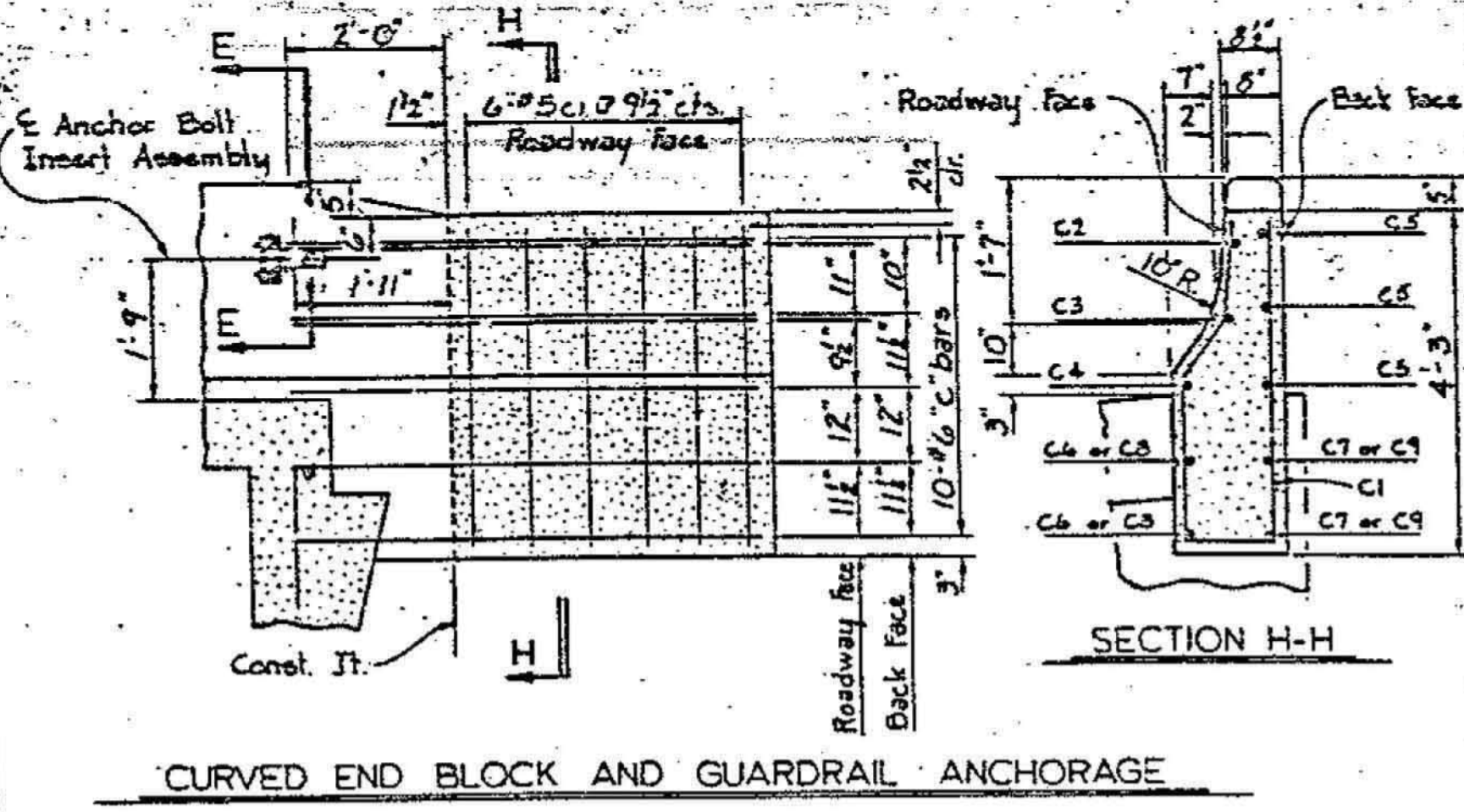
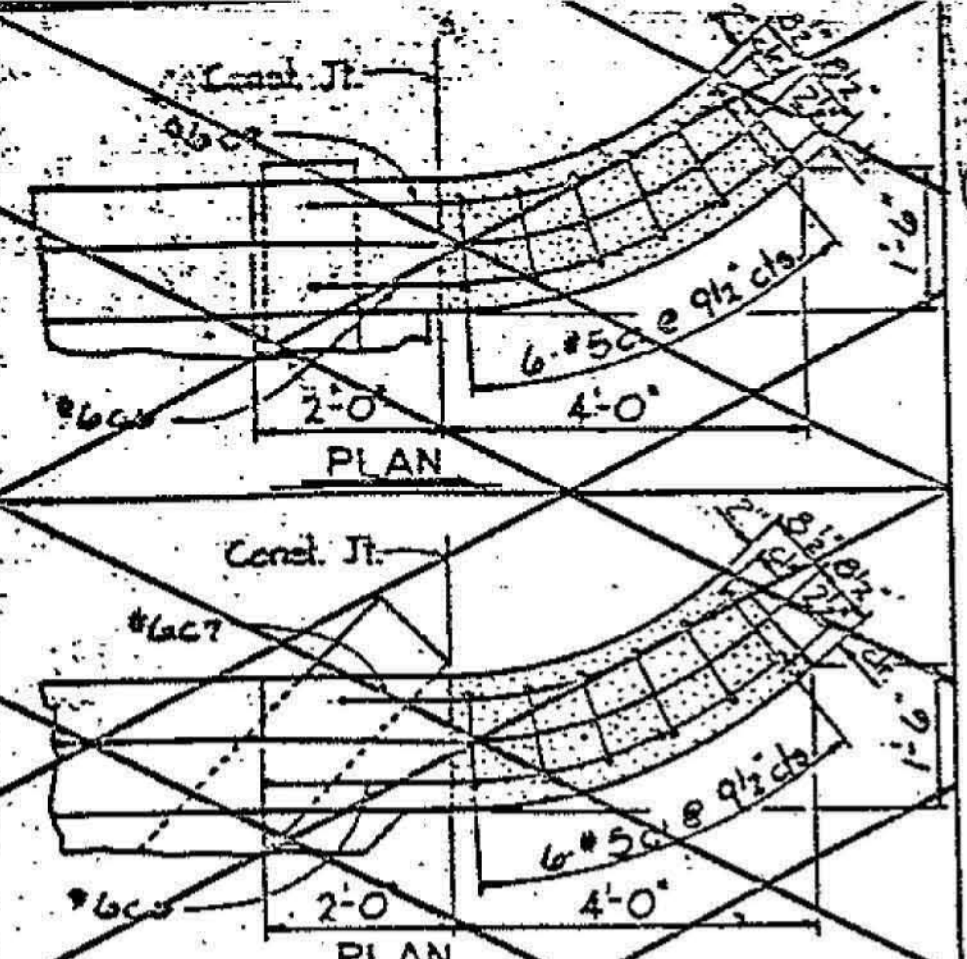
