

Bench Mark: Chiseled square on the west corner of the northwest wingwall of the existing structure.
Station 552+07.37, 19.1 feet to the left of centerline of roadway, Elevation 434.87

Existing Structure: S.N. 051-0011 Built in 1959 as F.A.I. Route 8, Section 51-23B-1 at Station 554+17.96.
The structure is a six span concrete T beam with a length of 391'-6" back-to-back of abutments. The superstructure is 35'-8" wide and is built on a radius. The piers consist of solid walls with spread footings in rock. The open pile bent abutments are supported on steel piles. The existing bridge is to be removed and replaced under stage construction. Traffic to be maintained using stage construction.

No salvage.

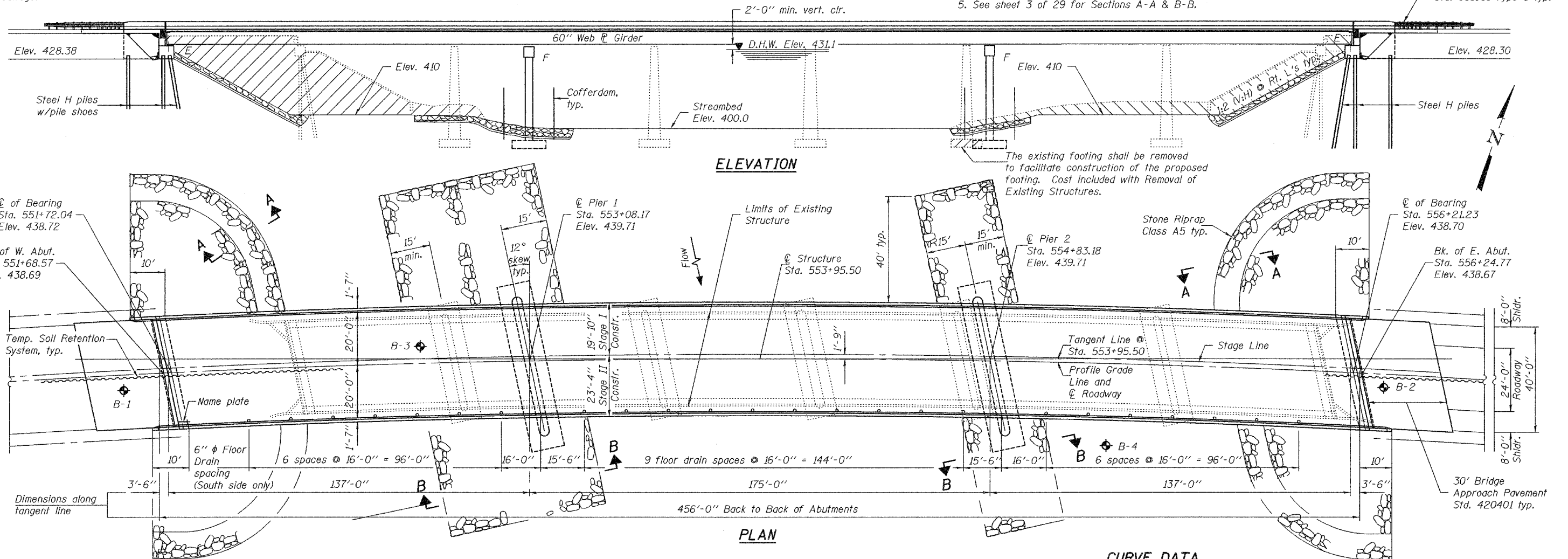
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

	Pier 1	Pier 2
Estimated top of rock	399.0	398.0
Approximate bottom of footing	395.5	394.5
Estimated water surface elevation =	409.0	

Notes:

- Hatched area indicates channel excavation. See Roadway Plans for quantities.
- Cofferdams will be required at Pier 1 and Pier 2.
- Remove existing broken concrete along banks, prior to placement of stone riprap. Cost included with Channel Excavation.
- Provide temporary support system mechanism at existing girder ends at existing Pier 3 for Stage I traffic. See details on sheet 4 of 29.
- See sheet 3 of 29 for Sections A-A & B-B.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 1
FAP 327	(51-23) B-3	LAWRENCE	56	18	29 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT	Contract No. 94967		

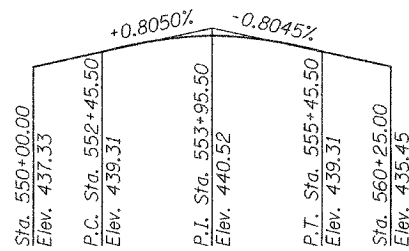


Center of Bearing Sta. 551+72.04 Elev. 438.72
Back of W. Abut. Sta. 551+68.57 Elev. 438.69

