

Bench Mark: DA 1, Chiseled square on top of north wingwall of east abutment of S.N. 075-0030, Sta. 1946+25, 18' Lt., Elev. 523.27.

Existing Structure: S.N. 075-0030 originally built in 1934 as SBI 107, Section 108B. In 1972, the superstructure was replaced with PPC deck beams as SBI 105, Section 108, BR-1. The existing structure is a single span, PPC deck beam bridge supported on closed abutments on spread footings keyed into rock. The back to back of abutments measures 63'-0" and the deck measures 33'-0" out to out. The deck has a 5" concrete overlay. There are no utilities attached to the structure.

Structure is to be removed and replaced using stage construction. One lane of traffic to be maintained at all times.

No Salvage

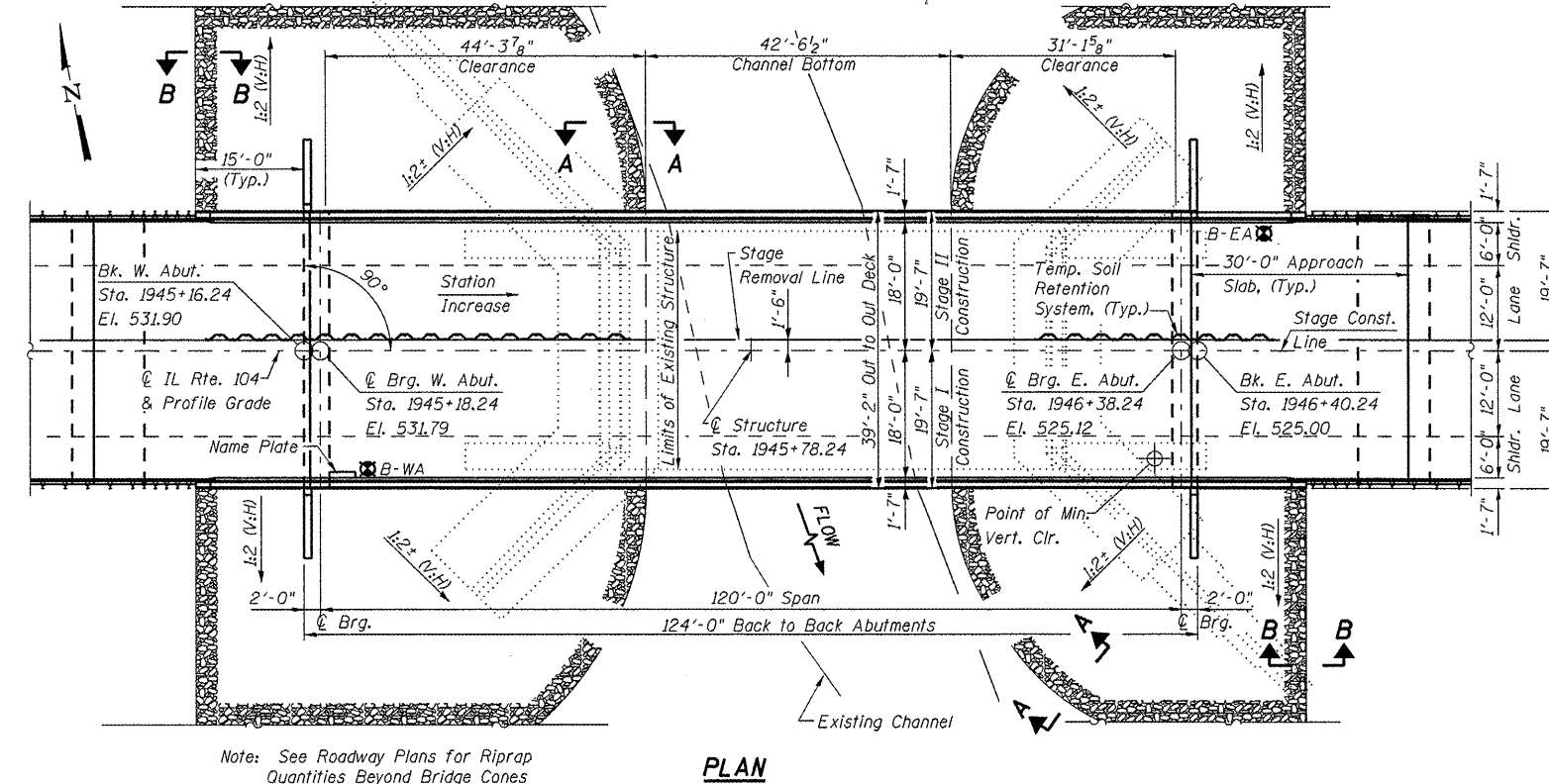
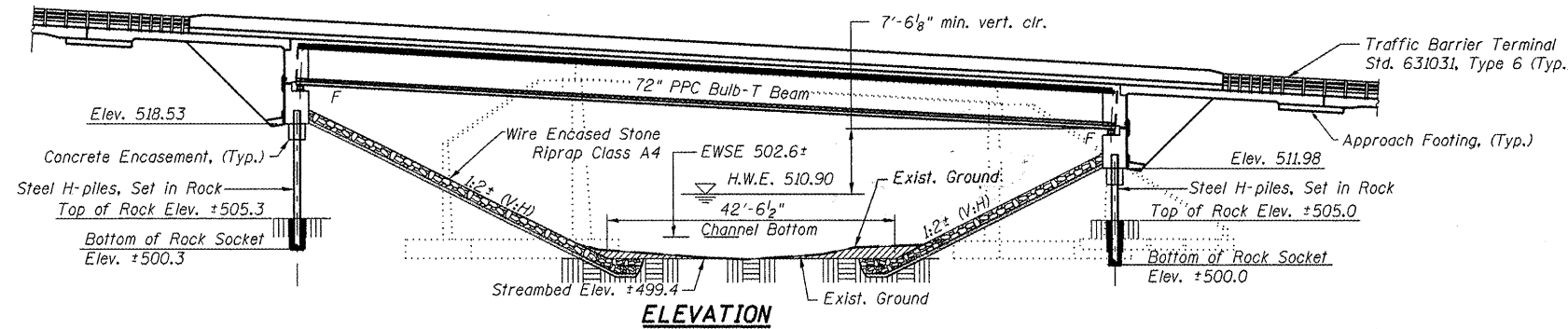
APPROVED
For Structural Adequacy Only
Curtis M. Watkins
Engineer of Bridges & Structures

