

U. S. DEPARTMENT OF COMMERCE  
 BUREAU OF PUBLIC ROADS  
 REGION 10

**PLAN AND PROFILE  
 PROPOSED HIGHWAY PROJECT**  
 NO. FH 39-1(2)  
 GRADING & DRAINAGE  
 ALASKA FOREST HIGHWAY  
 REVILLA HIGHWAY  
 CONNELL LAKE - WHITE RIVER  
 TONGASS NATIONAL FOREST  
 ALASKA

STATE	ROUTE	SECTION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	39	1	1964	1	24

**AS BUILT PLANS**

Signed Resident Engineer \_\_\_\_\_ Date \_\_\_\_\_

INDEX OF SHEETS

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3	ESTIMATE OF QUANTITIES
4-7	CULVERT PIPE SUMMARY
8-14B	PLAN & PROFILE SHEETS
15	DETAIL OF STRUCTURAL PLATE ARCH & CONC. FOOTING AT STA. 166+96
16-17	DETAILS OF CONC CRADLES FOR CULVERTS
18	BAR LIST FOR THE CONC. CRADLES
19	STANDARD CULVERTS
20	STANDARD BEAM-TYPE GUARDRAIL
21-22	STANDARD STEP BEVEL FOR MULTI-PLATE PIPE ARCHES AND PIPE & ELLIPSES
23	STANDARD SIGN W6-2, DEAD END
24	STANDARD IDENTIFICATION SIGN

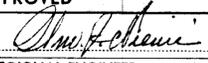
Field investigation soils reports of the foundation materials and detailed cross sections for this project are available for inspection in the Federal Highway Projects Office, Region 10, Bureau of Public Roads in Juneau, Alaska.

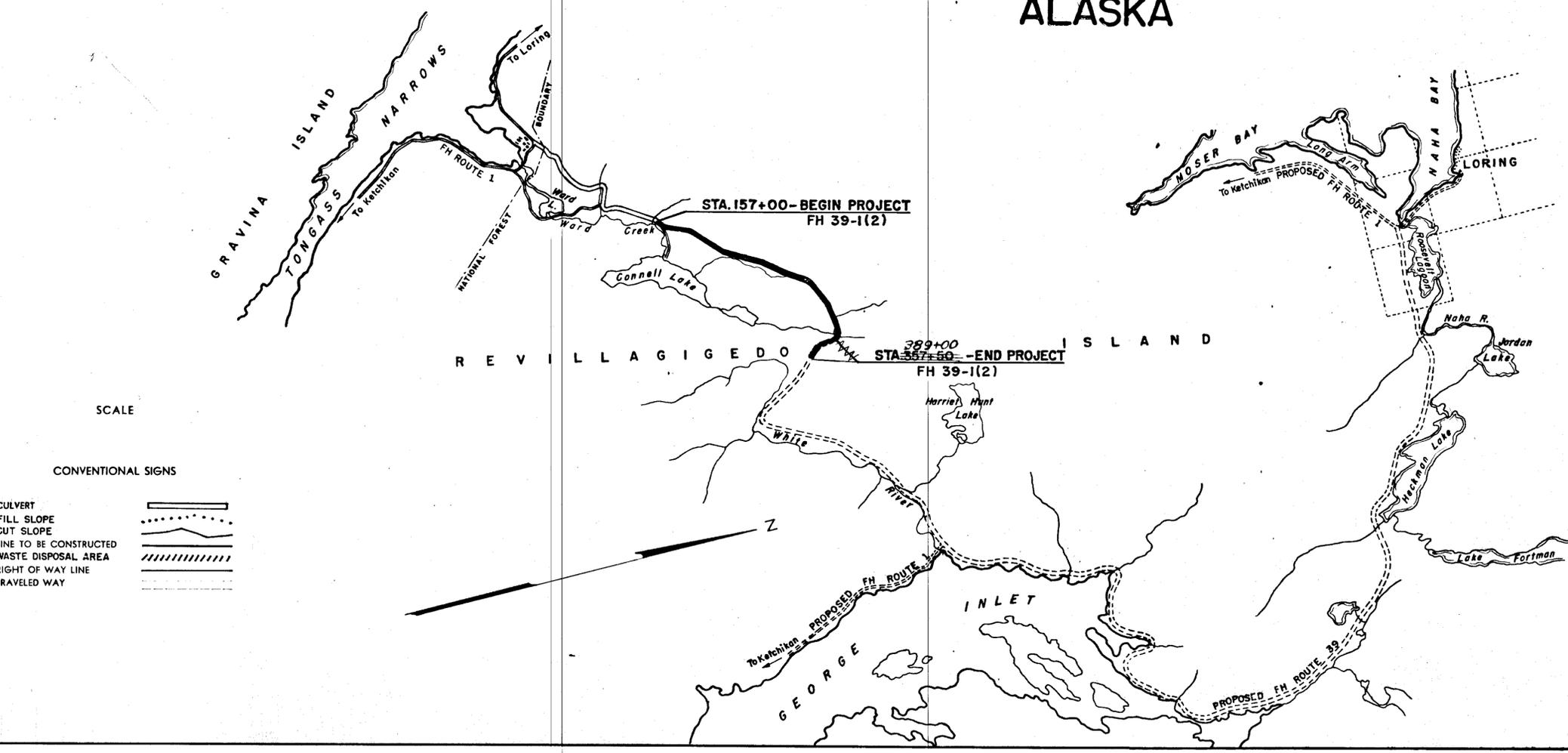
PROJECT SUMMARY

WIDTH OF SUBGRADE	28'
LENGTH OF GRADING & DRAINAGE	20,095.04 FT. = 3.806 MI.
TOTAL LENGTH OF PROJECT	20,095.04 FT. = 3.806 MI.

TYPE 0011 IMPROVEMENT

DESIGN	DESIGNATION
ADT	(1964) = 50
ADT	(1984) = 180
DHV	= 35
D	= 70%
T	= 14
V	= 35mph

APPROVED  
  
 REGIONAL ENGINEER  
 BUREAU OF PUBLIC ROADS  
 REGION TEN  
 Date 10-12-64



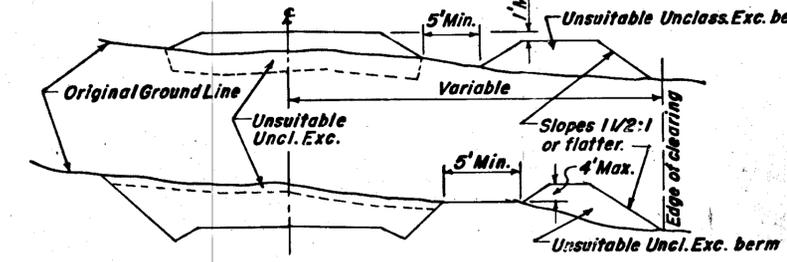
- SCALE
- CONVENTIONAL SIGNS
- CULVERT
  - FILL SLOPE
  - CUT SLOPE
  - LINE TO BE CONSTRUCTED
  - WASTE DISPOSAL AREA
  - RIGHT OF WAY LINE
  - RAVELED WAY

# AS BUILT PLANS

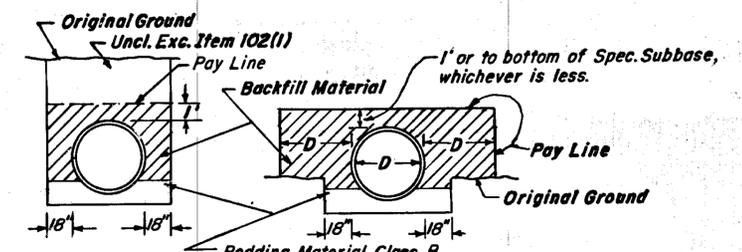
## GENERAL NOTES

- The culvert lengths as shown are approximate only.
- The grades and alignment shown on these plans are subject to minor revisions.
- Unsuitable unclassified excavation will be placed in Disposal Areas as shown on the plans or as directed by the engineer.
- Slope rounding will not be required.
- The grades will be carried on the shoulder on tangent and on the inside shoulder of curves, both 14' from center line.
- Superelevation on all curves shall be as staked by the engineer. Maximum superelevation shall be 0.06 feet per foot.
- All authorized excavation for culvert inlet and outlet ditches and channel changes will be paid for under item 102(1).

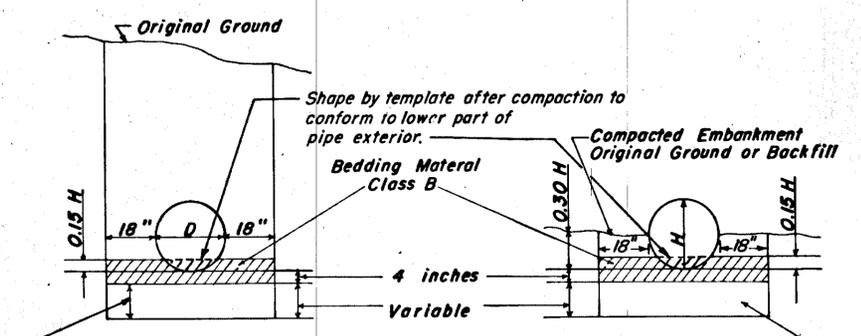
Unsuitable Uncl. Exc. berms shall be placed so they do not impede drainage or cause an unsightly condition. They shall be ditched to prevent obstruction of drainage as directed by the Engineer.



TYPICAL SECTIONS SHOWING UNSUITABLE UNCLASSIFIED EXCAVATION DISPOSAL AREA

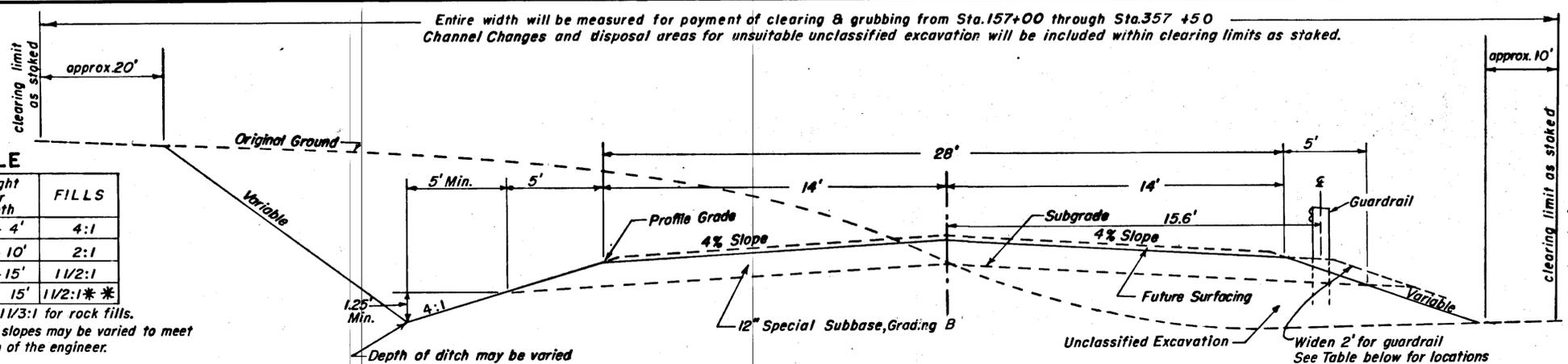


TYPICAL SECTION SHOWING BACKFILL DETAILS FOR CULVERTS

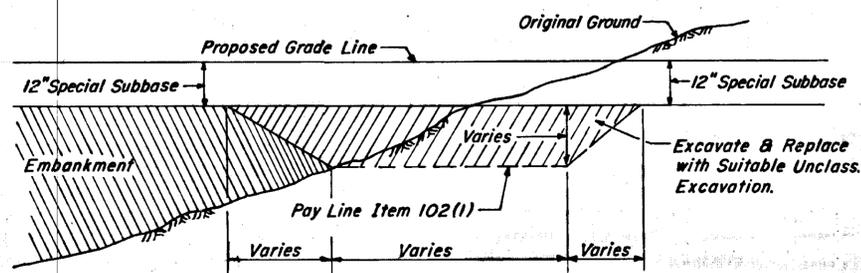


TYPICAL SECTIONS SHOWING BEDDING DETAILS FOR CULVERTS

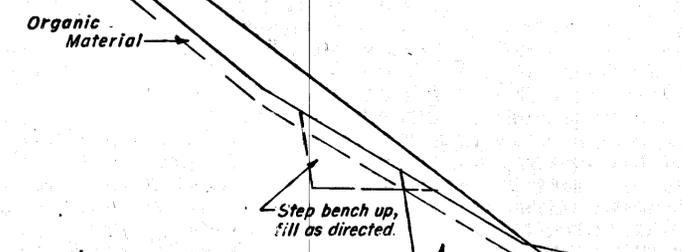
Entire width will be measured for payment of clearing & grubbing from Sta. 157+00 through Sta. 357+50. Channel Changes and disposal areas for unsuitable unclassified excavation will be included within clearing limits as staked.



