COLORADO
STATE HIGHWAY DEPARTMENT

PLAN AND PROFILE OF PROPOSED
FEDERAL AID PROJECT NO. 242-D
STATE HIGHWAY NO. 4.
MESA COUNTY

INDEX OF SHEETS

SCALES

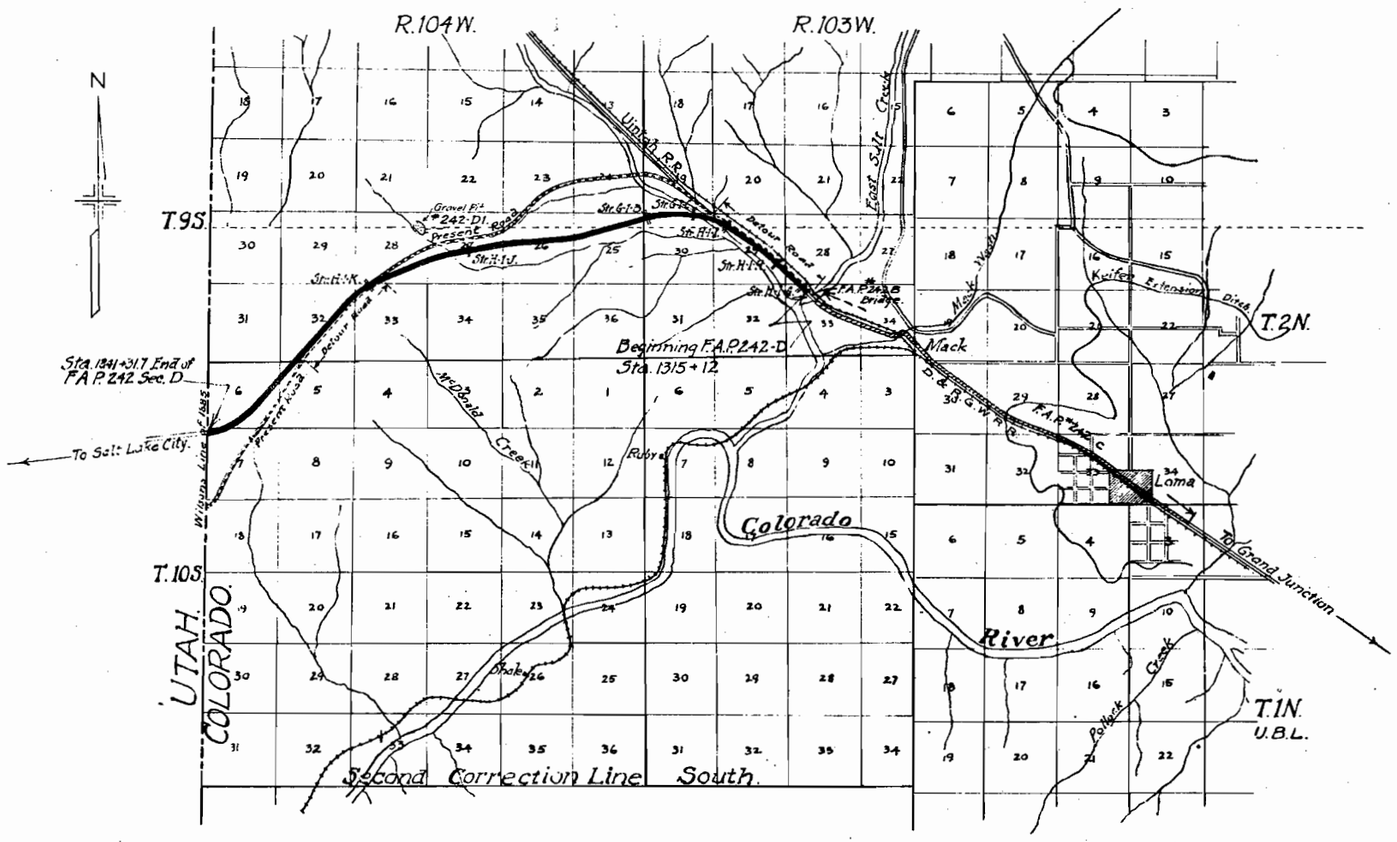
ON PLAN, 1 IN. = 100 FT.
ON PROFILE { (1 IN. = 100 FT. HORIZONTAL
(1 IN. = 10 FT. VERTICAL

GRADE LINE ON PROFILE IS SHOWN AS GRADE OF FINISHED ROAD

GROSS LENGTH OF PROJECT } 52.1830 FT. = 9.883 MI.
NET LENGTH OF PROJECT }

CONVENTIONAL SIGNS

Center Line of Improvement
Section Line
℄ -
R.O.W -
Fence -
Pole -



Scale-1in = 1mi.

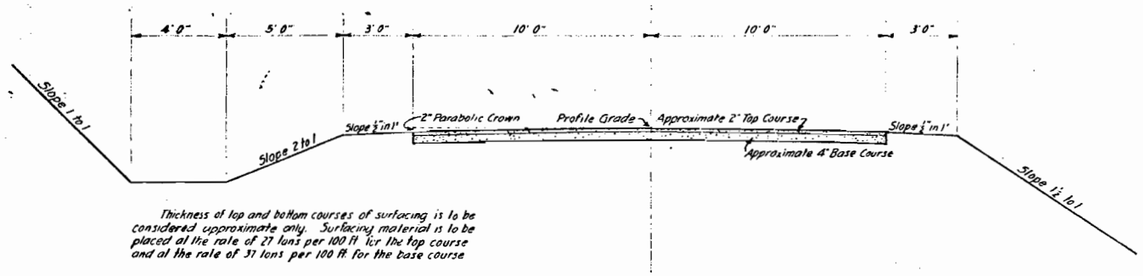
RECOMMENDED FOR APPROVAL 2/17, 20
ASSISTANT ENGINEER
APPROVED
STATE HIGHWAY ENGINEER
RECOMMENDED FOR APPROVAL
DIST. ENG. SUPERVISOR
RECOMMENDED FOR APPROVAL
CHIEF ENGINEER
APPROVED
DIRECTOR

TYPICAL CROSS SECTION OF IMPROVEMENT AND SUMMARY OF QUANTITIES

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.
2	COLO.	242-D	5

Rev. Mar 16 1931 A.J.S.
Rev as Constr. Mar 9 1932 J.G.Q. & J.E.P.

TYPICAL CROSS SECTION



Thickness of top and bottom courses of surfacing is to be considered approximate only. Surfacing material is to be placed at the rate of 21 tons per 100 ft. for the top course and at the rate of 31 tons per 100 ft. for the base course

GENERAL NOTES

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

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 ditch as shown on the Typical Section, either noted as "Borrow" on the Plans or as "Embankment" in the Structure List, 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 Plans. Slope stakes beyond the limits of the typical ditches as shown are subject to change by the Engineer to fit embankment requirements actually encountered during construction.

The Department estimates that surfacing material for project will be obtained from the vicinity of Pit No 2820 on the Title Sheet. This plan involves approximately 82.000 ton miles of overhaul on Gravel Surfacing. It is estimated that approximately 50.000 tons of material can be obtained from this locality. If the Contractor, for his own convenience, elects to use a plan other than the above, overhaul in excess of that under the Department's plan will not be allowed.

Stock piles of Surfacing Material, each to contain approximately 100 tons, are to be placed approximately ¼ mile apart as directed by the Engineer. This material is for maintenance operations after the completion of the project.

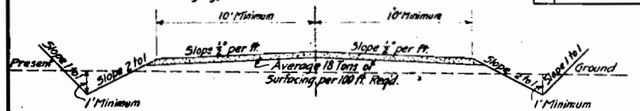
Curves shall be superelevated to an amount as determined by the following formula: Superelevation in feet = 0.0105 D W, in which D = degree of curvature and W = width of roadway in Feet. A superelevation of 0.0833 ft per ft width of roadway shall not be exceeded. The inside edge of the pavement is to remain 0.125 ft. below the profile grade. The section is to be standard except that a flat crown is to be used. The change from standard section to superelevated section is to take place over a distance of 120 ft. half on curve and half on approaching tangent.

The entire Project is to be cleared for the full width of the right of way and the cost there of is to be included in the lump sum price for Clearing and Grubbing the Entire Project. Approximate location and character of Clearing and Grubbing required are indicated in notes on plans.

All pipe cross culverts are to be provided with one headwall on the inlet and unless otherwise noted. Side drains do not require headwalls unless same are called for on plans.

Gates in right of way fences are to be provided opposite all side drains and at other places indicated on plans.

Between Stations 1315+12 and 1400 and Stations 1642 and 1728 where the new work is upon the present traveled roadway, the Contractor shall construct detours approximately parallel to new construction. Detour road shall be built in accordance with the following typical cross section:



Material from ditches is to be bladed to form subgrade for surfacing in accordance with Typical Section.

Quantities involved in Detour:
Blading and Grading Detour, 3.56 Miles
Surfacing for Detour, 3556 Tons
Overhaul on Surfacing for Detour, 11,124 Ton Miles.

SUMMARY OF CONSTR. QUANTITIES

No	Item	Unit	Roadway	Bridges	Total
10a	Clearing and Grubbing Entire Proj.	Lump Sum	•		•
11	Removing Two Culverts	" "	•		•
12a	Fence	Lin. Ft	7700		7700
13c	Unclassified Excavation	Cu Yd	130,608.5	280.5	130,889
14a	Dry Rock Excavation	" "	233.1	64.9	298
14b	" Common "	" "	8705	694.9	1565.4
14c	Wet Rock "	" "		136	136
14d	" Common "	" "		200	200
15a	Station Yard Overhaul	Sta Yd.	83,854		83,854
30a	Gravel or Crushed Rock Surfacing	Ton	33050		33050
30b	Overhaul of " " " "	Ton Mi.	87,666		87666
42a	Untreated Bridge Timber	M Ft B.m.	05	32	37
43a	Treated Bridge Timber	M Ft B.m.	10.2	75.85	86.05
45a	Asphalt Plank Wearing Surface	Sq Ft.	500	4425	4925
46a	Class "A" Concrete	Cu Yd.	104.69	620.11	724.8
46b	Class "B" "	" "	80.85	8.6	89.45
47	Reinforcing Steel	Lb.	6986	83680	95666
53a	15" Curr. Metal Culvert Pipe	Lin. Ft	172		172
53b	18" " " " "	" "	1251		1251
53c	24" " " " "	" "	752		752
53e	36" " " " "	" "	307		307
60c	Metal Pile Shoes	Each	24	217	241
72	Wire Cable Guard Fence	Lin. Ft.	3000	3660	6660
75a	Oak'y Barbed Wire Fence	" "	1423		1423
75b	Gates in Oak'y Barbed Wire Fence	Each	4		4
78	Project Markers	"	2		2
79	Right of Way Markers	"	41		41
60a	Treated Timber Piling	Lin. Ft	448	4707	5155
30c	Overhaul on Surfacing for Detour	Ton Mile	11124		11124
30x	Surfacing for Detour	Ton	3556		3556
100	Blading and Grading Detour	Mile	3.56		3.56
84a	Removal of Disused Bridge, Sta. 1320+	Lump Sum		•	•
84b	" " " " " 1344+	" "		•	•
84c	" " " " " 1666+	" "		•	•
90	Drain Pipe and Flange	Each	2	16	18
18b	Yard Mile Overhaul	Yd. Mi.	364		364
48	Structural Steel	Lb.		334932	334932
66	Rip Rap Enclosed in Wire Netting	Cu. Yd.		428	428
81	Bronze Name Plates	Each		2	2
82	Sheet Copper	Lb.		490	490
89	Drain Pipe	Each		36	36
96	Combination Woven Wire Fence	Lin. Ft.			8586
	ITEMS NOT RECEIVING FEDERAL AID				
30b	Overhaul of Gravel or Cr. R. Surfacing	Ton Mi	5684.4		5684.4
32	Replacement " " " "	Ton	2109		2109

Wire Cable Guard Fence

Station	Left	Right
1317+67 to 1320+67	300	300
1321+33 to 1324+33	300	300
1343+72 to 1344+72	100	100
1345+10 to 1349+10	400	400
1391+22 to 1391+72	50	50
1391+93 to 1392+43	50	50
1410+34 to 1414+14	380	
1452+20 to 1452+70	50	50
1452+96 to 1453+46	50	50
1590+50 to 1591+00	50	50
1591+20 to 1591+70	50	50
1627+00 to 1633+00	600	600
1665+10 to 1666+10		100
1666+35 to 1668+35		200
1685+50 to 1689+00		350
1812+10 to 1815+50	350	350
1409+84 to 1410+34		50
1410+84 to 1414+14		330
1689+50 to 1695+00		550
Totals	2730	3930

Galvanized Barbed Wire Fence

Station	Remove Left	Remove Right	Build Left	Build Right
1620+94 to 1667+20	4354			
1648+50 to 1682+50		3346		
1621+13 to 1638+08			1423	
			•	
Totals	4354	3346	1423	

R.O.W. Markers

3 at	1315+12
2 "	1338+84
2 "	1360+45
2 "	1383+85
4 "	1400+08
2 "	1458+30
2 "	1471+85
2 "	1513+45
2 "	1540+10
2 "	1586+77
2 "	1593+40
2 "	1620+95
2 "	1652+00
2 "	1682+43
2 "	1722+15
2 "	1744+58
2 "	1765+70
2 "	1805+90
2 "	1841+31.7
41 Total	

Gates

1 at left of 1623+50

1 - Right - 1651+00
2 - 1665+00

4 Total

Combination Woven Wire Fence

Station	Left	Right
1637+71 to 1682+02		4464
1638+08 to 1652+50	1442	
1656+21 to 1682+82	2680	
Totals	4122	4464

LIST OF STRUCTURES

Station	Description	Remove Structures	Reinforcing Steel Lbs.	Unclassified Excavation Cu. Yds.	Embankment Cu. Yds.	Concrete Cu. Yds. Class "A"	Concrete Cu. Yds. Class "B"	Str. Excav. Cu. Yds. Dry Rock	Str. Excav. Cu. Yds. Dry Com.	Str. Excav. Cu. Yds. Wet Rock	Str. Excav. Cu. Yds. Wet Com.	Corrugated Metal Pipe Lin. Ft. 15"	18"	24"	30"	36"	Unit Bridge Timber M.F.B.M.	Treated Br. Timber M.F.B.M.	Asphalt Wear. Surface Sq. Ft.	Tr. Timber Piling Lin. Ft.	Metal Pile Shoes Each	Creos. Pipe Lin. Ft.	Flange Sets Each
1315+12	Project Marker																						
1321+00	Remove Bridge																						
1320+81 to 1321+42	Bridge (Quantities in Summary)																						
1323+00	C.M.P. Culvert						1.1		8.3				40										
1333+00	" "						1.1		9.7				34										
1338+50	Side Drain Rt Appr & Dr Ditch Rt.			10					3.8			60											
1343+80	C.M.P. Culvert & Dr Ditch Lt			4.4			1.65		12.8					36									
1348+50	Remove Bridge																						
1344+71 to 1354+91	Bridge (Quantities in Summary)																						
1354+50	C.M.P. Culvert						1.1		10.3						36								
1811+50	Drain Ditch Lt.			5.5																			
1376+15	C.M.P. Culvert						1.1		8.2						36								
1382+50	" " & Dr Ditch Lt.			64.7			1.1		17.0						34								
1387+00	" "						1.1		7.8						34								
1391+60	Remove Culvert	1																					
1391+78 to 91-93	Bridge and Channel Excavation			386			2.37		86.2							0.5	10.2	507	448	24	2		
1410+00	Drain Ditch			116.9																			
1403+68 to 1414+34	" " Rd Appr & C.M.P. Culvert			15.7			1.1		14.5						34								
1417+73.33	Concrete Bridge →																						
1411+52	Two Side Drains (Quantities in Summary)								2.0			60											
1423+80	C.M.P. Culvert						1.1		15.7						38								
1429+00	" "						1.65	0.3	3.6					38									
1434+50	" " & Dr. Ditch Lt.			2.1			1.65	4.0	6.8					34									
1442+50	" " " " "			3.3			1.65	0.7	6.9					38									
1447+80	" "						1.1		2.2						38								
1452+10 to 1452+65	Bridge (Quantities in Summary)																						
1452+85	Ditch			1479.6																			
1459+35	C.M.P. Culvert						1.1	2.7	0.3						46								
1512+50	" "						3.0	5.8	7.4							48							
1525+35	" "						1.65	2.5	23.6					50									
1531+17	" "						1.1	4.4	11.9						48								
1538+94	" "						1.65	5.6	20.7					52									
1545+30	" " & Drain Ditch Lt. & Rt			54.0			1.83	6.3	9.2					50									
1550+65	" " " " "			2.5			1.1	3.3	10.3					42									
1553+50	" "						1.1	3.3	9.6					40									
1556+00	" "						1.65	2.5	12.7					44									
1561+00	" "						1.1	2.2	2.6						38								
1563+60	Double C.M.P. Culvert					•	3.8		15.3							76							
1567+00	C.M.P. Culvert						1.65		21.4					42									
1569+43	" "						1.65		11.4					42									
1574+20	" "						1.65		11.4					40									
1576+12	" "						1.1		11.6						38								
1684+50 to 1721+60	Drain Ditch Lt.			1717.5																			
1582+25	Concrete Box Culvert 6'-4"×4'-33°			2742	363.4	41.15				498	38.3												
1591 to 91+25	Bridge (Quantities in Summary)																						
1826+60	C.M.P. Culvert						1.1		6.3						44								
1603+50	" "						1.65		11.7					40									
1610+50	" "						3.8		2.41							72							
1591 to 1703+50	Intercepting Ditch & Dr Ditch Rt.			1795.2																			
1615+80	C.M.P. Culvert						1.65		15.4					40									
1623+50	" " and Channel Excavation			752.3			1.1		22.8						60								
1628+50	Concrete Box Culvert 6'-6"×43'			424	540.5	63.54				743	166.1												
1652+00	C.M.P. Side Drain and Approach								11.2						34								
1656+00	" "								3.3				52										
1666+20	Bridge Removal and Ditch Exc.				280.5																		
1666+10 to 1668+35	Bridge (Quantities in Summary)																						
1667+80	Approach Road & C.M.P. Culvert								4.7						34								
1674+68	Remove Culvert	1																					
1674+68	Double C.M.P. Culvert & Dr. Ditch Rt.				19.4		3.8		34.1							72							
1735+00	C.M.P. Culvert & Dr Ditch Rt & Lt.				53.8		1.1	0.4	15.4						34								
1742+00	" " " " " " "				35.7		1.65		6.8					36									
1746+00	" " " " " " "				18.9		1.1		2.7						38								
1759+08	" " " " " " "				61.5		1.65		11.5					36									
1764+50	" " " " " " "				56.3		1.1		10.1						36								
1768+00	" " " " " " "				52.8		1.65		12.1					36									
1773+00	" " " " " " "				27.3		1.1		5.6						40								
1785+75	" " " " " " "				39.5		3.0		15.7							38							
1799+25	" " " " " " "				22.9		1.1	7.3						42									
1805+06	" "						1.1	2.0	1.2					38									
1813+80	" " " " " " "				3.2		1.63	18.9	7.4					74									
1815+00	" " " " " " "				1.9		1.1	11.7						46									
1817+25	" " " " " " "				30.5		1.1	4.6	3.8					36									
1820+99	" " " " " " "				34.8		1.65	9.8	2.4						44								
1830+00	" " " " " " "				4.9		1.1	10.7	0.7					36									
1833+50	" " " " " " "				8.5		1.1		2.4					36									
1837+88	" " " " " " "				15.3		1.65		34.9						46								
1841+31.7	Project Marker																						
1841+00	C.M.P. Culvert								11.7						34								
1332+00	C.M.P. Culvert (Salvage)								1.2														
1353+75	" " "								1.3														
	C.M.P. Bands														3	8		1					
1730 to 1731+50	Drain Ditch Rt.				2801.																		
1819+50	Drain Ditch Rt				6.6																		
Totals		2	6986	10,894.3		104.69	80.85	233	870.5			172	1251	752			307	0.5	10.2	507	448	24	2

P-115-A

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	342-D	3	

Revised May 27, 1930 by EBW
Revised Sept. 18, 1930 by EBW

Nailing Directions

Nails to Posts: 2-40d nails per rail per joint.
Stringer Blocking: 4-40d nails per block.
Stringer Bridging: 4-20d nails per piece to edge of Stringers to Caps: 4-40d nails per stringer.
Sway Braces to Posts: 2-Tree spikes per brace per pile and bolts as called for.
Bulkheads to Caps & Stringers: 2-Tree spikes per bulkhead per stringer. Also 2-Tree spikes per backing plank per pile.
Sway braces to Caps: 2-Tree spikes per brace per cap and bolts as called for.
Floor planks to Floor planks use 1-40d nails at 12" crs. and toe nail planks to stringers with 1-30d nail per stringer every other floor plank.
Asphalt Plank to Laminated Wood Floor: one 40d nail per corner per plank and 30d galvanized nails @ 6" crs along each edge of planks, nails along edges of planks to be stagger nails along opposite edge of same plank.

Typical Elevation of Span

Section "B-B"

Section "C-C"

Floor Drain Detail

Plan View Wheel Guard Splice

Typical Sectional Plan of Spans Open Abutments Shown

Plan of Abutment with Horizontal Bulkheads & Backing Planks

Section "D-D" Floor Construction

Half Section "F-F" Typical Bent & Span Section

Type No. 1 Half End Elevation Horizontal Bulkhead & Backing Planks

Plan Pile Shoe Detail Cast Iron

One Abutment

Piling-Treated	5	Pcs. @	28.0	Long	140	Lin. Ft.	
Treated Timber							
Backing Planks	3	Pcs. @	28.0	Long	84	Lin. Ft.	
					112.5	Bd. Ft.	
Cap	1	Pcs. 12"x 14"	30'-0"	Long	140	Bd. Ft.	
Timber Header	1	Pcs. 6" x 8"	16'-0"	Long	64	Bd. Ft.	
Bulkheads	3	Pcs. 2" x 12"	28'-0"	Long	168	Bd. Ft.	
Stringer Blocking	—	Pcs. 3" x 6"	2'-10"	Long	5	Bd. Ft.	
Flooring Size	—	Pcs. 3" x 6"	20'-0"	Long	115	Bd. Ft.	
					3.5	M.	
Total Treated Timber					2204	Bd. Ft.	
Untreated Timber							
Hand Rail Posts	2	Pcs. 6" x 6"	4'-0"	Long	24	Bd. Ft.	
Total Untreated Timber					24	Bd. Ft.	
Asphalt Plank Wearing Surface 1½" Thick					125	Sq. Ft.	

One Bent

Piling-Treated	5	Pcs. @	28.0	Long	140	Lin. Ft.	
Treated Timber							
Stringer Blocking	1	Pcs. 6" x 10"	16'-0"		160	Bd. Ft.	
	—	Pcs. — x 10"	—		—	Bd. Ft.	
Cap	1	Pcs. 12" x 12"	30'-0"		360	Bd. Ft.	
Sway Braces	2	Pcs. 3" x 12"	30'-0"		60	Bd. Ft.	
Stringer Splices (SIS)	2	Pcs. 6" x 20"	4'-0"		80	Bd. Ft.	
Total Treated Timber					780	Bd. Ft.	
Total Untreated Timber (Hand Rail Posts)					24	Bd. Ft.	

