

**BENCH MARK:**

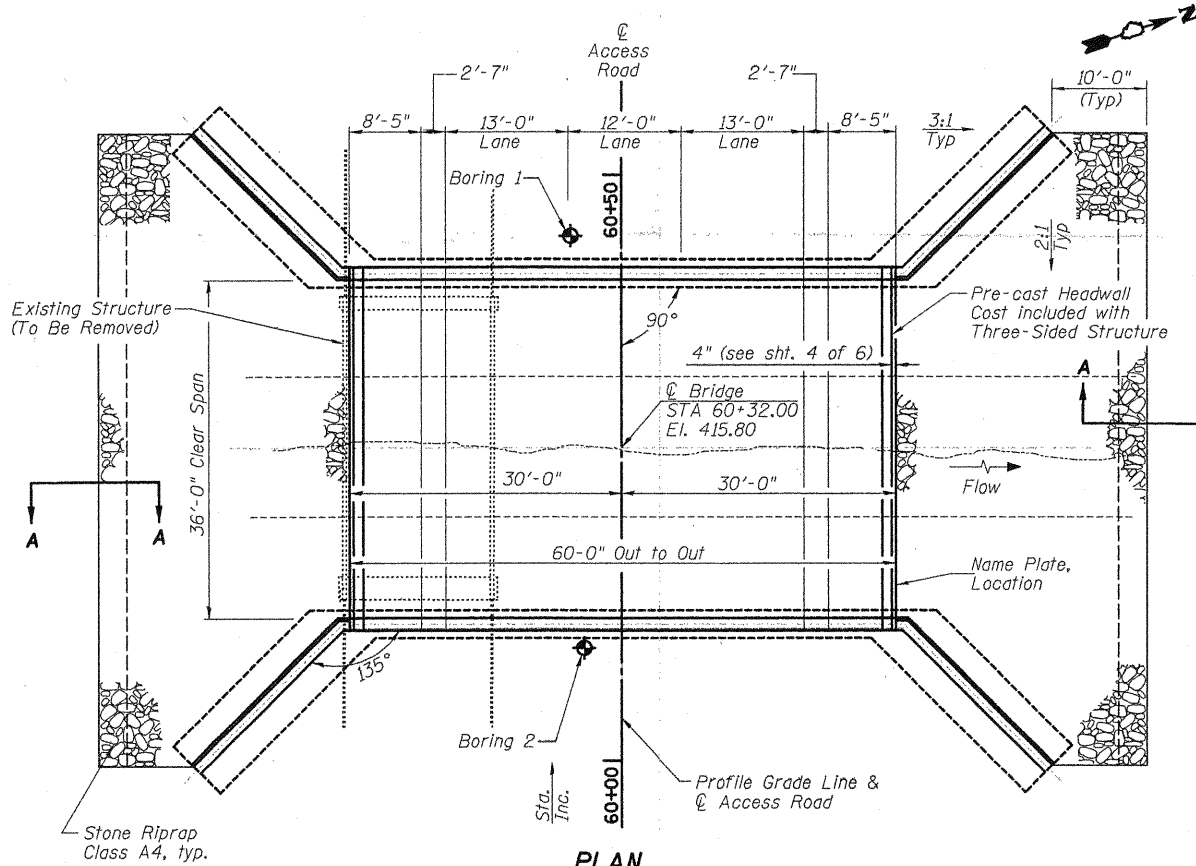
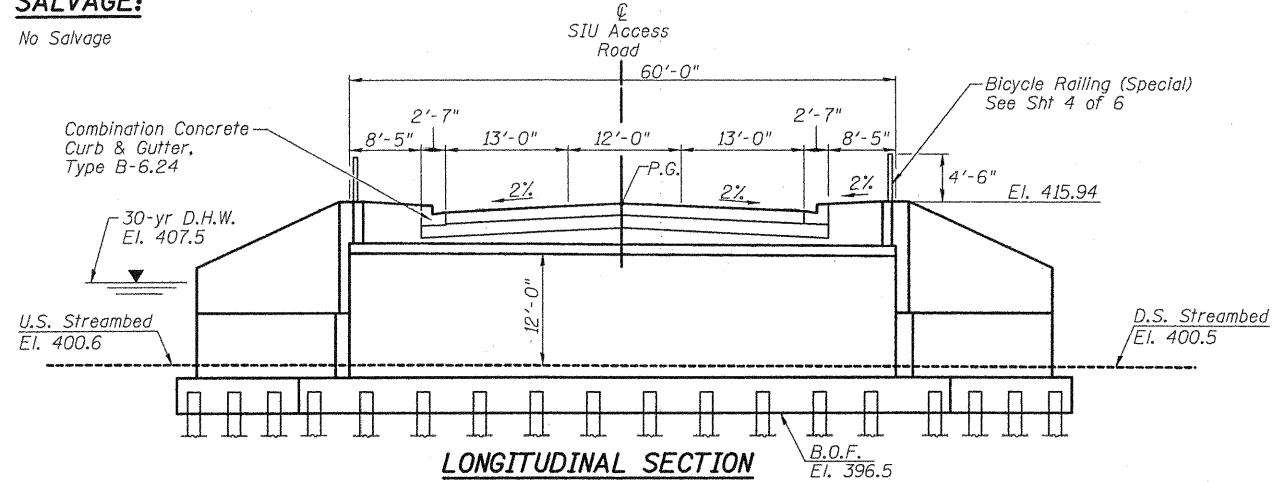
Chisled square at northwest corner of existing bridge, elevation = 415.78

