

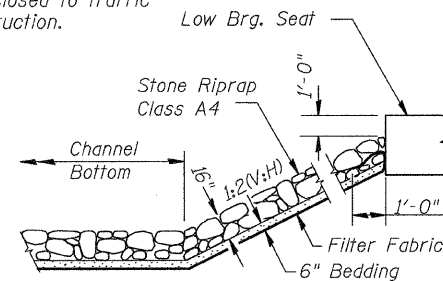
BM - RR Spike in Power Pole Sta. 21+40, 39' Lt. Elev. 655.17  
 BM - RR Spike in Power Pole Sta. 26+26, 44' Lt. Elev. 621.98

**Existing Structure:**

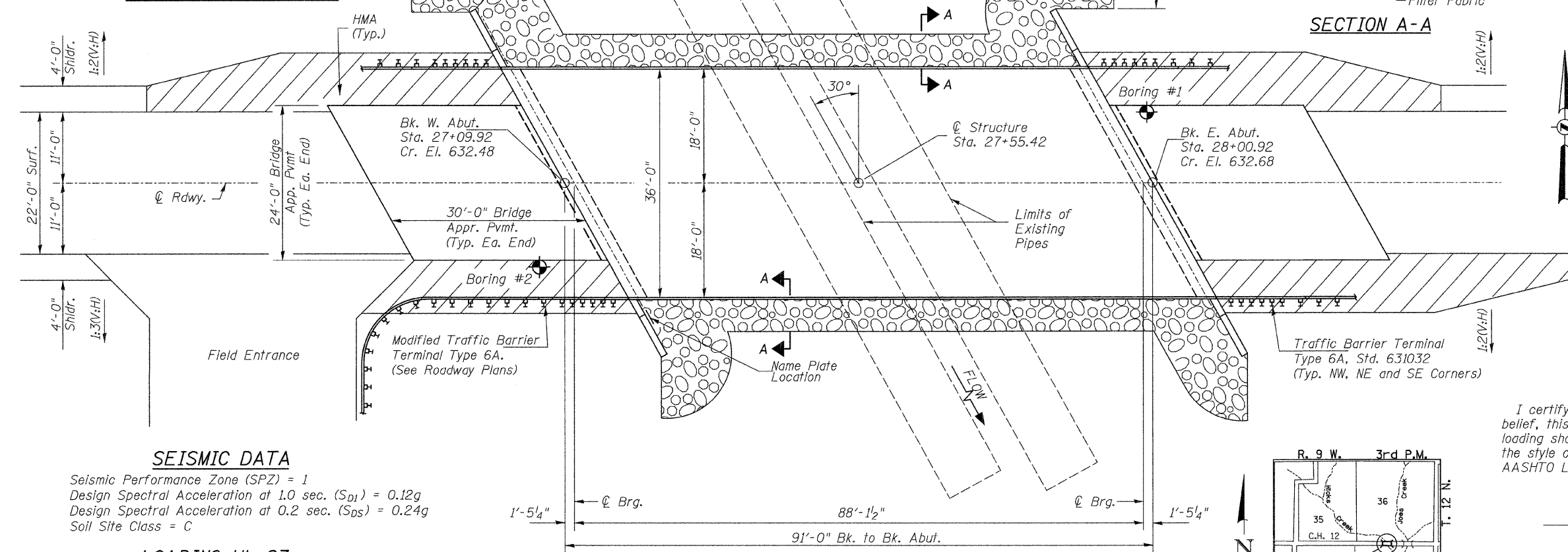
Two 9' diameter corrugated metal pipe culverts. The culverts are approximately 97' in length and are placed under ±8' of fill. The barrels are on a 30° right ahead skew. The culverts were placed in 1956. Exist. S.N. 059-5002

Salvage: See Special Provisions

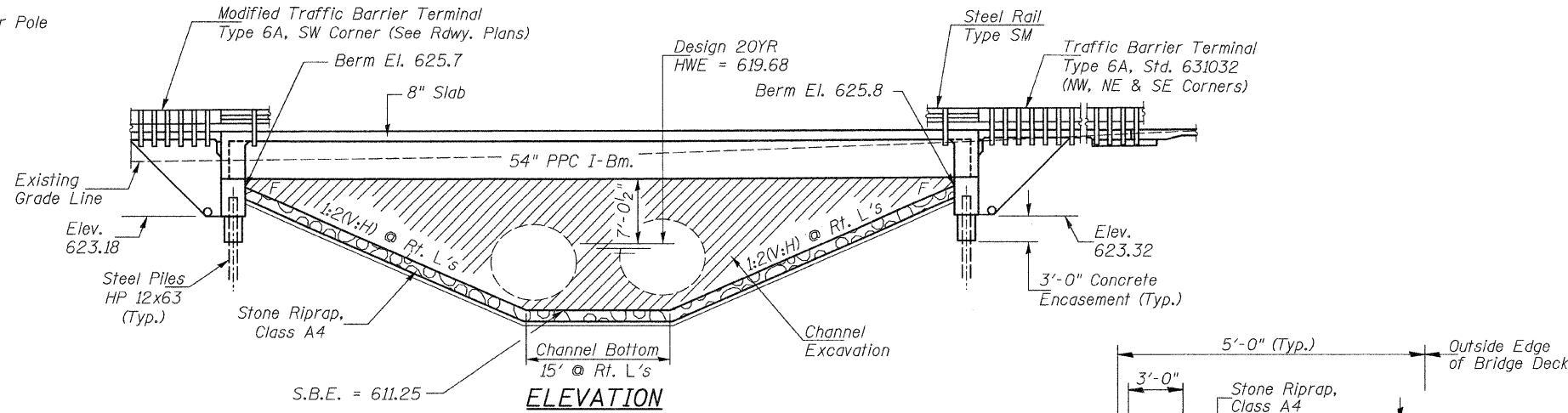
Road to be closed to traffic during construction.



