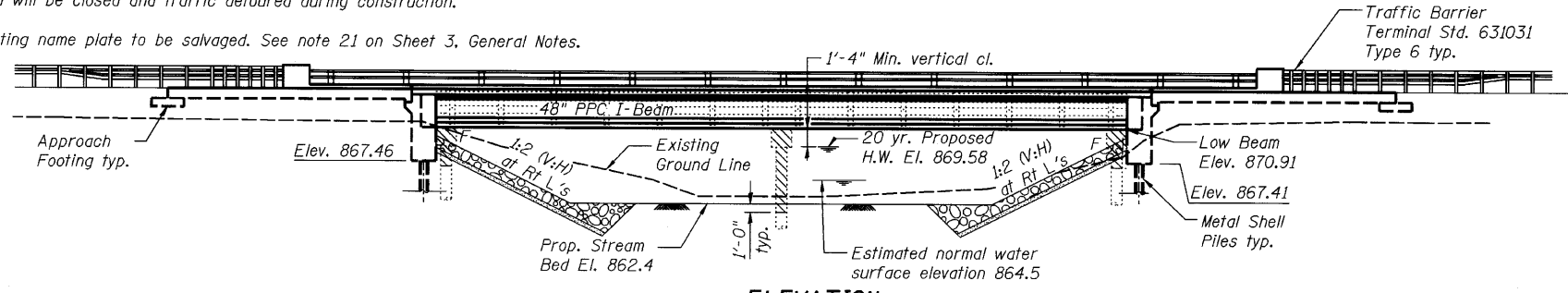


Benchmark: Large mag nail in fifth power pole west of bridge. Sta. 500+50, Offset 49.9' Lt., Elev. 872.659

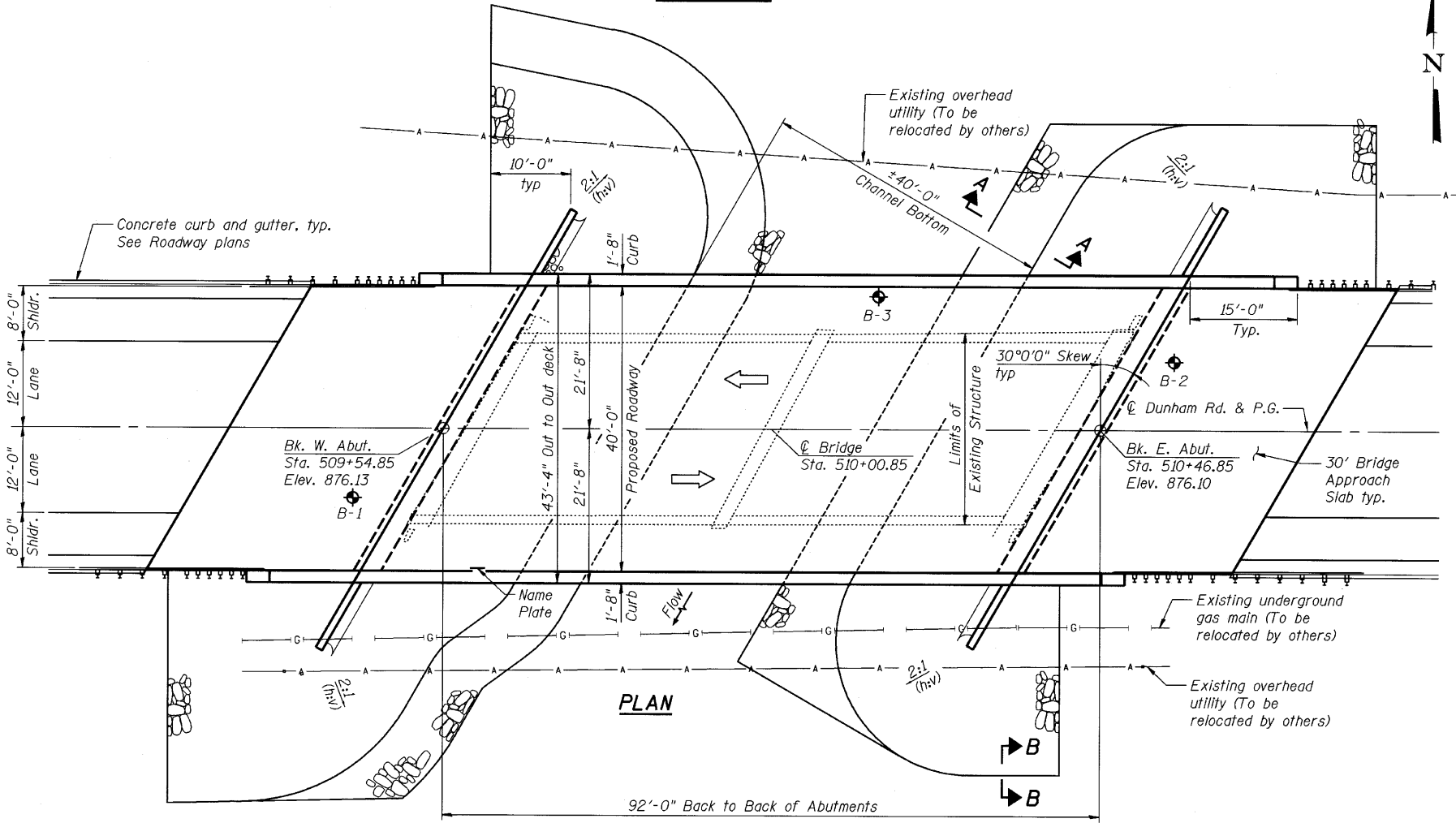
Existing Structure: S.N. 056-3021 built 1955 as Section 00-06321-00-BR Structure consists of two span deck beams with bituminous overlay, supported by stub abutments and open concrete pile bent pier. Abutments and piers are at a 30° skew with respect to Dunham Road. 86'-0" back to back abutments. 27'-0" out to out deck. Structure to be completely removed and replaced. Road will be closed and traffic detoured during construction.