One Wing

Description	Length of Wings 10'-0"	
Piling-Treated	3 @ 20 Lin. Ft.	60 Lin. Ft.

Treated Timber

Curb Planks	4" x 6"	1 @ 10'-0"	20	Bd. Ft.	
Backing Planks Type 2 Wing Stringer	Number 3	Size 2"x 12" x 10'-0"	20	Bd. Ft.	
Total Treated Timber			340		
Untreated Timber					
Hand Rails S4S	Number 1	Size 3"x 8" x 10'-0" = 20 Bd. Ft.			
	Number 1	Size 2"x 8" x 10'-0" = 14 Bd. Ft.			
Hand Rail Posts S4S	Number 3	Size 6"x 6" x 4'-0"	24	Bd. Ft.	
Total Untreated Timber			58	Bd. Ft.	

One Span of Superstructure

Untreated Timber	19 Ft. Span			27 Ft. Span		
Description	Number	Size		Number	Size	
Hand Rails S4S	2	3"x 8" x 10'-0"		2	3"x 8" x 10'-0"	
	Number	Size		Number	Size	
Hand Rail Posts S4S	6	6"x 6" x 4'-0"		8	6"x 6" x 4'-0"	
Total Untreated Timber	1938 Bd. Ft.			2676 Bd. Ft.		
Treated Timber						
Decking	Number 91	Size 3"x 6" x 20'-0"		130	3"x 6" x 20'-0"	
Bridging	Number 4	Size 2"x 4" x 5'-0"		4	2"x 4" x 5'-0"	
Wheel Guards	Number 2	Size 6"x 8" x 20'-0"		2	6"x 8" x 20'-0"	
Stringers (Top Flooring & Sway Only)	Number 3	Size 8"x 20" x 20'-0"		3	8"x 20" x 27'-0"	
Total Treated Timber (Single Span)						
Total Treated Timber (Multiple Spans)	5400 Bd. Ft.			9009 Bd. Ft.		
Asphalt Plank Wearing Surface	4755 Sq. Ft.			6758 Sq. Ft.		
	5225 Sq. Ft.			7421 Sq. Ft.		

Bolts & Washers for One Span of Superstructure

Description	Size	19 Ft. Span No.	Lgth.	Lbs.	No.	27 Ft. Span Lgth.	Lbs.
Posts to Rails	⅝"	8	10"	10	8	10"	12
Posts to Wheel Guards	⅝"	2	12"	3	2	12"	3
Posts to Stringers	⅝"	12	15"	19	16	15"	28
Posts to Str. Splices	⅝"	4	21"	5	4	21"	5
Posts to Caps	⅝"	2	22"	5	2	22"	5
Wheel Guards to Stringers	⅝"	10	36"	34	14	36"	48
Stringer Splices	⅝"	12	15"	19	12	19"	23
Washers Std. C.I.O.G.	⅝"	112	—	84	136	—	102
Total Weight							240

Bolts & Washers for One Bent

Description	Bolts	Size	Number	Length	Weight Each	Weight
Caps to Piles	Bolts	⅞"	5	24"	3.5 Lbs.	18 Lbs.
Sway Braces to Piles	Bolts	⅝"	2	22"	2.18 Lbs.	4 Lbs.
Sway Braces to Caps	do	⅝"	2	18"	2.33 Lbs.	5 Lbs.
Washers Std. C.I.O.G.		⅝"	34		0.53 Lbs.	18 Lbs.
Sway to Cap & Post	Bolts	⅝"	2	20"	2.0 "	4 "
Total Weight						59 Lbs.

Bolts & Washers for One Abutment

Caps to Piles	Bolts	⅞"	6	24"	3.5 Lbs.	21 Lbs.
		⅝"	2			4
		⅝"	2			4
Timber Header to Cap		⅝"	2			4
Timber Header to Floor	Lag screws	⅝"	13		0.63 "	8 Lbs.
Std. Cast Iron O.G.	Washers	⅝"	13		0.50 Lbs.	7 Lbs.
Std. Cast Iron O.G.	Washers	⅞"	1		0.75 Lbs.	1 Lbs.
Total Weight						57 Lbs.

Bolts & Washers for One Wing

Posts to Rails	Bolts	⅝"	3	10"	1.14 Lbs.	4 Lbs.
Posts to Piles	do	⅝"	6	22"	2.18 Lbs.	13 Lbs.
Piles to Curb Planks	do	⅝"	3	22"	2.18 Lbs.	7 Lbs.
Std. Cast Iron O.G.	Washers	⅝"	24		0.35 Lbs.	8 Lbs.
Total Weight						32 Lbs.

Nails

Description	Item	19 Ft. Span	27 Ft. Span
One Span of Superstructure	16d Common	2 Lbs.	4 Lbs.
	40d Common	136 Lbs.	252 Lbs.
One Bent	40d Common	6 Lbs.	— Lbs.
One Abutment	40d Common	6 Lbs.	— Lbs.
	7 Wire Splices	2.7 Lbs.	— Lbs.
One Wing	11 Wire Spikes	7 Lbs.	— Lbs.

Summary for Hardware

1	Spans @ 1	6.2 Lbs. per span equals		6.2	Lbs.
2	Bents @ 5.9	Lbs. per Bent equals		11.8	Lbs.
2	Abut's @ 52	Lbs. per Abutment equals		104	Lbs.
3	Wings @ 34	Lbs. per Wing equals		102	Lbs.
	Total Weight			224	Lbs.

Description	20d Common Each	20d Common Total	30d Common Each	30d Common Total	40d Common Each	40d Common Total	7 Wire Spikes Each	7 Wire Spikes Total
1 Spans	2.4	2	22.5	22.5	135.4	135.4	—	—
2 Bents	—	—	—	—	—	—	4	8
2 Abutments	—	—	—	—	—	—	4	8
3 Wings	—	—	—	—	—	—	4	12
Total Weight		2		22.5		135.4		28

★ This includes 20 d 3" Spikes for Asphalt Plank Surface

Summary of Quantities

Untreated Timber						
1 Spans	@ 1	55.4 Bd. Ft.	Each		55.4	Bd. Ft.
2 Bents	@ 1	48 Bd. Ft.	Each		48	Bd. Ft.
2 Abutments	@ 1	48 Bd. Ft.	Each		48	Bd. Ft.
3 Wings	@ 1	2.32 Bd. Ft.	Each		232	Bd. Ft.
				Total	381	M. Ft.
Treated Timber						
1 Spans	@ 1	10,343 Bd. Ft.	Each		10,343	Bd. Ft.
2 Bents	@ 780	Bd. Ft.	Each		1560	Bd. Ft.
2 Abutments	@ 2204	Bd. Ft.	Each		4408	Bd. Ft.
3 Wings	@ 340	Bd. Ft.	Each		1360	Bd. Ft.
				Total	17671	M. Ft.
Piling-Treated						
2 Bents	@ 140	Lin. Ft.	Each		280	Lin. Ft.
2 Abutments	@ 140	Lin. Ft.	Each		280	Lin. Ft.
3 Wings	@ 60	Lin. Ft.	Each		180	Lin. Ft.
				Total	856	Lin. Ft.

Structural Excavation
Dry Common — 54 Cu. Yds.
Wet Common — 16 Cu. Yds.

Asphalt Plank		Wearing Surface			
1 Spans	@ 1	92.5 Sq. Ft.	Each	162.5	Sq. Ft.
2 Abutments	@ 1	35 Sq. Ft.	Each	70	Sq. Ft.
			Total	1625	Sq. Ft.
Asphalt Felt 32" Wide					
2 Abutments	@ 1	36 Sq. Ft. ea.		72	Sq. Ft.
2 Spans	@ 29.7	34 Sq. Ft. ea.		1735	Sq. Ft.
			Total	1765	Sq. Ft.
Drain Pipe 8" Flange	3" Std. Pipe 26" long with 1 — 3" C.I. Flange			6	Pieces
Pile Shoes-Cast Iron @ 35 Lbs. each			Total	11	Shoes

General Notes

All work shall be done in accordance with The Standard Specifications of the Colorado State Highway Department adopted Jan. 1, 1930.

Piles, Sheet Piling, Wales, Bulkheads, Backing Planks, Timber Headers, Anchorages, Caps, Stringers, Stringer Blocking, Bridging, Dirt Stops, Wing stops & Wheel Guards, Stringer Splices and Flooring shall be creosoted.

Handrails & Handrail Posts shall not be creosoted.

Handrails & Handrail Posts shall receive two coats of paint. Paint shall be 10% pigment and 30% raw linseed oil, said dryer. Pigment shall be of 85% white lead, 20% zinc white and not over 15% inert.

Standard C.I.O.G. washers shall be used under each bolt head & nut.

All caps shall be edged to even depth during treatment.

All timber including piles shall be Southern Long Leaf Yellow Pine or West Coast Douglas Fir.

All Coast region Douglas Fir, Lumber and Timber must meet the requirements of the Pacific Lumber Inspection Bureau before treatment and each carload of creosoted or untreated timber shall be accompanied by a Pl. I. B. certificate. This is to be done without additional cost to the State.

All Stringers which are to be treated shall be dapped on one edge at the ends one-fourth inch (¼") off nominal size before treatment to insure even depth over caps.

All Stringer Splices and Stringer Blocking shall be surfaced one edge one-half inch (½") off nominal size before treatment.

Bid price of Asphalt Planks shall include all labor & material for finished Asphalt Plank Wearing Surface in place on bridge floor with one layer of Asphalt felt between the laminated wood floor and the asphalt planks and all nails necessary to fasten asphalt plank to laminated wood floor.

Structure Required

No. of Spans @	1	2	Ft.	Type of Abutment			
Top Roadway To Ground	5	Ft. At	N. End	2	Ft. At	S. End	
Length of Wings	10	Ft. At	N. End	10	Ft. At	S. End	

Loading Data

Live Load: A.A.S.H.O. July 1927 Class "H"
Dead Load: Assumes 150 Lbs. per cu. ft. Treated Timber
Asphalt Plank Wearing Surface 2" thick included in Dead Load

Colorado State Highway Department

Timber Trestle with 6" Laminated Floor

Across: Sta. 2400+41 ℄ 32+34
Near: Mack — Sec. 13 T 8 S R 103 W

Designed by	Approved by
Made by EBW	J. J. Bailey, Bridge Engineer
Checked by EBW-PCB	Date: May 22, 1929.

P-115-A

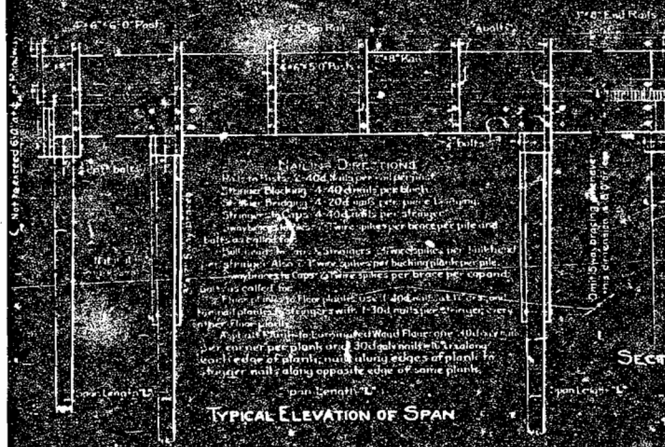
H-1-G

P-115-A

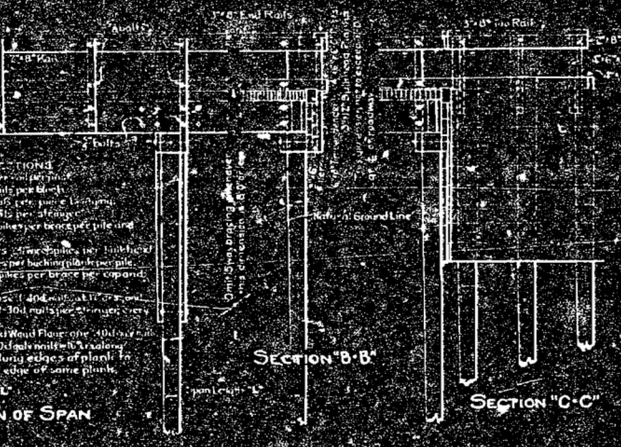
ROAD SYSTEM	STATE	SECTION	PROJECT
	6010	242-D	4

Revised May 31 1930 by EEV
Revised Sept. 19 1930 by EEV

Typical Elevation of Span



Section "B-B"



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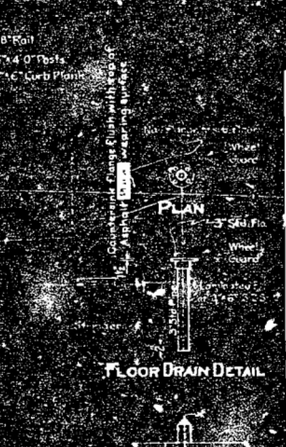
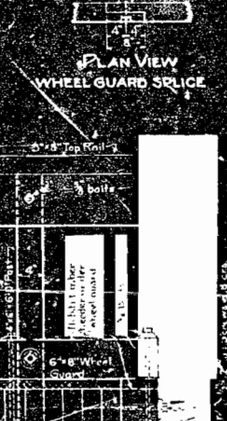


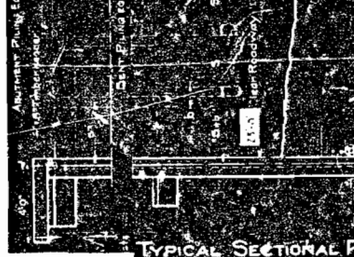
Plan View Wheel Guard Splice



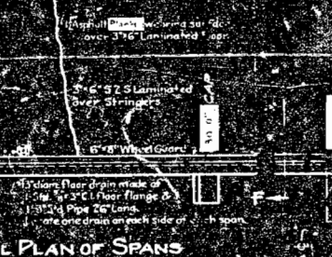
Typical Sectional Plan of Spans
Open Abutments Shown

Sectional Plan of Abutment with Horizontal Bulkheads & Backing Planks

Half Section "F-F"
Typical Bent & Span Section



Type No. II
Half End Elevation
Horizontal Bulkhead & Backing Planks



Section "D-D"
Floor Construction

Plan
Pile Shoe Detail
Cast Iron

One Abutment

Piling-Treated	6	Piles @	20'-0"	Long	120

Treated Timber

Cap	1	Pcs	8"x 16"	26'-0"	Long	360	Bd Ft
Timber Header	3	Pcs	6"x 8"	23'-0"	Long	184	Bd Ft
Bulkheads	3	Pcs	3"x12"	8'-0"	Long	216	Bd Ft
Stringer Blocking	1	Pcs	4"x 12"	2'-8"	Long	13	Bd Ft
	1	Pcs	4"x 20"	3'-11"	Long	21	Bd Ft
	1	Pcs	4"x 12"	2'-8"	Long	13	Bd Ft
	1	Pcs	4"x 20"	3'-11"	Long	21	Bd Ft
						119	
	3	Pcs	3"x 12"	26'-0"		90	Bd Ft
Total Treated Timber						1032	Bd Ft

Untreated Timber

Handrails	2	Pcs	2"x 6"	26'-0"		52	Bd Ft
Total Untreated Timber						52	Bd Ft
Asphalt Felt 32" wide						14	Sq Ft
Asphalt Plank Wearing Surface						12.6	Sq Ft

One Bent

Piling-Treated	5	Piles @	20'-0"	Long	100	Lin Ft

Treated Timber

Stringer Blocking	4	Pcs	4"x 20"	2'-8"	Long	134	Bd Ft
	4	Pcs	4"x 20"	3'-11"	Long	196	Bd Ft
Cap	1	Pcs	12"x 12"	30'-0"	Long	360	Bd Ft
Sway Braces	2	Pcs	3"x 12"	18'-0"	Long	108	Bd Ft
Stringer Splices-(SIES)	2	Pcs	6"x 20"	4'-0"		80	Bd Ft
Total Treated Timber						502	Bd Ft
Total Untreated Timber (Handrails & Posts)						24	Bd Ft

One Wing

Description	Length of Wings
	10'-0"
Piling-Treated	30 Lin Ft @ 60

Treated Timber

Cap	1	Pcs	8"x 16"	4'-0"		43	Bd Ft
Bracing Planks	2	Pcs	3"x 12"	10'-0"	Long	60	Bd Ft
Walking Planks	Number	1					
	Size	4"x12"	10'-0"			40	Bd Ft
Total Treated Timber						143	Bd Ft

Untreated Timber

Handrails	2&3	Number	1				
		Size	3"x 8"	10'-0"		20	Bd Ft
		Number	1				
		Size	2"x 8"	10'-0"		14	Bd Ft
Handrail Posts	(2)	Number	3				
		Size	4"x 6"	4'-0"		16	Bd Ft
Total Untreated Timber						50	Bd Ft

Bolts & Washers for One Span of Superstructure

Description	Size	No.	Length	Lbs.
Posts to Rails	5/8"	6	10"	10
Posts to Wheel Guards	5/8"	8	12"	11
Posts to Stringers	5/8"	12	15"	13
Posts to Sill Splices	5/8"	4	21"	9
Posts to Caps	5/8"	2	32"	5
Wheel Guards to Stringers	5/8"	10	36"	24
Stringer Splices	5/8"	12	15"	19
Washers Std. C.I. O.G.	5/8"	68		53
TOTAL WEIGHT				191

Bolts & Washers for One Bent

Description	Size	No.	Length	Lbs.	Washers	Wgt. Each	Wgt.
Caps to Piles	5/8"	Bolts 5	24"	5.3 Lbs.	15	lbs.	
Sway braces to Piles	5/8"	Bolts 3	22"	2.18 Lbs.	4.0	lbs.	
Sway braces to Caps	5/8"	do 2	18"	1.83 Lbs.	4	lbs.	
Washers Std. C.I. O.G.	5/8"	Washers 16		0.25 Lbs.	2.0	lbs.	
Sway to Cap & Post	5/8"	Bolts 2	20"	2.00	4	lbs.	
TOTAL WEIGHT					53	Lbs.	

Bolts & Washers for One Abutment

Timber Header	3/4"	Lag screws	2		0.63	lbs.	6 lbs.
Std. Cast Iron O.G.	3/4"	Washers	13		0.50 Lbs.		7 Lbs.
Std. Cast Iron O.G.	5/8"	Washers	2		0.75 Lbs.		2 Lbs.
TOTAL WEIGHT							15 Lbs.

Bolts & Washers for One Wing

Posts to Rails	5/8"	Bolts	3	10"	1.14 Lbs.		4 Lbs.
Posts to Piles	5/8"	do	6	22"	2.18 Lbs.		13 Lbs.
Piles to Curb Plank	5/8"			22"	2.18 Lbs.		7 Lbs.
Std. Cast Iron O.G.	3/4"	Washers	24		0.75 Lbs.		18 Lbs.
TOTAL WEIGHT							42 Lbs.

Nails

Description	Item	1918 Spec.
One Span of Superstructure	20d Common	2 Lbs.
	40d Common	135 Lbs.
	7" Wire Spikes	4 Lbs.
Bents	20d Common	6 Lbs.
One Abutment	7" Wire Spikes	16 Lbs.
One Wing	7" Wire Spikes	6 Lbs.

Summary for Hardware

Double Trimmed	2	Spans @	13	Lbs per span equals								352	Lbs.
	1	Bents @	6.3	Lbs. per Bent equals								63	Lbs.
	2	Abut's @	7.5	Lbs. per Abutment equals								15	Lbs.
	4	Wings @	3.2	Lbs. per Wing equals								12.8	Lbs.
	TOTAL WEIGHT											71	Lbs.
	DESCRIPTION			20d Common		30d Common		40d Common*		7" Wire Spikes			
				Each	Total	Each	Total	Each	Total	Each	Total		
Table assumes full seam stringers	2	Spans		2	4	90	#180	135	270	—	—		
	1	Bents		—	—	—	—	—	—	4	4		
	2	Abutments		—	—	—	—	6	12	16	32		
	4	Wings		—	—	—	—	1	4	6	24		
	TOTAL WEIGHT			4		#180			286		60		

★ This includes 126" of 30d. galv. nails for bracket P rails.

One Span of Superstructure

Untreated Timber

Description		Size			
Handrails	2	Number	4		
		Size	3"x 8"		
Handrail Posts	3 & 5	Number	6		
		Size	4"x 6"	4'-0"	
Total Untreated Timber					93 Bd. Ft.

Treated Timber

Flooring	2"				1465
Bridging		Number	4		
		Size	3"x 8"	13'-0"	
Wheel Guards					
Stringers					
Stringers (Top Mudsills Spans Only)					
Total Treated Timber (Single Span)					1465 Bd. Ft.
Total Treated Timber (Pairs of Spans)					2930 Bd. Ft.
Asphalt Plank Wearing Surface					415 Sq. Ft.
Asphalt Felt 32" wide					507 Sq. Ft.

Summary of Quantities

Untreated Timber

2	Spans	@	93	Bd. Ft. Each	384	Bd. Ft.
1	Bents	@	24	Bd. Ft. Each	24	Bd. Ft.
2	Abutments	@	49	Bd. Ft. Each	98	Bd. Ft.
4	Wings	@	98	Bd. Ft. Each	392	Bd. Ft.
				TOTAL	698	Bd. Ft.

Treated Timber

4	Spans	@	1465	Bd. Ft. Each	10 945	Bd. Ft.
1	Bents	@	801	Bd. Ft. Each	801	Bd. Ft.
2	Abutments	@	1642	Bd. Ft. Each	3284	Bd. Ft.
4	Wings	@	300	Bd. Ft. Each	1 200	Bd. Ft.
				TOTAL	16232	Bd. Ft.

Piling-Treated

1	Bents	@	100	Lin. Ft. Each	100	Lin. Ft.
2	Abutments	@	120	Lin. Ft. Each	240	Lin. Ft.
4	Wings	@	60	Lin. Ft. Each	240	Lin. Ft.
				TOTAL	580	Lin. Ft.

STRUCTURAL EXCAVATION
Dry Common 24 Cu. Yds.
Wet Common 8 Cu. Yds.

Asphalt Plank Wearing Surface

2	Spans	@	43.6	Sq. Ft. Each	950	Sq. Ft.
2	Abutments	@	11.5	Sq. Ft. Each	23	Sq. Ft.
				TOTAL	973	Sq. Ft.

Asphalt Felt 32" wide

2	Abutments	@	4	Sq. Ft. ea.	78	Sq. Ft.
2	Spans	@	507	Sq. Ft. ea.	1014	Sq. Ft.
				TOTAL	1092	Sq. Ft.

Drain Pipe & Flange
Pcs. 3" Std. Pipe 26" long with 1 - 3" C.I. Flange ea. 4 Pieces

Pile Shoes-Cast Iron @ 3.5 Lbs. each TOTAL 79 Shoes

General Notes

All work shall be done in accordance with the Standard Specifications for Highway Bridges and Structures of the Colorado State Highway Department adopted Jan. 1, 1913.

