Benchmark: Chiseled "□" on Northeast wingwall of SN 027-0070; Sta. 681+50.71, 17.61' Rt.
Elev. 785.68

Existing Structure: SN 027-0070 built in 1979 as F.A. Route 71, Section 115BR at Sta. 682+04.00. A one span P.P.C. deck beam bridge 75'-0" back-to-back abutments and 33'-8" out-to-out on pile bent abutments. The existing structure is to be removed and replaced. Traffic will be maintained using a detour route during construction.

No Salvage.

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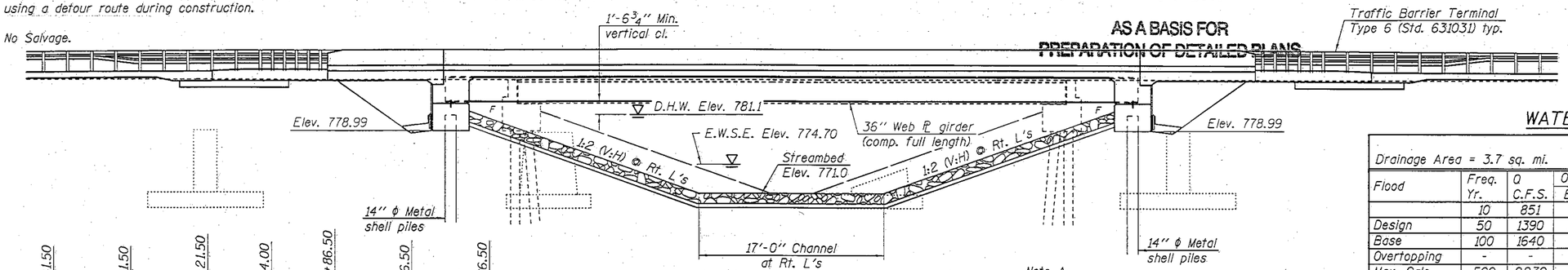
AS A BASIS FOR PREPARATION OF DETAILED PLANS

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevations (ft.)		
	E. Abut.	W. Abut.
Q100	778.99	778.99
Q500	778.99	778.99



ELEVATION

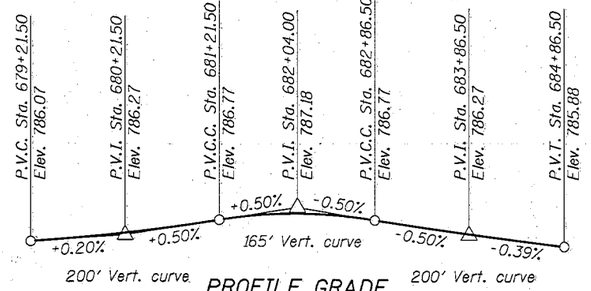
WATERWAY INFORMATION

Drainage Area = 3.7 sq. mi.
Existing Low Grade Elev. 785.35 @ Sta. 682+00
Proposed Low Grade Elev. 785.85 @ Sta. 685+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	851	195	306	780.2	0.1	0.0	780.2	780.2
Design	50	1390	236	356	781.1	0.3	0.0	781.3	781.1
Base	100	1640	249	373	781.4	1.3	0.1	782.7	781.5
Overtopping	-	-	-	-	-	-	-	-	-
Max. Calc.	500	2230	274	405	782.0	1.3	1.0	783.2	782.9

10-year existing velocity = 4.2 ft./sec.
10-year proposed velocity = 2.8 ft./sec.

Note A:
Portions of original structure built in 1931 may be encountered and require removal prior to driving piles.



PROFILE GRADE
(Along ℄ IL Rte. 54)

