

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 1
FA 773 IL 121	(109B) B-1	CUMBERLAND	96	58	25 SHEETS
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-			

Contract # 74237

Bench Mark #305- Brass Disk in top of concrete curb in southwest corner of structure (S.N. 018-0030) station 574+10; 16' Rt., Elev. 563.56.

Existing Structure- S.N. 018-0030; Built in 1928 as S.B.I. 131 Section 109-B at Station 574+84. Original structure is a 3-span reinforced concrete deck girder supported by closed concrete abutments and two concrete solid shaft piers on spread footings. The structure was reconstructed in 1981 as FA 773, Section 109B-1. The substructure was partially removed and widened and the superstructure was replaced and widened using PPC deck beams, 128'-7 1/4" bk. to bk. abutments, 33'-0" out to out of deck. Structure is to be removed and replaced with a 3-span 42" PPC I beam bridge on integral abutments. One lane traffic is to be maintained using stage construction.

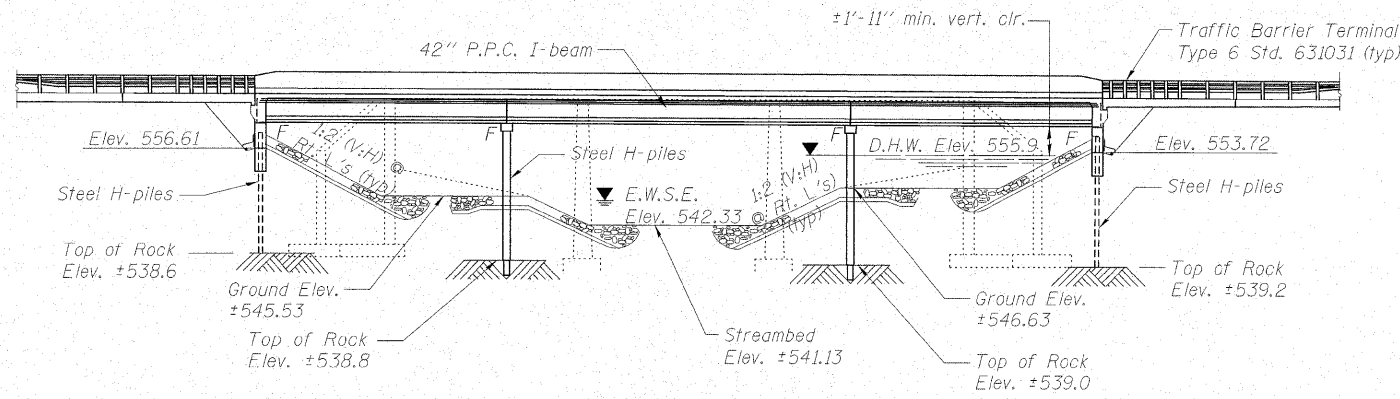
No Salvage-

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STATION 574+84.00  
BUILT 200 BY  
STATE OF ILLINOIS  
F.A.P. RTE. 773 SEC. (109B)B-1  
LOADING HL93  
STRUCTURE NO. 018-0063

NAME PLATE  
See Std. 515001



DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	W. Abut.	Pier 1	Pier 2	E. Abut.
	556.8	537.4	537.7	553.8

