FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.
8	COLO.	E-299C	7

COLORADO
STATE HIGHWAY DEPARTMENT

PLAN AND PROFILE OF PROPOSED
FEDERAL AID PROJECT NO. E-299-C
STATE HIGHWAY NO. 6
MESA COUNTY

INDEX OF SHEETS

1 Title Sheet
2 Cross Section and Summary Sheet
3-9 Bridge Details
10 Standard Methods for Superelevation and Widening Curves
10-A Standard Wire Fence with Steel Posts M-27-A
11 Structure Details
12 Details of Structures and Worn on Northerly Approach
13 Details " " " " Southerly "
14 Plan & Profile
15-31 Cross Sections

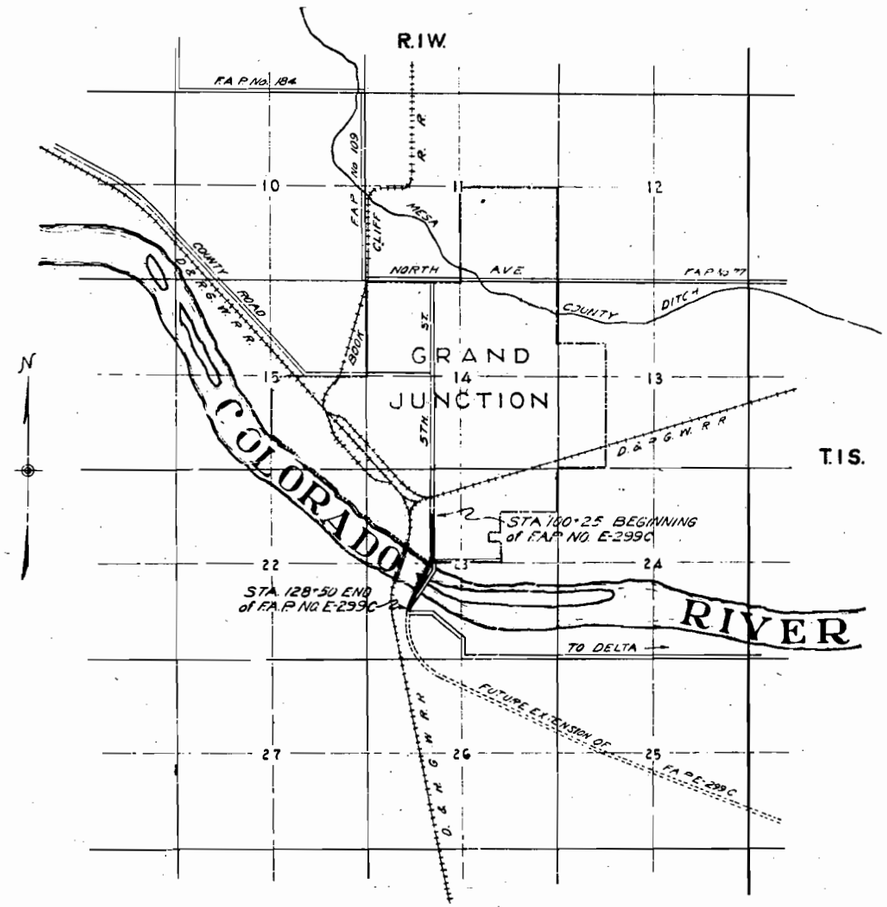
CONVENTIONAL SIGNS

Survey Line
Right of Way Line
1/4 Section Line
1/16 Section Line
Pole Line

SCALES

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
NET LENGTH OF PROJECT } 2825 FT. = 0.535 MI.



SCALE 1 IN = 2000 FT

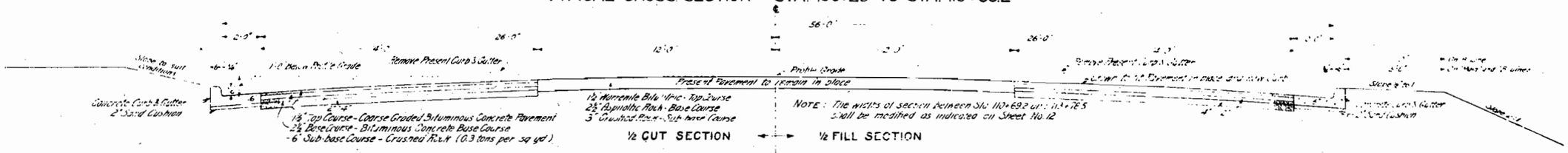
RECOMMENDED FOR APPROVAL
ASSISTANT ENGINEER
APPROVED
STATE HIGHWAY ENGINEER
RECOMMENDED FOR APPROVAL
DIST. ENG. BUREAU PUBLIC ROADS
RECOMMENDED FOR APPROVAL
CHIEF ENG. BUREAU PUBLIC ROADS
APPROVED
DIRECTOR BUREAU PUBLIC ROADS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	COLO.	F 299-C	2	21

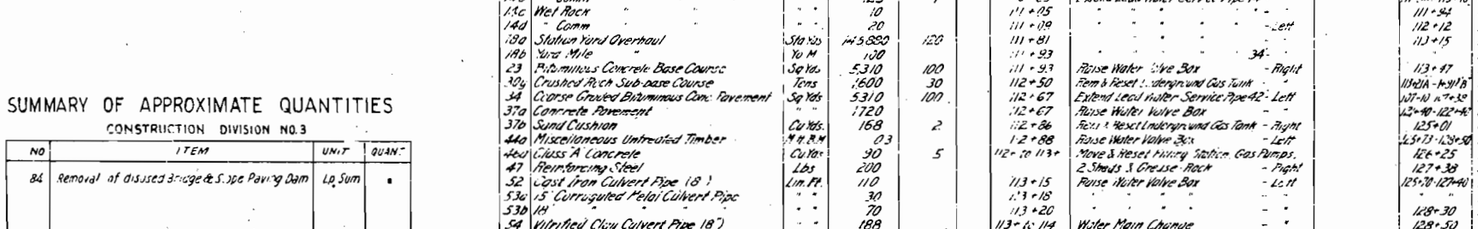
Rev. 1-22-42 - R.C.L.
Rev. 2-4-33 - M.S.R.

TYPICAL CROSS SECTION OF IMPROVEMENT AND SUMMARY OF QUANTITIES

TYPICAL CROSS SECTION - STA. 100+25 TO STA. 110+69.2



TYPICAL CROSS SECTION - STA. 122+08.5 TO STA. 128+50

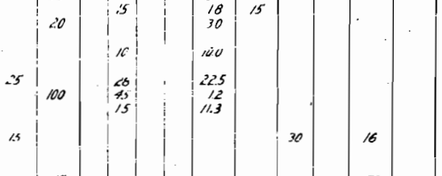


Selected Backfill Material Sta. 121+89 to 126+50 - Estimated 1330 Cu. Yds. Excav. involving 17,290 Sta. Yds. Overhaul, to come from island 100 ft. left of Sta. 117+50.

EXPANSION JOINT

½" Expansion Joints are required to be placed 60 ft apart perpendicular to the center line of the pavement.

DETAIL OF LONGITUDINAL GROOVE



GENERAL NOTES

This project is to be constructed in conformity with the Standard Specifications of The Colorado State Highway Department adopted January 1st 1930.

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

All roadway excavation required to construct the project is to be obtained as indicated on the plans. Quantities involved beyond the limits of the Typical Section as shown, 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 locations indicated on the plans. Slope stakes beyond the limits of the Typical Section, as shown, are subject to change by the Engineer, to fit embankment requirements actually encountered during construction.

All curves are to be superelevated in accordance with the methods shown on the Standard Superelevation Sheet.

The entire project is to be cleared for the full width of the right of way and the cost thereof shall be included in the lump sum bid for Clearing and Grubbing the entire project. All trash and debris are to be removed from the right of way and the cost thereof shall be included in the lump sum bid for Clearing and Grubbing the entire project.

Except as limited by the Special Provisions, power equipment may be used on this project.

SUMMARY OF APPROXIMATE QUANTITIES

CONSTRUCTION DIVISION NO. 3

NO	ITEM	UNIT	QUAN.
84	Removal of disused Bridge & Slope Paving Dam	Lg. Sum	1

SUMMARY OF APPROXIMATE QUANTITIES

No	Item	Unit	Quantity	No Fed Aid
	Construction Div. #1 (Bridge and Approach Slabs - Sta. 113+78.5 to 122+08.5			
11a	Clearing and Grubbing (Bridge Section)	Lump Sum		
13c	Unclassified Excavation	Cu Yds	3,900	
14a	Dry Rock Excavation (Structural)	" "	400	
14b	" Comm. " "	" "	1,000	
14c	Wet Rock " "	" "	530	
14d	" Comm. " "	" "	660	
16a	Station Yard Overhaul	Sta Yds	1,000	
46a	Class "A" Concrete	Cu Yds.	1,076	
46b	" "B" "	" "	710	
47	Reinforcing Steel	Lbs.	137,900	
48	Structural Steel	"	1,222,400	
81	Bronze Name Plates	Each	2	
89	Drain Pipes	Each	72	
91	Electrical Conduit	Lin Ft	975	
98a	10'-10" Electric Lighting Standards	Each	6	
98b	8'-4" " " "	"	4	
	Construction Div #2 (Roadway - Sta 100+25 to 113+78.5 & Sta. 122+08.5 to 128+50)			
10a	Clearing and Grubbing (Roadway Section)	Lump Sum		
11a	Removing 14 Structures	" "		
11b	Transplanting Trees Sta. 100+ to 106+	" "		
11c	Removing Curb & Gutter	Lin Ft.	2,160	40
12a	Removing Fence	" "	180	
13c	Unclassified Excavation	Cu Yds.	22,950	50
14a	Dry Rock Excavation (Structural)	" "	60	
14b	" Comm " "	" "	123	7
14c	Wet Rock " "	" "	10	
14d	" Comm " "	" "	20	
16a	Station Yard Overhaul	Sta Yds	in 5850	120
16b	Yard Mile "	Yd M	100	
23	Bituminous Concrete Base Course	Sq Yds.	5,310	100
30a	Crushed Rock Sub-base Course	Tons	1,600	30
34	Coarse Graded Bituminous Conc. Pavement	Sq Yds.	5,310	100
37a	Concrete Pavement	" "	1720	
37b	Sand Cushion	Cu Yds.	168	2
44a	Miscellaneous Untreated Timber	M ft. B.M.	03	
46a	Class A Concrete	Cu Yds	90	5
47	Reinforcing Steel	Lbs	200	
52	Cast Iron Culvert Pipe (8")	Lin. Ft.	110	
53a	15" Corrugated Metal Culvert Pipe	" "	30	
53b	18" " " " "	" "	70	
54	Vitrified Clay Culvert Pipe (18")	" "	188	
55	Relaying Pipe	" "	30	
71a	Conc. Combination Curb & Gutter	" "	2601	44
71d	" " " " (Special)	" "	22	44
75a	Galvanized Barbed Wire Fence	" "	180	
97	Cast Iron Manhole Ring & Cover	Each	1	
98	8" Cast Iron Valve	"	1	
	Materials to be furnished, work to be done by State forces			
	Extending 32 Water Service Pipes	Lump Sum		
	Remove and Reset Fire Plug	" "		
	Raising Valve Boxes & Moving Water Meters	" "		
	Revising Water Mains - Sta. 113+ to 128+	" "		
	Move & Reset Valve House - Sta. 126+	" "		
	Changing Sewers - Sta. 123+ and 127+	" "		
	Rem. Structures Tanks & Gas Pumps	" "		
	Repl. " " "	" "		(No Fed Aid)

WORK BY STATE FORCES

Station	Description
100+89	Extend Lead Water Service Pipe 14' - Left
100+98	" " " " " - Right
101+10	" " " " " - "
101+55	" " " " " - Left
101+80	" " " " " - Right
102+20	" " " " " - Left
102+26.5	" " " " " - Right
102+32	Remove and Reset Fire Plug - Left
102+65	Extend Lead Water Service Pipe 14' - Left
102+89	" " " " " - "
102+95	" " " " " - Right
103+35	" " " " " - "
103+72	" " " " " - Left
104+14	" " " " " - "
104+25	" " " " " - Right
104+60	" " " " " - "
105+12	" " " " " - "
105+13	" " " " " - "
105+93	" " " " " - Left
106+65	" " " " " - Right
107+22	" " " " " - "
107+49	" " " " " - "
108+63	" " " " " - "
108+61	" " " " " - Right
110+61	" " " " " - "
110+62	" " " " " - Left
116+63	Rem. & Reset Underground Gas Tank - Right
116+65	Extend Lead Water Service Pipe 14' - Left
116+74	Rem. & Reset Underground Gas Tank - Right
116+65	Extend Lead Water Service Pipe 14' - "
111+05	" " " " " - "
111+09	" " " " " - Left
111+81	" " " " " - "
111+93	" " " " 34' - "
111+93	Raise Water Valve Box - Right
112+50	Rem & Reset Underground Gas Tank - "
112+67	Extend Lead Water Service Pipe 42' - Left
112+67	Raise Water Valve Box - "
112+86	Rem. & Reset Underground Gas Tank - Right
112+88	Raise Water Valve Box - Left
112+ to 113+	Move & Reset Heavy Station Gas Pumps, 2 Sheds & Grease Rack - Right
113+15	Raise Water Valve Box - Left
113+18	" " " " - "
113+20	" " " " - "
113+ to 114	Water Main Change - "
121+90 - 128+40	Remove 16" Water Main - Rt. & Lt.
121+ to 128+	Replace 12" Water Main with 16" - Left
123+75 - 124+25	Sewer Change - "
125+70 - 126+40	Water Main Crossing - Rt. & X
126+25	Move & Reset 12' x 16' Valve House - Right
127+35	Move Water Meter - "
127+36	Sewer Change - Cross
128+30	Move Water Meter - Right
112+66	" " " - "

