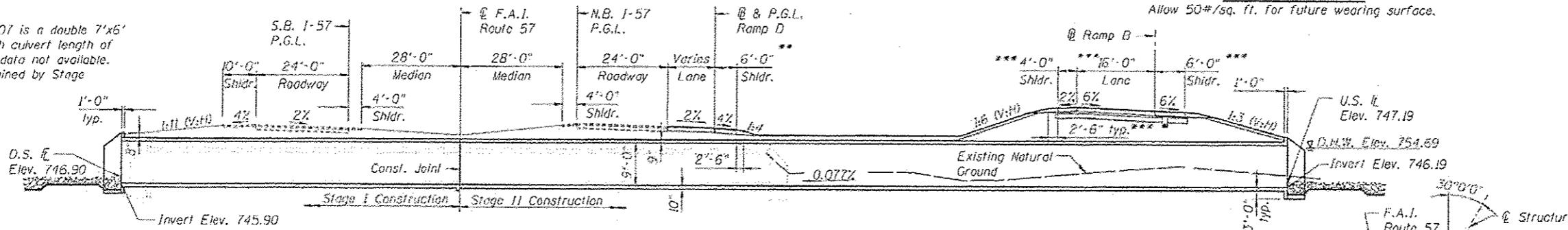


Benchmark:
Cut square on SE corner of IDOT light control panel foundation @ SW corner of I-57 & Stuenkel Rd. Elev. = 759.00

Existing Structure:
Existing SN 099-0507 is a double 7'x6' R.C. box culvert with culvert length of 200'. Existing plan data not available. Traffic to be maintained by Stage Construction.
No Salvage

DESIGN SPECIFICATIONS
2012 AASHTO LRFD Bridge Design Specifications, 6th Edition, with 2013 Interims
LOADING HL-93
Allow 50#/sq. ft. for future wearing surface.

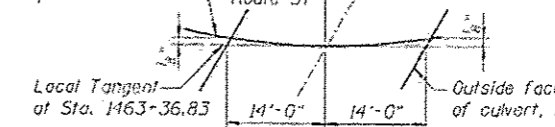
DESIGN STRESSES
FIELD UNITS
f'c = 3,500 psi
fy = 50,000 psi (Structural Steel)
fy = 60,000 psi (Reinforcement)



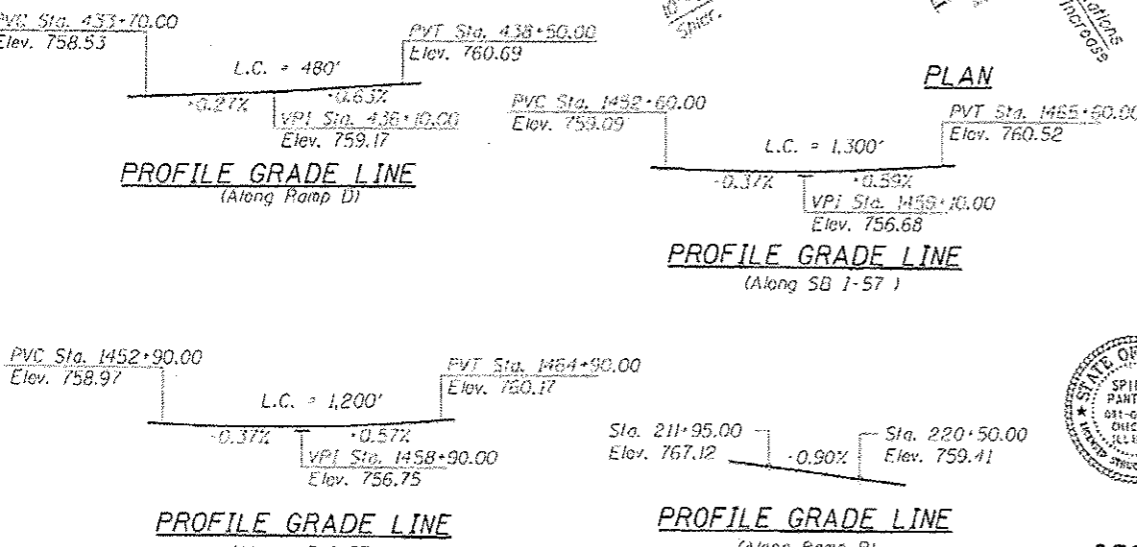
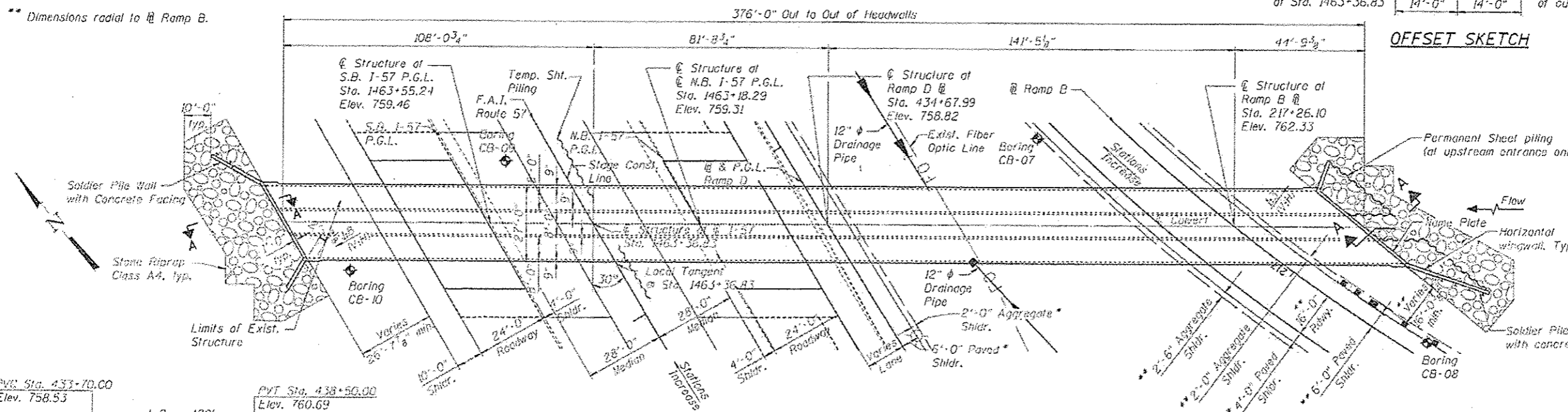
CURVE DATA
(Ramp D)
P.I. Sta. = 432+66.81
Δ = 9°00'57" (RT.)
D = 0°30'09"
R = 11,400.00'
T = 898.79'
L = 1793.88'
E = 35.38'
e = 2%
P.C. Sta. = 423+68.01
P.T. Sta. = 441+61.89

