BENCH MARK: CRA 18

South bolt on fire hydrant at Sta. 173+03.39, 92.89' Lt., Elev. 703.55

EXISTING STRUCTURE:

Existing Structure No. 022-0054 was first constructed in 1948 under Section 1977-212-WRS-BR-TS. The bridge has three simply supported spans: Spans 1 & 3 are 32'-3" cts. to cts. of bearings, span 2 is 44'-3" cts. to cts. of bearings, for a total of 116'-6" back to back of abutments. The substructure consists of closed abutments and reinforced concrete solid wall piers constructed on spread footings. In 1980 the superstructure was reconstructed with Precast Prestressed Concrete Deck Beams and both the superstructure and substructure were widened to 59'-0" out to out of beams.

The existing structure is to be removed & replaced.

Traffic is to be maintained utilizing Stage Construction.

The existing structure is to be used as Stage 1 Traffic Lanes during Stage 1 Construction.

Salvage: None

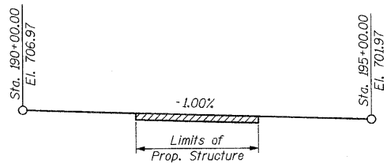
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WATERWAY INFORMATION

Drainage Area = 88.7 Sq. Mi.			Exist. Low Grade El. = 695.98 @ Sta. 195+50			Prop. Low Grade El. = 700.26 @ Sta. 196+50			
Flood	Freq. (Year)	Q (C.F.S.)	Waterway Opening (Sq. Ft.)		NAT. H.W.E.	CreatedHead (Ft.)		Headwater Elev.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
-	10	2,830	702.43	796.40	695.27	0.00	+0.10	695.27	695.37
Design	50	3,970	820.47	967.70	696.60	0.00	+0.12	696.60	696.72
Base	100	4,450	874.14	1,050.90	697.22	0.01	+0.13	697.23	697.35
Overtopping									
Existing	30	3,580							
Proposed	>500	N/A							
Max. Calc.	500	5,650	941.98	1,216.90	698.43	.044	+0.15	698.87	698.58

DESIGN SCOUR ELEVATION TABLE

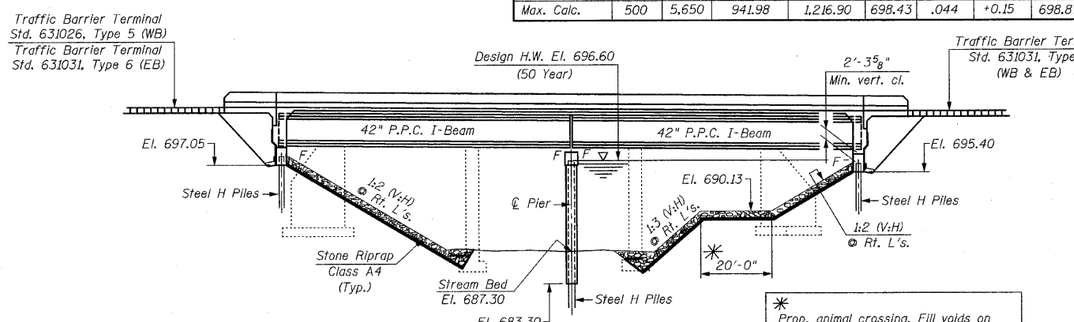
Location	W. Abut.	Pier	E. Abut.
Design Scour Elevations	697.00	681.00	695.36



PROFILE GRADE

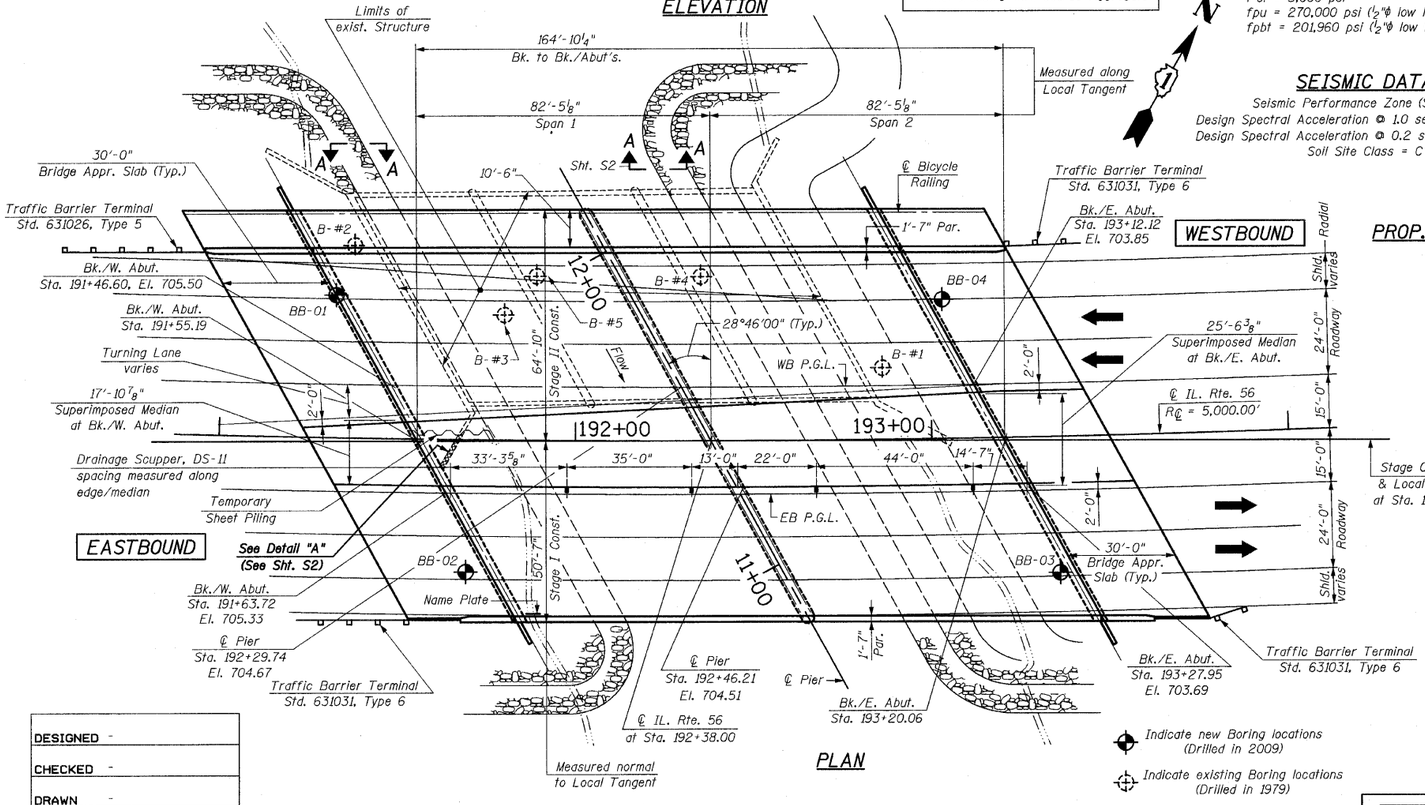
(Along WB P.G.L. & E.B. P.G.L. of IL. Rte. 56)

