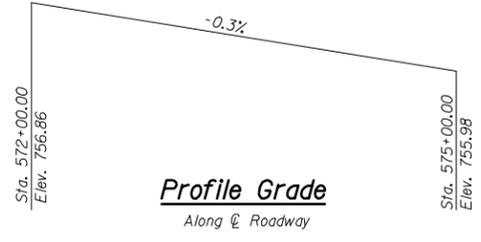


EXISTING STRUCTURE: THE EXISTING BOX CULVERT, S.N. 057-8024 WAS BUILT IN THE 1930'S AT STA. 573+30 AS A 5'x2' CAST-IN-PLACE BOX CULVERT ON A 45 DEGREE SKEW WITH CONCRETE HEAD WALLS. THE EXISTING STRUCTURE IS TO HAVE THE END SECTIONS REMOVED AND THE REMAINING BOX WILL BE FILLED WITH GROUT. STAGE CONSTRUCTION WILL BE UTILIZED.



STATION 573+49.96  
BUILT 2010 BY  
STATE OF ILLINOIS  
F.A.P. RT. 315 SEC. (101, 102X)R, R-2  
LOADING HS 20  
STRUCTURE NO. 057-8210

**NAME PLATE**  
See Std. 515001

**INDEX OF SHEETS**

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

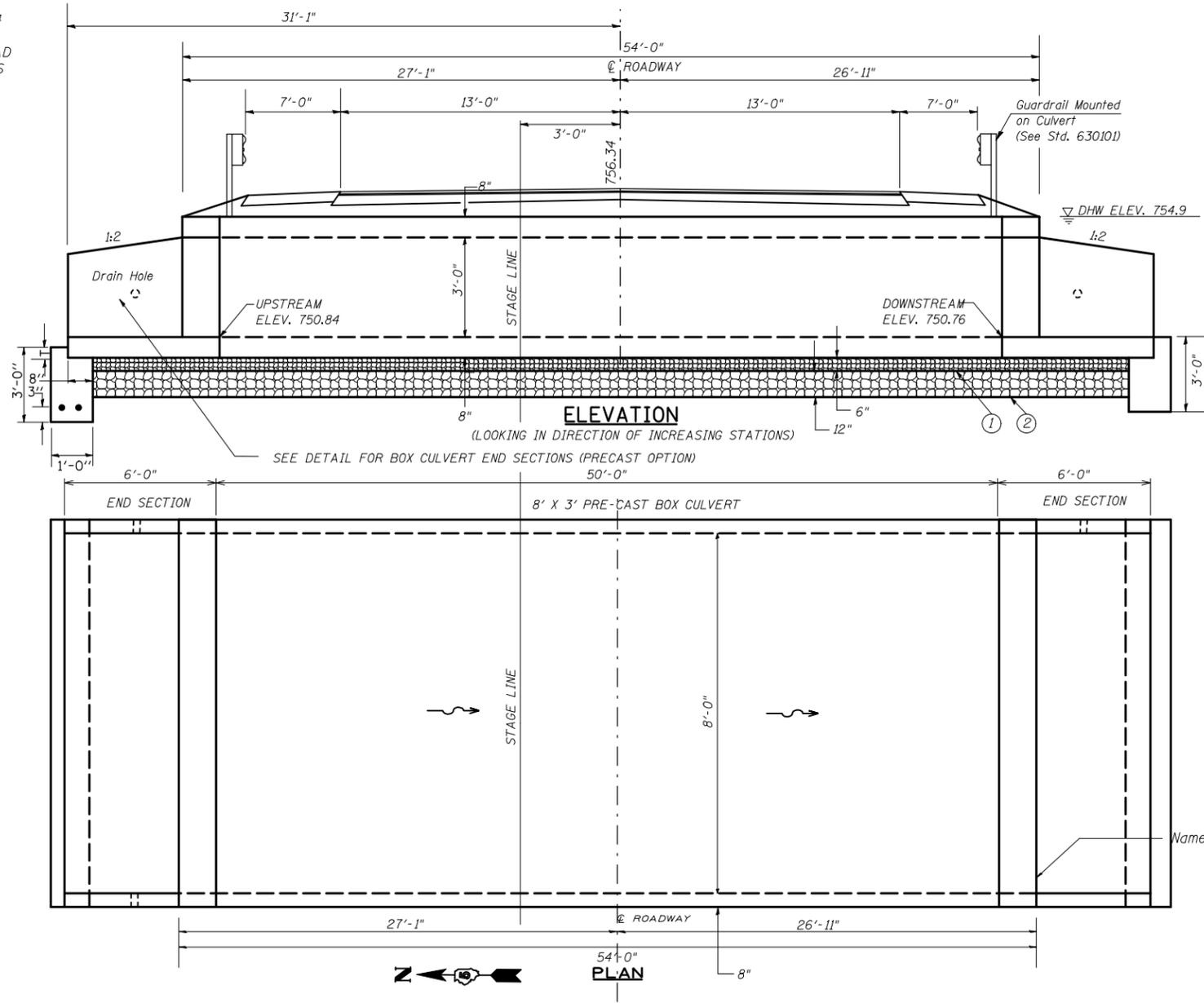
**DESIGN SPECIFICATIONS**  
2002 AASHTO

**LOADING HS20-44**  
Allow 50#/sq.ft. for future wearing surface

**DESIGN STRESSES**

**FIELD UNITS**  
f'c = 3,500 psi  
fy = 60,000 psi (reinforcement)  
fy = 65,000 psi (welded wire fabric)

**PRECAST UNITS**  
f'c = 5,000 psi  
fy = 65,000 psi (welded wire fabric)



**General Notes**

- 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.
- 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 design reinforcement areas shall conform to those found in Table 1 of the AASHTO M273 specification for an 8' x 4' box section.
- 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.
