

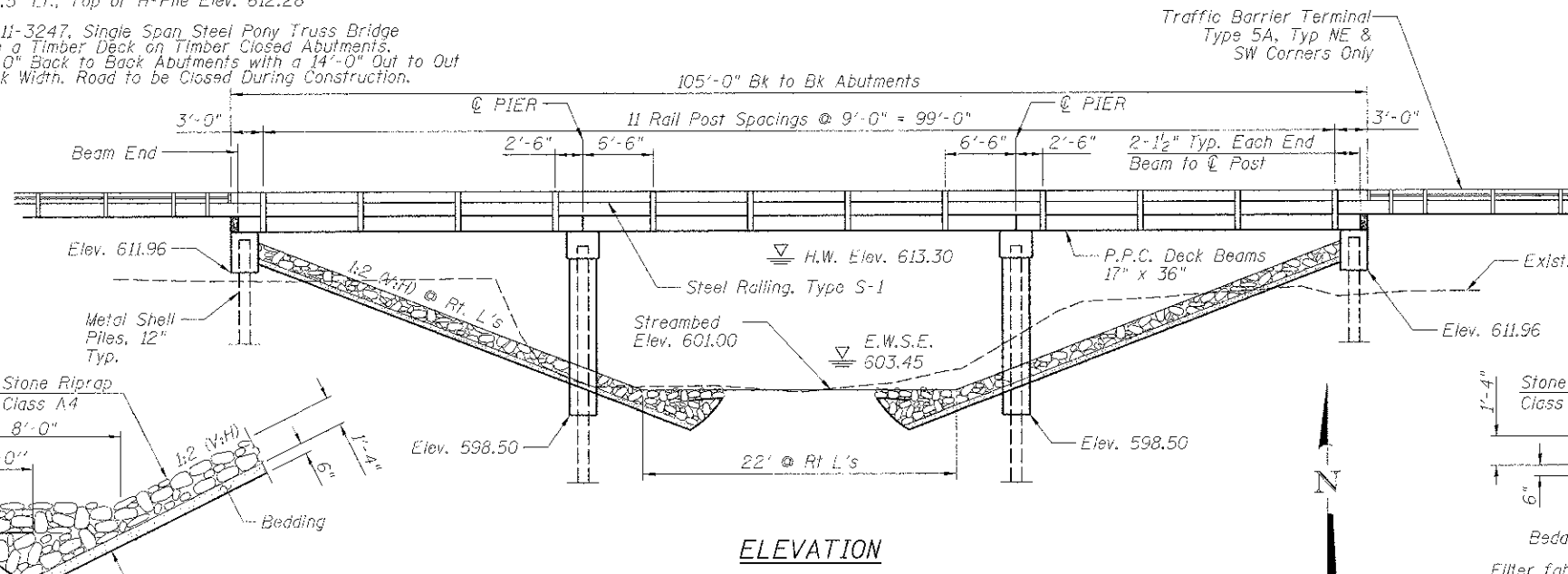
Benchmark: Sta. 15+34, 7.5' Lt., Top of H-Pile Elev. 612.26

Existing Structure: S.N. 011-3247, Single Span Steel Pony Truss Bridge  
With a Timber Deck on Timber Closed Abutments.  
61'-0" Back to Back Abutments with a 14'-0" Out to Out  
Deck Width. Road to be Closed During Construction.

No Salvage

**WATERWAY INFORMATION**

Drainage Area = 41.35 sq. mi.	Existing Low Grade Elevation 611.05 ft.			Sta. 21+50.00		
	Proposed Low Grade Elevation 612.54 ft.			Sta. 21+69.01		
Year	Freq.	Discharge (cfs)	Opening (sq ft)	Natural Head - (ft.)	Headwater Elevation	
5	5	2320	306	612.6	0.1	612.7
10	10	3070	306	613.3	0.1	613.4
100	100	5620	306	615.3	0.1	615.4
500	500	7480	306	616.4	0.1	616.8
10 Year Velocity through Existing Bridge = 7.6 fps				10 Year Velocity through Proposed Bridge = 4.8 fps		

