B.M. #16: Chiseled "□" on the N.E. Corner of the S.W. wingwall of Existing Structure No. 076-0023. El. 359.95

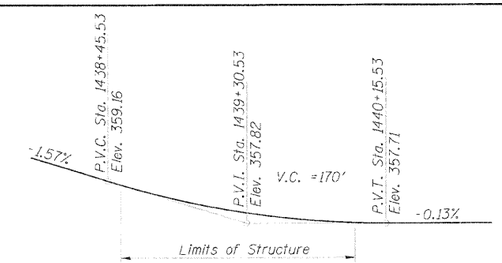
Existing Structure (No. 076-0023):

Originally constructed in 1923, replaced in 1980, and overlayed in 1991. The original 1923 structure was removed to below grade in 1980 and replaced with a 0° Skew, 3 span, 133'-9" Bk.-Bk. PPCDB structure, having span lengths of 25'-9", 70'-0" & 38'-0" and an out to out width of 36'-0". The existing ℄ of Structure is at Station 1439+28.17. The existing abutments are pile supported stub abutments on steel HP piles. The existing piers are pile bent supported with a solid encased wall around steel HP piles.

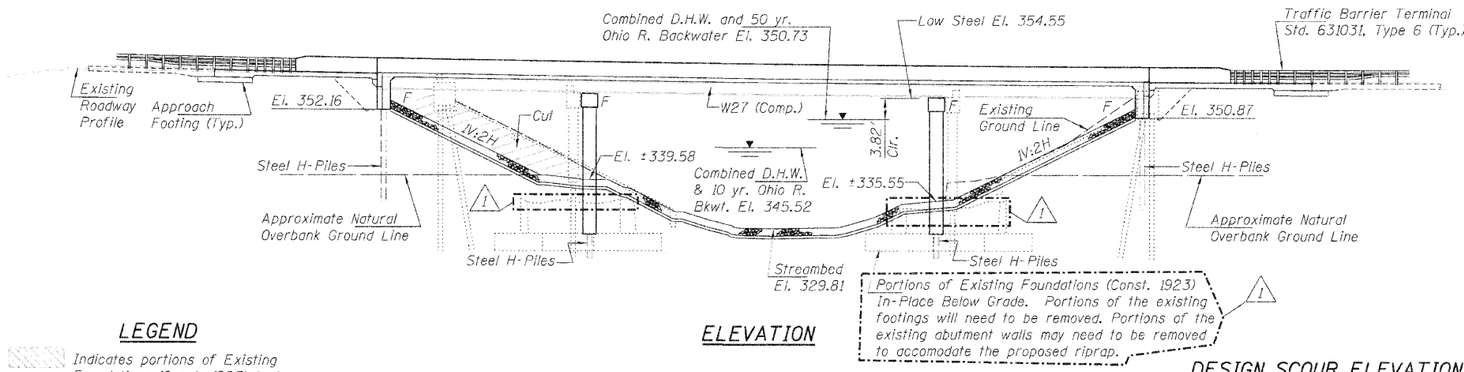
Structure is to be removed and replaced using stage construction.

The 7 existing supporting steel beams shall be salvaged and stockpiled on the construction site.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PROFILE GRADE - IL. RTE. 146



ELEVATION

LEGEND

Indicates portions of Existing Foundations (Const. 1923) to be Removed to facilitate Proposed Pier Installation.

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	N. Abut.	Pier 1	Pier 2	S. Abut.
	352.2	329.2	325.2	350.9

