

COLORADO

STATE HIGHWAY DEPARTMENT

PLAN AND PROFILE OF PROPOSED FEDERAL AID SECONDARY PROJECT NO.S 0119(3) STATE HIGHWAY NO. 135 GUNNISON COUNTY

FED. ROAD DIST. NO.	STATE	F.A.S. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	S 0119(3)	1	

Gunnison - Almont

INDEX OF SHEETS

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 3 LIST OF STRUCTURES & TIMBER GUARD POSTS
 4 DETAILS OF BRIDGE REMODELING, STA. 150+
 5 STANDARD MARKER POSTS
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 7 STANDARD WIRE FENCES (TREATED WOODEN POSTS)
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M 7 B
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M 2 D

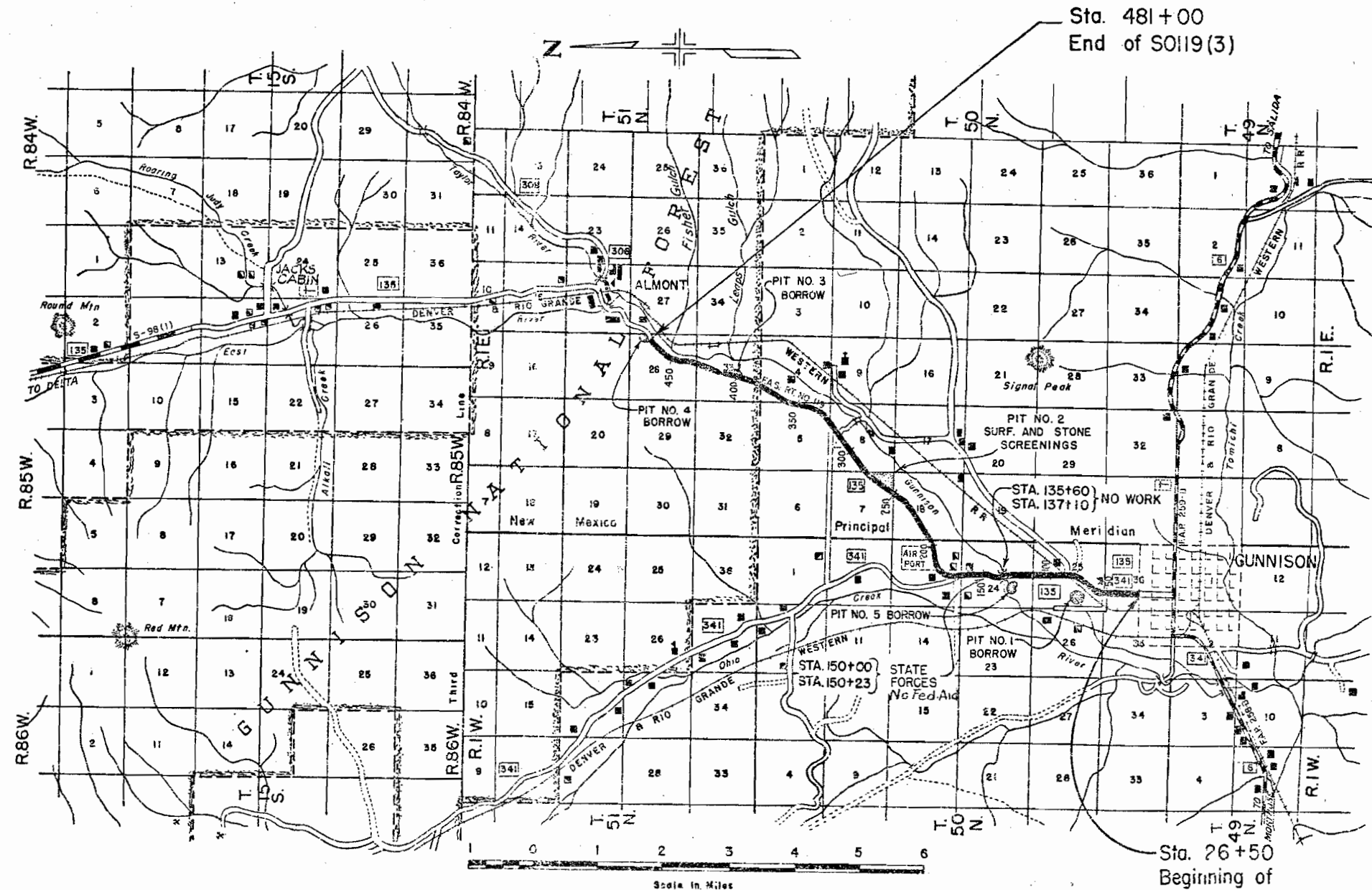
CONVENTIONAL SIGNS

- CENTER LINE OF SURVEY 50
 RAIL ROAD
 FOREST BOUNDARY
 FENCES & GATES
 POWER POLES
 TELEPHONE POLES
 RIGHT OF WAY LINES
 QUARTER SECTION LINE
 SECTION LINE
 TOWNSHIP LINE

SCALES OF ORIGINAL TRACINGS
 ON PLAN, 1 IN. = 200 FT.
 ON PROFILE 1 IN. = 200 FT. HORIZONTAL
 1 IN. = 10 FT. VERTICAL
 GRADE LINE ON PROFILE IS SHOWN AS GRADE OF FINISHED ROAD
 GROSS LENGTH OF PROJECT 45,450.0 FEET = 8.507 MILES
 NET LENGTH OF PROJECT 45,277.0 FEET = 8.575 MILES