Piles, Sheet Piling, Walers, Bulkheads, Backing Planks, Timber Headers, Sway Braces, Caps, Stringers, Stringer Blocking, Bridging, Curb Shims, Wheel Guards, Asphalt Plank, Stringer Splices and Flooring shall be sawed work.

Handrails & Handrail Posts shall be dressed on four sides.

Handrails & Handrail Posts shall be continuous from abutment to abutment. Splices will be permitted only over bents and 30% of splices in each span may be in the middle third of span.

All timber, including piles, shall be Southern Pine, Coast Yellow Pine or West Coast Douglas Fir.

All Coast Region Douglas fir lumber and timber must conform to the requirements of the Pacific Lumber Inspection Bureau for the grade of material used. Certificates of inspection of treated or untreated timber shall be accompanied by the U.S. Forest Service brand. This is to be done without additional cost to the State.

All Stringers which are to be treated shall be dapped on one edge at the ends one-fourth inch (¼") of nominal size before treatment to insure even depth over bents.

All Stringer Splices and Stringer Blocking shall be surfaced one edge one half inch (½") off nominal size before treatment.

Bid price of Asphalt Plank shall include all labor and material for the complete Asphalt Plank Wearing Surface to include the asphalt felt between the laminated wood floor and the asphalt plank, and all incidentals necessary to finish asphalt plank to laminated wood floor.

Structure Required

	2	Spans @	19	Ft.	Type of Abutment	II			
Cut Roadway to Ground	3.5	Ft.	Flat	N. End	4.5	Ft.	At	5.5	End
Length of Wings	10	Ft.	At	N. End	10	Ft.	At	S. End	

Loading Data

LIVE LOAD = A.R.A.-S.H.O. JULY 1921 CLASS "B"
DEAD LOAD [illegible]

Colorado State Highway Department

Timber Trestle with 8" Laminated Floor

Across Waste Way
Sta. 1334+71 To 1345+11
Near Mack Sec. 33 T 9 S R 103 W

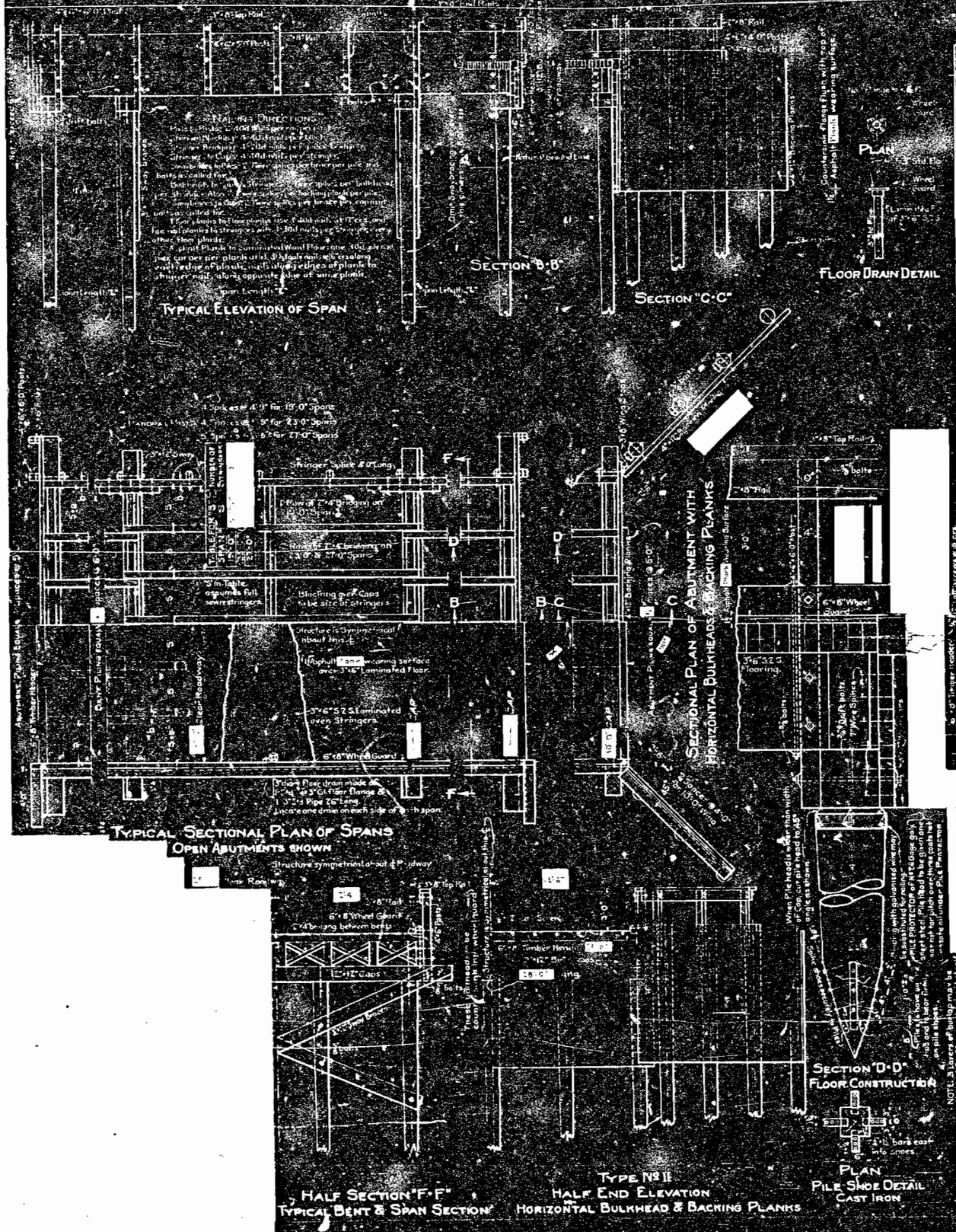
Designed by EEV	Approved by [illegible]
Made by EEV	Bridge Engineer
Checked by [illegible]	Date May 22, 1929

H-1-H

P-115-A

Form 241-D 5

Revised May 27, 1930 by [illegible]
Revised Sept. 18, 1930 by [illegible]



One Abutment

Treated Timber

	Pcs	Size	Length	Board Measure
Cap				
Timber Header	Pcs	6"x8"	Long =	Bd. Ft.
Bulkheads	Pcs	3"x12"	Long =	Bd. Ft.
Stringer Blocking	Pcs		Long =	Bd. Ft.
	Pcs		Long =	Bd. Ft.
Total Treated Timber				

Untreated Timber

Total Untreated Timber	
Asphalt Felt 32" wide	
Asphalt Plank Abearing Surface 2 inch	

One Bent

Piling-Treated — Piles @ — Lengths — Lin. Ft.

Treated Timber

	Pcs	Size	Length	Board Measure
Stringer Blocking	Pcs			Bd. Ft.
	Pcs			Bd. Ft.
Cap	Pcs	12" x 12"		Bd. Ft.
Sway Braces	Pcs	3" x 12"		Bd. Ft.
Stringer Splices (SIES)	Pcs	6" x 20"	4'-0"	80 Bd. Ft.
Total Treated Timber				Bd. Ft.

Total Untreated Timber [illegible] of Handrail Posts

One Wing

Description — Length of Wing 10'-0"

Treated Timber

	Number	Size	Length	Board Measure
Backing Planks Type & Grade		4"x12"	10'-0"	Bd. Ft.
Total Treated Timber				Bd. Ft.

Untreated Timber

	Number	Size	Length	Board Measure
Handrails 3-4S		3"x8"	10'-0" = 20	Bd. Ft.
		2"x8"	10'-0" = 14	Bd. Ft.
Handrail Posts 2-4S		6"x6"	6'-9" = 24	Bd. Ft.
Total Untreated Timber				Bd. Ft.

Bolts & Washers for One Span of Superstructure

Description	Size	19 Ft. Span No.	19 Ft. Span Length	19 Ft. Span Lbs.	23 Ft. Span No.	23 Ft. Span Length	23 Ft. Span Lbs.	27 Ft. Span No.	27 Ft. Span Length	27 Ft. Span Lbs.
Posts to Rails	⅝"	8	10"	10	8	10"	10	10	10"	12
Posts to Wheel Guards	⅝"	8	12"	11	8	12"	11	10	12"	14
Posts to Stringers	⅝"	12	15"	15	12	15"	15	16	15"	16
Posts to Str. Splices	⅝"	4	21"	9	4	21"	9	4	23"	9
Posts to Caps	⅝"	2	22"	5	2	22"	5	2	22"	5
Wheel Guards to Stringers	⅝"	10	36"	34	12	36"	41	14	36"	48
Stringer Splices	⅝"	12	18"	19	12	18"	19	12	18"	19
Washers Std CI OG	⅝"	1		1 1/6			87 1/6			102
TOTAL WEIGHT				131			101			240

Bolts & Washers for One Abutment

Posts to Rails	Bolts	⅝	2	10"	1.15 Lbs	2 Lbs
Posts to Wheel Guards	do	⅝	2	12"	1.35 Lbs	3 Lbs
Std Cast Iron O.G.	Washers	⅝	13		0.50 Lbs	7 Lbs
Std Cast Iron O.G.	Washers	¾	5		0.75 Lbs	4 Lbs
TOTAL WEIGHT						16 Lbs

Bolts & Washers for One Wing

Posts to Rails	Bolts	⅝	13	10"	1.14 Lbs	4 Lbs
Posts to Piles	do	⅝	6	12"	2.18 Lbs	13 Lbs
Piles - Cast Plate			3		2.18 Lbs	7 Lbs
Std Cast Iron O.G.	Washers	⅝	26		0.75 Lbs	20 Lbs
TOTAL WEIGHT						44 Lbs

Nails

Description	Item	1916 Num
One span of superstructure	20d Common	2 Lbs
	40d Common	133 Lbs
One Bent	7" Wire Spikes	4 Lbs
	40d Common	6 Lbs
One Abutment	7" Wire Spikes	16 Lbs
One Wing	7" Wire Spikes	6 Lbs

Summary for Hardware

1	Spans @ 191 Lbs. per span equals	191	Lbs.
X	Bents @ X Lbs. per Bent equals	—	Lbs.
1	Abuts @ 45 Lbs. per Abutment equals	90	Lbs.
4	Wings @ 42 Lbs. per Wing equals	168	Lbs.
TOTAL WEIGHT		449	Lbs.

Description	20d Common Each	20d Common Tonalite	30d Common Each	30d Common Spiral	40d Common Each	40d Common Total	7" Wire Spikes Each	7" Wire Spikes Total
1 Spans	2	2	#85	#15	93	133		
X Bents	—	—	—	—	—	—	—	—
1 Abutments	—	—	—	—	6	6	16	32
4 Wings	—	—	—	—	1	4	6	24
TOTAL WEIGHT		2		#85		143		56

★ This includes 63# of 30d spikes for Right & Plank.

One Span of Superstructure

Untreated Timber — 19 Ft. Span

Description		Number	Size	Length	Board Measure
Handrails	3-4S	2	3"x8"	20'-0"	320 Bd. Ft.
Handrail Posts	3-4S	6	4"x6"	5'-0"	120 Bd. Ft.
Total Untreated Timber					440 Bd. Ft.

Treated Timber

		Number	Size	Length	Board Measure
Curbing		2	6"x8"	20'-0"	160 Bd. Ft.
Bridging			3"x4"	18'-0"	
Wheel Guards					
Stringers		3			
Stringers	For Multiple Spans Only				
Total Treated Timber (Single Span)					5492 Bd. Ft.
Total Treated Timber (Multiple Spans)					
Asphalt Plank Wearing Surface					475 Sq. Ft.
					507 Sq. Ft.

Summary of Quantities

Untreated Timber

1	Spans @ 192	Bd. Ft. Each	192	M. Ft.
—	Bents @ —	Bd. Ft. Each	—	M. Ft.
2	Abutments @ 243	Bd. Ft. Each	486	Bd. Ft.
4	Wings @ 58	Bd. Ft. Each	232	Bd. Ft.
		TOTAL	4918	Bd. Ft.

Treated Timber

1	Spans @ 5493	Bd. Ft. Each	5493	M. Ft.
—	Bents @ —	Bd. Ft. Each	—	M. Ft.
2	Abutments @ 1842	Bd. Ft. Each	3684	Bd. Ft.
4	Wings @ 340	Bd. Ft. Each	1360	Bd. Ft.
		TOTAL	10136	Bd. Ft.

Piling-Treated

—	Bents @ —	Lin. Ft. Each	—	Lin. Ft.
2	Abutments @ 108	Lin. Ft. Each	216	Lin. Ft.
4	Wings @ 54	Lin. Ft. Each	216	Lin. Ft.
		TOTAL	432	Lin. Ft.

Structural Excavation
Dry Common — Cu. Yds.
Wet Common — Cu. Yds.

Asphalt Plank Wearing Surface

1	Spans @ 475	Sq. Ft. Each	475	Sq. Ft.	
2	Abutments @ 116	Sq. Ft. Each	232	Sq. Ft.	
		TOTAL	507	Sq. Ft.	

Asphalt Felt 32" wide

2	Abutments @ 116	Sq. Ft. ea.	232	Sq. Ft.
1	Spans @ 507	Sq. Ft. ea.	507	Sq. Ft.
		TOTAL	739	Sq. Ft.

Drain Pipe & Flange
1 Pc. 3" Std. Pipe 26" long with 1 — 3" x 3" Flange — 2 — Pieces

Pile Shoes-Cast Iron @ 35 Lbs. each — TOTAL — 24 — Shoes

General Notes

All work shall be done in accordance with the Standard Specifications of the Colorado State Highway Department adopted Jan. 1, 1930.

Piling, Stringers, Bulkheads, Backing Planks, Bridging, Wheel Guards, Curbing, Caps, Abutment & Stringer Blocking, Bridging, Bent Sway Wing Braces, Wheel Guards & Stringer Splices and Flooring shall be Douglas Fir.

Handrails & Handrail Posts shall be Select Dense Douglas Fir.

Curbing, Railings & Handrail Posts shall receive two coats of paint. Paint shall be ZnO paint mixed 50% raw linseed oil and 50% turpentine. Finish coat shall have 65% white lead, 20% zinc white and rest Raw Umber.

Under each nut and bolt head shall be placed a standard C.L.O.G. washer, and under each bolt head a standard C.L.O.G. washer shall be countersunk.

All caps shall be framed to even camber before treatment.

All lumber including piles shall be Southern Long Leaf Yellow Pine or West Coast Douglas Fir.

All Coast Region Douglas Fir, Lumber and Timber shall be in accordance with the Pacific Lumber Inspection Bureau before treatment and each piece shall be stamped with the Inspection Bureau mark. Each piece of Treated Timber shall be accompanied by a Full Boucherie Certificate. There is to be done without additional cost to the State.

All Stringers which are to be treated shall be shaped on one edge of the ends to even cut to inch (¾") nominal size before treatment to insure even depth of outer caps.

All Stringer Splices and Stringer Blocking shall be surfaced one edge one half inch (½") of nominal size before treatment.

Bid price of Asphalt Plank shall include all labor and material for the finished Asphalt Plank Wearing Surface complete in bridge floor with one layer of Asphalt Felt between the laminated wood floor and the asphalt plank and all incidentals necessary to finish asphalt plank to laminated wood floor.

Structure Required

1 Spans @ 19 Ft. Type of Abutment [illegible]
C of Roadway To Ground — Flat N End 2 Ft. At S End
Length of Wings — 10 Ft. At N End 10 Ft. At S End

Loading Data

Live Load = A.A.S.H.O. July 1922 Class "B".
Dead Load = Assumes 150 Lbs. per cu. ft. Timber, Concrete [illegible]

Colorado State Highway Department

Timber Trestle with 6" Laminated Floor

Across [illegible]
Sta 1331+12 To 1331+93
Near Mack — Sec 23 T 9 S R 103 W

Designed by E.S.W.	Approved by F. S. Bonbright
Made by E.S.W.	Bridge Engineer
Checked by [illegible]	Date: May 22, 1929.

H-1-E

F.A.P. ROUTE NO.	STATE	F.A.U. OR F.H.U. NO.	SHEET NO.	TOTAL SHEETS
3	COLO	742-D	6	

Revised Quantities as Constructed 2-27-39 RSS

Revised Nov 14th 12, 1931 By EBM

GENERAL PLAN

6 SPANS @ 40'-0" = 240'-0" TO ℄ OF ABUTMENT CAPS

EAST ABUTMENT — PIER No 1 — PIER No 2 — PIER No 3 — PIER No 4 — PIER No 5 — WEST ABUTMENT

LONGITUDINAL SECTION "A-A"

PART PLAN

SECTION "B-B"

SECTION "C-C"

SECTION "D-D"

ROLLER BEARING ASSEMBLY

DETAIL OF SHEET COPPER

DETAIL OF ROLLER BEARING PLATES

PLAN

SIDE ELEVATION

TYPICAL SECTION

DETAILS OF ROCK FILLED BULKHEAD

PLAN

PILE SHOE DETAIL

WIRE BASKET DETAIL

SHOWING METHOD OF LAPING SECTIONS.

COLORADO
STATE HIGHWAY DEPARTMENT
WEST SALT CREEK
BUILT BY
(CONTRACTOR'S NAME)
1931

BRONZE NAME PLATE - TWO REQUIRED

PLACE ONE NAME PLATE IN EACH HAND END POST OF BRIDGE. LETTERS AND BORDER OF NAME PLATE TO BE CAST ON ⅛". DESIGN TO BE APPROVED BY BRIDGE ENGINEER.

BAR LIST FOR SIX SPANS OF SUPERSTRUCTURE

MARK	SIZE	No. PER UNIT	LENGTH	BENDING DIAGRAM
R1	½"	13	15'-0"	
R3	½"	48	11'-9"	
R4	½"	128	14'-9"	
E3	½"	6 in 0	31'-0"	
E1	½"	1444	28'-2"	
E2	½"	361	27'-6½"	
R1	½"	480	7'-0"	

18600 Lin. Ft. of ½" ø Bars @ 0.668 Lbs per Lin. Ft. equals 12415 Lbs
56817 do ⅝" do @ 0.85 do do 48295 Lbs
Plus 1½% for overrun 380 Lbs
TOTAL 61300 Lbs

SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE

ITEM No.	DESCRIPTION	UNIT	AMOUNT
42a	Untreated Bridge Timber Headers 6"x12"x 24'-0" 2 Pcs.	Bd. Ft.	288
46a	CLASS "A" CONCRETE	Cu. Yds.	349
46	STRUCTURAL STEEL (Includes Overrun)	Lbs.	328400
61	BRONZE NAME PLATES	Pcs.	2
62	SHEET COPPER B & S No 16 GAGE 20" WIDE	Lbs.	490
	EXPANSION JOINT MATERIAL 1"x12"	Lin. Ft.	138
63	3" DIA GALV PIPE DRAINS	Pcs.	36
41	REINFORCING STEEL	Lbs.	61300

SUMMARY OF ESTIMATED QUANTITIES FOR ENTIRE BRIDGE

ITEM No.	DESCRIPTION	UNIT	SUB-STRUCTURE	SUPER-STRUCTURE	ROCK FILLED BULKHEAD	TOTAL
14a	DRY ROCK STRUCTURAL EXCAVATION	Cu. Yds.	70.8			70.8
14b	DRY COMMON " "	Cu. Yds.	37.1		186.4	333.5
14c	WET ROCK " "	Cu. Yds.	136			136
14d	WET COMMON " "	Cu. Yds.	260			260
42b	TREATED BRIDGE TIMBER	Bd. Ft.		288	760	1048
46a	CLASS "A" CONCRETE	Cu. Yds.	268.11	240		608.11
47	REINFORCING STEEL (Includes overrun)	Lbs.	27380	61300		88680
46	STRUCTURAL STEEL (" ")	Lbs.	3840	328000		331840
60a	TREATED TIMBER PILING 12" Min. Dia.	Lin. Ft.			1344	1344
60c	METAL PILE SHOES	Pcs.			114	114
61	BRONZE NAME PLATES	Pcs.		2		2
62	SHEET COPPER B & S No 16 GAGE	Lbs.		490		490
63	3" DIA GALV PIPE DRAINS	Pcs.		36		36
	EXPANSION JOINT MATERIAL 1"x12"	Lin. Ft.		138		138
66	RIP RAP ENCLOSED IN WIRE NETTING	Cu. Yds.			425	425

LOADING DATA
LIVE LOAD: A.A.S.H.O. CLASS "A" (M-18) Aug. 1928
D.L. ASSUMED 15 Lbs PER SQ. FT. ADDITIONAL WEARING SURFACE, THIS INCLUDES ½" MONOLITHIC CONCRETE WEARING SURFACE.

COLORADO
STATE HIGHWAY DEPARTMENT
GENERAL PLAN & DETAILS OF SUPERSTRUCTURE FOR 6 SPANS @ 60'-0" I-BEAM BRIDGE CONCRETE FLOOR, 24'-0" CLEAR ROADWAY,
Across WEST SALT CREEK
Sta 1414+13.92 To 1417+76.08
Near MACK Sec 30 T. 9S R. 103 W

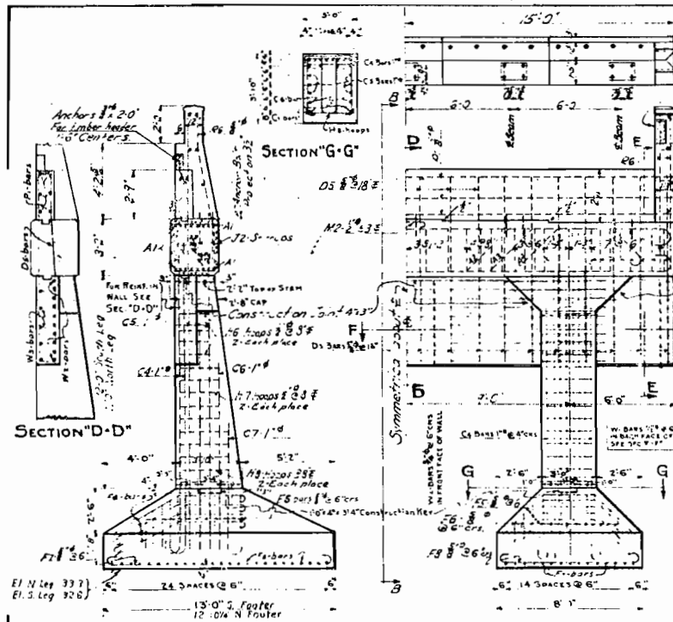
Designed by A.F.M.	Approved by Ted Bailey
Made by E.F.W.	Bridge Engineer
Checked by K.B.	Date: Feb. 20th 1931

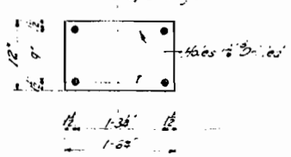
SHEET No 6a - SUBSTRUCTURE DETAILS & QUANTITIES.

STRUCTURE NO. G-1-C

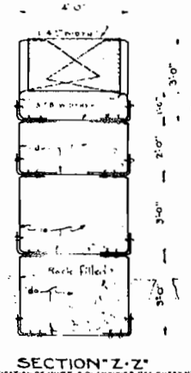
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	COLO	2420	6a	

Revised March 12, 1931 by E&W.
Revised as Constructed 2-27-39 R.S.S.

