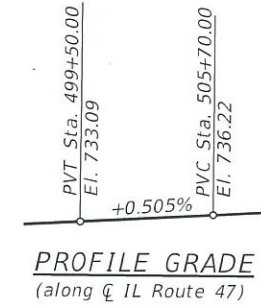
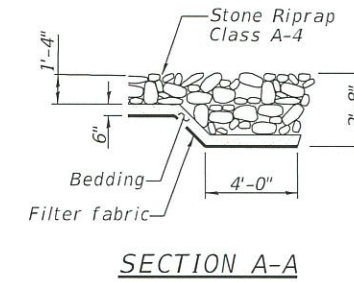
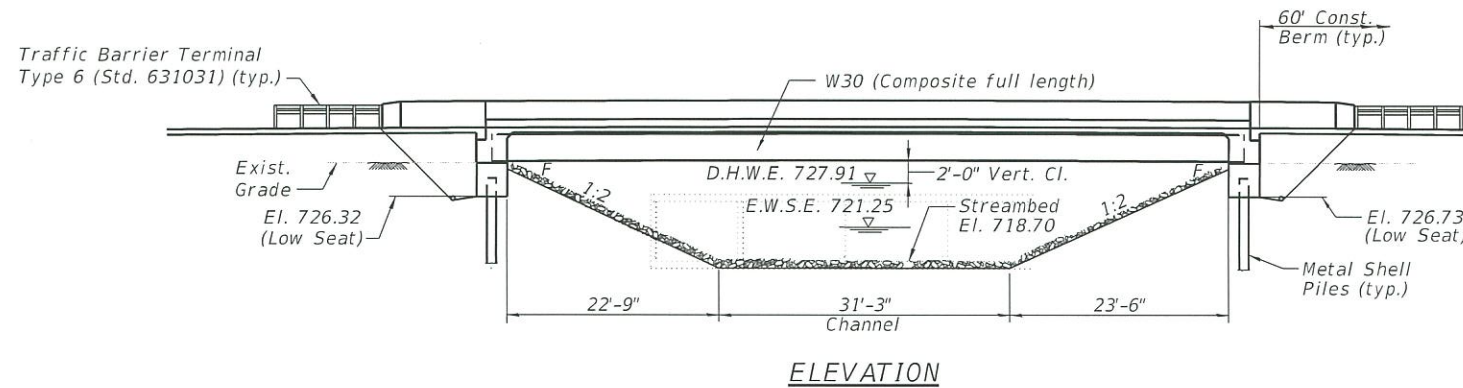


Bench Mark: "□" cut on top of Southwest Wingwall on Main St. bridge over Blackberry Creek El. 728.26

Existing Structure: S.N. 045-2000 was originally constructed in 1968 as a four cell reinforced concrete box culvert under Section 107B-1-1. Existing structure shall be removed and replaced. Traffic shall be maintained using Stage Construction.

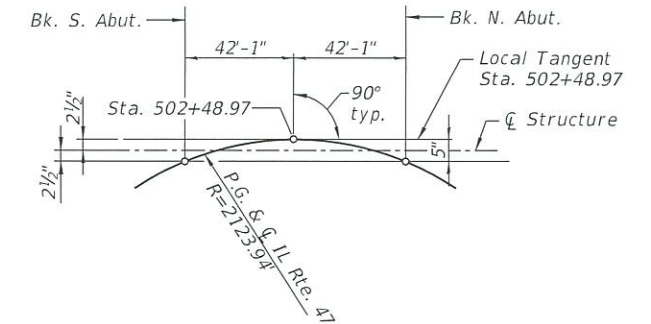
No Salvage.



APPROVED

NOV 20 2017

AS A BASIS FOR
PREPARATION OF DETAILED PLANS



PROP. CURVE E IL 47-2

PI Sta. = 506+43.12
 $\Delta = 35^\circ 09' 27''$ (RT)
 $D = 2^\circ 41' 51''$
 $R = 2,123.94'$
 $T = 672.89'$
 $L = 1,303.28'$
 $E = 104.04'$
 $* S.E. = 5.25\%$
 $T.R. = 42'$
 $S.E. \text{ Run} = 175'$
 $P.C. \text{ Sta.} = 499+70.23$
 $P.T. \text{ Sta.} = 512+73.51$

* Superelevation to be held at a constant 4.0% over the bridge & approaches.

