

Benchmark: PEI 560-4' Rebar, Sta. 107+57.83, 73.72' LT, EL = 890.35

Existing Structure: S.N. 056-3157 built in 1994 as double 10'x5' R.C. box culvert with a headwall to headwall length of 120'-0".

Existing structure is to be extended 56'-5" on the east side.

Precast culvert option will not be allowed at this site.

No salvage.

**GENERAL NOTES**

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.

Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Existing Name Plate shall be cleaned and relocated next to new Name Plate. Cost included with Name Plates.

CRYSTAL CREEK  
RE-BUILT 2010 BY  
MCHENRY COUNTY  
SEC. 05-00308-00-WR  
STATION 112+94.31  
STR. NO. 056-3157 LOADING HS20

**NAME PLATE**  
See Std. 515001

**INDEX OF SHEETS**

- STR 13. General Plan and Elevation
- STR 14. Culvert Details I
- STR 15. Culvert Details II

**CURVE RAK 4 DATA**

- $\Delta = 60^\circ 11' 27"$  (RT)
- $D = 1^\circ 59' 22"$
- $T = 1,669.17'$
- $L = 3,025.53'$
- $E = 448.74'$
- $R = 2,880.00'$
- S.E. = 4.0%
- P.C. = Sta. 110+47.98
- P.T. = Sta. 140+73.51
- P.I. = Sta. 127+17.15

**LOADING HS20-44**

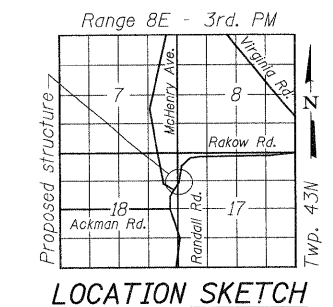
\*\*\*Allow 50#/sq. ft. for Future Wearing Surface.

**DESIGN SPECIFICATIONS**  
2002 AASHTO

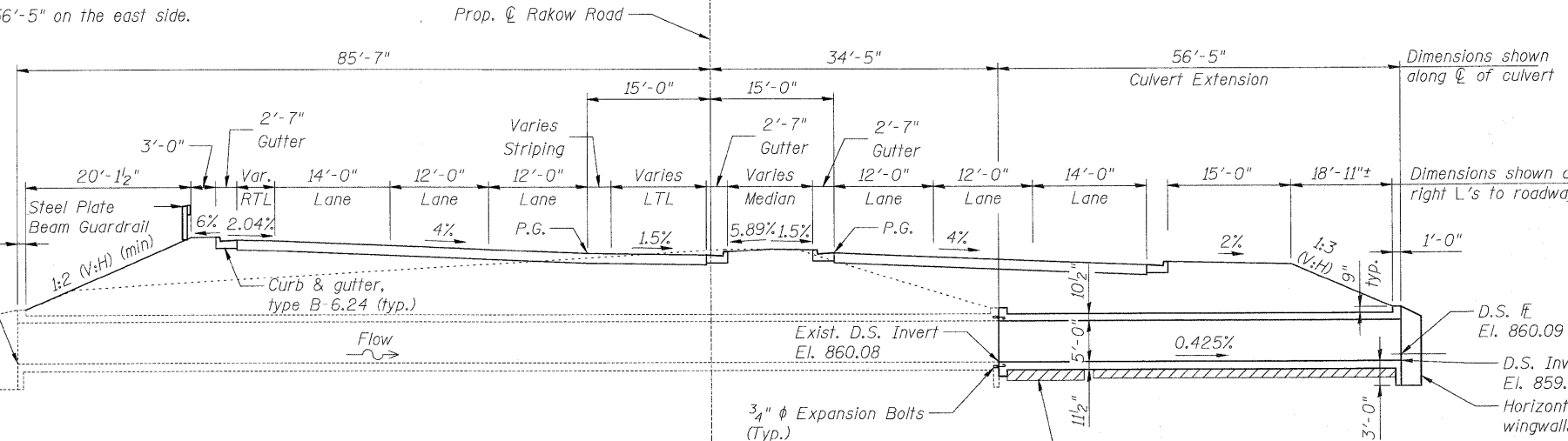
**DESIGN STRESSES**

- FIELD UNITS (NEW CONSTRUCTION)
- $f'_c = 3,500$  psi
- $f_y = 60,000$  psi (reinforcement)

\*\*\*Existing Structure is adequate for new loading condition.



**GENERAL PLAN AND ELEVATION**



**LONGITUDINAL SECTION**

Replace unsuitable material, as required in the field, with coarse aggregate (CA 7, CA 11 or CA 5 and CA 7 per Article 1004.04 of Standard Specifications). The aggregate shall be placed and compacted per Article 207.03 of Standard Specifications.

