

# DEPARTMENT OF HIGHWAYS STATE OF COLORADO

NOTE: ROW FOR THIS PROJECT  
OBTAINED UNDER PROJECT  
FAP 194-A(1).

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.
9	COLORADO	F 007-1(5)	1

*New Grand Lake*

## INDEX OF SHEETS

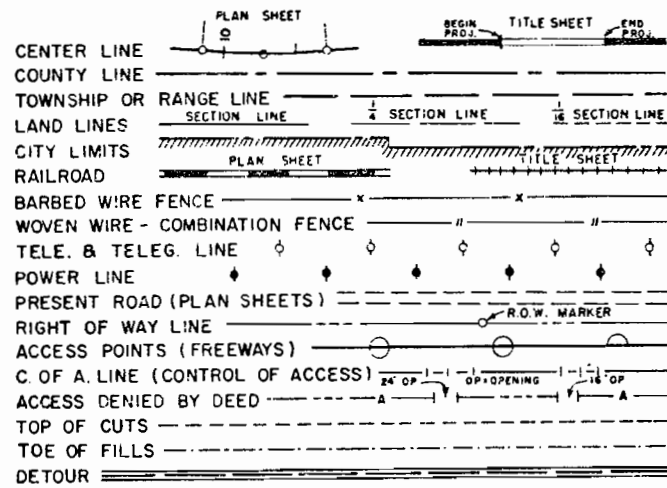
- |           |   |
|-----------|---|
| SHEET NO. |   |
| 1.        | TITLE SHEET, SKETCH MAP, TABULATION of LENGTH & DESIGN DATA.  |
| 2.        | TYPICAL CROSS SECTIONS, GENERAL NOTES & CONSTRUCTION LINE SHIFT.  |
| 3.        | SUMMARY of APPROXIMATE QUANTITIES.  |
| 4-6.      | STRUCTURE QUANTITIES.   |
| 7.        | PIT SKETCHES.   |
| 8.        | SUBBASE and SURFACING PLANS, SHOULDER ROLL, SLOPE & DITCH PAVING, & DETAIL of UNDERDRAIN & PLANT MIXED ASPHALTIC SHOULDER ROLL. |
| 9.        | DETAIL of INTERSECTION, STA. 45+.   |
| 10.       | SUMMARY of EARTHWORK, DELINEATORS, RAMP GRADES, DETAIL of DITCH PAVING & DETAIL of SLOPE PAVING.                                |
| 11.       | DETAILS of OVERHEAD SIGN STA 42+05  |
| 12-18.    | ALIGNMENT PLAN and PROFILE SHEETS.  |
| 19-89.    | CROSS SECTIONS.   |
| 90-92.    | RAMP CROSS SECTIONS.  |
- 
- |            |   |         |
|------------|---|---------|
| / M-1-D    | SUPERELEVATION and WIDENING of CURVES-CROWNED HIGHWAYS                          | 2/3/64  |
| / M-2-A    | APPROACH ROADS, FLARING, CUT SLOPE TREATMENT, BRIDGE & CREST WIDENING.          | 2/3/64  |
| / M-5-A    | LETTERS and FIGURES for STRUCTURE NUMBERS                                       | 1/31/64 |
| / M-6-B    | CONSTRUCTION TRAFFIC SIGNS (2 SHEETS)   | 1/31/64 |
| / M-5-CA   | IDENTIFICATION SIGNS  | 6/26/64 |
| / M-13-A   | DITCH TYPES   | 2/3/64  |
| / M-16-A   | BACKFILL AROUND STRUCTURES  | 1/31/64 |
| / M-45-A   | CULVERT PIPE  | 4/29/64 |
| / M-52-A   | REINFORCED CONCRETE PIPE  | 2/3/64  |
| / M-75-A   | METAL PLATE GUARD FENCE   | 2/3/64  |
| / M-192-AA | DELINEATORS (2 SHEETS)  | 1/28/64 |
| / S-523-AA | LAMINATED SIGN PANELS (CLASS III) and POST SPACING TABLE                        | 7/2/64  |
| / S-523-BA | EXTRUDED ALUMINUM SIGN PANELS (CLASS III), FOOTINGS, PEDESTALS and SIGN ISLANDS | 6/15/64 |

## PLAN AND PROFILE OF PROPOSED FEDERAL AID PROJECT NO. F 007-1(5) STATE HIGHWAY NO. 16 GRAND COUNTY

### SCALES OF ORIGINAL DRAWINGS

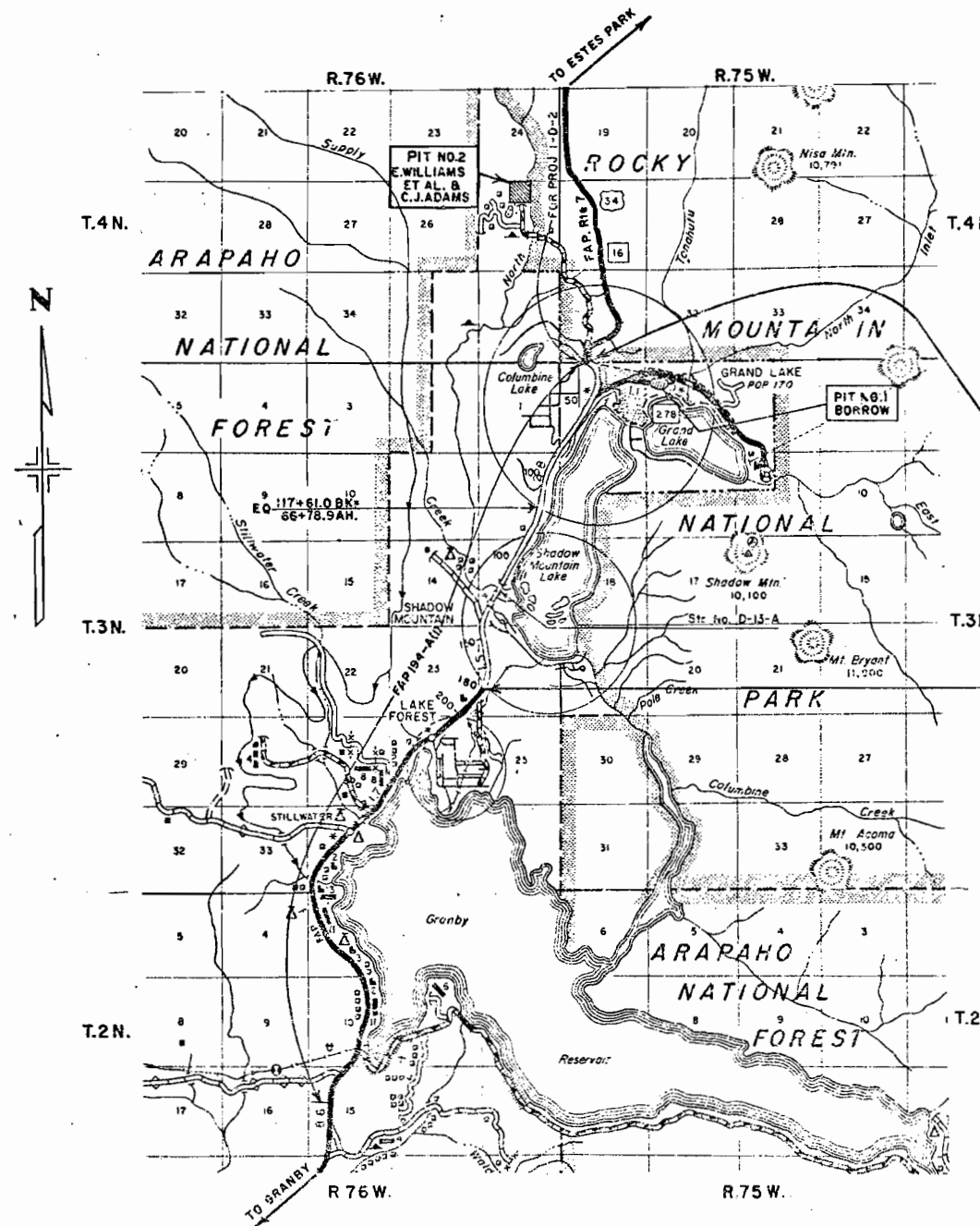
ON PLAN, 1 IN. = 100 FT.  
ON PROFILE, 1 IN. = 100 FT. HORIZONTAL  
1 IN. = 10 FT. VERTICAL

### CONVENTIONAL SIGNS



### TABULATION OF LENGTH AND DESIGN DATA

STATION	ROADWAY LIN. FT.	BRIDGE LIN. FT.
P.O.C. STA. 20+98.4 BEGIN F007-1(5) = STA. 20+98.4 ON FAP 194-A(1)	2794.4	
48+92.8 BK = EQUATION 48+89.2 AH.	1149.0	
P.O.T. 60+38.2 BK = EQUATION 60+54.2 AH.	5706.8	
ST. 117+61.0 BK = EQUATION 66+78.9 AH.	4647.0	
P.O.T. 113+25.9 BK = EQUATION 113+04.1 AH.	1450.9	
127+55.0 Str. No. D-13-A. No. Fork Colo. River. (LOADING=H-15)		103.67
128+58.67	5168.03	
ST. 180+26.7 BK = EQUATION 180+58.5 AH. END F 007-1(5) = 180+58.5 ON FAP 194-A(1)		
<b>TOTALS</b>	<b>20916.13</b>	<b>103.67</b>
<b>SUMMARY</b>		
	LIN. FT.	MILES
ROADWAY	20916.13	3.961
BRIDGE	103.57	0.020
TOTALS-GROSS AND NET LENGTH OF CONST.	21019.80	3.981
<b>DESIGN DATA</b>		
	STA. 20+98 TO 50+	STA. 50+ TO 180+ AH.
MAXIMUM DEGREE OF CURVE	12°	3° 05'
MAXIMUM GRADE	5.58%	5.92%
MINIMUM S.S.D. - HORIZONTAL	415'	635'
MINIMUM S.S.D. - VERTICAL	341'	390'
MAXIMUM DESIGN SPEED	35 M.P.H.	50 M.P.H.



STA. 20+98.4 BEGIN F007-1(5) =  
STA. 20+98.4 ON FAP 194-A(1)

STA. 180+26.7 Bk. =  
STA. 180+58.5 Ah. END F 007-1(5) =  
STA. 180+58.5 Ah. on FAP 194-A(1)

SEE SPECIAL PROVISIONS FOR  
NOTICE TO BIDDERS

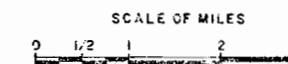
DEPARTMENT OF HIGHWAYS  
STATE OF COLORADO

APPROVED: *Chris E. Sumner* 7-27-64  
CHIEF ENGINEER DATE

DEPARTMENT OF COMMERCE  
BUREAU OF PUBLIC ROADS

APPROVED: \_\_\_\_\_ DATE \_\_\_\_\_

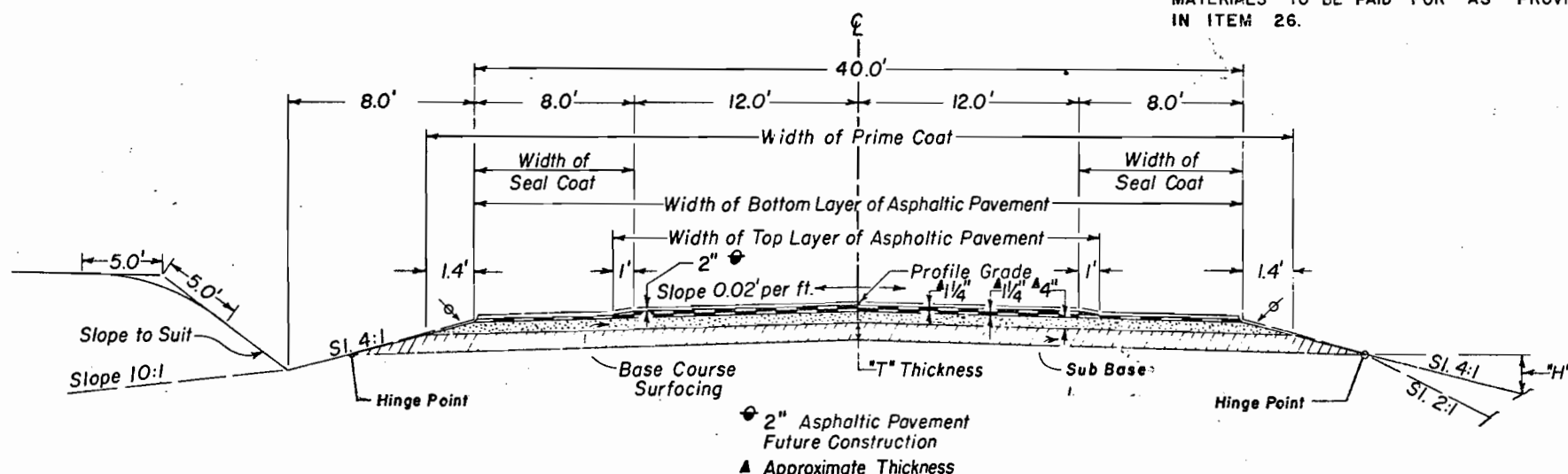
DIVISION ENGINEER



# TYPICAL CROSS SECTION

**NOTE**  
SEE STANDARD M-2-A FOR DETAILS OF CUT SLOPE TREATMENT, FLARING AND WIDENING.

CONTRACTOR WILL BE REQUIRED TO BLADE ADDITIONAL SURFACING MATERIAL TO THIS LINE AFTER COMPLETION OF PAVING OPERATION. MATERIALS TO BE PAID FOR AS PROVIDED IN ITEM 26.



