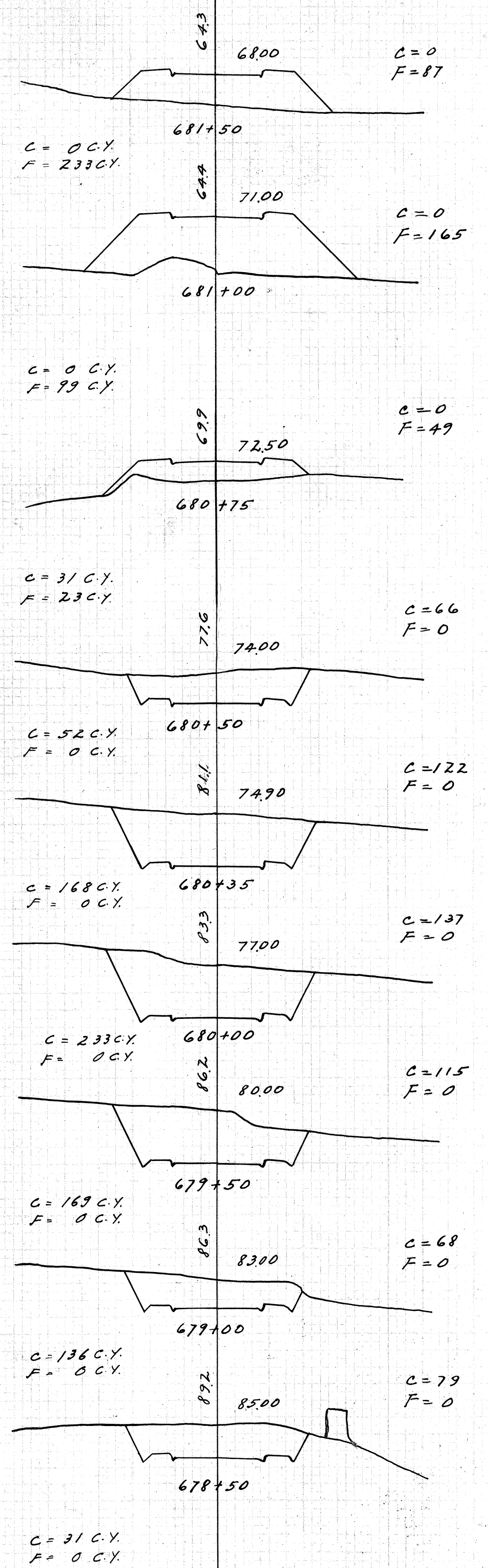
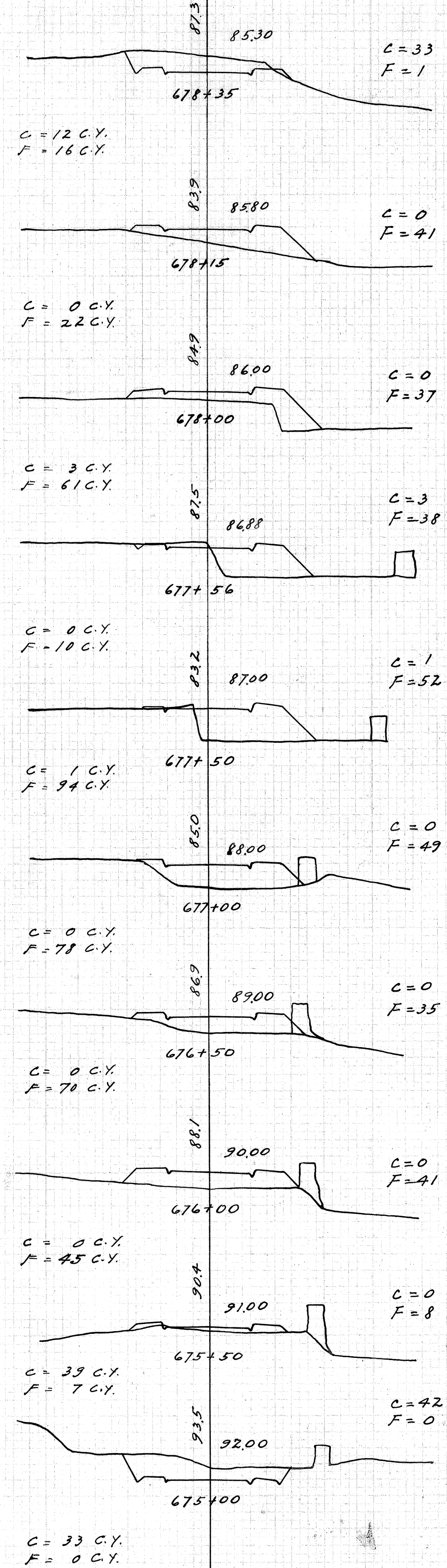
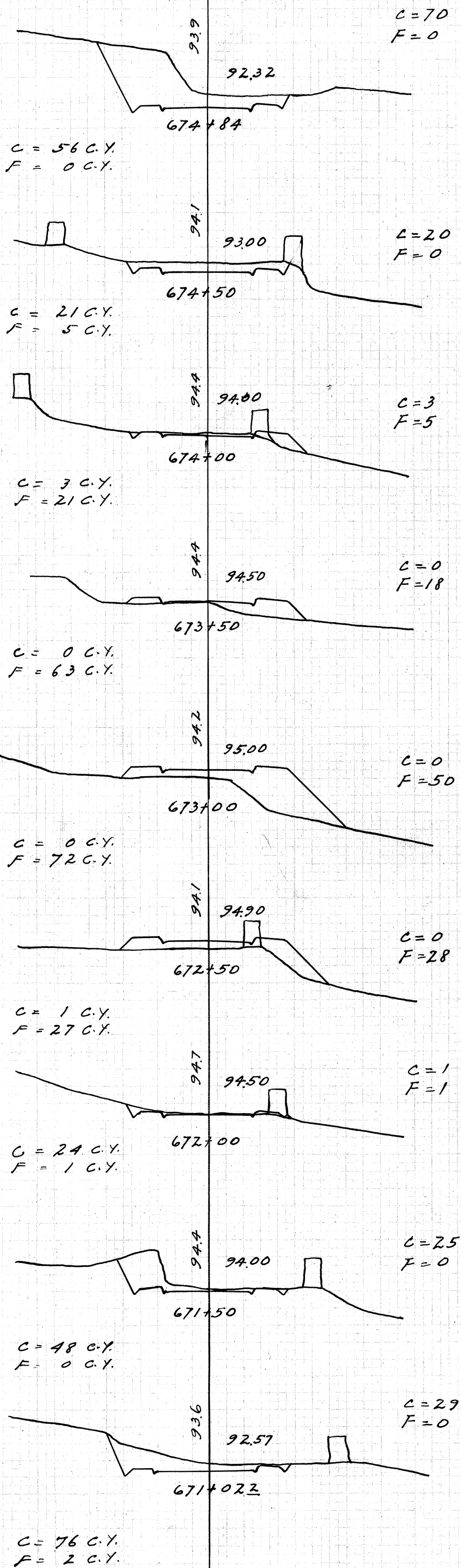
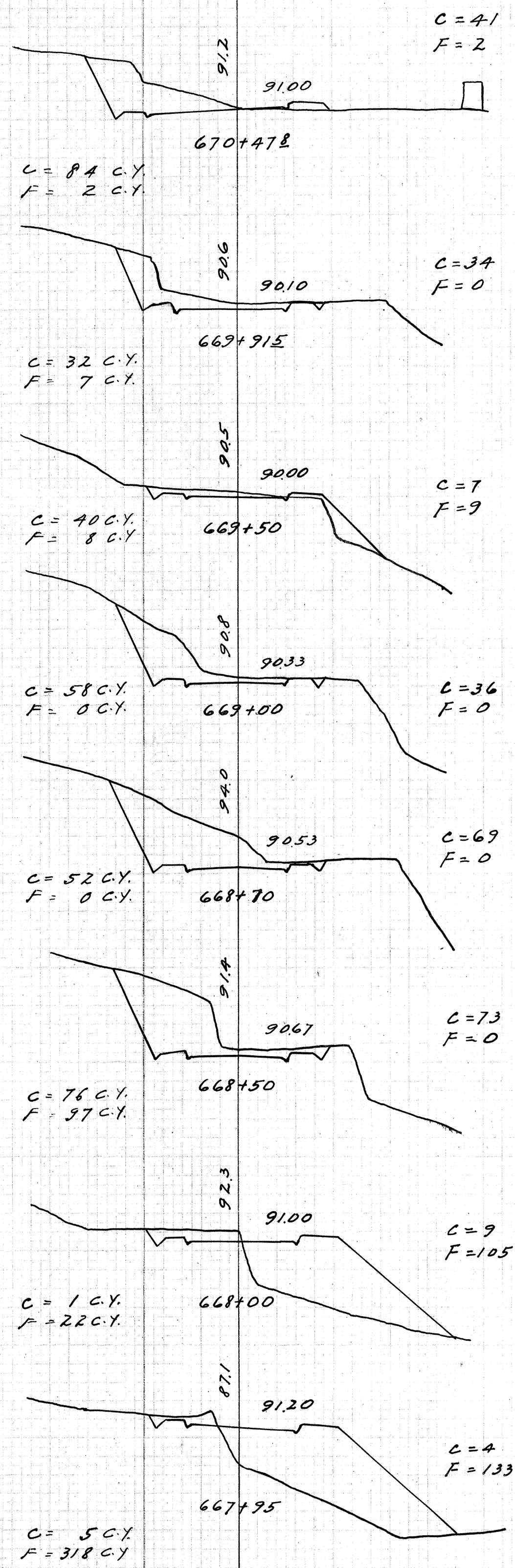
