

Bench Mark: BM Naperville 40-Stainless steel rod in PVC sleeve; 55'± right Sta. 88+47.86 Elev. 651.34 (NAVD 88)

Existing Structure: SN 099-3322 originally built in 1945 as Sec. 58-B-15d and widened in 1982 under Sec. 79-00058-01-BR by Will County. The original structure consisted of a three-span continuous reinforced concrete haunched girder bridge on R.C. closed abutments and solid wall piers supported by spread footings keyed into bedrock. Span lengths are 31'-9", 44'-0", and 31'-9"; with a total length of 108'-0" bk. to bk. abuts. In 1982 the superstructure was replaced with Prestressed Precast Conc. Deck Beams with a bituminous overlay, and the structure widened to an out to out width of 56'-0". The superstructure will be replaced, and substructure repaired. Stage construction with one lane each direction shall be utilized. No salvage.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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WATERWAY INFORMATION

Drainage Area = 81 Sq. Mi.		Low Grade Elev. 636.20 @ Sta. 75+50.00					
Flood	Freq. Yr.	C.F.S.	Opening Sq. Ft.	Nat.	Head - Ft.	Headwater El.	
		Exist.	Prop.		Exist.	Prop.	
Design	10	1970	628	628	634.22	0.28	0.28
	30	2460	703	703	634.64	0.36	0.36
	50	2950	767	767	634.92	0.58	0.58
Base	100	3410	834	834	634.99	0.76	0.76
Overtopping							
Max. Calc.	500	4550	972	972	635.17	1.33	1.33
						636.50	636.50

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Protective Coat	Sq. Yd.	1,020		1,020
Bridge Approach Pavement Connector (Flexible)	Sq. Yd.	64		64
Removal of Existing Superstructures	Each	1		1
Concrete Removal	Cu. Yd.		9.4	9.4
Concrete Structures	Cu. Yd.		32.9	32.9
Concrete Superstructures	Cu. Yd.	139.1		139.1
Bridge Deck Grooving	Sq. Yd.	997		997
* Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	6,076		6,076
* Reinforcement Bars, Epoxy Coated	Pound	44,020	8,090	52,110
Bar Splicers	Each	344		344
Steel Railing, Type SM	Foot	218		218
Name Plates	Each	2		2
Performed Joint Strip Seal	Foot	112		112
Concrete Sealer	Sq. Ft.		835	835
* Concrete Wearing Surface, 5"	Sq. Yd.	676		676
Asbestos Bearing Pad Removal	Each		60	60
Structural Repair of Concrete (Depth less than or equal to 5")	Sq. Ft.		45	45

* See Special Provisions

GENERAL NOTES

1. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
2. Reinforcement bars designated (E) shall be epoxy coated.
3. Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
4. The existing superstructure has a ±4.0" bituminous concrete overlay that will be removed. Cost included with Removal of Existing Superstructure.
5. Existing Name Plate shall be cleaned and relocated next to new Name Plate. Cost included with Name Plates.

DESIGN SPECIFICATIONS

NEW CONSTRUCTION
AASHTO LRFD Bridge Design Specifications,
4th Edition, 2009
EXISTING CONSTRUCTION
2002 AASHTO Standard Specification

DESIGN STRESSES

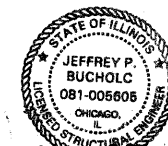
NEW CONSTRUCTION
FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 (M270 Grade 50)
PRECAST PRESTRESSED UNITS
f'c = 6,000 psi
f'ci = 5,000 psi
fpu = 270,000 psi (1/2" φ low lax strands)
fpbt = 201,960 psi (1/2" φ low lax strands)
EXISTING CONSTRUCTION
FIELD UNITS
f'c = 1,000 psi (Sub)
fy = 24,000 psi (Reinforcement)

LOADING HL-93 (NEW CONST.)

LOADING HS20 (EXISTING CONST.)

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

I certify that to the best of knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current AASHTO LRFD Bridge Design Specifications.