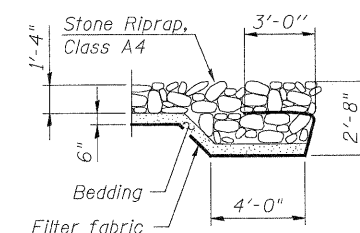
**WATERWAY INFORMATION**

Proposed Low Grade Elev. 871.00 @ Sta. 116+60.71

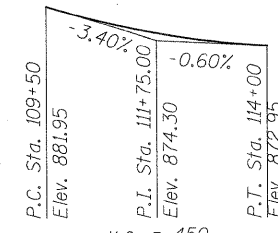
Flood	Freq. Yr.	Q (C.F.S.)	Opening (Sq. Ft.)		Nat. H.W.E.	Head (Ft.)		Headwater Elev.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	10	383	75.80	75.80	864.4	0.00	0.00	864.39	864.39
Base	50	712	98.00	98.00	865.5	0.33	0.26	865.83	865.76
Ex. Overtop	100	954	100.00	100.00	866.1	1.08	1.00	867.16	867.08
Max. Calc.	>100	1302	100.00	100.00	866.7	2.77	2.74	869.51	869.48
	500	1440	100.00	100.00	867.0	2.92	3.63	869.90	870.61

**DESIGN SCOUR ELEVATION TABLE**

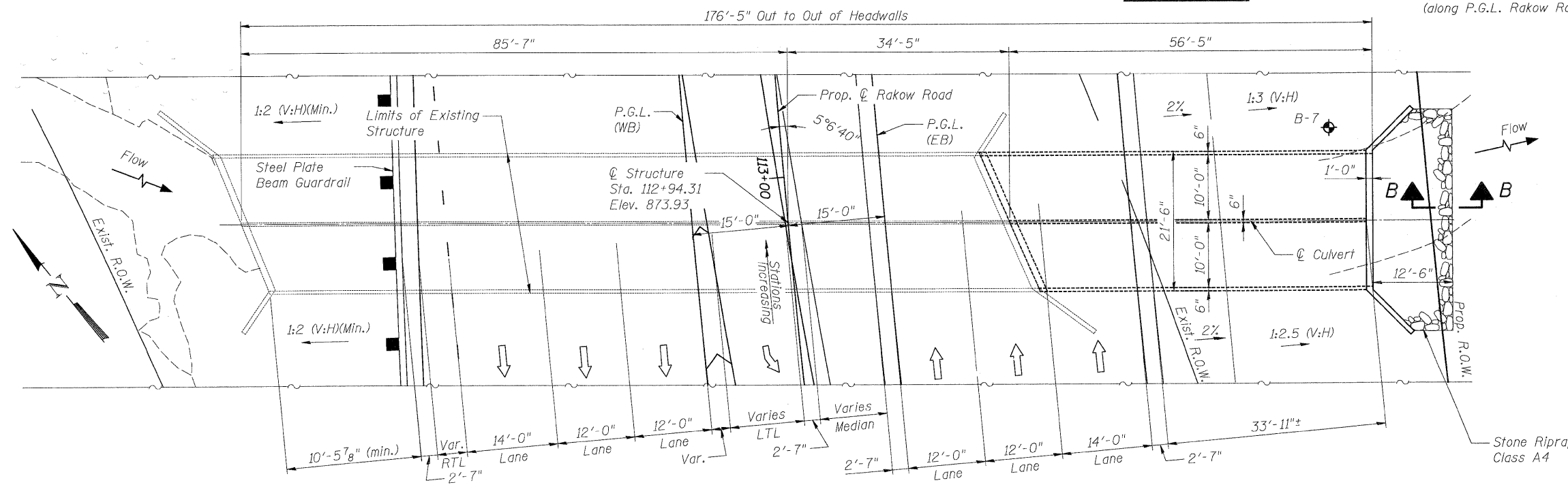
Design Scour Elevation (ft.)	Upstream	Downstream
	857.60	856.84



**SECTION B-B**



**PROFILE GRADE**  
(along P.G.L. Rakow Road)



**PLAN**

	USER NAME = Rdwy_Lisle	DESIGNED - A. Durbak	REVISED -		<b>RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31</b> <b>BOX CULVERT OVER CRYSTAL CREEK</b> <b>STA 112+94.31 STRUCTURE NO. 056-3157</b>			F.A. RTE. 0336	SECTION 05-00308-00-WR	COUNTY MCHENRY	TOTAL SHEETS 606	SHEET NO. 415
	PLOT CONFIG = PDF(Grey, Large).plt	DRAWN - A. Durbak	REVISIONS -		SCALE: NONE	SHEET NO. STR 13 OF 22	STA. TO STA.	FED. ROAD DIST. NO. ILLINOIS	FED. AID PROJECT	CONTRACT NO.		
PLOT SCALE = 1:10	CHECKED - A. Yargicoglu	DATE - 8/2/2010										
PLOT DATE = 7/28/2010												

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