FED. ROAD DIST. NO.	STATE	U.S. WORK PROJECT NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	W.P.G.H. 152-A	1	

PLANNED IN 13c H.A.C. 1

COLORADO
STATE HIGHWAY DEPARTMENT

PLAN AND PROFILE OF PROPOSED

U.S. WORKS PROGRAM GRADE CROSSING PROJECT W.P.G.H. 152-A
STATE HIGHWAY NO. 4
LAKE COUNTY

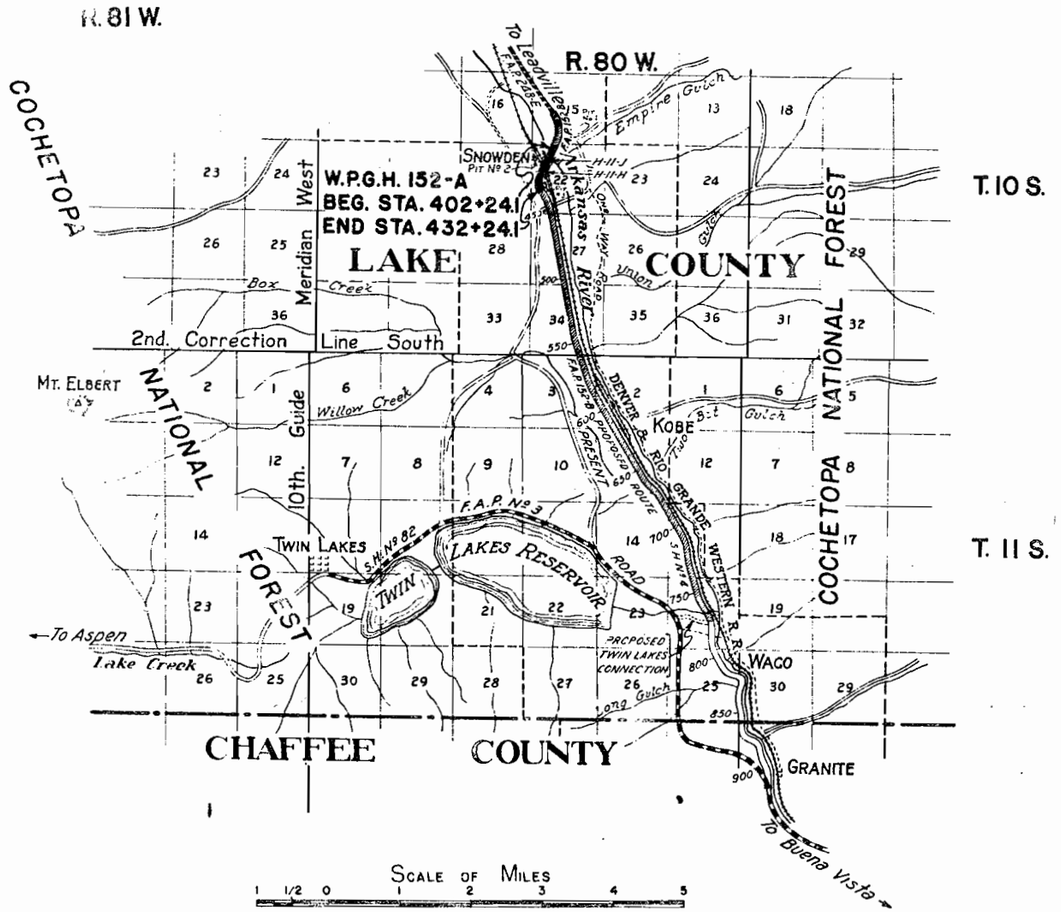
SCALES OF ORIGINAL TRACINGS
ON PLAN, 1 IN. = 100 FT.
ON PROFILE { 1 IN. = 100 FT. HORIZONTAL / 1 IN. = 10 FT. VERTICAL
GRADE LINE ON PROFILE IS SHOWN AS GRADE OF FINISHED ROAD
GROSS LENGTH OF PROJECT } 3,000 FEET = 0.568 MI.
NET LENGTH OF PROJECT }

INDEX OF SHEETS

CONVENTIONAL SIGNS

650

- Center Line of Survey
- Right of Way Lines
- Township or Range Lines
- Section Lines
- One-Quarter Section Lines
- Railroad Tracks
- Barbed Wire Fence
- Pole Lines



NOTE

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

Ernest Montgomery Div. Engr. Colorado Springs
E. W. Oviatt Res. Engr. Buena Vista

RECOMMENDED FOR APPROVAL 3/10/36
ASS'T 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	U.S.W.P. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	W.P.G.H. 152-A	2	

Report - 4-27-36 - JWS Rec. 7-13-36 H.C.W. Rev. 7-23-36 W.O. 225. No.8.

TYPICAL CROSS SECTION OF IMPROVEMENT AND SUMMARY OF QUANTITIES

GENERAL NOTES

This Project is to be constructed in accordance with the Standard Specifications of the Colorado State Highway Department, adopted August 1, 1935.

All quantities on 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 ditch as shown on the Typical Section, either noted on Profile as "Borrow," or on Tabulation 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 in construction.

All curves are to be superelevated and widened as provided by the Standard Superelevation sheet.

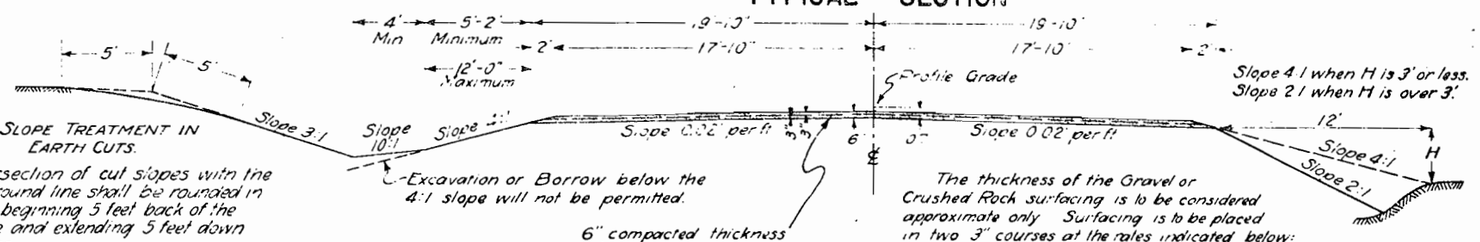
All poles encroaching on the construction are to be moved by the owners.

Clearing and Grubbing shall be of variable width and be held to the minimum required for the construction of the road, borrow pits, and channel changes, and to accommodate visibility. Ordinarily the clearing shall not extend more than 8 feet beyond the toes of the fills or the tops of the cut slopes.

Provisions regarding the construction of roads to borrow pits are set forth in the Special Provisions.

Except as noted on plans, overhaul will be paid for as measured along center line of Project.

TYPICAL SECTION



CUT SLOPE TREATMENT IN EARTH CUTS.

The intersection of cut slopes with the existing ground line shall be rounded in earth cuts beginning 5 feet back of the slope stake and extending 5 feet down the cut slope.

Where the cut slope length is less than 5 feet, reduce both of the above lengths of slope treatment to the actual slope distance. Excavation quantities involved in rounded slope shall not be included in Unclassified Excavation.

C-Excavation or Borrow below the 4:1 slope will not be permitted.

6" compacted thickness of Base Course Surfacing.

The thickness of the Gravel or Crushed Rock surfacing is to be considered approximate only. Surfacing is to be placed in two 3" courses at the rates indicated below:
3" bottom course surfacing - 59 tons per 100' of Roadway.
3" upper " " 56 " " " " "

1/2 CUT SECTION

1/2 FILL SECTION

TABULATION OF STRUCTURES

STATION	ITEMS	WIRE CABLE GUARD FENCE LIN. FT.	BARBED WIRE FENCE LIN. FT.
402+24.1	Project Marker		
407+36 to 408+38.2	Steel Truss Bridge (Quantities in Summary) Remove old Abutments 250 sq. yds. Dry Rubble Slope Paving 18" thick Channel Improvement - 3000 cu. yds. uncl. excav.*		
415+82.4 to 418+44.2	Railroad Overpass 6x3' Special Concrete Box Culvert } (Quantities in Summary) Remove old Abutments Underclearance Improvmt. - 2000 cu. yds. uncl. excav.*		
432+24.1	Project Marker		
404+99 to 407+41	Wire Cable Guard Fence, Left	242	
405+01 to 407+21	" " " " Right	226	
408+48 to 415+74.7	" " " " Left	727	
408+34 to 415+74.7	" " " " Right	741	
418+52 to 432+24	" " " " Left	1359	
418+52 to 432+24	" " " " Right	1385	
406+75 to 407+36	2000 Cu Yds. of Selected Fill		
402+24 to 407+10	Barbed Wire Fence, Right		500
407+70 to 414+60	" " " "		950
417+00 to 432+24	" " " "		1530
402+24 to 407+30	Left		530
408+70 to 420+00	"		1150
409+42	Right of Way Marker, Left		
424+16	" " " " Right		
415+76 and 418+50	4 Special Reinforced Concrete Paving Drains: 4 cu. yds. Class "A" Conc. 580 lbs. Reinf. Steel 294 lin. ft. 10" Corr. Metal Culv. Pipe, 4 Trash Guards 60 cu. yds. Dry Common Structural Excav.		
	TOTALS	4680	4660

*Included in profile quantities for payment.

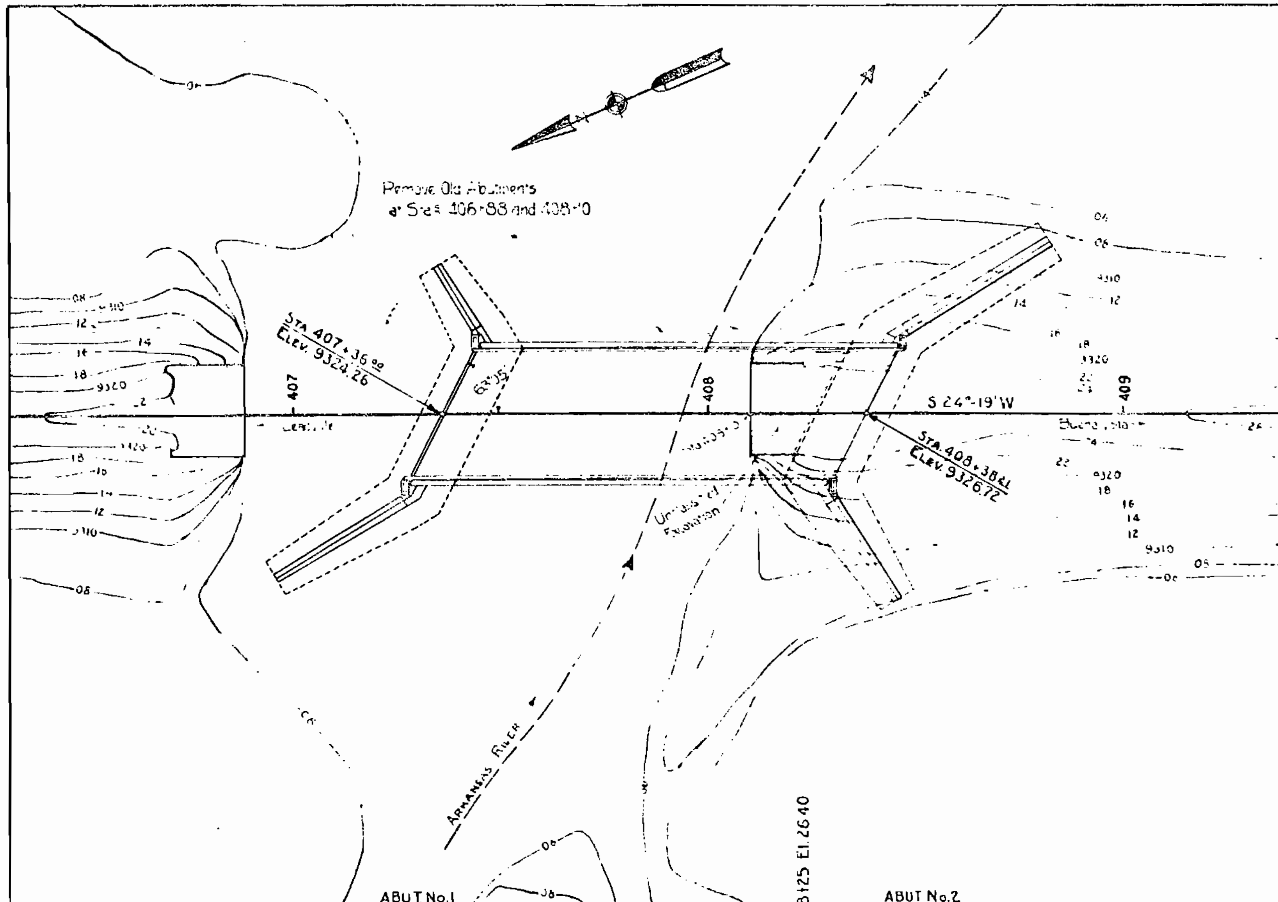
SUMMARY OF APPROXIMATE QUANTITIES

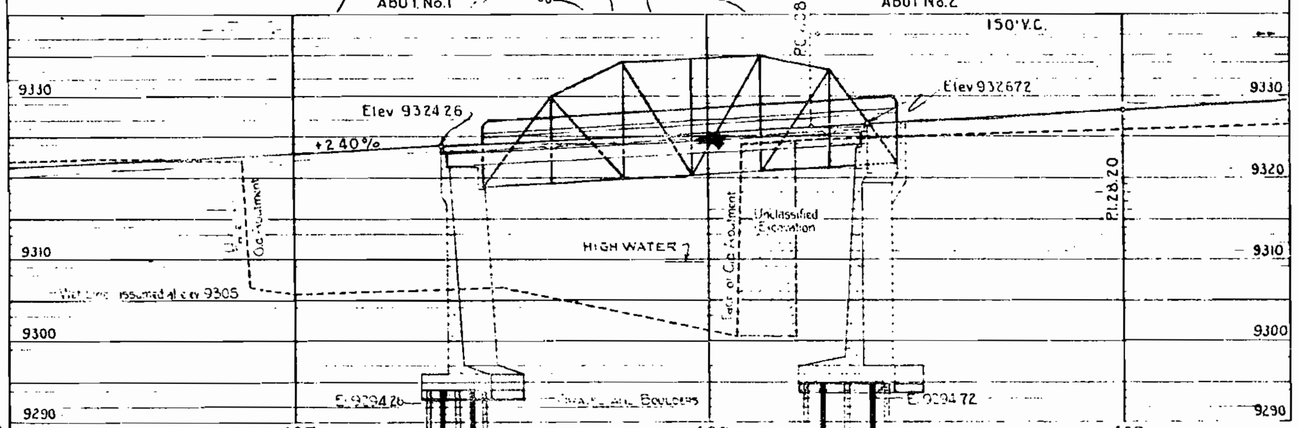
NO.	ITEM	UNIT	ROADWAY	BRIDGE STA. 407+	OVERPASS STA. 415+		TOTAL
10a	Clearing and Grubbing Entire Project	Lump Sum	*				*
11a	Removal of Old Abutments, Sta. 416+	" "			*		*
11b	" " " " Sta. 406+	" "		*			*
13c	Unclassified Excavation	Cu. Yd.	91,000	3000	2000		96,000
14a	Dry Rock Excavation (Structural)	" "		10	40		50
14b	" Common " "	" "	60	290	40		390
14c	Wet Rock " "	" "		10	40		50
14d	" Common " "	" "		1515	1230		2745
18a	Station Yard Overhaul	Sta. Yard	842,000				842,000
18b	Yard Mile Overhaul	Yd. Mile	7,200				7200
26a	Gravel or Crushed Rock Surfacing	Ton	3,040				3040
42a	Untreated Bridge Timber	M ft. bm		0.5	0.4		0.9
46a	Class "A" Concrete	Cu. Yd	4	786	757		1547
47	Reinforcing Steel	Lb.	580	81,770	131290		213640
48	Structural Steel	Lb.		133,620	157,780		291,400
53x	10" Corrugated Metal Culvert Pipe	Lin. Ft.	294				294
65	Dry Rubble Slope Paving 18" thick	Sq. Yd.	250				250
74	Wire Cable Guard Fence	Lin. Ft.	4680				4680
76a	Barbed Wire Fence with Treated Wooden Posts	" "	4,700				4700
80b	Bronze Name Plates	Each		1	1		2
80c	Sheet Copper	Lb.			575		575
81a	Project Markers	Each	2				2
81b	Right of Way Markers	"	2				2
85x	Trash Guards for Special Paving Drains	"	4				4
89a	Drain Pipe (Concrete Floor)	"		12			12
46r	Class "A" Concrete (Handrails)	Cu Yd		1	23		24
15x	Selected Fill	" "	2000				2000

Revised 7-23-36 by [illegible] Bars [illegible]
Revised 10-2-36 HAC Additional Quant. 14d 46a, 60a also piling
Revised As Constructed 3-2-38 R.A.D.

FED. ROAD DIST. NO.	STATE	WPGH PROJECT NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	152-A	3	

REVISED-4-27-36 CLASS "A" CONC QUANTITIES IN 2 ITEMS-T.G.





BAR LIST – ABUTMENT No. 1

Mark	Size	No. Reqd	Length	Type	l	m	r	t
[illegible]								

BAR LIST – ABUTMENT No. 2

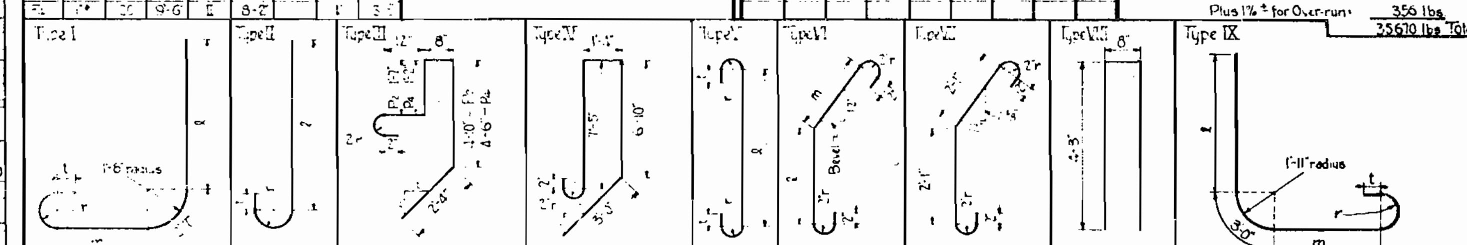
Mark	Size	No. Reqd	Length	Type	l	m	r	t
N11 to N19	¾"	2 each	26'-8" by 10" 11'-8"	IX	22'-8" by 10" 17'-8"	0	3"	2½"
N18	⅝"	1	16'-11"	Straight				
N19	⅝"	1	15'-8"	Straight				
R1	⅝"	63	[illegible]	II	9'-0"		4"	3½"
R2	⅝"	28	9'-3"	II	8'-5"		4"	2"
R3	1"	30	10'-10"	II	9'-6"		4"	3½"
R4	1"	20	9'-10"	II	8'-6"		4"	3½"
R5	⅝"	14	8'-11"	II	8'-1"		2½"	2"
R6	⅝"	13	7'-11"	II	7'-1"		2½"	2"
R7	1"	21	10'-9"	II	9'-5"		4"	3½"
R8	1"	14	9'-6"	II	8'-2"		4"	3½"
R9	⅝"	9	8'-11"	II	8'-1"		2½"	2"
R10	⅝"	9	7'-9"	II	6'-11"		2½"	2"
R11	⅝"	85	20'-0"	Straight-Field Bend				
R12 to R15	½"	1 each	18'-0" by 3'-0" 9'-0"	Straight				
R16	½"	2	1'-0"	Straight				
R17	½"	2	7'-0"	Straight				
R18 to R20	½"	2 each	19'-0" by 2'-0" 15'-0"	Straight				
S1	½"	46	24'-0"	Straight-Field Bend				
S2	½"	10	23'-4"	Straight-Field Bend				
S3	½"	6	17'-6"	Straight				
S4	½"	6	3'-4"	Straight				
S5 to S6	½"	19	39'-6" 36'-9"	Straight				
S7 to S16	½"	1 each	by 3'-10" 2'-3"	Straight				
S17	½"	17	27'-6"	Str.				
S18 to S28	½"	1 each	27'-2" by 2'-5" 3'-0"	Str.				
P1	½"	8	19'-3"	IV				
P2	½"	21	11'-11"	III				
X1	½"	20	3'-0"	V	1'-8"			
X2	½"	12	4'-4"	V	3'-0"			

SUMMARY – ABUTMENT 1

2363 lin ft of 1⅛" bar @ 3.400 lbs/ft =	[illegible]434 lbs
3643 lin ft of 1" bar @ 2.670 lbs/ft =	9727 "
1346 lin ft of ⅞" bar @ 2.044 lbs/ft =	2752 "
555 lin ft of ¾" bar @ 1.502 lbs/ft =	834 "
545 lin ft of ⅝" bar @ 1.043 lbs/ft =	513 "
1091 lin ft of ½" bar @ 0.850 lbs/ft =	928 "
4505 lin ft of ½" bar @ 0.668 lbs/ft =	3017 "
Plus 1% for Over-run =	205 "
Total Reinforcing Steel, Abutment No. 1 =	29500 lbs

SUMMARY – ABUTMENT No 2

1096 lin ft 1⅛" bar @ 4.303 lbs/ft =	4716 lbs
3604 lin ft 1" bar @ 3.400 lbs/ft =	12254 lbs
3939 lin ft 1" bar @ 2.670 lbs/ft =	10517 lbs
681 lin ft ⅞" bar @ 2.044 lbs/ft =	1392 lbs.
999 lin ft ¾" bar @ 1.502 lbs/ft =	1501 lbs
631 lin ft ⅝" bar @ 1.043 lbs/ft =	664 lbs.
1151 lin ft ½" bar @ 0.850 lbs/ft =	984 lbs.
4919 lin ft ½" bar @ 0.668 lbs/ft =	3286 lbs.
Plus 1% ± for Over-run =	356 lbs.
	35670 lbs Total



SUMMARY OF APPROXIMATE QUANTITIES FOR ENTIRE BRIDGE

J.O.B.