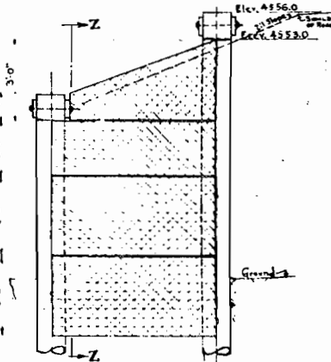




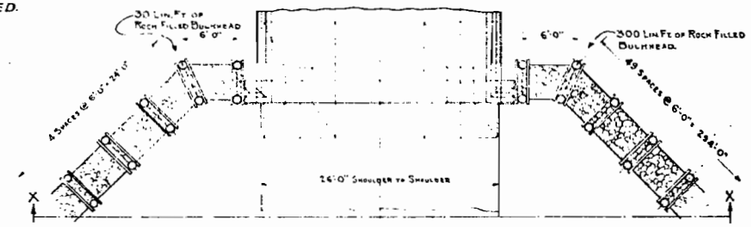
2 PLATES FOR FIXED ENDS
30 REQUIRED.



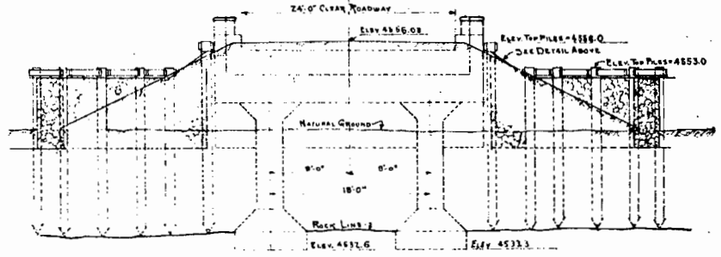
SECTION "Z-Z"
FOR SPECIFICATION OF WIRE & QUANTITIES SEE SHEET NO 6
WEST SALT CREEK



SIDE ELEVATION
DETAILS OF PANEL OF ROCK FILLED BULKHEAD NEXT TO ABUTMENT.



GENERAL PLAN OF EAST ABUTMENT



SECTIONAL ELEVATION "X-X"
SEE SHEET NO 6 FOR SUMMARY OF QUANTITIES FOR ENTIRE BRIDGE & DETAILS OF ROCK FILLED BULKHEAD.

SUMMARY OF APPROXIMATE QUANTITIES

ITEM	UNIT	DESCRIPTION	EAST ABUT.	WEST ABUT.	PIERS	PIERS	PIERS	TOTAL
562	CU YD	CLASS A CONCRETE	555	310	640	1140	1150	3795
78	LBS	REINFORCING STEEL	7200	3960	6800	13320	27360	
78	LBS	STRUCTURAL STEEL	520	120	280	920	3840	
162	CU YD	DRY ROCK STEPS	0	130.8	0	0		130.8
146	CU YD	DRY MASONRY	37.2	40.8	22.7	16.6		37
146	CU YD	PATRICK EYE CUT	39.2	0	54	40		39
140	LBS	PATTERN STEEL	290	0	69	160		290

BAR LIST FOR EAST ABUTMENT

MARKS	SIZE	NO	LENGTH	SHAPING	L	m	n	o	P	WEIGHT
A	1" ø	4	3'-4"	XIV	3'-9"					4 35
A2	1" ø	33	5'	I	5'-01"	8'-4"	3'-6"	2'-6"	2'-6"	4 35
A3	1" ø	2	33'-5"	I	33'-61"	7'-4"	4'-8"	2'-6"	2'-6"	4 35
A4	1" ø	2	32'-9"	II	32'-9"	6'-3"	6'-0"	2'-6"	2'-6"	4 35
J2	1" ø	33	10'-7"	X	2'-3"	2'-3"		0'-6"	0'-6"	
C6	1" ø	24	1'-0"	XIII	1'-8"					4 35
C5	1" ø	12	1'-0"	XIII	1'-8"					4 35
C6	1" ø	2	1'-0"	XIII	1'-0"					4 35
C7	1" ø	5	1'-0"	XIII	1'-0"					4 35
D5	5/8" ø	10	2'-6"	XIII	2'-6"	10'-6"	0'-5½"	3'-0"	0'-5½"	24 2
C5	1" ø	24	3'-2"	VI	3'-2"	2'-10"		2'-3"	2'-3"	
F6	1" ø	24	3'-6"	III	4'-1"	3'-8"		3'-6"	2'-3"	24 2
F7	1" ø	30	4'-3"	XIV	6'-11"					24 2
F8	1" ø	6	6'-1"	XIV	6'-11"					24 2
C6	1" ø	4	18'-3"	XII	2'-3"	8'-10"	0'-6"	4'-1½"	0'-10½"	24 2
D1	1" ø	6	20'-6"							
D2	1" ø	18	3'-0"	XIV	1'-8"					2 2
D3	5/8" ø	16	3'-10"	X	1'-9½"	1'-9½"		4"	4"	
D4	5/8" ø	20	8'-10"	X	1'-9½"	1'-9½"		4"	4"	
R	1" ø	2	1'-0"	—						
W1	1/2" ø	20	1'-0"	XIV	3'-10"					2 2
W2	1/2" ø	10	24'-0"	XIV	23'-10"					2 2
W3	1/2" ø	5	31'-0"	I	1'-0"	6'-10"	7'-0"	6'-8½"	0'-8½"	2 2

For Steel Summary See Top of Table

BAR LIST FOR WEST ABUTMENT

MARKS	SIZE	NO	LENGTH	SHAPING	L	m	n	o	P	WEIGHT
A1	1" ø	4	3'-4"	XIV	3'-8"					4 35
A2	1" ø	33	5'	I	5'-01"	8'-4"	3'-6"	2'-6"	2'-6"	4 35
A3	1" ø	2	33'-5"	I	33'-61"	7'-4"	4'-8"	2'-6"	2'-6"	4 35
A4	1" ø	2	32'-9"	II	32'-9"	6'-3"	6'-0"	2'-6"	2'-6"	4 35
J2	1" ø	33	10'-7"	X	2'-3"	2'-3"		0'-6"	0'-6"	
C6	1" ø	24	1'-0"	XIII	1'-8"					4 35
C5	1" ø	12	1'-0"	XIII	1'-8"					4 35
J6	5/8" ø	18	2'-0"	IX	5'-0"	0'-6"				
F5	1" ø	16	8'-0"	VI	1'-8"	3'-2"	2'-3"	2'-3"		
F4	1" ø	20	7'-2"	III	3'-4"	2'-2"		2'-3"		24 2
F6	1" ø	46	7'-7"	XIV	6'-11"					24 2
F7	1" ø	8	8'-7"	XIV	6'-11"					24 2
F8	1" ø	4	20'-5"	XVI	6'-2"	9'-9½"	0'-7"	5'-3"	0'-10½"	24 2
P1	1" ø	4	29'-8"	—						
W1	1/2" ø	8	3'-0"	XIV	1'-8"					
W6	1/2" ø	6	6'-0"	X	1'-5½"	1'-7½"		4"	4"	
R	1" ø	2	1'-0"	—						

430 Lineal ft of 1" ø Bars @ 3.4# per lin ft = 1462#
127 Lineal ft of 1" ø Bars @ 2.82 " " " = 359
1455 Lineal ft of 5/8" ø Bars @ 1.043 " " " = 1435
107 Lineal ft of 1/2" ø Bars @ 0.85 " " " = 91
Plus 1% = Overrun = 33
Total = 3860#

BAR LIST FOR PIERS No 1 & No 2

MARKS	SIZE	NO	LENGTH	SHAPING	L	m	n	o	P	WEIGHT
A5	1" ø	4	22'-6"	XIII	22'-8"					4 35
A6	1" ø	6	11'-5"	I	3'-6"	7'-4"	3'-6"	2'-6"	2'-6"	4 35
A7	1" ø	6	3'-5"	I	3'-6"	6'-3"	1'-8"	2'-6"	2'-6"	4 35
A4	1" ø	6	3'-9"	II	3'-6"	2'-6"	6'-0"	2'-6"	2'-6"	4 35
J2	1" ø	11	0'-7½"	X	2'-3"	2'-3"		0'-6"	0'-6"	
C11	1" ø	24	1'-0"	XIII	1'-8"					4 35
C11	1" ø	2	10'-0"	—						
F10	1" ø	38	7'-7"	XIV	6'-11"					
F11	1" ø	10	8'-7"	XIV	6'-11"					
M2	1" ø	24	3'-0"	XIV	1'-8"					
M11	1" ø	24	7'-0"	X	1'-5½"	2'-1½"		4"		
M10	1" ø	54	9'-0"	IV	1'-3½"	2'-3"	1'-5½"	1'-2"	8"	2 2

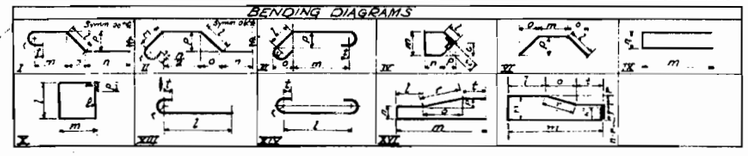
1126 Lineal ft of 1" ø Bars @ 3.4# per lin ft = 3828#
6.67 " " 1" ø " @ 3.33# " " " = 22.5
745 Lineal ft of 1/2" ø Bars @ 0.85# per lin ft = 633
Plus 1% = Overrun = 64
Total = 6802#

BAR LIST FOR PIERS No 3, No 4, & No 5

MARKS	SIZE	NO	LENGTH	SHAPING	L	m	n	o	P	WEIGHT
A5	1" ø	4	22'-6"	XIV	22'-8"					4 35
A6	1" ø	6	11'-5"	I	3'-6"	7'-4"	3'-6"	2'-6"	2'-6"	4 35
A7	1" ø	6	3'-5"	I	3'-6"	6'-3"	1'-8"	2'-6"	2'-6"	4 35
A4	1" ø	6	3'-9"	II	3'-6"	2'-6"	6'-0"	2'-6"	2'-6"	4 35
J2	1" ø	11	0'-7½"	X	2'-3"	2'-3"		0'-6"	0'-6"	
C11	1" ø	24	1'-0"	XIII	1'-8"					4 35
C11	1" ø	2	10'-0"	—						
F10	1" ø	38	7'-7"	XIV	6'-11"					
F11	1" ø	10	8'-7"	XIV	6'-11"					
M2	1" ø	24	3'-0"	XIV	1'-8"					
M11	1" ø	24	7'-0"	X	1'-5½"	2'-1½"		4"		
M10	1" ø	54	9'-0"	IV	1'-3½"	2'-3"	1'-5½"	1'-2"	8"	2 2

1556 Lineal ft of 1" ø Bars @ 3.4# per lin ft = 5328#
955 Lineal ft of 1" ø Bars @ 3.43# " " " = 3325
836 Lineal ft of 5/8" ø Bars @ 0.85# " " " = 711
Plus 1% Overrun = 90
Total = 9520#

BENDING DIAGRAMS



ELEVATION OF PIER FOOTERS AS CONSTRUCTED

Pier No	1		2		3		4		5	
Footer	N	S	N	S	N	S	N	S	N	S
Elev.	27.5	28.6	29.1	28.5	33.4	33.6	33.0	32.3	34.1	34.1

NOTE - Footers poured to shale.

GENERAL NOTES

ALL WORK SHALL BE DONE ACCORDING TO THE STANDARD SPECIFICATIONS OF THE COLORADO STATE HIGHWAY DEPARTMENT
ALL CONCRETE SHALL BE CLASS A
ALL EXPOSED SURFACES SHALL BE RUBBED FREE OF FORM MARKS.
ALL EXPOSED CORNERS EXCEPT ON HANDRAILS SHALL BE BEVELED TO A 2" FACE
GIRDERS, FLOOR SLAB 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
STRUCTURE IS DESIGNED FOR A 1" CONCRETE WEARING SURFACE.
ALL REINFORCING BARS SHALL BE BOUND OR WIRED, 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 30 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.
MAXIMUM TOE PRESSURE EQUALS 7000 Lbs per Sq. Ft.

COLORADO
STATE HIGHWAY DEPARTMENT
ABUTMENT & PIER DETAILS
FOR 6 SPANS @ 60'-0" BEAM BRIDGE
CONCRETE FLOOR 24'-0" CLEAR ROADWAY

Across WEST SALT CREEK
Sta 1414+1392 TO 1417+1608
Near MACK Sec. 30 T. 9 S R. 103 W

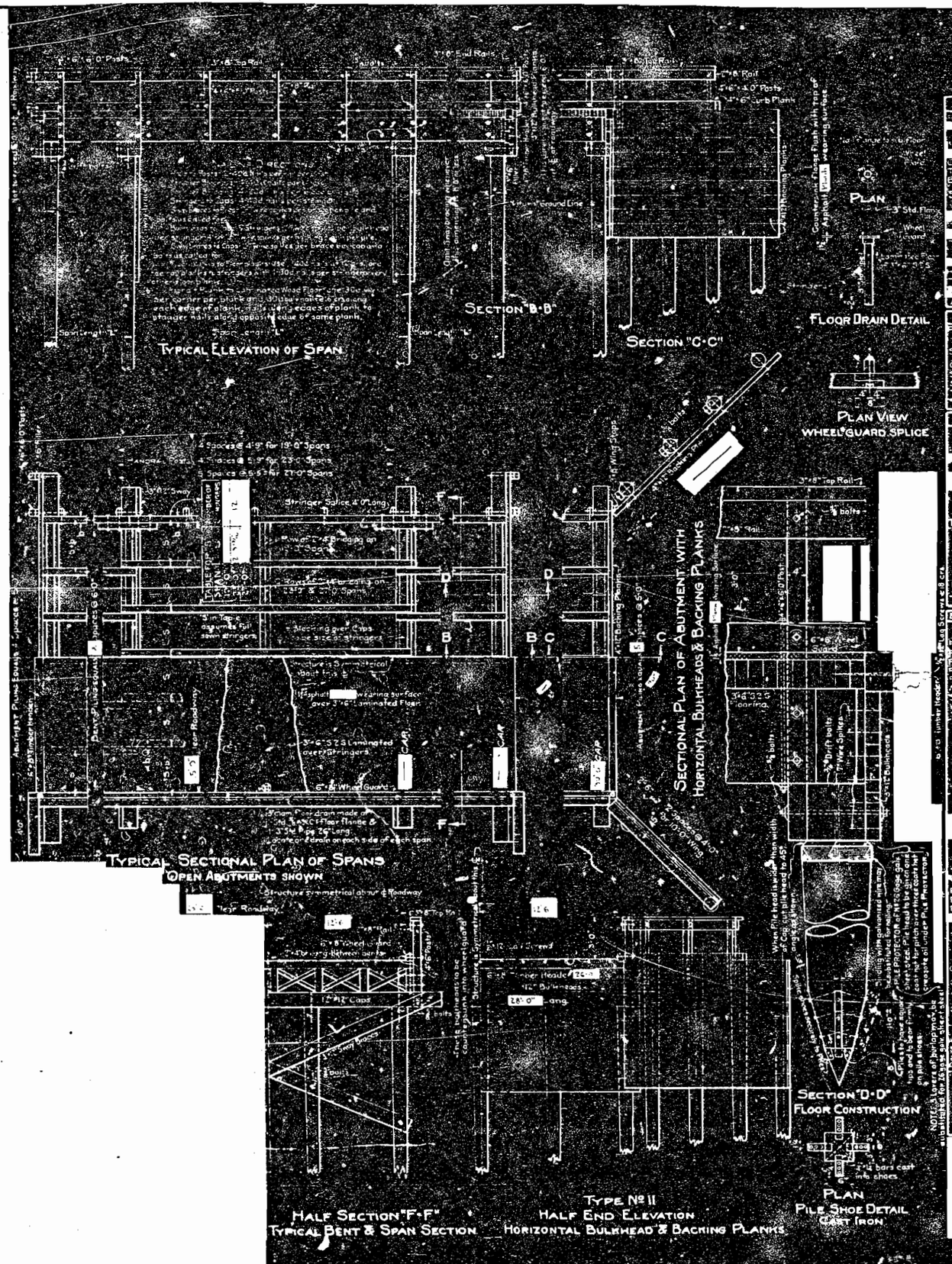
Designed by A.F.M. 2.A.W.
Made by W.M.M. W.M.M.
Checked by W.M.M. R.F.W.
Approved by C.D. Bailey
Bridge Engineer
Date: Feb 20 1939

STRUCTURE NO. G-1-C

P-115-A

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	SHEET No.	TOTAL SHEETS
15	COLO	243-D	7	

Revised May 27, 1930 by E.E.W.
Revised Sept. 18, 1930 by E.E.W.



One Abutment

Piling-Treated	Piles	@	Long =		Lin. Ft.
Treated Timber					
Cap	Pcs		Long =		Bd. Ft.
Timber Header	Pcs		Long =		Bd. Ft.
Bulkheads	Pcs		Long =		Bd. Ft.
Stringer Blocking	Pcs		Long =		Bd. Ft.
Total Treated Timber				12.78	Bd. Ft.
Untreated Timber					
Total Untreated Timber					Bd. Ft.
Asphalt Felt 32" wide					Sq. Ft.
Asphalt Plank Wearing Surface 2 1/2 inch					Sq. Ft.

One Bent

Piling-Treated	Piles	@	Long =		Lin. Ft.
Treated Timber					
Stringer Blocking	Pcs				Bd. Ft.
Cap	Pcs				Bd. Ft.
Sway Braces	Pcs				Bd. Ft.
Stringer Splices (SIES) 2	Pcs	6"	20'-0"	= 80	Bd. Ft.
Total Treated Timber					Bd. Ft.
Total Untreated Timber 2 Pcs 4"x6"x10'-0" Handrail Posts				= 24	Bd. Ft.

One Wing

Description	Length of Wings 10'-0"			
Piling-Treated	38	18"	54	Lin. Ft.
Treated Timber				
Cap	2	6"	10'-0"	Bd. Ft.
Backing Planks Type 1 Only	Number 5	Size 4"x12"x10'-0"	= 200	Bd. Ft.
Total Treated Timber			220	
Untreated Timber				
Handrails 3&S	Number 1	Size 3"x8"x10'-0" = 20		Bd. Ft.
Handrail Posts 2 @ 1.5	Number 3	Size 4"x6"x10'-0" = 14		Bd. Ft.
Total Untreated Timber			58	Bd. Ft.

Bolts & Washers for One Span of Superstructure

Description	Size	19 Ft. Span No.	Length	Lbs.	23 Ft. Span No.	Length	Lbs.	27 Ft. Span No.	Length	Lbs.
Posts to Rails	3/4"	8	10"	10	8	10"	10	10	10"	12
Posts to Wheel Guards	3/4"	8	12"	11	8	12"	11	10	12"	13
Posts to Stringers	3/4"	8	15"	12	12	15"	16	14	17"	20
Posts to Str. Splices	3/4"	4	22"	9	4	21"	9	4	23"	9
Posts to Caps	3/4"	2	22"	5	2	22"	5	2	22"	5
Wheel Guards to Stringers	3/4"	10	36"	34	12	36"	41	14	36"	48
Stringer Splices	3/4"	12	15"	9	12	15"	8	12	19"	23
Washers Std. C.I.O.G.	3/4"	112		83	116		87	136		102
TOTAL WEIGHT				191			101			240

Bolts & Washers for One Abutment

Posts to Rails	Bolts	3/4"	6	10"	1.14 Lbs	7	Lbs
Posts to Timber Guards	do	3/4"	2	2'6"	1.92	3	Lbs
Posts to Caps	do	3/4"	4	2'2"	2.47	10	Lbs
Posts to Stringers	do	3/4"	4	1'3"	1.63	6	Lbs
Wheel Guards to Stringers	do	3/4"	12	3'6"	3.99	48	Lbs
Stringer Splices	do	3/4"	8	1'5"	1.63	13	Lbs
No Cast Iron O.G. Washers		3/4"	13		0.63 Lbs	8	Lbs
Std Cast Iron O.G. Washers		3/4"	1		0.80 Lbs	1	Lbs
Std Cast Iron O.G. Washers		3/4"	1		0.75 Lbs	1	Lbs
TOTAL WEIGHT						45	Lbs

Bolts & Washers for One Wing

Posts to Rails	Bolts	3/4"	3	10"	1.14 Lbs	4 Lbs
Posts to Piles	do	3/4"	6	2'2"	2.18 Lbs	13 Lbs
Piles to Curb Planks	do	3/4"	3	2'2"	2.18 Lbs	Lbs
No Cast Iron O.G. Washers		3/4"	24		0.75 Lbs	18 Lbs
TOTAL WEIGHT						42 Lbs

Nails

Description	Item	23 Ft. Span No.	Lbs.
One Typical Superstructure	20d Common		
	40d Common	163	
	Wire Spikes		Lbs.
One Bent	40d Common	7	Lbs.
	Wire Spikes		Lbs.
One Abutment	8" Wire Spikes	16	Lbs.
One Wing	Wire Spikes	6	Lbs.

Summary for Hardware

Spans @ 201	Lbs. per span equal	201	Lbs.
Bents @ —	Lbs. per Bent equals	—	Lbs.
Abuts @ 45	Lbs. per Abutment equals	90	Lbs.
Wings @ 42	Lbs. per Wing equals	168	Lbs.
TOTAL WEIGHT		459	Lbs.

Description	20d Common Each	20d Common Total	30d Common Each	30d Common Total	40d Common Each	40d Common Total	8" Wire Spikes Each	8" Wire Spikes Total
1 Spans	5*	5	103	103	163	163	—	—
Bents	—	—	—	—	—	—	—	—
2 Abutments	—	—	—	—	4	8	16	32
4 Wings	—	—	—	—	4	16	6	24
TOTAL WEIGHT		5		103		187		56

★ This includes 75 Lbs. of Spikes & nails for Asphalt Plank.

One Span of Superstructure

Untreated Timber — 23 Ft. Span

Description		Number	Size
Handrails	3&S		3"x8"x24'0"
Handrail Posts	3&S		4"x6"x10'0"
Total Untreated Timber			2284 Bd. Ft.

Treated Timber

Flooring	3&S		1"x6"x24'0"
Bridging			2"x4"x10'0"
Wheel Guards			6"x10"x24'0"
Stringers			6"x10"x24'0"
Stringers for Multiple Spans Only			6"x10"x24'0"
Total Treated Timber (Single Span)			7389 Bd. Ft.
Total Treated Timber (Multiple Span)			
Asphalt Plank Wearing Surface			575.5 Sq. Ft.

Summary of Quantities

Untreated Timber

1 Spans	@ 220	Bd. Ft. Each	220	Bd. Ft.	
— Bents	@ —	Bd. Ft. Each	—	Bd. Ft.	
2 Abutments	@ 24	Bd. Ft. Each	48	Bd. Ft.	
4 Wings	@ 58	Bd. Ft. Each	232	Bd. Ft.	
			TOTAL	500	Bd. Ft.

Treated Timber

1 Spans	@ 7389	Bd. Ft. Each	7389	Bd. Ft.	
— Bents	@ —	Bd. Ft. Each	—	Bd. Ft.	
2 Abutments	@ 1246	Bd. Ft. Each	2492	Bd. Ft.	
4 Wings	@ 210	Bd. Ft. Each	840	Bd. Ft.	
			TOTAL	10881.5	Bd. Ft.