TABULATION OF LENGTH

STATION	ROADWAY	BRIDGE WORK BY STATE FORCES	BRIDGE NO WORK	LOADING
	LIN. FT.	LIN. FT.	LIN. FT.	
26+50 BEG. S 0119(3)	10,910.0	No Fed. Aid		
135+60 137+10 BRIDGE	1290.0		150.0	
150+00 150+23 BRIDGE	33,077.0	23.0		
481+00 END S 0119(3)				
TOTALS	45,277.0	23.0	150.0	
SUMMARY		LIN. FEET	MILES	
S 0119(3) ROADWAY		45,277.0	8.575	
NET LENGTH S 0119(3)		45,277.0	8.575	
BRIDGE (STATE FORCES, No Fed. Aid)		23.0	.004	
BRIDGE (NO WORK)		150.0	.028	
GROSS LENGTH S 0119(3)		45,450.0	8.607	



NOTE
 It is recommended that bidders on this Project go over the plan details with one of the following field representatives of this Department
 J. R. Cheney - Division Engineer
 Grand Junction Colo.
 Homer Gray - Resident Engineer
 Gunnison Colo.

RECOMMENDED FOR APPROVAL

John Bell
 ASSISTANT ENGINEER DATE
 5-27-48

APPROVED

Mark L. Watson
 STATE HIGHWAY ENGINEER DATE
 5-28-48

RECOMMENDED FOR APPROVAL

DISTRICT ENGINEER DATE
 PUBLIC ROADS ADMINISTRATION
 FEDERAL WORKS AGENCY

APPROVED

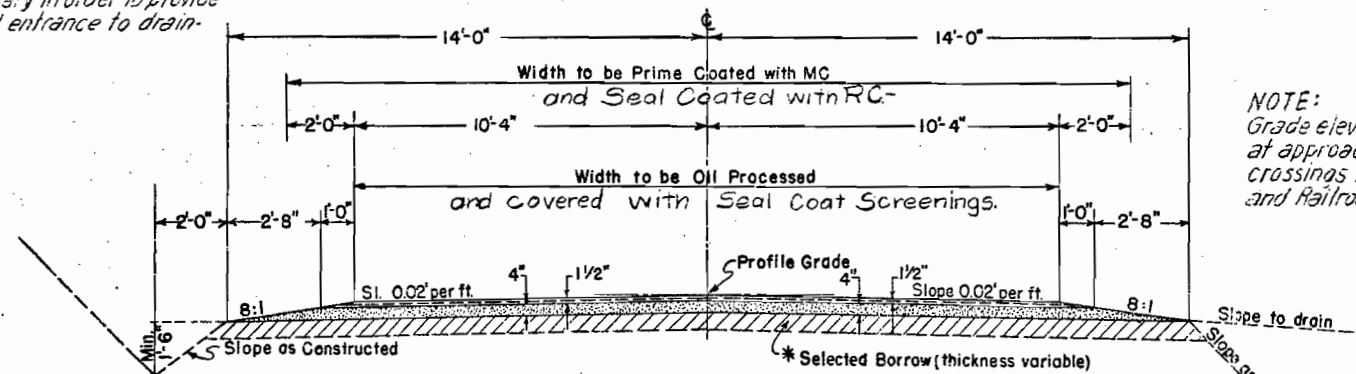
DIVISION ENGINEER DATE
 PUBLIC ROADS ADMINISTRATION
 FEDERAL WORKS AGENCY

Sta. 26+50
 Beginning of
 S 0119(3)

NOTE -
See Standard M-2-C for details of Cut
Slope Treatment, flaring or widening
for guard posts and/or Guard Posts.

The depth & width of side ditch shall be
varied where necessary in order to provide
proper drainage and entrance to drain-
age structures.

TYPICAL CROSS SECTION OF IMPROVEMENT AND SUMMARY OF QUANTITIES



NOTE:
Grade elevations shall be modified
at approaches to Bridges & Railroad
crossings to conform to the Bridge
and Railroad grades.

6" Compacted thickness of Gravel or Crushed Rock
Surfacing to be placed in two Courses:
Approximate 1 1/2" Top Course Surfacing to be placed
at the rate of 18 Tons per 100 lin. ft. of Roadway.
Approximate 4" Bottom Course Surfacing to be
placed at the rate of 56 Tons per 100 lin. ft. of
Roadway.

Asphaltic Road Material MC- is to be
placed over a 24'-8" width of Roadway
previous to placing Oil Processed material.
A Seal Coat will be required over the entire
Oil Processed area on this Project also.
The grades of oil to be determined by the
Engineer at the time of Construction.

Type I Stone Screenings shall be used on this
Project.

The top 1 1/2" of Surfacing is to be Oil Processed.

* Selected Borrow Material is to be used to raise
the present grade at the following locations:

STA. 26+ to 75+
STA. 168+ to 174+
STA. 350+ to 378+

It is estimated that Material for this operation
is available from Pits indicated on the plans &
estimated quantities involved are shown on the
Plan & Profile sheets. These quantities are to be
classified and paid for as "Unclassified Excavation".

GENERAL NOTES

This Project is to be constructed in conformity with the Standard Specifications
of the Colorado State Highway Department adopted Jan. 1, 1948.

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

All Roadway Excavation required to construct this Project is to be obtained
as indicated on the plans. Quantities involved beyond the limits of the ditch
as shown on the Typical Section, either noted on the Profile as "Borrow" or on
the "List of Structures" as "Embankment", are to be classified and paid for as
"Unclassified Excavation". These quantities are to be staked as part of the
original Excavation at locations indicated on the plans. Slope stakes, beyond
the limits of the Typical Section as shown, are subject to change by the Engineer
to fit conditions actually met in construction.

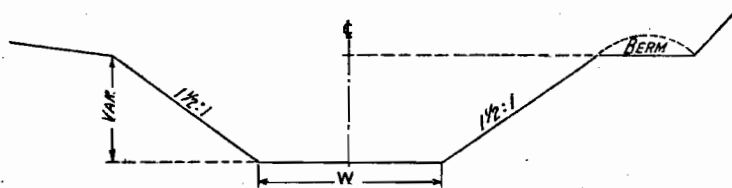
Except as otherwise noted on the plans, payment for Overhaul will be based on
measurement along the centerline of the Project.