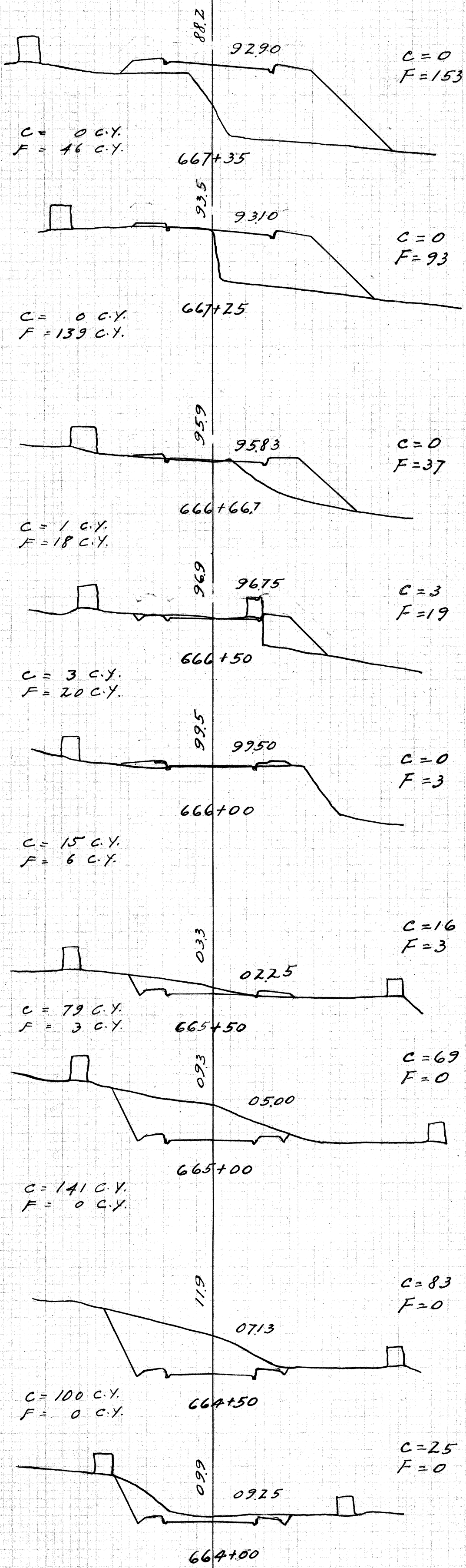
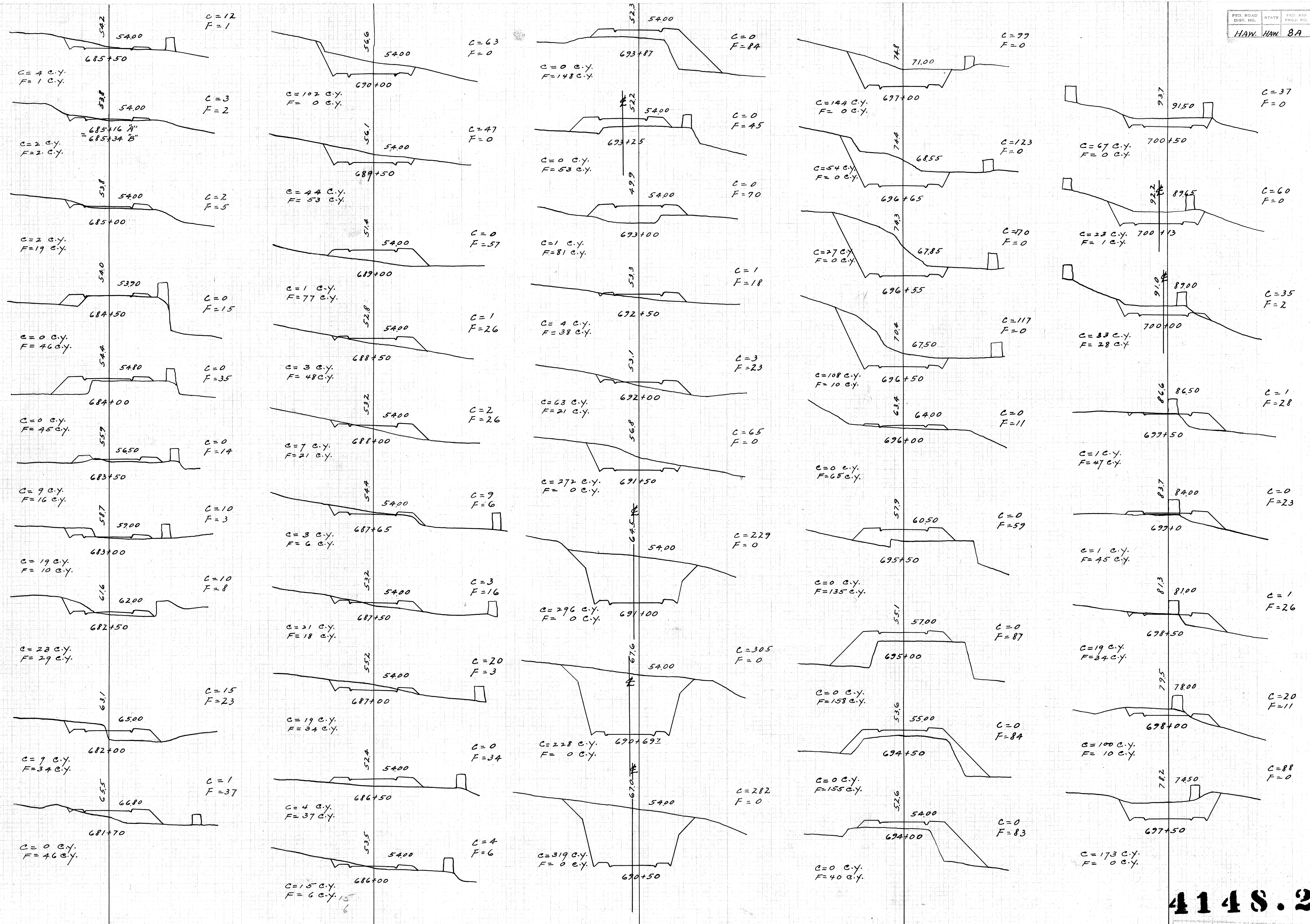
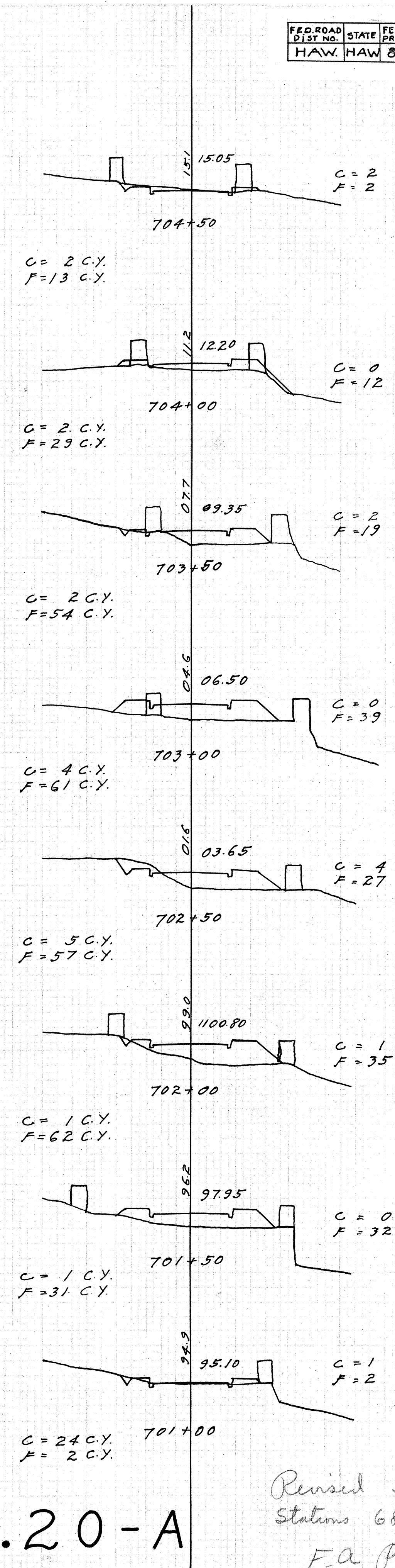
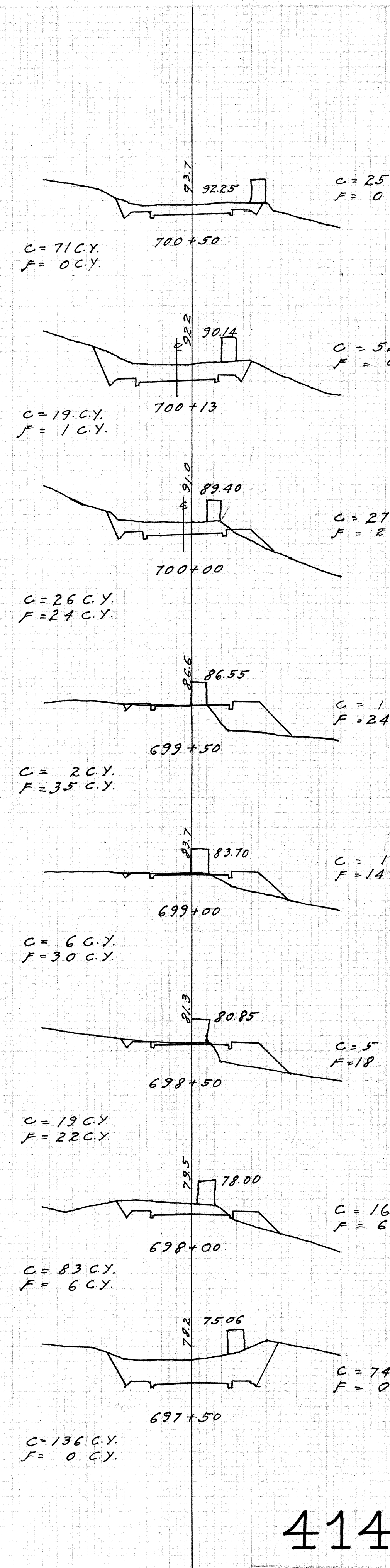