Existing name plate to be salvaged. See note 21 on Sheet 3, General Notes.

**McHENRY COUNTY  
DIVISION OF TRANSPORTATION**



**ELEVATION**



**PLAN**

**DESIGN SCOUR ELEVATION TABLE**

Design Scour Elevation (ft.)	W. Abut.	E. Abut.
	867.46	867.41

**DESIGN SPECIFICATIONS**

2007 AASHTO LRFD Bridge Design Specifications with 2009 Interims

**DESIGN STRESSES**

FIELD UNITS	PRECAST PRESTRESSED UNITS
f'c = 3,500 psi	f'c = 7,000 psi
fy = 60,000 psi (Reinforcement)	f'ci = 6,000 psi
	fpu = 270,000 psi (1/2" φ low lax. strands)
	fpbt = 201,960 psi (1/2" φ low lax. strands)

**LOADING HL-93**

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

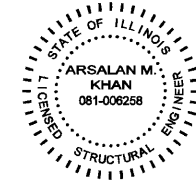
**WATERWAY INFORMATION**

Drainage Area = 24.91 sq. mi.	Existing Low Grade Elev. = 872.89 ft. @ Sta. 504+50	Proposed Low Grade Elev. = 872.89 ft. @ Sta. 504+50							
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist. Prop.	Nat. H.W.E. *	Head - Ft. * Exist. Prop.	Headwater El. * Exist. Prop.			
Design	20	1250	298.56 329.61	394.35 414.16	869.34 869.69	0.05 0.07	0.01 0.01	869.39 869.70	869.35 869.70
Base	50	1550	374.35 451.32	477.42 870.20	870.20	0.08 0.01	0.01	870.28 870.21	870.21
Overtopping	>500				870.48	0.10 0.00	0.00	870.58 870.48	870.48
Max. Calc.	500	2180	447.40 528.64	871.04	0.30 0.06	0.06		871.34 871.10	871.10

\*Headwater elevations taken 75' upstream of the bridge due to junction influences  
20 year velocity through existing bridge = 4.1 fps.  
20 year velocity through proposed bridge = 3.1 fps.