EXCAVATION BELOW 4:1 SLOPE AND/OR 10:1 SLOPE WILL NOT BE PERMITTED.

THE DEPTH AND WIDTH OF THE SIDE DITCH SHALL BE VARIED WHERE NECESSARY IN ORDER TO PROVIDE PROPER DRAINAGE AND/OR ENTRANCE TO DRAINAGE STRUCTURES.

MATERIAL ABOVE THE SUBGRADE IS TO BE CONSTRUCTED OF SUB-BASE MATERIAL AT LOCATIONS DESIGNATED IN SUB-BASE MATERIAL TABULATION. ESTIMATED QUANTITIES INVOLVED IN THIS OPERATION AND THICKNESS OF MATERIAL REQUIRED ARE TABULATED IN THE SUB-BASE MATERIAL PLAN.

## CONSTRUCTION LINE

(SHIFTS FROM SURVEYED  $\phi$ )

STA. TO STA.	SHIFT	
	LT.	RT.
21+00 TO 24+00		TRANS. 5.0'
24+00 TO 35+00		TRANS. 5.0'
35+00 TO 38+32.3		TRANS. 5.0'
38+32.3 TO 48+89.2	SURVEYED $\phi$	
48+89.2 TO 53+89.2		TRANS. 6.0'
53+89.2 TO 73+00		TRANS. 5.0'
73+00 TO 75+00		TRANS. 5.0'
75+00 TO 80+00		TRANS. 5.0'
80+00 TO 83+00		TRANS. 8.0'
83+00 TO 85+00		TRANS. 5.0'
85+00 TO 88+00		TRANS. 5.0'
88+00BK TO 100+00AH		TRANS. 5.0'
100+00 TO 110+00		TRANS. 5.0'
110+00 TO 135+00	SURVEYED $\phi$	
135+00 TO 145+00		TRANS. 5.0'
145+00 TO 180+26.7		TRANS. 5.0'

**FILL SLOPES:**  
ON CURVES  
SLOPE 4:1 WHERE "H" IS 5' OR LESS  
SLOPE 2:1 WHERE "H" IS OVER 5'  
SLOPE 1 1/2:1 WHERE "H" IS OVER 20'  
ON TANGENTS  
SLOPE 4:1 WHERE "H" IS 3' OR LESS  
SLOPE 2:1 WHERE "H" IS OVER 3'  
SLOPE 1 1/2:1 WHERE "H" IS OVER 20'

APPROXIMATE 6 1/2" COMPACTED THICKNESS BASE COURSE SURFACING AND ASPHALTIC PAVEMENT SHALL BE PLACED IN SEPARATE COURSES AT THE FOLLOWING RATES PER 100 LIN. FT. OF ROADWAY:

	MAINLINE	RAMP (12')	RAMP (16')	RAMP (24')
ASPHALTIC PAVEMENT - TOP LAYER	19 TONS	10 TONS	13 TONS	19 TONS
ASPHALTIC PAVEMENT - BOTTOM LAYER	31 TONS	16 TONS	19 TONS	25 TONS
BASE COURSE	91 TONS	48 TONS	57 TONS	75 TONS

**NOTE**  
BOTTOM LAYER OF BITUMINOUS SURFACING SHALL BE COMPLETED FOR FULL WIDTH BEFORE TOP LAYER OF BITUMINOUS SURFACING IS PLACED. PAVING JOINTS IN TOP LAYER WILL OVERLAP MIN. 1 FT. OVER JOINTS IN BOTTOM LAYER.

## GENERAL NOTES

THIS PROJECT IS TO BE CONSTRUCTED IN CONFORMITY WITH THE STANDARD SPECIFICATIONS OF THE COLORADO DEPARTMENT OF HIGHWAYS, ADOPTED JANUARY 1, 1958.

ALL QUANTITIES ON PRELIMINARY PLANS ARE TO BE CONSIDERED APPROXIMATE ONLY.

ALL POLES ENCRANCHING ON CONSTRUCTION ARE TO BE MOVED BY THE OWNERS.

FOR PRELIMINARY PLAN QUANTITIES OF ASPHALTIC ROAD MATERIALS AND STONE SCREENINGS, THE FOLLOWING RATES OF APPLICATION WERE USED.

PRIME COAT MC	@ 0.40 GALS. PER SQ. YD.
TACK COAT RC (OVER BRIDGE)	@ 0.10 GALS. PER SQ. YD.
PAVING ASPHALT (120-150 PENETRATION)	@ 5.8%
SEAL COAT RC	@ 0.25 GALS. PER SQ. YD.
STONE SCREENINGS TYPE 1	@ 24 LBS. PER SQ. YD.

RATE OF APPLICATION AND GRADE OF ASPHALTIC MATERIAL SHALL BE AS DETERMINED BY THE ENGINEER AT TIME OF APPLICATION.

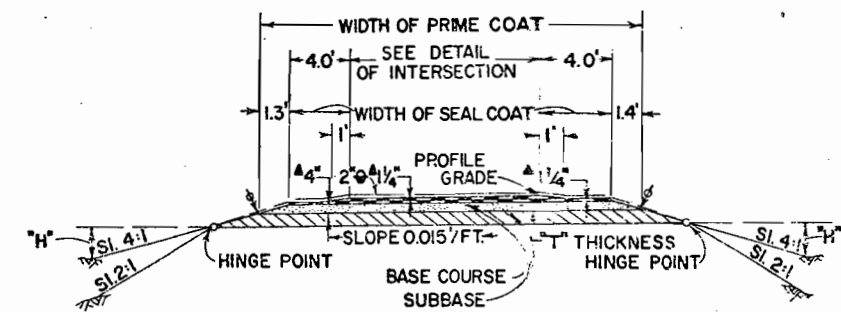
ROAD APPROACHES WHICH REQUIRE PLANT MIXED ASPHALTIC SURFACING IN THE "STRUCTURE LIST" SHALL BE PRIMED AND A 1 1/4" THICKNESS OF ASPHALTIC SURFACING PLACED AS FOLLOWS OR AS DIRECTED BY THE ENGINEER: PUBLIC APPROACHES AND ENTRANCES TO BUILDINGS OR RESIDENCES TO BE SURFACED 50 FT. OUT FROM EDGE OF SHOULDER OR TO THE R.O.W. LINE WHICHEVER IS LESS. FIELD ENTRANCES SHALL BE SURFACED 4 FT. OUT FROM EDGE OF SHOULDER.

THICKNESS OF SUB-BASE, SURFACING AND ASPHALTIC PAVEMENT MATERIALS AS SHOWN ON PLANS IS APPROXIMATE ONLY. THESE MATERIALS ARE TO BE PLACED ON THE BASIS OF TONNAGES SHOWN ON PLANS.

IF EXCAVATION OPERATIONS DEVELOP MATERIALS WHICH WILL STAND ON SLOPES STEEPER THAN SLOPE STAKE LINES, THE DEPARTMENT RESERVES THE RIGHT TO CHANGE CUT SLOPES DURING THE PROGRESS OF SUCH EXCAVATIONS.

DURING CONSTRUCTION OF THIS PROJECT, TRAFFIC WILL USE THE PRESENT TRAVELED ROADWAY EXCEPT WHERE DETOURS ARE SHOWN ON PLANS.

APPLICATION METHODS, FOR LIQUID ASPHALTIC ROAD MATERIAL, WHICH RESULT IN THE DISCOLORATION OF CONCRETE PAVEMENT, CURBS OR GUTTERS WILL NOT BE PERMITTED.



TYPICAL RAMP SECTION

# SUMMARY OF APPROXIMATE QUANTITIES

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
1	COLORADO	FO07-1(5)	3	

SPECIFICATION ITEM NO.	ITEM	UNIT	BRIDGE STR. NO. D-13-A (NON-FEDERAL AID)	ROADWAY	PROJECT TOTALS
10'	Clearing and Grubbing Entire Project	Lump Sum		●	●
11'	Removal of Structures	Each		4'	4'
11'	Reset Mailbox Structures	Each		16'	16'
11'	Plug Culverts	Each		11'	11'
12'	Removing Guard Fence	Lin. Ft.		60'	60'
12'	Removing and Rebuilding Guard Fence	Lin. Ft.		260'	260'
13'	Unclassified Excavation	Cu. Yd.		79,000'	79,000'
13'	Unclassified Ditch Excavation	Cu. Yd.		400'	400'
13'	Stripping	Cu. Yd.		7,000'	7,000'
14'	Unclassified Structural Excavation - Miscellaneous	Cu. Yd.		630'	630'
16'	Structure Backfill (Class X)	Cu. Yd.		250'	250'
17'	Compaction (Modified)	Cu. Yd.		109,000'	109,000'
17'	Wetting	M Gal.		3,770'	3,770'
17'	Water (Diluted Emulsified Asphalt)	M Gal.		300'	300'
18'	Station Yard Overhaul	Sta. Yd.		504,000'	504,000'
18'	Yard Mile Overhaul	Yd. Mi.	200	78,600'	78,600'
18'	Ton Mile Overhaul	Ton Mi.		377,000'	377,200'
23'	Subbase Material (Class 2)	Ton'		49,100'	49,100'
26'	Gravel or Crushed Rock Surfacing (Grading C)	Ton'		22,300'	22,300'
29'	Asphalt (120-150 Penetration)	Ton'	2'	748'	750'
30'	Asphaltic Road Material MC (Prime)	Gal.'		44,400'	44,400'
30'	Asphaltic Road Material RC	Gal.'	50'	9,550'	9,600'
31'	Stone Screening (Type I)	Ton'		460'	460'
32'	Plant Mixed Asphaltic Surfacing	Ton'	25'	11,535'	11,560'
32'	Plant Mixed Asphaltic Shoulder Roll	Ton'		60'	60'
32'	Plant Mixed Asphaltic Ditch Paving	Ton'		80'	80'
45'	18" Culvert Pipe	Lin. Ft.		534'	534'
51'	Relaying 18" Pipe (CMP)	Lin. Ft.		120'	120'
53'	24" Corrugated Metal Culvert Pipe	Lin. Ft.		463'	463'
53'	36" Corrugated Metal Culvert Pipe	Lin. Ft.		165'	165'
53'	60" Corrugated Metal Culvert Pipe	Lin. Ft.		21'	21'
71'	Place 8" Perforated Corrugated Metal Pipe Underdrain	Lin. Ft.		390'	390'
75'	Metal Plate Guard Fence (Beam Type)	Lin. Ft.		875'	875'
150'	Install Overhead Sign	Lump Sum		●	●
192'	Delineators (Type I)	Each		165'	165'
192'	Delineators (Type II)	Each		49'	49'
192'	Delineators (Type III)	Each		8'	8'
	<u>STATE FORCES</u>				
	Furnishing and Installing Identification Signs	Each		2'	2'
	<u>STATE-FURNISHED MATERIAL</u>				
71'	8" Perforated Corrugated Metal Pipe Underdrain	Lin. Ft.		390'	390'
150'	Tubular Sign Bridge Structure (65'1" to 70'0" Span)	Each		1'	1'
	<u>NON-FEDERAL AID</u>				
	Signing and Striping Entire Project (State Forces)	Lump Sum		●	●

MICROFILMED

# STRUCTURE QUANTITIES

LOCATION	MISCELLANEOUS	PLUG CULVERTS EACH	REMOVAL OF STRUCTURES NO.	EXCAVATION CUBIC YARDS			UNCLASSIFIED STRUCTURAL EXCAVATION CUBIC YARDS MISC.	STRUCTURE BACKFILL CUBIC YARDS CL. X	SUBBASE CLASS 2 TONS	GRAVEL OR CRUSHED ROCK SURFACING TONS	ASPHALTIC SURFACING TONS	CONCRETE CUBIC YARDS CL. "A"	RELAYING 18" PIPE (CMP) LIN. FT.	CULVERT PIPE					METAL PLATE GUARD FENCE LIN. FT.		
				UNCL.	EMB.	UNCL. DITCH								ITEM 45 LIN. FT.		CORRUGATED METAL LIN. FT.					
														"H"	18"	24"	36"	60"			
18+00 to 20+98.4 21+00 to 21+50 21+85					▲				35'	20'	9'									50'	
22+25 to 24+50 27+00 to 29+00 27+60				20'				12'											21*	225' 200'	
32+50 to 33+50 33+25 35+00 to 53+				10'	▲			4'	▲	▲	▲									17*	100'
36+ 37+ 37+86 41+ to 44+	260'-Removing & Rebuilding Guard Fence				10' 20'			3'	35' 49'	20' 28'	9' 13'									17*	225'
43+00 46+ 47+ 50+74 52+18 55+16 55+55				10'				12'	37' 37' 37'	21' 21' 21'	10' 10' 10'									17* 25*	
59+17 61+40 65+50			1'	40' 10'				4' 6'	15' 15'	10' 10'	2' 2'			3'	32'					19* 17* 31*	
68+ 73+80				10'				6'	30'	20'	9'									17*	
74+55 78+21 80+96		1		20' 20'	10'			7' 4' 2'	21'	14'	7'			5'	46'					23* 15*	
85+40 85+76 86+00				30' 30'				3'	25' 25'	17' 20'	8' 9'									19*	
88+13 90+70 to 90+90 91+69 92+00 to 95+30 92+30 to 95+30	20 Lin. Ft. - Removing Guard Fence. Place 390 Lin. Ft. of 8" Perforated C.M.P. Under-drain 390 Lin. Ft. 8" Perforated C.M.P. Under-drain (State Furnished)			30' 30'	20'			3'	30' 500*	21' 820'	10'									17*	
93+ 95+62			1'	10'					18'	12'	6'										
95+96 96+61 98+00		1'		10' 10'				4' 5'	15' 15'	11' 11'	2' 2'			1'	32'					23*	
99+82 to 101+48 102+98 to 104+62 102+98 to 103+18'	20 Lin. Ft. - Removing Guard Fence.								160' 80'	95' 45'											
104+69 105+46 106+79			1'	10' 10'	10'			4' 7'	15' 20'	11' 12'	2' 6'			1'	50'					23*	
108+27 to 109+05 108+27 to 108+42 109+03 to 109+05	15 Lin. Ft. Removing Guard Fence. 5 Lin. Ft. Removing Guard Fence.								75'	45'	30'										

\* Includes 1' for Internal Connecting Band.    Δ Quantities in Surfacing & Subbase Plans.    ▲ Included in Roadway Quantities.    \* Not Included in Totals.  
 ● Includes 1' for External Connecting Band.    ° "H" as shown on Standard M-45-A.    ■ No End Sections are Req'd.

