

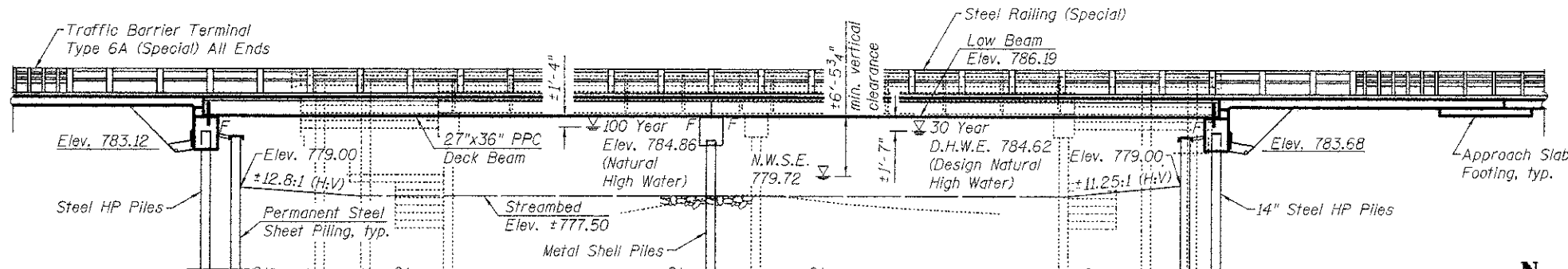
Benchmark: Chiseled square on east curb at east end of curb on the east side of the entrance to Nippersink Public Library. Approximately 890 feet west of the Structure. Elev. 793.44

Existing Structure: S.N. 056-3045 built in 1958. The superstructure consists of two spans of eight 17"x36" prestressed precast deck beams with side mounted railing and a HMA overlay. The substructure consists of R.C. closed abutments on creosoted timber piles with timber lagging and a R.C. pile bend pier with metal shell piles. Structure measures 69'-3" bk to bk abutments and 24'-0" out to out. Existing structure is to be removed. Traffic will be detoured.

Existing Name Plate to be salvaged. See Roadway General Notes.

**GENERAL NOTES**

The Illinois Department of Transportation is not the owner of record for this bridge. Those seeking historic, as-built, or other existing documents and plans must contact the owner of record to make arrangements for access to this information.  
 Calculated weight of Structural Steel = 55,560 pounds.  
 Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.  
 Reinforcement bars designated (E) shall be epoxy coated.  
 Concrete Sealer shall be applied to the designated areas of the abutment.  
 Layout of slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.  
 The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.  
 The Contractor is advised that the existing structure contains members that are in deteriorated condition with reduced load carrying capacity. It is the Contractor's responsibility to account for the condition of the existing structure when developing construction procedures for removal.  
 See Erosion Control sheet for locations of Cofferdams.



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**DESIGN STRESSES**

- FIELD UNITS**
- f'c = 3,500 psi
  - f<sub>y</sub> = 60,000 psi (Reinforcement)
  - f<sub>y</sub> = 50,000 psi (M202 Grade 50)
- PRECAST PRESTRESSED UNITS**
- f'c = 6,000 psi
  - f'ci = 5,000 psi
  - fpu = 270,000 psi (1/2" low lax. strands)
  - fpbt = 201,960 psi (1/2" low lax. strands)

