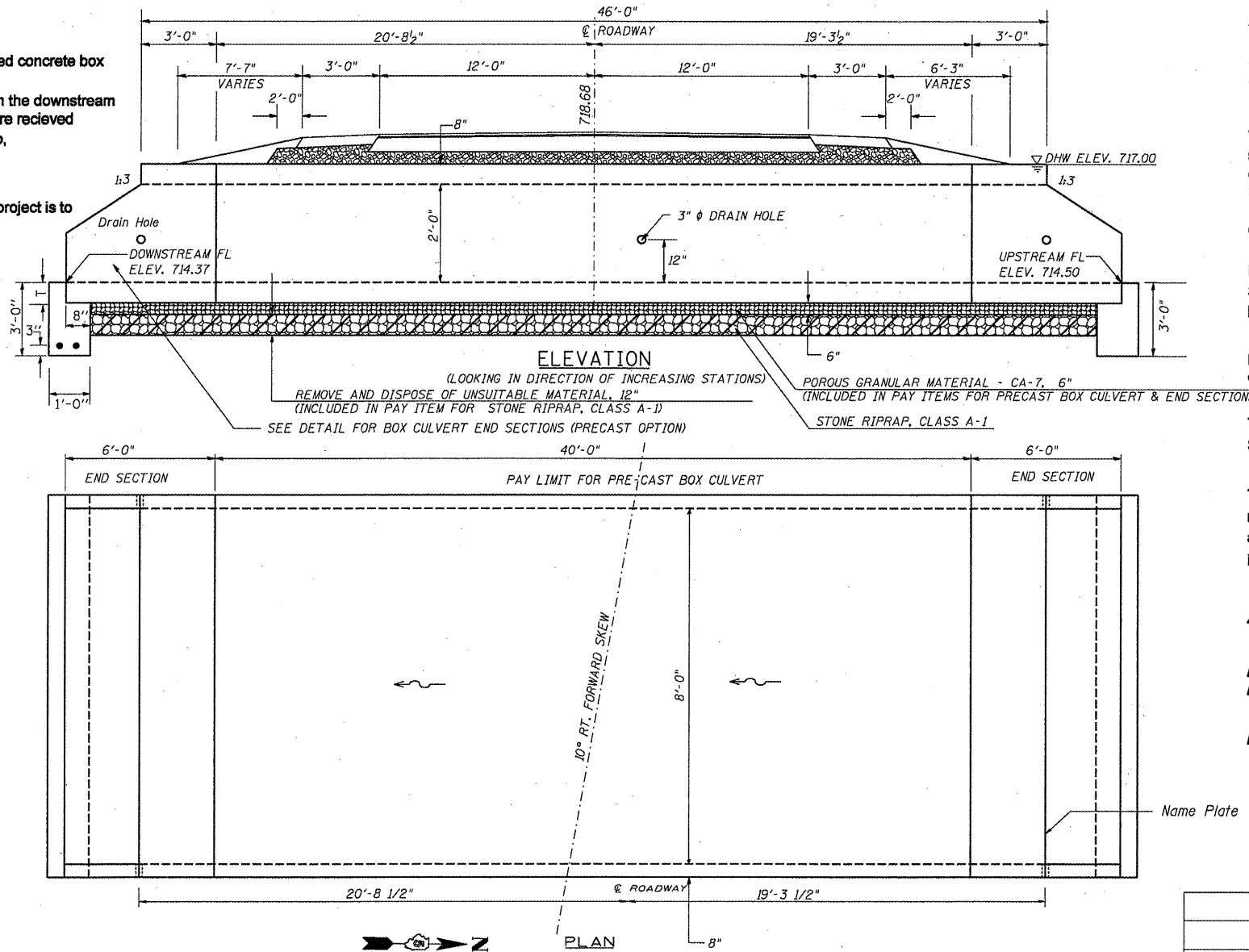


BENCHMARK ELEV. = 717.612 Chiseled square on the southeast corner of the south headwall of S.N. 010-8115.

EXISTING STRUCTURE: S.N. 010-8115, a single cell 6' x 2' reinforced concrete box culvert, constructed in 1924 at Station 338+71 as part of Section 4. In 1986 the structure was modified with a skewed extension added on the downstream end as part of section 5(W,RS-1) & 4(W-1, RS-2). In 2009 the structure recieved posting mitigation repairs, consisting of an 8" reinforced concrete slab, with dimensions of 9' x 24'.

The existing structure is to be completely removed and replaced. The project is to be completed under stage construction. No Salvage.



