

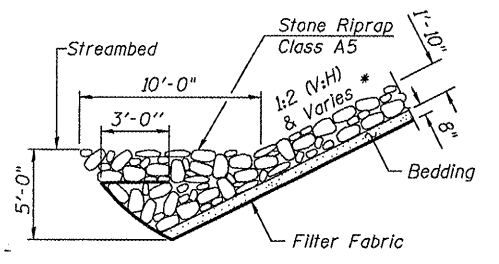
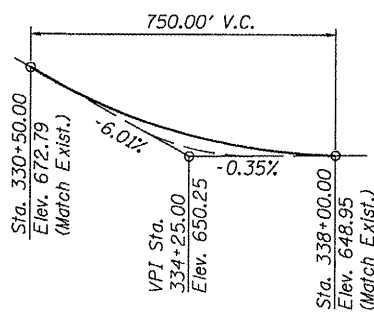
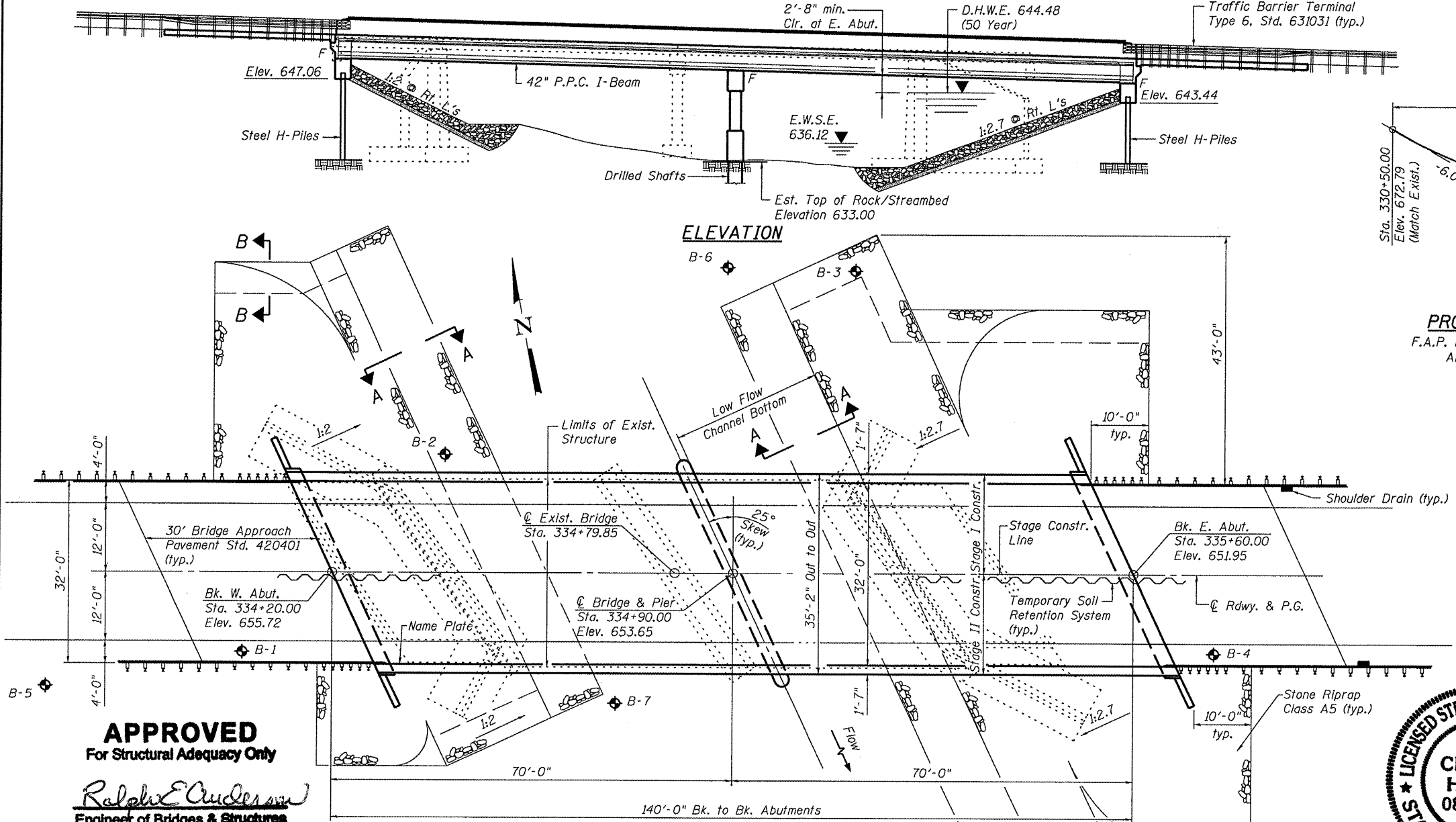
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 645		Marshall	71	18
FED. ROAD DIST. NO. 4		ILLINOIS	FED. AID PROJECT	