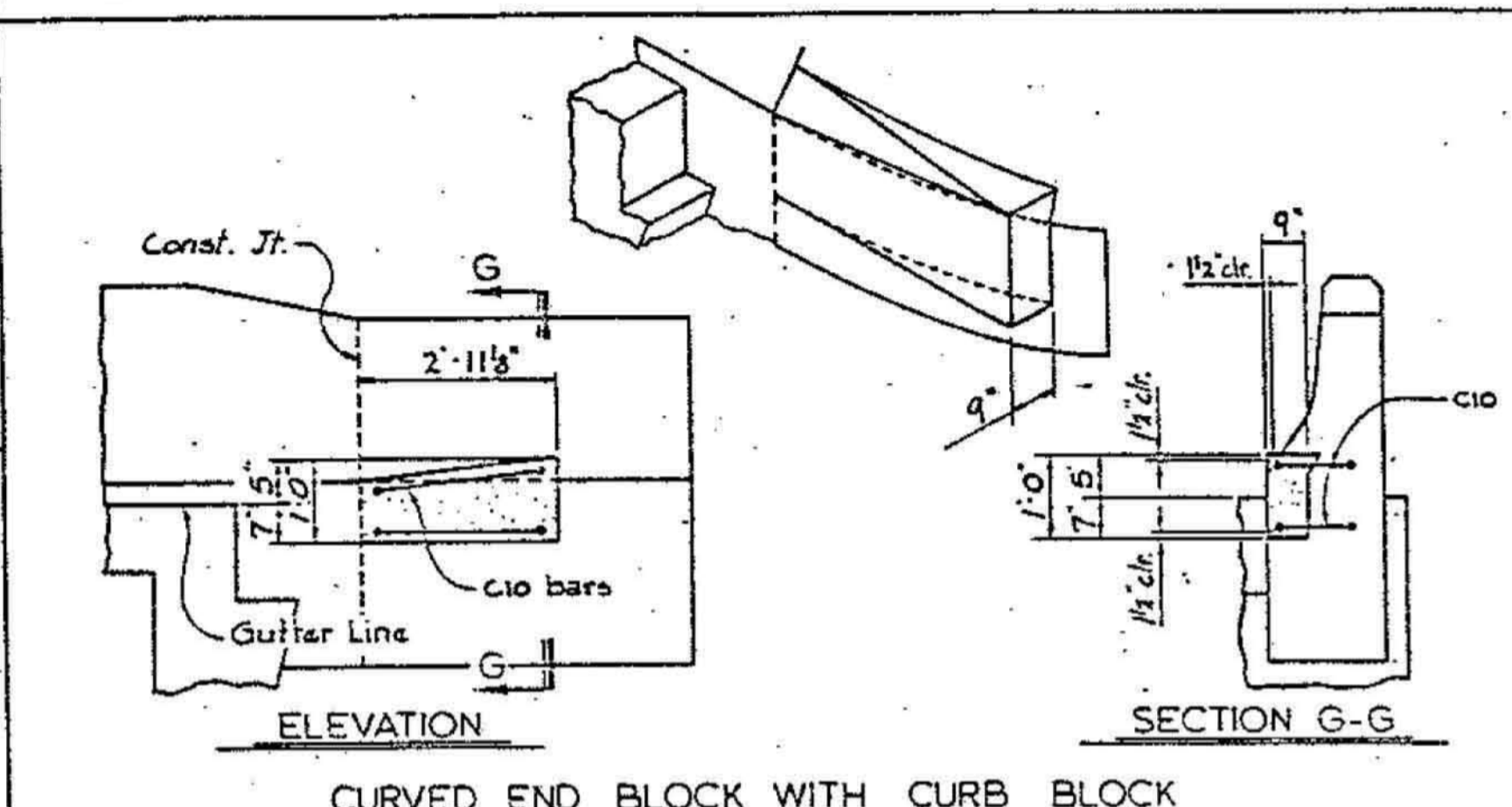
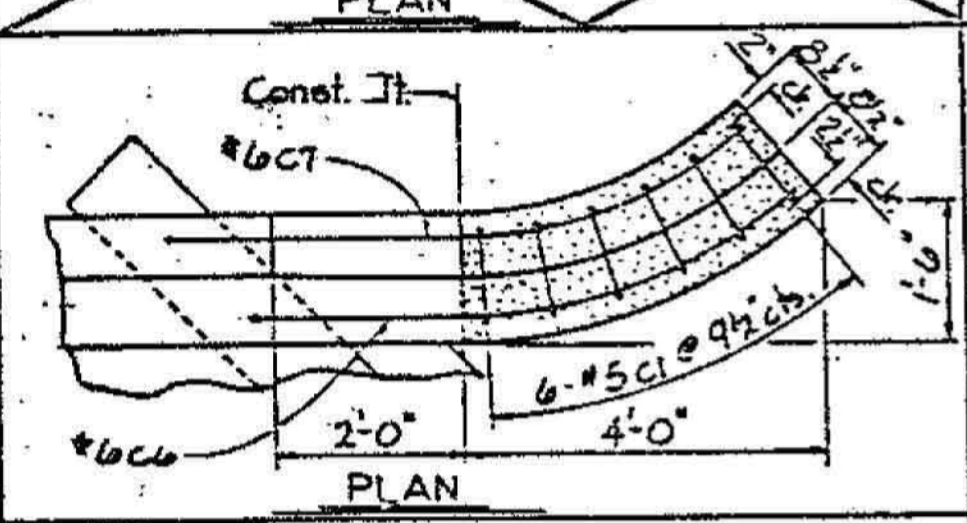


