

Bench Mark #404: Headwall, chiseled square, existing IL 173 at Sta. 9+46.95, 37.97' Rt., Elev. 731.995

Existing Structure: S.N. 101-6502 was built in 1995 as a triple 6'x6' box culvert. The existing culvert is 88'-1" long along the stream centerline.

The road shall be closed during construction and traffic detoured.

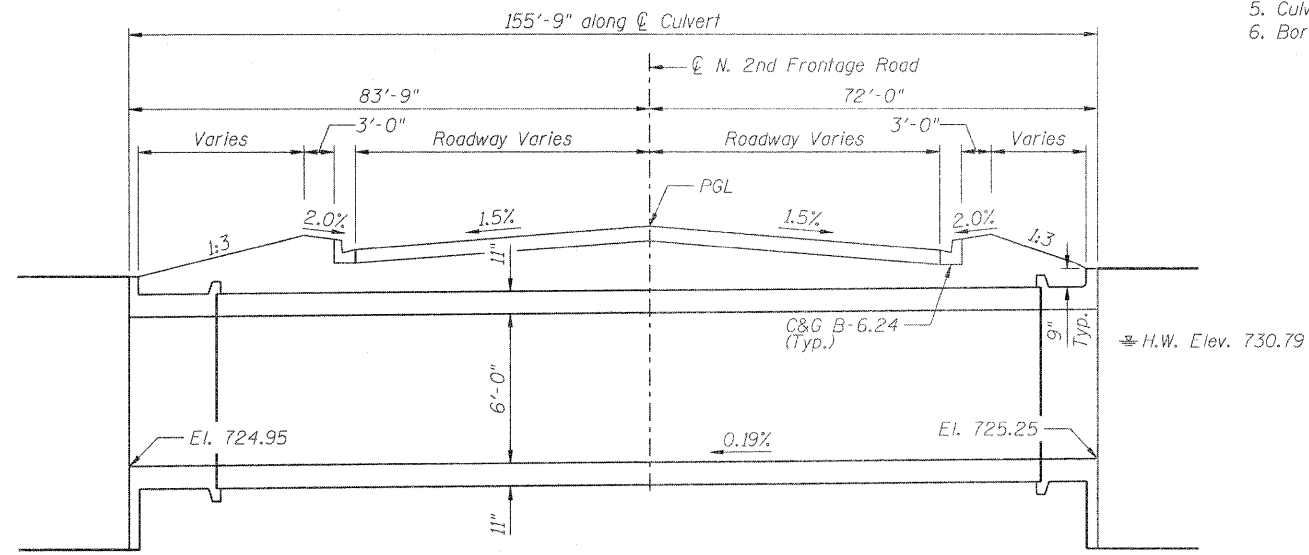
No Salvage.

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GENERAL NOTES

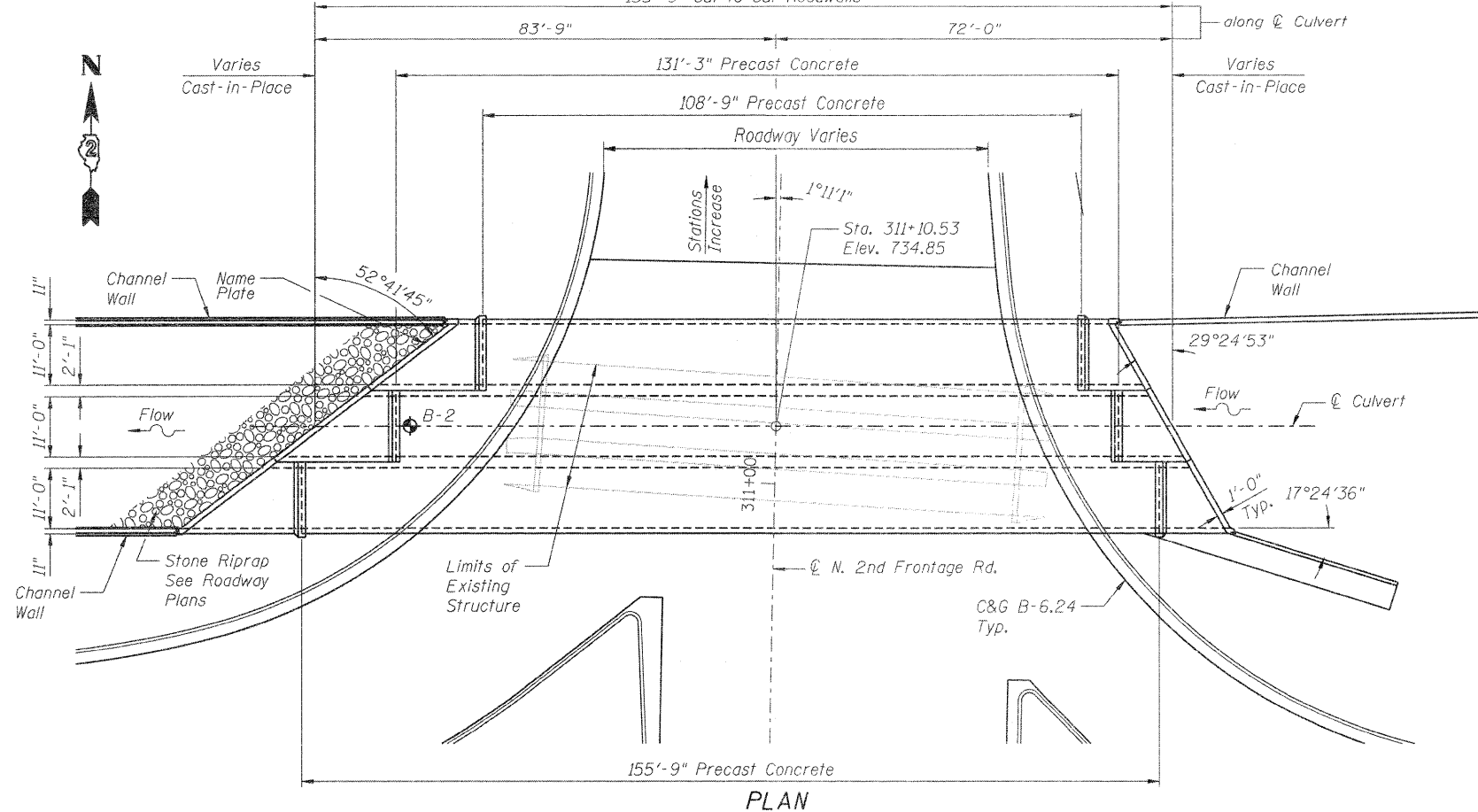
1. Precast Concrete Box Culvert sections shall conform to the requirements of Article 540.06 of the Standard Specifications and the applicable requirements of AASHTO M 273.
2. Reinforcement bars shall conform to the requirements of ASTM A 706 Grade 60 (IL Modified). See Special Provisions.
3. Reinforcement bars designated (E) shall be epoxy coated.
4. Lifting holes shall be filled with concrete plugs and mastic after box sections are in place.
5. Exposed edges shall have a 3/4" chamfer.