Piling-Treated

— Bents	@ —	Lin. Ft. Each	—	Lin. Ft.	
2 Abutments	@ 108	Lin. Ft. Each	216	Lin. Ft.	
4 Wings	@ 54	Lin. Ft. Each	216	Lin. Ft.	
			TOTAL	432	Lin. Ft.

Structural Excavation
Dry Common — 18 Cu. Yds.
" — 6 Cu. Yds.

Asphalt Plank Wearing Surface

1 Spans	@ 538	Sq. Ft. Each	538	Sq. Ft.	
2 Abutments	@ 11.5	Sq. Ft. Each	23	Sq. Ft.	
			TOTAL	561	Sq. Ft.

Asphalt Felt 32" wide

2 Abutments	@ 14	Sq. Ft. ea.	28	Sq. Ft.	
1 Spans	@ 6.125	Sq. Ft. ea.	6.125	Sq. Ft.	
			TOTAL	34.125	Sq. Ft.

Drain Pipe & Flange — Type 3 SW Pipe 4.25" long with 3 1/2" Flange — 2 Pieces

Pile Shoes-Cast Iron — Type 3 S.O.G. — TOTAL 24 Shoes

General Notes

All work shall be done in accordance with the "Standard Specifications of the Colorado State Highway Department adopted Jan. 1, 1930."

Lumber, Piling, Wires, Bolts, Nails, Backing Planks, Timber Headers, Sway Braces, Caps, Stringers, Stringer Blocking, Bridging, Curb Steps, Wing Steps, Wheel Guards, Stringer Splices and Flooring shall be creosoted.

Handrails & Handrail Posts shall not be creosoted.

Handrails & Handrail Posts shall receive two coats of paint. Paint shall be 70% linseed and 30% raw linseed oil, and dryer. Tint with small tube of white lead, 20% zinc white and not over 15% of the total weight of the paint. Color shall be Standard C.T.D.G. washers shall be used under each bolt head and nut.

All caps shall be adzed to even depth before treatment.

All timber including piles shall be Southern Pine or West Coast Douglas Fir.

All Coast region Douglas Fir lumber and Timber Products treated by pressure process of the Pacific Lumber Inspection Bureau before treatment and each car load of treated or untreated timber shall be accompanied by a P.L.I.B. certificate. This is to be done without additional cost to the State.

All Stringers which are to be treated shall be dapped on one edge at the ends one-fourth inch (1/4") of nominal size before treatment to insure even depth over caps.

All Stringer Splices and Stringer Blocking shall be surfaced one edge one-half inch (1/2") off nominal size before treatment.

Bid price of Asphalt Planks shall include all labor and material for finished Asphalt Plank Wearing Surface in place on bridge floor, with one layer of Asphalt Felt between the laminated wood plank and the asphalt plank, and all nails necessary to fasten asphalt planks to laminated wood floor.

Structure Required

	1	Spans @	23	Ft. Type of Abutment	1		
Top Roadway To Ground	4.0	Ft.	At	Flat	End	5.5	Ft. At W. End
Length of Wings	13	Ft.	At	End	10	Ft. At W. End	

Loading Data

Live Load = A.A.S.H.O. July 1927 Class "B"
Dead Load = Assume 15 Lbs. per sq. ft. Wearing Surface. This includes 12 Lbs. Asphalt Plank Planks.

Colorado State Highway Department

Timber Trestle with 6" Laminated Floor

Across: Dry Wash — Sta. 4+23.2 to 4+52.2 = 29
Near: Mack — Sec. 12, T. 3 S., R. 103 W.

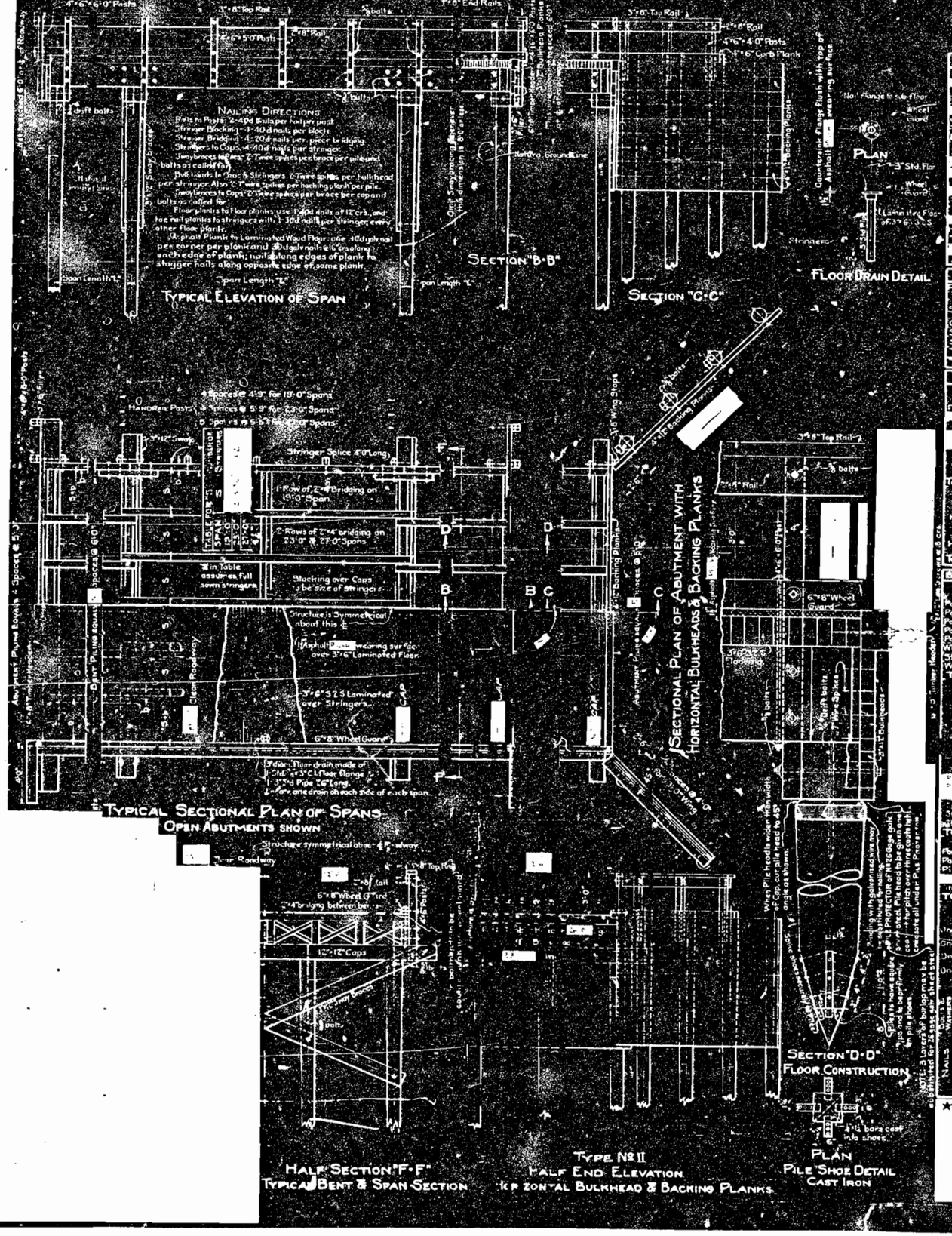
Designed by E.E.W.	Approved by C. D. Bailey, Bridge Engineer
Made by C.E.G.	
Checked by E.E.W.	Date: May 22, 1929.

G-1-B

P-115-A

I.D. Proj. Dist. No.	State	Fed. Aid Proj. No.	Sheet No.	Total Sheets
9	COLO.	4-D	8	

Revised May 27, 1930 by E.S.W.
Revised Sept. 18, 1930 by E.S.W.



One Abutment

Treated Timber

Cap					
Timber Header					
Bulkheads					
Stringer Blocking					
Flooring					
Total Treated Timber					1606

Untreated Timber

Handrail Posts					
Total Untreated Timber					
Asphalt Felt 32" wide					
Asphalt Plank Wearing Surface 2½" Thick					12.5

One Bent

Piling-Treated					
Stringer Blocking					
Cap					
Sway Braces					
Stringer Splices (SIES)	2	Pcs. 6"×20"	4'0"		80 Bd Ft
Total Treated Timber					
Total Untreated Timber	4 Pcs. 4"×6"	0" Handrail Posts			24 Bd Ft

One Wing

Description	Length of Wings 10'-0"			
Piling-Treated	36	Lin Ft		Lin Ft

Treated Timber

Curb Planks	4"×6"	1 @ 10'-0"	= 20	Bd Ft	
Backing Planks (Type B only)	Number				
	Size	4"×12"×10'-0"	= 40	Bd Ft	
Total Treated Timber			34		

Untreated Timber

Handrails 3.45	Number	1			
	Size	3"×8"×10'-0"	= 20	Bd Ft	
	Number	1			
	Size	2"×8"×10'-0"	= 14	Bd Ft	
Handrail Posts 1/2	Number	3			
	Size	4"×6"	24	Bd Ft	
Total Untreated Timber			58	Bd Ft	

Bolts & Washers for One Span of Superstructure

Description	Size	19 Ft. Span Nº	Length	Lbs.	23 Ft. Span Nº	Length	Lbs.	27 Ft. Span Nº	Length	Lbs.
Posts to Rails	⅝"	8	10"	10	8	10"	10	10	10"	12
Posts to Wheel Guards	⅝"	9	11"	11	8	12"	11	10	12"	13
Posts to Stringers	⅝"	12	13"	12	12	15"	13	16	15"	18
Posts to Str. Splices	⅝"	4	21"	9	4	21"	9	4	21"	9
Posts to Caps	⅝"	4	12"	5	4	12"	5	4	12"	5
Wheel Guards to Stringers	⅝"	10	36"	34	12	36"	41	14	36"	48
Stringer Splices	⅝"	12	19"	19	12	19"	19	12	19"	23
Washers Std. C.I. O.G.	⅝"	11	2"	84	116	2"	87	136	2"	102
TOTAL WEIGHT				191			191			240

Bolts & Washers for One Abutment

Timber Header to Floor	Washers	⅝"	13	0.63 Lbs.	8 Lbs.
Std. Cast Iron O.G.	Washers	⅝"	13	0.50 Lbs.	7 Lbs.
Mild Cast Iron O.G.	Washers	⅝"	26	0.75 Lbs.	20 Lbs.
TOTAL WEIGHT					35 Lbs.

Bolts & Washers for One Wing

Piles to Rails	Bolts	⅝"	3	10"	1.14 Lbs.	4 Lbs.
Piles to Piles	do	⅝"	6	22½"	2.18 Lbs.	13 Lbs.
Piles to Curb Planks	do	⅝"	3	22½"	2.18 Lbs.	7 Lbs.
Std. Cast Iron O.G.	Washers	⅝"	26	0.75 Lbs.		18 Lbs.
TOTAL WEIGHT						

Nails

Description	Item	23 Ft. Span
One Span of Superstructure	20d Common	5 Lbs.
	40d Common	163 Lbs.
One Bent	7" Wire Spikes	7 Lbs.
One Abutment	20d Common	1 Lbs.
	7" Wire Spikes	19 Lbs.
One Wing	7" Wire Spikes	4 Lbs.

Summary for Hardware

1	Spans @ 201	Lbs. per span equals	201	Lbs.
2	Bents @ 163	Lbs. per Bent equals	326	Lbs.
2	Abuts @ 45	Lbs. per Abutment equals	90	Lbs.
2	Wings @ 23	Lbs. per Wing equals	46	Lbs.
TOTAL WEIGHT			663	Lbs.

Nails	Description	20d Common Each	20d Common Total	30d Common Each	30d Common Total	40d Common Each	40d Common Total	7" Wire Spikes Each	7" Wire Spikes Total
1	Spans	6	5	1.3	1	1.63	163	7	7
2	Bents								
2	Abutments							19	38
2	Wings							4	8
TOTAL WEIGHT			5		1		163		53

★ This includes 35" 3 inch planks for Approach Planks.

One Span of Superstructure

Untreated Timber — 23 Ft. Span

Description		Number	Size	
Handrails	3.45	1	3"×8"	24'0"
		1	2"×8"	24'0"
Handrail Posts	3.45	6	4"×6"	5'0"
TOTAL UNTREATED TIMBER				220 Bd Ft.

Treated Timber

Flooring	3.25	110	3"×6"	16'-0"
Bridging		4	3"×4"	24'0"
Wheel Guards		Per Span 2	6"×8"	24'0"
Stringers		4	6"×20"	24'0"
Stringers (For Multiple Spans Only)		2	6"×20"	24'0"
TOTAL TREATED TIMBER (Single Span)				7380 Bd Ft.
TOTAL TREATED TIMBER (Multiple Spans)				6720 Bd Ft.
ASPHALT PLANK WEARING SURFACE				6140 Sq Ft.

Summary of Quantities

Untreated Timber

1	Spans	@ 2.4	Bd Ft Each	2.4	Bd Ft
2	Bents	@ 2.4	Bd Ft Each	4.8	Bd Ft
2	Abutments	@ 2.4	Bd Ft Each	4.8	Bd Ft
2	Wings	@ 2.4	Bd Ft Each	2.4	Bd Ft
			TOTAL	900	Bd Ft

Treated Timber

1	Spans	@ 2.389	Bd Ft Each	2.389	Bd Ft
2	Bents	@ 1.674	Bd Ft Each	3.348	Bd Ft
2	Abutments	@ 1.674	Bd Ft Each	3.348	Bd Ft
2	Wings	@ 1.34	Bd Ft Each	1.360	Bd Ft
			TOTAL	2001	Bd Ft

Piling-Treated

3	Bents	@ 16	Lin Ft Each	48	Lin Ft
2	Abutments	@ 16	Lin Ft Each	32	Lin Ft
2	Wings	@ 7.84	Lin Ft Each	15.68	Lin Ft
			TOTAL	348	Lin Ft

Structural Excavation			
Dry Common		33	Cu Yds
Wet Common		11	Cu Yds

Asphalt Plank Wearing Surface					
1	Spans	@ 1.76	Sq Ft Each	515	Sq Ft
2	Abutments	@ 1.76	Sq Ft Each	35	Sq Ft
			TOTAL	600	Sq Ft
Asphalt Felt 32" wide					
2	Abutments	@ 24	Sq Ft ea.	48	Sq Ft
1	Spans	@ 614	Sq Ft ea.	614	Sq Ft
			TOTAL	662	Sq Ft
Drain Pipe & Flange 1-Pc. 3" Std. Pipe 2'6" long with 1-3" C.I. Flange				2	Pieces
Pile Shoes-Cast Iron @ 35 Lbs. each			TOTAL	12	Shoes

General Notes

All work shall be done in accordance with the Standard Specifications of the Colorado State Highway Department adopted Jan. 1, 1930.

Piles, Sheet Piling, Wales, Bulkheads, Backing Planks, Timber Headers, Sway Braces, Caps, Stringers, Stringer Blocking, Bridging, Dirt Stops, Wing Stops & Wheel Guards, Stringer Splices and Flooring shall be creosoted.

Handrails & Handrail Posts shall not be creosoted.

Handrails & Handrail Posts shall receive two coats of paint. Paint shall be 70% pigment and 30% raw linseed oil and dryer. Pigment shall have 65% white lead, 20% zinc white and not over 15% inerts.

Standard C.I.O.G. washers shall be used under each bolt head & nut.

All caps shall be edged to even depth before treatment.

All timber including piles shall be Southern Long Leaf Yellow Pine or West Coast Douglas Fir.

All Coast region Douglas Fir, Lumber and Timber must meet the requirements of the Pacific Lumber Inspection Bureau before treatment and each carload of treated or untreated timber shall be accompanied by a P.L.I.B. certificate. This is to be done without additional cost to the State.

All Stringers which are to be treated shall be dapped on one edge at the ends one-fourth inch (¼") off nominal size before treatment to insure even depth over caps.

All Stringer Splices and Stringer Blocking shall be surfaced one edge, one-half inch (½") off nominal size before treatment.

The bid price of Asphalt Plank shall include all labor and material for finished Asphalt Plank Wearing Surface in place on bridge floor with one layer of Asphalt Felt between the laminated wood floor and the asphalt planks and all nails necessary to fasten asphalt planks to laminated wood floor.

Structure Required

	1	Spans @	23	Ft. Type of Abutment			
℄ of Roadway W/ Ground			4.5	Ft. At	S. End	4.5	Ft. At W. End
Length of Wings			11	Ft. At	S. End	10	Ft. At W. End

Loading Data

Live Load A.A.S.H.O. July 1927 Class "B"

Dead Load Assumes 35 Lbs per Sq. Ft. Wearing Surface, Asphalt Plank, Laminated Floor, Stringers, Caps, Bents, Piles & Bracing.

Colorado State Highway Department

Timber Trestle with 6" Laminated Floor

Across [redacted] Sta. [redacted]

Near [redacted] Sec. 31 T. 30 N. R. 104 W.

Designed by E.S.W.
Made by E.S.W.
Checked by E.S.W. & P.B.

Approved by H. J. Bailey
Bridge Engineer
Date: May 22, 1929.

H-1-d

P-115-A

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	SHEET No.	TOTAL SHEETS
3	COLO.	242-D	9	

Revised May 27, 1930 by E.E.W.
Revised Sept. 18, 1930 by E.E.W.

Nailing Directions

Palsra Posts: 2-40d. Nails per rail portion.
Stringer Blocking: 4-20d. nails per block.
Stringer Bridging: 4-20d. nails per brace bridg.
Stringers to Caps: 4-60d. nails per stringer.
Sway braces to Pile: 2 wire spikes per brace per pile and bolts as called For.
Bolt pads to Caps & Stringers: 2 wire spikes per bolt head per stringer. Also 2 wire spikes per backing plank per pile.
Sway braces to Caps: 2 wire spikes per brace per cap and as called for.
Floor planks to Floor planks: use 1-40d. nail at 12" c/c, and toe nail planks to stringers with 1-30d. sp. per stringer every other plank.
Asphalt Planks to Laminated Wood Floor: one 30d. spike per corner per plank and 30d. spikes @ 2'-0" c/c along each edge of plank, nails along edges of plank to stagger nails along opposite edge of same plank.

Typical Elevation of Span

Section "B-B"

Section "C-C"

Floor Drain Detail

Plan

Plan View
Wheel Guard Splice

Typical Sectional Plan of Spans
Open Abutments Shown

For Substructure see "Half Section E-E"

Half Section "E-E"

Full Section "B-B"

Type No III
Half End Elevation
Open Type Abutment

Half Section "F-F"
Typical Bent & Span Section

Type No II
Half End Elevation
Horizontal Bulkhead & Backing Planks

Section "D-D"
Floor Construction

Plan
Pile Shoe Detail
Cast Iron

One Abutment
Treated Timber

Posts	6	Pcs	2"x12"x6'-0"	=	432	Bd. Ft.
Caps	1	Pc.	6"x18"x8'-0"	=	216	Bd. Ft.
Sway Braces	2	Pcs.	3"x12"x8'-0"	=	192	Bd. Ft.
Cap		Pcs.	12"x12"	Long =	384	Bd. Ft.
Timber Header		Pcs.	6"x8"	Long =	128	Bd. Ft.
Bulkheads		Pcs.	3"x12"	Long =	192	Bd. Ft.
Stringer Blocking		Pcs.	6"x10"	Long =	160	Bd. Ft.
Flooring 525		Pcs.	3"x6"	Long =	1117	Bd. Ft.
Fillers					18	Bd. Ft.
Total Treated Timber					2635	Bd. Ft.
Untreated Timber						
End Rails		Pcs.	3"x8"x4'-0"	Long =	32	Bd. Ft.
Handrail Posts		Pcs.	3"x6"x6'-0"	Long =	72	Bd. Ft.
Total Untreated Timber					120	Bd. Ft.
Concrete Class "A"					6	Cu. Yds.
Asphalt Plank Wearing Surface 1½" Thick					125	Sq. Ft.

Bolts & Washers for One Span of Superstructure

Description	Size
Posts to Rails	⅝"
Posts to Wheel Guards	⅝"
Posts to Stringers	⅝"
Posts to Sway Braces	⅝"
Wheel Guards to Stringers	⅝"
Washers SQ. CUT.	⅝"
Total Weight	

Cor. Span		
No.	Lbs.	Lbs.
6	10"	10
8	12"	11
10	15"	13
12	18"	15
		19
		186

Bolts & Washers for One Abutment

	Size	Bolts	Washers	Lbs.
Caps to Piles	⅝"	—	24	93 Lbs.
Piles under Wheel Guard	⅝"	—	16	62 Lbs.
				155
Timber Header to Piles	⅝"	13	13	0.63 ea. 8
Std. Cast Iron D.S.	⅝"	13	13	0.50 Lbs. 7 Lbs.
Std. Cast Iron D.S.	⅝"			15
				170

Total Weight 19 Lbs.

Nails

Description	Item	23'-0" Span
One Span of Superstructure	10d Common	163 Lbs.
One Bent	7" Wire Spikes	12 Lbs.
One Abutment	40d Common	12 Lbs.
	7" Wire Spikes	12 Lbs.
One Wing	7" Wire Spikes	6 Lbs.

Summary for Hardware

Nails	Spans @	Lbs. per span equals	Lbs.
	Bents @	Lbs. per Bent equals	Lbs.
	Abuts @	Lbs. per Abutment equals	Lbs.
	Wings @	Lbs. per Wing equals	Lbs.
	Total Weight		Lbs.

Description	20d Common Each	20d Common Total	30d Common Each	30d Common Total	40d Common Each	40d Common Total	7" Wire Spikes Each	7" Wire Spikes Total
Spans								
Bents								
Abutments								
Wings								
Total Weight								

One Span of Superstructure

Untreated Timber

Description	Number	Size	Number	Size	Number	Size
Handrails	3	4"x8"				
Handrail Posts	3	4"x8"				
Total Untreated Timber						

Treated Timber

Flooring	3	3"x6"	110			
Bridging						
Wheel Guards						
Stringers						
Stringers (For Multiple Spans Only)						
Total Treated Timber (Single Span)						
Total Treated Timber (Multiple Spans)						
Asphalt Plank Wearing Surface						
Asphalt						

23'-0" Span

No.	Lumber	Size
2		4"x8"x 24'-0"
2		4"x8"x 24'-0"
6		4"x8"x 6'-0"
		220 Bd. Ft.
110		3"x6"x 24'-0"
6		3"x6"x 24'-0"
6		3"x6"x 18'-0"
575		

Summary of Quantities

Untreated Timber

1	Spans	@ 220	Bd. Ft. Each	220	Bd. Ft.
—	Bents	@ —	Bd. Ft. Each	—	Bd. Ft.
2	Abutments	@ 110	Bd. Ft. Each	220	Bd. Ft.
—	Wings	@ —	Bd. Ft. Each	—	Bd. Ft.
			Total		Bd. Ft.

Treated Timber

1	Spans	@ 2635	Bd. Ft. Each	2635	Bd. Ft.
—	Bents	@ —	Bd. Ft. Each	—	Bd. Ft.
2	Abutments	@ —	Bd. Ft. Each	—	Bd. Ft.
—	Wings	@ —	Bd. Ft. Each	—	Bd. Ft.
			Total		Bd. Ft.

