

EXISTING STRUCTURE: THE EXISTING STRUCTURE CONSISTS OF A 90" CMP CULVERT. THE EXISTING STRUCTURE SHALL BE REMOVED AND REPLACED WITH A PRECAST SINGLE BARREL 9'x6' BOX CULVERT UTILIZING STAGED ROAD CLOSURES.

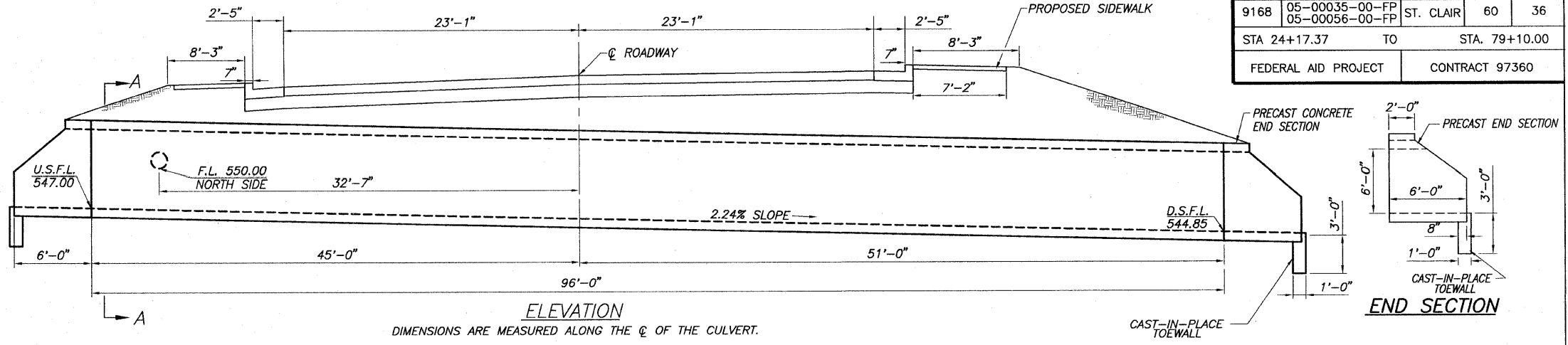
**GENERAL NOTES**

THIS BOX CULVERT HAS A FILL HEIGHT OF 5'-8". THE PRECAST BOX CULVERT SHALL BE DESIGNED IN ACCORDANCE WITH AASHTO M 259 EXCEPT THAT THE AGGREGATE SHALL CONFORM TO THE REQUIREMENTS OF ARTICLE 1003.02 AND 1004.02 OF THE STANDARD SPECIFICATIONS WITH EXCEPTION OF "GRADATION."

THE LAYOUT OF SLOPE PROTECTION MAY BE VARIED IN THE FIELD TO SUIT GROUND CONDITIONS AS DIRECTED BY THE ENGINEER.

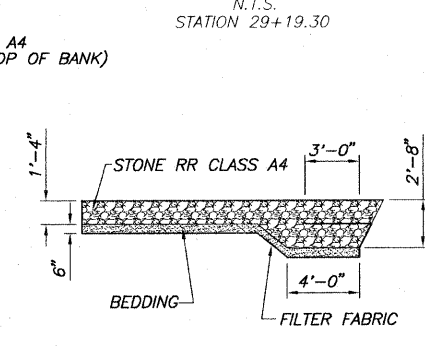
THE CAST-IN-PLACE TOEWALL WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST FOR "BOX CULVERTS END SECTION". APPROXIMATELY 1.8 CU. YD. OF CONCRETE WILL BE NEEDED.

F.A.U. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
9168	05-00035-00-FP 05-00056-00-FP	ST. CLAIR	60	36
STA 24+17.37 TO		STA. 79+10.00		
FEDERAL AID PROJECT			CONTRACT 97360	



