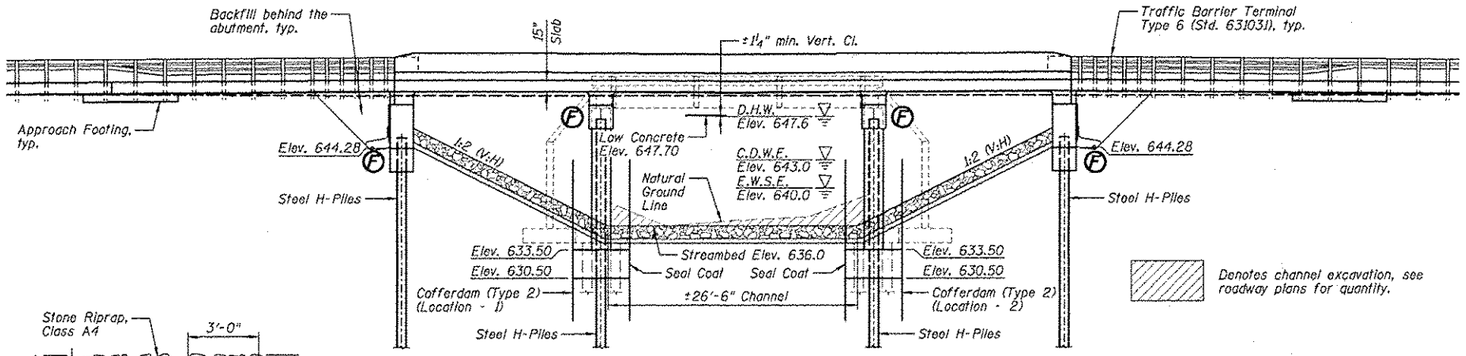
Benchmarks: BM #12 Railroad spike in power pole, Station 59+07/80' RT, Elevation = 649.15
BM #13 Railroad spike in power pole with transformer, Station 61+09/57' RT, Elevation = 649.62

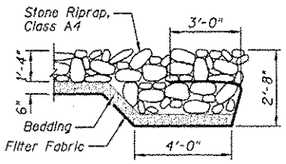
Existing Structure: S.N. 053-0070 was constructed in 1928 as Section 113B, and the superstructure was replaced in 1983 as Section 113BR-1. The superstructure consists of a single span with fourteen precast prestressed concrete deck beams with a 4" bituminous overlay and steel rail on each fascia beam. The substructure consists of closed reinforced concrete abutments and vertical cantilever wingwalls supported on untreated timber piles. The back to back of abutment dimension measures 29'-10 5/8" and the out to out deck dimension measures 42'-0" with no skew. Bridge to be closed and traffic detoured during construction.

No Salvage.