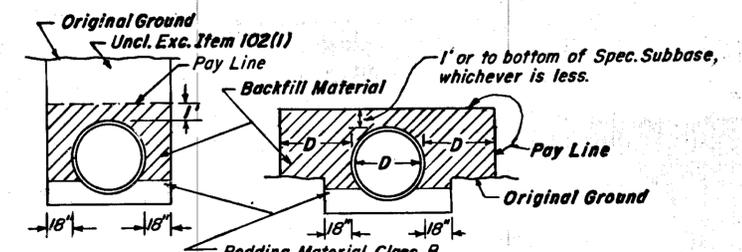
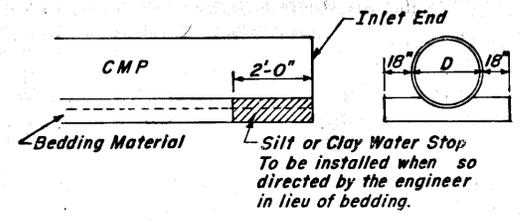
TYPICAL SECTION OF IMPROVEMENT



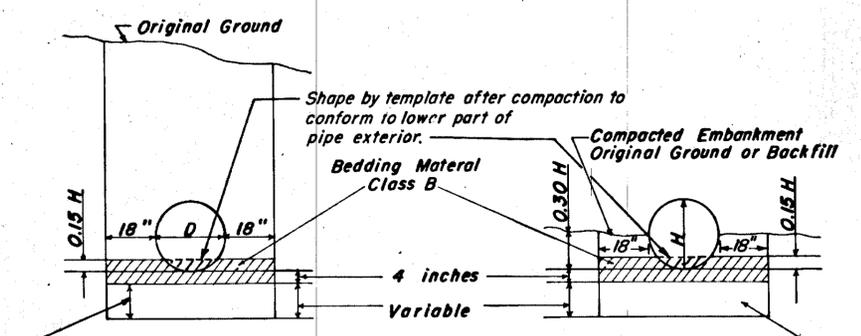
CUT & FILL TRANSITION



TYPICAL SECTION FOR SIDEHILL BENCHING  
Benching will be paid for only where specifically authorized in writing by the engineer.

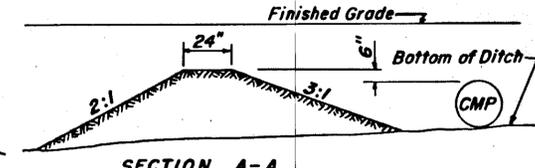


TYPICAL SECTION SHOWING BACKFILL DETAILS FOR CULVERTS

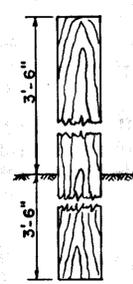
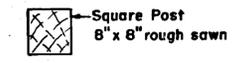
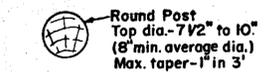


TYPICAL SECTIONS SHOWING BEDDING DETAILS FOR CULVERTS

TABLE OF BEAM-TYPE GUARDRAIL	
331+00 to 336+50 Rt.	550 Lin. Ft.
341+75 to 343+25 Lt.	150 Lin. Ft.
344+75 to 346+25 Lt.	150 Lin. Ft.
164+75 to 165+87.5 Lt.	112.5 Lin. Ft.
166+12.5 to 167+25 Lt.	112.5 Lin. Ft.
166+50 to 168+00 Rt.	150 Lin. Ft.



SECTION A-A  
CHECK DAM  
(To be installed as directed by the engineer.)

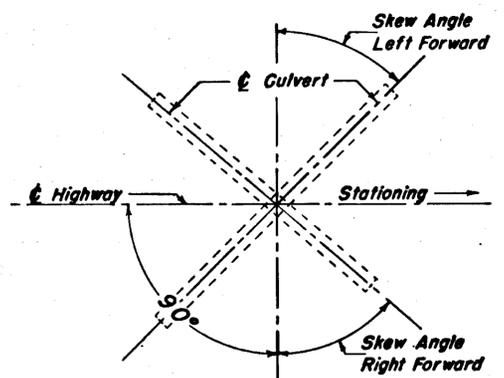


TRASH RACK POST DETAIL  
Posts to be installed as specified on 3' centers. See sheet no. 15 & 17 for locations. Grading & Treatment will be as specified on sheet no. 20 for Guardrail Posts.

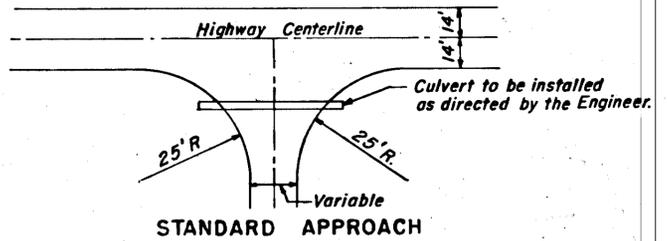
### SLOPE TABLE

CUTS		Height or Depth	FILLS	
Rock	Earth		Rock	Earth
1:1	4:1	0' - 4'	4:1	
2:1 or 1 1/4:1	2:1	4' - 10'	2:1	
2:1 or 1 1/4:1	1 1/2:1	10' - 15'	1 1/2:1	
2:1 or 1 1/4:1	1:1 *	Over 15'	1 1/2:1 **	

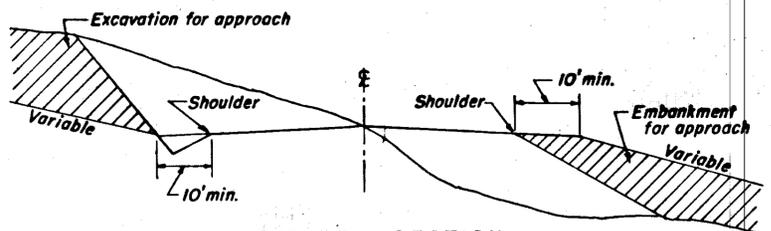
\* May be staked flatter. \*\* May be 1 1/3:1 for rock fills.  
NOTE: The table above is a guide only, slopes may be varied to meet field conditions at the direction of the engineer.



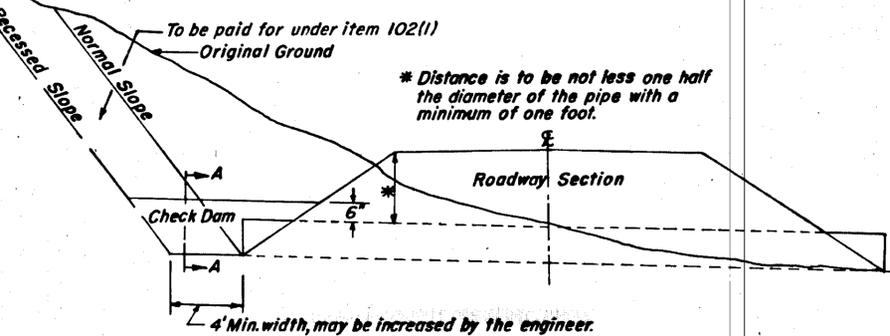
SKUEW ANGLE



STANDARD APPROACH



TYPICAL SECTION SHOWING STANDARD APPROACH



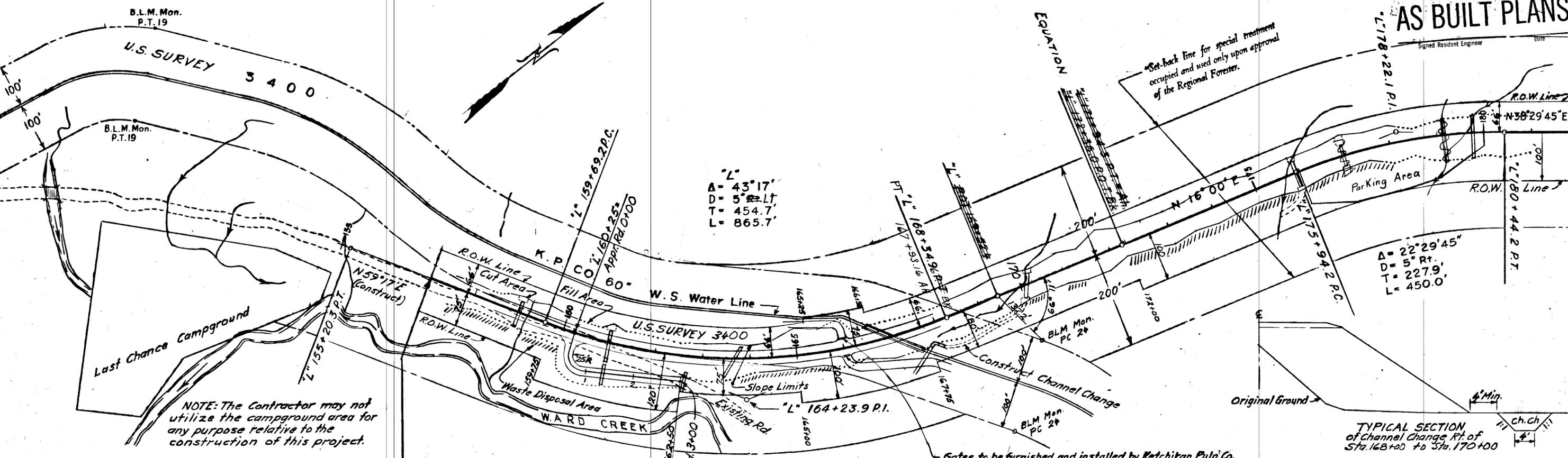
SIDEHILL INLET DETAIL

\* Distance is to be not less one half the diameter of the pipe with a minimum of one foot.

TONGASS NATIONAL FOREST

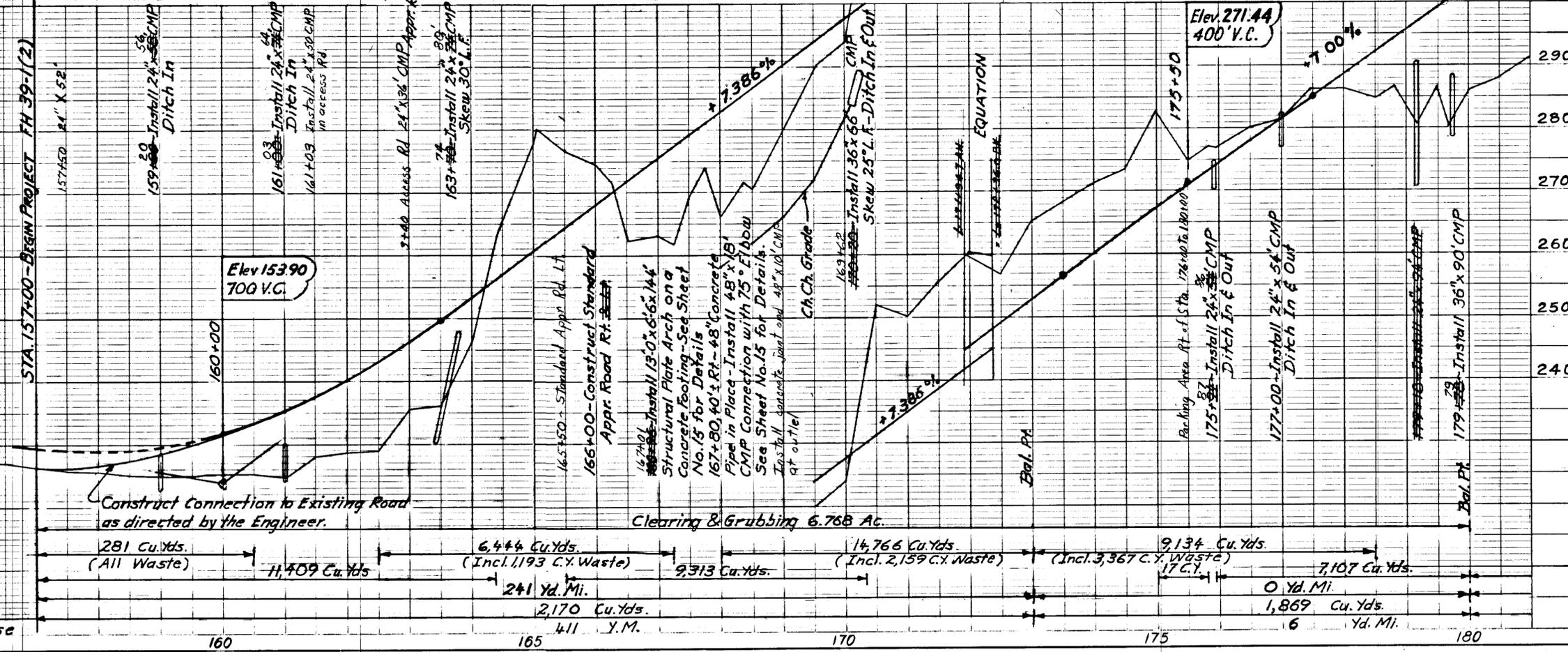
STATE	ROUTE	SECTION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	39	1	1964	8	24

AS BUILT PLANS



SUMMARY OF STANDARD SIGNS				
STATION	DIST. FROM CENTERLINE IN FEET		SIGN NO.	TYPE OF SIGN
	LEFT	RIGHT		
200+00	16		W7-1	Hill
295+00		16	W7-1	Hill
326+00		16	W1-2L	Curve Sign Left
336+50		18	W1-2R	" " Right
337+50	16		W1-2R	" " "
352+25	16		W1-2L	" " Left
354+50			WS-2	DEAD END *

