

**EXISTING STRUCTURE:** S.N. 006-3243

Originally built in 1978 as TR 271A, Section 75-00107-00-BR. The existing structure is a three span (34'-9 1/2':35'-2':34'-9 1/2'') precast concrete deck bridge with open abutments & pile supported pier caps. 107'-3" back to back of abutments & 26'-3" out to out of deck. Structure to be removed & replaced. Road closed to traffic.

No salvage.

**BENCH MARK:** Chiseled "□" on the southwest wingwall of existing structure, El. = 580.41

**DESIGN SCOUR ELEVATION TABLE**

Design Scour Elevation (ft.)	W. Abut. 559.65	E. Abut. 559.65
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WEST BUREAU CREEK  
BUILT 2010 BY  
BUREAU COUNTY  
SECTION 05-00195-00-BR  
T.R. 271A STATION 60+00  
STR. NO. 006-4376 LOADING HS20

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUB	SUPER	TOTAL
Channel Excavation	Cu. Yd.	1,515	---	1,515
* Porous Granular Embankment	Ton	676	---	676
* Stone Riprap, Class A5 (Special)	Ton	360	---	360
* Removal of Existing Structures No. 2	Each	---	---	1
Structure Excavation	Cu. Yd.	1,693	---	1,693
Concrete Structures	Cu. Yd.	362.5	14.8	377.3
Concrete Superstructure	Cu. Yd.	---	121.2	121.2
Bridge Deck Grooving	Sq. Yd.	---	418	418
Protective Coat	Sq. Yd.	---	493	493
* Floor Drains (Special)	Each	---	12	12
Stud Shear Connectors	Each	960	---	4,674
* Cleaning and Painting Steel Bridge	L. Sum	---	1	1
* Containment and Disposal of Lead Based Cleaning Residues	L. Sum	---	1	1
Reinforcement Bars	Pound	12,590	---	12,590
Reinforcement Bars, Epoxy Coated	Pound	39,980	38,070	78,050
Furnishing Steel Piles HP 14x89	Foot	4,428	---	4,428
Driving Piles	Foot	4,428	---	4,428
Test Pile Steel HP 14x89	Each	2	---	2
Name Plates	Each	---	1	1
Preformed Joint Strip Seal	Foot	---	24	24
Anchor Bolts, 1/4"	Each	---	12	12
Geocomposite Wall Drain	Sq. Yd.	249	---	249
* Steel Bearing Assembly	Each	---	4	4
* Underwater Structure Excavation Protection - Location 1	Each	1	---	1
* Underwater Structure Excavation Protection - Location 2	Each	1	---	1
* Fixed Hinge Pin Assembly	Each	---	4	4

\* See Special Provisions.  
\*\* Includes Deck, Approach Pavement, and Top & Inside Face of Curb only.

**NAME PLATE LETTERING**

Refer To Std. 515001-02

**INDEX OF SHEETS**

- 1C General Plan and Elevation
- 2C Superstructure Details
- 3C Top of Approach Slab Elevations - West
- 4C Top of Approach Slab Elevations - East
- 5C Shear Stud Layout & Force Diagram
- 6C Bolsters & Floor Drains
- 7C Strip Seal Details
- 8C Bridge Approach Slab Details
- 9C East & West Abutment Details
- 10C East & West Abutment Details
- 11C Pile Details
- 12C-13C Boring Logs

**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 1  
Design Spectral Acceleration at 1.0 sec. (S<sub>D1</sub>) = 0.045 g  
Design Spectral Acceleration at 0.2 sec. (S<sub>D5</sub>) = 0.11 g  
Soil Site Class = B

**GENERAL NOTES:**

Total weight of Steel Bearing Assemblies - 1,990 lbs.  
Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60.  
The structural steel plates of the bearing assembly shall conform to the requirements of ASTM A 706 Gr 50. See Special Provisions.  
Reinforcement bars designated (E) shall be epoxy coated.

Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete. As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding 1/8 inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