Concrete "Class A"
2 Abutments @ 6 Cu. Yds. Each 12 Cu. Yds.

Structural Excavation
Pier Foundations — Cu. Yds.
Pier Common — Cu. Yds.
Abutment Rock — Cu. Yds.
Wing Common — Cu. Yds.

Asphalt Plank Wearing Surface

1	Spans	@ 575	Sq. Ft. Each	575	Sq. Ft.
2	Abutments	@ 75	Sq. Ft. Each	150	Sq. Ft.
			Total	600	Sq. Ft.

Asphalt Felt 32" Wide

2	Abutments	@ 12	Sq. Ft. ea.	24	Sq. Ft.
1	Spans	@ 614	Sq. Ft. ea.	614	Sq. Ft.
			Total	638	Sq. Ft.

Drain Pipe & Flange
2 — 3" Std. Pipe 26" long with 1 — 3" C.I. Flange — 2 Pieces

General Notes

All work shall be done in accordance with The Standard Specifications of the Colorado State Highway Department adopted Jan. 1, 1930.
Piles, Sheet Piling, Wales, Bulkheads, Backing Planks, Timber Headers, Sway Braces, Caps, Stringers, Stringer Splicing, Bridging, Dirt Stops, Wing Stops & Wheel guards, Stringer Splices and Flooring shall be creosoted.
Handrails & Handrail Posts shall not be creosoted.
Handrails & Handrail Posts shall receive two coats of paint. Paint shall be 70% pigment and 30% raw linseed oil, and pigment shall have 65% white lead, 20% zinc white, and not over 15% inerts.
Standard C.I.O.S. washers shall be used under each bolt head & nut.
All caps shall be edged to even depth before treatment.
All timber including piles shall be Southern Long Leaf Yellow Pine or West Coast Douglas Fir.
All Coast region Douglas Fir, Lumber and Timber must meet the requirements of the Pacific Lumber Inspection Bureau before treatment and each carload of treated or untreated timber shall be accompanied by a Fir-Tex certificate. This is to be done without additional cost to the state.
All Stringers which are to be treated shall be mapped on one edge at the ends, one-fourth inch (¼") off nominal size before treatment to insure even depth over caps.
All Stringer Splices and Stringer Blocking shall be surfaced one edge one half inch (½") off nominal size before treatment.

Bid prices of Asphalt Plank shall include all labor and material for finished Asphalt Plank Wearing Surface in place on bridge floor with one layer of Asphalt Felt between the laminated wood Floor and the asphalt planks and all nails necessary to fasten asphalt plank to laminated wood floor.

Structure Required

Spans @ ft. for Type of Abutment
For Roadway, ft. Ground — Flat End — Ft. Flat Ft. End
Length of Wings — Ft. Flat — Ft. End

Loading Data

Live Load - A.A.S.H.O. July 1927 Class "B".
Dead Load - Assumes 10 lbs per sq. ft. Plank Surface. This includes for Asphalt Plank Wearing Surface.

Colorado
State Highway Department
Timber Trestle with 6" Laminated Floor

Across Grand & Rattle Pass
Near Kremmling Sec. 21 T. 2 N. R. 83 W.
Designed by E.E.W.
Made by E.E.W.
Checked by E.E.W.
Approved by J. J. Bailey
Bridge Engineer
Date May 22, 1929.

H-1-K

P115-A

"A" Line Sheet #1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	COLO	242-D	14	

Rev as Constr Mar 9 1932 By JEH

EAST SALT CR

Sta 1315+12 Regd Project Marker

Present Road

To Mack

To State Line

UINTAH RR

STA 1333+00 1/2 MILE CHIP REGD

STA 1333+00 18'0" 34" CMP REGD

Sta 1332 Regd 18 Byfs C.M.P. Side Dr. Salvaged Pipe

Also 18 Lin. Ft. 34" CMP Regd in Embankment for Approach Road

8 Dr Ditch Ft. Regd 10 Cu Yds

Unless otherwise noted on profile all material necessary to construct embankments is available on highway right of way or immediately adjacent thereto within 300 ft. of where required.

Sta 1317+67 – 1320+67 Regd. 600 Lin Ft. Wire Cable Guard Fence
Sta 1321+33 – 1324+33 Regd. 600 " " " " " "

END F.A.P. 242-B
BEGINNING F.A.P. 242-D STA 1315+12

Clearing + Grubbing, Light
Small Sage Brush + Greasewood

Present Structure:
Span 1 @ 30'-0"
Clear roadway 16'-0"
Clear Waterway 250 Sq. Ft.
Type of Superstructure Timber Trestle
Type of Substructure Timber Piles
Requirements as to removal Remove

Stream Data:
Drainage area in sq. miles 6+
Velocity during high water
Elevation of:
Max. High Water / Normal Stage / Low Water / Stream Bed
Drift
Scour

Proposed Structure:
Position referred to present structure
Span 2 @ 15'-0" Rein Conc
Clear roadway 28'-0"
Clear Waterway
Type of Superstructure Piles-A Cncts Type B T. Timber Trestle. Asphalt Plank Wearing Surface
Type of Substructure Timber Piles
Detour Structure Requirements
R. R. Siding, Mack Haul to bridge site 2½ mi.
Nearby structures on same stream
Location
Waterway 800 Sq. Ft.
Record during floods

B.M. on Tel. Pole No 121.74 Elev. 4494.30

B.M. on Tel. Pole No 121.78 Elev. 4500.42

B.M. on Tel. Pole No 121.83 Elev. 4503.35

B.M. on Tel. Pole No 121.93 Elev. 4508.84

B.M. on Tel. Pole No 121.98 Elev. 4513.17

Preliminary Data Only

Unclass'd Exc.	515	
" Bor.		
Emb. + 15%	343	
Sta. % Overhaul	72	

4540 927

PROFILE
SURVEYED
PLOTTED
DRAWN
NOTE BOOK
STRUCTURE BOREHOLE NOTES

PLAN
SURVEYED
PLOTTED
DRAWN
NOTE BOOK
STRUCTURE BOREHOLE NOTES

E. H. Yardley
W. P. Bucher
Z. H. Redmon

DATE 11-16-31
DATE 11-16-31
DATE May 9, 32

"A" Line Sheet No. 4

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
2	COLO.	242-D	15	

Rev. as Constr. Mar. 9, 1932 By M.O.I.P.

RECEIVED DEC 11 '29 ENG. DIV. S.R.B.

PLAN — SURVEYED ... DRAWN ... CHECKED ... NOTE BOOK ... NO. ... ALIGNMENT CHECKED ... RT. OF WAY CHECKED ... STRUCTURE SHOWN ... DATE ... BY ... REVISED ... A.M.D. ... 2-14-30

PROFILE — SURVEYED ... DRAWN ... CHECKED ... NOTE BOOK ... NO. ... STRUCTURE SHOWN ... DATE ... BY ... REVISED ... E.V.C. ... 2-14-30

Sec. 36 T. 1 N. R. 98 W. 6th P.M.

Sec. 36 N½ NE¼ N½ NW¼ U.S. Land

Sec. 36 NE¼ NW¼ U.S. Land

Sec. 30 SW¼ NE¼ U.S. Land

Sta. 1359+75 Road 24"x16' C.M.P. Side Drain Salvaged Pipe

Sta. 1344+80 Road 24"x16' C.M.P. Side Drain Salvaged Pipe

Sta. 1342+80 Road 24"x16' C.M.P. Side Drain Salvaged Pipe

Sta. 1343+60 Road 18"x12' C.M.P. Side Drain Salvaged Pipe

Sta. 1344+60 18"x12' C.M.P. Road

Sta. 1345+20 Road 18"x12' C.M.P. Side Drain Salvaged Pipe

Sta. 1345+50 Road 18"x12' C.M.P. Side Drain Salvaged Pipe

Sta. 1342+80 Road 24"x16' C.M.P. Side Drain Salvaged Pipe

Road 44 cu. yds. Ditch Left

Sta. 1340+80 24"x16' C.M.P. Road Side Drain

Mountain States Telephone

R.O.W.

Hickory Road

N 89° 18' W

N 30° 88' W

WINTAH RR.

18'x 16' Conc. Box

Pile driven trestle Two bents 16' each

Sta. 1342+72 – 1344+72 Recd. 200' Lim. Ft. Wire Cable Guard Fence

Sta. 1342+10 – 1342+40 Recd. 800 " " " " "

Clearing + Grubbing, Light Small Sage Brush + Greasewood

Present Structure

Span 1 @ 25'-0"
Clear Waterway
Clear Roadway 16'-0"
Type of Superstructure Timber Trestle
Type of Substructure Timber Trestle
Requirements at its Removal Remove

Stream Data:

Drainage area in Sq. Mi.
Velocity during high water:
Elev. of:
Max. High Water
Normal Stage
Low Water
Stream bed
Drift
Scour

Proposed Structure

Position referred to present structure
Span 2 @ 19'-6"
Clear Roadway 25'-0"
Clear Waterway
Type of Superstructure, Std. R-115-A (Crlvt.) Type No. 2 Ft. Timber Planks, Asphalt Plank
Type of Substructure, Treated Timber Piles 10' Wings
Detour Structure Requirements:
R.R. Siding 1 Track Haul to Bridge Site, 3 Mi.

Near by Structures on Same Stream:

Correction:
Waterway
Record during Floods.

Preliminary Data Only

Unclass'd Exc. 175 2440 1181 1741
" Bor. 2440 1181 1741
Emb. + 15% 2622½ 1181 1741
BM on Tel. Pole No. 13138 Elev. 4813.37
BM on Tel. Pole No. 13141 Elev. 4813.98
Sta. Yd. 0 th 1008 405

4540 4530 4520 4510 4500

1339 38 1340 41 42 43 44 45 46 47 48 49 1350 51 52 53 54 55 56 57 58 59 1360 61 62 63 64 65 66 67 68 69 1370

PLATE I—PLAN—PROFILE U. S. E. R. A. STRUCTURES

"A" Line Sheet #3

FED ROAD DIST NO	STATE	FED AID PROJ. NO.	SHEET NO	TOTAL SHEETS
3	COLO.	242 D	16	

Rev as Constr Mar 9 1932 By JGO JFP

PLAN — SCALE 1" = 100'

SW¼ NE¼ | Sec 29 U.S. Land | SE¼ NW¼ | SW¼ NE¼ | N54°16'W | Sec 29 U.S. Land | NW¼ NW¼ | NE¼ NW¼

Sta 1325+18 15° 35' Cmp Regd

Sta 1332+50 Incline 24"x30" Wood Box 18 Lin Ft 15" CMP Regd & Drain Ditch Left Regd 647 Cu Yds.

1 R.O.W. Markers Regd

Sta 1337+00 18 Lin Ft 24" CMP Regd

Sta 1401+50 Incline 24"x30" Wood Box Regd 54 Lin Ft 13" Cmp Sta 1381+72 Excavated Timber Bridge One 19 Span With Substructure CHANNEL EXC 566 CU YDS

4 R.O.W. Markers Regd

Row 3 — 60' — Mountain Mike Trl. — Present Road — Row 3

Sta. 1381+33 - 1381+72 Regd 100 Lin Ft. Wire Cable Guard Fence

Sta. 1381+88 - 1382+28 " " " " " "

UINTAH R.R. — UINTAH DR.

One 16' Bent Pile Trestle

PROFILE — SCALE 1" = 100' Horiz. 1" = 10' Vert.

BM Spike in Tel. Pole No 13.13 Elev. 4531.76

BM Spike in Tel. Pole No 13.13 Elev. 4538.15

BM Spike in Tel. Pole No 13.13 Elev. 4529.61

BM Spike in Tel. Pole No 13.13 Elev. 4536.31

+0.8% — +0.18% — +0.56% — +0.41% — +0.9% — +0.9% — +1.00%

FL 33' — FL 34'

Present Structure:
Span
Clear Roadway
Clear Waterway
Type of Superstructure 24"x30" Wood Box
Type of Substructure
Requirements as to removal
Stream data:
Drainage area in Sq. mi.
Velocity during high water
Elev. of: Max. High Water — Low Water
Normal Stage — Stream Bed
Drift
Scour

Proposed Structure
Position Referred to present Structure
Span 1 @ 19'
Clear Roadway 25'
Clear Waterway
Type of Superstructure, Std. P-115-A (1932) Type II. Tr. Timber Trestle - Asphalt Plank
Type of Substructure, Tr. Timber Piles, 10° Wings
Detour Structure Requirements
R.R. Siding - Mack. Haul to Bridge Site 3½ mi.
Nearby Structures on Same Stream
Location
Waterway
Record During Floods.

Grubbing & Clearing, Light
Small Sage Brush & Greasewood

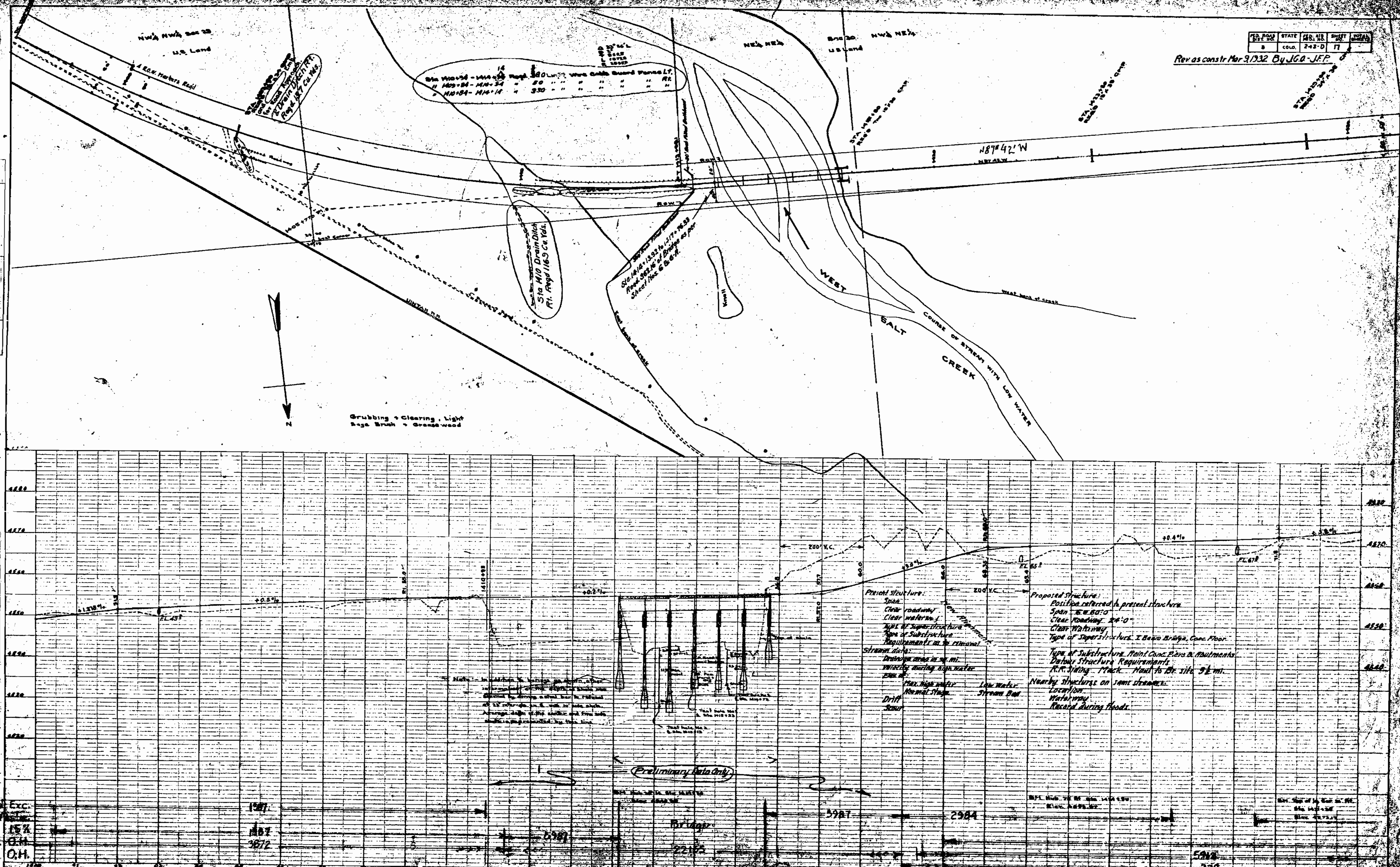
Preliminary Data Only

Unclas'd Exc.	100	1242	1716
" Bor.	150		
Emb. + 15%	250	1242	1716
Sta. Yd. O.H.		3260	3191

1360 — 69 — 1370 — 71 — 72 — 73 — 74 — 75 — 76 — 77 — 78 — 79 — 1380 — 81 — 82 — 83 — 84 — 85 — 86 — 87 — 88 — 89 — 1390 — 91 — 92 — 93 — 94 — 95 — 96 — 97 — 98 — 99 — 1400

PLATE 1 - PLAN—PROFILE U.P.R.R. & B STANDARD
KRUTTSCHNITT & ESSER CO. NEW YORK

DEC 1930
ENG. DIV.
S. H. D.



FED. ROAD ADM. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO	242-C	18	

Revised Constr Mar 9 1932 By U.G.O.-H.P.

DEC 1936
ENG. DIV.
U. S. D.

PLAN
PROFILE
NOTE BOOK
HD.
DATE
BY
CHECKED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
STRUCTURE NO. AND PAVING CHKD

Sta. 1452+20 - 1452+70 Regd. 100 Lin. Ft. Wire Cable Guard Fence
Sta. 1452+96 - 1453+46 Regd. 100 Lin. Ft. Wire Cable Guard Fence

Sta 1452 to 1439. Regd.
1479.6 Cu. Yds. Exc. for Ditch

Dry Wash

2 R.O.W. Markers Regd.

Ditch Regd

Δ 17°41' L
D 11°
T 893.2
L 1770.0
R 5730.0

NE¼ NW¼ Sec 30
T 9S R103W 6PM
U.S. Land

Sta. 1435+50
Regd 18'-0" Cmp.
&Drain Ditch Left
Regd 2.1 Cu. Yds.

Sta. 1442+50
Regd 18'-0" Cmp.
&Drain Ditch Left
Regd 33 Cu. Yds.

Sta. 1437+80
Regd 18'-0" Cmp.

Sta 1432+79 - 1433+38
Regd Concrete Timber Bridge
One 12' Span

NW¼ NW¼ Sec 30
T 9S R103W 6PM

NE¼ NE¼ Sec 25
T 9S R104W 6PM

U.S. Land

Clearing + Grubbing, Light
Small Grease wood

Present Structure
Span
Clear Roadway
Clear Waterway
Type of Superstructure
Type of Substructure
Requirements as to removal
Stream Data:
Drainage area in sq. mi.
Velocity during high water
Elevation of
Max. high Water
Normal Stage
Drift
Scour

Low Water
Stream Bed

Proposed Structure
Position referred to present structure
BM 2½ Hub 26' Lt. Sta 1433+36 Elev. 4939.37

Span 1 @ 23'
Clear Roadway 25'
Clear Waterway
Type of Superstructure, Std. P-115-A (Mod.) Type II, Tr. Timber Trestle, Asphalt Plank
Type of Substructure, Tr. Timber Piles, 10' Wings
Detour Structure Requirements
R.R. Siding, Mack Haul to Bridge Site 4 mi.
Nearby Structures on some stream:
Location
Waterway
Record During floods

BM Top of Conc. Pipe 14.6' Rt. Sta 1433+36 Elev. 4879.35

BM 2½ Hub 69' Rt. Sta 1439+65 Elev. 4878.08

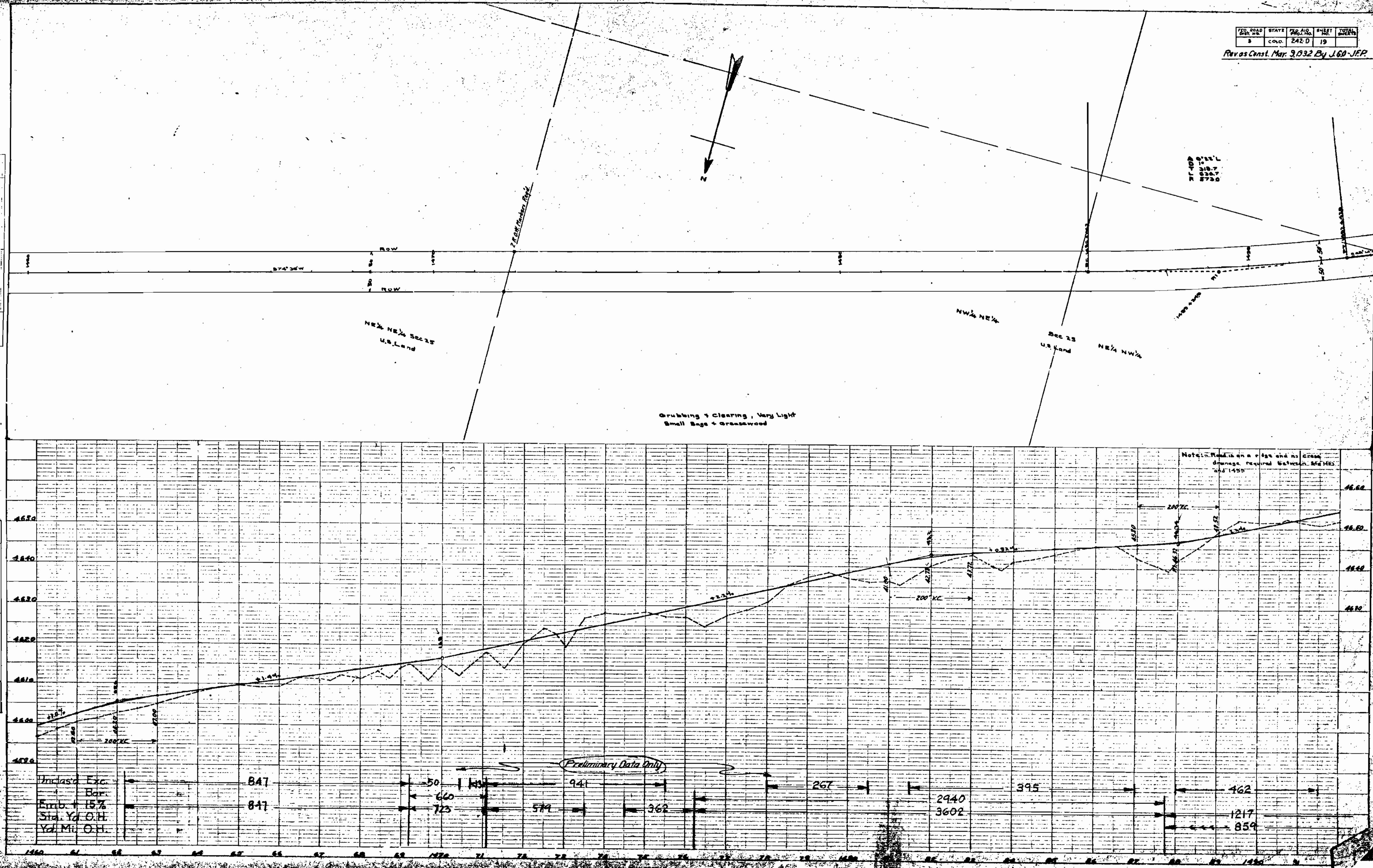
Preliminary Data Only

PROFILE OF PROPOSED DITCH

Ditch Section

Unclas. Exc.	763
Unclass. Bor.	
Emb. + 15%	3761
Sta. Yd. O.H.	
Yd. Mi. O.H.	

