

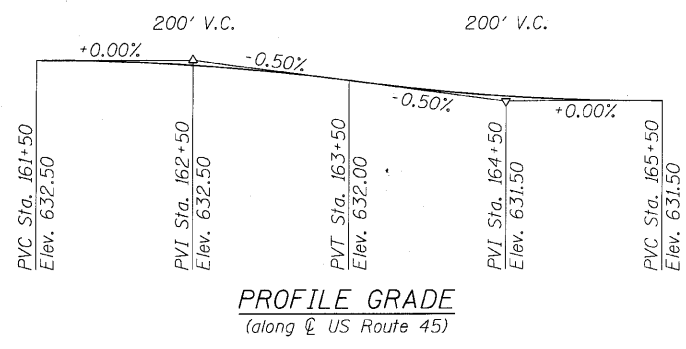
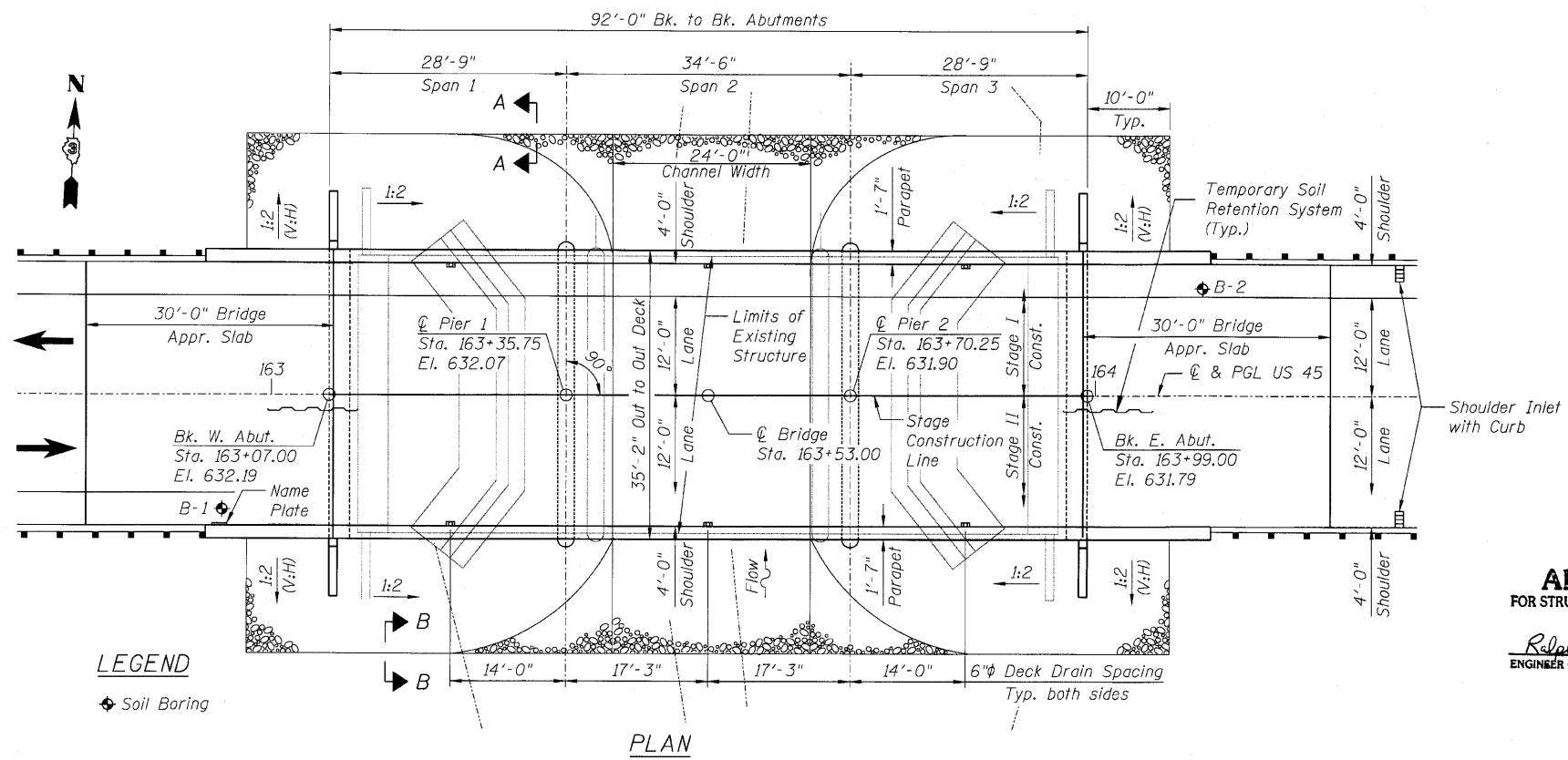
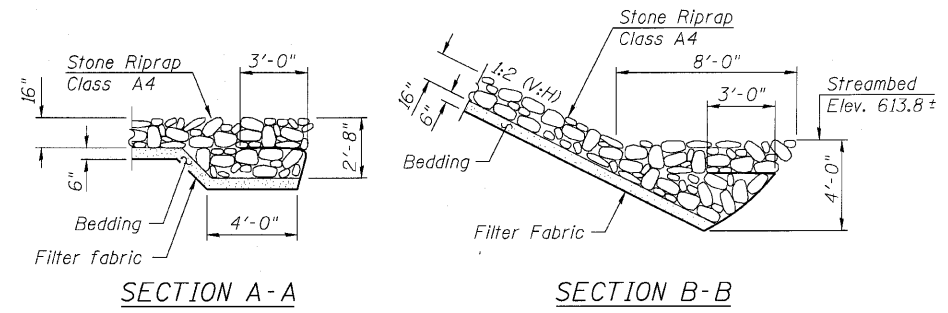
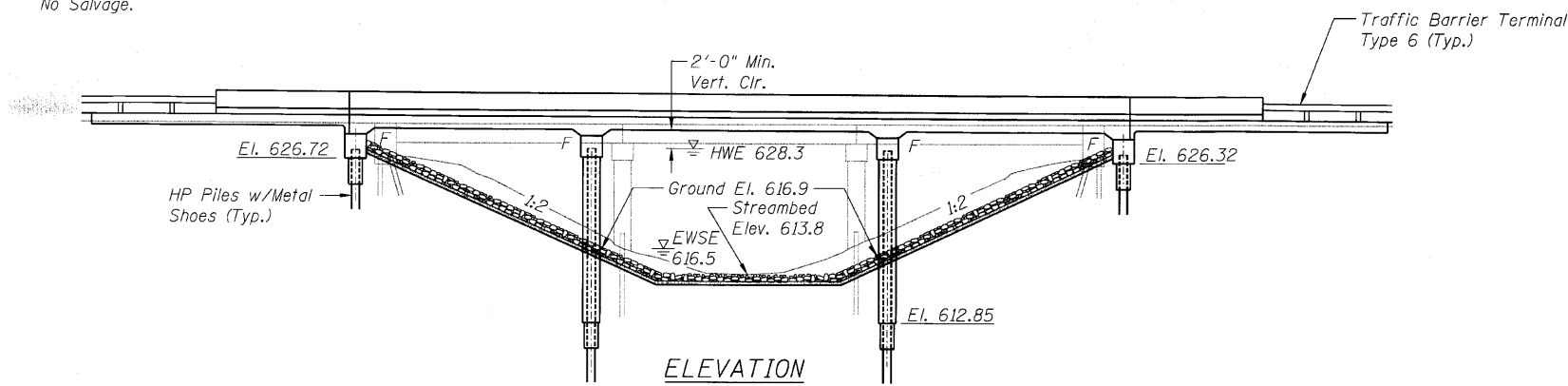
Bench Mark: Railroad Spike in Power Pole 40' Rt., Sta. 162+98, Elev. 630.78.

