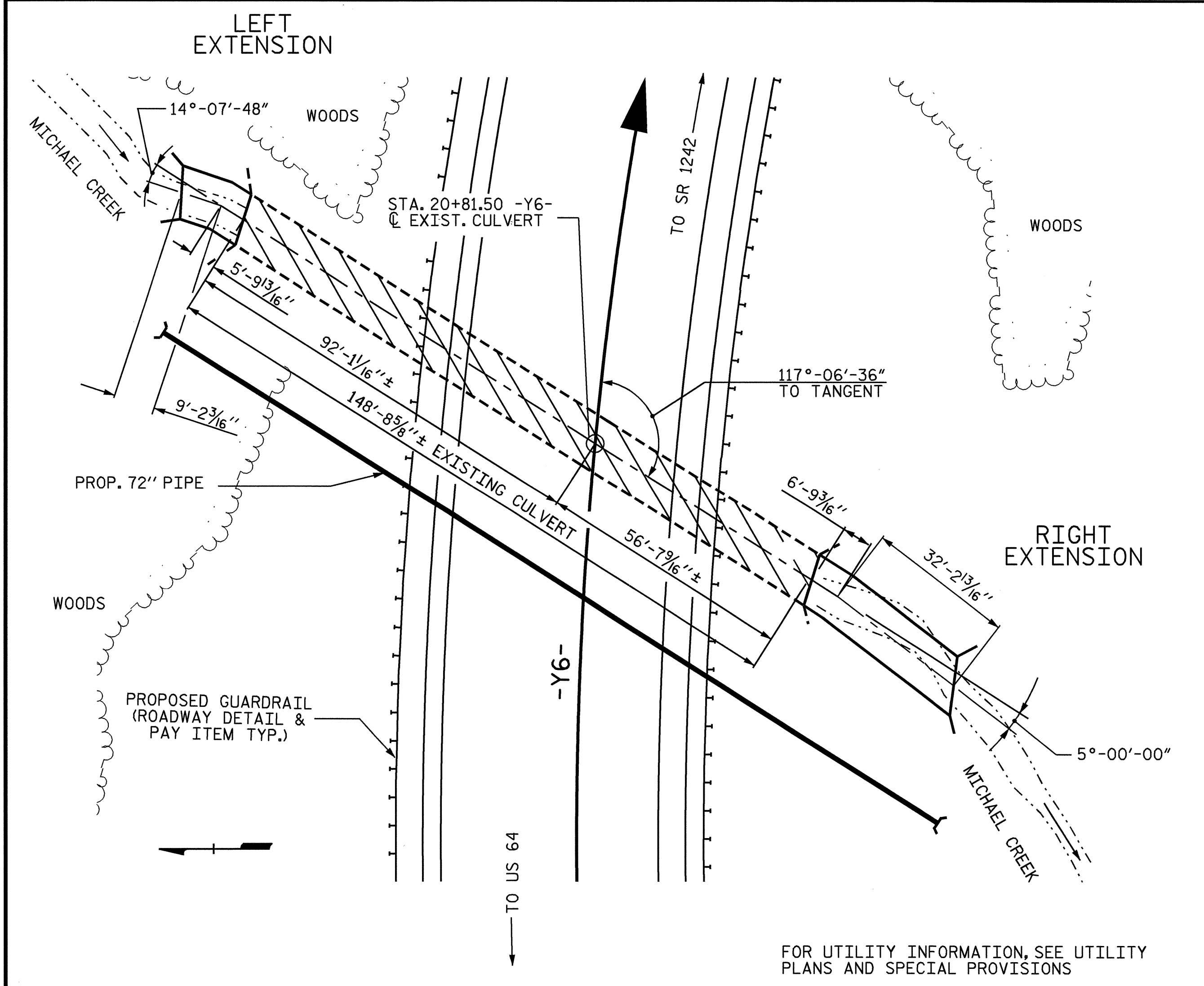


BM: NCGS MONUMENT "ROYAL" BY1 STA. 11+00.38 58.63 FT. LEFT, ELEV. 763.83

F. A. PROJECT NO. STP-BRSTP-29(31)



LOCATION SKETCH

HYDRAULIC DATA

DESIGN DISCHARGE	= 1100 C.F.S.
FREQUENCY OF DESIGN FLOOD	= 25 YRS.
DESIGN HIGH WATER ELEVATION	= 720.4
DRAINAGE AREA	= 1.04 Sq.Mi.
BASIC DISCHARGE (Q100)	= 1400 C.F.S.
BASIC HIGH WATER ELEVATION	= 724.0

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 3700 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	= 500 YRS. +
OVERTOPPING FLOOD ELEVATION	= 746.0

NOTES

ASSUMED LIVE LOAD ----- HS20 OR ALTERNATE LOADING.  
DESIGN FILL----- 8.12' LEFT EXT. & 11.74' RIGHT EXT.  
FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE SHEET.  
3" Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

CONCRETE IN CULVERTS TO BE POURED IN THE FOLLOWING ORDER:

1. WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF ALL VERTICAL WALLS.
2. THE REMAINING PORTIONS OF THE WALLS AND WINGS FULL HEIGHT FOLLOWED BY ROOF SLAB AND HEADWALLS.

THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF CULVERT BEFORE STAKING IT OUT MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL

DIMENSIONS FOR WING LAYOUT AS WELL AS ADDITIONAL REINFORCING STEEL EMBEDDED IN THE BARREL ARE SHOWN ON THE WING SHEET.

AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF THE EXTERIOR WALL ABOVE LOWER WALL COSTRUCTION JOINT. THE SPLICE LENGTH SHALL BE AS PROVIDED IN THE SPLICE LENGTH CHART SHOWN ON THE PLANS. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.

IF APPROVED BY THE ENGINEER, THE CONTRACTOR MAY USE THE EXISTING WINGS AS TEMPORARY SHORING FOR THE CONSTRUCTION OF THE CULVERT EXTENSIONS. IN THIS CASE, THE BOTTOM SLAB OF THE EXTENSION SHALL BE POURED AT LEAST 72 HOURS PRIOR TO CUTTING THE WINGS. THE WINGS MAY BE CUT EARLIER PROVIDED THE SLAB CONCRETE STRENGTH HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI.

DOWELS SHALL BE USED TO CONNECT THE CULVERT EXTENSION TO THE EXISTING CULVERT AS SHOWN. FOR NOTE REGARDING SETTING OF DOWELS, SEE SHEET SN.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS.

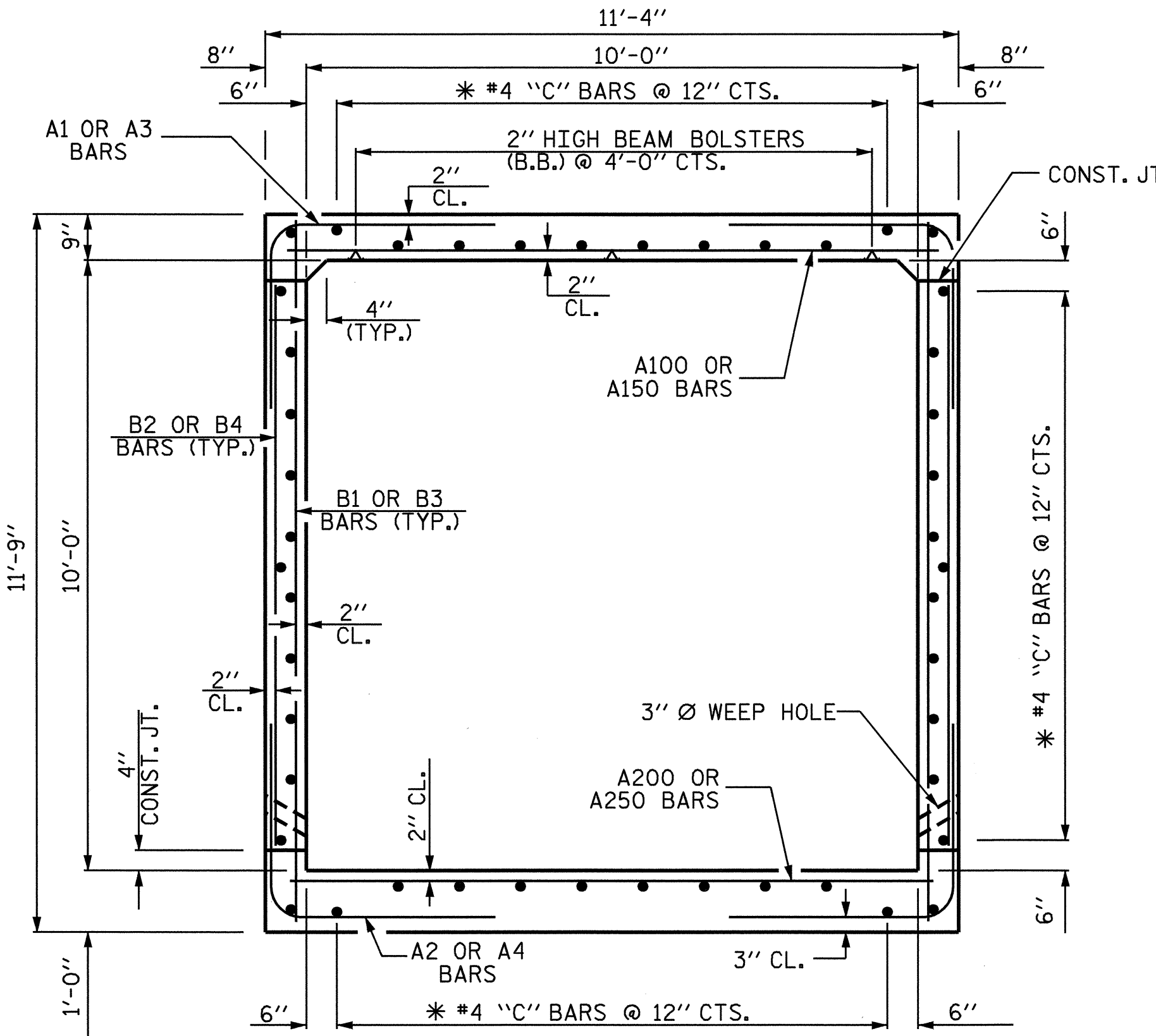
FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.