The Detour for this Project lies along the present traveled road. At all places where the new
work lies along the present traveled road, the Contractor shall, at his own expense,
prosecute construction in such manner that traffic may readily pass over the road. Also,
the Contractor shall maintain in safe condition and at his own expense, all temp-
orary approaches to and crossings of intersecting roads.

All Curves are to be Superelevated and Widened as provided by the Standard
Superelevation sheet included with the plans, except as otherwise noted on
the plans. Curves on this Project over 6 degrees shall be provided with the
Superelevation shown on the Standard Superelevation sheet for a 6° Curve.

Adequate Inlets and Gutters shall be provided at all drainage structures.
The estimated quantity of Ditch Excavation required for such structures,
is shown in the tabulation of Structures.

TYPICAL SECTION OF DITCHES



Depth of Ditch is variable. Width (W) is shown on line sheets.
Excavated material to be used to dike lower side of ditch where necessary.
Approximately 6 inches of Embankment material will be used to cover culverts
in such manner that a minimum of pipe shall be exposed in the completed
work. This shall be accomplished by warping Embankment slopes around and
adjacent to the culvert.

All side approach roads to the Project shall be Oil Processed approximately
to the Right of Way line.

SURFACING PLAN

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

Alteration of the Surfacing Plan as here outlined will be allowed only on
written permission from the Department.

MATERIAL TO BE PLACED	SOURCE	AVAILABLE	QUANTITY		OVERHAUL TON MILE
			TOP GRADING C	BOTTOM GRADING B	
26+50 to 135+60. 135+60 to 137+10 137+10 to 150+00 150+00 to 150+23	PIT NO. 2 150' Rt. of Sta. 280+00 in the SE 1/4 of NE 1/4 & NE 1/4 of SE 1/4 Sec. 7.	Ample	1964	6110	22,578
			BRIDGE		
			233	723	1,542
			BRIDGE		
150+23 to 228+70 228+70 to 331+30 331+30 to 481+00	T. 50 N., R. 1 E., N. M. P. M.		1413	4395	4,316
			1847	5746	F.H.
			2695	8384	15,706
Road Approaches Approaches to Project			180		238
			12	56	98
TOTALS			8350	25,414	44,478

SUMMARY OF APPROXIMATE QUANTITIES

ITEM NO.	ITEM	UNIT	ROADWAY	BRIDGE STA. 150+00 No Fed Aid	PROJ. TOTALS
10a	Clearing & Grubbing entire Project	Lump Sum	.	.	.
11b	Removal of 7 Structures	Lump Sum	.	.	.
12a	Removing Fence	Lin. Ft.	1000		1000
13c	Unclassified Excavation	Cu. Yd.	25,000		25,000
13d	Unclassified Ditch Excavation	" "	300		300
14a	Dry Rock Excavation (Structural)	" "	30		30
14b	Dry Common Excavation (")	" "	240		240
14c	Wet Rock Excavation (")	" "	10		10
14d	Wet Common Excavation (")	" "	30		30
16a	Structure Backfill (Class I)	Cu. Yd.	250		250
16d	Mechanical Tamping	Hour	70		70
17a	Rolling with Tamping Roller	Unit/Hour	470		470
17b	Rolling with Flat Wheeled Roller	Hour	40		40
17c	Rolling with Rubber Tired Roller	Hour	270		270
17d	Furnishing Tamping Roller	Roller/Unit	4		4
17e	Furnishing Flat Wheeled Roller	Lump Sum	.		.
17f	Furnishing Rubber Tired Roller	Lump Sum	.		.
17g	Wetting	M. Gal.	1840		1840
18a	Station Yard Overhaul	Sta. Yd.	238,000		238,000
18b	Yard Mile Overhaul	Yd. Mi.	12,000		12,000
18c	Ton Mile Overhaul	Ton. Mi.	44,500		44,500
26b	Gravel or Crushed Rock Surfacing (Grading B)	Ton	25,500		25,500
26c	Gravel or Crushed Rock Surfacing (Grading C)	Ton	8400		8400
30x	Asphaltic Road Material RC-	Gal.	26,700		26,700
30y	Asphaltic Road Material MC-	"	50,900		50,900
30j	Asphaltic Road Material MC-3	"	97,000		97,000
31a	Road Mix Oil Processing	Sq. Yd.	111,800		111,800
31c	Stone Screenings (Type I)	Ton	1070		1070
51c	Relaying 24" Pipe	Lin. Ft.	50		50
53a	15" Corrugated Metal Culvert Pipe	Lin. Ft.	134		134
53c	24" Corrugated Metal Culvert Pipe	Lin. Ft.	408		408
53d	30" " " " "	" "	20		20
76a	Barbed Wire Fence with Treated Wooden Posts	Lin. Ft.	1000		1000
92	Timber Guard Posts	Each	40		40
119	Shaping Roadbed	Mile	5.5		5.5
134b	22"x13" Corrugated Metal Pipe Arch Culvert	Lin. Ft.	88		88
134e	36"x22" " " " " "	" "	110		110
81a	Project Markers	Each	2		2
	Remove and Rebuild Portions of Present Br.			Lump Sum	.
	Furnish and Install 2 Reflectorized R.R. Crossing Signs with advance warning signs.	Lump Sum	.		.

LIST OF STRUCTURES

FED. ROAD DIST. NO.	STATE	F.A.S. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	S 0119 (3)	3	

Rev. 6-24-48 J.S.M.

