

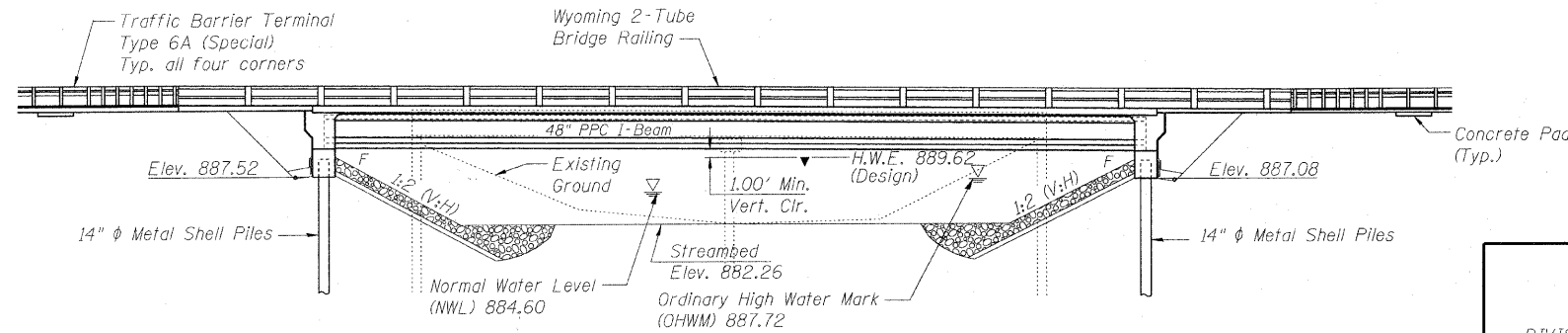
MCHENRY COUNTY
DIVISION OF TRANSPORTATION

Benchmark: Spike in power pole on southerly side Lawrence Road approx. 300' west of north bridge abutment over Lawrence Creek. Elev. 887.19
Existing Structure: S.N. 056-3011 was built in 1958 as Sec. 48-B-2-MFT. Two-span superstructure consists of seven 17"x36" PPC Deck Beams with a 5" asphalt overlay, 27'-0" out to out width and 71'-1" back to back of abutments. Substructure consists of timber pile bent abutments and metal shell pile bent pier. Existing structure to be removed and replaced with proposed structure. One lane of traffic to be maintained using staged construction. Existing Name Plate to be salvaged. See Roadway General Notes.

WATERWAY INFORMATION

Drainage Area = 16.67 sq. mi.		Ex. Low Grade Elev. = 894.82 @ Sta. 106+66							
		Pr. Low Grade Elev. = 895.11 @ Sta. 111+00							
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Head - Ft.		Headwater El.		
			Exist.	Prop.	H.W.E.	Exist.	Prop.	Exist.	Prop.
Design	10	1423	292	515	889.32	0.57	0.09	889.89	889.41
	20	1736	310	541	889.62	0.77	0.23	890.39	889.85
	50	2160	330	571	889.96	1.02	0.39	890.98	890.35
Base	100	2458	344	591	890.18	1.21	0.51	891.39	890.69
Max. Calc.	500	3187	377	638	890.70	1.64	0.92	892.34	891.62

10 year velocity through existing bridge = 4.71 fps
10 year velocity through proposed bridge = 2.66 fps



ELEVATION

LAWRENCE CREEK
BUILT 20__ BY
MCHENRY COUNTY
DIVISION OF TRANSPORTATION
SEC. 06-00320-01-BR
F.A.S. RT. 28 STA. 107+03.00
STR. NO. 056-3181 LOADING HL-93

NAME PLATE
See Std. 515001

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	SE Abut. NW Abut.
	887.52 887.08

LOADING LRFD HL-93

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

DESIGN SPECIFICATIONS

2007 AASHTO LRFD Bridge Design Specifications with 2008 and 2009 Interims

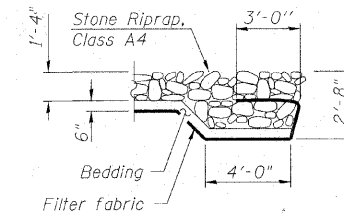
DESIGN STRESSES

FIELD UNITS

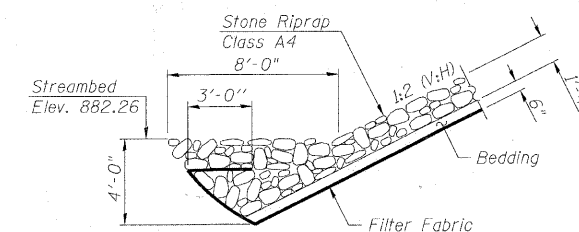
$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)
PRECAST PRESTRESSED UNITS
 $f'_c = 7,000$ psi
 $f'_{ci} = 6,000$ psi
 $f_{pu} = 270,000$ psi (1/2" dia. low lax strands)
 $f_{pbt} = 201,960$ psi (1/2" dia. low lax strands)