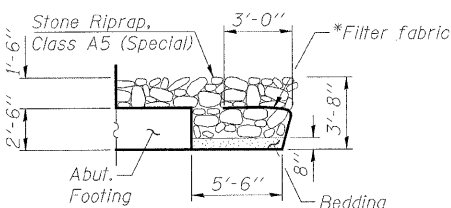
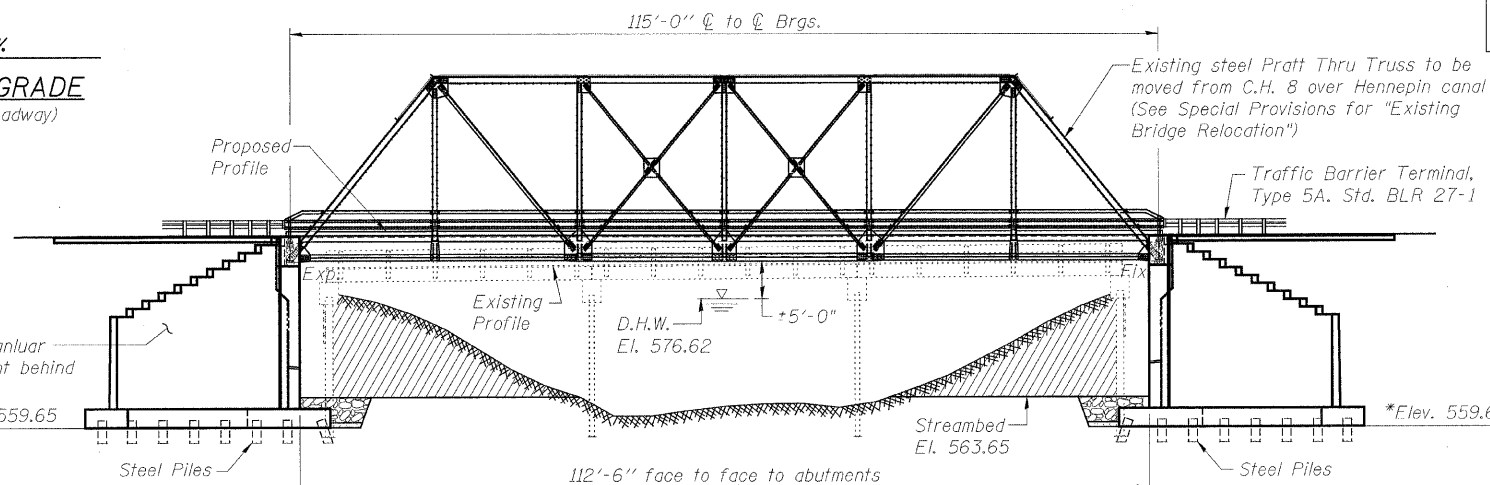
The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.

Cleaning and painting of the existing structural steel shall be as specified in the special provision for "Cleaning and Painting Existing Steel Structures". All existing steel shall be cleaned per Near White Blast Cleaning - SSPC-SP10. All existing steel shall be painted according to the requirements of Paint System 1 - OZ/E/U. The color of the final coat for all steel surfaces shall be Reddish Brown, Munsell No. 2.5YR 3/4.

Contractor shall field weld end plate at four corners of historic truss railing of same size & thickness as plate located on Traffic Barrier Terminal Type 5A. Cost incidental to "Traffic Barrier Terminal Type 5A".

+0.00%  
**PROFILE GRADE**  
(Along Centerline Roadway)



**SECTION A-A**

\*Cost included with Stone Riprap, Class A5 (Special)

B104  
Sta. 59+00  
Lt. 30'  
End of Deck at W. Abut.  
Sta. 59+41.25  
El. 585.00

B103  
Sta. 59+00  
Lt. 5'

