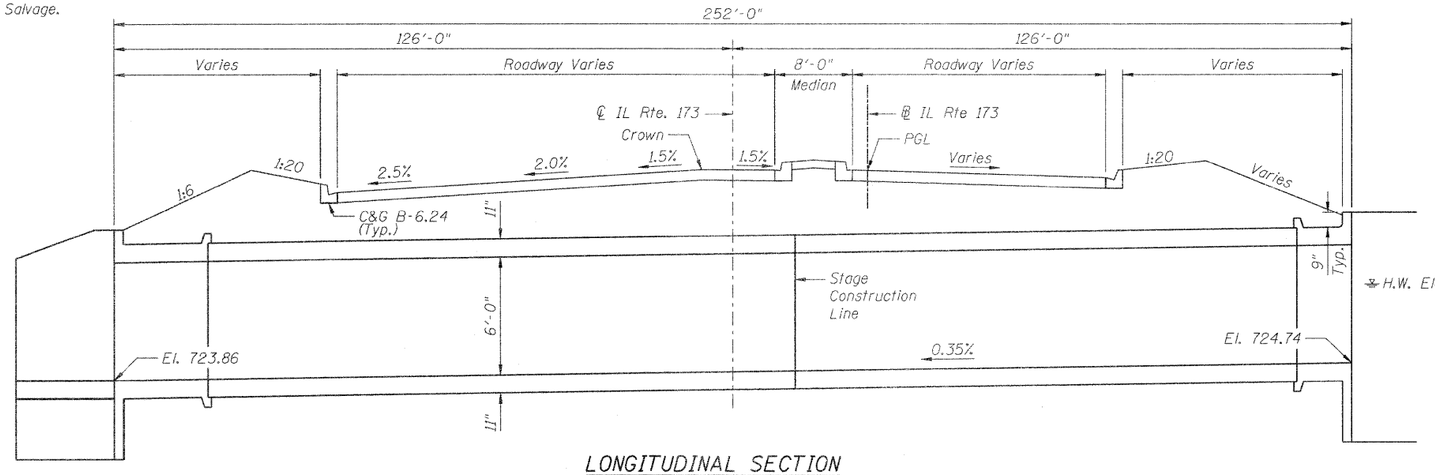
Bench Mark #404: Headwall, chiseled square, existing IL 173 at Sta. 9+46.95, 37.97' Rt., Elev. 731.995

Existing Structure: S.N. 101-2009 was built in 1964 as F.A. Route 188, Section 4B-2 as a triple 8'x6' box culvert. The existing culvert is 108.4' long along the stream centerline from survey.

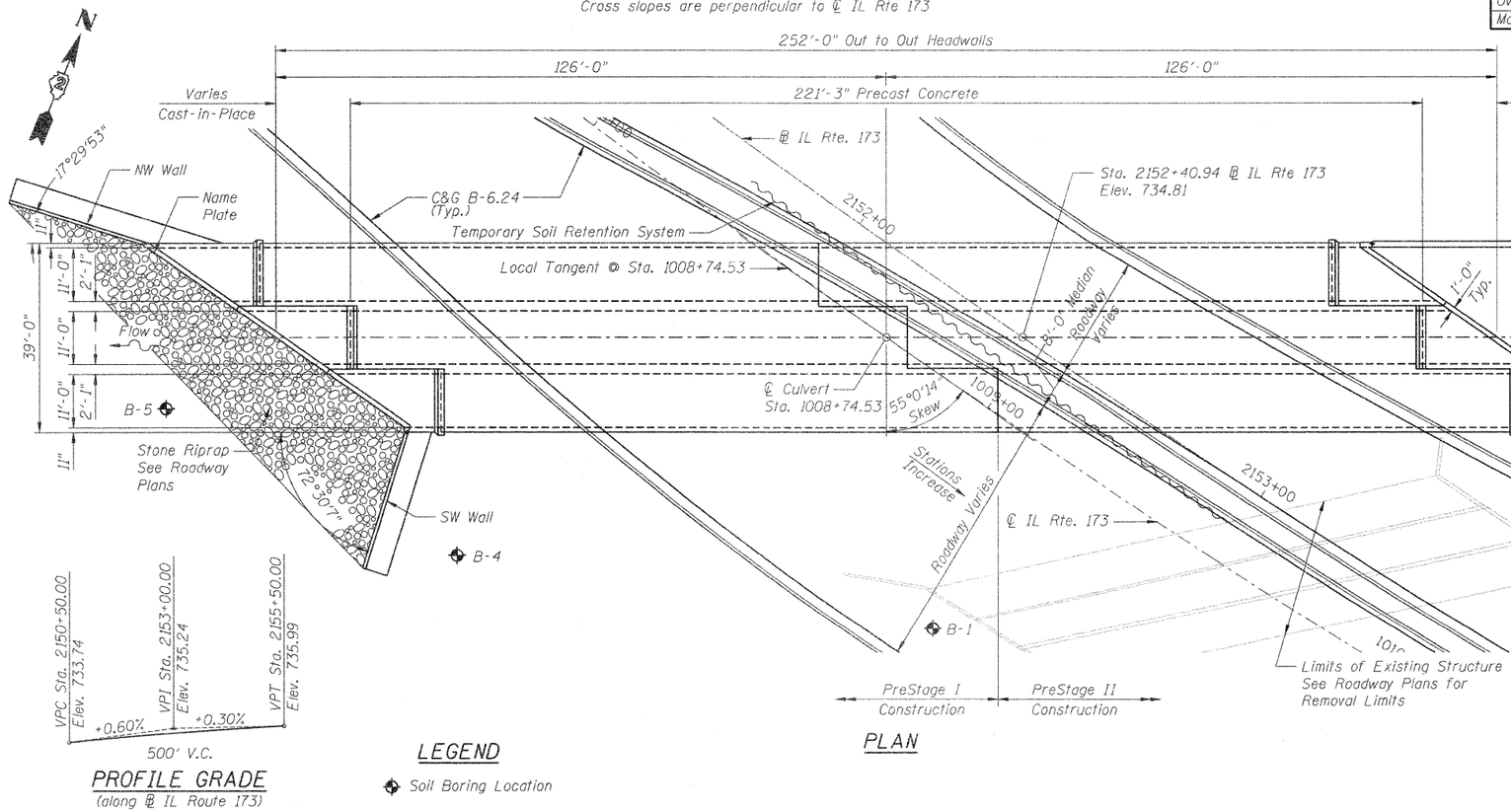
Traffic shall be maintained during staged construction.

