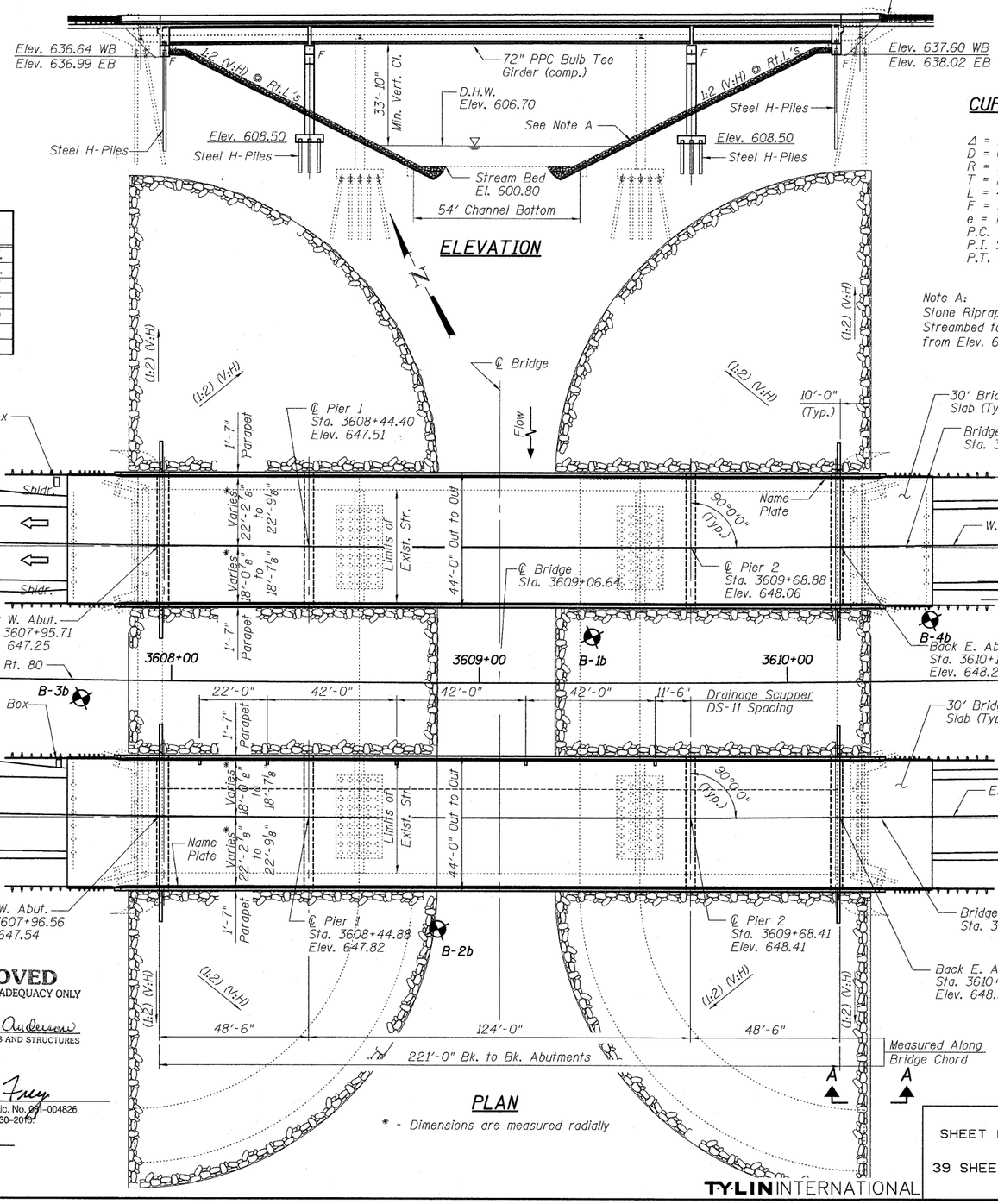
Benchmark: BM #438 ROW Marker. Sta. 3573+21.49 Offset 134.57 Rt., El. 641.41

Existing Structure: S.N. 006-0028 EB and 006-0029 WB. Built as F.A. Rt. 80 Section 06-7B-1, in 1963. The superstructure consists of a 237'-0" (back to back of abutments) by 36'-7½" wide reinforced concrete deck on three span continuous wide flange steel beams supported by pile bent spill thru abutments and hammerhead piers. Existing structures to be removed and replaced using crossovers.