(Continued)

# STRUCTURE QUANTITIES

LOCATION	MISCELLANEOUS	PLUG CULVERTS EACH	REMOVAL OF STRUCTURES NO.	EXCAVATION CUBIC YARDS			UNCLASSIFIED STRUCTURAL EXCAVATION CUBIC YARDS MISC.	STRUCTURE BACKFILL CUBIC YARDS CL. X	SUBBASE CLASS 2 TONS	GRAVEL OR CRUSHED ROCK SURFACING TONS	ASPHALTIC SURFACING TONS	CONCRETE CUBIC YARDS CL. "A"	RELAYING 18" PIPE (CMP) LIN. FT.	CULVERT PIPE					METAL PLATE GUARD FENCE LIN. FT.
				UNCL.	EMB.	UNCL DITCH								ITEM 45		CORRUGATED METAL			
														18"	24"	36"	60"	24"	
109+33 109+97 111+94				10'	20'		5'	4'	15'	11'	2'							15'	
113+30 115+11 116+67				10'			4'	3'	15'	11'	2'							19'	17'
69+08 70+07 70+54				10'			7'	6'	15'	11'	2'								21'
73+78 74+66 74+90					20'		2'	3'	15'	12'	6'							19'	
82+04 84+29 87+81		1'	1'	20'	20'		3'	3'	15'	12'	6'			1'	30'			29'	13'
98+ 98+52 101+27		1'			30'		4'	5'	15'	12'	6'			1'	30'				
101+50 104+43 107+96		1'		10'	50'		7'	7'	15'	11'	2'			3'	36'				25'
109+50 110+31				10'			9'	9'	36'	12'	6'		40'						23' 9'
112+81 113+52 114+10				10'	60'		5'	6'	36'	12'	6'		40'						21' 17'
114+36 115+05 116+75		1'			30'		12'	5'	36'	12'	6'			2'	34'				
118+51 120+45 120+93		1'			20'		4'	6'	36'	12'	6'		40'						
122+30 to 124+ 122+77 123+16					10'	25'			30'	11'	2'								
124+00 124+31 124+ to 126+70		1'			30'	260	7'	5'	36'	12'	6'			2'	34'				
125+63 126+79 127+					10'		2'	2'	36'	12'	6'							11'	37.5'
127+ to 128+ 129+ 129+83									36'	12'	6'								37.5'
130+09 130+24 130+95				10'			3'	4'	36'	12'	6'							11' 11'	
134+40 135+05 136+00 to 140+00					20'		4'	5'	36'	12'	6'			1'	32'				

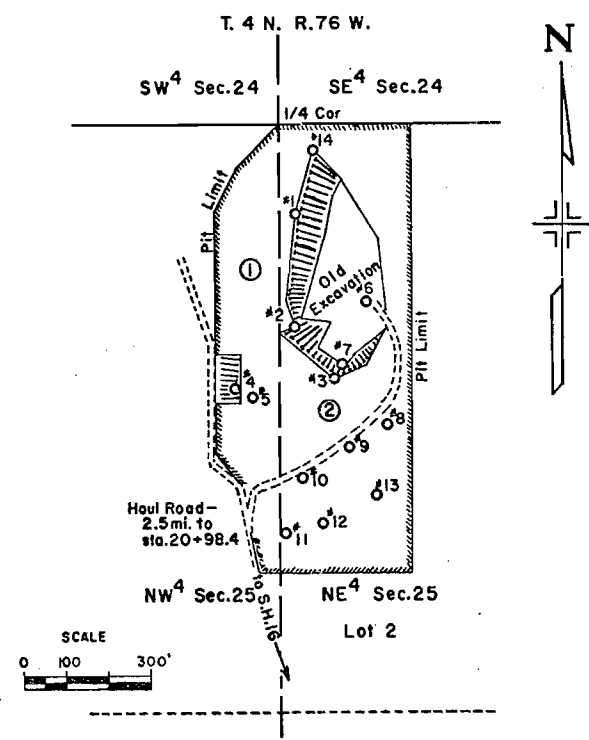
(Continued)

MICROFILMED



### PIT NO.2 (CRAIG J. ADAMS)

SUBBASE MATERIAL, BASE COURSE SURFACING AND AGGREGATE FOR PLANT MIX.  
 LOCATION - E. 1/2, N.E. 1/4, N.W. 1/4 OF SEC. 25, & W. 1/2, N.W. 1/4, N.E. 1/4 OF SEC. 25,  
 T. 4 N., R. 76 W., 6TH P.M.  
 OWNER - ESTHER WILLIAMS ET AL. & CRAIG J. ADAMS.  
 QUANTITY AVAILABLE - 114,000 CU. YDS.  
 HAUL DISTANCE - 2.5 MI. TO STA. 20+98.4  
 ESTIMATED FOR STRIPPING - 7,000 CU. YDS.  
 FIELD SAMPLE - 1409  
 NOTE: PIT AREA ① BELONGING TO ESTHER WILLIAMS ET AL. NOT TO BE USED ON THIS PROJECT.



NOTE: HAUL DISTANCE FROM PIT TO STATION ON PROJECT WILL BE AS SHOWN ON PIT SKETCH AND WILL NOT BE REMEASURED.

### LOG OF THE PIT

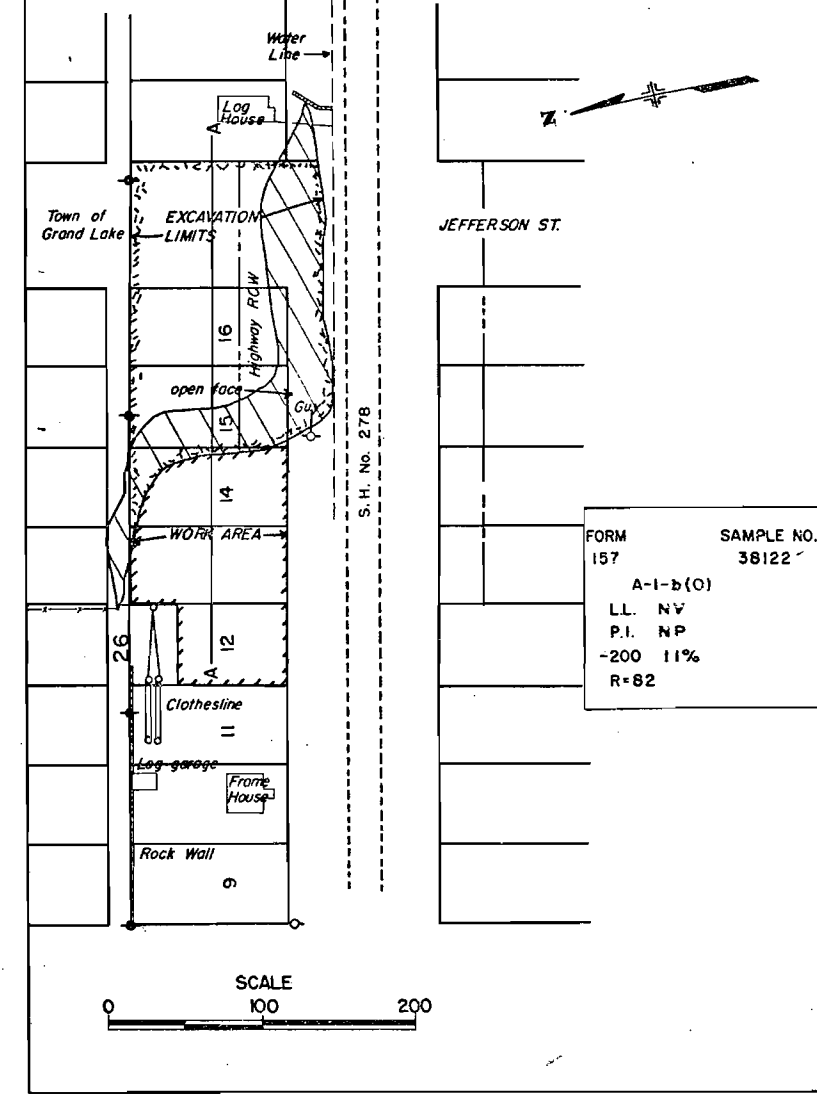
SAMPLE NO. 1409

TEST NO.	DEPTH		DESCRIPTION OF TEST HOLE MATERIAL
	FROM	TO	
1	0.0	3.0	OVERBURDEN
	3.0	25.0	SAND & GRAVEL
2	STRIPPED		OVERBURDEN
	0.0	12.0+	SAND & GRAVEL
3	0.0	2.0	OVERBURDEN
	2.0	16.0+	SAND & GRAVEL
4	0.0	1.0	OVERBURDEN
	1.0	8.0+	SAND & GRAVEL
5	0.0	1.0	OVERBURDEN
	1.0	10.0	SAND & GRAVEL
6	0.0	21.0	SAND & GRAVEL
	21.0+		SHALE
7	0.0	21.0	SAND & GRAVEL
	0.0	1.0	OVERBURDEN
8	1.0	14.0	SAND & GRAVEL
	0.0	1.0	OVERBURDEN
9	1.0	10.0	SAND & GRAVEL
	0.0	1.0	OVERBURDEN
10	1.0	10.0	SAND & GRAVEL
	0.0	1.0	OVERBURDEN
11	1.0	10.0	SAND & GRAVEL
	0.0	5.0	OVERBURDEN
12	5.0	10.0	SAND & GRAVEL
	0.0	5.0	OVERBURDEN
13	5.0	10.0	SAND & GRAVEL
	0.0	6.0	OVERBURDEN
14	6.0	10.0	SAND & GRAVEL
	0.0	64.0	SAND & GRAVEL

\* SEE NOTE ABOVE FOR PIT AREA ①

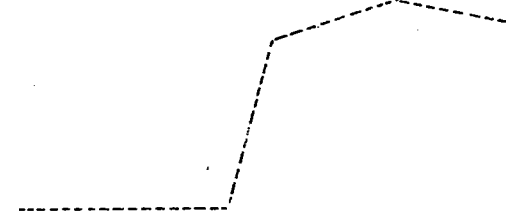
### PIT NO.1 GRAND LAKE BORROW AREA

GRAND LAKE BORROW AREA  
 OWNER: Lots 9 To 14, Block 26: Lavaun C. & Odessa B. Davis  
 Lots 15 & 16, Block 26: Chester W. & Vivian R. Fleming  
 HAUL DISTANCE: 3200' to sta. 47+00  
 QUANTITY AVAILABLE: 21,000 cu. yds.  
 SAMPLE NO.: 157 No. 38122



FORM 157  
 A-1-b(0)  
 LL. NV  
 P.I. NP  
 -200 11%  
 R=82

### SECTION A-A



MICROFILMED

### SUBBASE AND SURFACING PLANS

It is estimated that material for the subbase and surfacing for the project is available in the vicinity of the pit indicated in the following tabulations. Estimated quantities for these operations are shown below. Alteration of the subbase and surfacing plans will be allowed only on written permission from the Department.

