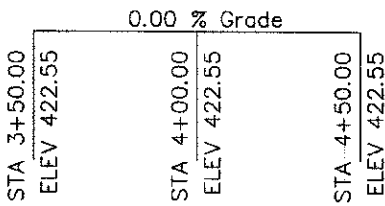


B.M.-Lt. Sta. 4+44, spike in power pole, Elev. 421.10

Existing Structure - Existing structure No. 051-3067 consists of a single span steel I-beam bridge with concrete deck bearing on closed concrete abutments. The bk. to bk. of abutments length is 31.5' and the out-to-out roadway width is 14.8'. The existing structure shall be completely removed. Road closure shall be used during construction.

Salvage - Any material deemed salvageable by the Engineer shall be stockpiled on the R.O.W. and shall become the property of Russell Road District. The Contractor shall dispose of all remaining material.



**PROFILE GRADE**  
(along  $\phi$  roadway)

**DESIGN STRESSES**

**FIELD UNITS**

$f'_c = 3,500$  psi  
 $F_y = 60,000$  psi (reinforcement)

**PRECAST PRESTRESSED UNITS**

$f'_c = 6,000$  psi  
 $f'_{ci} = 5,000$  psi  
 $F'_s = 270,000$  psi ( $\frac{1}{2}$ " low relax. strands)  
 $F'_{si} = 201,960$  psi ( $\frac{1}{2}$ " low relax. strands)

