

Bench Mark: Survey disk set in top of concrete monument station located 356 ft. west of centerline of Vermont Road on the southeasterly side of Kishwaukee Valley Road within the triangle created by the roads. Station is 21 ft. east of powerpole, 114 ft. west of another powerpole, 22.5 ft. north of centerline of Vermont Road and 58 ft. east of stop sign. Survey disk with stamping "BEAR": NGS BEAR 1991-AJ2936 published by McHenry County G.I.S. Station #7323 2056698.511 North - 926595.2104 East, Held Elevation = ± 849.135

Existing Structure: S.N. 056-3014 built in 1953 as F.A.S. Route 31, Section 38B at Station 149+52.2. Structure consists of two span continuous steel beams and reinforced concrete deck. 86'-0" Bk. to Bk. abutments and 26'-0" Out to Out of deck. Structure to be removed and replaced. F.A.S. Route 31 will be closed during construction; Detour will be provided. No salvage.

NORTH BRANCH OF KISHWAUKEE RIVER
BUILT 20__ BY
MCHENRY COUNTY
SEC. 06-00323-00-BR
F.A.S. RT. 31 STATION 149+46.95
STRUCTURE NO. 056-3177 LOADING HL93

LOADING HL-93

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

DESIGN SPECIFICATIONS

2007 AASHTO LRFD Bridge Design Specifications
with 2008 Interims

DESIGN STRESSES

FIELD UNITS	PRECAST PRESTRESSED UNITS
$f'_c = 3,500$ psi	$f'_c = 7,000$ psi
$f_y = 60,000$ psi (Reinforcement)	$f'_{si} = 6,000$ psi
	$f'_s = 270,000$ psi ($1/2"$ ϕ low lax. strands)
	$f_{si} = 201,960$ psi ($1/2"$ ϕ low lax. strands)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{d1}) = 0.084g
Design Spectral Acceleration at 0.2 sec. (S_{d5}) = 0.136g
Soil Site Class = D

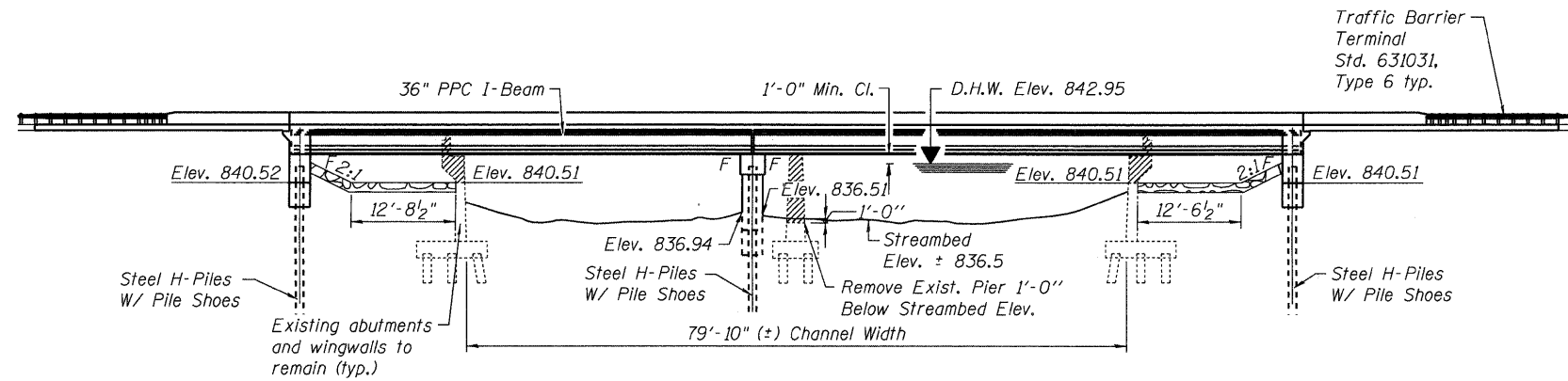
WATERWAY INFORMATION

Drainage Area = 31.14 Sq. Mi. Low Grade Elev. 848.13 ft. @ Sta. 148+60									
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	10	1333	419.3	526.5	842.49	0.03	0.00	842.52	842.49
	30	1729	456.1	573.8	842.90	0.05	0.00	842.95	842.89
	50	1939	473.6	595.9	843.10	0.06	0.00	843.16	843.08
Base	100	2174	491.1	617.9	843.29	0.07	0.00	843.36	843.27
Overtopping	>500								
Max. Calc.	500	2737	529.3	665.6	843.70	0.11	0.00	843.81	843.67