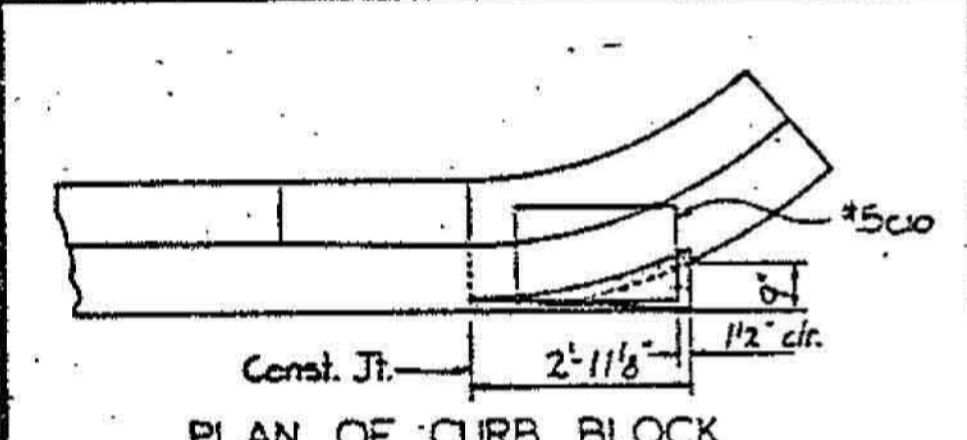
REVISED 10-22-80 BY: JMB, VBY: JF  
 REVISED 10-1-79 BY: JMB, VBY: JF  
 REVISED 4-8-77 BY: JMB, VBY: JF  
 REVISED 7-27-73 BY: JMB, VBY: JF  
 REVISED 1-19-82 BY: ERL, VBY: B.S.C.  
 REVISED 3-15-82 BY: ERL, VBY: B.S.C.  
 REVISED 10-22-82 BY: ERL, VBY: B.S.C.  
 REVISED 10-24-83 BY: ERL, VBY: B.S.C.



