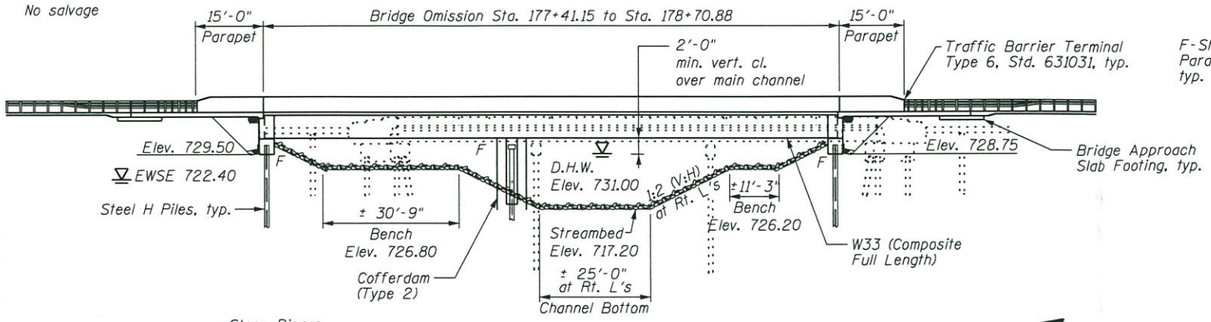
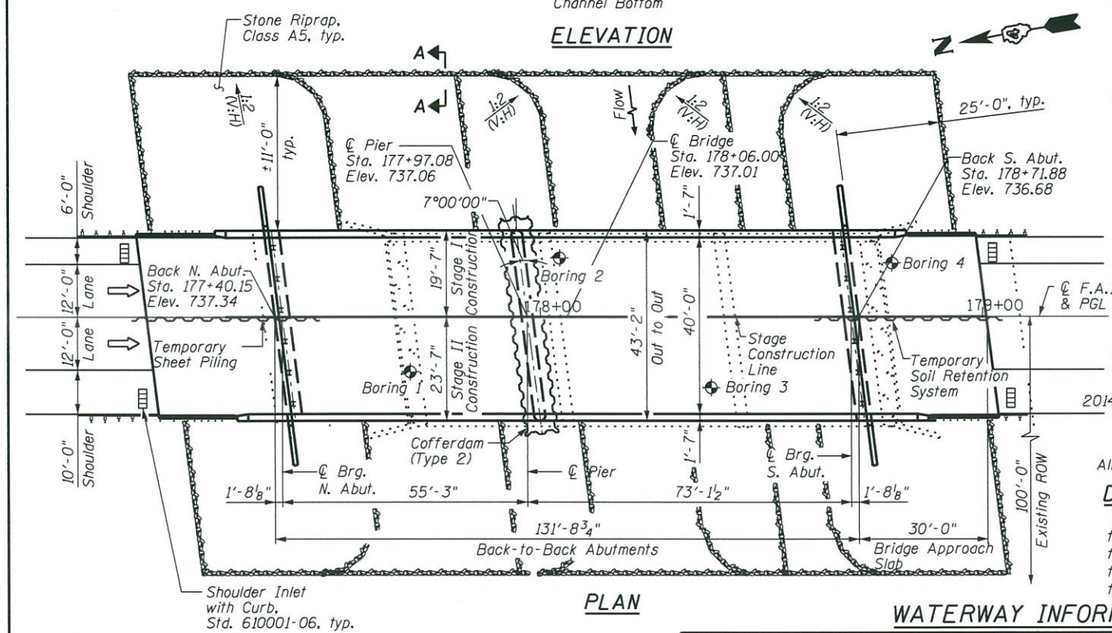
Bench Mark: #13 - Spike in post of fence 11 ft. right of ℄ EB I-74 Station ±182+70. Elevation 736.37.

