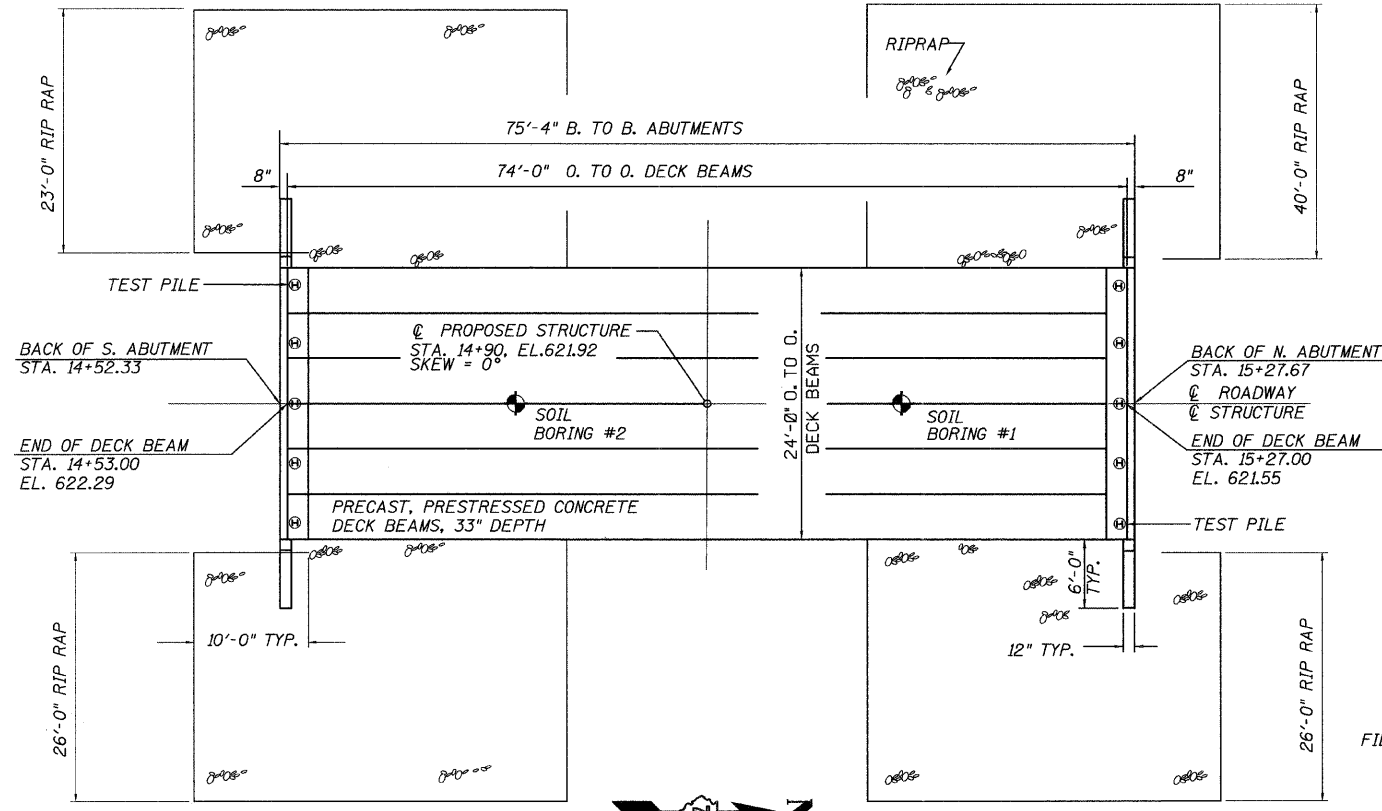
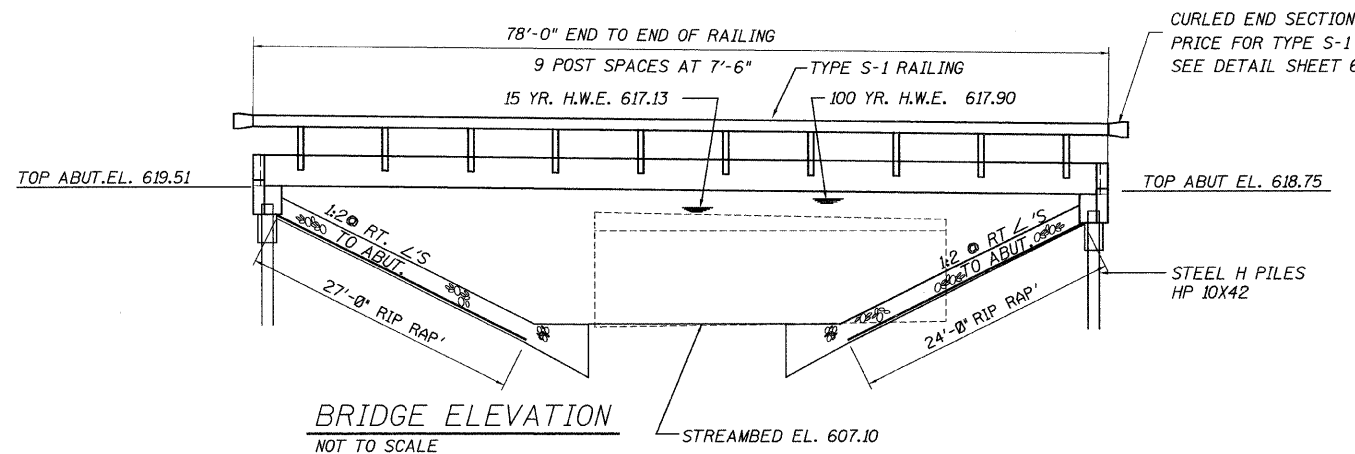


