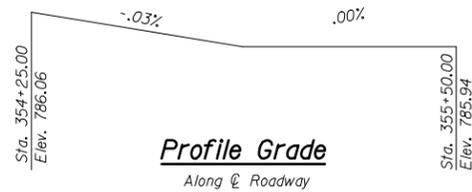


EXISTING STRUCTURE: THE EXISTING BOX CULVERT WAS BUILT IN THE 1930'S AT STA. 354+66 AS A 3'x2' CAST-IN-PLACE BOX CULVERT WITH CONCRETE HEAD WALLS. THE EXISTING STRUCTURE IS TO BE COMPLETELY REMOVED AND REPLACED. STAGE CONSTRUCTION WILL BE UTILIZED.

(NO BENCHMARK INFO AVAILABLE AT THIS TIME)



STATION 354+72.83
BUILT 2010 BY
STATE OF ILLINOIS
F.A.P. RT. 315 SEC. (101, 102X)R,RS-2
LOADING HS 20
STRUCTURE NO. 057-2044

NAME PLATE
See Std. 515001

INDEX OF SHEETS

1. General Plan and Elevation
2. Box Culvert End Section Details

DESIGN SPECIFICATIONS
2002 AASHTO

LOADING HS20-44

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

DESIGN STRESSES

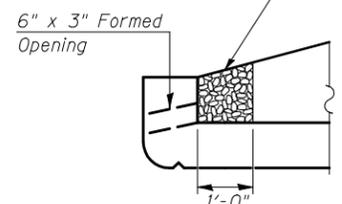
FIELD UNITS

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (reinforcement)
 $f_y = 65,000$ psi (welded wire fabric)

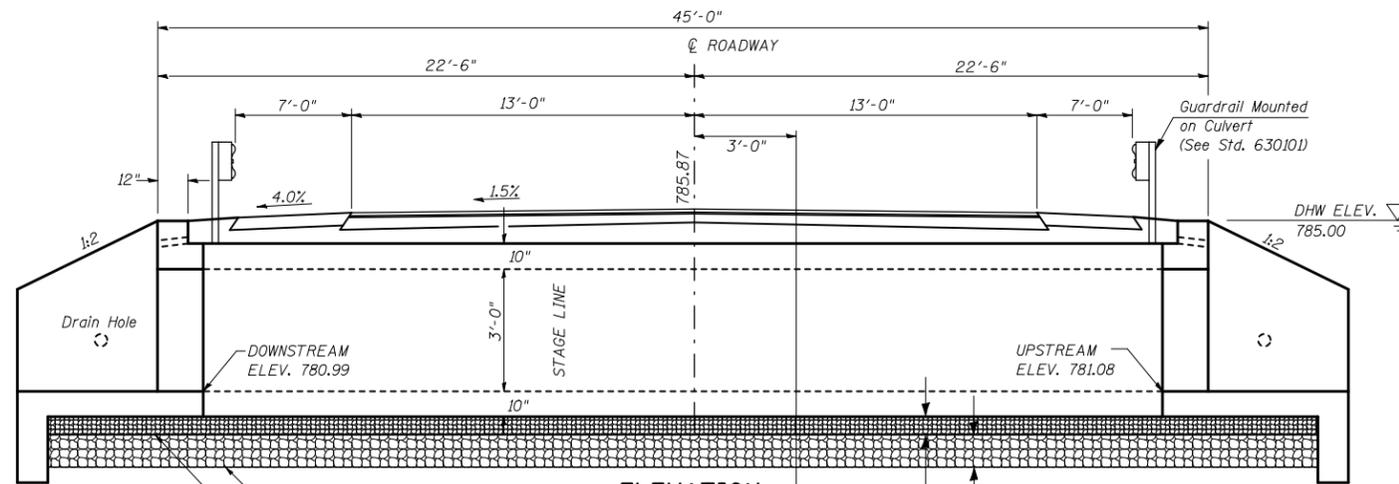
PRECAST UNITS

$f'_c = 5,000$ psi
 $f_y = 65,000$ psi (welded wire fabric)

Coarse aggregate full length of both headwalls. To be placed by Grading Contractor. Cost included with BOX CULVERT END SECTION.