#### SURFACING PLAN

MATERIAL TO BE PLACED	SOURCE	TONS			TON MILE OVERHAUL		
		PLANT MIX		BASE COURSE GRADING C	PLANT MIX		BASE COURSE GRADING C
		TOP COURSE	BOTTOM COURSE		TOP COURSE	BOTTOM COURSE	
18+00 ~ 20+98.4 20+98.4 ~ 35+00 35+00 ~ 39+32.3 39+32.3 ~ 40+82.3 40+82.3 ~ 46+42.8	Pit No. 2 R=78	55	73	213	136	180	527
257		428	1,276	677	1,127	3,359	
46+42.8 ~ 48+92.8 Bk. 48+92.8 Ah ~ 53+89.2 53+89.2 ~ 60+38.2 Bk. 60+38.2 Ah ~ 117+61.0 Bk. 66+78.9 Ah ~ 113+25.9 Bk.		75	103	309	226	310	929
		121	183	548	372	563	1,686
		119	198	591	379	631	1,883
		1,044	1,741	5,193	3,954	6,593	19,666
		850	1,417	4,229	4,053	6,756	20,164
113+04.1 Ah ~ 127+55.0 127+55.0 ~ 128+58.7 128+58.7 ~ 180+26.7 Bk. 180+58.5 Ah ~ 183+00		266	443	1,320	1,422	2,368	7,055
		0	24*	0	0	132*	0
		946	1,576	4,703	5,668	9,443	28,180
		44	59	172	286	384	1,119
Ramp 1 0+00 ~ 1+70 1+70 ~ 3+00 3+00 ~ 6+50		8	13	41	24	39	123
		13	20	62	39	60	186
		64	86	260	195	261	790
Ramp 2 0+00 ~ 1+55 1+55 ~ 3+40		10	15	44	29	44	127
		23	34	105	67	100	307
Approach Lt. 44+85 Est. for Shoulder Finishing		10	14	43	29	41	126
				697			3,071
From List of Structures			465'	1,093'		2,051'	4,816'
TOTALS		4,223'	7,312'	22,226'	18,472'	32,228'	97,930'

\* Approach to Project  
\* Non-Federal Aid

#### SUBBASE PLAN

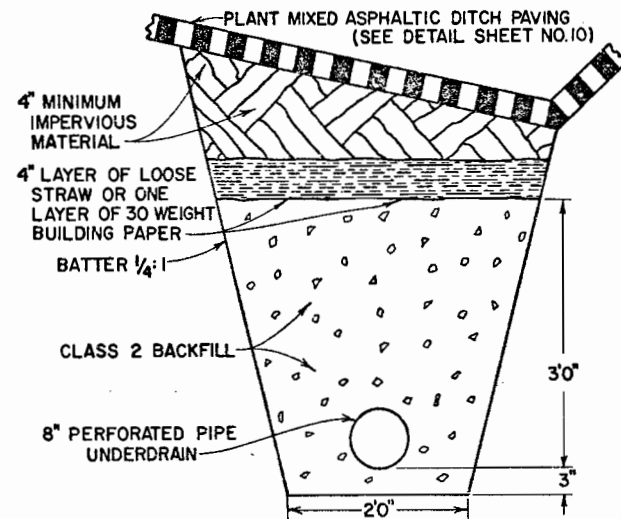
MATERIAL TO BE PLACED	SOURCE	*THICKNESS "T"	TONS CLASS 2	TON MILE OVERHAUL
20+98.4 ~ 23+50 23+50 ~ 35+00 35+00 ~ 39+32.3 39+32.3 ~ 40+82.3 40+82.3 ~ 45+50	Pit No. 2 R=75	1.3'	835	2,108
		1.0'	3,154	8,379
		1.0'	1,129	3,169
		1.0'	483	1,382
		1.0'	1,354	3,954
45+50 ~ 46+42.8 46+42.8 ~ 48+92.8 Bk. 48+92.8 Ah ~ 53+89.2 53+89.2 ~ 56+00 56+00 ~ 60+38.2 Bk.		0.7'	92	274
		0.7'	247	743
		0.7'	1,055	3,246
		0.7'	378	1,189
		0.8'	862	2,763
60+54.2 Ah ~ 66+00 66+00 ~ 95+00 95+00 ~ 114+00 114+00 ~ 117+61.0 Bk. 66+78.9 Ah ~ 69+00		0.8'	909	2,999
		0.3'	2,052	7,439
		0.5'	1,363	5,561
		0.4'	202	867
		0.4'	104	452
69+00 ~ 84+00 84+00 ~ 97+00 97+00 ~ 113+25.9 Bk. 113+04.1 Ah ~ 127+55.0 127+55.0 ~ 128+58.7 128+58.7 ~ 180+26.7 Bk.		0.8'	1,930	8,708
		0.4'	839	4,008
		1.0'	5,063	25,588
		1.0'	4,518	24,149
		0.0'	0	0
		1.0'	14,098	84,475
Ramp 1 0+00 ~ 1+70 1+70 ~ 5+50		1.0'	153	459
		1.0'	986	3,005
Ramp 2 0+00 ~ 1+55 1+55 ~ 3+00		1.0'	160	463
		1.0'	299	874
From List of Structures Estimated for Irreg.			2,324'	10,792'
			4,459'	20,705'
TOTALS			49,048'	227,751'

\* Approximate Thickness based on Design Curve "D".

#### PLANT MIXED ASPHALTIC SHOULDER ROLL, DITCH & SLOPE PAVING

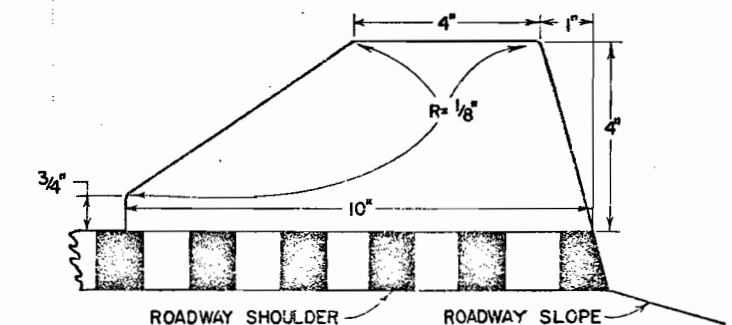
MATERIAL TO BE PLACED	SIDE	LIN. FT.	TONS	TON MILE OVERHAUL
<b>SHOULDER ROLL</b>				
104+00 ~ 106+60 Bk.	Rt.	260	4	18
107+00 ~ 111+00 Bk.	Rt.	400	6	29
95+00 ~ 98+40 Ah.	Rt.	340	5	25
98+60 ~ 101+00 Ah.	Rt.	240	4	20
103+00 ~ 117+00 Ah.	Lt.	800	12	61
135+25 ~ 139+90 Ah.	Lt.	465	7	40
140+50 ~ 143+00 Ah.	Lt.	250	4	23
156+00 ~ 164+00 Ah.	Lt.	800	12	74
TOTALS		3,555'	54'	290'
<b>DITCH PAVING</b>				
92+00 ~ 95+30 Bk.	Rt.	330	50	190
<b>SLOPE PAVING</b>				
Est. for Culvert Inlets			25	110

▼ To be paid for as Plant Mixed Asphaltic Ditch Paving.



DETAIL OF UNDERDRAIN

#### DETAIL OF PLANT MIXED ASPHALTIC SHOULDER ROLL



ROADWAY SHOULDER ROADWAY SLOPE

MICROFILMED

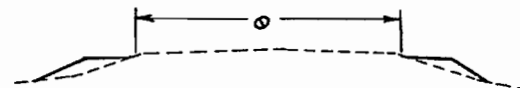


### DELINEATORS

STATION	SPACING	TYPE I EACH	TYPE II EACH	TYPE III EACH
20+98.4 ~ 24+00.0	12° Curve	10		
26+91.2 ~ 34+54.7	8°30' Curve	14		
38+50.3 ~ 52+57.2	Intersection	15	44	5
56+57.2 ~ 63+98.6	Tangent	4		
67+98.6 ~ 81+45.8	3° Curve	12		
85+31.9 ~ 93+38.3	2°15' Curve	8		
95+29.2 ~ 107+81.4	3° Curve	12		
108+88.8 ~ 12+28.9	1°30' Curve	10		
16+28.9 ~ 19+79.7	Tangent	2		
83+79.7 ~ 101+45.9	2° Curve	18		
103+34.5 ~ 116+89.3	2° Curve	10		
120+89.3 ~ 125+95.0	Tangent	2		
125+95.0 ~ 130+18.7	Bridge	8		2
136+00.0 ~ 144+80.0	Accel. & Decel.	3	5	1
144+80.0 ~ 162+50.9	3° Curve	21		
166+18.1 ~ 178+26.7	3° Curve	16		
<b>TOTALS</b>		<b>165</b>	<b>49</b>	<b>8</b>

Guard Posts to be removed by Maintenance Forces.

### \* DETAIL OF COMPACTION

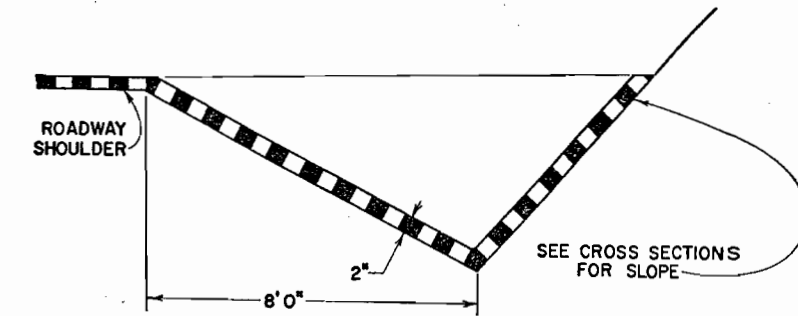
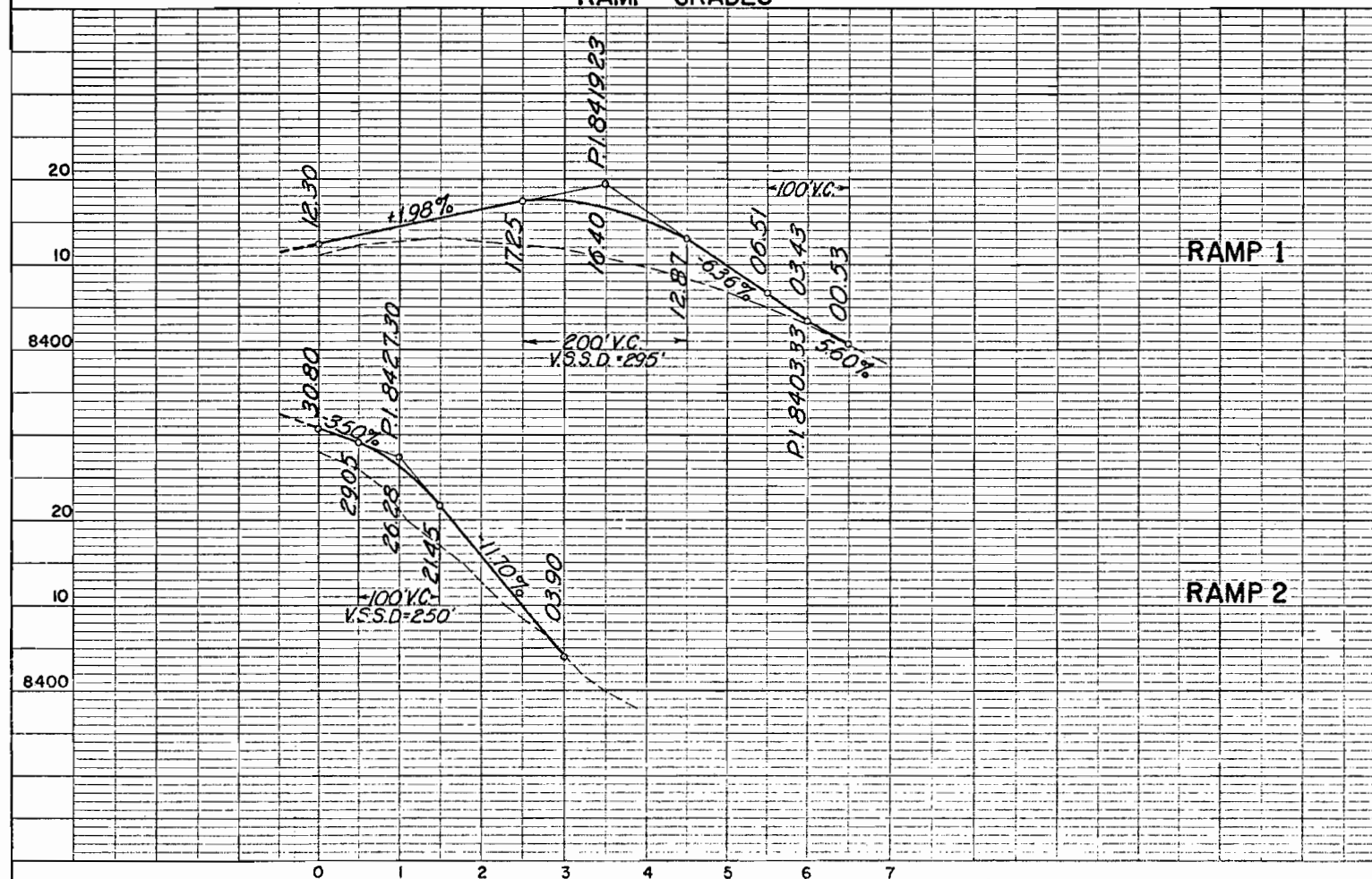