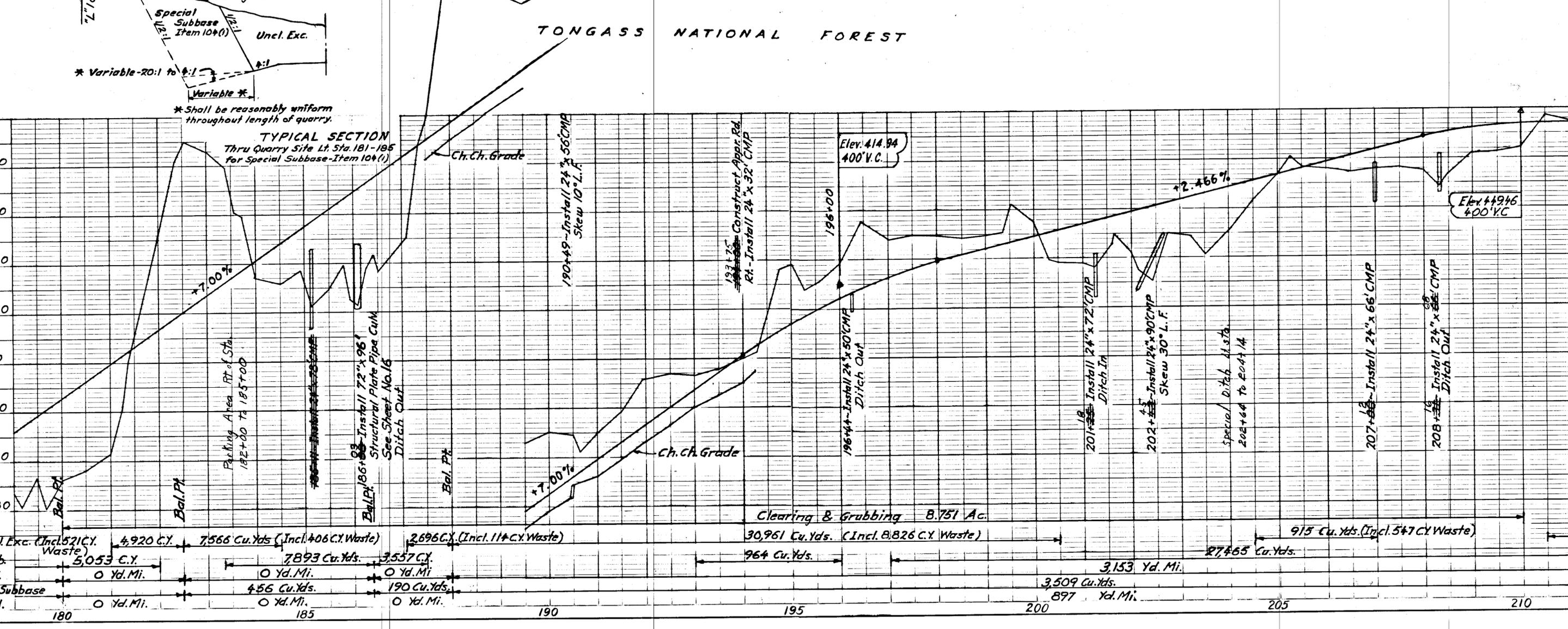
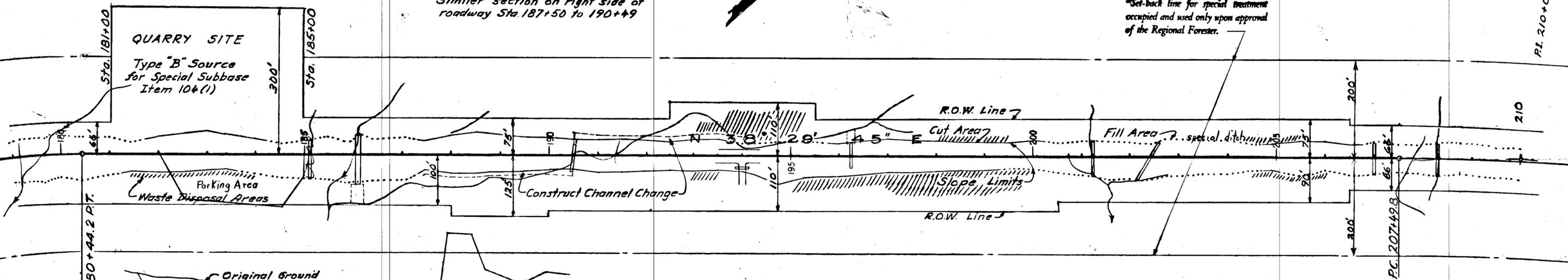
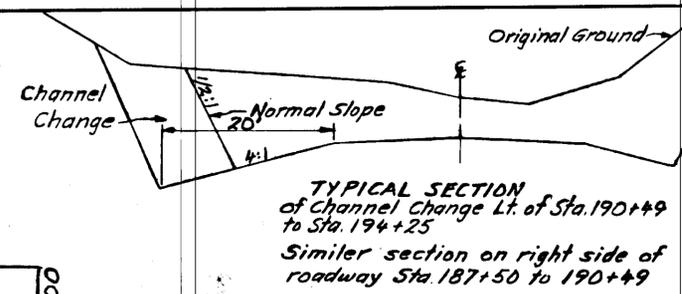
NOTE: Minimum length for all sign posts will be 13 feet.  
 \* Message revised as indicated on sheet No. 23.  
 Summary cont on Sheet No. 14-A



STATE	ROUTE	SECTION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	39	1	1964	9	24

# AS BUILT PLANS

Signed Resident Engineer \_\_\_\_\_ Date \_\_\_\_\_



P.L. 210+00.0

P.C. 207+49.8

\* Variable 20:1 to 4:1

\* Shall be reasonably uniform throughout length of quarry.

TYPICAL SECTION Thru Quarry Site Lt. Sta. 181-185 for Special Subbase Item 104(1)

Elev. 414.94  
400' V.C.

Elev. 419.46  
400' V.C.

Station	Volume / Description
180	Incl. Exc. (Incl. 521 C.Y. Waste) 4,920 C.Y.
185	Emb. 5,053 C.Y.
185	Subbase 456 Cu.Yds.
185	Subbase 190 Cu.Yds.
190	Incl. Exc. (Incl. 114 C.Y. Waste) 2,696 C.Y.
190	Subbase 3,557 C.Y.
190	Subbase 456 Cu.Yds.
190	Subbase 190 Cu.Yds.
195	Clearing & Grubbing 8.751 Ac. 30,961 Cu.Yds. (Incl. 8,826 C.Y. Waste)
195	Subbase 964 Cu.Yds.
200	Subbase 3,153 Yd. Mi.
200	Subbase 3,509 Cu.Yds.
200	Subbase 897 Yd. Mi.
205	Subbase 27,465 Cu.Yds.
205	Subbase 915 Cu.Yds. (Incl. 547 C.Y. Waste)
210	Subbase 915 Cu.Yds. (Incl. 547 C.Y. Waste)

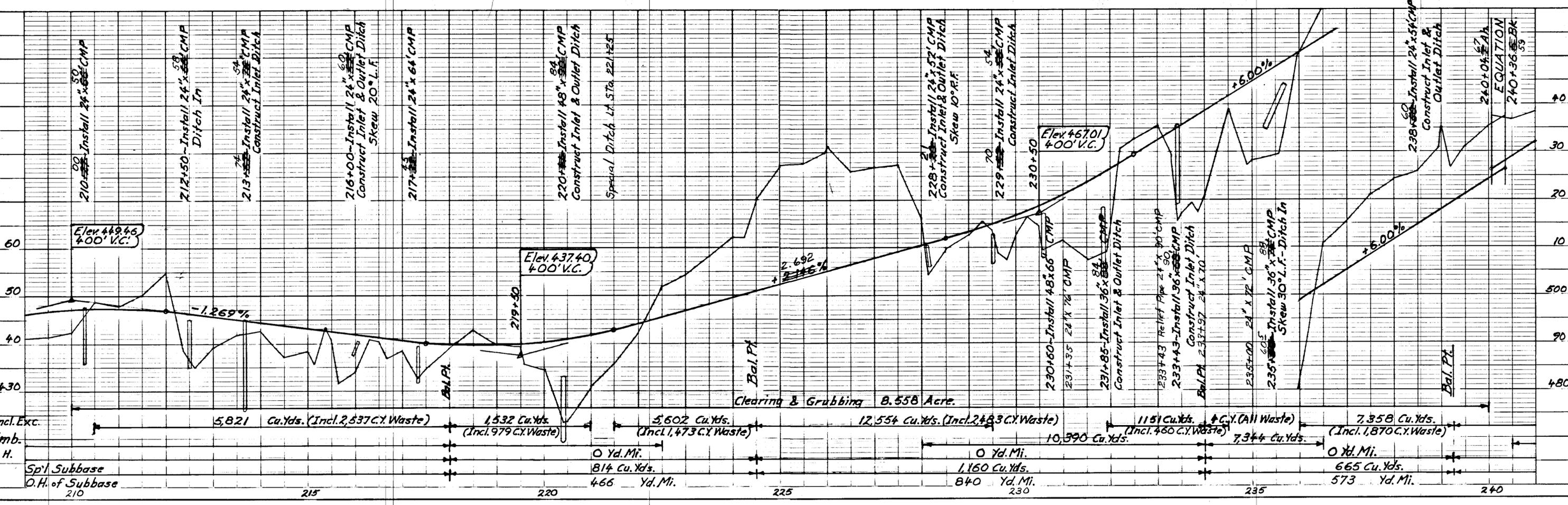
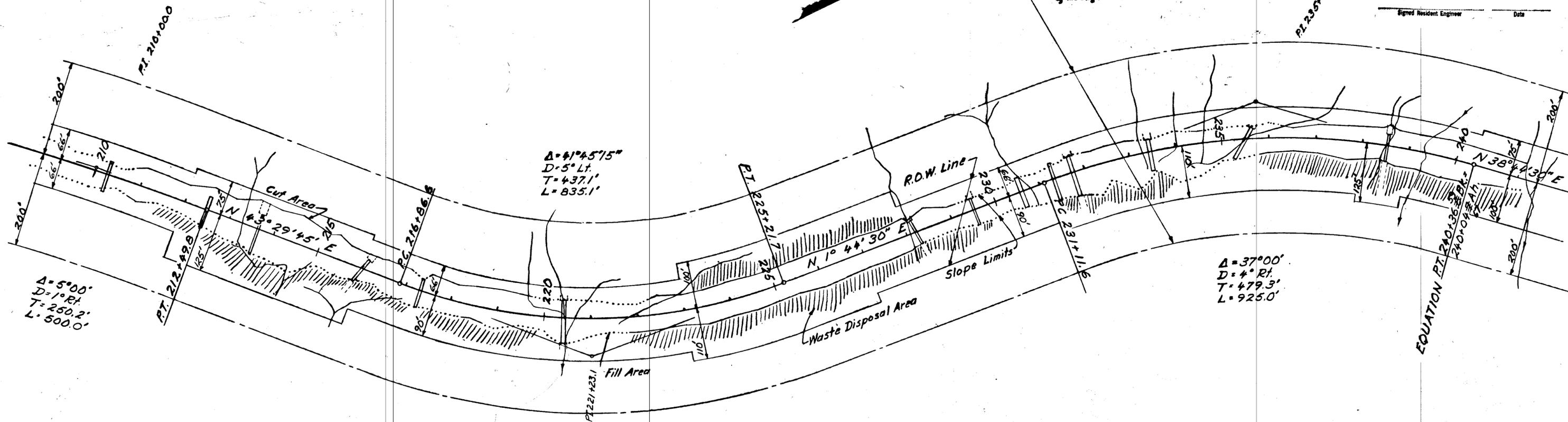
TONGASS NATIONAL FOREST

STATE	ROUTE	SECTION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	99	1	1964	10	24

AS BUILT PLANS

Signed Resident Engineer Date

The back line for special treatment occupied and used only upon approval of the Regional Forester.

