FED. ROAD DIST. NO.	STATE	SN FED. AID PROJ. NO.	SHEET NO.	SH
3	COLO.	44-B(I)	1	

44(3)

COLORADO
STATE HIGHWAY DEPARTMENT

PLAN AND PROFILE OF PROPOSED
S N FEDERAL AID PROJECT NO. F.A.P. 44-B(I)
STATE HIGHWAY NO. 185
LARIMER COUNTY

INDEX OF SHEETS

SCALES OF ORIGINAL TRACINGS

ON PLAN, 1 IN. = 100 FT.
ON PROFILE (1 IN. = 100 FT. HORIZONTAL
(1 IN. = 10 FT. VERTICAL

GRADE LINE ON PROFILE IS SHOWN AS GRADE OF FINISHED ROAD

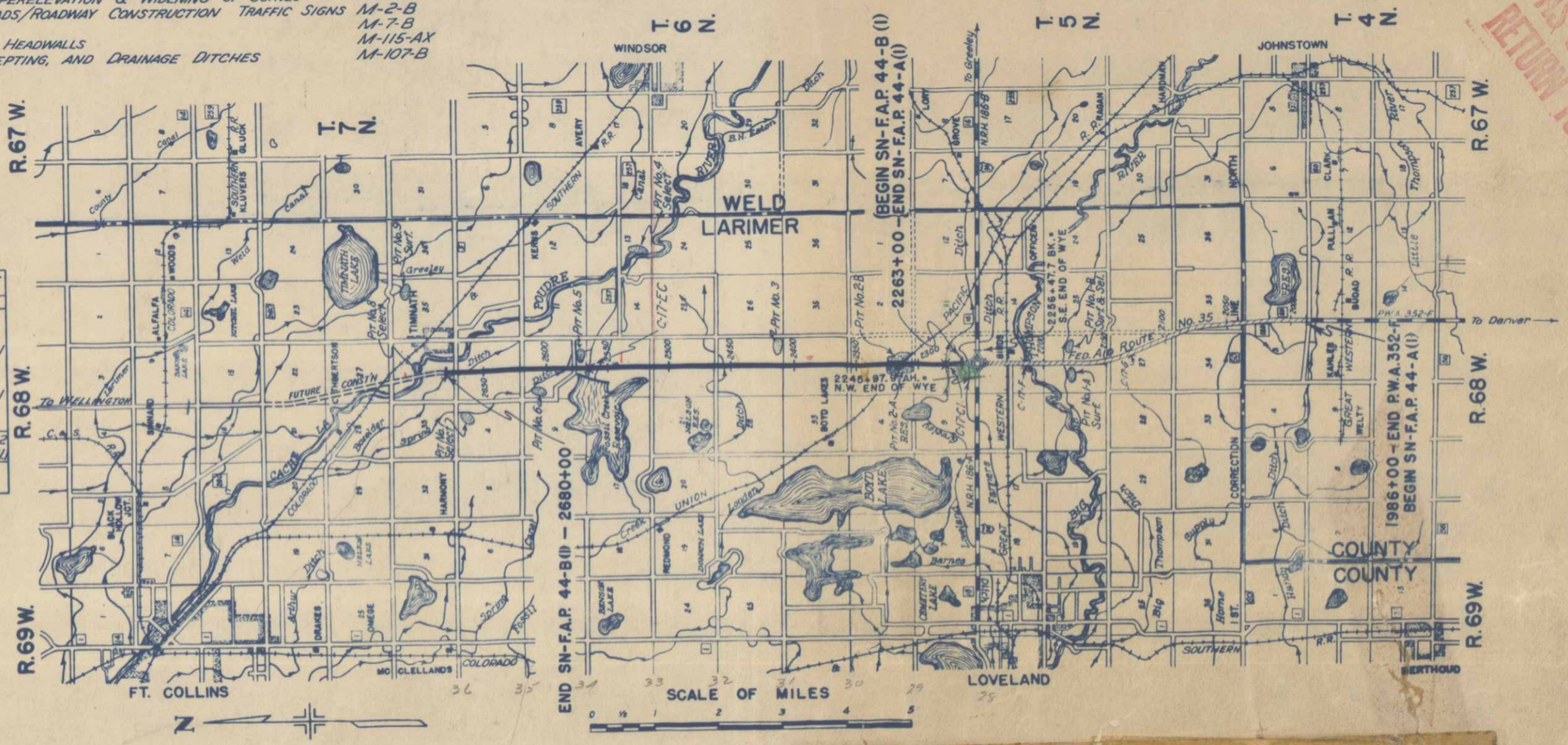
GROSS LENGTH OF PROJECT } 41,700.0 FT. = 7.897 MI.
NET LENGTH OF PROJECT }

CONVENTIONAL SIGNS

- CENTER LINE
- RIGHT OF WAY LINE
- COUNTY LINE
- TOWNSHIP OR RANGE LINE
- SECTION LINE
- QUARTER SECTION LINE
- BARBED WIRE FENCE
- COMBINATION WIRE FENCE
- TELEPHONE LINE
- POWER

NOTE:
It is recommended that bidders on this Project go over the plan details with one of the following field representatives of this Department.

R.J. Randall — Division Engineer — Greeley
H.J. Winter — Resident — "



LENGTH OF PROJECT

STATIONS	ROADWAY LIN. FT.	BRIDGES LIN. FT.
2263+00.0 - Begin		
2278+71.0 - Bridge End	1,571.0	
Bridge		26.1
2278+97.1 - Bridge End		
2555+55.0 - " "	28,657.9	
Bridge		26.1
2565+81.1 - Bridge End		
2680+00.0 - End	11,418.9	
Totals	41,647.8 (7.887 MI.)	52.2 (0.010 MI.)
	41,700.0 (7.897 MI.)	

RECOMMENDED FOR APPROVAL
ASSISTANT ENGINEER — DATE 11-15-44

APPROVED
STATE HIGHWAY ENGINEER — DATE

RECOMMENDED FOR APPROVAL
DISTRICT ENGINEER, PUBLIC ROADS ADMINISTRATION, FEDERAL WORKS AGENCY

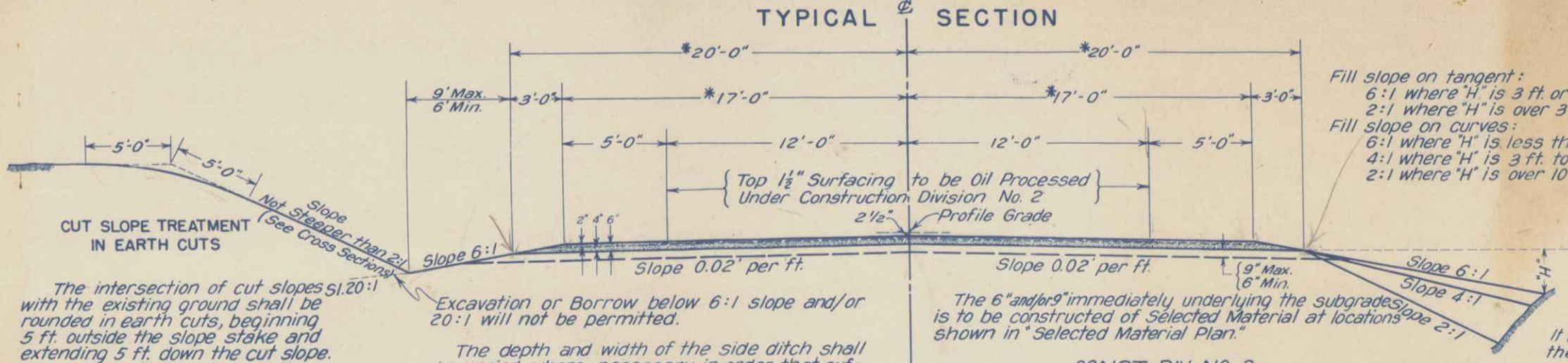
RECOMMENDED FOR APPROVAL
CHIEF, WESTERN REGION, PUBLIC ROADS ADMINISTRATION, FEDERAL WORKS AGENCY

APPROVED
COMMISSIONER, PUBLIC ROADS ADMINISTRATION, FEDERAL WORKS AGENCY

AS CONSTRUCTED PLANS
RETURN TO DIST. 4 DESIGN

FED. ROAD DIST. NO.	STATE	SN FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	44-B(1)	2	

TYPICAL CROSS SECTION OF IMPROVEMENT



Fill slope on tangent:
6:1 where "H" is 3 ft. or less.
2:1 where "H" is over 3 ft.
Fill slope on curves:
6:1 where "H" is less than 3 ft.
4:1 where "H" is 3 ft. to 10 ft.
2:1 where "H" is over 10 ft.

The intersection of cut slopes with the existing ground shall be rounded in earth cuts, beginning 5 ft. outside the slope stake and extending 5 ft. down the cut slope. Where the cut slope is less than 5 ft., reduce each of the above widths of slope treatment to the actual slope distance. Quantities shall be included in "Unclassified Excavation."

Excavation or Borrow below 6:1 slope and/or 20:1 will not be permitted.

The depth and width of the side ditch shall be varied where necessary in order that sufficient depth may be acquired to provide entrance to cross drainage structures.

6" compacted thickness of Gravel or Crushed Rock Surfacing to be placed in two courses:
Approximate 2" Top course Surfacing to be placed at the rate of 36 tons per 100 lin. ft. of roadway. Top Course to be Stockpiled for use on Construction Division No. 2
Approximate 4" Bottom Course Surfacing to be placed at the rate of 78 tons per 100 lin. ft. of roadway.

The 6" and/or 9" immediately underlying the subgrade is to be constructed of Selected Material at locations shown in "Selected Material Plan."

CONST. DIV. NO. 2

At Bridge Approaches the Oil Processing shall be widened to meet the roadway width of the Bridge and shall take place gradually over a distance of 300 ft. each way from the Bridge ends.

Asphaltic Road Material MC-0 to be placed over a 40 ft. width of Roadway previous to placing of Oil Processed Material.

* Roadway Embankment at Bridge Approaches shall be so constructed that the finish point of the gravel shoulder is a minimum of 3 ft. outside the curb line of the Bridge. Where widening of the section is necessary to achieve this result, it shall take place gradually over a distance of 300'. This is done to accommodate guard fence at Bridge Approaches.

GENERAL NOTES (CONST. DIV. NO. 1)

This project is to be constructed in conformity with the Standard Specifications of the Colorado State Highway Department adopted June 1, 1940.

All quantities on preliminary plans are to be considered approximate only.

All roadway excavation required to construct this Project is to be obtained as indicated on the plans. Quantities involved beyond the limits of the ditch, as shown on the Typical Section, either noted on the Profile as "Borrow" or on the List of Structures as "Embankment", are to be Classified and paid for as "Unclassified Excavation."

These quantities are to be staked as part of the original Excavation at location indicated on the plans. Slope stakes beyond the limits of the Typical Section, as shown, are subject to change, by the Engineer, to fit conditions actually met in construction.

All poles encroaching on construction are to be moved by the owners.

All corrugated Metal Pipe Culverts shall be laid without headwalls unless otherwise noted on the Plans.

The ends of the Corrugated Metal Pipe Culverts shall be covered with approximately 6 inches of embankment material in such a manner that a minimum of metal shall be exposed in the completed work. This shall be accomplished by warping embankment slopes around and adjacent to the culvert.

All side approach roads to the Project shall be gravel surfaced with a 4 inch thickness of "Gravel or Crushed Rock Surfacing" extending approximately 30 ft. from the edge of the Highway. Estimated tonnage of "Surfacing Material" required in this operation is shown in the List of Structures.

Except as otherwise noted on the plans, payment for overhaul will be based on measurement along the centerline of the Project.

The entire project shall be cleared in conformity with the requirements of the Standard Specifications except that such trees or shrubs, as the Engineer may designate, shall be left in place and protected from damage during construction operations.

Right of Way fences for this project shall be constructed entirely within the Highway Right of Way as shown on the plans.

Intercepting ditches shall be placed on light grades following the ground contour and where possible shall be so constructed that the direction of flow will be away from the roadway, in order to spread runoff and thereby avoid erosion. This work shall be done in accordance with the methods shown on Standard Sheet No. M-107-B included in the plans. These ditches shall be constructed at locations indicated and as staked by the Engineer.

All curves are to be superelevated and widened as provided for by the Standard Superelevation Sheet included with the plans.

The ends of all cuts shall be flared and backslopes flattened to discharge side ditch drainage away from the base of adjacent fill slopes. The transition of flattened backslopes and ditch shall be done in such a manner that a uniform appearance of slope and ditch results, and so as to promote the growth of native groundcover.

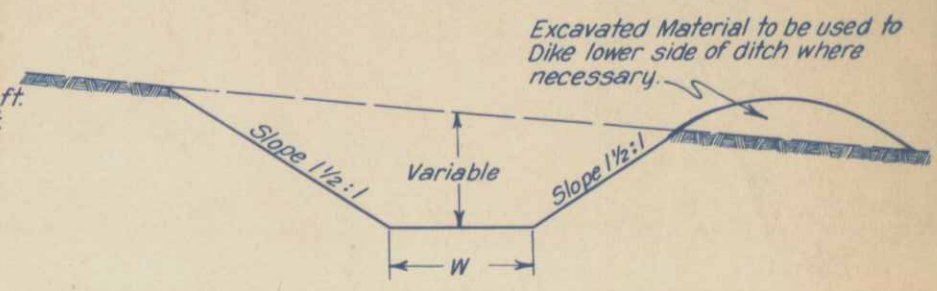
ROAD APPROACHES (CONST. DIV. NO. 2)

All side approach roads of the Project shall be Oil Processed a distance approximately 20 ft. from the edge of the Highway. Quantities involved in this operation are Tabulated below.

NO.	ITEM	UNIT	*QUANTITY
30e	Asphaltic Road Material, RC-4	Gal.	1,580
30g	Asphaltic Road Material, MC-0	Gal.	1,470
30p	Asphaltic Road Material, SC-3	Gal.	7,060
31x	Road Mix Oil Processing	Sq. Yd.	6,300
31c	Rolling Surfacing	Hr.	15
32b	Stone Screenings	Ton	80

*Includes Quantities for Accel. & Decel. Lanes on Rt., Sta. 2668+00 to 2678+30.

TYPICAL SECTION OF DITCHES



SURFACING PLAN.

It is estimated that material for Gravel Surfacing for the Project is available in the vicinity of the pits indicated in the following tabulation. Estimated quantities involved in this operation are shown below.

No alteration of the Surfacing Plan as here outlined will be allowed without written permission from the Department.

MATERIAL TO BE PLACED	SOURCE	QUANTITY			OVERHAUL
		TONS AVAIL.	TONS USED ◉ 2" TOP COURSE	TONS USED 4" BOTTOM COURSE	TON MILES
2263+00 to 2278+71	Pit #1-A 1000 ft. Lt. Sta 2181+00	Ample	565	1226	1742
2278+97.1 to 2486+45	W½ Sec. 22, T.5N., R.68W.		7469	16184	73116
2486+45 to 2565+55	Pit #9, 1½ Miles Rt. Sta. 2727+00	Ample	2848	6170	38839
2565+81.1 to 2680+00	= N.E. ¼ Sec. 35, T.7 N., R.68W.		4111	8907	32174
Accel. & Decel. Lanes for Major Rd. Appr. 2673+15			100	200	456
Road Approaches	Pit # 1-A			⊗ 520	1530
Road Approaches	Pit # 9			⊗ 810	2610
TOTAL			15,093	34,017	150467

◉ 2" Top Course to be Stockpiled.
⊗ Top Course Surfacing to be placed on Road Approaches and not Stockpiled.

SELECTED MATERIAL PLAN.

At the locations shown below, the 6" and/or 9" immediately underlying the surfacing, is to be constructed of Selected Material. Approximate quantities involved in this operation are shown below.

No alteration of the Selected Material Plan as here outlined will be allowed without written permission from the Department.

MATERIAL TO BE PLACED	SOURCE	QUANTITY			OVERHAUL	
		CU. YDS. AVAIL.	THICKNESS INCHES	CU. YDS. USED	STA. YD	YD. MI.
2263+00 to 2278+71	Pit #1-B 1000 ft. Rt. Sta 2181+00	Ample	9	2121	23,331	3542
2278+97.1 to 2407+00	E ½ Sec. 22, T.5 N., R.68W.		6	11,523	186,753	34981
2407+00 to 2467+00	Pit #4-10,600 ft. Rt. Sta. 2542+00 E ½ SW ¼ Sec. 13, T.6 N., R.68W.	15,000	6	5400	59,400	19944
2467+00 to 2565+55	Pit #7,-3700 ft. Lt. Sta 2673+20	15,000+	9	13,304	146,344	44832
2465+81.1 to 2578+00	N.E. ¼ Sec. 4, T.6 N., R.68W.		9	1,646	18,106	3,813
2478+00 to 2606+50	Pit #8 Channel Improvement	18,000	9	3848	42,328	7051
2606+50 to 2680+00	300 ft. Rt. Sta. 2702+00. N.W. ¼		6	6615	72,765	5732
Accel. & Decel. Lanes for Major Rd. Appr. 2673+15	Sec. 34, T.7 N., R.68W.		6	200	2,200	60
TOTAL				44,657	491,227	119,95

FED. ROAD DIST. NO.	STATE	SN-FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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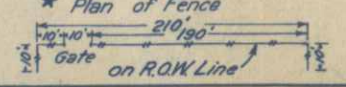
FENCING REQUIREMENTS

STATION	SIDE	REMOVE FENCE	REMOVE & REBUILD FENCE	BARBED WIRE FENCE	COMB. WIRE FENCE	CHAIN LINK WIRE MESH FENCE	GATES NO. BARB. WIRE	GATES NO. DRIVE	GATES NO. DOUBLE DRIVE	GATES NO. WALK
		LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.				
2263+00 to 2276+43	Lt.			1343						
2263+00 to 2278+13	"	1515								
2263+00 to 2279+35	Rt.	1590								
2263+00 to 2269+50	"			650						
2265+65	"						1			
2269+50 to 2271+60	Rt.					*220				
2269+60	"							1		
2271+60 to 2279+35	"			775						
2271+70	Lt.						1			
2272+00	"						1			
2276+35	Lt.&Rt.						2			
2276+43 to 2288+50	Lt.			*1207						
2276+55	Lt.&Rt.						2			
2278+84 to 2288+50	Lt.	970								
2279+35 to 2281+25	Rt.		190							
2279+75	Rt.	45								
2280+00	Lt.						1			
2281+25 to 2307+40	Rt.			2615						
2281+25 to 2307+60	"	2760								
2281+30	"							1		
2281+30	Lt.						1			
2282+25	Rt.									1
2283+25	"						1			
2288+50 to 2308+20	Lt.			1970						
2288+70	"						1			
2302+95	Rt.						1			
2307+25 to 2308+20	Lt.	95								
2307+55 to 2355+20	Rt.			4765						
2307+75 to 2308+70	"	135								
2308+35 to 2355+20	Lt.			4685						
2308+35 to 2309+30	Lt.	100								
2315+00	Lt.&Rt.						2			
2355+80 to 2460+10	" " "			20,860						
2381+75	Lt.						1			
2381+80	"	40								
2381+90	Lt.						1			
2382+00	Rt.						1			
2407+75	"	20								
2407+75 to 2460+10	Lt.	5270								
2407+90	Lt.&Rt.						2			
2452+05 to 2460+10	Rt.	890								
2455+85	Lt.						1			
2457+80	Rt.						1			
2459+88	Lt.						1			
2460+70 to 2484+90	"			2420						
2460+70 to 2469+60	Rt.			890						
2460+70 to 2484+90	Lt.	2500								
2460+70 to 2469+60	Rt.	980								
2463+85	"						1			
2465+85	Lt.						1			
2467+35	Lt.						1			
2469+60 to 2474+40	Rt.				480					
2470+25	"								1	
2470+55 to 2474+40	"		405							
2470+55 to 2487+35	"	1790								
2474+40 to 2487+35	Rt.			1295						
2478+40	"						1			
2484+90 to 2486+95	Lt.		205							
2487+15	Rt.						1			
2487+35 to 2498+05	Lt.	1175								
2487+35 to 2513+75	Lt.			2650						
2487+35 to 2495+25	Rt.		790							
2488+80	Lt.						1			
2495+25 to 2495+95	Rt.				70					
2495+75	"							1		
2498+05 to 2513+75	Lt.&Rt.	3280								
2498+05 to 2513+75	Rt.			1580						
2500+85	Lt.						1			
2501+80	Rt.						1			
2514+25	X	200								
2514+25 to 2575+10	Lt.			6110						
2514+30 to 2546+00	Rt.			3195						
2517+00	Lt.&Rt.						2			
2528+50	X	105								
2529+50	Lt.&Rt.						2			
2541+80 to 2546+00	Rt.	470								
2544+00	"						1			
2555+20	X	135								
2565+20	X	150								
2565+60	Lt.						1			
2567+70	X	335								
2572+35	X	150								
2575+10 to 2576+55	Lt.		145							
2579+90	X	140								
2580+55	X	125								
2580+55 to 2620+00	Lt.			3945						
2586+00	"						1			
2586+70	X	220								
2593+90	X	130								
2593+90 to 2620+00	Rt.			2610						
2606+70	X	145								
2607+50	Lt.&Rt.						2			
2620+00	X	140								
2620+60	X	140								
2620+60 to 2672+95	Lt.			5235						
2645+70	Lt.						1			
2645+90	X	110								
2646+55	Lt.						1			
2654+00	Lt.&Rt.						2			
2660+00	Lt.						1			
2672+60	Lt.						1			
2672+90	X	130								
2673+50	X	130								
2673+50 to 2680+00	Lt.			650						
2679+80	"						1			
2678+00	Lt.						1			
TOTAL		26,110	1735	69,450	550	220	47	3	1	1

* Items receiving Fed. Aid.
It is estimated that approximately 40 Metal Line Posts will be required for rebuilding fence.
* Electrical Connections to be restored.