No Salvage.



LONGITUDINAL SECTION

Vertical scale exaggerated for clarity
Cross slopes are perpendicular to ℄ IL Rte 173



PROFILE GRADE
(along ℄ IL Route 173)

PLAN

LEGEND

Soil Boring Location

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. 259.
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 $\frac{3}{4}$" chamfer.

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Removal of Existing Structures No. 1	Each	1
Reinforcement Bars	Pound	26,230
Reinforcement Bars (Epoxy Coated)	Pound	220
Temporary Soil Retention System	Sq. Ft.	1,376
Name Plates	Each	1
Concrete Box Culverts	Cu. Yd.	162.1
Precast Concrete Box Culvert 11'x6'	Foot	664

WATERWAY INFORMATION

Drainage Area = 2.9 Sq. Mi.
Exist. Low Grade El. = 733.33 @ Sta. 1003+90.40
Prop. Low Grade El. = 733.23 @ Sta. 1005+78.44

Flood	Freq. Year	Q cfs	Opening Sq. Ft. Existing	Opening Sq. Ft. Proposed	Natural H.W.E. Existing	Natural H.W.E. Proposed	Head - Foot Existing	Head - Foot Proposed	Headwater Elev. (ft) Existing	Headwater Elev. (ft) Proposed
	10	579	120	177	729.46	728.64	0.71	0	730.2	728.6
Design	50	958	144	198	730.21	729.58	1.56	0	731.8	729.6
Base	100	1130	144	198	730.48	729.93	2.06	0	732.5	729.9
Overtopping	300	1370	144		730.77		2.56		733.3	
Max. Calc.	500	1580	144/75	198	731.03	730.73	3.06	0.15	734.1	730.9

10-Year Velocity through Existing Structure = 6.4 fps
10-Year Velocity through Proposed Structure = 6.1 fps

DESIGN SCOUR ELEVATION TABLE

	Upstream	Downstream
Design Scour Elevation (ft.)	721.99	721.11

LOADING HS20-44

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

DESIGN SPECIFICATIONS

2002 AASHTO

DESIGN STRESSES

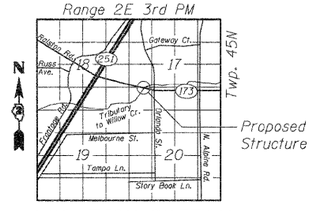
PRECAST
f'_c = 5,000 psi
f_y = 65,000 psi (welded wire fabric)

CAST-IN-PLACE
f'_c = 3,500 psi
f_y = 60,000 psi (reinforcement)

INDEX OF SHEETS

HORIZONTAL CURVE DATA

PI Sta. = 1010+89.77	PI Sta. = 2154+31.66
Δ = 18° 24' 35" (LT)	Δ = 18° 24' 35" (LT)
D = 2° 29' 38"	D = 2° 30' 41"
R = 2,297.42'	R = 2,281.42'
T = 372.30'	T = 369.71'
L = 738.19'	L = 733.04'
E = 29.97'	E = 29.76'
S.E. = N/A	S.E. = N/A
P.C. Sta. = 1007+17.47	P.C. Sta. = 2150+61.95
P.T. Sta. = 1014+55.65	P.T. Sta. = 2157+94.99



LOCATION SKETCH

FILE NAME =	USER NAME = SAW	DESIGNED - JLA	REVISED -
...\D264987-2051-001-GPE.dgn		CHECKED - PMM	REVISED -
	PLOT SCALE = Ø2.0000 '/ IN.	DRAWN - SAW	REVISED -
	PLOT DATE = 11/1/2010	CHECKED - JLA	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN
IL 173 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	272
	S.N. 101-2051	CONTRACT NO. 64987		
	ILLINOIS FED. AID PROJECT			