Item	Description	Unit	Superstructure	Abutment No 1	Abutment No 2		Totals
11b	Removal of Old Abutments	Lump Sum					•
13c	Unclassified Excavation	Cu Yd					956.6
14a	Dry Rock Excavation (Str'l)	Cu Yd					
14b	Dry Common " "	Cu Yd			525.9		525.9
* 14c	Wet Rock " "	Cu Yd					
* 14d	Wet Common " "	Cu Yd		773.9	1156.7		1930.6
42a	Untreated Bridge Timber	M ft b m		0.204	0.280		0.484
46a	Class "A" Concrete	Cu Yd	88	366.9	441.7		896.6
47	Reinforcing Steel (incl 1% overrun)	Lb	⊗ 16383	⊗ 29115	⊗ 35205		⊗ 80703
48	Structural Steel (incl 1½% overrun)	Lb	133000	60	60		133120
80b	Bronze Name Plate	Each	1				1
89a	Drain Pipe (Concrete Floor)	Each	12				12
	Expansion Joint Material ¾" [illegible]	Lin Ft		56	59		115
46c	Class "A" Conc H.R. & Posts	Cu Yd		0.5	0.5		1
60a	Treated Timber Piling	Lin Ft		1608.9	2207.6		3816.5
60c	Treated Tim. P. Cut-off	Lin Ft		695.1	281.4		976.5

* Wet Line at Elevation 9310.7

⊗ Contractor billed for 80703 lb This amount prorated

REFERENCE DRAWINGS:
Sheet No 4 100 Ft Span Steel Low Truss - Standard T-103-B
Sheet No 5 Additional Details for Standard T-103-B.
Sheet No 6 Details of Abutment No 1.
Sheet No. 7 Details of Abutment No. 2.
Sheet No 6A Piling Layout for Abutment No 1
Sheet No 7A Piling Layout for Abutment No 2

LOADING DATA.
LIVE LOAD A.A.S.H.O. 1935 CLASS A. H-15
DEAD LOAD ASSUMES 15 LBS PER SQ FT ADDITIONAL WEARING SURFACE WHICH INCLUDES THE ½ IN CONCRETE MONOLITHIC WEARING SURFACE SHOWN

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 S1S 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.

See Sheet No 4 for Additional General Notes.

Maximum Pressure on Abutment Toe = 450[illegible] Lbs. per Sq. Ft.

COLORADO
STATE HIGHWAY DEPARTMENT
GENERAL LAYOUT, ABUTMENT BAR LISTS, SUMMARY of QUANTS.
Across ARKANSAS RIVER
Sta. 407+36 TO 408+38.41
Near MALTA Sec. 22 T.10 S. R. 80 W.

Designed by H.W.F.	Approved by [signature]
Made by W.C.C.	Bridge Engineer
Check Design	Date: March 10th, 1936
Check Detail J.O.B.	

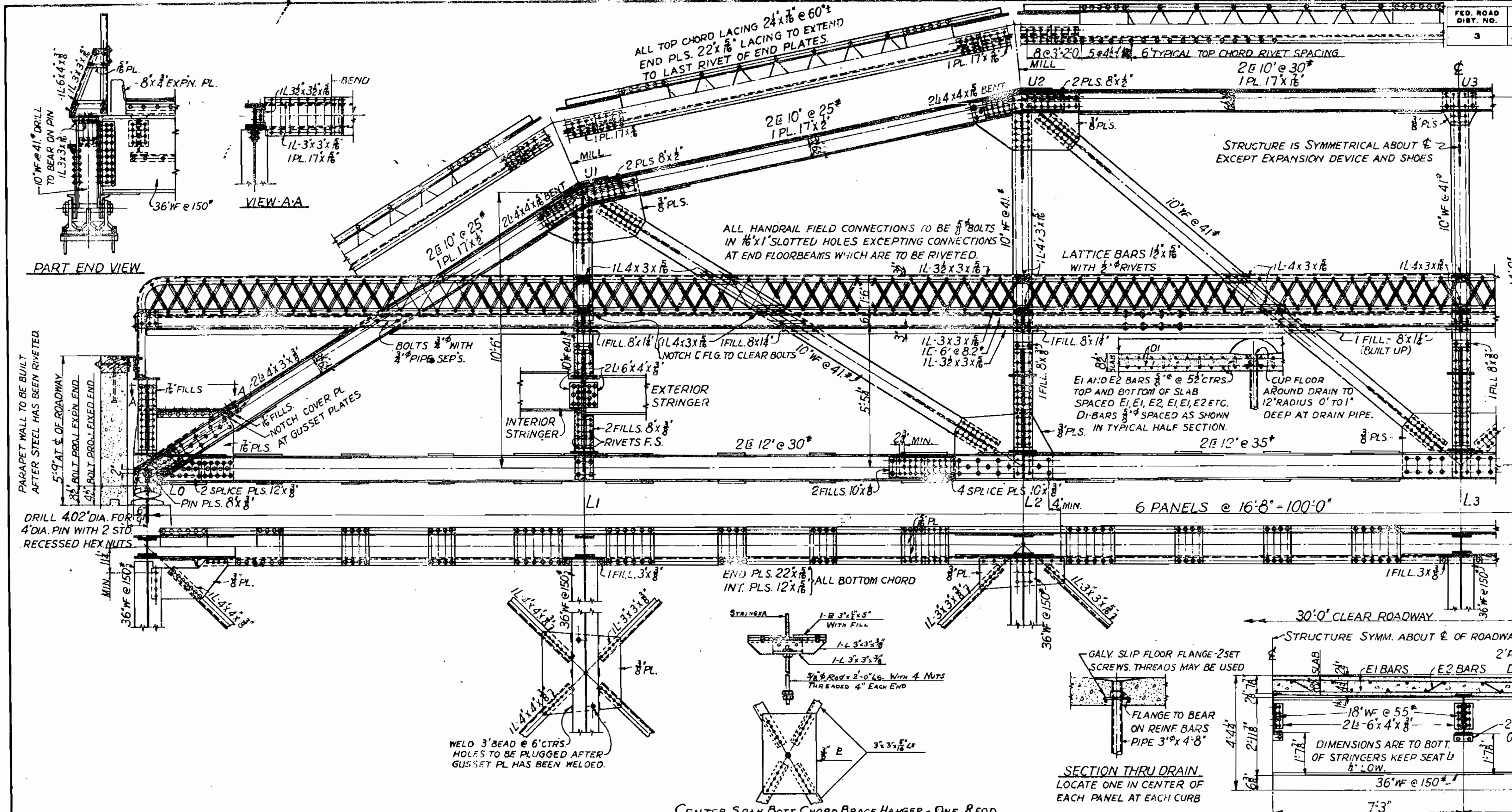
STRUCTURE NO. H-11-J

FED. ROAD DIST. NO.	STATE	W P G H PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	152-A	4	

T·103·B

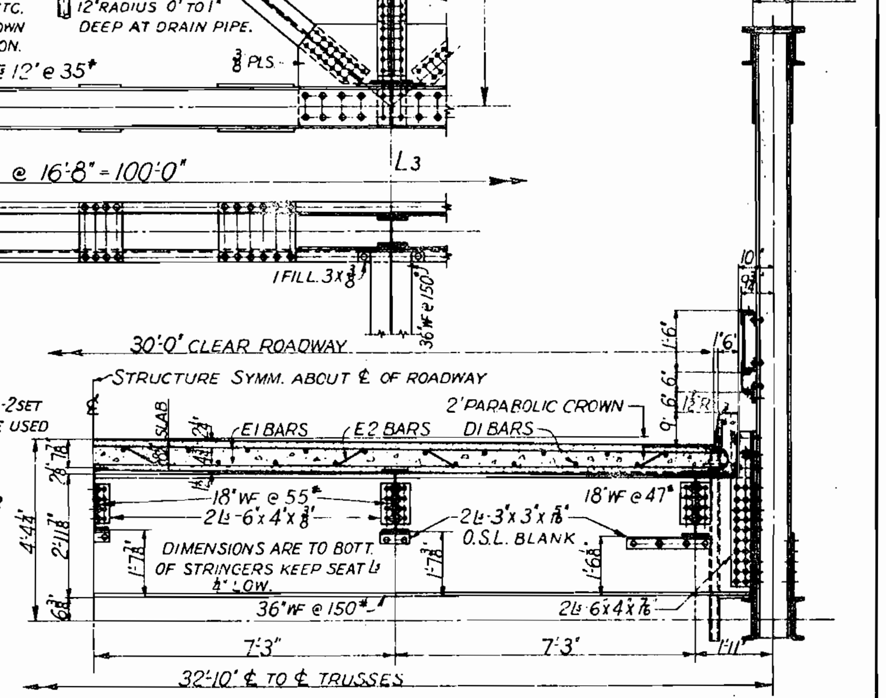
REV. 3·3·36 BY W.M.M. (INCREASED WEB MEMBERS BPR.)

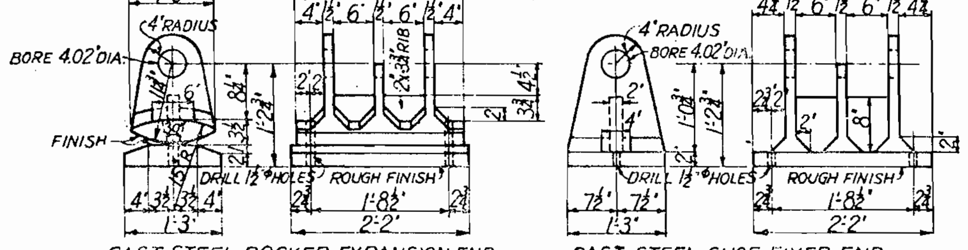
REFERENCE DRAWINGS:
Sheet No. 3 Gen. Layout, Summary of Quantities, Bar List For Abutments.
Sheet No 5. Additional Details For Std T-103-B
Sheet No 6. Details of Abutment No 1
Sheet No 7. " " " No 2.



COLORADO STATE HIGHWAY DEPARTMENT 1936

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





FURNISH ALSO
8 ANCHOR BOLTS 1¼"φ x 24" HEX. NUT - SQ. HD. AND 8 CUT WASHERS (UNDER NUT)

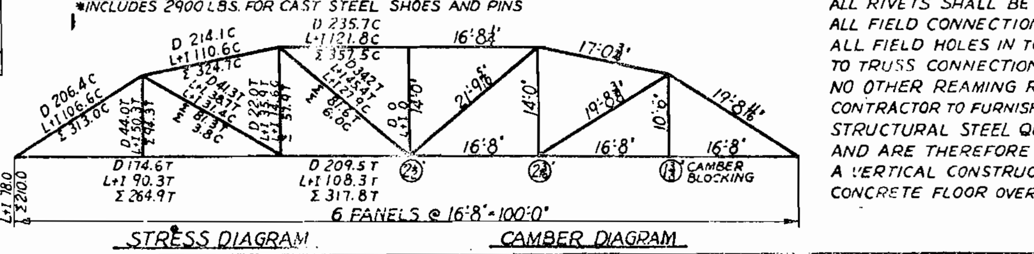
	INITIAL	DATE
ORIGINAL BY		
CHECKED BY		
VAN DYKE BY	B.E.S.	3-6-36
CHECKED BY	W.T.S.	3-6-36

T·103·B

ESTIMATED QUANTITIES

ITEM Nº	DESCRIPTION	UNIT	ONE SPAN
46a	CONCRETE CLASS "A"	CU.YD.	88
47	REINFORCING STEEL (INCLUDES 1%± FOR OVERRUN)	LBS.	16600
* 48	STRUCTURAL STEEL (INCLUDES 2½%± FOR OVERRUN)	LBS.	133500
89a	DRAIN PIPE (FLANGE INCLUDED) (GALVANIZED IRON)	EACH	12

*INCLUDES 2900 LBS. FOR CAST STEEL SHOES AND PINS



GENERAL NOTES

ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE COLORADO STATE HIGHWAY DEPARTMENT ADOPTED AUGUST 1, 1935.
ALL RIVETS SHALL BE ¾"φ EXCEPT IN HANDRAIL.
ALL FIELD CONNECTIONS SHALL BE POWER RIVETED.
ALL FIELD HOLES IN TOP AND BOTTOM CHORD SPLICES AND FLOORBEAM TO TRUSS CONNECTIONS TO BE SUB-PUNCHED 11/16"φ AND REAMED TO 13/16"φ. NO OTHER REAMING REQUIRED.
CONTRACTOR TO FURNISH ONE PILOT NUT & ONE DRIVING NUT - SEE SPEC'S. PA. 185
STRUCTURAL STEEL QUANTITIES ARE CALCULATED FROM DESIGN PLANS AND ARE THEREFORE APPROXIMATE ONLY.
A VERTICAL CONSTRUCTION JOINT IS REQUIRED TRANSVERSLY IN THE CONCRETE FLOOR OVER EACH FLOORBEAM EXCEPT END BEAMS.

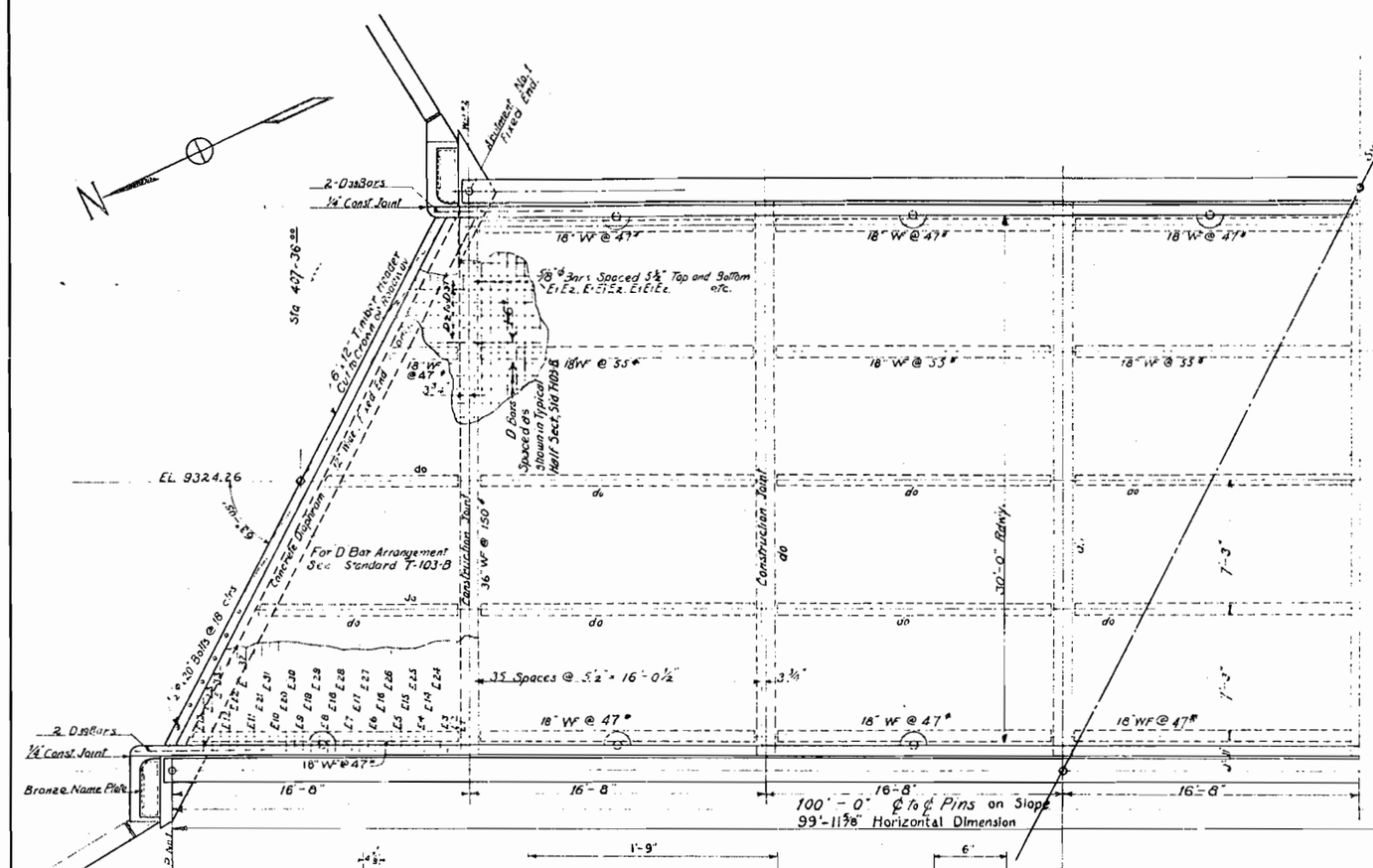
LOADING DATA.
LIVE LOAD A.A.S.H.O. AUG. 1935 CLASS A. (H-15)
DEAD LOAD ASSUMES 25 LBS. PER SQ. FT. ADDITIONAL WEARING SURFACE WHICH INCLUDES THE ¾ IN. CONCRETE MONOLITHIC WEARING SURFACE SHOWN.
EXCEPTIONS TO 1935 SPECIFICATIONS.
CONCRETE fc = 650 N = 15

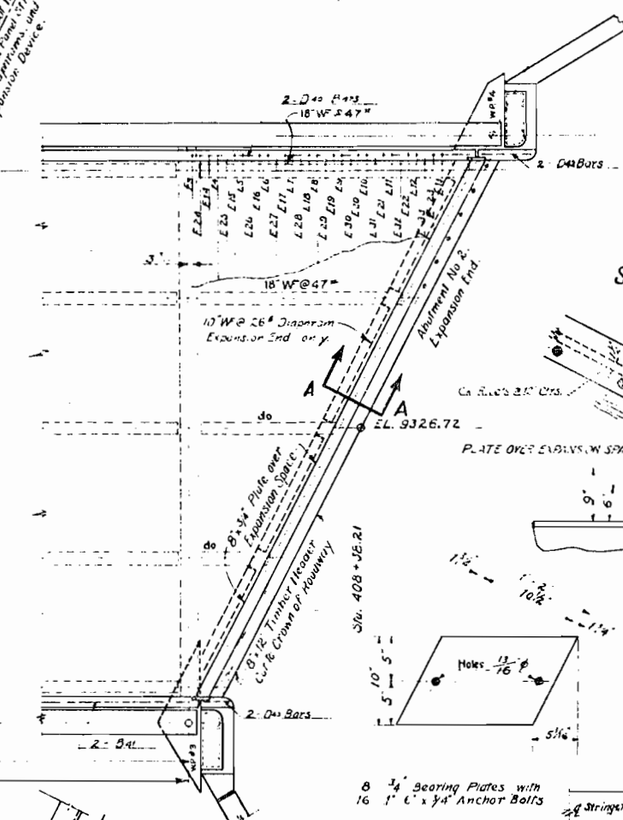
COLORADO
STATE HIGHWAY DEPARTMENT
100 FT. SPAN STEEL LOW TRUSS
30 FT. CLEAR ROADWAY
CONCRETE FLOOR
Across ARKANSAS RIVER
Sta. 407+36 to 408+38.83
Near MALTA Sec. 22 T. 10S R. 80W