* Plan of Fence



SUMMARY OF APPROXIMATE QUANTITIES

ITEM NO.	ITEM	UNIT	ROADWAY CONST. DIV. NO. 1	ROADWAY CONST. DIV. No. 2	BRIDGE STA. 2278+	BRIDGE STA. 2565+	NON FED. AID	TOTAL CONST. DIV. NO. 1
10a	CLEARING AND GRUBBING ENTIRE PROJECT	LUMP SUM	•		•			•
11a	REMOVAL OF BRIDGE, STA. 2278+	" "	•					•
11b	REMOVAL OF BRIDGE, STA. 2458+	" "	•					•
11c	REMOVING AND REBUILDING CATTLE GUARDS	EACH	2					2
11d	REMOVE AND RESET WOOD FLUME, STA. 2656+	LUMP SUM	•					•
11e	MOVE MERRY GO ROUND, STA. 2270+	" "	•					•
11f	MOVE FEED RACK, STA. 2575+	" "	•					•
11g	MOVE BARN AND SHED, STA. 2575+	" "	•					•
11h	REMOVING AND RESETTING MAIL BOXES	" "	•					•
11i	REMOVAL OF 34 STRUCTURES	" "	•					•
12a	REMOVING FENCE	LIN. FT.	26,200					26,200
12b	REMOVING AND REBUILDING FENCE	" "	1,800					1,800
12c	LINE POSTS (METAL)	EACH	40					40
13c	UNCLASSIFIED EXCAVATION	CU. YD.	206,000					206,000
13d	UNCLASSIFIED DITCH EXCAVATION	" "	8,000					8,000
14a	DRY ROCK EXCAVATION (STRUCTURAL)	" "	75		5			80
14b	DRY COMMON EXCAVATION (STRUCTURAL)	" "	1,425		140	250		1,815
14c	WET ROCK EXCAVATION (STRUCTURAL)	" "	50			5		55
14d	WET COMMON EXCAVATION (STRUCTURAL)	" "	950		425	250		1,625
14e	MECHANICAL TAMPING	HRS.	350		135	95		580
15a	ROLLING FILLS	UNIT HR.	1,380					1,580
15b	FURNISHING ROLLER	R. UNIT	8					8
15c	WETTING FILLS	M. GAL.	1,920					1,920
18a	STATION YARD OVERHAUL	STA. YD.	1,835,000					1,835,000
18b	YARD MILE OVERHAUL	YD. MI.	190,300					190,300
26a	GRAVEL OR CRUSHED ROCK SURFACING	TON	34,100					34,100
26b	STOCKPILE SURFACING	TON	15,100					15,100
26c	OVERHAUL OF SURFACING	TON MI.	150,500					150,500
44a	MISCELLANEOUS UNTREATED TIMBER	M FT. bm	0.2					0.2
44b	MISCELLANEOUS TREATED TIMBER	" " " "	1.8					1.8
46a	CLASS "A" CONCRETE	CU. YD.	341		252	266		859
46b	CLASS "B" CONCRETE	" "	4					4
46r	CLASS "A" CONCRETE (HANDRAILS)	" "			3.5	3.5		7.0
47	REINFORCING STEEL	LBS.	32,100		24,800	28,500		85,400
26x	DETOUR SURFACING	CU. YD.	100					100
51	RELAYING PIPE	LIN. FT.	16					16
53b	18" CORRUGATED METAL CULVERT PIPE	" "	2,198					2,198
53c	24" CORRUGATED METAL CULVERT PIPE	" "	1,188					1,188
53d	30" CORRUGATED METAL CULVERT PIPE	" "	80					80
53e	36" CORRUGATED METAL CULVERT PIPE	" "	68					68
53ex	36" CORRUGATED METAL CULVERT PIPE (ASPHALT COATED)	" "	98					98
53k	84" CORRUGATED METAL CULVERT PIPE	" "	144					144
55b	18" CORRUGATED METAL SIPHON PIPE	" "	652					652
63a	GROUTED RUBBLE SLOPE AND DITCH PAVING (6" THICK)	SQ. YD.	15					15
63b	GROUTED RUBBLE SLOPE AND DITCH PAVING (12" THICK)	" "	32					32
71x	6" PERFORATED CORRUGATED METAL PIPE UNDERDRAIN	LIN. FT.	100					100
76c	BARBED WIRE FENCE WITH METAL POSTS	" "					69,500	69,500
76f	COMBINATION WIRE FENCE WITH METAL POSTS	" "					600	600
76g	BARBED WIRE GATES	EACH					47	47
76h	DRIVEWAY GATES	"					3	3
76i	WALK GATES	"					1	1
78a	CHAIN LINK WIRE MESH FENCE	LIN. FT.	220					220
78b	DOUBLE DRIVEWAY GATES	EACH	1					1
81a	PROJECT MARKERS	"	1					1
81b	RIGHT OF WAY MARKERS	"	47					47
85b	TRASH GUARDS FOR 18" SIPHONS	"	8					8
85bx	TRASH GUARDS FOR 18" CULVERTS	"	2					2
89a	DRAIN PIPE (CONCRETE FLOOR) (4" x 1'-9")	"			2			2
92	TIMBER GUARD POSTS	"	95					95
110a	4" C.I. VALVE AND VALVE BOX	"	4					4
110x	4" METAL DRAIN PIPE	LIN. FT.	880					880
134b	30"x17" CORRUGATED METAL PIPE ARCH CULVERT	" "	126					126
134c	37"x21" CORRUGATED METAL PIPE ARCH CULVERT	" "	56					56
15y	SELECTED BACKFILL MATERIAL	CU. YDS.	600					600
42a	UNTREATED BRIDGE TIMBER	M FT. bm			0.3	0.3		0.6
53g	48" CORR. METAL CULVERT PIPE	LIN. FT.	40					40
	R.R. GRADE CROSSING WITH SIGNS, STA. 2307+ (WORK TO BE DONE BY R.R. CO. FORCES)	LUMP SUM	•	(FORCE ACC'T.)				•
	REMOVE AND RESTORE WELL AND APPURTENANCES, STA. 2470+	" "	•	" "				•
	REMOVE AND RESTORE WELL AND APPURTENANCES, STA. 2487+	" "	•	" "				•
	REMOVE AND RELAY 2" PIPE LINE, STA. 2282+	" "	•	" "				•
	MOVING TELEPHONE LINE (WORK BY TELEPHONE CO. FORCES)	" "	•	" "				•
	MOVING POWER LINE (WORK BY POWER CO. FORCES)	" "	•	" "				•
15x	WETTING SURFACING	M GAL.		170				
30e	ASPHALTIC ROAD MATERIAL RC-4	GAL.		29,500				
30g	ASPHALTIC ROAD MATERIAL MC-0	"		57,100				
30p	ASPHALTIC ROAD MATERIAL SC-3	"		132,000				
31x	ROAD MIX OIL PROCESSING	SQ. YD.		117,800				
31c	ROLLING SURFACING	HR.		280				
31d	FURNISHING RUBBER TIRED ROLLER	LUMP SUM		•				
32b	STONE SCREENINGS	TON		1,475				
118	BLADING, GRADING, AND COMPACTING ROADWAY	MI.		7.9				

FED. ROAD DIST. NO.	STATE	SN-FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	44-B(1)	4	

LIST OF STRUCTURES

LOCATION	DESCRIPTION	REMOVE STRUCTURE NO.	EXCAVATION CU.YD. UNCL.	EXCAVATION CU.YD. EMBANK.	EXCAVATION CU.YD. UNCL. DITCH	STRUCTURAL EXCAVATION CU.YD. ©	GRAVEL SURFACING TON	CONCRETE CU.YD. CLASS "A"	CONCRETE CU.YD. CLASS "B"	REINF. STEEL LB.	CORRUGATED METAL CULVERT PIPE LIN.FT. 18"	24"	30"	36"	48"	84"	CORR. METAL SIPHON PIPE LIN.FT. 18"	TRASH GUARDS EACH 18"	C.I.VALVE & VALVE BOX EACH 4"	METAL DRAIN PIPE LIN.FT. 4"	MISC. UNTREATED TIMBER B'RD.FT.		SELECT BACKFILL MATERIAL CU.YDS.	MISCELLANEOUS
2263+00	Project Marker																							1-Project Marker.
2265+65	Remove 15'x20' C.M.P. Side Drain Rt.	1																						
	C.M.P. Side Drain and Road Approach Rt.			35		5	15				30													
2269+52-2271+62	C.M.P. Culvert Rt., 2 Type "B" Hdwls., Trash Guards, and ditches.				20	60			1.10		210													
2269+60	Remove 15'x20' C.M.P. and 18"x12' V.C.P. Rt.	2																						2-18" Trash Guards (C.M.P. Culv.)
	C.M.P. Side Drain and Road Approach Rt.			15		5	15				30													
2270+79	Move School Merry Go Round from R.O.W. Rt.																							
2271+57-2272+13	C.M.P. Side Drain Lt.					15					56													Move School Merry Go Round
2271+70	Road Approach Lt.																							
2271+85	Corr. Metal Pipe Arch Culv. and ditches.			25			15																	
	Remove Concrete Division Box Rt.	1			15	10																		
2271+75	Concrete Division Box Rt.					5		1.1		104														30"x17"x62' C.M.P. Arch. Culvert
2271+93	Remove 18"x22' C.M.P.	1																						
2272+00	Road Approach Lt.																							
2276+35	Remove 12"x20' C.M.P. Lt.	1		25			15															7		
2276+43	C.M.P. Side Drain Lt. & double Road Appr. Lt. & Rt.			325		5	50				48													
2278±	C.M.P. Culv. & Emb. for Detour-Remove Detour Str. & Emb.	1	300	300																				
2278+71.0-2278+97.1	Bridge. Remove Bridge.			SEE SUMMARY FOR QUANTITIES											40									
2279+32	Remove 1'x1'x1' Wood Box Side Drain Lt.	1																						
2280+00	C.M.P. Side Drain and Road Approach Lt.			50			15																	100 cu.yds. Detour Surfacing
2281+20	Double Road Approach Rt.			100			25				30													
2282+25	Walk Approach Rt.			15																				
2282+35-2282+83	Rem. & Relay portion of 2" pipe line Rt.			FORCE ACCOUNT			5																	
2283+25	Road Approach Rt.			25																				
2288+70	Road Approach Lt.			25			15																	
2289+00	C.M.P. Cross Culvert and ditches.				25	15	15																	
2302+95	C.M.P. Side Drain and Road Approach Rt.		15									66												
2307+86	Rem. & Rebuild R.R. Cattle Guards Rt. & Lt.					5	15				30													
	Rail Road Grade Crossing																							
2315+00	Road Approaches Lt. & Rt.			FORCE ACCOUNT (Work by R.R. Company Forces)																				Rem. & Rebuild 2 Cattle Guards.
				55			30																	
2317+00	C.M.P. Cross Culvert and ditches.				90	30																		
2335+00	C.M.P. Cross Culv., inlet ditch, Dikes at inlet & outlet.			20	10	20																		
2355+50	Road Approaches Lt. & Rt. & 2-18" C.M.P. Side Drains			110		10	50				{40 40	98			68									
2364+00	C.M.P. Cross Culvert and ditches.				5	10																		
2381+80	Double Road Approach Lt.			100			25					66												
2382+00	Road Approach Rt.			10			15																	
2382+25	C.M.P. Cross Culvert and ditches				20	20						64												
2407+90	Road Approaches Rt. & Lt.			80			30																	
2420+00	C.M.P. Cross Culvert and ditches.				15	10																		
2423+00	Fill Hole Rt.			50								74												
2432+00	C.M.P. Cross Culvert and ditches.				15	10						68												
2455+85	C.M.P. Side Drain and Road Approach Lt.			80			15				26													
2457+80	Remove 12"x22' C.M.P. Rt.	1																						
	C.M.P. Side Drain and Road Approach Rt.			30		5	15				28													
2458+33	Remove Present Bridge 8'x4'x60' C.B.C. (Type 8 I)					220		83.5		8175														Remove Bridge
2459+88	Road Approach Lt.			90			15																120	
2460+01	Remove 12"x32' C.M.P. Lt.	1																						
2460+40	Remove 12"x34' C.M.P. Lt.	1																						
	C.M.P. Side Drains & Road Approaches Rt. & Lt.			375		25	50				{46 46													
2460+70-2467+00	Irrigation Ditch Change Lt. (W=2')				90																			
2460+80	Remove 12"x25' C.M.P. Lt.	1																						
	SHEET TOTAL	12	315	1940	305	485	445	84.6	1.1	8,279	660	436			68	40					7		120	

FED. ROAD DIST. NO.	STATE	SN-FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	44-B(11)	5	

LIST OF STRUCTURES

LOCATION	DESCRIPTION	REMOVE STRUTURE NO.	EXCAVATION CU. YD. UNCL.	EXCAVATION CU. YD. EMBANK.	EXCAVATION CU. YD. UNCL. DITCH	STRUCTURAL EXCAVATION CU. YD. ◎	GRAVEL SURFACING TON	CONCRETE CU. YD. CLASS "A"	CONCRETE CU. YD. CLASS "B"	REINF. STEEL LB.	CORRUGATED METAL CULVERT PIPE LIN. FT. 18"	24"	30"	36"	48"	84"	CORR. METAL SIPHON PIPE LIN. FT. 18"	TRASH GUARDS EACH 18"	C.I. VALVE & VALVE BOX EACH 4"	METAL DRAIN PIPE LIN. FT. 4"	MISC. UNTREATED TIMBER B'RD.FT.	SELECT BACKFILL MATERIAL CU. YDS.	MISCELLANEOUS
2463+85	C.M.P. Side Drain and Road Approach Rt.			60			15				30												
2463+00 - 2470+00	Drain Ditch Lt. (W=2')				240																		
2463+00 - 2466+00	Drain Ditch Rt. (W=2')				185																		
2465+32	Remove Concrete Ditch Check Lt.	1																					
2465+46	Remove 15"x25' V.C.P.	1																					
	C.M.P. Cross Culvert for Irrigation					15					102												
	Concrete Division Box Lt.					10		1.6		142											12		
2465+63	Remove Concrete Ditch Check Lt.	1																					
2465+75 - 2494+35	Irrigation Ditch change Rt. (W=2')				1300																		
2465+75 - 2470+80	Irrigation Ditch change Rt. (W=2')				50																		
2465+85	Remove 3'x11' Timber Ditch Crossing Lt.	1																					
	2 C.M.P. Side Drains and Road Approach Lt.			50			15				130												
2467+35	C.M.P. Side Drain and Road Approach Lt.			40			15				120												
2469+60 - 2470+72	C.M.P. Side Drain in Irrigation Ditch Rt.					10					112												
2470+25	Rem. 18'x24' C.M.P. & 3'x16' Timber Ditch Crossing Rt.	2																					
	C.M.P. Side Dr. in Irrig. ditch & Road Appr. Rt.			35			15				24												
2470+50	Rem. and Restore Well and Appurtenances. Rt.		FORCE ACCOUNT																				
2475+65	Remove and Relay 15"x16' Metal Pipe Rt.																						Relay 16' Metal Pipe
	Remove 6"x100' Clay Tile under drain	1																					
	Perforated C.M.P. under drain					40																	6"x100' Perforated C.M.P.
2478+00 - 2484+00	Drain Ditch Lt. (W=1')				40																		
2478+40	C.M.P. Side Dr. in Irrig. ditch & Road Appr. Rt.			120			15				30												
2486+50	C.M.P. Side Dr. and Walk Approach Lt.			5		5	5				10												
2486+60 - 2491+00	Drain Ditch Lt. (W=1')				30																		
2487+10	Remove 12"x20' C.M.P. Lt.	1																					
	C.M.P. Side Drain and Road Approach Lt.			25			15				28												
2487+15	Remove 4'x12' Timber Ditch Crossing Rt.	1																					
	C.M.P. Side Dr. in Irrig. ditch & Road Appr. Rt.			25			15				24												
2487+30	Remove Concrete Division Box Rt.	1																					
	Concrete Division Box Rt.					5		2.3		220											9		
2487+35	Rem. and Restore Well and Appurtenances Lt.		FORCE ACCOUNT																				
2488+80	C.M.P. Side Drain and Road Approach Lt.			25			15				28												
2491+60	Remove 12"x20' C.M.P. Rt.	1																					
	C.M.P. Side Dr. in Irrig. ditch & Road Appr. Rt.			30			15				24												
2491+79	Remove Outhouse Lt.	1																					
2494+35	C.M.P. Cross Culvert					25					74												
2494+35 - 2513+63	Irrigation Ditch Change Lt. (W=1.5)				750																		
2494+45	Remove 15"x21"x29' Culvert Rt.	1																					
2494+60	C.M.P. Side Drain and Walk Approach Rt.			5			5				10												
2495+75	C.M.P. Side Drain and Road Approach Rt.			35		5	25				40												
2497+00 - 2498+30	C.M.P. Side Drain and Road Approach Rt.			110		10	80				138												
2499+ - 2505+	8 Timber Ditch Checks in Irrig. ditch Lt.																						1778 Bd.ft. Misc. Treated Timber.
2500+80	Remove 4'x12' Timber Ditch Crossing Lt.	1																					
2500+85	C.M.P. Side Dr. in Irrig. ditch & Road Appr. Lt.			70			15				28												
2501+05	Remove Concrete Ditch Check Lt.	1																					
2501+80	Remove 12"x20' C.M.P. Rt.	1																					
	C.M.P. Side Drain and Road Approach Rt.			35		5	15				26												
2502+00 - 2509+00	Irrigation Ditch Change Rt. (W=1.5')				160							70											
2509+00	C.M.P. Cross Culvert, ditches, Grouted Rubble				10	20																	15 sq. yds. Grouted Rubble Slope
	Slope and Ditch Paving (6" thick) & Dike at inlet.			30																			& Ditch Paving (6" thick.).
2509+00 - 2513+50	Waste Ditch Rt. (W=1.5')				100																		
2509+30	Remove 15"x28' C.M.P. Rt.	1																					
2513+60	Remove 12"x34' C.M.P. Rt.	1																					
	SHEET TOTAL	18		700	2865	150	280	3.9		362	808	70									21		

FED. ROAD DIST. NO.	STATE	SN- FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	44-B(1)	7	

LIST OF STRUCTURES

LOCATION	DESCRIPTION	REMOVE STRUCTURE	EXCAVATION CU. YD.			STRUCTURAL EXCAVATION CU. YD.				GRAVEL SURFACING	CONCRETE CU. YD.		REINF. STEEL	CORRUGATED METAL CULVERT PIPE LIN. FT.							CORR. METAL SIPHON PIPE LIN. FT.		TRASH GUARDS EACH		C.I. VALVE & VALVE BOX. EACH		METAL DRAIN PIPE LIN. FT.		MISC. UNTREATED TIMBER		SELECT BACKFILL MATERIAL	MISCELLANEOUS
		NO.	UNCL.	EMBANK	UNCL. DITCH	◎				TON	CLASS "A"	CLASS "B"	LB.	18"	24"	30"	36"	48"	84"	*36"	18"		18"		4"		4"		B'RD.FT.		CU.YDS.	
2642+20-2645+90	Waste Ditch Lt.(W=1')				40									20																	
2645+70	C.M.P. Side Dr. in Waste Ditch & Road Appr. Lt.			60						15																					
2646+35	C.M.P. Cross Culvert, ditch changes Rt.& Lt.(W=1')				30	10								68																	
2646+55	C.M.P. Side Dr. in Irrig. Ditch Lt. Road Apprs. Rt.& Lt.			90						30				20																	
2646+75 - 2648+50	Vary roadway ditch Lt.		60																												
2652+00	C.M.P. Cross Culvert and ditches.				5	10									66																
2654+00	C.M.P. Side Dr. Lt. and Road Approaches Rt.& Lt.			50		5				30				30																	
2655+00-2656+95	Irrigation Ditch Change Lt.(W=1')				30																										
2655+00-2670+75	Irrigation Ditch Change Lt (W=2')				300																										
2656+30	Rem. & Reset 23'x9"x14' Wood Flume Lt.																														Rem.& Reset Wood Flume
2656+95	C.M.P. Cross Culvert and ditches.				10	10								70																	
2658+00	C.M.P. Cross Culvert, C.M.P. under irrigation ditch Lt. and ditches.				15	10 5								72 20																	
2668+00-2678+30	Accel.& Decel. Lanes for Major Road Appr. Rt.			*440						300																					
2672+60	Road Approach Lt.			60						15																					
2673+15	Major Road Approach Rt., Road Approach Lt.			280						70																					
2673+80	Road Approach Lt.			55						15																					
2676+60	10'x3'x63' C.B.C. (Type 10-1) & ditches (W=10')				360	215					93.8		9783																		
2678+00	C.M.P. Side Drain and Road Approach Lt.			45		5				15				28																45	
	SHEET TOTAL		60	640	790	270				490	93.8		9,783	328	66																
	PROJECT TOTAL	34	1820	5,300	6,280	2495				1630	340.65	3.35	32,100	2198	1188	80	68	40	144	98	652		8		4		880		105		45	
																														530	

* Asphalt Coated
* Included for payment in profile quantities.
◎ Structural Excavation is estimated to be 5% Rock 95% Common, each of which is estimated to be 60% Dry and 40% Wet.

