APPROVED

FEB 14 2014

AS A BASIS FOR PREPARATION OF DETAILED PLANS

Bench Mark: Chiseled "□" NW Wingwall of IL 8 Bridge over Kickapoo Creek. Elevation 512.50

Existing Structure: S.N. 072-0047 was built in 1931 under FAS 384, Section Z-1D at Station 101+16. In 1974 the east span of the original three span truss bridge was replaced with 2 simple span PPC deck beams and 1 new pier was added under FAS 384, Section Z-1D-BR. In 1979 the two spans reconstructed in 1974 were widened and the remaining two truss spans were replaced with 4 simple span PPC deck beams and 2 new piers were added under FAS 384, Section Z-1D-BR-1. The existing structure consists of a 6 span PPC deck beam superstructure with bituminous overlay on closed abutments, three solid wall encased pile bent piers supported by steel H-piles, and two concrete piers. 277'-4" back-to-back abutments. 33'-0" out-to-out deck. Structure to be removed and replaced using stage construction.

Traffic is to be maintained using staged construction.

Salvage: Temporary support beams and clamps.

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	W. Abut.	Pier 1	Pier 2	Pier 3	Pier 4	E. Abut.
	506.61	467.3	467.1	468.9	468.7	506.61

HIGHWAY CLASSIFICATION

Rte. FAS 1388 - IL Rte. 8
Functional Class: Major Collector (Non-Urban)
ADT: 2750 (2009); 3060 (2020)
ADTT: 190 (2009); 210 (2020)
DHV: 306 (2020)
Design Speed: 55 m.p.h.
Posted Speed: 55 m.p.h.
Two-Way Traffic
Directional Distribution: 50:50

LOADING HL-93

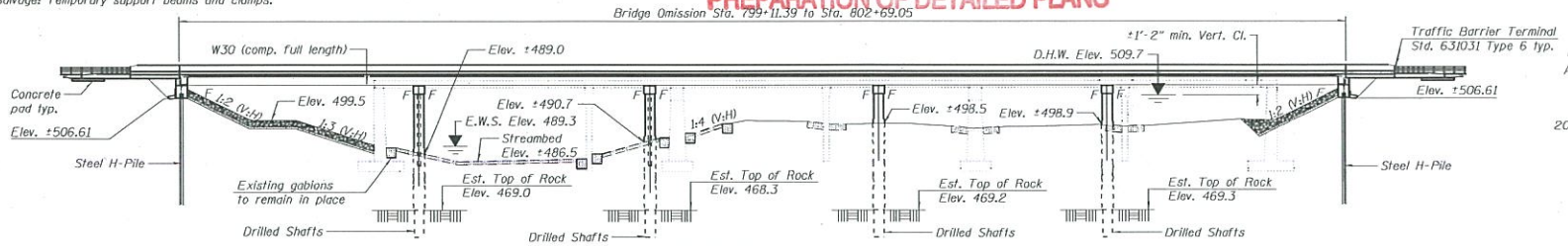
Allow 50#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS

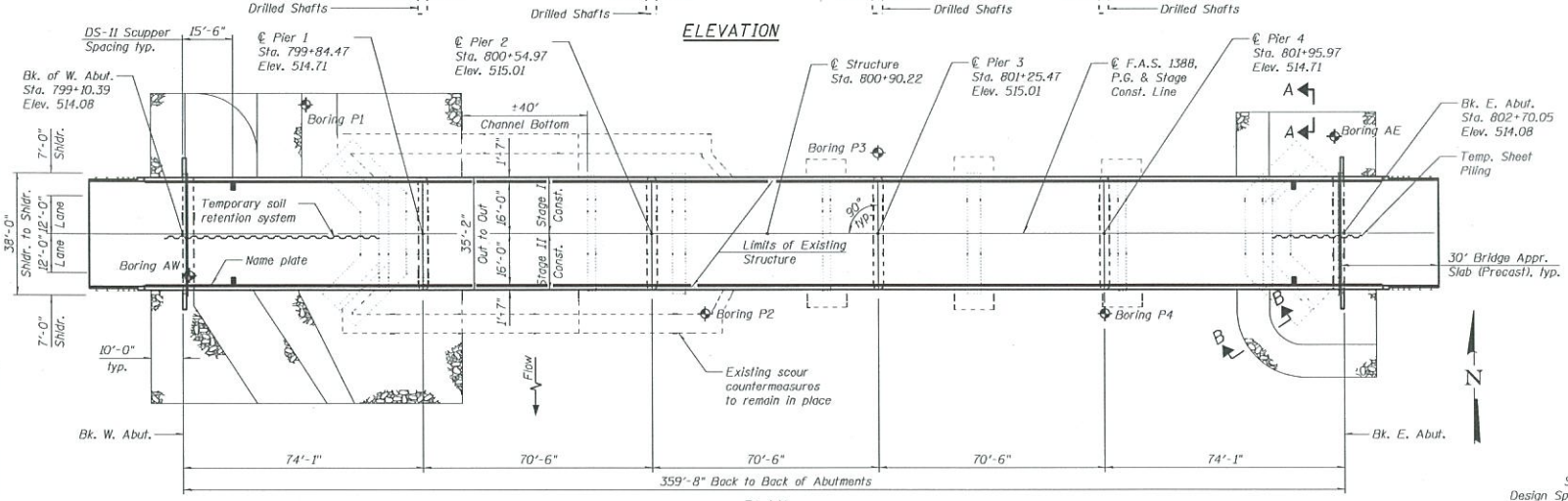
2010 AASHTO LRFD Bridge Design Specifications with 2010 Interims

