

Benchmark: Chiseled square located on the top of the SE abutment of S.N. 092-0176, Sta. 69+47.5, 18.1' Rt., Elev. 686.717.

Existing Structure: S.N. 092-0176 built as F.A.S. Rte. 331 - Sec. Z-1-BR in 1979, is a single span P.P.C. deck beam bridge with bituminous wearing surface and waterproofing membrane system. The structure is 45'-0" back to back of closed abutments on spread footings, and 30'-0" out to out of deck. Skew is 30° Rt. Fwd. In 2009, 4 of 10 P.P.C. deck beams were replaced and H.M.A. wearing surface patches were completed.

Structure to be replaced with a cast-in-place concrete triple cell box culvert with a 35° Rt. Fwd. skew.

Traffic to be maintained utilizing Stage Construction.

No Salvage.

APPROVED

For Structural Adequacy Only

J. Carl Peyer (SE)
Engineer of Bridges & Structures

STATION 69+64
BUILT 20__ BY
STATE OF ILLINOIS
F.A.S. RT. 331 SEC. (79-102)BR
LOADING HS20-44
STR. NO. 092-2044

NAME PLATE

(See Std. 515001)

INDEX OF SHEETS

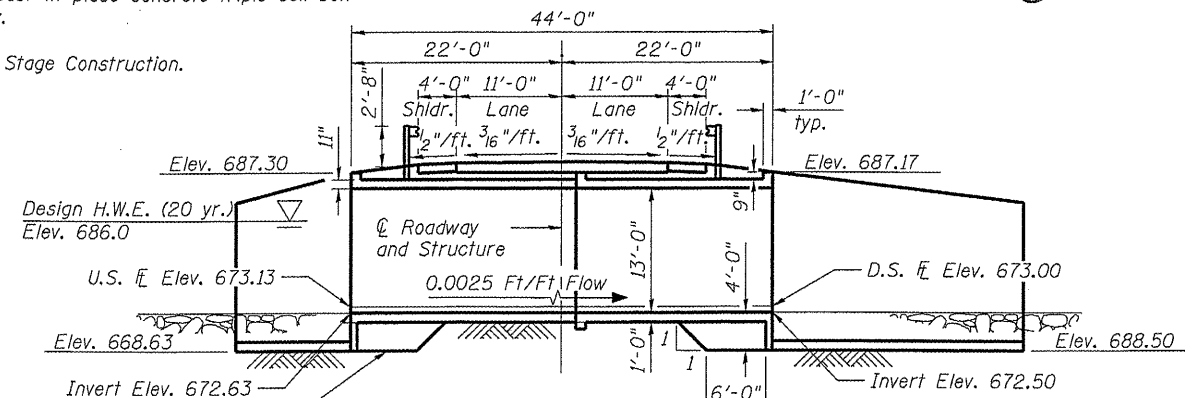
- 1 General Plan & Elevation
- 2 Stage Construction Details
- 3 Temporary Concrete Barrier for Stage Construction
- 4 Top Slab Details
- 5 Bottom Slab Details
- 6 Culvert Details
- 7 Bar Splicer Assembly and Mechanical Splicer Details
- 8 Riprap Details
- 9 Soil Boring Logs

TOTAL BILL OF MATERIAL

Item	Unit	Total
Stone Riprap, Class A4	Sq. Yd.	655
Filter Fabric	Sq. Yd.	655
Removal of Existing Structures	Each	1
Reinforcement Bars	Pound	85,020
Reinforcement Bars, Epoxy Coated	Pound	3,900
Bar Splicers	Each	344
Name Plates	Each	1
Concrete Box Culverts	Cu. Yd.	425.1
Steel Plate Beam Guard Rail, Attached to Structures	Foot	119
Temporary Sheet Piling	Sq. Ft.	1,133

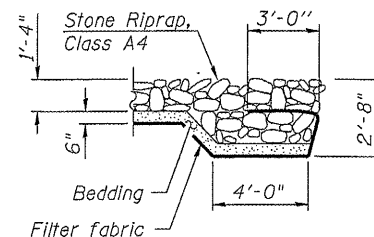
GENERAL NOTES

1. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60.
2. Reinforcement bars designated (E) shall be epoxy coated.
3. Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.
4. Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure. The Contractor shall sawcut the upper portion of the existing abutment at the stage removal line before Stage I removal to ensure the remaining portion will not be prematurely damaged.
5. Precast Alternate is not allowed.
6. Steel Plate Beam Guardrail, Attached to Structures: Attachment shall be according to case IV except that the 1/2" ϕ holes in the top slab shall be formed (instead of cored) for the threaded rods.
7. For Riprap details see sheet 8 of 9.
8. For drainage pipe thru wingwall location and details see sheet 4 of 9.
9. See Roadway Plans for Porous Granular Embankment details and quantity.
10. For quantity of Temporary Concrete Barrier, see Roadway Plans.

