

Existing Structure: Cast in place concrete quadruple barrel box culvert,
 Inside cell span - 10'-0", Outside cell span - 8'-0", All
 cells 5'-6" Height, ±50'-0" Width, Concrete railing,
 45° Skew Lt. Fwd.
 Existing Structure No. 084-5005

Estimated concrete to be removed - 102.5 cu. yd.

Benchmarks: BM#1 - 60d Nail & Washer in Power Pole

40' Lt. Sta. 51+55 El. 642.23

BM#2 - 60d Nail & Washer in Power Pole

40' Lt. Sta. 57+94 El. 638.92

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.		168	168
Stone Dumped Riprap, Class A4	Ton			616
Filter Fabric	Sq. Yd.			995
Hot-Mix Asphalt Surface Course, Mix "C", N50	Ton			26
Removal of Existing Structures	Each			1
Structure Excavation	Cu. Yd.			153
Concrete Structures	Cu. Yd.		43.2	43.2
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	1852		1852
Reinforcement Bars	Pound		4720	4720
Steel Railing, Type SM	Foot	136		136
Furnishing Steel Piles HP10X42	Foot		350	350
Driving Piles	Foot		350	350
Test Pile Steel HP10X42	Each		2	2
Pile Shoes	Each		12	12
Name Plates	Each		1	1
Waterproofing Membrane System	Sq. Yd.	212		212
Portland Cement Mortar Fairing Course	Foot	200		200

WATERWAY INFORMATION

Drainage Area = 5.05 Sq. Mi. Pr. Low Grade Elev. 643.73 @ Sta. 57+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Natural H.W.E.	Head - ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	20	1072	198	235	641.1	0.7	0.2	641.8	641.3
Base	100	1557	198	265	641.8	1.3	0.5	643.1	642.3
Exist. Overtop.	93	1525							
Prop. Overtop.	Greater than 500 Years								
Max. Calc.	500	2023	198	278	642.4	1.2	0.8	643.6	643.2

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (Ft.)	W. Abut.	E. Abut.
	637.9	637.9

LOADING HL-93

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

DESIGN SPECIFICATIONS

2010 AASHTO LRFD Bridge Design Specifications

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
 fy = 60,000 psi (Reinforcement)

PRECAST PRESTRESSED UNITS

f'c = 6000 psi
 f'ci = 5000 psi
 fpu = 270000 psi (1/2" low lax strands)
 fpbt = 201960 psi (1/2" low lax strands)

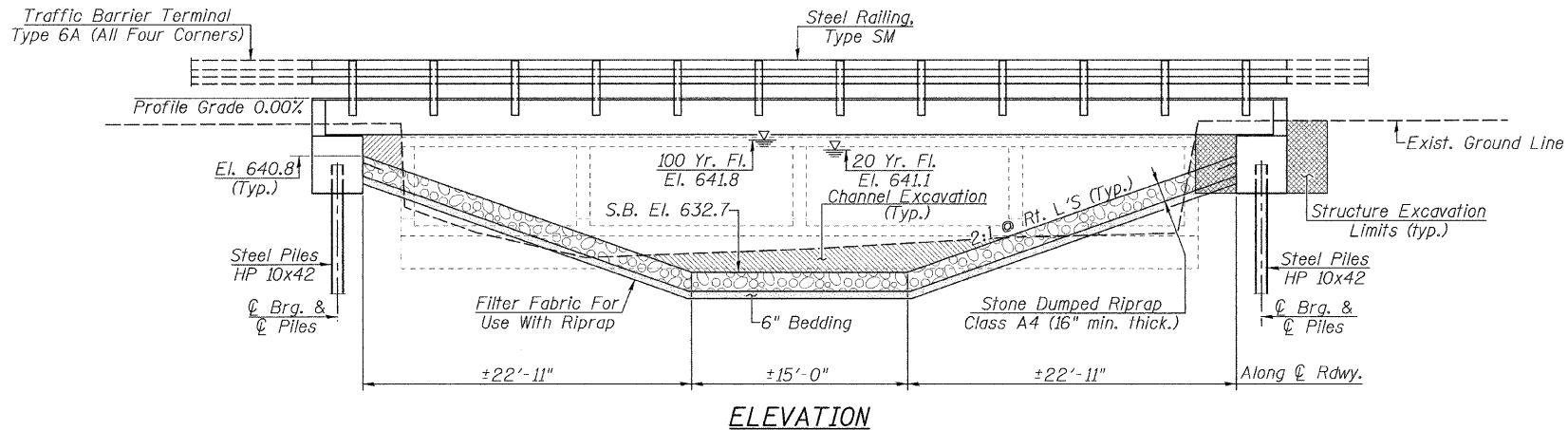
GENERAL NOTES

See Proposal for Boring Data.
 Reinforcement bars shall conform to the requirements of ASTM A706, Grade 60.
 Reinforcement bars designated (E) to be epoxy coated.
 The layout of the riprap sloped wall may be varied to suit ground conditions in the field as determined by the Engineer.
 The contractor shall drive one test pile in a permanent location at both abutments as directed by the Engineer in the field prior to ordering the remainder of piles.