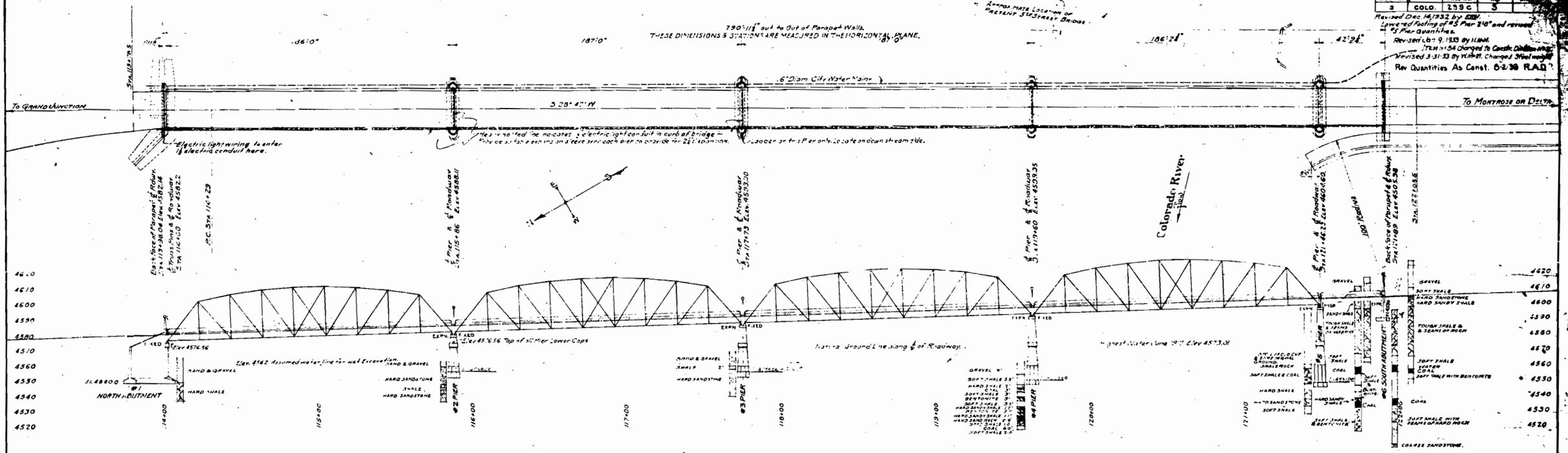
LIST OF STRUCTURES

Station	Description	Remove Struct	Excavation Cu Yds Unclass.	Excavation Cu Yds Unclass. Lump	Struct Excav. Cu Yds Dry Rock (Comm.)	Struct Excav. Cu Yds Dry Rock (Comm.)	Struct Excav. Cu Yds Wet Rock (Comm.)	Struct Excav. Cu Yds Wet Rock (Comm.)	Concrete Cu Yds Class 'A'	Reinf Steel Lbs.	Corr Met Pipe Lin Ft 15"	Corr Met Pipe Lin Ft 18"	4"x6" Header Lin Ft	8" Vit Tile Pipe Lin Ft.	8" Cast Iron Pipe Lin Ft	Miscl
100+25	Remove & Relay 2' Iron Fence - Right															Relay 30' Fence
100+30	Rem. & Backfill Side Walks & Tile Pipe Subsequently	2		10												
	& Conc. Curb & Pavem. Lay the Pipe (Detail Sh "11)					15			2.6	28				54		
100+34	Rem. & Build 2 Conc. Sidewalks (Detail Sh "12)	2				1			0.5							
100+ to 106+	Transplant Trees (1 in 30 + in Diam.)															Transplant Trees
101+35	7' Driveway - Left (Detail Sheet "12)		5						1.7							
102+12	7' " - " " "		5						0.7							
102+90	7' " - Right " "		5						0.7							
103+25	7' " - Left " "		5						0.7							
105+11	7' " " " "		5						0.7							
105+16	8' " - Right " "		5						0.8							
106+53	8' " " " "		5						0.8							
107+34	Rem & Build 14 Conc. Basins & Tile Pipe Subsequently	2		15												
	& Conc. Curb Pavem. Lay Tile Pipe (Detail Sh "11)					20			2.6	28				60		
107+20	24 Street Approach - Right (Detail Sh. "12)		15						(Paving & Curbing included in Summary)							
108+35	30' Driveway - Right " (Detail Sheet "12)		10						3.2							
109+50	50' " " " "		15						6.4							
110+00	Conc. Manhole					10			2.0	25						C.I. Ring & Cover
	& Conc. Curb Pavem. Lay Tile Pipe (Detail Sh "11)					15			2.6	28				54		
110+20	10 Driveway - Right (Detail Sheet "12)		5						1.0							
110+28	16' " " " "		5						1.7							
110+65	7' " - Left " "		5						0.7							
110+93	7' " " " "			5					0.7							
111+10	7' " - Right " "			5					0.7							
100+25 to 111+20	Remove Conc. Curb & Gutter - Right & Left															Rem. 2200 Lin Ft Curb & Gutter
111+46	Rem & Backfill Side Walk & Tile Pipe Subsequently	1		5												
111+51	" " " " " "	1		5												
111+43	Raise Manhole 2.9 ft (Detail Sheet "11)	1				10			1.3	10						
111+90 - 113+10	Rem & Rebuild Conc. Sidewalk (Detail Sh "12)	1				15			9.8							
111+94	" Driveway - Left (Detail Sheet "12)			15					1.0							
112+12	36' " - Right " "			30					3.9							
113+15	Raise Manhole 4.4 ft (Detail Sheet "11)	1		15					1.8	15						
	& Driveway - Front (Detail Sheet "12)			20					3.0							
113+97	Remove Tree															Clearing + Grubbing
113+10 - 114+10	Conc. Retaining Wall - Left (Detail Sh. "12)					10			10.0							
107+10 - 114+30	Remove Concrete Sidewalk - Right	1														
122+90 - 122+40	& Grade Slope Paving (Detail Sheet "11)		25			26			22.5							
125+01	& Siphon & Ditch Change (Detail Sh "11)			100		45			12						110	(8" Fittings) 2-45° C.I. Ells 1-C.I. Tee 1-C.I. Valve
125+73 - 128+50	Rem & Build Conc. Sidewalk (Detail Sh "12)	1				15			11.3							
126+25	Remove Siphon	1														
127+38	Side Drain, Rubble Rip Rap & Timber Header - Ft		15										30	16		
125+70 - 127+40	Remove Fence - Right															Rem. 180 Lin Ft
" "	Build Barbed Wire Fence - Right															Build " "
128+30	Road Approach & Timber Header - Left			15										50		
128+50	" " " " " - End			20										24		
	C.M.P. thru waste dump - near Sta. 132+00												70			
117+50	Channel Improvement		6206													
	TOTALS	14	6336	235		*199			94.6	134	30	70	30	188	110	

*Structural Excavation is estimated to be 90% Dry & 10% Wet, each of which is estimated to be 30% Rock & 70% Common.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	259 C	5	

Revised Dec. 14, 1932 by EBW.
Lowered footing of #5 Pier 2'6" and revised #5 Pier Quantities.
Revised Jan. 9, 1933 By H.M.K.
Item 154 changed To Concrete Deck Slab.
Revised 3-31-33 By H.M.K. Changed Steel weight.
Rev Quantities As Const. 6-2-36 R.A.D.



Summary of Quantities for Entire Bridge

Item No.	Description	Unit	Substructure #1 North Abutment	#2 Pier	#3 Pier	#4 Pier	#5 Pier	#6 South Abutment	Superstructure Four 185' Truss Spans	One 40' I Beam Span	Two Approach Slabs	Total
14a	Dry Rock Structural Excavation	Cu. Yd.	-	0	0	0	304.1	216.5		131.1		651.7
14b	Dry Common do do	Cu. Yd.	135.3	84	32.1	0	123.5	0		—		374.9
15ac	Wet Rock do do	Cu. Yd.	266.0	930	970	648	209.6	0				2723.6
15dd	Wet Common do do	Cu. Yd.	455.6	337	211	129.1	3	0		—		639.8
	Special Rock Excavation	Cu. Yd.					643.0					643.0
46a	Class 'A' Concrete	Cu. Yd.	285	37	46	55	62	608	477	26	30	♦1081.5
46b	Class 'B' Concrete	Cu. Yd.		1454	1491	1987	2081					7023
47	Reinforcing Steel	Lbs.	24250	1300	2000	2150	2930	4630	90320	5020	5260	137860
48	Structural Steel	Lbs.		610	610	610	310	310	12/0281	29850		(242681
51	Bronze Name Plates	Pcs.	1					1				2
54-A	Painting of Bridge Name Plates	Lump Sum										Lump Sum
57	1¼" Electric Conduit	Lin. Ft.	48					44	843	40		975
85	Galv. Pipe Drain 3" Diam. x 4'-8" Long	Pcs.							72			72
98a	1000 W Electric Light Standards Complete	Pcs.							6			6
98b	250 W do do do do	Pcs.	2					2				4
66x	1⅝ x 14 GA Clamps	Pair							72			72
	Expansion Joint Material ½ x 10"	Lin. Ft.						24				24
	Drain Pipe (for weep holes)	Each	11									11

© Water line for wet excavation as shown on field plans

♦ Includes 27 Cu. Yds. Class 'A' Concrete for Sidewalk.

Reference Drawings

Sheet N°4 Details of 185 Ft Span Steel Truss.
Sheet N°5 do do do & Lamp Posts
Sheet N°6 Plan, Elevations & Bar List of Abutment N°1
Sheet N°7 Sections & Details of Abutment N°1
Sheet N°8 Piers N°s 2, 3, 4 & 5
Sheet N°9 Abutment N°6 & 40 Ft. Approach Spans Also Approach Slabs.

General Notes

All work shall be done according to the "Standard Specifications of the Colorado State Highway Department" adopted Jan. 1, 1930.
All concrete shall be Class 'A' except Body & Footings of Piers which shall be Class 'B'.
All exposed surfaces shall be rubbed free of form marks.
All exposed corners, except on handrails shall be beveled to a 2" face.
Floor slabs and curb shall be poured monolithically.
All construction joints shall be thoroughly cleaned before fresh concrete is poured.
Footings in rock shall be poured out to the rock and not formed.
Thickness of floor slab shown includes ½ concrete wearing surface.
All reinforcing bars shall be round or square, plain or deformed as shown and noted.
All reinforcing bars shall be tagged with the station number and letter designation.
Secondary bars when spliced shall be given a lap of 60 diameters.
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.

Loading Data

Live Load - A. A. S. H. O. Aug. 1926. Class A. (H-15)
Dead Load - Assumed 80 Lbs. per Sq. Ft. additional wearing surface, which includes the ½ in. concrete distributing wearing surface.

NOTE - For Details of Sidewalk that was added see S.P. 506 (1933)

Colorado
State Highway Department
General Layout
Summary of Quantities
General Notes
Across Colorado River
Sta. 113+38.04 to 121+98
Near Grand Junction Sec. 23 T. 1 S. R. 1 W.

Designed by H.S.	Approved by C. D. Curtis
Made by E.B.W.	Bridge Engineer
Checked by	Date: Nov. 3rd 1933

STRUCTURE NO. H-2-H

REVISED 3-3-33 BY W.M.M. ADDED CONN. 3 L. ON RAILING

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.
3	COLO.	299-C	4

COLORADO
STATE HIGHWAY
DEPARTMENT
1933

NAME PLATE
2 REQUIRED-CAST IRON
LETTERS AND BORDER TO BE RAISED ⅛"
PLACE ONE ON RIGHT HAND END POST AT EACH END OF BRIDGE.

CT SK. NEAR SIDE FOR EXPN. ENDS ONLY E. OF TAU 33 ℄

LACING BARS 24"x⅜"

LOWER LATERAL SUPPORT

ALL FLOOR BEAMS 33" WF @ 132#

HOLE FOR ⅞" HANGER

18" WF @ 47# STRINGER

⅞" x 2'-6" BOLT - 50 NUTS

5½" DIA. PIN WITH 2 STD. RECESSED HEX. NUTS

DRILL 5⅝" DIAM. ⅞" PIN PLS

NOTCH COVER PLATE AT GUSSET PLATES.

DRILL 10 WF 50 WEB AND FLANGE REAR ON PIN.

