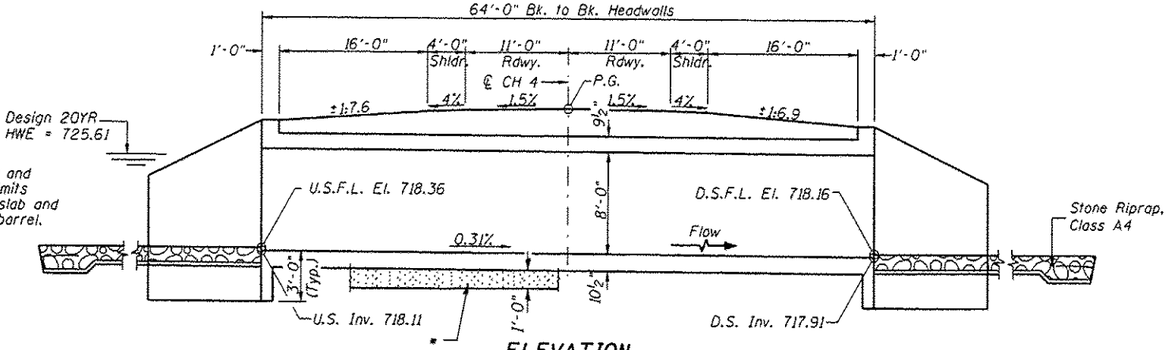
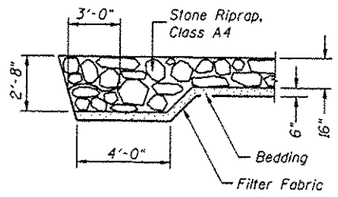
Existing Structure:
Single 12'x9' reinforced concrete box culvert. The structure is approximately 31' in length, and is not skewed.
Str. No. N/A

Salvage: None

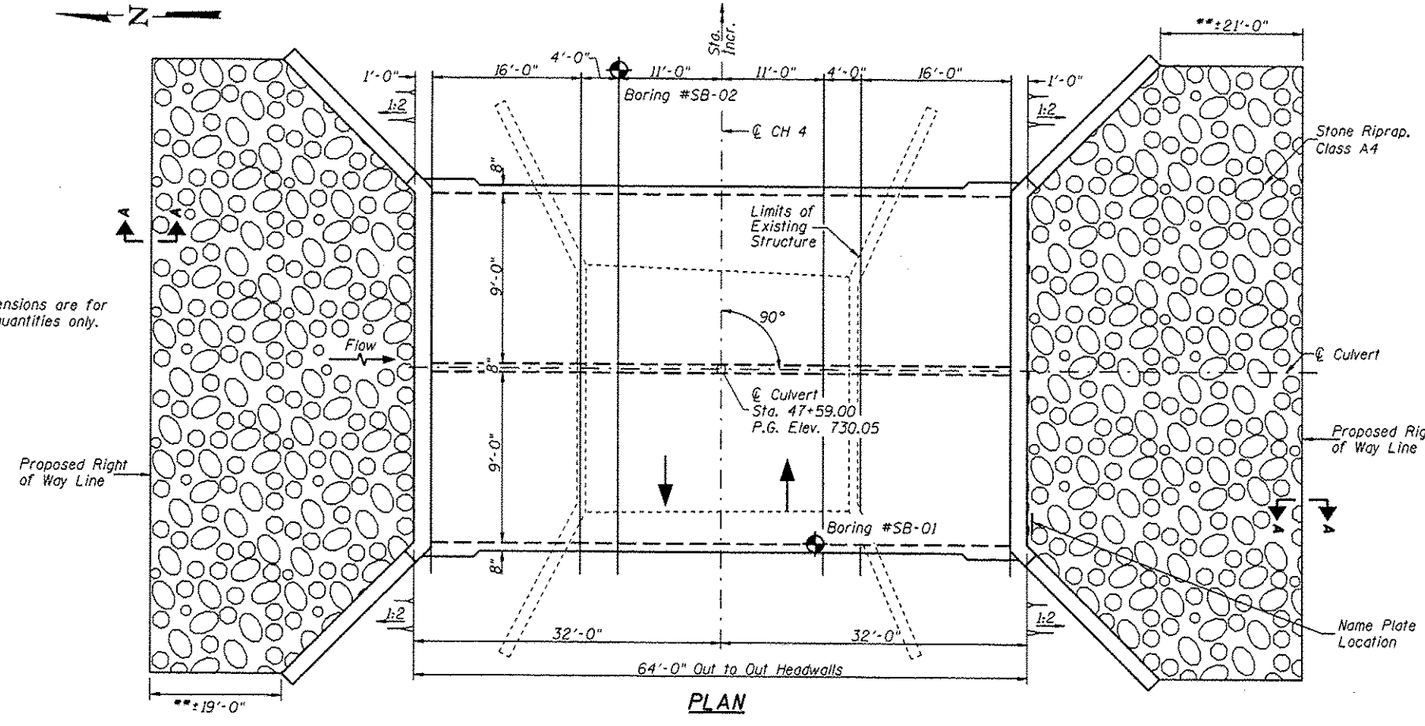
Road to be closed to traffic during construction.



