Bench Mark: 4401-11 Chiseled square located on the East corner of the existing North Abutment. Elev. 604.08

Existing Structure: S.N. 092-0035, originally built in 1937 as S.B.I. Route 1, Section RX-21B. In 1972, the superstructure was replaced and the substructure widened as F.A. 1, Section RX-1 BR. The existing structure is a five simple span PPC deck beam bridge supported on spill-thru counterforted abutments and solid stem piers on spread footings. The back to back abutments measures 339'-0" and 33'-0" out to out of deck. The existing structure is to be removed and replaced. Traffic will be detoured.

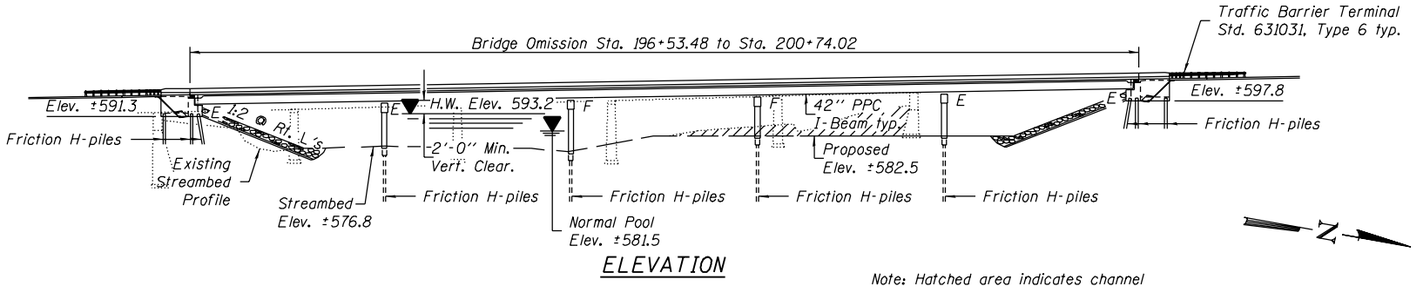
No salvage

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

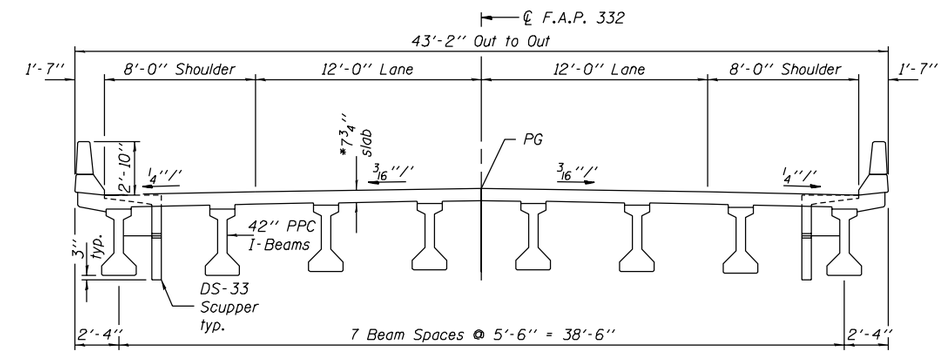
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
-				
-	-	-		
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 1