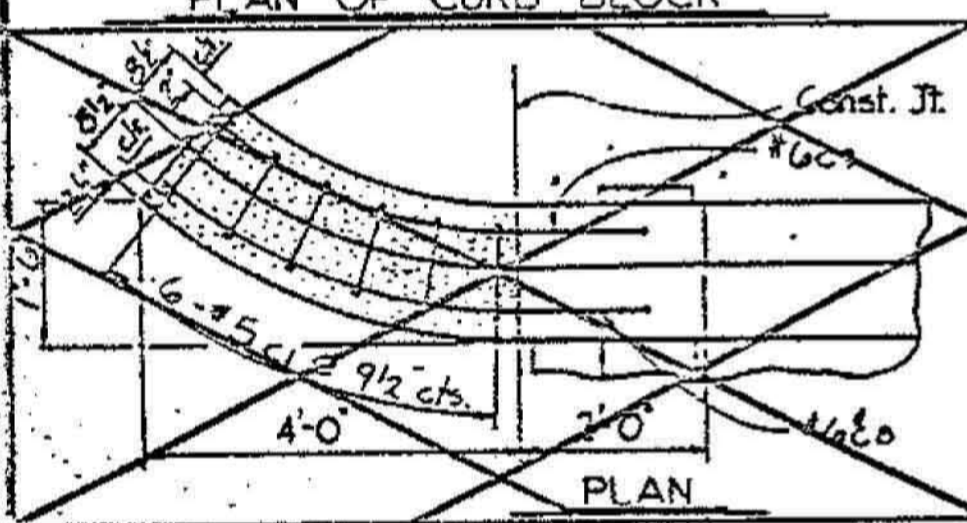
CURVED END BLOCK AND GUARDRAIL ANCHORAGE



