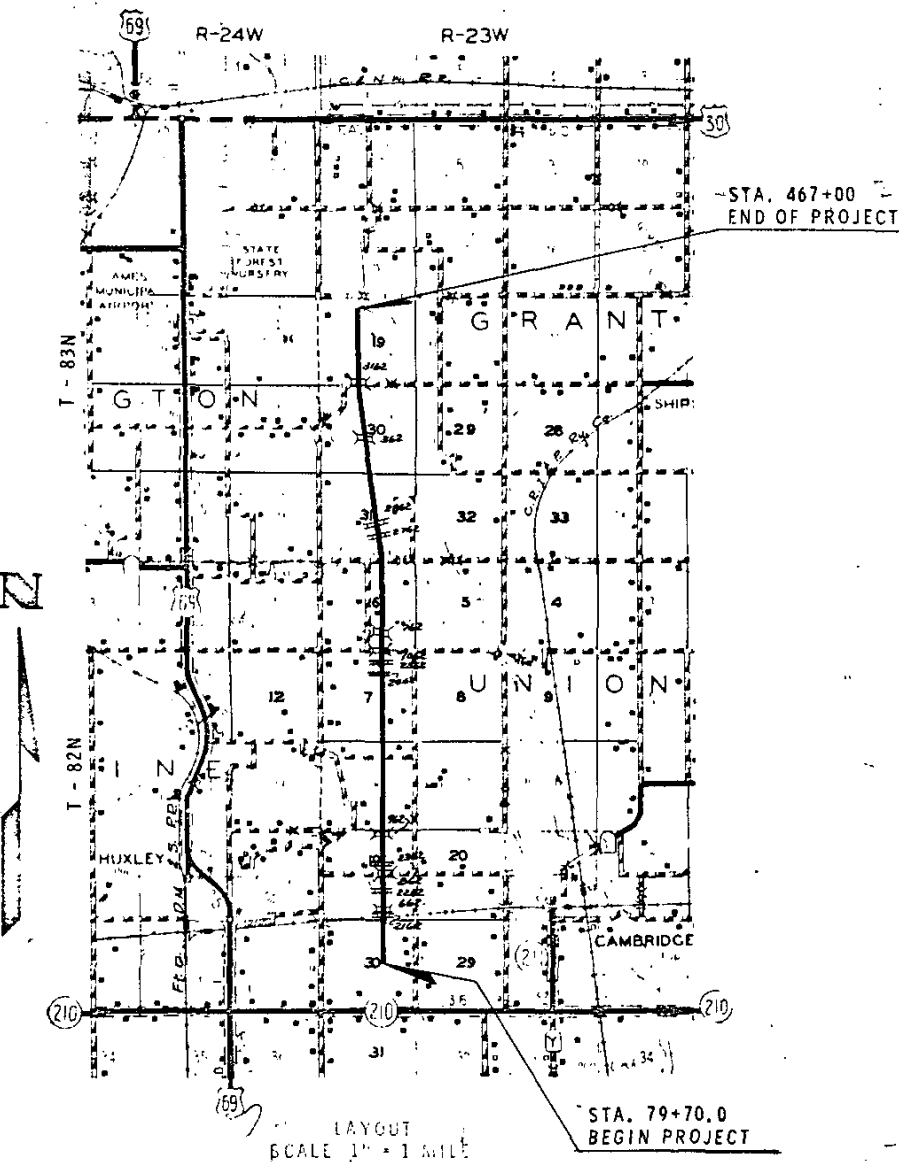


Story I-35 #9

DESIGN NO. 362	T-83N R-23W	STATION 392+15.00
SECTION NO. 30	INTERSTATE NO. 35 OVER SKUNK RIVER	GRANT TOWNSHIP
DUAL 320'-0" X 30' CONTINUOUS WELDED GIRDER BRIDGES 15° SKEW		
ESTIMATE OF QUANTITIES		
ITEM	UNIT	TOTAL
Concrete	Cu. Yds.	1,261.8
Reinforcing Steel	Lbs.	265,908
Structural Steel	Lbs.	571,670
Class 20 Excavation	Cu. Yds.	1,152
Class 21 Excavation	Cu. Yds.	599
Crested Piling 96 at 35'	Lin. Ft.	3,360
Untreated Piling (Oak or Gumwood) 192 at 35'	Lin. Ft.	6,720
Aluminum Handrail (Q - Q End Posts)	Lin. Ft.	1,238.0
Steel Handrail (Q - Q End Posts)	Lin. Ft.	1,254.0
Granular Backfill	Tons	870
Porous Backfill	Cu. Yds.	45