STATION 1945+78.24
BUILT 20 BY
STATE OF ILLINOIS
F.A.P. 745 SECTION 108B-2
LOADING HL-93
STRUCTURE NO. 075-0512

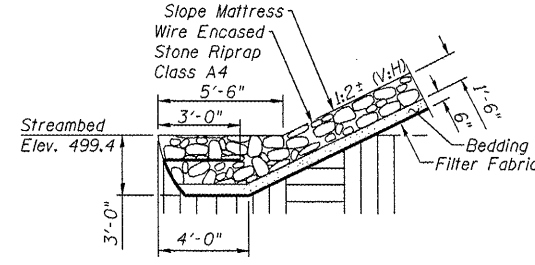
NAME PLATE
See Std. 515001

INDEX OF SHEETS

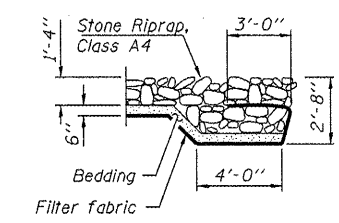
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|------------------------------------|---|
| 1. General Plan and Elevation | 12. Approach Slab Details (2 of 2) |
| 2. General Data | 13. Framing Plan |
| 3. Stage Construction Details | 14. 72" PPC Bulb-T Beam |
| 4. Temporary Concrete Barrier | 15. 72" PPC Bulb-T Beam Details |
| 5. Top of Slab Elevations (1 of 2) | 16. West Abutment Details |
| 6. Top of Slab Elevations (2 of 2) | 17. East Abutment Details |
| 7. Top of Approach Slab Elev. | 18. Bearing Details |
| 8. Superstructure | 19. Bar Splicer Assembly & Mechanical Splicer Details |
| 9. Superstructure Details | 20. HP Pile Details |
| 10. Diaphragm Details | 21. Wingwall Extension Details |
| 11. Approach Slab Details (1 of 2) | 22. Soil Boring Logs |



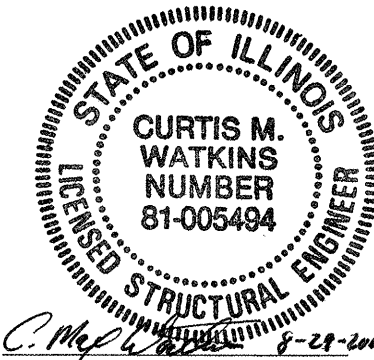
Note: See Roadway Plans for Riprap Quantities Beyond Bridge Cones



SECTION A-A



SECTION B-B



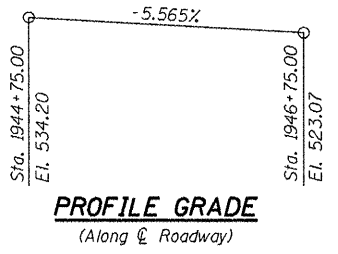
Curtis M. Watkins Date 8-29-2011
Illinois Licensed Structural Engineer No. 5494
License Expires 30-Nov.-2012

DESIGN SPECIFICATIONS
AASHTO LRFD Bridge Design Specifications
5th Edition with 2010 Interim Revisions

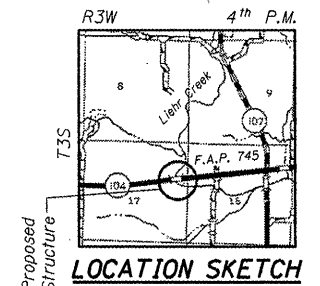
DESIGN STRESSES
FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 36,000 psi (M270 Grade 36)
PRECAST PRESTRESSED UNITS
f'c = 7,000 psi
f'ci = 6,000 psi
f's = 270,000 psi (1/2" low lax. strands)
f'si = 201,960 psi (1/2" low lax. strands)

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

SEISMIC DATA
Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.147g
Design Spectral Acceleration at 0.2 sec. (S_{D5}) = 0.348g
Soil Site Class = C



PROFILE GRADE
(Along Centerline of Roadway)



LOCATION SKETCH

GENERAL PLAN
ILLINOIS ROUTE 104 OVER
LIEHR CREEK
F.A.P. RTE. 745 SECTION 108B-2
PIKE COUNTY
STATION 1945+78.24
STRUCTURE NO. 075-0512

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	W. Abut.	E. Abut.
	518.53	511.98

WATERWAY INFORMATION

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	10	2545	500	520	508.6	0.3	0.4	509.0	509.0
Base	100	4160	640	690	510.9	0.6	0.7	511.5	511.5
Overtop Exist.	>500								
Overtop Prop.	>500								
Max. Calc.	500	6775	810	920	513.6	1.3	1.3	514.9	514.9

10 Year Velocity through Existing Bridge = 5.67 fps
10 Year Velocity through Proposed Bridge = 5.28 fps