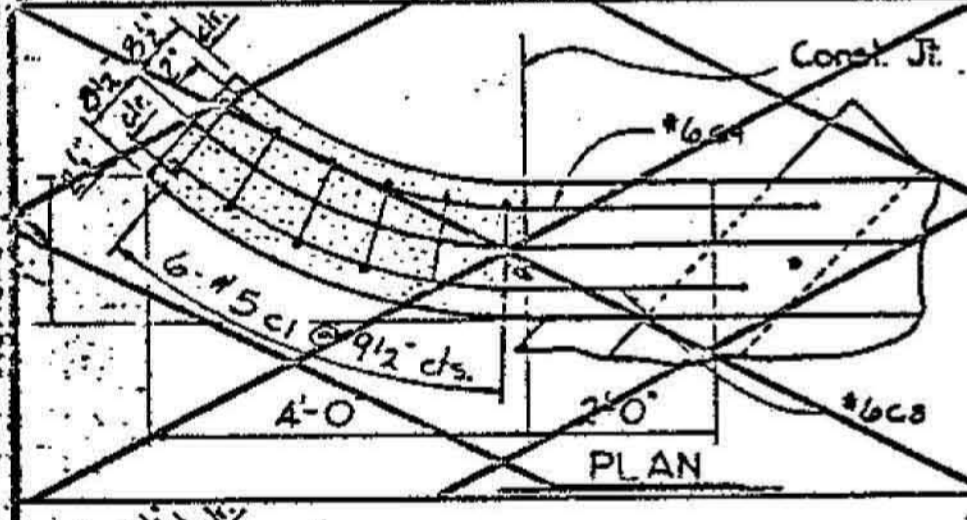
CURVED END BLOCK WITH CURB BLOCK



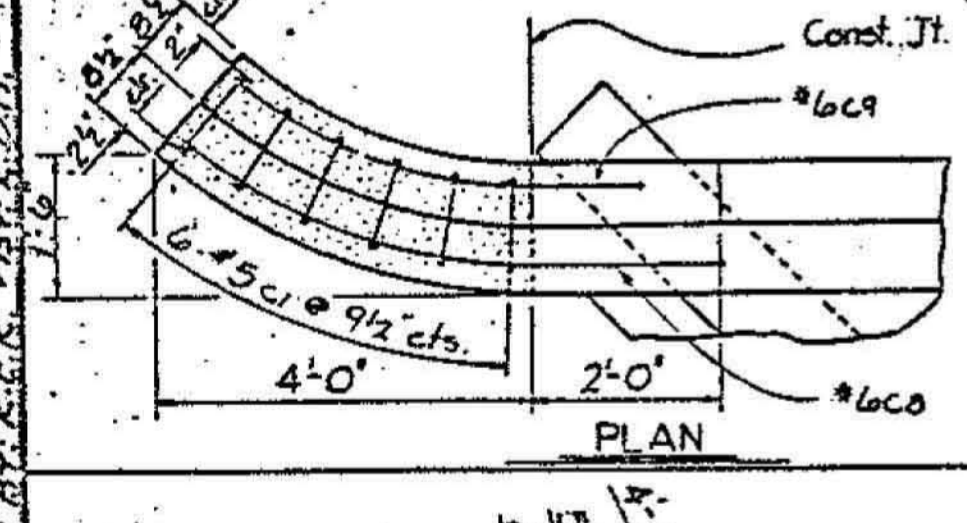
PLAN OF CURB BLOCK



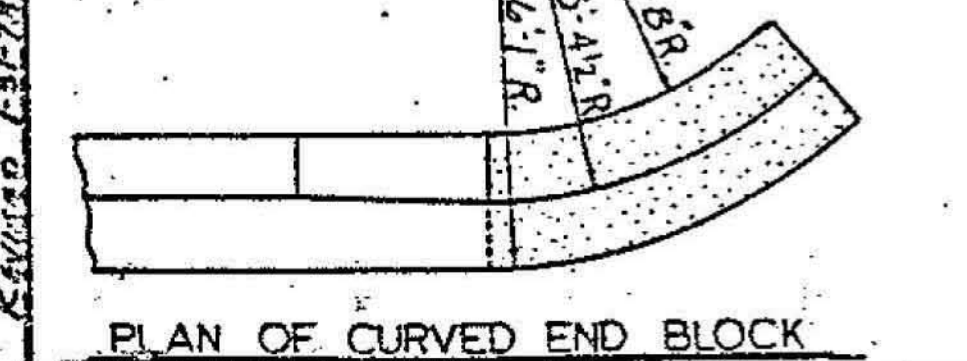
PLAN



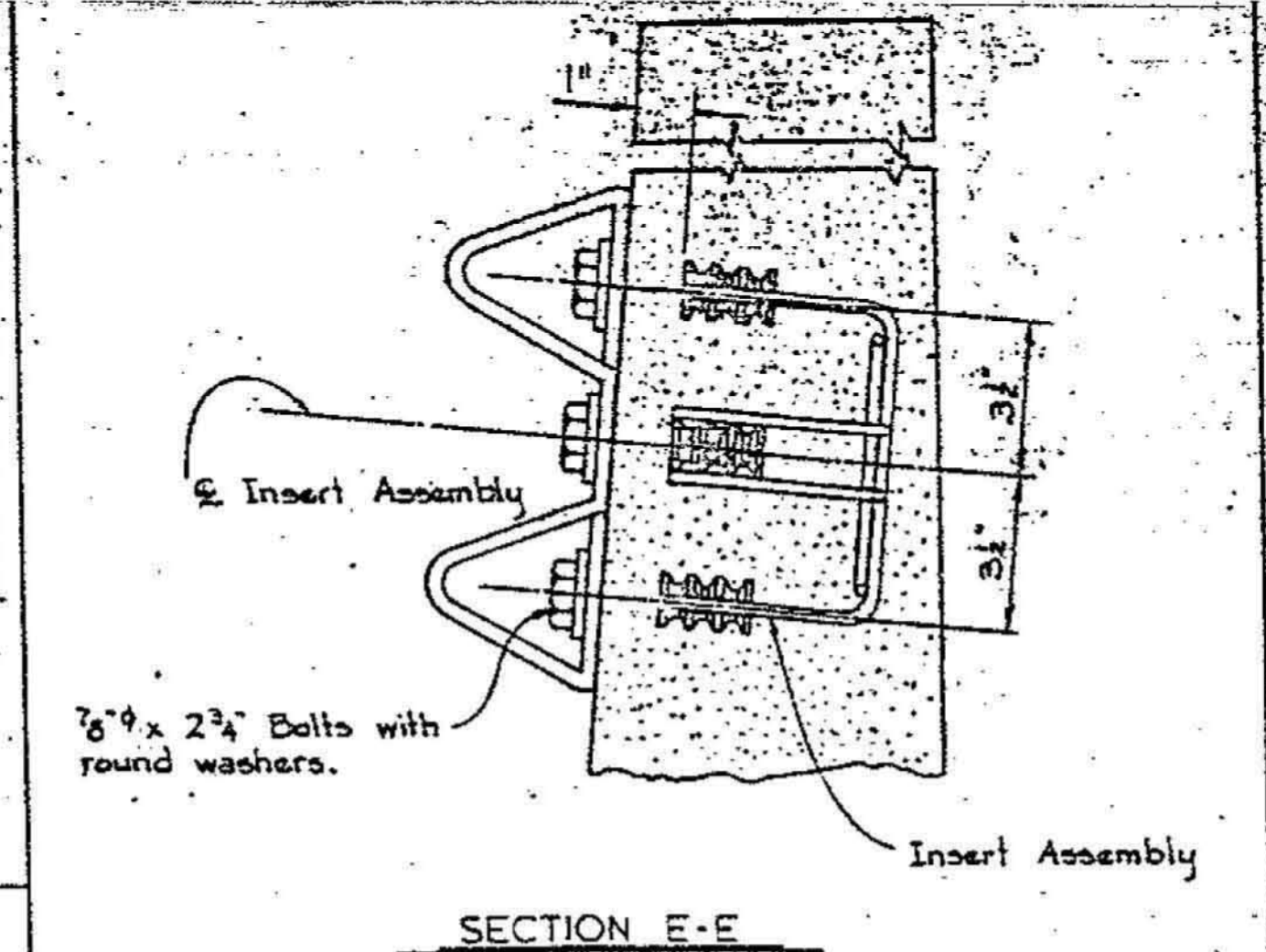
PLAN



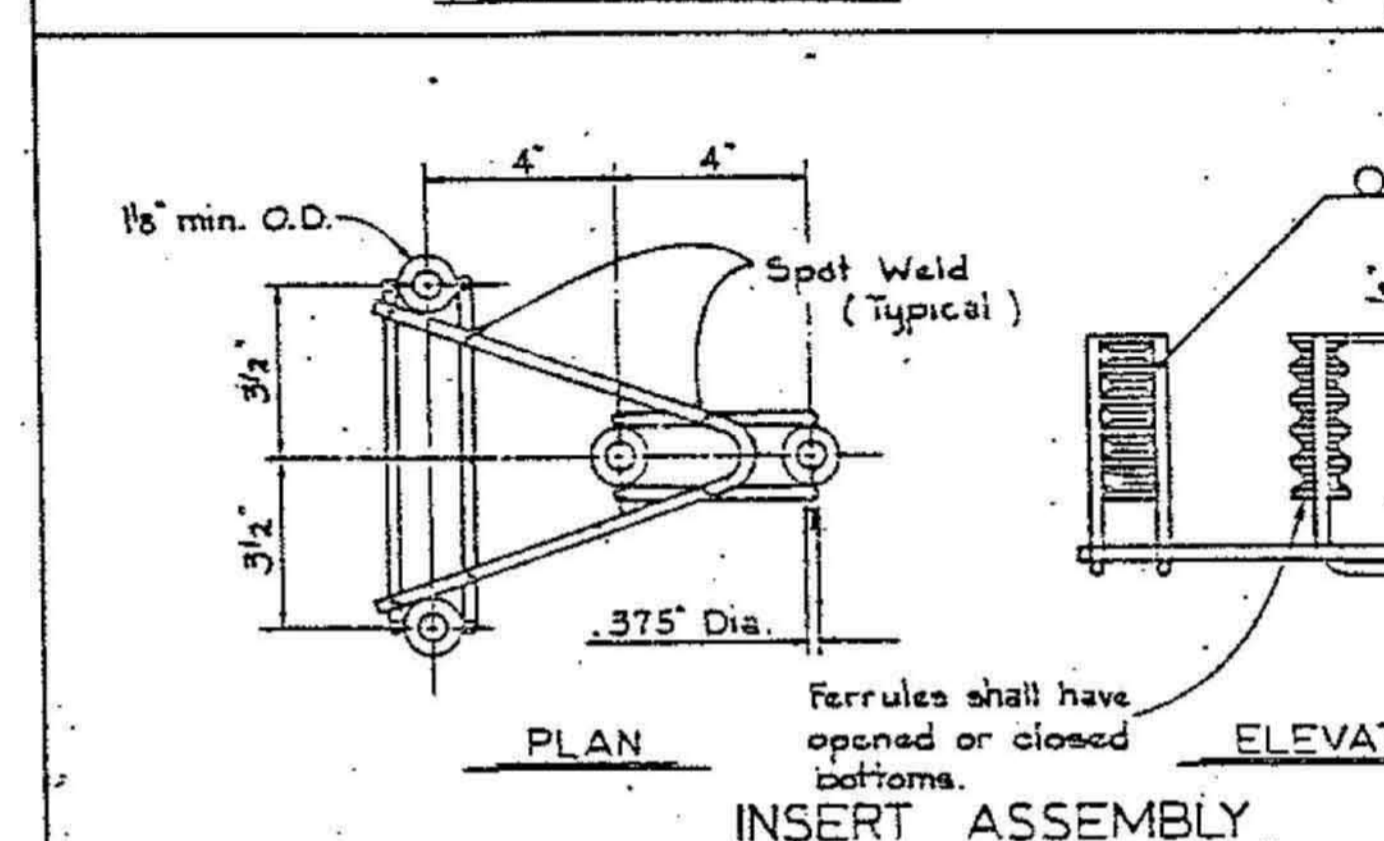
PLAN



PLAN OF CURVED END BLOCK



SECTION E-E

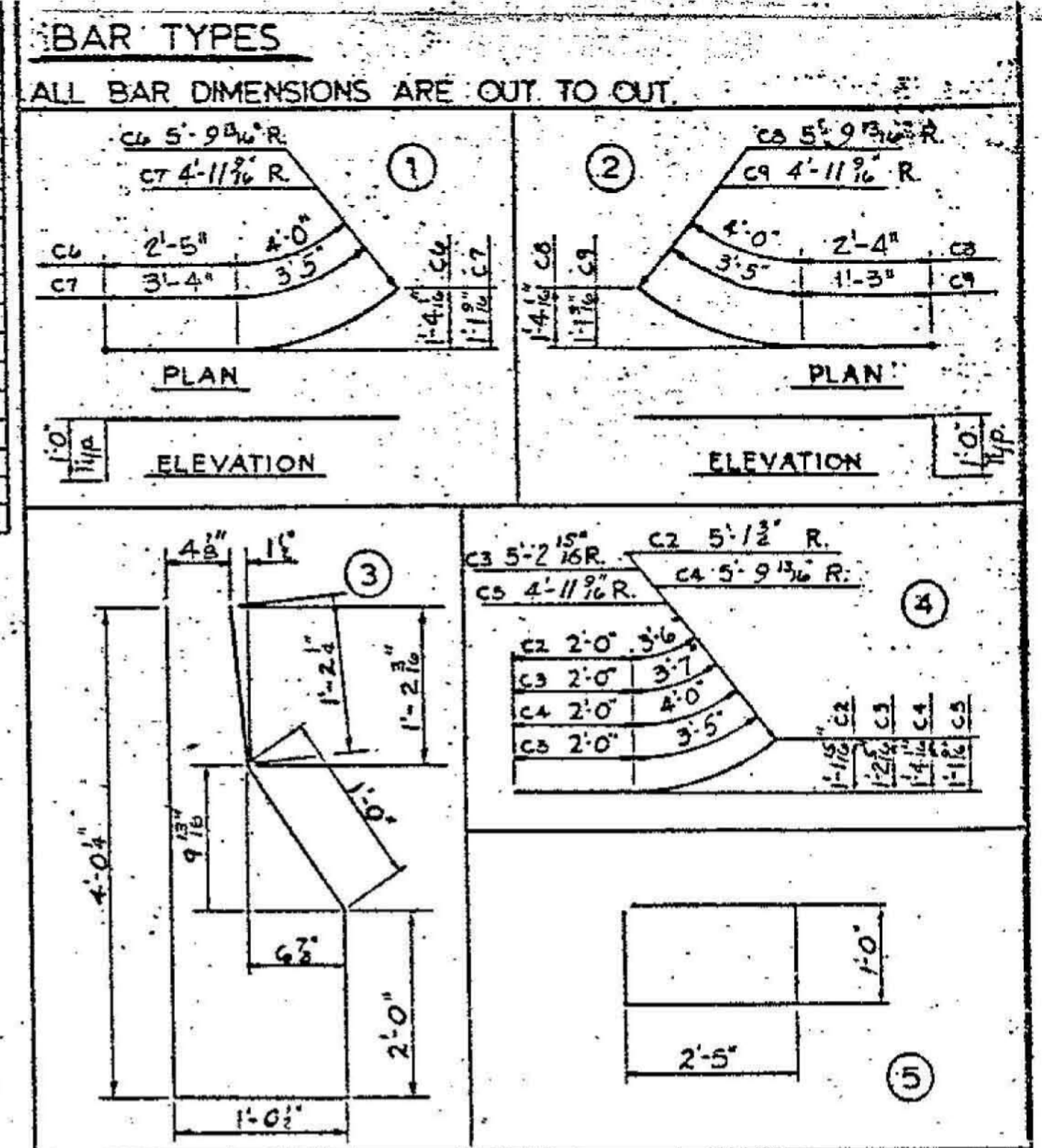


INSERT ASSEMBLY

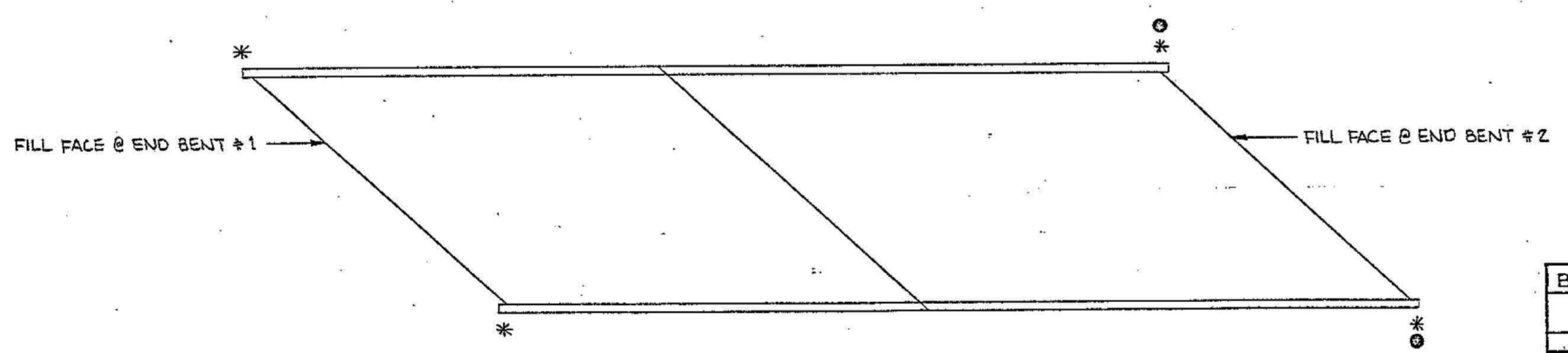
BILL OF MATERIAL FOR FOUR CURVED END BLOCKS

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
c1	24	#5	3	9'-3"	232
c2	4	#6	4	5'-6"	33
c3	4	#6	4	5'-7"	34
c4	4	#6	4	6'-0"	36
c5	12	#6	4	5'-5"	98
c6	4	#6	1	7'-5"	45