R.O.W. MARKERS

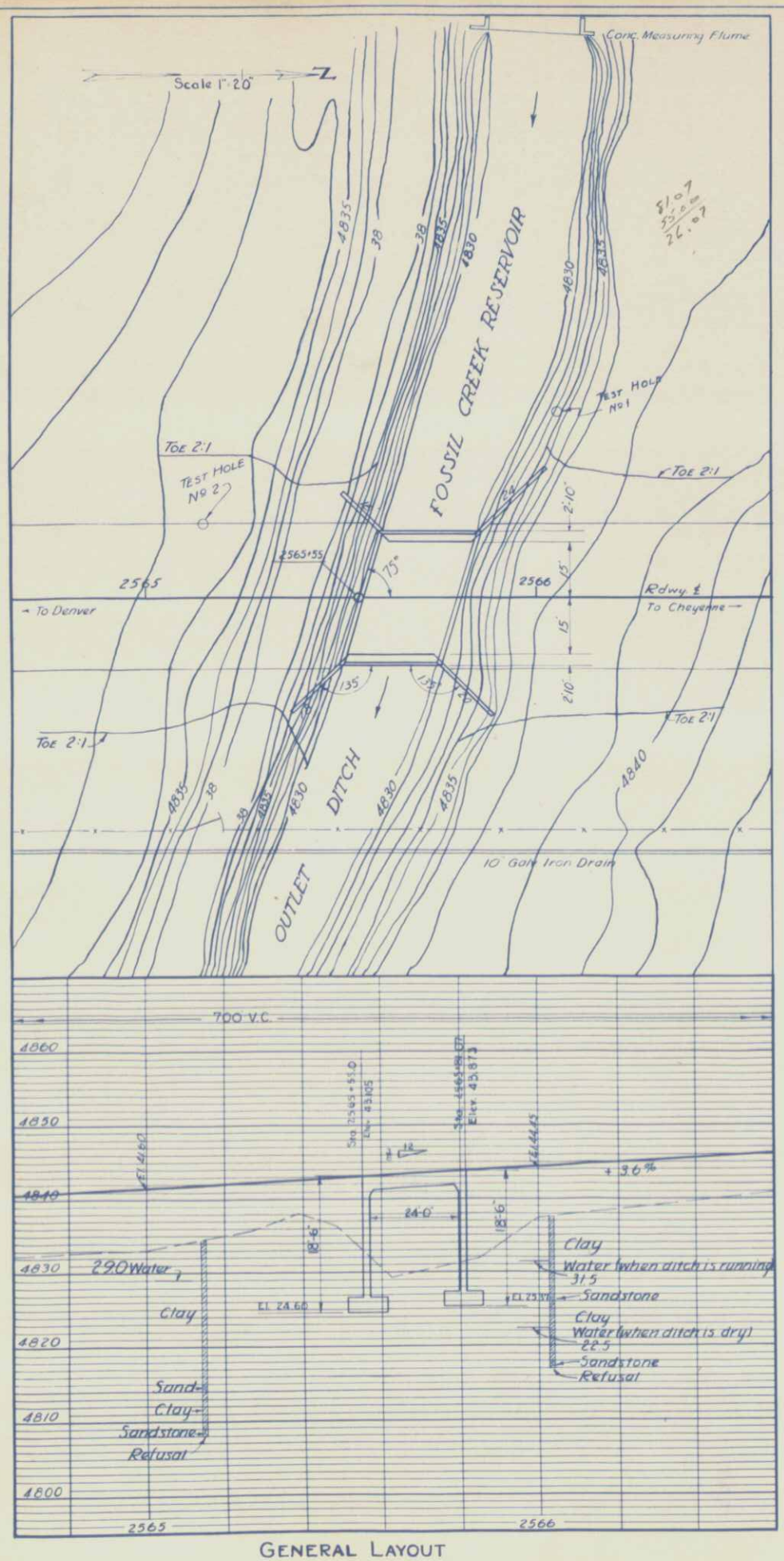
STATION	SIDE	NO.	STATION	SIDE	NO.	STATION	SIDE	NO.
2276+43	Lt.&Rt.	2	2511+00	Lt.	1	2620+00	Lt.	1
2303+10	" " "	2	2514+25	Lt.&Rt.	2	2620+60	Rt.	1
2355+20	Lt.	1	2516+50	" " "	2	2645+87	Rt.	2
2355+80	Rt.	1	2518+00	" " "	2	2645+87	Lt.	1
2381+80	Lt.&Rt.	2	2537+00	" " "	2	2672+85	Lt.&Rt.	2
2407+77	Lt.&Rt.	2	2538+50	Lt.&Rt.	2			
2433+27	" " "	2	2544+50	Rt.	1			
2460+10	Lt.	1	2546+00	"	1			
2460+70	Rt.	1	2548+00	Lt.	1			
2487+35	Lt.&Rt.	2	2549+00	Lt.	1			
2501+00	Rt.	1	2567+31	Lt.&Rt.	2			
2502+50	"	1	2576+50	Lt.	2			
2509+50	Lt.	1	2593+90	Lt.&Rt.	2			
						TOTAL		47

TIMBER GUARD POSTS

STATION	SIDE	SPACING	NO.	STATION	SIDE	SPACING	NO.
2271+85	Lt.&Rt.	Minor Str.	2	2564+91 to 2565+52	Lt.&Rt.	Major Str.	10
2278+07 to 2278+68	" " "	Major Str.	10	2565+84 to 2566+45	" " "	" "	10
2279+00 to 2279+61	" " "	" "	10	2586+45	" " "	Minor Str	2
2317+00	" " "	Minor Str.	2	2597+15	" " "	" "	2
2382+25	Lt.&Rt.	Minor Str.	2	2617+90 to 2619+90	Rt.	50ft.	5
2432+00	" " "	" "	2	2619+80	Lt.	Minor Str.	1
2458+33	" " "	" "	2	2624+00	Lt.&Rt.	" "	2
2509+00	" " "	" "	2	2620+80 to 2622+80	Rt.	50ft.	5
2521+00	Lt.&Rt.	Minor Str.	2	2630+90	Lt.&Rt.	Minor Str.	2
2555+60 to 2556+20	" " "	30ft.	6	2646+35	" " "	" "	2
2561+91 to 2564+41	" " "	50ft.	12	2676+60	" " "	" "	2
					TOTAL		95

REVISIONS

FED. ROAD DIST. NO.	STATE	S.N.: F.A.P.	SHEET NO.	TOTAL SHEETS
3	COLO.	44 B(1)	8	



GENERAL LAYOUT

BAR LIST - ABUT. No. 1

Mark	Size	No.	Length	Type	ℓ	m	n	r	t
A 1	1"ϕ	4	7'-2"	I	5'-6"			4"	7½"
A 2	1"ϕ	38	8'-2"	I	6'-6"			4"	7½"
A 3	1"ϕ	4	10'-2"	I	8'-6"			4"	7½"
A 4	1"ϕ	38	11'-9"	I	10'-1"			4"	7½"
A 5		1	18'-8"		13'-1"	2'-8"			
to	1"ϕ	of	to 23'-6⅜"	II	to 17'-1⅛"	to 3'-6½"		4"	3½"
A 12		ea.	by 8 3/16"		by 6 3/8"	by 1½"			
A 13	½"ϕ	12	11'-8"	Str.					
A 14		1	2'-4"						
to	½"ϕ	of	to 10'-1"	Str.					
A 17		ea.	by 2'-7"						
A 18	1"ϕ	4	23'-11"	II	17'-4"	3'-8"		4"	3½"
A 19	½"ϕ	6	6'-0"	Str.					
A 20	½"ϕ	14	22'-11"	IV	17'-3"	5'-8	2'-10"		
A 21	½"ϕ	14	22'-4"	IV	17'-3"	5'-1"	4'-4⅜"		
A 22	1"ϕ	4"	24'-3"	II	17'-8"	3'-8"		4"	3½"
A 24	1"ϕ	22	22'-9"	II	16'-2"	3'-8"		4"	3½"
A 25	¾"ϕ	28	10'-6"	III	8'-6"			3"	2½"
A 26	½"ϕ	13	36'-0"	Str.					
A 27	⅜"ϕ	89	7'-10"	I	6'-10"			3"	2½"
B 1	⅞"ϕ	4	6'-4"	I	5'-2"			3½"	3"
B 2	⅞"ϕ	4	9'-4"	I	8'-2"			3½"	3"
B 3	½"ϕ	11	13'-8"	Str.					
B 5		1	16'-10"		11'-8"	2'-5"			
to	⅜"ϕ	of	to 19'-0⅝"	II	to 13'-5⅜"	to 2'-10¼"		3½"	3"
B 8		ea.	by 8 7/16"		by 7 1/16"	by 1¾"			
B 9		1	19'-11⅜"		14'-0⅜"	3'-0			
to	1"ϕ	of	to 23'-7¾"	II	to 17'-0"	to 3'-8¾"		4	3½"
B 14		ea.	by 8 7/16"		by 7 1/16"	by 1¾"			
B 15		1	2'-0"						
to	½"ϕ	of	to 12'-0"	Str.					
B 19		ea.	by 2'-6"						
B 20		1	7'-11"			6'-3"			
to	⅝"ϕ	of	to 9'-0"	III	to 7'-4"			2½"	2"
B 24		ea.	by 3 1/4"		by 3 1/4"				
B 25		1	9'-6"		7'-6"				
to	¾"ϕ	of	to 10'-3⅜"	III	to 8'-3⅛"			3"	2½"
B 28		ea.	by 3 1/4"		by 3 1/4"				
B 29	⅝"ϕ	9	6'-4"	I	5'-6"			2½"	2"
B 30	½"ϕ	4	22'-6"	Str.	(Field Bend)				
B 31	½"ϕ	9	19'-6"	Str.					
B 32	½"ϕ	4	21'-6"	Str.	(Field Bend)				
B 33	½"ϕ	9	16'-6"	Str.					
B 34		1	8'-9"		6'-9"				
to	¾"ϕ	of	to 10'-3"	III	to 8'-3"			3"	2½"
B 40		ea	by 3"		by 3"				

SUMMARY

1988	Linear feet of	½"ϕ @ 0.668#/ft.	1328#
99	" "	⅝"ϕ 1.043	103
1097	" "	¾"ϕ 1.502	1648
134	" "	⅞"ϕ 2.044	274
1820	" "	1"ϕ 2.670	4860
	+1%± (overrun)		87
	Total		8300#

BAR LIST - ABUT No. 2

Mark	Size	No.	Length	Type	ℓ	m	n	r	t
A 2	1"ϕ	41	8'-2"	I	6'-6"			4"	7½"
A 4	1"ϕ	42	11'-9"	I	10'-1"			4"	7½"
A 19	½"ϕ	6	6'-0"	Str.					
A 20	½"ϕ	14	22'-11"	IV	17'-3"	5'-8"	2'-10"		
A 21	½"ϕ	14	22'-4"	IV	17'-3"	5'-1"	4'-4⅜"		
A 22	1"ϕ	4	24'-3"	II	17'-8"	3'-8"		4"	3½"
A 23	1"ϕ	4	24'-5"	II	17'-10"	3'-8"		4"	3½"
A 24	1"ϕ	22	22'-9"	II	16'-2"	3'-8"		4"	3½"
A 25	⅜"ϕ	28	10'-6"	III	8'-6"			3"	2½"
A 26	½"ϕ	13	36'-0"	Str.					
A 27	⅜"ϕ	88	7'-10"	I	6'-10"			3"	2½"
A 28	⅜"ϕ	11	6'-5"	I	5'-7"			2½"	2"
A 29		1	7'-11"		6'-3"				
to	⅜"ϕ	of	to 8'-10"	III	to 7'-2"			2½"	2"
A 33		ea.	by 2 3/4		by 2 3/4				
A 34		1	9'-4"		7'-4"				
to	⅜"ϕ	of	to 10'-3"	III	to 8'-3"			3"	2½"
A 38		ea.	by 2 3/4		by 2 3/4				
A 39	½"ϕ	9	21'-0"	Str.					
A 40	½"ϕ	4	26'-0"	Str.	(Field Bend)				
A 41	½"ϕ	4	25'-6"	Str.	(Field Bend)				
A 42	½"ϕ	9	28'-0"	Str.					
A 43	⅝"ϕ	13	6'-3"	I	5'-5"			2½"	2"
A 44		1	7'-5"		5'-9"				
to	⅝"ϕ	of	to 8'-6⅜"	III	to 6'-10⅜"			2½"	2"
A 49		ea.	by 2 3/4		by 2 3/4				
A 50		1	9'-0½"		7'-0½"				
to	⅜"ϕ	of	to 10'-6"	III	to 8'-6"			3	2½"
A 56		ea.	by 2 3/4		by 2 3/4				
B 1	⅞"ϕ	11	6'-4"	I	5'-2"			3½"	3"
B 2	⅞"ϕ	11	9'-4"	I	8'-2"			3½"	3"
B 4	½"ϕ	11	15'-8"	Str.					
C 1		1	2'-9"						
to	½"ϕ	of	to 14'-5"	Str.					
C 5		ea.	by 2'-11"						
C 6		1	17'-1"		11'-11"	2'-5"			
to	⅞"ϕ	of	to 19'-7½"	II	to 13'-11½"	to 2'-11"		3½"	3"
C 10		ea.	by 7 5/8"		by 6 1/16"	by 1½"			
C 11		1	20'-4⅞"		14'-5⅞"	3'-0			
to	1"ϕ	of	to 23'-6⅜"	II	to 17'-0¼"	to 3'-7¼"		4"	3½"
C 16		ea.	by 7 5/8"		by 6 1/8"	by 1½"			
D 1		1	3'-2"						
to	½"ϕ	of	to 17'-9"	Str.					
D 6		ea.	by 2'-11"						
D 7	½"ϕ	10	19'-8"	Str.					
D 8		1	15'-9"		10'-10"	2'-2"			
to	⅞"ϕ	of	to 19'-6⅜"	II	to 13'-10⅝"	to 2'-11"		3½"	3"
D 14		ea.	by 7 5/8"		by 6 1/16"	by 1½"			
D 15		1	20'-3⅞"		14'-8⅞"	3'-0"			
to	1"ϕ	of	to 24'-1⅝"	II	to 17'-5⅞"	to 3'-9"		4"	3½"
D 21		ea.	by 7 5/8"		by 6 1/8"	by 1½"			

SUMMARY

2259	Linear feet of	½"ϕ @ 0.668#/ft.	1509#
242	" "	⅝"ϕ 1.043	252
1101	" "	¾"ϕ 1.502	1652
388	" "	⅞"ϕ 2.044	793
2010	" "	1"ϕ 2.670	5368
	+1%± (overrun)		956
	Total		10530#

BAR LIST - SUPERSTRUCTURE

Mark	Size	No.	Length	Type	ℓ	r	t
E 1	⅞"ϕ	45	27'-4"	III	25'-0"	3½"	3"
E 2	⅞"ϕ	45	27'-0"	V		3½"	3"
E 3	1"	10	27'-7"	III	24'-11"	4"	3½"
E 4	½"	8	26'-7"	III	25'-3"	2"	2"
E 5	⅞"ϕ	35	33'-6"	Str.			
E 6	½"ϕ	52	7'-4"	VI			
E 7	½"	106	3'-6"	III	2'-2"	2"	2"
E 8	½"ϕ	6	26'-0"	Str.			
H 1	½"	24	6'-6"	VII			
H 2	½"ϕ	6	17'-8"	Str.			
H 3	½"	16	7'-0"	VIII			
H 4	½"ϕ	16	7'-6"	Str.	(Field Bend)		

SUMMARY

763	Linear feet of	½"ϕ @ 0.668#/ft.	510#
3618	" "	⅞"ϕ 2.044	7395
852	" "	½" 0.850	724
276	" "	1" 3.400	938
	+1%(overrun)		93
	Total		9660#

SUMMARY OF QUANTITIES

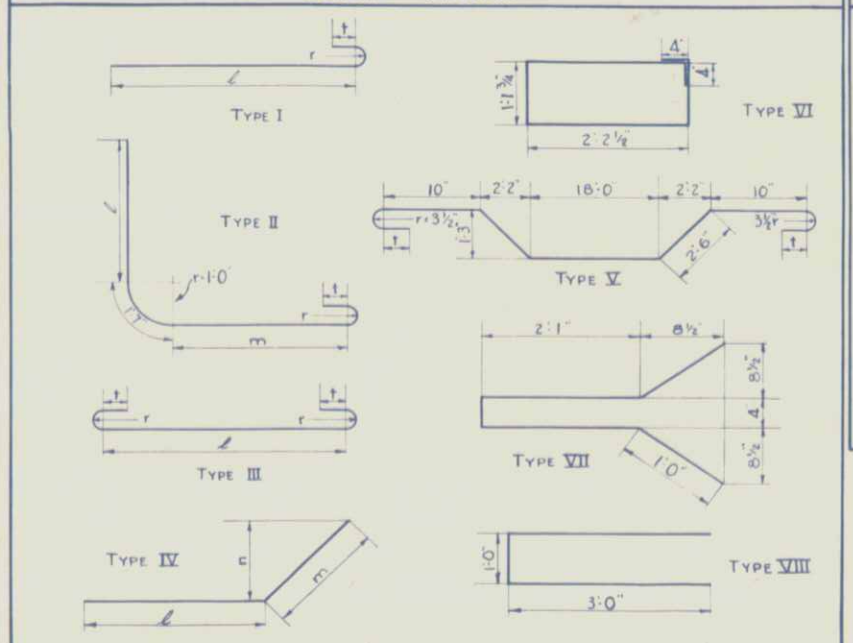
Item No.	Item	Unit	Abut. #1	Abut. #2	Superstr.	Total
14a	Dry Rock Excavation (Str.)	Cu. Yds.				5
14b	" Common " "	" "	135	113		248
14c	Wet Rock " "	" "				5
14d	" Common " "	" "	130	118		248
14e	Mechanical Tamping	Hours	50	45		95
42a	Untreated Bridge Timber	Mft. bm.	0.128	0.128		0.256
46a	Class 'A' Concrete	Cu. Yds.	96.9	107.6	61.1	265.6
46r	" " " (Handrails)	" "			3.39	3.39
47	Reinforcing Steel	Lbs.	8300	10530	9660	28490
*	¼" Expansion Joint Material	Sq. Ft.	42	42		84

* to be included in unit bid price of Class 'A' Concrete.

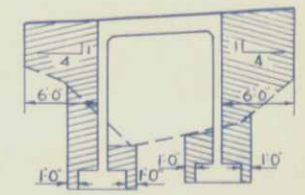
REFERENCE DRAWINGS

SHEET No. 9 - DETAILS, 24'-0" SPAN CONC. SLAB BRIDGE.

BENDING DIAGRAMS



MECHANICAL TAMPING DIAGRAM



Contractor's attention is called to Specifications covering Mechanical Tamping. Especial care shall be taken to prevent deflection of the wing walls by wedging action.

LOADING DATA.
LIVE LOAD: A. A. S. H. O. 1941
DEAD LOAD: ASSUMES 15 LBS PER SQ. FT. ADDITIONAL WEARING SURFACE WHICH INCLUDES THE ¼ INCH CONCRETE MONOLITHIC WEARING SURFACE SHOWN.

DESIGNING DATA.
A. A. S. H. O. 1941
f_s = 18000 #/in²
n = 12

GENERAL NOTES

ALL WORK SHALL BE DONE ACCORDING TO THE STANDARD SPECIFICATIONS OF THE COLORADO STATE HIGHWAY DEPARTMENT ADOPTED JUNE 1, 1940.

ALL CONCRETE SHALL BE CLASS "A".

FORMS FOR CONCRETE SURFACES EXPOSED IN THE FINISHED WORK SHALL BE CONSTRUCTED OF SHIPLAP OR TONGUE AND GROOVE LUMBER S2S UNLESS FACED WITH PANEL BOARD.

CONCRETE GIRDERS, FLOOR SLABS AND CURB SHALL BE POURED MONOLITHICALLY. FOOTINGS IN ROCK SHALL BE POURED OUT TO THE ROCK AND NOT FORMED.

ALL REINFORCING BARS SHALL BE DEFORMED AND TAGGED WITH THE STATION NUMBER AND LETTER DESIGNATION. MAIN BARS SHALL NOT BE SPLICED.

SOUNDINGS AND DEPTH OF FOOTINGS SHOWN ARE ACCORDING TO THE BEST AVAILABLE DATA. IF ESSENTIALLY DIFFERENT CONDITIONS ARE ENCOUNTERED THE BRIDGE ENGINEER WILL INSPECT AND DETERMINE IF REDESIGN IS NECESSARY.

ALL REINFORCING STEEL TO BE INTERMEDIATE GRADE.

COLORADO
STATE HIGHWAY DEPARTMENT
24'-0" SPAN CONC. SLAB BRIDGE
LAYOUT, BAR LIST & SUMMARY

Across Outlet Fossil Creek Reservoir
Sta. 2565+55 to 2565+89.07
Near Timnath Sec. 15 T 6N R 68 W

Designed by W.W.D.	Approved by P. D. Bailey
Made by T.T.E.	Bridge Engineer
Checked by	Date: Nov. 12th, 1941.

REVISIONS

Initial	Date
WWD	Oct

FED. ROAD DIST. NO.	STATE	S.N.-F.A.P.	SHEET NO.	TOTAL SHEETS
3	COLO.	44 B(1)	9	

HANDRAIL ELEVATION

SECTION B-B

SECTION C-C

SECTION THRU SLAB

SECTION AT ℄ ROADWAY

ABUTMENT Nº1

ABUTMENT Nº2

SECTION A-A

SECTION & ELEVATION OF S.W. WING

ELEVATION OF N.W. WING

SECTION D-D

SECTION E-E

ELEVATION OF N.E. WING

ELEVATION OF S.E. WING

SECTION F-F

Max. Toe Pressure 3000# per sq. ft.