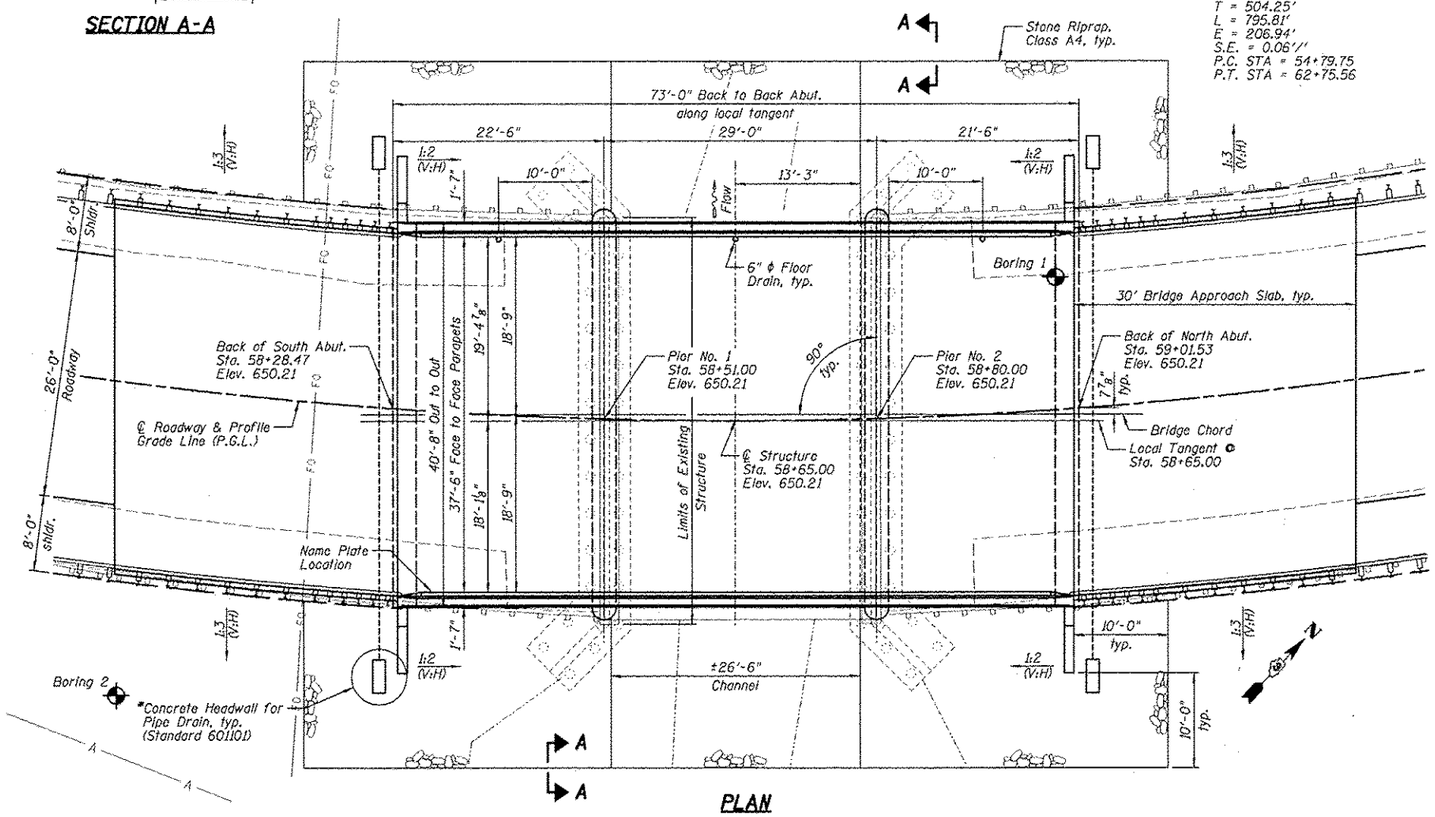


ELEVATION

Denotes channel excavation, see roadway plans for quantity.



SECTION A-A



PLAN

*Included in the cost of Pipe Underdrains for Structures 4".

CURVE DATA:

F.A.P. 681 (IL Rte. 116)
PI STA. = 59+84.00
Δ = 89° 15' 08" (LT)
D = 11° 12' 55"
R = 510.87'
T = 504.25'
L = 795.81'
E = 206.94'
S.E. = 0.06'/'
P.C. STA = 54+79.75
P.T. STA = 62+75.56

WATERWAY INFORMATION

Existing Low Grade Elev. 649.81 @ Sta. 59+00
Drainage Area = 7.74 Sq. Mi.
Proposed Low Grade Elev. 649.85 @ Sta. 59+70

Flood	Freq.	Q	Opening Sq. Ft.		Nat.	Head - Ft.		Headwater El.	
	Yr.	C.F.S.	Exist.	Prop.	H.W.E.	Exist.	Prop.	Exist.	Prop.
	10	1390	250	407	646.0	0.1	0.0	646.1	646.1
Design	50	2270	271	503	647.6	0.8	0.1	648.3	647.7
Base	100	2660	271	513	647.9	1.1	0.3	649.0	648.1
Overtopping	200	3080	271	513	648.1	2.2	0.4	650.3	648.5
Max. Calc.	500	3620	271	513	648.5	2.5	0.6	651.0	649.1

10 Yr. Velocity = 3.4 ft/sec. (Proposed)
10 Yr. Velocity = 5.9 ft/sec. (Existing)

SCOUR INFORMATION

	Design Scour Elevation (ft.)			
	South Abutment	Pier 1	Pier 2	North Abutment
Q100	644.28	621.35	621.35	644.28
Q500	644.28	618.75	618.75	644.28

LOADING HL-93

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

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications, Customary U.S. Units, 6th Edition.

DESIGN STRESSES

FIELD UNITS
f'c = 3,500 psi (Cast-In-Place)
fy = 60,000 psi (Reinforcement)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.078 g
Design Spectral Acceleration at 0.2 sec. (SDs) = 0.133 g
Soil Site Class = C

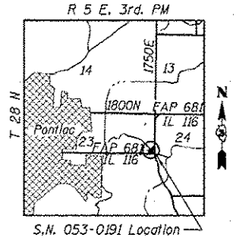
INDEX OF SHEETS

SHEET NO.	TITLE
B1	GENERAL PLAN AND ELEVATION
B2	GENERAL DATA
B3	TOP OF SLAB ELEVATIONS
B4	TOP OF APPROACH SLAB ELEVATIONS
B5	SUPERSTRUCTURE PLAN
B6	SUPERSTRUCTURE CROSS SECTION
B7	SUPERSTRUCTURE DETAILS
B8-B9	BRIDGE APPROACH SLAB DETAILS
B10	SOUTH ABUTMENT
B11	NORTH ABUTMENT
B12	PIER NO. 1
B13	PIER NO. 2
B14	PIER DETAILS
B15	HP PILE DETAILS
B16-B17	SOIL BORING LOGS

JOSEPH M. LOWRANCE 081-006446 LICENSED STRUCTURAL ENGINEER OF BLOOMINGTON ILLINOIS

Joseph M. Lowrance Date 11-30-12
JOSEPH M. LOWRANCE
ILLINOIS STRUCTURAL ENGINEER
NO. 081-006446
Exp. Date 11/30/14

APPROVED
For Structural Adequacy Only
D. Carl Purvis, PE
Engineer of Bridges & Structures



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
IL ROUTE 116 OVER
SMITH BRANCH
F.A.P. ROUTE 681 - SECTION (113 BR-1)BR
LIVINGSTON COUNTY
STATION 58+65.00
STRUCTURE NO. 053-0191

Farnsworth GROUP, INC.
2709 McGraw Drive
Bloomington, Illinois 61704
309/663-8435, 309/663-1571 fax

DATE - 11/27/12

	DESIGNED - TCR	REVISED
	CHECKED - JML	REVISED
	DRAWN - JWK	REVISED
	CHECKED - MSW	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. B1 OF 17 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
681	(113 BRBR & (113 BR-1)BR	LIVINGSTON	123	69
		CONTRACT NO. 66832		
	ILLINOIS FED. AID PROJECT			

24-8740