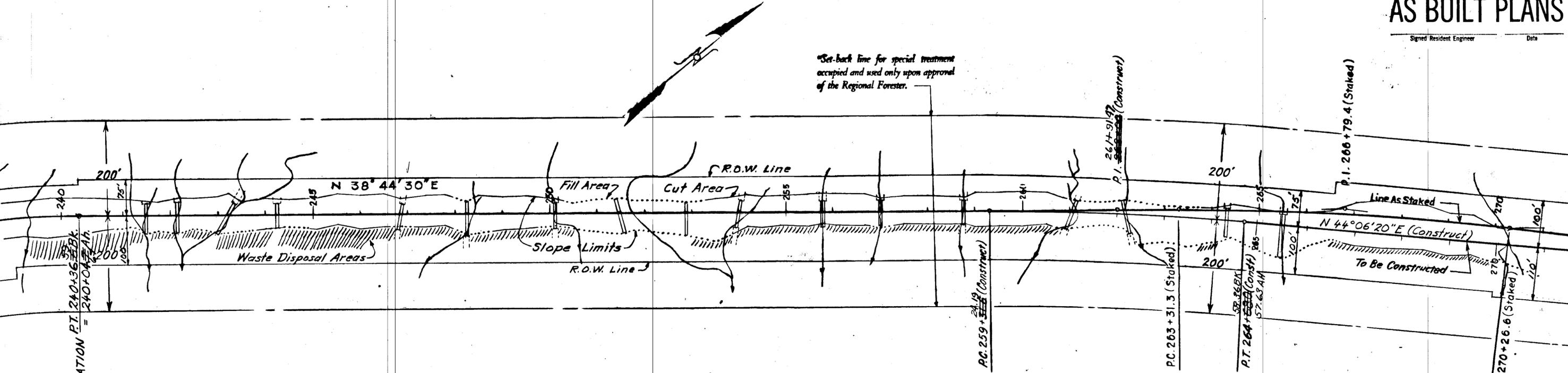


STATE	ROUTE	SECTION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	39	1	1964	11	24

TONGASS NATIONAL FOREST

AS BUILT PLANS

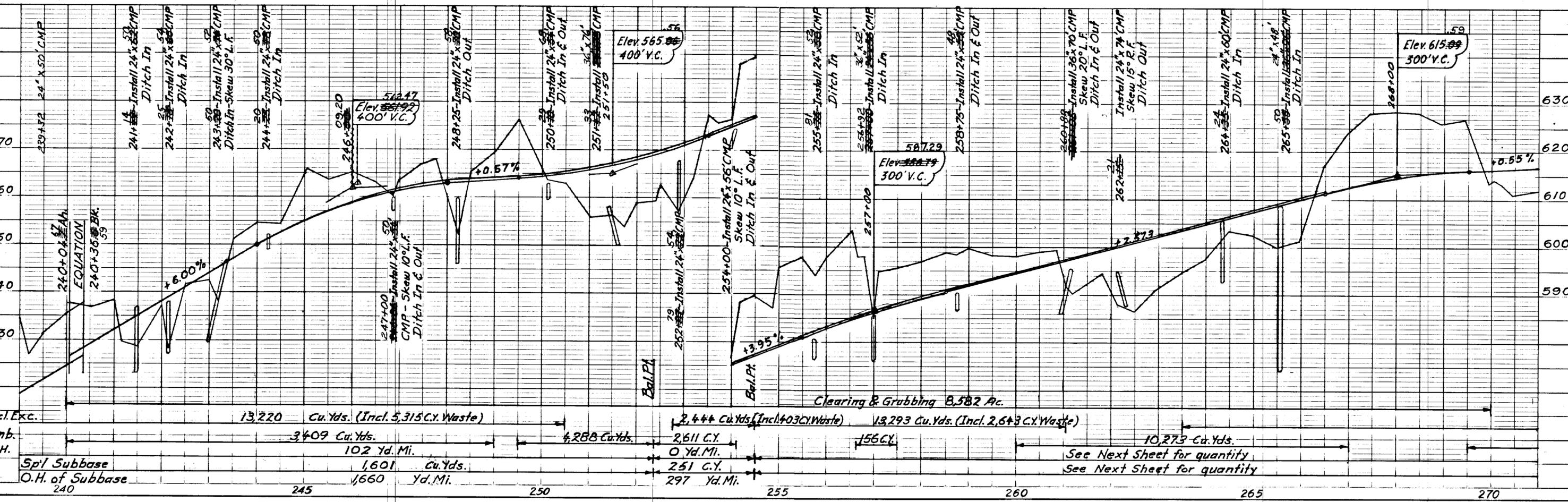
Signed Resident Engineer \_\_\_\_\_ Date \_\_\_\_\_



\*Set-back line for special treatment occupied and used only upon approval of the Regional Forester.

(Construct)  
 $\Delta = 5^{\circ} 21' 50'' 20' 30''$   
 $D = 1^{\circ} \text{ Rt.}$   
 $T = 267.28$   
 $L = 534.17$

(Staked)  
 $\Delta = 6^{\circ} 57' 12''$   
 $D = 1^{\circ} \text{ Rt.}$   
 $T = 348.1'$   
 $L = 695.3'$

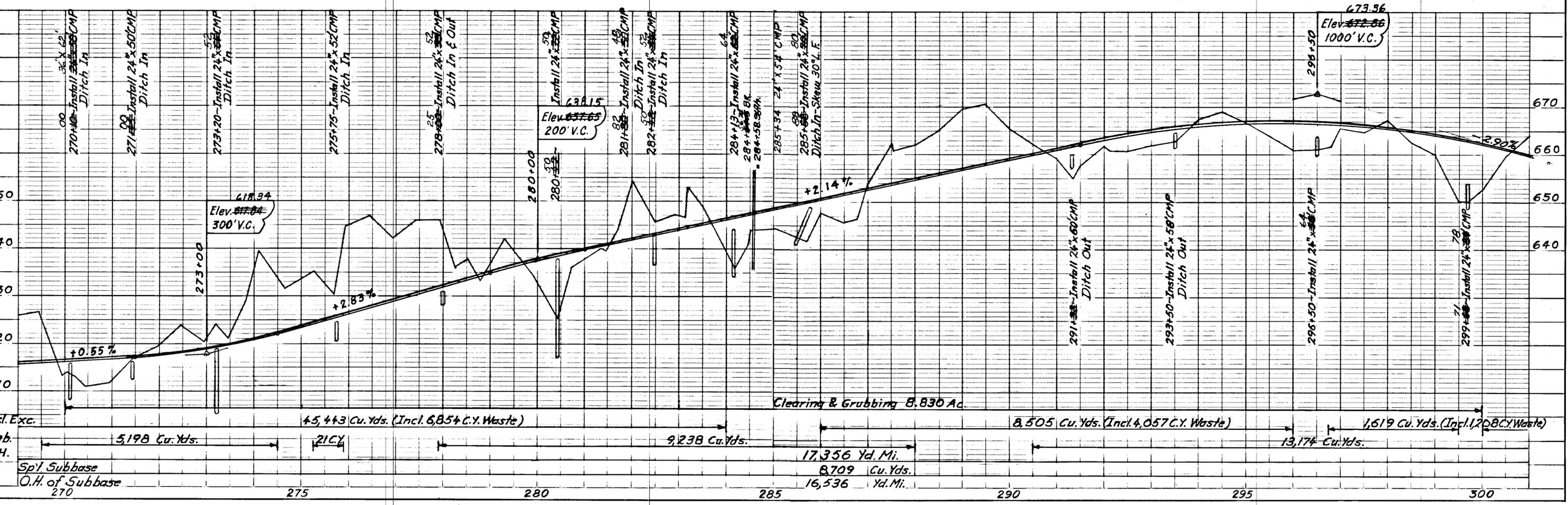
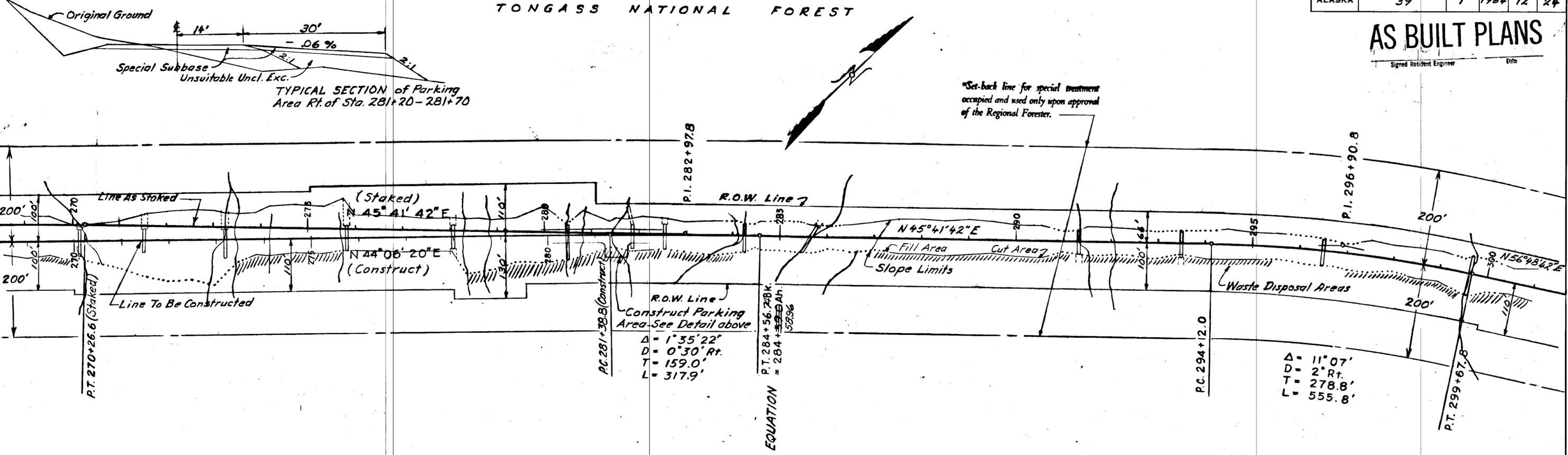


STATE	ROUTE	SECTION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	39	1	1964	12	24

# AS BUILT PLANS

Signed Resident Engineer \_\_\_\_\_  
Date \_\_\_\_\_

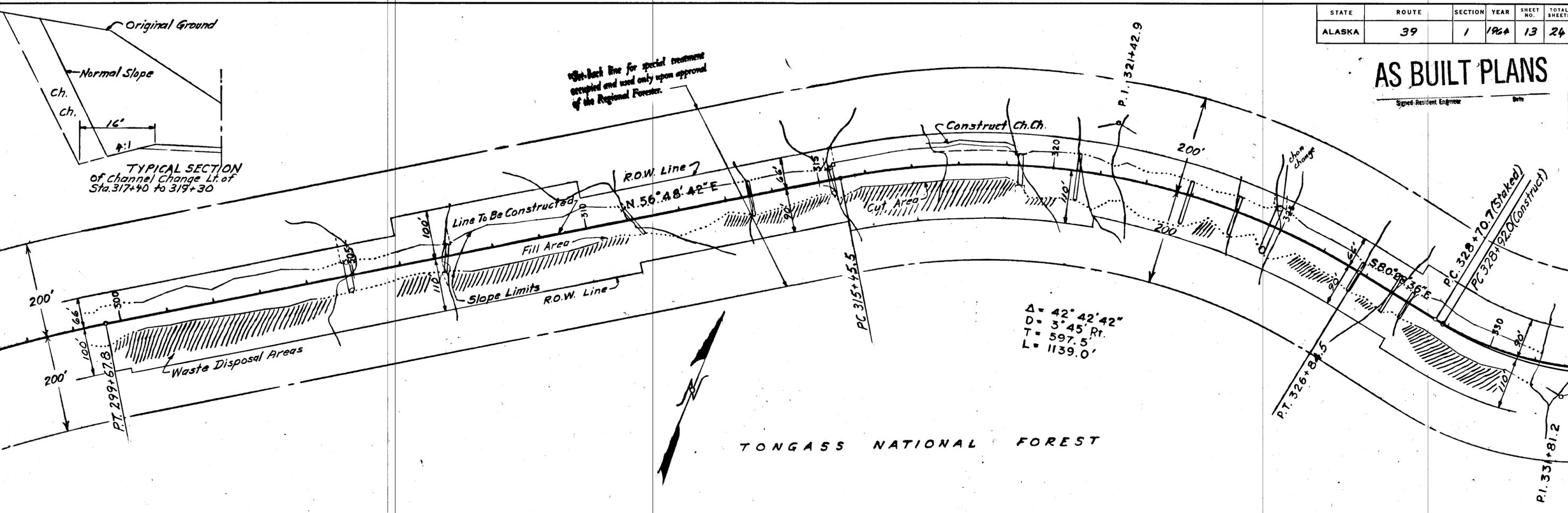
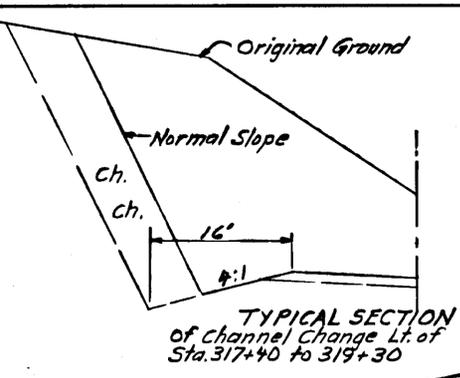
## TONGASS NATIONAL FOREST