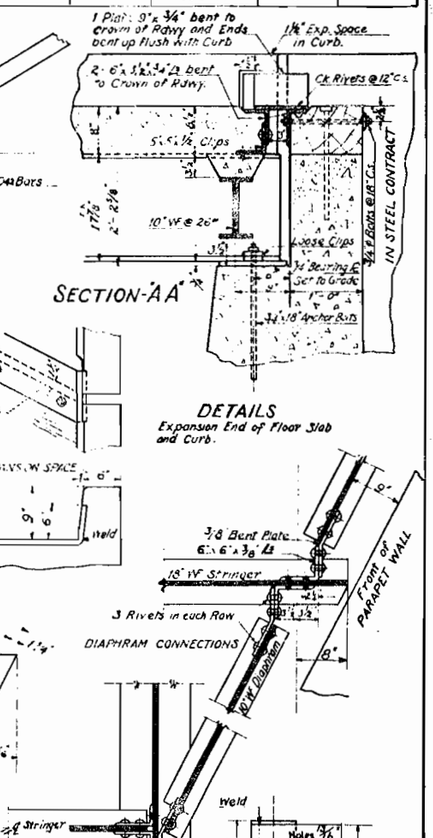
Designed by K.B. Made by W.McM. Check Design Check Detail W.McM.	Approved by [signature] Bridge Engineer Date: Jan. 20th, 1936

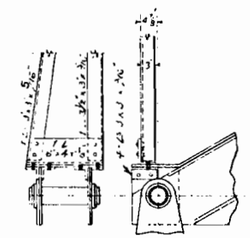
STRUCTURE NO. H-11-J

FED. ROAD DIST. NO.	STATE	W.P.G.H. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	152-A	5	

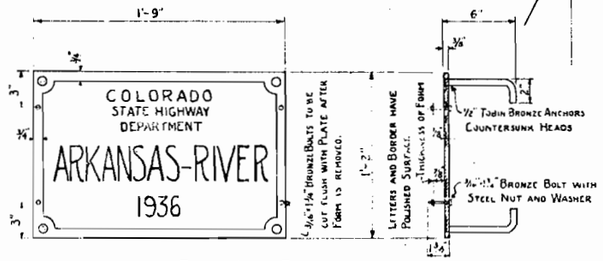




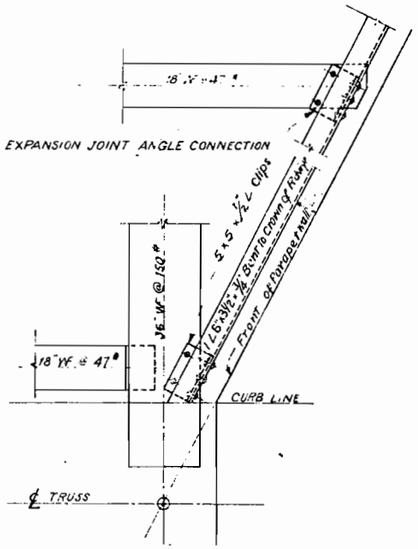


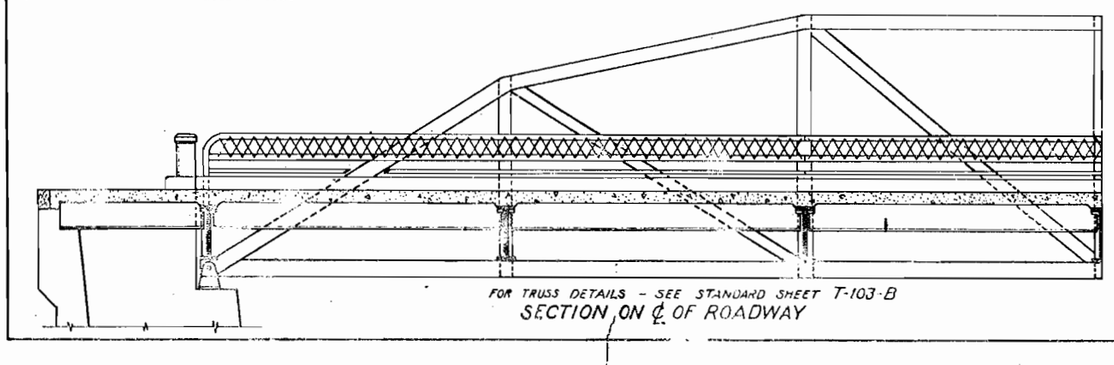


2-Handrail Posts at Truss Ends where Floor Beam does not occur.



BRONZE NAME PLATE
ONE REQUIRED





FOR TRUSS DETAILS - SEE STANDARD SHEET T-103-B
SECTION ON ℄ OF ROADWAY

BAR LIST

W.M.H.

Mark	Size	No. Reqd.	Length	Diagram
E1	5/8 ϕ	242	32'-0"	30'-4"
E3 to E11	"	4 Eq.	30'-11"	29'-3" to 2'-2" by 2'-8 1/2"
E13 to E14	"	4 Eq.	29'-3"	27'-5 1/2" to 3'-1" by 2'-8 1/2"
E23	"	2	4'-9"	
E24	5/8 ϕ	2	30'-8"	4'-6" 3 Spaces @ N=21'-9"
E25	"	2	28'-8"	1'-10" 3 " @ N=21'-9"
E26	"	2	25'-0"	6'-3 1/2" 2 " @ N=14'-6"
E27	"	2	22'-4"	3'-7 1/2" 2 " @ N=14'-6"
E28	"	2	19'-5"	1'-0" 2 " @ N=14'-6"
E29	"	2	16'-8"	5'-3" N= 7'-3"
E30	"	2	14'-0"	2'-3" N= 7'-3"
E31	"	2	11'-4"	6'-1" N= 7'-3"
E2	5/8 ϕ	61	32'-8"	9'-8 1/2" 4'-4 1/2" 9 1/2" 1'-6" 8 1/2" 4'-4 1/2" 8 1/2" 1'-3"
E32	5/8 ϕ	2	8'-4"	4'-6 1/2" 8 1/2" 1'-3"
E33	"	2	5'-8"	1'-10 1/2"
D1	5/8 ϕ	200	16'-6"	
D2 to D10	"	2 Eq.	0'-6" to 3'-5" by 4 1/8"	
D11 to D19	"	2 "	4'-2" to 7'-1" by 4 1/8"	
D20 to D28	"	2 "	7'-10" to 10'-9" by 4 1/8"	
D29 to D37	"	2 "	11'-6" to 14'-5" by 4 1/8"	
D38	"	2	15'-2"	
D39	"	4	18'-6"	
D40	"	2	15'-6"	
D41	"	2	16'-10"	
D42	"	2	2'-9"	
D43	"	2	1'-4"	

SUMMARY

15770 LIN. FT of 5/8" ϕ BAR STEEL

@ 1.043 LBS. PER FT = 16448 LBS
+1% OVERRUN = 152
TOTAL = 16600 LBS

REFERENCE DRAWINGS

Sheet No. 5 General Layout, Summary of Quantities, Bar Lists for Abutments.
Sheet No. 4 100 Ft. Span Steel Low Truss Standard T-103-B
Sheet No. 6 Details of Abutment No.1
Sheet No. 7 Details of Abutment No.2

LOADING DATA.

LIVE LOAD A.A.S.H.O. 1933 CLASS A. H-15.
DEAD LOAD ASSUMES 15 LBS. PER SQ. FT. ADDITIONAL WEARING SURFACE WHICH INCLUDES THE ¾ IN. CONCRETE MONOLITHIC WEARING SURFACE SHOWN.

COLORADO
STATE HIGHWAY DEPARTMENT
ADDITIONAL DETAILS
FOR
STANDARD T-103-B
Across ARKANSAS RIVER
Sta. 407+36 to 408+38.21
Near MALTA Sec. 22 T. 10 S - R. 60 W

Designed by HWP	Approved by O.S. Bailey
Made by G.C.D	Bridge Engineer
Check Design	Date: March 10th 1936
Check Detail WMH	

STRUCTURE NO. H-11-J

800 6-6-35

FED. ROAD DIST. NO.	STATE	W.P. G.H	SHEET NO.	TOTAL SHEETS
3	COLO.	152-A	6	

Rev. 9-14-36 by H.W.P. Added Piling. See Sheet No. 6A.
W.O. No. 1502

SECTION THRU D-D

PLAN OF ABUTMENT WALL

SECTION THRU E-E

END POST DETAIL

SECTION B-B

SECTION THRU WORK POINT PARALLEL TO ℄ ROADWAY

PLAN OF ABUTMENT Nº1

TRUE ELEVATION OF 18 FT. WING

SECTION C-C

TRUE ELEVATION OF 40 FT. WING

ELEVATION OF ABUTMENT Nº 1

SECTION A-A

REFERENCE DRAWINGS

Sheet No. 3 General Layout, Summary of Quantities & Bar Lists for Abutments.
Sheet No. 4 100 Ft. Span Steel Low Truss Standard T-103-B.
Sheet No. 5 Additional Details for Standard T-103-B.
Sheet No. 7 Details of Abutment No. 2.
Sheet No. 6A Piling Layout for Abutment No. 1
Sheet No. 7A " " " No. 2

LOADING DATA.
LIVE LOAD A.A.S.H.O. 1935 CLASS A. "H-18"
DEAD LOAD ASSUMES 15 LBS. PER SQ. FT.
ADDITIONAL WEARING SURFACE WHICH INCLUDES THE ½ IN. CONCRETE MONOLITHIC WEARING SURFACE SHOWN.

COLORADO
STATE HIGHWAY DEPARTMENT

ABUTMENT Nº 1

Across ARKANSAS RIVER
Sta. 407+36 TO 408+36.21
Near MALTA Sec. 22 T. 10 S. R. 60 W.

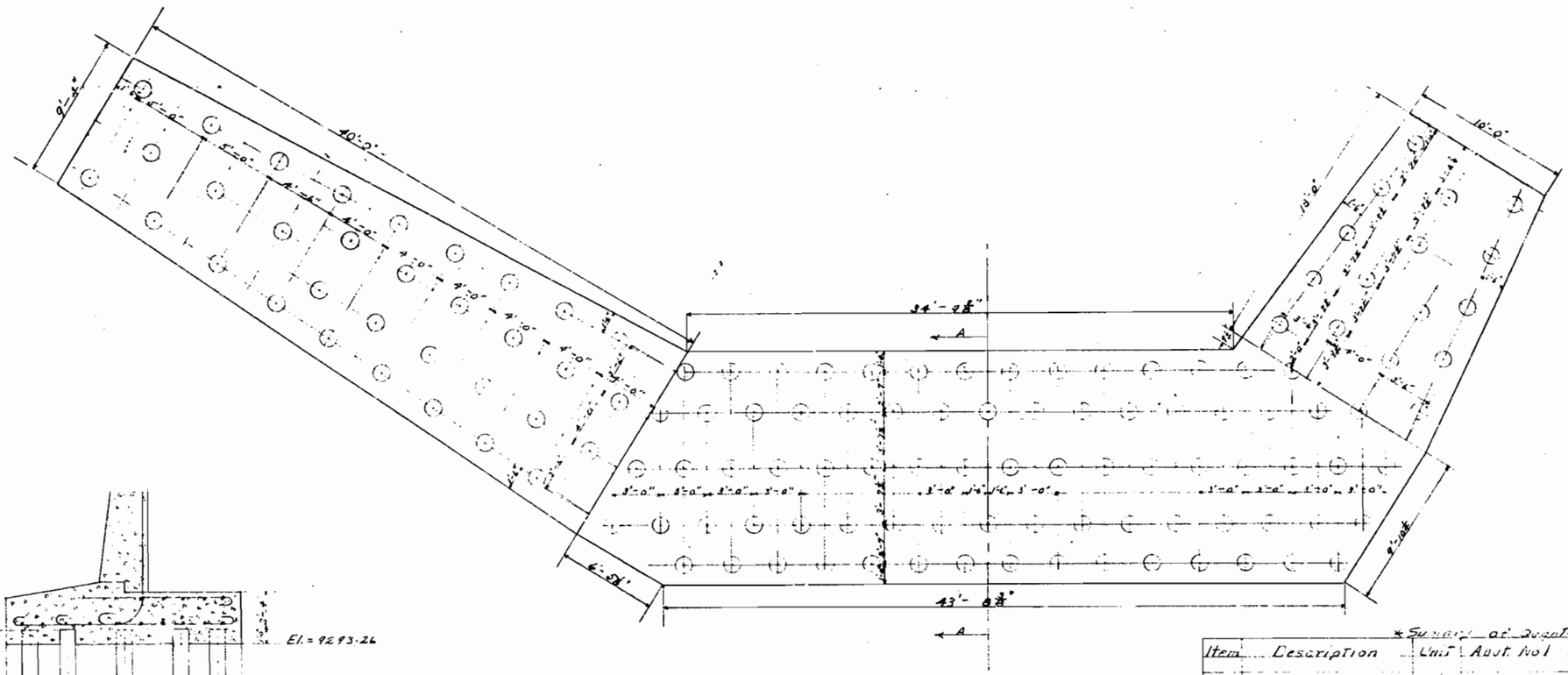
Designed by H.W.P.
Made by E.W.T.
Check Design
Check Detail T.M.H.

Approved by Pol Bailey
Bridge Engineer
Date: March 10th 1936

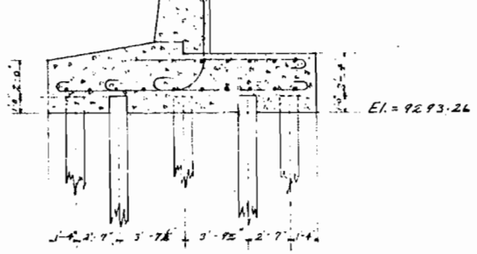
STRUCTURE NO. H-11-J

FED ROAD DIST NO.	STATE	PROJECT NO. W.P.G.H.	SHEET NO.	TOTAL SHEETS
3	COLO.	152-A	8-A	

Additional Sheet. 9.14.36. See W.O. No 1502
Work with sheet No 6
Revised & Constructed 3-2-38 RAD.



Plan of Pile Support - Abutment No 1.

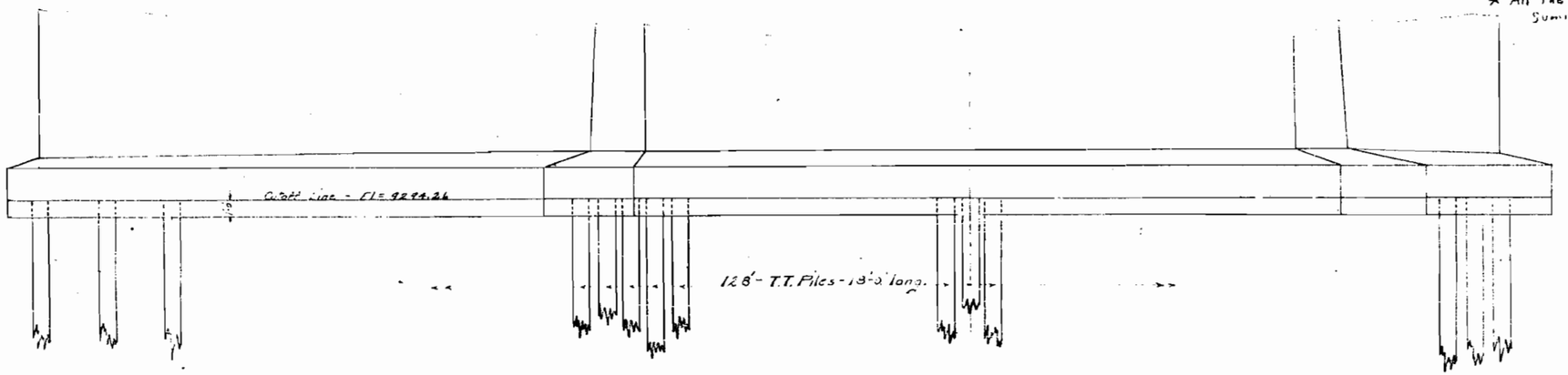


Section AA

* Summary of Quantities in R/C Foundation

Item	Description	Unit	Abut No 1	Abut No 2	Totals
143	Vert. Excavation	Cu. Yd.	60.	68	128
462	Class "A" Concrete	Cu. Yd.	51.5	59.0	110.5
60a	Treated Timber Piling	Lin. Ft.	2304'	2958'	4662'

* All the above Quantities are shown in Summary on Sheet #3.



COLORADO
STATE HIGHWAY DEPARTMENT

ABUTMENT No 1

Across ARKANSAS RIVER
Sta 407+36 to 409+38.21
Near MALTA Sec 22, T 10S, R 80W

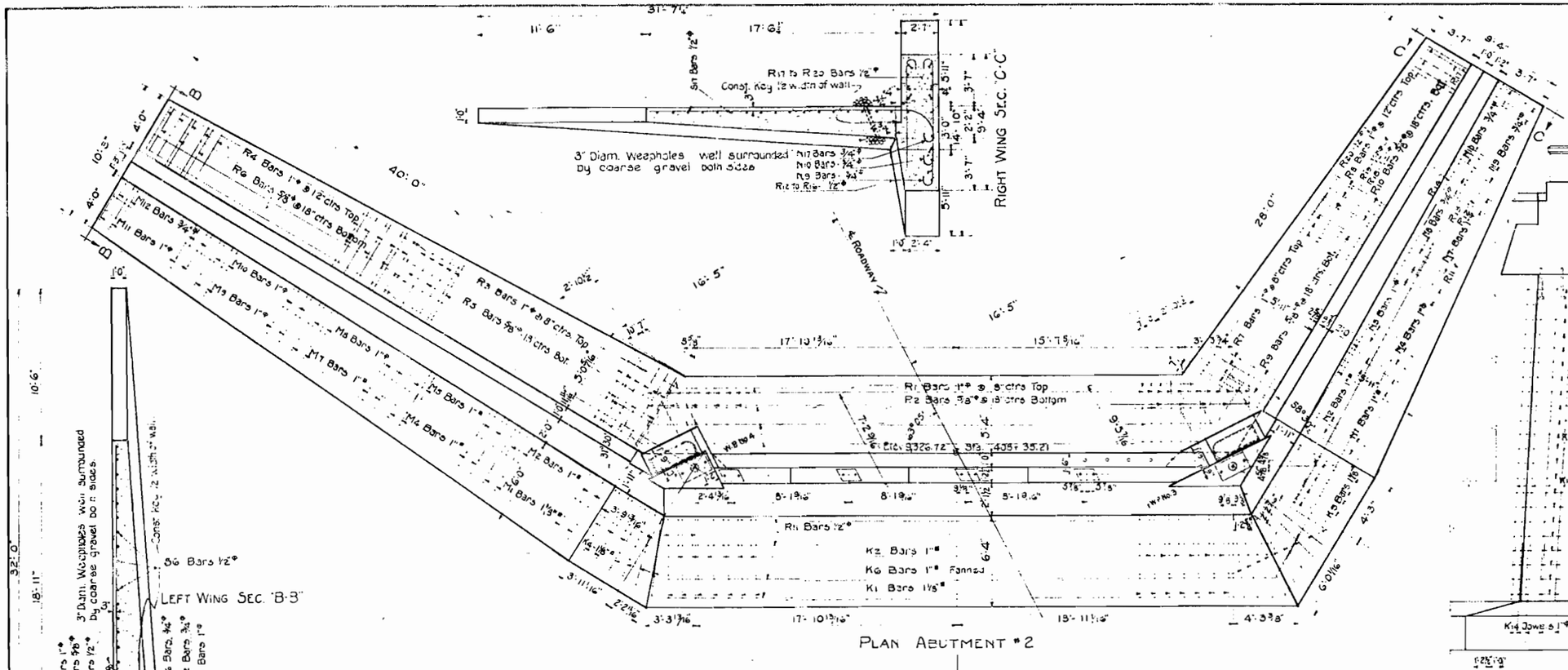
Designed by H.W.P.
Made by H.W.P.
Check Design
Check Detail

Approved: Rd. Bailey
Bridge Engineer
Date: Sept. 15, 1936

STRUCTURE NO H-11-J

FED. ROAD DIST. NO.	STATE	W.P.S.H. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	152-A	7	

Rev. 9.14.36 by HWP. Added Piling. See Sheet No. 7-A
W.O. No. 1502



NOTE:- For Sections 'D-D' & 'E-E', also Plan of Abutment Wall and End Post Detail and Section Thru Work Point Parallel to ℄ Roadway. See Drwg. of Abutment No. 1.