To be excluded from Compaction of Base of Cuts and Fills. Width varies-see Cross Sections

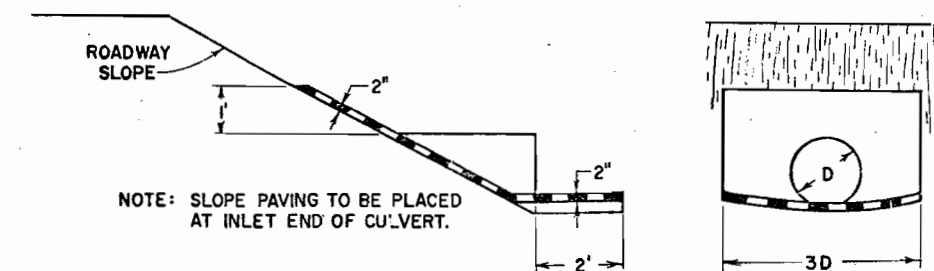
### SUMMARY OF EARTHWORK QUANTITIES

UNCLASSIFIED EXCAVATION From Roadway Cross Sections	16,344'	STATION YARD OVERHAUL From Mass Diagram	457,834'
Widened Cuts	38,545'	Est. for Overbreak and Subsidence	45,783'
Borrow	11,994'	<b>TOTAL</b>	<b>503,617 Sta. Yd.</b>
Est. for Overbreak and Subsidence	6,688'		
List of Structures as Excavation	370'		
List of Structures as Embankment	3,030'	YARD MILE OVERHAUL From Mass Diagram	71,440'
Est. for Cut Slope Treatment	900'	Est. for Overbreak and Subsidence	7,144'
* Muck Removal	500'	<b>TOTAL</b>	<b>78,584 Yd.Mi.</b>
<b>TOTAL</b>	<b>78,371 Cu.Yd.</b>		
UNCLASSIFIED EXCAVATION From Roadway Cross Sections	16,344'	COMPACTON (Modified) Unclassified Excavation	77,871'
Widened Cuts	38,545'	* Base of Cuts and Fills	30,148'
Borrow	11,994'	<b>TOTAL</b>	<b>108,019 Cu.Yd.</b>
<b>TOTAL</b>	<b>66,883 Cu.Yd.</b>		
UNCLASSIFIED EXCAVATION X FACTOR Roadway Excavation X Factor	9,805'	UNCLASSIFIED DITCH EXCAVATION From List of Structures	305 Cu.Yd.
Widened Cuts X Factor	28,375'	* Not to be Compacted	
Borrow X Factor	10,195'		
<b>TOTAL</b>	<b>48,375 Cu.Yd.</b>		
EMBANKMENT From Roadway Cross Sections	48,375 Cu.Yd.		

### RAMP GRADES



DETAIL OF PLANT MIXED ASPHALTIC DITCH PAVING

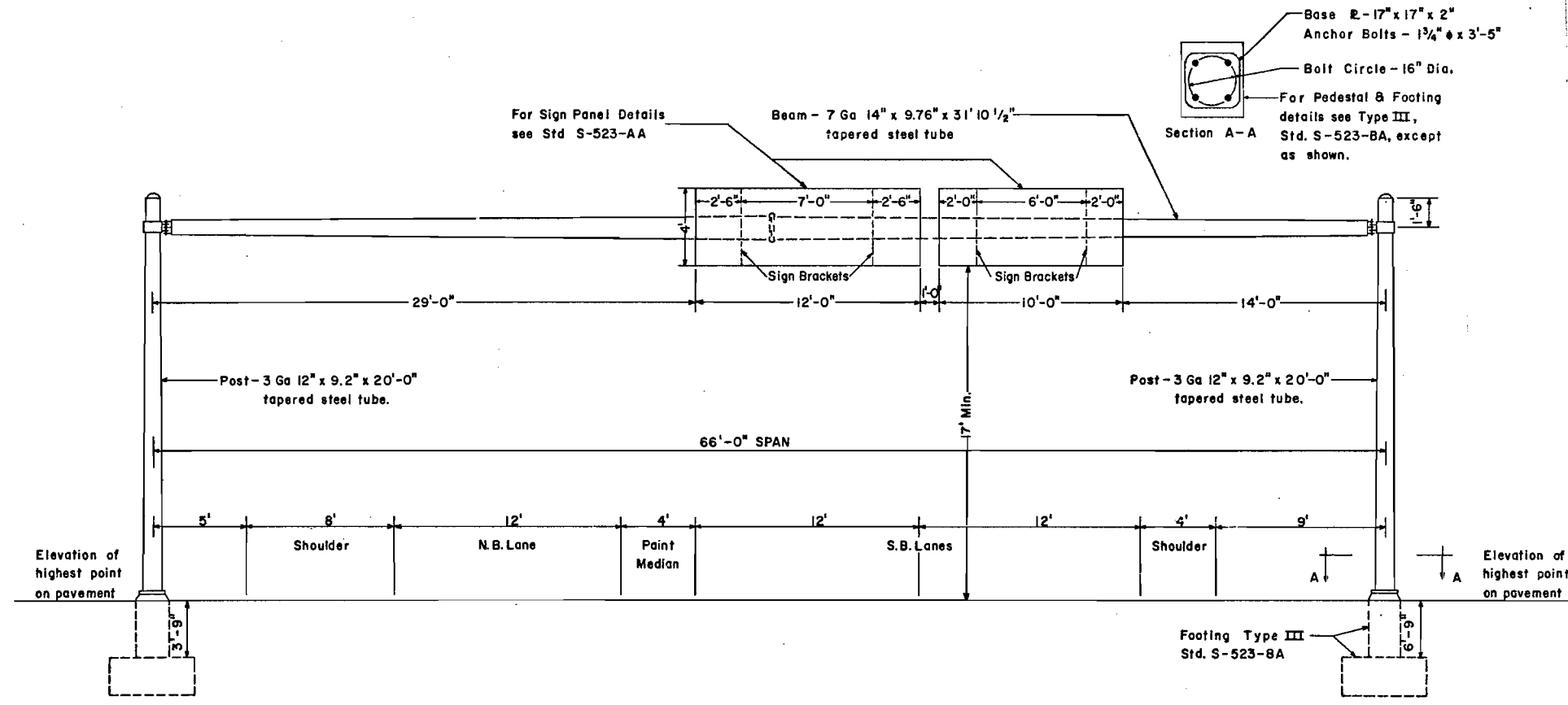


DETAIL OF PLANT MIXED ASPHALTIC SLOPE PAVING

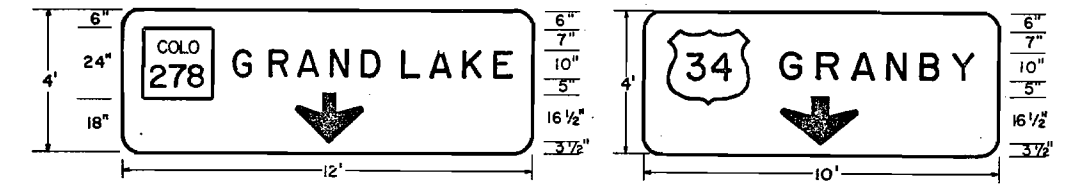
NOTE: TO BE PAID FOR AS PLANT MIXED ASPHALTIC DITCH PAVING

FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	F 007 - 1 (5)	11	

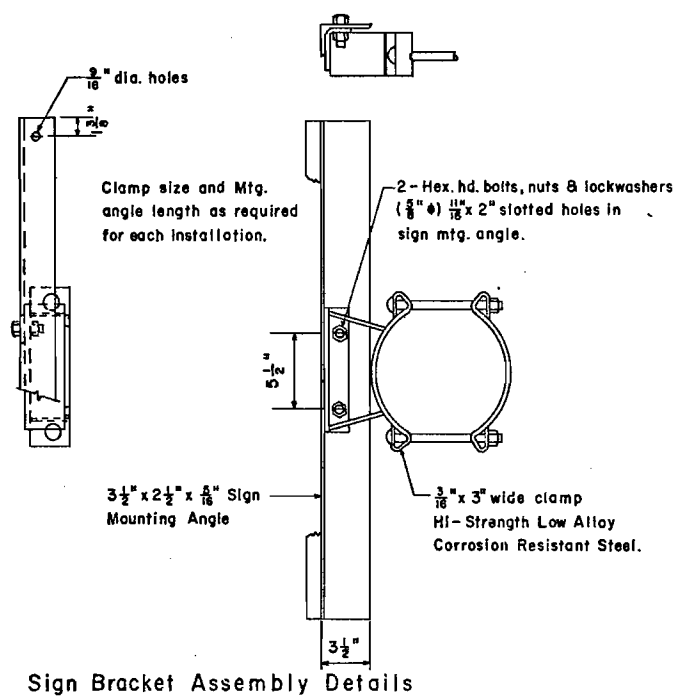
# DETAILS OF OVERHEAD SIGN STA. 42+05



## SIGN LAYOUT



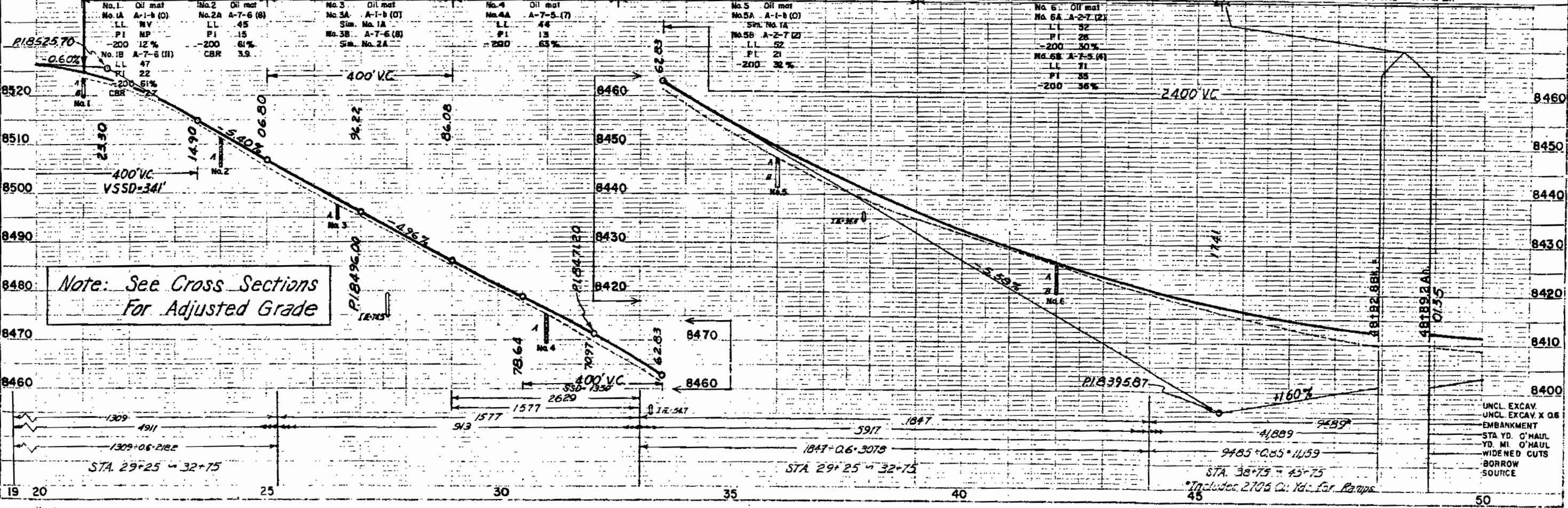
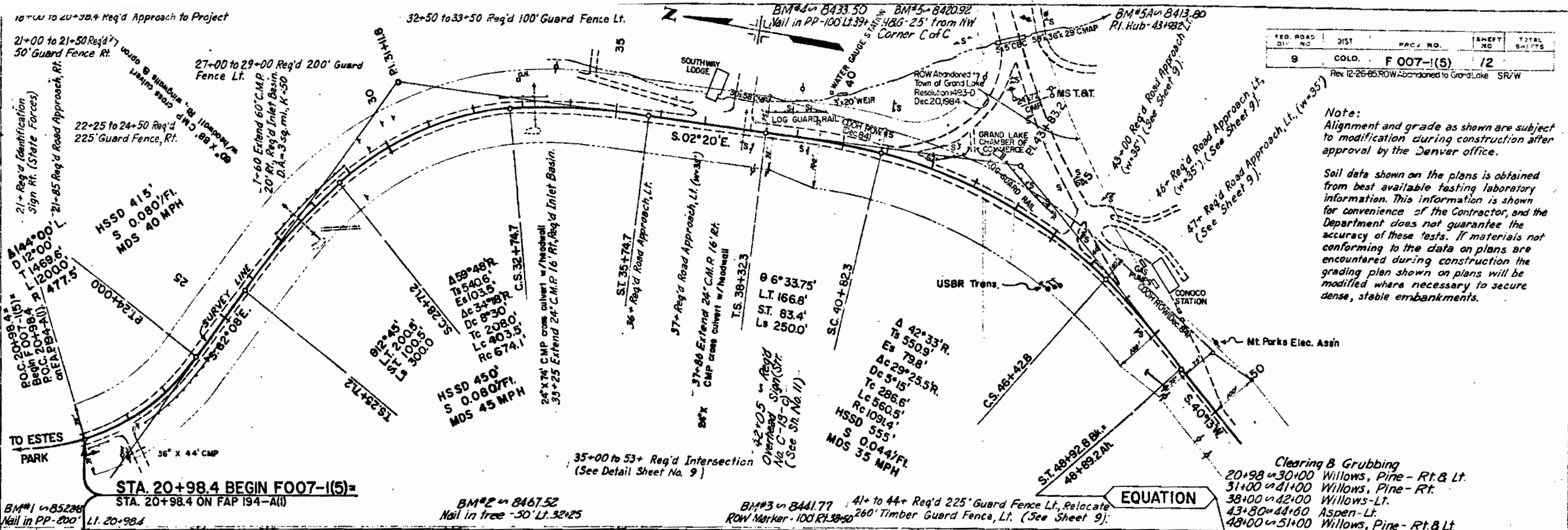
Panels shall be laminated aluminum 1" thick.  
Legend and Border shall be White Cutout Aluminum.  
Background shall be Green porcelain enamel.