STATE OF IOWA
STATE HIGHWAY COMMISSION
DESIGN FOR
BRIDGES AND CULVERTS
INTERSTATE ROAD SYSTEM
PROJECT NO. I-16-35-4(8)103
STORY COUNTY

DESIGN NO. 3162	LOCAL ROAD	STA. 5422+49.85 ON LOCAL ROAD
SECTIONS 19 & 30	OVER INTERSTATE #35	STA. 423+73.42 ON INTERSTATE #35
	T 83N--R 23W	GRANT TOWNSHIP
215'-5" X 24'-0" PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE		
ESTIMATE OF QUANTITIES		
ITEM	UNIT	TOTAL
Concrete	Cu. Yds.	201.8
Reinforcing Steel	Lbs.	42,833
Prestressed Concrete Beams B1-42'-6"	Only	8
Crested Piling 48 at 30'; 18 at 50'	Lin. Ft.	2,340
Class 20 Excavation	Cu. Yds.	237
Granular Backfill	Tons	130
Concrete Slope Protection	Sq. Yds.	342
Aluminum Handrail (Q - Q End Posts)	Lin. Ft.	413.8 or
Steel Handrail (Q - Q End Posts)	Lin. Ft.	413.8
4" Tile Subdrains	Lin. Ft.	448

IOWA STATE HIGHWAY COMMISSION
STANDARD REQUIRED

CHP C2P C3J
C4P F4J
CBH--00 C12F C12J
CBH--15 F2J
CFP F6-J1

305.9
65,922

267
140
362

**DETAIL PLANS
REDUCED IN SIZE
(DO NOT SCALE)**

DESIGN NO. 662	T-82N R-23W	STA. 110+59.12 INTERSTATE #35
SECTION 19	INTERSTATE NO. 35 OVER C.M. ST. P. & P. R.R.	UNION TOWNSHIP
DUAL 142'-6" X 40' PRETENSIONED PRESTRESSED CONCRETE BEAM OVERHEAD CROSSING		
ESTIMATE OF QUANTITIES		
ITEM	UNIT	TOTAL
Concrete	Cu. Yds.	653.6
Reinforcing Steel	Lbs.	144,492
Aluminum Handrail (Q - Q End Posts)	Lin. Ft.	269.2
Steel Handrail (Q - Q End Posts)	Lin. Ft.	269.2
Prest. Prestr. Conc. Beams 46'-8" (A-5)	Only	54
Crested Piling 84 at 30'; 28 at 45'; 28 at 50'	Lin. Ft.	5,180
Class 20 Excavation	Cu. Yds.	612
Granular Backfill	Tons	348
4" Tile Subdrain	Lin. Ft.	264

145,032
538.4
538.4

673

SPECIFICATIONS:

CONSTRUCTION: Standard Specifications of the Iowa State Highway Commission, Series of 1960, plus current Supplemental Specifications and Special Provisions.

DESIGN STRESSES for the following materials are in accordance with A.A.S.H.O. Standard Specifications for Highway Bridges, Series of 1961.

Concrete in accordance with Section 1.4.11 $f'_c = 3500$ psi.

Reinforcing Steel in accordance with Section 1.4.12 "Reinforcement" for Intermediate, Hard, or Rail Steel Grade.

Structural Steel in accordance with INT. 716(2); 1.4.2 "Structural Steel".

Prestressed Concrete in accordance with Section 1.13.7 $f'_c = 5000$ psi.

Prestressing Steel in accordance with Section 1.13.7 $f'_c = 250,000$ psi.

This bridge will require Bridge Sign assemblies furnished and placed by others as specified in Traffic and Highway Planning Instruction No. 11, revised October 1, 1961.