LOADING DATA
FIVE LOAD A.R.E.A. H.O. 1941 H-15
DEADLOAD ALLOWANCE 150 LBS. PER SQ. FT. ADDITIONAL WEARING SURFACE WHICH INCLUDES THE ½ INCH CONCRETE MONOLITHIC WEARING SURFACE SHOWN.

DESIGNING DATA
A.R.E.A. H.O. 1941
f'c = 2250#
fs = 18000#
n = 10

COLORADO
STATE HIGHWAY DEPARTMENT

24'-0" SPAN CONC. SLAB BRIDGE

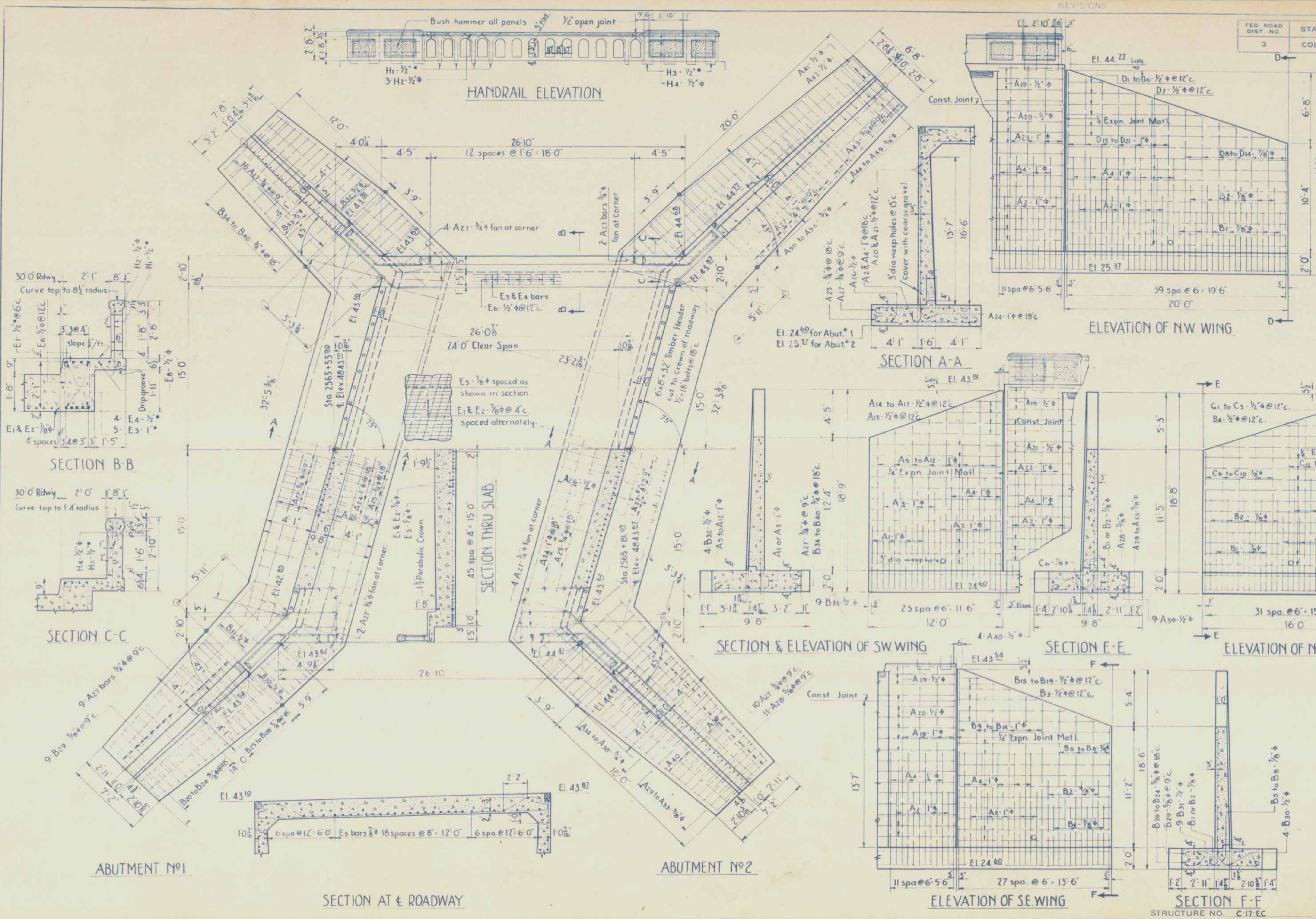
DETAILS ~

Across Outlet Fossil Creek Reservoir
Sta. 2565+55 to 2565+81.07
Near Timnath Sec. 15 T. 6N R. 68W

Designed by W.W.D.	Approved by P. D. Bailey
Made by T.T.E.	Bridge Engineer
Checked by	Date: Nov. 12th 1941.

STRUCTURE NO. C-17-EC

FED. ROAD DIST. NO.	STATE	SN. F.A.P.	SHEET NO.	TOTAL SHEETS
3	COLO.	44 B(1)	9	



Max. Toe Pressure 3000# per sq. ft.

LOADING DATA
LIVE LOAD A.A.S.H.O. 1941 H-15
DEAD LOAD ... ADDITIONAL WEARING SURFACE WHICH INCLUDES THE ½ INCH CONCRETE MONOLITHIC WEARING SURFACE SHOWN.

DESIGNING DATA
A.A.S.H.O. 1941

STRUCTURE NO. C-17-EC

COLORADO
STATE HIGHWAY DEPARTMENT
24'0" SPAN CONC. SLAB BRIDGE
DETAILS~

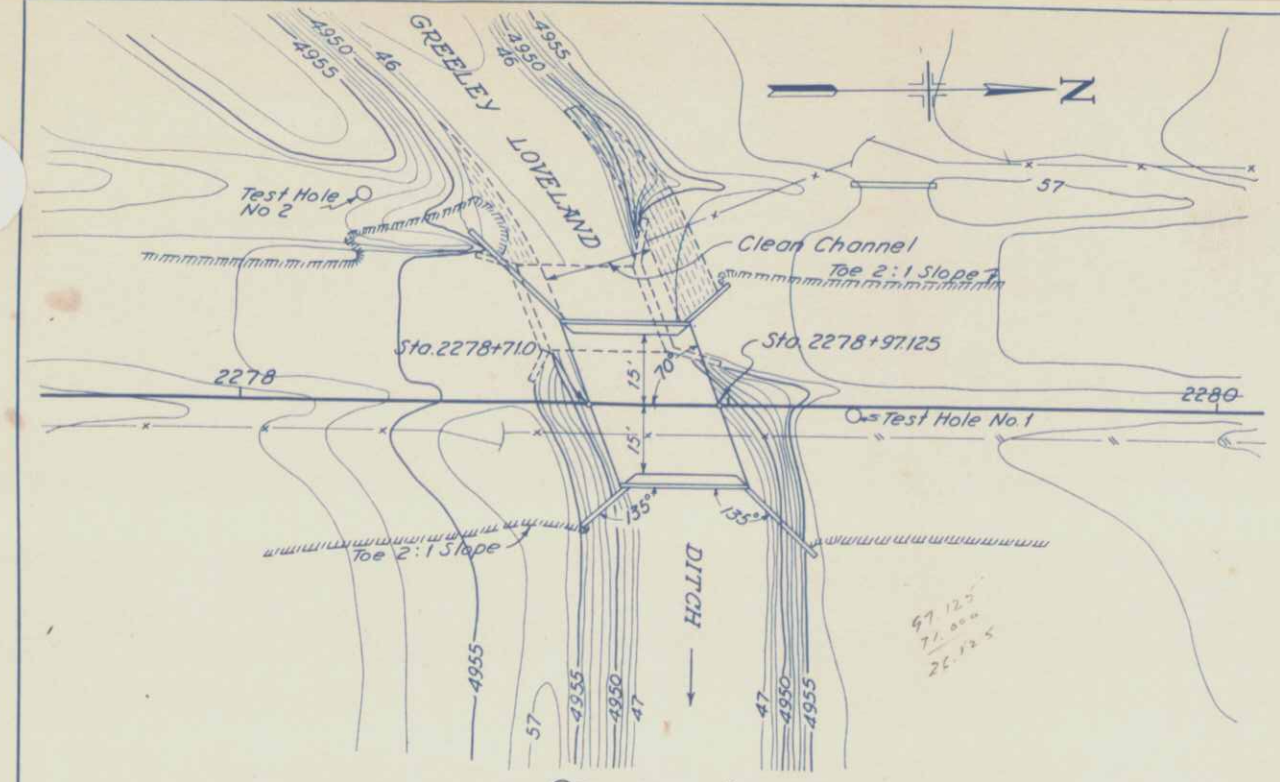
Across Outlet Fossil Creek Reservoir
Sta. 2565+55 to 2565+81.07
Near Timnath Sec. 15 T. 6N. R. 68W.

Designed by W.W.D. | Approved by P. S. Bailey
Made by T.T.E. | Bridge Engineer
Checked by | Date: Nov. 12th 1941.

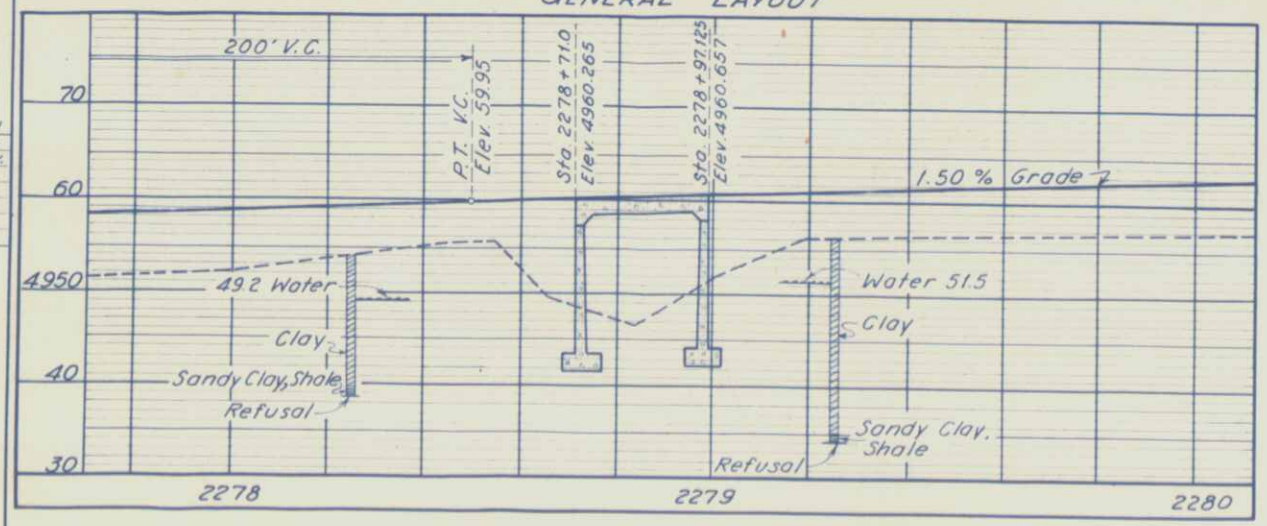
REVISIONS

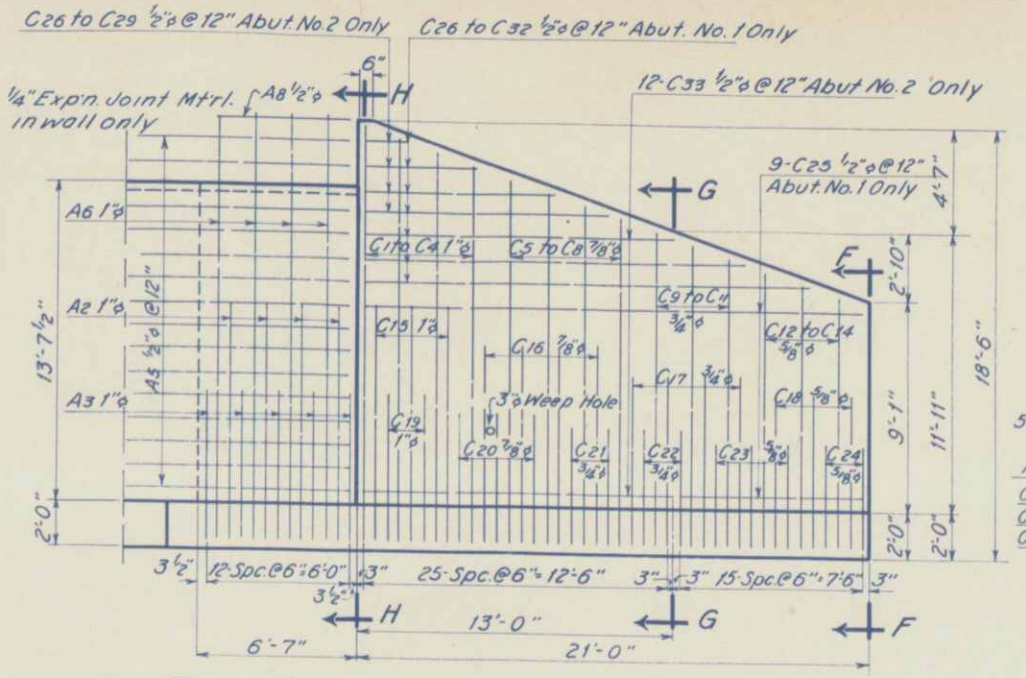
Initial	Date
E.D.W.	NOV. 1941
A.D.N.	"
J.W.T.	"
A.D.N.	"

FED. ROAD DIST. NO.	STATE	S.N. F.A.P.	SHEET NO.	TOTAL SHEETS
3	COLO.	44 B(11)	10	

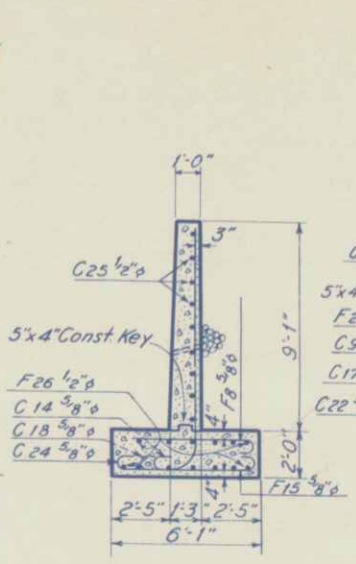


GENERAL LAYOUT

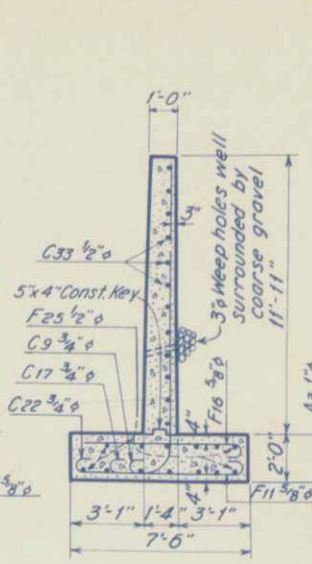




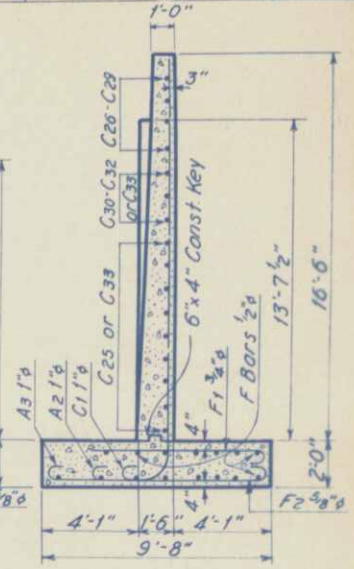
TRUE ELEVATION OF 21'-0" & 13'-0" WING WALLS



SECTION FF



SECTION GG



SECTION HH

ABUT. NO 1 & NO 2 BAR LIST (CONT.)

A.D.N. - C.L.T.

MARK	SIZE	NO. REQ'D NO.1	NO.2	LENGTH	TYPE	ℓ	m	r	t
C12	⅝"ø	1	-	13'-10"		10'-11"	0'-6"	2½"	2
C13	"	1	-	13'-4"		10'-5"	0'-6"	2½"	2
C14	"	1	-	12'-9"		9'-10"	0'-6"	2½"	2
C15	1"ø	3	3	13'-10"		9'-2"	1'-9"	4"	3½"
C16	⅞"ø	4	4	11'-10"		7'-7"	1'-6"	3½"	3"
C17	¾"ø	4	2	10'-3"	V	6'-5"	1'-3"	3"	2½"
C18	⅝"ø	3	-	9'-1"		5'-8"	1'-0"	2½"	2"
C19	1"ø	2	2	11'-11"		5'-6"	3'-6"	4"	3½"
C20	⅞"ø	3	3	10'-6"		4'-8"	3'-1"	3½"	3"
C21	¾"ø	2	2	9'-7"		4'-1"	2'-11"	3"	2½"
C22	¾"ø	2	1	9'-4"		4'-1"	2'-8"	3"	2½"
C23	¾"ø	3	-	8'-2"		3'-6"	2'-3"	2½"	2"
C24	¾"ø	2	-	7'-11"		3'-6"	2'-0"	2½"	2"
C25	½"ø	9	-	20'-8"	Str.				
C26				2'-0"	"				
to	½"ø	1-EO.	1-EO.	by 2'-9"	"				
C29				to 10'-3"	"				
C30	½"ø	1	-	13'-0"	"				
C31	"	1	-	15'-9"	"				
C32	"	1	-	18'-6"	"				
C33	"	-	12	12'-8"	"				
F1	¾"ø	67	67	7'-11"		6'-11"		3	2½"
F2	⅝"ø	30	30	7'-3"		6'-5"		2½"	2"
F3	¾"ø	7	7	7'-8"		6'-8"		3	2½"
F4	"	3	3	7'-5"		6'-5"		"	"
F5	"	3	3	7'-2"		6'-2"		"	"
F6	"	3	1	6'-2"		5'-4"		2½"	2"
F7	"	3	-	5'-11"		5'-1"		"	"
F8	"	3	-	5'-8"		4'-10"		"	"
F9		4	4	7'-1"	VIII	6'-3"		"	"
F10		4	4	6'-10"		6'-0"		"	"
F11	⅝"ø	3	3	6'-7"		5'-9"		"	"
F12		2	2	6'-4"		5'-6"		"	"
F13		2	-	6'-1"		5'-3"		"	"
F14		2	-	5'-10"		5'-0"		"	"
F15		2	-	5'-7"		4'-9"		"	"
F16		2	2	6'-8"		5'-10"		"	"
F17		31	31	20'-0"	Str.				
F18		2	2	10'-9"	"				
F19		2	2	25'-0"	"				
F20	½"ø	2	2	12'-3"	"				
F21		2	2	15'-6"	"				
F22		2	2	22'-6"	"				
F23		2	2	17'-6"	"				
F24		1	1	7'-6"	"				
F25		-	13	14'-0"	"				
F26		13	-	22'-0"	"				

BAR SUMMARY FOR ABUTMENT NO.1

1617 Lin. ft. of 1"ø	@ 2.670 #/Lin. ft.	=	4317 #
233 " " " ⅞"ø	@ 2.044 #/ " "	=	476
752 " " " ¾"ø	@ 1.502 #/ " "	=	1130
515 " " " ⅝"ø	@ 1.043 #/ " "	=	537
2189 " " " ½"ø	@ 0.668 #/ " "	=	1462
+1%± for Overrun		=	78
TOTAL		=	8000 #

SUPERSTRUCTURE BAR LIST

A.D.N. - C.L.T.

MARK	SIZE	NO.	LENGTH	TYPE	ℓ	r	t
H1	½"ø	44	6'-8"	I			
H2	½"ø	16	6'-3"	Straight Field Bend			
H3	"	4	5'-9"	"		"	"
H4	"	16	10'-2"	"		"	"
E1	⅜"ø	45	27'-4"	II	25'-0"	3½"	3"
E2	⅜"ø	45	26'-11"	III		3½"	3"
E3	1"ø	10	27'-7"	II	24'-11"	4"	3½"
E4	½"ø	48	7'-3"	IV			
E5	"	8	24'-0"	Str.			
E6	"	108	3'-6"	II	2'-2"	2"	2"
E7	½"ø	4	27'-0"	Str.			
D1	⅜"ø	29	34'-6"	Str.			

BAR SUMMARY

276 Lin. ft. of 1"ø	@ 3.400 #/Lin. ft.	=	938 #
3388 " " " ⅜"ø	@ 2.044 #/ " "	=	6925
1211 " " " ½"ø	@ 0.850 #/ " "	=	1029
394 " " " ½"ø	@ 0.668 #/ " "	=	263
+1%± for Overrun			95
TOTAL			9250 #

ABUTMENT NO.1 & NO.2 BAR LIST

A.D.N. - C.L.T.