**ELEVATION**  
DIMENSIONS ARE MEASURED ALONG THE  $\phi$  OF THE CULVERT.

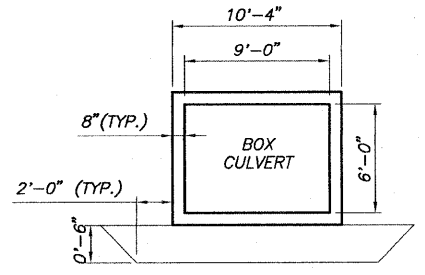
**BOX CULVERT DETAIL**



**SECTION A'-A'**

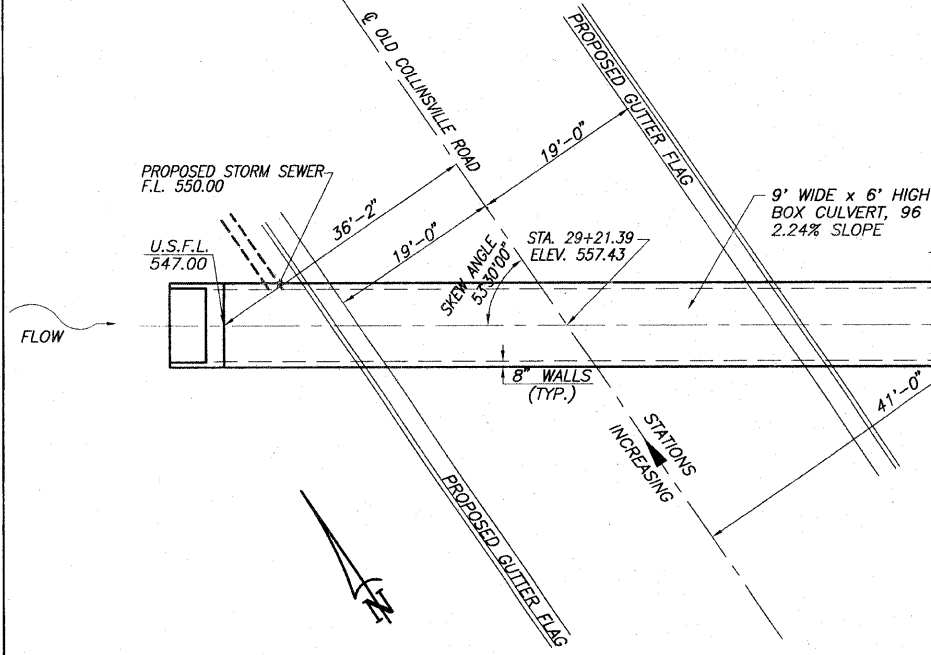
**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
REMOVAL OF EXISTING STRUCTURES	EACH	1
CHANNEL EXCAVATION	CU. YD.	88
STRUCTURE EXCAVATION	CU. YD.	471
BOX CULVERT END SECTIONS	EACH	2
PRECAST CONCRETE BOX CULVERT 9'x6'	FOOT	96
STONE RIPRAP CLASS A4	SQ. YD.	45
FILTER FABRIC FOR USE WITH RIPRAP	SQ. YD.	45
POROUS GRANULAR EMBANKMENT	CU. YD.	29



**SECTION THRU BARREL**

REMOVE UNSUITABLE SOIL BELOW BOTTOM OF CULVERT TO ELEV. 543.54 AND 2 FT. OUTSIDE THE FOOTPRINT OF THE BOX. COST SHALL BE INCLUDED IN THE COST OF "CHANNEL EXCAVATION". REPLACE WITH CA-7 OR CA-11 "POROUS GRANULAR EMBANKMENT."

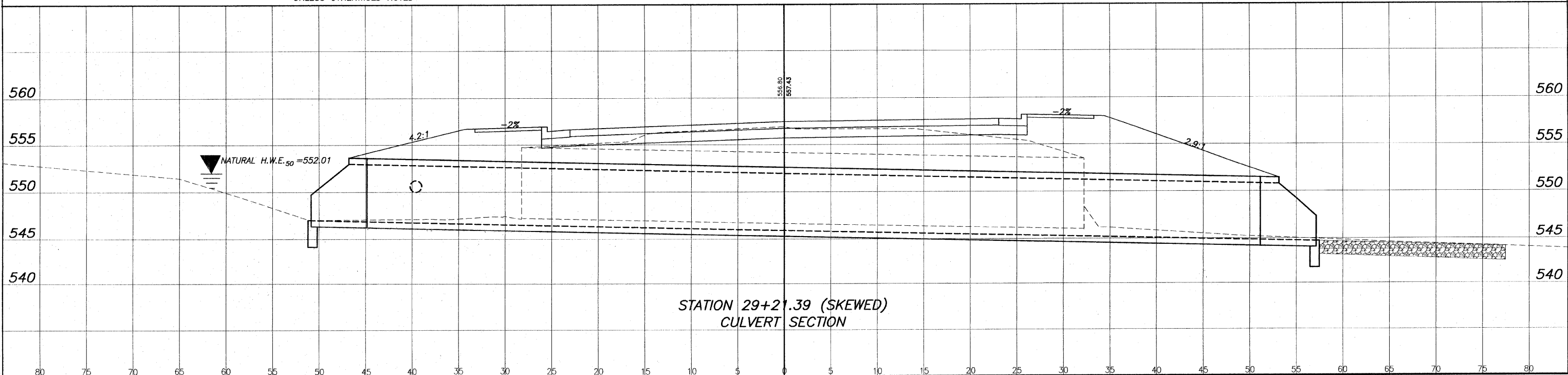


**PLAN**

N.T.S.  
DIMENSIONS ARE GIVEN AT RT. ANGLES TO THE  $\phi$  RDWY. UNLESS OTHERWISE NOTED

**WATER INFORMATION TABLE**

DRAINAGE AREA = 0.60 SQ. MI.		EXISTING LOW GRADE ELEVATION = 554.04 FT. @ STA. 30+28.90 PROPOSED LOW GRADE ELEVATION = 554.20 FT. @ STA. 30+34.16							
FLOOD YEAR	FREQUENCY	DISCHARGE (CFS)	WATERWAY OPENING (SQ. FT.)		NATURAL H.W.E.	HEAD (FT.)		HEADWATER ELEV.	
			EXISTING	PROPOSED		EXISTING	PROPOSED	EXISTING	PROPOSED
DESIGN	50	480	31.0	45.1	552.01	4.35	2.12	556.36	554.13
BASE	100	555	33.4	48.2	552.36	5.40	3.10	557.76	555.46



**STATION 29+21.39 (SKEWED) CULVERT SECTION**