DESIGN STRESSES

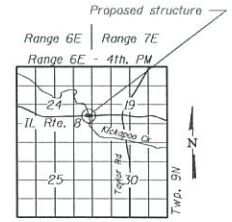
FIELD UNITS
f'_c = 3,500 psi
f_y = 60,000 psi (reinforcement)
f_y = 50,000 psi (M270 Grade 50)



ELEVATION



PLAN



LOCATION SKETCH

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.110g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.171g
Soil Site Class = D

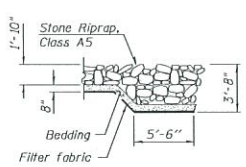
WATERWAY INFORMATION

Existing Overtopping Elev. 511.0 @ Sta. 799+50
Proposed Overtopping Elev. 511.0 @ Sta. 799+50

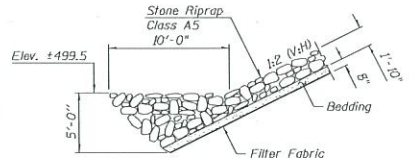
Drainage Area = 235 Sq. Mi.

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.
	10	13900	2201	2592	506.6	1.3	1.0	507.9	507.6
Design	50	23000	2587	3530	509.6	1.6	1.6	511.2	511.2
Base	100	27700	2587	3856	511.2	0.9	0.7	512.1	511.9
Scour Design Check	200	37500	2587	3856	514.2	0.5	0.5	514.7	514.7
Overtop (Exist.)	25	18800	2488	-	508.2	3.0	-	511.2	-
Overtop (Prop.)	50	23000	-	3530	509.6	-	1.4	-	511.0
Max. Calc.	500	40400	2587	3856	514.9	0.5	0.5	515.4	515.4

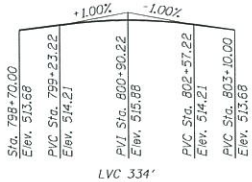
10 Year Velocity through Exist. Bridge = 6.3 ft/s 10 Year Velocity through Prop. Bridge = 5.4 ft/s



SECTION A-A



SECTION B-B



PROFILE GRADE
(along ℄ roadway)

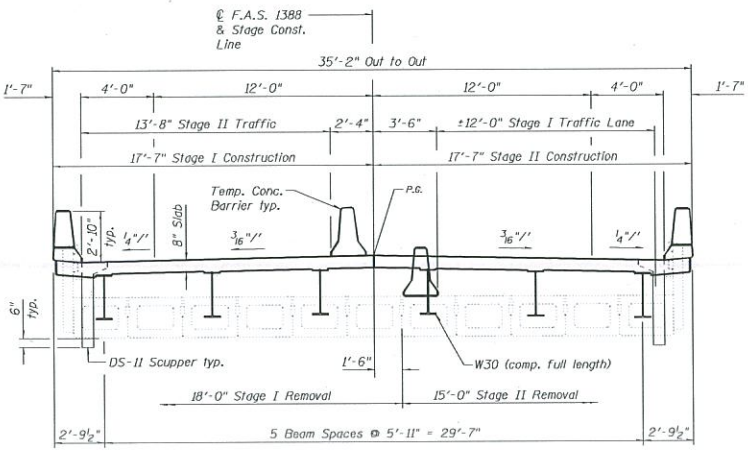
GENERAL PLAN & ELEVATION
ILLINOIS ROUTE 8 OVER KICKAPOO CREEK
F.A.S. RT. 1388 - SEC. (Z-1D-BR-1)BR
PEORIA COUNTY
STATION 800+90.22
STRUCTURE NO. 072-0229