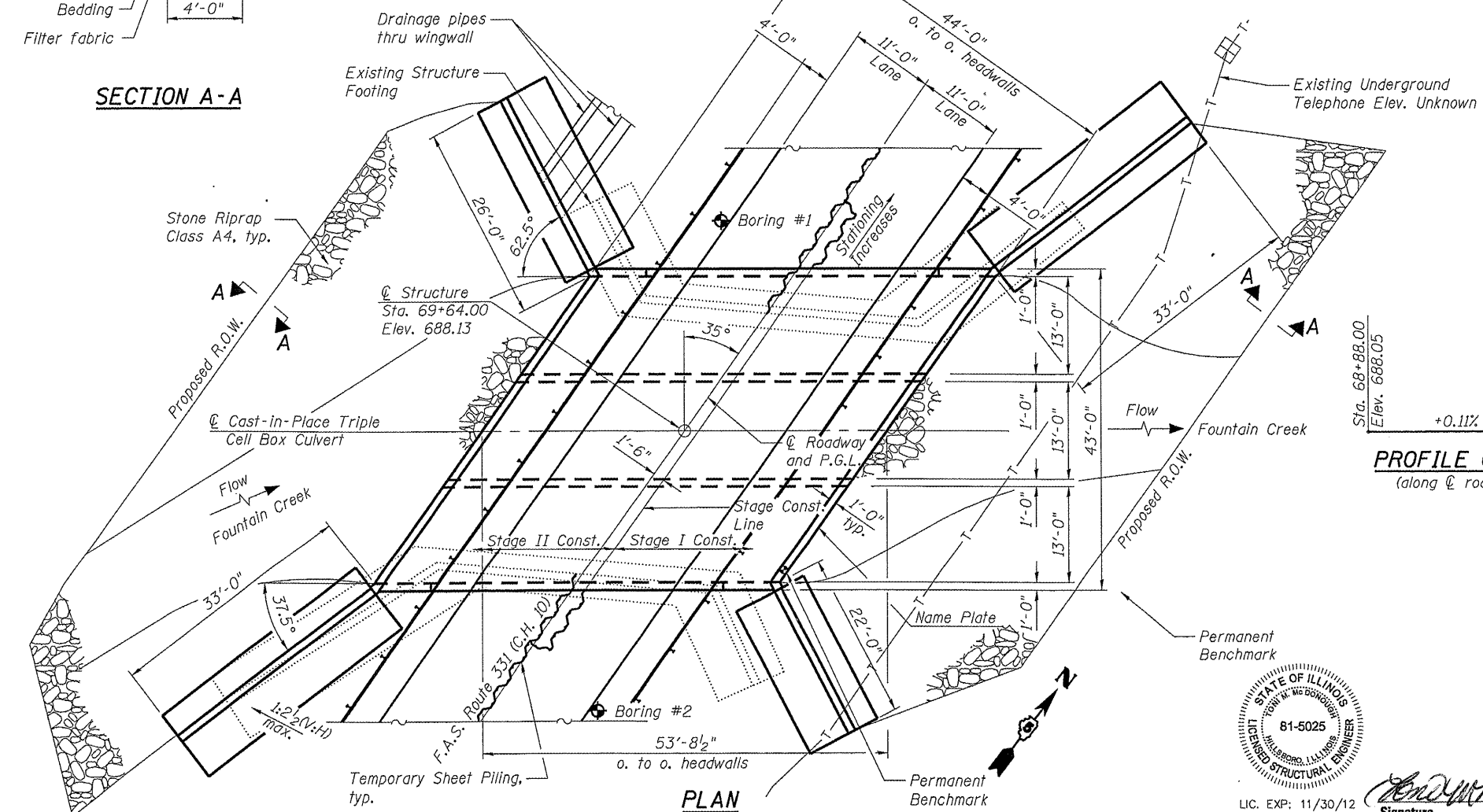


LONGITUDINAL SECTION

(Horiz. dim. @ rt. L's to rdwy.)
(Looking North)



SECTION A-A



PLAN

WATERWAY INFORMATION

		Existing Low Grade Elev. = 687.42 ft @ Sta. 63+00		Proposed Low Grade Elev. = 687.42 ft @ Sta. 63+00		
Drainage Area = 15.1 Sq. Mi.						
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	10	1980	374 487	685.6	0.5 0.3	686.1 685.9
Base	20	2501	374 488	686.0	0.9 0.5	686.9 686.5
Overtopping (Exist.)	100	3730	374 488	686.8	1.8 1.2	688.6 688.0
Overtopping (Prop.)	35	2922	374 -	686.3	1.2 -	687.5 -
Overtopping (Prop.)	60	3330	- 488	686.6	- 0.9	- 687.5

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	Upstream	Downstream
	668.63	668.5

LOADING HS20-44

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

DESIGN SPECIFICATIONS

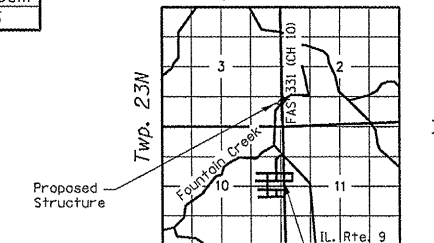
2002 AASHTO Standard Specifications for Highway Bridges

DESIGN STRESSES

FIELD UNITS

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

Range 13W 2nd P.M.



LOCATION SKETCH

GENERAL PLAN AND ELEVATION

F.A.S. ROUTE 331 (C.H. 10)

OVER FOUNTAIN CREEK

SECTION (79-102)BR

VERMILION COUNTY

STA. 69+64.00

S.N. 092-2044



J. Carl Peyer
Signature Date 8/12/2011



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PROFESSIONAL DESIGN NO. 184-002754

FILE NAME	USER NAME	DESIGNED	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN AND ELEVATION STRUCTURE NO. 092-2044	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
@922044-70434.dgn	RNH	JMH	-			331	(79-102)BR	VERMILION	29	12
PLOT SCALE		TMM	-							
PLOT DATE		RNH	-							
		TMM	-							
						CONTRACT NO. 70434		ILLINOIS FED. AID PROJECT		