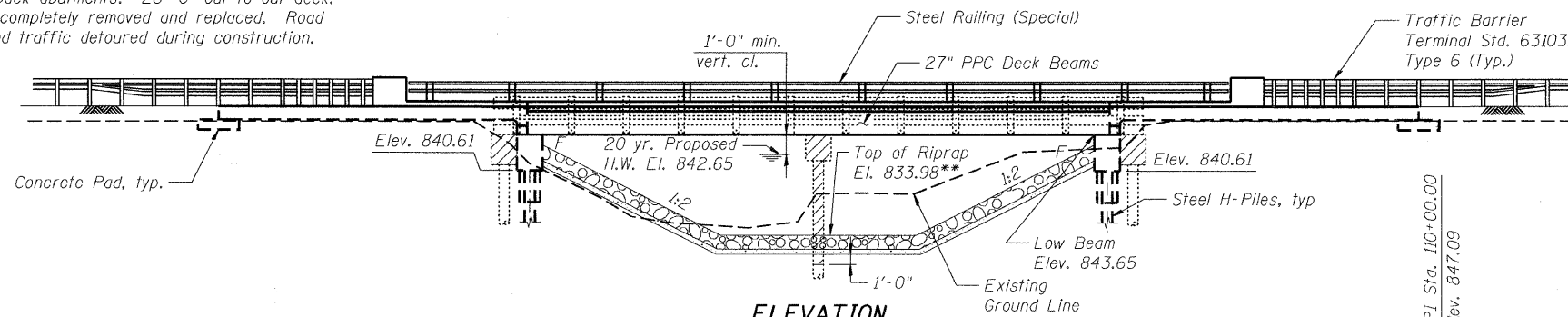


Benchmark: BM #2, Nail in third power pole west of bridge. Sta. 103+90, 23' Lt., Elev. 846.41.

Existing Structure: S.N. 056-3110 built 1970. Structure consists of two span deck beams with bituminous overlay supported by stub abutments and open concrete pile bent pier. 63'-7" back to back abutments. 26'-0" out to out deck. Structure to be completely removed and replaced. Road will be closed and traffic detoured during construction.

No Salvage.