c7	4	#6	1	7'-9"	47
c8	4	#6	2	7'-4"	44
c9	4	#6	2	5'-8"	34

Reinforcing Steel Lbs. 603  
 Class "A" Concrete Cu. Yds. 2.9



- THE 4-BOLT INSERT-ASSEMBLY UNIT SHALL CONSIST OF THE FOLLOWING COMPONENTS:
  - FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF ASTM A108, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 1 1/2".
  - 4 - 7/8" x 2 3/4" BOLTS WITH WASHERS. BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" x 2 3/4" GALVANIZED BOLTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)
  - WIRE STRUTS SHOWN IN THE INSERT ASSEMBLY DETAIL ARE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 P.S.I.
- THE INSERT ASSEMBLY WITH BOLTS SHALL BE ASSEMBLED IN THE SHOP. BOLT THREADS MAY BE RECURT AS NECESSARY TO INSURE FIT.
- THE COST OF THE 4-BOLT INSERT ASSEMBLY UNIT COMPLETE IN PLACE, SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.
- THE 4-BOLT INSERT ASSEMBLY UNIT IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END POSTS.
- CURVED END BLOCKS ARE REQUIRED AT ALL END POSTS.
- THE COST OF THE EXCAVATION AND BACKFILL FOR THE CURVED END BLOCKS SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CLASS "A" CONCRETE.



SKETCH SHOWING GUARDRAIL ANCHORAGE LOCATION

\* GUARDRAIL ANCHORAGE REQUIRED  
 ○ CURB BLOCKS REQUIRED

BILL OF MATERIAL FOR CURB BLOCK

Block	Reinforcing Steel	Lbs.
1 Block	c10	2 1/2 5 6'-10" 14
2 Blocks	c10	4 #5 5 6'-10" 29
3 Blocks	c10	6 #5 5 6'-10" 43
4 Blocks	c10	8 #5 5 6'-10" 57

TOTAL BILL OF MATERIAL

Reinforcing Steel - Lbs. - 632 ✓  
 Class "A" Concrete - Cu. Yds. - 2.9 ✓

FOR INFORMATION ONLY

DRAWING  
 C23  
 OF 24

PROJECT No. B.1451904  
 ORANGE-DURHAM COUNTY  
 STATION: 775+38.86 - L-Med.

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALPH  
 STANDARD  
 CURVED END BLOCK, GUARDRAIL ANCHORAGE, AND CURB BLOCK  
 JULY FOR BARRIER RAIL 1978

REVISIONS

NO.	BY	DATE	NO.	BY	DATE
1			2		
2					

DATE: FEB 1984  
 CHECKED BY: J.M. BRIT