

EXISTING STRUCTURE NO. 006-4227

The existing structure was originally built in 1959. The existing structure is a three span (15'-6"; 15'-9"; 15'-6") precast concrete channel beam bridge on closed abutments and piers. 50'-0" back to back of abutments and 22'-0" out to out of deck. Structure to be removed and replaced. Road shall be closed to traffic during construction.

No salvage.

BENCH MARK: Chiseled "□" on the northwest corner of hub guard of exist. bridge, Elev. 755.42

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BILL OF MATERIAL - BRIDGE

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.		637	637
Removal of Existing Structures	Each		1	1
Concrete Structures	Cu. Yd.		33.8	33.8
Precast Prestressed Concrete Deck Beams (33" Depth)	Sq. Ft.	1,984		1,984
Reinforcement Bars	Pound		4,260	4,260
Steel Railing, Type S-1	Foot	168		168
Furnishing Metal Shell Piles 12" x 0.250"	Foot		216	216
Driving Piles	Foot		216	216
Test Pile Metal Shells	Each		2	2
Name Plates	Each		1	1
Porous Granular Embankment, Special	Ton		194	194
Stone Riprap, Class A5 (Special)	Ton		1,178	1,178

LOADING HL-93

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

DESIGN SPECIFICATIONS

2010 AASHTO LRFD Bridge Design Specifications, 5th. Edition & 2011 Interims

DESIGN STRESSES

FIELD UNITS

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)

PRECAST PRESTRESSED UNITS

$f'_c = 6,000$ psi
 $f'_{ci} = 5,000$ psi
 $f_{pu} = 270,000$ psi ($\frac{1}{2}$ " ϕ Low Lax Strands)
 $f_{pbt} = 201,960$ psi ($\frac{1}{2}$ " ϕ Low Lax Strands)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
 Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.070g
 Design Spectral Acceleration at 0.2 sec. (S_{D5}) = 0.117g
 Soil Site Class = C

GENERAL NOTES

* See Special Provisions.

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.

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

Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure. The Contractor shall sawcut the upper portion of the existing abutment at the stage removal line before Stage 1 removal to ensure the remaining portion will not be prematurely damaged.

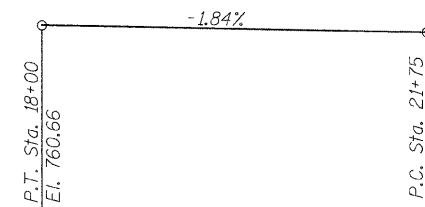
WATERWAY INFORMATION

Drainage Area = 7.37 sq. mi. Low Grade Elev. 752.23 @ Sta. 23+50

Flood	Freq. Yr.	a C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	15	2,420	389	430	750.28	1.11	1.03	751.39	751.31
Base	100	3,940	457	529	751.76	2.72	2.56	754.48	754.32

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	S. Abut.	N. Abut.
	750.49	748.99

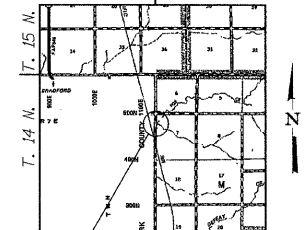


PROFILE GRADE
(Along ϕ Roadway)

FOX CREEK
 BUILT 2012 BY
 BUREAU COUNTY
 SECTION 10-16115-00-BR
 TWP. RTE. 136 STATION 20+05
 STR. NO. 006-4235 LOADING HL-93

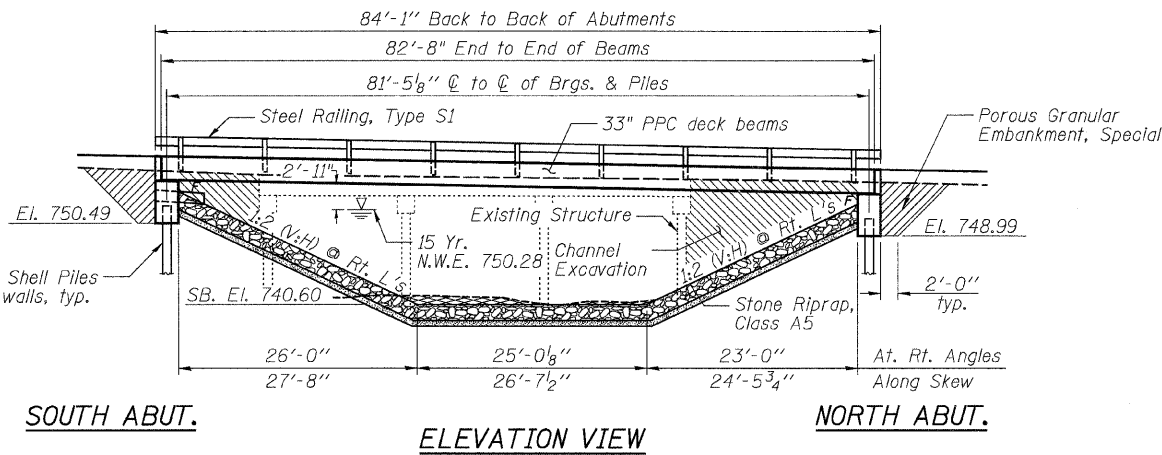
NAME PLATE LETTERING
Refer To Std. 515001

