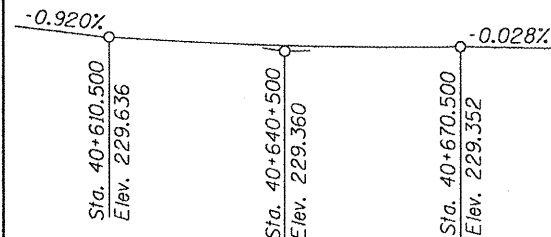


Benchmark: Chiseled Square on the top of the N.W. wingwall at 6.841 m Lt. at Sta. 40+614.311 Elev. 229.323 and a Railroad Spike in power pole at 13.13 m Rt. at Sta. 40+565.55 Elev. 228.959.

Existing Structure: S.N. 057-0151 was built in 1936 as S.B.I. Route 119, Sec. 102-x-b WPH at Sta. 40+617.196. The structure is a single span RC Slab Bridge with Steel Rail on Closed Abutments and Wingwalls. 5.49 m F. to F. Abutments. 13.1 m O. to O. Deck with no skew. The structure shall be removed and replaced with a Double 2.4 m x 2.1 m Precast Box Culvert with no skew. Traffic shall be maintained utilizing a road closed detour.

No Salvage.

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



Profile Grade
Along Centerline of Roadway

STATION 40+618.100
BUILT 20__ BY
STATE OF ILLINOIS
F.A.P. RT. 315 SEC. (102X)BR, BR-3
LOADING HS 20
STRUCTURE NO. 057-8302

NAME PLATE
See Std. 515001

INDEX OF SHEETS

- General Plan and Elevation
- & 3. End Section Details
- Bar Splicer Assembly and Porous Granular Embankment Details
- Boring Logs