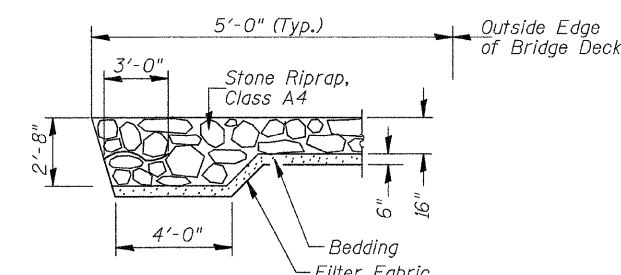
**STONE RIPRAP DETAIL**



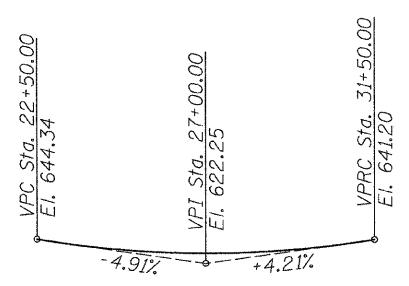
**PLAN**



**ELEVATION**



**SECTION A-A**



**PROFILE GRADE**

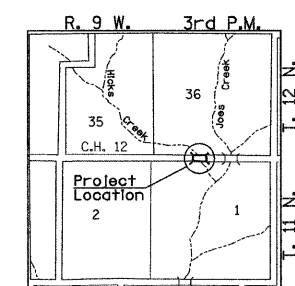
**DESIGN SCOUR TABLE**

Location	W. Abut	E. Abut
Design Scour Elevation	623.18	623.32

**DESIGN SCOUR TABLE**

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 LRFD Bridge Design Specifications.

*Benjamin A. Nebel* 3/2/2010  
 Illinois Structural No. 6527  
 Expires 11/30/2010



**LOCATION SKETCH**

**SEISMIC DATA**  
 Seismic Performance Zone (SPZ) = 1  
 Design Spectral Acceleration at 1.0 sec. ( $S_{D1}$ ) = 0.12g  
 Design Spectral Acceleration at 0.2 sec. ( $S_{D5}$ ) = 0.24g  
 Soil Site Class = C

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

**DESIGN SPECIFICATIONS**  
 2007 AASHTO LRFD Bridge Design Specifications with Interims

**DESIGN STRESSES**  
**FIELD UNITS**  
 $f'_c$  = 3,500 psi  
 $f_y$  = 60,000 psi (Reinforcement)

**PRECAST PRESTRESSED UNITS**  
 $f'_c$  = 6,000 p.s.i.  
 $f'_{ci}$  = 5,000 p.s.i.  
 $f'_s$  = 270,000 p.s.i. ( $\frac{1}{2}$ "  $\phi$  low relaxation strands)  
 $f'_{si}$  = 201,960 p.s.i. ( $\frac{1}{2}$ "  $\phi$  low relaxation strands)

**WATERWAY INFORMATION**

Drainage Area = 2.42 Sq. Mi. Low Grade Elev. = 632.45 @ Sta. 27+34.38

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.		Head - Ft.		Headwater El.	
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	20	1,226	103	269	619.68	4.75	0.00	624.43	619.68	
Base	100	1,840	119	332	620.92	8.44	0.01	629.36	620.93	

DESIGNED	BAN
CHECKED	JOH
DRAWN	TC
CHECKED	BAN

SHEET NO. 1 19 SHEETS	ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	CH 12	07-00090-00-BR	MACOUPIN	77	11
	SN 059-3556			CONTRACT NO. 93538	
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT BRS-0732(148)			

**GENERAL PLAN AND ELEVATION**  
**C.H. 12 OVER HICKS CREEK**  
**SECTION 07-00090-00-BR**  
**MACOUPIN COUNTY**  
**STATION 27+55.42**  
**STR. NO. 059-3556**