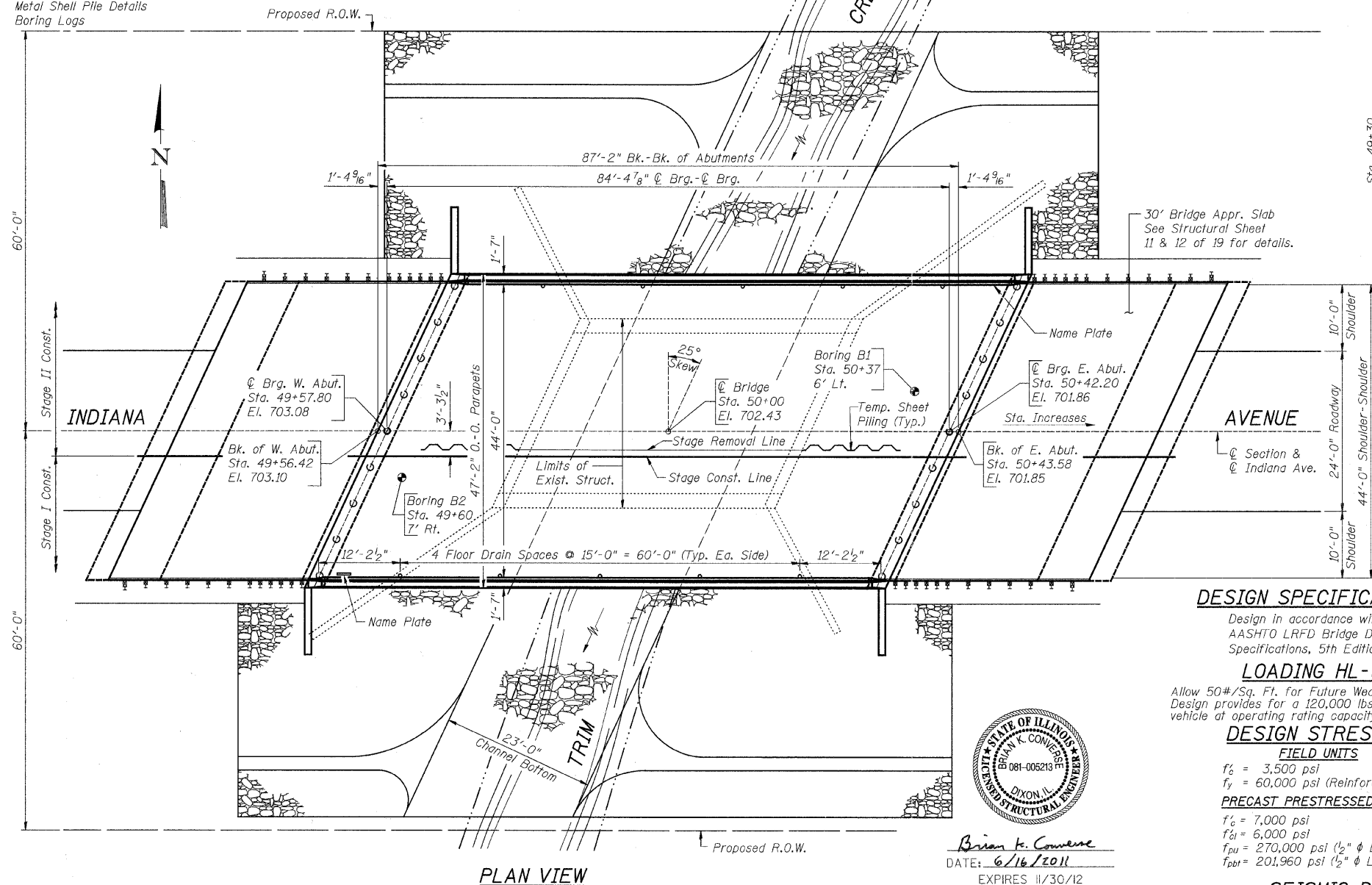
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**WATERWAY INFORMATION**

DRAINAGE AREA ..... 13.6 SQ. MI.  
 DESIGN DISCHARGE (30 YR.)..... 770 C.F.S.  
 EXISTING OPENING ..... 320 SQ. FT.  
 REQUIRED OPENING ..... 412 SQ. FT.  
 PROPOSED OPENING ..... 412 SQ. FT.  
 CREATED HEAD (30 YR.) ..... < 0.3'  
 100 YR. DISCHARGE..... 950 C.F.S.  
 CREATED HEAD (100 YR.) ..... < 0.5'  
 HIGH WATER ELEV. (100 YR.)..... 694.08'

