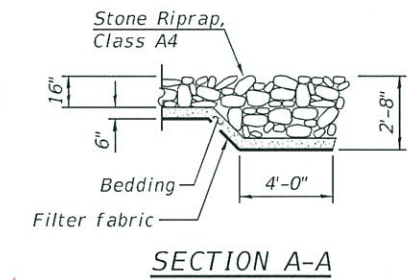
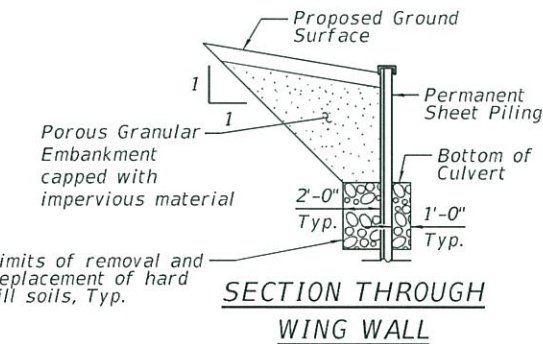
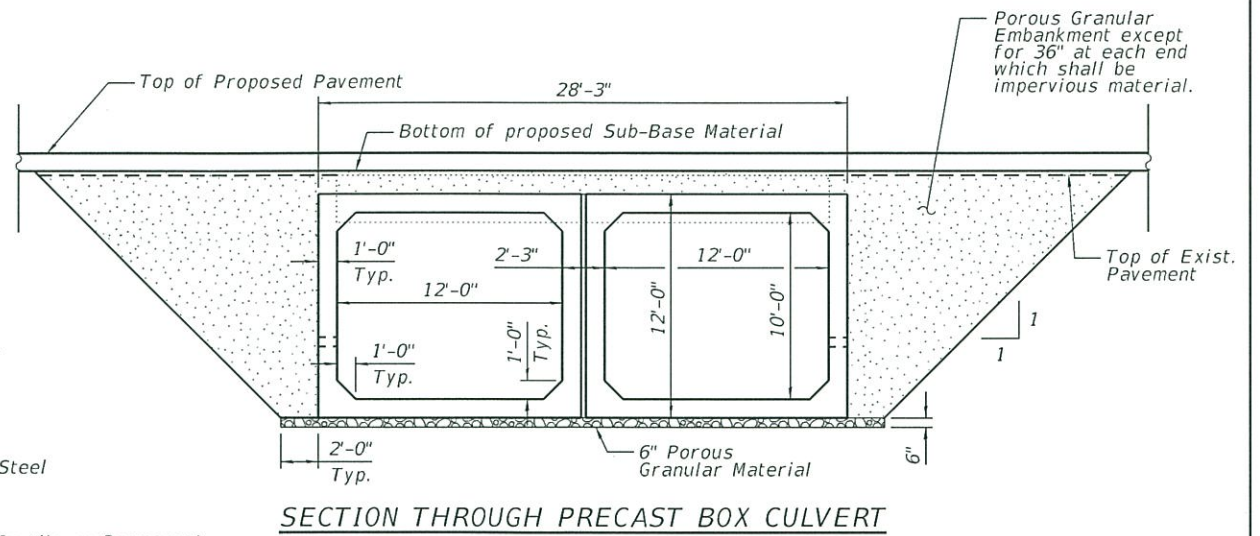