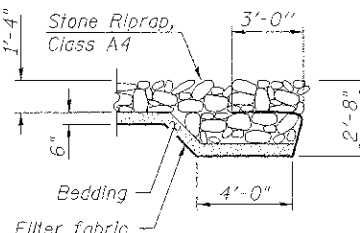
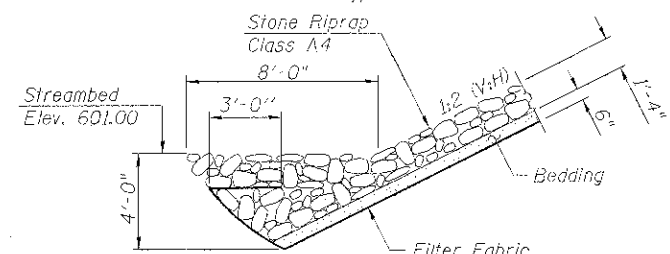


DESIGN SCOUR ELEVATION	N & S Abut.	N & S Pier
	611.96	587.85

**TOTAL BILL OF MATERIAL**

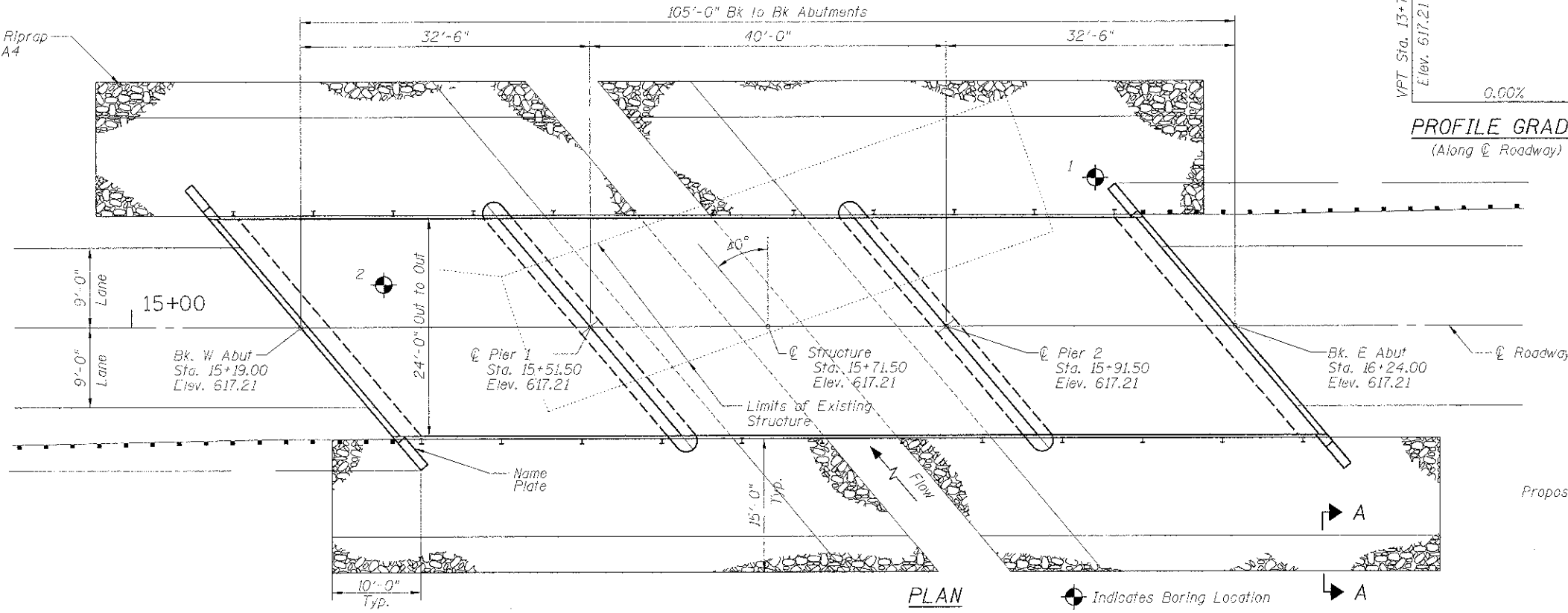
ITEM	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A4	Ton		448	448
Filter Fabric	Sq. Yd.		673	673
Removal of Existing Structures	Each		1	1
Structure Excavation	Cu. Yd.		28.0	28.0
Cofferdam Excavation	Cu. Yd.		81.0	81.0
Cofferdam (Type 1) (Location-1)	Each		1	1
Cofferdam (Type 1) (Location-2)	Each		1	1
Concrete Structures	Cu. Yd.		119.2	119.2
Precast Prestressed Concrete Deck Beams (17" depth)	Sq. Ft.	2,473		2,473
Reinforcement Bars, Epoxy Coated	Pound		10,280	10,280
Steel Railing, Type S1	Foot	210		210
Furnishing Metal Shell Piles, 12" x 0.25"	Foot		762	762
Driving Piles	Foot		762	762
Test Pile, Metal Shells	Each		2	2
Name Plates	Each	1		1