1442 | 14 | 442 | 65 | 5948 | 6511 | 67



FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS
3 | COLO. | 242-D | 19 |
Rev. as Const. Mar. 9, 1932 By J.G.D.-J.F.P.
PLAN
NOTE BOOK
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
BY
DATE
ROW
S74°36'W
2 R.O.W. Markers Req'd.
N
Δ 0°22' L
D 1°
T 319.7
L 636.7
R 5730
NE¼ NE¼ Sec 25
U.S. Land
NW¼ NE¼
Sec 25
U.S. Land
NE¼ NW¼
Grubbing + Clearing, Very Light
Small Sage + Greasewood
Note:- Road is on a ridge and no cross drainage required between Sta 1453 and 1455
PROFILE
NOTE BOOK
SURVEYED
PLOTTED
GRADES CHECKED
E. W. NOTED
STRUCTURAL NOTATIONS CHKD
4650
4640
4630
4620
4610
4600
4590
4660
4650
4640
4630
+2.0%
+1.44%
+2.34%
+0.32%
200' V.C.
200' V.C.
200' V.C.
Preliminary Data Only
Unclas'd Exc.
Bor.
Emb. + 15%
Sta. Yd. O.H.
Yd. Mi. O.H.
847
847
50
660
723
941
579
362
267
395
2940
3602
462
1217
859
1460
61
62
63
64
65
66
67
68
69
1470
71
72
73
74
75
76
77
78
79
1480
81
82
83
84
85
86
87
88
89
1490
91

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	242-D	20	

Rev. as Constr. Mar 9 1932 By J.G.D. J.F.P.

PLAN
SURVEYED
PLOTTED
NOTE BOOK
NO.
DRAWING CHECKED
ENGINEER INSPECTED
DEPT. OF WAY CHECKED
STRUCTURE NOTE "A" CHECKED

PROFILE
SURVEYED
PLOTTED
NOTE BOOK
NO.
DRAWING CHECKED
ENGINEER INSPECTED
DEPT. OF WAY CHECKED
STRUCTURE NOTE "A" CHECKED

DATE
BY

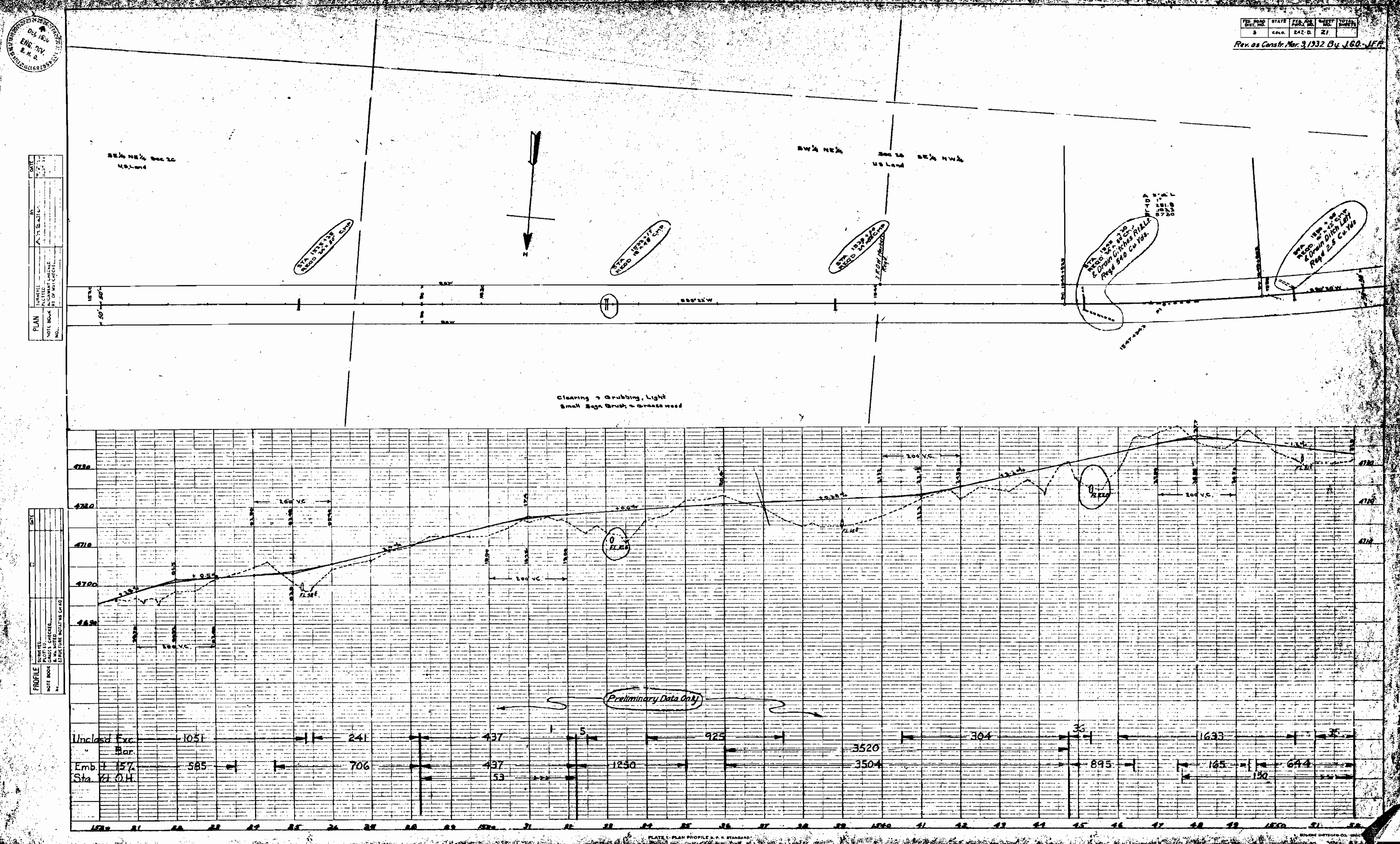
Clearing + Grubbing, Light
Small Sage Brush + Greasewood

N

Unclass'd Exc. — 755 — 1259 — 3 — 1549 — 705 — 18 — 928
Bor. — 300 — 40
Emb. @ 15% — 348 — 914 — 1012 — 529 — 1023 — 351 — 317
Sta. Yd. C.H. — 3076

PLATE I - PLAN-PROFILE B. P. R. STANDARD

EUGENE DIETZGEN CO. CHICAGO



DEC 1930 ENG. DIV. S. H. D.
FED. ROAD DIST. NO. 3
STATE COLO.
FED. AID PROJ. NO. 242-D
SHEET NO. 21
Rev. as Constr. Mar. 9 1932 By J.G.O.-J.F.R.
SE¼ NE¼ Sec 26
U.S. Land
SW¼ NE¼
Sec 26
US Land
SE¼ NW¼
STA 1525+35 REQD 24"x 50' CMP
STA 1533+17 REQD 18"x48' CMP
STA 1538+30 REQD 24"x 52' CMP
2 R.O.W. Markers Reqd.
STA 1545+30 REQD 24"x 52' CMP & Drain Ditches Rt.&Lt. Reqd 54.0 Cu.Yds.
STA 1550+55 REQD 18"x 42' CMP & Drain Ditch Left Reqd 2.5 Cu.Yds
Δ 5°-2' L
D 1°
T 251.8
L 503.3
R 5730
R.O.W.
50'
S 85°22' W
1547+94.3
Clearing + Grubbing, Light
Small Sage Brush + Greasewood
PLAN
NOTE BOOK No.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
B. M. NOTED
STRUCTURE NOTATIONS CH'KD.
4730
4720
4710
4700
4690
+0.5%
+0.6%
+0.28%
200' V.C.
F.L. 98.5
F.L. 14.3
F.L. 31.2
-1.3%
Preliminary Data Only
Unclas'd Exc.
" Bor.
Emb. + 15%
Sta. Yd. O.H.
1051
241
437
5
925
304
36
1633
35
3520
585
706
437
1250
3504
895
165
644
53
150
1520
21
22
23
24
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1530
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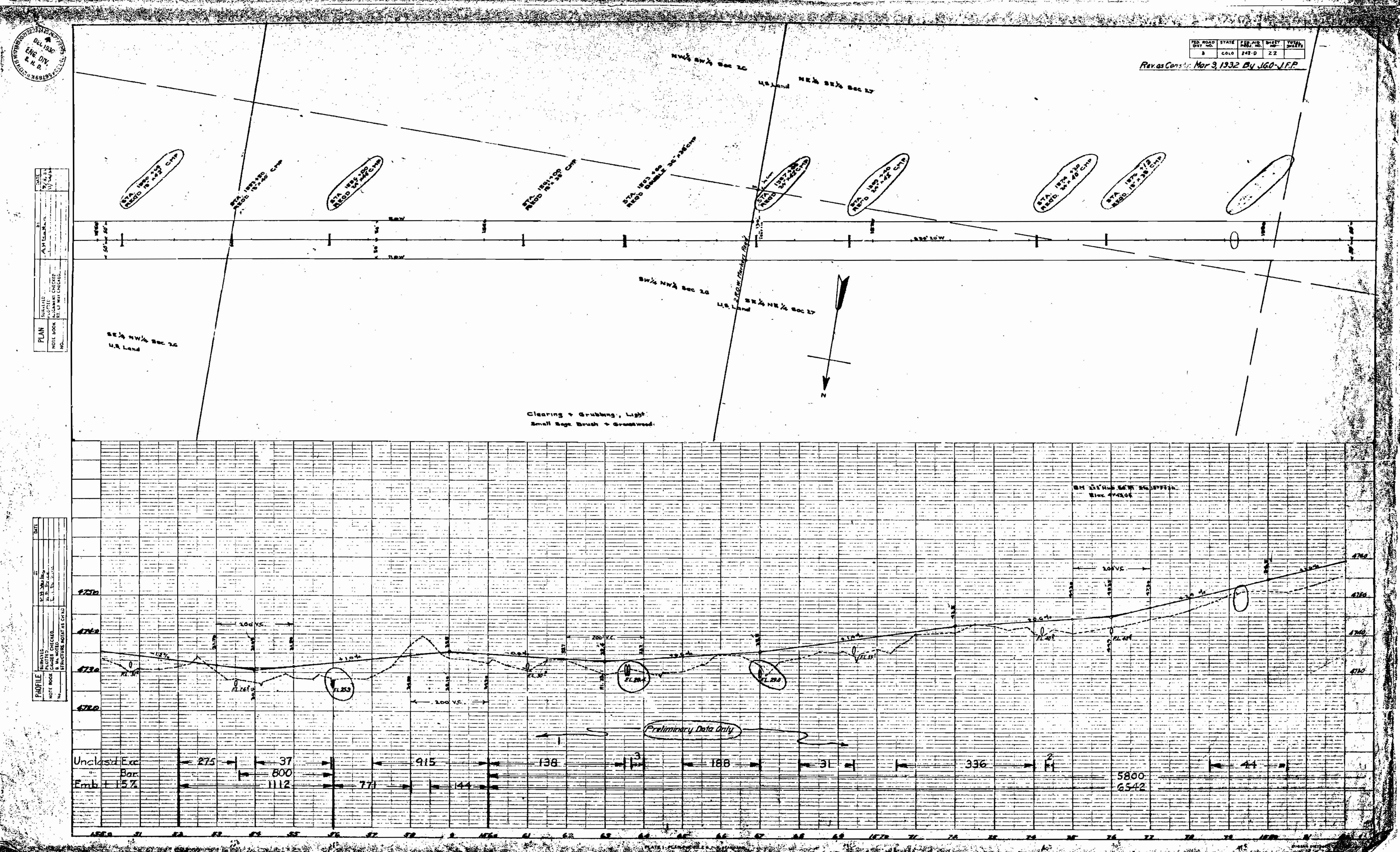
1550
51
52
PLATE 1 - PLAN PROFILE S. P. R. STANDARD



FED. ROAD DIST. NO. 3
STATE COLO
FED. AID PROJ. NO. 242-D
SHEET NO. 22
TOTAL SHEETS
Rev. as Const: Mar 9, 1932 By JGO-J.F.P.
NW¼ SW¼ Sec 26
U.S. Land
NE¼ SE¼ Sec 27
STA. 1874+20 REQ'D. 24"x40' CMP
STA. 1876+12 REQ'D. 18"x38' CMP
R.O.W.
SW¼ NW¼ Sec 26
2 R.O.W. Markers Req'd
SE¼ NE¼ Sec 27
U.S. Land
SE¼ NW¼ Sec 26
U.S. Land
N
Clearing + Grubbing, Light
Small Sage Brush + Greasewood
PLAN
NOTE BOOK
NO.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
BY
DATE
PROFILE
GRADES CHECKED
B. M. NOTED
STRUCTURE NOTAT NS CH'KD
4750
4740
4730
4720
4760
200' V.C.
F.L. 25.3
F.L. 30
F.L. 29.4
F.L. 29.8
F.L. 40
Preliminary Data Only
Unclas'd Exc.
" Bor.
Emb + 15%
275
37
800
1112
771
915
144
138
3
188
31
336
2
44
5800
6542
1850
51
52
53
54
55
56
57
58
9
1860
61
62
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1870
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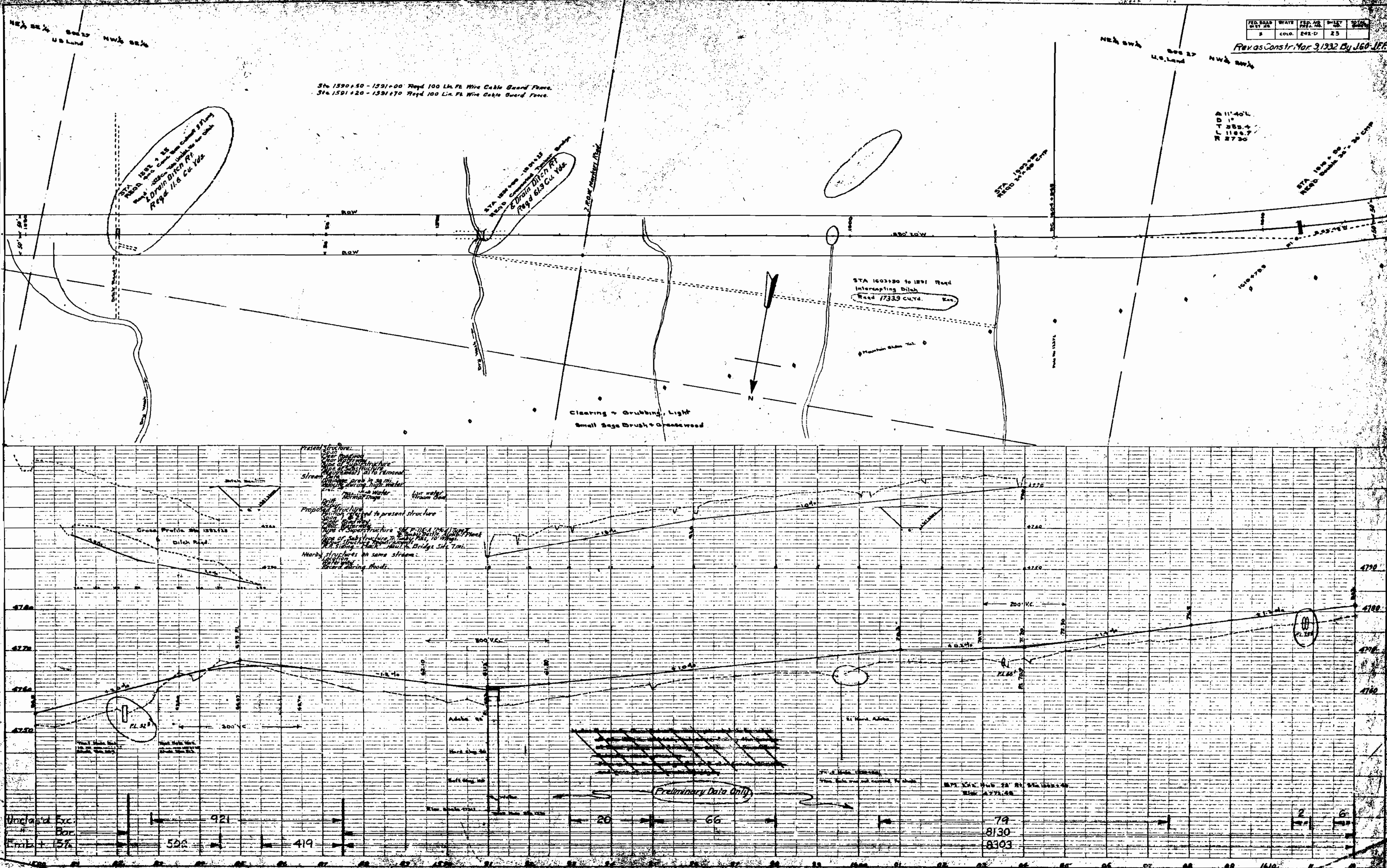
79
1880
81



FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS
5 | COLO. | 242-D | 25 |
Rev. as Constr. Mar. 9, 1932 By JGO-JFP.
NE¼ SE¼ Sec 27 U.S. Land NW¼ SE¼
NE¼ SW¼ Sec 27 U.S. Land NW¼ SW¼
Sta 1590+50 - 1591+00 Reqd 100 Lin. Ft. Wire Cable Guard Fence.
Sta 1591+20 - 1591+70 Reqd 100 Lin. Ft. Wire Cable Guard Fence.
Ditch Road
Drain Ditch Rt. Reqd 11.6 Cu. Yds.
Drain Ditch Rt Reqd 61.3 Cu. Yds.
R.O.W. Markers Reqd
R.O.W.
STA 1603+50 to 1591 Reqd Intercepting Ditch Reqd 1733.9 Cu. Yd. Exc.
Clearing + Grubbing, Light
Small Sage Brush + Greasewood
N
Δ 11°40' L
D 1°
T 585.4
L 1166.7
R 5730
PLAN
NOTE BOOK NO.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
BY
DATE
Present Structure:
Span
Clear Roadway
Clear Waterway
Type of Superstructure
Type of Substructure
Requirements as to removal
Stream Data
Drainage area in sq. mi.
Velocity during high water
Max. High Water
Normal Stage
Low water
Stream Bed
Drift
Scour
Proposed Structure
Position referred to present structure
Span
Clear Roadway
Clear Waterway
Type of Substructure, Tr. Timber Piles, 10' Wings.
Detour Structure Requirements
R.R. Siding - Haul to Bridge Site 7 mi.
Nearby structures on same stream:
Location
Waterway
Record during floods.
Ditch Section
Cross Profile Sta 1582+25
Ditch Road
200' V.C.
Adobe
P.I. 52
P.I. 60
P.I. 75
Preliminary Data Only
4790
4780
4770
4760
4750
PROFILE
NOTE BOOK NO.
SURVEYED
PLOTTED
GRADES CHECKED
STRUCTURE NOTATIONS CHKD
Unclas'd Exc.
Bor.
Emb. + 15%
921
592
419
20
66
79
8130
8303
2
6
1610

Fed. Road Dist. No.	State	Fed. Aid Proj. No.	Sheet No.	Total Sheets
3	Colo.	E420	24	

Rev as Constr Mar 9 1932 By J.G.O. J.F.P.

PLAN	Surveyed	By A.H. Bartha	Date 1/31/32
	Plotted		
	Note Book	Alignment Checked	
	No.	Grades Checked	
		No. of Mon. Noted	
		Structure Noted	

PROFILE	Traced	By A.H. Bartha	Date 3/3/32
	Plotted		
	Note Book	Grades Checked	
	No.	No. of Mon. Noted	
		Structure Noted	

Sta 1621+13 to 1638+08 Regd 1423 Lin Ft. Galvanized Barbed Wire Fence Left

Sta 1627+00 to 1633+00 Regd 1500 Lin Ft Wire Cable Guard Fence

EQUATION

Proposed Channel Change Sta 1633+38 to 1636+71.3 Length 733.3 Feet Under Cr.

Gate Regd.

Mountain State Tel.