REFERENCE DRAWINGS

Sheet No. 3	General Layout, Summary of Quantities, Bar Lists for Abutments.
Sheet No. 4	100 Ft. Span Steel Low Truss. Standard T-103-B.
Sheet No. 5	Additional Details for Standard T-103-B.
Sheet No. 6	Details of Abutment No. 1.
Sheet No. 6A	*Piling Layout for Abutment No. 1*
Sheet No. 7A	*" " " No. 2*

LOADING DATA.
LIVE LOAD A.A.S.H.O. 1935 CLASS A. H-10
DEAD LOAD ASSUMES 15 LBS. PER SQ. FT. ADDITIONAL WEARING SURFACE WHICH INCLUDES THE ½ IN. CONCRETE MONOLITHIC WEARING SURFACE SHOWN.

COLORADO
STATE HIGHWAY DEPARTMENT
ABUTMENT Nº 2

Across ARKANSAS RIVER.
Sta. 407+38. to 409+38.21
Near MALTA Sec. 22 T. 10S R. 80W.

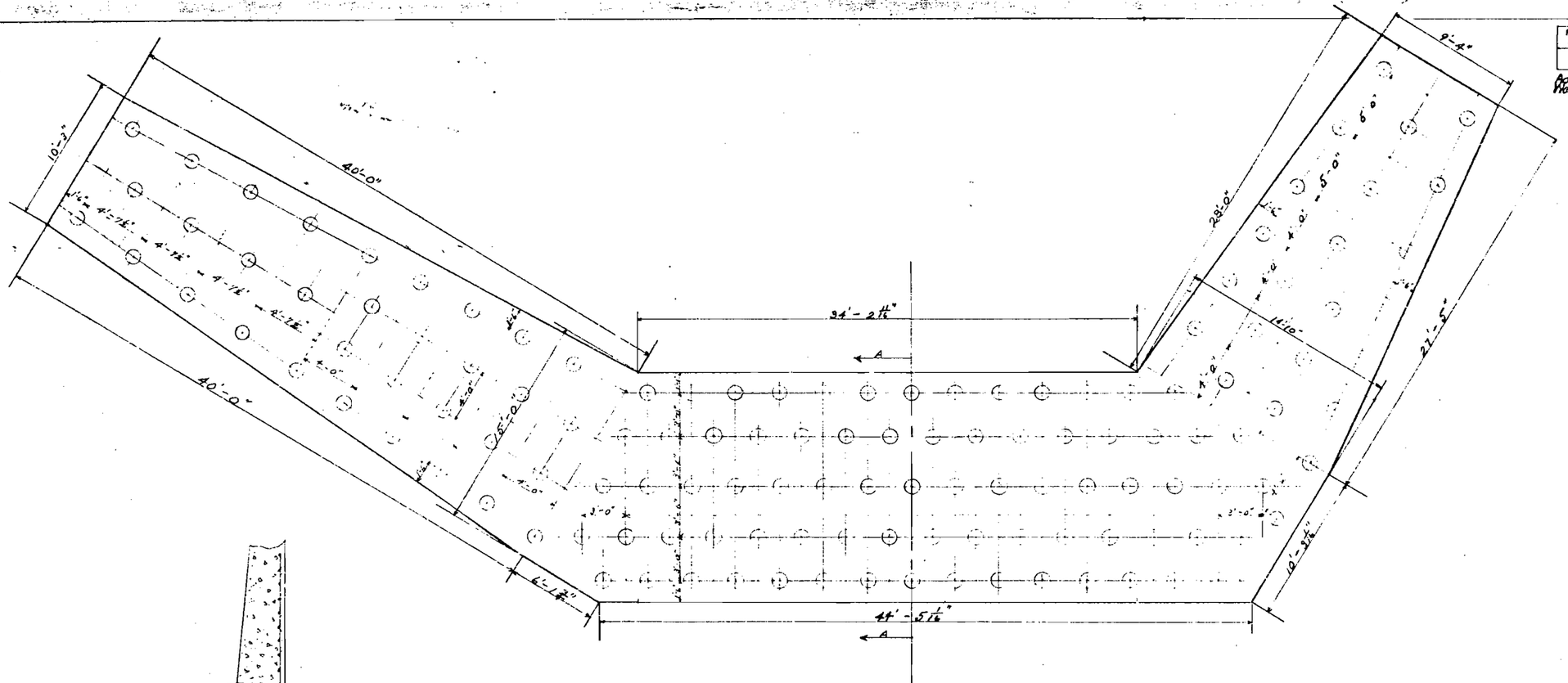
Designed by H.W.P.
Made by A.T.F.
Check Design
Check Detail K.E.G.

Approved by *Carl Bailey*
Bridge Engineer
Date: *March 10th* 1936

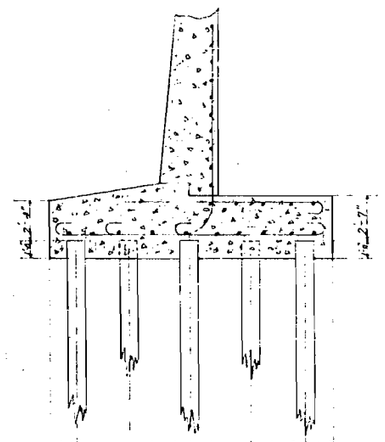
STRUCTURE NO. H-11-J

FED ROAD DIST NO	STATE	W.D.G.H. PROJ. NO	SHEET NO	TOTAL SHEETS
9	COLO	152-A	7-A	

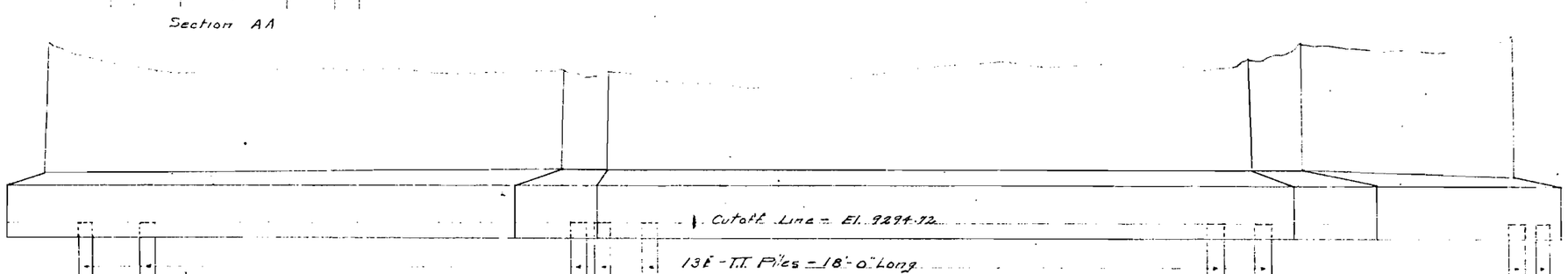
Additional Sheet, 9-14-38. See W.O. No. 1502
Mark with sheet No. 7



Plan of Pile Support - Abutment No 2



Section AA



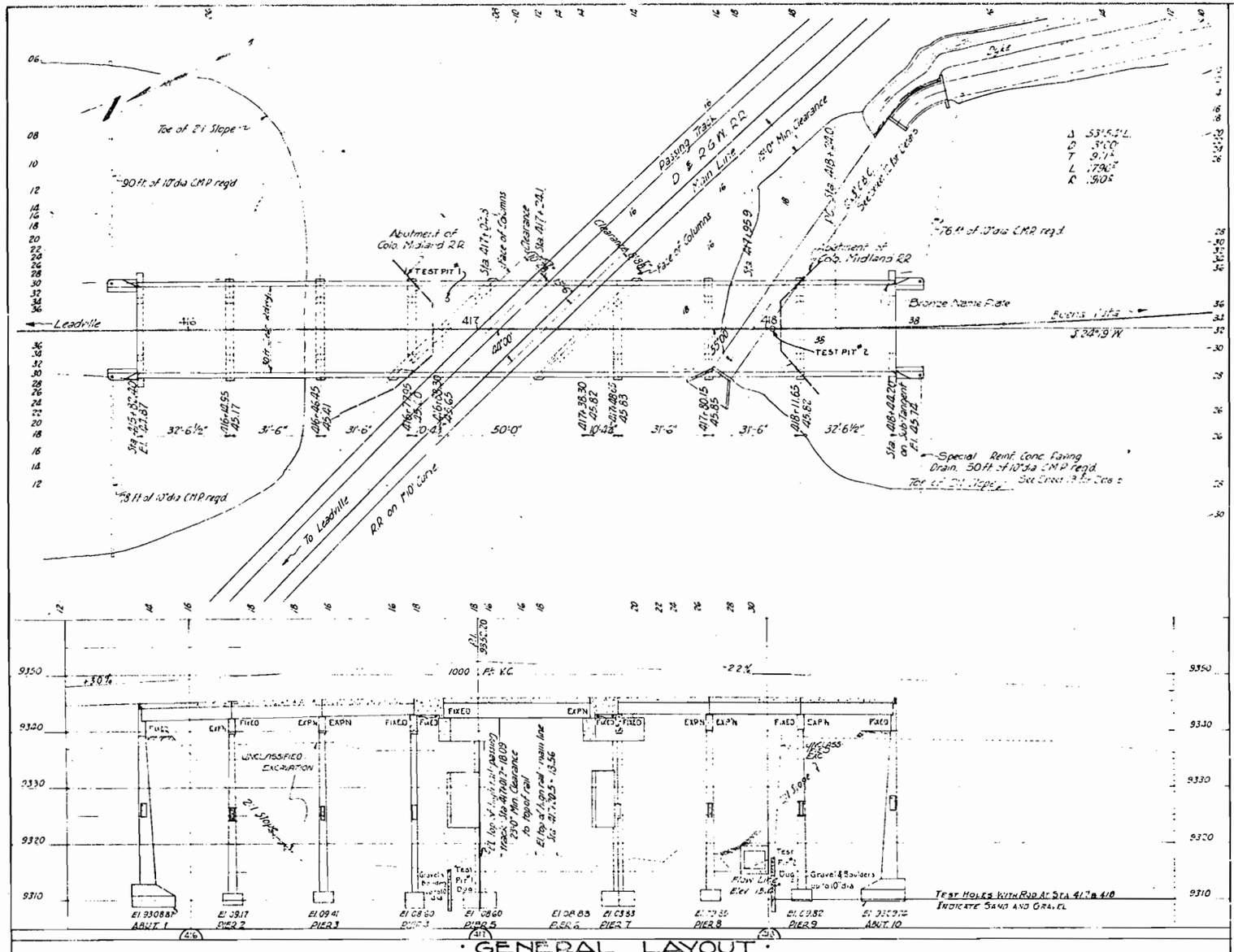
COLORADO
STATE HIGHWAY DEPARTMENT
ABUTMENT No 2
Across ARKANSAS RIVER
Sta 401+36 To 408+38.21
Near MALTA Sec. 22, T10S, R 80W.

Designed by H.W.B.
Made by H.W.P.
Check Design
Check Detail

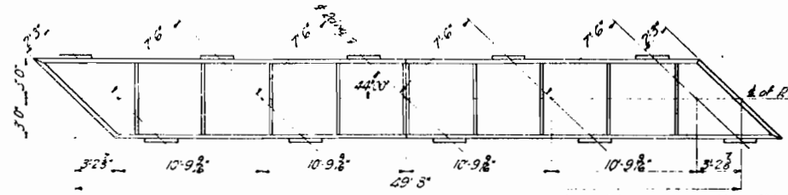
Approved by R.D. Bailey
Bridge Engineer
Date: Sept. 18-1936

FED. ROAD DIST. NO.	STATE	PROJ. NO. W.P.G.M.	SHEET NO.	TOTAL SHEETS
3	COLO.	152-A	8	

REVISED 4-17-36 - TEST PITS ADDED - T.G.
REVISED 4-27-36 - CLASS 'A' CONC. QUANTITIES IN 2 ITEMS - T.G.
Rev. 7-13-36. Hand rail conc. N.E.S.
Rev. 7-23-36, by T.G. Summary of Quantities. See W.O. # 225
Revised As Constructed 3-2-38 R.A.D.

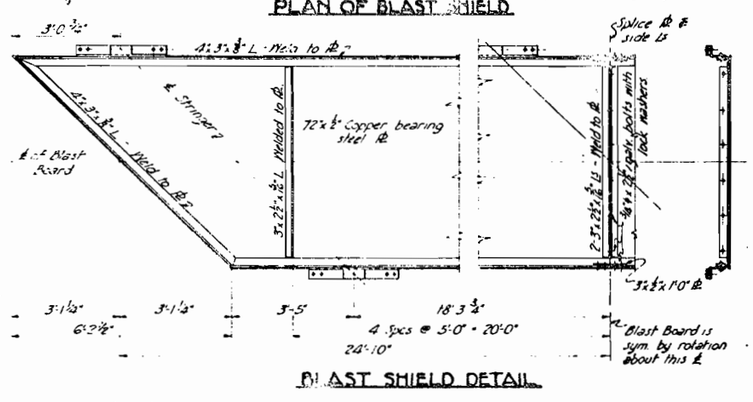


GENERAL LAYOUT

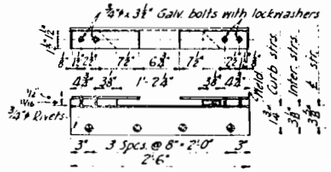


- 1 complete assembly reqd. over Main Line
- 1 complete assembly reqd. over Passing Track

PLAN OF BLAST SHIELD



BLAST SHIELD DETAIL



CLIP ANGLE DETAIL

4 - 3½ x 3½ x ⅜" L reqd. for curb stringers
6 - 5" x 3½" x ⅜" L reqd. for all other stringers

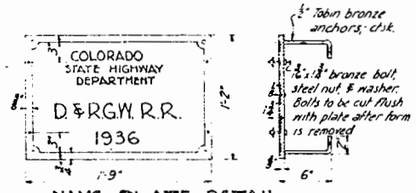
REFERENCE DRAWINGS

Details of Superstructure - Sheet No. 9
Details of Abutments 1 & 10, and Piers 2, 3, 8, & 9, & Superstructure Bar List - Sheet 10
Details of Piers 4, 5, 6, & 7 - Sheet No. 11
Details of Special Box Culvert — Sheet No. 12

ITEM NO	ITEM	UNIT	SUPERSTRUCT.	SPECIAL BOX CULVERT	ABUTS 1 & 10	PIERS 2, 3, 8, & 9	PIERS 4, 5, 6, & 7	TOTAL
11a	REMOVAL OF OLD ABUTMENTS	LUMP SUM						*
14a	DRY DOCK STRUCTURAL EXCAVATION	CU. YDS.						*
14b	DRY COMMON STRUCTURAL EXCAVATION	CU. YDS.		170.7	508.1	271.3	82.7	1032.8
14c	WET DOCK STRUCTURAL EXCAVATION	CU. YDS.						*
14d	WET COMMON STRUCTURAL EXCAVATION	CU. YDS.		4.2	54.4	58.2	71.2	188.0
19a	CREOSOTED BRIDGE TIMBER	M. F. B. M.	0.421					0.421
46a	CLASS 'A' CONCRETE	CU. YDS.	268.2	35	103.8	132.0	157	696
47	REINFORCING STEEL (6% OVERRUN INCLUDED)	LBS.	59504	1981	13103	29019	26786	130390
48	STRUCTURAL STEEL (1½% OVERRUN INCLUDED)	LBS.	156240		50	206	104	156600
46c	CLASS 'A' CONCRETE HAND RAILS & POSTS	CU. YDS.	21.8		7.2			23
60b	APPROVED NAME PLATE	EACH	1					1
80c	SHEET COPPER (38 oz/sq ft)	LBS.	575					575
13c	UNCLASSIFIED EXCAVATION	CU. YDS.						2115.5
	12" EXPN. JOINT MATERIAL - 12" WIDE	LIN. FT.	67					67
	9" EXPN. JOINT MATERIAL - 12" WIDE	LIN. FT.	114					114

* Includes 6200 lbs. Copper bearing steel blast plate

Prorated according to amounts shown on contractors invoices



NAME PLATE DETAIL

GENERAL NOTES

ALL WORK SHALL BE DONE ACCORDING TO THE STANDARD SPECIFICATIONS OF THE COLORADO STATE HIGHWAY DEPARTMENT, ADOPTED AUG. 1, 1935
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 S4S UNLESS FACED WITH PANEL BOARD.
CONCRETE PIERS, FOOTINGS, 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 RIVETS SHALL BE ⅞" ø, FIELD RIVETS SHALL BE POWER DRIVEN.

LOADING DATA.
LIVE LOAD A.A.S.H.O. 1935 CLASS A. H-15
DEAD LOAD ASSUMES 15 LBS. PER SQ. FT. ADDITIONAL WEARING SURFACE WHICH INCLUDES THE 4" IN CONCRETE MONOLITHIC WEARING SURFACE SHOWN

COLORADO
STATE HIGHWAY DEPARTMENT

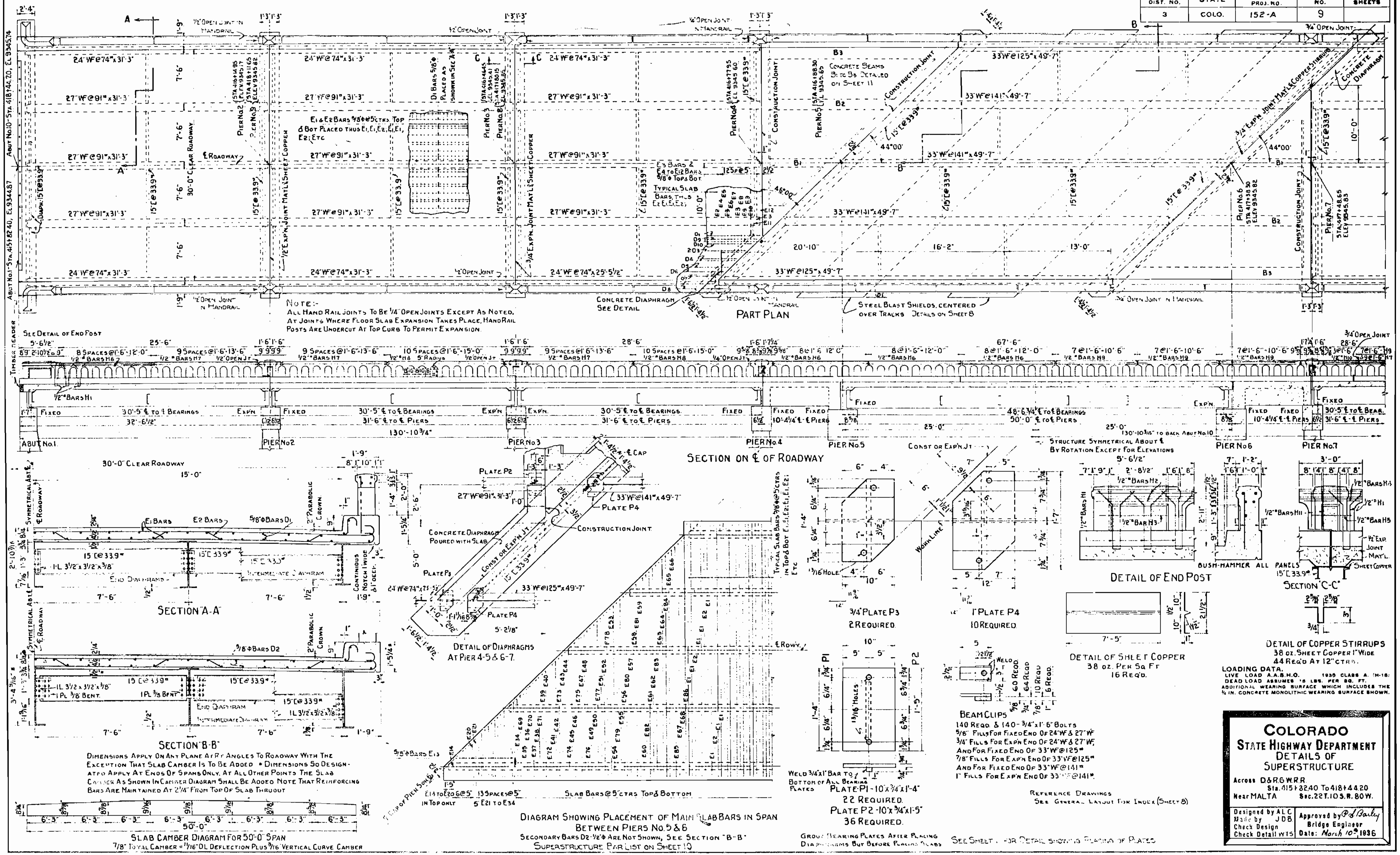
GENERAL LAYOUT, GENERAL NOTES, SUMMARY OF QUANTITIES, DETAILS OF BLAST SHIELD & NAME PLATE.