L0 L1 L2 L3 L4

U1 U2 U3 U4

CLOSED JOINT

CLOSED JOINT

9 PANELS @ 20'-6¾" = 185'-0½" C TO C. BEARINGS

STRUCTURE SYMMETRICAL ABT ℄ EXCEPT EXPANSION DEVICE & SHOES

END TIE PLS 24"x⅜"

INT. TIE PLS 12"x⅜"-3'-0" CTRS

1 SPLICE PL 24"x⅜"

RIVETS ⅞" EXCEPT AS NOTED.
OPEN HOLES ⅝" EXCEPT AS NOTED.

STRESS DIAGRAM — 9 PANELS @ 20'-6¾" = 185'-0½" C TO C PINS

CAMBER DIAGRAM — CAMBER = 2¼" + DL DEFLECTION

LOADING DATA
LIVE LOAD A.A.S.H.O. CLASS "A" IN 13 AUGUST 1928
DEAD LOAD: ASSUMES 25 LBS. PER SQ. FT. ADDITIONAL WEARING SURFACE
DEAD LOAD: INCLUDES ¾" MONOLITHIC CONCRETE WEARING SURFACE ALSO 200 LBS. PER LINEAL FOOT OF TRUSS FOR WATER PIPE AND ELECTRIC LINES.

REFERENCE DRAWINGS
SHEET NO 3 GENERAL LAYOUT, SUMMARY OF QUANTITIES AND GENERAL NOTES.
SHEET NO 5 DETAILS OF 185 FT. SPAN STEEL TRUSS & LAMP POSTS
SHEET NO 6 DETAILS OF ABUTMENT NO 1.
SHEET NO 7 SECTIONS AND DETAILS OF ABUTMENT NO 1.
SHEET NO 8 PIERS NO 2-3-4 AND 5.
SHEET NO 9 ABUTMENT NO 6 AND 40 FT. APPROACH SPAN.

COLORADO
STATE HIGHWAY DEPARTMENT
185 FT. SPAN STEEL THRU TRUSS
24 FT. CLEAR ROADWAY
CONCRETE FLOOR

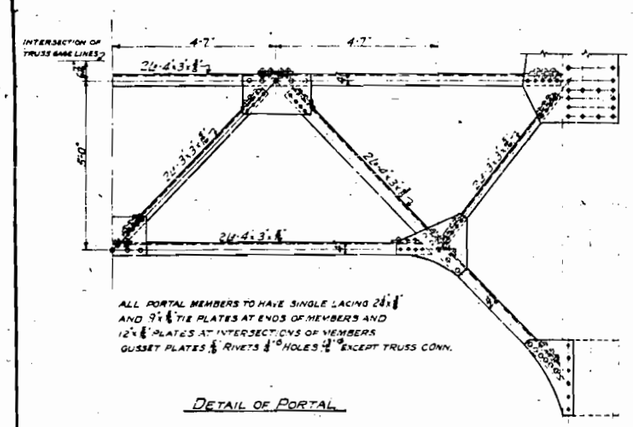
Across COLORADO RIVER
Sta. 113+98.04 to 121+89.04
Near GRANDJUNCTION Sec. 23 T. 1 S. R. 10 W

Designed by K.B.	Approved by C.H. Bailey
Made by W.M.M.	Bridge Engineer
Checked by	Date: Nov. 30 1932

STRUCTURE NO. H-2-H

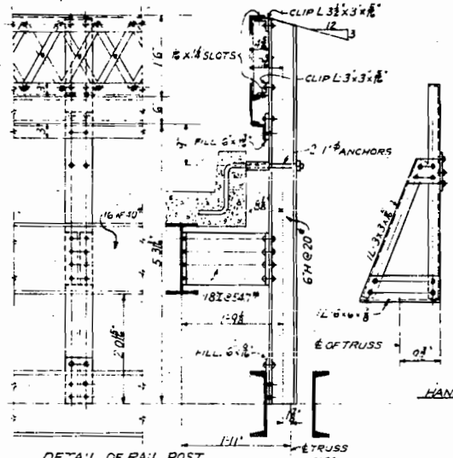
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	299C	5	

REVISED 3-31-33 BY R.B.B.T. ADDED ITEM 89 STEEL PIPE

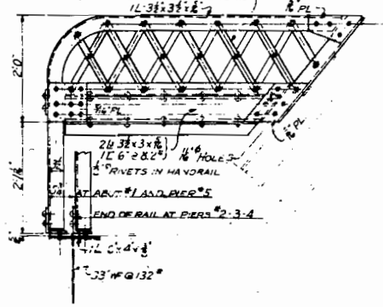


ALL PORTAL MEMBERS TO HAVE SINGLE LACING 2L 4"x3½"x⅜" AND 9"x⅜" TIE PLATES AT ENDS OF MEMBERS AND 12"x⅜" PLATES AT INTERSECTIONS OF MEMBERS. GUSSET PLATES ⅜" RIVETS ⅞" HOLES ¹³/₁₆" EXCEPT TRUSS CONN.

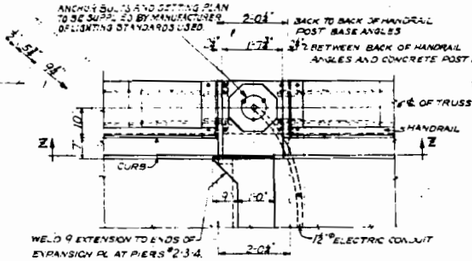
DETAIL OF PORTAL



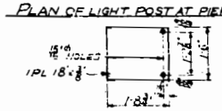
DETAIL OF RAIL POST
18 REQ'D PER SPAN



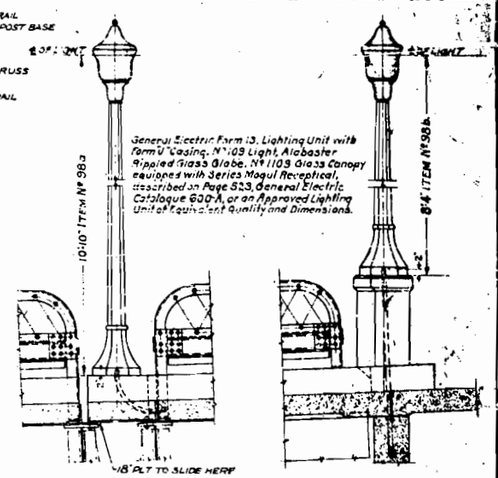
HANDRAIL AT ENDS OF BRIDGE
4 REQUIRED



PLAN OF LIGHT POST AT PIERS № 2-3-4

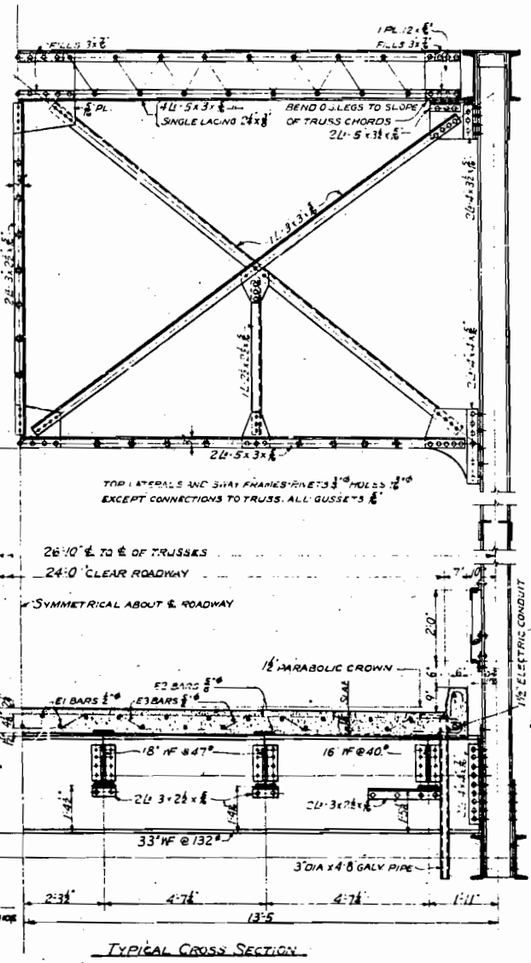


DETAIL OF PLATE SUPPORT AT LIGHT POSTS
6 REQ'D (AT PIERS #2-3-4)

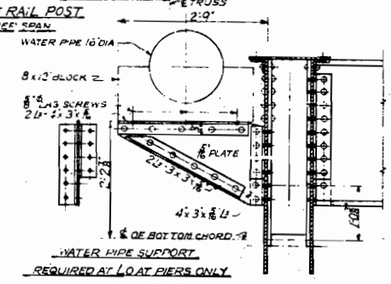


General Electric Form 13, Lighting Unit with Form U Casing, № 109 Light, Alabaster Rippled Glass Globe, № 1109 Glass Canopy equipped with Series Mogul Receptical, described in Page 533 General Electric Catalogue 630-A, or an Approved Lighting Unit of Equivalent Quality and Dimensions.

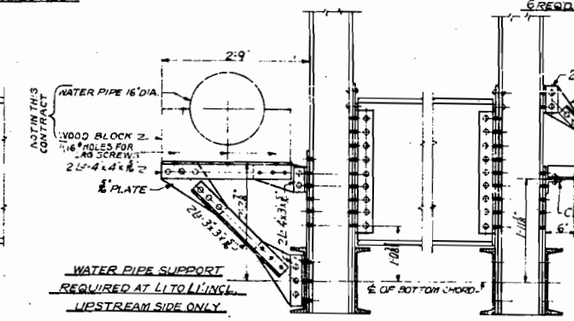
SECTION Z-Z LIGHT POST AT SOUTH END OF BRIDGE



TYPICAL CROSS SECTION

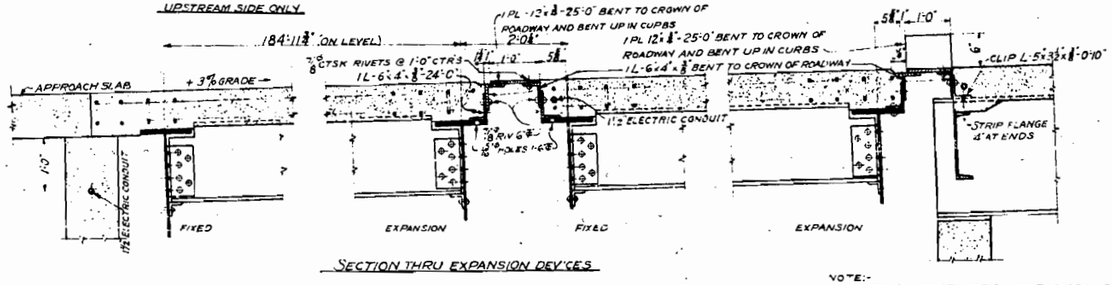


WATER PIPE SUPPORT
REQUIRED AT L0 AT PIERS ONLY
UPSTREAM SIDE ONLY



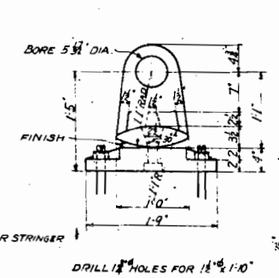
WATER PIPE SUPPORT
REQUIRED AT L1 TO L11 INCL.
UPSTREAM SIDE ONLY

PHONE LINE SUPPORT
REQUIRED AT L1, L3, L11
DOWNSTREAM SIDE ONLY

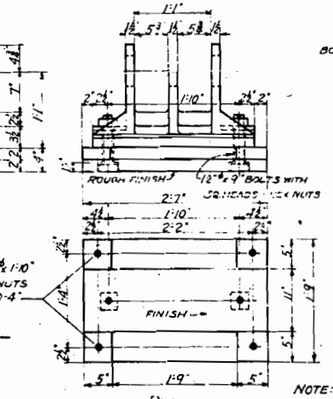


SECTION THRU EXPANSION DEVICES

NOTE:-
A VERTICAL CONSTRUCTION JOINT IS REQUIRED TRANSVERSELY IN THE CONCRETE FLOOR OVER EACH FLOOR BEAM, REINFORCING TO REMAIN CONTINUOUS THRU THESE JOINTS.



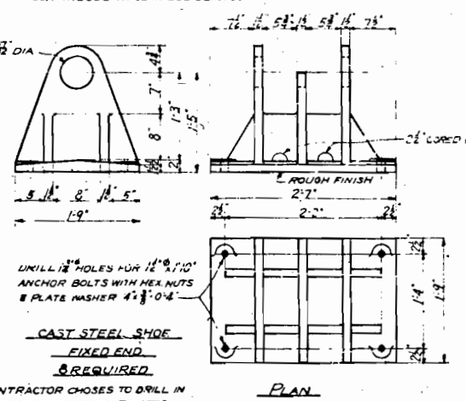
STRINGER CONNECTION



DRILL 1½" HOLES FOR 1⅝"ø 1'-10" ANCHOR BOLTS WITH HEX. NUTS & PLATE WASHER 4"x⅜"-0'-4"

CAST STEEL ROCKER
EXPANSION END
8 REQUIRED

PLAN



DRILL 1½" HOLES FOR 1⅝"ø 1'-10" ANCHOR BOLTS WITH HEX. NUTS & PLATE WASHER 4"x⅜"-0'-4"

CAST STEEL SHOE
FIXED END
8 REQUIRED

PLAN

NOTE: IF CONTRACTOR CHOSES TO DRILL IN ANCHOR BOLTS AFTER CONCRETE SETS SWEDGE BOLTS SHALL BE FURNISHED.

