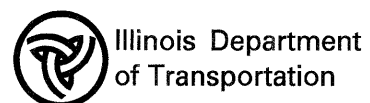


Bench Mark:

**Existing Structure:**

The existing structure is a 6'x6' concrete box culvert. The existing structure is to be removed and replaced. Traffic is to be maintained on the existing roadway during construction by staging the construction.

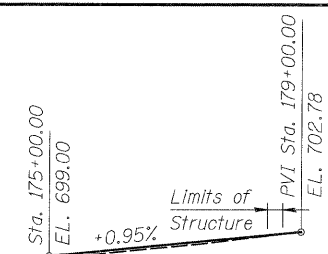
No salvage.



\* Dimension measured perpendicular to roadway  
 \*\* Temporary Concrete Barrier. See Roadway Plans for location.

**INDEX OF SHEETS**

- S5 - General Plan & Elevation
- S6 - Culvert Details I
- S7 - Culvert Details II
- S8 - Soil Borings



**PROFILE GRADE - IL RT. 53**

**GENERAL NOTES**

1. The Precast Concrete Box Culvert 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 AASHTO M-31, M-322, Grade 60. The cost of reinforcement is included with "Box Culvert End Sections".
3. Work this sheet with S6 & S7 for details of Cast-In-Place Sections.
4. All exposed concrete edges shall be chamfered 3/4" unless otherwise noted.

**DESIGN SPECIFICATIONS**

2002 AASHTO Standard Specifications for Highway Bridges

**LOADING HS20-44**

Allowance for Future Wearing Surface=50 lb/ft<sup>2</sup>

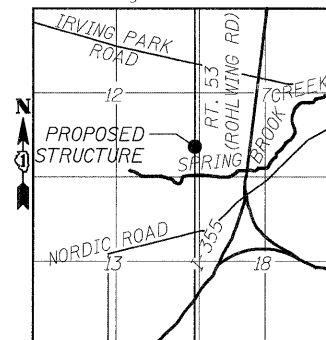
**DESIGN STRESSES**

- Precast Units**  
 f'c=5,000 psi  
 fy=65,000 psi (welded wire fabric)
- Field Units**  
 f'c=3,500 psi  
 fy=60,000 psi (Reinf.)  
 fy=65,000 psi (welded wire fabric)

**SEISMIC DATA**

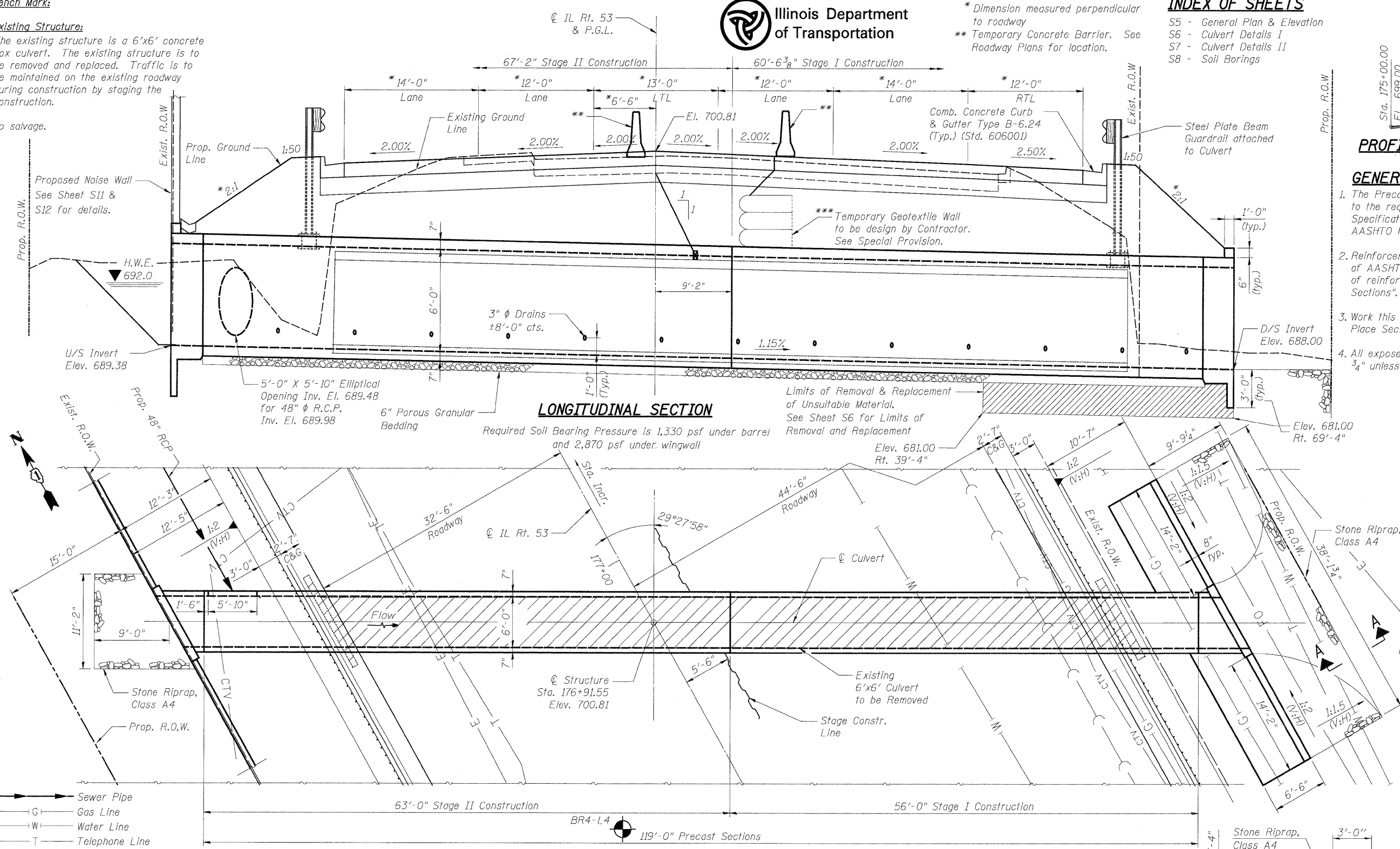
Seismic Performance Category (SPC)=A  
 Bedrock Acceleration Coefficient (A)=0.035g  
 Site Coefficient (S)=1.0

