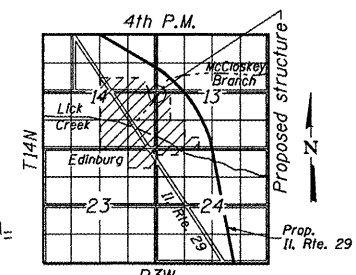


F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
75	84-12: 11-3		729	470
STA. N/A	TO STA. N/A			
FED. ROAD DIST. NO. 5 ILLINOIS FED. AID PROJECT				
SANGAMON AND CHRISTIAN				

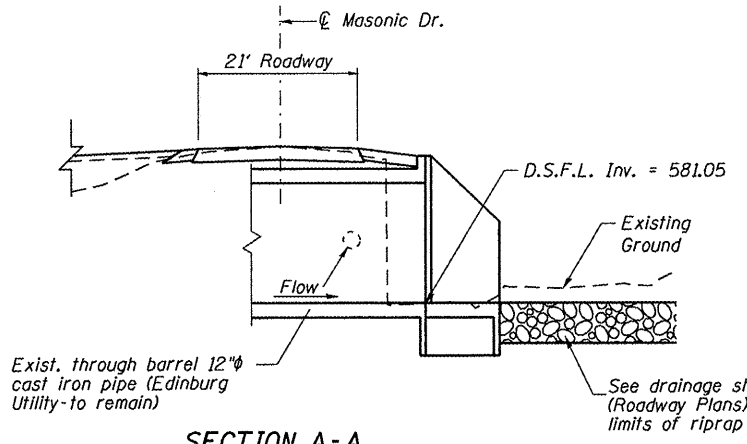
Sheet 1 of 4 Sheets



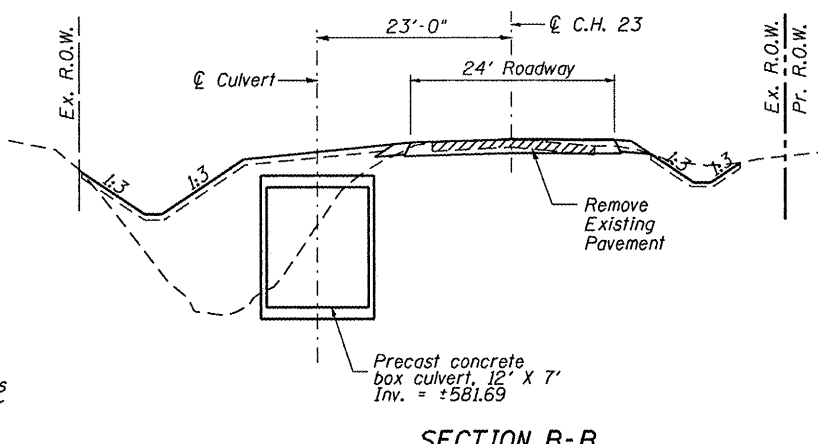
LOCATION SKETCH

**EXISTING STRUCTURES:** 6' W X 8' H RCBC with concrete hdwls. 28' long to be removed. 84" Dia. CMP with concrete hdwls. 82' long to be removed.

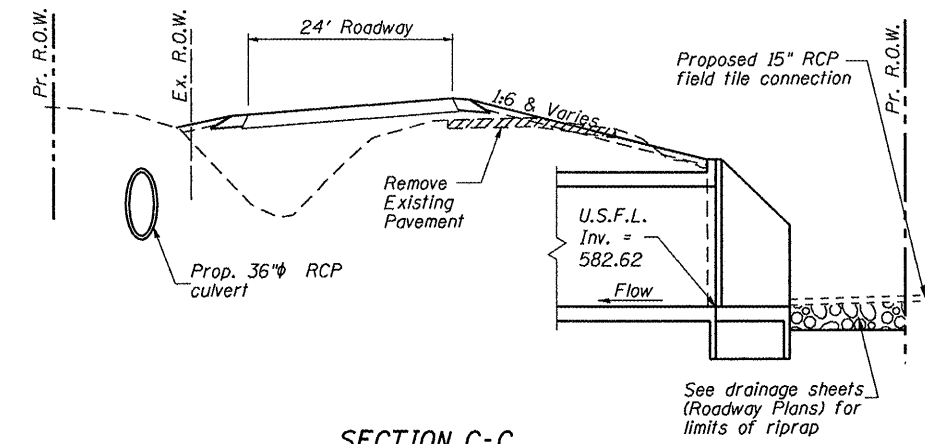
**PROPOSED STRUCTURE:** 12' x 7' Precast Concrete Box Culvert with cast-in-place end sections.



