

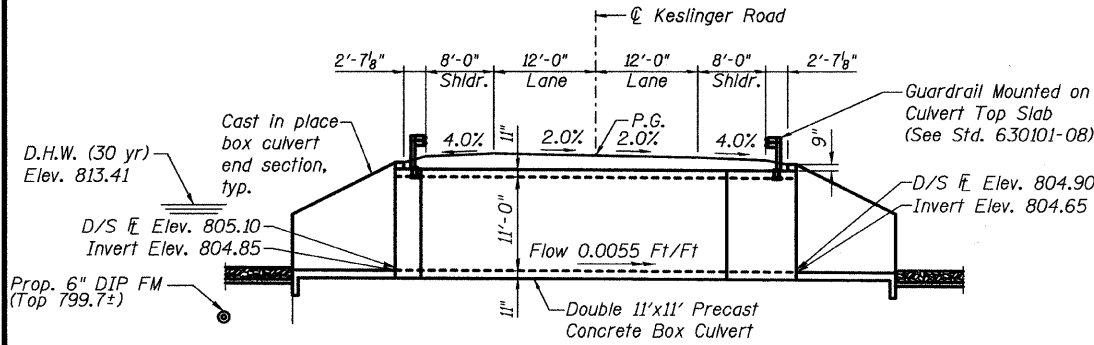
BENCHMARKS

Chiselled "□" on concrete headwall, Elev. 817.333

EXISTING STRUCTURE

S.N. 045-3101 was built in 1949 as Sec. 148B-15D. The existing structure is a single-span reinforced concrete slab bridge with a 14-inch thick deck slab and an 8" thick bituminous overlay supported on reinforced concrete closed abutments on spread footings with reinforced concrete cantilever wingwalls. The bridge has a 20'-0" clear span and measures 22'-0 3/4" back-to-back of abutments and supports two 12'-0" traffic lanes with an out-to-out deck width of 28'-4". A traffic detour will be provided during construction of the new bridge.