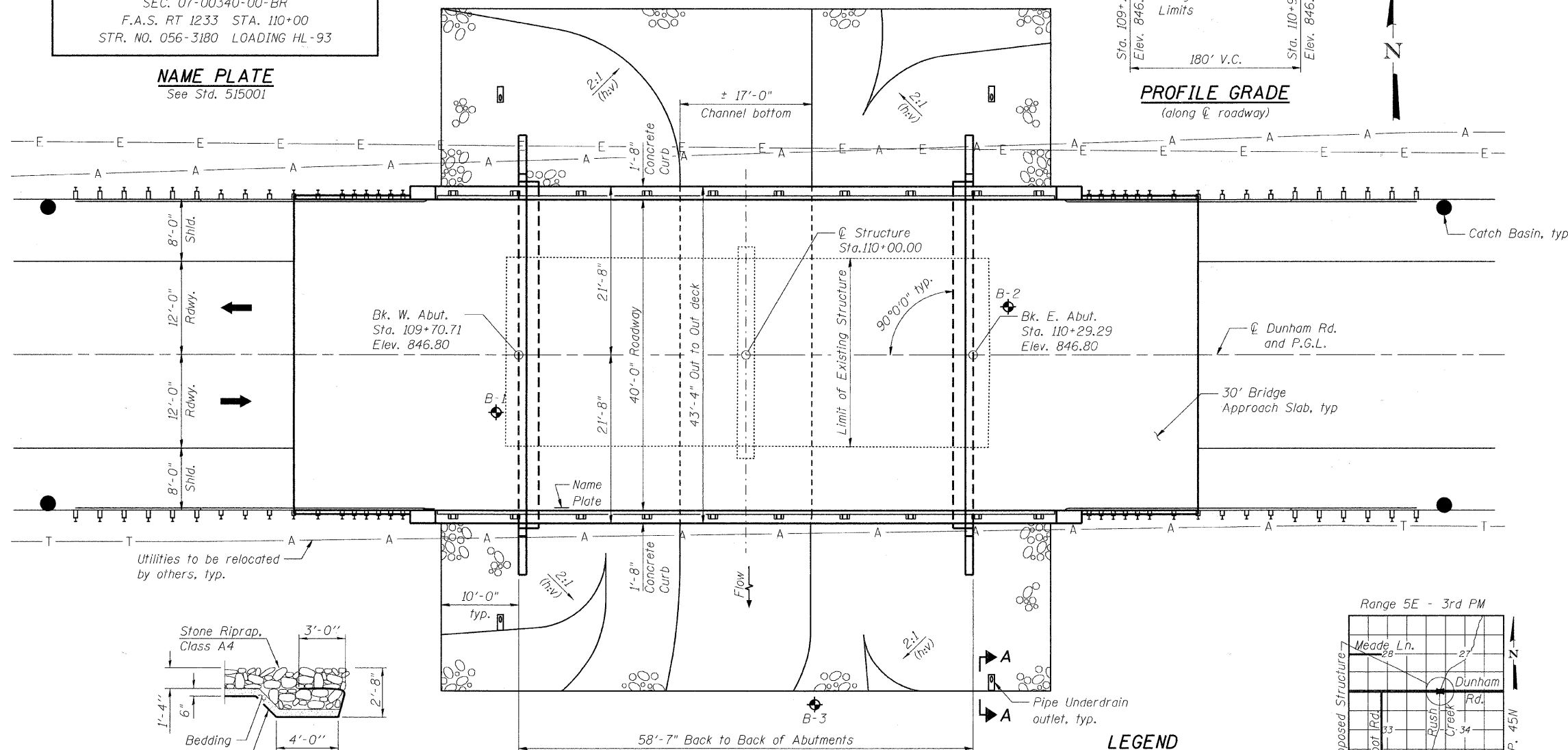
**ELEVATION**

\*\* Native sediment to be backfilled 1'-0" on top of riprap to match existing upstream and downstream streambed elevation. Cost included with Channel Excavation.

RUSH CREEK  
BUILT 2011 BY  
MCHENRY COUNTY DIVISION OF TRANSPORTATION  
SEC. 07-00340-00-BR  
F.A.S. RT 1233 STA. 110+00  
STR. NO. 056-3180 LOADING HL-93

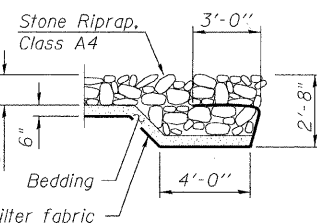
**NAME PLATE**

See Std. 515001



**PLAN**

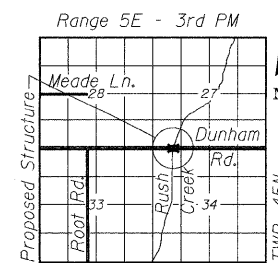
See Grading Detail for slope configuration.



**SECTION A-A**

**LEGEND**

- ◆ Indicates Soil Boring Location
- ▭ Limits of Removal



**LOCATION SKETCH**

**DESIGN SCOUR ELEVATION TABLE**

Design Scour Elevation (ft.)	W. Abut. 840.61	E. Abut. 840.61
------------------------------	-----------------	-----------------

**WATERWAY INFORMATION**

Drainage Area = 16.67 sq. mi.	Existing Low Grade Elev. = 844.75 ft. @ Sta. 108+50	Proposed Low Grade Elev. = 845.63 ft. @ Sta. 112+94				
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	10	998	216.08 247.69	842.44	0.12 0.00	842.56 842.36
Design	20	1179	241.07 272.55	842.94	0.13 0.00	843.07 842.87
Design	50	1470	268.65 299.51	843.52	0.19 0.00	843.71 843.45
Design	100	1660	282.28 312.83	843.82	0.25 0.00	844.07 843.76
Base	>500					
Overtopping	500	2110	291.29 331.02	844.49	0.63 0.09	845.12 844.58

\* Headwater elevations taken 75' upstream of the bridge due to junction influences  
20 year velocity through existing bridge = 5.2 fps.  
20 year velocity through proposed bridge = 4.5 fps.

**LOADING HL-93**

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

**DESIGN SPECIFICATIONS**

2010 AASHTO LRFD Bridge Design Specifications with Interims

**DESIGN STRESSES**

**FIELD UNITS**

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

**PRECAST PRESTRESSED UNITS**

f'c = 6,000 psi  
f'ci = 5,000 psi  
fpu = 270,000 psi (1/2" φ low lax. strands)  
fpt = 201,960 psi (1/2" φ low lax. strands)

**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 1  
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.087g  
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.164g  
Soil Site Class = D



DATE: 2/4/2011  
SEAL EXPIRES: 11/30/2012

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

**GENERAL PLAN & ELEVATION  
DUNHAM ROAD OVER RUSH CREEK**

**SECTION 07-00340-00-BR**

**MCHENRY COUNTY**

**STATION 110+00.00**

**STRUCTURE NO. 056-3180**

FILE NAME = 3381.02 01 General Plan and Elevation.dgn



USER NAME = espina  
DESIGNED - AMK  
CHECKED - BWS  
DRAWN - RD  
PLOT DATE = 2/4/2011

REVISOR -  
REVISOR -  
REVISOR -  
REVISOR -

**MCHENRY COUNTY DIVISION OF TRANSPORTATION**

SHEET NO. S-1 OF S-18 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	07-00340-00-BR	MCHENRY	46	18
			CONTRACT NO. 63552	

ILLINOIS FED. AID PROJECT