BM#1- TOP WINGWALL @ SW CORNER OF BRIDGE.
ELEV.= 100.00 ASSUMED

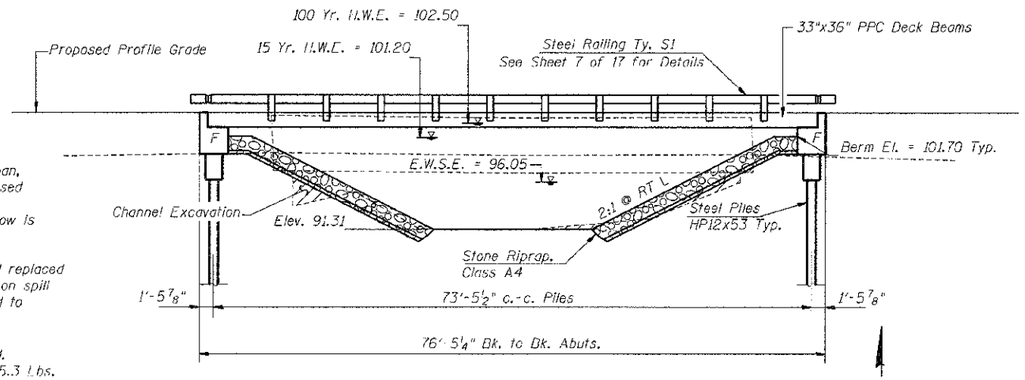
BM#2- RR SPIKE IN FIRST UTILITY POLE WEST OF BRIDGE SOUTH SIDE TR.
ELEV.= 101.91

BM#3- RR SPIKE IN FIRST UTILITY POLE EAST OF BRIDGE SOUTH SIDE TR.
ELEV.= 99.58

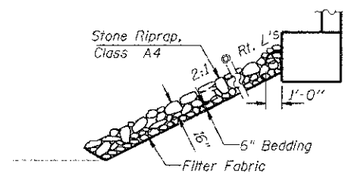
Existing structure S.N. 011-3065 single span, concrete deck beam, the structure has closed abutments with wingwalls and a 30° skew. The face to face opening normal to the flow is ±50' and has a roadway width of 20'-0".

The existing structure will be removed and replaced with a single span PPC deck beam bridge on spill through abutments. The road will be closed to thru-traffic during construction.

Estimated Concrete Quantity = 85.6 Cu. Yd.
Estimated Structural Steel Quantity = 11,315.3 Lbs.



ELEVATION



STONE RIPRAP ANCHOR DETAIL
Section A-A

GENERAL NOTES

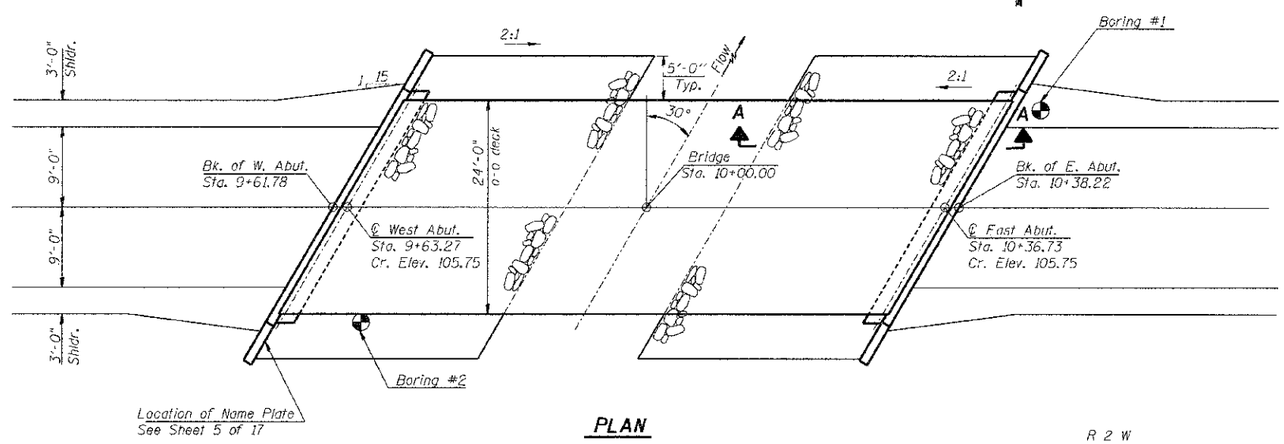
Reinforcement bars shall conform to the requirements of ASTM A705 Grade 60.