No Salvage

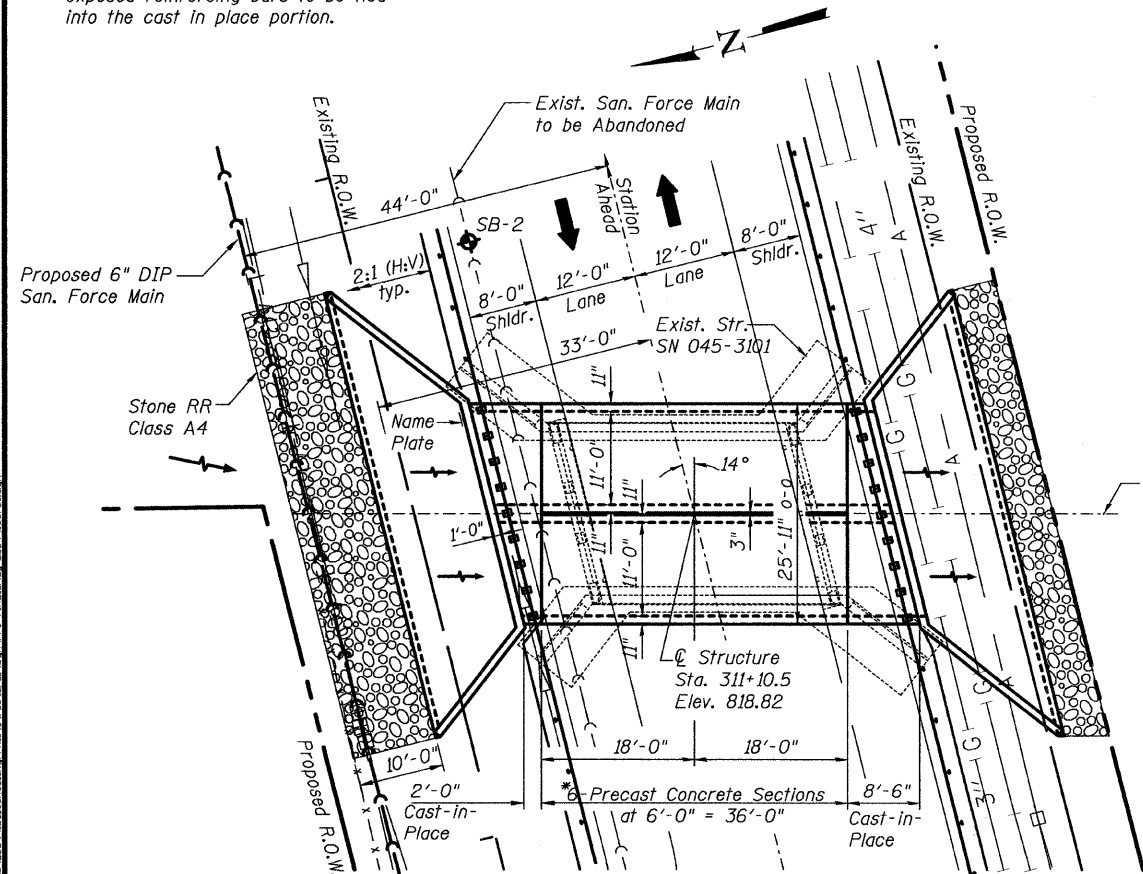


LONGITUDINAL SECTION

(Looking East)

Note: Precast culvert sections at the ends of each barrel are to have exposed reinforcing bars to be tied into the cast in place portion.

Note: Horizontal dimensions are at Rt. L's to C Rdwy.



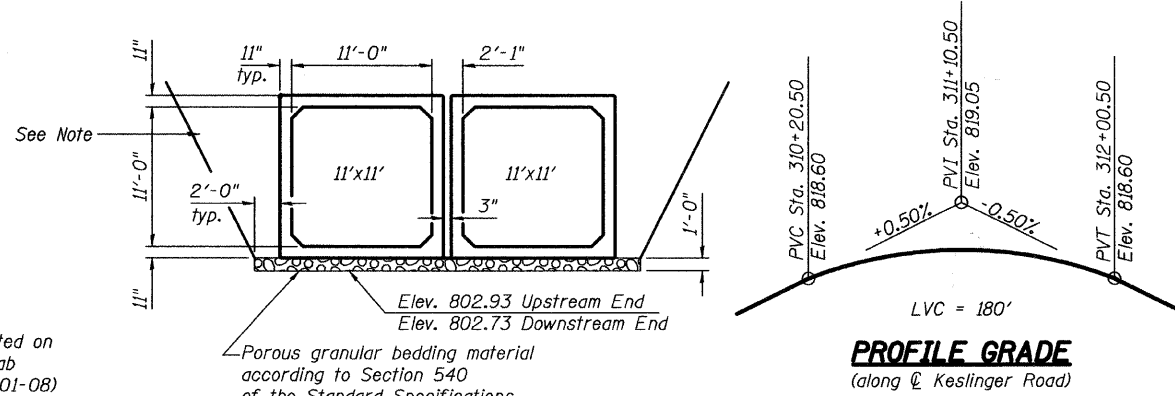
*Pay Limits for Precast Concrete Box Culvert

PLAN

◆ Indicates Soil Boring location

DESIGNED	MJD
CHECKED	AEU
DRAWN	MJD
CHECKED	AEU

KANE COUNTY DIVISION OF TRANSPORTATION



SECTION THRU PRECAST BARREL

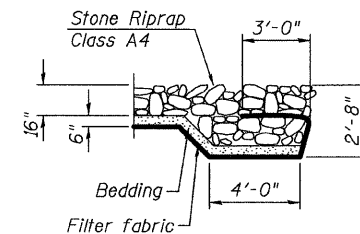
Note:

1. Porous Granular Bedding Material will not be measured separately for payment but shall be considered INCLUDED in the cost of the Precast Concrete Box Culvert.
2. Structure Excavation for the removal of the existing structure and the proposed structure/headwall will not be measured separately for payment but shall be considered INCLUDED in the cost of the Precast Concrete Box Culvert.
3. Backfill behind the proposed Structure/Headwalls will be per Section 207. The backfill material will not be measured separately for payment but shall be considered INCLUDED in the cost of the Precast Concrete Box Culvert.