F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	01-16117-00	Shelby	15	4
STA. 14+52.33		TO STA. 15+27.67		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		



**BRIDGE PLAN**  
NOT TO SCALE



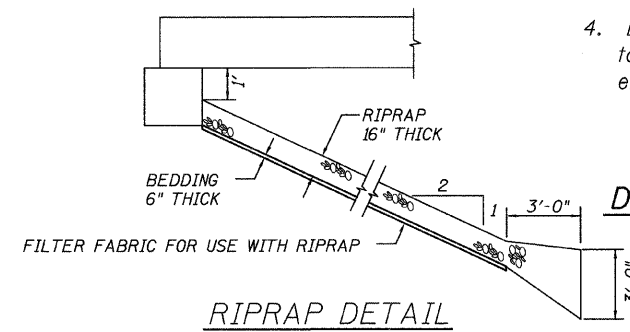
**BRIDGE ELEVATION**  
NOT TO SCALE

ITEM	UNIT	SUBSTR.	SUPER	TOTAL
STONE RIPRAP, CLASS A4	TON	448		448
FILTER FABRIC	SQYD	668		668
REMOVAL OF EXISTING STRUCTURES	LSUM	1		1
STRUCTURE EXCAVATION	CU. YD.	13		13
CONCRETE STRUCTURES	CU. YD.	19.0		19.0
CONCRETE ENCASEMENT	CU. YD.	2.8		2.8
PRECAST, PRESTRESSED CONCRETE DECK BEAMS (33" DEPTH)	SQ. FT.		1776	1776
REINFORCEMENT BARS	POUNDS	2572		2572
STEEL RAILING, TYPE S1	LIN. FT.		156	156
FURNISHING STEEL PILES HP 10X42	LIN. FT.	192		192
DRIVING PILES	LIN. FT.	192		192
TEST PILES STEEL HP 10X42	EACH	2		2
NAME PLATE	EACH		1	1

DRAINAGE AREA = 7.4 SQ. MI. LOW GRADE ELEV. = 618.82 @ STA. 14+90									
FLOOD	FREQ. YR.	Q C.F.S.	OPENING SQ. FT. EXIST.	OPENING SQ. FT. PROP.	NAT. H.W.E.	HEAD - FT. EXIST.	HEAD - FT. PROP.	HEADWATER EL. EXIST.	HEADWATER EL. PROP.
DESIGN	15	2729	240	532	617.13	0.30	0.65	617.40	617.78
BASE	100	3767	240	532	617.90	0.50	0.33	618.38	618.23
MAX. CALC.	500	4564	240	532	618.34	--	0.10	-----	618.43

**GENERAL NOTES**

- The contractor shall drive (2) test piles to 110% of the nominal required bearing specified in production locations at substructures specified or approved by the engineer before ordering the remainder of the piles.
- Boring data is shown in the special provisions only as a guide to the bidders in estimating soil conditions that may be encountered.
- Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (II Modified).
- Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the engineer.



**RIPRAP DETAIL**

**DESIGN STRESSES:**

SUBSTRUCTURE

$F_y = 60,000$  p.s.i. (REINFORCEMENT)  
 $F'_c = 3,500$  p.s.i.  
 $n = 9$

P.P.C. SUPERSTRUCTURE

$F_y = 60,000$  p.s.i. (REINFORCEMENT)  
 $F'_c = 5,000$  p.s.i.  
 $F'_{ci} = 4,000$  p.s.i.  
 $F'_s = 270,000$  p.s.i. (1/2" STRANDS)  
 $F'_{si} = 189,000$  p.s.i. (1/2" STRANDS)

DESIGN LOADING

HS 20-44

DESIGN SPECIFICATIONS

2002 A.A.S.H.T.O., STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES (17th Edition)

TRIBUTARY TO RICHLAND CREEK  
 BUILT 2000 BY  
 SHELBY COUNTY  
 RICHLAND TOWNSHIP  
 SEC. 01-16117-00-BR  
 STATION 14+90 PROJECT NO. BROS-173(162)  
 STR. NO. 087-3531 LOADING HS20

LETTERING FOR NAME PLATE  
 LOCATE ON THE SE WINGWALL.

THIS STRUCTURE HAS BEEN DESIGNED TO BE STABLE FOR SCOUR CONDITIONS IN ACCORDANCE WITH THE FHWA TECHNICAL ADVISORY - T 5140.23, "EVALUATING SCOUR AT BRIDGES" AND HYDRAULIC ENGINEERING CIRCULAR 18 - EVALUATING SCOUR AT BRIDGES.

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 THE REQUIREMENTS OF THE CURRENT "AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES".



MARTIN J. SILVESTER  
 STRUCTURAL ENGINEER  
 LICENSE EXP. DATE: 11-30-10

NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 BRIDGE PLAN & ELEVATION  
 TR 338 OVER TRIBUTARY TO RICHLAND CREEK  
 SECTION 01-16117-00-BR  
 SHELBY COUNTY  
 STA 14+90  
 STRUCTURE NO. 087-3531

SCALE: NTS  
 DATE: \_\_\_\_\_ DRAWN BY Baker  
 CHECKED BY MJS