Revised 4-9-64, Design No. 1062 Roadway changed to 26'. Quantities changed.
Revised 4-1-64, Design No. 3162 Roadway changed to 26'. Quantities changed.
Revised 5-18-64, Design No. 862, Roadway changed to 28'. Quantities changed.
Revised 1-8-64, Design No. 662, Reinforcing quantity corrected.
Revised 12-16-63, Design No. 662, Class 20 Excavation quantities corrected.
Revised 12-16-63, Design No. 362, Class 21 Excavation quantities corrected.
Revised 11-21-63, Design No. 2362, Concrete & Reinforcing Steel quantities corrected.
Design 662 Revised 10-22-63: Handrail quantities corrected.

DESIGN NO. 862	T 82N - R 23W	STA. 132+63.4 ON LOCAL ROAD
SECTION 19	ON LOCAL ROAD OVER INTERSTATE NO. 35	STA. 2129+00.8 ON LOCAL ROAD UNION TOWNSHIP
219'-7" X 24'-0" PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE		
ESTIMATE OF QUANTITIES		
ITEM	UNIT	TOTAL
Concrete	Cu. Yds.	292.2
Reinforcing Steel	Lbs.	64,884
Steel Handrail (Q - Q End Posts)	Lin. Ft.	418.5
Aluminum Handrail (Q - Q End Posts)	Lin. Ft.	418.5
Prestressed 38'-4" (Special)	Only	4
Prestressed 42'-6" (B1)	Only	4
Concrete Beams 67'-6" (B7)	Only	8
Crested Piling 81 at 30'	Lin. Ft.	2,430
Class 20 Excavation	Cu. Yds.	290
Granular Backfill	Tons	130
Concrete Slope Protection	Sq. Yds.	382
4" Tile Subdrains	Lin. Ft.	160
Crested Test Piling 1 at 30'	L.S.	Lump Sum

DESIGN NO. 1062	LOCAL ROAD	STA. 265+06.7 ON INTERSTATE #35
SECTIONS 7 & 6	OVER INTERSTATE #35	STA. 3265+05.5 ON LOCAL ROAD UNION TOWNSHIP
215'-5" X 24'-0" PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE 1°-43' SKEW		
ESTIMATE OF QUANTITIES		
ITEM	UNIT	TOTAL
Concrete	Cu. Yds.	294.8
Reinforcing Steel	Lbs.	64,594
Prestressed Spec. 38'-4"	Only	4
Prestressed B-2 46'-8"	Only	4
Concrete Beams 8-6 63'-4"	Only	8
Crested Piling 56 at 25'; 9 at 30'	Lin. Ft.	1,670
Class 20 Excavation	Cu. Yds.	267
Granular Backfill	Tons	130
Concrete Slope Protection	Sq. Yds.	364
Aluminum Handrail (Q - Q End Posts)	Lin. Ft.	413.8
Steel Handrail (Q - Q End Posts)	Lin. Ft.	413.3
4" Tile Subdrain	Lin. Ft.	148
Crested Test Piling 1 at 25'	L.S.	Lump Sum

MILEAGE SUMMARY 105-1			
DIV.	LOCATION	LIN. FT.	MILES
	BRIDGE AT STA. 110+59.12	145,333	.028
	STRUCTURE AT STA. 151+10	46.0	.009
	STRUCTURE AT STA. 274+10.00	52,800	.010
	BRIDGE AT STA. 392+15.00	324,656	.061
	TOTAL		.108

APPROVED
R. M. Tustin
DEPUTY CHIEF ENGINEER
IOWA HIGHWAY COMMISSION
AUG 3, 1963
DATE

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
APPROVED
DIVISION ENGINEER
DATE

Title Sheet 1 of 2

STORY COUNTY PROJECT NO. I-16-35-4(8)103 FILE NO. 21495

[illegible][illegible]