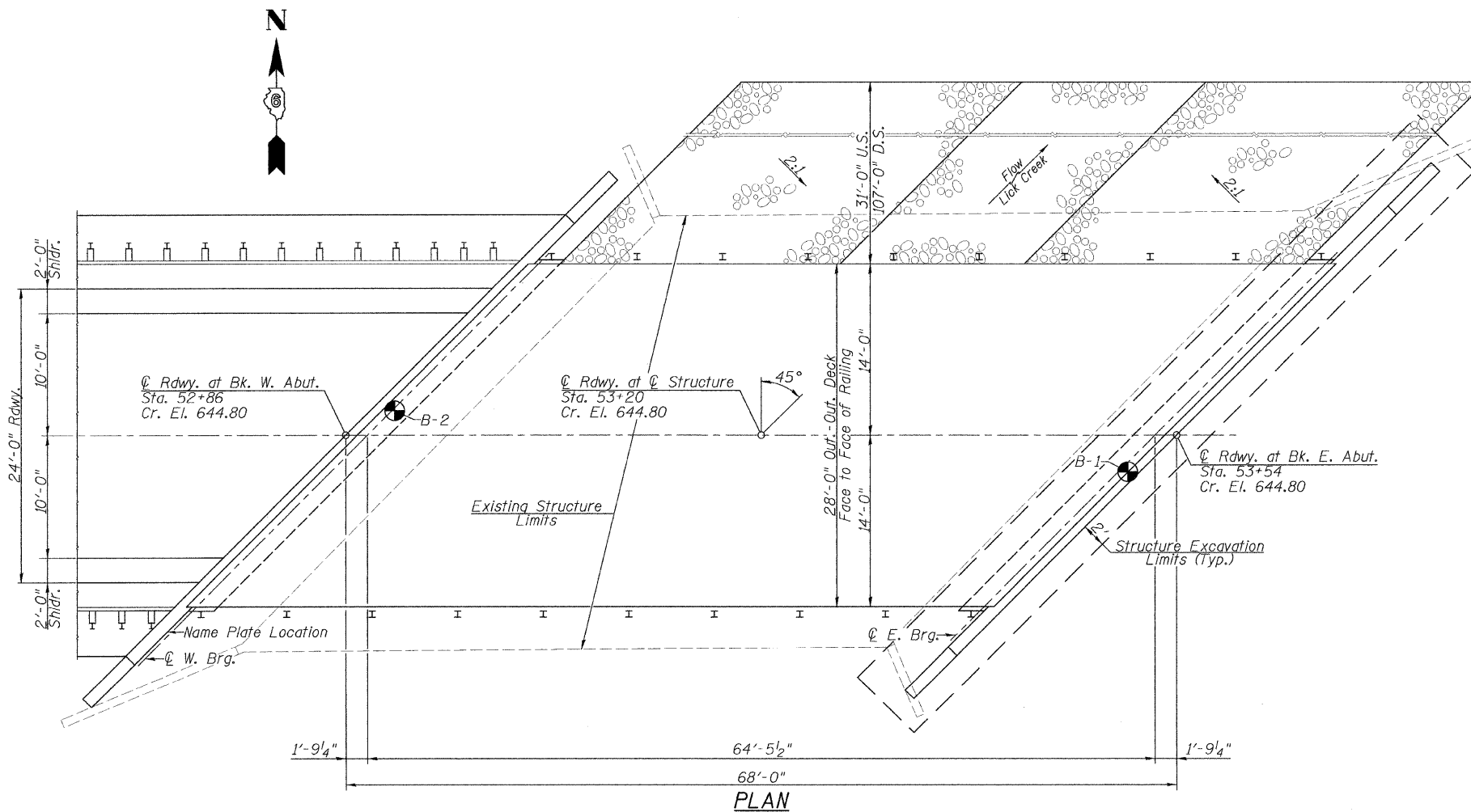
I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current "A.A.S.H.T.O. LRFD Bridge Design Specifications.



M. A. Henderson 3/7/2012
 Expiration Date 11/30/2012



ELEVATION

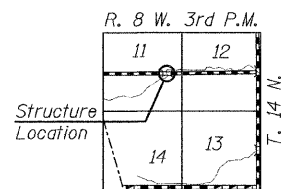


PLAN

LICK CREEK
 BUILT 20 BY
 SANGAMON COUNTY
 SECTION 08-0054-01-BR
 PROJECT BRS-0624(112)
 STA. 53+20.00
 STR. NO. 084-3645 LOADING HL-93

NAME PLATE

(Standard 515001)



LOCATION SKETCH