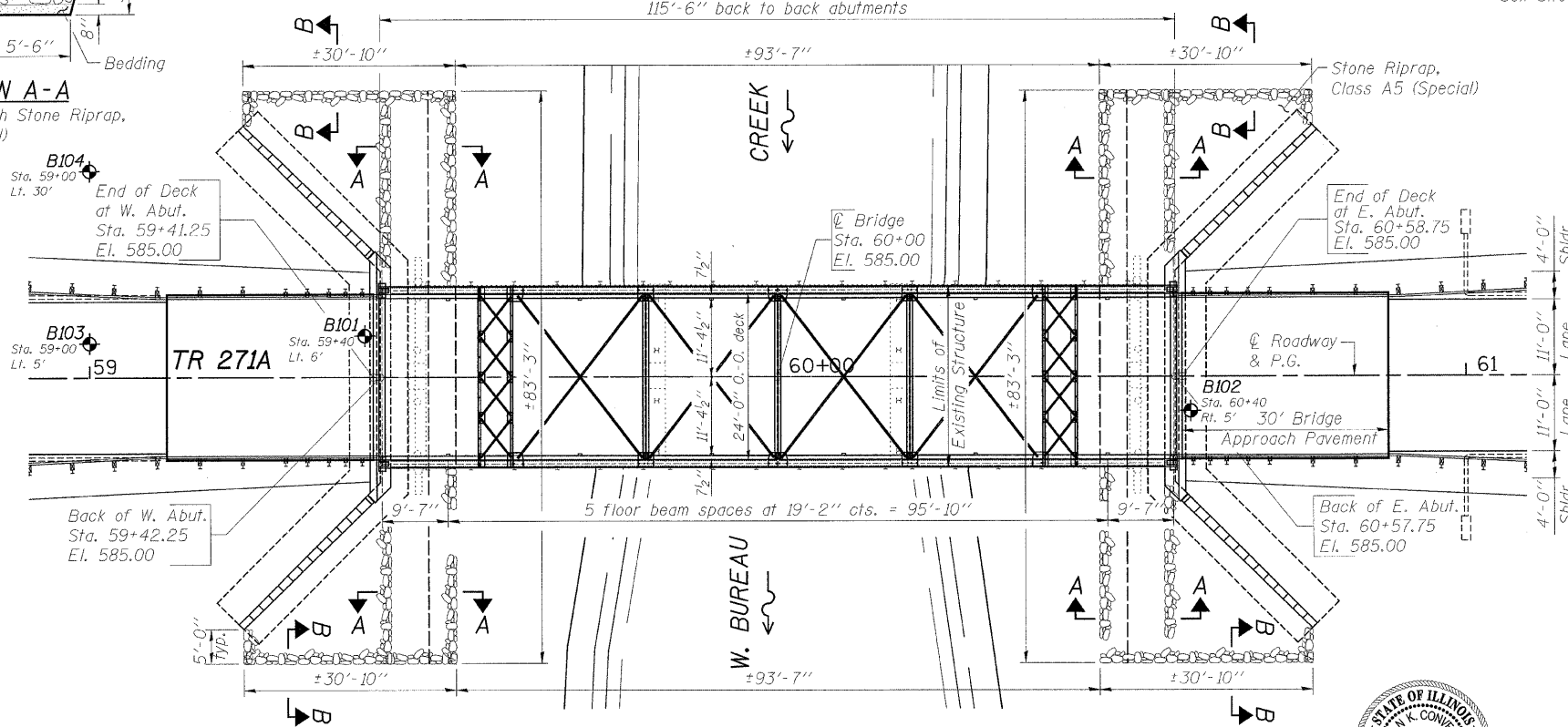
Back of W. Abut.  
Sta. 59+42.25  
El. 585.00

**W. ABUT**

**ELEVATION**

**NOTE:**  
Hatched area indicates Channel Excavation.

**E. ABUT**



**PLAN**

**DESIGN SPECIFICATIONS**

2002 Standard Specifications for Highway Bridges - 17th Edition

**LOADING HS20-44**

No future wearing surface allowed.

**DESIGN STRESSES**

**FIELD UNITS**

f'c = 3,500 psi  
fy = 60,000 psi (Reinforcement)  
fy = 50,000 psi (M270 Grade 50W)

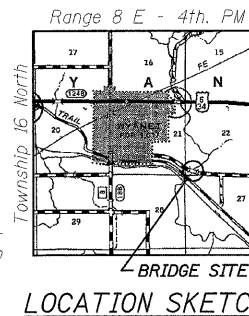
**WATERWAY INFORMATION**

Drainage Area = 87.2 sq. mi.		Low Grade El. 578.32 @ Sta. 54+75	
Flood Yr.	0	Opening Sq. Ft.	Nat. Head - Ft.
Design	20	8,200	957
Base	100	12,575	1,145
Overtopping		1,437	1,644
		576.62	2.56
		1.87	579.18
		4.45	582.91
		3.56	582.02

"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 Complies With Requirements Of The Current 'AASHTO Standard Specifications For Highway Bridges'."



Brian K. Converse  
DATE: 4/30/2010  
EXPIRES 11/30/10



**BRIDGE SITE LOCATION SKETCH**

**GENERAL PLAN AND ELEVATION  
T.R. 271A OVER WEST BUREAU CREEK  
SECTION 05-00195-00-BR  
BUREAU COUNTY  
STA. 60+00  
S.N. 006-4376**

WHA JOB NUMBER	1066D05	<b>WILLET, HOFMANN &amp; ASSOCIATES, INC.</b> CONSULTING ENGINEERS Land Surveying - Transportation - Structural Environmental - Architecture 809 East Second Street Dixon, Illinois 61021 Phone 815.284.3381 Fax 815.284.3385 Design Firm #184-000918 www.willett-hofmann.com	Designed By: M. A. Small Date: 2/10
			Checked By: B. K. Converse Date: 2/10
STRUCTURAL SHEET NO. 1C OF 13C SHEETS	F.A.S. RTE. 188 SECTION 05-00195-00-BR COUNTY BUREAU TOTAL SHEETS 127 114	CONTRACT NO. 87380	Drawn By: F.D. Lachat Date: 2/10