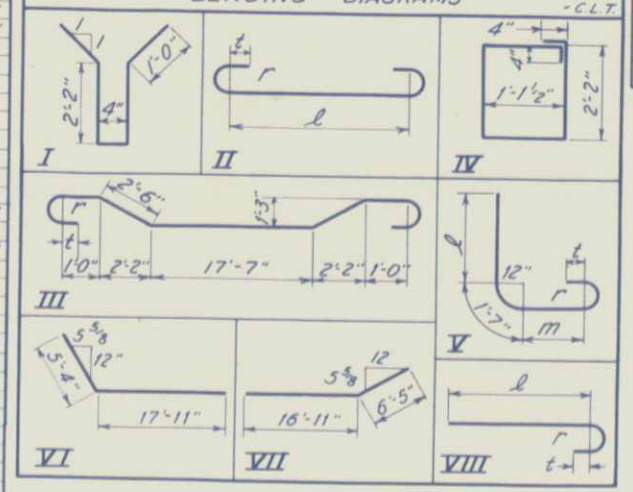
MARK	SIZE	NO. REQ'D NO.1	NO.2	LENGTH	TYPE	ℓ	m	r	t
A1	1"ø	22	22	19'-7"	V	16'-2"	0'-6"	4"	3½"
A2	1"ø	30	30	13'-11"	V	9'-2"	1'-10"	4"	3½"
A3	1"ø	30	30	12'-1"	V	3'-6"	3'-8"	4"	3½"
A4	½"ø	15	15	23'-3"	VII				
A5	½"ø	15	15	23'-5"	VII				
A6	1"ø	7	7	20'-10"	V	17'-5"	0'-6"	4	3½"
A7	½"ø	1	1	5'-0"	Str.				
A8	½"ø	1	1	6'-0"	"				
B1				20'-4"		16'-11"			
to	1"ø	1-EO.	1-EO.	by 7"to	V	by 7"to	0'-6"	4"	3½"
B4				18'-7"		15'-3"			
B5	⅞"ø	1	1	17'-0"	V	14'-7"	0'-6"	3½"	3"
B6	1"ø	2	2	13'-8"	V	9'-0"	1'-9"	4"	3½"
B7	⅞"ø	3	3	11'-10"	V	7'-6"	1'-7"	3½"	3"
B8	1"ø	1	1	11'-9"	V	5'-3"	3'-7"	4	3½"
B9	⅞"ø	1	1	10'-11"	V	4'-8"	3'-6"	3½"	3"
B10	⅞"ø	1	1	10'-9"	V	4'-8"	3'-4"	3½"	3"
B11	⅞"ø	1	1	10'-7"	V	4'-8"	3'-2"	3½"	3"
B12	½"ø	14	14	6'-8"	Str.				
B13	½"ø	1	1	2'-0"	"				
B14	½"ø	1	1	4'-6"	"				
C1				20'-4"		16'-11"			
to	1"ø	1-EO.	1-EO.	by 6½"to	V	by 6½"to	0'-6"	4"	3½"
C4				18'-8½"		15'-3½"			
C5				18'-0"		14'-9"			
to	⅞"ø	1-EO.	1-EO.	by 6½"to	V	by 6½"to	0'-6"	3½"	3"
C8				16'-4½"		13'-1½"			
C9	¾"ø	1	1	15'-8"	V	12'-7"	0'-6"	3	2½"
C10	"	1	-	15'-1"	V	12'-0"	0'-6"	3	2½"
C11	"	1	-	14'-7"	V	11'-6"	0'-6"	3	2½"

BAR SUMMARY FOR ABUTMENT NO.2

1617 Lin. ft. of 1"ø	@ 2.670 #/Lin. ft.	=	4317 #
233 " " " ⅞"ø	@ 2.044 #/ " "	=	476
693 " " " ¾"ø	@ 1.502 #/ " "	=	1041
325 " " " ⅝"ø	@ 1.043 #/ " "	=	339
1865 " " " ½"ø	@ 0.668 #/ " "	=	1246
+1%± for Overrun		=	71
TOTAL		=	7490 #

BENDING DIAGRAMS

A.D.N. - C.L.T.



REFERENCE DRAWINGS

SHEET NO. 11 SUPERSTRUCTURE AND ABUTMENT DETAILS

GENERAL NOTES

ALL WORK SHALL BE DONE ACCORDING TO THE STANDARD SPECIFICATIONS OF THE COLORADO STATE HIGHWAY DEPARTMENT.

ALL CONCRETE SHALL BE CLASS "A."

FORMS FOR CONCRETE SURFACES EXPOSED IN THE FINISHED WORK SHALL BE CONSTRUCTED OF SHIPLAP OR TONGUE AND GROOVE LUMBER S3S UNLESS FACED WITH PANEL BOARD.

CONCRETE GIRDERS, FLOOR SLABS AND CURB SHALL BE POURED MONOLITHICALLY. FOOTINGS IN ROCK SHALL BE POURED OUT TO THE ROCK AND NOT FORMED.

ALL REINFORCING BARS SHALL BE DEFORMED AND TAGGED WITH THE STATION NUMBER AND LETTER DESIGNATION. MAIN BARS SHALL NOT BE SPLICED.

SOUNDINGS AND DEPTH OF FOOTINGS SHOWN ARE ACCORDING TO THE BEST AVAILABLE DATA. IF ESSENTIALLY DIFFERENT CONDITIONS ARE ENCOUNTERED THE BRIDGE ENGINEER WILL INSPECT AND DETERMINE IF REDESIGN IS NECESSARY.

ALL REINFORCING STEEL TO BE INTERMEDIATE GRADE.

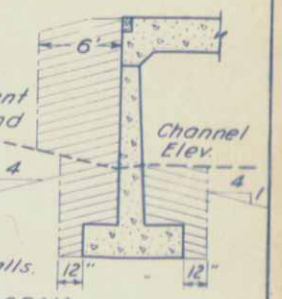
SUMMARY OF QUANTITIES

C.L.T. - K.R.F.

ITEM	DESCRIPTION	UNIT	SUPERSTRUCT.	ABUTMENTS NO.1	ABUTMENTS NO.2	TOTAL
11a	Removal of Pres. Bridge	L.S.				*
14b	Dry Common Struct. Excav.	Cu. Yd.		65	75	140
14d	Wet " " "	" "		200	225	425
14e	Mechanical Tamping	Hrs.		66	69	135
42a	Untreated Bridge Timber	Mft. bm.		.13	.13	.26
46a	Class "A" Concrete	Cu. Yd.	63	98	91	252
46r	" " " Handrails	" "	3.2			3.2
47	Reinforcing Steel	Lbs.	9250	8000	7490	24740
89a	Drain Pipe Conc. Floor 4"x1'-9"	Each	2			2
*	¼" Exp'n. Joint Material	Sq. Ft.	12	41	41	94

* Include in Bid Price for Class "A" Concrete

Contractors attention is called to Specifications covering Mechanical Tamping. Especial care must be used to prevent deflection of wall by wedging action. Earth in 6" layers on a minimum slope of 4:1. Mechanical Tamping of each layer shall start along wall and continue away from wall. Rolling equipment SHALL Not be used within 6' of walls.



MECHANICAL TAMPING DIAGRAM

LOADING DATA.
LIVE LOAD A. A. S. H. O. 1941 CLASS A. (H-15)
DEAD LOAD ASSUMES 15 LBS. PER SQ. FT. ADDITIONAL WEARING SURFACE WHICH INCLUDES THE ½ INCH CONCRETE MONOLITHIC WEARING SURFACE SHOWN.

DESIGNING DATA
fs = 18,000 #/□"
fc = 833 #/□"
n = 12

COLORADO
STATE HIGHWAY DEPARTMENT

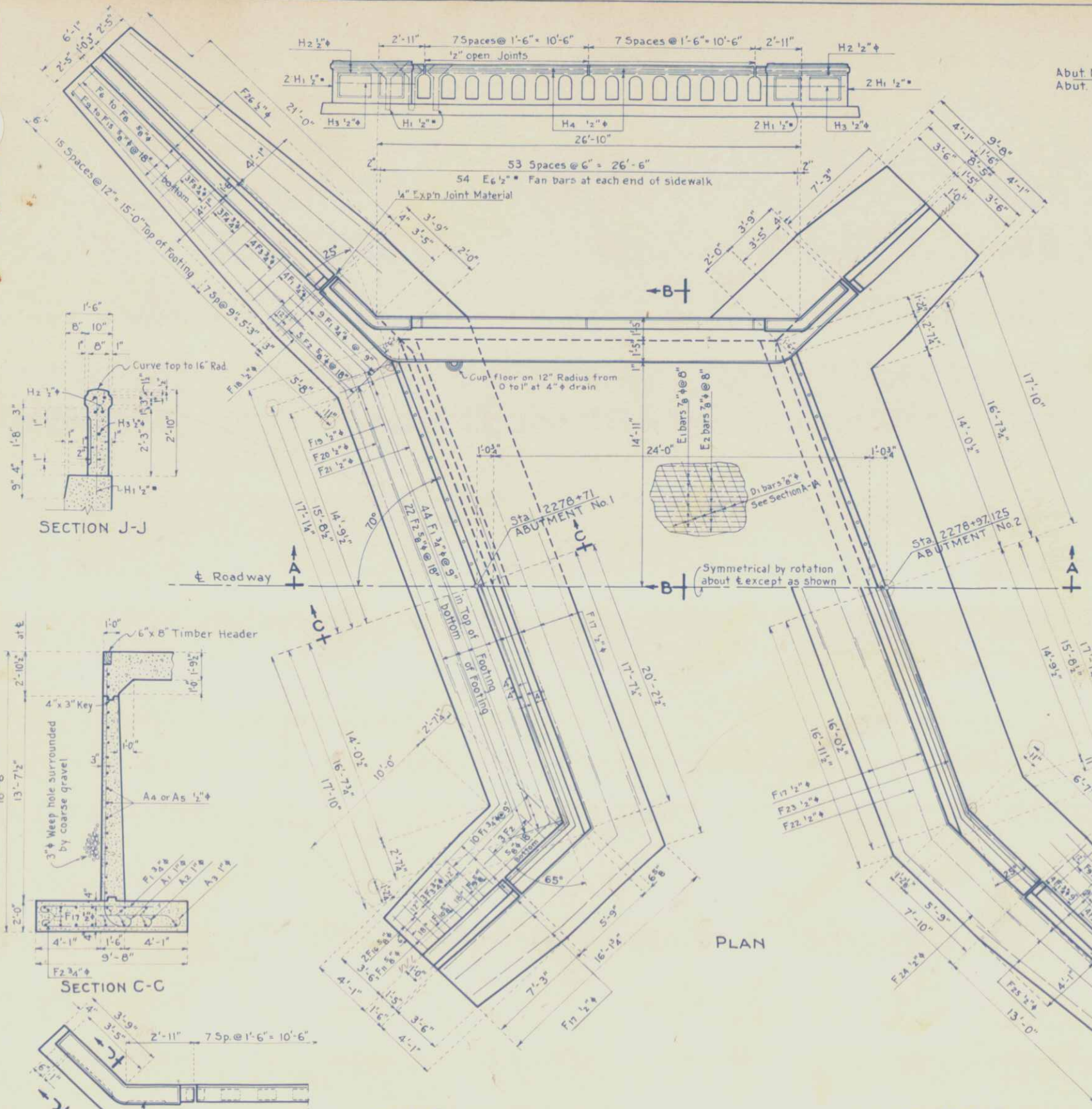
ONE 24'-0" CLEAR CONC. SLAB SPAN
DETAIL OF 13' & 21' WINGS
GEN. LAYOUT - BAR LISTS
& SUMMARY OF QUANT'S.

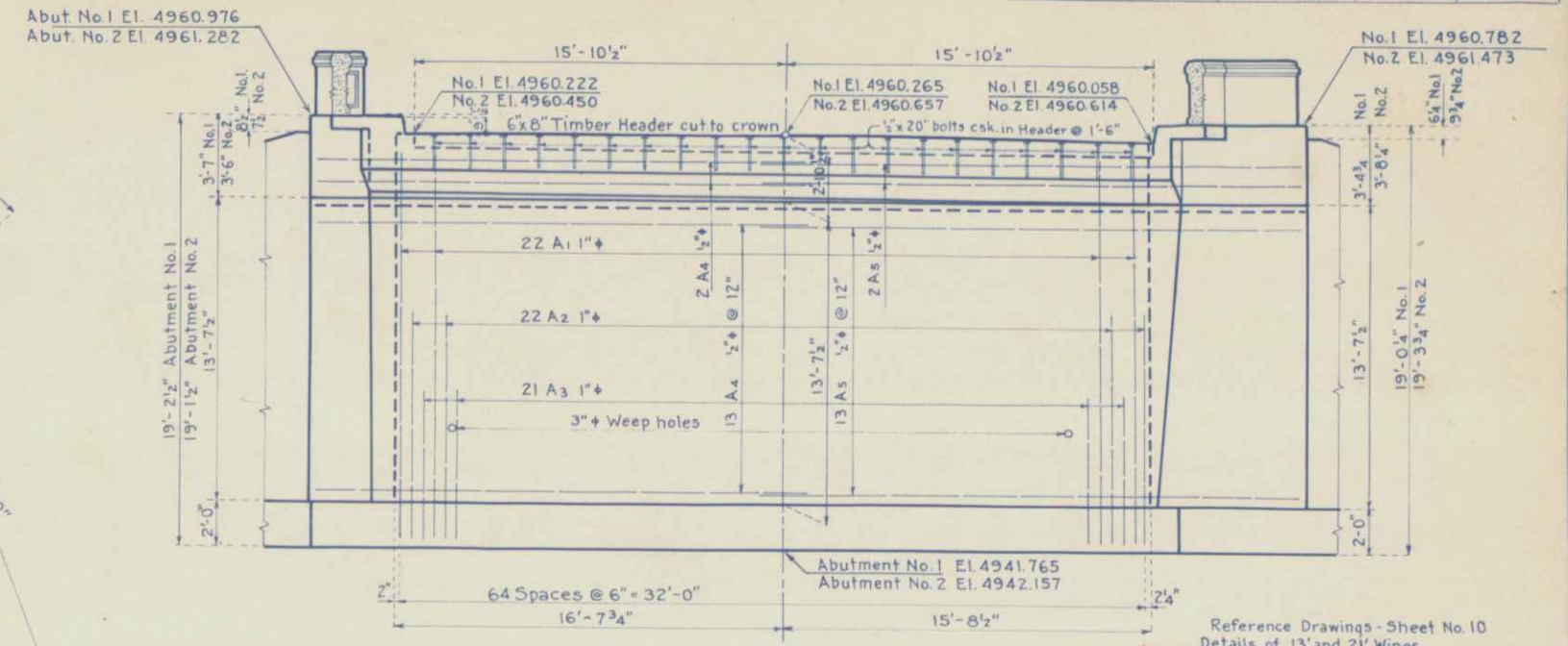
Across GREELEY LOVELAND DITCH
Sta. 2278+71.0 to 2278+97.125
Near KELIM Sec. 10 T. 5 N. R. 66 W.

Designed by E.D.W.	Approved by P. E. Bailey
Made by J.W.T.	Bridge Engineer
Checked by A.D.N.	Date: Nov. 12th 1941

REVISIONS

FED. ROAD DIST. NO.	STATE	SN F.A.P.	SHEET NO.	TOTAL SHEETS
3	COLO.	44-B(1)	11	

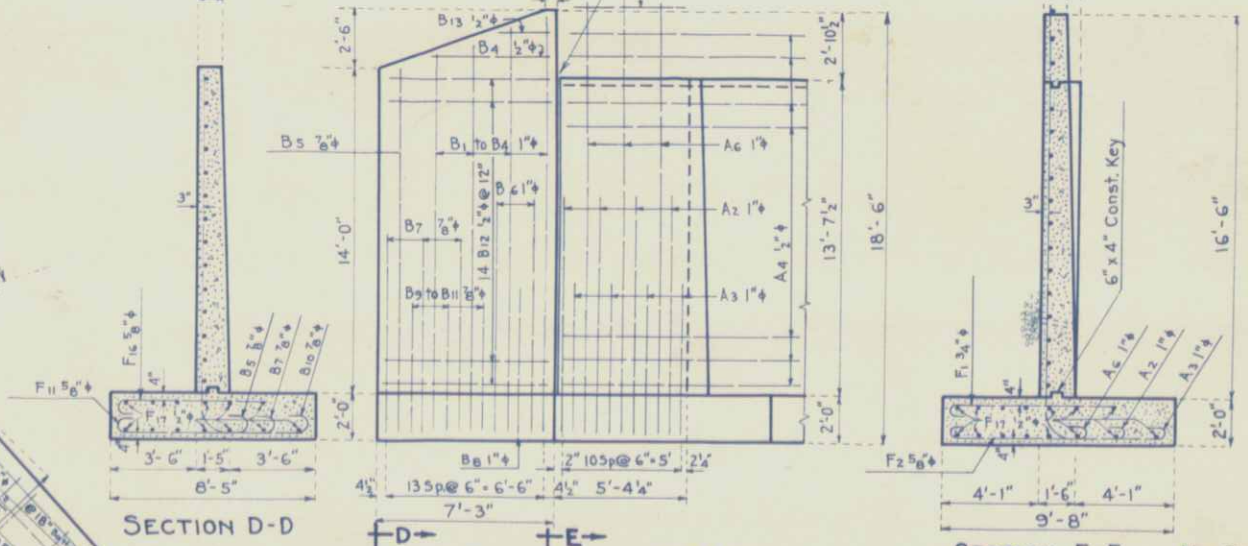




ELEVATION ABUTMENT No. 1

Abutment No. 2 Same except as noted.

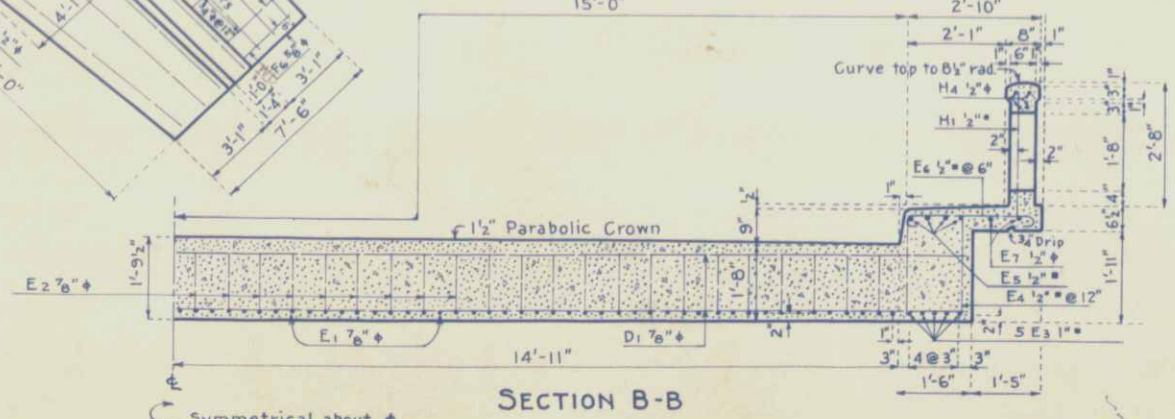
Reference Drawings - Sheet No. 10 Details of 13' and 21' Wings, General Layout, Bar Lists and Summary of Quantities.



Max. Toe Pressure 3000# per sq. ft.

LOADING DATA.
LIVE LOAD: A. A. S. H. O. 1941 CLASS A. "H-16"
DEAD LOAD: ASSUMES 18 LBS. PER SQ. FT. ADDITIONAL WEARING SURFACE WHICH INCLUDES THE ½ INCH CONCRETE MONOLITHIC WEARING SURFACE SHOWN.

DESIGNING DATA.
A.A.S.H.O. 1941 EXCEPT CONCRETE UNIT STRESSES
fs = 18,000# per sq. in.
fc = 838# per sq. in.
n = 12



COLORADO
STATE HIGHWAY DEPARTMENT
24'-0" CONCRETE SPAN DETAILS OF SUPERSTRUCTURE AND ABUTMENTS.

Across Greely - Loveland Ditch
Sta. 2278+71 to 2278+97.125
Near Kelim Sec. 10 T. 5 N. R. 68 W.

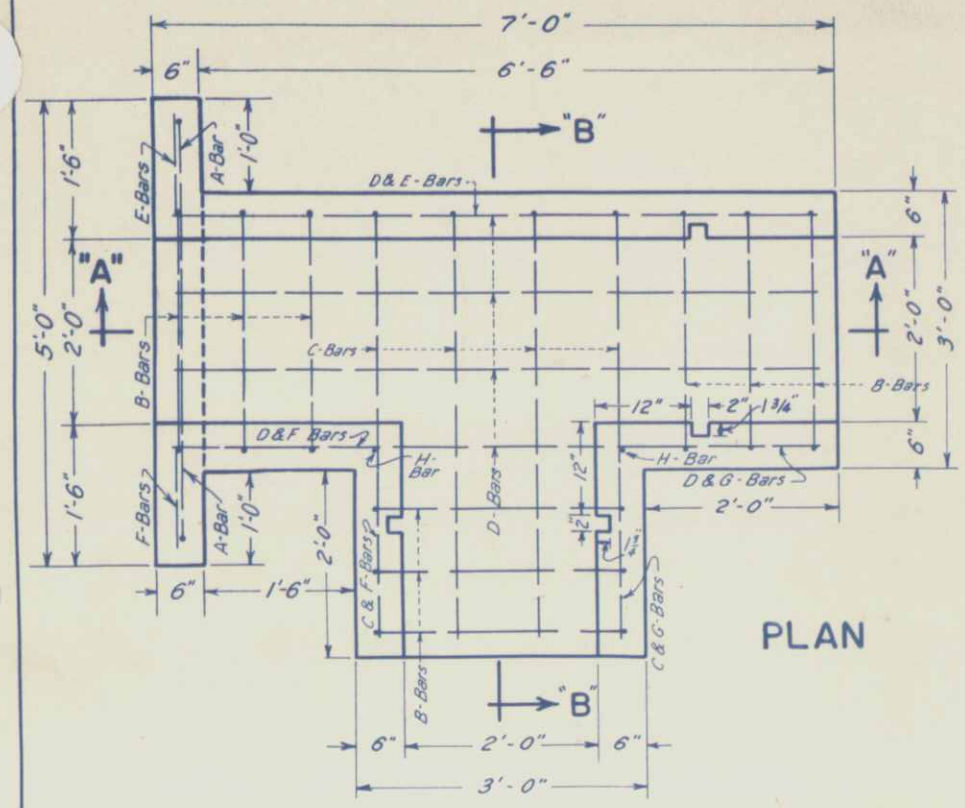
Designed by E.D.W.
Made by E.D.W. & A.P.M.
Checked by

Approved by P. D. Bailey
Bridge Engineer
Date: Nov. 12th 1941.