**EXISTING STRUCTURES:**

Structure Number is 039-0045. Built in 1952 as S.B.I. Route 2, Sec. 9-1-B. Existing structure is a single span bridge with a reinforced concrete deck on steel beams supported by closed concrete abutments with timber piles and wingwalls. The out-to-out width is 16'-0". The back-to-back abutments length is 32'-0". The existing structure is to be removed and replaced with a three sided precast concrete structure located on a new alignment downstream. The road will be closed to traffic during the construction.

**SALVAGE:**

No Salvage



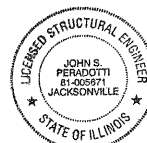
**PLAN**

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 "A.A.S.H.T.O. Standard Specification for Highway Bridges."

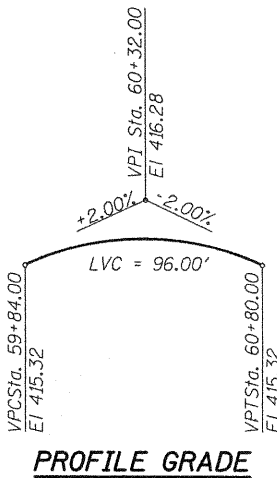
DESIGNED	MEB
CHECKED	AJW
DRAWN	MLK & AJW
CHECKED	JSP

**HR**  
HURST-ROSCHKE  
ENGINEERS, INC.  
PROFESSIONAL DESIGN NUMBER: 184-00028

*John S. Peradotti* 7-26-10  
JOHN S. PERADOTTI, S.E.  
ILLINOIS STRUCTURAL NO. 5671  
EXPIRES: NOVEMBER 30, 2010



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**HIGHWAY CLASSIFICATION**  
S.B.I. Rte. 2 - SIU Access Road  
Functional Class: Local Road (Urban)  
ADT: 1662 (2010); 1662 (2030)  
ADTT: 84  
DHW: 256  
Design Speed: 25 m.p.h.  
Posted Speed: 20 m.p.h.  
2-Way Traffic  
Directional Distribution: 50:50

**DESIGN SPECIFICATIONS**  
2007 AASHTO LRFD Bridge Design Specifications  
with 2008 and 2009 Interims

**LOADING HL-93**  
Allow 50#/sq. ft. for future wearing surface.

**SEISMIC DATA**  
Seismic Performance Zone (SPZ) = 3  
Design Spectral Acceleration at 1.0 sec. (S<sub>D1</sub>) = 0.367  
Design Spectral Acceleration at 0.2 sec. (S<sub>D5</sub>) = 0.856  
Soil Site Class = D

