

**EXISTING STRUCTURE:** S.N. 006-4139  
Originally constructed in 1953 at Sta. 20+00 as a two span (2@38'-0") steel beam bridge. The structure is supported on timber piles with timber backing, 79'-6" back to back of abutments and 26'-0" out to out of deck. The existing structure is to be removed and replaced.

No Salvage.

Road will be closed to traffic during construction.

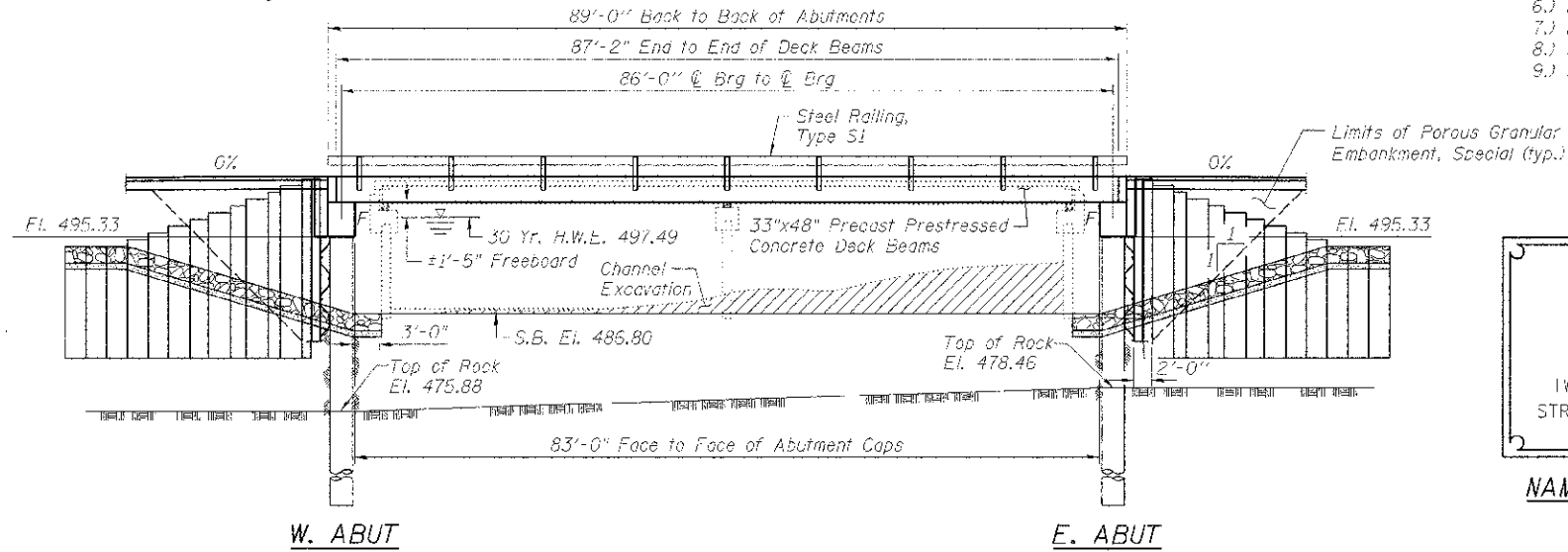
**BENCH MARK:** Chis. "□" on the NE wingwall of the exist. bridge, El. 502.55

**INDEX OF SHEETS**

- 1.) General Plan & Elevation
- 2.) 33" x 48" PPC Deck Deck
- 3.) 33" x 48" PPC Deck Beam Details
- 4.) West Abutment Details
- 5.) West Abutment Sheet Pile Layout
- 6.) East Abutment Details
- 7.) East Abutment Sheet Pile Layout
- 8.) Steel Railing, Type S1 Details
- 9.) Soil Boring Logs

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPFR	SUB	TOTAL
Channel Excavation	Cu. Yd.	---	371	371
Removal of Existing Structures	Each	---	---	1
Concrete Structures	Cu. Yd.	---	45.4	45.4
Precast Prestressed Concrete Deck Beams (33" Depth)	Sq. Ft.	2,789	---	2,789
Furnishing and Erecting Structural Steel	Pound	---	5,340	5,340
Reinforcement Bars	Pound	---	22,650	22,650
Steel Railing, Type S1	Foot	178	---	178
Name Plates	Each	---	1	1
Permanent Casing	Foot	---	128	128
Drilled Shaft in Soil	Cu. Yd.	---	10.5	10.5
Drilled Shaft in Rock	Cu. Yd.	---	27.2	27.2
Porous Granular Embankment, Special	---	---	1,292	1,292
Stone Riprap, Class A5 (Special)	Ton	---	78	78
Permanent Steel Sheet Piling	Sq. Ft.	---	3,090	3,090