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications, 6th Edition

DESIGN STRESSES

FIELD UNITS

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

HIGHWAY CLASSIFICATION

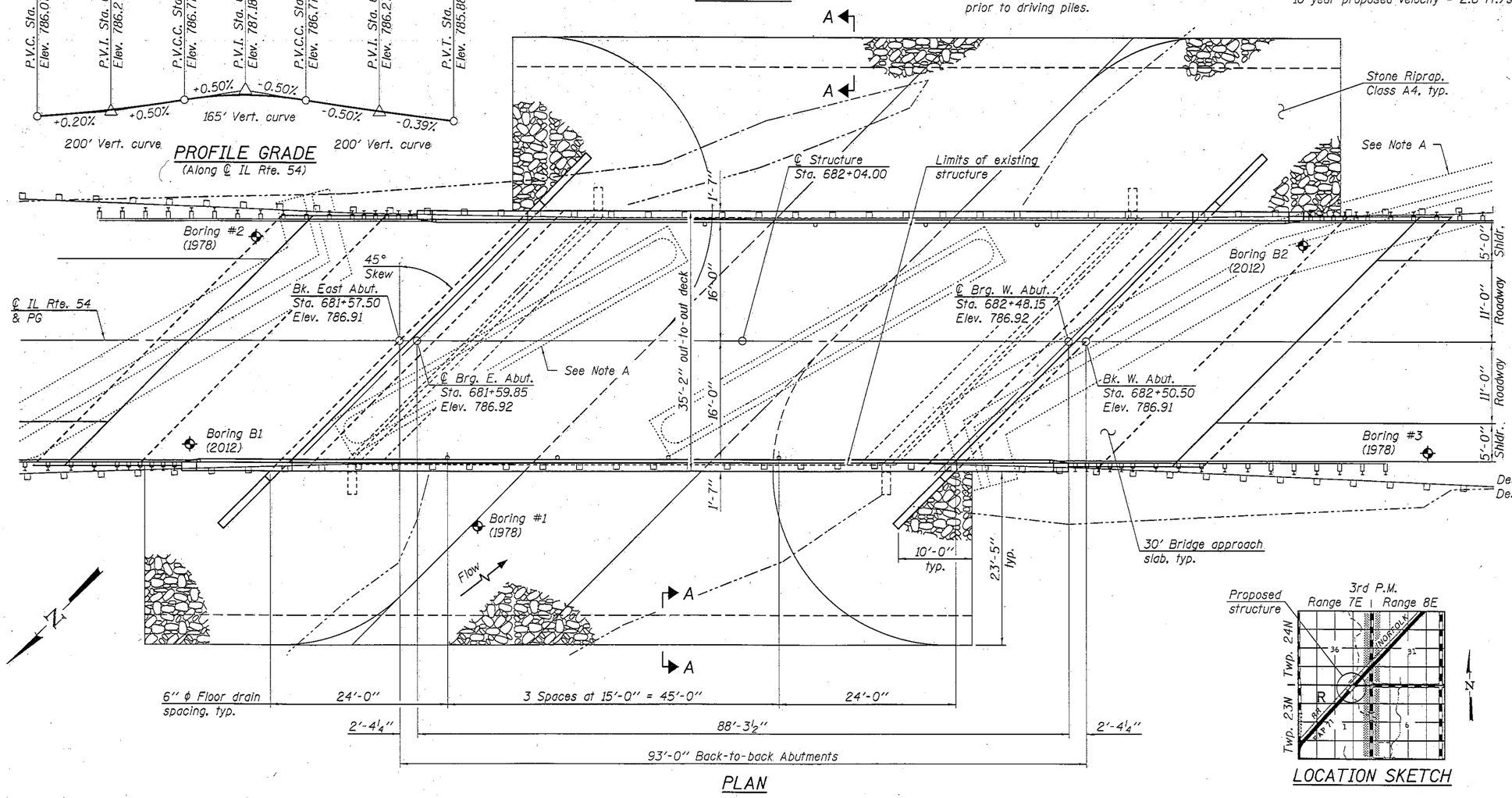
F.A.P. Rte. 71 - IL Rte. 54
Functional Class: Minor Arterial (Non-urban)
ADT: 2,050 (2014); 2,100 (2024)
ADTT: 328 (2014)
DHV: 205
Design Speed: 55 m.p.h.
Posted Speed: 55 m.p.h.
Two-Way Traffic
Directional Distribution: 50:50

LOADING HL-93

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

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.086 g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.150 g
Soil Site Class = C



PLAN

LOCATION SKETCH

GENERAL PLAN & ELEVATION
ILLINOIS ROUTE 54 OVER DRAINAGE DITCH
F.A.P. RTE. 71 - SEC. (115)BR-4
FORD COUNTY
STATION 682+04.00
STRUCTURE NO. 027-0102

DESIGNED -	DEREK G. VERHULST
CHECKED -	ALEX S. SIUDYLA
DRAWN -	MICHAEL B. MOSSMAN
CHECKED -	

4-9-2013

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 2 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
71	(115)BR-4	FORD		
		CONTRACT NO. 66994		
		ILLINOIS FED. AID PROJECT		