A 3 FOOT STRIP OF FILTER FABRIC SHALL BE ATTACHED TO THE FILL FACE OF THE WING COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINT.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

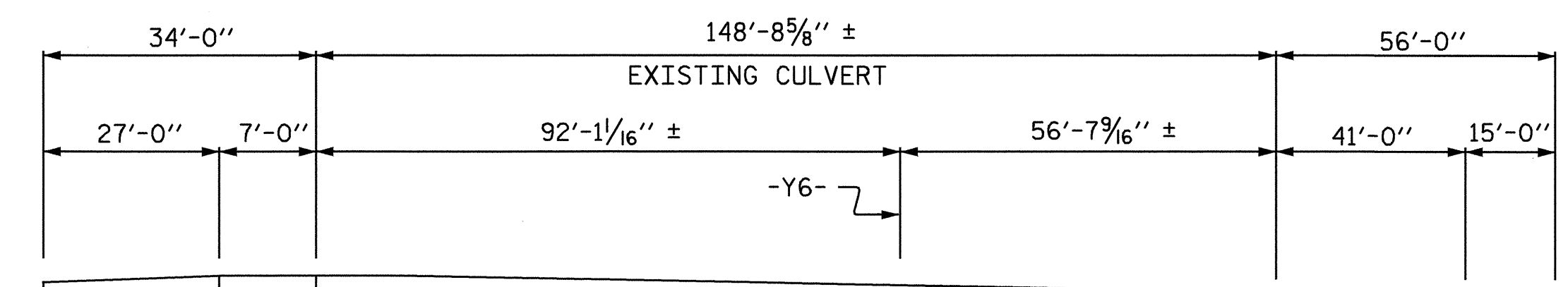
FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

AT THE CONTRACTOR'S OPTION HE MAY SUBMIT, TO THE ENGINEER FOR APPROVAL, DESIGN AND DETAIL DRAWINGS FOR A PRECAST REINFORCED CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE CULVERT SHOWN ON THE PLANS. THE DESIGN SHALL PROVIDE THE SAME SIZE AND NUMBER OF BARRELS AS USED ON THE CAST-IN-PLACE DESIGN. FOR OPTIONAL PRECAST REINFORCED CONCRETE BOX CULVERT, SEE SPECIAL PROVISIONS.



RIGHT ANGLE SECTION OF BARREL

THERE ARE 46 "C" BARS IN SECTION OF BARREL  
\* - "C" BARS SHALL BE FIELD BENT AS NECESSARY



PROFILE ALONG CULVERT

TOTAL STRUCTURE QUANTITIES		
LEFT EXTENSION	RIGHT EXTENSION	TOTAL
CLASS A CONCRETE BARREL @ 1.233 CY/FT 18.5 C.Y. WINGS ETC. 18.3 C.Y. TOTAL 36.8 C.Y.	CLASS A CONCRETE BARREL @ 1.233 CY/FT 48.1 C.Y. WINGS ETC. 20.1 C.Y. TOTAL 68.2 C.Y.	CLASS A CONCRETE BARREL @ 1.233 CY/FT 66.6 C.Y. WINGS ETC. 38.4 C.Y. TOTAL 105.0 C.Y.
REINFORCING STEEL BARREL 3380 LBS. WINGS ETC. 1235 LBS. TOTAL 4615 LBS.	REINFORCING STEEL BARREL 7618 LBS. WINGS ETC. 1392 LBS. TOTAL 9010 LBS.	REINFORCING STEEL BARREL 10998 LBS. WINGS ETC. 2627 LBS. TOTAL 13625 LBS.
CULVERT EXCAVATION _____ LUMP SUM	CULVERT EXCAVATION _____ LUMP SUM	CULVERT EXCAVATION _____ LUMP SUM
FOUNDATION CONDITIONING MATERIAL _____ 12 TONS	FOUNDATION CONDITIONING MATERIAL _____ 31 TONS	FOUNDATION CONDITIONING MATERIAL TOTAL _____ 43 TONS

PROJECT NO. B-3157  
DAVIDSON COUNTY  
STATION: 20+81.50-Y6-

SHEET 1 OF 8



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
SINGLE 10 FT. X 10 FT.  
CONCRETE BOX CULVERT  
LEFT AND RIGHT EXTENSIONS

AUGUST 1989		SHEET NO. C-12	
REVISIONS			
NO.	BY:	DATE:	NO.
1			3
2			4
TOTAL SHEETS 19			

STR. #4 STD. NO. CB221A

REVISED 11-13-91 BY E.L.R. CHECKED BY G.R.P.  
ADDED 8-22-89

ASSEMBLED BY : M.D.PISO DATE : 7/03	SPECIAL
CHECKED BY : D.CRUTCHER DATE : 7/03	
DRAWN BY : R. WRIGHT DATE : AUG. 1989	STANDARD
CHECKED BY : C.R.K. DATE : AUG. 1989	