Existing Structure: S.N. 038-0175 originally constructed in 1974 as SBI Route 116 Section 118X-BR. Three simple span PPC Channel Beams (Nelson Beams) superstructure supported on pile bent abutments and solid wall pile bent piers. Bk. to Bk. abutments is 85'-0" and Out to Out width is 33'-9".

Existing structure shall be removed and replaced using stage construction to maintain one lane of traffic.

No Salvage.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



Signature: *Deborah A. Zroka*
Date: July 29, 2010
November 30, 2010
Expires

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Robert E. Andrews (SE)
ENGINEER OF BRIDGES AND STRUCTURES

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

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

DESIGN STRESSES

FIELD UNITS
 $f'_c = 3,500$ psi
 $f_y = 60,000$ psi (reinforcement)

SEISMIC DATA
Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration @ 1.0 sec (SD1) = 0.078g
Design Spectral Acceleration @ 0.2 sec (SDS) = 0.137g
Soil Site Class = C

LEGEND
◆ Soil Boring

WATERWAY INFORMATION

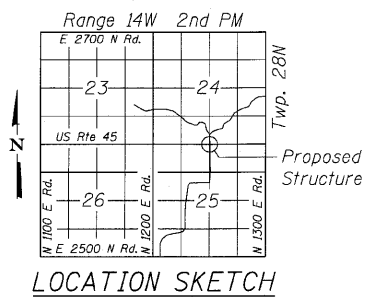
Drainage Area = 68.7 sq. mi. Exist. Low Grade Elev. = 631.20 @ Sta. 164+00
Prop. Low Grade Elev. = 631.44 @ Sta. 167+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	10	2427	509	776	627.3	0.4	0.4	627.7	627.7
Base	50	3695	586	860	628.3	0.8	0.6	629.1	629.0
Max. Calc.	100	4234	608	884	628.6	0.9	0.8	629.6	629.4
	500	5512	632	929	629.2	1.5	1.1	630.6	630.3

10-Year Velocity through Existing Bridge = 4.8 fps
10-Year Velocity through Proposed Bridge = 3.8 fps

DESIGN SCOUR ELEVATION TABLE

W. Abut.	Pier 1	Pier 2	E. Abut.
626.7	609.8	609.8	626.3



GENERAL PLAN AND ELEVATION
US 45 OVER PRAIRIE CREEK
F.A.P. RTE. 681
SECTION 118BR
IROQUOIS COUNTY
STATION 163+53.00
STRUCTURE NO. 038-0221

SHEET NO.	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1	681	118BR	IROQUOIS	42	10
OF 20 SHEETS					
CONTRACT NO. 66861					
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					

ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613
Date: 7-28-10 Drawn By: FJS Checked By: DZ

7/29/2010 6:28:40 PM C:\Drawings\5500-00\US45N-TwoStructuralPlans\SI_General_Plan.dgn