Salvage: None.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

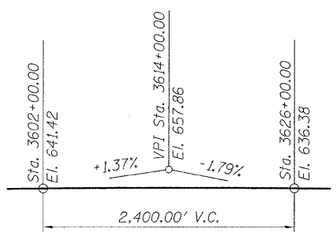


WATERWAY INFORMATION

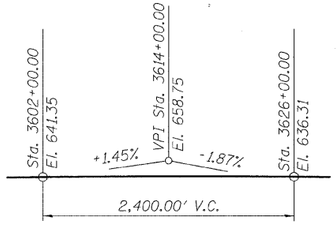
Drainage Area = 12.1 Sq. Mi. Existing Low Grade Elev. 646.9 @ Sta. 3607+87
Proposed Low Grade Elev. 647.2 @ Sta. 3607+60

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	1265	172	172	605.8	0.9	0.9	606.7	606.7
Design	50	2033	232	232	606.7	1.6	1.6	608.3	608.3
Base	100	2374	253	253	607.0	2.0	2.0	609.0	609.0
Overtopping	—	—	—	—	—	—	—	—	—
Max. Calc.	500	3205	289	289	607.5	2.7	2.7	610.2	610.2

10 Year Velocity through Existing Bridge = 7.4 fps
10 Year Velocity through Proposed Bridge = 7.4 fps



PROFILE GRADE
I-80 Westbound



PROFILE GRADE
I-80 Eastbound

DESIGN SCOUR ELEVATION TABLE

		W.Abut.	Piers 1&2	E. Abut.
Design Scour Elevation (ft.)	WB	636.71	602.50	637.68
	EB	637.00	602.50	638.04

APPROVED
FOR STRUCTURAL ADEQUACY ONLY

Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

DESIGNED	SP, AD
CHECKED	PDF
DRAWN	SP, IM
CHECKED	PDF

STATE OF ILLINOIS — PHILLIP D. FREY — 081-004826 — CHICAGO, ILLINOIS — LICENSED STRUCTURAL ENGINEER

Signed Phillip D. Frey
Phillip D. Frey, S.E. Il. Lic. No. 081-004826
Expires 11-30-2010
Date 9-4-09

CURVE DATA

Δ = 22° 37' 08" (LT)
D = 0° 29' 52"
R = 11,511.14'
T = 2,302.14'
L = 4,544.32'
E = 227.95'
e = 1.5%
P.C. STA. = 3590+84.54
P.I. STA. = 3613+86.67
P.T. STA. = 3636+28.85

Note A:
Stone Riprap - use Class A5 from Streambed to Elev. 610.0 and Class A4 from Elev. 610.0 to the Abutment. (Typ.)

DESIGN SPECIFICATION

AASHTO 2002 Standard Specifications for Highway Bridges

LOADING HS20-44 & ALT. MILITARY

Allow 50 #/sq. ft. for Future Wearing Surface.

SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient = 0.036g
Site Coefficient = 1.0

DESIGN STRESSES

FIELD UNITS

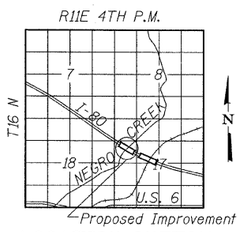
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

PRECAST PRESTRESSED UNITS

f'c = 6,000 psi
f'ci = 5,000 psi
f's = 270,000 psi (1/2" ϕ low lax. strands)
fsi = 201,960 psi (1/2" ϕ low lax. strands)

LEGEND:

Boring Location
P.G.L. denotes Profile Grade Line
E.B. denotes East Bound
W.B. denotes West Bound



LOCATION SKETCH

GENERAL PLAN
I-80 OVER NEGRO CREEK
F.A.I. RTE. 80
SEC. 06-7BR-1 & 06-7VB-M
BUREAU COUNTY
STA. 3609+06.64
STRUCTURE NO. 006-0174 (EB)
STRUCTURE NO. 006-0175 (WB)

TYLIN INTERNATIONAL

SHEET NO. 1	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
39 SHEETS	80	*	BUREAU	344	199
			CONTRACT NO. 66908		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

* 06-17BR & BR-1,7VB-M, 6BR & 6, 7 RS-1 & 11