The Contractor shall drive one steel test pile in a permanent location at the West Abutment as directed by the Engineer, before ordering the remainder of piles. Test piles shall be driven to 110% of the nominal required bearing.

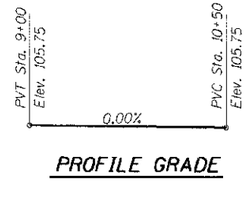
Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer. Structure excavation will not be paid for as a separate item but shall be considered as included in the contract unit price for the class of concrete involved.

The steel H piles shall be according to AASHTO M270 Grade 50.

Concrete Sealer shall be applied to the designated areas of the abutments.



PLAN



PROFILE GRADE

BUCKHART CREEK
BUILT 201_ BY
BUCKHART ROAD DISTRICT
CHRISTIAN COUNTY
SEC. 06-03111-00-BR
STATION 10+00.00
STR. NO. 011-3408 LOADING HL- 93

LETTERING FOR NAME PLATE
See Std. 515001

DESIGN SCOUR ELEVATION	
W. Abut.	E. Abut.
99.70	99.70

WATERWAY INFORMATION

Drainage Area	36.89 Sq. Mi.
Required Opening (15 Yr.)	420 Sq. Ft.
Provided Opening	420 Sq. Ft.
Present Opening	308 Sq. Ft.
Design Discharge (15 Yr.)	2,523 C.F.S.
Created Head (15 Yr.)	0.50 Ft.
100 Year Discharge	4,140 C.F.S.
100 Yr. Created Head	1.00 Ft.
15 Yr. Design High Water Elev.	101.20
100 Yr. High Water Elev.	102.50

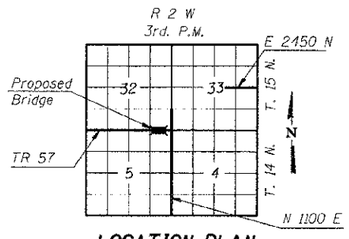
DESIGN STRESSES

f'_c = 6,000 p.s.i. Prestressed Beams
f'_{ci} = 5,000 p.s.i. Prestressed Beams
f'_s = 270,000 p.s.i. 1/2" ϕ Low Relaxation Strands
f_{si} = 201,960 p.s.i. 1/2" ϕ Low Relaxation Strands
f'_c = 3,500 p.s.i. Concrete Substructure -- Field Units
f_y = 60,000 p.s.i. Reinf. Bars -- Field Units

LOADING: HL-93
Design Specifications: 2010 AASHTO & Interims
50#/Sq. Ft. included in dead load for future wearing surface.

CONSTRUCTION PERMITS

THE REQUIREMENTS OF THE IDNR - OFFICE OF WATER RESOURCES HAVE BEEN FULFILLED IN ACCORDANCE WITH STATEWIDE PERMIT NO. 2.



LOCATION PLAN

SEISMIC DATA:
Seismic Performance Zone (SPZ) = 2
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.156
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.304
Soil Site Class = D

STATE OF ILLINOIS
ROBERT A. LEE
081-005246
CHICAGO IL
LICENSED STRUCTURAL ENGINEER

Expires 11/30/2014

"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 Standard Specifications for Highway Bridges'".

Robert A. Lee 3/05/13

ILLINOIS STRUCTURAL NO. 081-005246 Expires 11/30/14

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Precast Prestressed Concrete Deck Beams (33" Depth)	Sq. Ft.	1,780		1,780
Concrete Structures	Cu. Yd.		28.5	28.5
Reinforcement Bars	Pound		3,010	3,010
Steel Railing, Type S-1	Foot	150		150
Name Plates	Each		1	1
Furnishing Steel Piles HP12x53	Foot		585	585
Driving Piles	Foot		585	585
Test Piles, Steel HP12x53	Each		1	1
Stone Riprap, Class A4	Ton		153	153
Filter Fabric	Sq. Yd.		230	230
Channel Excavation	Cu. Yd.		92	92
Concrete Encasement	Cu. Yd.		4.9	4.9
Concrete Sealer	Sq. Ft.		351	351
Removal of Existing Structures	Each			1

FUHRMANN ENGINEERING INC.
2852 SOUTH 11th STREET
SPRINGFIELD, IL 62703
(217) 529-5577

USER NAME =	DESIGNED -	REVISED -	
	CHECKED -	REVISED -	
PLOT SCALE =	DRAWN -	REVISED -	
PLOT DATE =	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN
SN 011-3408
Sheet No. 1 of 8 sheets.

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	06-03111-00-BR	CHRISTIAN	17	4
		CONTRACT NO. 93601		
	ILLINOIS FED. AID PROJECT			