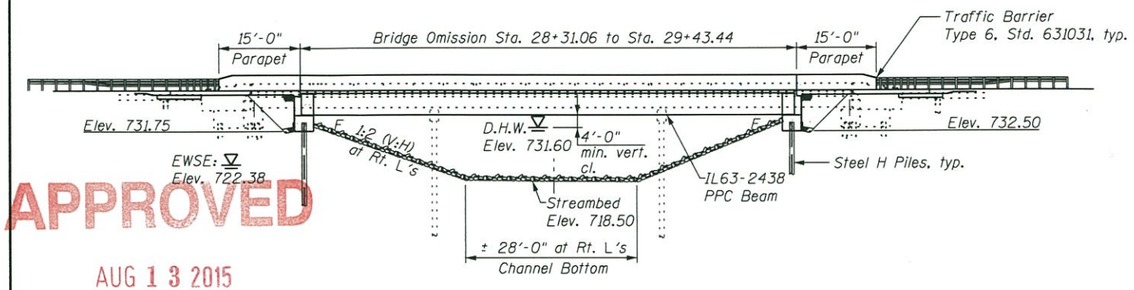
Bench Mark: #13A - Spike in roof of 15" tree 114 ft. right of ℄ WB I-74 Station ±32+31. Elevation 734.99.

Existing Structure: S.N. 048-0002 Built in 1966 as F.A.I. Route 74, Section 48-24B. at Sta. 28+87.23. 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 141'-0" long Bk. to Bk. abutments and 43'-8" Out to Out of deck. Structure to be removed and replaced.
Traffic to be maintained utilizing stage construction.