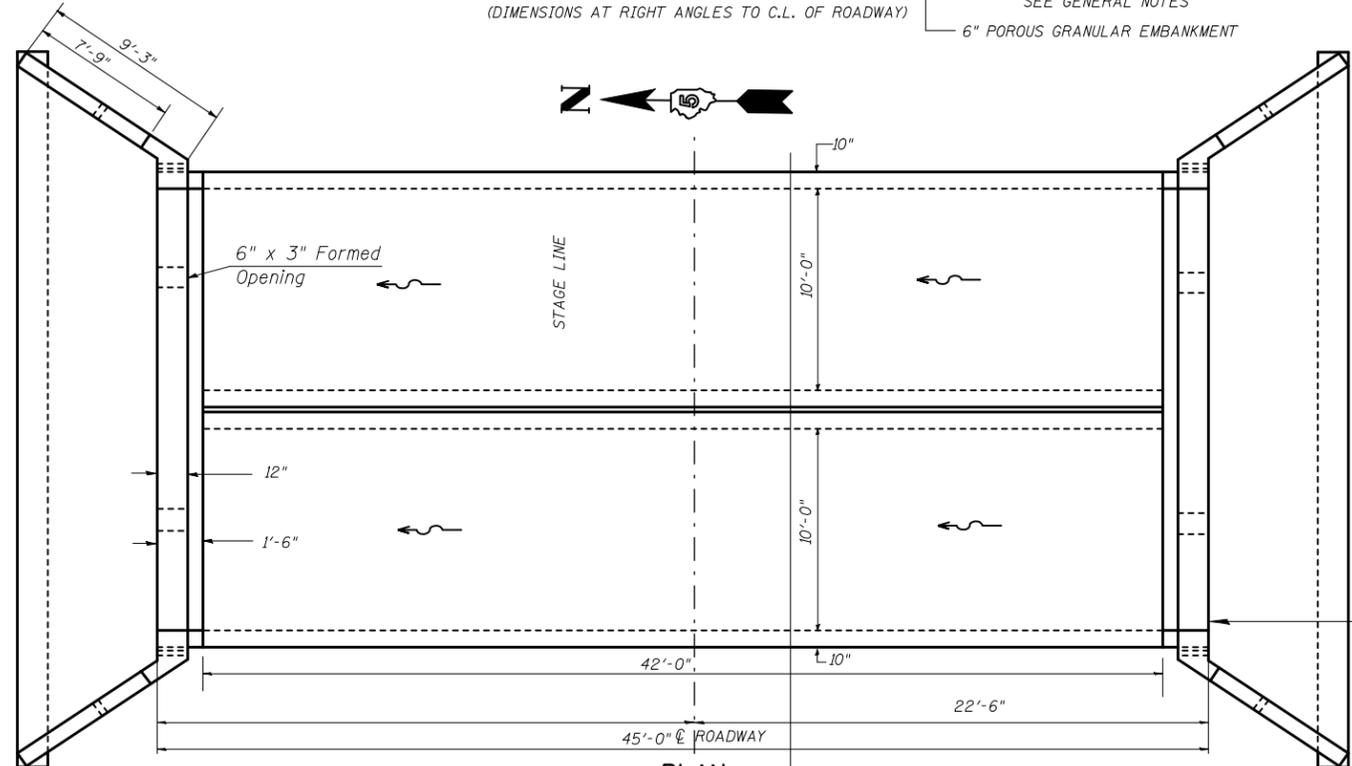


DRAIN DETAIL



ELEVATION

(LOOKING IN DIRECTION OF INCREASING STATIONS)
(DIMENSIONS AT RIGHT ANGLES TO C.L. OF ROADWAY)



