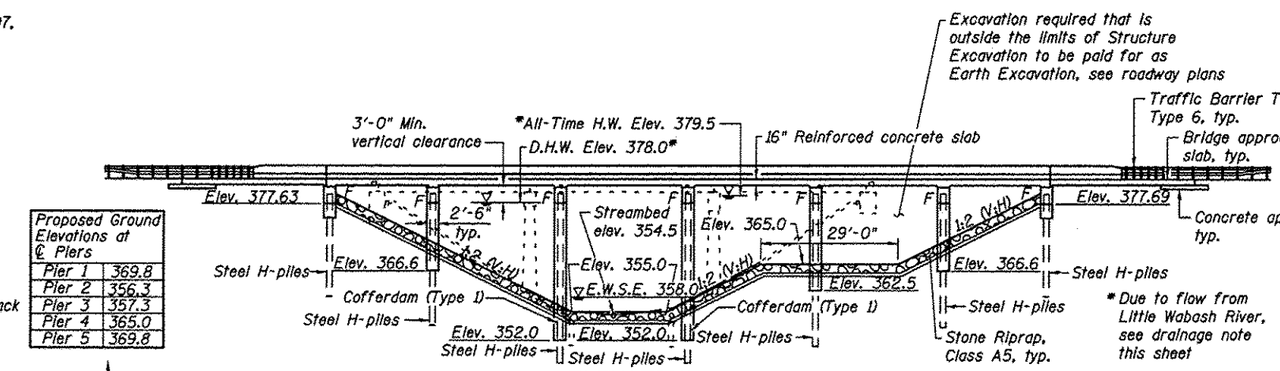
BENCHMARK: BM A5-17 - Chiseled square on SW wing wall of SN 097-0007. elev. 382.67 (NAVD 88)

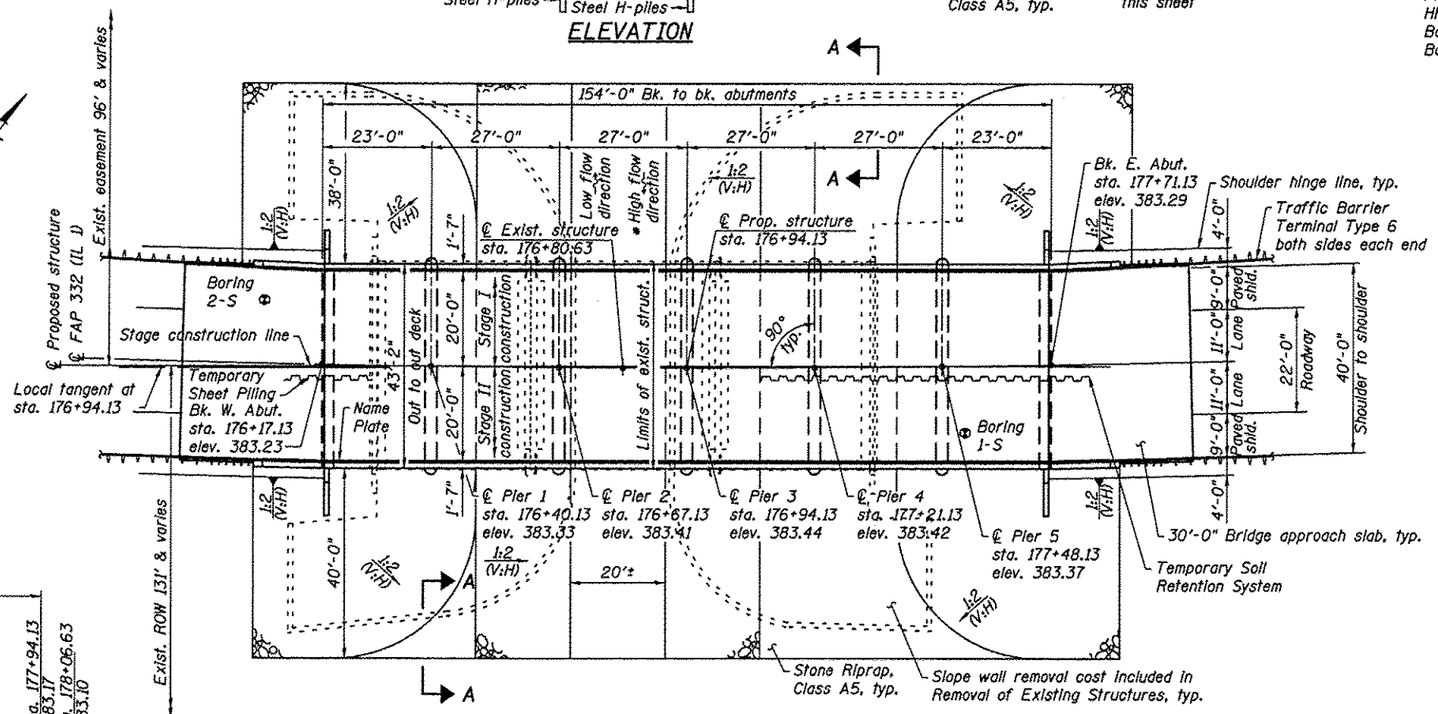
EXISTING STRUCTURE:
SN 097-0007 was originally built in 1951 as S.B.I. Route 1 Section 4-BY. It had a W24 steel beam superstructure. In 1978, the substructure was widened, and the superstructure was replaced with PPC deck beams. The existing substructure consists of open abutments and solid shaft piers supported on steel and timber piles. The superstructure consists of three spans (32'-2", 38'-11", 32'-7") with an out-to-out deck width of 44'-0". The bridge length is 106'-3" back-to-back of abutments along the local tangent. The structure was constructed with no skew and 0.041 ft/ft superelevation. Traffic shall be maintained utilizing stage construction.

