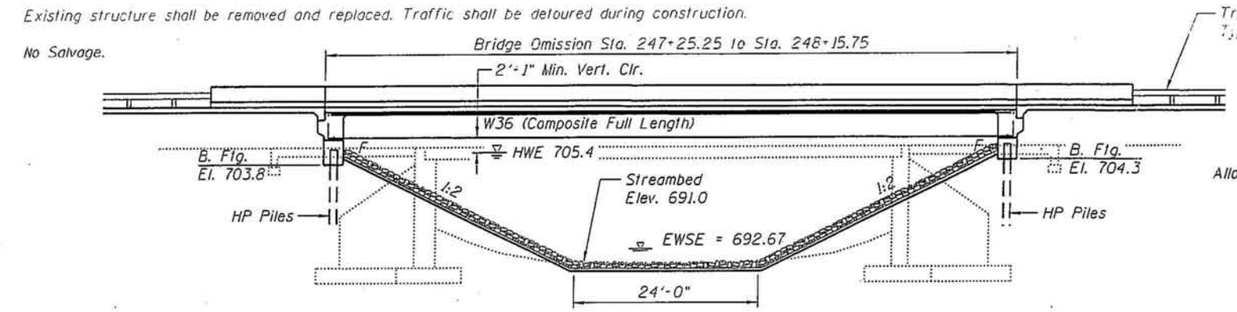
Bench Mark: Top of ROW marker, Sta. 235+96.37, 32.57' Rt., Elev. 740.68

Existing Structure: S.N. 008-0014 originally constructed in 1926 as SBI Route 40 Section 5-B. It was originally a single span reinforced concrete deck girder superstructure built on closed abutments. In 1971 the superstructure was replaced with PPC deck beams built on reconstructed abutment caps as SBI 40, Section 5BR-1. In 1996, the HMA wearing surface was removed and replaced with a 5" concrete overlay. In 2009, bridge railings and six PPC deck beams were replaced as FAP Route 646, Section (5 BR-1)D. Bk. to Bk. abutments is 62'-9¾" and Out to Out of deck is 33'-0".

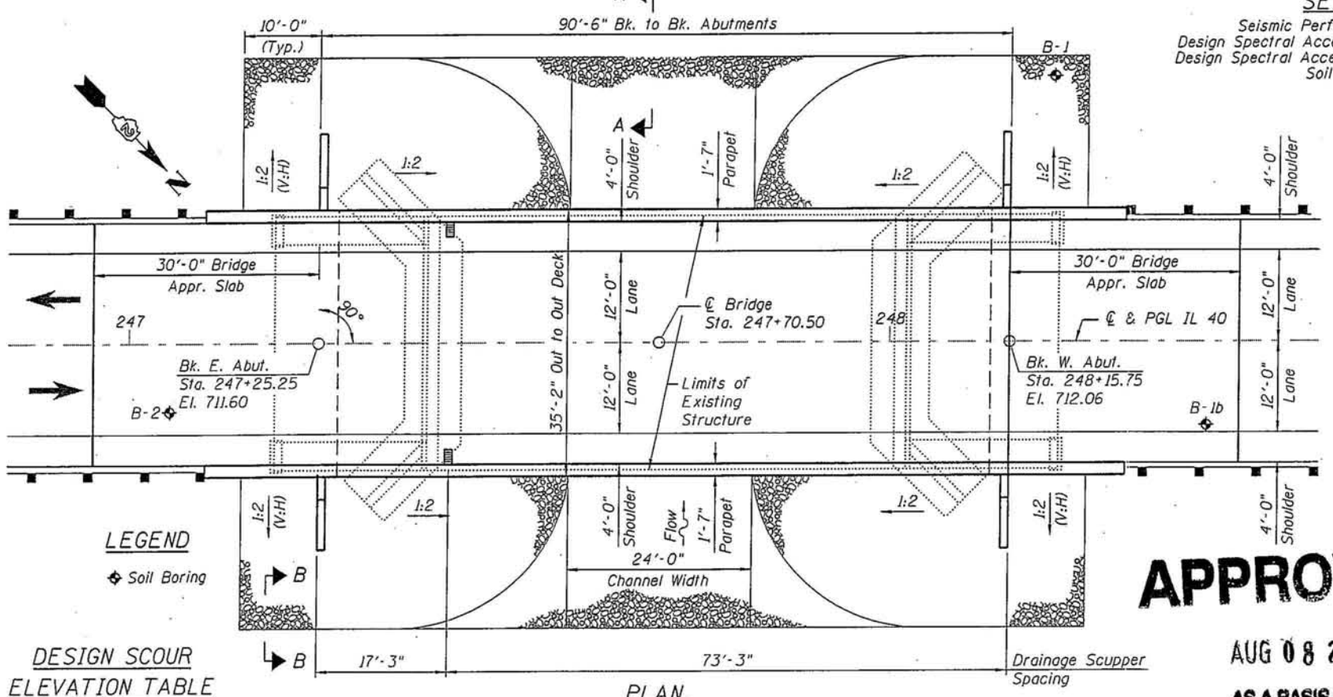
Existing structure shall be removed and replaced. Traffic shall be detoured during construction.