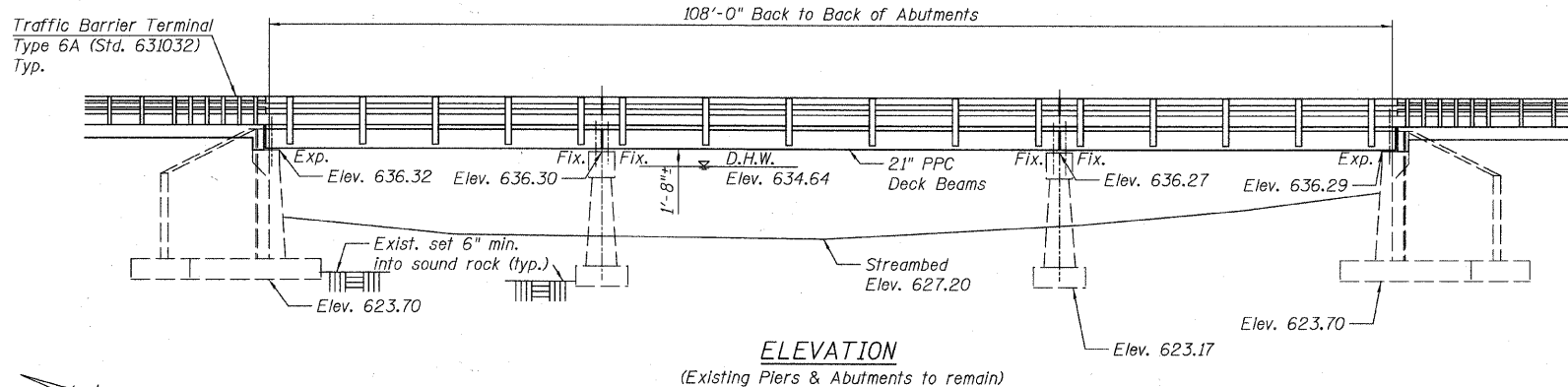


4/4/11 Exp. 11/30/12

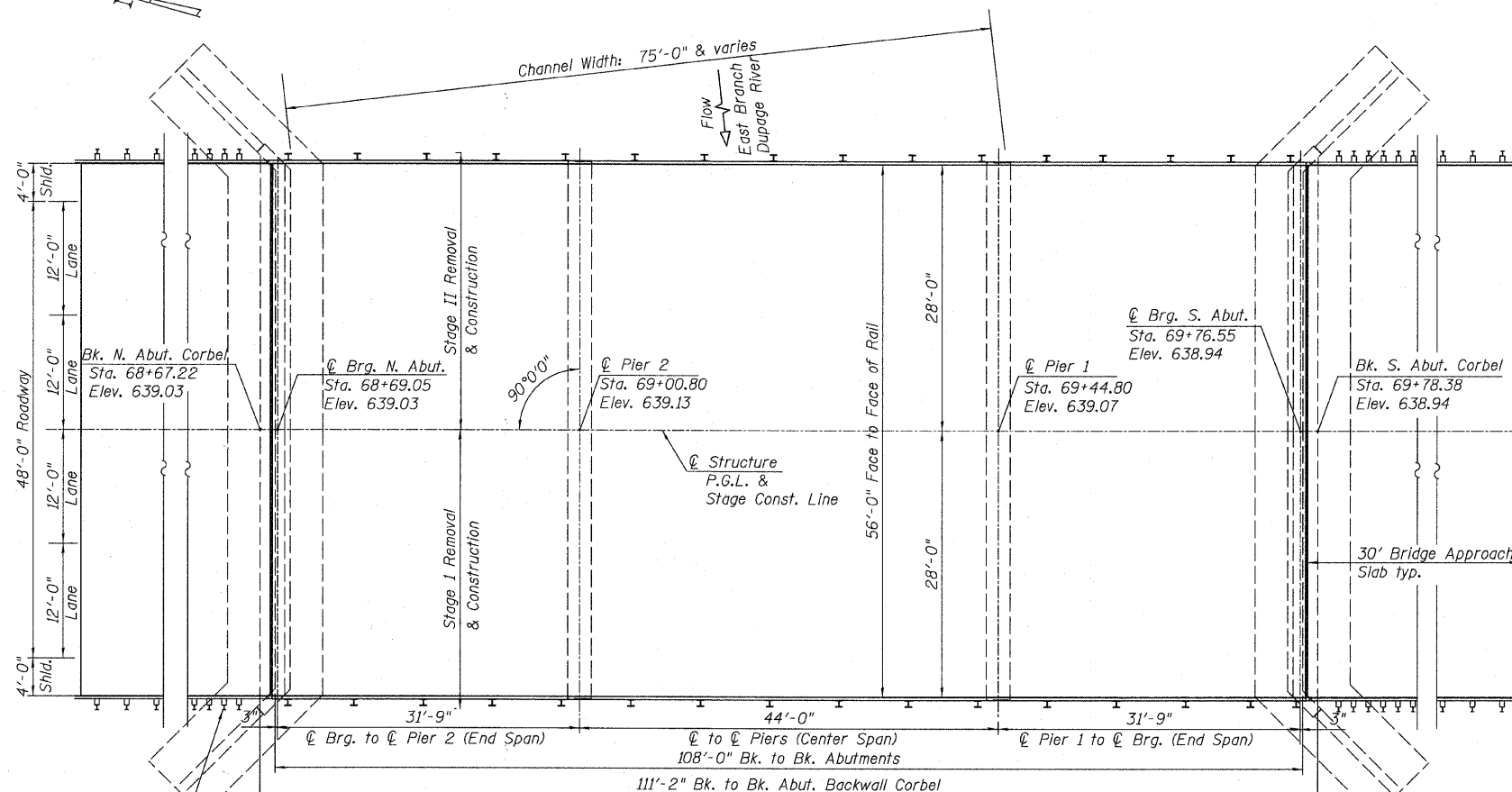
URS
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GENERAL PLAN & ELEVATION
STRUCTURE NO. 099-3322

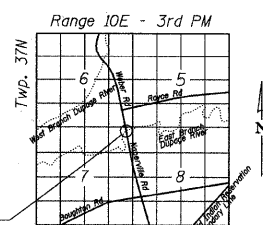
SHEET NO. S-1	F.A.P. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
18 SHEETS	0856	08-00050-00-BR	WILL	26	7
CONTRACT NO. 63576					
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					



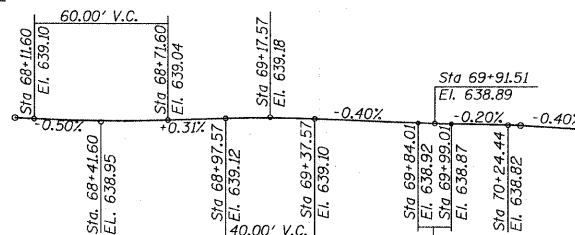
ELEVATION
(Existing Piers & Abutments to remain)



PLAN



LOCATION SKETCH



PROFILE GRADE

DESIGNED L. LAWS
CHECKED J.P.B.
DRAWN L. LAWS
CHECKED J.P.B.