← DRY WASH

Clearing & Grubbing, Light
Small Sage Brush & Greasewood

Old R.R. Structure Stks Missing Bar

Ditch Section

PROFILE ON CHANNEL CHANGE STA 1633+38 to 1636

Test Hole Not Bot. in Sand Elev of Bottom 4807.1

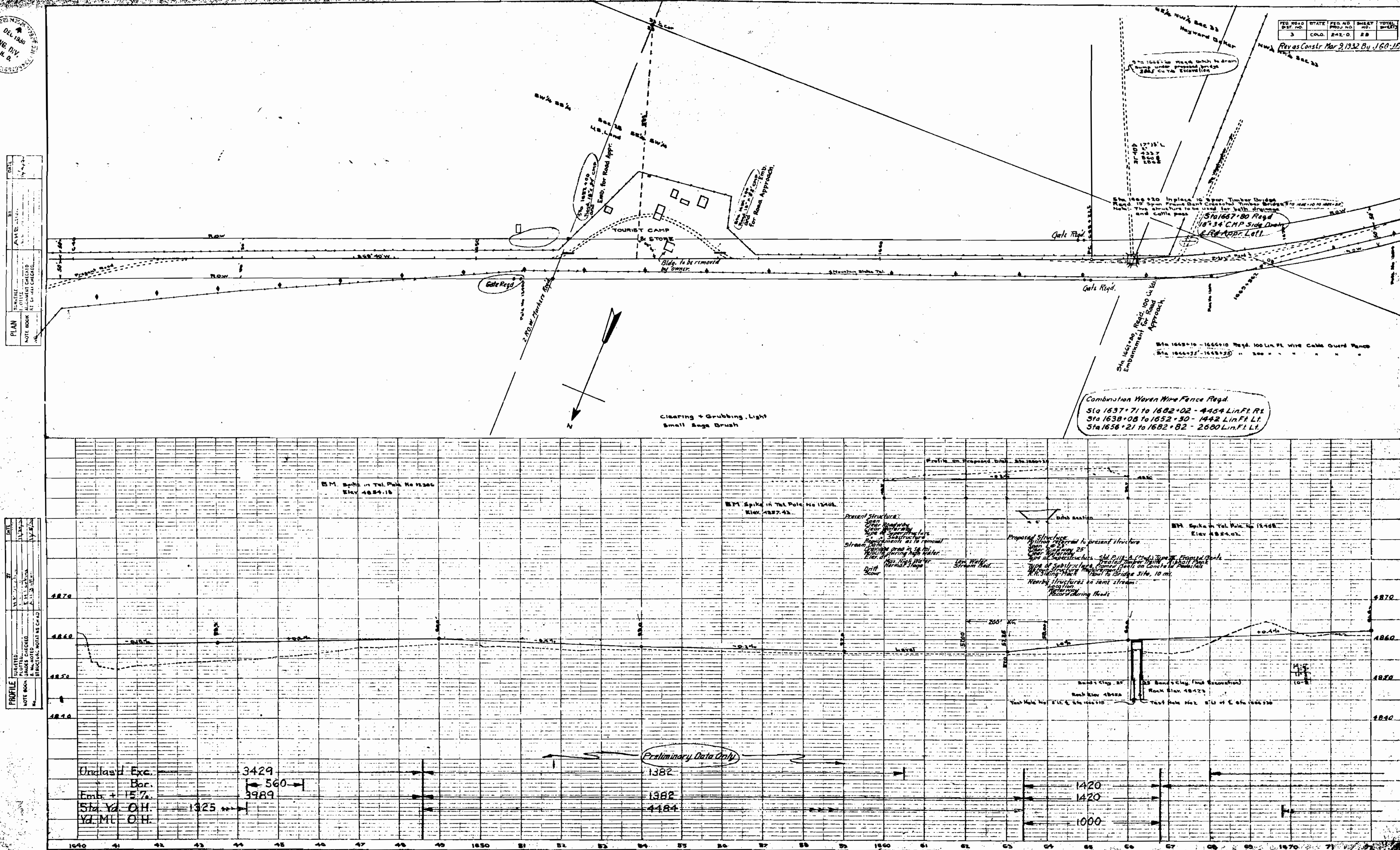
Test Hole Not Bot. in Sand Elev of Bottom 4803.8

Bm 50' Rt. Sta 1615+36 Ext. Hub. Elev 4794.17

Bm 50' Lt. Sta 1633+38 Ext. Hub. Elev. 4805.67

Preliminary Data Only

Unclass'd Exc.	22	5	
" Bor.		1710	
Emb. + 15%		1737	
Sta. Yd. O.H.			
	767	2363	131
		1599	5543
		360	9922
			5412


DEC 1930
ENG. DIV.
S. H. D.
FED. ROAD DIST. NO. 3
STATE COLO.
FED. AID PROJ. NO. 242-D
SHEET NO. 28
TOTAL SHEETS
Rev as Constr Mar 9, 1932 By J.G.O.-J.F.P.
NE¼ NW¼ Sec 33
Hayward Baker
NW¼ Sec 33
SW¼ SE¼
Sec 28
SE¼ SW¼
TOURIST CAMP
& STORE
Bldg. to be removed by owner.
Emb. for Road Appr.
Emb. for Road Approach.
Gate Reqd
2 R.O.W. Markers Reqd.
ROW
Present Road
Mountain States Tel.
Gate Reqd.
Sta 1666+20 Inplace 16' Span Timber Bridge
Reqd. 19' Span Frame Bent Creosoted Timber Bridge
Note: This structure to be used for both drainage and cattle pass
Sta 1667+80 Reqd
18"x34' C.M.P. Side Drain
& Rd Appr. Left
Sta 1661+80, Reqd. 100 Cu Yds. Embankment for Road Approach.
Combination Woven Wire Fence Reqd.
Sta 1637+71 to 1682+02 - 4464 Lin.Ft. Rt.
Sta 1638+08 to 1652+30 - 1442 Lin.Ft. Lt.
Sta 1656+21 to 1682+82 - 2680 Lin.Ft. Lt.
Clearing + Grubbing, Light
Small Sage Brush
N
PLAN
NOTE BOOK
PROFILE
B.M. Spike in Tel. Pole No 12386
Elev 4854.18
B.M. Spike in Tel. Pole No 12402
Elev. 4857.42
B.M. Spike in Tel. Pole No 12408
Elev 4854.02
Profile on Proposed Ditch
Ditch Section
Present Structure:
Span
Clear Roadway
Clear Waterway
Type of Superstructure
" " Substructure
Requirements as to removal
Stream Data
Drainage area in sq. mi.
Velocity during high water
Elev. of
Max. High Water
Normal Stage
Low Water
Stream Bed
Drift
Scour
Proposed Structure
Position referred to present structure
Span
Clear Roadway 25'
Clear Waterway
Type of Superstructure
Type of Substructure
R.R. Siding-Mack Haul to Bridge Site, 10 mi.
Nearby structures on same stream:
Location
Waterway
Record during floods
200' V.C.
Level
4870
4860
4850
4840
Preliminary Data Only
Unclass'd Exc.
Bor.
Emb. + 15%
Sta. Yd. O.H.
Yd. Mi. O.H.
3429
560
3989
1325
1382
1382
4484
1420
1420
1000
1640
41
42
43
44
45
46
47
48
49
1650
51
52
53
54
55
56
57
58
59
1660
61
62
63
64
65
66
67
68
69
1670
71
72

FED. ROAD DIV. NO.	STATE	FED. AID NO.	SHEET NO.	TOTAL SHEETS
8	COLO.	242 D	26	

Texas Constr. Mar. 9, 1932 By L&C - LEP

EQUATION 1678+17.5 Back
1678+10.5 Ahead

Sta 1684+50 to 1721+60
Drain Ditch Left Regd 1717.5 Cu Yds.

Sta 1685+50 to 1689+00 Regd. 350 Lin. Ft. Wire Cable Guard Fence Rt
Sta 1689+50 to 1695+00 Regd 550 Lin Ft Wire Cable Guard Fence Rt

Clearing & Grubbing, Light
Small Sage Brush

Equation

BM Spike in Tel. Pole No 13433
Elev. 4668.49

Preliminary Data Only

Unclass'd Exc.	2619		256	818
Bon			1060	
Emb + 15%	2619		1316	818
Sta Yd O.H.	8100		36	162

1670 71 72 73 74 75 76 77 78 79 1680 81 82 83 84 85 86 87 88 89 1690 91 92 93 94 95 96 97 98 99 1700

FED. ROAD DIST. NO	STATE	FED. AID PROJ. NO	SHEET NO	TOTAL SHEETS
8	COLO	242-B	27	-

Rev as Constr Mar 9 1932 By L&A JPP

Sta 1730+00 to 1790+50
Drain Ditch Rt. Regd. 2801 Cu Yds

EXCELSIOR DIVIDE

Clearing & Grubbing, Light
Small Sage Brush

B.M. Spike in Tel. Pole No. 16335
Elev. 4921.18

B.M. Spike in Tel. Pole No. 16346
Elev. 4901.16

B.M. Spike in Tel. Pole No. 3446
Elev. 4910.61

Preliminary Data Only

Unclass'd Exc.	969
" Bor.	2380
Emb + 15%	3349
Sta. Yd. O.H.	

400' V.C.

PLATE I. PLAN-PROFILE U. S. D. A. STANDARD

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	248-D	28	

Revised Constr. Mar 9 1932 By JGR-IB

U.S. LAND ENG. CIV. & M. D.

EXCELSIOR DIVIDE

Property Line

Mountain States Tel.

C.L. D.&R.G.W. Marshall Pass

T 50 N R 5 E N.M.P.M.

N 1/4 Cor. Sec 5

Sta 1738+00 CMP 18" C.M. 16 Ga. 1/2 Drain Ditches R.R.&L.T. Reg'd 538 Col 165

Sta 1738+00 Bank 12" C.M. 16 Ga. 1/2 Drain Ditches R.R.&L.T. Reg'd 35 Tourist

Sta 1745+00 Bank 18" C.M.P. 16 Ga. 1/2 Drain Ditches R.R.&L.T. Reg'd 183 Col 165

Sta 1755+00 Bank 12" C.M.P. 16 Ga. 1/2 Drain Ditches R.R.&L.T. Reg'd 615 Colorado

R.O.W.

Section Line

Clearing & Grubbing, Light Small Sage Brush

T 50 N R 5 E N.M.P.M. Lot 2 Sec 32 U.S. Land

PLAN

SURVEY DRILLED	
NOTE BOOK PLOTTED	
NO.	ALIGNMENT CHECKED
	PT. OF WAY CHECKED

PROFILE

SURVEY DRILLED	
NOTE BOOK PLOTTED	
NO.	GRADES CHECKED
	R. W. NOTED
	STRUCTURE QUANTITIES CHKD.

BM Spike in Tel. Pole No 65403 Elev 4915.08

BM Bo'Rl Sta 1741+80 12"x12" Hub Elev. 4902.97

BM Bo' Rl Sta 1788+00 12"x12" Hub Elev. 4892.86

4920
4910
4900
4890
4880

400' V.C.

F.L. 10.2

F.L. 03.2

F.L. 09.2

F.L. 14.2

Preliminary Data Only

Unclass'd. Exc.	490	68	578
" Bor.			5440
Emb + 15%			6576

1730 30 32 33 34 35 36 37 38 39 1740 41 42 43 44 45 46 47 48 49 1750 51 52 53 54 55 56 57 58 59 1760 61 62

PLATE 1 - PLAN-PROFILE D. F. & E. STANDARD

EUGENE HITTGEN CO. CHICAGO

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	242-B	30	

Revised Constr. Mar. 9, 1932 By J.S.D.-J.F.P.

DEC 1934
ENG. DIV.
G.N.D.

PLAN
SURVEYED ... DATE ...
PLOTTED ... BY ...
NOTE BOOK ... CHECKED ...
NO. ... ALIGNMENT ...
... PROFILE ...

PROFILE
SURVEYED ... DATE ...
PLOTTED ... BY ...
NOTE BOOK ... CHECKED ...
NO. ... G. M. NOTED ...
... STRUCTURE SCALE 1" = 20'

Sta 1790+35 Begin 18' Cmb. & Drain Ditches Rt & Lt. Regd 22.9 Cu. Yds.

Sta 1800+28 Round Hd. 30" C.M.P.

2 R.R.M. Markers Rem'd.

EQUATION
Sta 1803+00 Back
Sta 1811+50 Ahead

Sta 1811+50 Drain Ditch Lt. Regd. 2.5 Cu. Yds.

Sta 1813+30 Round Hd. 30" C.M.P. 30° Skew 18' Cmb. & Drain Ditches Rt & Lt. Regd. 3.2 Cu. Yds.

Sta 1815+90 Round Hd. 30" C.M.P. 18' Cmb. & Drain Ditch Rt. Regd. 1.9 Cu. Yds.

Sta 1817+85 Round Hd. 30" C.M.P. 18' Cmb. & Drain Ditches Rt & Lt. Regd. 32.5 Cu. Yds.

Sta 1819+50 Drain Ditch Rt. Regd. 6.6 Cu. Yds.

Sta 1820+90 Drain Ditches Lt. Regd. 34.8 Cu. Yds.

Sta 1812+10 to 1815+60 Regd. 700 Lin. Ft. Wire Cable Guard Fence

Clearing & Grubbing
Sage Brush & Juniper Trees

R.O.W.

U.S. Land

NW¼ SE¼ Sec 6

SW¼ SE¼ Sec 6

SE¼ SW¼

BM 80' Rt Sta 1795+00
3¼" Hub Elev 4850.69

BM Nail in Juniper Tree
80' Rt Sta 1800+00
Elev 4872.19

BM 80' Rt Sta 1803+00
3"x3" Hub Elev 4880.16

BM 80' Lt Sta 1818+00
Nail in Juniper Tree
Elev 4858.66

Equation

400' V.C.

200' V.C.

1500

1782

Preliminary Data Only

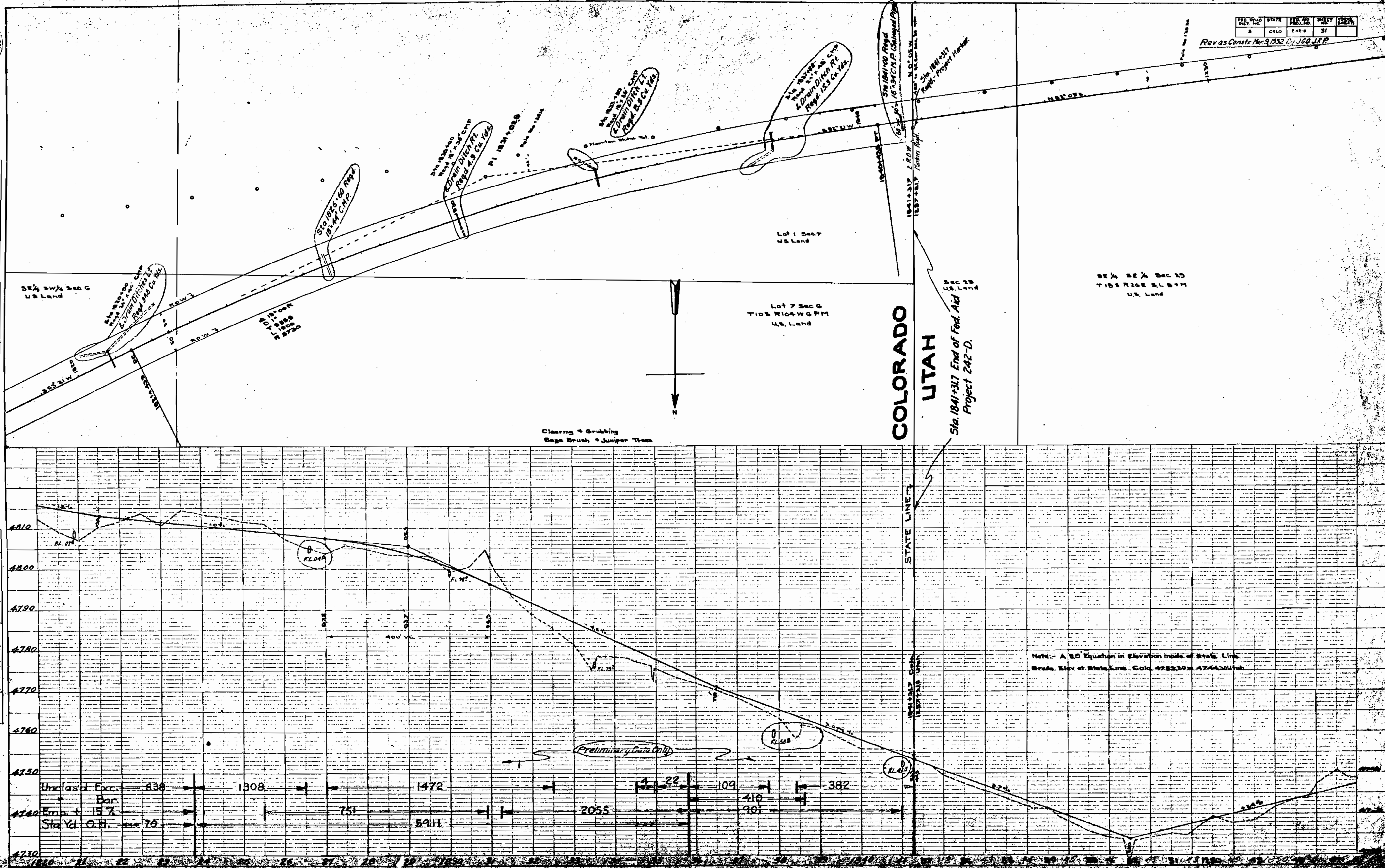
Unclass'd Exc. — 1098 — 450 — 3 — 727 — 1755
Bor. — 420
Emb. + 15% — 1098 — 873 — 691 — 1066
Sha. Yd. O.H. — 1728 — 1417

725 — 1340 — 1380 — 556

4890 4880 4870 4860 4850 4840 4830 4820 4810 4800

1790 91 92 93 94 95 96 97 98 99 1800 01 02 03 04 05 06 07 08 09 1810 11 12 13 14 15 16 17 18 19 1820 21 22

DEC 193_ ENG. DIV. S. H. D.



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'.

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 50-ft. each side of C. L., giving location and elevation of point 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 e 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. 2 County Mesa State Route No 4 Sec. Sta. 1418

Date of survey Nov 10 1920 To be built by Federal Aid

1. Bridge Site

Location On West Salt Creek 4 Miles West of Mack

Sec. 20 Twp. 9 S Range 102 W 6 PM Local name West Salt Creek Bridge

Over West Salt Creek River Creek

Distance from nearest shipping point 4 Miles

2. Source of materials

Sand Commercial Pit at Length of haul to site Grand Junction 30 miles

Gravel Pit South of Loma " " " " " About 2 Miles " "

Stone At Site 1870 " " " " " " " "

Falsework Timber " " " " " Grand Junction 30 " "

Piling " " " " " West Coast " "

3. Cost Data.—

Cost of following materials at site

Portland Cement $2.50 Per Bbl.

Sand, coarse and clean $.50 " Cu. Yd.

Gravel 1½" For small quantities " " "

Stone $.50 " " "

Falsework Timber $42.00 " Ft. B. M.

Piling 50¢ " Lin. Ft.

Cost per ton-mile for hauling 15¢

4. Waterway.—

Drainage area in Sq. Miles (approximate) 48

Character of watershed Broken part adobe hills

Elevation of Highest water 4842.0 Date Aug 1921

Source of information on water elevation Maintenance Patrolman

Elevation of ordinary high water 4839.0

Elevation of low water 4842

Elevation of permanent ground-water 4830 & 4829

Is stream ever dry? No During what months?

Will all flood water pass through recommended structure? Yes

Can channel be cleaned to afford more waterway? No

Is stream cutting or silting up? Cutting

Is stream-stable in its banks? Stable on bed, Unstable on East Depth of scour? 2 to 10 Ft

Does stream carry light, medium, or heavy silt? Heavy silt & gravel

What clearance above high water should be allowed? 10 Ft

Is channel change necessary? No, but east bank above proposed structure requires protection

If channel change is necessary, illustrate location on sketch map.

5. Foundation Data.—

Character of material Adobe, fine sand, fine gravel & small rock (Washed material on top of shale)

Distance from stream-bed to solid foundation Average 8.3 Ft in Shale

Recommended depth of footings Two Ft into shale

Should piles be used? No What length?

6. Old Bridge.—

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.

Type Pile Trestle Number and length of spans 3 Spans 35-35-35

Area of waterway provided under old structure 102 Sq. Ft.

Has this area proved sufficient at flood times? No. Been replaced several times

Is it too large? No

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.

Elevation of under-clearance 10 Ft.

Disposition of existing structure Turn over to Maintenance Dept.

Remarks A tributary (Badger Cr.) flows into West Salt Cr below present bridge. A 66' Span bridge over Badger Cr. has a waterway of 600 Sq Ft and to date has never been tested for capacity. This flows into West Salt Cr. from the east above proposed structure.

7. Recommendations for New Structure.—

Type Treated timber bents on Concrete footings Number and length of spans 11@20 Timber Stringers on Bents, 1@30 Steel I Beams

What is the least clear span permissible? 200

Width of roadway 20 Are sidewalks desired No

Angle of Skew recommended Ft. Angle to Road

Will approaches be desired, or will same be filled? Fills 4 ft. on East Side. Rip Rapped

Approximate cost per Cu. Yd. of approach-filling at bridge site? 30¢

Is it necessary to maintain traffic alongside old structure? No

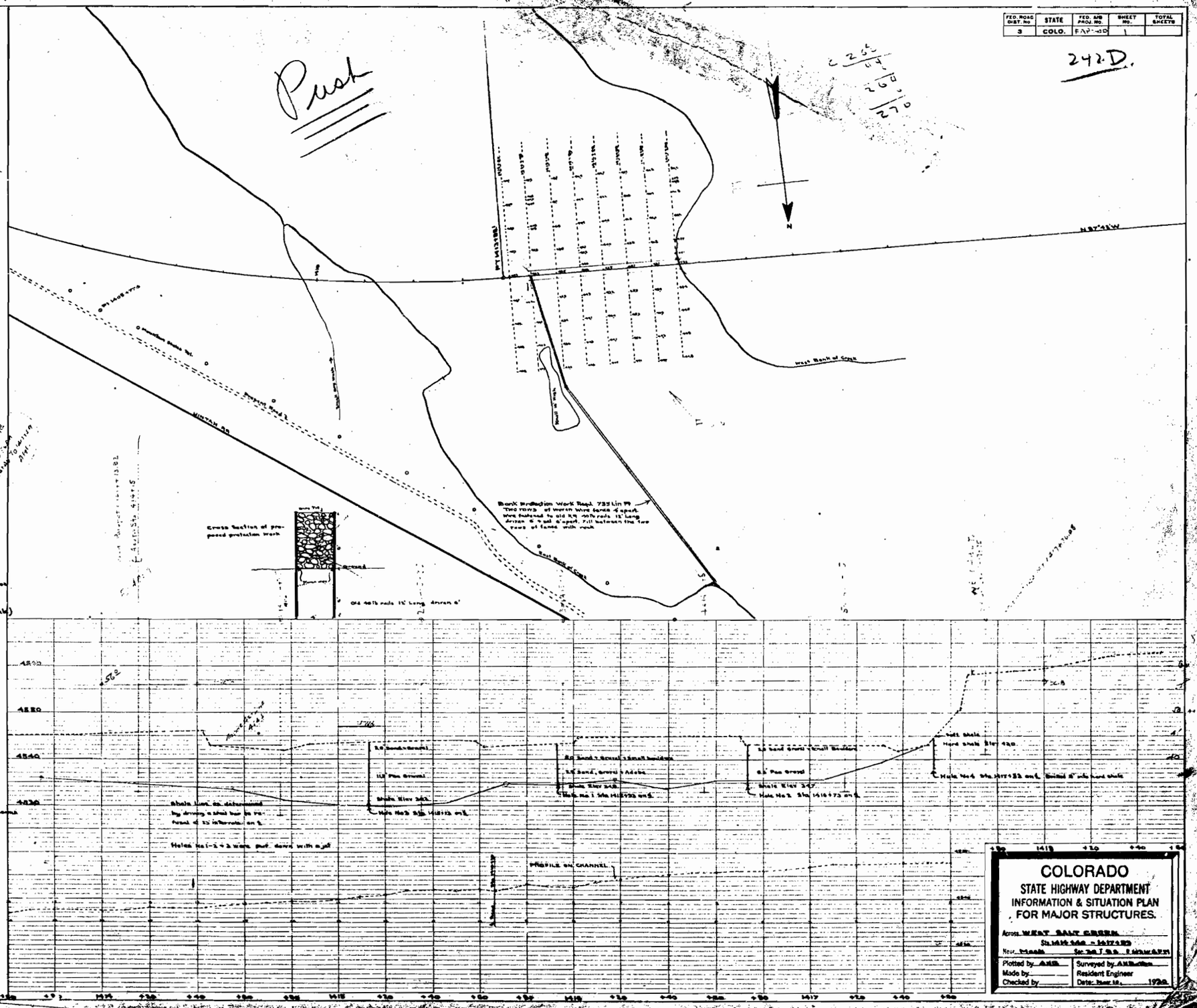
If so, how shall it be done?

Submitted by C. H. C. 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.

SHEET DATA	NOTE BOOK	BY	DATE
	No. 2 Page 32-33		
	No. Page		

Survey: Soundings Plotted — Layout: B.P.'s Approved, Detail Sheets



FED. ROAD DIST. No	STATE	FED. AID PROJ. No.	SHEET No.	TOTAL SHEETS
3	COLO.	FAP-40	1	

242.D.

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

Across WEST SALT CREEK

Sta. 1414+66.6 = 1417+83.9

Near Mack Sec. 20 T. 9 S. R. 102 W. 6 P.M.

Plotted by A.H.B. Surveyed by A.H.Bolton

Made by Resident Engineer

Checked by Date: June 16, 1921

STRUCTURE NO. 51 A