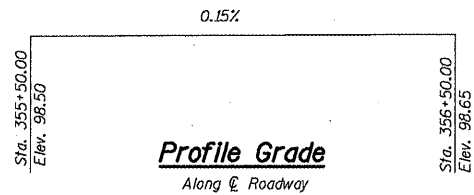


BENCHMARK ELEV. = 100.00' (assumed datum). Chiseled square on the northwest corner of the south headwall of S.N. 010-8107.

EXISTING STRUCTURE: S.N. 010-8107, a single 6' x 2.5' reinforced concrete box culvert, was constructed in 1926 at Station 356+31.43 as part of Section 81-15D. The existing structure is to be completely removed and replaced. The project is to be completed under road closure conditions, utilizing unmarked local detour routes.



STATION 356+28.00
BUILT 2010 BY
STATE OF ILLINOIS
F.A.S. RTE. 514 SEC. 81-15D, CR
LOADING HS20
STRUCTURE NO. 010-8130

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

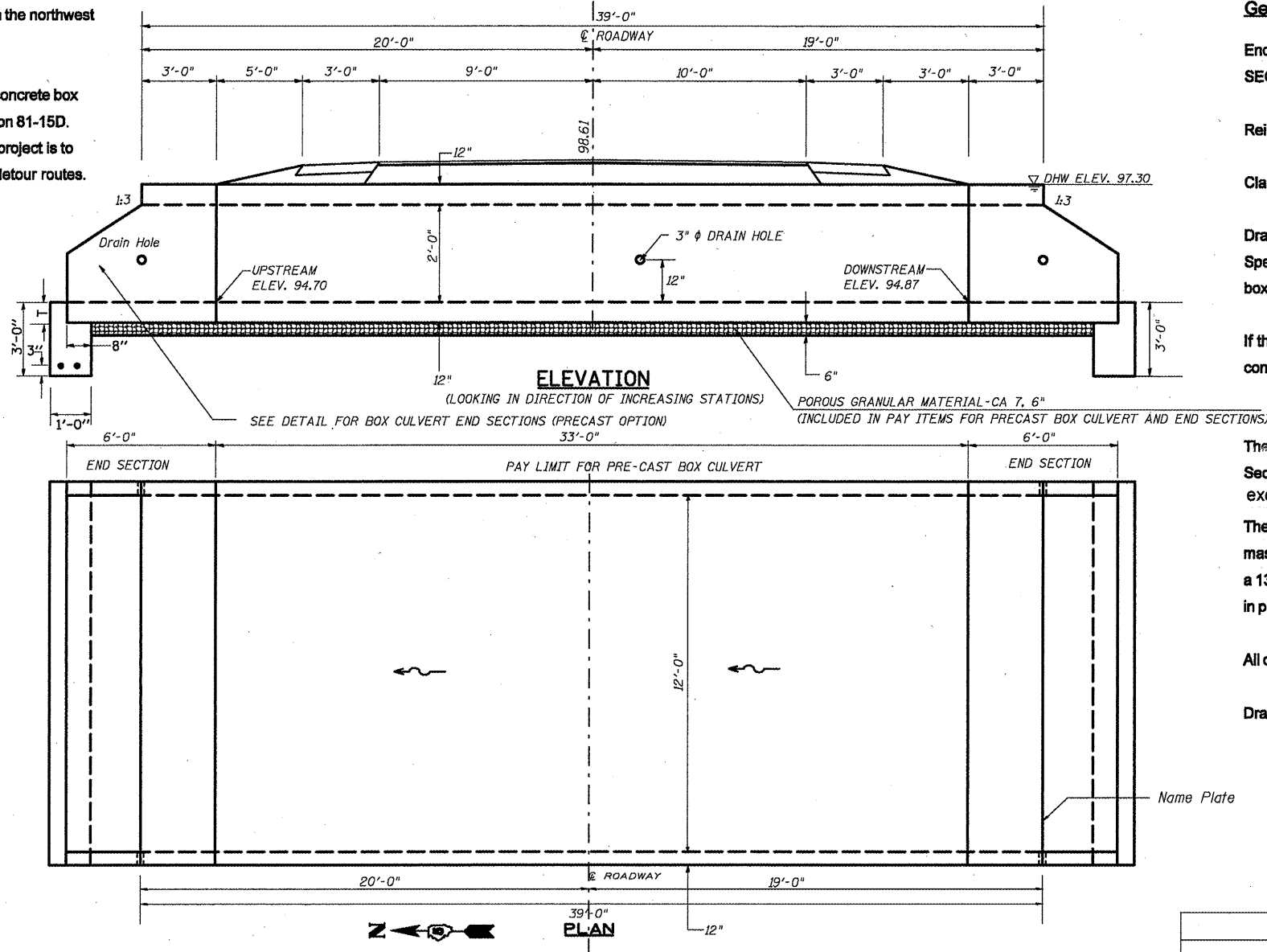
DESIGN SPECIFICATIONS
 2002 AASHTO

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

DESIGN STRESSES

FIELD UNITS
 $f'_c = 3,500$ psi
 $f_y = 60,000$ 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)



Drainage Area = 0.27 mi. ²		Existing Low Grade Elev. = 98.44 @ Sta. 355+00		Proposed Low Grade Elev. = 98.44 @ Sta. 355+00					
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	88	15	19				98.2	98.8
Design	30	124	15	21				overtopped	97.3
Base	100	166	15	24				overtopped	98.1
Overtopping									
Max. Calc.	500	226	15	24				overtopped	overtopped

10 YEAR VELOCITY THROUGH EXISTING BRIDGE = 13 1/8 10 YEAR VELOCITY THROUGH PROPOSED BRIDGE = 4.5 1/8

* Information provided using the USGS method (2004 equations)

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	N. Cut-Off Wall		S. Cut-Off Wall	
		91.67	91.90	

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.

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 for a 12' x 4' box, except As1 shall be equal to 0.43 sq. in.

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.

Drawings are not to scale.

TOTAL BILL OF MATERIAL

Item	Unit	Total
Removal of Existing Structures	Each	1
Precast Concrete Box Culverts 12' x 2' (M273)	Foot	33
Box Culvert End Section, Culvert No. 1	Each	2
Name Plates	Each	1
Porous Granular Embankment	Cu Yd	18.8

GENERAL PLAN AND ELEVATION
SINGLE 12' x 2' PRECAST BOX CULVERT
F.A.S. ROUTE 514 - SECTION 81-15D, CR
CHAMPAIGN COUNTY
STATION 356+28.00, S.N. 010-8130

FILE NAME =	USER NAME = hennessdm	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN AND ELEVATION	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
ct:\pw\work\PW100T\HENNESSDM\dms86853\070619-shit-Detail.dgn	DRAWN -	REVISED -	514			81-15D, CR	CHAMPAIGN	30	11	
PLOT SCALE = 40.0000 ' / IN.	CHECKED -	REVISED -	CONTRACT NO. 70619							
PLOT DATE = 3/1/2010	DATE -	REVISED -	ILLINOIS FED. AID PROJECT							