

McHENRY COUNTY
DIVISION OF TRANSPORTATION

Benchmark: C.G.I #102 - 3/4" ϕ Iron pipe set in grass. Sta. 104+58, 14.54' LT. Elev. 849.93'

Existing Structure: S.N. 056-3064 built in 1938. Single span, 64'-6" back to back of abutments, 25'-0" out to out. Superstructure consists of riveted steel pony trusses and concrete deck. Substructure composed of closed abutments on untreated timber piles. Superstructure to be completely removed. Portions of existing abutment to remain. Road will be closed during construction.

Salvage: None

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	Exist. W. Abut.	Exist. E. Abut.
	0.0	0.0

Note: No Scour is anticipated at the proposed abutments.

SCOPE OF WORK

Total superstructure and part of substructure removal and replacement with a single span PPC beam bridge on integral abutments.

DESIGN SPECIFICATIONS

2007 AASHTO LRFD Bridge Design Specifications with 2008 Interims

DESIGN STRESSES

FIELD UNITS		PRESTRESSED UNITS	
$f'_c = 3,500$ psi	$f'_c = 7,000$ psi	$f'_c = 6,000$ psi	$f'_c = 6,000$ psi
$f_y = 60,000$ psi (Reinforcement)	$f_y = 50,000$ psi (M270 Grade 50)	$f_{pu} = 270,000$ psi (1/2" ϕ low lax. standards)	$f_{pbt} = 201,960$ psi (1/2" ϕ low lax. standards)

LOADING HL-93

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

WATERWAY INFORMATION

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	25	1200	233.84	233.84	840.49	0.00	0.00	840.47	840.48
Base	50	1390	255.81	255.81	841.40	0.00	0.00	841.39	841.40
IDNR 100-year	100	1560	278.09	278.09	841.82	0.00	0.00	841.81	841.82
Max. Calc.	500	1970	348.18	348.18	843.12	0.00	0.00	843.11	843.11

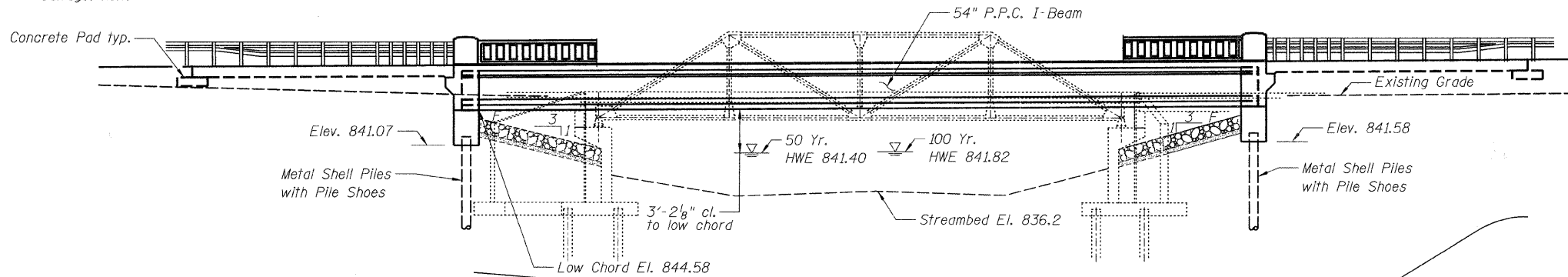
SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec (S_{D1}) = 0.08g
Design Spectral Acceleration at 0.2 Sec (S_{D2}) = 0.24g
Soil Site Class = D