PAID OCTOBER 8, 1963

DESIGN NO. 962

STATION 151+10 ON INTERSTATE #3

SECTION 19

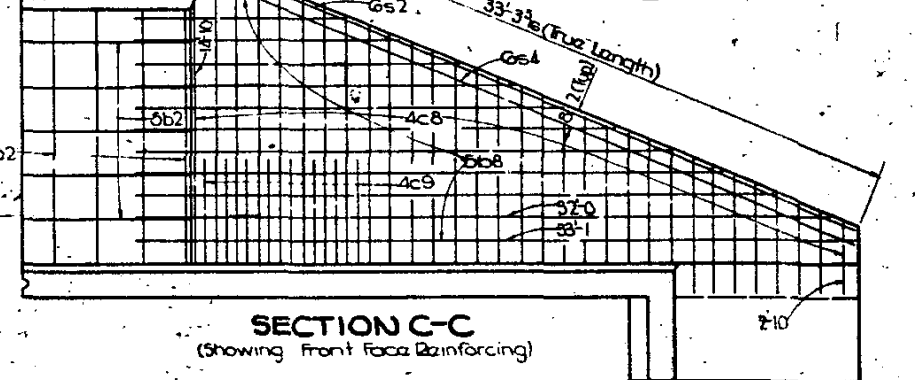