MICROFILMED

Note:  
Alignment and grade as shown are subject to modification during construction after approval by the Denver office.

Soil data shown on the plans is obtained from best available testing laboratory information. This information is shown for convenience of the Contractor, and the Department does not guarantee the accuracy of these tests. If materials not conforming to the data on plans are encountered during construction the grading plan shown on plans will be modified where necessary to secure dense, stable embankments.



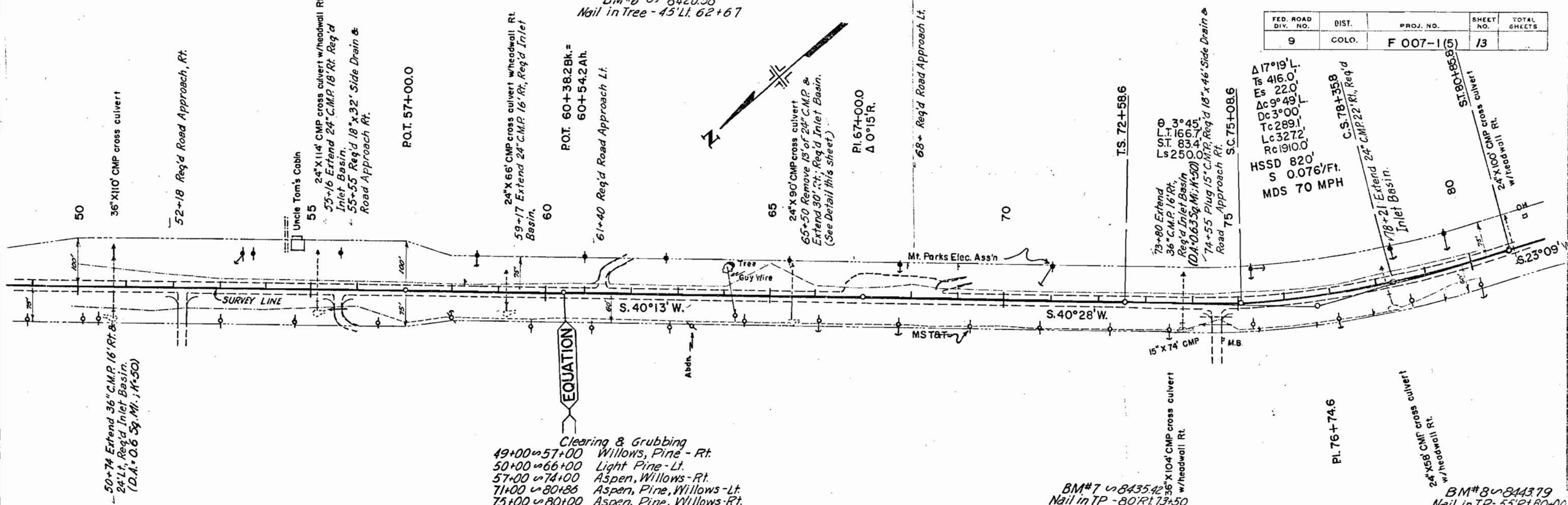
No. 1	Oil mat	No. 2	Oil mat	No. 3	Oil mat	No. 4	Oil mat	No. 5	Oil mat	No. 6	Oil mat
No. 1A	A-1-b (0)	No. 2A	A-7-6 (8)	No. 3A	A-1-b (0)	No. 4A	A-7-5 (7)	No. 5A	A-1-b (0)	No. 6A	A-2-7 (2)
LL	11	LL	45	Sim. No. 1A	LL	44	Sim. No. 1A	Sim. No. 1A	LL	32	
PI	12	PI	15	No. 3B	A-7-6 (8)	PI	13	No. 5B	A-2-7 (2)	PI	28
-200	12%	-200	61%	Sim. No. 2A	LL	52	Sim. No. 2A	LL	52	-200	30%
					PI	21		PI	21	No. 6B	A-7-5 (4)
					-200	32%		LL	31	-200	36%

MICROFILM

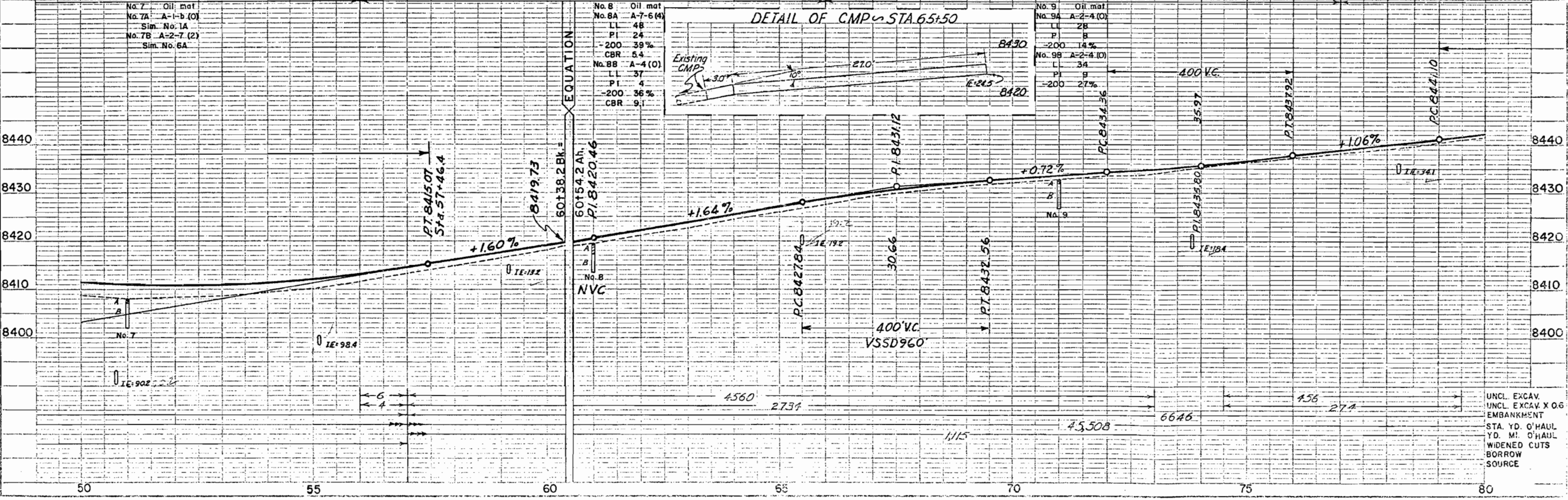
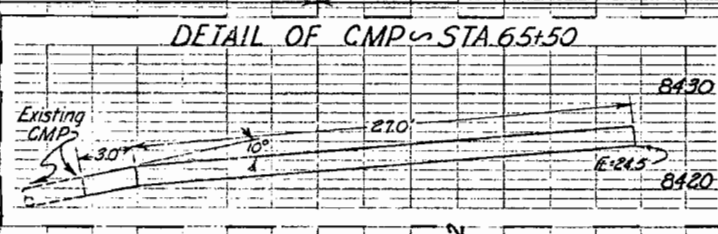
PLAN	DATE
BY	
DATE	
NO. 257/0	

PROFILE	DATE
BY	
DATE	
NO. 257/0	

FED. ROAD DIV. NO.	DIST.	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	F 007-1(5)	13	



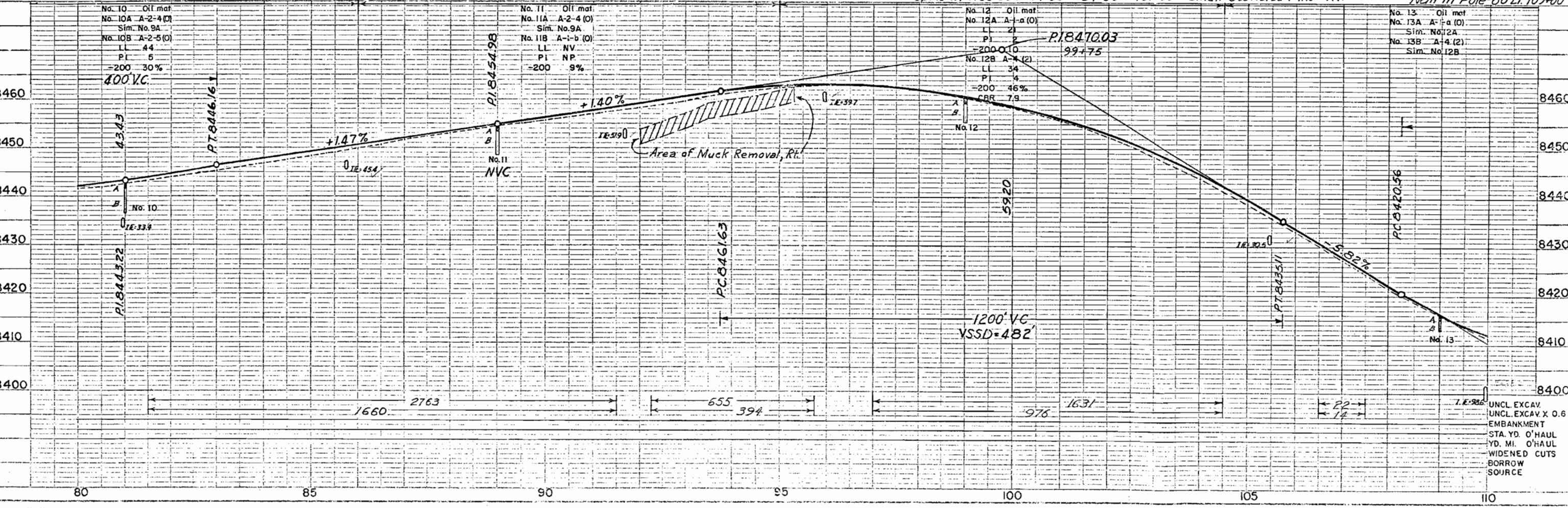
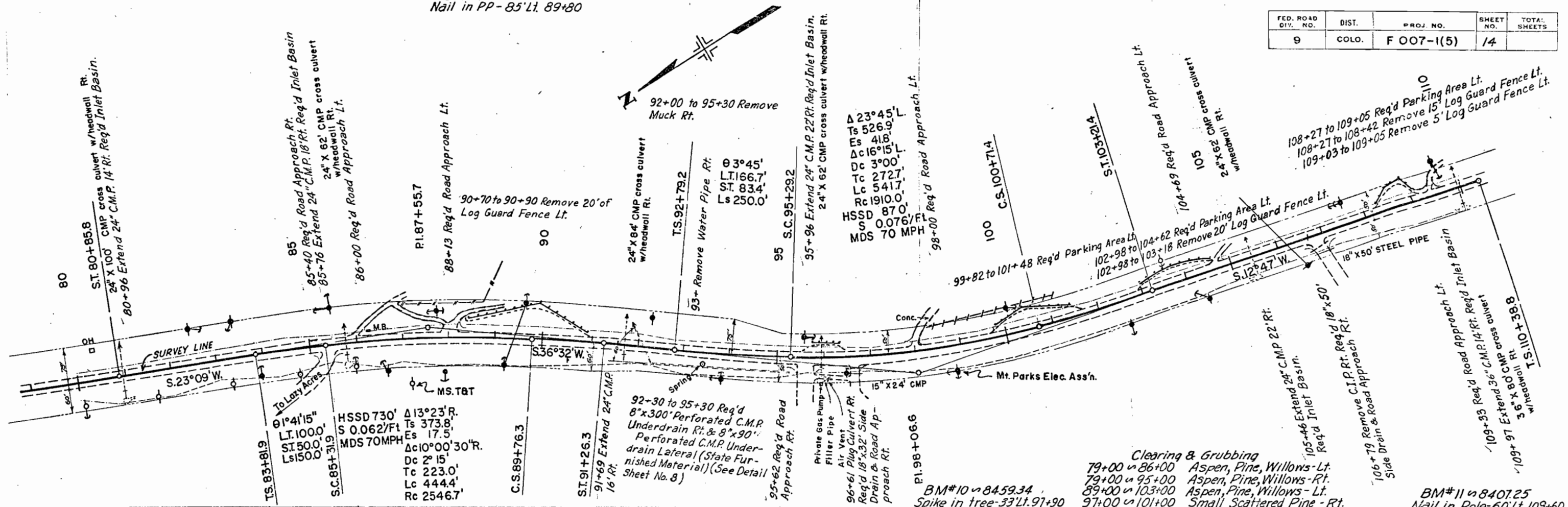
Clearing & Grubbing  
 49+00 ~ 57+00 Willows, Pine - Rt.  
 50+00 ~ 66+00 Light Pine - Lt.  
 57+00 ~ 74+00 Aspen, Willows - Rt.  
 71+00 ~ 80+86 Aspen, Pine, Willows - Lt.  
 75+00 ~ 80+00 Aspen, Pine, Willows - Rt.