**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 1  
Design Spectral Acceleration at 1.0 sec. (S<sub>D1</sub>) = 0.131g  
Design Spectral Acceleration at 0.2 sec. (S<sub>D5</sub>) = 0.270g  
Soil Site Class = E



DATE: 02/2010  
SEAL EXPIRES: 11/30/2010

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 complies with requirements of the current AASHTO LRFD Bridge Design Specifications.

**N. BRANCH KISHWAUKEE RIVER  
BUILT 2011 BY McHENRY COUNTY  
DIVISION OF TRANSPORTATION  
SEC. 06-00321-00-BR  
F.A.S. RTE. 1233 STA. 510+00.85  
STR. NO. 056-3179 LOADING HL-93**

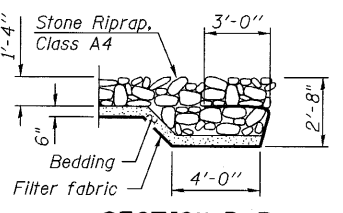
**NAME PLATE**  
See Std. 515001

**LEGEND**

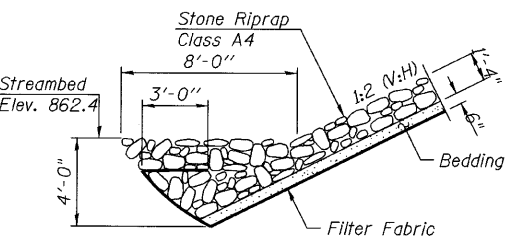
- ◆ Indicates Soil Boring Location
- ▨ Limits of Removal

DESIGNED - AMK
CHECKED - EKM
DRAWN - SAT
CHECKED - EKM

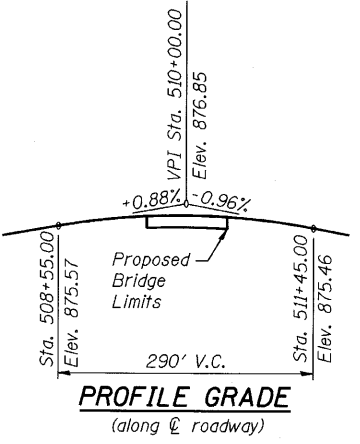
**Giorba Group, Inc.**  
CONSULTING ENGINEERS  
5507 North Cumberland Avenue, Suite 402 Chicago, Illinois 60656  
Tel. 773.775.4009 Fax 773.775.4014 Email chicago@giorba.com



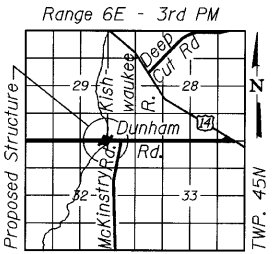
**SECTION B-B**



**SECTION A-A**



**PROFILE GRADE**



**LOCATION SKETCH**

**GENERAL PLAN AND ELEVATION  
DUNHAM ROAD OVER N. BRANCH  
KISHWAUKEE RIVER  
F.A.S. RTE. 1233-SEC. 06-00321-00-BR  
McHENRY COUNTY  
STATION 510+00.85  
STRUCTURE NO. 056-3179**

SHEET NO. S-1	F.A.S. RTE. 1233	SECTION 06-00321-00-BR	COUNTY McHENRY	TOTAL SHEETS 48	SHEET NO. 19
S-21 SHEETS				CONTRACT NO. 63516	
ILLINOIS FED. AID PROJECT					

rdm:ley 8/2/2010 N:\PROJ\3381\3381\_01\_Kish\Design\Structural\CAD\3381\_01\_General\_Plan & Elev.dgn