SEISMIC DATA

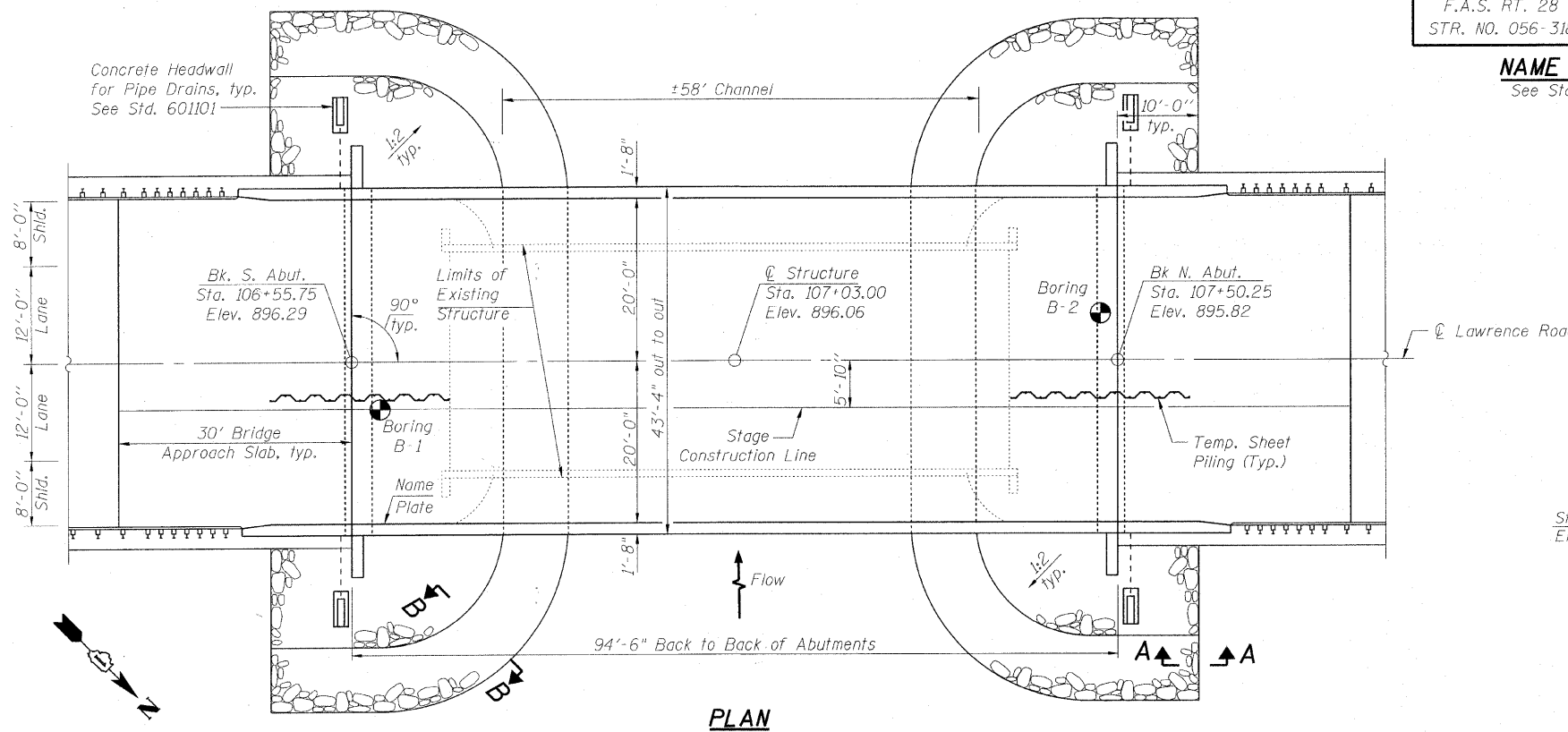
LRFD Seismic Performance Zone (LRFD SPZ) = 1
Design Spectral Acceleration @ 1.0 sec. (SD1) = 0.15g
Design Spectral Acceleration @ 2.0 sec. (SDS) = 0.05g
Soil Site Class - D



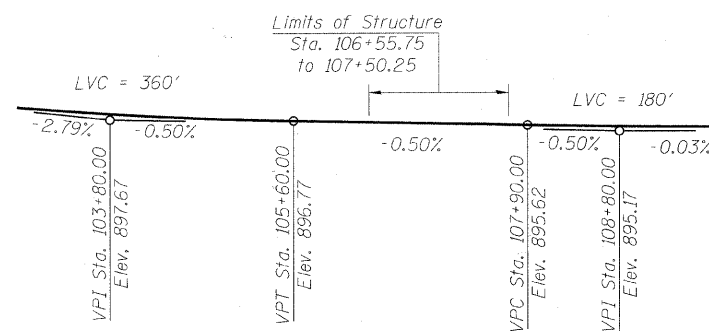
SECTION A-A



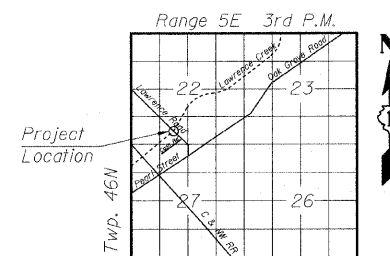
SECTION B-B



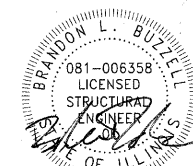
PLAN



PROFILE GRADE LINE
(along roadway)



LOCATION SKETCH



DATE: 2/7/2011
LICENSE EXPIRES 11/30/12

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 the requirements of the current AASHTO LRFD Bridge Design Specifications.

GENERAL PLAN
LAWRENCE ROAD
OVER LAWRENCE CREEK
FAS 28 - SEC. 06-00320-01-BR
MCHENRY COUNTY
STATION 107+03.00
STRUCTURE NO. 056-3181

SHEET NO. 1	F.A.S. RTE. 0028	SECTION 06-00320-01-BR	COUNTY MCHENRY	TOTAL SHEETS 70	SHEET NO. 25
25 SHEETS	CONTRACT NO. 63535				
JOB NO. C-91-139-11 ILLINOIS FED. AID PROJECT BRS-0028(107)					

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