CURVE DATA
(F.A.I. Route 57)
P.I. Sta. = 1458+10.02
Δ = 14°07'38" (RT.)
D = 0°29'59"
R = 11,467.92'
T = 1,421.02'
L = 2,827.62'
E = 87.71'
e = -
P.C. Sta. = 1443+89.00
P.T. Sta. = 1472+16.63

CURVE DATA
(Ramp B)
P.I. Sta. = 215+03.68
Δ = 92°13'31" (RT.)
D = 8°10'52"
R = 660'
T = 686.11'
L = 1062.36'
E = 292.05'
e = 6%
P.C. Sta. = 208+17.54
P.T. Sta. = 218+79.90



* Dimensions radial to Ramp D.
** Dimensions radial to Ramp B.

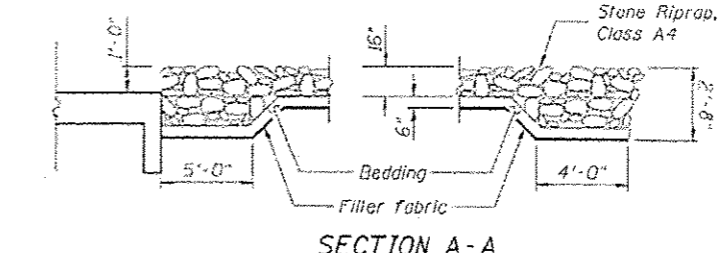


APPROVED
For Structural Adequacy Only
Dr. Carl Pany
Engineer of Bridges & Structures

STATE OF ILLINOIS
SPIROS PANTAZIS
011-005410
ENGINEER
ILLINOIS
SIGNED: *SP*
Spiros Pantazis, S.E. IL Lic. No. 021-005410
Date: 1/3/14
Expires 11-30-2014

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	D.S. Invert	U.S. Invert
	742.90	743.19



WATERWAY INFORMATION

Drainage Area = 2.85 sq. mi. Low Grade Elev. 755.26 @ Sta. 1456+80.62

Flood Yr.	Freq.	C.F.S.	Opening Sq. Ft.		Head - Ft.		Headwater El.		
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	
10	434	84.0	156.0	754.18	0.36	0.49	754.54	753.69	
Design	50	670	84.0	178.32	754.69	2.24	-0.07	756.93	754.62
Base	100	852	84.0	192.0	754.96	2.24	0.31	757.22	755.29
Max. Calc.	500	1117	84.0	192.0	755.34	3.26	1.29	758.60	756.63

10 year outlet velocity from existing structure = 5.4 ft./sec.
10 year outlet velocity from proposed structure = 3.0 ft./sec.

I-57, RAMP D & RAMP B OVER EAST BRANCH OF HICKORY CREEK
F.A.I. 57 - SEC. 99-IHB-R1
WILL COUNTY
STATION 1463+36.83