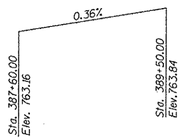
EXISTING STRUCTURE: No Existing Structure

BENCHMARK ELEV. = 764.88 RR Spike in southwest corner F.P., west side F.P., at approx. Sta. 394+25, 35' RT.



Profile Grade
Along ℄ IL 54 Roadway

STATION 388+50.00
BUILT 201_ BY
STATE OF ILLINOIS
F.A.P. RT. 71 SEC. 121R
LOADING HS 20
STRUCTURE NO. 057-2049

NAME PLATE
See Std. 515001

INDEX OF SHEETS

DESIGN SPECIFICATIONS

2002 AASHTO

LOADING HS20-44

Allow 50#/sq.ft. for future wearing surface

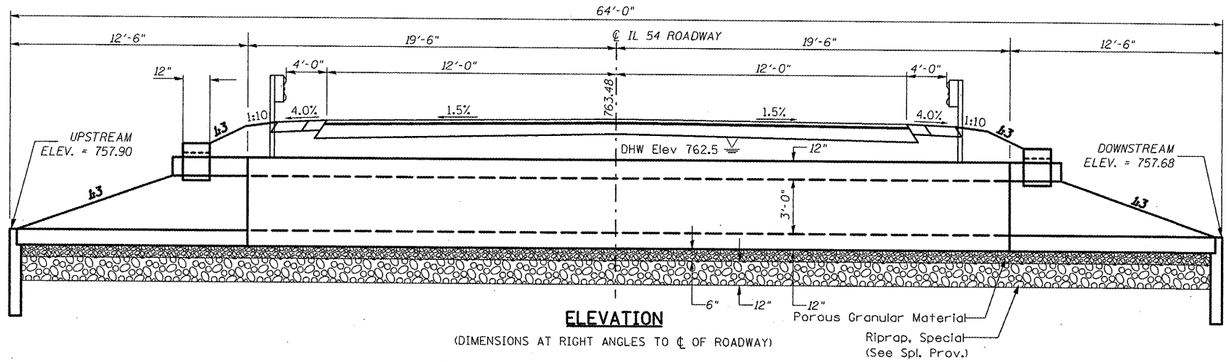
DESIGN STRESSES

FIELD UNITS

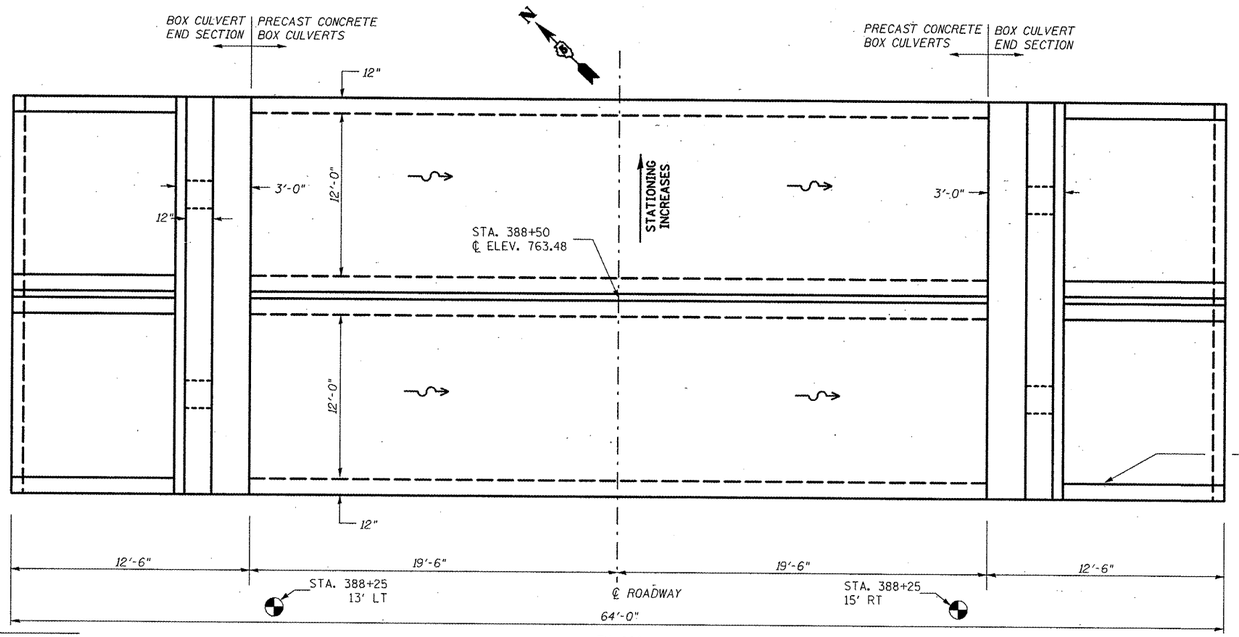
f'c = 3,500 psi
fy = 60,000 psi (reinforcement)
fy = 65,000 psi (welded wire fabric)