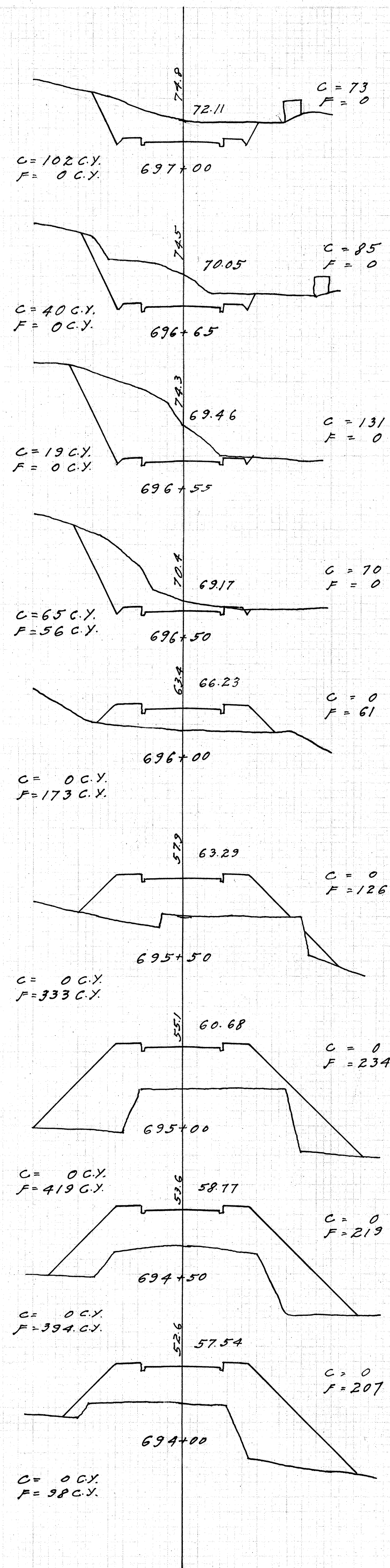
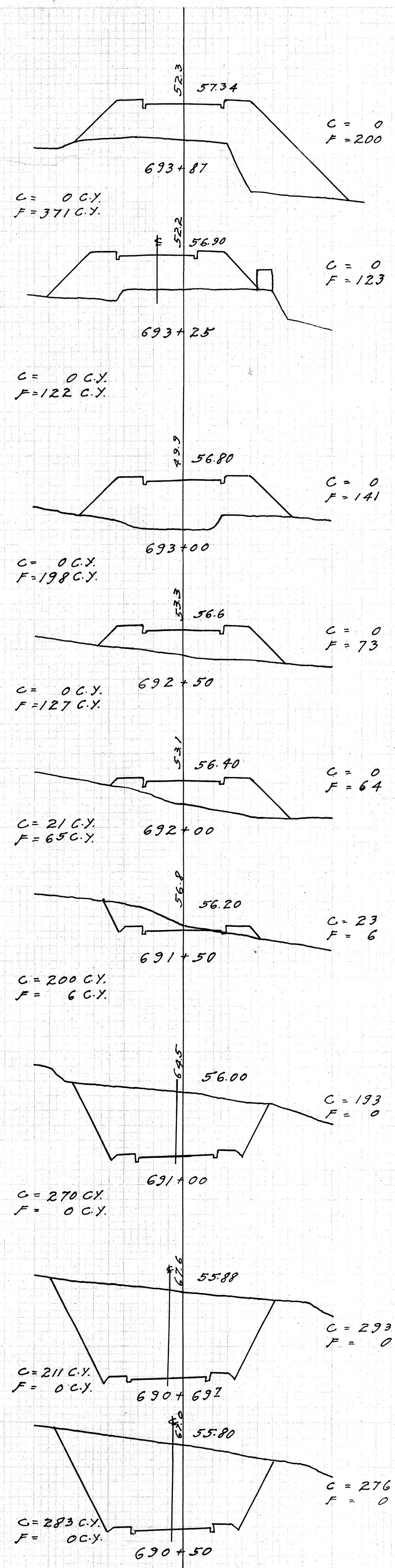
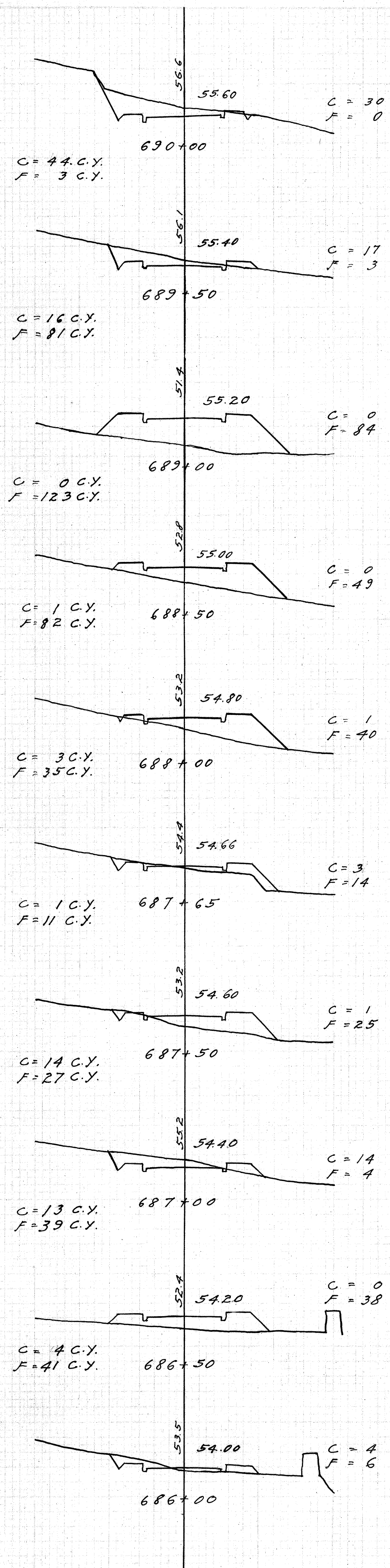




4148.19

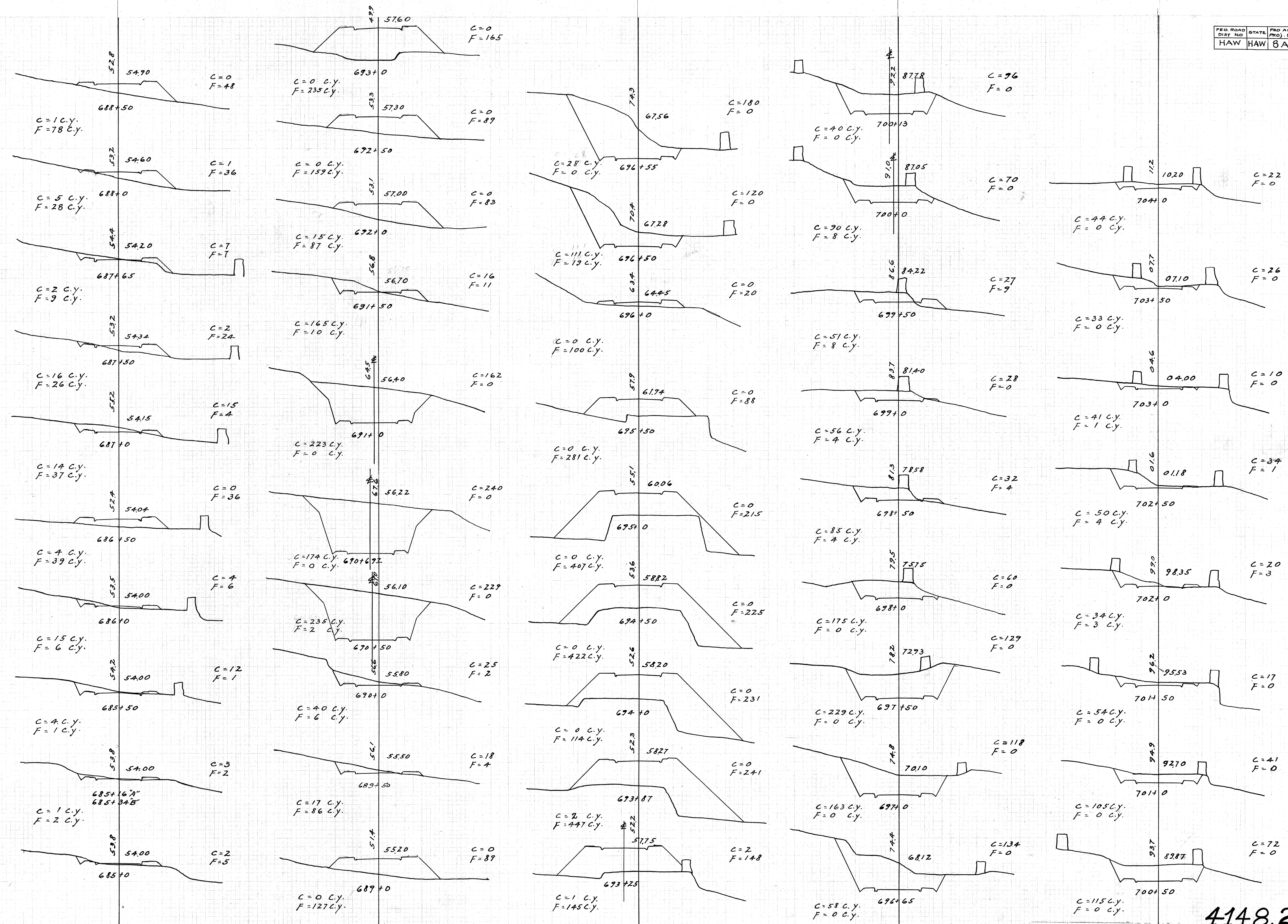