**DESIGN SPECIFICATIONS**

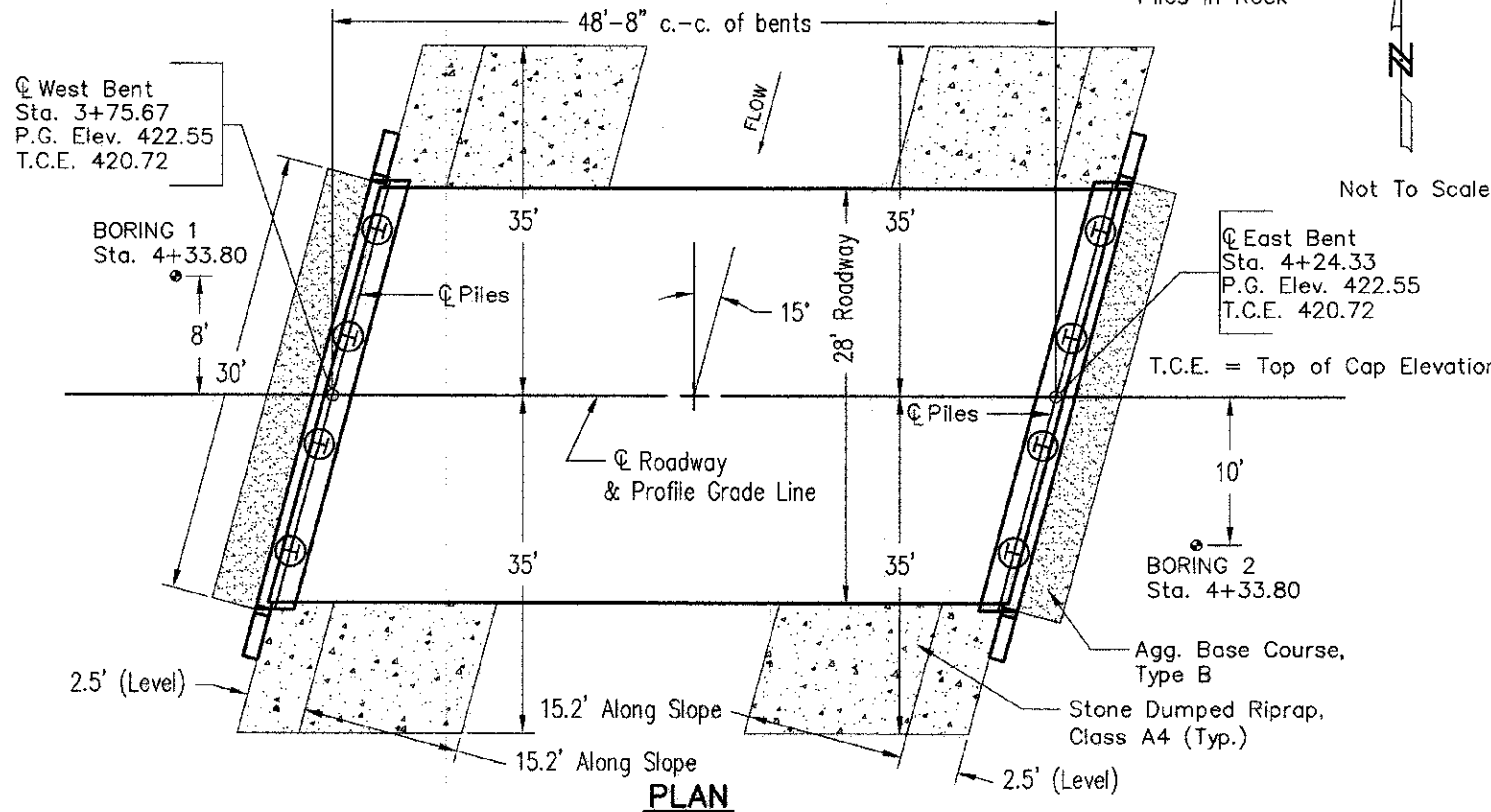
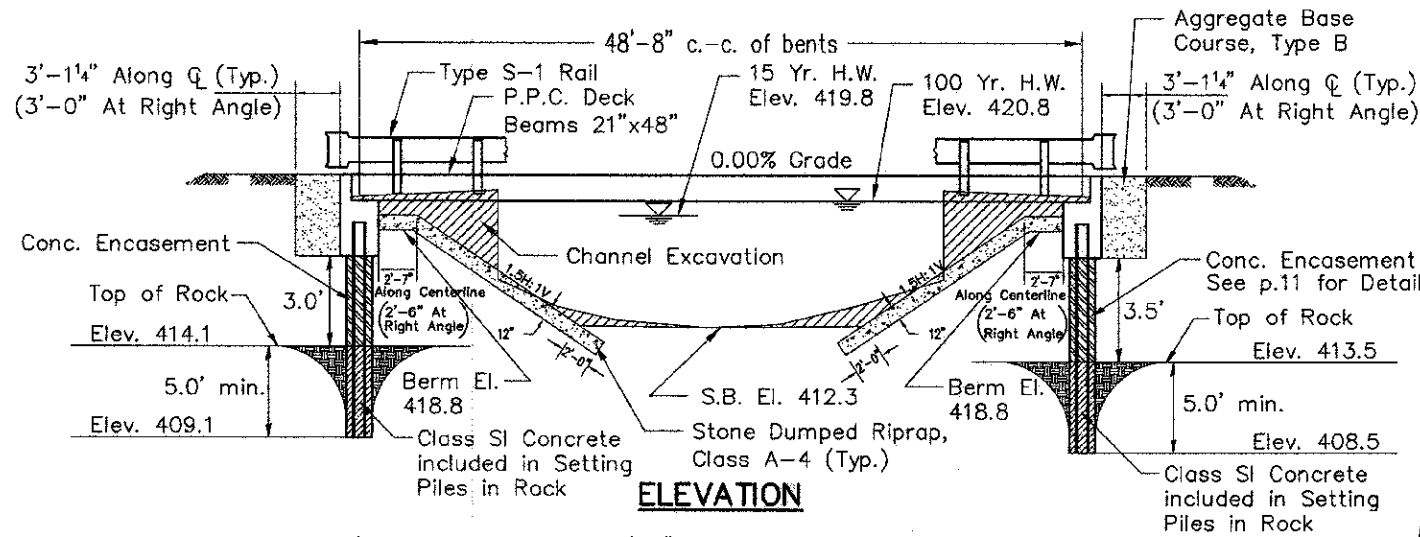
AASHTO LRFD Bridge Design Specifications - 5th ed.

