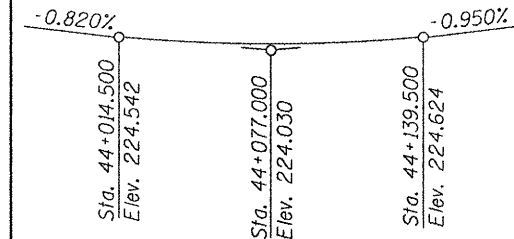


Benchmark: Chisled square on the top of the S.E. wingall, 6.90 m Rt. at Sta. 44+050.200 Elev. 224.102 and a Railroad spike in power pole at 12.3 m Rt. at Sta. 43+986.300 Elev. 225.010.

Existing Structure: S.N. 057-0096 was built in 1938 as S.B.I. route 119 as Sec. 102-S-B WPH at Sta. 44+046.283. The structure is a single span RC Slab Bridge with Steel Rail on Closed Abutments and Wingwalls. 7.32 m F. to F. Abutments. 13.14 m O. to O. Deck with no skew. The structure shall be removed and replaced with a 3.3 m x 2.4 m Double Precast Box Culvert at 0° skew. Traffic will be maintained utilizing a detour.

No Salvage.

Note: All dimensions are in millimeters (mm) except as noted.



Profile Grade
Along Centerline of Roadway

STATION 44+045.00
BUILT 20__ BY
STATE OF ILLINOIS
F.A.P. RT. 315 SEC. (102X)BR, BR-3
LOADING HS 20
STRUCTURE NO. 057-2039

NAME PLATE
See Std. 515001

INDEX OF SHEETS

1. General Plan and Elevation
2. & 3. End Section Details
4. Bar Splicer Assembly and Porous Granular Embankment Details
5. Boring Logs

DESIGN SPECIFICATIONS
2002 AASHTO

LOADING HS20-44

Allow 2.4 kN/m² for future wearing surface

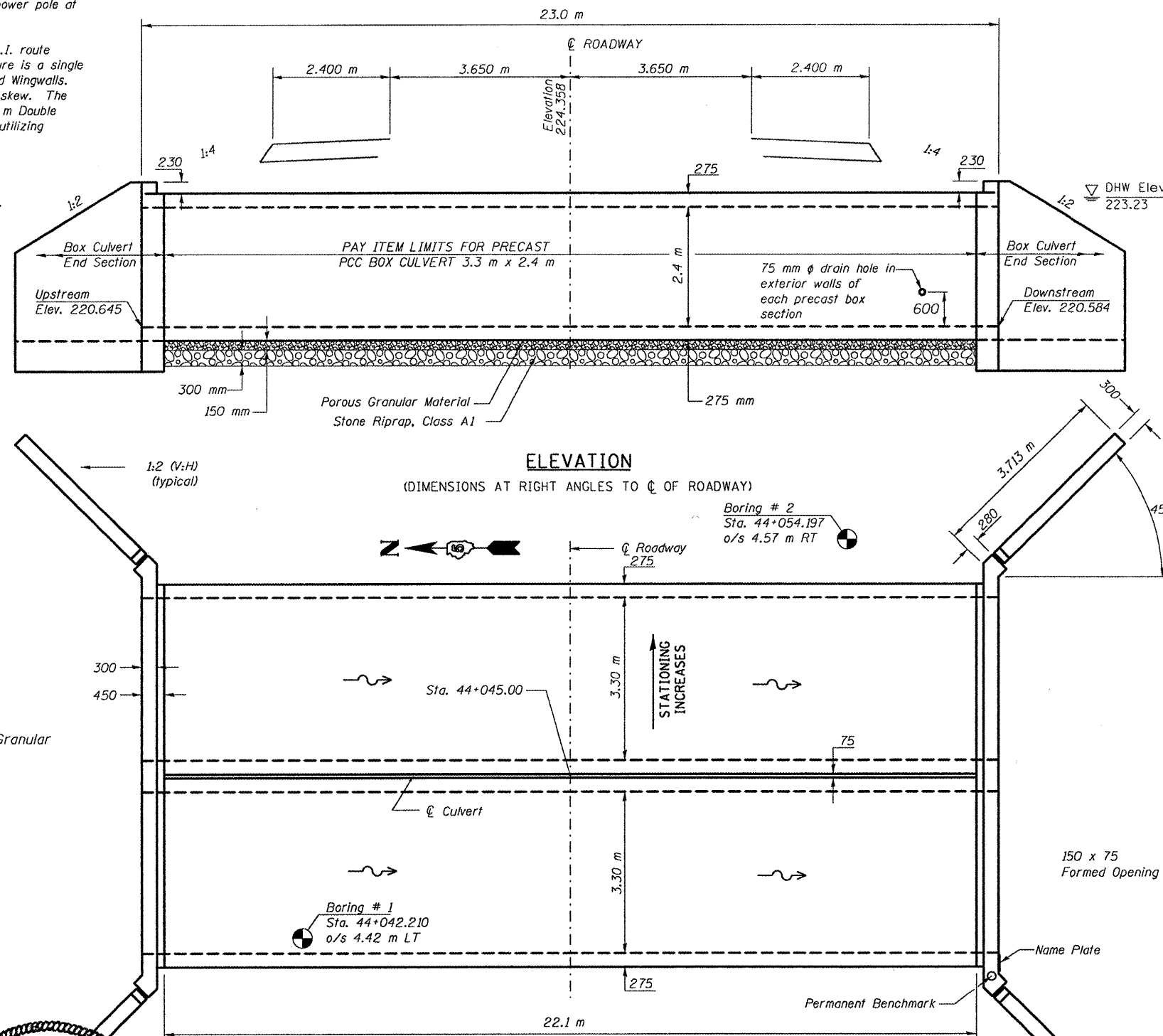
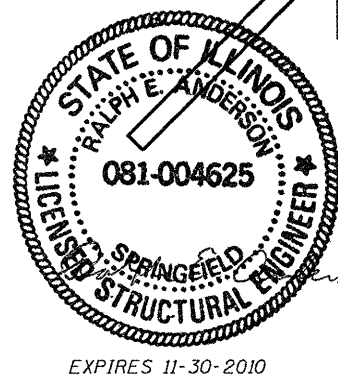
DESIGN STRESSES