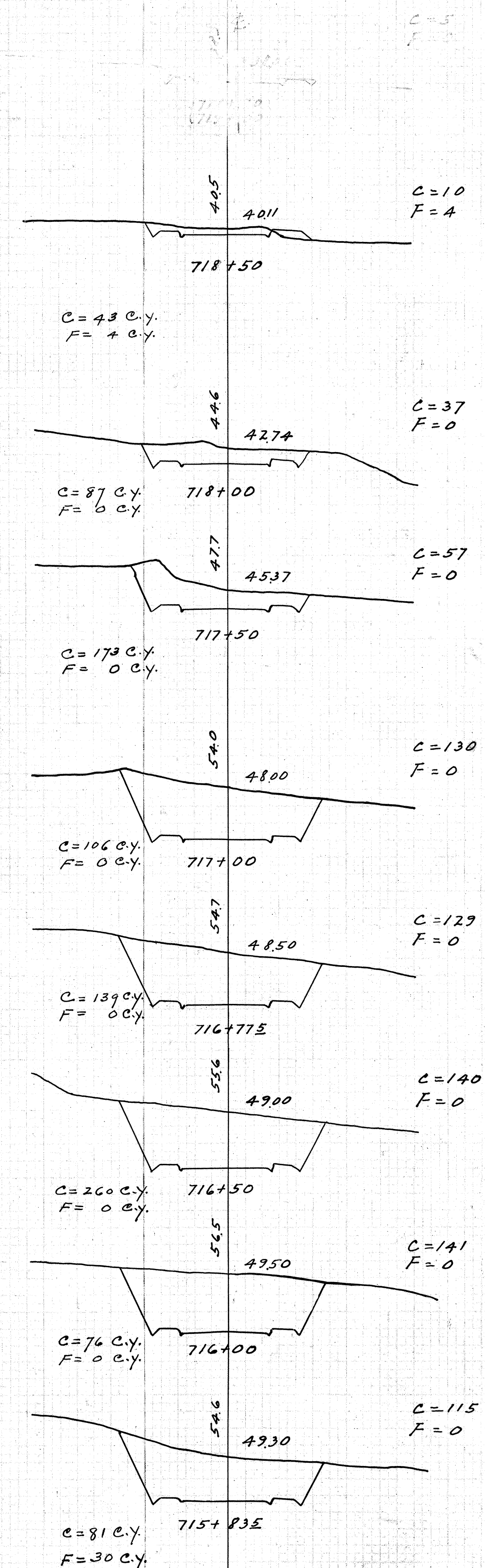
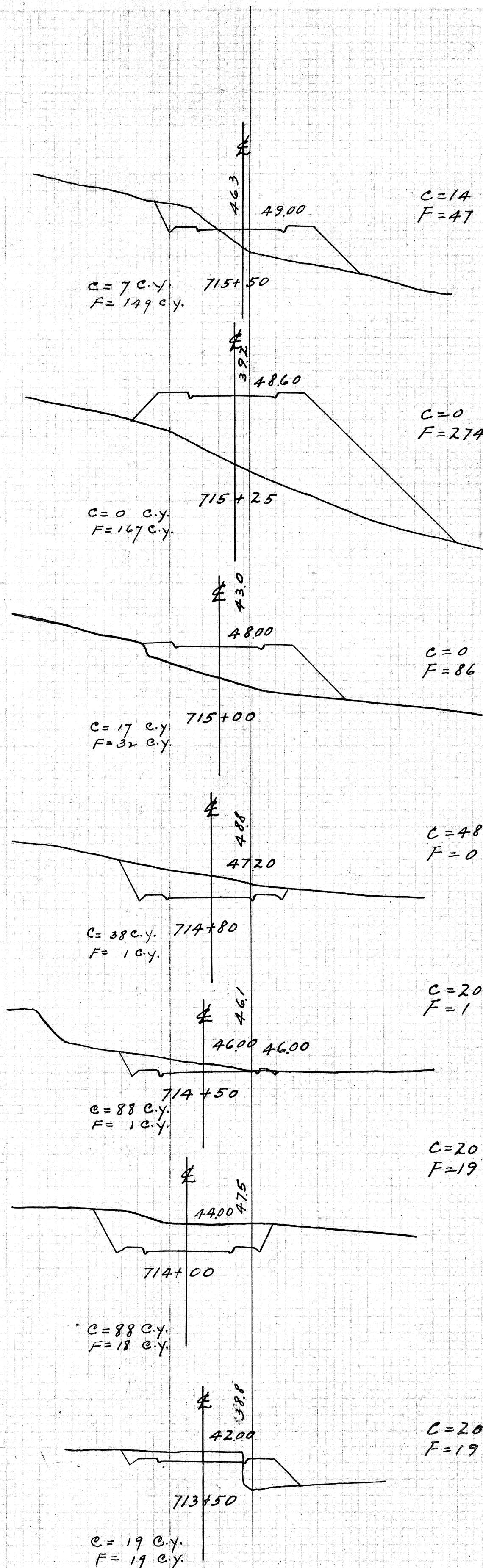
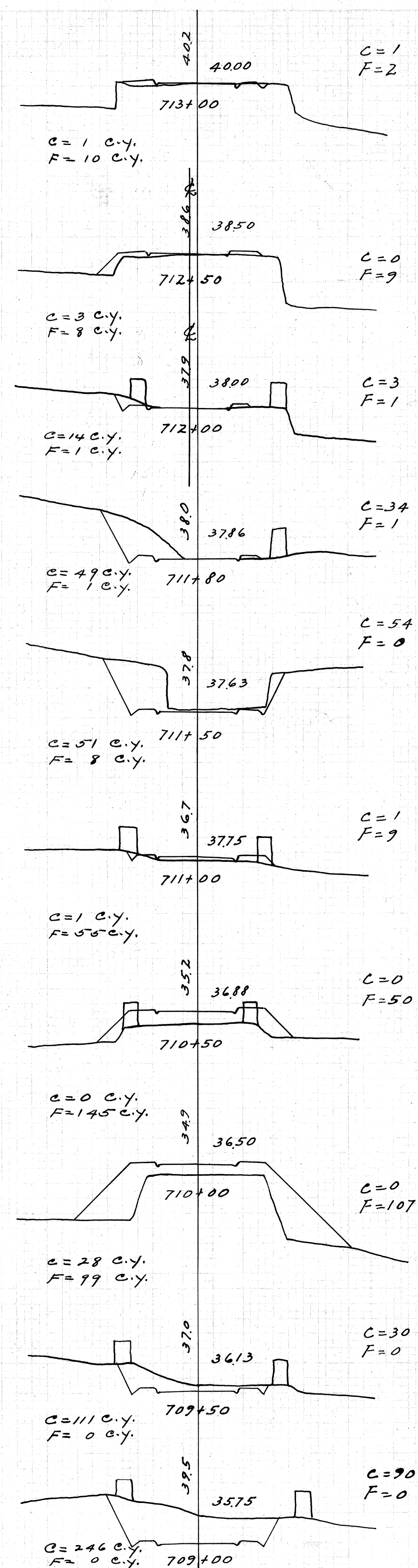
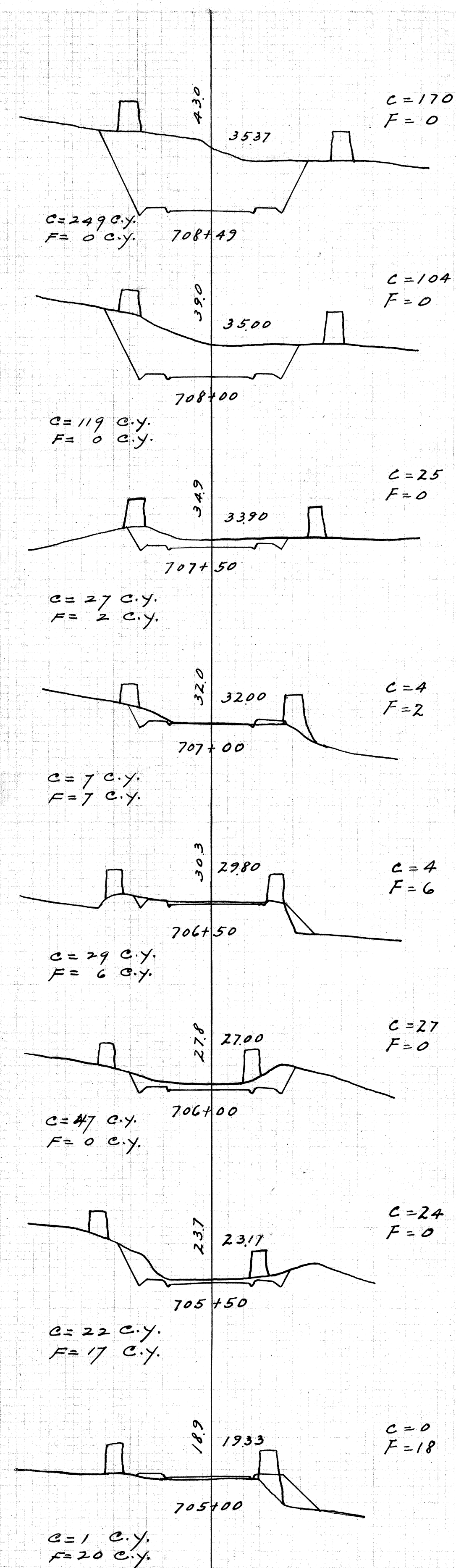
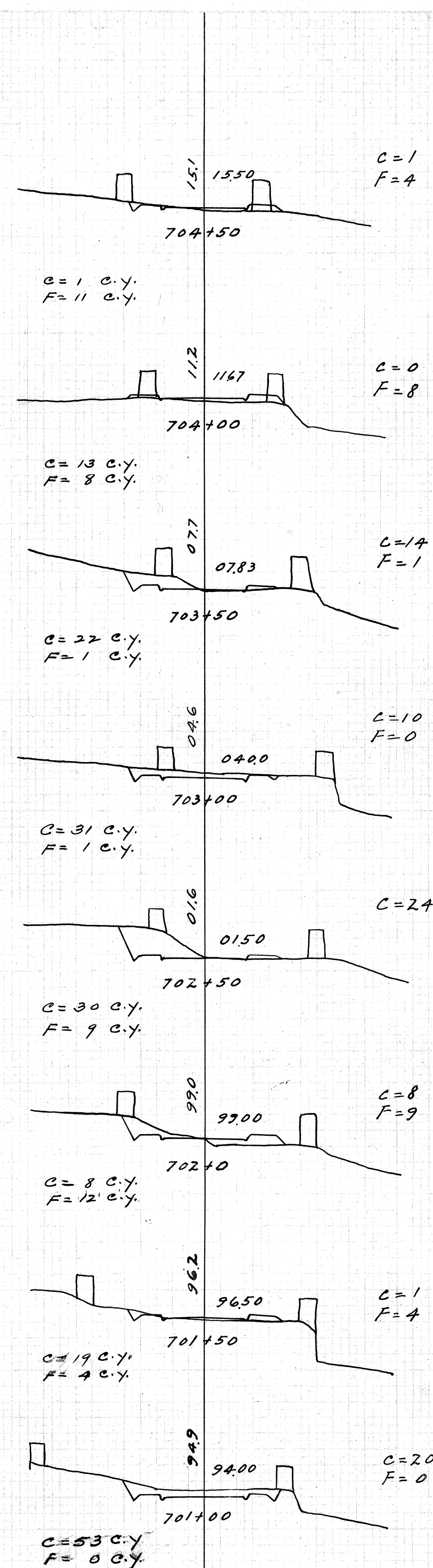