- Drain holes shall be provided in accordance with Article 503.11 of the Standard

**TOTAL BILL OF MATERIAL**

Item	Unit	Total
Precast Concrete Box Culverts 8'x3'	Foot	48
Box Culvert End Sections, Culvert No. 6	Each	2
Name Plates	Each	1
Culverts to be Grouted	CuYd	14.5
Permanent Benchmark	Each	1
Stone Riprap, Class A-1	Ton	53.2
Remove Box Culvert End Section	Each	2
Porous Granular Embankment	CuYd	115.0
Structure Excavation	CuYd	103.7

Existing Low Grade Elev. = 756.3 ft. @ Sta. 573+50

Drainage Area = 0.1mi.<sup>2</sup> Proposed Low Grade Elev. = 756.4 ft. @ Sta. 573+50

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Natural H.W.E.	Head - Ft.		Headwater Elevation	
			Existing	Proposed		Existing	Proposed	Existing	Proposed
	10	68	10	20				754.6	754.1
Design	50	116	10	24				OVER	754.9
Base	100	138	10	24				OVER	755.2
Overtopping									
Max. Calc.	500	194	10	24				OVER	756.3

10 YEAR VELOCITY THROUGH EXISTING BRIDGE = 7.16 ft/s      10 YEAR VELOCITY THROUGH PROPOSED BRIDGE = 3.94 ft/s

ALL-TIME H.W.E. & DATE: UNKNOWN

**DESIGN SCOUR ELEVATION TABLE**

DESIGN SCOUR ELEVATION	UPSTREAM	DOWNSTREAM
	748.64	748.60

**GENERAL PLAN AND ELEVATION**  
**8'x3' PRECAST BOX CULVERT**  
**F.A.P. ROUTE 315 - SECTION (101, 102X)R,RS-2**  
**MCLEAN COUNTY, STATION 573+30**  
**CULVERT NO. 11 - SN 057-8210(P)**