Center of Bearing Sta. 556+21.23 Elev. 438.70
Back of E. Abut. Sta. 556+24.77 Elev. 438.67

STATION 553+95.50
BUILT 20 BY
STATE OF ILLINOIS
F.A.P. RT. 327 SEC. (51-23)B-3
LOADING HL-93
STR. NO. 051-0063

NAME PLATE
See Std. 515001



PROFILE GRADE
(F.A.P. Rte. 327)

DESIGNED	W.E. Noel
CHECKED	Mark Hoff
DRAWN	h.t. duong
CHECKED	CEH / MDS

EXAMINED
PASSED
ENGINEER OF BRIDGE DESIGN
ENGINEER OF BRIDGES AND STRUCTURES



EXPIRES 11-30-2008

DESIGN SCOUR TABLE

Design Scour Elevation	W. Abut.	Pier 1	Pier 2	E. Abut.
	428.0	396.5	395.5	428.0

WATERWAY INFORMATION

Drainage Area = 2329.25 mi² Low Grade Elev. 430.7 @ Sta. 50+00 (I.L.D.)

Flood Frequency	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.			
		Exist.	Prop.		Exist.	Prop.	Exist.	Prop.		
Design 50 Yr.	Main Channel	32008	30685	7384	8901	431.1	0.2	0.2	431.3	431.3
	N. Overflow	3637	7130	4068	4600	431.1	0.2	0.2	431.3	431.3
	S. Overflow	15373	13203	7980	8359	431.1	0.2	0.2	431.3	431.3
Total	51018	51018	19432	21860	-	-	-	-	-	-
Base 100 Yr.	Main Channel	30718	31333	7384	8961	432.2	0.2	0.2	432.4	432.4
	N. Overflow	8955	9085	4068	4600	432.2	0.2	0.2	432.4	432.4
	S. Overflow	17568	16823	7980	8359	432.2	0.2	0.2	432.4	432.4
Total	57241	57241	19432	21920	-	-	-	-	-	-
Overtopping 40 Yr.	Main Channel	30474	30723	7362	8771	430.8	0.2	0.2	431.0	431.0
	N. Overflow	6011	6153	4068	4600	430.8	0.2	0.2	431.0	431.0
	S. Overflow	11793	11402	7980	8359	430.8	0.2	0.2	431.0	431.0
Total	48278	48278	19432	21730	-	-	-	-	-	-
Max. Calc. 500 Yr.	Main Channel	32398	33003	7384	8961	432.5	0.4	0.4	432.9	432.9
	N. Overflow	13260	13560	4068	4600	432.5	0.4	0.4	432.9	432.9
	S. Overflow	26014	25109	7980	8359	432.5	0.4	0.4	432.9	432.9
Total	71672	71672	19432	21920	-	-	-	-	-	-

10 yr. velocity through existing bridge = 3.9 fps 10 yr. velocity through proposed bridge = 3.1 fps

CURVE DATA

Exist. Curve CIA-1 (Centerline of Roadway)
PI Sta. = 580+83.00
Δ = 66°-01'-58" (RT)
D = 1°-12'-40"
R = 4,730.65'
T = 3,074.04'
L = 5,452.02'
E = 911.05'
e = 1.5%
T.R. = 40'
S.E. RUN = 40'
P.C. Sta. = 550+08.96
P.T. Sta. = 604+60.97

LOADING HL-93

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

DESIGN SPECIFICATIONS

2007 LRFD AASHTO

DESIGN STRESSES

FIELD UNITS

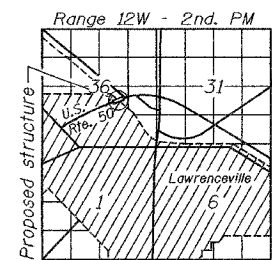
f_c = 3,500 psi
f_y = 60,000 psi (reinforcement)
f_y = 50,000 psi (structural steel M270 Grade 50)

SEISMIC DATA

Seismic Performance Category (SP2) = 2
Bedrock Acceleration Coefficient (A) = 0.09g
Site Coefficient (S) = 1.2

GENERAL PLAN & ELEVATIONS
U.S. RT. 50 OVER EMBARRAS RIVER

F.A.P. RT. 327 - SEC. (51-23)B-3
LAWRENCE COUNTY
STATION 553+95.50
STRUCTURE NO. 051-0063



LOCATION SKETCH