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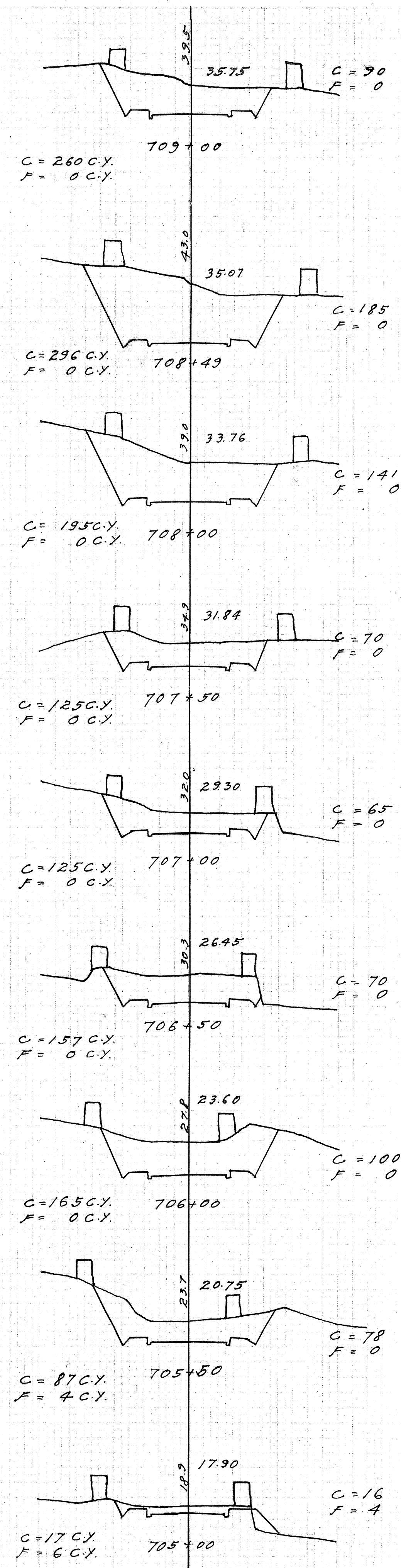
4148.20-A

Revised Sections Covering
 Stations 686 to 709+00