STATION	DESCRIPTION	REMOVE STRUCTURES NO.	EXCAVATION		STRUCTURAL ★ EXCAVATION				STRUCTURAL BACKFILL (CLASS I) CUYDS.	MECH. TAMP. HRS.	CORRUGATED METAL CULVERT PIPE								CORR. METAL ARCH CULVERT		GRAVEL OR CRUSHED ROCK SURFACING TONS	MISCELLANEOUS	
			UNCLASSIFIED EXCAVATION EXC.	DITCH EXC. CUYDS.	CUBIC YARDS						LIN. FT. *								LIN. FT. *				
												15"	18"	24"	30"	36"	48"	60"	22"x13"	36"x22"			
26+50 31+57 36+00	Project Marker & Approach to Project Cross Culvert & Ditches (W=1') Remove 18"x35' C.M.P. & 21x35' C.M.P. with Hdwalls. Road Approach & Side Drain, Lt. Remove 15"x14' C.M.P.	2 1		25 10	5				15 5	20 5	5			54								37 20	1- Project Marker
46+40 48+34	Road Approach & Side Drain, Rt. Extend 36"x22"x32' Metal Pipe Arch Culvert & Ditches (W=3').			10	5				5 10	10	3	22							9' Lt. 11' Rt.		20		
53+00 57+86 63+50 to 68+50	Road Approaches, Rt. & Lt. Extend 24"x38' C.M.P. & Ditches (W=1') Remove Fence, Rt. Build new Fence, Rt.			10	5				5	5	1			7' L 5' R							40	Remove 500' Fence Build 500' New Barbed Wire Fence	
63+00 to 68+00 67+85	Ditch Changes, Rt. (W=1') & (W=2') Relay & Extend 24"x50' C.M.P. & Ditches (W=1')				80 10					35 20	5			13' R								Relay 24"x50' C.M.P.	
76+00 81+00 84+ to 99+	Road Approach & Side Drain, Rt. C.M.P. Cross Culv. Remove Fence, Lt. Build new Fence, Lt.								5 5			22		50							20	Remove 500' Fence Build 500' New Barbed Wire Fence	
88+07 91+32 103+26 112+00	Extend 24"x32' C.M.P. & Ditches (W=1') Extend 24"x34' C.M.P. & Ditches (W=1') Extend 24"x32' C.M.P. & Ditches (W=1') Cross Culvert & Ditches (W=3') Remove 36"x18"x34' Conc. Box Culv.	1			5 5 5 5				5 5 10 15	5 5 5 15	2 1 1 4		13' L 5' R 9' L 7' R 9' L 11' R							38			
123+19 123+28 124+87 128+43 129+63	Road Approach & Side Drain, Rt. Extend 24"x30' C.M.P. & Ditches (W=1') Road Approach & Side Drain, Lt. Extend 24"x34' C.M.P. & Ditches (W=1') Extend 24"x30' C.M.P. & Ditches (W=1')			10 20	5 5				5 5 5	5 5 5	1 22	22	5' L 5' R 9' L 7' R								20 20		
149+15 150+00 to 150+23	Extend 24"x30' C.M.P. & Ditches (W=1') Remove & Rebuild portions of 23-Span Timber Bridge				5			(Work By State Forces)	10 5	5	1		7' L 7' R 7' L 7' R										
155+90 159+03 162+19 166+83 170+20	Extend 24"x30' C.M.P. & Ditches (W=1') Extend 24"x30' C.M.P. & Ditches (W=1') Extend 24"x30' C.M.P. & Ditches (W=1') Extend 30"x46' C.M.P. & Ditches (W=2') Remove comb. 18"x20' C.M.P. & 18"x18"x15' Wood Box Culv.	2			5 5 5 5				10 5 5 15	10 5 5 10	2 3 1 2		11' L 9' R 9' L 7' R 5' L 11' R										
170+75 172+66 173+60 183+45	Cross Culvert & Ditches (W=3') Extend 15"x44' C.M.P. & Ditches (W=1') Extend 24"x84' C.M.P. & Ditches (W=1') Extend 15"x30' C.M.P.				100 5 5				30 5 10 5	25 5 15 5	6 1 4 1	5' L 7' R 5' L 7' R	17' L 21' R						52				
299+37 360+88 393+05 420+00	Cross Culvert & Ditches (W=2'). Remove 15"x38' C.M.P. Road Approaches, Rt. & Lt. Extend 24"x44' C.M.P. & Ditches (W=1') Cross Culvert & Ditches (W=1')	1		20	5 5 5				10 5 20	20 5 15	5 1 4			7' R 42					88		40		
440+00 481+00	Cross Culvert & Ditches (W=1') Project Marker & Approach to Project				5				20	15	4			38							37	1- Project Marker	
TOTALS		7		105	295				295	245	61	134		408	20				88	110	254		

★ Structural Excavation is estimated to be 90% Common & 10% Rock each of which is estimated to be 90% Dry & 10% Wet.
* On Pipe extensions, 1-ft. additional length is included for each Connecting Band.