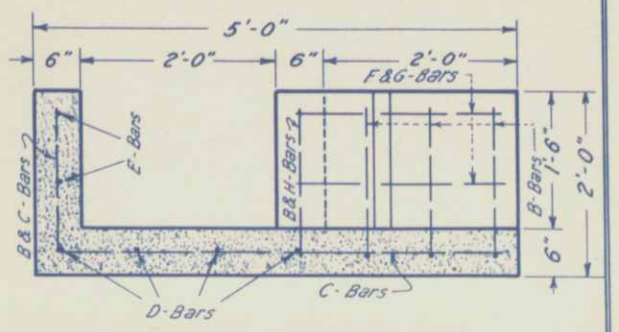
STRUCTURE NO. C 17 C 1

FED. ROAD DIST. NO.	STATE	SN-FED.AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	44-B(1)	12	

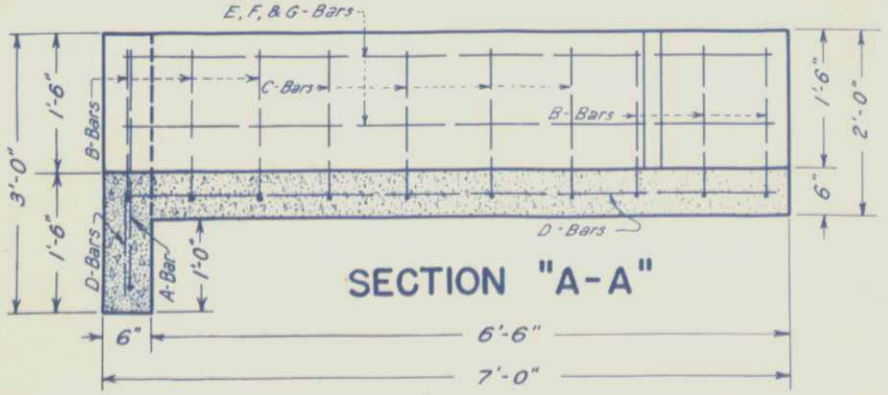
DETAIL OF CONCRETE DIVISION BOX, RT. OF STA. 2271+



PLAN

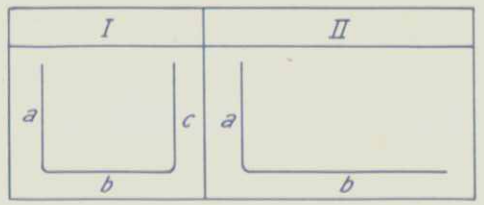


SECTION "B-B"



SECTION "A-A"

BENDING DIAGRAM



BAR LIST

All Dimensions are to ℄ of Bars

MARK	TYPE	SPACING	DIMENSION a	DIMENSION b	DIMENSION c	NO. OF BARS	LENGTH OF ONE BAR	TOTAL LENGTH
A	I		2'-7"	4'-6"	2'-7"	1	9'-8"	9'-8"
B	I	8"	1'-7"	2'-6"	1'-7"	9	5'-8"	51'-0"
C	II	10"	1'-7"	4'-7"		4	6'-2"	24'-8"
D	II	10"	1'-1"	6'-7"		4	7'-8"	30'-8"
E	II	9"	1'-1"	6'-7"		2	7'-8"	15'-4"
F	I	9"	1'-1"	2'-0"	2'-1"	2	5'-2"	10'-4"
G	II	9"	2'-1"	2'-1"		2	4'-2"	8'-4"
H	STRAIGHT					2	1'-8"	3'-4"
							TOTAL	153'-4"

All bars ½ ϕ @ 0.668 lbs. per lin. ft.

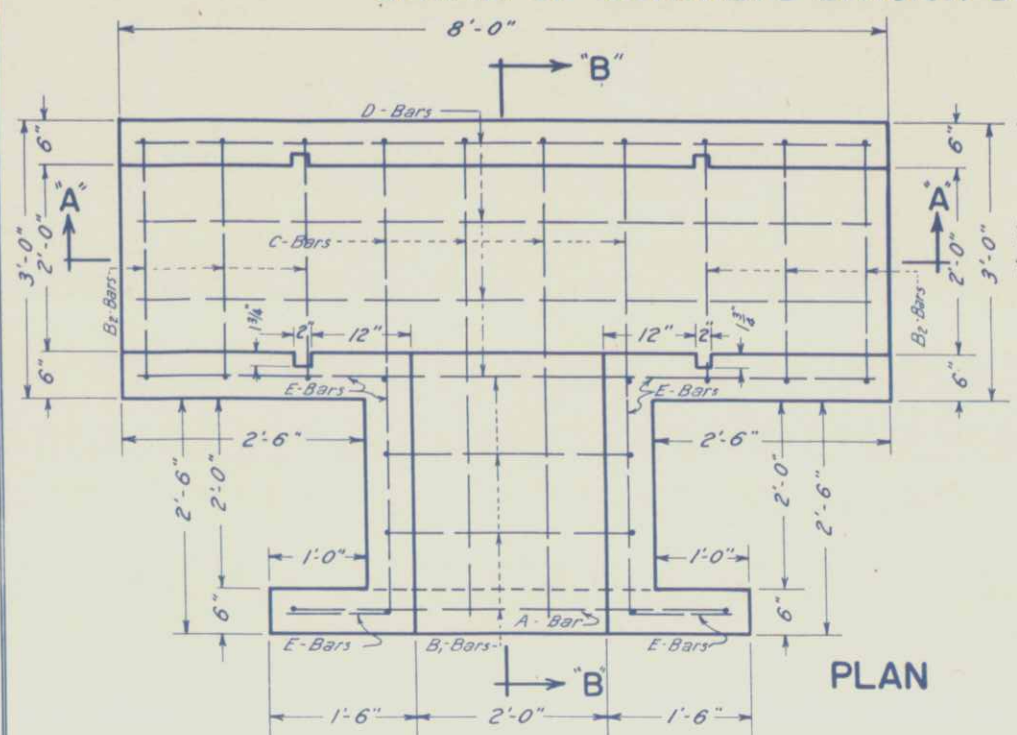
153'-4" x 0.668 lbs. per lin. ft. = 103 lbs.
Plus 1% ± for over-run = 1 lb.
Total Reinforcing Steel = 104 lbs.

3 pcs. 2" x 6" x 2'-3" Misc. Untr. Timber for Flash Boards = 6.75 Bd. Ft.

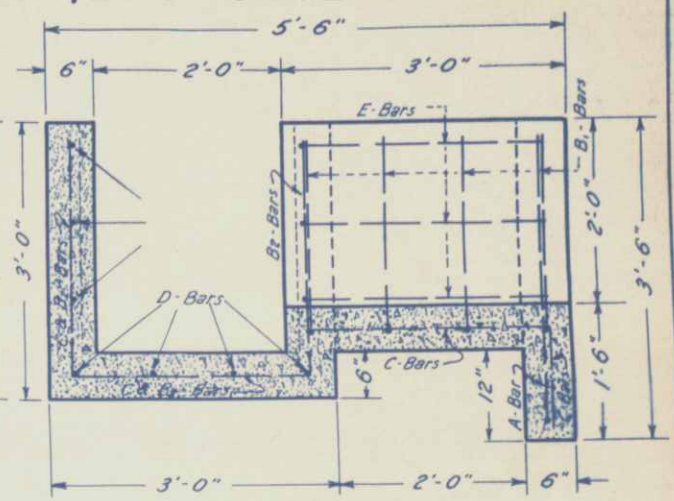
1.1 Cu. Yd. Class "A" Concrete

Note: All Reinforcing Bars are to be placed in center of Walls and Slabs.

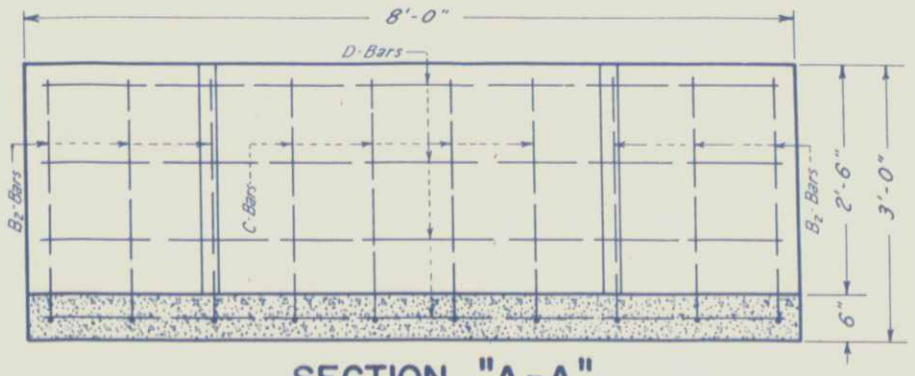
DETAIL OF CONCRETE DIVISION BOX, LT. OF STA. 2465+



PLAN

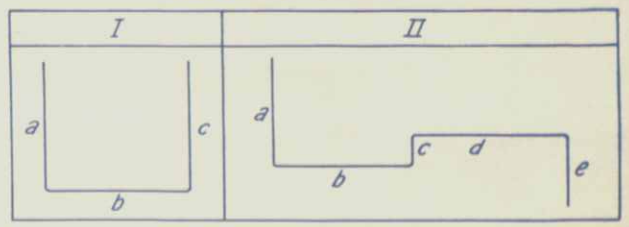


SECTION "B-B"



SECTION "A-A"

BENDING DIAGRAM



BAR LIST

All Dimensions are to ℄ of Bars

MARK	TYPE	SPACING	DIMENSION a	DIMENSION b	DIMENSION c	DIMENSION d	DIMENSION e	NO. OF BARS	LENGTH OF ONE BAR	TOTAL LENGTH
A	I	see detail	3'-1"	4'-6"	3'-1"			1	10'-8"	10'-8"
B_1	I	10"	2'-1"	2'-6"	2'-1"			4	6'-8"	26'-8"
B_2	I	10"	2'-7"	2'-6"	2'-7"			6	7'-8"	46'-0"
C	II	10"	2'-7"	2'-6"	6"	2'-6"	1'-1"	4	9'-2"	36'-8"
D	STRAIGHT	10"						7	7'-8"	53'-8"
E	I	10"	2'-7"	2'-6"	1'-1"			6	6'-2"	37'-0"
									TOTAL	210'-8"

All bars ½ ϕ @ 0.668 lbs. per lin. ft.

210'-8" x 0.668 lbs. per lin. ft. = 141 lbs.
Plus 1% ± for over-run = 1 lb.
Total Reinforcing Steel = 142 lbs.

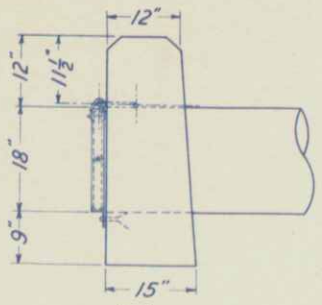
5 pcs. 2" x 6" x 2'-3" Misc. Untr. Timber for Flash Boards = 11.25 Bd. Ft.

1.6 Cu. Yd. Class "A" Concrete

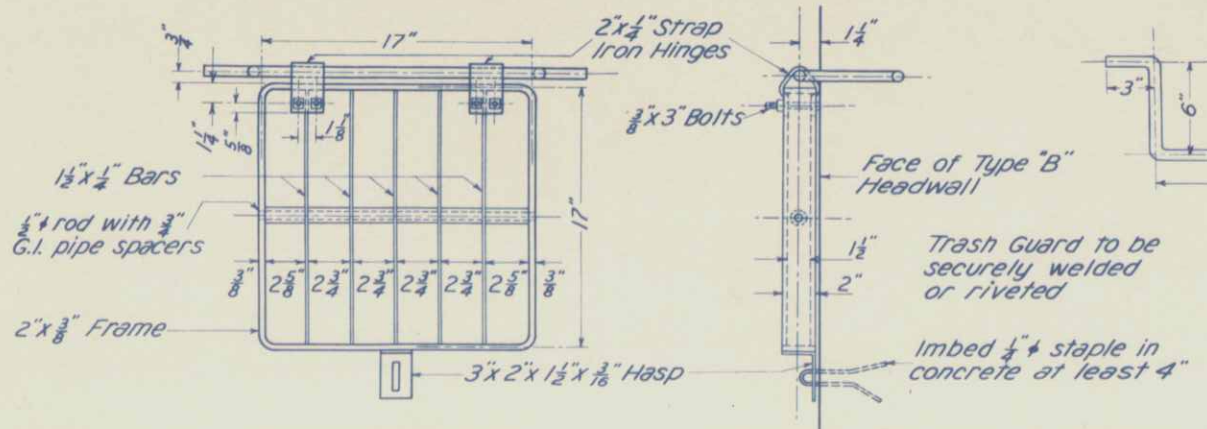
Note: All Reinforcing Bars are to be placed in center of Walls and Slabs.

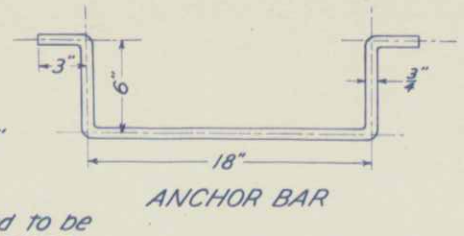
FED. ROAD DIST. NO.	STATE	SN-FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	44-B(1)	13	

DETAILS OF TRASH GUARD FOR 18" C.M.P. RT. OF STAS. 2269+ & 2271+



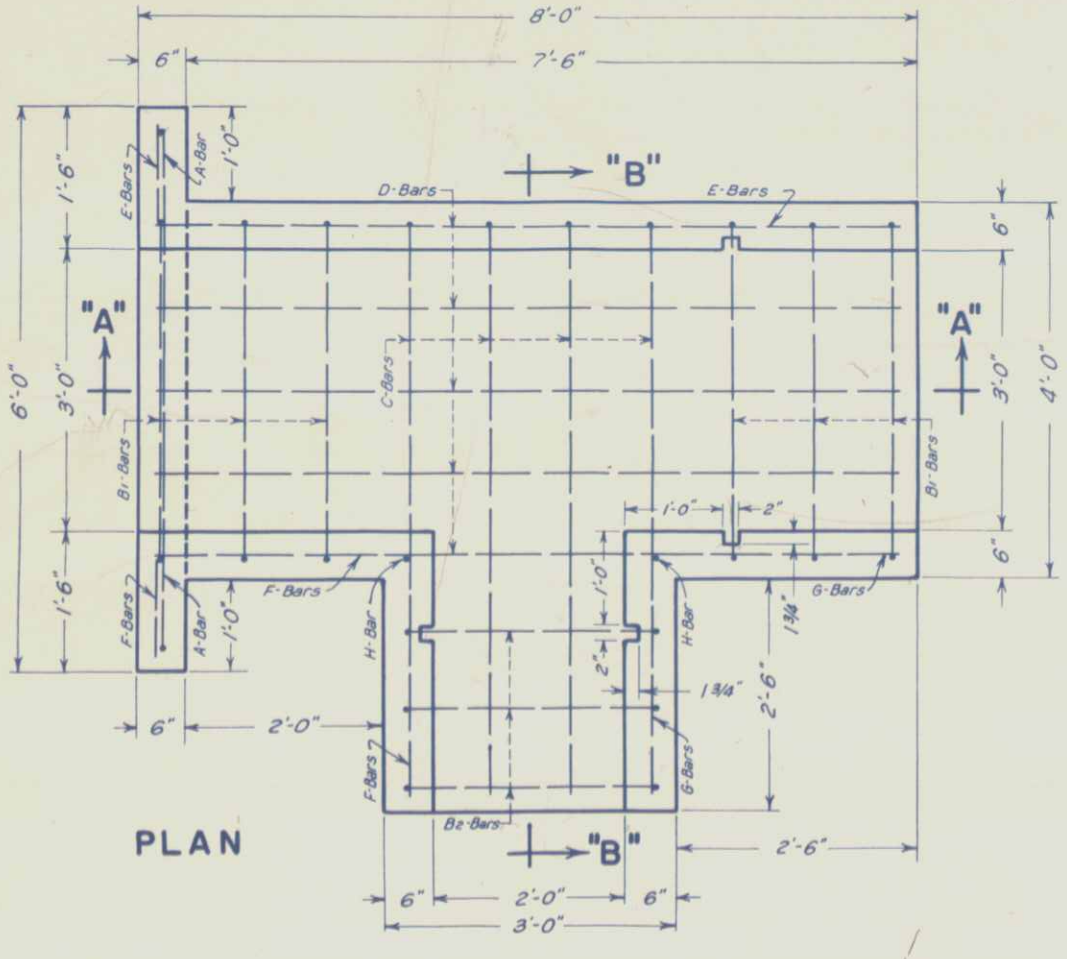
TYPE "B" HEADWALL WITH TRASH GUARD



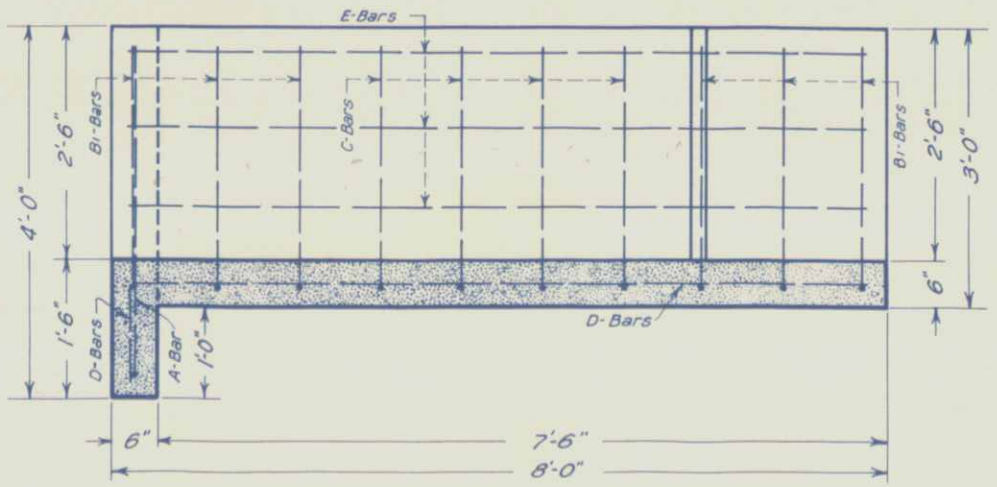


ANCHOR BAR

DETAIL OF CONCRETE DIVISION BOX RT. OF STA. 2597+



PLAN



SECTION "A-A"

BAR LIST

All Dimensions are to ℄ of Bars

MARK	TYPE	DIMENSIONS a	b	c	LENGTH ONE BAR	NO. REQ'D	TOTAL LENGTH	SPACING
A	I	3'-7"	5'-6"	3'-7"	12'-8"	1	12'-8"	SEE DETAIL
B1	I	2'-7"	3'-6"	2'-7"	8'-8"	6	52'-0"	10"
B2	I	2'-7"	2'-6"	2'-7"	7'-8"	3	23'-0"	10"
C	II	2'-7"	6'-1"		8'-8"	4	34'-8"	10"
D	II	1'-1"	7'-7"		8'-8"	5	43'-4"	10"
E	II	1'-1"	7'-7"		8'-8"	3	26'-0"	10"
F	I	1'-1"	2'-6"	2'-7"	6'-2"	3	18'-6"	10"
G	II	2'-7"	2'-7"		5'-2"	3	15'-6"	10"
H	STRAIGHT				2'-8"	2	5'-4"	SEE DETAIL

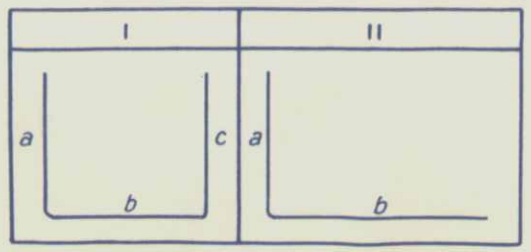
All bars ½" ϕ @ 0.668 lbs. per lin. ft. TOTAL 231'-0"

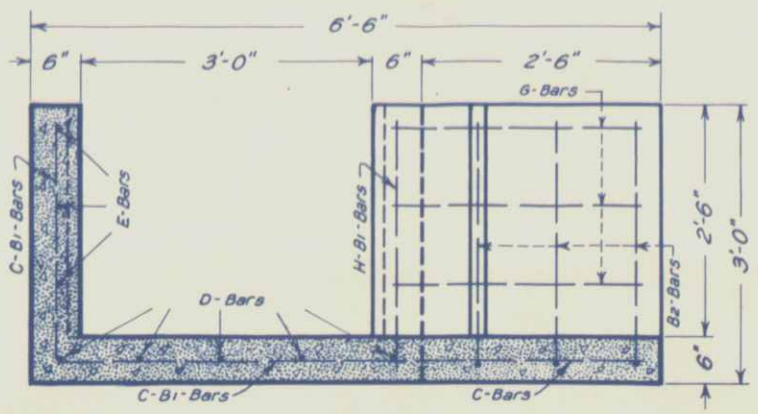
231'-0" x 0.688 lbs. per lin. ft. = 155 lbs.
Plus 1% ± for Over-run = 2 lbs.
Total Reinf. Steel = 157 lbs.
5 pcs. 2"x6"x3'-3" Misc. Untr. Timber for Flash Boards = 16.25 Bd. Ft.
5 pcs. 2"x6"x2'-3" Misc. Untr. Timber for Flash Boards = 11.25 Bd. Ft.
Total = 27.50 Bd. Ft.