Across D. & R.G.W. R.R.
Sta. 415+82.40 to 418+44.20
Near Malta. Sec. 22 T. 10 S. R. 80 W.

Designed by HES	Approved by P. L. Gaily
Made by HES	Bridge Engineer
Check Design	Date: March 10, 1936
Check Detail T.M.H.	

STRUCTURE NO. H-10-M

FED. ROAD DIST. NO.	STATE	W.P.&H. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	152-A	9	



PART PLAN
NOTE:- All Hand Rail Joints To Be 1/4" Open Joints Except As Noted. At Joints Where Floor Slab Expansion Takes Place, Hand Rail Posts Are Undercut At Top Curb To Permit Expansion.
Concrete Diaphragm See Detail
Steel Blast Shields, Centered Over Tracks. Details on Sheet 8
Concrete Beams B1 to B3 Detailed on Sheet 11
SECTION ON ℄ OF ROADWAY
Structure Symmetrical About ℄ By Rotation Except For Elevations
ABUT No.1
PIER No.2
PIER No.3
PIER No.4
PIER No.5
PIER No.6
PIER No.7
SECTION "A-A"
30'-0" Clear Roadway
SECTION "B-B"
Dimensions Apply On Any Plane At Rt. Angles To Roadway With The Exception That Slab Camber Is To Be Added. • Dimensions So Designated Apply At Ends Of Spans Only. At All Other Points The Slab Camber As Shown In Camber Diagram Shall Be Added. Note That Reinforcing Bars Are Maintained At 2 1/4" From Top Of Slab Throughout.
SLAB CAMBER DIAGRAM FOR 50'-0" SPAN
7/8" Total Camber = 1/16" DL Deflection Plus 5/16" Vertical Curve Camber
DETAIL OF DIAPHRAGMS AT PIER 4-5 & 6-7.
DIAGRAM SHOWING PLACEMENT OF MAIN SLAB BARS IN SPAN BETWEEN PIERS No.5 & 6
Secondary Bars D2-1/2"φ Are Not Shown, See Section "B-B"
Superstructure Bar List on Sheet 10
3/4" PLATE P3
2 REQUIRED
1" PLATE P4
10 REQUIRED
PLATE P1 - 10"x3/4"x1'-4"
22 REQUIRED.
PLATE P2 - 10"x3/4"x1'-5"
36 REQUIRED.
Grout Bearing Plates After Placing Diaphragms But Before Placing Slabs
See Sheet ... For Detail Showing Placing Of Plates
BEAM CLIPS
140 Reqd. & 140 - 3/4"x1'-6" Bolts
5/8" Fills For Fixed End Of 24"WF & 27"WF
3/4" Fills For Exp'n End Of 24"WF & 27"WF, And For Fixed End Of 33"WF@125#
7/8" Fills For Exp'n End Of 33"WF@125# And For Fixed End Of 33"WF@141#
1" Fills For Exp'n End Of 33"WF@141#
DETAIL OF END POST
DETAIL OF SHEET COPPER
38 oz. Per Sq Ft
16 Req'd.
SECTION "C-C"
DETAIL OF COPPER STIRRUPS
38 oz. Sheet Copper 1" Wide
44 Req'd At 12" Ctrs.
Reference Drawings
See General Layout For Index (Sheet 8)

LOADING DATA.

LIVE LOAD A.A.S.H.O. 1935 CLASS A. (H-15)
DEAD LOAD ASSUMES 15 LBS. PER SQ. FT.
ADDITIONAL WEARING SURFACE WHICH INCLUDES THE ½ IN. CONCRETE MONOLITHIC WEARING SURFACE SHOWN.

COLORADO
STATE HIGHWAY DEPARTMENT
DETAILS OF SUPERSTRUCTURE

Across D.&R.G.W.R.R.
Sta. 415+32.40 To 418+44.20
Near MALTA Sec. 22 T. 10 S. R. 80 W.

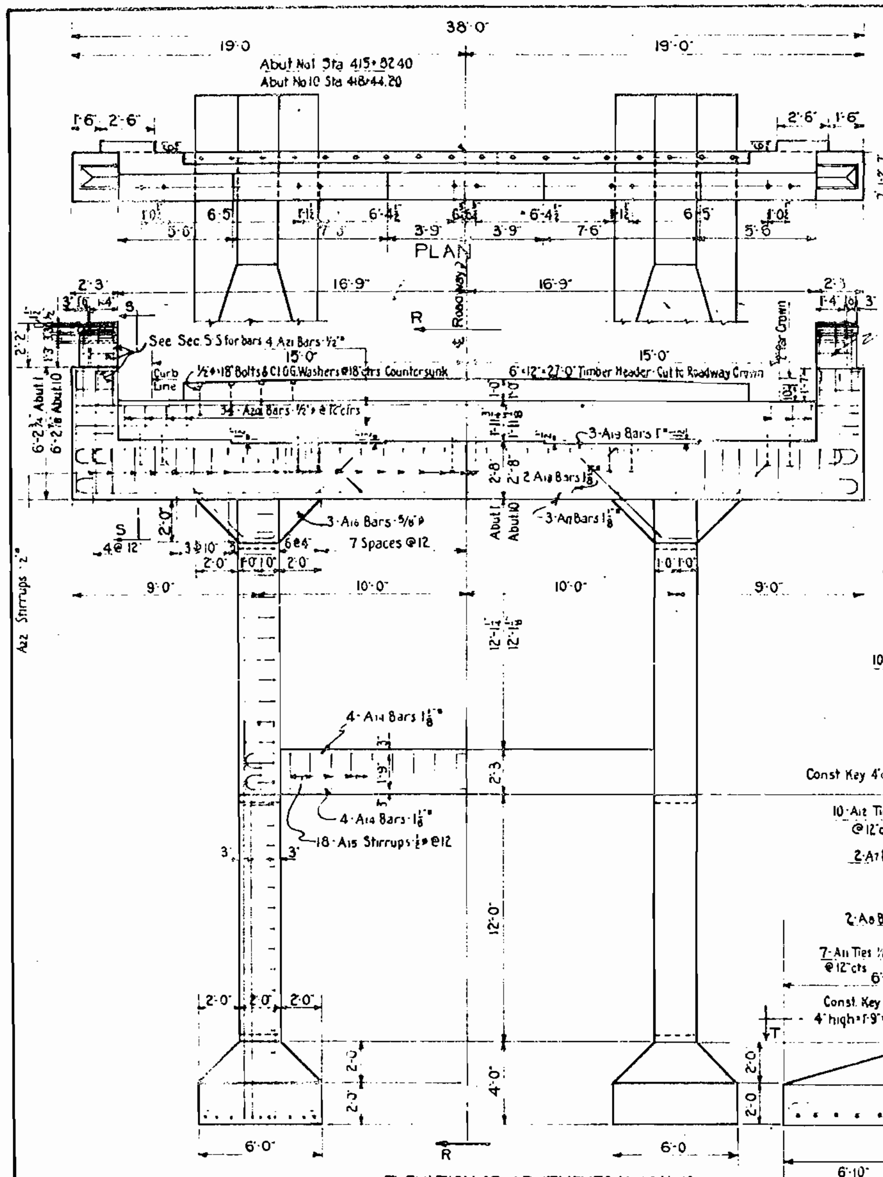
Designed by A.L.C.
Made by J.D.B.
Check Design
Check Detail W.T.S.

Approved by P. L. Bailey
Bridge Engineer
Date: March 10th 1936

STRUCTURE NO. H-11-H

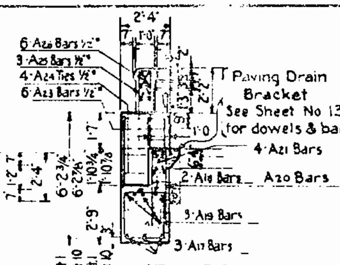
Revised 7-23-36 Wc & ALC; added stuff Piers 2,3,8,9. See W.O. No. 225

FED. ROAD DIST. NO.	STATE	W.P.G.H. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	152-A	10	

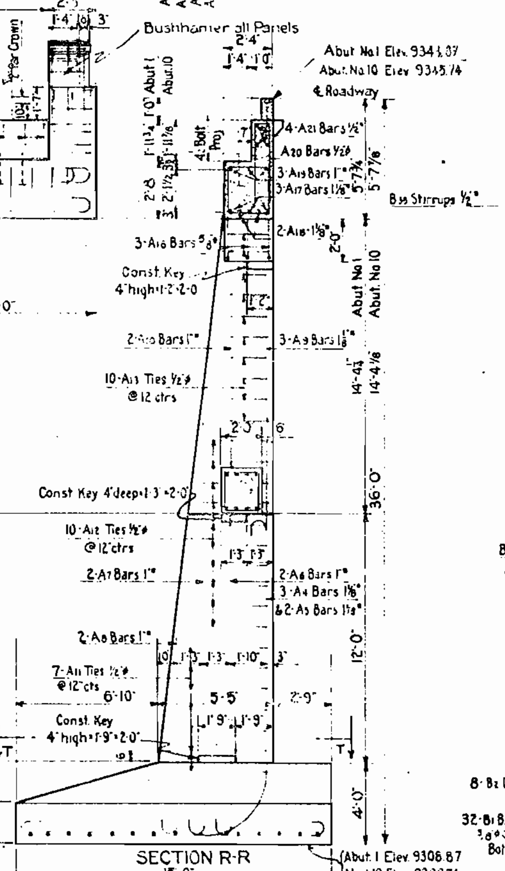


PLAN

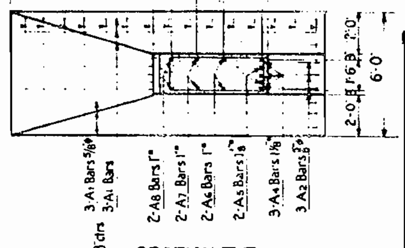
ELEVATION OF ABUTMENTS No1 & No10



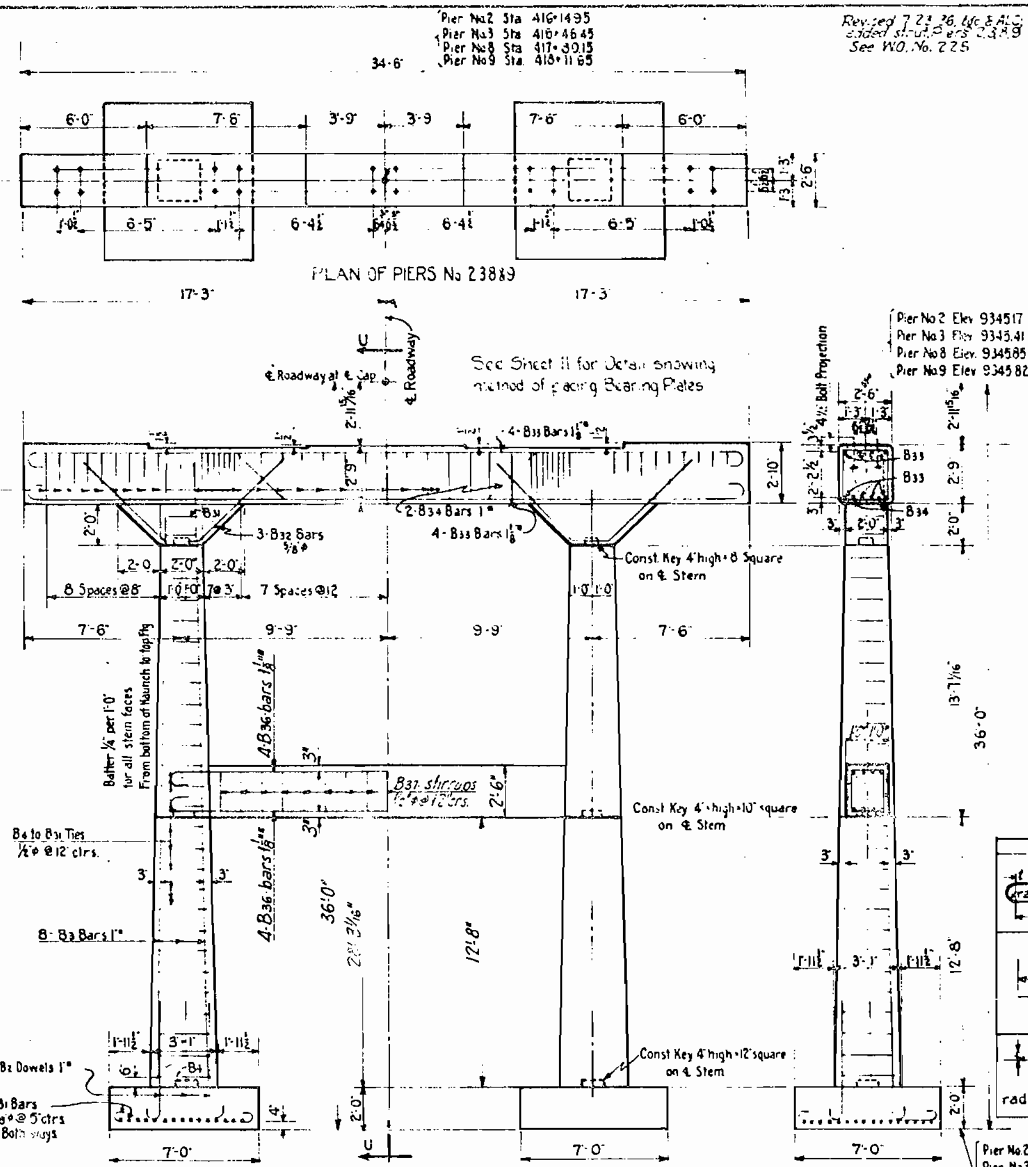
SECTION S-S



SECTION R-R



SECTION T-T



PLAN OF PIERS No 2, 3, 8 & 9

ELEVATION OF PIERS 2, 3, 8 & 9

SECTION U-U

BAR LIST FOR ABUTMENTS 1 & 10 (Inclusive) A.F.F.

MARK	SIZE	No REQ'D	LENGTH	TYPE	l	m	r	t
A1	5/8"φ	24	15-7	I	13-11		2½	2
A2	5/8"φ	12	5-8	XIII	4-10		2½	2
A3	5/8"φ	60	6-7	I	4-11		2½	2
A4	1⅛"	12	31-9	XI	17-2	8-1	4½	4
A5	1⅛"	8	27-11	XII	11-10	8-1	4½	4
A6	1"	8	21-2	XIII	19-10		4	3½
A7	1"	8	21-0	XIII	19-8		4	3½
A8	1"	8	10-6	XIII	9-2		4	3½
A9	1⅛"	12	16-4	—				
A10	1"	8	16-4	—				
A11	½"φ	28	12-10	VIII	4-5½	1-7½		
A12	½"φ	40	10-4	VIII	3-2½	1-7½		
A13	½"φ	40	7-10	VIII	1-11½	1-7½		
A14	1⅛"	16	23-9	I	20-9		4½	4
A15	½"φ	36	7-8	VIII	1-10½	1-7½		
A16	5/8"φ	12	12-6	XIV	1-6	5-6		
A17	1⅛"	8	39-9	I	36-9		4½	4
A18	1⅛"	4	41-6	XV	10-0	11-3		
A19	1"	6	39-8	I	36-10		4	3½
A20	½"φ	68	7-7	IX	3-8	7		
A21	½"φ	8	37-6	—				
A22	½"φ	86	9-1	VIII	2-3	1-11½		
A23	½"φ	24	5-5	—				
A24	½"φ	16	8-2	VIII	1-10	1-11		
A25	½"φ	12	8-1	IX	5-9	7		
A26	½"φ	24	1-7	—				

1878 LIN FT. OF ½"φ BARS @ 0.668 LB PER LIN FT. = 1254 LB.
1486 - - ½"φ - @ 0.850 - - - = 1264 -
988 - - 5/8"φ - @ 1.043 - - - = 1030 -
790 - - 1"φ - @ 3.400 - - - = 2686 -
1586 - - 1⅛"φ - @ 4.303 - - - = 6822 -
PLUS 1% ± FOR OVERRUN = 124 -
TOTAL = 13180 LB.

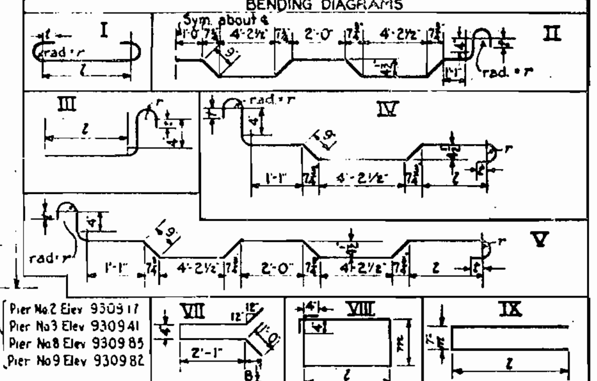
BAR LIST FOR PIERS 2, 3, 8 & 9 (Inclusive) A.F.F.

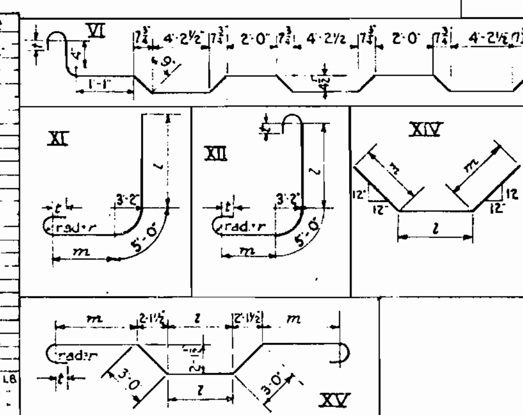
MARK	SIZE	No REQ'D	LENGTH	TYPE	l	m	r	t
B1	5/8"φ	256	7-7	I	5-11		2½	2
B2	1"	64	6-11	XIII	5-7		4	3½
B3	1"	64	30-3	—				
B4 to B31	½"φ	8 each	11-5 to 6-11 by 2	VIII	2-8¾ to 1-6¾ by ½	2-8¾ to 1-6¾ by ½		
B32	5/8"φ	24	12-6	XIV	1-6	5-6		
B33	1⅛"	32	36-3	I	33-3		4½	4
B34	1"	8	37-9	XV	10-0	9-6½	4	3½
B35	½"φ	188	9-7	VIII	2-4	2-1½		
B37	½"φ	72	7-8	VIII	2-0	1-6		

(B36 bars 1⅛"φ, 32 reqd; length 23'4", l = 20'2", r = 4½)

2608 LIN FT. OF ½"φ BARS @ 0.668 LB PER LIN FT. = 1742 LB
1804 - - ½"φ - @ 0.850 - - - = 1532 -
2244 - - 5/8"φ - @ 1.043 - - - = 2340 -
2680 - - 1"φ - @ 3.400 - - - = 9112 -
1907 - - 1⅛"φ - @ 4.303 - - - = 8206 -
PLUS 1% ± FOR OVERRUN = 228 -
TOTAL 23160 LB.