TIMBER GUARD POSTS

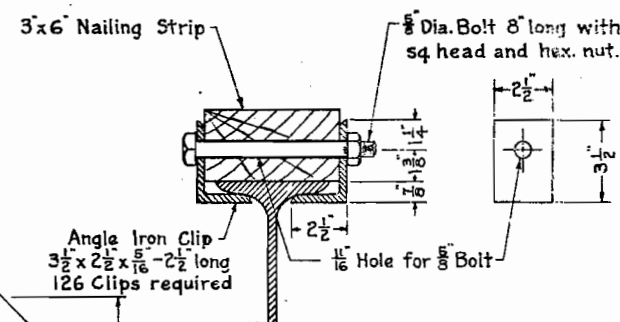
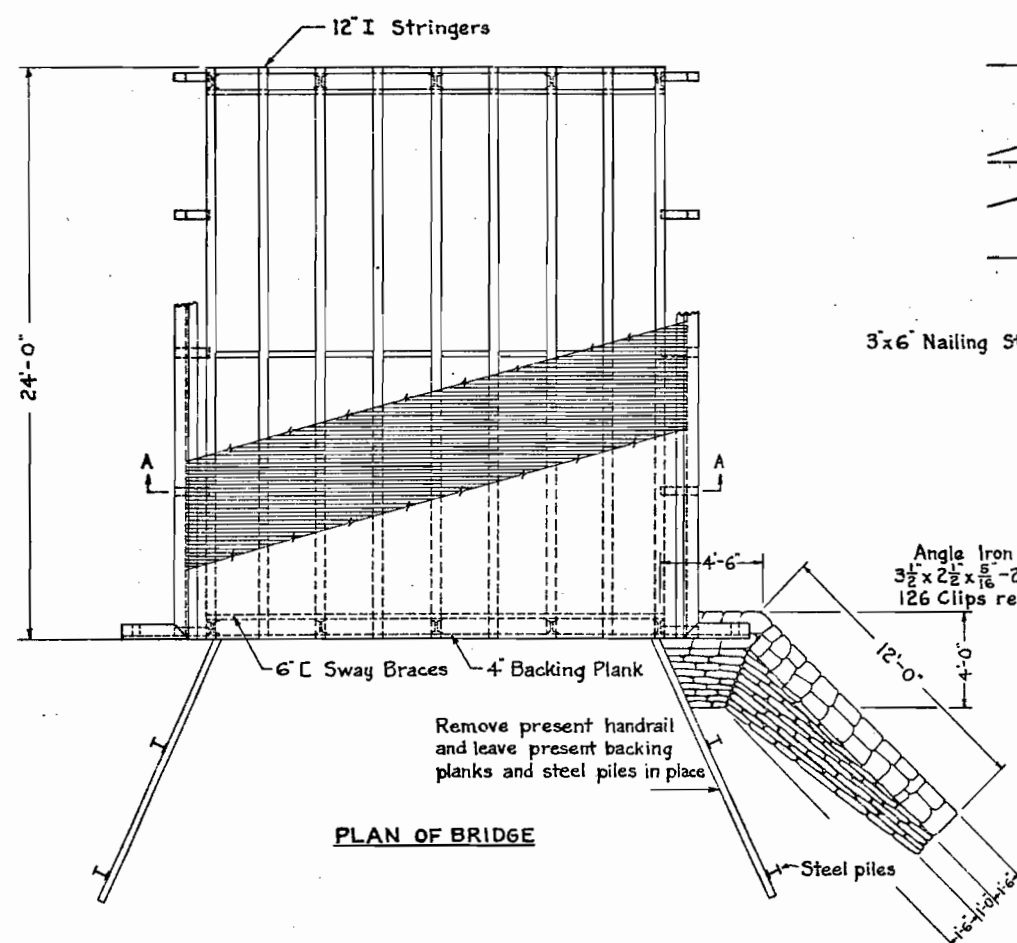
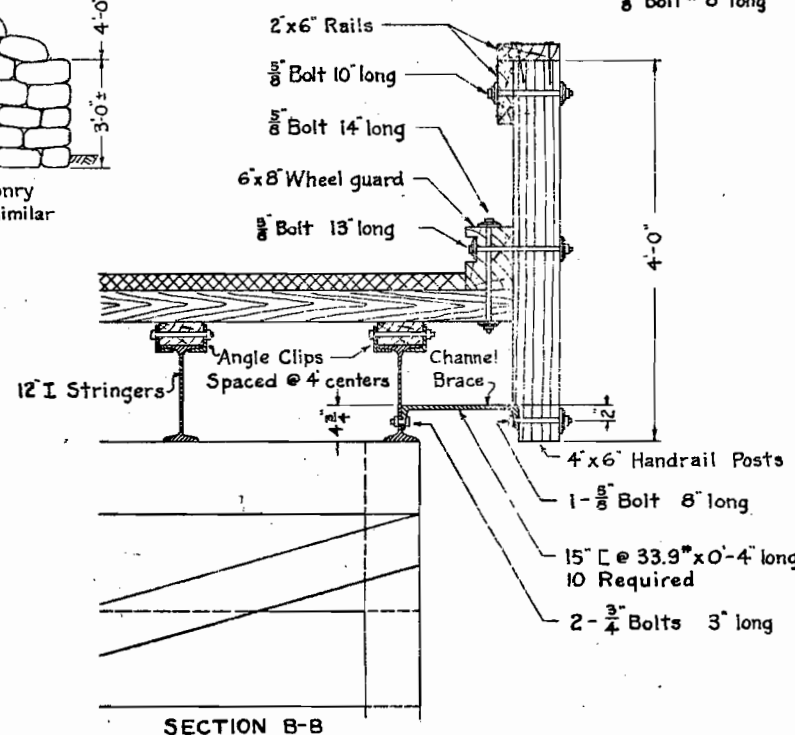
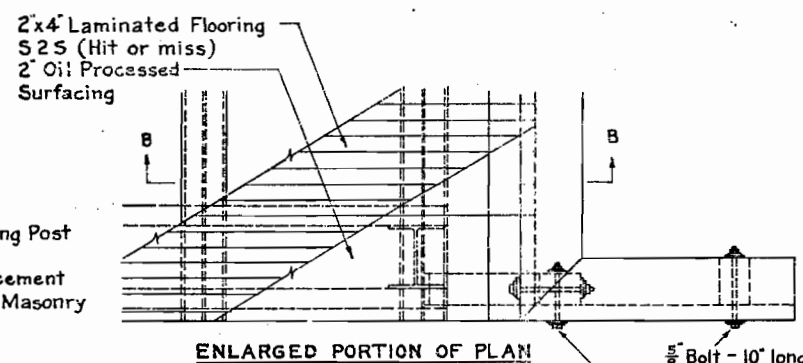
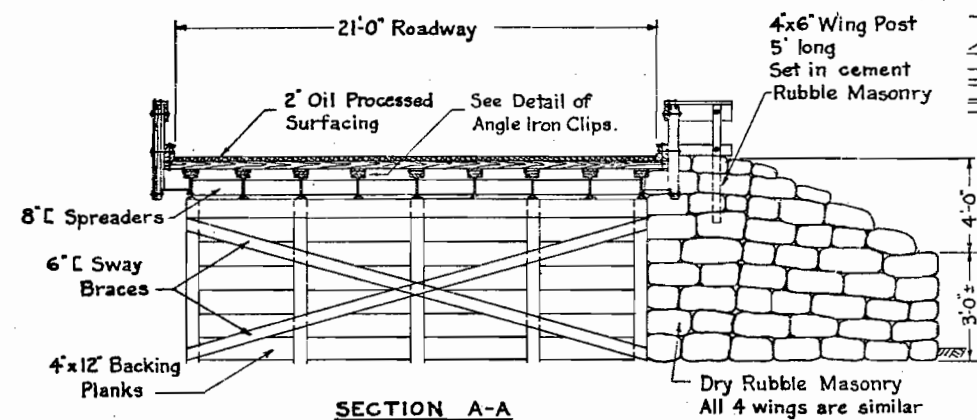
STATION	SPACING	NO.	
		LT.	RT.
207 + 43	STOCK PASS	1	1
226 + 11	STOCK PASS	1	1
246 + 66	STOCK PASS	1	1
285 + 00	STOCK PASS	8	8
329 + 78	STOCK PASS	1	1
135+60	Br.	4	4
137+10	Br.	4	4
TOTAL			40