R. 7 E. 4th. P.M. | R. 8 E. 4th. P.M.

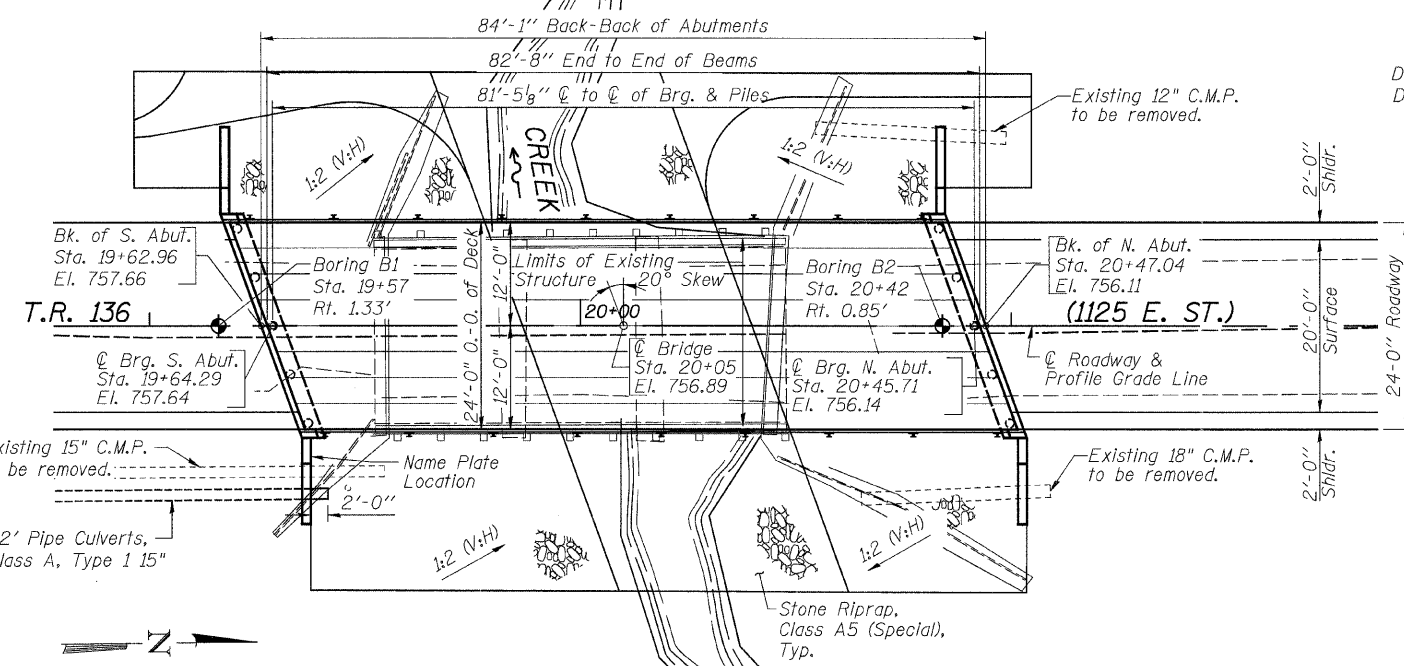


Bridge Location
LOCATION SKETCH

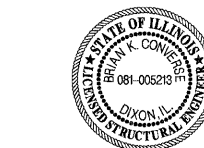
GENERAL PLAN AND ELEVATION
T.R. 136 (1125 E. ST.) OVER FOX CREEK
SEC. 10-16115-00-BR
BUREAU COUNTY
STATION 20+05
STRUCTURE NO. 006-4235



ELEVATION VIEW



PLAN VIEW



Brian K. Converse
 DATE: 2/12/2012
 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 Bridge Design Specifications."



DESIGNED - MICHAEL WAGNER
 CHECKED - BRIAN CONVERSE
 DRAWN - MICHAEL WAGNER
 CHECKED - MEGAN CACKLEY

REVISED -
 REVISED -
 REVISED -
 REVISED -

BUREAU COUNTY
T.R. 136 (1125 E. ST.) OVER FOX CREEK
STATION 20+05

STRUCTURAL SHEET NO. 1 OF 9 SHEETS

TWP. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
136	10-16115-00-BR	BUREAU	21	9
WHA* 1286D10		CONTRACT NO. 87498		

ILLINOIS FED. AID PROJECT BROS-0011084