PRECAST UNITS

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



ELEVATION
(DIMENSIONS AT RIGHT ANGLES TO ℄ OF ROADWAY)



PLAN

WATERWAY INFORMATION TABLE

Route:	FAP 71 (IL-54)	Existing S.N.:	SLD 6.62 - No Structure Exists
Section:	121R	Proposed S.N.:	057-2049
County:	McLean	Waterway:	Unnamed Tributary of Salt Creek
Date:	4/30/2009	By:	GMS

Existing Low Grade Elev. = N/A @ Sta.

Drainage Area = 0.4 mi.² Proposed Low Grade Elev. = 762.95 ft. @ Sta. 386+20

Flood	Freq.	Q	Opening Sq. Ft.		Natural	Head - Ft.		Headwater Elevation	
	Yr.	C.F.S.	Existing	Proposed	H.W.E.	Existing	Proposed	Existing	Proposed
	10	222	N/A	72		N/A		N/A	761.1
Design	50	379	N/A	72		N/A		N/A	762.5
Base	100	451	N/A	72		N/A		N/A	Over
Overtopping									
Max. Calc.	500	631	N/A	72		N/A		N/A	Over

10 YEAR VELOCITIY THROUGH EXISTING BRIDGE : N/A
10 YEAR VELOCITIY THROUGH PROPOSED BRIDGE : 3.08 ft/s

Design Scour Elevation Table

Design Scour Elevation (ft.)	Upstream	Downstream
	754.90	754.68

General Notes

See 'Double Cell Precast Box Culvert End Sections' for end section details.

Build tops of headwalls parallel to the grade lines.

All construction joints shall be bonded according to Article 503.09 of the Standard Specifications.

Reinforcement bars shall conform to the requirements of ASTM A706 Gr. (IL Modified). See Special Provisions.

The 6" Porous Granular Material required per Art. 540.06 of the Standard Specifications shall also extend beneath the Box Culvert End Sections and shall be considered included in the cost of Precast Concrete Box Culverts and Box Culvert End Sections.

When lapping sheets of welded wire fabric, the overlap measured between the outermost cross wires of each fabric sheet shall not be less than 8"

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.

Class SI Concrete shall be used throughout.

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 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 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 M259. See Sections B-B,D-D, E-E, and F-F on Sheet 2.

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 M273. The design reinforcement areas shall conform to those found in Table 1 of the AASHTO M273 specification for a 12' x 4' box section.

The joints between precast box sections shall be sealed, 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.

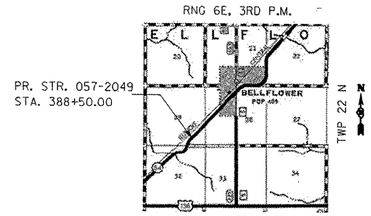
All dimensions are in FEET (') - INCHES (") unless otherwise noted.

Drawings not to scale.

MOUNT NAME PLATE

TOTAL BILL OF MATERIAL

Item	Unit	Total
Removal of Existing Structures No. 3	Each	1
Precast Concrete Box Culverts 12'x3'	Foot	78
Box Culvert End Sections, Culvert No.3	Each	2
Name Plates	Each	1



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
DOUBLE 12'x3' PRECAST BOX CULVERT
F.A.P. ROUTE 71 - SECTION 121R
MCLEAN COUNTY
STATION 388+50.00 S.N. 057-2049
CULVERT NO. 3

SHEET 1 OF 2

FILE NAME = c:\pw_work\PWIDOT\CRAIGRE\d0101441\D70592-sht-BoxCulverts.dgn	USER NAME = craigre	DESIGNED -	REVISED -
	PLOT SCALE = 44.0000 ' / IN.	DRAWN -	REVISED -
	PLOT DATE = 11/17/2009	CHECKED -	REVISED -
		DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
PROPOSED CULVERT NO. 3 – STR. NO. 057-2049

SCALE: | SHEET NO. OF SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
71	121R	MCLEAN	87	33
		CONTRACT NO. 70592		
	ILLINOIS FED. AID PROJECT			