No salvage

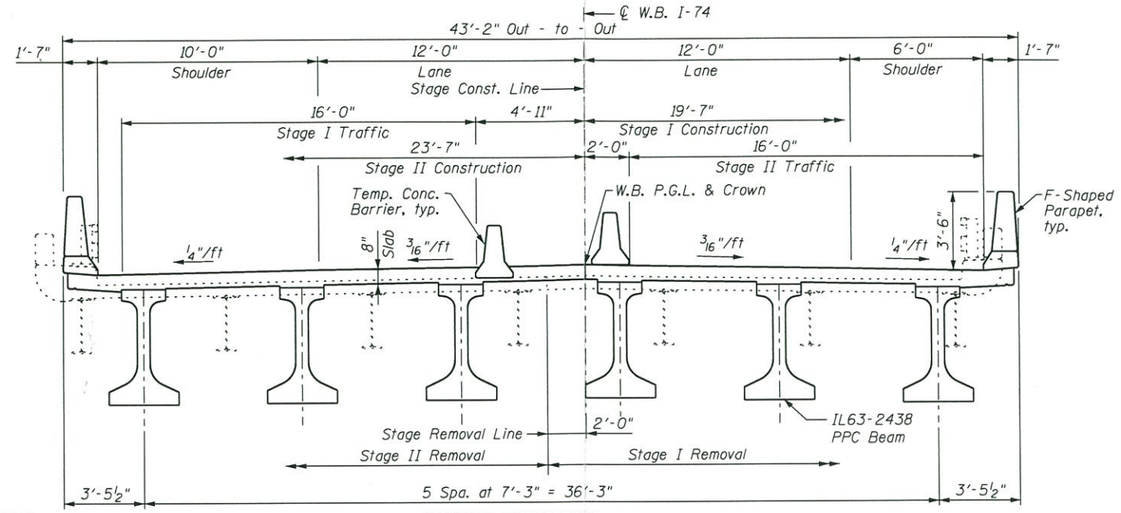


ELEVATION

APPROVED

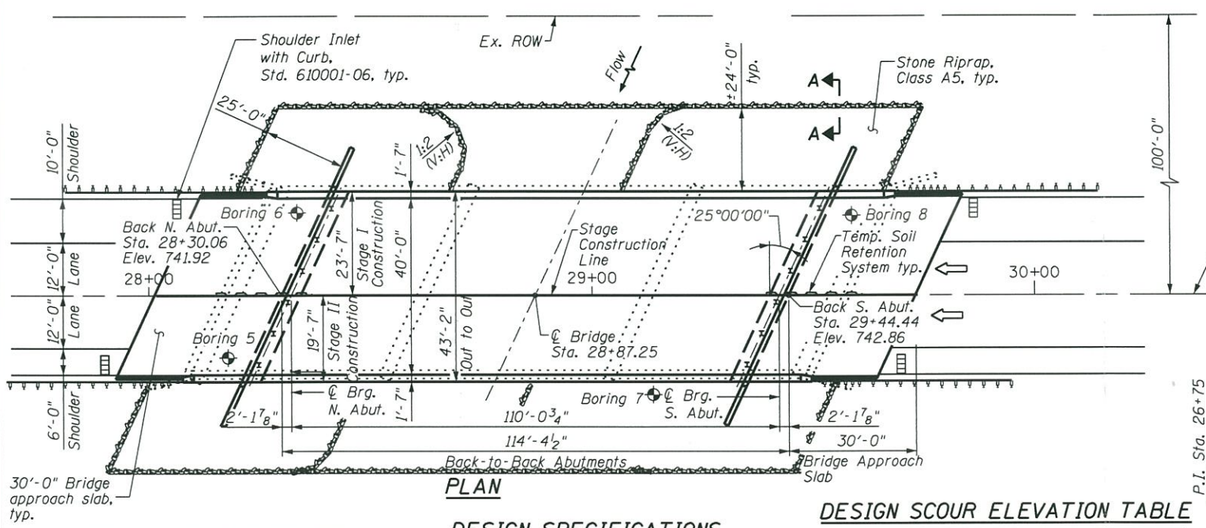
AUG 13 2015

AS A BASIS FOR PREPARATION OF DETAILED PLANS

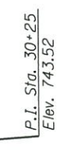


CROSS SECTION

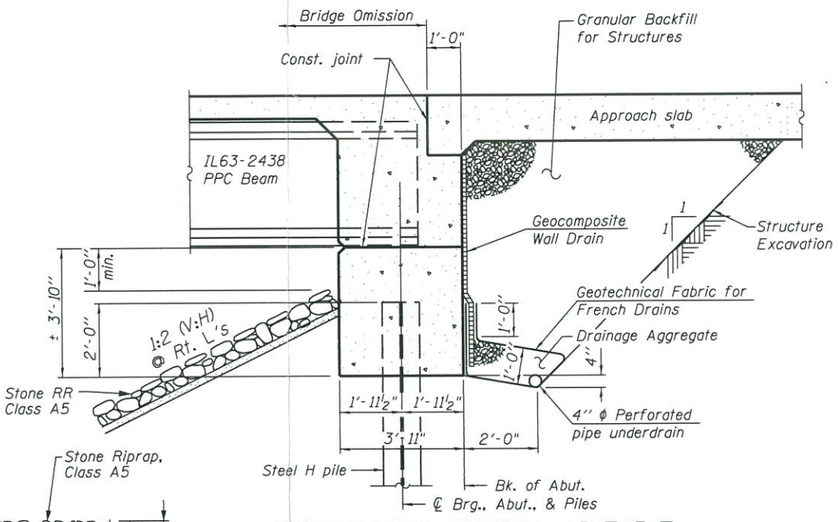
(Looking South)



PLAN

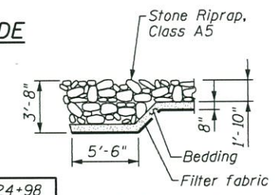


PROFILE GRADE



SECTION THRU INTEGRAL ABUTMENT

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



SECTION A-A

HIGHWAY CLASSIFICATION

F.A.I. Rte. 74 - WB 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

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

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)

PRECAST PRESTRESSED UNITS

f'c = 8,500 psi
f'ci = 7,000 psi
fpu = 270,000 psi
(0.6"ϕ low lax strands)
fpbt = 202,300 psi
(0.6"ϕ low lax strands)

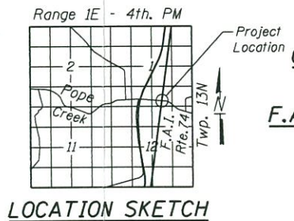
DESIGN SCOUR ELEVATION TABLE

Design Scour Elevations (ft.)			Item 113
	N. Abut.	S. Abut.	
Q100	731.75	732.50	8
Q200	731.75	732.50	
Design	731.75	732.50	
Check	731.75	732.50	

WATERWAY INFORMATION

Drainage Area = 27.4 sq. mi.
Existing Overtopping Elev. 739.9 @ Sta. 24+98
Proposed Overtopping Elev. 739.9 @ Sta. 24+98

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	3030	492	600	730.5	2.1	1.8	732.6	732.3
Design	50	4810	583	686	731.6	3.3	2.9	734.9	734.5
Base	100	5620	618	719	732.0	3.9	3.4	735.9	735.4
Scour Design Check	200	6420	653	752	732.4	4.4	4.0	736.8	736.4
Max. Calc.	500	7580	707	803	733.0	5.3	4.9	738.3	737.9



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
W.B. I-74 OVER POPE CREEK
F.A.I. RT. 74 SECTION 48-(24B)I,I-1
KNOX COUNTY
STATION 28+87.25
STRUCTURE NO. 048-0105

FILE NAME = ...\048B105-68084-TSL-WB Pope.dgn	DESIGNED JMM	REVISED -	
	DRAWN PRD	REVISED -	
PLOT TIME = 1:51:41 PM	CHECKED PC	REVISED -	
PLOT DATE = 7/9/2015	DATE 04-15-2015	REVISED -	

SEPSTEIN
600 WEST FULTON STREET
CHICAGO, ILLINOIS
60661-1259
TEL 312 454 9100
FAX 312 559 1237
WEB www.sepsteinglobal.com

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN
STRUCTURE NO. 048-0105
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. 68084		
		ILLINOIS FED. AID PROJECT		