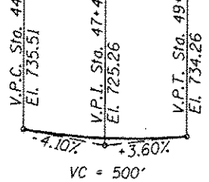
ELEVATION



SECTION A-A



PLAN



PROFILE GRADE

**Riprap dimensions are for estimating quantities only.

WALNUT CREEK TRIBUTARY
BUILT 201 BY
KNOX COUNTY
SEC. 12-00001-01-RS
C.H. 4 STATION 47+59.00
F.A. PROJ. RS-0393(105)
STR. NO. 048-5038 LOADING HL-93

NAME PLATE

Locate Name Plate at South Headwall S.W. Corner of Culvert (See Std. 515001)

GENERAL NOTES

Reinforcement Bars shall conform to the requirements of ASTM A 706 Grade 60.
For backfilling and embankment see Standard Specifications.
All construction joints shall be bonded.
Exposed concrete edges shall have a $\frac{3}{4}$" chamfer unless otherwise noted.
Precast culvert option will not be allowed.
Layout of stone riprap/slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.
A distance of half the length of the wingwall, but not less than 6 feet of the barrel shall be poured monolithically with the wingwall.
Areas of excavation required for removal of the existing structure or construction of the new culvert shall be backfilled with Porous Granular Embankment up to the top of slab elevation. See Special Provisions for more detailed information.
All excavation required for construction of the culvert as shown in these plans and in accordance with the Standard Specifications shall be included in the cost of Concrete Box Culverts.

TOTAL BILL OF MATERIAL

	ITEM	UNIT	TOTAL
	Concrete Box Culverts	CU YD	151.3
	Reinforcement Bars	POUND	21,580
①	Removal of Existing Structures No. 2	EACH	1
	Name Plates	EACH	1
	Stone Riprap, Class A4	SQ YD	220
	Filter Fabric	SQ YD	220
	Removal & Disposal of Unsuitable Material	CU YD	57
①	Porous Granular Embankment	CU YD	420

①See Special Provisions

DESIGN SCOUR TABLE

Location	Upstream	Downstream
Design Scour Elevation	718.11	717.91

I certify that to the best of my knowledge, information and belief, this culvert design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current AASHTO Standard Specification for Highway Bridges.

3/20/2013
Illinois Structural No. 6440
Expires 11/30/2014

JOSEPH E. GUSTAFSON — 6440 — LICENSED STRUCTURAL ENGINEER — 3/20/13 — ILLINOIS
Lic Exp 11/30/2014

WATERWAY INFORMATION

Drainage Area = 1.72 Sq. Mi. Low Grade Elev. = 730.05 @ Sta. 47+56.23

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	20	813	86	137	725.61	1.80	0.25	727.41	725.86
Base	100	1,210	95	144	726.43	3.30	0.89	729.73	727.32

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications

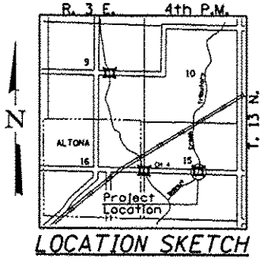
DESIGN STRESSES

FIELD UNITS

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

LOADING HL-93

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



LOCATION SKETCH

DESIGNED	CTM
CHECKED	STM
DRAWN	CTM
CHECKED	STM

3275CULV01-EAST

GENERAL PLAN & ELEVATION
KNOX COUNTY
SECTION 12-00001-01-RS
C.H. 4 OVER WALNUT CREEK TRIBUTARY

SHEET NO. 1	ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
5 SHEETS	CH 4	12-00001-01-RS	KNOX	174	76
		S.N. 048-5038		CONTRACT NO. 89614	
	FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT RS-0393(105)		