Range 10E - 3rd. PM



**LOCATION SKETCH**

**6' X 6' BOX CULVERT GP&E**  
**ILLINOIS ROUTE 53**  
**FAU 2578 SECTION 532B-1**  
**DUPAGE COUNTY STATION 176+91.55**



**LONGITUDINAL SECTION**

Required Soil Bearing Pressure is 1,330 psf under barrel and 2,870 psf under wingwall

Limits of Removal & Replacement of Unsuitable Material. See Sheet S6 for Limits of Removal and Replacement

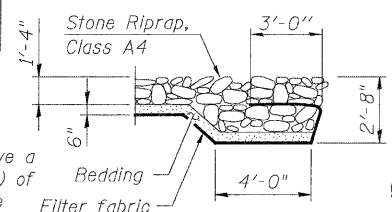
**PLAN**

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Removal And Disposal Of Unsuitable Material	Cu Yd	165
Stone Riprap, Class A4	Sq Yd	58
Filter Fabric	Sq Yd	58
Temporary Sheet Piling	Sq Ft	584
Box Culvert End Sections	Cu Yd	22.7
Precast Concrete Box Culvert 6' X 6'	Foot	119.0
Box Culvert Removal	Foot	96.0
Rock Fill	Cu Yd	165
Geotextile Retaining Wall	Sq Ft	39

\*\*\* The geotextile soil reinforcement shall have a minimum allowable tensile strength (T min.) of 36 lb./in. as determined by the procedure described in the Special Provision. The computations supporting the determination of T min. shall be submitted to the engineer for approval.

**SECTION A-A**



**WATERWAY INFORMATION TABLE**

Proposed Low Grade Elev. = 696.2 @ Sta. 172+00  
 Existing Low Grade Elev. = 696.1 @ Sta. 172+00

Flood	Freq. Yr.	Q (C.F.S.)	Opening (Sq. Ft.)		Nat. H.W.E.	Head (Ft.)		Headwater Elev.		
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.	
Design	10	65	16	16	692.0	0.0	0.0	692.0	692.0	
Base	50	94	19	18	692.4	0.2	0.3	692.6	692.7	
Overtop Exist	100	102	19	19	692.5	0.3	0.4	692.8	692.9	
Overtop Prop	Ex. & Pr. 500+ years									
Max. Calc.	500	134	21	20	692.8	0.7	0.8	693.5	693.6	

**LEGEND**

- DESIGNED - A. Durbak
- CHECKED - R. DiGiulio
- DRAWN - A. Durbak
- CHECKED - R. DiGiulio

SHEET NO.	F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S5 OF S25	2578	532B	DUPAGE	781	584
12/3/2010			ILLINOIS FED. AID PROJECT		
CONTRACT NO. 60477					