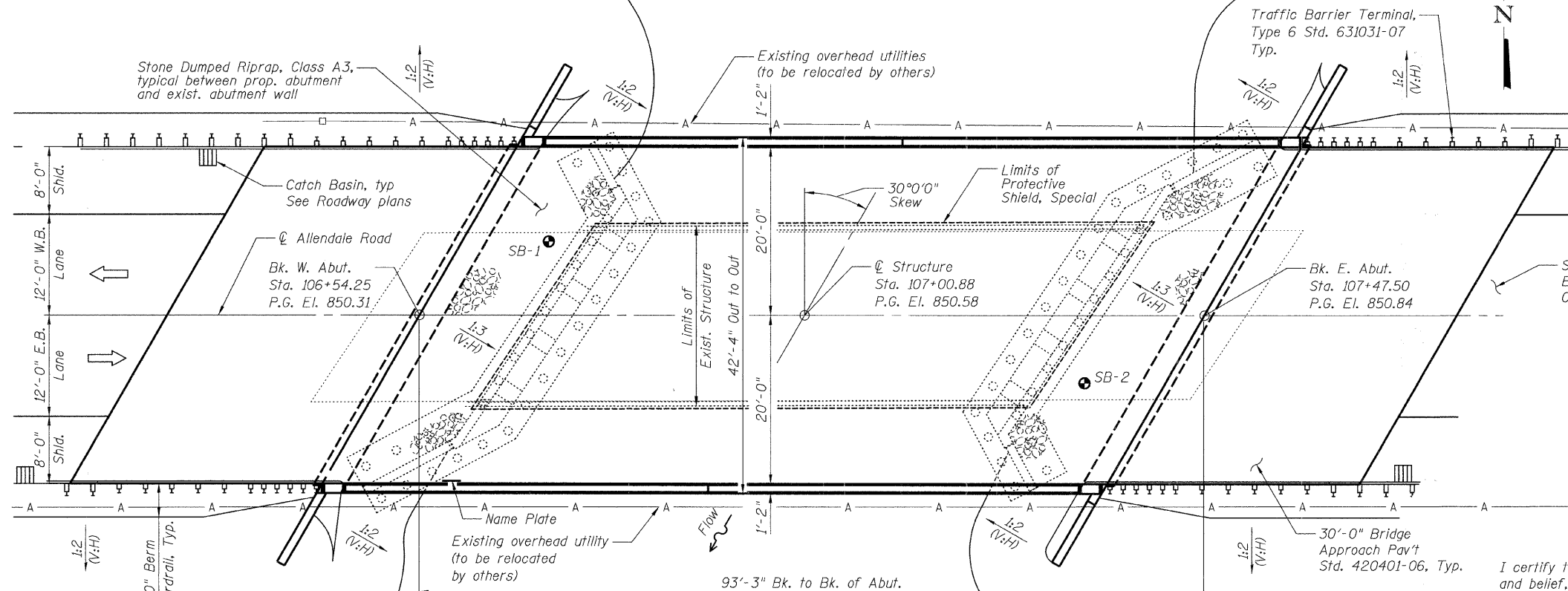
VANDER KARR CREEK
BUILT 200_ BY
McHENRY COUNTY
SEC. 05-00310-00-BR
STATION 107+00.88
STR. NO. 056-3173 LOADING HL-93

NAME PLATE

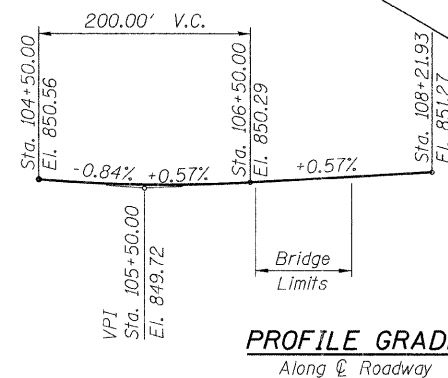
See Std. 515001



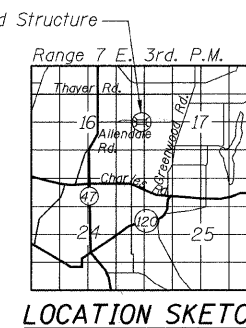
ELEVATION



PLAN



PROFILE GRADE
Along ϕ Roadway



LOCATION SKETCH

LEGEND:

- \bullet Indicated Soil Boring Location
- E.B. East Bound
- W.B. West Bound

DESIGNED	AMK
CHECKED	EKM
DRAWN	RD
CHECKED	EKM



Ciorba Group, Inc.
CONSULTING ENGINEERS

5507 North Cumberland Avenue, Suite 402 Chicago, Illinois 60656
Tel. 773.775.4009 Fax 773.775.4014 Email chicago@ciorba.com



DATE: 2/8/2009
SEAL EXPIRES: 11/30/2010

I certify that to the best of my 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 Standard Specifications for Highway Bridges.

GENERAL PLAN AND ELEVATION

ALLENDALE ROAD OVER
VANDER KARR CREEK
STATION 107+00.88
STRUCTURE NO. 056-3173

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	05-00310-00-BR	McHENRY	44	17
SHEET NO. S-1 OF S-20 SHEETS		CONTRACT NO. 63114		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

2/6/2009 2:17:11 PM rdanley