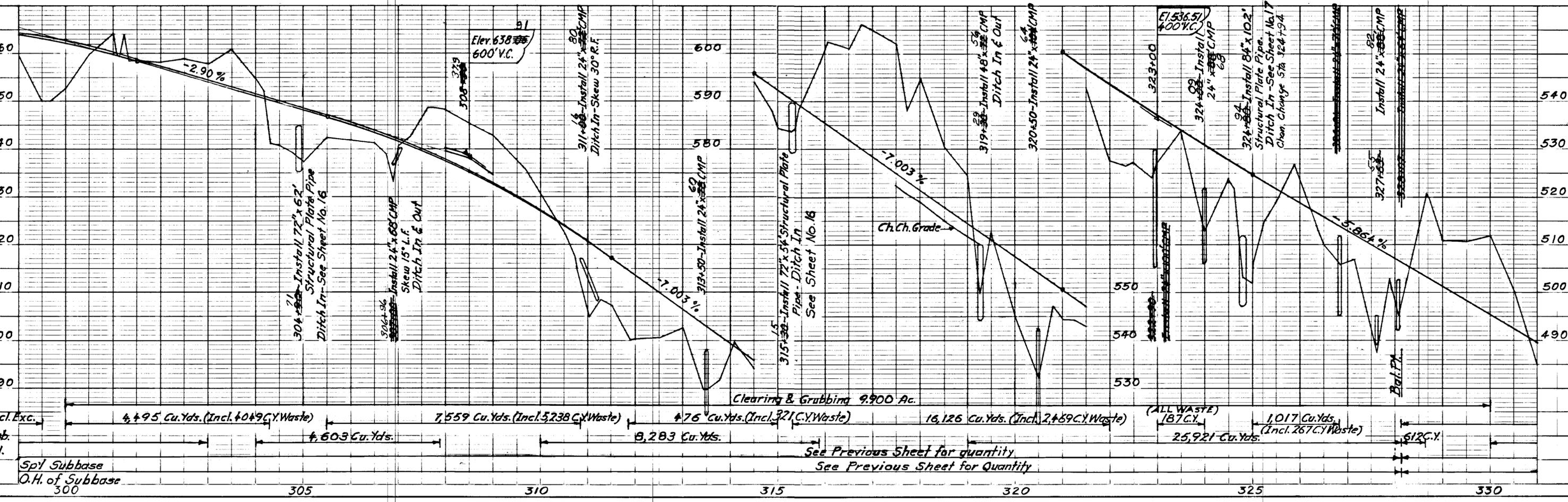
STATE	ROUTE	SECTION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	39	1	1964	13	24

# AS BUILT PLANS

Signed: Resident Engineer



TONGASS NATIONAL FOREST



Sp'l Subbase O.H. of Subbase  
 300 305 310 315 320 325 330



STATE	ROUTE	SECTION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	39	1	1964	14B	24

# AS BUILT PLANS

## SUMMARY OF STANDARD SIGNS

STATION	DISTANCE FROM & IN FEET		SIGN NO.	TYPE & SIGN
	LEFT	RIGHT		
378+00		16	W1-4R	Curve Sign Right
367+50	18		W1-2L	" " Left
374+50		16	W1-2R	" " Right
387+00	16		W1-4L	" " Left
386+00		18	W6-2	Dead End *

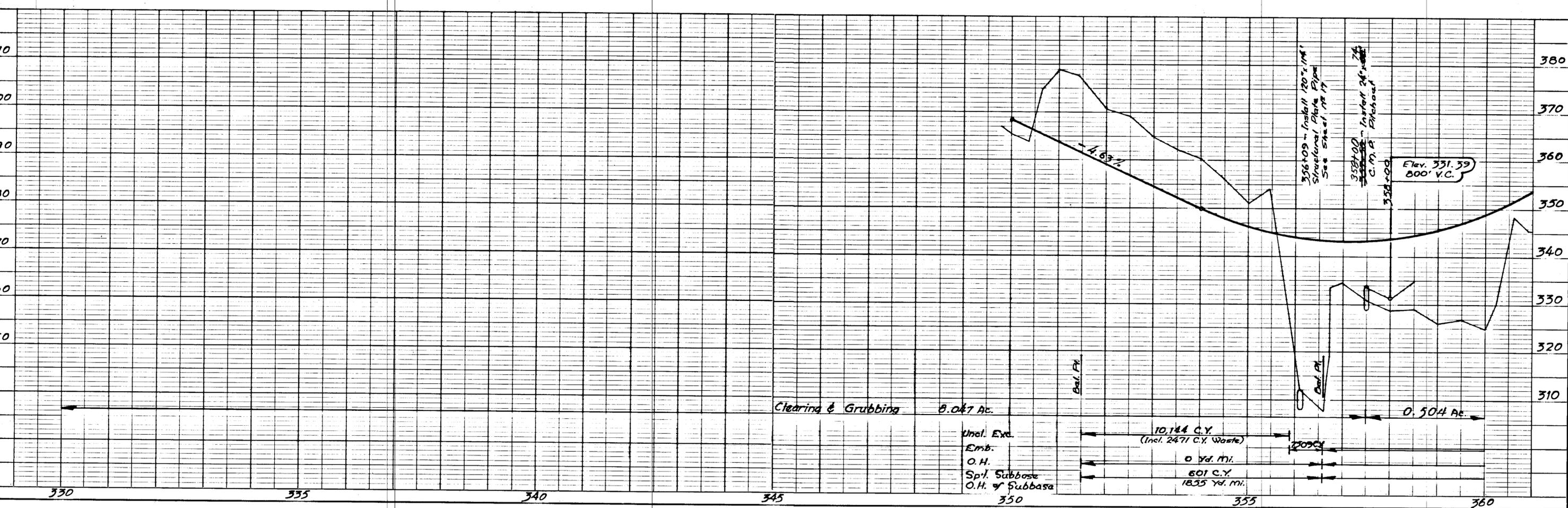
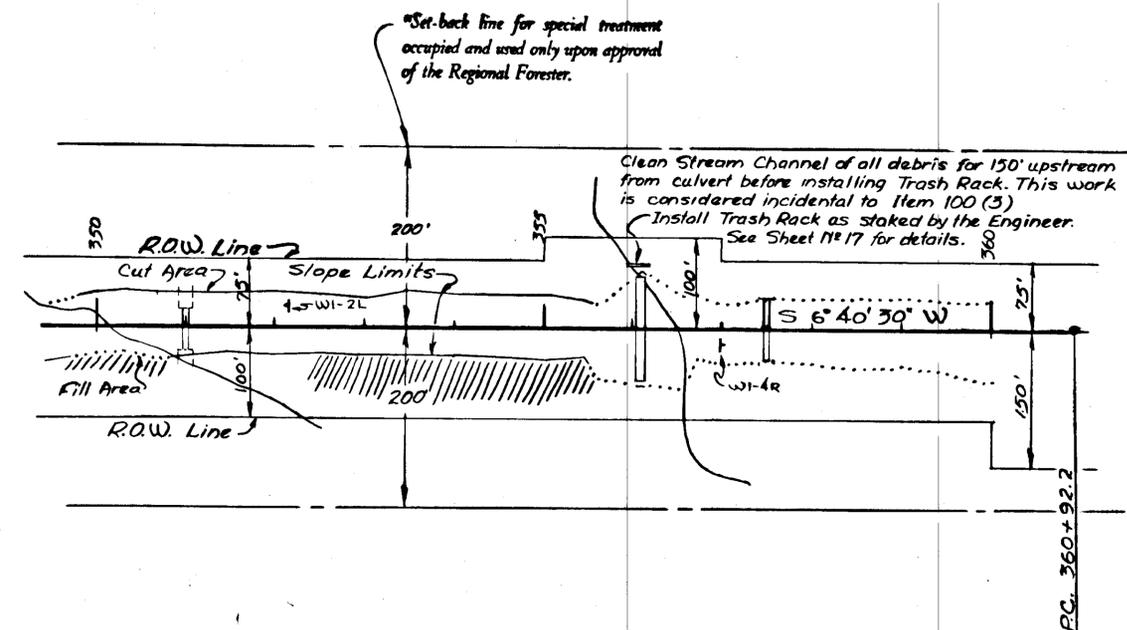
\* This sign is provided in original contract, but should be installed at Sta. 386+00 rather than Station originally scheduled.

## TABLE OF BEAM-TYPE GUARDRAIL

<del>366+00 to 370+25</del> Right	<del>425</del> Lin. Ft.
<del>371+25 to 375+25</del> Right	<del>200</del> Lin. Ft.

NOTE: The <sup>50</sup>/<sub>25</sub> Lin. Ft. of Guardrail originally scheduled for installation at Sta. 357+00 will now be installed at Sta. 389+00 instead.

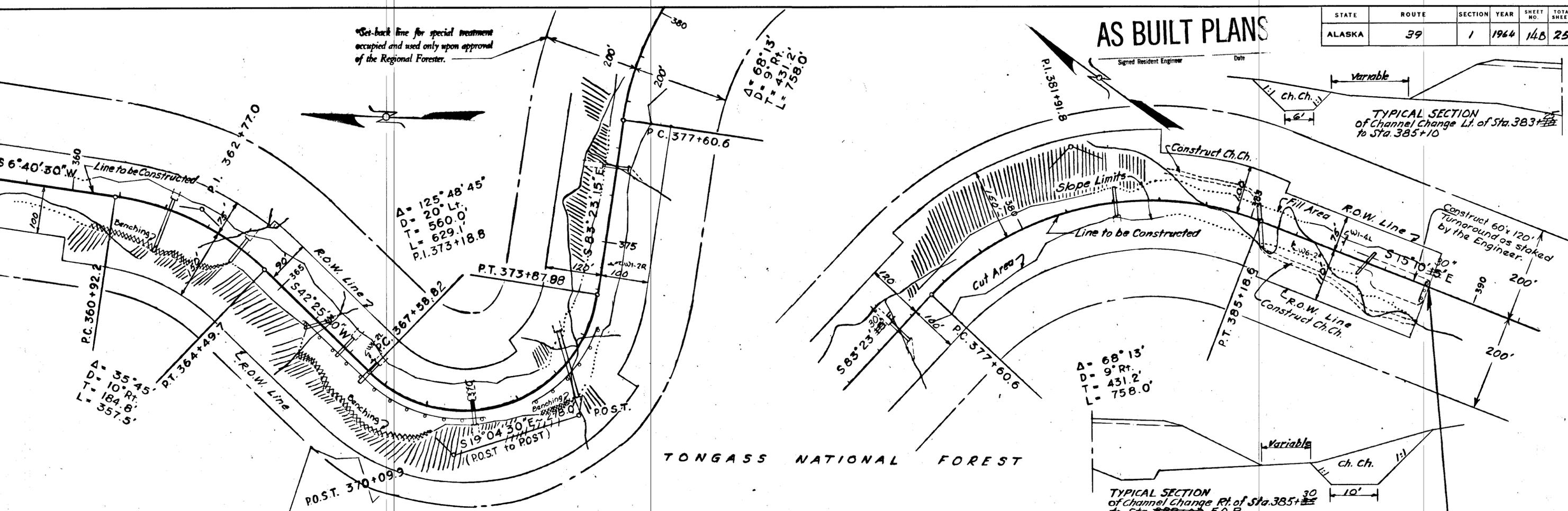
344+75 to 373+75 901 Lin. Ft.



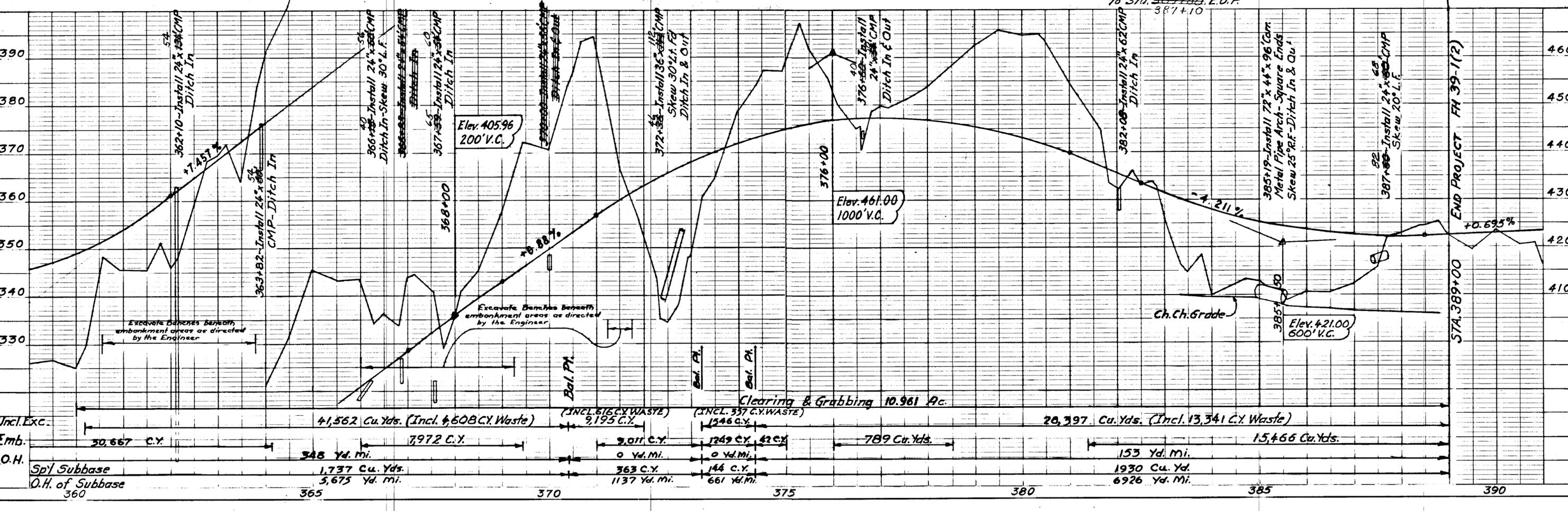
STATE	ROUTE	SECTION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	39	1	1964	14B	25

# AS BUILT PLANS

Set-back line for special treatment occupied and used only upon approval of the Regional Forester.