**STONE RIPRAP ANCHOR DETAIL**

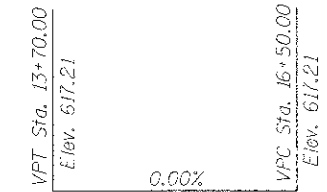


**SECTION A-A**

**ELEVATION**

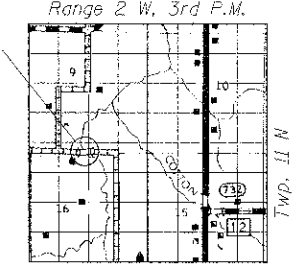


**PROFILE GRADE**  
(Along C Roadway)



**GENERAL NOTES**

Reinforcement bars shall conform to the requirements of ASTM A 705 Gr 60.  
Reinforcement bars designated (E) shall be epoxy coated.  
Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.  
The Contractor shall drive 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 piles.  
The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.  
All proposed construction activities shall be in accordance with Nationwide Permit number 14 of the Department of the Army authorized under section 404 of the Clean Water Act.  
CONSTRUCTION PERMITS: The requirements of the IDNR - Office of Water Resources have been fulfilled in accordance with Statewide Permit No. 2.



**SOUTH FORK SANGAMON RIVER  
BUILT 20 BY  
CHRISTIAN COUNTY  
GREENWOOD ROAD DISTRICT  
SECTION 08-04118-00-BR  
TR 307A STATION 15+71.50  
S.N. 011-3417 LOADING HL-93**

**NAME PLATE**  
See Std. 515001 &  
Abut. Detail for Location

**GENERAL PLAN AND ELEVATION  
SECTION 08-04118-00-BR  
CHRISTIAN COUNTY  
STRUCTURE NO. 011-3417**

**DESIGN STRESSES**

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

**PRECAST PRESTRESSED UNITS**  
f'c = 6,000 psi  
f'ci = 5,000 psi  
fpu = 270,000 psi (1/2" φ Low Lax. Strands)  
fpbt = 201,960 psi (1/2" φ Low Lax. Strands)  
fy = 60,000 psi (Reinforcement)

**LOADING HL-93**

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

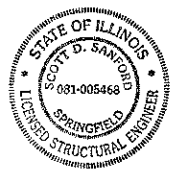
**DESIGN SPECIFICATIONS**

2010 AASHTO LRFD Bridge Design Specifications

**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 1  
Design Spectral Acceleration at 1.0 sec. (Sd1) = 0.071  
Design Spectral Acceleration at 0.2 sec. (Sd5) = 0.210  
Soil Site Class = D

**GREENE & BRADFORD, INC.**  
OF SPRINGFIELD  
REGISTERED PROFESSIONAL ENGINEERS  
ILLINOIS LICENSE NO. 031-005468  
1211 W. 20th St., Springfield, IL 62761  
Tel: 217-223-1111 Fax: 217-223-1112



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. L.R.F.D. Bridge Design Specifications.

Signature: *Scott D. Sanford*  
Dated: 12-16-11

FILE NAME: J:\2012\CAD\CAD\sheds\SN 011-3417\0804118-2190	USER NAME: eamerdah	DESIGNED: NIEWINSKI	REVISED: AH 4/20/11	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>GENERAL PLAN AND ELEVATION STRUCTURE NO. 011-3417</b>	T.R. RTE.:	SECTION:	COUNTY:	TOTAL SHEETS:	SHEET NO.:	
PLOT SCALE: 8.0252 / in.	CHECKED: TRELLO	DRAWN: VERENSKI	REVISED: AH 9/09/11			307A	08-04118-00-BR	CHRISTIAN	26	9	
PLOT DATE: 12/15/2011	CHECKED: TRELLO	REVISED:				CONTRACT NO. 03567					
ILLINOIS FED. AID PROJECT: BR05-0021 (178)											