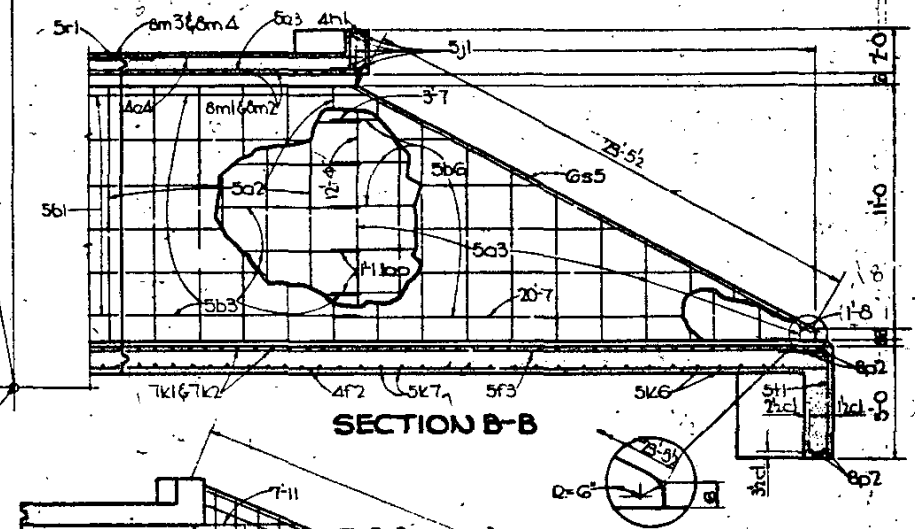
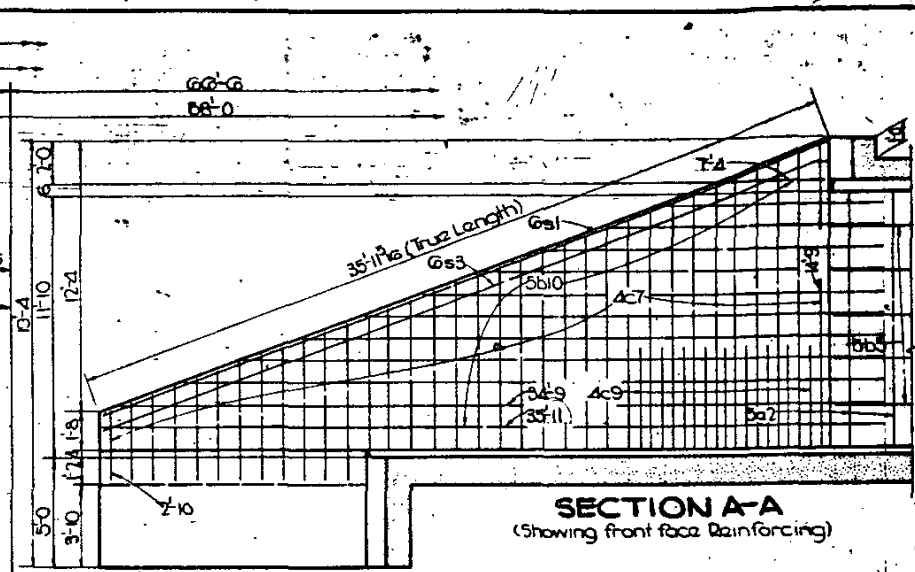
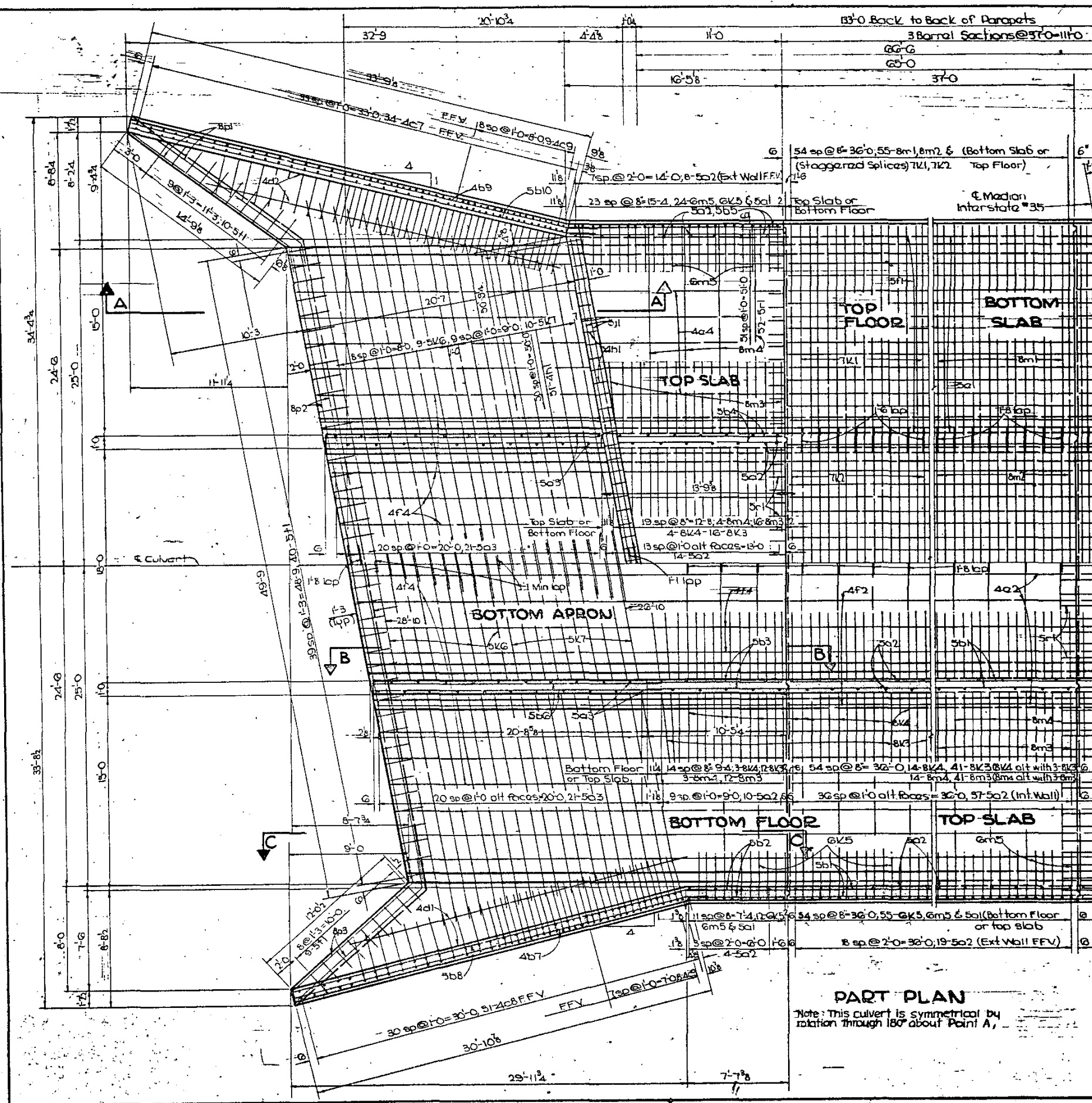
T-82N -- R-23W UNION TOWNSHIP