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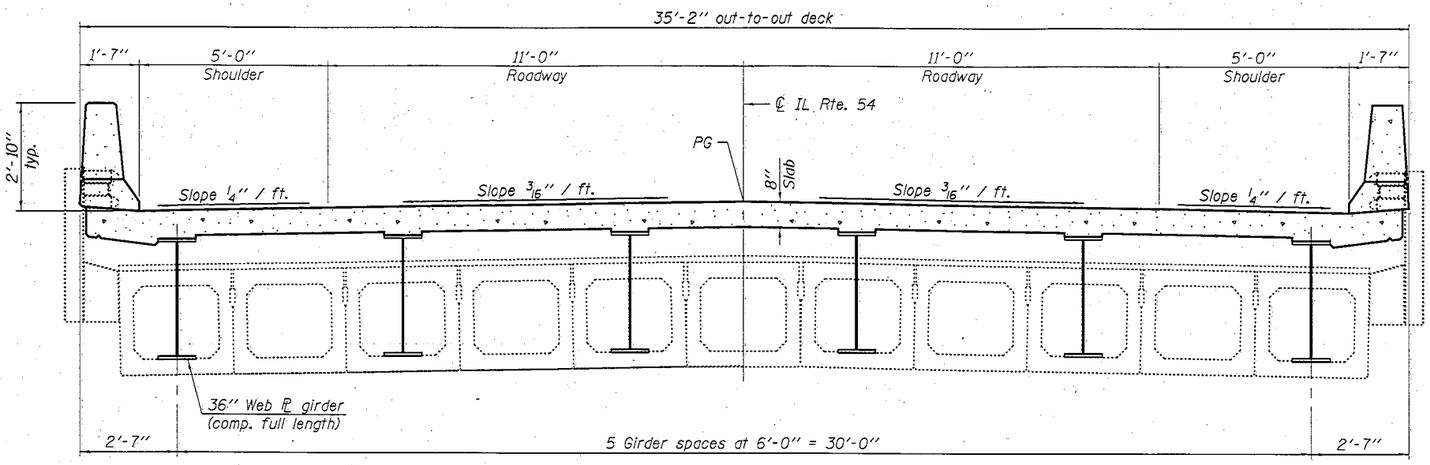
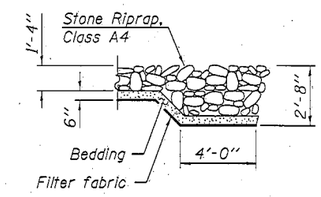
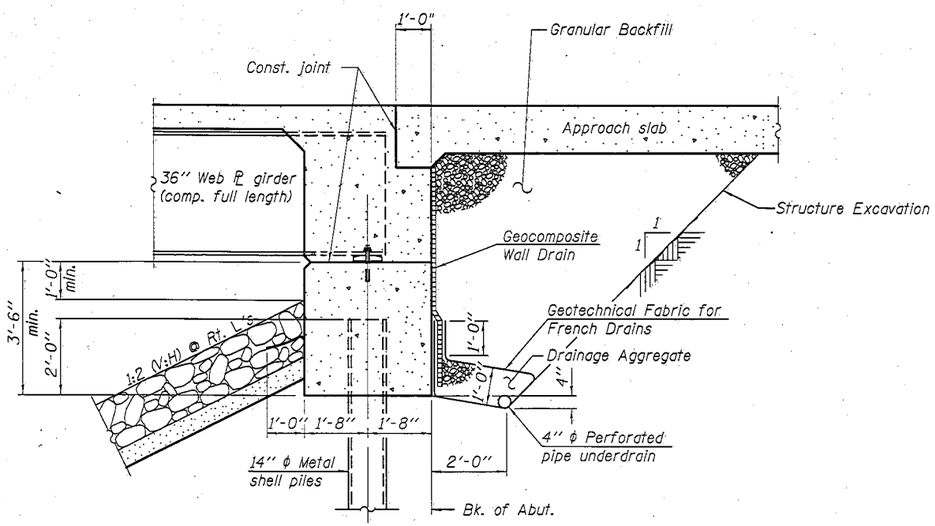


CROSS SECTION



SECTION A-A



SECTION THRU INTEGRAL ABUTMENT
(Horiz. dim. @ Rt. L's)

GENERAL PLAN & ELEVATION
ILLINOIS ROUTE 54 OVER
DRAINAGE DITCH
F.A.P. RTE. 71 - SEC. (115)BR-4
FORD COUNTY
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SHEET NO. 2 OF 2 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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