WELCH CREEK
BUILT 2010
KANE COUNTY
SEC. 01-00267-00-BR
F.A.S. RT. 0110, STA. 311+10.50
STR. NO. 045-3159, LOADING HS-20

NAME PLATE

See Std. 515001



STONE RIPRAP ANCHOR DETAIL

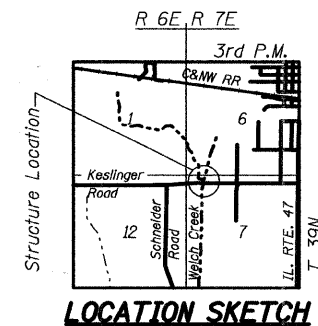
GENERAL NOTES

Reinforcement shall conform to the requirements of Illinois Modified ASTM A706. All exposed edges shall have 3/4" chamfer. This box culvert has a fill height < 2.0 feet. The precast concrete box culvert shall conform to the requirements of AASHTO M273. Precast end sections are not allowed. Remove existing structure including wings and abutments.

WATERWAY INFORMATION

Drainage Area = 2.58 sq. mi. Low Grade Elev. 817.2 @ Sta. 308+82
Max. Recorded H.W.E. = 817.5 (1996)

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	30	676.85	153.03	172.04	813.31	0.02	-0.09	813.33	813.22
Base	100	1028.7	184.89	209.44	814.96	0.02	-0.04	814.98	814.92
Overtopping	1996 Storm	1383	207.47	235.62	815.81	1.64	0.3	817.45	815.84



LOCATION SKETCH

DESIGN LOADING HS20-44

Allow 50 psf for future wearing surface

DESIGN SPECIFICATIONS

2002 AASHTO "Standard Specifications for Highway Bridges" and AASHTO M273 - Precast Reinforced Concrete Box Sections

DESIGN STRESSES

FIELD UNITS

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

PRECAST UNITS

f'c = 5,000 psi (minimum)
fy = 65,000 psi (welded wire fabric)
fy = 60,000 psi (reinforcement bars)

HIGHWAY CLASSIFICATION

Keslinger Road (FAS 0110)
Functional Class: Major Collector (Non-Urban)
ADT: 4,926 (2003), 10,000 (2030)
ADTT: 394 (2003), 800 (2030)
DHW: N/A (2003), 1,000 (2030)
Design Speed: 60 m.p.h.
Posted Speed: 55 m.p.h.

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Stone Riprap, Class A4	Sq. Yd.	87
Filter Fabric	Sq. Yd.	87
Removal of Existing Structures	Each	1
Name Plates	Each	1
Box Culvert End Section	Each	2
Precast Concrete Box Culvert 11' x 11'	Foot	72

INDEX OF SHEETS

- S-1 General Plan
- S-2 End Section Details
- S-3 End Section Details
- S-4 Soil Boring Logs



Andrew E. Underwager

Date: 7/29/2009
License Expires: 11/30/2010

"I certify that to the best of my knowledge, information and belief, this box 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 Specifications for Highway Bridges'."

**GENERAL PLAN
KESLINGER ROAD OVER WELCH CREEK
FAS 0110, SEC. 01-00267-00-BR
KANE COUNTY
STATION 311+10.50
STRUCTURE NO. 045-3159**

SHEET NO. S-1 S-4 SHEETS	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	0110	01-00267-00-BR	KANE	37	18
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		
		CONTRACT NO. 83994			