ESTIMATED QUANTITIES FOR ONE SPAN OF SUPERSTRUCTURE

ITEM №	DESCRIPTION	UNIT	TOTAL
46a	CONCRETE CLASS "A"	CU.YD.	119.2
47	REINFORCING STEEL INCLUDES 1% OVERRUN	LBS.	22,580
* 48	STRUCTURAL STEEL INCLUDES 2% OVERRUN	LBS.	304,600
89	DRAIN PIPE 3 DIA x 4'-8" GALVANIZED PIPE	EACH	18
89x	⅜"x 14 GA. CLAMPS	PAIR	72

* INCLUDES 3'-00 LBS CAST STEEL SHOES, AL SO 1440 LBS. WATER PIPE & PHONE BRKTS.
# WEIGHTS CALCULATED FROM DESIGN PLANS AND ARE THEREFORE APPROXIMATE ONLY.

BAR LIST FOR ONE SPAN OF SUPERSTRUCTURE

MAR.	№	SIZE	LENGTH	BENDING DIAGRAM
E1	205	⅝"ø	38'-9"	
E2	197	⅝"ø	26'-0"	
E3	124	⅝"ø	27'-7"	SYMMETRICAL ABOUT ℄

7944 LINEAL FT. OF ⅝"ø BARS @ 668# PER LINEAL FT. = 5307 LBS.
16342 LINEAL FT. OF ⅝"ø BARS @ 1.043# PER LINEAL FT. = 17045 LBS.
PLUS 1% # FOR OVERRUN = 228 LBS.
TOTAL = 22,580 LBS.

REFERENCE DRAWINGS
SHEET № 3 GENERAL LAYOUT, SUMMARY OF QUANTITIES AND GENERAL NOTES
SHEET № 4 DETAIL OF 185 FT. SPAN STEEL TRUSS
SHEET № 6 DETAIL OF ABUTMENT № 1.
SHEET № 7 SECTIONS AND DETAILS OF ABUTMENT №1.
SHEET № 8 PIERS № 2, 3, 4 & 5.
SHEET № 9 ABUTMENT № 6, 40 FT. APPROACH SPAN AND SLABS.

SPECIAL NOTES

ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE COLORADO STATE HIGHWAY DEPT. ADOPTED JAN. 1932.
ALL RIVETS SHALL BE ⅞"ø EXCEPT AS NOTED ON DRAWINGS.
ALL FIELD CONNECTIONS SHALL BE POWER RIVETED.
ROADWAY FLOOR SLAB AS SHOWN INCLUDES ½" MONOLITHIC WEARING SURFACE.
FOR GENERAL NOTES ON CONCRETE & SUBSTRUCTURE DETAILS SEE SHT.
FABRICATOR SHALL FURNISH ONE PILOT NUT AND ONE DRIVING NUT AS PER SPECIFICATIONS PAGE 119.

COLORADO
STATE HIGHWAY DEPARTMENT
185 FT. SPAN STEEL THRU TRUSS
24 FT. CLEAR ROADWAY
CONCRETE FLOOR
Across COLORADO RIVER
Sta. 113+98.04 TO 121+82.00
Near GRAND JUNCTION Sec. 23 T. 1 S. R. 100 W.

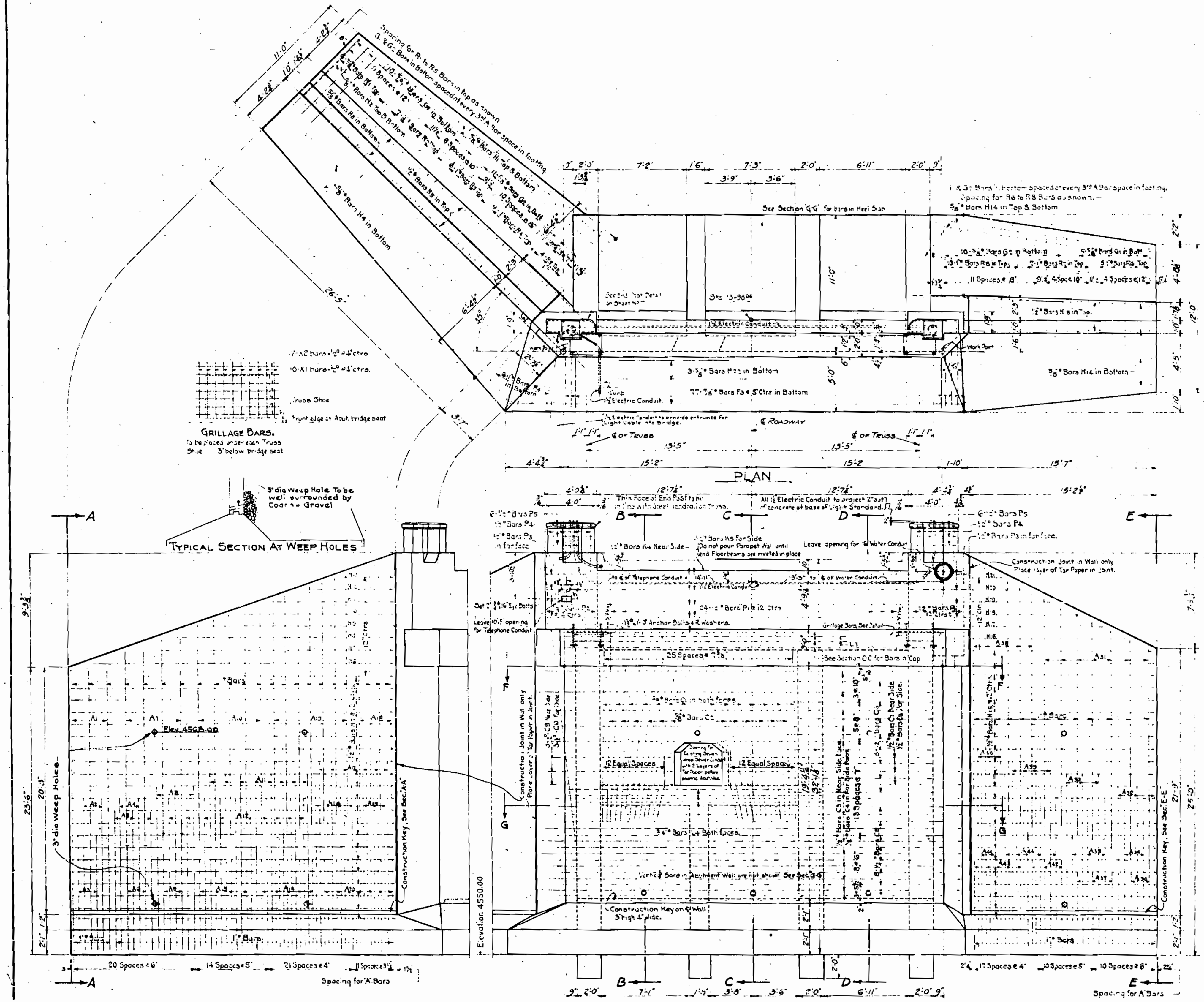
Designed by K.B.	Approved by C.J. Bailey
Made by W.M.M.	Bridge Engineer
Checked by	Date: Nov 30th 1932

STRUCTURE NO. H-2-H

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	[illegible]
3	COLO.	299-C	6	

Revised 3-1-33 WWD. Added Weep Holes

Revised 12-14-32 A.G.K. Bars in Toe & Heel of Wings & Footing Revised



Bar List for Abutment No 1

Footing Bars & Bars projecting from Ftg to Wingwalls & Counterforts

Mark	No	Size	Length	l	m	n	r	t	S
A1	3	1"	24'-0"	22'-8"			4	3½	
A4	2	1"	13'-5"	12'-1"			4	3½	
A5	3	1"	14'-5"	13'-1"			4	3½	
A11	8	1"	15'-5"	14'-1"			4	3½	
A[illegible]	[illegible]	1"	16'-5"	15'-1"			4	3½	
A32	3	1"	14'-5"	13'-1"			4	3½	
A33	3	1"	15'-5"	14'-1"			4	3½	
A3[illegible]	4	1"	16'-5"	15'-1"			4	3½	
A40	3	1"	17'-5"	16'-1"			4	3½	
G1	[illegible]	⅞"	8'-4"	7'-6"			2½	2	
G2	21	⅝"	9'-4"	8'-6"			2½	2	
F[illegible]	[illegible]	⅞"	9'-5"	8'-3"			3½	3	
F[illegible]	6	1"	12'-0"	10'-9"			4	3½	
V1	4	⅝"	26'-3"	25'-7"			2½	2	
V2	4	¾"	24'-3"	23'-3"			3	2½	
V3	4	⅞"	19'-9"	18'-7"			3½	3	
V4	4	1"	15'-6"	14'-2"			4	3½	
V5	4	1"	10'-0"	8'-3"			4	3½	
V6	2	⅝"	26'-0"	25'-2"			2½	2	
V7	2	¾"	21'-11"	20'-11"			3	2½	
V8	2	⅞"	18'-0"	16'-10"			3½	3	
V9	2	1"	13'-3"	11'-11"			4	3½	
V10	2	1"	9'-2"	7'-10"			4	3½	
V11	2	⅝"	13'-9"	12'-11"			2½	2	
V12	2	¾"	12'-7"	11'-7"			3	2½	
V13	2	⅞"	10'-7"	9'-5"			3½	3	
V14	2	1"	8'-8"	7'-4"			4	3½	
V15	2	1"	6'-6"	5'-2"			4	3½	
A2	2	1"	17'-2"	9'-3"	3'-5"				
A3	3	1"	16'-2"	3'-8"	3'-5"				
A12	6	1"	17'-11"	9'-3"	4'-2"				
A16	[illegible]	1"	20'-4"	10'-8"	5'-7"				
A19	3	1"	21'-4"	11'-8"	5'-7"				
A34	[illegible]	1"	16'-10"	8'-3"	4'-1"				
A35	3	1"	18'-3"	3'-8"	4'-6"				
A42	5	1"	19'-10"	10'-3"	5'-1"				
A41	2	1"	21'-4"	11'-8"	5'-7"				
A8	[illegible]	1"	15'-2"	6'-8"	3'-3"				
A9	[illegible]	1"	14'-11"	5'-3"	3'-10"				
A9	[illegible]	1"	16'-3"	6'-8"	4'-2"				
A13	4	1"	14'-7"	4'-8"	4'-6"				
A14	5	1"	15'-1"	4'-8"	5'-0"				
A15	[illegible]	1"	15'-8"	4'-8"	5'-7"				
A36	2	1"	13'-2"	3'-8"	4'-1"				
A37	3	1"	13'-7"	3'-8"	4'-6"				
A44	3	1"	15'-2"	4'-8"	5'-1"				
A43	3	1"	15'-8"	4'-8"	5'-7"				
D1	3	1"	31'-6"	24'-10"	3'-4"	1'-1"	4½	4	4
D2	2	1"	23'-0"	16'-4"	3'-4"	1'-1"	4½	4	4
D3	3	1"	17'-7"	10'-8"	3'-4"	1'-11"	4½	4	7
D4	2	1"	11'-3"	4'-7"	3'-4"	1'-1"	4½	4	7
D5	3	1"	31'-9"	25'-1"	3'-4"	1'-3"	4½	4	4
D6	2	1"	24'-3"	17'-7"	3'-4"	1'-3"	4½	4	4
D7	3	1"	18'-1"	11'-6"	3'-4"	2'-0½"	4½	4	7
D8	2	1"	11'-11"	5'-0"	3'-4"	2'-0½"	4½	4	7
D9	3	1"	30'-0"	24'-6"	3'-4"	1'-1"	4	3½	4
D10	2	1"	22'-8"	16'-1"	3'-4"	1'-1"	4	3½	4
D11	3	1"	17'-3"	10'-8"	3'-4"	1'-11"	4	3½	7
D12	2	1"	11'-2"	4'-7"	3'-4"	1'-1"	4	3½	7
D13	2	1"	20'-3"	13'-6"	3'-1"	2'-0"	4½	4	8
D14	2	1"	14'-9"	8'-0"	3'-1"	2'-0"	4½	4	8
F1	14	⅞"	35'-8"						
F2	6	⅞"	33'-3"						
H1	2	⅝"	24'-0"						
H2	2	⅝"	26'-9"						
H3	[illegible]	⅝"	29'-6"						
H4	3	⅝"	31'-6"						
H5	2	½"	26'-0"						
H14	8	⅝"	20'-0"						
H[illegible]	2	½"	14'-11"						
H22	3	⅝"	36'-0"						
K[illegible]	19	⅝"	3'-6"						
K6	14	⅞"	10'-8"						
R1	6	⅞"	8'-8"	3'-0"	2'-3"	1'-3"	3½	3	
R2	7	1"	9'-10"	4'-4"	2'-7"	1'-7"	4	3½	
R3	6	1"	10'-3"	4'-9"	2'-8"	1'-5"	4	3½	
R4	9	1"	10'-8"	5'-2"	2'-1"	1'-3"	4	3½	
R5	4	1"	11'-2"	5'-8"	3'-1"	1'-1"	4	3½	
R6	5	1"	9'-9"	4'-3"	2'-7"	1'-7"	4	3½	
R7	7	1"	10'-3"	4'-9"	2'-9"	1'-5"	4	3½	
R8	10	1"	10'-10"	5'-4"	3'-0"	1'-2"	4	3½	