TRIPLE 13'-16'-13' X 12' X 145'-0 REINFORCED CONCRETE BOX CULVERT

ESTIMATE OF QUANTITIES

ITEM	UNIT	TOTAL
Concrete	Cu Yds.	941.7
Reinforcing Steel	Lbs.	159,057
Class 2B Excavation	Cu. Yds.	2,690

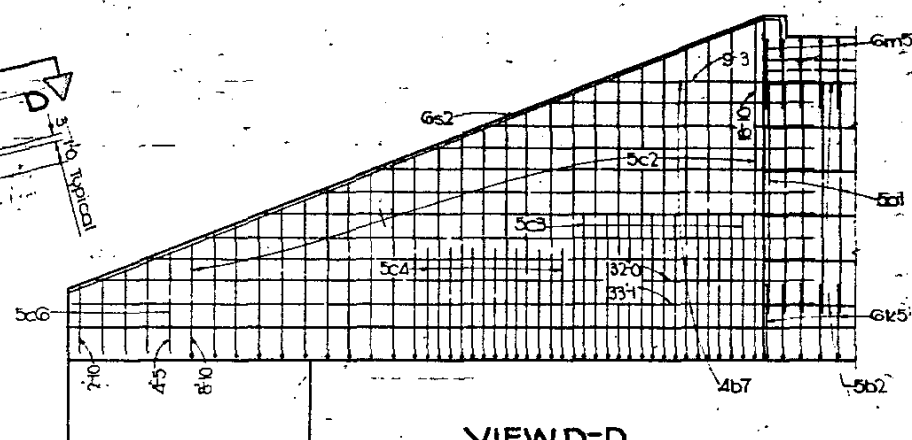
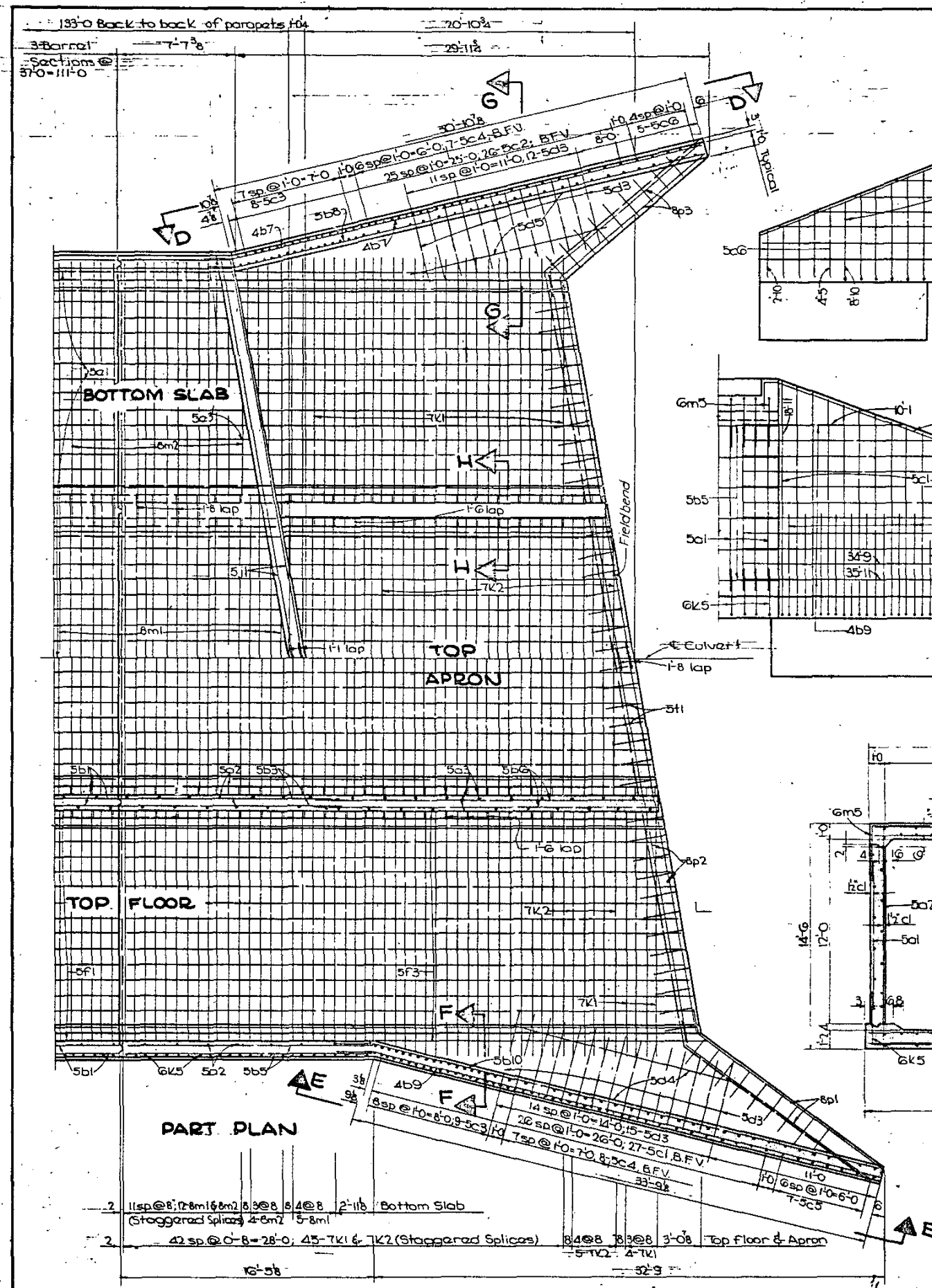
Revised 11-21-63 Des No 2362 Conc. & Reinf Steel Quantities Calculated
Revised 11-21-63 Sheet 65 of 68 Des No 2362 Conc. & Reinf Steel Quantities Calculated