Existing Structure: S.N. 048-0001 built in 1966 as F.A.I. Route 74 (EB). Section 48-24B at Sta. 178+23. Existing structure consists of 3-span reinforced concrete cast in place deck on continuous steel WF beams and supported by spill-thru concrete abutments and concrete pile bent piers. Structure is 111'-2" long Bk. to Bk. of abutments, width is 43'-8" Out to Out of deck.
Structure to be removed and replaced. Traffic to be maintained utilizing stage construction.

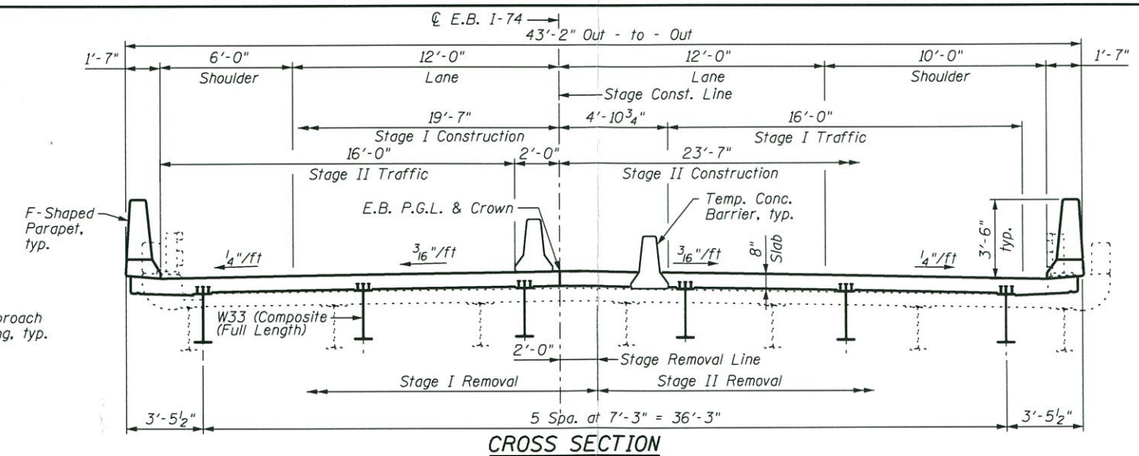
No salvage



ELEVATION



PLAN



CROSS SECTION

(Looking South)

SEISMIC DATA

Seismic Performance Zone (SPZ) = C
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.107g
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.068g
Soil Site Class = SPZ 1

HIGHWAY CLASSIFICATION

F.A.I. Rte. 74 - EB I-74
Functional Class: Interstate
ADT: 6550 (2013); 7114 (2032)
ADTT: 2293 (2013)
Design Speed: 65 m.p.h.
Posted Speed: 65 m.p.h.
One-Way Traffic

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications
7th edition

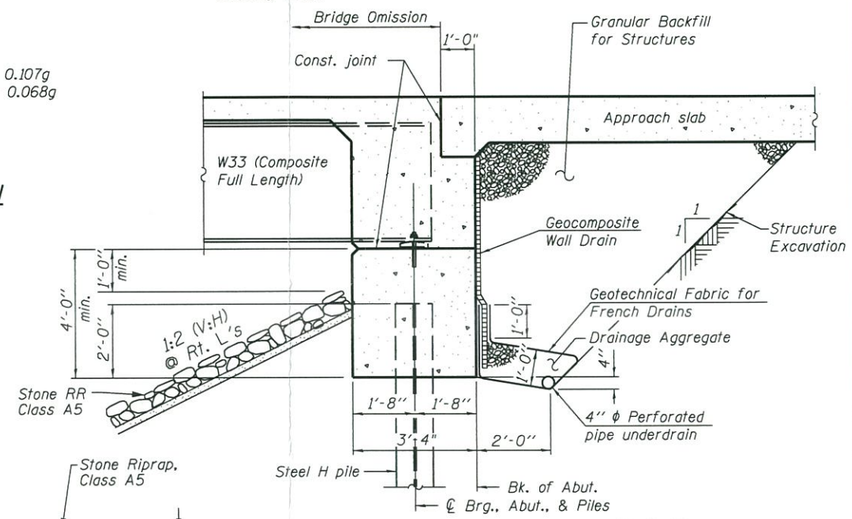
LOADING HL-93

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

DESIGN STRESSES

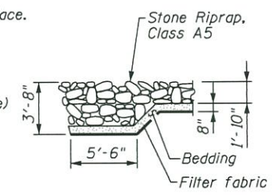
FIELD UNITS

f'c = 3,500 psi
f'c = 4,000 psi (Superstructure Concrete)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50W)