TONGASS NATIONAL FOREST



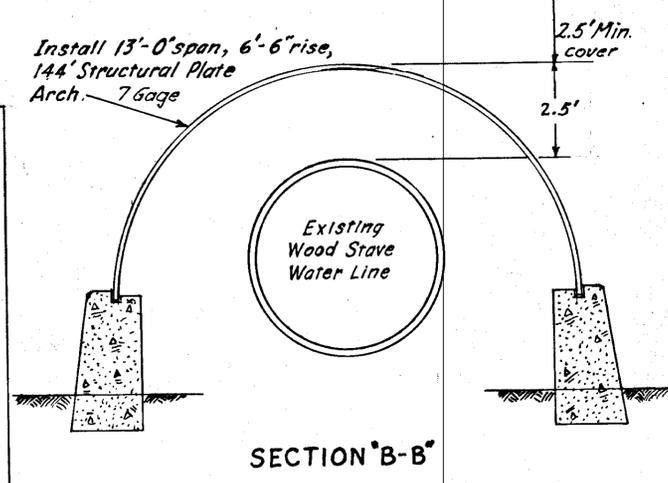
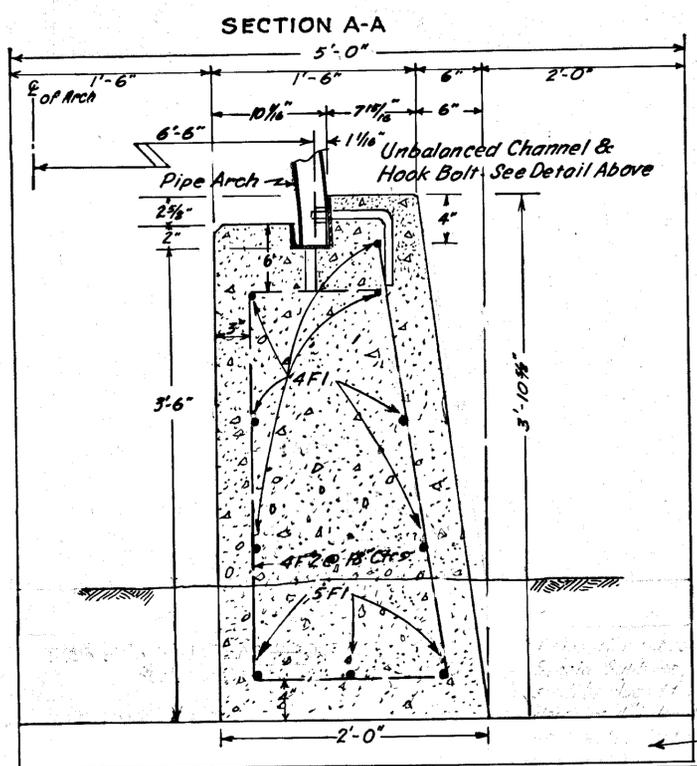
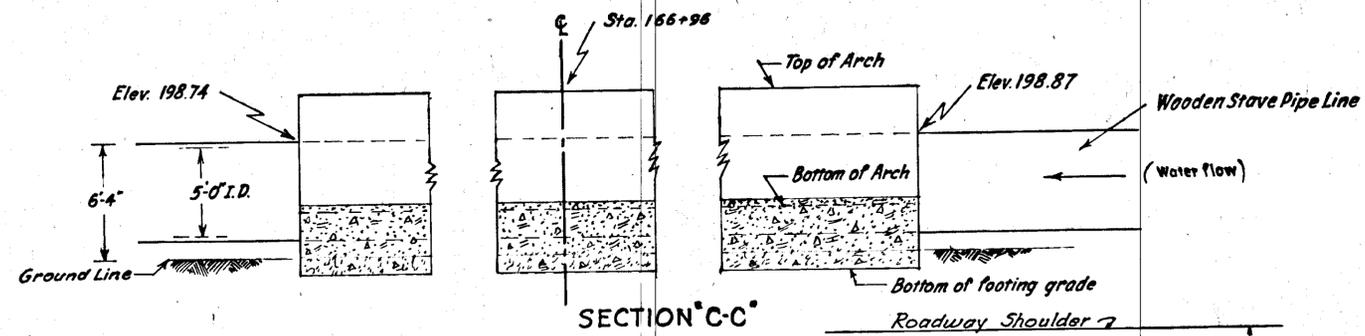
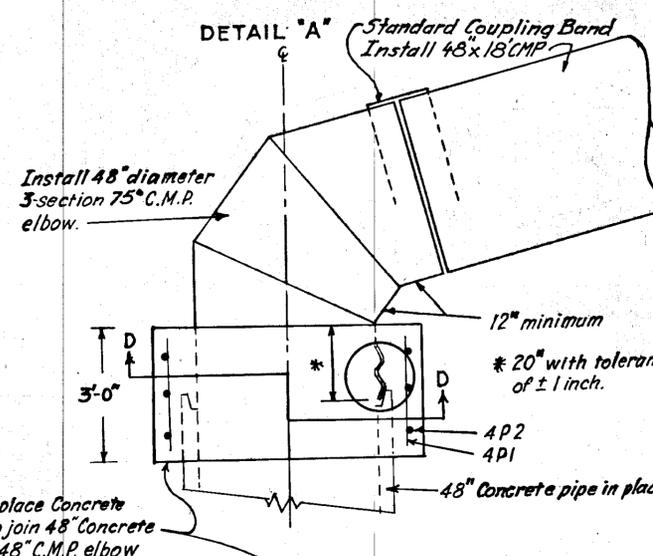
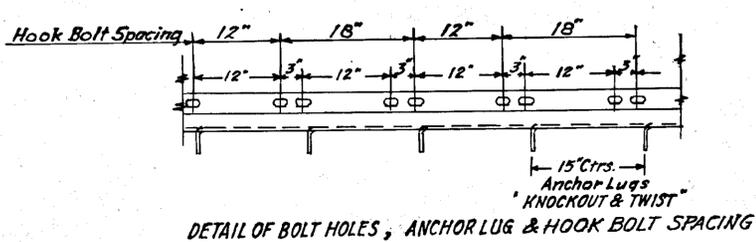
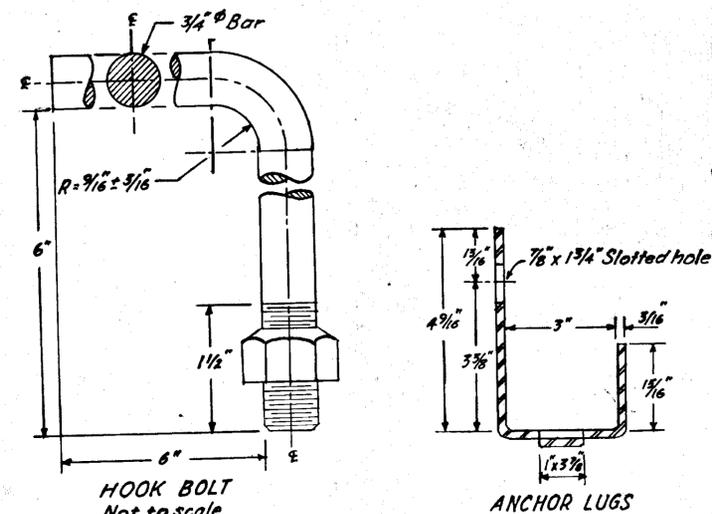
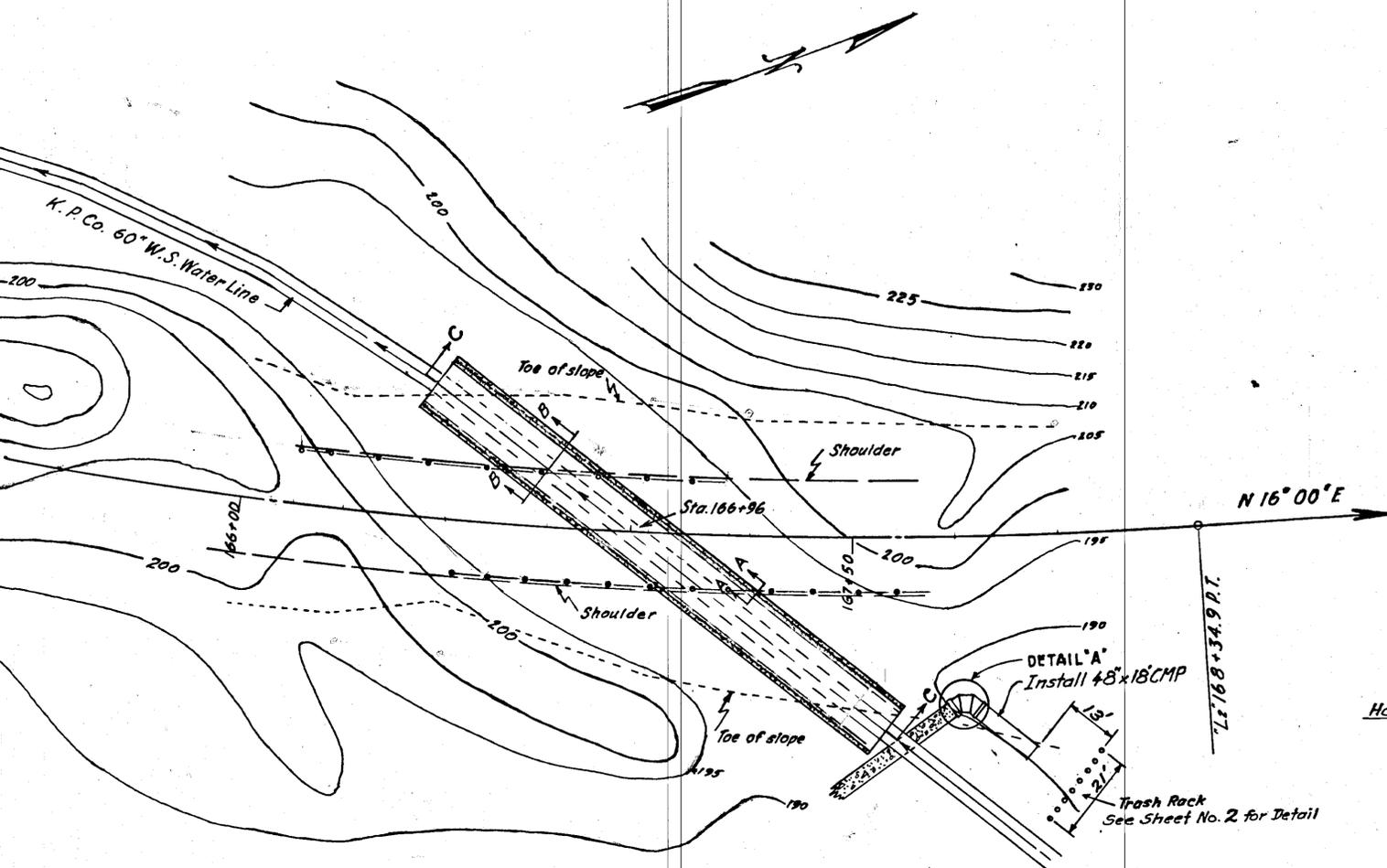
END PROJECT FH 39-1(2)

STA. 389+00

# AS BUILT PLAN

## NOTES:

- No direct payment will be made for hook bolts and unbalanced channels; the furnishing and placing of these items will be considered subsidiary to work under Item 455 (3).
- If bedrock is encountered above the design grade of the arch footings, blasting to excavate same will not be required provided the contractor cleans the rock surface thoroughly of all dirt and loose rock fragments before pouring concrete. Any additional cutting or bending of re-bars will be at no cost to the Govt.



