Bench Mark:
BM #7 Elevation = 570.41 (Feet)
A square cut in corner of northeast wingwall on north bound Illinois route 53 bridge.

Existing Structure:
The existing structure No. 099-0090 (NB) was built in 1942 under construction route FA-5 and section 4-RB.
The existing bridge consists of three continuous spans of reinforced concrete T-beams.
The structure length is 108'-9" Bk. to Bk. of Abutments and 32'-10" Out to Out Deck.
The substructure consists of two abutments, two piers, and two curtain walls between N.B. & S.B. structures. The concrete facing creates triple arches supported on two piers and the abutments (Historic Bridge).
The superstructure of existing bridge to be removed and replaced.
Traffic shall be detoured by providing cross over away from the structure location, see roadway plans.
No salvage.

APPROVED

MAR 3 1 2003

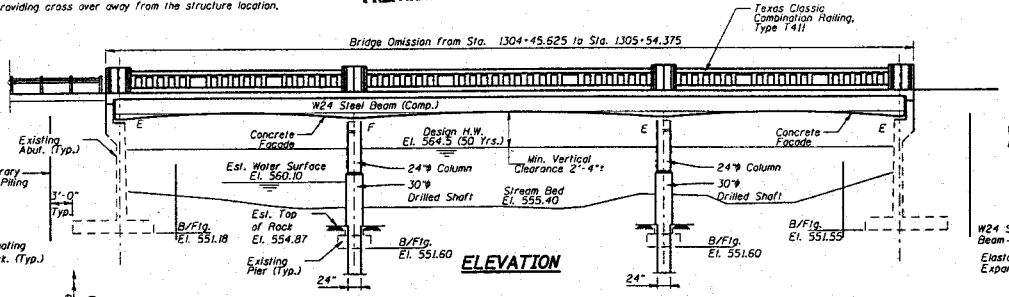
AS A BASIS FOR PREPARATION OF DETAILED PLANS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

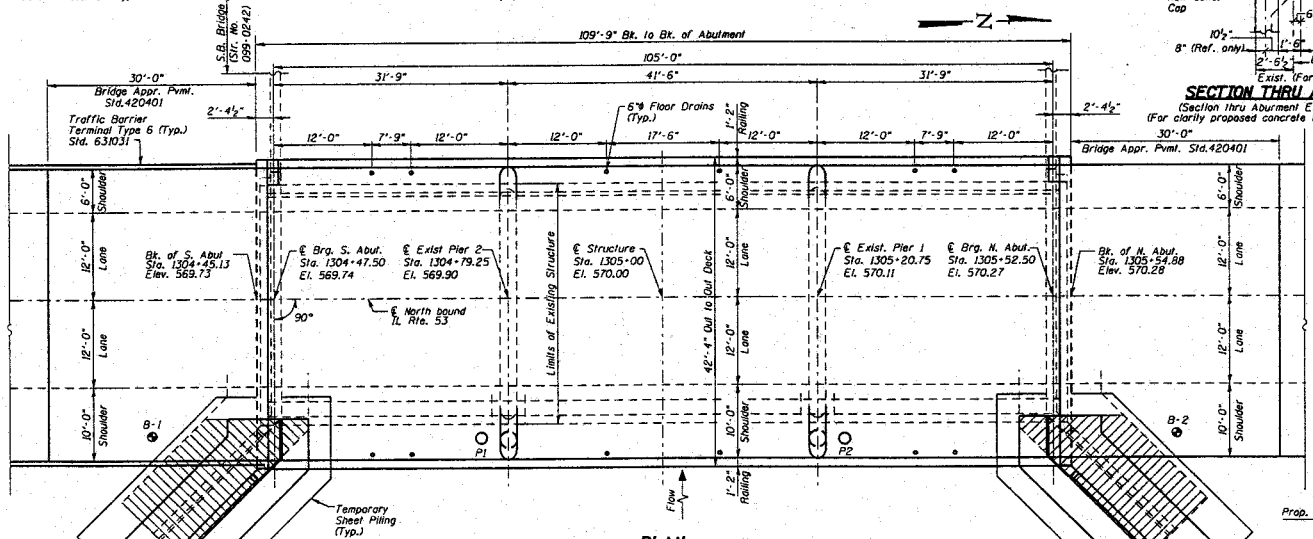
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 846	099-0090(NB)	WILL	1	1

FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT-

SHEET NO.
SHEETS

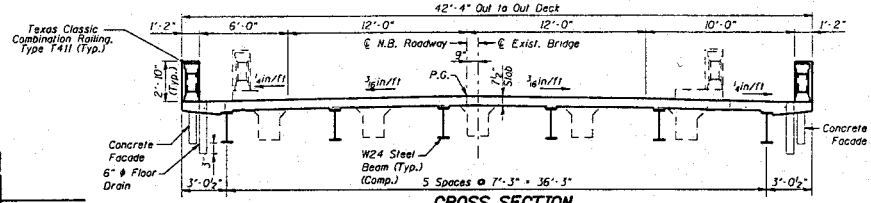


ELEVATION

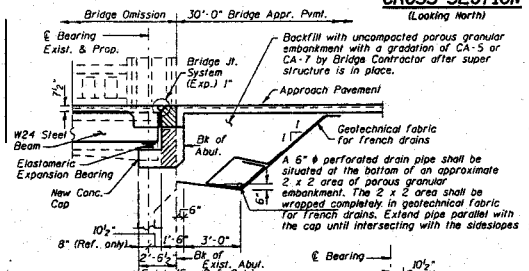


PLAN

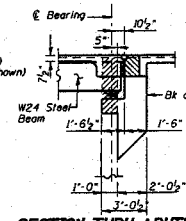
B-1 ⊗ Indicates boring location
P1 ○ Indicates soil probe location



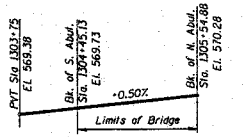
CROSS SECTION
(Looking North)



SECTION THRU ABUTMENT
(Section thru Abutment Extension Similar)
(For clarity proposed concrete facade is not shown)



SECTION THRU ABUTMENT @ CURTAIN WALL



PROPOSED PROFILE GRADE
(at ℄ of NB)

HIGHWAY CLASSIFICATION

IL Rte 53 over Prairie Creek

FAP Rte. 846
Class: Other Principal Arterial
ADT: 3500 vpd (1999)
ADT: 4725 vpd (2021)
Design Speed: 45 MPH
Posted Speed: 45 MPH

DESIGN SPECIFICATIONS

Superstructure:
1998 AASHTO LRFD Bridge Design Specifications with 1999 thru 2002 interims.

Substructure:
1996 AASHTO Standard Specifications with 1997 thru 2002 Interims.

LOADING HL-93 (Struct. Steel, Deck & Bearings)

LOADING HS20-44 (Substructure)

Allow 50 psf for future wearing surface.

DESIGN STRESSES

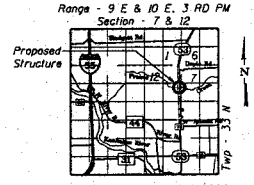
Existing
f'c = 3,500 psi (concrete)
fy = 60,000 psi (reinforcement)

Proposed
f'c = 3,500 psi (concrete)
fy = 60,000 psi (reinforcement)
fy = 50,000 psi (structural steel) (M270 GR.50)
fy = 36,000 psi (diaphragms) (M270 GR.36)

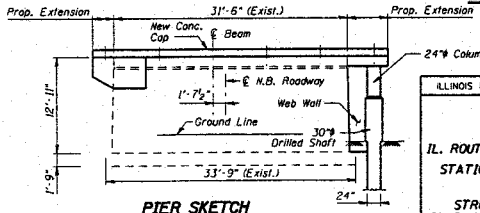
SEISMIC DATA

Seismic performance category (S.P.C.) = A
Bedrock acceleration coefficient (A) = .04g
Site coefficient (s) = 1.0

Range - 9 E & 10 E. 3 RD PM
Section - 7 & 12



LOCATION SKETCH



PIER SKETCH
(Looking North)

WATERWAY INFORMATION

Drainage Area = 45.1 sq.mi | Low Grade Elev. 569.73 @ Sta. 1301+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	2010	738	738	562.9	0.0	0.0	562.9	562.9
Design	50	2910	901	901	564.5	0.1	0.1	564.6	564.6
Base	100	3260	959	959	565.1	0.2	0.2	565.3	565.3
Overtopping									
Max. Calc.	500	4080	1095	1095	566.7	0.3	0.3	567.0	567.0

All elevations are in highway datum.

SCOPE OF WORK

1. Remove and replace superstructure.
2. Remove and replace approach slabs.
3. Remove and replace backwalls and top of abutment at both abutments.
4. Remove and replace wingwalls as shown.
5. Extend substructure as shown.
6. Repair cracks and deteriorated areas on the substructure.

DESIGNED	NDS/JLU
CHECKED	MTP/SMK/GBC
DRAWN	NDS/JLU
CHECKED	SMK/GBC

ILLINOIS DEPARTMENT OF TRANSPORTATION

GENERAL PLAN
FAP 846
IL. ROUTE 53 OVER PRAIRIE CREEK
STATION 1305+00 SECTION 4-RB
WILL COUNTY
STRUCTURE NO. 099-0090(NB)

SCALE: NONE
DATE: 8/12/2002