FIELD UNITS

f'c = 24 MPa
fy = 420 MPa (reinforcement)
fy = 445 MPa (welded wire fabric)

PRECAST UNITS

f'c = 35 MPa
fy = 445 MPa (welded wire fabric)



Design Scour Elevation Table

Design Scour Elevation (m)	Upstream	Downstream
	219.745	219.684

WATERWAY INFORMATION

Drainage Area = 15.80 sq. km. Low Grade Elev. 224.30 @ Sta. 44+072.410

Flood	Freq. Yr.	Q m ³ /s	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	50	24.8	15.6	16.4	223.10	0.15	0.13	223.25	223.23
Base	100	28.8	16.2	16.4	223.18	0.18	0.21	223.36	223.39
Overtopping									
Max. Calc.	500	37.6	17.5	16.4	223.35	0.22	0.33	223.57	223.68



General Notes

Excavation behind the existing abutment walls shall be performed to balance front and back soil pressure before removing the superstructure.

Build tops of headwalls parallel to the grade lines.

Reinforcement bars shall conform to the requirements of ASTM A706M Gr 420. See Special Provisions.

The 150 mm Porous Granular Material required per Art. 540.06 of the Standard Specifications shall also extend beneath the Box Culvert End Section to the back face of the cut off wall and shall be considered included in the cost of Precast Concrete Box Culverts and Box Culvert End Sections.

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.

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 fill height for the precast boxes is 0.9 meters. The precast concrete box culvert sections shall conform to the requirements of AASHTO M 259M.

The welded wire fabric extending from the outside face of the vertical walls of the precast box sections shall be a minimum of 2x3 W4.5xW4.0 (English) or equivalent. Substitution of reinforcement bar for welded wire fabric is not allowed.

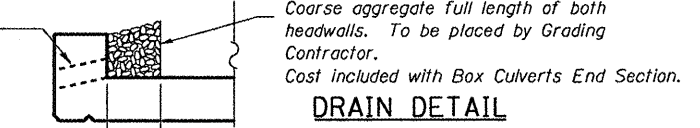
For End Section only, 38 mm cover unless otherwise noted.

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 M 259M. See Sections A-A through D-D on sheet 3 of 5.

All portions of the precast box culverts in contact with cast-in-place concrete shall be bonded according to Article 503.09(b). The surface shall be prepared by sandblasting.

The box culvert end section shall be built in the field and a precast option is not allowed except the cut-off wall may be precast. 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 joints between the precast box sections shall be sealed and all void filled with a mastic joint sealer. In addition, the joints shall be externally sealed on all four sides with a 330 mm wide external sealing band. The seal shall be centered over the joint, secured in place and protected during the backfilling process.



TOTAL BILL OF MATERIAL

Item	Unit	Total
Removal of Existing Structures No. 2	Each	1
Precast Concrete Box Culverts 3.3 m x 2.4 m	Meter	44.2
Box Culvert End Section, Culvert No. 2	Each	2
Name Plates	Each	1
Permanent Benchmark	Each	1
Porous Granular Embankment	Cu. M.	400
Stone Riprap, Class A-1	M. Ton	136

GENERAL PLAN AND ELEVATION
DOUBLE 3.3 x 2.4 PRECAST BOX CULVERT
F.A.P. ROUTE 315 - SECTION (102X)BR, BR-3
MCLEAN COUNTY
STATION 44+045.00, S.N. 057-2039
CULVERT NO. 2

FILE NAME =	USER NAME = *USER*	DESIGNED - R. CARROLL	REVISED - D. GREIFZU	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN AND ELEVATION S.N. 057-2039	F.A.P. RTE. 315	SECTION (102X)BR, BR-3	COUNTY MCLEAN	TOTAL SHEETS 42	SHEET NO. 26
FILEL	PLOT SCALE = *SCALE*	DRAWN - R. CARROLL	REVISED - D. GREIFZU			SCALE:	SHEET NO. 1 OF 5 SHEETS	STA. TO STA.	CONTRACT NO. 70529	
	PLOT DATE = *DATE*	CHECKED - D. GREIFZU	REVISED - S. MOYNIHAN							
		DATE - 01/22/2010	REVISED - 03/03/2010							