SECTION A-A

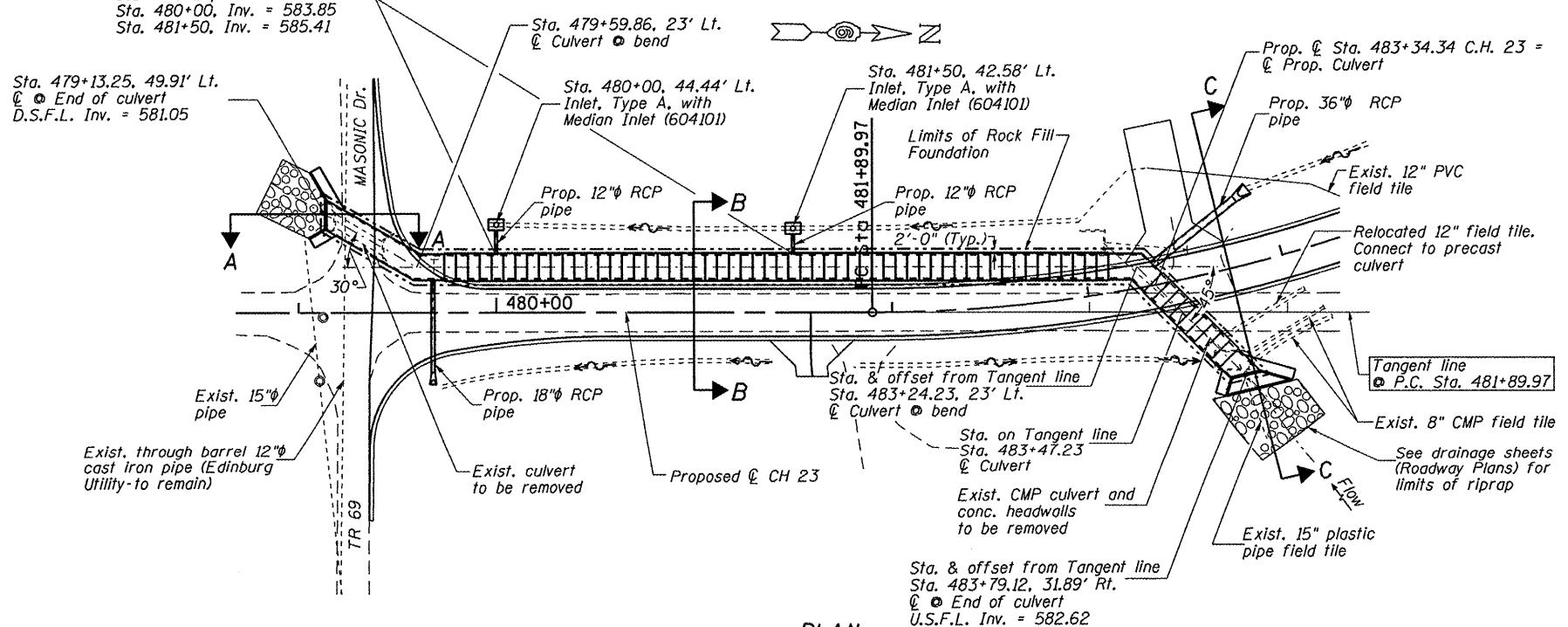


SECTION B-B

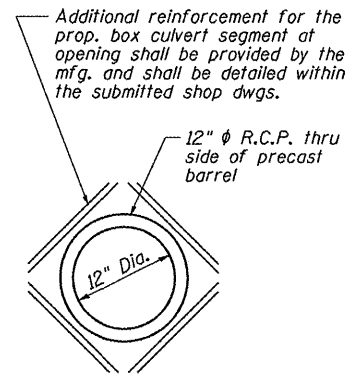


SECTION C-C

18" RCP pipe opening to be cast into 2 precast units  
Sta. 480+00, Inv. = 583.85  
Sta. 481+50, Inv. = 585.41



PLAN



Exp. 11-30-2012  
**LICENSED STRUCTURAL ENGINEER**  
**WILLIAM L. BAILEY, JR.**  
**5087**  
 STATE OF ILLINOIS  
 03-28-2012