**DESIGN STRESSES**  
**FIELD UNITS**  
f'<sub>c</sub> = 3,500 psi  
f<sub>y</sub> = 60,000 psi (Reinforcement)

**PRECAST PRESTRESSED UNITS**  
f'<sub>c</sub> = 5,000 psi  
f<sub>y</sub> = 65,000 psi (Welded Wire Fabric)

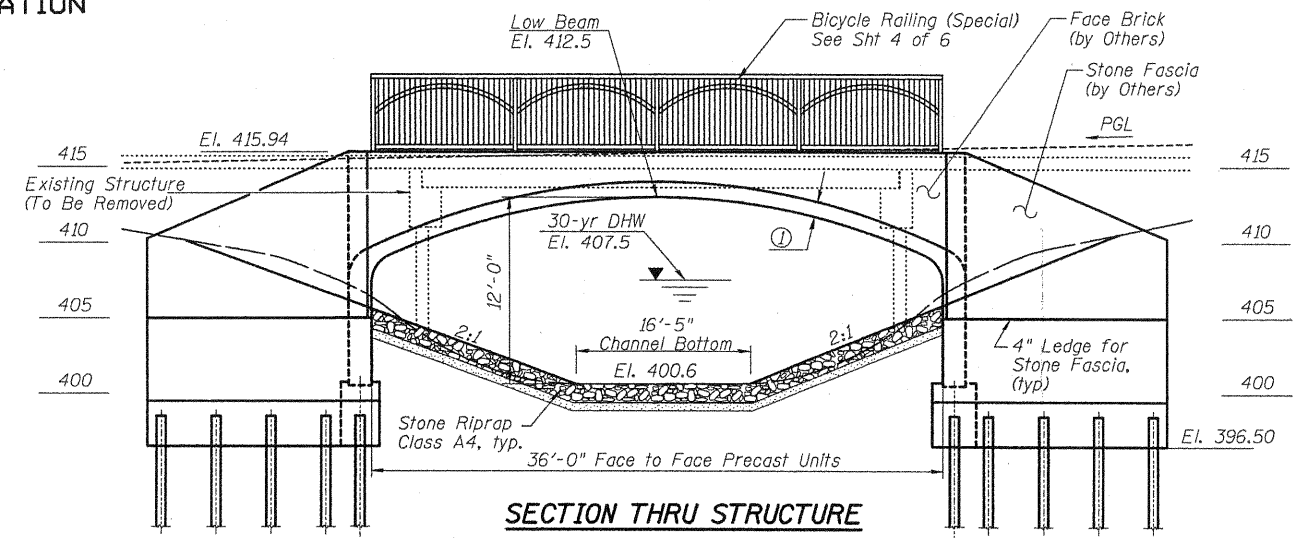
**APPROVED**  
FOR STRUCTURAL ADEQUACY ONLY  
*Robert E. Anderson (SEIT)*  
Director of Bridges and Structures

**DESIGN SCOUR ELEVATION TABLE**

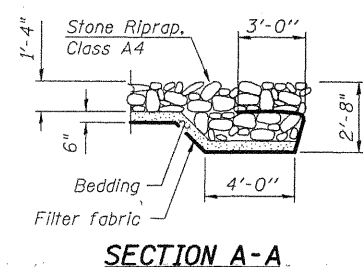
Design Scour Elevation (ft.)	D.S.	U.S.
	389.1	389.2

**WATERWAY INFORMATION**

Drainage Area = 3290 AC (5.14 Square Miles)		Low Grade Elev. ±415.00				
Sta. N/A		Sta. N/A				
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist. Prop.	Nat. H.W.E.	Head - Ft. Exist. Prop.	Headwater El. Exist. Prop.
Design	30	1115	169 169	407.49	2.13 2.13	409.62 409.62
Base	50	1298	176 177	408.04	3.56 3.57	411.60 411.61
Base	100	1472	192 195	408.58	5.40 5.48	413.98 414.06
Overtopping	---	---	---	---	---	---
Max. Calc.	500	1789	219 224	409.45	9.65 9.65	419.10 419.10



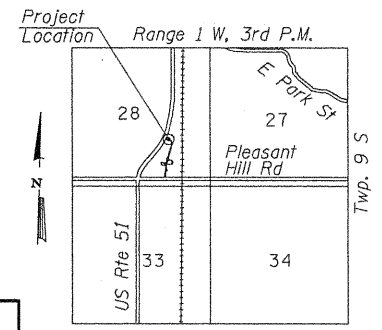
① Slab, headwall width, wall thickness, and shape may vary per precast manufacturer



**SECTION A-A**

PILES FORK CREEK  
BUILT 2011 BY  
SIUC  
SEC. 05-00002-00-RP  
STATION 60+32.00  
STRUCTURE NO. 039-3268  
LOADING HL-93

**NAME PLATE**  
See Std. 515001



**LOCATION SKETCH**

SHEET NO. 1 6 SHEETS	S.B.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2	05-00002-00-RP	JACKSON	35	17
CONTRACT NO. 99425				FED. ROAD DIST. NO. 9 ILLINOIS FED. AID PROJECT	

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Removal of Existing Structures	Each	1
Structure Excavation	Cu. Yd.	1,365
Concrete Structures	Cu. Yd.	179.8
Reinforcement Bars, Epoxy Coated	Pound	2,885
Reinforcement Bars	Pound	14,305
Bicycle Railing (Special)	Foot	72
Furnishing Steel Piles HP 12x53	Foot	1,775
Driving Piles	Foot	1,775
Test Pile Steel HP 12x53	Each	2
Name Plates	Each	1
Three Sided Precast Concrete Structures 36' x 12'	Foot	60
Stone Riprap Class A4	Sq. Yd.	621
Filter Fabric	Sq. Yd.	621

\* See Special Provisions  
\*\* These quantities were calculated under the assumption that the precast keyway section was 3" in depth. This dimension varies per manufacturer and the quantities may need revisions.

**GENERAL PLAN**  
SIU ACCESS ROAD OVER  
PILES FORK CREEK  
S.B.I. RTE 2 - SEC 05-00002-00-RP  
JACKSON COUNTY  
STATION 60+32.00  
STRUCTURE NO. 039-3268

HRE # 365-4048

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