1 SHEET

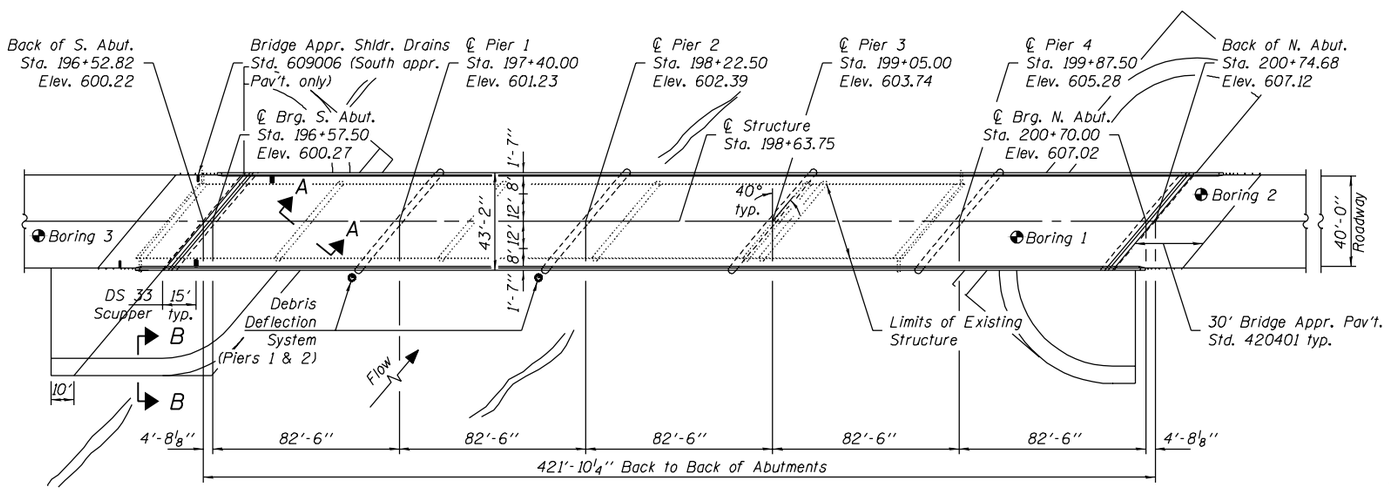


ELEVATION

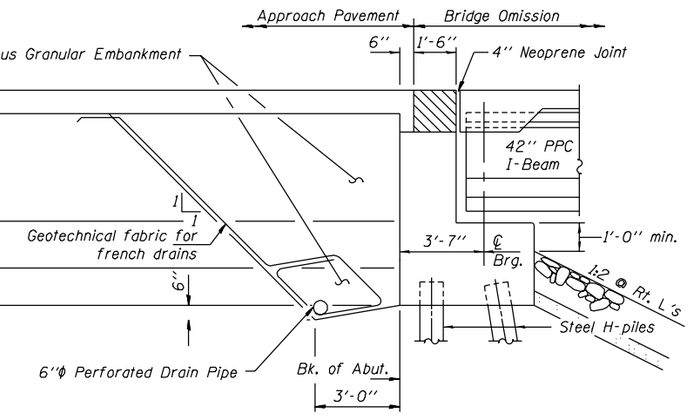


*Use Bridge Smoothness Specification

CROSS SECTION
(Looking North)



PLAN



SECTION THRU ABUTMENTS
(Dimensions @ Rt. L's)

HIGHWAY CLASSIFICATION

F.A.P. Rte. 332 - Il. Rte. 1
Functional Class: Principal Arterial (Rural)
ADT: 4,750 (2004); 6,000 (2024)
ADTT: 450 (2024)
DHV: 500
Design Speed: 60 m.p.h.
Posted Speed: 55 m.p.h.

LOADING HS20-44

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

DESIGN SPECIFICATIONS

2002 AASHTO

DESIGN STRESSES

FIELD UNITS

f'_c = 3,500 psi
f_y = 60,000 psi (reinforcement)

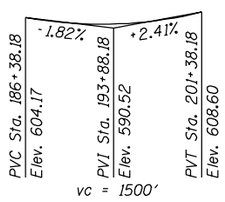
PRECAST PRESTRESSED UNITS

f'_c = 6,000 psi
f'_{ci} = 5,000 psi
f'_s = 270,000 psi (½"Φ low lax. strands)
f_{si} = 201,960 psi (½"Φ low lax strands)

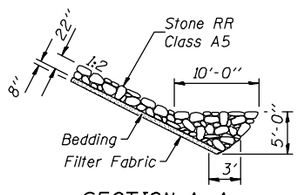
SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = 0.04g
Site Coefficient (S) = 1.2

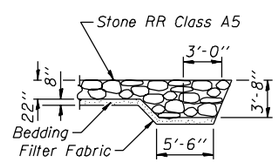
APPROVED
AS A BASIS FOR
PREPARATION OF DETAILED PLANS
FEB 01 2005



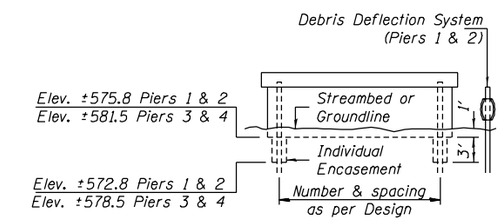
PROFILE GRADE
(along ℄ roadway)



SECTION A-A



SECTION B-B



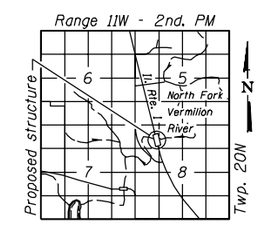
PIER SKETCH

WATERWAY INFORMATION

Drainage Area = 282 mi.² Exist. Low Grade Elev. 592.9 ft. @ Sta. 194+00
Prop. Low Grade Elev. 598.3 ft. @ Sta. 193+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	12700	2096	2824	591.7 / 591.6	0.3	0.2	592.0	591.8
Overtop	25	15000	2295	-	592.6	0.3	-	592.9	-
Design	50	17730	2549	3270	593.8 / 593.2	0.4	0.2	594.2	593.4
Base	100	19800	2686	3439	594.6 / 593.8	0.3	0.2	594.9	594.0
Max. Calc.	500	24710	2926	3783	596.2 / 595.0	0.4	0.4	596.6	595.4

10 Year Velocity through Existing Bridge = 6.1 fps 10 Year Velocity through Prop. bridge = 4.5 fps
*Note: Existing natural WSE with existing dowmstream constuction. Proposed natural WSE with modified downstream construction.



LOCATION SKETCH

GENERAL PLAN
U.S. ROUTE 136/ IL. ROUTE 1 OVER
NORTH FORK VERMILION RIVER
F.A.P. ROUTE 332 - SEC. RX-1-BR-1
VERMILION COUNTY
STATION 198+63.75
STRUCTURE NO. 092-0205

DESIGNED	J.A. Elston
CHECKED	A. Siudyla
DRAWN	W.D. Collins
CHECKED	A. Siudyla

EXAMINED _____ 20 _____
ENGINEER OF BRIDGE DESIGN

PASSED _____
ENGINEER OF BRIDGES AND STRUCTURES