HIGHWAY CLASSIFICATION

Route: IL Rte 47
 Functional Class: Other Principal Arterial
 ADT: 8,200 (2010), 15,000 (2040)
 DHV = 690
 ADTT = 1706 (2010), 3120 (2040)
 Design Speed: 60 mph
 Posted Speed: 55 mph
 Two-Way Traffic
 Directional Distribution: 50/50

LOADING HL-93
 Allow 50#/sq. ft. for future wearing surface

DESIGN SPECIFICATIONS
 2014 AASHTO LRFD Bridge Design
 Specifications 7th Edition w/ 2015 and 2016 Interims

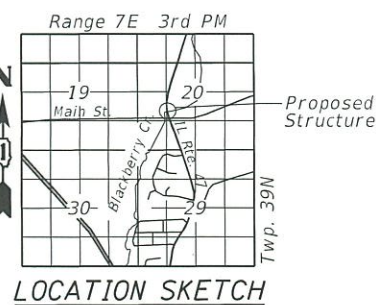
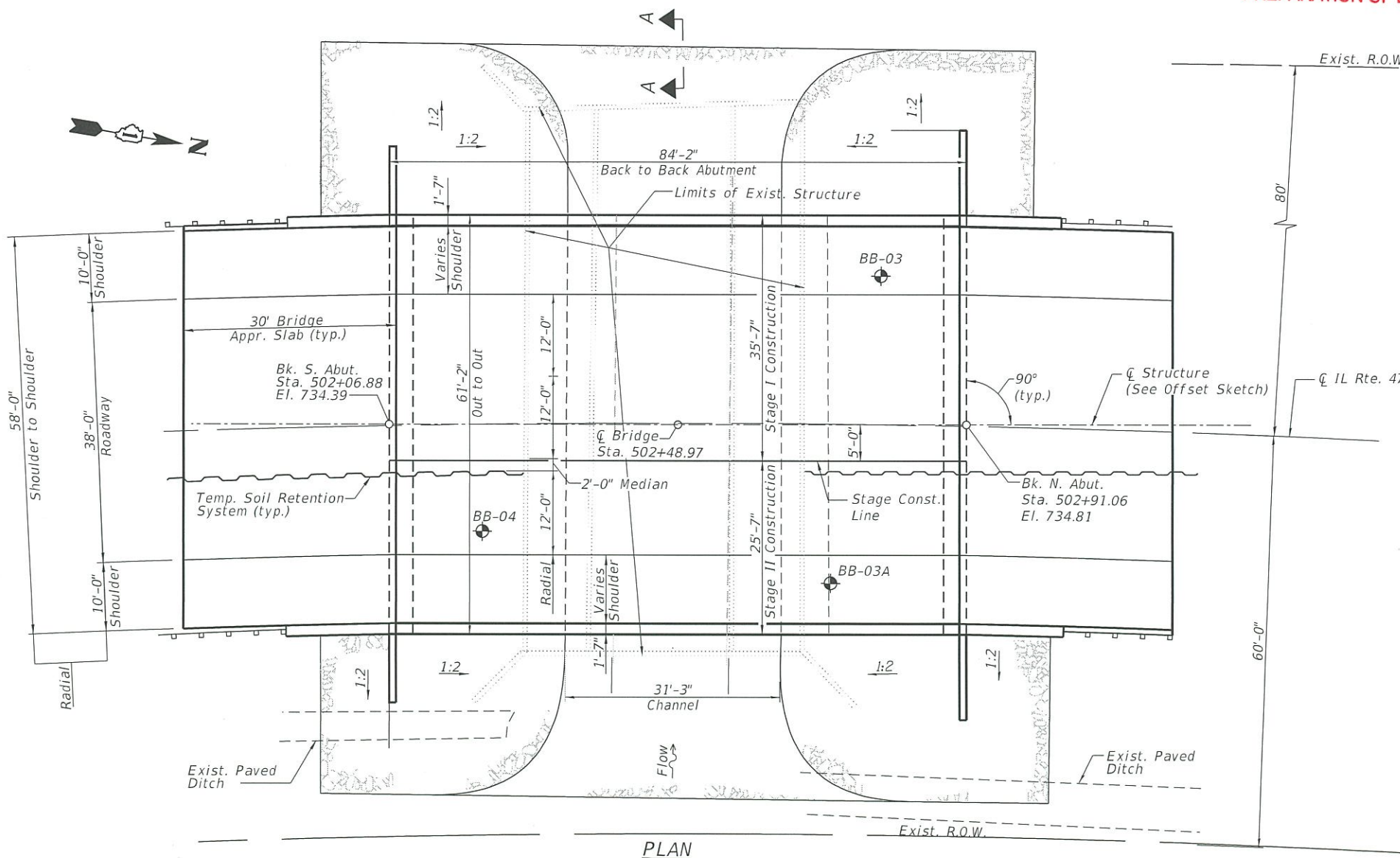
DESIGN STRESSES