- UNCL. EXCAV.
- UNCL. EXCAV. X 0.6
- EMBANKMENT
- STA. YD. O'HAUL
- YD. M. O'HAUL
- WIDENED CUTS
- BORROW
- SOURCE

FED. ROAD DIV. NO.	DIST.	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	F 007-1(5)	14	

PLAN	DATE
BY	
APPROVED	
NOTED	
DATE	

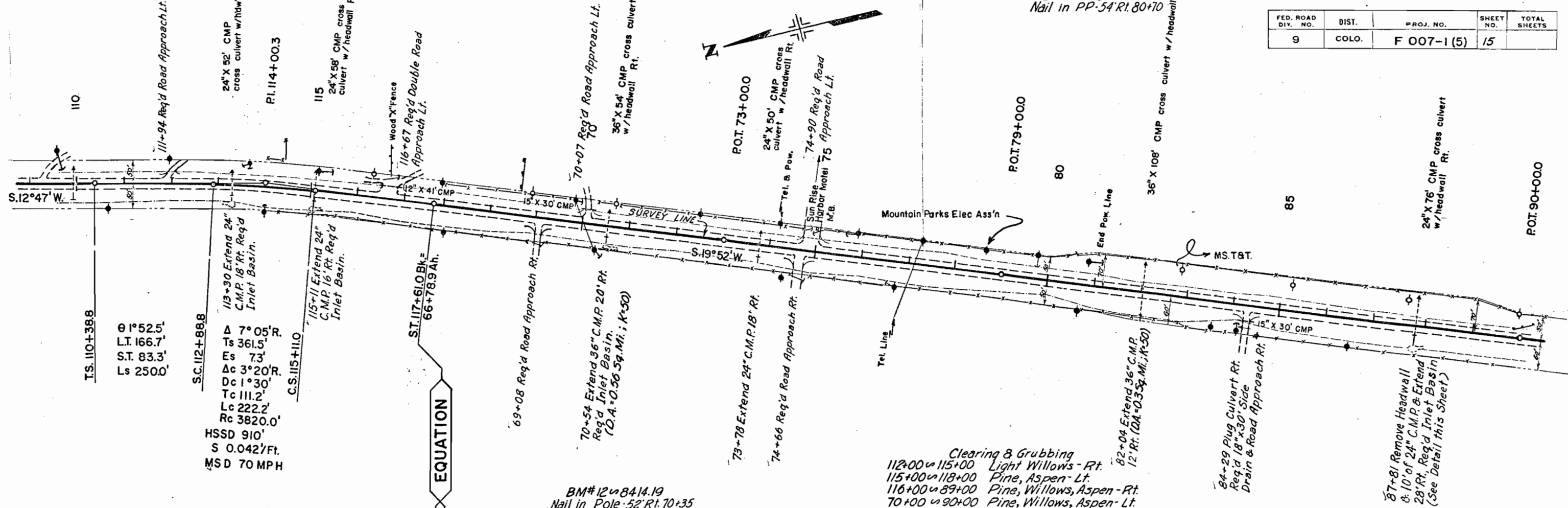


PROFILE	DATE
BY	
APPROVED	
NOTED	
DATE	

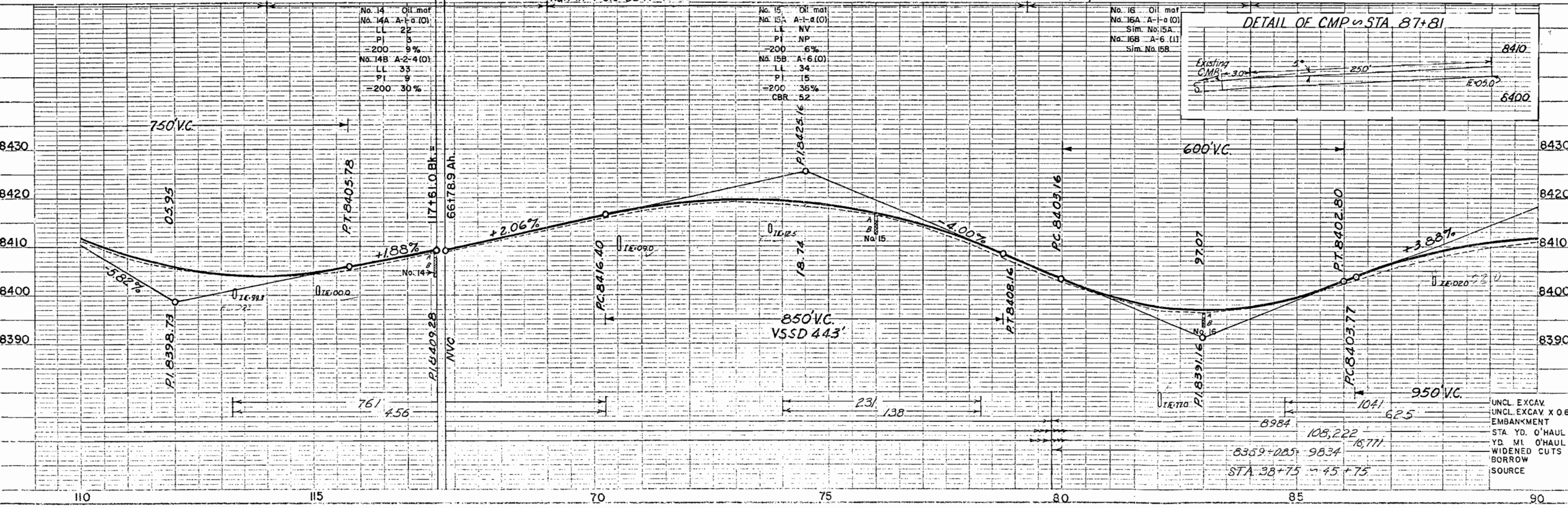
UNCL EXCAV  
UNCL EXCAV X 0.6  
EMBANKMENT  
STA. YD. O'HAUL  
YD. MI. O'HAUL  
WIDENED CUTS  
BORROW  
SOURCE

FED. ROAD DIV. NO.	DIST.	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	F 007-1 (5)	15	

PLAN	SUBMITTED	DATE
NO. 25710		



PROFILE	SUBMITTED	DATE
NO. 25711		

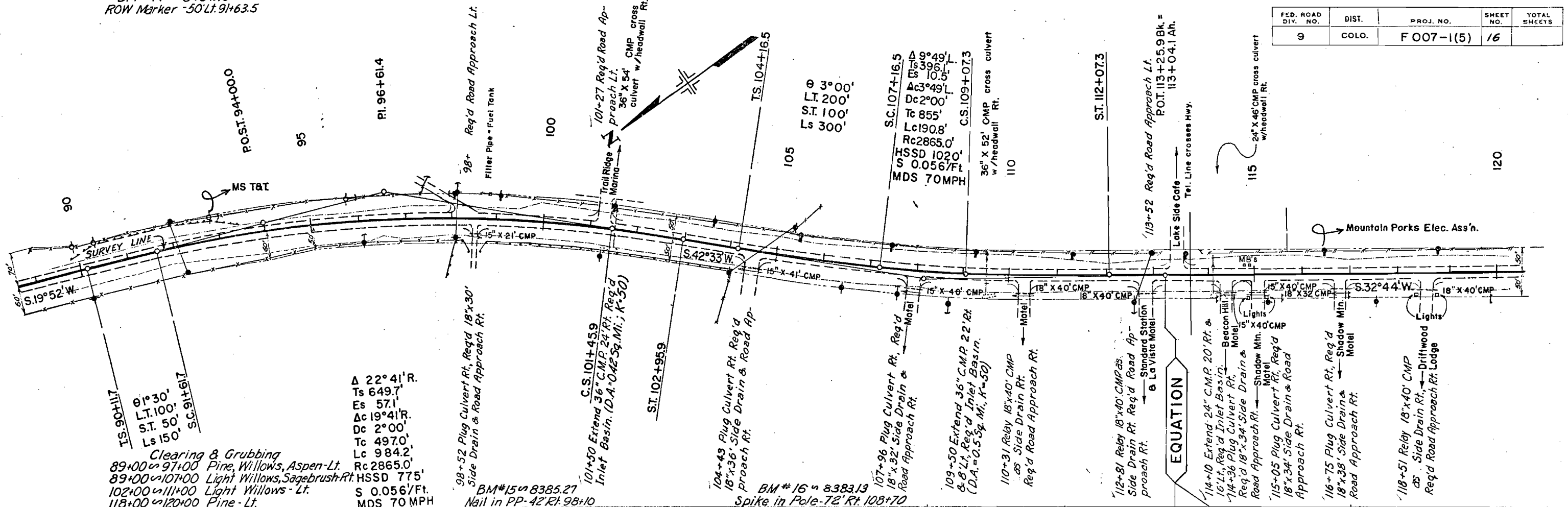


UNCL. EXCAV  
UNCL. EXCAV X 0.6  
EMBANKMENT  
STA. YD. O'HAUL  
YD. MI. O'HAUL  
WIDENED CUTS  
BORROW  
SOURCE

BM#14 @ 8407.15  
ROW Marker -50'Lt. 91+63.5

FED. ROAD DIV. NO.	DIST.	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	F 007-1(5)	16	

PLAN	DATE
SURVEYED	
NOTE BOOK ASSIGNMENT CHECKED	
NO. 257110	



Clearing & Grubbing  
 89+00 ~ 97+00 Pine, Willows, Aspen-Lt.  
 89+00 ~ 107+00 Light Willows, Sagebrush-Rt.  
 102+00 ~ 111+00 Light Willows - Lt.  
 118+00 ~ 120+00 Pine - Lt.

Δ 22°41'R.  
 Ts 649.7'  
 Es 57.1'  
 Δc 19°41'R.  
 Dc 2°00'  
 Tc 497.0'  
 Lc 984.2'  
 Rc 2865.0'  
 HSSD 775'  
 S 0.056/Ft.  
 MDS 70MPH

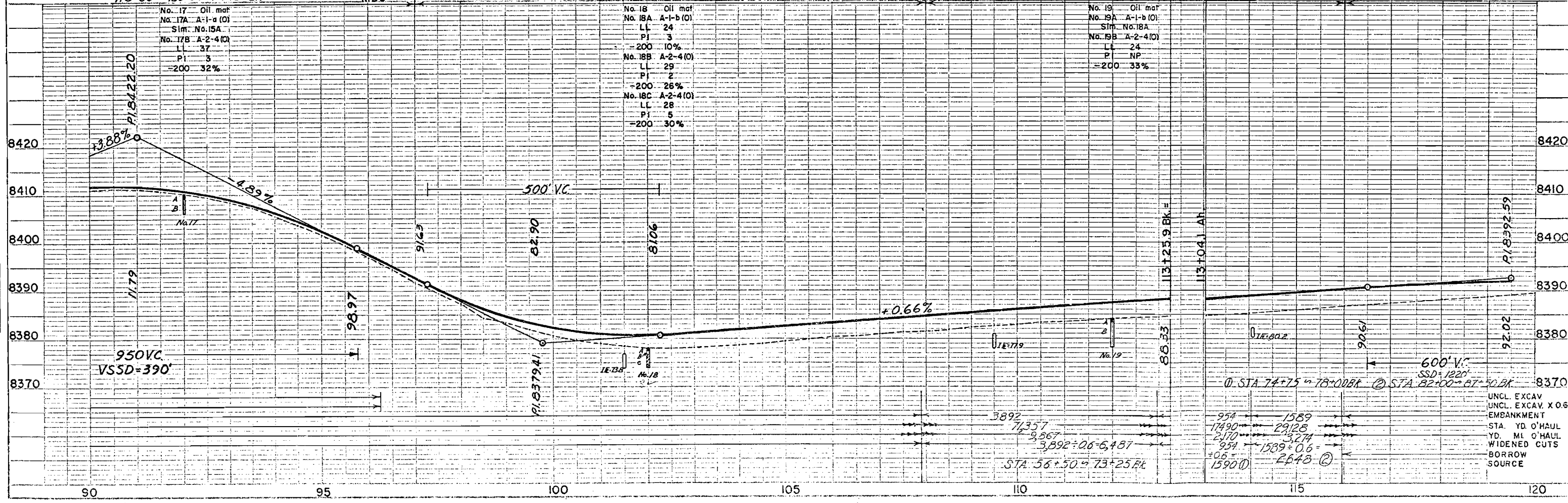
BM#15 @ 8385.27  
 Nail in PP-42 Rt. 98+10