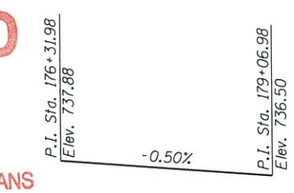
SECTION THRU INTEGRAL ABUTMENT

(Horiz. dim. @ Rt. L's)



SECTION A-A

APPROVED
AUG 13 2015
AS A BASIS FOR PREPARATION OF DETAILED PLANS



PROFILE GRADE

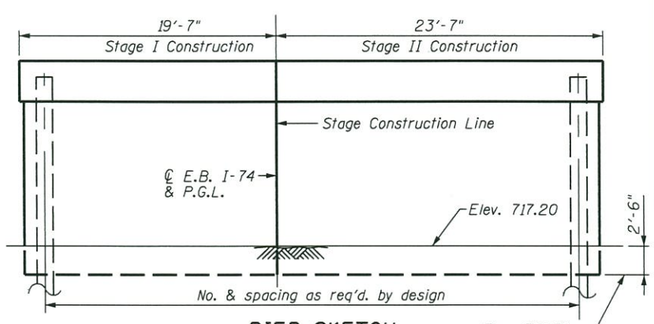
WATERWAY INFORMATION

Drainage Area = 33.4 sq. mi.
Existing Overtopping Elev. 735.4 @ Sta. 178+90
Proposed Overtopping Elev. 738.3 @ Sta. 178+90

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	3580	547	656	730.0	1.6	1.4	731.6	731.4
Design	50	5750	633	773	731.0	2.7	2.3	733.7	733.3
Base	100	6750	669	820	731.4	3.3	2.8	734.7	734.2
Overtopping Existing	200	7770	708	869	731.8	3.8	3.5	735.6	735.3
Max. Calc.	500	9170	758	930	732.3	4.7	4.2	737.0	736.5

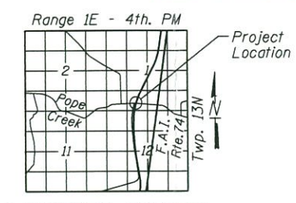
DESIGN SCOUR ELEVATION TABLE

	Design Scour Elevations (ft.) N. Abut.	Pier	S. Abut.	Item 113
0100	729.50	706.9	728.75	5
0200	729.50	706.4	728.75	
Design	729.50	706.9	728.75	
Check	729.50	706.4	728.75	



PIER SKETCH

(Looking South)



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
E.B. I-74 OVER POPE CREEK
F.A.I. RT. 74 SECTION 48-(24B)I,I-1
KNOX COUNTY
STATION 178+06.00
STRUCTURE NO. 048-0104

FILE NAME = ...\048B104-68B84-TSL-EB Pope.dgn	DESIGNED JMM	REVISED -	
	DRAWN PRD	REVISED -	
PLOT TIME = 1:52:49 PM	CHECKED PC	REVISED -	
PLOT DATE = 7/9/2015	DATE 04-15-2015	REVISED -	

SEPSTEIN
600 WEST FULTON STREET
CHICAGO, ILLINOIS 60661-1229
TEL 312 454 9100
FAX 312 559 1217
WEB www.sepstein.com

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN
STRUCTURE NO. 048-0104

SHEET NO. 1 OF 1 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-(24B)I,I-1	KNOX	#TOT	1
		CONTRACT NO. 68B84		
		ILLINOIS FED. AID PROJECT		