Cast in place concrete collar to join 48\"/>

Backfill, Item 103(6), will be placed for a minimum depth of 4\"/>

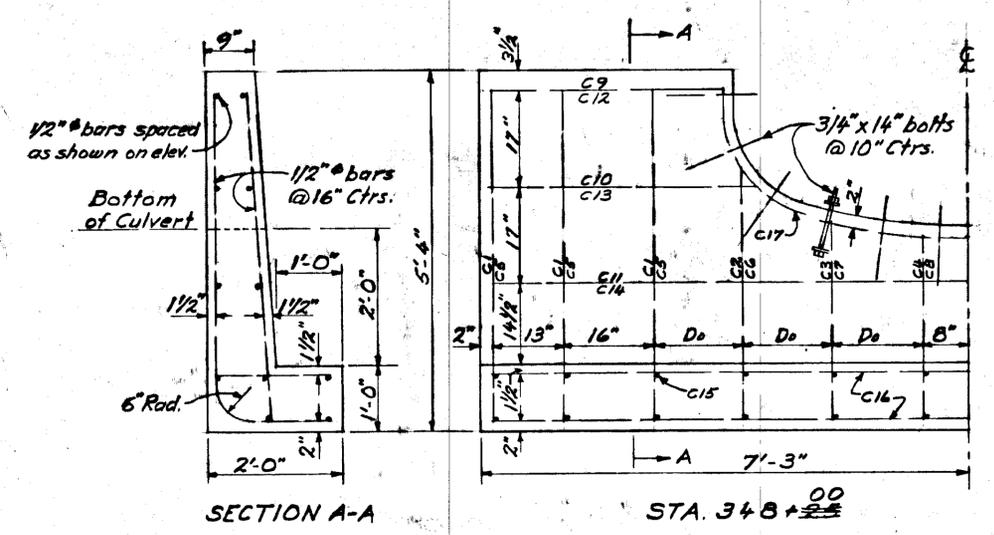
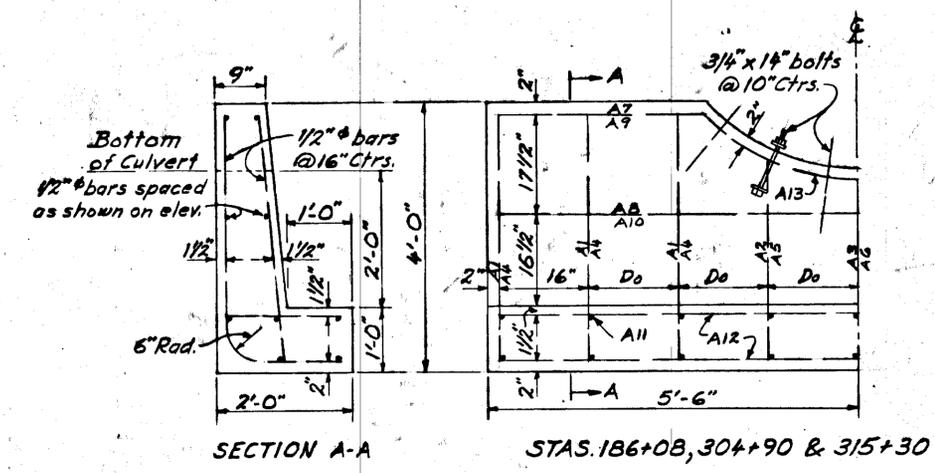
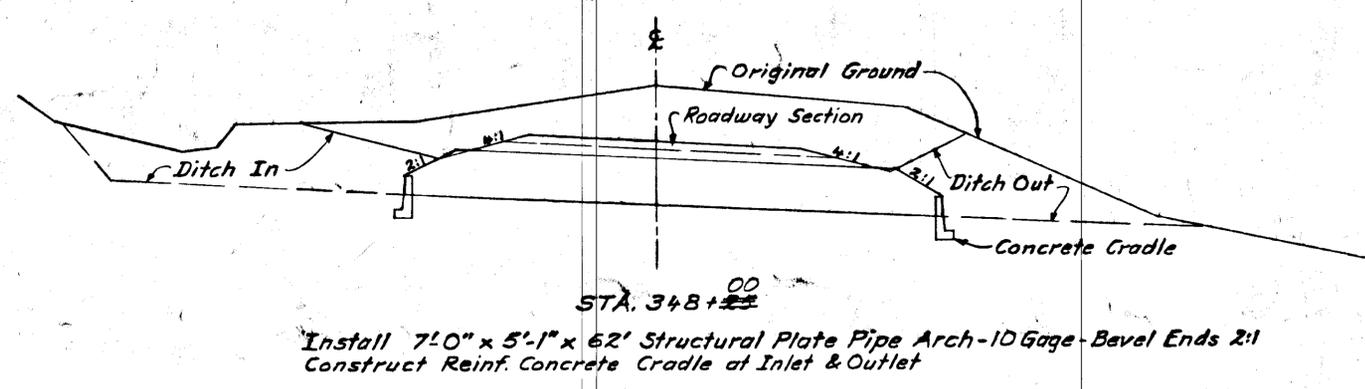
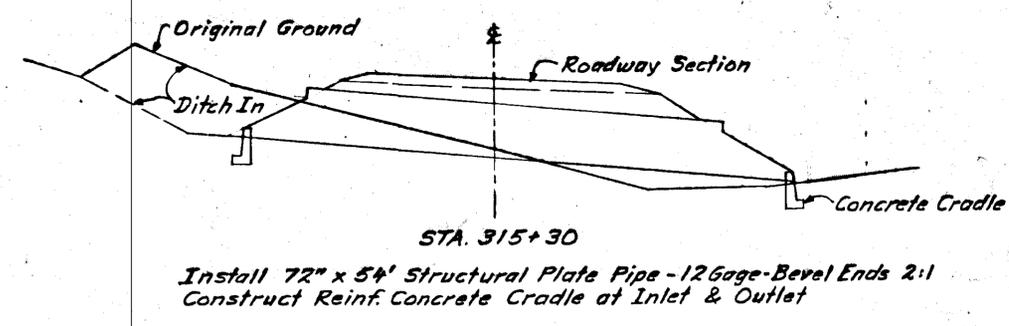
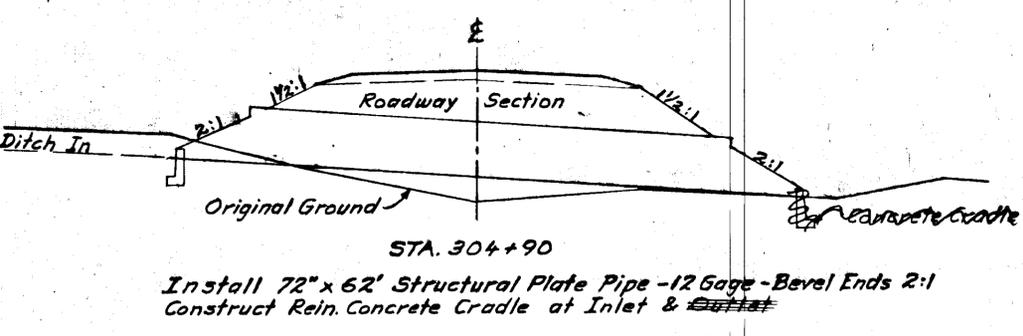
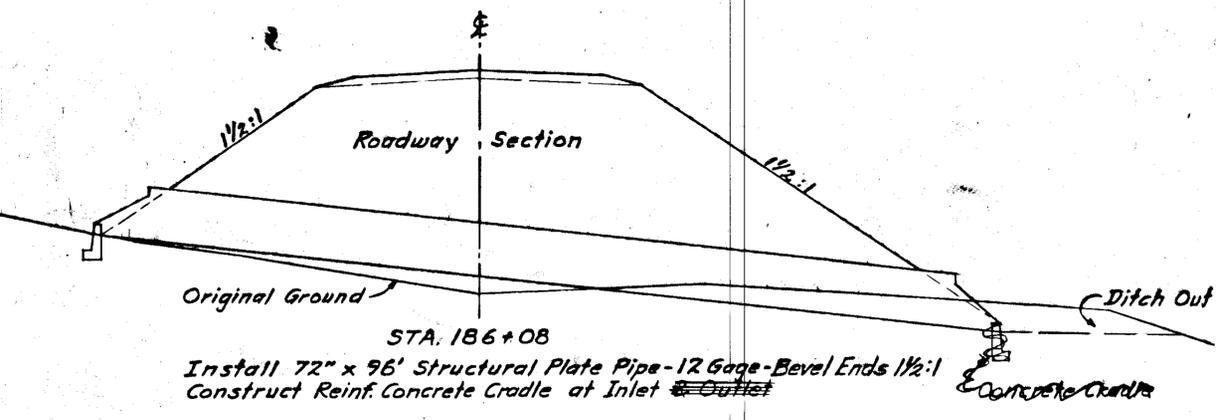
### BAR LIST FOR S.P.

LOCATION	MARK NO.	SIZE	LENGTH	BENDING DIAGRAM
Pipe Arch Footing	4F1	14	4	143'-6" Straight Bar
" " "	4F2	192	4	8'-7" Straight Bar
" " "	5F1	6	5	143'-6" Straight Bar
48" Pipe Joint	4P1	12	4	2'-6" Straight Bar
" " "	4P2	3P	4	18'-5" per P.

STATE	ROUTE	SECTION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	FH-39	1	1964	16	24

# AS BUILT PLANS

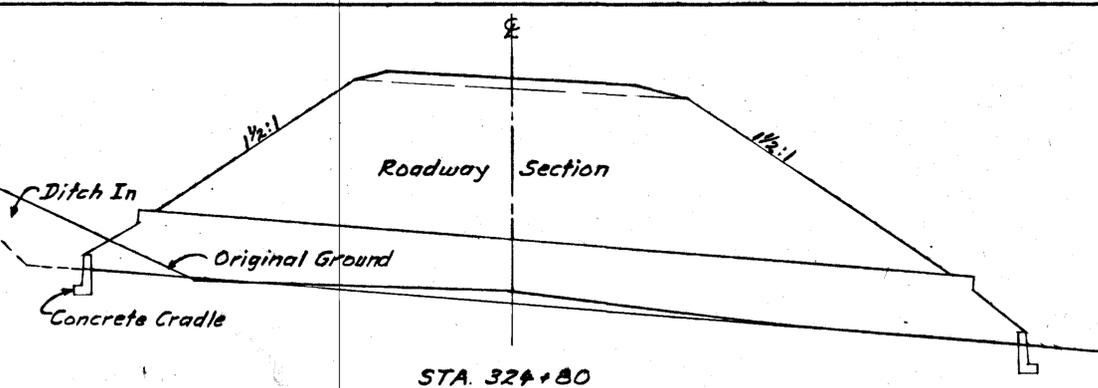
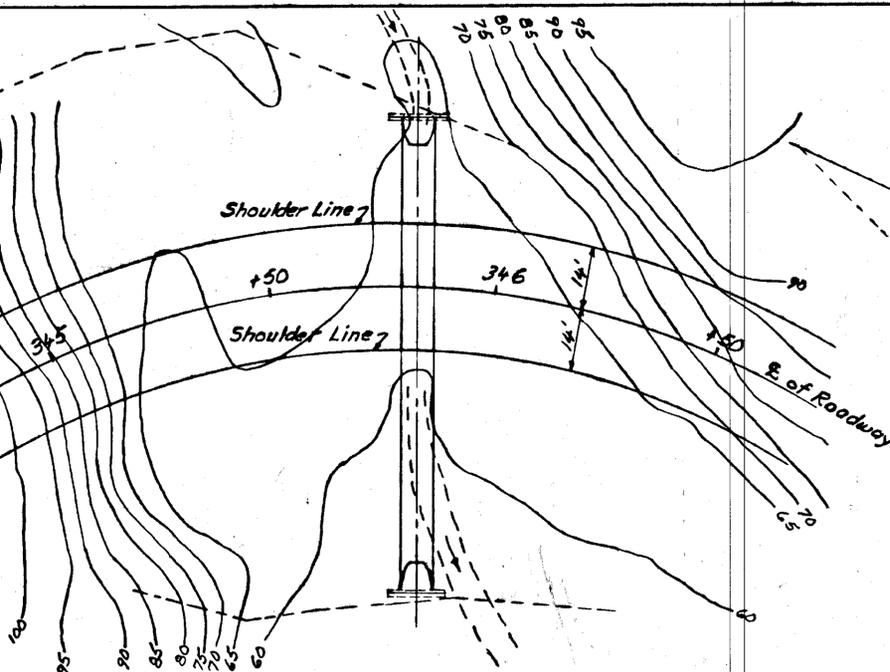
Signed Resident Engineer \_\_\_\_\_ Date \_\_\_\_\_