1.8 Cu. Yds. Class "A" Concrete

Note: All Reinforcing Bars are to be placed in center of Walls and Slabs.

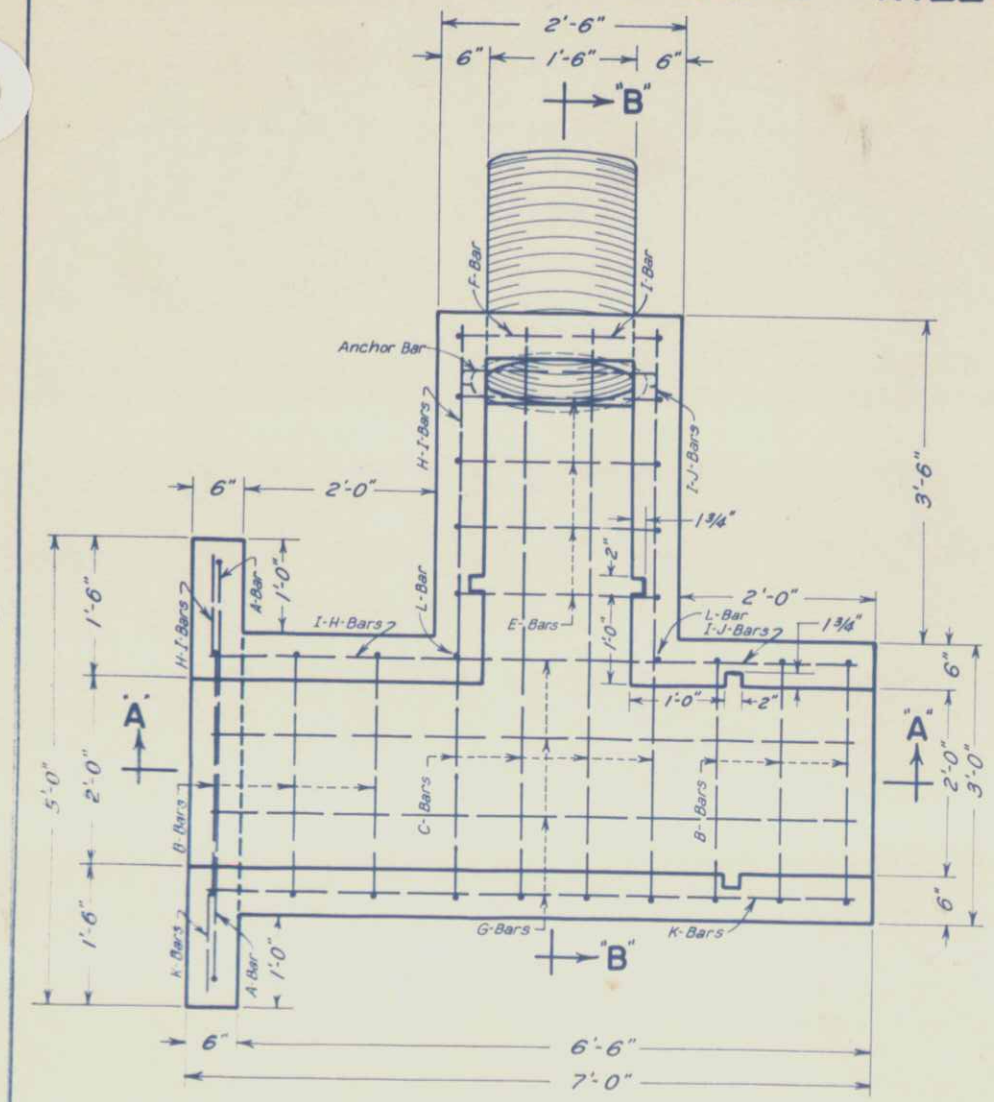
BENDING DIAGRAM



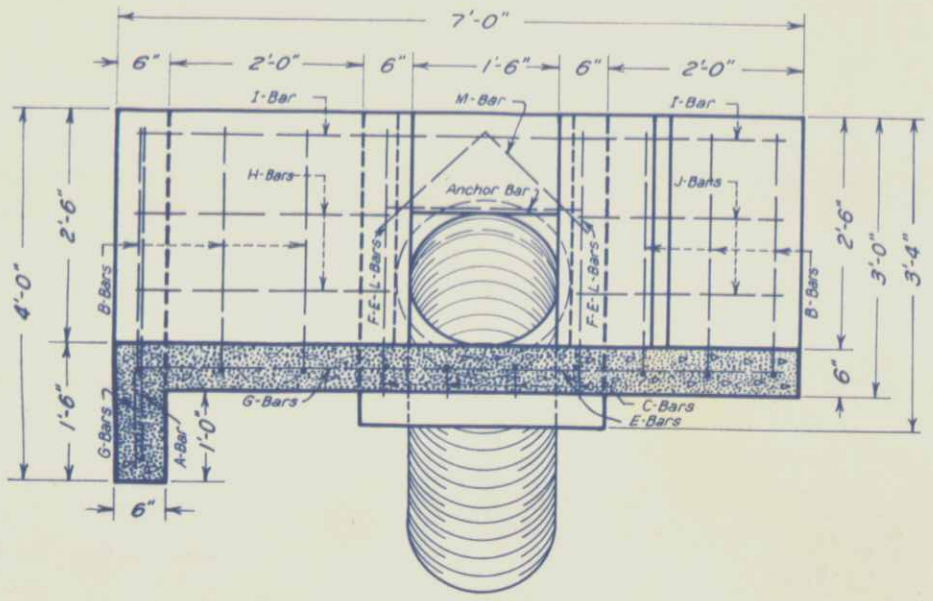


SECTION "B-B"

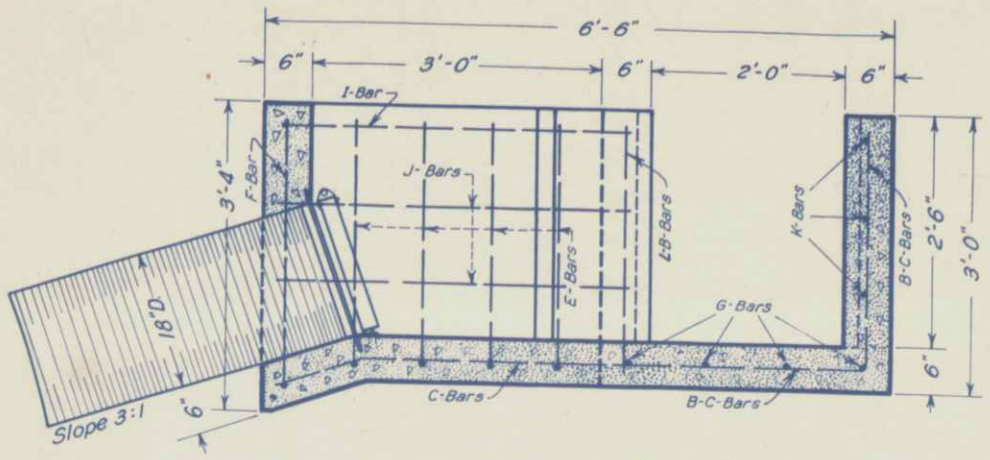
DETAILS OF SPECIAL INLET BOX FOR 18" SIPHON LT. OF STA. 2541+ 75



PLAN

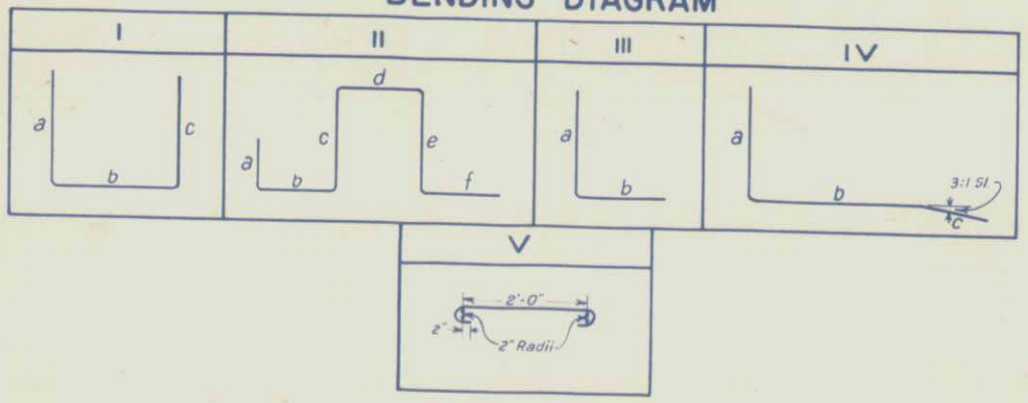


SECTION "A-A"



SECTION "B-B"

BENDING DIAGRAM



BAR LIST

All Dimensions are to ℄ of Bars.

MARK	TYPE	DIMENSIONS a	b	c	d	e	f	LENGTH ONE BAR	NO. REQD	TOTAL LENGTH	SPACING
A	I	3'-7"	4'-6"	3'-7"				11'-8"	1	11'-8"	See Detail
B	I	2'-7"	2'-6"	2'-7"				7'-8"	6	46'-0	9"±
C	IV	2'-7"	5'-2"	0'-11"				8'-8"	4	34'-8"	8"
E	I	2'-7"	2'-0"	2'-7"				7'-2"	4	28'-8"	8"±
F	I	2'-10"	2'-0"	2'-10"				7'-8"	1	7'-8"	8"
G	III	1'-1"	6'-7"					7'-8"	4	30'-8"	10"
H	I	1'-1"	2'-6"	3'-7"				7'-2"	2	14'-4"	10"
I	II	1'-1"	2'-6"	3'-6"	2'-0"	3'-6"	2'-1"	14'-8"	1	14'-8"	10"
J	III	3'-7"	2'-1"					5'-8"	2	11'-4"	10"
K	III	1'-1"	6'-7"					7'-8"	3	23'-0"	10"
L	STRAIGHT							2'-8"	2	5'-4"	See Detail
M	III	1'-6"	1'-6"					3'-0"	1	3'-0"	" "
ANCHOR	V							2'-10"	1	2'-10"	" "
									TOTAL	233'-10"	

All bars ½"ϕ @ 0.668 lbs. per lin. ft.

233'-10" x 0.668 lbs. per lin. ft. = 157 lbs.
Plus 1% ± for Over-run = 2 lbs.
Total Reinf. Steel = 159 lbs.

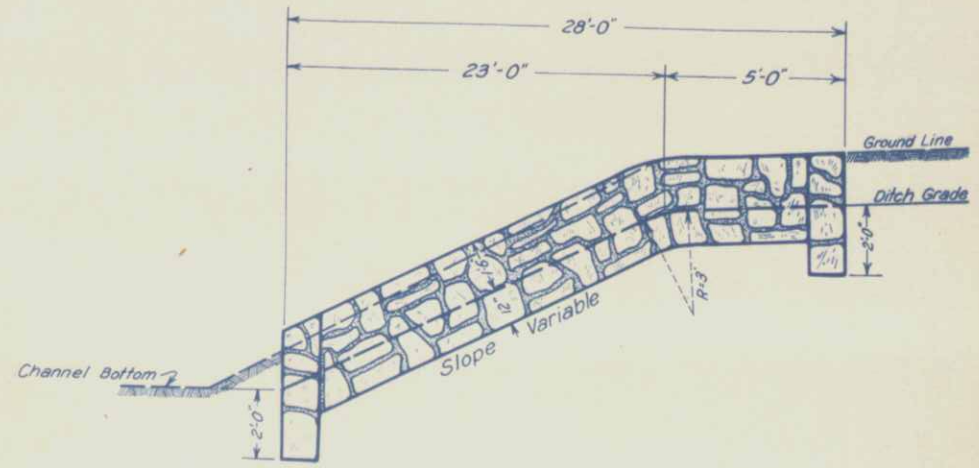
5 pcs. 2"x 6"x 2'-3" Misc. Untr. Timber for Flash Boards = 11.25 Bd. Ft.
5 pcs. 2"x 6"x 1'-9" Misc. Untr. Timber for Flash Boards = 8.75 Bd. Ft.
Total = 20.00 Bd. Ft.

1.7 Cu. Yds. Class "A" Concrete

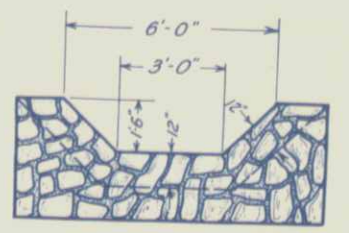
Note: All Reinforcing Bars are to be placed in center of Walls and Slabs.

FED. ROAD DIST. NO.	STATE	SN-FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	44-B(1)	14	

DETAIL FOR GROUTED RUBBLE SLOPE & DITCH PAVING RT. OF STA. 2565+



SIDE ELEVATION

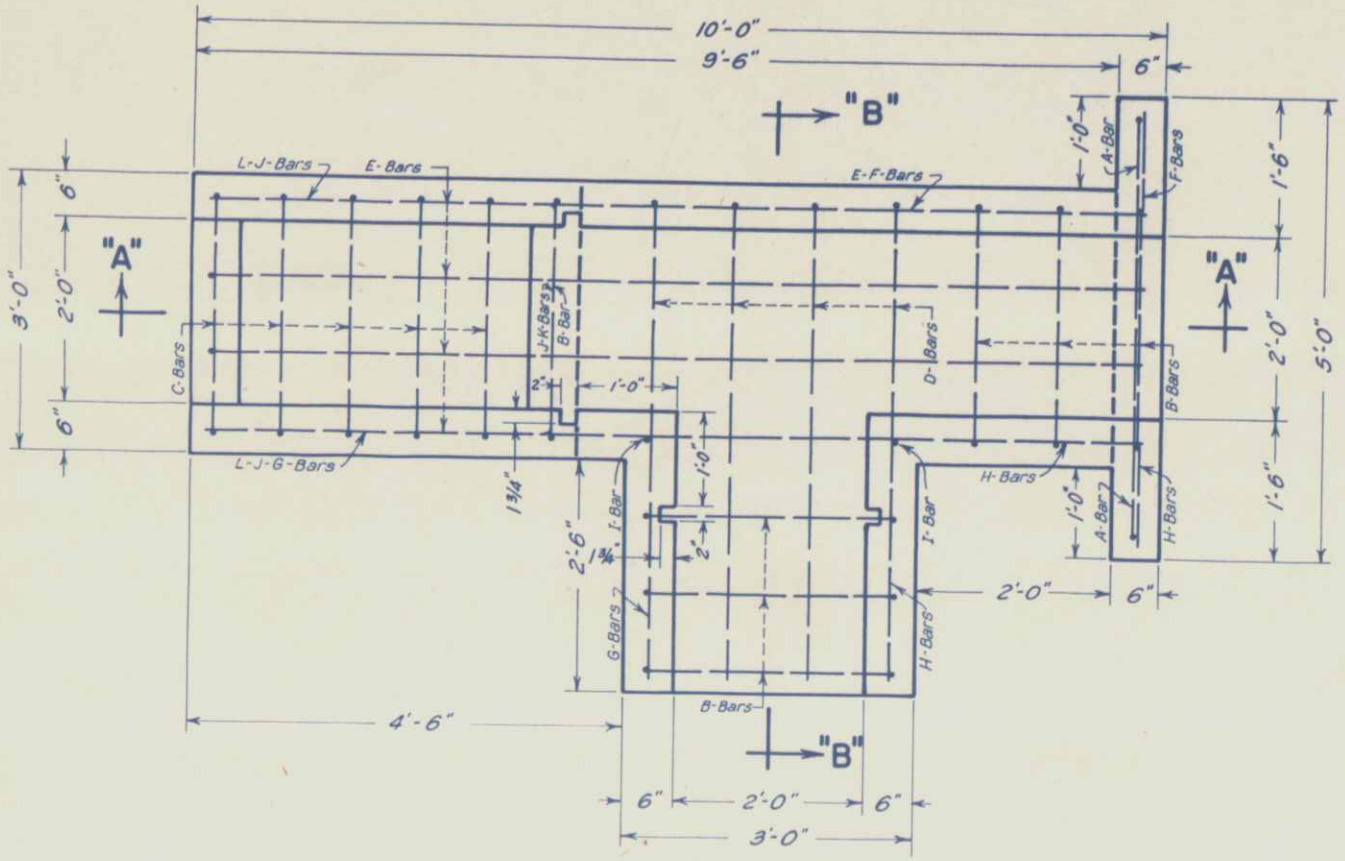


END VIEW

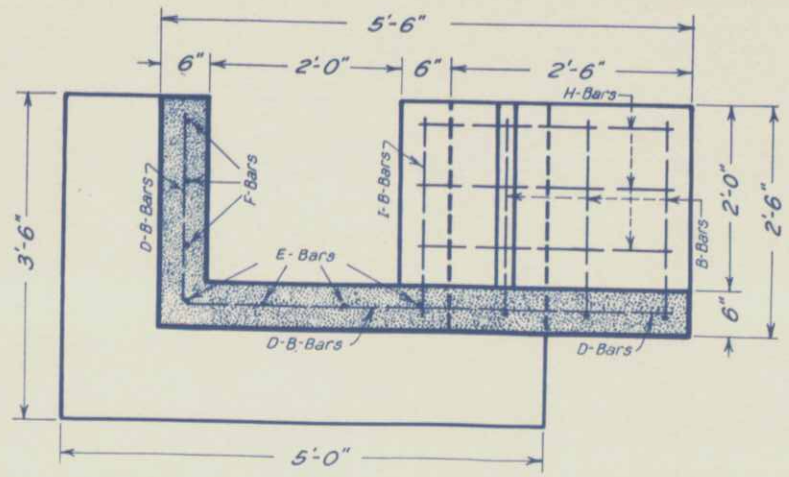
Excavation involved in the placement of Grouted Rubble Slope and Ditch Paving is to be classified and paid for as "Unclassified Ditch Excavation."

FED. ROAD DIST. NO.	STATE	SN-FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	44-B(11)	15	

DETAIL OF CONCRETE DIVISION BOX WITH DROP RT. OF STA. 2487+

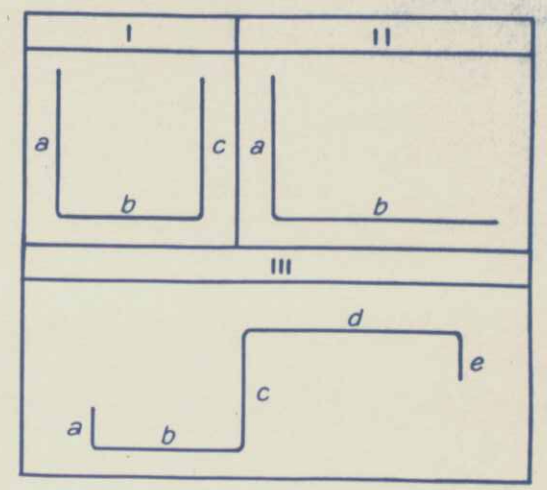


PLAN



SECTION "B-B"

BENDING DIAGRAM



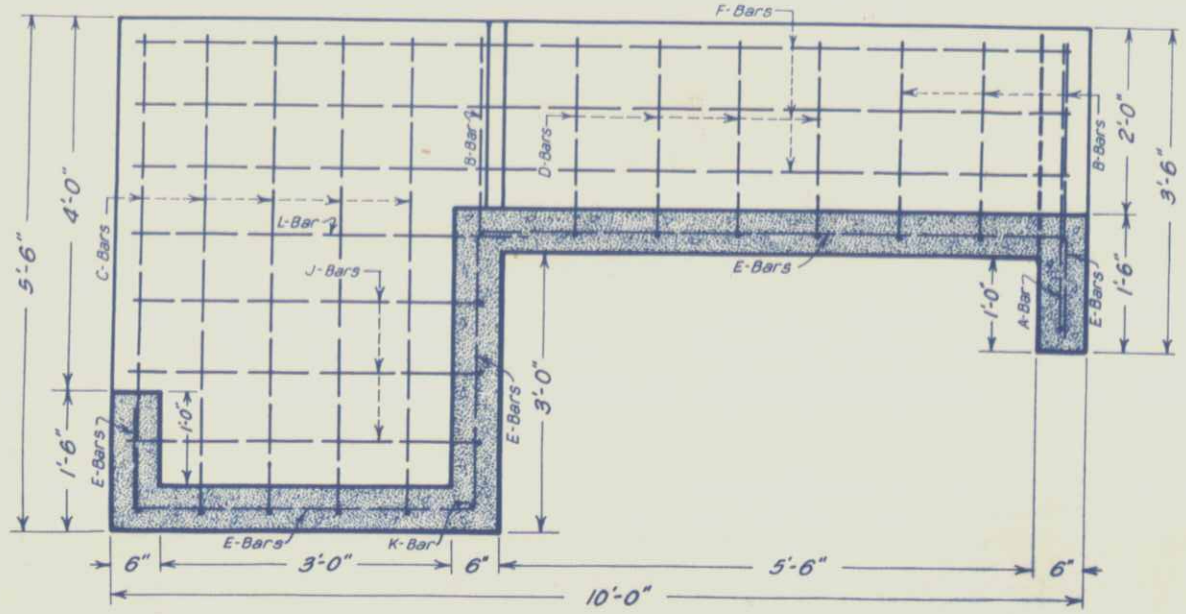
BAR LIST

All Dimensions are to ℄ of Bars

MARK	TYPE	DIMENSIONS a	b	c	d	e	LENGTH ONE BAR	NO. REQ'D	TOTAL LENGTH	SPACING
A	I	3'-1"	4'-6"	3'-1"			10'-8"	1	10'-8"	SEE DETAIL
B	I	2'-1"	2'-6"	2'-1"			6'-8"	7	46'-8"	10"
C	I	5'-1"	2'-6"	5'-1"			12'-8"	5	63'-4"	8"±
D	II	2'-1"	5'-1"				7'-2"	4	28'-8"	10"
E	III	1'-1"	3'-6"	3'-0"	6'-0"	1'-1"	14'-8"	4	58'-8"	10"
F	II	9'-7"	1'-1"				10'-8"	3	32'-0"	8"
G	II	4'-7"	2'-7"				7'-2"	3	21'-6"	8"
H	I	2'-7"	2'-6"	1'-1"			6'-2"	3	18'-6"	8"
I	STRAIGHT						2'-2"	2	4'-4"	SEE DETAIL
J	I	3'-7"	2'-6"	3'-7"			9'-8"	3	29'-0"	9"
K	STRAIGHT						2'-8"	1	2'-8"	SEE DETAIL
L	STRAIGHT						4'-1"	2	8'-2"	SEE DETAIL

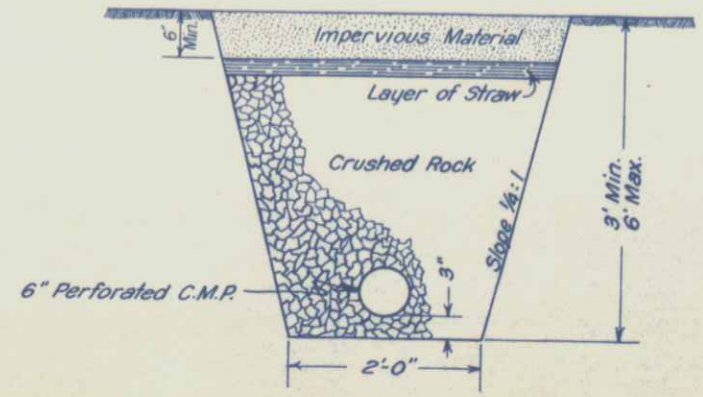
All bars ½" ϕ @ 0.668 lbs. per lin. ft. Total = 324'-2"
324'-2" x 0.668 lbs. per lin. ft. = 217 lbs.
Plus 1% ± for Over-run = 3 lbs.
Total Reinf. Steel = 220 lbs.
4 pcs. 2"x 6"x 2'-3" Misc. Untr. Timber for Flash Boards = 9.00 Bd. Ft.
2.3 Class "A" Concrete.