PLAN

DESIGN SCOUR ELEVATION TABLE

DESIGN SCOUR ELEVATION	UPSTREAM	DOWNSTREAM
	778.08	777.99

		Existing Low Grade Elev. = 785.9 ft. @ Sta. 354+72							
Drainage Area = 1.6mi. ²		Proposed Low Grade Elev. = 785.9 ft. @ Sta. 354+72							
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Natural H.W.E.	Head - Ft.		Headwater Elevation	
			Existing	Proposed		Existing	Proposed	Existing	Proposed
Design	10	254	6	58				Over	784.0
Base	50	407	6	60				Over	785.0
Overtopping	100	474	6	60				Over	785.4
Max. Calc.	500	635	6	60				Over	Over

10 YEAR VELOCITY THROUGH EXISTING BRIDGE = Unknown

10 YEAR VELOCITY THROUGH PROPOSED BRIDGE = 5.38 fps

ALL-TIME H.W.E. & DATE: June 4, 2008 - Water reported 6" deep at centerline - see Water on Pavement Data form

General Notes

Build tops of headwalls parallel to the grade lines.

All construction joints shall be bonded according to Article 503.09 of the Standard Specifications.

Reinforcement bars shall conform to the requirements of ASTM A706 Gr. (IL Modified). See Special Provisions.

When lapping sheets of welded wire fabric, the overlap measured between the outermost cross wires of each fabric sheet shall not be less than 8"

End Sections will be paid for at the contract unit price per each for BOX CULVERT END SECTIONS, as outlined in Section 540 of the Standard Specifications.

Class SI Concrete shall be used throughout.

Concrete, Rebar, and Welded Wire Fabric quantities and lengths calculated for the cast-in-place End Sections may vary based on the precast box culverts supplied.

Drain holes shall be provided in accordance with Article 503.11 of the Standard Specifications.

The design reinforcement areas shall conform to those found in Table 1 of the AASHTO M273 specification for a 10' x 5' box section

The ends of the precast box sections adjacent to the end section shall be formed without the male and female shapes specified in Article 8.1 of AASHTO M273. See Section D-D on sheet 2 of 2.

The design fill height for this box is less than 2 feet. The Precast Concrete Box Culvert Sections shall conform to the requirements of AASHTO M 273.

The joints between precast box sections shall be sealed, all voids filled with a mastic joint sealer. In addition, the joints shall be externally sealed on all four sides with a 13 inch wide external sealing band. The seal shall be centered over the joint, secured in place and protected during the backfilling process.

- ① Six inches of bedding beneath the box culvert are included in the cost of the Box Culvert.
- ② The additional 12 inches of undercut is paid for separately as STONE RIPRAP, CLASS A-1 (TON) (1.8 TONS/CU.YD.), which price shall include the removal and disposal of unsuitable material.

All dimensions are in FEET (') - INCHES (") unless otherwise noted. Drawings not to scale.

TOTAL BILL OF MATERIAL

Item	Unit	Total
Box Culvert Removal	Each	1
Precast Concrete Box Culverts 10'x3'	Foot	84
Box Culvert End Section, Culvert No. 3	Each	2
Name Plates	Each	1
Permanent Benchmark	Each	1
Stone Riprap Class A1	Tons	102.9
Porous Granular Embankment	CuYd	110.2
Structure Excavation	CuYd	197.9

GENERAL PLAN AND ELEVATION
DOUBLE 10'x3' PRECAST BOX CULVERT
F.A.P. ROUTE 315 - SECTION (101, 102X)R,RS-2
MCLEAN COUNTY, STATION 354+72.83
CULVERT NO. 8 SN 057-2044(P)

FILE NAME =	USER NAME = bucklesjj	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN AND ELEVATION BOX CULVERT #8; S.N. 057-2044	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
ct:\pw\work\p\d\dot\bucklesjj\d0170848\0572044\sh-t\details.dgn		DRAWN -	REVISED -			315	•	MCLEAN	115	56
PLOT SCALE = 40.0000' / IN.		CHECKED -	REVISED -			•(101,102X,RS-2 & 55RS-PRK LN		CONTRACT NO. 70507		
PLOT DATE = 12/9/2009		DATE -	REVISED -			ILLINOIS FED. AID PROJECT				