No Salvage.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION



PLAN

LEGEND

◆ Soil Boring

DESIGN SCOUR ELEVATION TABLE

E. Abut.	W. Abut.
703.8	704.3

HIGHWAY CLASSIFICATION

Route: FAP 646 (IL 40)
Functional Class: Minor Arterial (Non-Urban)
ADT: 2,100 (2012) 2,825 (2032)
DHV = 285 (2032)
ADTT = 11.5%
Design Speed: 65 mph
Posted Speed: 55 mph
Directional Distribution: 50/50
Two Way Traffic

LOADING HL-93

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

DESIGN SPECIFICATIONS

2010 AASHTO LRFD Bridge Design Specifications With 2010 Interims

DESIGN STRESSES

FIELD UNITS

f'_c = 3,500 psi
f_y = 60,000 psi (reinforcement)
f_y = 50,000 psi (M270 Grade 50W)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration @ 1.0 sec S_{D1} = 0.058
Design Spectral Acceleration @ 0.2 sec S_{DS} = 0.097
Soil Site Class = C

APPROVED

AUG 08 2011

AS A BASIS FOR PREPARATION OF DETAILED PLANS

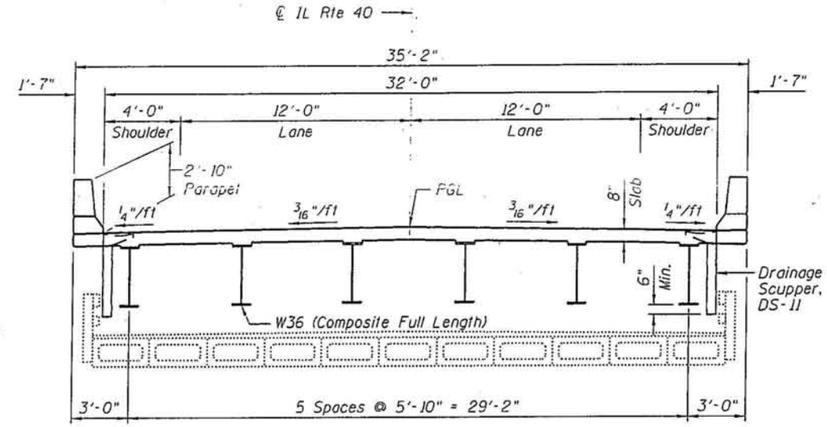
WATERWAY INFORMATION

Drainage Area = 23.2 sq. mi.