**DESIGN SPECIFICATIONS**

2010 AASHTO LRFD Bridge Design Specifications with 2010 Interims

**LOADING HL-93**

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

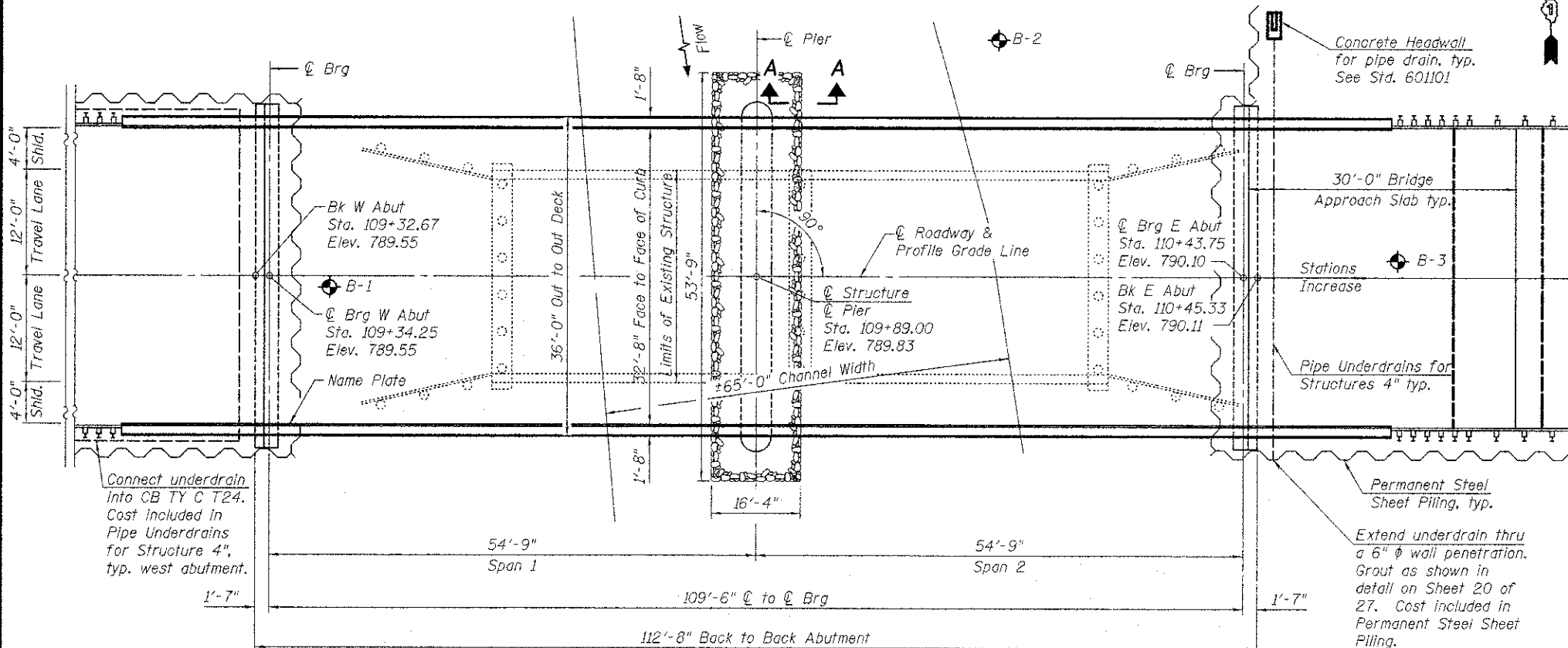
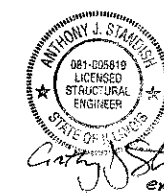
**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 1  
 Design Spectral Acceleration at 1.0 sec. (S<sub>D1</sub>) = 0.077  
 Design Spectral Acceleration at 0.2 sec. (S<sub>D5</sub>) = 0.127  
 Soil Site Class = D

NIPPERSINK CREEK  
 BUILT 20\_\_ BY  
 McHENRY COUNTY  
 DIVISION OF TRANSPORTATION  
 SEC 08-00356-00-BR  
 TWP. RT. 21 STA. 109+89.00  
 STRUCTURE NO. 056-3192  
 LOADING HL-93

**NAME PLATE**

See Std. 515001



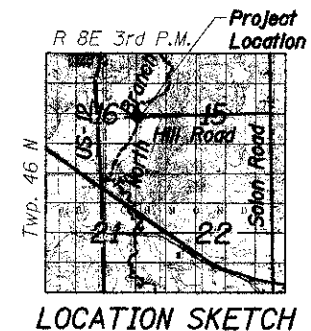
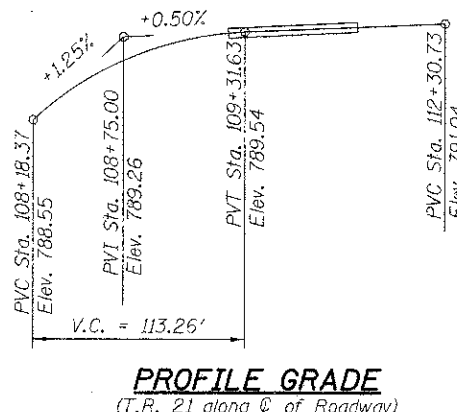
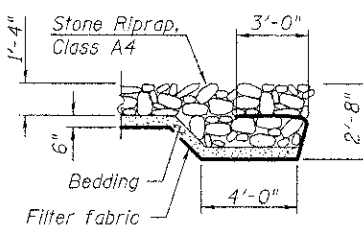
**DESIGN SCOUR ELEVATION TABLE**

Design Scour Elevation (ft.)	West Abut.	Pier	East Abut.
	770.41	764.41	770.41

**WATERWAY INFORMATION**

Drainage Area = 68.7 square miles Low Grade Elev. 786.20 @ Sta. 105+50

Flood Yr.	Freq. Yr.	Q Fp/s.	Opening Sq. Ft.	Nat. Exist.	Nat. Prop.	H.W.E. Exist.	H.W.E. Prop.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	10	1610	324.47	591.68	784.02	0.64	0.27	784.66	784.29		
Base	30	2294	362.39	654.93	784.62	1.08	0.50	785.70	785.12		
Overtop Existing	100	2735	382.67	689.44	784.86	1.44	0.71	786.30	785.57		
Overtop Proposed	405	3920	-	778.88	785.55	-	1.24	-	788.20		
Max. Calc.	500	4521	446.39	806.52	785.75	2.55	1.51	788.30	787.26		



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**  
**T.R. 21 (HILL ROAD)**  
**OVER N. BRANCH NIPPERSINK CREEK**  
**McHENRY COUNTY**  
**STA. 109+89.00**  
**S.N. 056-3192**