Bend Diagrams: 2'-6" Rad.; 2'-6" Rod; 12" Rad.; Straight

Ties in Counterforts

Mark	No	Size	Length	l	m	n	r	t
U1 to U4	2 Each	⅝"	23'-6" to 20'-6" by 12"	9'-9" to 3'-3" by 6"	1'-8"			
U5 to U15	2 Each	½"	18'-6" to 11'-6" by 1'-0"	7'-9" to 3'-3" by 6"	1'-8"			
U14 to U17	1 Each	⅝"	23'-6" to 20'-6" by 12"	9'-9" to 8'-0" by 7"	1'-8"			
U18 to U20	1 Each	½"	18'-10" to 9'-10" by 4½"	7'-5" to 2'-11" by 6¾"	1'-8"			
U21 to U30	1 Each	⅝"	20'-6" to 14'-0" by 2'-2"	8'-9" to 5'-6" by 1'-1"	1'-2"			
U31	1	½"	12'-0"	4'-6"	1'-2"			
U32	1	½"	9'-10"	3'-5"	1'-2"			

Bars in Abutment Wall

Mark	No	Size	Length	l	m	n	r	t
C2	12	⅝"	16'-3"	4'-1"	4'-11"	4'-11"		
C6	3	½"	12'-5"	3'-7"	3'-8"	2'-10"		
C5	9	½"	30'-0"					
C3	14	⅝"	36'-3"					
C4	14	½"	31'-6"	26'-10"	4'-0"	3'-0"	2	2
C10	3	½"	10'-11"	6'-5"	4'-0"	3'-0"	2	2
C7	3	½"	20'-4"	17'-3"	2'-10"	2'-0"		
C9	3	½"	12'-3"	9'-0"	3'-3"	2'-3½"		
C11	22	½"	5'-6"	4'-2"			2	2
L1	[illegible]	1"	35'-9"	32'-7"			4	3½
L4	6	¾"	21'-9"	19'-9"			3	2½
X1	20	½"	3'-4"	2'-0"			2	2
X2	14	½"	4'-4"	3'-0"			2	2
C1	23	⅝"	15'-7"					
C8	3	½"	16'-3"					
K1	23	½"	22'-2"					
K2	22	½"	9'-5"					
K3	7	½"	28'-5"					
K4	5	½"	33'-8"					
K5	6	½"	26'-0"					
L2	2	1"	30'-0"					
L3	4	1"	23'-0"					
P5	12	½"	3'-6"					
M1	24	½"	8'-6"	2'-7½"	1'-3½"			
M2	14	½"	7'-4"	2'-3"	1'-1"			
P4	8	½"	9'-8"	4'-6"	8"			
P2	10	½"	20'-0"	9'-4"	1'-4"			
P3	8	½"	7'-8"					
P1	24	½"	15'-6"					

Bending Diagrams: Straight

Bars in Wing Walls (See footing list for other bars)

Mark	No	Size	Length
A7	4	1"	15'-0"
A10	5	1"	18'-0"
A17	7	1"	19'-5"
A18	4	1"	20'-8"
A31	7	1"	14'-9"
A38	6	1"	19'-5"
H8	19	½"	26'-0"
H9 to H15	1 Each	½"	24'-8" to 4'-10" by 2'-10"
H16	21	½"	14'-11"
H16 to H21	1 Each	½"	12'-9" to 2'-9" by 2'-0"

Bending Diagram: Straight

Summary of Reinforcement Bar List

503 Lin. Ft. 1⅛" Bars @ 4.303 Lbs. per Lin. Ft.	=	2181 Lbs.
2576 Lin. Ft. 1" □ Bars @ 3.400 Lbs. per Lin. Ft.	=	8758 Lbs.
973 Lin. Ft. 1" ● Bars @ 2.670 Lbs. per Lin. Ft.	=	2598 Lbs.
1648 Lin. Ft. ⅞" Bars @ 2.044 Lbs. per Lin. Ft.	=	3369 Lbs.
297 Lin. Ft. ¾" Bars @ 1.502 Lbs. per Lin. Ft.	=	445 Lbs.
2291 Lin. Ft. ⅝" Bars @ 1.043 Lbs. per Lin. Ft.	=	2390 Lbs.
3151 Lin. Ft. ½" □ Bars @ 0.850 Lbs. per Lin. Ft.	=	2679 Lbs.
2355 Lin. Ft. ½" ● Bars @ 0.668 Lbs. per Lin. Ft.	=	1573 Lbs.
Plus 1% Additional for Overrun	=	247 Lbs.
	TOTAL =	24250 LBS.

~ Reference Drawings ~

- Sheet No 3 General Layout, Summary of Quantities and General Notes.
- Sheet No 4. Details of 185 Ft Span Steel Truss.
- Sheet No 5 " " " " " " Lamp Posts
- Sheet No 7 Sections and Details of Abutment No 1.
- Sheet No 8 Piers Nos 2, 3, 4 and 5.
- Sheet No 9 Abutment No 6 and 40 Ft. Approach Span.

Colorado State Highway Department

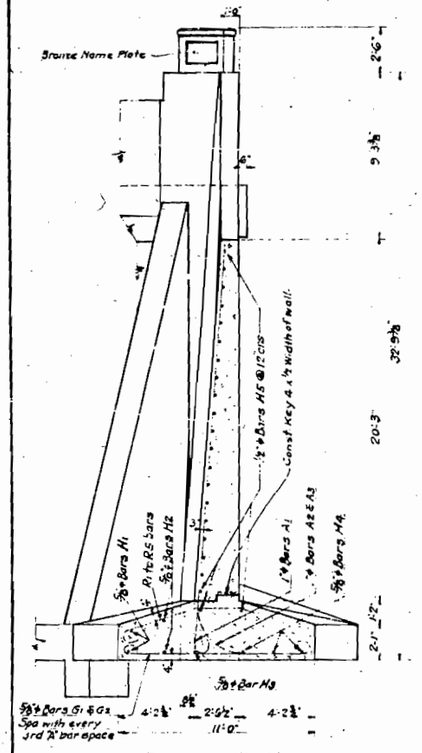
Plan, Elevation and Bar List of (North) Abutment No 1
For Bridge at 5th Street.
Across Colorado River
Sta. 113+98.04 to 121+69.00
At Grand Junction Sec. 23 T. 1 S. R. 1 W.

Designed by KB	Approved by [signature]
Made by AGK	Bridge Engineer
Checked by ALC	Date: Nov. 30th 1932

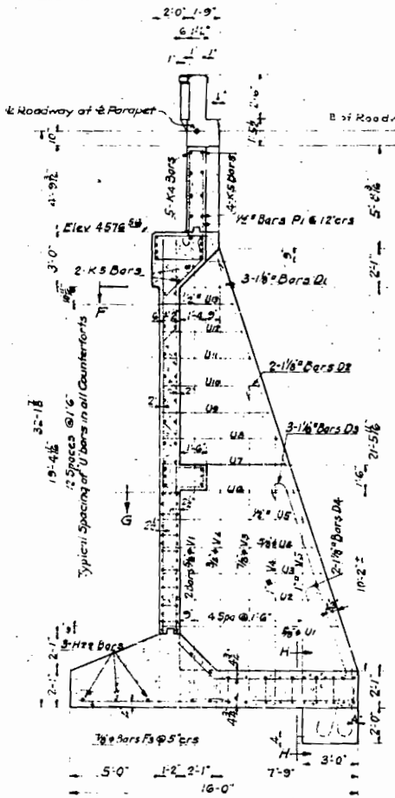
STRUCTURE NO. H-2-H

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	299-C	7	

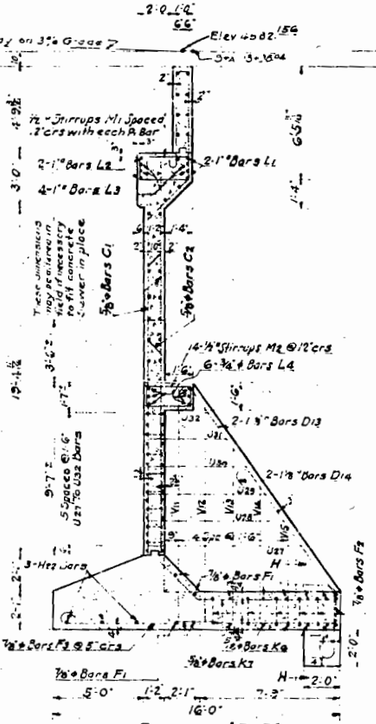
Revised 12-16-32 by WWD
Steel edge distance added.



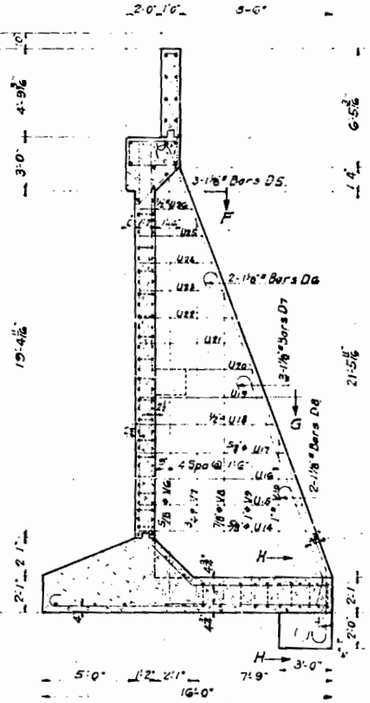
SECTION "A-A"



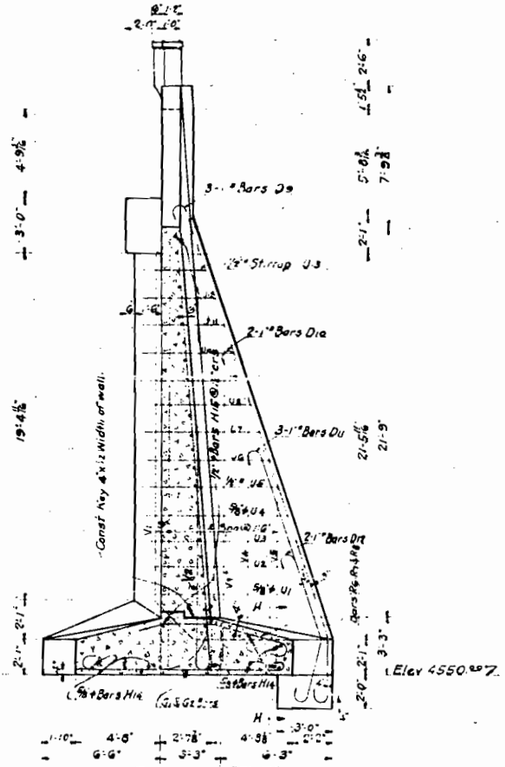
SECTION "B-B"



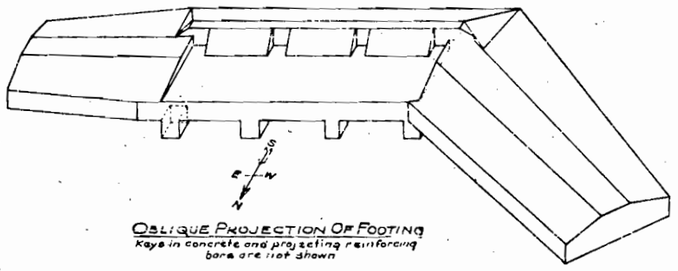
SECTION "C-C"



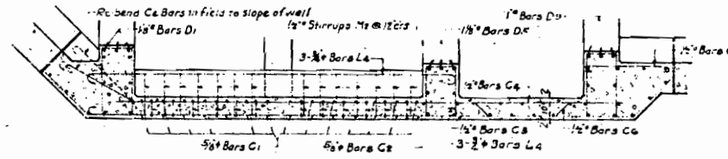
SECTION "D-D"



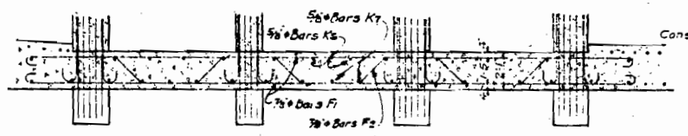
SECTION "E-E"



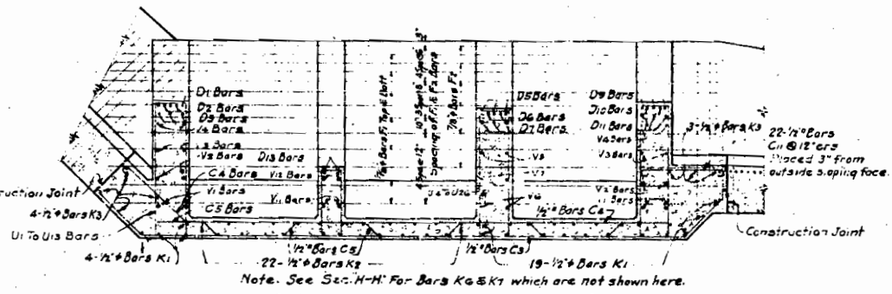
OBLIQUE PROJECTION OF FOOTING
Keys in concrete and projecting reinforcing bars are not shown



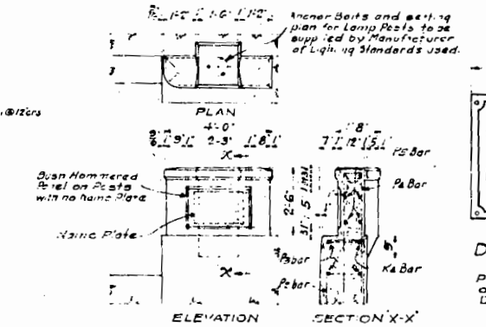
SECTION "F-F"



SECTION "H-H"



SECTION "G-G"



DETAIL OF NORTH WEST END POST
No EAST END POST SIMILAR BUT OPP. HAND

DETAIL OF BRONZE NAME PLATE
2-REQ'D
Place one on North West End Post and one on South East End Post of Bridge
Design to be approved by Bridge Engineer

REFERENCE DRAWINGS.
Sheet No 3 General Layout Summary of Quantities and General Notes.
Sheet No 4 Details of 185 Ft Span Steel Truss.
Sheet No 5 Details of 185 Ft Span Steel Truss & Comp. Data
Sheet No 6 Plan, Elevation & Bar List of Abutment No 1
Sheet No 8 Piers No 2-3-4 and 5
Sheet No 9 Abutment No 6, 40 Ft Approach Span & Slabs

COLORADO
STATE HIGHWAY DEPARTMENT
SECTIONS & DETAILS
OF ABUTMENT No 1
FOR BRIDGE AT 5TH ST.
Across Colorado River
Sta. 113+98.24 To 121+89.29
At Grand Junction Sec 23 T. 1S R. 1.00 W.