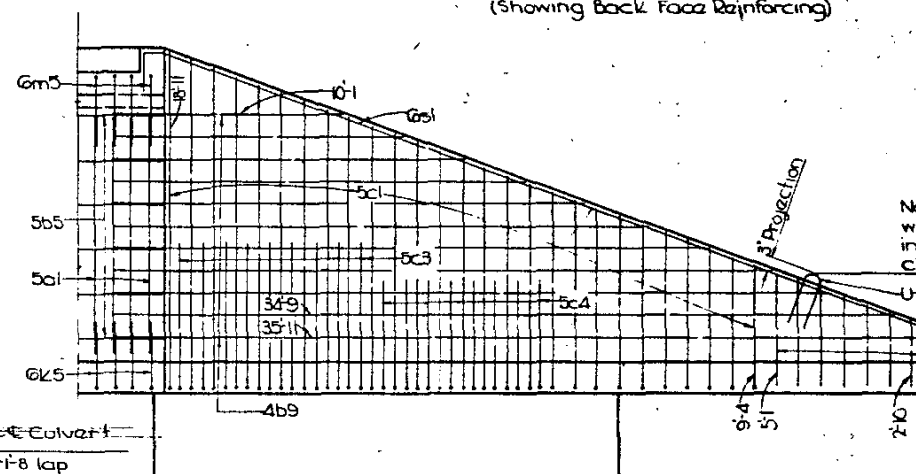
VARIABLE BARS—ONE END			
BAR NO.	LENGTHS	BAR NO.	LENGTHS
503	51 from 7-3 to 16-1	513	51 from 28-2 to 37-0
404	26 from 7-3 to 16-1	414	26 from 28-2 to 37-0

PART PLAN
Note: This culvert is symmetrical by rotation through 180° about Point A.

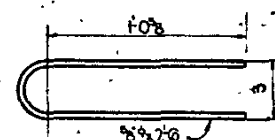
Design for 10' Span
**TRIPLE 15' - 18" - 15" x 21" - 33" 0 REINFORCED
 CONCRETE BOX CULVERT**
 Station: 274+10.00 Project: I-16-35-4(8)103
STORY COUNTY
 Iowa State Highway Commission
 March 1963 Sheet 2 of 3
 Designed by T&T Story Co. File No. 21495
 Designed by AG Traced by S Checked by S



VIEW D-D
(Showing Back Face Reinforcing)



VIEW E-E
(Showing Back Face Reinforcing)