FIELD UNITS

$f_c = 3,500$ psi
 $f_c = 4,000$ psi (Superstructure Concrete)
 $f_y = 60,000$ psi (reinforcement)
 $F_y = 50,000$ psi (M270 Gr 50)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
 Design Spectral Acceleration at 1.0 sec. (S_{D1}) = .089g
 Design Spectral Acceleration at 0.2 sec. (S_{D5}) = .161g
 Soil Site Class = D



GENERAL PLAN
ILLINOIS ROUTE 47 OVER
BLACKBERRY CREEK
 F.A.P. RTE. 326 - SEC. 107N-4
 KANE COUNTY
 STATION 502+48.97
 STRUCTURE NO. 045-2050

FILE NAME = P:\2015\0558 IDOT Dist IL Route 47 at Main St of Elburn (PTB 171-041\CAD-Milhouse\dm\045-2050.dwg) 47 Bridge\TSA\045-2050.dwg



USER NAME = tsledge	DESIGNED - LAS	REVISED -
PLOT SCALE = 2400:0.0000 '1' / ft.	CHECKED - DAZ	REVISED -
PLOT DATE = 11/20/2017	DRAWN - TCS	REVISED -
	CHECKED - LAS	REVISED -

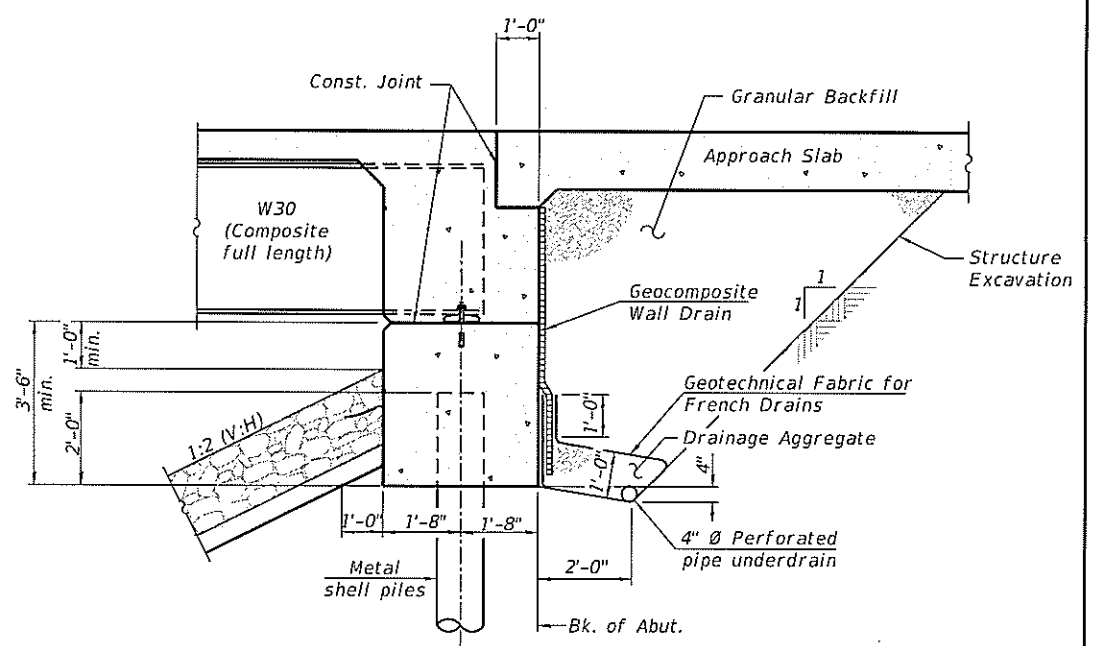
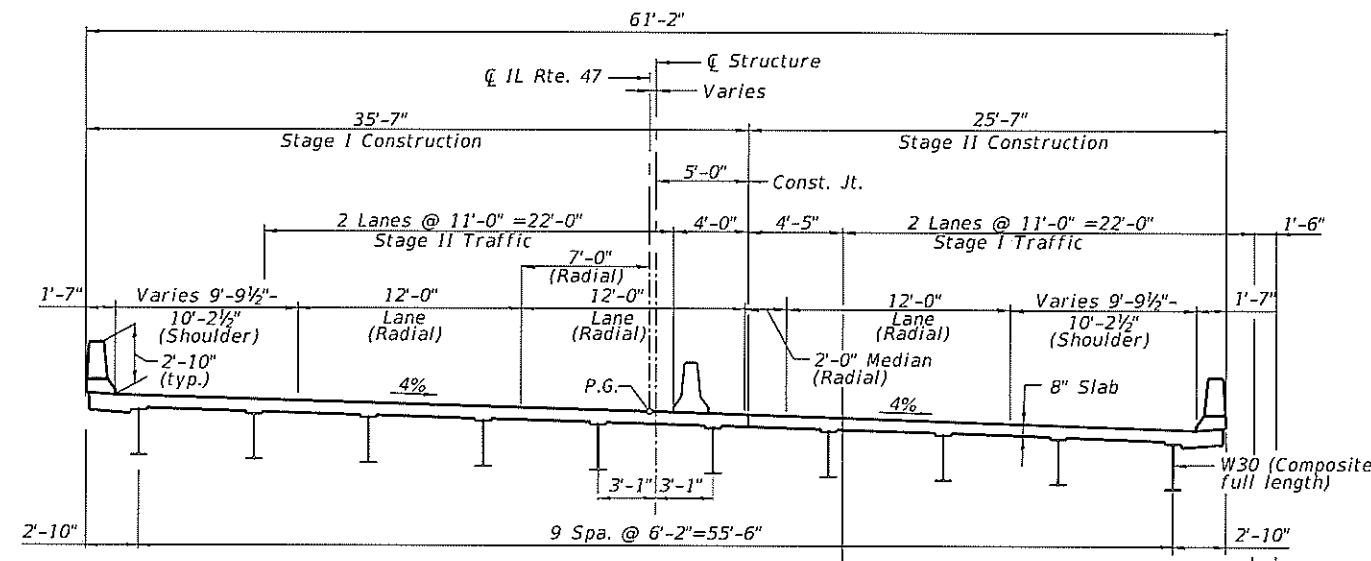
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN
SN 045-2050