Designed by K.B.	Approved by C.D. Curley
Made by W.W.D.	Bridge Engineer
Checked by A.L.C.	Date: Nov. 30th 1932.

STRUCTURE NO. H-2-H

Revised Footings As Constructed. 6-2-38 R.A.D.

Revised Dec 14, 1932 by EFW. Lowered Footing of #5 Pier 2'0". Revised Feb 23, 1933 by RWD. added center Key at piers

FED. ROAD DIST. NO.	STATE	FED. NO. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	295-C	6	

SECTION "A-A" PLAN LOWER CAP
(All Piers alike except as noted)

PLAN PIER UPPER CAP
(All Piers alike except as noted on No 5)

DETAIL OF STARKWATER PLATE
For Piers # 2-3-4-5

Bent R 1'6" x 12'-6" 5 Bent Bars 1"x 1'6" Welded to Pl as shown

Plate 21"x 8" x 2" Under South Shoes For Piers No 2-3-4

SHIM PLATES
as required

SECTION "D-D"

SECTION "E-E"

PLAN

HALF ELEVATION PIER TOP No 3
For Details & Dimensions of Lower Cap and Pier Footing See Pier No 2

HALF ELEVATION PIER TOP No 4
For rest of pier see Pier #2

HALF ELEVATION PIER TOP No 5
For rest of Pier see Pier #2

SECTION "F-F"

SIDE ELEVATION OF PIER No 2
Typical For all Piers Except As Noted in Other Details

NOTE — Footings Poured to Rock.

SECTIONAL PLAN "C-C"
Typical For All Piers

SECTION "B-B"
Typical For All Piers Except as noted

SECTION "X-X"

LADDER DETAIL
For Downstream End of Pier No 3

SECTION "H-H"

BAR LIST FOR FOUR PIERS

Mark	Size	Number of Bars in Each Pier: Pier #2	Pier #3	Pier #4	Pier #5	Length	k	e	m	n	o	p	Wgt.	t	Bend No
T1	1"	9	9	9	9	32'-0"									
T1a	1"				2	30'-0"									
T1b	1"				4	24'-0"									
S1	1"	20				8'-6"									
S3	1"		20			14'-3"									
S4	1"			20		19'-8"									
S5	1"				23	25'-10"									
N1	½"	18	18	18	18	5'-2"									
T2	½"	3				32'-0"	4'-0"	4'-1½"	6'4"						
T5	½"		3	3	3	42'-8"	11'-6"	6'-10"	6'-0"	5'-3"	6'-0"	3'-3"			
T3	½"	20	20	20		11'-7"		4'-1½"	1'-2"					6	6
T4	½"				30	11'-7"		4'-1½"	1'-2"					6	6
T20	½"				18	9'-10"		3'-9"	0'-8"					6	6
T6	½"	8				7'-11"		2'-10"	0'-11"				2	2	7
T7	½"	2				9'-11"		3'-4"	0'-11"				2	2	7
T8	½"	2				9'-11"		3'-10"	0'-11"				2	2	7
T9	½"	2				10'-11"		4'-4"	0'-11"				2	2	7
T10	½"	2				11'-11"		4'-10"	0'-11"				2	2	7
T11	½"		4	4	4	7'-11"		2'-10"	0'-11"				2	2	7
T12	½"		2	2	2	8'-9"		3'-3"	0'-11"				2	2	7
T13	½"		2	2	2	10'-3"		4'-0"	0'-11"				2	2	7
T14	½"		2	2	2	11'-9"		4'-9"	1'-0"				2	2	7
T15	½"		2	2	2	13'-3"		5'-6"	0'-11"				2	2	7
T16	½"		2	2	2	16'-11"		7'-8"	0'-11"				2	2	7
T17	½"		2	2	2	22'-11"		10'-4"	0'-11"				2	2	7
S2	½"	18				15'-10¾"	3'-10¾"	3'-1"	1'-8"	1'-6"		1'-2⅜"		6	6
S6	½"		28			18'-11¾"	3'-7½"	2'-11"	1'-6"	1'-6"		1'-0⅜"		6	6
S7	½"			40		14'-0¾"	3'-4"	2'-7"	1'-5½"	1'-6"		0'-11"		6	6
S8	½"				50	12'-11¾"	3'-0"	2'-3"	1'-4½"	1'-6"		0'-9"		6	6
T21	1"	17				5'-3"		1'-3"	2'-0"						

Summary of Steel — Piers Only	Pier No 2 Lin Ft	Pier No 2 Lbs	Pier No 3 Lin Ft	Pier No 3 Lbs	Pier No 4 Lin Ft	Pier No 4 Lbs	Pier No 5 Lin Ft	Pier No 5 Lbs
½" bars @ 0.668 Lbs per Lin Ft	757	506	943	630	1085	725	940	628
¾" " 0.830 " " "	364	327	416	374	416	374	1105	940
1" " 2.670 " " "	170	454	375	1001	394	1052	500	1335
Plus 1% For Overrun		13		15		19		27
Totals		1300		2000		2150		2930

— REFERENCE DRAWINGS —
Sheet No 3 General Layout, Summary of Quantities and General Notes
Sheet No 4 Details of 185 Ft Span Steel Truss
Sheet No 5 Details of 185 Ft Truss & Lower Panels
Sheet No 6 Plan, Elevation & Bar List of Abutment No 1
Sheet No 7 Sections and Details of Abutment No 1
Sheet No 9 Abutment No 6, 40 Ft Approach Span, & Slabs

COLORADO
STATE HIGHWAY DEPARTMENT
PIERS FOR BRIDGE AT 5TH ST.
PIERS No 2-3-4 & 5
Across Colorado River
Sta. 113+98.4 To 121+89.9
At Grand Junction Sec. 28T. 1S R. 100W

Designed by E.F.W. Approved by Rob't Carley
Made by W.W.D. Bridge Engineer
Checked by W.H.M. Date: Nov. 30th 1932.

STRUCTURE NO. H-2-H

Copy Check EFW 11-30-32

Revised As Constructed. Extended Rt. Wing Wall. 6-2-38 R.A.D.

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	SHEET No.
3	COLO.	299 C	

(Place Name Plate in panel)

2" Expansion Joint — ¾" ⌀ Bars S1 @ 4" crs

27'-W 9.85"

27'-W @ 8.5"

0 to 0 Stringers 40'-10"

27'-W @ 8.5"

⅝" ⌀ Bars E13 and E14 @ 6" crs top and bottom of Slab over 3rd pier ending in 2" g bar

Thickness of ℄ of Approx. Slab = 10". At edges 8½" and at ends, crown shall conform to roadway.

½" ⌀ Bars E11 Top and Bottom of Slab arranged as shown in Section I-I

½" ⌀ Bars S2 @ 7"

Symmetrical about ℄ Roadway except for Name Plate

19'-6"

HALF PLAN.

24'-0" Clear Roadway

Symmetrical about ℄ Roadway

½" Parabolic Crown

L 3"x2½"x⅜"x0'-6"

Pipe Sleeve & Washer

2 Bars 1"⌀ See Detail. Wrap Web with tar paper

12"-W" @ 25"

2'-4⅝" — 4'-9⅝" — 4'-9½" — 10½"

SECTION I-I.

Thread

DETAIL FOR 1"⌀ BAR 24 REQUIRED with Hex. Nuts.

Cut Washer

DETAIL FOR 1"N.I. PIPE SLEEVE 24 REQUIRED

5 Spaces @ 7'-4½" = 36'-10½"

2-L 3½"x3½"x⅜" 16'-11⅝" 8.2#

1 L 3½"x3½"x⅜"

Notes:- Concrete Posts to be Vertical.

Sta. 121+99.00

¾" ⌀ Bars S11

½" ⌀ Bars S2

1½" Electrical Conduit

W.P.-1

Fixed — Structural Excavation carried to this line — Expansion

40'-10"

42'-9⅛" on 45° Grade

42'-4½" on Horizontal.

℄ Pier No. 5

Approx. Natural Ground Line

SECTION K-K.

BAR LIST FOR TWO APPROACH SLABS.

MARK	SIZE	NO	LENGTH	BENDING DIAGRAM All dimensions are to ℄ of Bars
S1	¾" ⌀	144	20'-5"	
S2	½" ⌀	19	23'-8"	Straight
S3 to S21	½" ⌀	2 to 18	24'-3" to 26'-1"	By 1"

2939 Lin. Ft. ¾" ⌀ Bars @ 1.502 Lbs. per Ft. = 4416 Lbs.
934 Lin. Ft. ½" ⌀ " @ 0.850 " " = 793 "
1½% for overrun = 251 "
TOTAL = 5460 Lbs.

BAR LIST FOR 40' APPROACH SPAN & ABUTMENT No. 6.

MARK	SIZE	NO	LENGTH	BENDING DIAGRAMS All dimensions are to ℄ of bars
B1	¾" ⌀	33	7'-0"	B1 6'-0" B2 5'-5"
B2	⅝" ⌀	30	6'-5"	Radius 3" Radius 24"
E12	⅝" ⌀	112	26'-0"	E12 24'-4"
E13	⅝" ⌀	28	27'-7"	Radius 15" Rad. 2½"
J1	⅞" ⌀	25	17'-2"	
J2	⅞" ⌀	28	11'-6"	
J3	⅞" ⌀	8	20'-8"	Radius 32" Radius 16"
J4	⅞" ⌀	18	13'-8"	
J5 to J9	⅞" ⌀	18 Each	18'-0" To 19'-3" By 3¼"	
J10	⅞" ⌀	5	19'-9"	
S1	½" ⌀	12	23'-6"	Straight
N1	½" ⌀	4	24'-10"	do.
N2	½" ⌀	4	17'-10"	do.
N3	½" ⌀	13	23'-10"	do.
N4	½" ⌀	4	4'-0"	do.
N5	½" ⌀	8	7'-0"	do.
N6	½" ⌀	8	3'-8"	do.
N7	½" ⌀	2	3'-6"	do.
N8	½" ⌀	8	0'-2"	do.
C11	½" ⌀	78	91'-8"	do.
Z1	½" ⌀	25	10'-0"	
P1	½" ⌀	8	8'-4"	

1090 Lin. Ft. ½" ⌀ bars @ 0.868 Lbs. per Ft. = 1129 Lbs.
1072 Lin. Ft. ½" ⌀ " @ 0.85 " " = 911 "
4158 Lin. Ft. ⅝" ⌀ " @ 1.043 " " = 4336 "
308 Lin. Ft. ¾" ⌀ " @ 1.502 " " = 463 "
1335 Lin. Ft. ⅞" ⌀ " @ 2.066 " " = 2759 "
1½% for overrun = 102 "
TOTAL = 9670 Lbs.

DETAIL FOR BEARING CLIPS

Reqd 24 Lbs 6"x4"x0'-5"
12 Lbs 3"x3"x0'-3"
12 Lbs 3"x3"x0'-3"

5" — ⅜" Fixed End — 4" Expansion End — 0'-10"

10"x⅜"x1'-4" BEARING PLATE 12 REQUIRED

18"

⅞" x 18" ANCHOR BOLT 24 REQUIRED

3"x½"x3" STEEL PLATE WASHER 24 REQUIRED

SECTION M-M.