Revised	6/3/48
Revised	6/3/48
Revised	6/3/48

REVISIONS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	S0119 (3)	4	

Items to be Removed:
5 Nailing Strips fastened to Stringers.
3x12 Plank Flooring.
6" Gravel Surfacing.
Angle Iron Handrail.
2-4x6 Wheel Guards.
Timber Handrailing on the 4 Wings.



NAILING DIRECTIONS
Rails to posts. - 2-16d nails per rail per post.
Floor Planks to Floor Planks. 1-16d nail at 12" centers.
Floor Planks to Nailing Strip. 1-16d nail per Nailing Strip per every other Floor Plank (Toenail).

QUANTITIES

NO.	TREATED TIMBER	SIZE	LENGTH	TOTAL
178	Laminated Flooring S2S	2x4	22'-0"	2611 Bd.Ft.
9	Nailing Planks	3x6	24'-0"	324 Bd.Ft.
2	Wheel Guards	6x8	24'-0"	192 Bd.Ft.

UNTREATED TIMBER

4	Rails	S4S	2x6	24'-0"	96 Bd.Ft.
10	Rail Posts	S4S	4x6	4'-0"	80 Bd.Ft.
4	Rail Posts (Wings)	S4S	4x6	5'-0"	40 Bd.Ft.
8	Rails (Wings)	S4S	2x6	3'-0"	24 Bd.Ft.

BOLTS

63	Angle Clips to Nailing Strip	5/8"	8"	54.2 lbs.
10	Wheel Guards to Posts	5/8"	13"	12.8 lbs.
10	Wheel Guards to Floor	5/8"	14"	13.6 lbs.
18	Rail to Posts	5/8"	10"	18.5 lbs.
8	"	5/8"	8"	6.9 lbs.
10	Channel Braces to Posts	5/8"	8"	8.6 lbs.
20	Channel Brace to Stringer	3/4"	3"	14.6 lbs.

WASHERS (Ogee)

20	Wheel Guards to Posts	5/8"		15.0 lbs.
20	Wheel Guards to Floor	5/8"		15.0 lbs.
20	Rails to Posts	5/8"		15.0 lbs.
32	Rails to Posts (Wings)	5/8"		24.0 lbs.
10	Channel Brace to Post	5/8"		7.5 lbs.

*NAILS

	Rails to Posts	16d.		2 lbs.
	Floor Plank to Floor Plank	16d.		94 lbs.
	Floor Plank to Nailing Strip	16d.		18 lbs.

SUMMARY OF QUANTITIES

ITEM NO.	ITEM	TOTAL
11a	Removal of Portion of Present Structure	Lump Sum
32a	Plant Mixed Oil Processed Surfacing	6.3 T
42a	Untreated Bridge Timber	240 Bd.Ft.
42b	Treated Bridge Timber	3127 Bd.Ft.
50	Dry Rubble Masonry	35 Cu.Yds.
48	Structural Steel (plus 1 1/2% for overrun)	278 lbs.

* Bolts, Washers and Nails are to be included in the Bid Price of Timber.

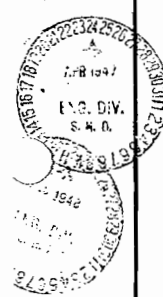
GENERAL NOTES

All work shall be done according to the Standard Specifications of the Colorado State Highway Department, adopted Jan. 1, 1948.
All timber shall be dense southern pine or west coast douglas fir.
All cut surfaces or bored holes in treated timber shall be thoroughly saturated with hot creosote oil.
All handrailing and posts above the wheel guards shall be painted white and all handrail posts below the top of wheel guards shall be painted black as specified.
The entire exposed surface of all untreated timber shall be painted one coat as specified immediately after the material is delivered to the project.
Before placing handrailing the contact surfaces shall receive the second coat of paint.
All hardware to be galvanized. Weights of hardware as shown are for ungalvanized material.
This work to be done with State Forces without Federal Aid.