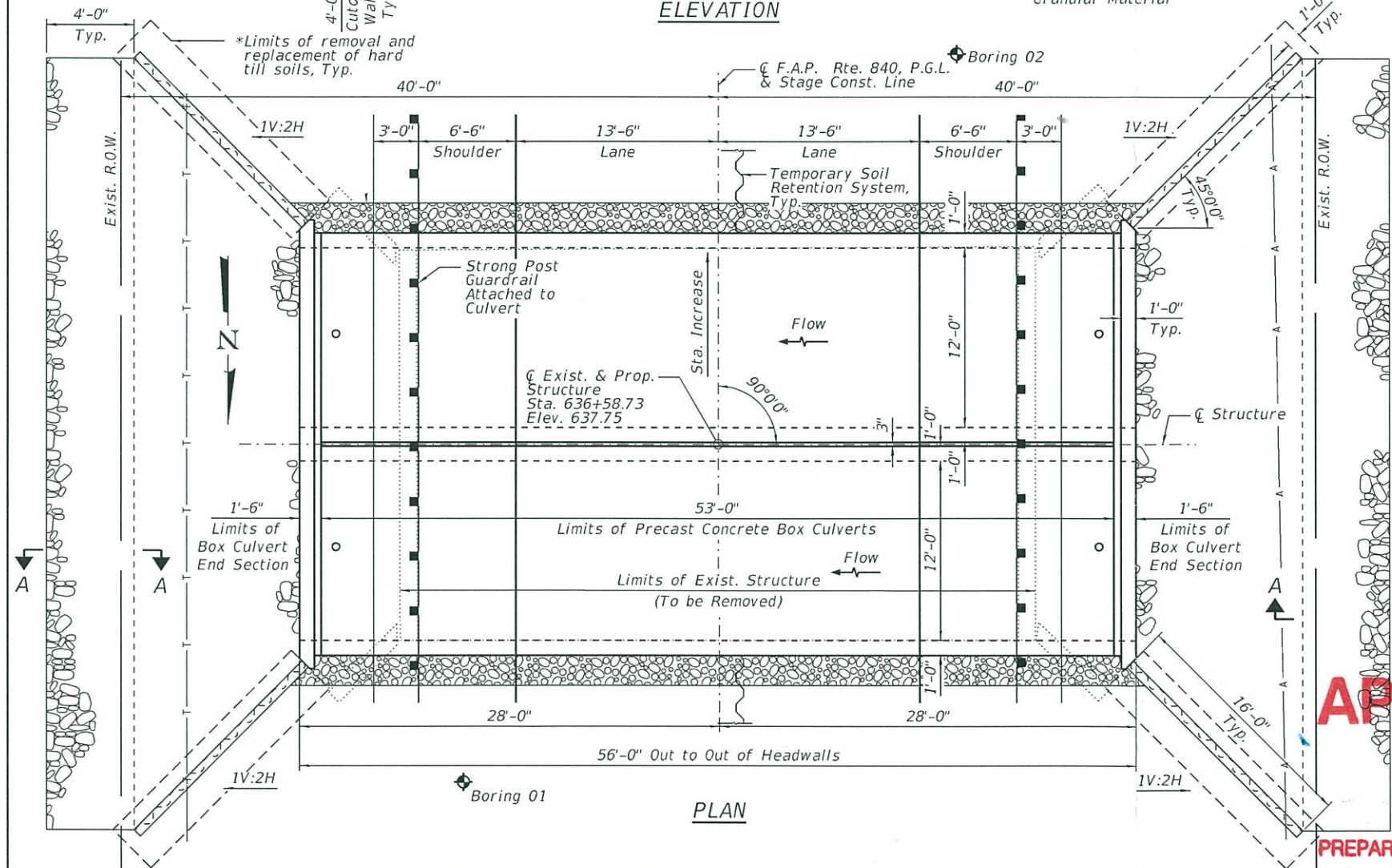
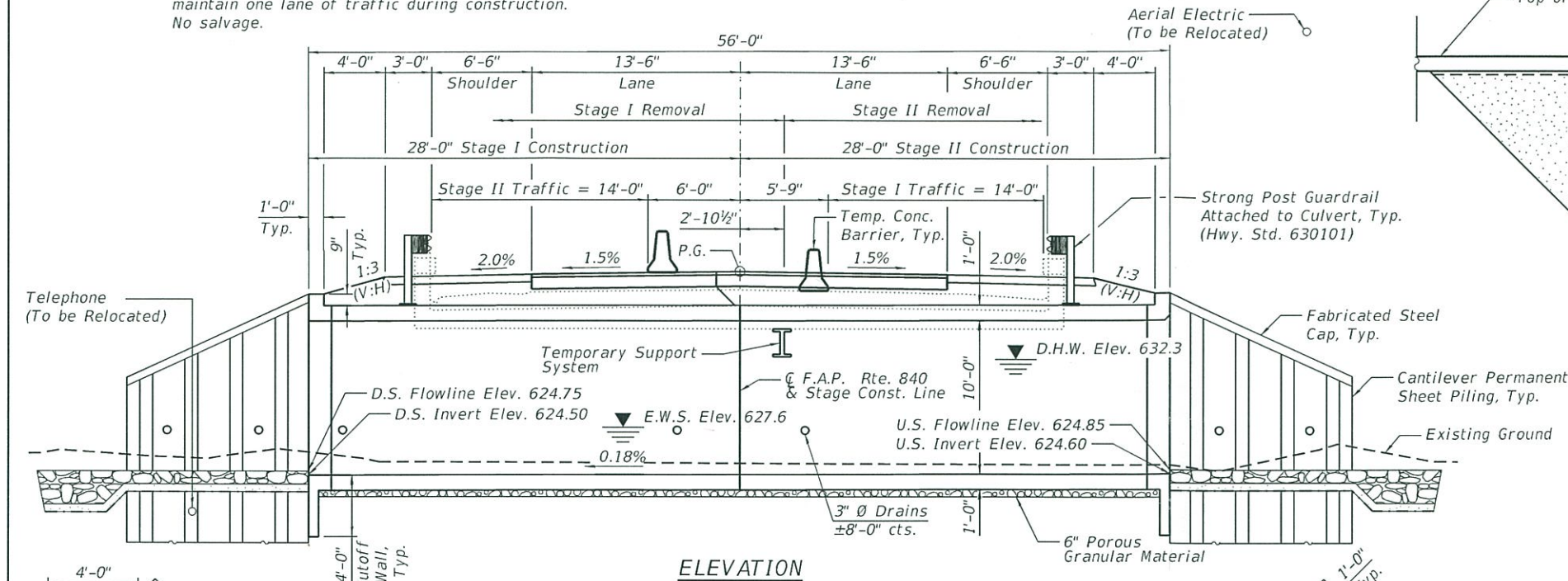