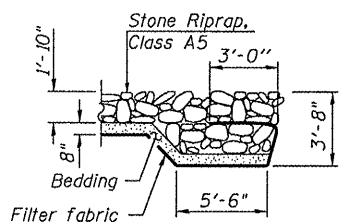
(105BR)BR
Contract - 68479

Benchmarks: Chisled "□" on top of N.E. Wingwall Bridge S.N. 062-0016 Elev. 648.58.
Existing Structure: Structure number 062-0016 was built in 1929 as Section 105-C, SBI Rt. 90 over Senachwine Creek Sta. 334+79.60. Then a solid concrete center pier was added and the superstructure was replaced in 1974 as Section 105BR. The existing structure is 33'-0" Out to Out of Deck, 79'-5" Back to Back of Abutments. It has 2-spans at 39'-8 1/2" each with 17" Precast Concrete Deck Beams with closed abutments on timber piling and a solid pier on spread footing. The existing structure shall be removed and replaced using stage construction.

No Salvage



SECTION A-A
* See Elevation View for slope information.



SECTION B-B

DESIGN SPECIFICATIONS
2007 AASHTO LRFD Bridge Design Specifications

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

DESIGN STRESSES
FIELD UNITS

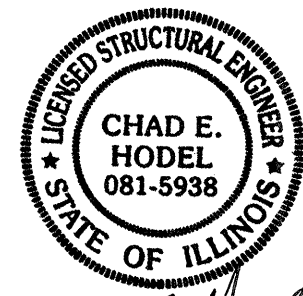
- $f'_c = 3,500$ psi
- $f_y = 60,000$ psi (Reinforcement)
- PRECAST PRESTRESSED UNITS**
- $f'_c = 6,000$ psi
- $f'_{ci} = 5,000$ psi
- $f'_s = 270,000$ psi (1/2" Low Relax. Strands)
- $f_{si} = 201,960$ psi (1/2" Low Relax. Strands)

SEISMIC DATA

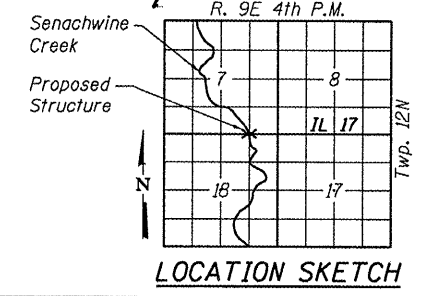
- Seismic Performance Zone (SPZ) = 1
- Bedrock Acceleration Coefficient (A) = 0.039g
- Site Coefficient (S) = 1.0

HIGHWAY CLASSIFICATION

- F.A.P. Route 645 (IL Route 17)
- Class: Minor Arterial (Non-Urban)
- ADT: 1000 (2003); 2200 (2026)
- ADTT: 300 (2026)
- Design Speed: 55 m.p.h.
- Posted Speed: 55 m.p.h.



Chad E. Hodel
8-26-08
EXP. 11-30-08
R. 9E 4th P.M.



GENERAL PLAN AND ELEVATION
IL ROUTE 17 OVER SENACHWINE CREEK
FAP ROUTE 645 - SECTION (105BR)BR
MARSHALL COUNTY
STATION 334+90.00
STRUCTURE NO. 062-0072

WATERWAY INFORMATION

Drainage Area = 28.3 sq. mi. Exist. Low Grade Elev. 648.95 @ Sta. 338+00.00
Prop. Low Grade Elev. 648.95 @ Sta. 338+00.00

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	3488	507	637	643.55	0.69	0.62	644.24	644.17	
Design	50	5504	563	728	644.48	1.66	0.80	646.14	645.28	
Base	100	6430	585	762	644.82	2.20	1.08	647.02	645.90	
Max. Calc.	500	8664	630	833	645.52	3.93	1.85	649.45	647.37	

10yr Velocity through Existing Bridge = 7.1 fps
10yr Velocity through Proposed Bridge = 5.6 fps

APPROVED
For Structural Adequacy Only

Ralph E. Anderson
Engineer of Bridges & Structures

DESIGN SCOUR TABLE

	West Abut.	Pier	East Abut.
Design Scour Elevation	647.06	631.50	643.44

DESIGNED	CEH
CHECKED	CWC
DRAWN	DLH
CHECKED	CEH / CWC



Filename: L:\Jobs\DOT BBS\6956 BBS Various\Various\03\CADD_Struct\062-0072 4-18-08.dgn Date: 8/26/2008 Operator: dneberling