DESIGN SPECIFICATIONS
2002 AASHTO

LOADING HS20-44

Allow 2.4 kN/m² for future wearing surface

DESIGN STRESSES

FIELD UNITS

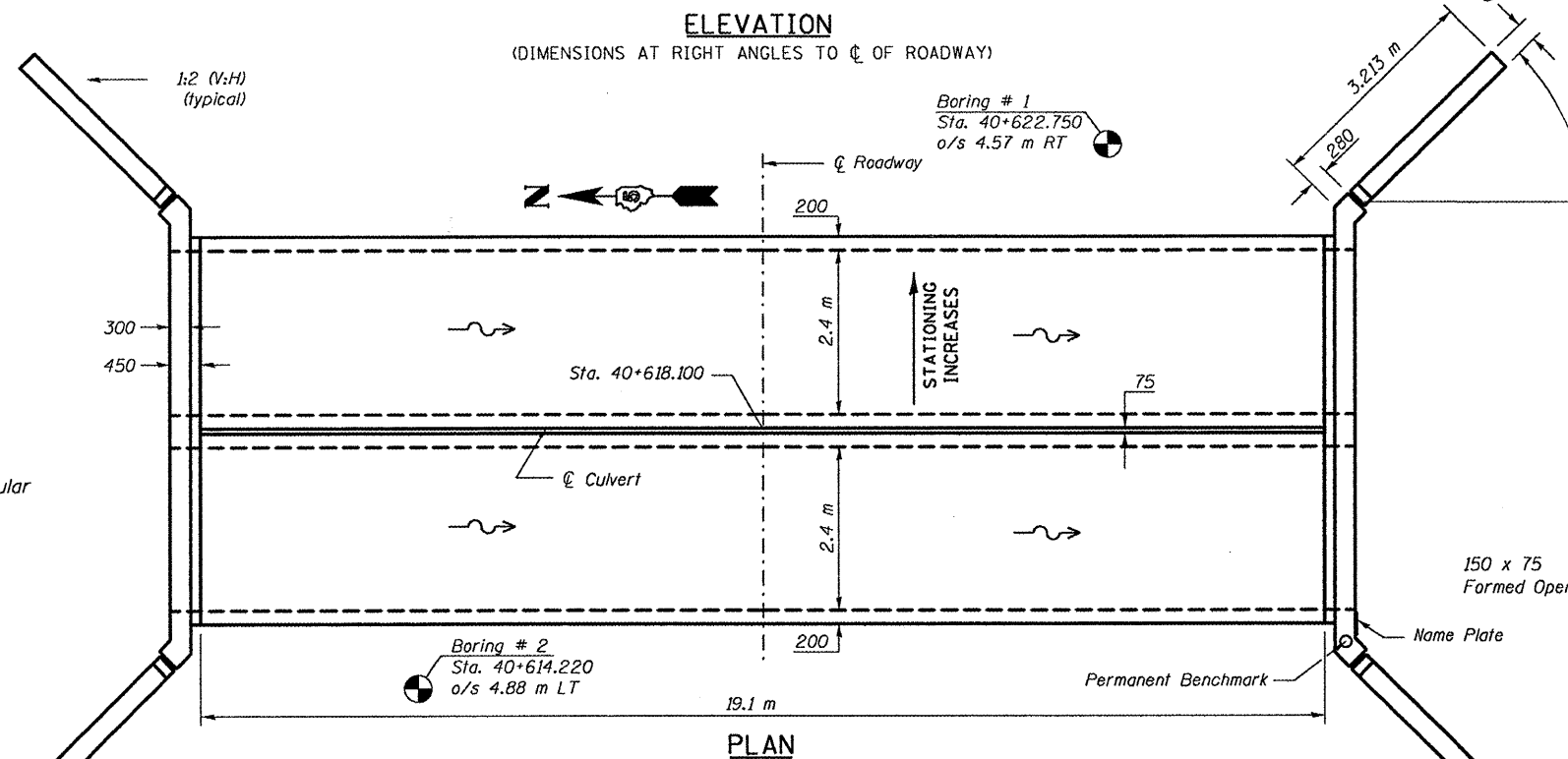
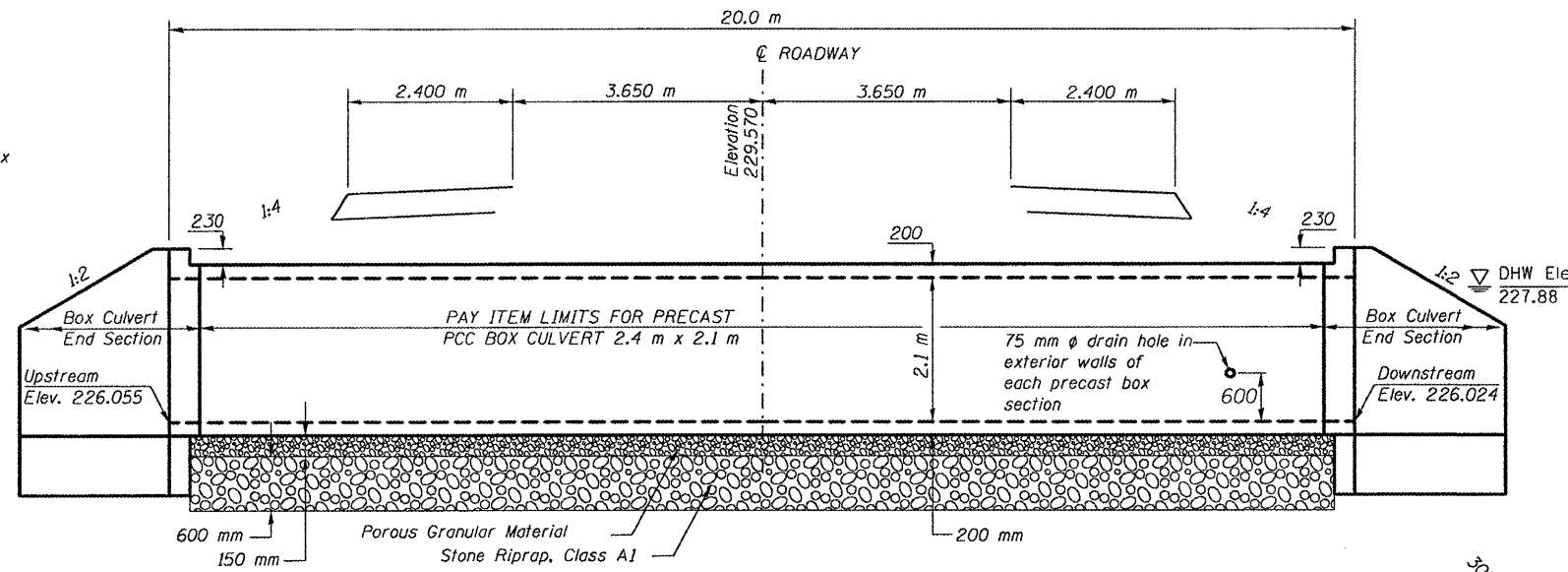
f'c = 24 MPa
fy = 420 MPa (reinforcement)
fy = 445 MPa (welded wire fabric)