LOADING DATA.
LIVE LOAD - A. A. S. H. O. 1944 CLASS A. (H-8)
DEAD LOAD - ASSUMES 25 LBS. PER SQ. FT. ADDITION
AL WEARING SURFACE WHICH INCLUDES THE 2 INCH
OIL SURFACING AS SHOWN.

DESIGNING DATA.
A.A.S.H.O. 1944 UNIT STRESSES
fc = 833 lbs. per sq. in.
fs = 18000 lbs. per sq. in.
E = 12
ft = 1600 lbs. per sq. in.

COLORADO
STATE HIGHWAY DEPARTMENT
NEW FLOOR AND HANDRAIL
FOR 24'-0" SPAN BRIDGE
WITH 21'-0" ROADWAY
Across Clark Stream
Sta. 150+00 - 150+24
Near Gunnison Sec. 24 T. 50N. R. 1W.
Designed by *[Signature]* Approved by *[Signature]*
Made by *[Signature]* Bridge Engineer
Checked by *[Signature]* Date: June 2, 1948.



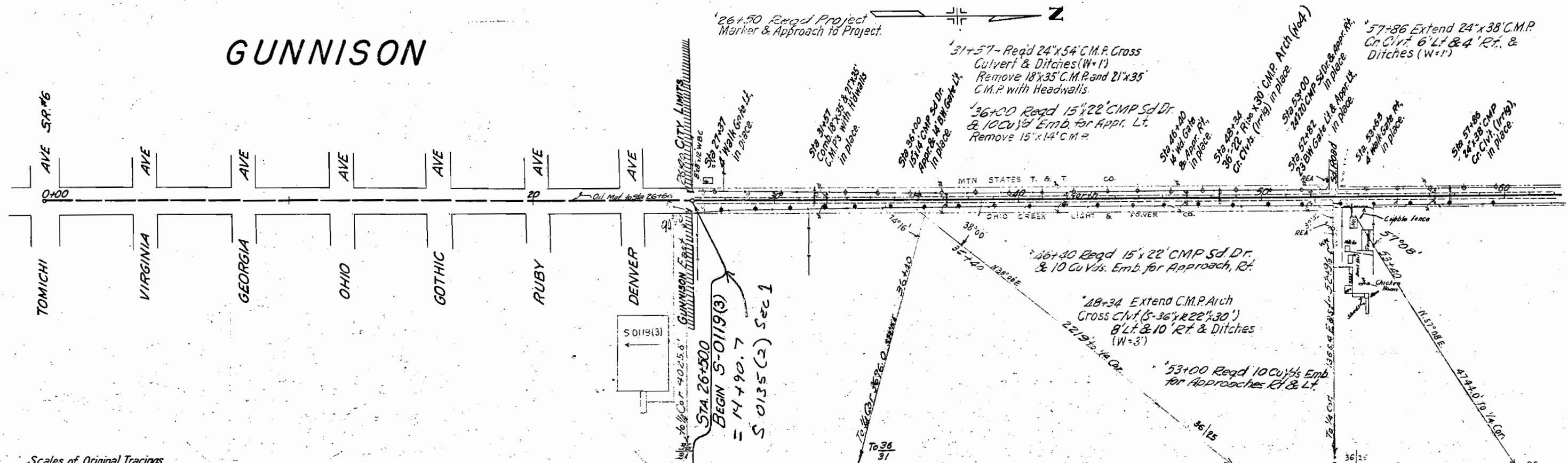
DATE	10/1/57
BY	W.C.M.
PLAN	NOTE BOOK
NO.	50119(3)
RT.	OF WAY CHECKED

DATE	10/1/57
BY	W.C.M.
PROFILE	NOTE BOOK
NO.	50119(3)
STRUCTURE	TOTAL 15 CHD

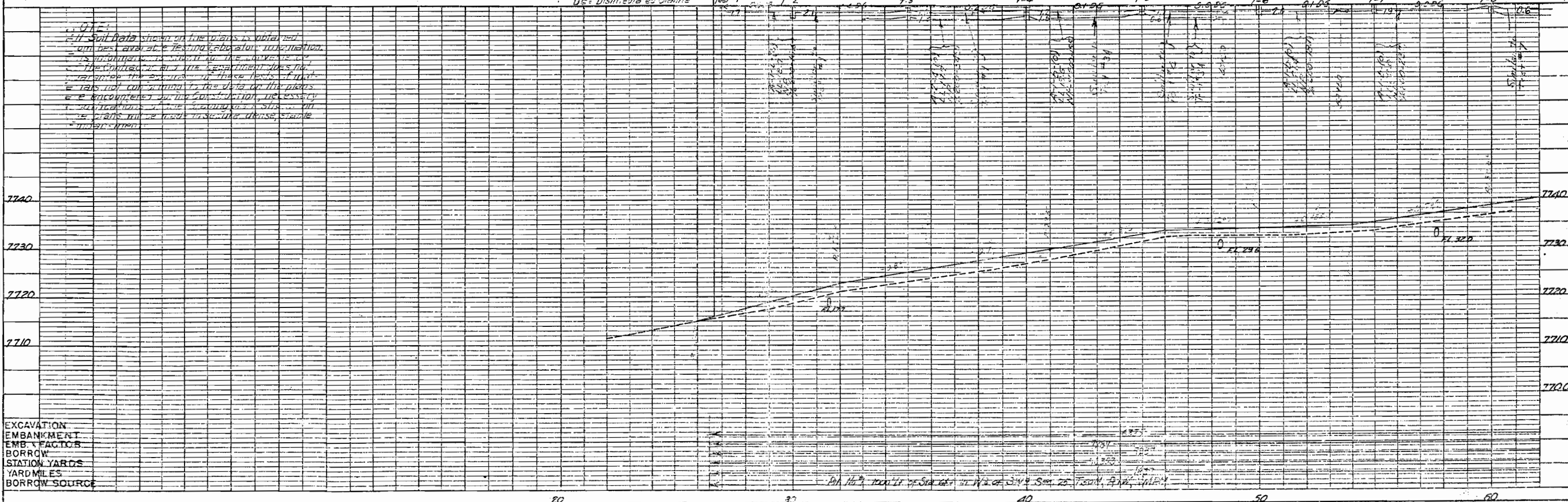
DATE	10/1/57
BY	W.C.M.
PROFILE	NOTE BOOK
NO.	50119(3)
STRUCTURE	TOTAL 15 CHD