**BILL OF MATERIAL**

Item	Unit	Quantity
Porous Granular Embankment	Cu. Yd.	633
Filter Fabric	Sq. Yd.	2,546
Removal of Existing Structures	Each	2
Precast Concrete Box Culvert 12' X 7'	Foot	390
Concrete Box Culverts	Cu. Yd.	159.7
Reinforcement Bars, Epoxy Coated	Pound	230
Reinforcement Bars	Pound	33,200
Rock Fill Foundation	Ton	936
Granular Culvert Backfill	Cu. Yd.	45

**DESIGN SPECIFICATIONS** **LOADING HL-93**

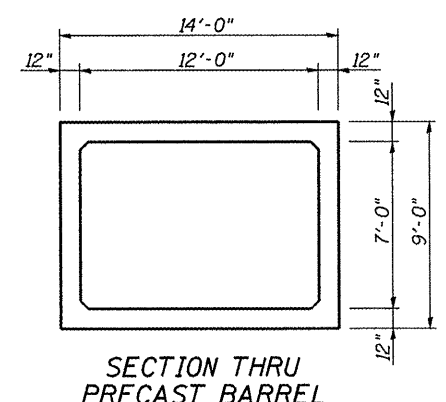
2010 AASHTO LRFD Bridge Design Specifications with 2010 Interim Revisions  
 Allow 50#/sq. ft. for future wearing surface.

**DESIGN STRESSES**

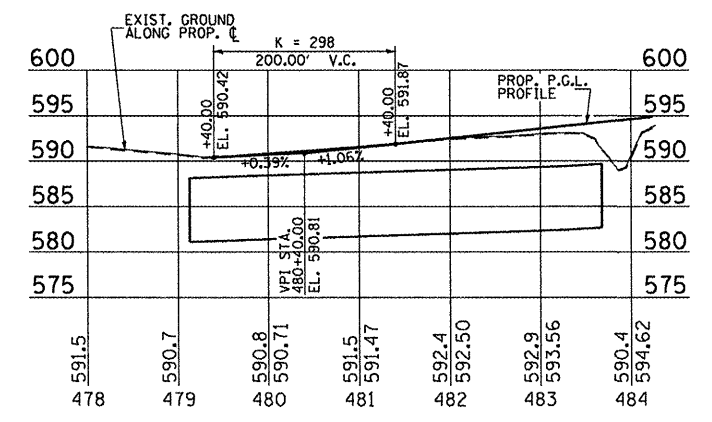
FIELD UNITS	PRECAST UNITS
f'c = 3,500 psi	f'c = 5,000 psi
fy = 60,000 psi	fy = 65,000 psi (W.W.F.)

**WATERWAY INFORMATION**

Drainage Area = 3.25 sq. mi.		Ex. Low Grade El. = 592.25 ft. @ Sta. 482+00 (CH23)		Pr. Low Grade El. = 592.41 ft. @ Sta. 482+00 (CH23)		
Flood	Freq. Yr.	0 C.F.S.	Opening Sq. Ft. Exist. Prop.	Nat. H.W.E.	Head - Ft. Exist. Prop. Exist. Prop.	Headwater El. Exist. Prop.
Design	30	451.07	38.5 84.0	590.55	2.44 0.73	592.99 591.28
Base	100	637.91	38.5 84.0	590.78	2.48 2.09	593.26 592.87
Overtopping						
Max. Calc.	500	863.07	38.5 84.0	591.56	1.84 1.84	593.47 593.40



SECTION THRU PRECAST BARREL



ROADWAY PROFILE

**NOTES:**

- The Precast Culvert shall be designed in accordance with ASTM C1577.
- Reinforcement bars shall conform to the requirements of the ASTM A706, Grade 60.
- It shall be the responsibility of the contractor to divert the stream flow in order to keep the construction area free of water. The method of water diversion shall be subject to the approval of the Engineer and the cost shall be included in the item "Precast Concrete Box Culverts 12' x 7'."
- Precast end sections will not be allowed.
- All construction joints shall be bonded.
- Limits of Removal and Replacement of weak soils with Rock Fill Foundation will be determined by the Engineer.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**BOX CULVERT**  
**GENERAL PLAN**  
**PROPOSED STRUCTURE NO. 011-7052**  
**STA. 483+34.34**  
 SCALE: NONE  
 DATE: 03/06/2012  
 DRAWN BY: GLD  
 CHECKED BY: WLB