BENDING DIAGRAMS





BAR LIST FOR ENTIRE SUPERSTRUCTURE W.H.L. - A.F.F.

MARK	SIZE	No REQ'D	LENGTH	TYPE	l	m	r	t
E1	5/8"φ	632	34-4	I	32-8		2½	2
E2	5/8"φ	160	34-0	II			2½	2
E3	5/8"φ	8	27-1	VI	2-6½		2½	2
E4	5/8"φ	4	33-11	I	32-3		2½	2
E5	5/8"φ	4	33-6	I	31-10		2½	2
E6	5/8"φ	4	32-8	I	31-0		2½	2
E7	5/8"φ	4	32-3	I	30-7		2½	2
E8	5/8"φ	4	31-6	I	29-10		2½	2
E9	5/8"φ	4	31-1	I	29-5		2½	2
E10	5/8"φ	4	30-3	I	28-7		2½	2
E11	5/8"φ	4	29-10	I	26-2		2½	2
E12	5/8"φ	4	29-1	I	27-5		2½	2
E13	5/8"φ	12	3-0	III	1-6		2½	2
E14 to E20	5/8"φ	2 each	3-11 to 6-2 by 4½	I	2-3 to 4-6 by 4½		2½	2
E21 to E34	5/8"φ	4 each	6-6 to 11-11 by 5	I	4-10 to 10-3 by 5		2½	2
E35	5/8"φ	4	12-8	I	11-0		2½	2
E36	5/8"φ	4	13-1	I	11-5		2½	2
E37	5/8"φ	4	13-11	I	12-3		2½	2
E38	5/8"φ	4	14-3	I	12-7		2½	2
E39	5/8"φ	4	15-1	I	13-5		2½	2
E40	5/8"φ	4	15-6	I	13-10		2½	2
E41	5/8"φ	4	16-3	I	14-7		2½	2
E42	5/8"φ	4	16-8	I	15-0		2½	2
E43	5/8"φ	4	17-6	I	15-10		2½	2
E44	5/8"φ	4	17-11	I	16-3		2½	2
E45	5/8"φ	4	18-8	I	17-0		2½	2
E46	5/8"φ	4	19-1	I	17-5		2½	2
E47	5/8"φ	4	19-11	I	18-3		2½	2
E48	5/8"φ	4	20-4	I	18-8		2½	2
E49	5/8"φ	4	21-1	I	19-5		2½	2
E50	5/8"φ	4	21-6	I	19-10		2½	2
E51	5/8"φ	4	22-4	I	20-8		2½	2
E52	5/8"φ	4	22-9	I	21-1		2½	2
E53	5/8"φ	4	23-6	I	21-10		2½	2
E54	5/8"φ	4	23-11	I	22-3		2½	2
E55	5/8"φ	4	24-9	I	23-1		2½	2
E56	5/8"φ	4	25-2	I	23-6		2½	2
E57	5/8"φ	4	25-11	I	24-3		2½	2
E58	5/8"φ	4	26-4	I	24-8		2½	2
E59	5/8"φ	4	27-2	I	25-6		2½	2
E60	5/8"φ	4	27-7	I	25-11		2½	2
E61	5/8"φ	4	28-4	I	26-8		2½	2
E62	5/8"φ	4	28-9	I	27-1		2½	2
E63	5/8"φ	4	29-7	I	27-11		2½	2
E64	5/8"φ	4	30-0	I	28-4		2½	2
E65	5/8"φ	4	30-9	I	29-1		2½	2
E66	5/8"φ	4	31-2	I	29-6		2½	2
E67	5/8"φ	4	32-1	I	30-5		2½	2
E68	5/8"φ	4	32-6	I	30-10		2½	2
E69 to E75	5/8"φ	2 each	11-2 to 18-11 by 1-3½	IV	2-0½ to 9-9½ by 1-3½		2½	2
E76 to E81	5/8"φ	2 each	20-1 to 26-4 by 1-3	V	3-3 to 9-6 by 1-3		2½	2
E82 to E84	5/8"φ	2 each	27-8 to 33-0 by 1-4	VI	3-1½ to 8-5½ by 1-4		2½	2
O1	5/8"φ	292	31-0	—				
O2	5/8"φ	106	26-1	—				
O3	5/8"φ	4	29-3	—				
O4	5/8"φ	4	28-0	—				
O5	5/8"φ	2	27-0	—				
O6	5/8"φ	2	26-6	—				
O7	5/8"φ	2	26-0	—				
O8	5/8"φ	8	25-6	—				
O9	5/8"φ	2	30-9	—				
O10	5/8"φ	2	30-3	—				
H1	½"φ	334	6-6	VII				
H2	½"φ	16	4-7	—				
H3	½"φ	4	4-2	—				
H4	½"φ	48	2-8	—				
H5	½"φ	12	1-10	—				
H6	½"φ	40	11-8	—				
H7	½"φ	48	13-2	—				
H8	½"φ	32	14-8	—				
H9	½"φ	32	10-2	—				
H10	½"φ	8	4-2	—				
H11	½"φ	24	1-8	—				
R1	1"	10	25-2	I	22-7		4	3½
R2	1⅛"	4	25-6	I	22-6		4½	4
R3	1"	8	18-8	I	16-0		4	3½
R4	1⅛"	4	18-11	I	15-11		4½	4
R5	1"	8	11-0	I	8-4		4	3½
R6	½"φ	46	7-6	VIII	2-4	1-1		
R7	½"φ	30	7-8	VIII	2-7	0-11		
R8	½"φ	46	9-9	IX	4-7	0-7		
R9	½"φ	4	23-3	—				
R10	½"φ	8	33-3	—				
R11	½"φ	46	10-11	IX	5-2			
R12	5/8"φ	2	26-9	X	25-1		2½	2
R13	5/8"φ	2	26-4	X	24-8		2½	2
R14 to R16	5/8"φ	4 each	25-11 to 25-1 by 5	X	24-3 to 23-5 by 5		2½	2
R17 to R21	5/8"φ	4 each	24-9 to 23-1 by 5	X	23-1 to 21-5 by 5		2½	2
R22 to R26	5/8"φ	4 each	22-9 to 21-1 by 5	X	21-1 to 19-5 by 5		2½	2
R27 to R31	5/8"φ	4 each	20-9 to 19-1 by 5	X	19-1 to 17-5 by 5		2½	2
R32 to R36	5/8"φ	4 each	18-9 to 17-1 by 5	X	17-1 to 15-5 by 5		2½	2
R37 to R41	5/8"φ	4 each	16-9 to 15-1 by 5	X	15-1 to 13-5 by 5		2½	2
R42 to R46	5/8"φ	4 each	14-9 to 13-1 by 5	X	13-1 to 11-5 by 5		2½	2
R47 to R51	5/8"φ	4 each	12-9 to 11-1 by 5	X	11-1 to 9-5 by 5		2½	2
R52 to R56	5/8"φ	4 each	10-9 to 9-1 by 5	X	9-1 to 7-5 by 5		2½	2
R57 to R61	5/8"φ	4 each	8-9 to 7-1 by 5	X	7-1 to 5-5 by 5		2½	2
R62 to R66	5/8"φ	4 each	6-9 to 5-1 by 5	X	5-1 to 3-5 by 5		2½	2
R67 to R69	5/8"φ	4 each	4-9 to 3-11 by 5	X	3-1 to 2-3 by 5		2½	2
R70	½"φ	6	24-10	—				
R71 to R76	½"φ	2 each	23-2 to 18-2 by 12	—				
R77 to R83	½"φ	2 each	16-3 to 10-3 by 12	—				
R84 to R90	½"φ	2 each	8-6 to 2-6 by 12	—				
R91 to R95	½"φ	2 each	22-6 to 18-6 by 12	—				
R96 to R101	½"φ	2 each	15-10 to 10-10 by 12	—				
R102 to R108	½"φ	2 each	8-1 to 2-1 by 12	—				
R109	½"φ	46	7-0	VIII	2-7	0-7		
R110	5/8"φ	38	3-0	III	1-6	4	2½	2

178 LIN FT OF 1⅛"φ BARS @ 4.303 LB PER LIN FT = 766 LB
489 - - 1"φ - @ 3.400 - - = 1663 -
49064 - - 5/8"φ - @ 1.043 - - = 51174 -
4378 - - ½"φ - @ 0.850 - - = 3721 -
3079 - - ½"φ - @ 0.668 - - = 2057 -
PLUS 1% ± FOR OVERRUN = 589 -
TOTAL = 59970 LB

Abut No1 & 10 - Max Toe Pressure: 6500# /sq.ft. (includes 2800#/sq. ft. earth overburden)

LOADING DATA.
LIVE LOAD A.A.S.H.O. 1935 CLASS A. (H-16)
DEAD LOAD ASSUMES 15 LBS. PER SQ. FT. ADDITIONAL WEARING SURFACE WHICH INCLUDES THE ¾ IN. CONCRETE MONOLITHIC WEARING SURFACE SHOWN.

Piers 2,3,8 & 9 - Footing Pressures:
D.L. only = 3000#/sq.ft.
D.L.+L.L. = 4000#/sq.ft.
D.L.+L.L.+Longitudinal Force = 7850#/sq.ft.

REFERENCE DRAWINGS
See General Layout Sheet For Index, (Sheet 8)

COLORADO
STATE HIGHWAY DEPARTMENT
ABUTMENTS 1 & 10,
SUPERSTRUCTURE BAR LIST,
PIERS 2,3,8 & 9
Across D & R.G.W. R.R.
Sta. 415+82.40 to 418+44.20
Near MALTA Sec. 22 T. 10 S. R. 80 W.

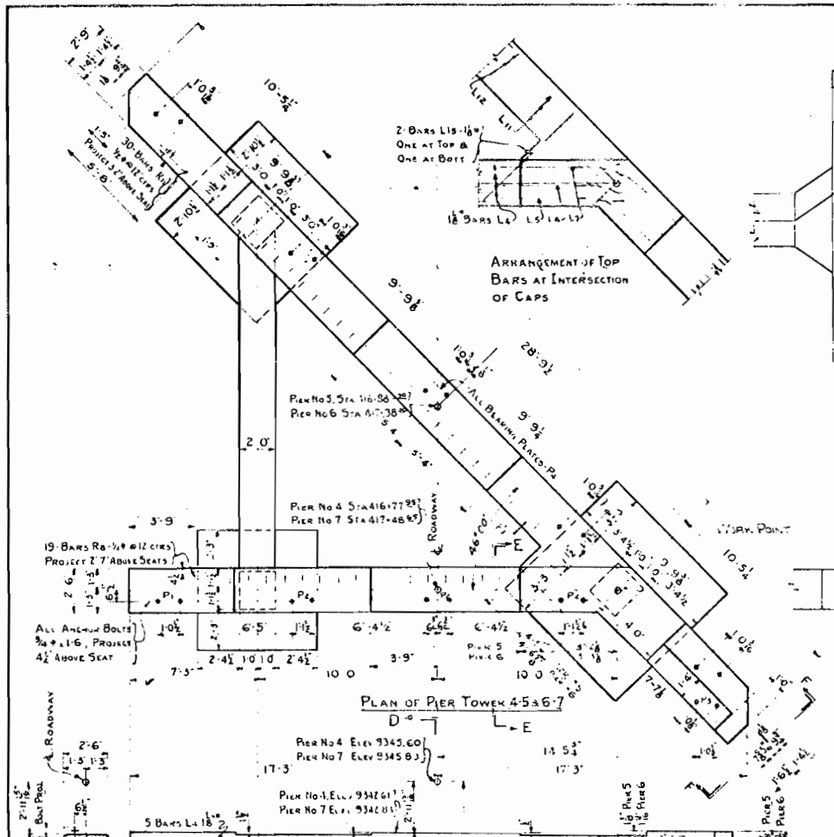
Designed by ALC
Made by E.W.T.
Check Design
Check Detail WHL
Approved by R.L. Bailey, Bridge Engineer
Date: March 10th 1936

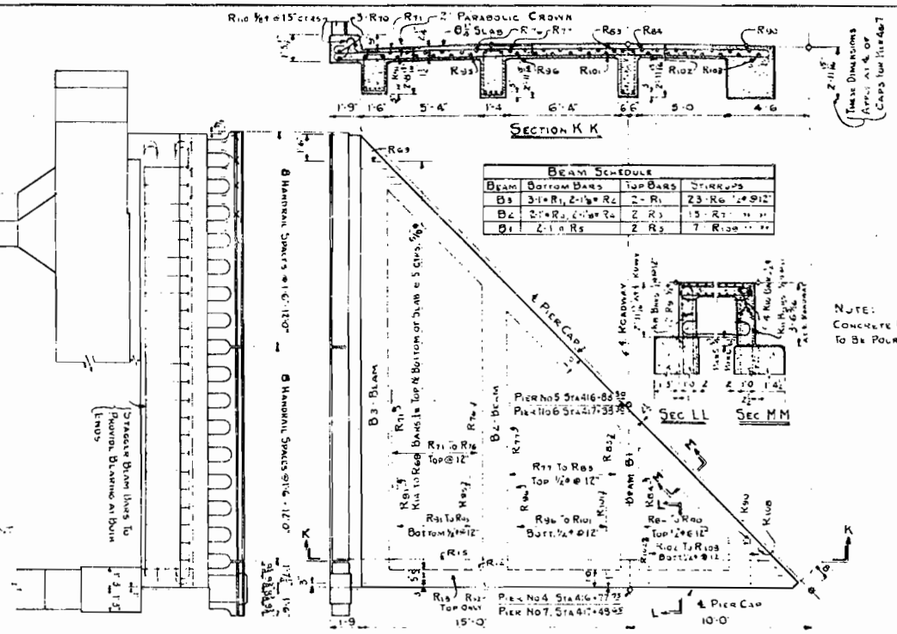
STRUCTURE NO. H-11-H

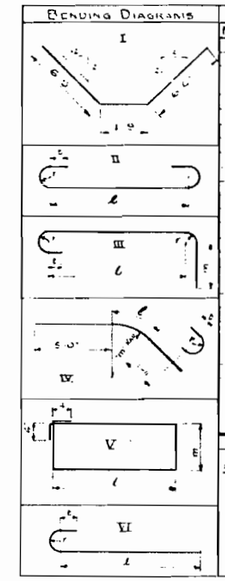
200 6-33

FED. ROAD DIST. NO.	STATE	W.P.& H. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	152-A	11	

Rev. 4-27-36 by R.A. Top bars, pier cap from 1'-10½" to 1'-8"





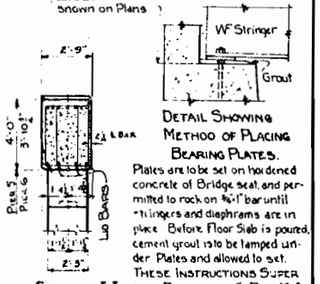


Bar List for Piers 4-5 & 6-7 (2 Piers)

Mark	Size	No Reqd	Length	Type	L	m	r	t
L1	⅞ø	16	13'-9"	I				
L2	1⅛ø	8	24'-6"	II	21'-6"		4½"	4"
L3	1⅛ø	4	30'-0"	II	27'-0"		4½"	4"
L4	1⅛ø	10	31'-7"	III	26'-6"	3'-0"	4½"	4"
L5	1⅛ø	2	10'-4"	IV	1'-11"	2'-6"	4½"	4"
L6	1⅛ø	2	11'-1"	IV	2'-8"	3'-6"	4½"	4"
L7	1⅛ø	2	11'-10"	IV	3'-5"	4'-6"	4½"	4"
L8	1¼ø	8	34'-2"	II	30'-10"		5"	4½"
L9	1¼ø	8	33'-10"	II	30'-10"		4½"	4"
L10	1ø	16	12'-2"	—	—	—	—	—
L11	1⅛ø	12	20'-0"	II	17'-0"		4½"	4"
L12	1⅝ø	16	28'-9"	II	25'-9"		4½"	4"
L13	½ø	56	10'-1"	V	2'-8½"	2'-0"		
L14	½ø	144	11'-11"	V	3'-4½"	2'-3"		
L15	1⅜ø	4	7'-0"	—	—	—	—	—
K1	⅞ø	52	7'-4"	II	5'-8"		2½"	2"
K2	1ø	16	20'-4"	II	19'-0"		4"	3½"
K3	1ø	16	17'-0"	—	—	—	—	—
K4	½ø	164	7'-8"	V	1'-10½"	1'-7½"		
K5	⅞ø	16	23'-4"	II	20'-4"		4½"	4"
K6	½ø	72	7'-8"	V	2'-0"	1'-6"		
K7	1⅛ø	16	24'-0"	II	21'-0"		4½"	4"
K8	⅝ø	80	9'-4"	II	7'-8"		2½"	2"
K9	⅞ø	72	8'-7"	II	6'-11"		2½"	2"
K10	1⅛ø	32	18'-10"	II	17'-4"		4½"	4"
K11	1⅛ø	32	17'-6"	—	—	—	—	—
K12	⅞ø	40	31'-6"	II	29'-10"		2½"	2"
K13	½ø	80	10'-6"	II	9'-2"		2"	2"

Bar Summary For Both Piers

274 Lin Ft	1¼ø @ 5.313 Lbs. Per Ft	=	1428 Lbs.
3618 "	1⅛ø " 4.303 " "	=	15568 "
608 "	1ø " 3.400 " "	=	2060 "
196 "	⅞ø " 2.670 " "	=	524 "
3254 "	⅝ø " 1.043 " "	=	3394 "
2282 "	½ø @ .850 " "	=	1940 "
2650 "	½ø @ .668 " "	=	1770 "
	Plus 1½% for Overrun	=	266 "
	Total		26950 Lbs.



Detail Showing Method of Placing Bearing Plates.

Plates are to be set on hardened concrete of Bridge seat, and permitted to rock on ¾" I bar until stringers and diaphrams are in place. Before Floor Slab is poured, cement grout is to be tamped under Plates and allowed to set. These Instructions Supersede Paragraph 6, Page 164, of Standard Specifications.

Reference Drawings:- See General Layout For Index of Drawings. (Sheet 8)

Footing Pressures: Dead Load Only 3,000 Lbs/Sq Ft
Max. D.L. & L.L. 4,100 -/- "
" D.L. & L.L. & Traction 5,400 -/- "

Loading Data.
Live Load A.A.S.H.O. 1935 Class A. M-18.
Dead Load Assumes 18 Lbs. per Sq. Ft. Additional Wearing Surface which includes the ¼ in. Concrete Monolithic Wearing Surface Shown.