FED. ROAD DIST. NO.	STATE	F.H.A. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	5 0119(3)	11	

GUNNISON



Scales of Original Tracings
Horiz. 1 in = 200 ft.
Vert. 1 in = 10 ft.



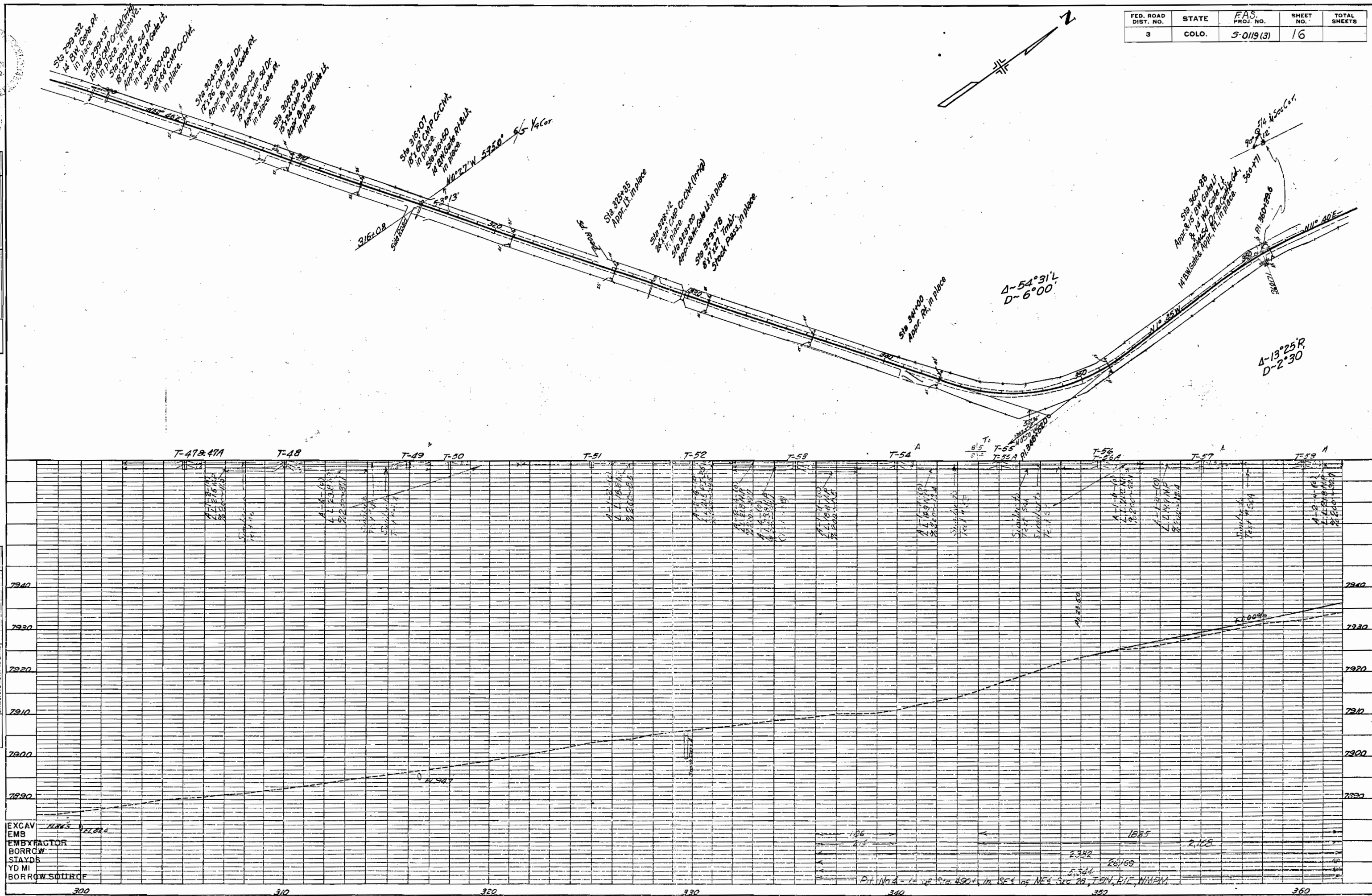
EXCAVATION
EMBANKMENT
EMB. FACTOR
BORROW
STATION YARDS
YARD MILES
BORROW SOURCE



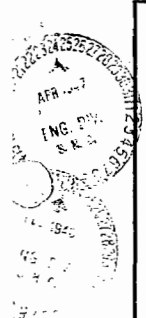
WORLD PLAN

PROFILE	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO. 2 4 4 4 4	GRADES CHECKED		
	B. M. NOTED		
	STRUCTURE NOTATIONS CH'KD		

EXCAV	FLY'S
EMB	
EMBxFACTOR	
BORROW	
STAYDS	
YD MI	
BORROW SOURCE	



MICROFILM



DATE	
BY	
PLAN	
NOTE BOOK	
NO. 23227	

DATE	
BY	
PROFILE	
NOTE BOOK	
NO. 23227	

FED. ROAD DIST. NO.	STATE	F.A.S. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	5-0119(3)	17	