Exist. Low Grade Elev. = 705.15 @ Sta. 246+20
Prop. Low Grade Elev. = 711.53 @ Sta. 246+65

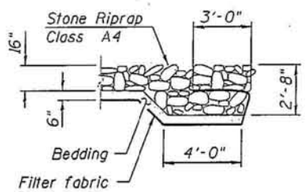
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Ten-Year	10	2150	550	620	703.6	0.1	0.1	703.8	703.7
OVR (E)	40	3280	556		705.2	0.5		705.8	
Design	50	3420	556	760	705.4	0.5	0.1	705.9	705.5
Base	100	3980	556	818	706.1	0.6	0.1	706.7	706.2
Max. Calc.	500	5380	556	945	707.6	0.5	0.1	708.1	707.8

10-Year Velocity through Existing Bridge = 3.9 fps
10-Year Velocity through Proposed Bridge = 3.5 fps

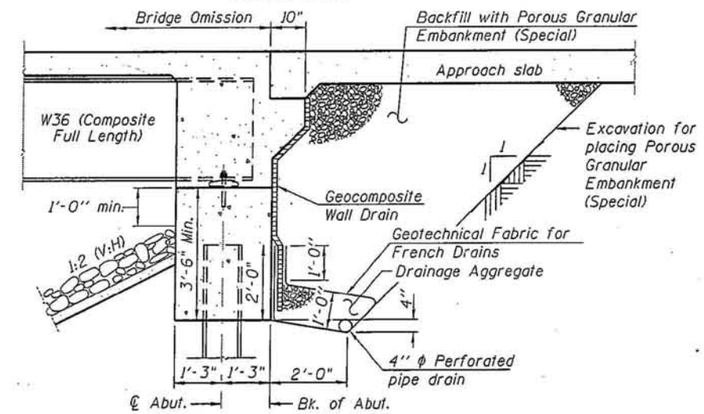


CROSS SECTION

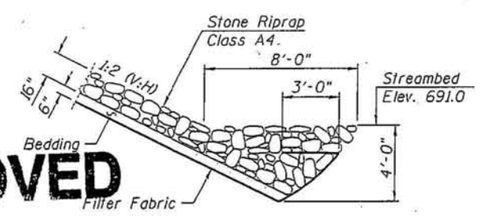
(Looking North)



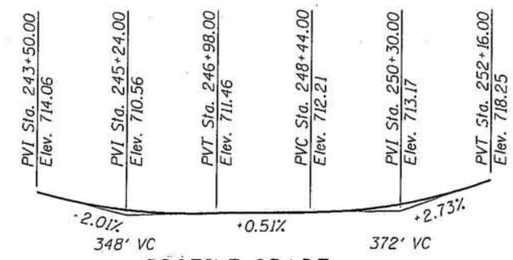
SECTION A-A



SECTION THRU ABUTMENT

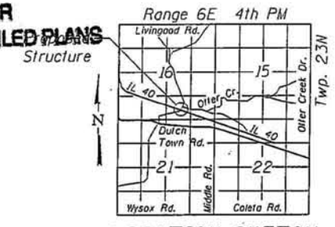


SECTION B-B



PROFILE GRADE

(along ℄ IL Route 40)



LOCATION SKETCH

GENERAL PLAN
ILLINOIS ROUTE 40 OVER OTTER CREEK
FAP 646 - SEC. 5BR-3
CARROLL COUNTY
STA. 247+70.50
STRUCTURE NO. 008-0051

USER NAME = SAW	DESIGNED - LAS	REVISED -	
	CHECKED - DAZ	REVISED -	
PLOT SCALE = 0:2.0000 ':' / IN.	DRAWN - SAW	REVISED -	
PLOT DATE = 7/15/2011	CHECKED - LAS	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN
S.N. 008-0051
SHEET NO. 1 OF 1 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
646	5BR-3	CARROLL	1	1
		CONTRACT NO. 64D84		
		ILLINOIS FED. AID PROJECT		

FILE NAME = ...\64D84-001-TSL.dgn