BM#16 @ 8383.13  
 Spike in Pole-72 Rt. 108+70

No. 17 Oil mat  
 No. 17A A-1-a (O)  
 Sim. No. 15A  
 No. 17B A-2-4(O)  
 L 37  
 P 3  
 -200 32%

No. 18 Oil mat  
 No. 18A A-1-b (O)  
 L 24  
 P 3  
 -200 10%  
 No. 18B A-2-4(O)  
 L 29  
 P 2  
 -200 26%  
 No. 18C A-2-4(O)  
 L 28  
 P 5  
 -200 30%

No. 19 Oil mat  
 No. 19A A-1-b (O)  
 Sim. No. 18A  
 No. 19B A-2-4(O)  
 L 24  
 P NP  
 -200 33%



① STA 74+75 ~ 78+00 BK ② STA 82+00 ~ 87+50 BK

3892  
 76357  
 9567  
 3,892 = 0.6 = 6,487  
 STA 58+50 ~ 73+25 Rt

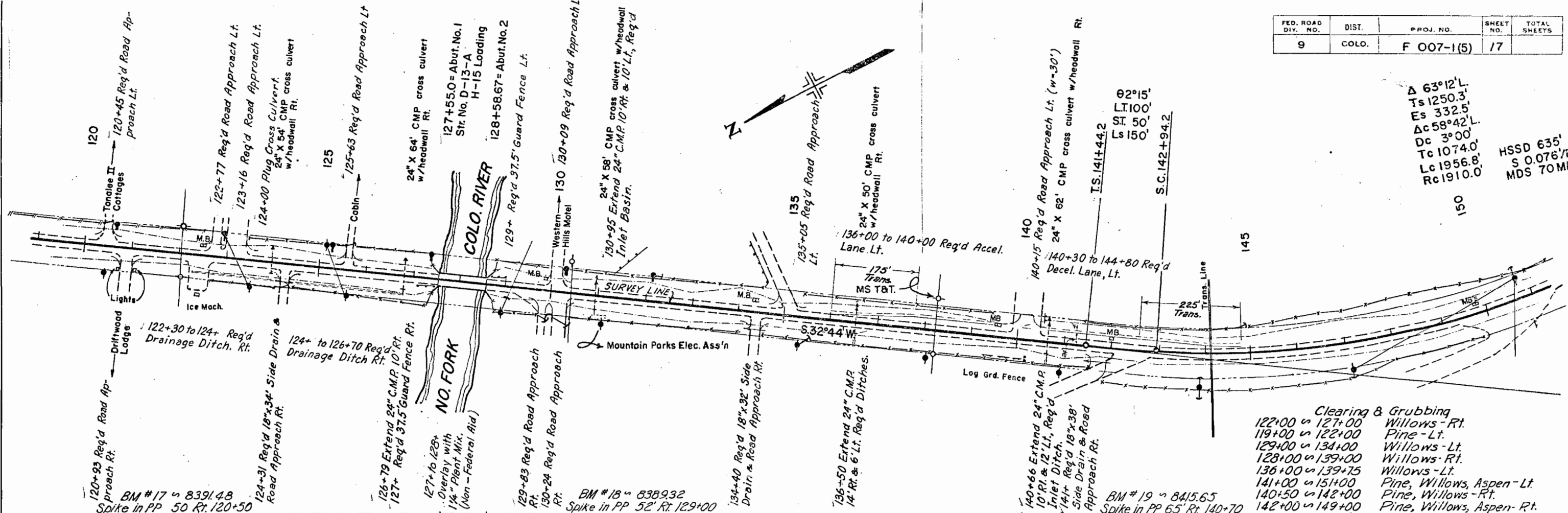
954  
 17490  
 2170  
 954  
 1589  
 29128  
 3,274  
 1589 = 0.6 = 2,648

UNCL EXCAV  
 UNCL EXCAV X 0.6  
 EMBANKMENT  
 STA. YD O'HAUL  
 YD. ML O'HAUL  
 WIDENED CUTS  
 BORROW  
 SOURCE

PROFILE	DATE
SURVEYED	
NOTE BOOK ASSIGNMENT CHECKED	
B. M. NOTED	
NO. 257110	

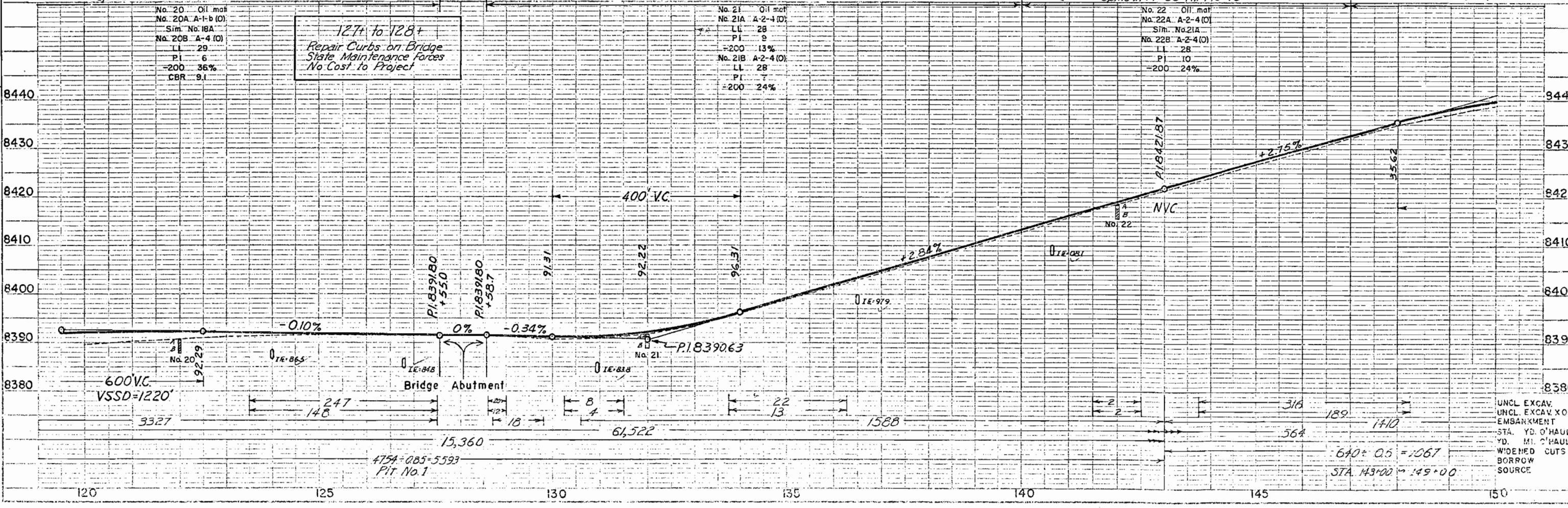
FED. ROAD DIV. NO.	DIST.	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	F 007-1(5)	17	

DATE	
BY	
PLAN	
DATE	
BY	
NOTE BOOK	
NO. 67720	



Clearing & Grubbing  
 122+00 to 127+00 Willows - Rt.  
 119+00 to 122+00 Pine - Lt.  
 129+00 to 134+00 Willows - Lt.  
 128+00 to 139+00 Willows - Rt.  
 136+00 to 139+75 Willows - Lt.  
 141+00 to 151+00 Pine, Willows, Aspen - Lt.  
 140+50 to 142+00 Pine, Willows - Rt.  
 142+00 to 149+00 Pine, Willows, Aspen - Rt.

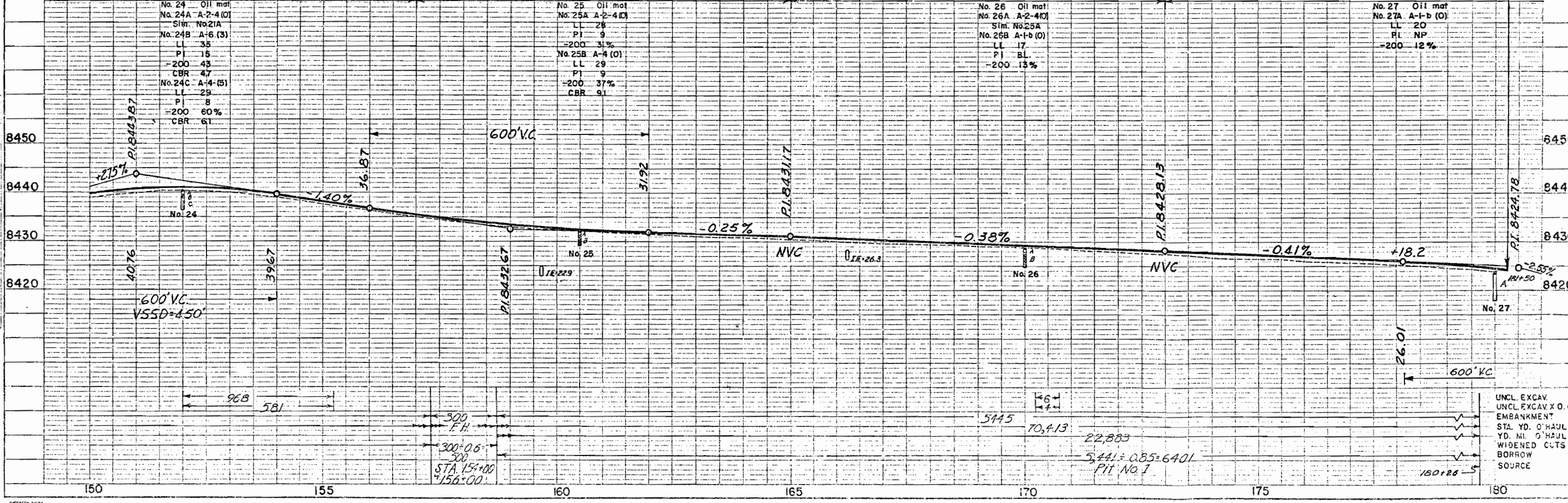
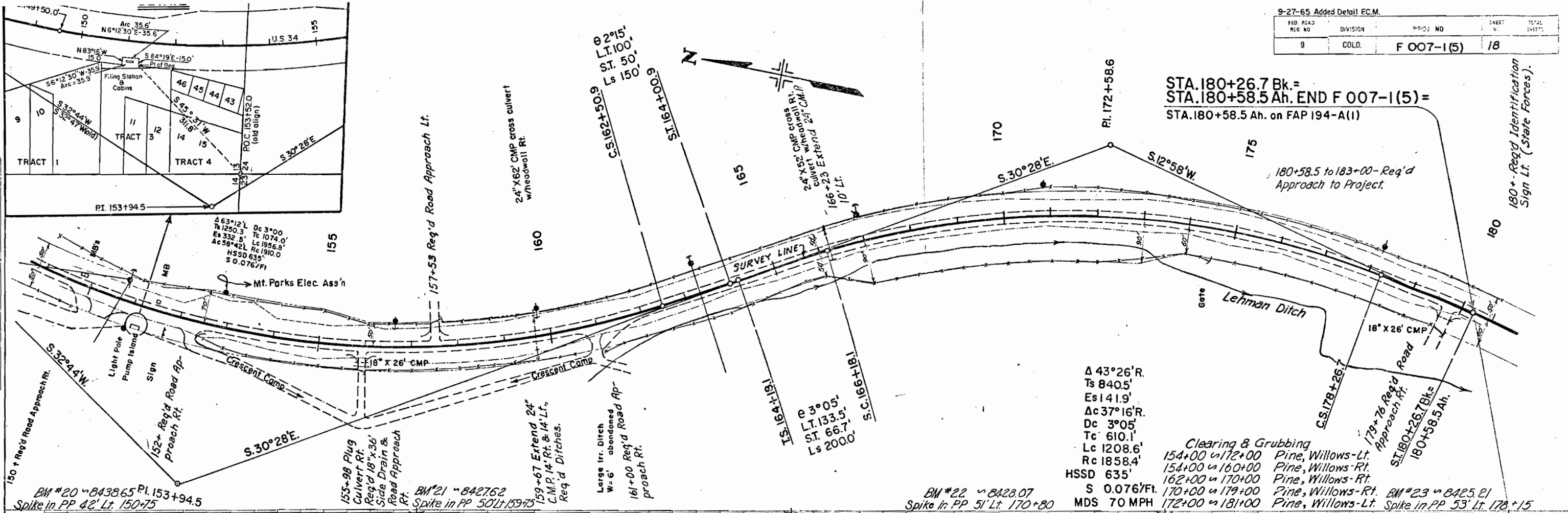
DATE	
BY	
PROFILE	
DATE	
BY	
NOTE BOOK	
NO. 67711	



NO. 67711

PLAN  
 SURVEYED BY DATE  
 NOTE BOOK NO. CHECKED BY DATE  
 NO. OF WAY CHECKED BY DATE  
 NO. 257/100

PROFILE  
 SURVEYED BY DATE  
 NOTE BOOK NO. CHECKED BY DATE  
 B.M. NOTED BY DATE  
 NO. 257/100



UNCL EXCAV.  
 UNCL EXCAV X 0.6  
 EMBANKMENT  
 STA. YD. O'HAUL  
 YD. M. O'HAUL  
 WIDENED CUTS  
 BORROW  
 SOURCE