PRECAST UNITS

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



EXPIRES 11-30-2010



Design Scour Elevation Table

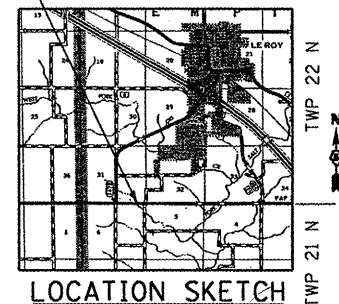
Design Scour Elevation (m)	Upstream	Downstream
	225.155	225.124

WATERWAY INFORMATION

Drainage Area = 5.44 sq. km. Low Grade Elev. 229.35 @ Sta. 40+675

Flood	Freq. Yr.	Q m ³ /s	Opening Sq. Ft.		Nat. H.W.E.		Head - Ft.		Headwater El.	
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	50	15.1	7.0	8.9	227.88	0.47	0.11	228.35	227.99	
Base	100	17.5	7.2	9.1	227.93	0.59	0.17	228.52	228.10	
Overtopping										
Max. Calc.	500	23.1	7.8	9.7	228.03	0.91	0.32	228.94	228.35	

PR. STR. 057-8302
STA. 40+618.100
RNG 4E, 3RD P.M.



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.

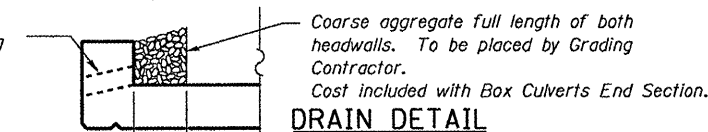
For End Section only, 38 mm cover unless otherwise noted.

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. 1	Each	1
Precast Concrete Box Culverts 2.4 m x 2.1 m	Meter	38.2
Box Culvert End Section, Culvert No. 1	Each	2
Name Plates	Each	1
Permanent Benchmark	Each	1
Porous Granular Embankment	Cu. M.	365
Stone Riprap, Class A-1	M. Ton	182

GENERAL PLAN AND ELEVATION
DOUBLE 2.4 x 2.1 PRECAST BOX CULVERT
F.A.P. ROUTE 315 - SECTION (102X)BR, BR-3
MCLEAN COUNTY
STATION 40+618.100, S.N. 057-8302
CULVERT NO. 1

FILE NAME	USER NAME	DESIGNED	REVISED
FILE	*USER*	R. CARROLL	D. GREIFZU
		R. CARROLL	D. GREIFZU
		D. GREIFZU	S. MOYNIHAN
		01/22/2010	03/03/2010

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
S.N. 057-8302
SCALE: SHEET NO. 1 OF 5 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
315	(102X)BR, BR-3	MCLEAN	42	18

CONTRACT NO. 70529
ILLINOIS FED. AID PROJECT