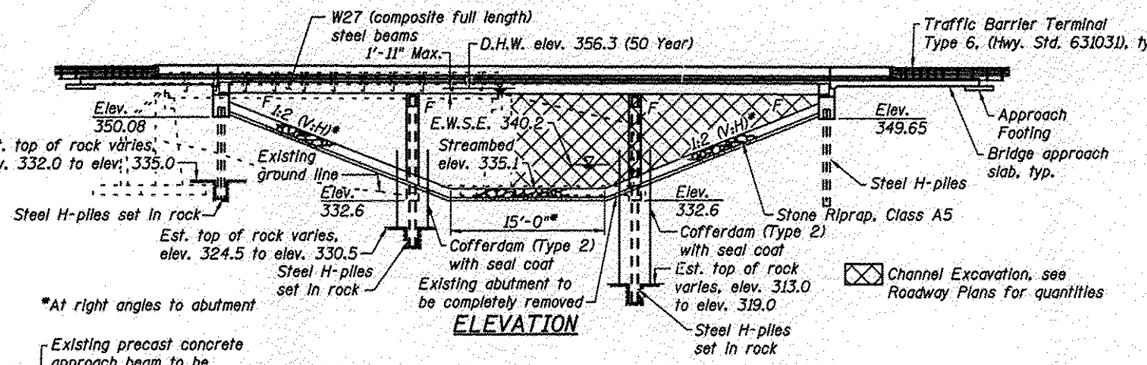
BENCHMARK: BM W-46,
Chiseled square on SW corner of SN 035-0002,
Elev. 356.87 (NAVD 88)

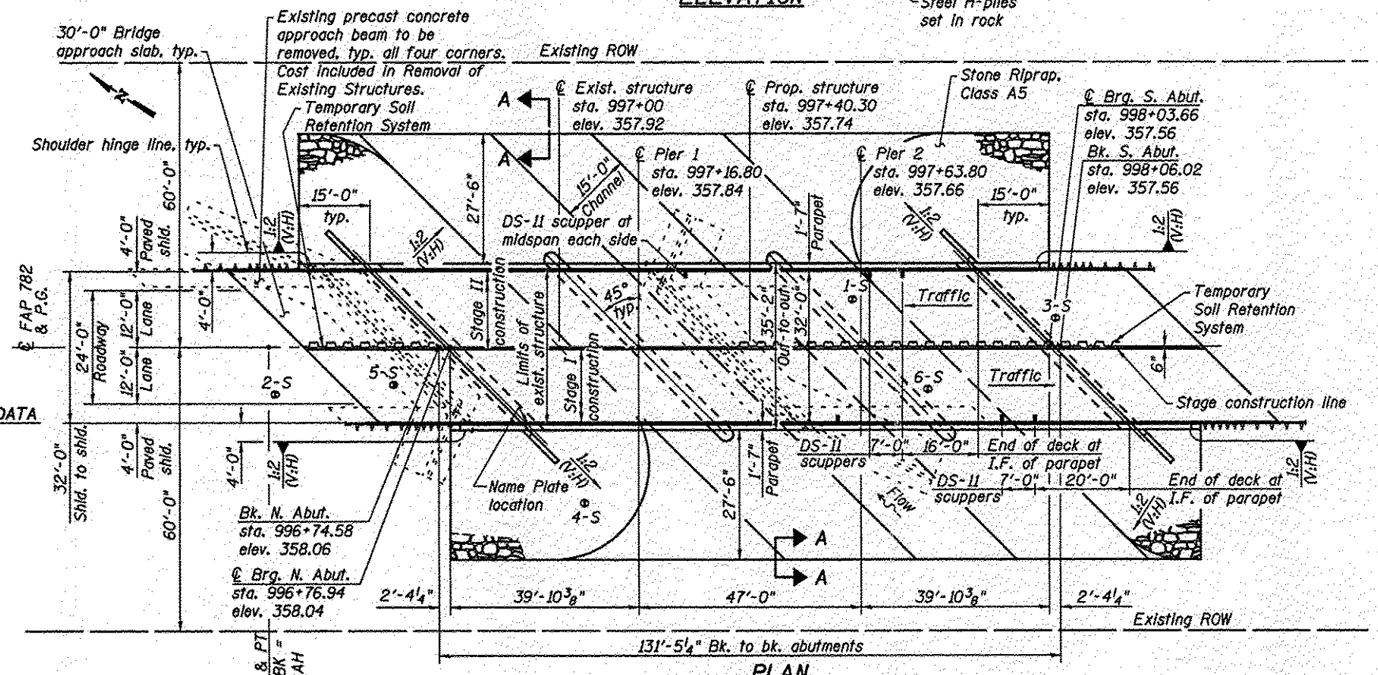
EXISTING STRUCTURE:
SN 035-0002 was originally built in 1933 as SBI Rte. 140, Section 115-A. It is a PPC deck beam superstructure on timber pile supported abutments. The superstructure consists of one-span (66'-2¼"). The out to out deck width is 33'-0" and the length is 75'-2½" back to back of abutments. The abutments were widened in 1979. The structure was constructed with a 43°-58'-29" rt. fwd. skew. Traffic shall be maintained utilizing stage construction.

No salvage.