 F-a p 8 a





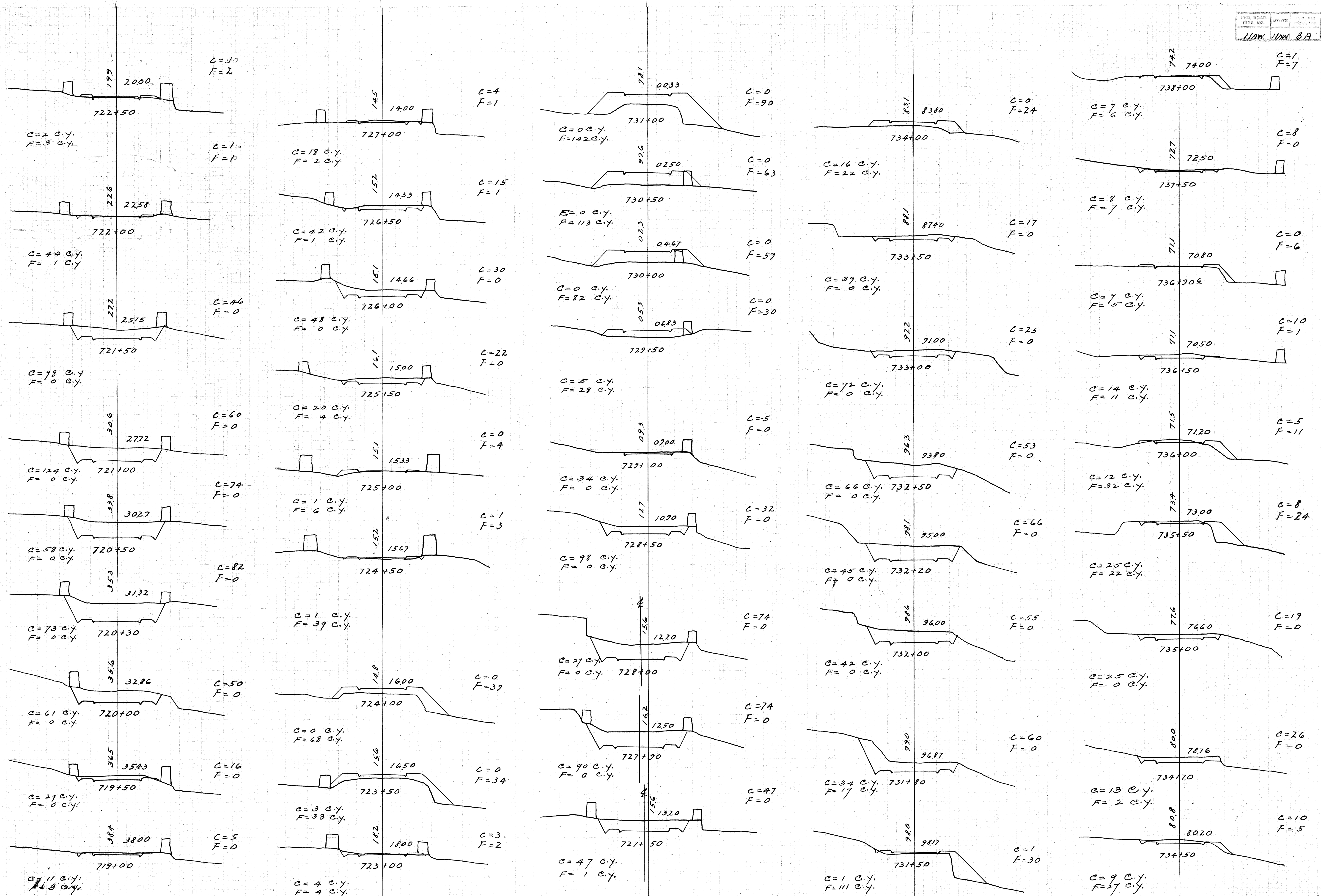
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4148.21-A

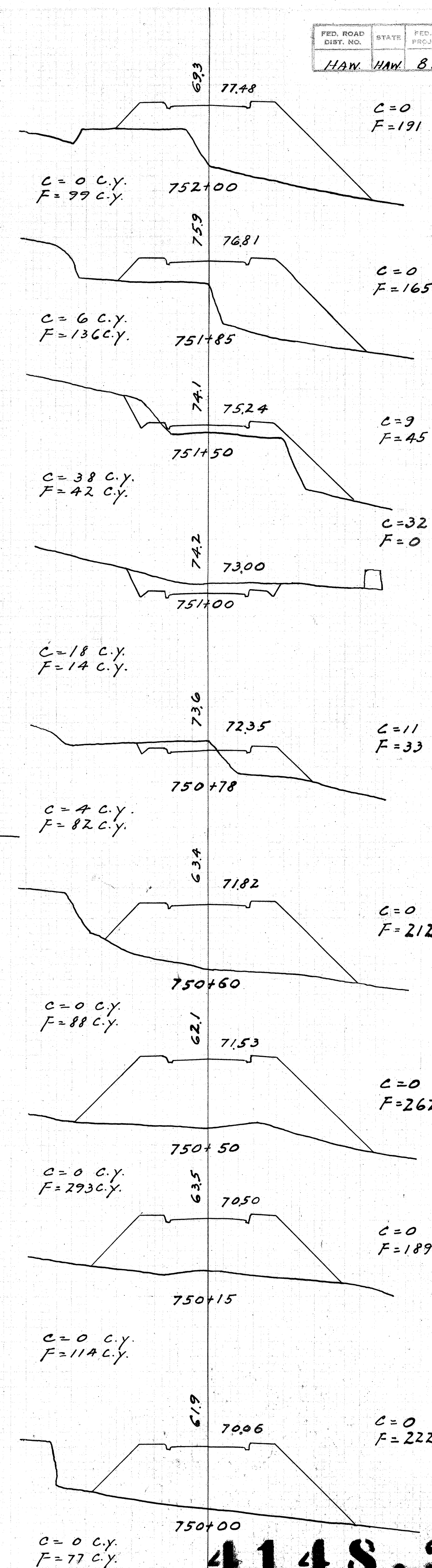