℄ of Bridge — ℄ of Roadway — 2'-0" — 12'-0" — 12'-0" — 3'-3"

S1 bars where except as noted

Bars S3 to S21 Each

Fan S1 Bars for Extra width here

20'-0"

Note:- Warp Approach Slab and Curb from Roadway Section at Station 113+18.54 to Bridge Floor Section Station 114+98.54.

DETAILS FOR APPROACH SLAB ON NORTH END OF BRIDGE.

REFERENCE DRAWINGS

SHEET No. 3. GENERAL LAYOUT, SUMMARY OF QUANTITIES AND GENERAL NOTES.
SHEET No. 4. DETAILS FOR 135-FT SPAN STEEL TRUSS.
SHEET No. 5 " " " " & LAMP POSTS.
SHEET No. 6 PLAN, ELEVATION AND BAR LISTS FOR ABUTMENT No. 6.
SHEET No. 7. SECTIONS AND DETAILS, ABUTMENT No. 6.
SHEET No. 8. DETAILS, PIERS Nos. 2, 3, 4 & 5.

LOADING DATA:- SEE SHEET No. 4.

FRONT ELEVATION ABUTMENT No. 6.

4-½"⌀ Bars N6
1-½"⌀ Bar N7
2-½"⌀ Bars N4
4-½"⌀ Bars P6
½"⌀ Bar N5
⅞"⌀ Bars J10 @ 12" crs.
⅞"⌀ Bars J3 @ 12" crs.
⅞"⌀ Bars J1 @ 12" crs.
⅞"⌀ Bars J4 @ 12" crs.
⅞"⌀ Bars J2 @ 12" crs.
½"⌀ Bars N3 @ 12" crs.
2-⅝"⌀ Bars B3
4-⅝"⌀ Bars B2

½"⌀ Bar N8 2 Each Place
½"⌀ Bars N1 @ 12" crs
½"⌀ Bars N2 @ 12" crs
3"⌀ Bars Z1 @ 12" crs
10"x6" Opening for Conduit
⅞"⌀ Bars J9 to J5 @ 12" crs
⅞"⌀ Bars J4 @ 12" crs
½"⌀ Bars N3 @ 12" crs

Lamp Post holes to come with Lamp Posts

For details of Post above curb see Post shown on Sheet 7

Set 2 - ¾"x16" Eyebolts

PLAN.

SECTION X-X.

Sta. 121+89 Elev 4603.98

½"⌀ Bars N1 @ 6" Seat slopes

½"⌀ Bars N2

½"⌀ Bars Z1 @ 12" crs

Lay cove for panel over all of top of Parapet wall

⅞"⌀ Bars J1 @ 12" crs

⅞"⌀ Bars J1 & J2 @ 6" crs.

3" Diam Weep hole w/ surrounded with coarse gravel.

½"⌀ Bars B1 @ 12" crs

⅝"⌀ Bars B3

⅝"⌀ Bars B2 @ 18" crs

Elev 4590.0

NOTE FOR APPROACH SPAN

All rivets to be ⅞" ⌀ except in Handrail

COLORADO
STATE HIGHWAY DEPARTMENT

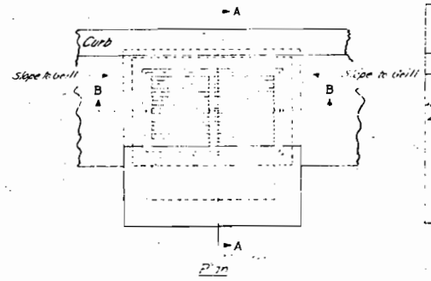
40' SPAN x 24'-0 WIDE I-BEAM CONCRETE APPROACH SPAN AND DETAILS FOR ABUTMENT No. 6

Across COLORADO RIVER
Sta. 113+98.04 to 121+89.00
Near Grand Junction Sec. 23 T. 1 S. R. 100 W.

Designed by K.B.	Approved by
Made by R.M.A.	Bridge Engineer
Checked by R.M.A.	Date:

STRUCTURE NO. H-2-K

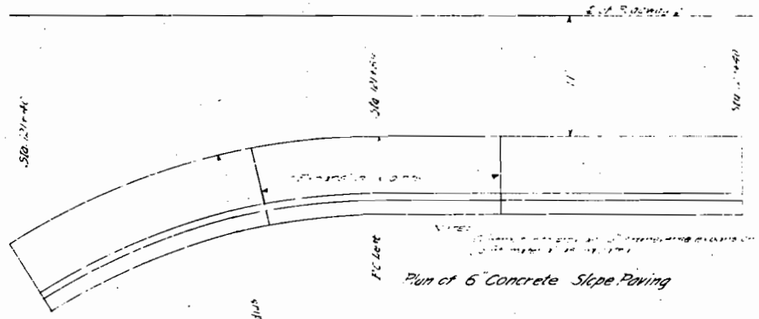
FED ROAD DIST NO	STATE	FED AID PROJ NO	SHEET NO	TOTAL SHEETS
9	COLO	E-299-C	11	



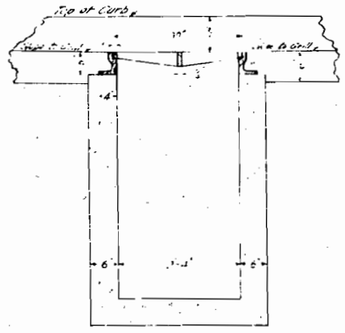
APPROXIMATE QUANTITIES
FOR ONE CATCH BASIN

NO.	ITEM	UNIT	QUANT.
	Structural Excav.	Cu. Yds.	15
460	Class A Concrete	Cu. Yds.	2.55
427	Pipe Railing Steel	Lbs.	44

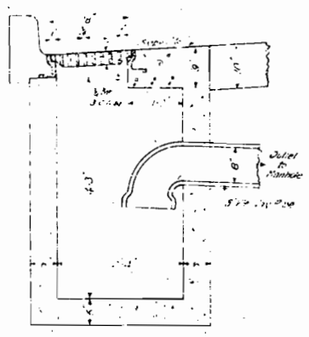
NOTE:
C.I. Grills & Frames to be shipped from Division Concrete Yard.



Plan of 6" Concrete Slope Paving



Section A-B



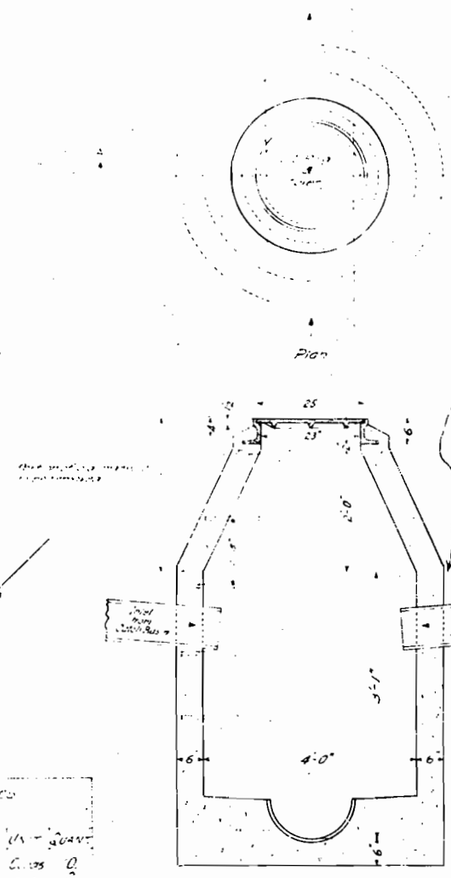
Section A-A

CATCH BASIN
Scale 1/2" = 1'

TYPICAL SECTION OF
6" CONCRETE SLOPE PAVING
Scale 1/2" = 1'-0"

APPROXIMATE QUANTITIES
6" CONCRETE SLOPE PAVING

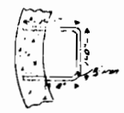
NO.	ITEM	UNIT	QUANT.
	Structural Excav.	Cu. Yds.	129.
460	Class A Concrete	Cu. Yds.	22.5



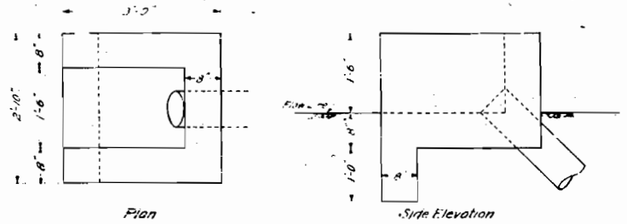
APPROXIMATE QUANTITIES
MANHOLE

NO.	ITEM	UNIT	QUANT.
	Structural Excav.	Cu. Yds.	0
463	Class A Concrete	Cu. Yds.	2
	C.I. Ring & Cover	Each	1
	18" Cast Iron Pipe Steps	Each	25

CONCRETE MANHOLE - STA 110+00
Scale 3/4" = 1'



DETAIL OF SIPHON INLET & OUTLET BOXES
Scale 1/2" = 1'



APPROXIMATE QUANTITIES
8" CAST IRON SIPHON

NO.	ITEM	UNIT	QUANTITY
	Structural Excav.	Cu. Yds.	30
190	Embankment for Ditch Inlet	"	30
460	Class A Concrete	"	12
	8" Cast Iron Pipe Class A Weight 42.9 lbs per ft	Lin. Ft.	110
	8" 45° Bend C.I. S.S.	Each	2
	8" " 90° Bend C.I. S.S.	"	1
	8" Valve (Iron Body Screwed Cushion "A" Bronze Mounted 150# working pressure or equivalent.)	"	1

8" CAST IRON SIPHON - STA. 125+01 (SKEW 70°)

TYPICAL SECTION OF DITCH
TO CONNECT SIPHON
100 Cu. Yds. Emb. Req'd.

GRAND JUNCTION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	E 299C	12	

PLAN — SURVEYED, PLOTTED, NOTE BOOK, NO., ALIGNMENT CHECKED, RT. OF WAY CHECKED, DATE, BY

PROFILE — SURVEYED, PLOTTED, NOTE BOOK, GRADES CHECKED, R. R.'S NOTED, STRUCTURE NOTES & DETAILS, NO., DATE, BY

Note:- Superelevation is to be Constructed as staked by the Engineer to meet approach slabs at Bridge and Struthers Avenue Approach

Sta. 100+25.9 Beginning of F.A.P. E 299C

The alignment and grade as hereon shown are subject to adjustment.

Scale:- 1 inch = 50 feet

Sta. 115+08.5 End of F.A.P. E 299C

Bridge and Approach to be built under Construction Div No. 2

R.R. 114+29.2

Sta. 114+09 Equation Sta 0+00 "B" Line = Sta 114+09

Sta 113+50.9 "A" Line = Sta 114+54.9 "B" Line

Sta. 114+91.8 End of "B" Line

Proposed City Water Connection

Present Bridge

Equation

"A" Line
Δ = 90°00'
D = 11°22'
R = 505'
T = 505'
L = 792'

"B" Line
Δ = 87°18'
D = 11°42'
R = 501'
T = 502'
L = 764'

Δ = 28°47' R
D = 9°00'
R = 716.5'
T = 183.9'
L = 359.8'

AC 110+69.8

Nuland Ave.

Struthers Ave.

Fifth St.

South

Combination Sanitary and Storm Sewer on ℄

Present Curbing

Telephone Line

Power Line

Fire Plug

Catch Basin

Sewer Manhole

Underground Gas Tank

Filling Station

Concrete Approach

Concrete Retaining Wall

Driveway Approach

Section A-A

Scale: 1 inch = 1 foot

Plan of Concrete Driveway Approach

Scale: 1/4 in. = 1 foot.

Typical Section Concrete Sidewalk

Typical Section Concrete Retaining Wall Sta 113+21 "A" Line to Sta. 114+91.8 "B" Line

Scale: 1/2 in = 1 ft.

Typical Section of Curb and Gutter Sta 100+25 to Sta 113+50.9

Scale: 1 in thick = 1 foot

Plan of Steel Intersection at Sta. 110+20

Scale: 3/16 in = 1 foot.

Section B-B

Scale: 1/4 in = 1 foot.

Concrete Gutter

Bituminous Concrete Pavement

Concrete Curb & Gutter

Approximate Quantities Concrete Sidewalk

Sta. to Sta.		Thickness (Inches)	Width (Feet)	Area (Sq. Ft.)	Cu. Yds. Concrete
100+25	Rt.	4	5		
100+25 to 101+00	Rt.	4	5	375	0.052
113+50.9 to 113+70	Rt.	4	5	100	0.014
113+70 to 114+91.8	Rt.	4	5	609	0.084
113+50.9 to 113+70	Lft.	4	5	100	0.014
113+70 to 114+91.8	Lft.	4	5	609	0.084
Total				1793	0.248

Profile "A" Line

Profile "B" Line

Profile Scales: Horizontal: 1" = 50' Vertical: 1" = 5'

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	F-299(6)	12A	

O.R.B. – JAN. 14, 1932.
For - - - Pgs. 15-33
SCALE – 1 IN. = 10 FT.

NOTE:
For sections from sta. 100+25 to 110+00 inclusive see cross sections.