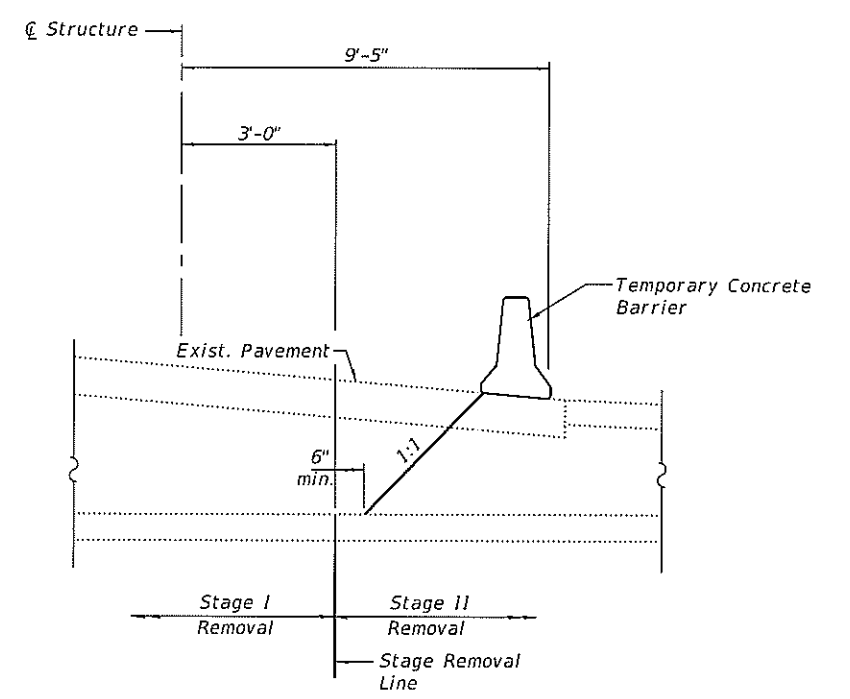
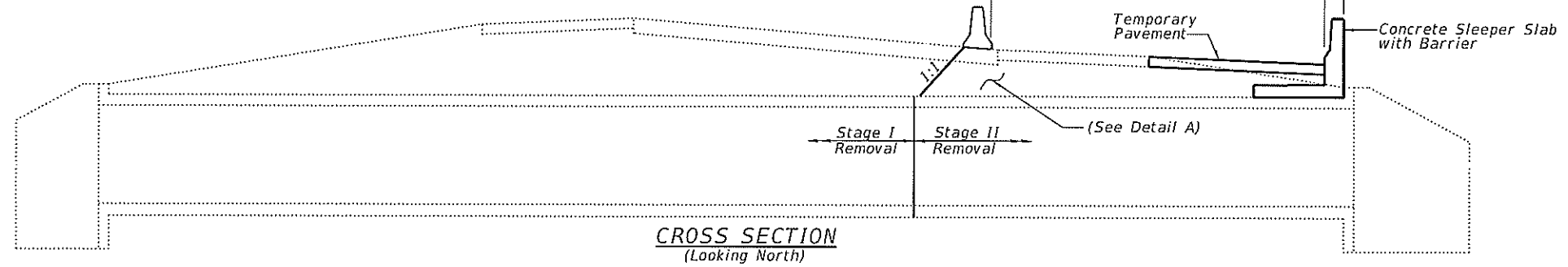
SHEET NO. 1 OF 2 SHEETS

F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	107N-4	KANE		
CONTRACT NO. 60T21			ILLINOIS FED. AID PROJECT	

FILE NAME = F:\2015\0559 IDOT Dist II Route 47 at Main S of Elburn RPT 171-041-CR00-Milhouse\Upn\CADD\IL 47 Bridge\1581\1581.dwg, sh., TSL, Ldgn



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



DETAIL A

WATERWAY INFORMATION

Drainage Area = 11.32 sq. mi. Exist. Low Grade Elev. = 729.53 @ Sta. 501+17
 Prop. Low Grade Elev. = 734.50 @ Sta. 501+17

Flood	Freq. Yr.	Existing Discharge C.F.S.	Proposed Discharge C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
				Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	10	634	634	203.2	334.5	726.33	0.12	0.13	726.45	726.46
Base	50	1120	1120	203.2	439.7	727.91	0.48	0.17	728.39	728.08
Max. Calc.	100	1376	1376	203.2	472.8	728.44	0.51	0.32	728.95	728.76
	500	2097	2097	516.8	570.3	729.88	0.04	0.23	729.92	730.11

10-Year Velocity through Existing Bridge = 3.12 fps
 10-Year Velocity through Proposed Bridge = 1.90 fps

DESIGN SCOUR ELEVATION TABLE

Event/Limit State	Design Scour Elevations (ft.)		
	S. Abut.	N. Abut.	Item 113
Q100	726.32	726.73	8
Q500	726.32	726.73	
Design	726.32	726.73	
Check	726.32	726.73	



USER NAME = tsledge	DESIGNED - LAS	REVISED -
PLLOT SCALE = 2400.0000 1" / Ft.	CHECKED - DAZ	REVISED -
PLLOT DATE = 11/20/2017	DRAWN - TCS	REVISED -
	CHECKED - LAS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SECTION
SN 045-2050
SHEET NO. 2 OF 2 SHEETS

F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	107N-4	KANE		
CONTRACT NO. 60T21				
ILLINOIS FED. AID PROJECT				