SPRING CREEK  
BUILT 2013 BY  
BUREAU COUNTY  
SECTION 09-1013-00-BR  
TWP. RTE. 398 STATION 20+00  
STR. NO. 006-4143 LOADING HL-93

**NAME PLATE LETTERING**  
Refer To Std. 51500i

**GENERAL NOTES**

Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure.

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

Backfill shall be placed behind the abutment after the superstructure has been set and dowels placed and cured. See Article 502.10 of the Standard Specifications.

The Organic Zinc Rich Primer / Epoxy / Urethane Paint System shall be used for painting of new structural steel except where otherwise noted. The entire system shall be shop applied, mask off connection surfaces, field installed fasteners and damaged areas shall be touched up in the field. The color of the final finish coat for all steel surfaces shall be Reddish Brown, Munsell No. 2.5YR 3/4.

H.S. bolts shall be mechanically galvanized & shall be ASTM A325 Type 1.

**LOADING HL-93**

Allow 50#/#sq. ft. for future wearing surface.

**DESIGN SPECIFICATIONS**

2012 AASHTO LRFD Bridge Design Specifications

**DESIGN STRESSES**

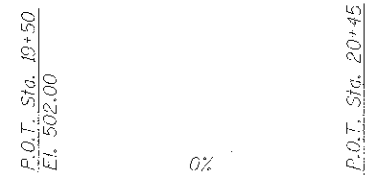
**FIELD UNITS**

- f'c = 3,500 psi
- f'c = 4,000 psi (Drilled Shafts)
- fy = 60,000 psi (Reinforcement)
- PRECAST PRESTRESSED UNITS**
- f'c = 6,000 psi
- f'ci = 5,000 psi
- fpu = 270,000 psi (1/2" Low Lax Strands)
- fprt = 201,960 psi (1/2" Low Lax Strands)

**SEISMIC DATA**

- Seismic Performance Zone (SPZ) = 1
- Design Spectral Acceleration at 1.0 sec. (S<sub>01</sub>) = 0.069
- Design Spectral Acceleration at 0.2 sec. (S<sub>05</sub>) = 0.121
- Soil Site Class = C