No salvage.

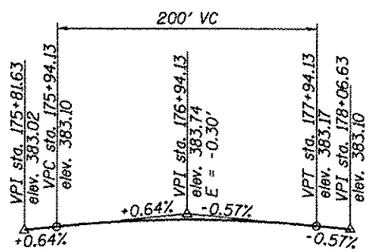
Proposed Ground Elevations at ℄ Piers	
Pier 1	369.8
Pier 2	356.3
Pier 3	357.3
Pier 4	365.0
Pier 5	369.8



ELEVATION



PLAN



PROFILE GRADE
(Along ℄ IL 1)

℄ FAP ROUTE 332 CURVE DATA

Δ = 22° 39' 04" (LT)
D = 1° 20' 05"
R = 4,292.40'
T = 859.70'
L = 1,696.94'
E = 85.25'
S.E. = 0.04 '/'
PC sta. = 169+08.02
PT sta. = 186+04.96
PI sta. = 177+67.72
Full superelevation
sta. 172+00 to sta. 183+00

STRUCTURE INDEX OF SHEETS

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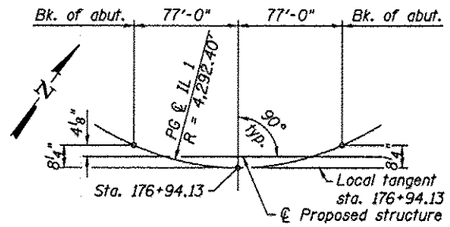


OFFSET SKETCH

Design Scour Elevations (ft.)						
W. Abut.	Pier 1	Pier 2	Pier 3	Pier 4	Pier 5	E. Abut.
377.7	368.8	350.2	350.2	362.7	368.8	377.7

Drainage Note

At some point above flood stage, the Little Wabash River flows to the east, using McHenry Slough as a shortcut to reach the Wabash River. This occurred in May 2011 and resulted in the all-time high water elevation recorded at the bridge site. This event also caused a large amount of scour at the bridge.

WATERWAY INFORMATION

Drainage Area = 3.71 Sq. Mi. Low Grade Elev. 380.21 @ Sta. 167+00

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	431	1296	1713	378.0	0.0	0.0	378.0	378.0
Design	50	674	1296	1713	378.0	0.0	0.0	378.0	378.0
Base	100	781	1296	1713	378.0	0.0	0.0	378.0	378.0
Max. Calc.	500	1040	1296	1713	378.0	0.0	0.0	378.0	378.0

10 year velocity through existing structure = 0.4 FPS
10 year velocity through proposed structure = 0.3 FPS

DESIGN SPECIFICATIONS

2010 AASHTO LRFD
Bridge Design Specifications
5th Edition with 2010 Interims

LOADING HL-93

Allow 50 psf for future wearing surface.

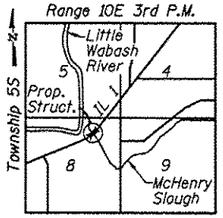
DESIGN STRESSES

FIELD UNITS

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

SEISMIC DATA

Seismic Performance Zone (SPZ) = 2
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.293g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.693g
Soil Site Class = D



LOCATION SKETCH

STATION 176+94.13
BUILT 201_ BY
STATE OF ILLINOIS
F.A.P. RT. 332 SEC. 4B-1
LOADING HL-93
STR. NO. 097-0078

NAME PLATE
See Std. 515001

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures — Date

STATE OF ILLINOIS — ERIC L. HEWEZI — No. 6159 — LICENSED STRUCTURAL ENGINEER
EXPIRES 11-30-12
SIGNATURE
08/31/12
DATE

GENERAL PLAN & ELEVATION
IL 1 OVER MCHENRY SLOUGH
FAP ROUTE 332 - SECTION 4B-1
WHITE COUNTY
STATION 176+94.13
STRUCTURE NO. 097-0078

ESCA CONSULTANTS, INC.

USER NAME = elh	DESIGNED - ELH	07/12	REVISED -		
ESCA PROJECT NO. 988.11	CHECKED - RDP	10/12	REVISED -		
PLOT SCALE = 8x2 '/' IN.	DRAWN - DWH/HAS	07/12	REVISED -		
PLOT DATE = 1/24/2013 3:55:33 PM	CHECKED - ELH	10/12	REVISED -		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 23 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
332	4B-1	WHITE	70	22
		CONTRACT NO. 78154		
		ILLINOIS FED. AID PROJECT AID		