INDEX OF SHEETS



* Prop. animal crossing. Fill voids on animal crossing with Coarse Aggregate

ELEVATION



PLAN

Indicate new Boring locations (Drilled in 2009)

Indicate existing Boring locations (Drilled in 1979)

DESIGN SPECIFICATIONS

2007 AASHTO LRFD Bridge Design Specifications with 2008 & 2009 Interims

DESIGN STRESSES

FIELD UNITS

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

LOADING HL-93

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

PRECAST PRESTRESSED UNITS

f'c = 6,000 psi
f'ci = 5,000 psi
fpu = 270,000 psi (½"ϕ low lax strands)
fpbt = 201,960 psi (½"ϕ low lax strands)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration @ 1.0 sec (SD1) = 0.063g
Design Spectral Acceleration @ 0.2 sec (SDS) = 0.121g
Soil Site Class = C

CURVE DATA

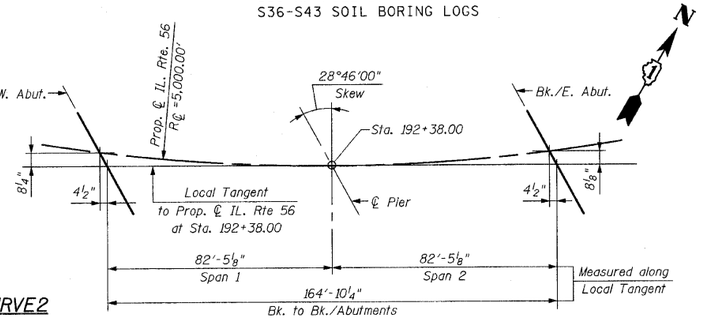
PROP. CURVE #56CURVE2

Δ = 14°15'54" (Lt.)
D = 1°08'45"
T = 625.66'
L = 1,244.85'
E = 38.99'
R = 5,000.00'
S.E. = 2.2%
P.C. = Sta. 190+01.95
P.T. = Sta. 202+46.80
P.I. = Sta. 196+27.61

STATION 192+38
BUILT 20 BY
STATE OF ILLINOIS
F.A.P. ROUTE 365
SECTION (58&59) WRS-3
LOADING HL-93
STRUCTURE NO. 022-2027

NAME PLATE

See Std. 515001

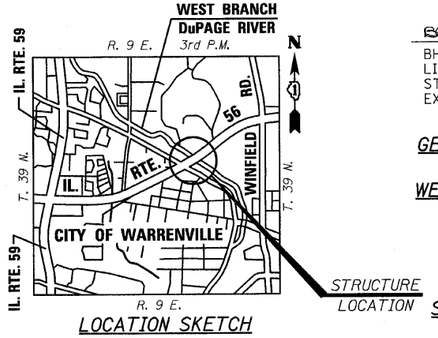


OFFSET SKETCH

STATE OF ILLINOIS
BHADRESH N. SHAH
081-004476
CHICAGO
LICENSED STRUCTURAL ENGINEER

BHadresh N. Shah

BHADRESH N. SHAH 08/11/2010
LICENSED STRUCTURAL ENGINEER
STATE OF ILLINOIS LIC. No. 081-004476
EXPIRES: 11-30-10



LOCATION SKETCH

GENERAL PLAN & ELEVATION
IL. ROUTE 56 OVER
WEST BRANCH DuPAGE RIVER
F.A.P. RTE. 365
SECTION (58&59) WRS-3
DuPAGE COUNTY
STA. 192+38.00
STRUCTURE NO. 022-2027

DESIGNED	-
CHECKED	-
DRAWN	-
CHECKED	-

CHRISTIAN-ROGE & ASSOCIATES, INC.
ENGINEERS-PLANNERS-SURVEYORS
211 WEST WACKER DRIVE
CHICAGO, ILLINOIS 60606
PHONE: (312)372-2023 FAX: (312)372-5274

SHEET NO. S1	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S43 SHEETS	365	(58&59) WRS-3	DuPAGE	466	207
			CONTRACT NO. 62420		
		ILLINOIS	FED. AID PROJECT		