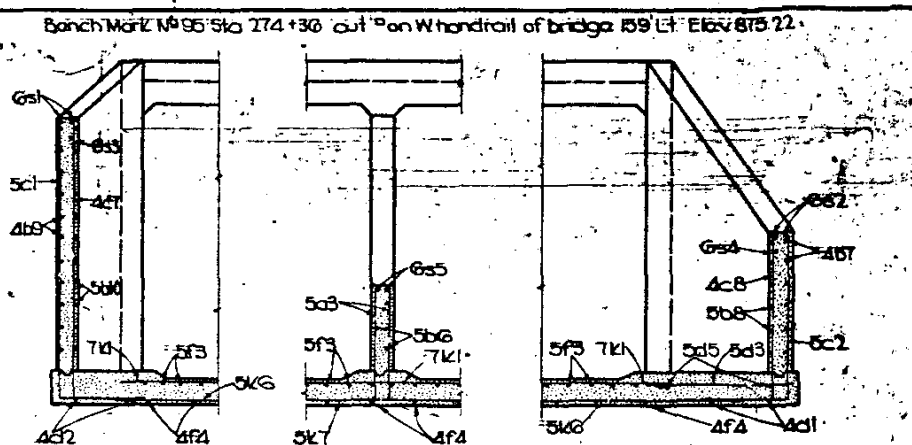


U-ANCHOR DETAIL

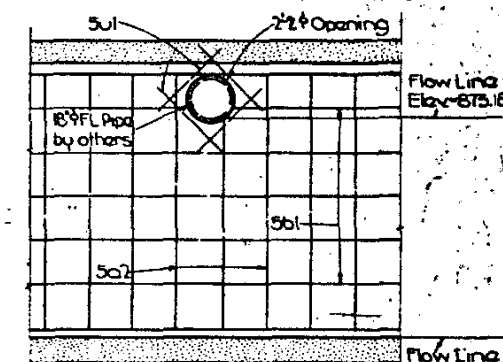
Note: U-anchors are to be placed in each wingwall in order to facilitate the anchoring of fences. Cost of U-Anchors is included in the price bid for concrete.

U-anchor → Anchors are to be galvanized and of structural steel

4 required. Total weight = 1016

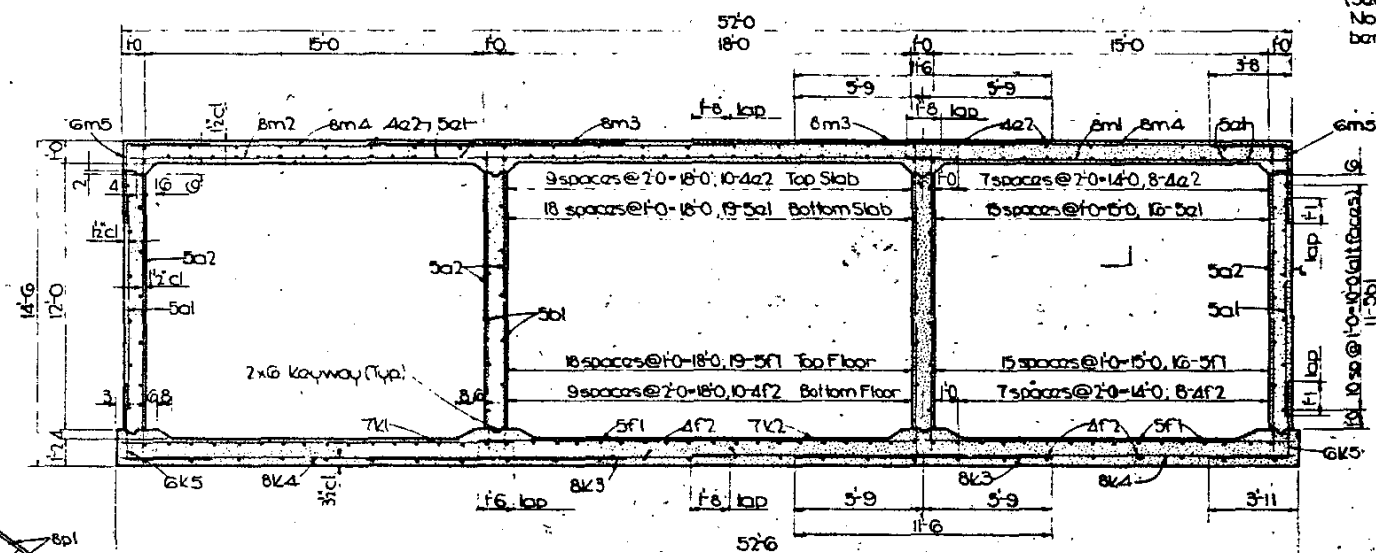


SECTION F-F SECTION H-H SECTION G-G



DETAIL FOR MEDIAN DRAIN
OPENING

(See Sheet 1 for location.)
Note: Contractor is to
bend or spread bars to fit.



BARREL CROSS SECTION

Design for 10' Skew

TRIPLE 15'-15'-15' x 12' x 133'-0 REINFORCED
CONCRETE BOX CULVERT

Station 274+10.00 I-16-354(B)103

STORY COUNTY
Iowa State Highway Commission

March 1963

Design 162 Story Co.

Sheet 3 of 4 Price \$24.00