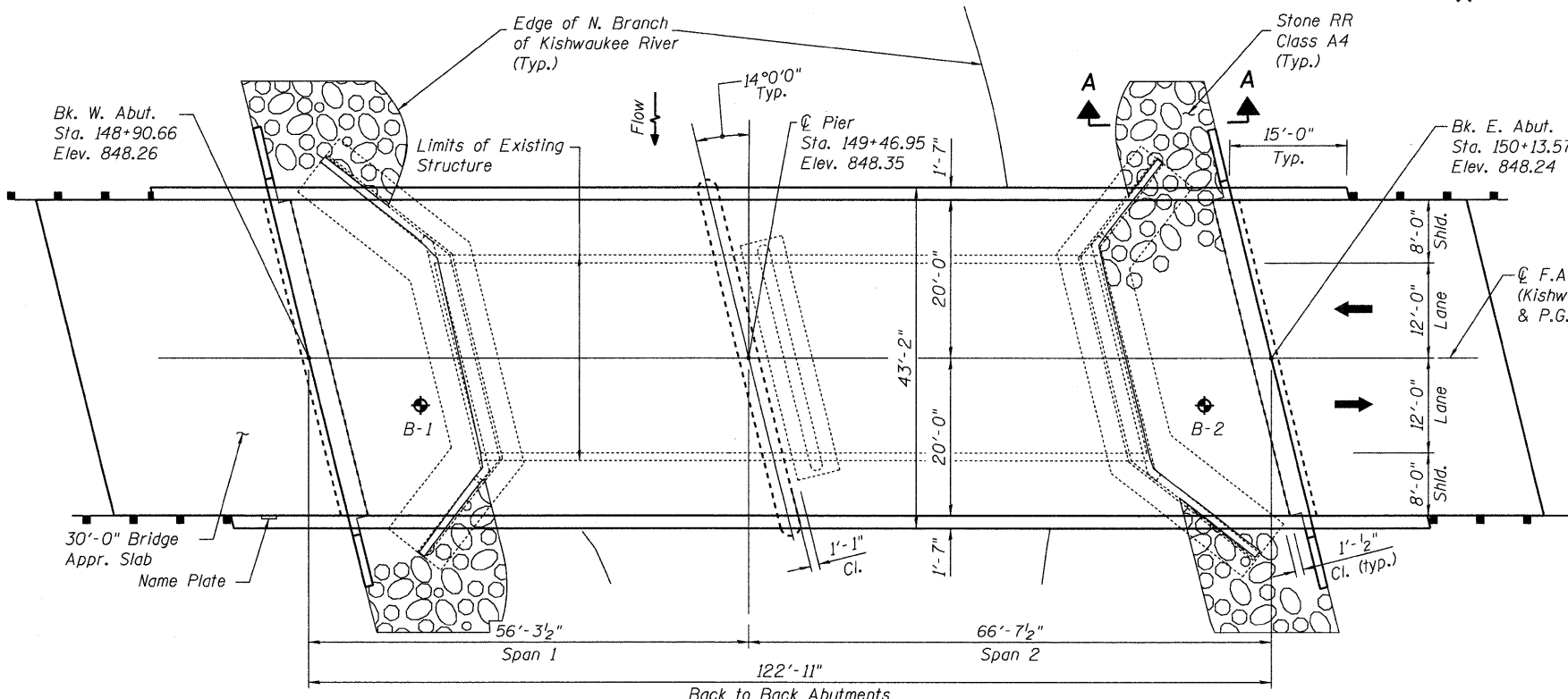
10 year velocity through existing bridge = 3.3 fps 10 year velocity through prop. bridge = 2.3 fps

DESIGN SCOUR ELEVATION TABLE

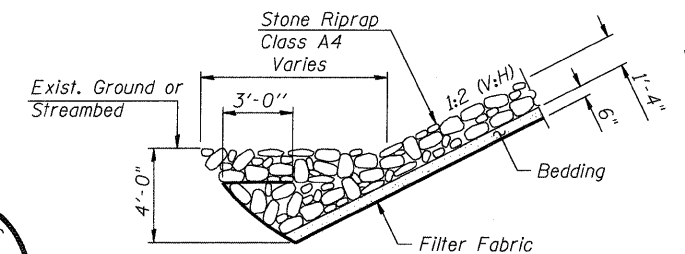
Design Scour Elevation (ft.)	W. Abut.	Pier	E. Abut.
	832.32	836.09	832.32



ELEVATION



PLAN



SECTION A-A

I certify that to the best 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.

LEGEND:

[Hatched Box] Removal

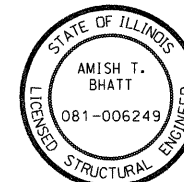
**GENERAL PLAN AND ELEVATION
KISHWAUKEE VALLEY RD (CH 30) OVER
NORTH BRANCH OF KISHWAUKEE RIVER
F.A.S. RTE. 31 - SEC. 06-00323-00-BR**

MCHENRY COUNTY

STATION 149+46.95

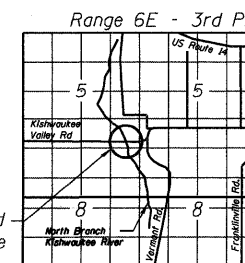
STRUCTURE NO. 056-3177

Sheet No. S-1 of 23



Amish T. Bhatt 05/29/09
AMISH T. BHATT DATE

LICENSE EXPIRES 11/30/2010



LOCATION SKETCH

AECOM

USER NAME = debezicd
PLOT SCALE = 0:1.0000" / IN.
PLOT DATE = 5/28/2009

DESIGNED - DD
DRAWN - DD
CHECKED - ATB
DATE - 3/18/2009

REVISED -
REVISED -
REVISED -
REVISED -

**MCHENRY COUNTY
DIVISION OF TRANSPORTATION**

**GENERAL PLAN AND ELEVATION
STRUCTURE NO. 056-3177**

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0031	06-00323-00-BR	MCHENRY	53	20

CONTRACT NO. 63218
FED. ROAD DIST. NO. 1 | ILLINOIS FED. AID PROJECT