Note: All Reinforcing Bars are to be placed in center of Walls and Slabs.



SECTION "A-A"

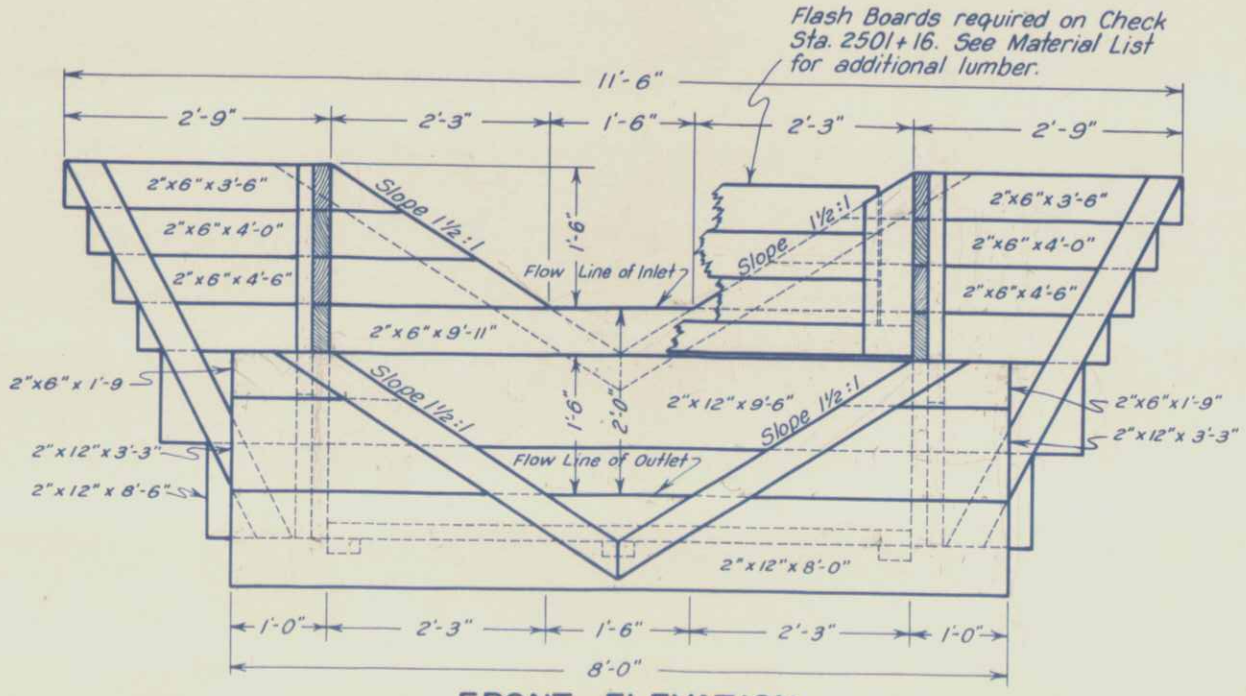
DETAIL OF UNDERDRAIN STA. 2475+



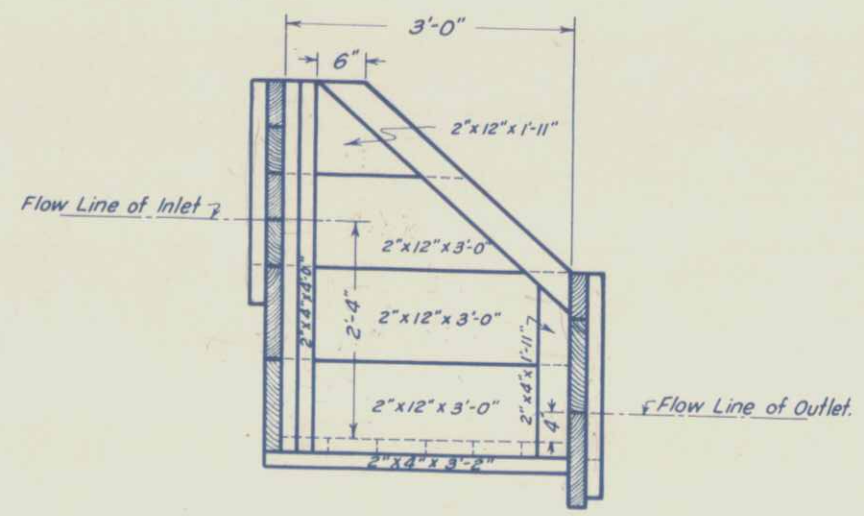
FED. ROAD DIST. NO.	STATE	SN-FED AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	44-B(1)	16	

1778

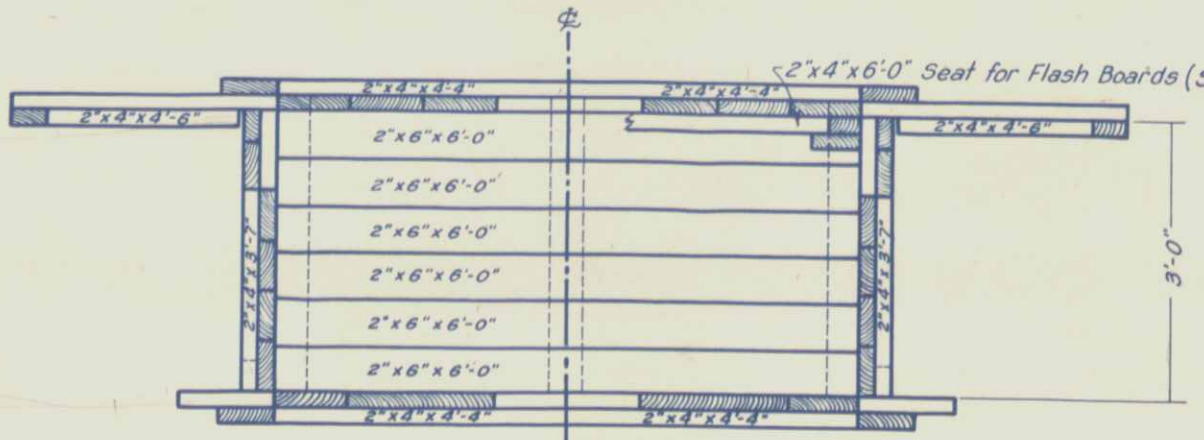
DETAIL OF TIMBER DITCH CHECKS LT. OF STAS. 2499+ TO 2504+



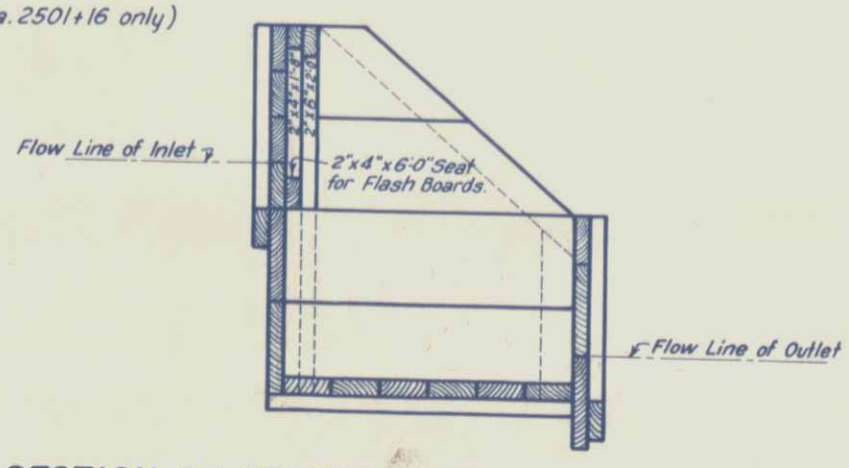
FRONT ELEVATION



SIDE ELEVATION



½ PLAN ½ PLAN STA. 2501+16



SECTION ON CENTER LINE OF CHECK SHOWING SLOT & SEAT FOR FLASH BOARDS STA. 2501+16

MATERIAL LIST FOR ONE CHECK

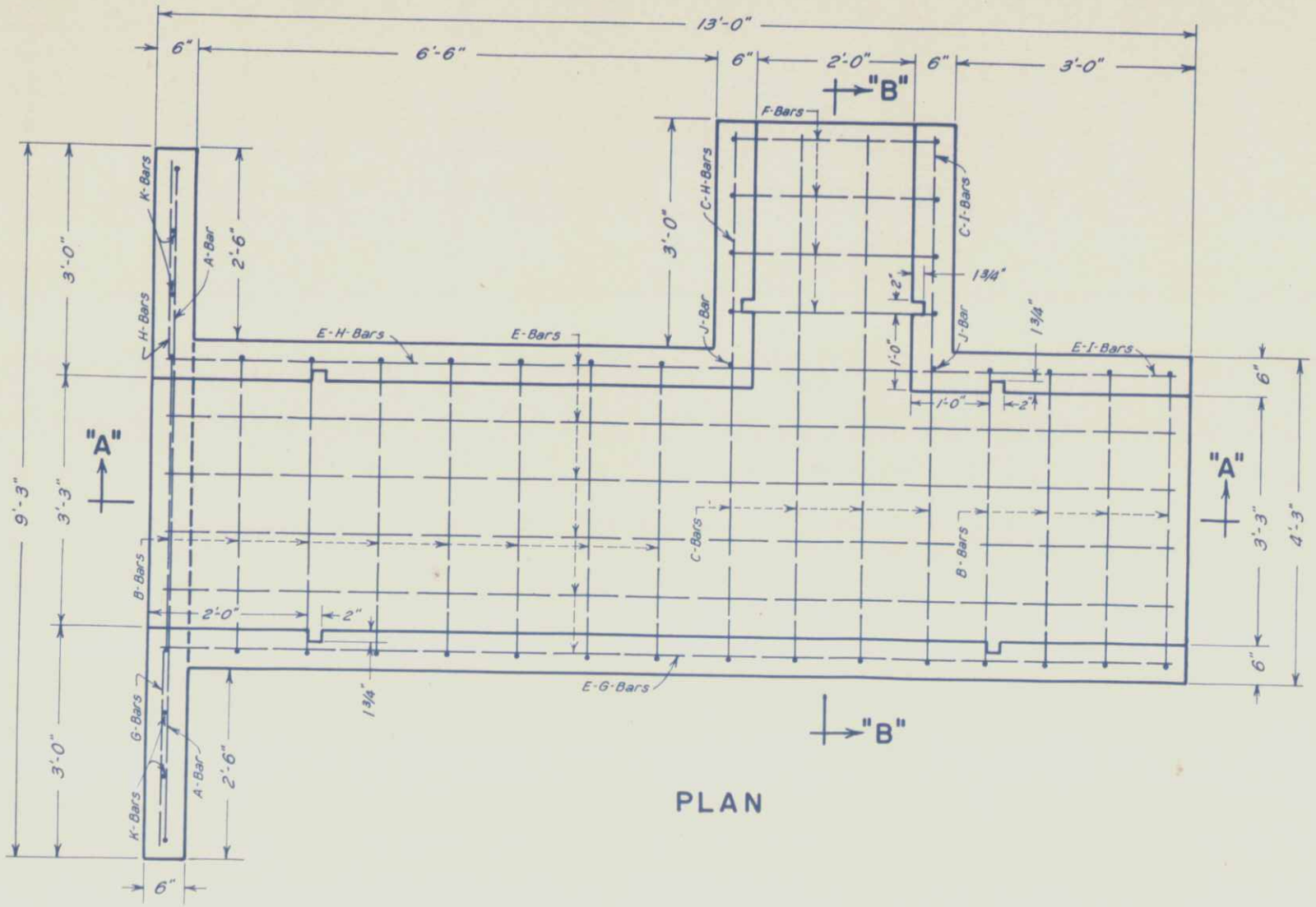
NUMBER OF PIECES	SIZE	MISC. TREATED TIMBER FT. B.M.
MATERIAL REQUIRED FOR ONE CHECK (WITHOUT FLASH BOARDS)		
2	2"x6"x3'-6"	7.0
2	2"x6"x4'-0"	8.0
2	2"x6"x4'-6"	9.0
1	2"x6"x9'-11"	9.9
1	2"x12"x9'-6"	19.0
1	2"x12"x8'-6"	17.0
1	2"x12"x8'-0"	16.0
2	2"x12"x1'-11"	7.7
6	2"x12"x3'-0"	36.0
2	2"x6"x1'-9"	3.5
2	2"x12"x3'-3"	13.0
4	2"x4"x4'-4"	11.6
2	2"x4"x4'-6"	6.0
2	2"x4"x3'-7"	4.8
6	2"x6"x6'-0"	36.0
2	2"x4"x1'-11"	2.6
3	2"x4"x3'-2"	6.4
2	2"x4"x4'-0"	5.4
	TOTAL	218.9
ADDITIONAL MATERIAL REQUIRED FOR FLASH BOARDS TO BE USED ON DITCH CHECK LT. OF STA. 2501+16		
1	2"x4"x6'-0"	4.0
2	2"x6"x2'-0"	4.0
2	2"x4"x1'-8"	2.2
3	2"x6"x5'-3"	15.8
TOTAL FOR FLASH BOARDS		26.0
TOTAL FOR CHECK (NO FLASH BDS)		218.9
TOTAL FOR CHECK STA. 2501+16		244.9
10 LBS. OF 6d NAILS		

All lumber to be "Full Sawn", unsurfaced or S-2-E. If S-2-E lumber is used, the dimensions of checks as hereon shown, are to be varied accordingly.

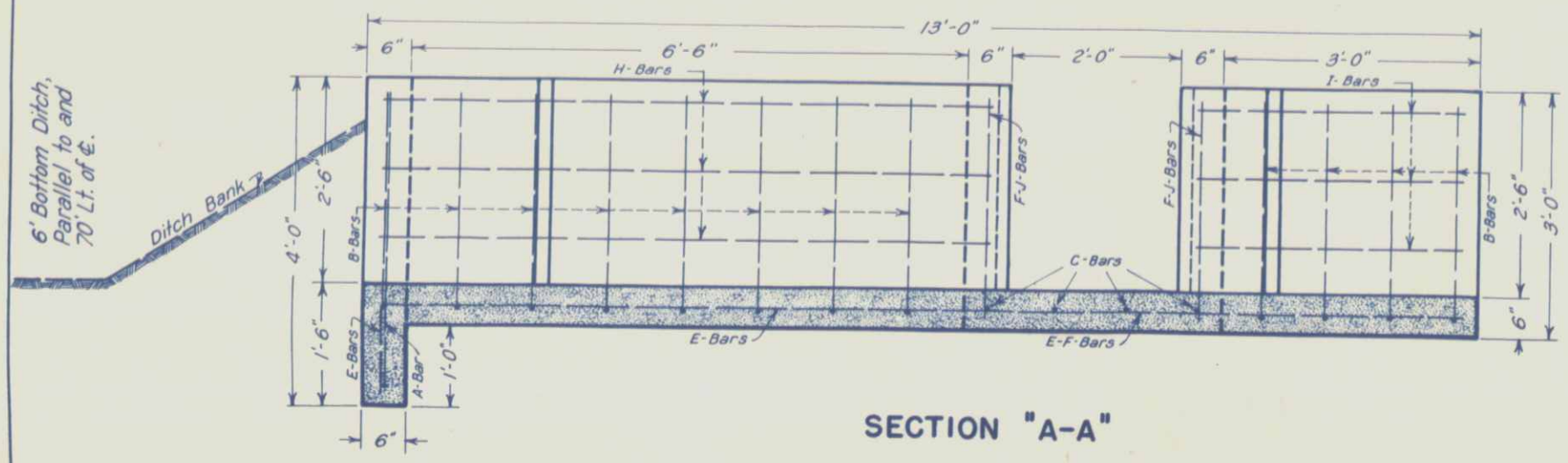
All Excavation involved in the placement of these Checks is to be paid for as "Unclassified Ditch Excavation."

DETAIL OF CONCRETE HEAD & DIVISION BOX LT. OF STA. 2597+

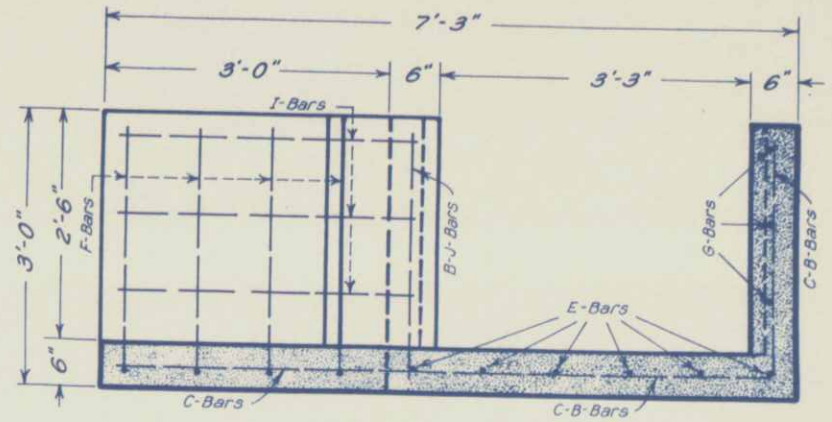
FED. ROAD DIST. NO.	STATE	SN-FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	44-B(11)	17	



PLAN

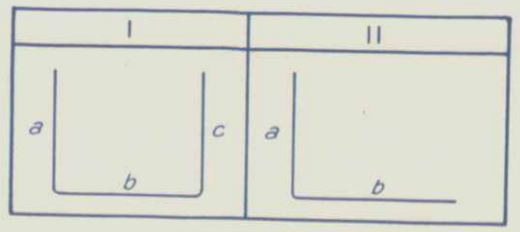


SECTION "A-A"



SECTION "B-B"

BENDING DIAGRAM



BAR LIST

All Dimensions are to ℄ of Bars

MARK	TYPE	DIMENSIONS a	b	c	LENGTH ONE BAR	NO. REQD	TOTAL LENGTH	SPACING
A	I	3'-7"	8'-9"	3'-7"	15'-11"	1	15'-11"	SEE DETAIL
B	I	2'-7"	3'-9"	2'-7"	8'-11"	12	107'-0"	10"±
C	II	2'-7"	6'-10"		9'-5"	4	37'-8"	10"
E	II	1'-1"	12'-7"		13'-8"	6	82'-0"	9"
F	I	2'-7"	2'-6"	2'-7"	7'-8"	4	30'-8"	9"
G	II	2'-7"	12'-7"		15'-2"	3	45'-6"	10"
H	I	2'-7"	7'-0"	3'-1"	12'-8"	3	38'-0"	10"
I	II	3'-1"	3'-1"		6'-2"	3	18'-6"	10"
J	STRAIGHT				2'-8"	2	5'-4"	SEE DETAIL
K	STRAIGHT				3'-8"	4	14'-8"	" "

All bars ½" ϕ @ 0.668 lbs. per lin. ft. TOTAL = 395'-3"

395'-3" x 0.668 lbs. per lin. ft. = 264 lbs.
Plus 1%± for Over-run = 3 lbs.
Total Reinf. Steel = 267 lbs.

5 pcs. 2"x 6"x 3'-6" Misc. Untr. Timber for Flash Boards = 17.50 Bd. Ft.
5 pcs. 2"x 6"x 2'-3" " " " " " " = 11.25 Bd. Ft.
3.0 Cu. Yds. Class "A" Concrete Total = 28.75 Bd. Ft.

Note: All Reinforcing Bars are to be placed in center of Walls and Slabs.