FILE NAME = 8720229-68697-TSL-001.dgn	USER NAME =	DESIGNED - BWP	REVISED -
BFW — BACON | FARMER | WORKMAN ENGINEERING & TESTING CO.		CHECKED - RSB	REVISED -
	PLOT SCALE =	DRAWN - BWP	REVISED -
	PLOT DATE = 2/13/2014	CHECKED - RSB	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

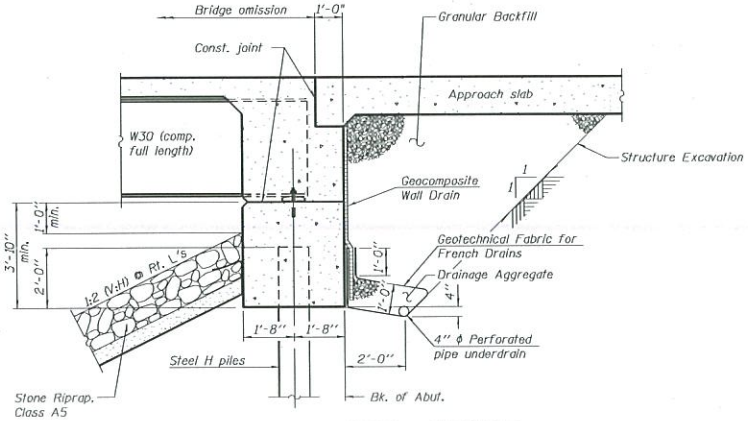
SHEET NO. 1 OF 2 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1388	(Z-1D-BR-1)BR	PEORIA		
		CONTRACT NO. 68697		
		ILLINOIS FED. AID PROJECT		



CROSS SECTION
(Looking East)

Note:
The condition of the remaining existing deck beams for the duration of Stage I Traffic should be verified during the final design. If their condition changes, the proposed staging sequence shall be re-evaluated.
If additional beam replacements or beam supports are required, the designer shall provide the necessary plans.



SECTION THRU INTEGRAL ABUTMENT
(Horiz. dim. @ Rt. L's)

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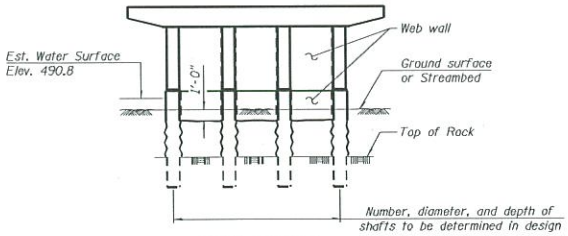
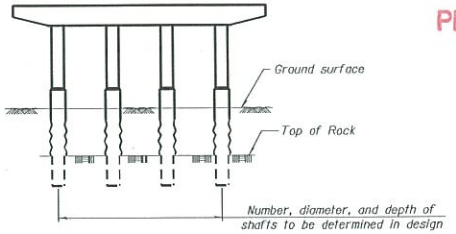


PIER SKETCH
(Piers 1 & 2)



PIER SKETCH
(Piers 3 & 4)

STAGING & DETAILS
ILLINOIS ROUTE 8 OVER
KICKAPOO CREEK
F.A.S. RT. 1388 - SEC. (Z-1D-BR-1)BR
PEORIA COUNTY
STATION 800+90.22
STRUCTURE NO. 072-0229

FILE NAME = 072D229-68697-TSL-002.dgn	USER NAME =	DESIGNED - BWP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGING & DETAILS STRUCTURE NO. 072-0229	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS / SHEET NO.
BFW BACON | FARMER | WORKMAN ENGINEERING & TESTING, INC.		CHECKED - RSB	REVISED -			1388	(Z-1D-BR-1)BR	PEORIA	
	PLOT SCALE =	DRAWN - BWP	REVISED -					CONTRACT NO. 68697	
	PLOT DATE = 2/13/2014	CHECKED - RSB	REVISED -		SHEET NO. 2 OF 2 SHEETS			ILLINOIS FED. AID PROJECT	