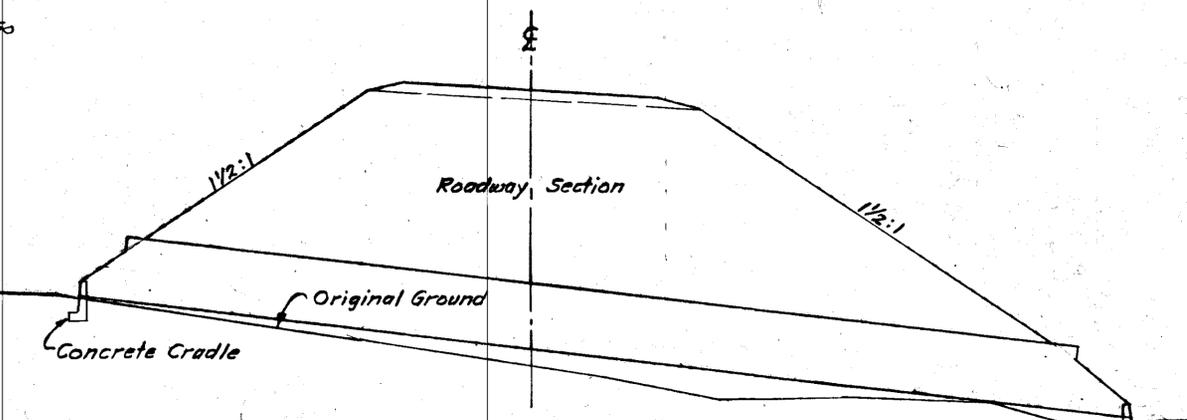
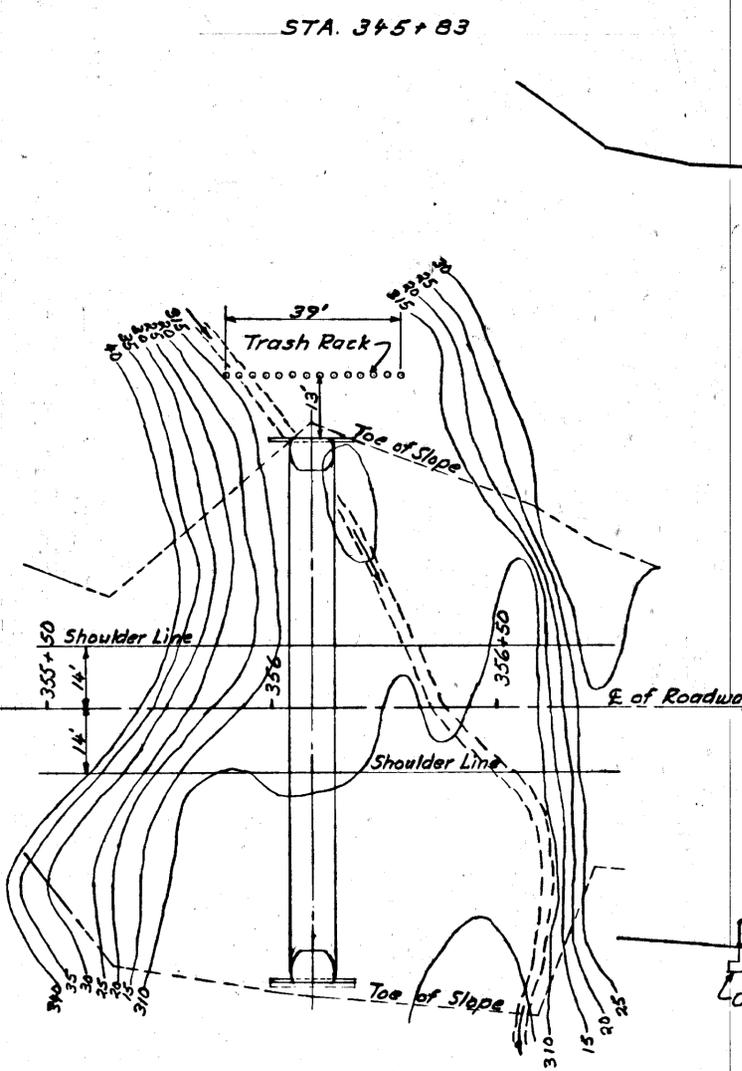
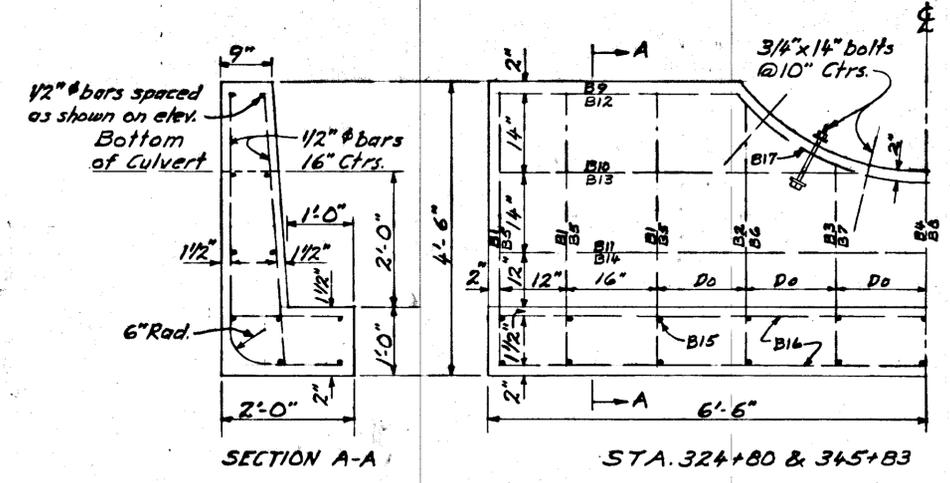
STATE	ROUTE	SECTION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	FH-39	1	1964	17	24

# AS BUILT PLANS

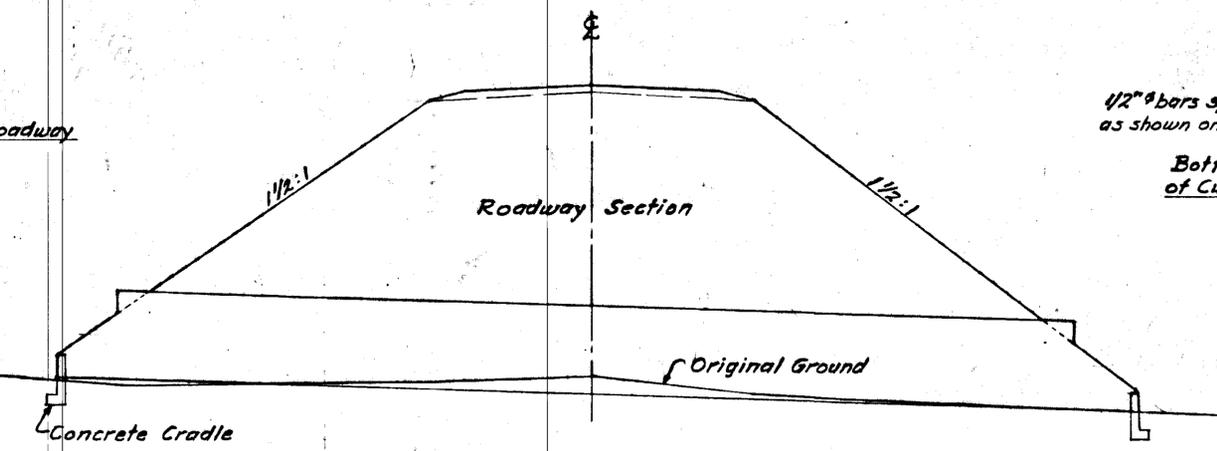
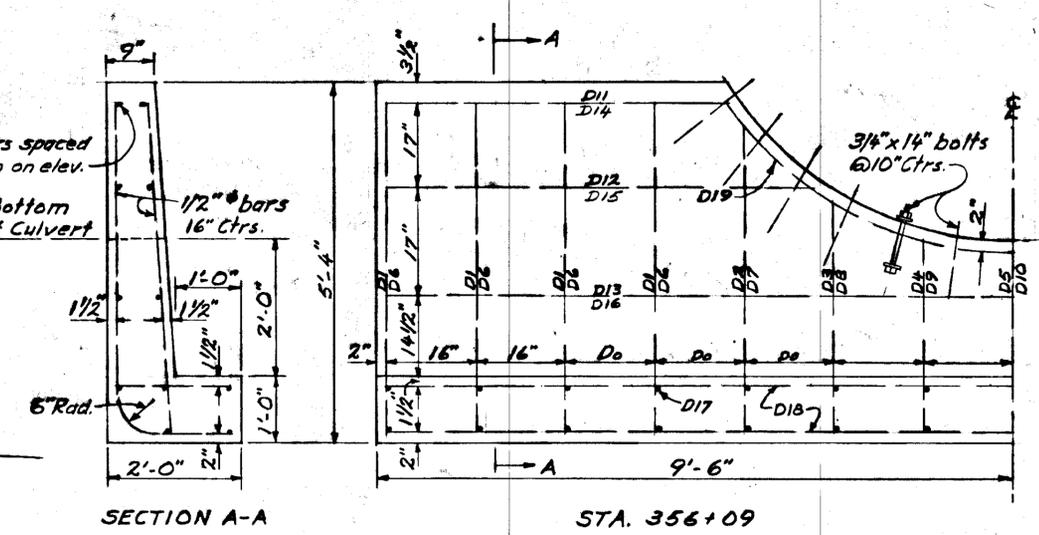
Signed Resident Engineer



Install 84" x 102' Structural Plate Pipe - 10 Gage - Bevel Ends 1 1/2:1  
Construct Reinf. Concrete Cradle at Inlet & Outlet



Install 84" x 112' Structural Plate Pipe - 8 Gage - Bevel Ends 1 1/2:1  
Construct Reinf. Concrete Cradle at Inlet & Outlet



Install 120" x 114' Structural Plate Pipe - 7 Gage - Bevel Ends 1 1/2:1  
Construct Reinf. Concrete Cradle at Inlet & Outlet

STA. 356+09

STA. 356+09

STA. 356+09

**BAR LIST**  
For Inlet & Outlet Cradles for Culverts as Shown Below

# AS BUILT PLANS

Signed Resident Engineer \_\_\_\_\_ Date \_\_\_\_\_

72" S.P.P. AT STA. 186+08, 304+90 & 315+30

LOCATION	STRAIGHT BARS		NO. PER CULVERT	TOTAL NO.	BENT BARS		NO. PER CULVERT	TOTAL NO.	BENDING DIAGRAM All Dimensions are Out to Out
	MARK	LENGTH			MARK	LENGTH			
Back wall, Vertical					A1	5'-1 1/2"	12	36	
" " "					A2	4'-5"	4	12	
" " "					A3	4'-1 1/2"	2	6	
Front wall, Vertical	A4	3'-8"	12	36					
" " "	A5	3'-0"	4	12					
" " "	A6	2'-8"	2	6					
Back wall, Horiz.	A7	3'-1"	4	12					
" " "	A8	10'-8"	2	6					
Front wall, "	A9	3'-1"	4	12					
" " "	A10	10'-8"	2	6					
Footing	A11	1'-8"	18	54					
"	A12	10'-8"	10	30					
Arch					A13	5'-2"	4	12	

84" S.P.P. AT STA. 324+80 & 345+83

LOCATION	STRAIGHT BARS		NO. PER CULVERT	TOTAL NO.	BENT BARS		NO. PER CULVERT	TOTAL NO.	BENDING DIAGRAM All Dimensions are Out to Out
	MARK	LENGTH			MARK	LENGTH			
Back wall, Vertical					B1	5'-7 1/2"	12	24	
" " "					B2	5'-6"	4	8	
" " "					B3	4'-7 1/2"	4	8	
" " "					B4	4'-3 1/2"	2	4	
Front wall, Vertical	B5	4'-2"	12	24					
" " "	B6	4'-0 1/2"	4	8					
" " "	B7	3'-2"	4	8					
" " "	B8	2'-10"	2	4					
Back wall, Horiz.	B9	3'-7"	4	8					
" " "	B10	5'-4"	4	8					
" " "	B11	12'-8"	2	4					
Front wall, Horiz.	B12	3'-7"	4	8					
" " "	B13	5'-4"	4	8					
" " "	B14	12'-8"	2	4					
Footing	B15	1'-8"	22	44					
"	B16	12'-8"	10	20					
Arch					B17	6'-5"	4	8	

120" S.P.P. AT STA. 356+09

LOCATION	STRAIGHT BARS		BENT BARS		BENDING DIAGRAM All Dimensions are Out to Out
	MARK NO.	LENGTH	MARK NO.	LENGTH	
Back wall, Vertical			D1	16 6'-4"	
" " "			D2	4 5'-0"	
" " "			D3	4 4'-10"	
" " "			D4	4 4'-4"	
" " "			D5	2 4'-1 1/2"	
Front wall, Vertical	D6	16 4'-10 1/2"			
" " "	D7	4 4'-6 1/2"			
" " "	D8	4 3'-4 1/2"			
" " "	D9	4 2'-10 1/2"			
" " "	D10	2 2'-8"			
Back wall, Horiz.	D11	4 5'-1"			
" " "	D12	4 6'-4 1/2"			
" " "	D13	2 18'-8"			
Front wall, Horiz.	D14	4 5'-1"			
" " "	D15	4 6'-4 1/2"			
" " "	D16	2 18'-8"			
Footing	D17	30 1'-8"			
"	D18	10 18'-8"			
Arch			D19	4 10'-8 1/2"	

NOTE: All bars listed on this sheet are size no. 4.

7'-0" x 5'-1" S.P.P.A. AT STA. 348+00

LOCATION	STRAIGHT BARS		BENT BARS		BENDING DIAGRAM All Dimensions are Out to Out
	MARK NO.	LENGTH	MARK NO.	LENGTH	
Back wall, Vertical			C1	12 6'-4"	
" " "			C2	4 5'-2 1/2"	
" " "			C3	4 4'-4 1/2"	
" " "			C4	4 4'-1 1/2"	
Front wall, Vertical	C5	12 4'-10 1/2"			
" " "	C6	4 3'-9"			
" " "	C7	4 2'-11"			
" " "	C8	4 2'-8"			
Back wall, Horiz.	C9	4 3'-4 1/2"			
" " "	C10	4 3'-11"			
" " "	C11	2 14'-2"			
Front wall, Horiz.	C12	4 3'-4 1/2"			
" " "	C13	4 3'-11"			
" " "	C14	2 14'-2"			
Footing	C15	24 1'-8"			
"	C16	10 14'-2"			
Arch			C17	4 9'-9"	

KSCHEICAN - KSAVILA HWY