Colorado State Highway Department

Detail of Piers 4-5 & 6-7 And Roadway Slab

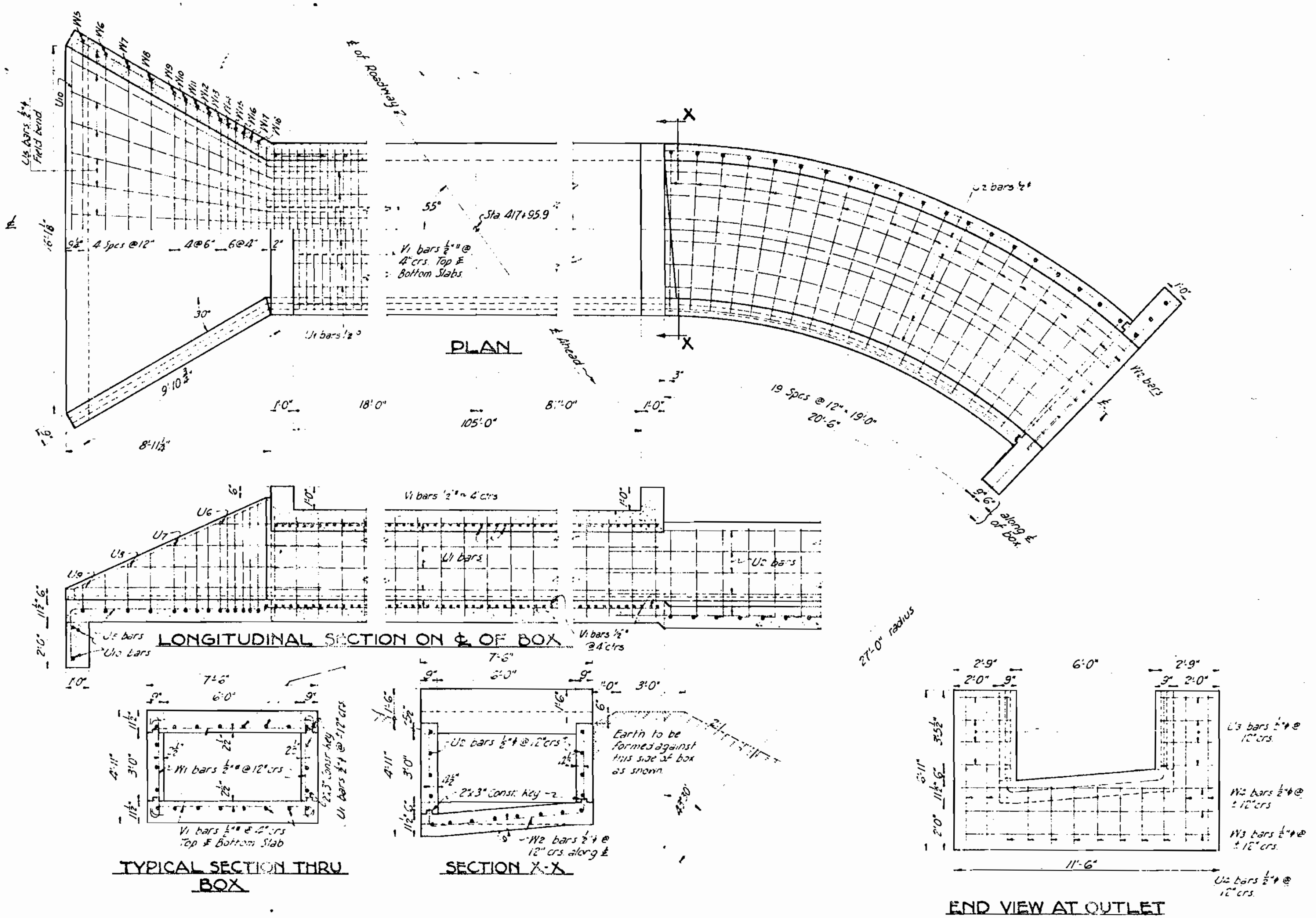
Across D. & R.G.W. R.R.
Sta. 415+82.40 to 418+44.20
Near Malta Sec. 22 T. 10S R. 80W

Designed by A.L.C.	Approved by P. J. Bailey
Made by W.T.S.	Bridge Engineer
Check Design	
Check Detail K.T.D.	Date: March 10, 1936

STRUCTURE NO. H-11-H

FED. ROAD DIST. NO.	STATE	PROJ. NO. W.P.G.H.	SHEET NO.	TOTAL SHEETS
3	COLO.	152-A	12	

Revised As Constructed 3-2-38 R.A.D.



BAR LIST FOR SPECIAL 6'X3' C.B.C.

MARK	SIZE	NO. REQ'D	LENGTH	l	m	n	BENDING DIAGRAM
V1	½"ϕ	662	8'-0"	6'-8"			
W1	½"ϕ	216	5'-5"	4'-1"			
W2	½"ϕ	21	14'-5"	6'-5"	4'-0"	3'-6"	
W5	½"ϕ	1	18'-6"	16'-2"	10"	10"	
W6	½"ϕ	1	18'-3"	15'-1"	1'-4"	1'-4"	
W7	½"ϕ	1	17'-11"	13'-11"	1'-9"	1'-9"	
W8	½"ϕ	1	17'-7"	12'-9"	2'-2"	2'-2"	
W9	½"ϕ	1	17'-5"	11'-7"	2'-8"	2'-8"	
W10	½"ϕ	1	17'-4"	11'-0"	2'-11"	2'-11"	
W11	½"ϕ	1	17'-3"	10'-5"	3'-2"	3'-2"	
W12	½"ϕ	1	17'-0"	9'-10"	3'-4"	3'-4"	
W13	½"ϕ	1	16'-11"	9'-3"	3'-7"	3'-7"	
W14	½"ϕ	1	16'-10"	8'-0"	3'-9"	3'-9"	
W15	½"ϕ	1	16'-10"	8'-6"	3'-11"	3'-11"	
W16	½"ϕ	1	16'-9"	8'-1"	4'-1"	4'-1"	
W17	½"ϕ	1	16'-7"	7'-9"	4'-2"	4'-2"	
W18	½"ϕ	1	16'-6"	7'-4"	4'-4"	4'-4"	
U5	½"ϕ	14	14'-4"	Additional bending to be done in field			12'-0"
U1	½"ϕ	110	23'-0"				Straight
U2	½"ϕ	16	25'-0"	Bend in field			
U3	½"ϕ	8	2'-3"				
U4	½"ϕ	3	11'-0"				
U6	½"ϕ	2	5'-4"	Bend in field			
U7	½"ϕ	2	7'-0"	" " "			
U8	½"ϕ	2	10'-0"	" " "			
U9	½"ϕ	2	1'-8	" " "			
U10	½"ϕ	2	16'-6"				
W3	½"ϕ	8	2'-6				
W4	½"ϕ	4	6'-5"				

3876 lin. ft. of ½"ϕ bars @ 0.668 lbs. per ft. = 2590 lbs
6306 " " " ½"■ " @ 0.850 " " " = 5360 "
Plus 1% ± for overrun = 80 "
Total = 8030 "

SUMMARY OF QUANTITIES FOR SPECIAL 6'X3' C.B.C.

ITEM NO.	DESCRIPTION	UNIT	TOTAL
14 b	Dry Common Struct. Excav.	Cu. Yds.	170.4
46 a	Class "A" Concrete	Cu. Yds.	95
47	Reinforcing Steel (1% overrun incl.)	Lbs.	○ 7981
14 d	Wet Common Struct. Excav.	Cu. Yds.	42

○ Prorated according to amounts shown on Contractors invoices.

REFERENCE DRAWINGS:
See General Layout (Sheet 8) for index of Reference Drawings.

GENERAL NOTES

All work shall be done according to the Standard Specifications of the Colorado State Highway Dept. adopted Aug. 1, 1935.

All concrete shall be class "A".

All exposed surfaces shall be rubbed free of form marks.

All walls shall have forms on both sides.

Minimum distance between ℄ of bar and edge of concrete to be 2½".

All construction joints shall be thoroughly cleaned before fresh concrete is poured.

All reinforcing bars shall be deformed and tagged with the station number and letter designation. Main bars shall not be spliced.

Pour wing footing and outlet check wall monolithically with floor of box.

The use of additional construction joints is undesirable. Should field conditions require, construction joints may be made on a vertical plane perpendicular to the centerline of culvert and shall have a 2"x 3" key.

Supporting soils for all culverts must be composed of firm and uniform material throughout.

All backfilling shall be laid in layers not exceeding 6" in depth and each layer shall be rolled or hand tamped where inaccessible to roller, also moistened when necessary.

LOADING DATA.
LIVE LOAD A.A.S.H.O. 1935 CLASS A. (H-15)
DEAD LOAD ASSUMES 15 LBS. PER SQ. FT. ADDITIONAL WEARING SURFACE WHICH INCLUDES THE ½ IN. CONCRETE MONOLITHIC WEARING SURFACE SHOWN.

COLORADO
STATE HIGHWAY DEPARTMENT

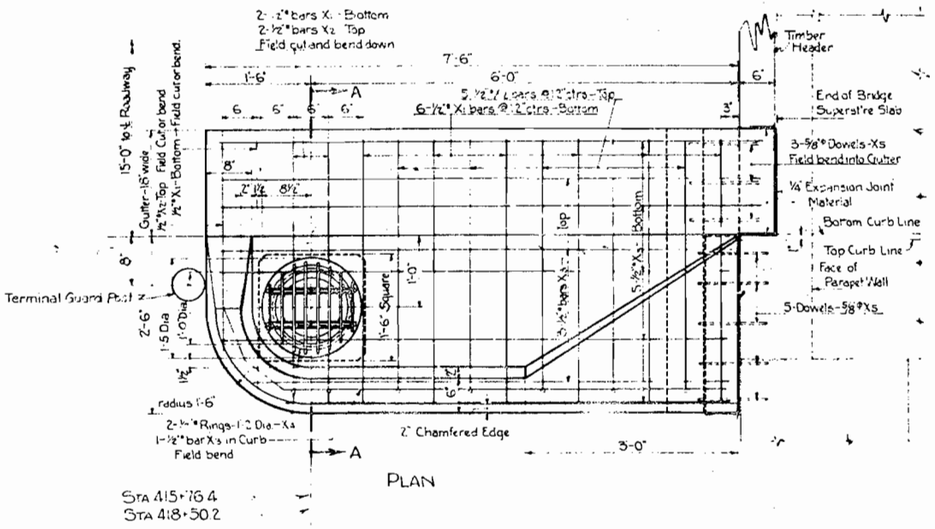
SPECIAL
6'x3' CONCRETE BOX CULVERT
Under D&RGW Overpass
Sta. 417+95.9
Near Malta. Sec. 22 T. 10 S. R. 80 W.

Designed by HES Made by HES Check Design Check Detail JEM	Approved by P. S. Bailey Bridge Engineer Date: March 10th, 1936

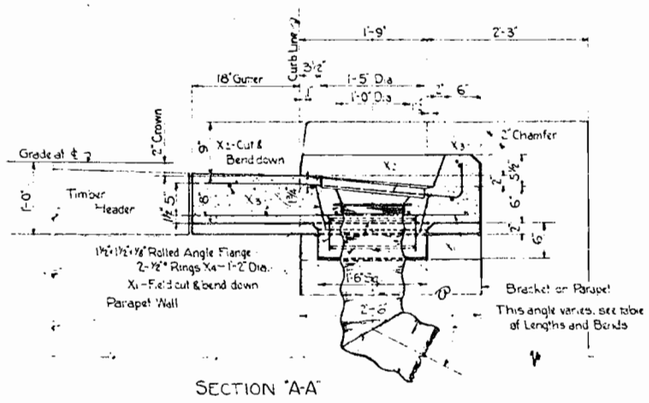
STRUCTURE NO. H-11-H

FED. ROAD DIST. NO.	STATE	W.P.G.H. PROJECT	SHEET NO.	TOTAL SHEETS
3	COLO.	15[illegible]A	13	

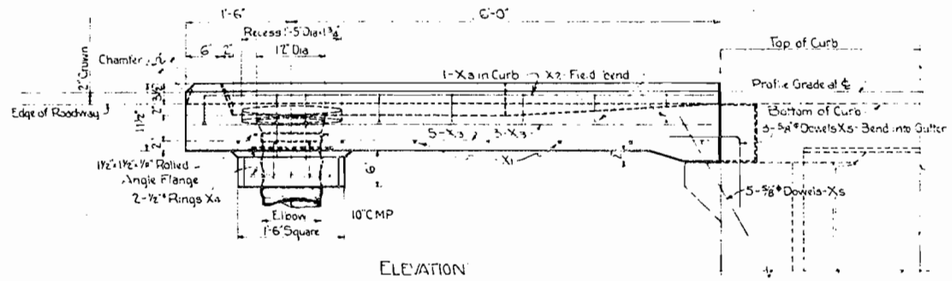
Revised As Constructed 3-2-38 R.A.D



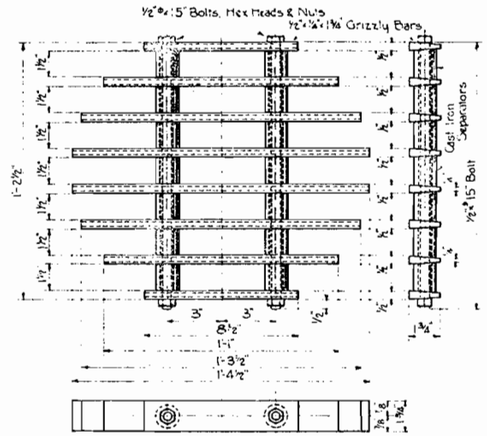
Sta 415+76.4
Sta 418+50.2



SECTION "A-A"



ELEVATION



TRASH-GUARD DETAIL
Weight 35 Lbs.

BAR LIST FOR ONE DRAIN

E.W.T.

Mark	Size	No. Reqd.	Length	Bending Diagram
X1	½"	10	5'-8	
X2	½"	8	4'-0"	Field Cut and Bend to clear Pipe, etc.
X3	½"	9	7'-8"	
X4	½"	2	5'-0"	X4 Ring
X5	⅝"	8	2'-0"	Field Bend as shown in Elevation

Leg 1'-4" Dia 1'-2"

BAR SUMMARY

144 lin ft ½" bar @ 0.850" lin ft =	123 lbs	
16 lin ft ⅝" bar @ 1.043" lin ft =	17 lbs.	
Plus 1% for Over-run	5 lbs.	
Total Reinforcing Steel	145 lbs	

SUMMARY OF QUANTITIES FOR FOUR DRAINS

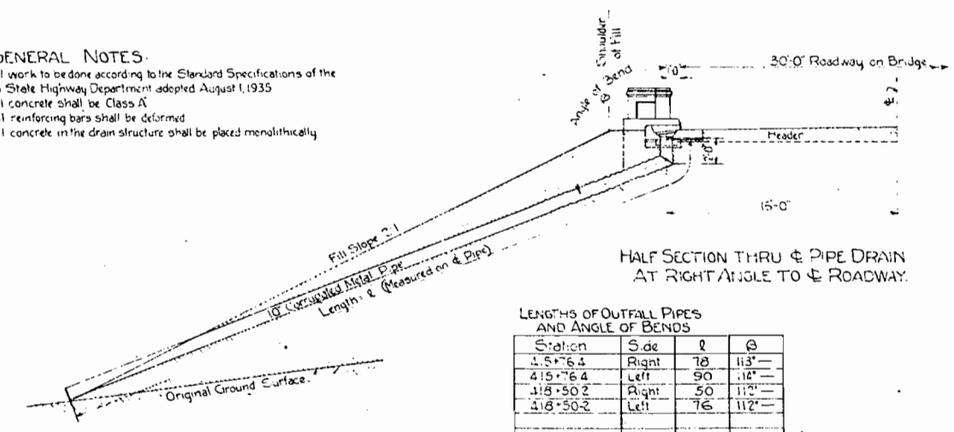
E.W.T.

Item	Description		
46a	Class A Concrete	4 at 1.0 Cu Yd each =	4.0 Cu Yds.
47	Reinforcing Steel	4 at 144 Lbs. each =	o 576 Lbs.
53 x	10' Dia-16 Ga. Corrugated Metal Pipe	See table of lengths	294 Lin. Ft.
85 x	Trash Guards	4 at one each =	4
	¼" Expansion Joint Material 12" wide	4 at 5 lin ft. each =	20 Lin. Ft.
14b	Dry Common Structural Exc.	Total for 4 Drains	41.3 Cu Yds.

o Prorated as per contractors invoices

GENERAL NOTES.

All work to be done according to the Standard Specifications of the Colorado State Highway Department adopted August 1, 1935
All concrete shall be Class A
All reinforcing bars shall be deformed
All concrete in the drain structure shall be placed monolithically



HALF SECTION THRU ℄ PIPE DRAIN AT RIGHT ANGLE TO ℄ ROADWAY.

LENGTHS OF OUTFALL PIPES AND ANGLE OF BENDS

Station	Side	ℓ	β
415+76.4	Right	78	113°—
415+76.4	Left	90	116°—
418+50.2	Right	50	113°—
418+50.2	Left	76	112°—

Total for 4 Drains 294 lin ft

Elbows, and Connecting Bands if required, shall be included in price bid for 10" Corrugated Metal Culvert Pipe
Rolled Angle Flange shall be either welded or riveted to Corrugated Metal Pipe Elbow

REFERENCE DRAWINGS:
See General Layout for Index.

LOADING DATA.
LIVE LOAD A.A.S.H.O. AUG. 1928 CLASS A. (H-18)
DEAD LOAD ASSUMES 15 LBS. PER SQ. FT. ADDITIONAL WEARING SURFACE WHICH INCLUDES THE ¼ IN CONCRETE MONOLITHIC WEARING SURFACE SHOWN.

COLORADO
STATE HIGHWAY DEPARTMENT
SPECIAL REINFORCED CONCRETE PAVING DRAIN
-OVERPASS-
Across D&RGW R.R.
Sta. 415+76 & 418+50
Near Malta Sec. 22 T. 6 S., R. 80 W.

Designed by WCC	Approved by P. A. Peaty
Made by WCC	Bridge Engineer
Check Design E.W.T.	Date March 10th, 1936
Check Detail E.W.T.	

STRUCTURE NO. H-11-H

DATA REQUIRED TO ACCOMPANY SITUATION PLAN.

I. GENERAL REMARKS.

Fill out all blanks with care, giving information on all points listed, and supplementary remarks on features not listed. High water and foundation conditions are especially important and should be thoroughly investigated.

II. PROFILE.

Plot profile of centerline of roadway. Use natural scale, preferably 1"–10', or multiple of 10'.

At proper locations show section of test pits, noting material encountered, if available at time of survey.

Show present, and if possible, proposed finished grade noting elevations and gradients.

III. MAP.

Show present and proposed alignment of bridge and all approaches, as far as affected. Extend Cross sections at least 100-ft. each side of C. L., giving location and elevation of points so that at least 2-foot contours may be accurately plotted. Show edge of water, islands, shoals, other obstructions, and direction of current at high water and at low water. Plot location of test pits, position and pointing of camera for each photo, all buildings, fences, and other features affected. Establish bench marks and give location of same. Reference C. L. and show North point. Give a C. L.-profile of stream-bed for 500 feet up-stream and 500 feet down-stream from center line of survey. Plot proposed structure in soft pencil only. Do not ink.

IV. REPORT OF EXAMINATION OF BRIDGE-SITE.

Div.____ County____ Route____ Sec.____ Sta.____

Date of survey____ To be built by____

1. Bridge Site____
   - Location____
   - Sec. 22 Twp. 10S Range 80 W Local name Snowden
   - Over Arkansas River Creek____
   - Distance from nearest shipping point 5 Mi. to Malta
2. Source of materials____
   - Sand____ Length of haul to site____ miles____
   - Gravel____ " " " " " ____ " ____
   - Stone____ " " " " " ____ " ____
   - Falsework Timber____ " " " " " ____ " ____
   - Piling____ " " " " " ____ " ____
3. Cost Data.—
   - Cost of following materials at site____
     - Portland Cement____ Per Bbl.
     - Sand, coarse and clean____ " Cu. Yd.
     - Gravel____ " " "
     - Stone____ " " "
     - Falsework Timber____ " Ft. B. M.
     - Piling____ " Lin. Ft.
   - Cost per ton-mile for hauling____
4. Waterway.—
   - Drainage area in Sq. Miles (approximate) 240 (3245 Dunn)
   - Character of watershed Mountainous
   - Elevation of Highest water____ Date____
   - Source of information on water elevation____
   - Elevation of ordinary high water____
   - Elevation of low water Max. Stream Flow = 2900 sec. ft. @ 10 ft. per sec (State Eng. Office)
   - Elevation of permanent ground-water____
   - Is stream ever dry?____ During what months?____
   - Will all flood water pass through recommended structure?____
   - Can channel be cleaned to afford more waterway?____
   - Is stream-bed cutting or silting up? Some Scour at Present South Abutment
   - Is stream stable in its banks?____ Depth of scour?____
   - Does stream carry light, medium, or heavy drift? Light
   - What clearance above high water should be allowed?____
   - Is channel change necessary?____
   - If channel change is necessary, illustrate location on sketch map.
5. Foundation Data.—
   - Character of material Rod Sounding at Sta 401+00 to El. 9295 Shows gravel & boulders
   - Distance from stream-bed to solid foundation____
   - Recommended depth of footings____
   - Should piles be used?____ What length?____ Pile Shoes?____
6. Old Bridge.— 1/4 Mile down Stream
   - If there is no bridge at the present location include here data on nearest bridge over same stream. If possible show location of such bridge or bridges on the map. Photographs if available.
   - Type____ Roadway Width____ Number and length of spans 2 @ 40'-0"
   - Area of waterway provided under old structure 560 Sq. Ft., Elev. of Underclearance 7'
   - Has this area proved sufficient at flood times? Yes Skew Angle____
   - Is it too large?____ Disposition of Existing Structure____
7. Give foundation data on bridges in vicinity. When possible, get pile driving data, logs of borings, etc., for adjoining structures, and where considered advantageous procure plans.
   - Sketch profile of Rail Road Crossing if within 1000 ft. of Highway. (Show X-section of entire waterway.)
   - Elevation of base of Rail____ Elevation of Rail Road Underclearance____
   - Remarks____
8. Recommendations for New Structure.—
   - Type I-Bm. Conc. Width curb to curb 30.0 Number and length of spans 2 @ 52'-0"
   - What is the least clear span permissible?____
   - Are sidewalks desired? No Lighting conduit? No Light standards? No
   - Angle of Skew recommended 60° 00'
   - Will approaches be desired, or will same be filled?____
   - Approximate cost per Cu. Yd. of approach-filling at bridge site?____
   - Is it necessary to maintain traffic alongside old structure?____
   - If so, how shall it be done?____
   - R. R. Siding____ Haul to Bridge Site____ Mi.
   - Remarks____

Submitted by____
Engineer.