**PROFILE GRADE**  
(Along Center Roadway)

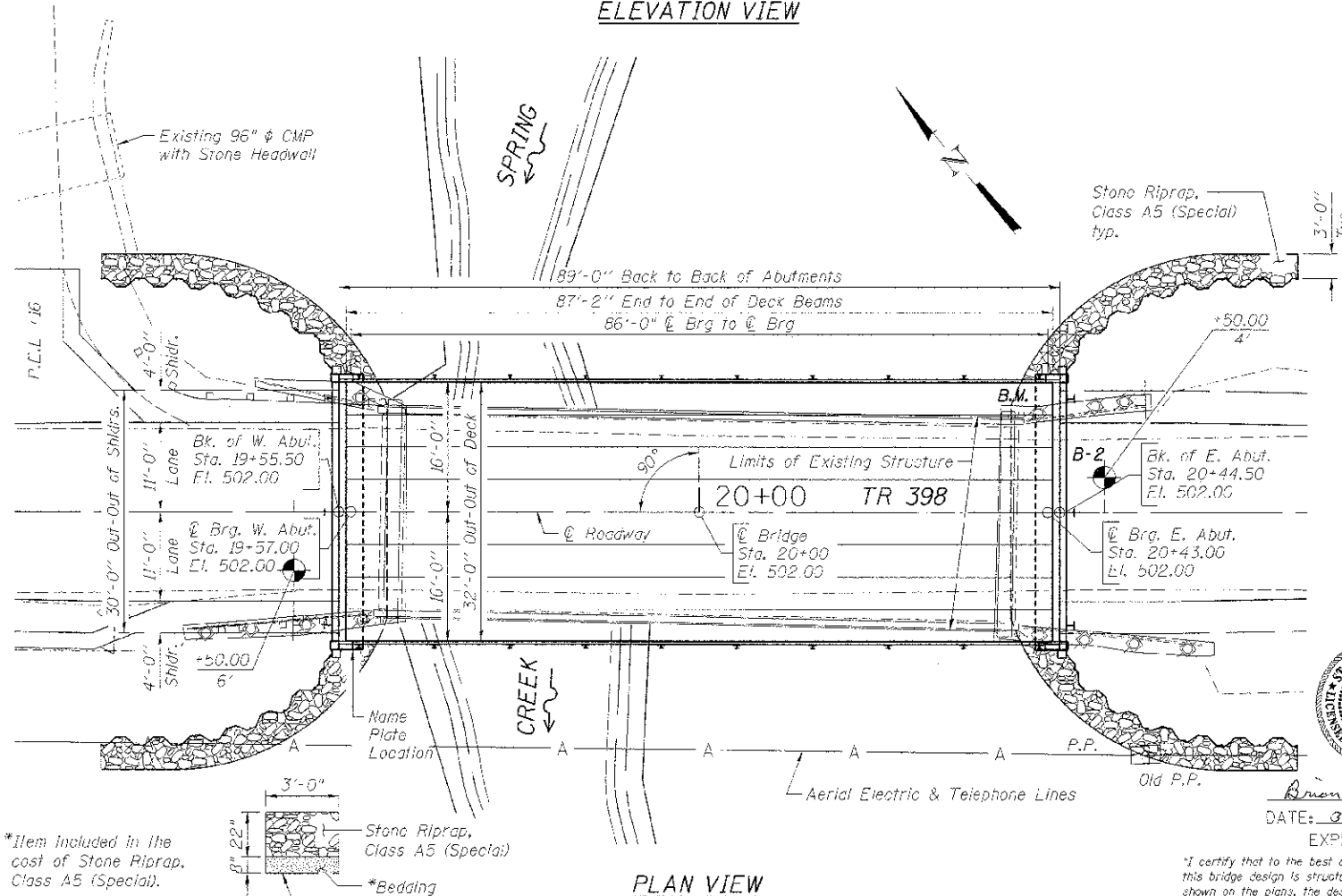


**WATERWAY INFORMATION**

Drainage Area = 48.3 sq. mi.		Low Grade Elev. 500.85 @ Sta. 22+00				
Flood	Freq.	Q	Opening Sq. Ft.	Nat. Head - Ft.	Headwater El.	
	Yr.	C.F.S.	Exist.	Prop.	Exist.	Prop.
10	3,855	524	776	495.15	0.20	0.00
30	5,550	619	887	497.49	0.66	0.00
100	7,285	715	998	498.83	2.54	0.39
Max. Calc.	500	9,880	757	1,007	500.93	2.14
					1.61	503.07

**DESIGN SCOUR ELEVATION TABLE**

Design Scour - West Abut.	475.88
Design Scour - East Abut.	478.46



**STONE RIPRAP, CLASS A5 (SPECIAL)**

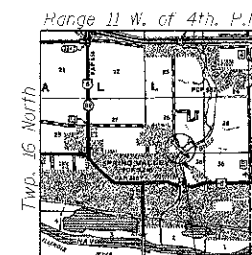
\*Item included in the cost of Stone Riprap, Class A5 (Special).

- \*Bedding
- \*Filter Fabric



Brian A. Converse  
DATE: 07/21/2013  
EXPIRES 11/30/14

"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 Bridge Design Specifications."



Bridge Site  
**LOCATION SKETCH**

**GENERAL PLAN AND ELEVATION**  
**T.R. 398 (PERU-PRINCETON RD.) OVER SPRING CREEK**  
**SECTION 09-1013-00-BR**  
**BUREAU COUNTY**  
**STATION 20+00**  
**STRUCTURE NO. 006-4143**



DESIGNED - TAN NRI AHSFN	REVISED -
CHECKED - BRIAN CONVERSE	REVISED -
DRAWN - ROH ALLEN	REVISED -
CHECKED - BRIAN CONVERSE	REVISED -

**BUREAU COUNTY**  
**T.R. 398 OVER SPRING CREEK**  
**STATION 20+00**

**GENERAL PLAN & ELEVATION**  
**STRUCTURE NO. 006-4143**

STRUCTURAL SHEET NO. 1 OF 9

TWP. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
398	09-1013-00-BR	BUREAU	19	7
WFA# 1004012			CONTRACT NO.	87551

ILLINOIS REG. AID PROJECT BRS-0010949