General Notes

End sections will be paid for at the contract unit price per each for BOX CULVERT END SECTION, CULVERT NO. 1, as outlined in Section 540 of the Standard Specifications.

Reinforcement bars shall conform to the requirements of ASTM A706 Gr. 60. The Porous Granular Material CA-7 6", required per article 540.06 of the standard specifications shall also extend beneath the Box Culvert End Sections and shall be considered included in the cost of Precast Concrete Box Culverts and Box Culvert End Sections.

Class SI concrete shall be used throughout.

Drain holes shall be provided in accordance with Article 503.11 of the Standard Specifications. One drain hole on exterior culvert walls shall be provided for each precast box culvert section.

If the Contractor elects to use a precast cut-off wall, shop drawings and a proposed construction sequence shall be submitted to the Engineer for approval.

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.

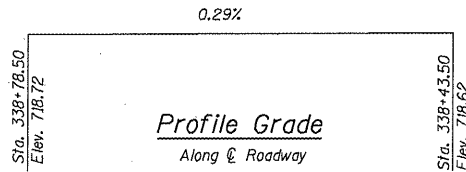
The joints between precast box sections shall be sealed, and all voids filled with a mastic joint sealer. In addition, the joints shall be externally sealed on all four sides with a 13 inch wide external sealing band. The seal shall be centered over the joint, secured in place and protected during the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

ALL DIMENSIONS ARE IN FEET (') - INCHES (") UNLESS OTHERWISE NOTED.

ROADWAY DIMENSIONS MEASURED PERPENDICULAR TO ROADWAY. BOX CULVERT DIMENSIONS MEASURED ALONG 10 RT. FORWARD SKEW.

DRAWINGS ARE NOT TO SCALE.

The design of the box section shall be in accordance with M273 Table 1 for an 8x4 box except A_{s1} shall extend into the top slab a dimension equal to 24" + 2 longitudinal wire spacings.



STATION 338+61.00
BUILT 2010 BY
STATE OF ILLINOIS
F.A.S. RTE. 1514 SEC. 4CR
LOADING HS20
STRUCTURE NO. 010-8135

NAME PLATE
See Std. 515001

INDEX OF SHEETS

1. General Plan and Elevation
2. Box Culvert End Section (Precast Option) Details
3. Porous Granular Embankment 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)

Drainage Area = 0.10 mi. ²		Existing Low Grade Elev. = 717.99 @ Sta. 336+46		Proposed Low Grade Elev. = 717.99 @ Sta. 336+46					
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	46	12	14				716.5	716.3
Design	50	76	12	16				717.5	717.0
Base	100	89	12	16				overtopped	717.3
Overtopping									
Max. Calc.	500	122	12	16				overtopped	overtopped

10 YEAR VELOCITY THROUGH EXISTING BRIDGE = 8.88 ft/s 10 YEAR VELOCITY THROUGH PROPOSED BRIDGE = 3.83 ft/s

* Information provided using the USGS method (2004 equations)

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	S. Cut-Off Wall		N. Cut-Off Wall	
	710.95			711.50

All - Time H.W.E. & Date:
12/22/1990 - High water reported by IDOT Maintenance.
Approximately 3' deep at centerline.
Reason: Floodwaters have no positive outfall in immediate area, ponding in adjacent fields.

Name Plate

BILL OF MATERIAL

Item	Unit	Total
Removal of Existing Structures	Each	1.0
Precast Concrete Box Culverts 8' x 2' (M273)	Foot	40.0
Box Culvert End Section, Culvert No. 1	Each	2.0
Name Plates	Each	1.0
Porous Granular Embankment	Cu Yd	140.0
Stone RIPRAP Class A-1	Tons	55.0

GENERAL PLAN AND ELEVATION
SINGLE 8' x 2' PRECAST BOX CULVERT
F.A.S. ROUTE 1514 - SECTION 4CR
CHAMPAIGN COUNTY
STATION 338+61.00, S.N. 010-8135

FILE NAME =	USER NAME = bleckrt	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN AND ELEVATION	F.A.S. RTE. 1514	SECTION 4CR	COUNTY CHAMPAIGN	TOTAL SHEETS 29	SHEET NO. 14			
CONTRACT NO. 70701	PLOT SCALE = 3/8" = 1' / IN.	CHECKED -	REVISED -			SCALE:	SHEET NO. 1 OF 3 SHEETS	STA. TO STA.	ILLINOIS FED. AID PROJECT				
	PLOT DATE = 5/5/2010	DATE -	REVISED -										