**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 2  
Design Spectral Acceleration at 1.0 sec. ( $S_{D1}$ ) = 0.152g  
Design Spectral Acceleration at 0.2 sec. ( $S_{D5}$ ) = 0.378g  
Soil Site Class = C

**PILE DATA (2-ABUTS.)**

Type HP 10 X 42 - Set in Rock  
Nominal Required Bearing 331 kips  
Factored Resistance Available 182 kips  
Estimated Pile Length 12 Feet  
Number of Production Piles 8



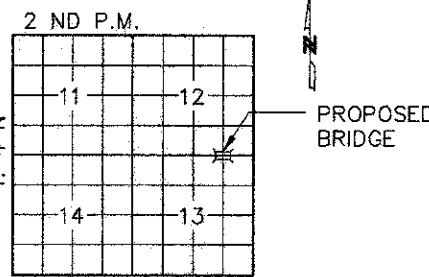
**LOADING HL-93**

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

STATION 4+00.00  
ALLISON DRAINAGE DITCH #1  
SEC. 11-09113-00-BR BUILT 201  
RUSSELL ROAD DISTRICT  
LAWRENCE COUNTY  
LOADING HL-93  
STR. NO. 051-3300

**LETTERING FOR NAME PLATE**

Locate Name Plate at S.W. Corner of Bridge (See Std. 515001)



**LOCATION SKETCH**

**WATERWAY INFORMATION**

Drainage Area = 5.31 SQ MI		Low Grade Elev = 420.28 @ Sta. 1+55							
Flood	Freq. Yr.	Q. C.F.S.	Opening Sq. Ft. Exist.	Prop.	Not. H.W.E. Exist.	Prop.	Head - Ft. Exist.	Prop.	Headwater El.
Design	15	600	175	211	419.8	0.1	0.1	419.9	419.9
Base	100	975	175	256	420.8	0.1	0.1	420.9	420.9
Overtopping									
Max. Calc.	500								

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 87	11-09113-00-BR	LAWRENCE	15	5
CONTRACT NO. 95693		ILLINOIS	PROJECT BROS-0101(045)	

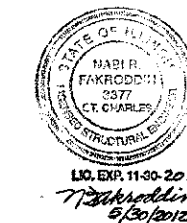
**GENERAL NOTES**

- See Bridge Plan Sheet 12 for boring logs.
- Concrete sealer shall be applied to exterior face of each fascia beam.
- The Steel H-Piles shall be according to AASHTO M270 Grade 50.
- Reinforcement bars shall conform to the requirements of ASTM A 706 Grade 60.
- Reinforcement bars designated (E) shall be epoxy coated.
- Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
- All proposed construction activities shall be in accordance with Nationwide Permit number 14 of the Department of the Army authorized under Section 404 of the Clean Water Act. The IEPA has issued Section 401 Water Quality Certification for this activity.

**TOTAL BILL OF MATERIAL**

Item	Unit	Super	Sub.		Total
			Piers	Abuts.	
Channel Excavation	Cu. Yd.	-	-	190	190
Stone Dumped Riprap, Class A4	Tons	-	-	145	145
Aggregate Base Course, Type B	Tons	-	-	75	75
Removal of Existing Structures	Each	-	-	-	1
Concrete Structures	Cu. Yd.	-	-	25.6	25.6
Concrete Encasement	Cu. Yd.	-	-	3.1	3.1
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	1393	-	-	1393
Reinforcement Bars, Epoxy Coated	Pound	-	-	3546	3546
Steel Railing, Type S-1	Foot	100	-	-	100
Furnishing Steel Piles HP 10 X 42	Foot	-	-	96	96
Name Plates	Each	-	-	1	1
Setting Piles in Rock	Each	-	-	8	8

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.



**INDEX OF SHEETS**

- General Plan & Elevation
- Superstructure
- Superstructure Details
- Steel Railing, Type S-1
- West Abutment Details
- East Abutment Details
- Pile Details
- Boring Logs

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ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #104 003613

**GENERAL PLAN & ELEVATION**  
**STRUCTURE NO. 051-3300**  
**T.R. 87**  
**OVER ALLISON DITCH #1**  
**SECTION 11-09113-00-BR**  
**LAWRENCE COUNTY**  
**STATION 4+00.00**