LONGITUDINAL SECTION

Vertical scale exaggerated for clarity

155'-9" Out to Out Headwalls



PLAN

LEGEND

Soil Boring Location

FILE NAME = ...D264987-2052-001-GPE.dgn

USER NAME = SAW
 PLOT SCALE = 0.25000" = 1' / IN.
 PLOT DATE = 11/28/2010

DESIGNED - JLA
 CHECKED - PMM
 DRAWN - SAW
 CHECKED - JLA

REVISED -
 REVISED -
 REVISED -
 REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**GENERAL PLAN
 N. 2ND FRONTAGE ROAD OVER WILLOW CREEK TRIBUTARY**

SHEET NO. 1 OF 6 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
303	129K-1	WINNEBAGO	401	282
S.N. 101-2052		CONTRACT NO. 64987		
ILLINOIS FED. AID PROJECT				

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Removal of Existing Structures No. 2	Each	1
Reinforcement Bars	Pound	22,490
Reinforcement Bars (Epoxy Coated)	Pound	110
Name Plates	Each	1
Concrete Box Culverts	Cu. Yd.	139.2
Precast Concrete Box Culvert 11'x6'	Foot	396

LOADING HS20-44

Allow 50#/sq. ft. for future wearing surface.
 Design Fill Ht. < 2'

DESIGN SPECIFICATIONS

2002 AASHTO

DESIGN STRESSES

PRECAST

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

CAST-IN-PLACE

f'c = 3,500 psi
 fy = 60,000 psi (reinforcement)

WATERWAY INFORMATION

Drainage Area = 2.9 Sq. Mi. Exist. Low Grade El. = 733.07 @ Sta. 311+85.00
 Prop. Low Grade El. = 733.85 @ Sta. 313+20.29

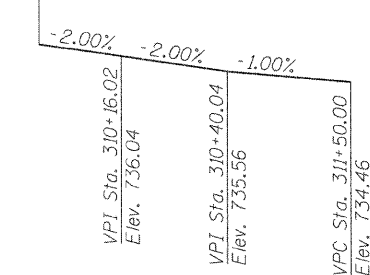
Flood	Freq. Year	Q cfs	Opening Sq. Ft.		Natural H.W.E.		Head - Foot*		Headwater Elev. (ft)	
			Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed
Design	50	958	87/46	162	731.05	730.79	2.61	0	733.7	730.8
Base	100	1130	93/163	177	731.39	731.24	2.65	0	734.0	731.2
Overtopping	30	810		79	730.60		2.50		733.1	
Max. Calc.	500	1580	103/433	198	732.19	732.32	2.24	0	734.4	732.3

10-Year Velocity through Existing Structure = 7.5 fps
 10-Year Velocity through Proposed Structure = 6.7 fps
 *Includes backwater from downstream IL 173 culvert

DESIGN SCOUR ELEVATION TABLE

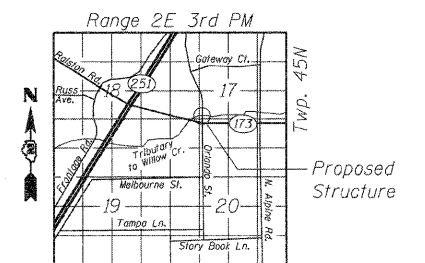
Design Scour Elevation (ft.)	Upstream	Downstream
	722.50	722.20

Sta. 310+00 @ N. 2nd Frontage Rd.



PROFILE GRADE

(along @ N. 2nd Frontage Rd.)



LOCATION SKETCH