NOTE.—When bridge is recommended to be left in place, complete structural details shall be procured from the bridge itself or from existing plans of the structure. When possible these plans shall be forwarded with the plans of the project.

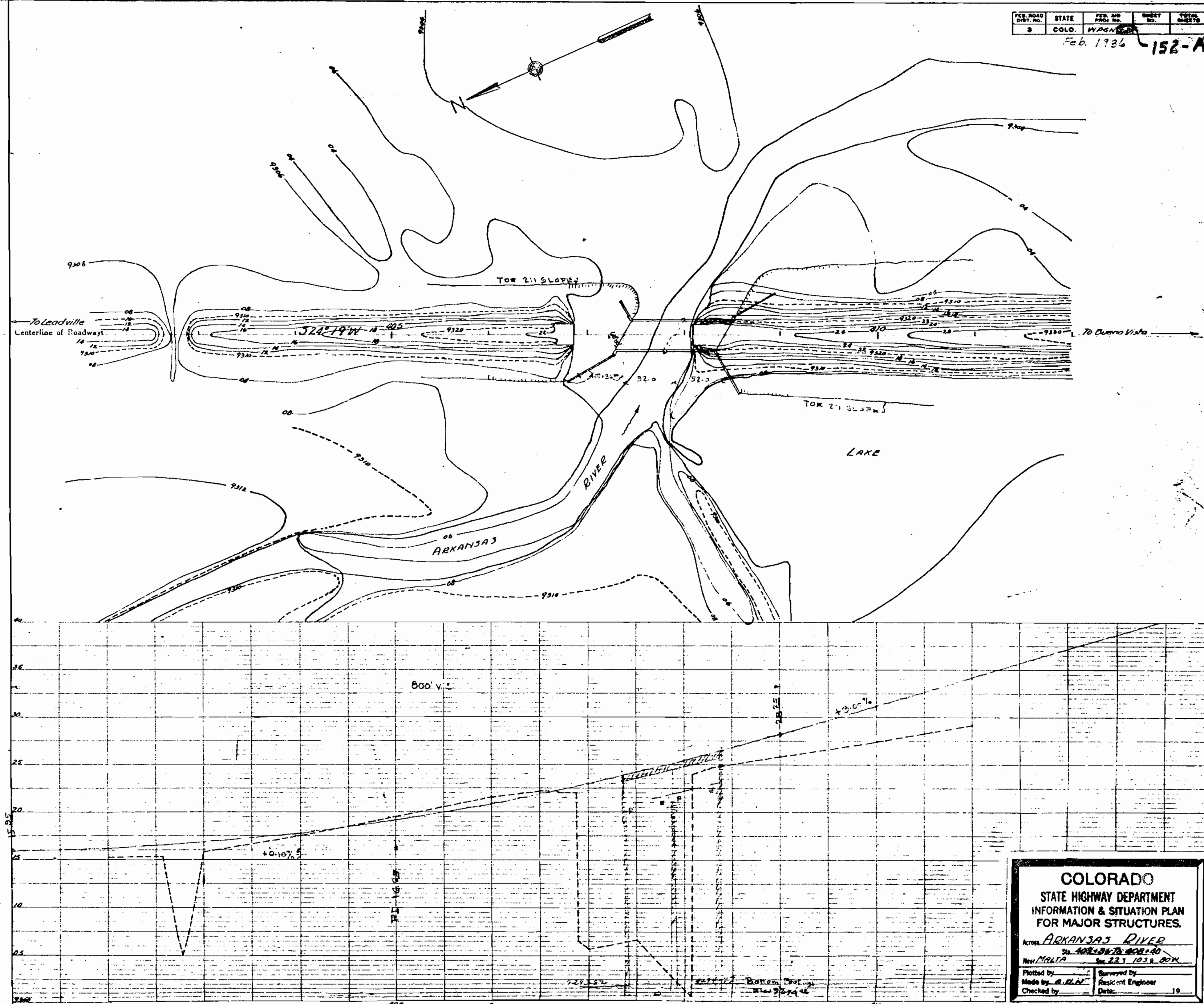
2000; 7-1-1933.

SHEET DATA	
FIELD	NOTE BOOK NO.____ PAGE____
OFFICE	NO.____ PAGE____
Survey / Soundings / Plotted / Layout / B.P.R. Approval / Detail Sheets	BY / DATE

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	WPGH		

Feb. 1936

152-A

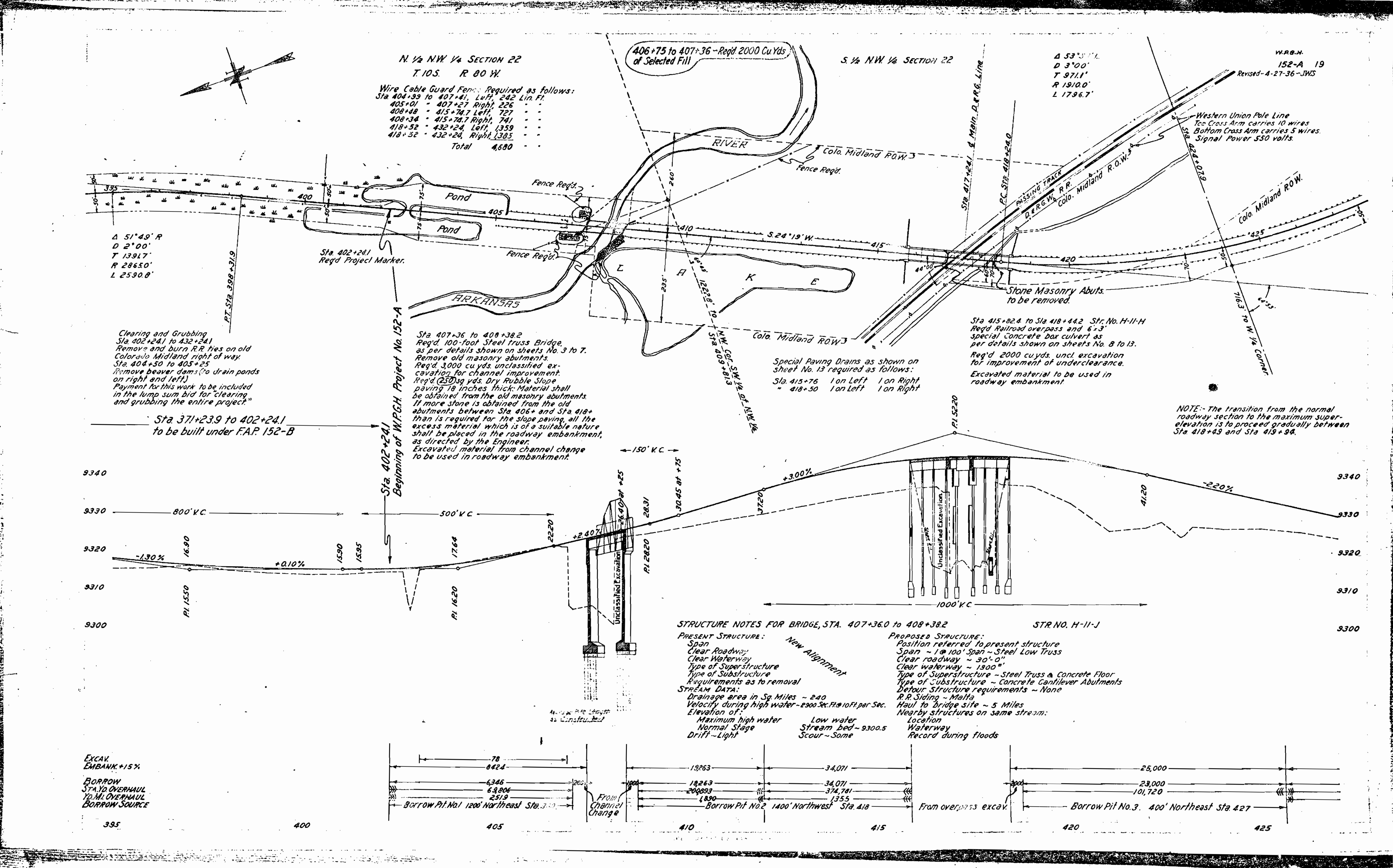


COLORADO
STATE HIGHWAY DEPARTMENT
INFORMATION & SITUATION PLAN FOR MAJOR STRUCTURES.

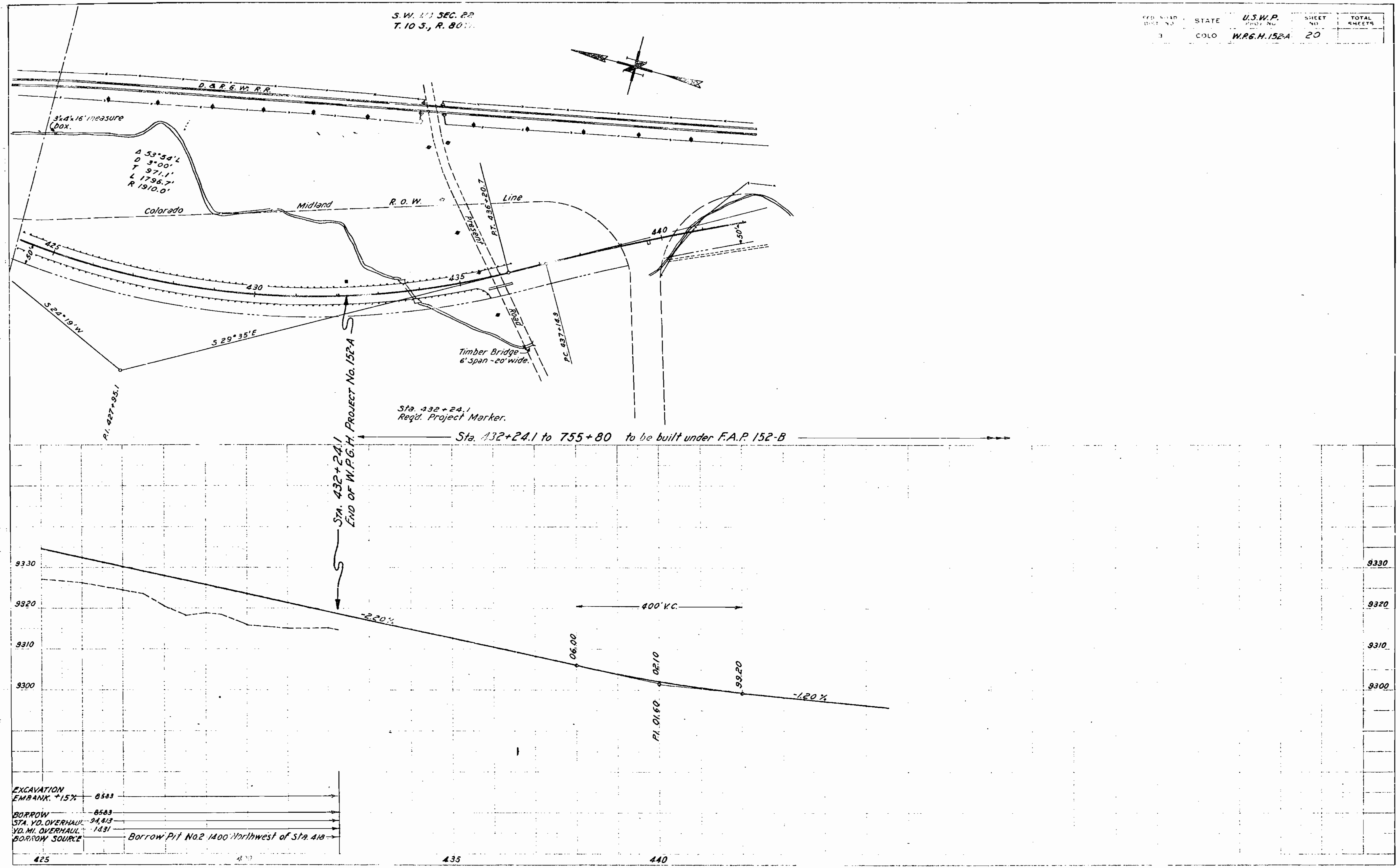
Across ARKANSAS RIVER
Sta. 403+36 To 408+40
Near MALTA Sec. 22 T. 10S R. 80 W.

Plotted by____ Surveyed by____
Made by A.D.W. Resident Engineer
Checked by____ Date____ 19____

STRUCTURE NO.


W.P.G.H.
152-A 19
Revised-4-27-36-JWS
N. ½ N.W. ¼ Section 22
T. 10 S. R 80 W.
Wire Cable Guard Fence Required as follows:
Sta. 404+39 to 407+41, Left, 242 Lin. Ft.
405+01 - 407+27 Right, 226
408+48 - 415+74.7 Left, 727
408+34 - 415+74.7 Right, 741
418+52 - 432+24, Left, 1359
418+52 - 432+24, Right, 1385
Total 4,680
406+75 to 407+36 - Req'd 2000 Cu.Yds. of Selected Fill
S. ½ N.W. ¼ Section 22
Δ 53°
D 3°00'
T 971.1'
R 1910.0'
L 1796.7'
Western Union Pole Line
Top Cross Arm carries 10 wires
Bottom Cross Arm carries 5 wires.
Signal Power 550 volts.
RIVER
Colo. Midland R.O.W.
Fence Req'd.
Pond
Pond
Fence Req'd.
Fence Req'd.
S. 24°19' W.
Sta. 417+24.1 ℄ Main D.&R.G. Line
P.C. Sta. 418+24.0
Passing Track
D.&R.G.W. R.R.
Colo. Midland R.O.W.
Colo. Midland R.O.W.
Sta. 424+07.9
716.3' to W. ¼ Corner
L A K E
ARKANSAS
1222.8' to N.W. Cor. S.W. ¼ of N.W. ¼ Sta. 409+81.3
Stone Masonry Abuts. to be removed.
Δ 51°49' R
D 2°00'
T 1391.7'
R 2865.0'
L 2590.8'
P.T. Sta. 398+31.9
Sta. 402+24.1 Req'd Project Marker.
Clearing and Grubbing
Sta. 402+24.1 to 432+24.1
Remove and burn R.R. ties on old Colorado Midland right of way.
Sta. 404+50 to 405+25
Remove beaver dams (to drain ponds on right and left.)
Payment for this work to be included in the lump sum bid for "clearing and grubbing the entire project."
Sta. 407+36 to 408+38.2
Req'd. 100-foot Steel truss Bridge, as per details shown on sheets No. 3 to 7.
Remove old masonry abutments.
Req'd. 3,000 cu.yds. unclassified excavation for channel improvement.
Req'd. 250 sq.yds. Dry Rubble Slope paving 18 inches thick: Material shall be obtained from the old masonry abutments. If more stone is obtained from the old abutments between Sta. 406+ and Sta. 418+ than is required for the slope paving, all the excess material which is of a suitable nature shall be placed in the roadway embankment, as directed by the Engineer.
Excavated material from channel change to be used in roadway embankment.
Special Paving Drains as shown on sheet No. 13 required as follows:
Sta. 415+76 1 on Left 1 on Right
" 418+50 1 on Left 1 on Right
Sta. 415+82.4 to Sta. 418+44.2 Str. No. H-11-H
Req'd Railroad overpass and 6'×3' special Concrete box culvert as per details shown on sheets No. 8 to 13.
Req'd 2000 cu.yds. uncl. excavation for improvement of underclearance.
Excavated material to be used in roadway embankment.
NOTE:- The transition from the normal roadway section to the maximum superelevation is to proceed gradually between Sta. 418+49 and Sta. 419+94.
Sta. 371+23.9 to 402+24.1 to be built under F.A.P. 152-B
Sta. 402+24.1 Beginning of W.P.G.H. Project No. 152-A
150' V.C.
800' V.C.
500' V.C.
1000' V.C.
-1.30%
+0.10%
+2.40%
+3.00%
-2.20%
P.I. 15.50
P.I. 16.20
P.I. 28.20
P.I. 52.20
Unclassified Excavation
Unclassified Excavation
STRUCTURE NOTES FOR BRIDGE, STA. 407+36.0 to 408+38.2
STR. NO. H-11-J
Present Structure:
Span
Clear Roadway
Clear Waterway
Type of Superstructure
Type of Substructure
Requirements as to removal
Stream Data:
Drainage area in Sq. Miles ~ 240
Velocity during high water ~ 2900 Sec.Ft. @ 10 Ft. per Sec.
Elevation of:
Maximum high water
Normal Stage
Drift ~ Light
Low water
Stream bed ~ 9300.5
Scour ~ Some
New Alignment
Proposed Structure:
Position referred to present structure
Span ~ 1 @ 100' Span ~ Steel Low Truss
Clear roadway ~ 30'-0"
Clear waterway ~ 1900□"
Type of Superstructure ~ Steel Truss & Concrete Floor
Type of Substructure ~ Concrete Cantilever Abutments
Detour Structure requirements ~ None
R.R. Siding ~ Malta
Haul to bridge site ~ 5 Miles
Nearby structures on same stream:
Location
Waterway
Record during floods
Excav.
Embank. +15%
Borrow
Sta. Yd. Overhaul
Yd. Mi. Overhaul
Borrow Source
Borrow Pit No. 1 1200' Northeast Sta.
From Channel Change
Borrow Pit No. 2 1400' Northwest Sta. 418
From overpass excav.
Borrow Pit No. 3. 400' Northeast Sta. 427
395 400 405 410 415 420 425

FED. ROAD DIST. NO.	STATE	U.S.W.P. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO	W.P.G.H. 152-A	20	



S.W. 1/4 SEC. 22
T. 10 S., R. 80 W.
D. & R. G. W. R.R.
3'x4'x16' measure box.
Δ 53°54' L
D 3°00'
T 971.1'
L 1796.7'
R 1910.0'
Colorado
Midland
R. O. W.
Line
Present Road
P.T. 436+20.7
P.C. 437+16.9
425
430
435
440
50'
S 24°19' W
S 29°35' E
P.I. 427+95.1
Timber Bridge 6' Span - 20' wide.
Sta. 432+24.1 Req'd. Project Marker.
Sta. 432+24.1 to 755+80 to be built under F.A.P. 152-B
Sta. 432+24.1 End of W.P.G.H. Project No. 152-A
9330
9320
9310
9300
-2.20%
400' V.C.
06.00
02.10
99.20
P.I. 01.60
-1.20%
EXCAVATION
EMBANK. +15% 8583
BORROW 8583
STA. YD. OVERHAUL 94,813
YD. MI. OVERHAUL 1831
BORROW SOURCE Borrow Pit No. 2 1400' Northwest of Sta. 418