DESIGN SPECIFICATIONS

2007 AASHTO LRFD Bridge Design Specifications - 4th ed.

LOADING HL-93

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

DESIGN STRESSES

FIELD UNITS

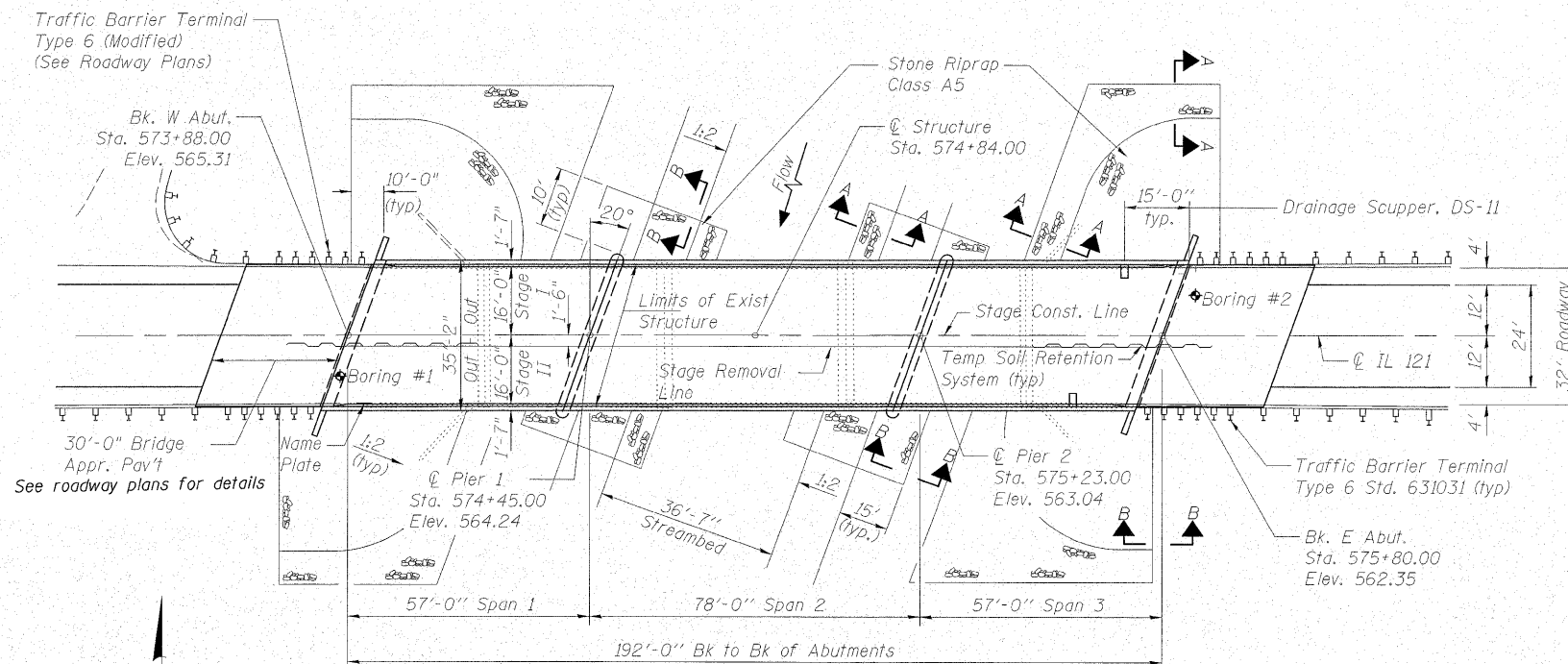
$f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (reinforcement)

PRECAST PRESTRESSED UNITS

$f'_c = 7,000$  psi  
 $f'_{ci} = 6,000$  psi  
 $f'_s = 270,000$  psi (1/2"  $\phi$  low lax strands)  
 $f_{si} = 201,960$  psi (1/2"  $\phi$  low lax strands)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1  
Bedrock Acceleration Coefficient (A) = 0.067 g  
Site Coefficient (S) = 1.5



APPROVED  
FOR STRUCTURAL ADEQUACY ONLY

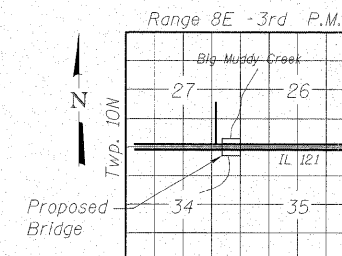
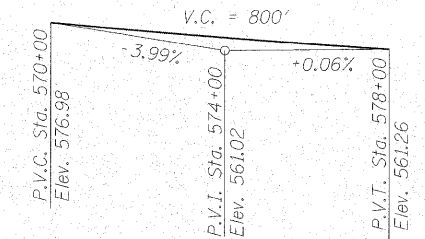
*Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

WATERWAY INFORMATION

Proposed Low Grade Elev. = 561.16 @ Sta. 581+00  
Existing Low Grade Elev. = 561.16 @ Sta. 581+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Head - Ft.		Headwater El.		
			Exist.	Prop.	H.W.E. Exist.	Prop.	Exist.	Prop.	
Design	10	6265	769	1432	554.6	2.0	1.3	556.6	555.9
Base	50	9939	891	1640	555.9	3.7	2.2	559.6	558.1
Overtopping	100	11572	938	1722	556.4	5.1	2.5	561.5	558.9
Max. Calc.	500	15570	1041	1904	557.5	4.6	3.5	562.1	561.0

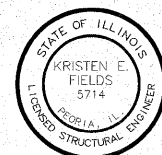
10-Year Velocity through Existing Bridge = 7.80 fps  
10-Year Velocity through Proposed Bridge = 3.87 fps



GENERAL PLAN AND ELEVATION  
IL ROUTE 121 OVER BIG MUDDY CREEK  
F.A.P. RTE. 773 - SECTION (109B)B-1  
CUMBERLAND COUNTY  
STATION 574+84.00  
STRUCTURE NO. 018-0063



DESIGNED - BAS
CHECKED - KEF
DRAWN - LAD
CHECKED - RJA



*Kristen E. Fields*  
Date Signed: 1-12-09  
Exp. Date: 11-30-10