Benchmark: BM 7 - Cut square on top of NW wingwall on S.N. 038-0116 over Langan Creek Sta. 636+46.03, 22.04' Rt., Elev. 635.92  
 Existing Structure: S.N. 038-0116 was built in 1928 under SBI 49, Section 138-B at Sta. 636+58. The wearing surface was modified under three different contracts between 1970 and 2000. Existing structure is a single span slab bridge with a deck thickness of 30.5", 26'-0" bk. to bk. abutments, 42'-2" out to out deck with no skew. The Contractor shall remove and replace the existing structure. Stage Construction shall be utilized to maintain one lane of traffic during construction.  
 No salvage.



**DESIGN SPECIFICATIONS**

2014 AASHTO LRFD Bridge Design Specifications, 7th Edition with 2015 & 2016 Interims

**LOADING HL-93**

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

**DESIGN STRESSES**

**PRECAST UNITS**

$f'_c = 5,000$  psi  
 $f_y = 65,000$  psi (Welded Wire Rein.)

**FIELD UNITS**

$f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (Reinforcement)  
 $f_y = 50,000$  psi (Sheet Piling)

**HIGHWAY CLASSIFICATION**

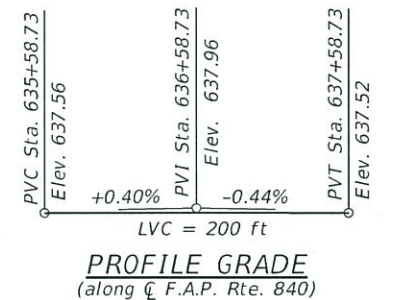
F.A.P. Route 840 (US 45/52)  
 Functional Class: Minor Arterial  
 ADT: 3914 (2019), 4779 (2039)  
 DHV: 1004 (2039)  
 ADTT: 755 (2039)  
 Design Speed: 55 mph  
 Posted Speed: 55 mph

\*Limits of removal and replacement of hard till soils with porous granular material meeting the gradation requirements of Std. Specifications Section 540.2, Note 1.

**WATERWAY INFORMATION**

Drainage Area = 2.64 sq. mi. Low Grade Elev. = 635.39 @ Sta. 642+90

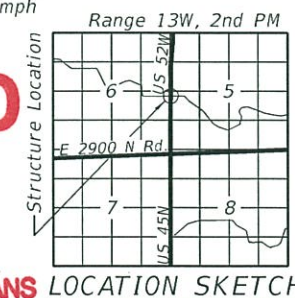
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.		Head - Ft.		Headwater El.	
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	10	277	137	167	631.6	632.3	0.0	0.0	631.6	631.6
Base	50	439	155	185	632.3	632.8	0.3	0.2	632.6	632.5
Scour	100	524	162	192	632.6	632.8	0.4	0.3	633.0	632.9
Overtopping	200	593	166	196	632.8	633.0	0.4	0.3	633.2	633.1
Max. Calc.	500	690	172	202	633.0	633.0	0.6	0.4	633.6	633.4



**APPROVED**

JUL 14 2017

AS A BASIS FOR PREPARATION OF DETAILED PLANS



GENERAL PLAN AND ELEVATION  
 US 45 / 52 OVER LANGAN CREEK TRIB.  
 F.A.P. RTE. 840 SEC. (138 BR-1)BR  
 IROQUOIS COUNTY  
 STATION 636+58.73  
 S.N. 038-2029

**LIN ENGINEERING, LTD.**  
 Consulting Engineers  
 Springfield, Illinois

USER NAME =	DESIGNED - VPT	REVISED -
FILE NAME =	CHECKED - MTH	REVISED -
PLOT SCALE =	DRAWN - CGY	REVISED -
PLOT DATE =	CHECKED - VPT	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

F.A.P. RTE. 840	SECTION 138 BR-1BR	COUNTY IROQUOIS	TOTAL SHEETS	SHEET NO.
CONTRACT NO. 66E24				

ILLINOIS FED. AID PROJECT