ITEM	UNIT	SUB.	SUPER.	TOTAL
Channel Excavation	Cu. Yd.	1,751		1,751
Stone Riprap, Class A5	Sq. Yd.	1,349		1,349
Filler Fabric	Sq. Yd.	1,349		1,349
*** Removal Of Existing Structures	Each			1
Structure Excavation	Cu. Yd.	208		208
Floor Drains	Each		10	10
Concrete Structures	Cu. Yd.	80.8		80.8
Concrete Superstructure	Cu. Yd.		309.9	309.9
** Bridge Deck Grooving	Sq. Yd.		693	693
* Protective Coat	Sq. Yd.		797	797
Furnishing & Erecting Precast, Prestressed Concrete I-Beams, 48"	Foot		602	602
Reinforcement Bars (Epoxy Coated)	Pound	6,770	64,030	70,800
Bar Splicers	Each	20	585	605
Furnishing Metal Shell Piles 12"x0.250"	Foot	952		952
Driving Piles	Foot	952		952
Test Pile Metal Shells	Each	2		2
Name Plates	Each		1	1
Geocomposite Wall Drain	Sq. Yd.	126		126
Concrete Headwalls for Pipe Drains	Each	4		4
*** Porous Granular Embankment Special	Cu. Yd.	235		235
*** Temporary Sheet Piling	Sq. Ft.	1,464		1,464
Pipe Underdrains for Structures, 4"	Foot	188		188



**PROFILE GRADE**  
 (Along @ Roadway)

P.I. Sta. = 50+80  
 Elev. = 700.90  
 L = 300'

**NAME PLATE LETTERING**

REFER TO STD. 515001-03

**GENERAL NOTES**

- See Structural Sheet 19 for Boring Data.
- Reinforcement Bars shall be according to the requirements of AASHTO M 31 (M 31M) or M 322 (M 322M), Grade 60 (400) for deformed bars.
- Channel to be transitioned to fit Proposed Structure inside Right of Way. Cost Included in the Unit Price per Cu. Yd. for Channel Excavation. See Roadway Plans.
- The Contractor shall drive One Steel Test Pile in a permanent location at each Abutment, as directed by the Engineer, before ordering the Remainder of Piles.
- Layout of Slope Protection System may be varied in the field to suit ground conditions as directed by the Engineer.
- Temporary Concrete Barriers shall be provided for Stage Construction. See Standard 704001. Pay Item for Temporary Concrete Barrier is Included in Roadway Plans.
- Slip-Forming of Parapets is not allowed.
- \* Includes Top & Inside Face of Parapet & Deck.
- \*\* Includes 30' Bridge Approach Pavements.
- \*\*\* See Special Provisions.

**DESIGN SPECIFICATIONS**

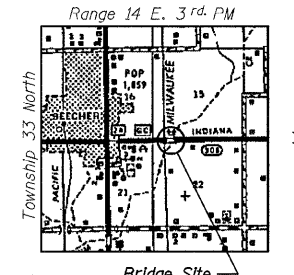
Design in accordance with 2010 AASHTO LRFD Bridge Design Specifications, 5th Edition.  
**LOADING HL-93**  
 Allow 50#/Sq. Ft. for Future Wearing Surface. Design provides for a 120,000 lbs. permit vehicle at operating rating capacity.

**DESIGN STRESSES**

**FIELD UNITS**  
 $f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (Reinforcement)  
**PRECAST PRESTRESSED UNITS**  
 $f'_c = 7,000$  psi  
 $f'_a = 6,000$  psi  
 $f_{pu} = 270,000$  psi ( $\frac{1}{2}$ "  $\phi$  Low Lax Strands)  
 $f_{psi} = 201,960$  psi ( $\frac{1}{2}$ "  $\phi$  Low Lax Strands)

**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 1  
 Design Spectral Acceleration at 1.0 sec. ( $S_{D1}$ ) = 0.150  
 Design Spectral Acceleration of 0.2 sec. ( $S_{D5}$ ) = 0.096  
 soil Site Class = D



**LOCATION SKETCH**

**DESIGN SCOUR ELEVATION TABLE**

Design Scour Elevation (ft.)	W. Abut.	E. Abut.
	696.25	695.39



Brian K. Converse  
 DATE: 6/16/2011  
 EXPIRES 11/30/12

"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 requirements of the current 'AASHTO LRFD Bridge Design Specifications'."

FILE = S:\Struct\1033004-Indiana Avenue\Design\Structural Drawings\1033004GPE.dgn

REVISION	DATE	BY	REMARKS

**ILLINOIS DEPARTMENT OF TRANSPORTATION**  
**BRIDGE REPLACEMENT**  
**INDIANA AVENUE (CH 24) OVER TRIM CREEK**

**WILLETT HOFMANN & ASSOCIATES INC.**  
 ENGINEERING ARCHITECTURE LAND SURVEYING  
 809 EAST 2ND STREET, DIXON, IL 61021-0367  
 T: 815-264-3381 DESIGN FIRM: #184-000918

**WILL COUNTY**

**GENERAL PLAN AND ELEVATION**  
**STRUCTURE NO. 099-3378**  
**STRUCTURAL SHEET NO. 1 OF 19 SHEETS**

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
01-00042-07-BR	WILL	58	14
STA. 47+00	STA. 53+50		
WHA #: 1033004	DATE: 6/9/2011		

CONTRACT NO. 63617