℄ 5TH STREET

℄

110+50

111+00

111+25

111+50

111+68

111+75

112+00

112+25

112+50

112+65

112+75

112+90

113+00

113+45

28'

28'

28'

12'

PC-110+82

PC-111+83 (10 Curve Rt. on Curb)

Sta. 111+68 Beginning of Concrete Sidewalk Re-construction

Shoulder Line

6 In. Curb

Concrete Sidewalk 5 Ft. Wide

Toe of Slope

1 Ft. Shoulder
6 in. Curb

PC-111+69 (6° Curve Rt. on Curb)

PC-111+28

111+76

112+01.8

112+27

112+51.3

P.R.-112+53.0

+66.3

PT-112+79 (6° Curve on Curb)

PC-112+55

+78.0

+82.5

112+96

113+06

+16

+36

+06

Edge of Walk

End of Wall

STRUTHERS AVENUE

8.2'

15.8'

1+91.3

1+75

12.3'

1+55.4

11.9'

12.2'

12'

Δ=90°-00'
D=119°-22'
L=75.4'
T=48.0
R=48.0

PT-113+50.9

1+23.7

1+15.8

1+07.3

Manhole

PC-113+35.6

12'

RT.-0+98.9

0+89

0+81

0+69

Δ=61°-19'
D=12°-17'
L=342.0
T=190.0
R=501.7

PC.-0+44.7

0+25

0+21.5 Curb and Gutter Ends 18' Left

0+13

0+03.5

+40

+50

+75

+87

+98.5

12'

12'

Bridge Deposit

PT-1+18.5 (6 Curve Ends) End of Curb and Gutter No. 2

PC-113+45

RT.-0+17.7

= Main Line Auxiliary Section
= Section "A" ("A" Line)
= Section "B" ("B" Line)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	E-299-C	13	-

Colorado River

PARK PLACE

PARK AVENUE

BLOCK 35

MESA AVENUE

CANON AVENUE

GRAND

To Ouray

To Grand Junction

Proposed 12" C.I. Pipe

12" Line (To be replaced with 16" Line)

City Pipe Line

Δ=93°49'
D=3°30'
R=1637.1'
T=1769.5'
L=2680.2'

Cabins

Filling Station

Store

R.R.W.

Pumon Bridge

Proposed Water Main Change

10" City Pipe Line, To be Removed from Sta 121+20 to Sta 128+40

S 28°-47' W

Telephone Line

Proposed Sewer Change

Present Sewer

Concrete School Pavilion

Sewer Line

Proposed

Sewer (Cap)

House

Proposed Ditch Change

Ditch

Fence

Wire and Meter

Proposed 6" Water Main

Proposed 6" Meter

Header

To be moved & re-poured upon completion of sta. 128+97

GUNNISON BOULEVARD

Hallrich Lumber and Supply Co.

Existing Valve House

Hallrich Lumber and Supply Company

Proposed Water Main Change

Proposed Valve House

Valve

DAMON COURT

Manhole

Sewer

BLOCK 36

BLOCK 33

HIGH STREET

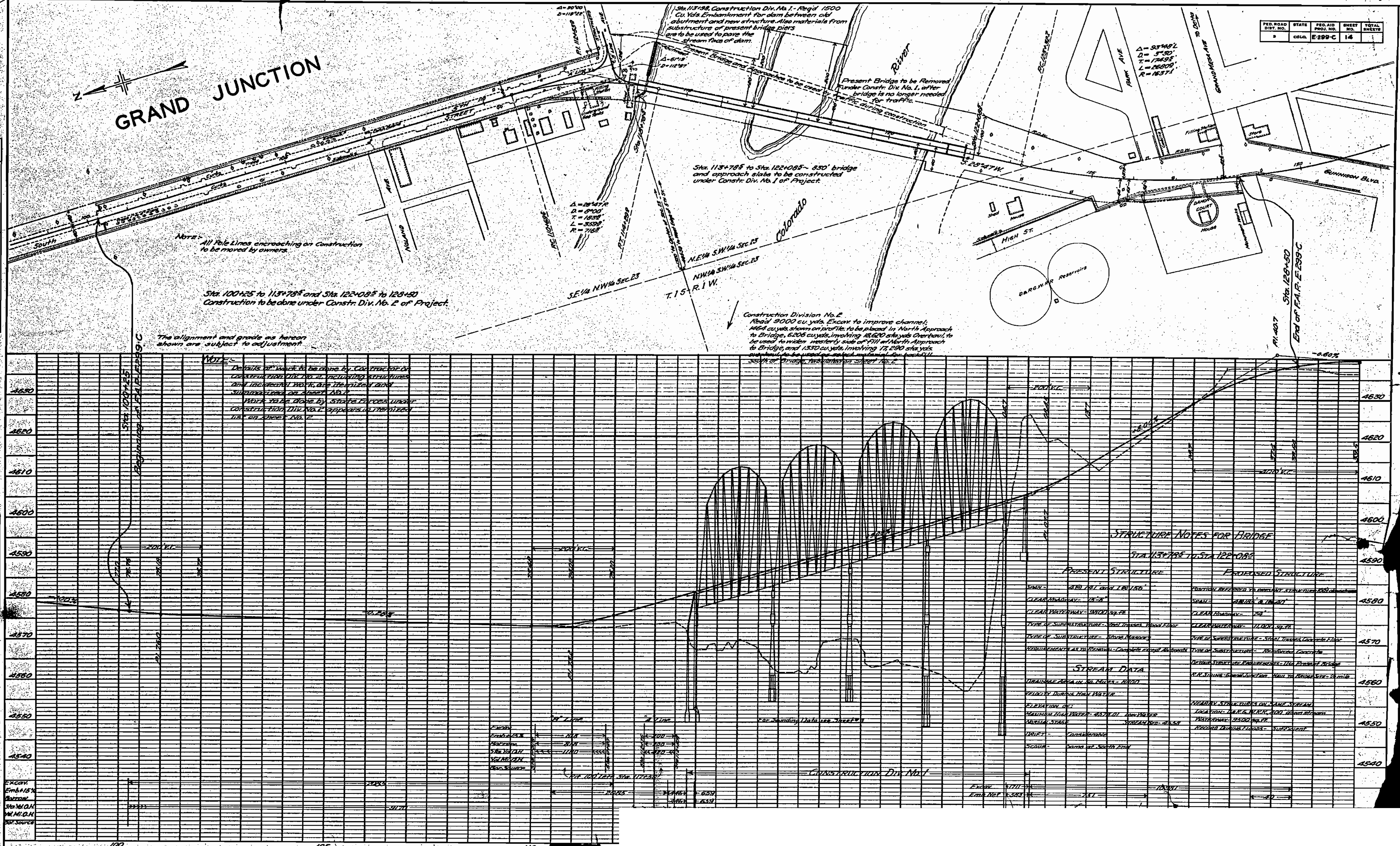
D.R.G.W.R.R. PROPERTY

STATION 128+50 - END OF F.A.P. E-299-C

NOTE:
All main line water main changes to be done by City of Grand Junction.
10 in. Water main between sta. 121+20 to 128+40 to be removed by City of Grand Junction.

SOUTH APPROACH TO 5th STREET BRIDGE
Scale 1 in = 30 ft.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	E-299-C	14	



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	E-299-C	1	1

Colorado River

PRESENT BRIDGE

Sta. 121+46.29 ℄ Pier No. 5

Sta. 122+08.5

Sta. 121+45.0 - Elevation of Station of Proposed 16" Water Pipe = 4603.00

Valve - Elev. of Stem = 4628.02

Rlin. Water Main to be Replaced With Rlin. Main (Approximate Location)

P.C. - 123+38.7

R.o.W.

BLOCK 35

PARK AVENUE

House

Fire Plug

TO Ohio

GRAND MESA

CANON AVENUE

Proposed Connection (12" Pipe)

AVENUE

BLOCK 34

Filling Station

To Grand Junction

BLOCK 5

Store

Proposed Connection to 12" Water Line

Present Water Valve and Meter to be moved to a point 46 ft. Rt. of Sta. 126+10

Present Water Valve & Meter to be moved to a point 48 ft. Rt. Sta. 129+47.

GUNNISON BLVD.

Present 18in. Water Main to be Removed

Present Water Lines & Valve to be Removed

Remove & Replace Present Service Line

Proposed 2" Water Line and Valve

Present D.&R.G.W. RR. Valve House

Proposed 6" Water Line

WALLRICH LUMBER CO.

Proposed Valve

Abandoned Water Main

Proposed Location of D.&R.G.W.R.R. Valve House

ANNA SOULE

BLOCK 36

House

Shed

HIGH STREET

D. & R. G. W. R.R. PROPERTY

RESERVOIRS

D. & R. G. W. RR.

BLOCK 33

House

DEDICATION

Know all men by these presents, That we, I.A. Moon + H.S. Day, have caused the following described lands to be platted into lots and blocks to be known as Moon & Day's Addition to Orchard Mesa Heights, being located in Lot 7, Sec. 23, T1S, R1W, Ute Meridian, and we hereby dedicate the streets therein to the use of the public forever.

(Follows M.+B. description of land comprising said Addition).

(Signed) I.A. Moon
H.S. Day

Acknowledged Sept. 16th, 1908, by I.A. Moon and H.S. Day, before Charles B. Rich, Notary Public of Mesa County, Colorado.

(N.P. Seal) Commission expires Jan. 20, 1909

Plat of Moon & Day's Addition to Orchard Mesa Heights.

1" = 100'

HIGH ST

BLOCK 37

BLOCK 36

PARK PLACE

PARK AVE

BLOCK 34

BLOCK 33

COURT

BOULEVARD

GRAND MESA Ave.

GUNNISON

CANON AVE

DOLORES ST.

LAVETA ST.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	E299C	14A	

O.K.R.E. - Aug. 15, 1933.

PLAN — SURVEYED, PLOTTED, QUANTITY CHECKED, NOTE BOOK, NO., DATE, BY

PROFILE — SURVEYED, PLOTTED, GRADES CHECKED, S. B.M. NOTED, NO., STRUCTURE NOTATIONS CHKD., DATE, BY

GRAND JUNCTION

Borrow Pits B-C-D-G-X & Z
All Borrow Excavation taken from these pits was used to make all the Embankment on north side of bridge, except that shown on profile, involving 3866 Sta. Yd. Overhaul for Const. Divn. No. 1 & 12,973 Sta. Yd. Overhaul for Const. Divn. No. 2.

Davis
Toner
Pit "G"
Chapman

Pit "B"
Pit "C"
Pit "D"
Pit "X"
Pit "Y"
Pit "Z"
Pit "A"

PT 112.70 8°-0' Curve
PC 111+68 8°-0' Curve
Struthers Avenue
PC 111+22 10°-0' Curve
PC 110+82
PC 113+28.5 8°-0' Curve
Δ=28°-47' R
D=8°-00'
T=183.8'
L=359.8
R=716.3
Channel Change
Rew River
Colorado
Sta. 122+085
S 26°-47' W
PC 123+22.7
Δ=93°-48' L
D=3°-30'
T=1749.5
L=2680.0
R=1637.1
Back Ave.
To Delta
Grand Mesa Ave.
City Water Main
Filling Sta.
Store
Garage
Sewer
Gunnison Blvd.
High Street
D.E.R.G.W.-R.R. Property
House
Veh. House
Barn
2" line
Fence

500° 00' W
5th Street
Noland Avenue
100
110
105
115
120
125
130

S.E.¼ N.W.¼ Sec. 23.
N.E.¼ S.W.¼ Sec. 23.
N.W.¼ S.W.¼ Sec. 23.
1320 to center of Sec. 23
1538 to W edge of 5th St.

Construction Divn. No. 2. – Pit "A"
755.9 cu. yd. selected material (gravel) involving 9827 Sta. Yd. & 59.4 Yd. Mi. Overhaul was used south of bridge for backfilling

Construction Divn. No. 1. – Pit "A"
414.2 cu. yd. selected material involving 574 Sta. Yd. & 35 Yd. Mi. Overhaul was used south of bridge for backfilling

Construction Divn. No. 2. All water valves placed as planned on Sheet no. 12.

4630 4620 4610 4600 4590 4580 4570 4560 4550

Excav.
Emb. 125%
Borrow
Sta. Yd. O.H.
Yd. Mi. O.H.

1518
6249
1979
1292
30 Yd. 82.8

142 cu. yds. of this excav. was hauled to Sta. 94+00 and wasted, involving 763 Sta. Yd. of Overhaul.

142 cu. yds. of this excav. was hauled to 30 ft. right of Sta. 118 and wasted, involving 1892 Sta. Yd. of Overhaul.

Construction Divn. No. 1

Excav. 4330 cu. yds.
Emb. Wgt. 1.31
204
10,743
165
Sta. Yd. O.H. 1860
Yd. Mi. O.H. 115
95,080 Const. Divn. No. 2
20.5 Const. Divn. No. 2
Add to 140117

All surplus excav. in both divn. No. 1 & divn. no. 2 was wasted on the following stations 128+00 to 131+50, 136+90 to 140+17 & 70' Lt. 97+00

98 99 100 1 2 3 4 105 6 7 8 9 110 11 12 13 14 115 16 17 18 19 120 1 2 3 4 125 6 7 8 9 130

PLATE 1—PLAN-PROFILE O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.