WATERWAY INFORMATION TABLE
NORMAL DEPTH OR 10 YEAR BACKWATER FOR OHIO RIVER

Drainage Area = 10.76 Sq. Mi. Low Grade Elev. 357.51 @ Sta. 1442+78

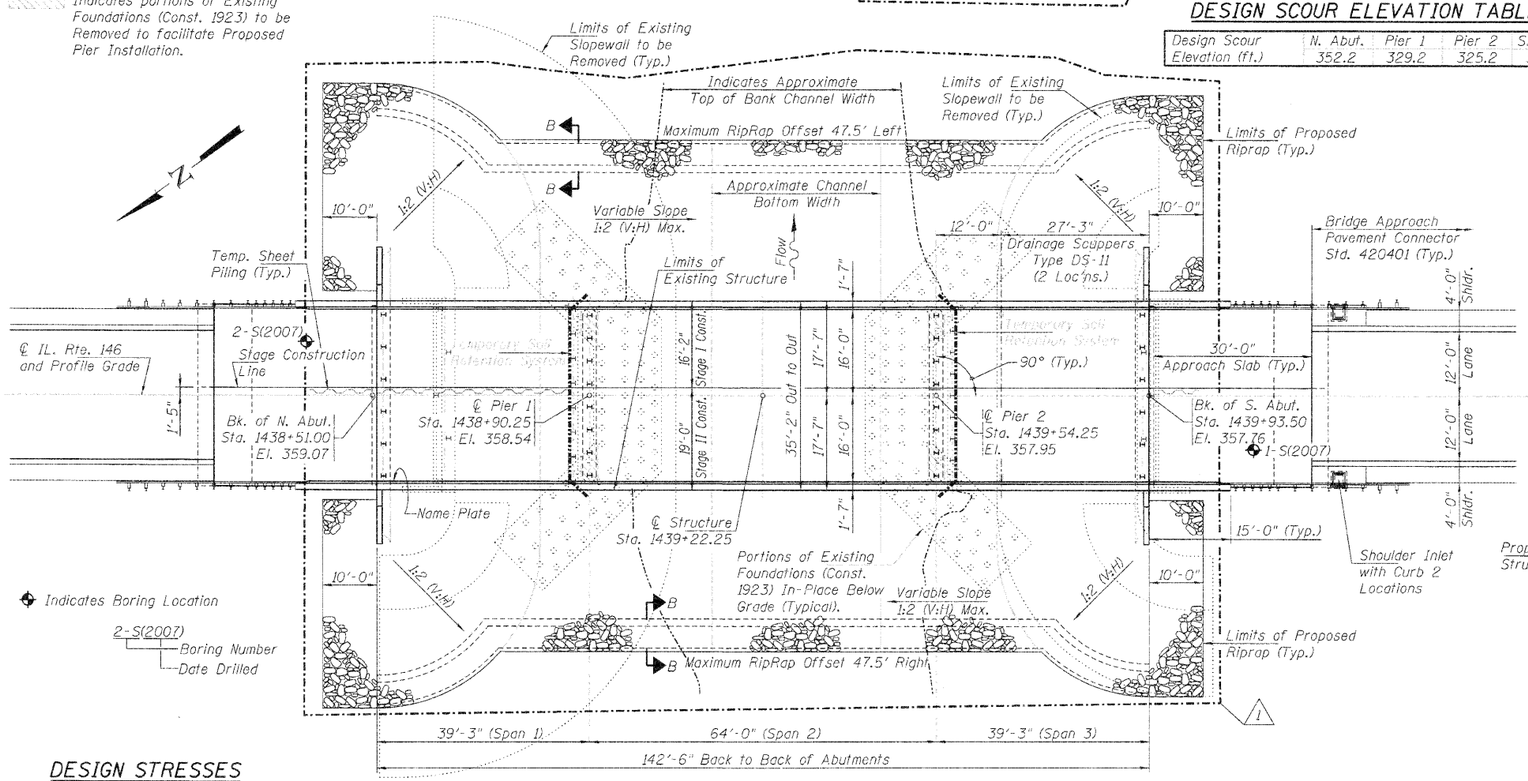
	Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
1.	Ten-Year	10	3486	850	883	345.11	0.34	0.33	345.45	345.44
1.	Design	50	5339	888	924	345.52	0.74	0.72	346.26	346.24
2.	Base	100	6149	936	976	346.03	0.87	0.84	346.90	346.88
2.	Overtopping Max. Calc.	500	8265	1066	1117	347.36	1.16	1.11	348.52	348.47

1. 10 Year Ohio River Backwater used for 10 and 50 year events.
2. Normal Depth Ohio River used for 100 and 500 year events.

WATERWAY INFORMATION TABLE
50 YEAR OHIO RIVER BACKWATER

Drainage Area = 10.76 Sq. Mi. Low Grade Elev. 357.51 @ Sta. 1442+78

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.
Ten-Year	10	3486	1420	1499	350.68	0.11	0.09	350.79	350.77
Design	50	5339	1426	1505	350.73	0.26	0.21	350.99	350.94
Base	100	6149	1429	1509	350.76	0.34	0.28	351.10	351.04
Overtopping Max. Calc.	500	8265	1440	1520	350.85	0.62	0.51	351.47	351.35



PLAN

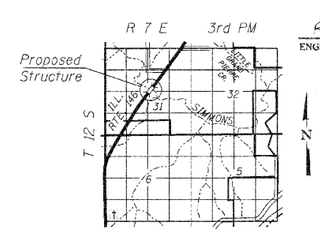
SEISMIC DATA

Seismic Performance Zone (SPZ) = 2
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.29
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.80
Soil Site Class = C

MICHAEL N. MENDENHALL 081-006657 LICENSED STRUCTURAL ENGINEER STATE OF ILLINOIS

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
ENGINEER OF BRIDGES AND STRUCTURES

SIGNATURE
12/21/10
DATE
LIC. EXP. DATE: 11/30/12



LOCATION SKETCH

GENERAL PLAN
IL. ROUTE 146 over SIMMONS CREEK
F.A.P. ROUTE 885 - SECTION 6B-2
POPE COUNTY
STATION 1439+22.25
STRUCTURE NO. 076-0029

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50W)

LOADING HL-93

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

DESIGN SPECIFICATIONS

2007 AASHTO LRFD Bridge Design Specifications with 2008 & 2009 Interims

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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
885	6B-2	Pope	48	20

CONTRACT NO. 78141
ILLINOIS FED. AID PROJECT

08H0131 — SHEET NO. 1
05/21/10 — 29 SHEETS

1 Revised 12/15/10 R.A.H.