Proposed Ground Elevation at ℄ Piers	
Pier 1	339.9
Pier 2	339.5

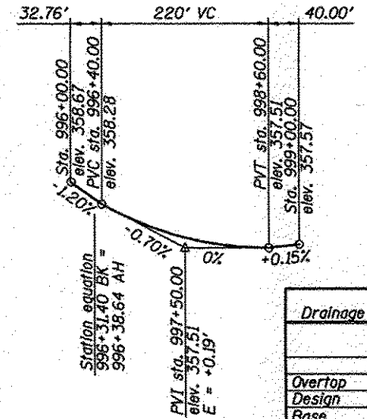


ELEVATION



PLAN

℄ FAP ROUTE 782 CURVE DATA
Δ = 18°32' 51" (LT)
D = 0°59' 56"
R = 5,735.61'
T = 936.54'
L = 1,856.70'
E = 75.96'
S.E. = 0.0285'/'
PC sta. = 977+74.70
PT sta. = 996+31.40
PI sta. = 987+11.24
Superelevation transition
sta. 994+56 to sta. 996+31



PROFILE GRADE
(Along ℄ roadway)

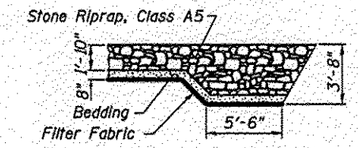
DESIGN SCOUR ELEVATION TABLE (ft.)				
	N. Abut.	Pier 1	Pier 2	S. Abut.
Q100	350.0	331.8	329.5	349.5
Q500	350.0	326.9	326.8	349.5

WATERWAY INFORMATION

Drainage Area = 6.50 Sq. Mi.
Prop. Low Grade Elev. 357.45 ✪ Sta. 1000+15
Exist. Low Grade Elev. 357.05 ✪ Sta. 998+00

	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	2710	722	986	356.2	0.3	0.2	356.5	356.4
Overtop	37	4210	722	-	356.3	0.8	-	357.1	-
Design	50	4570	722	986	356.3	0.9	0.5	357.2	356.8
Base	100	5420	722	986	356.3	1.2	0.7	357.5	357.0
Overtop	320	6800	-	986	356.4	-	1.0	-	357.4

10 Year Velocity through Existing Bridge 3.8 ft/s
10 Year Velocity through Proposed Bridge 2.8 ft/s



SECTION A-A

STATION 997+40.30
BUILT 201_ BY
STATE OF ILLINOIS
F.A.P. RT. 782 SEC. 115B-1
LOADING HL-93
STR. NO. 035-0017

NAME PLATE
(See Hwy. Std. 515001)

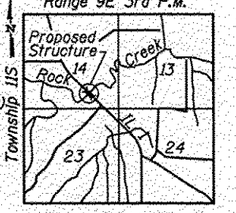
DESIGN SPECIFICATIONS
2012 AASHTO LRFD
Bridge Design Specifications

LOADING HL-93
Allow 50 psf for future wearing surface

DESIGN STRESSES

FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (reinforcement)
fy = 50,000 psi (M270 Grade 50) (Primary)
fy = 36,000 psi (M270 Grade 36)

SEISMIC DATA
Seismic Performance Zone (SPZ) = 3
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.325g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.755g
Soil Site Class = D



LOCATION SKETCH

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Cantilever Forming Brackets for Superstructures with W27 Beams and Smaller	Sheet No. 25 of 29
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TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A5	Sq. Yd.	-	1534	1534
Filter Fabric	Sq. Yd.	-	1534	1534
Removal of Existing Structures	Each	-	-	1
Structure Excavation	Cu. Yd.	-	186	186
Cofferdam Excavation	Cu. Yd.	-	318	318
Cofferdam (Type 2) (Location-1)	Each	-	1	1
Cofferdam (Type 2) (Location-2)	Each	-	1	1
Concrete Structures	Cu. Yd.	-	314.1	314.1
Concrete Superstructure	Cu. Yd.	289.6	-	289.6
Bridge Deck Grooving	Sq. Yd.	632	-	632
Seal Coat Concrete	Cu. Yd.	-	146.4	146.4
Protective Coat	Sq. Yd.	812	-	812
Furnishing and Erecting Structural Steel	L Sum	1	-	1
Stud Shear Connectors	Each	3258	-	3258
Reinforcement Bars, Epoxy Coated	Pound	64280	31220	95500
Bar Splicers	Each	522	196	718
Furnishing Steel Piles HP14x73	Foot	-	1466	1466
Driving Piles	Foot	-	396	396
Test Pile Steel HP14x73	Each	-	2	2
Name Plates	Each	1	-	1
Anchor Bolts, ⅝"	Each	-	48	48
Geocomposite Wall Drain	Sq. Yd.	-	90	90
Granular Backfill for Structures	Cu. Yd.	-	165	165
Asbestos Bearing Pad Removal	Each	22	-	22
Drainage Scuppers, DS-11	Each	6	-	6
Pipe Underdrains for Structures 4"	Foot	-	203	203
Setting Piles in Rock	Each	-	33	33
Temporary Soil Retention System	Sq. Ft.	-	1708	1708

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

STATE OF ILLINOIS
RICHARD D. PAYNE
No. 4647
LICENSED STRUCTURAL ENGINEER
EXPIRES 11-30-14
SIGNATURE
1/22/2014
DATE

GENERAL PLAN & ELEVATION
IL 1 OVER ROCK CREEK
FAP ROUTE 782 - SECTION 115B-1
HARDIN COUNTY
STATION 997+40.30
STRUCTURE NO. 035-0017

ESCA CONSOLIDATED, INC.

USER NAME = kah		DESIGNED - SHL	07/13	REVISED -	
ESCA PROJECT NO. 1835.83		CHECKED - RDP	09/13	REVISED -	
PLOT SCALE = 62 '/' IN.		DRAWN - JPC	07/13	REVISED -	
PLOT DATE = 1/22/2014	1:52:32 PM	CHECKED - SHL	08/13	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 29 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
782	115B-1	HARDIN	70	24
		CONTRACT NO. 78263		
	ILLINOIS FED. AID PROJECT			