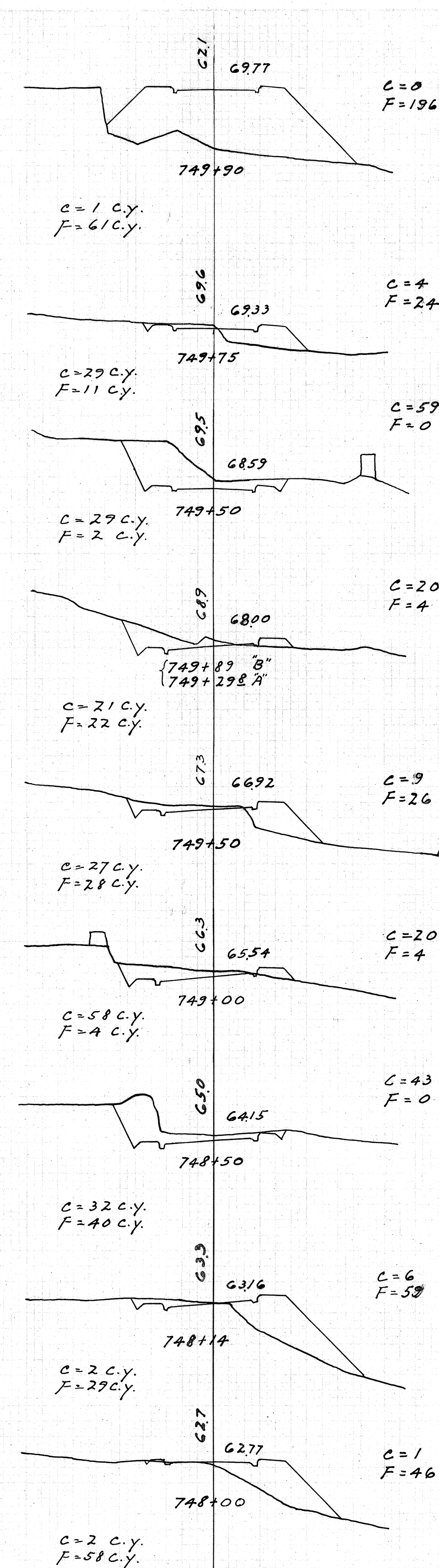
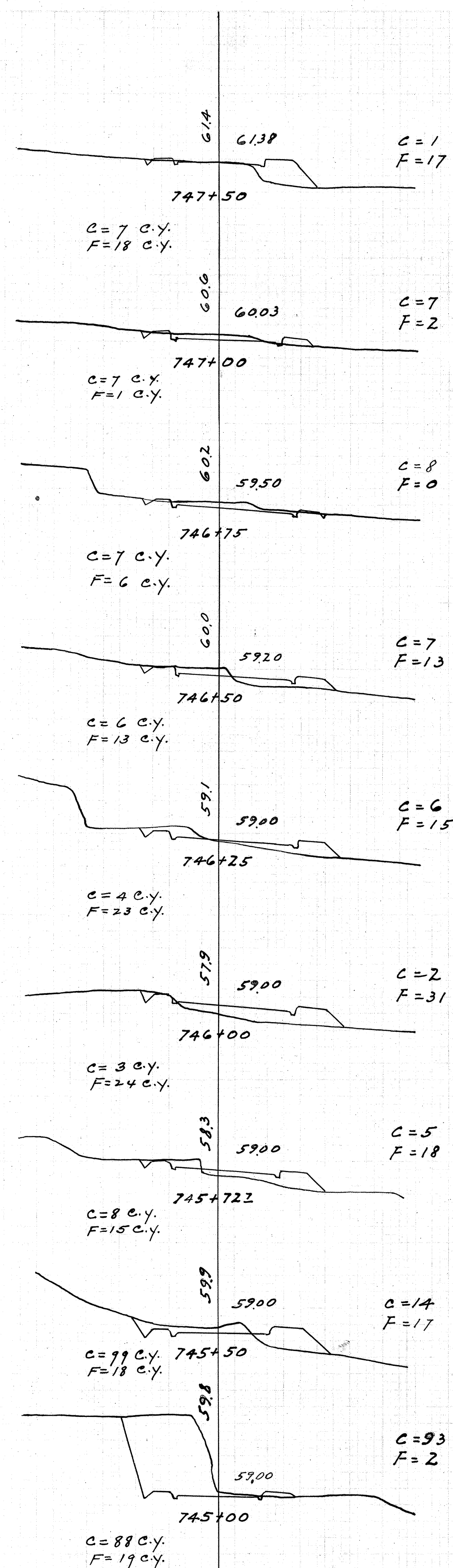
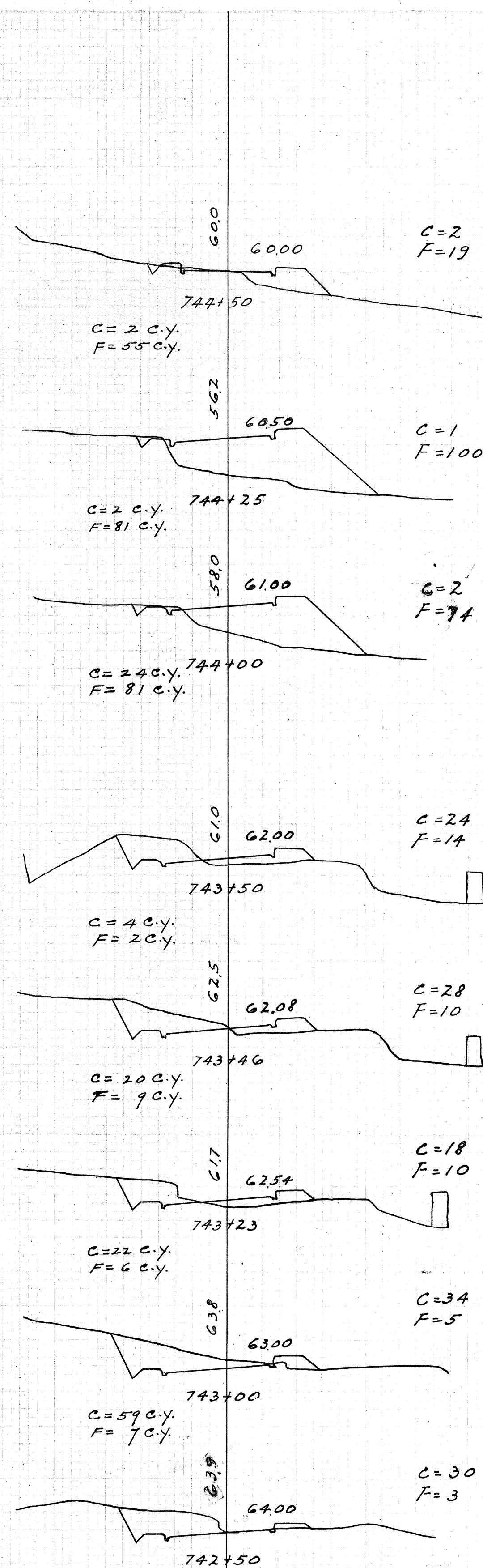
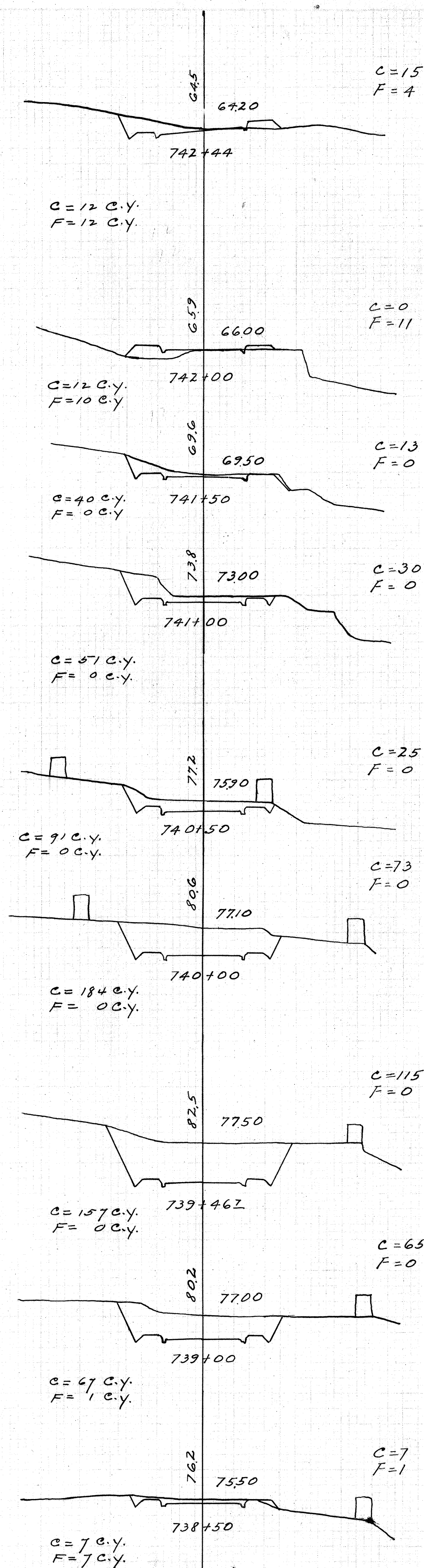
Revised Section Covering
Station 686 to 709+00
Proj. FA P80

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	HAW.	8A	1930	22	53



4148.22

Plan File	Pocket	Folder	Plan
No. 6	10	2	No.



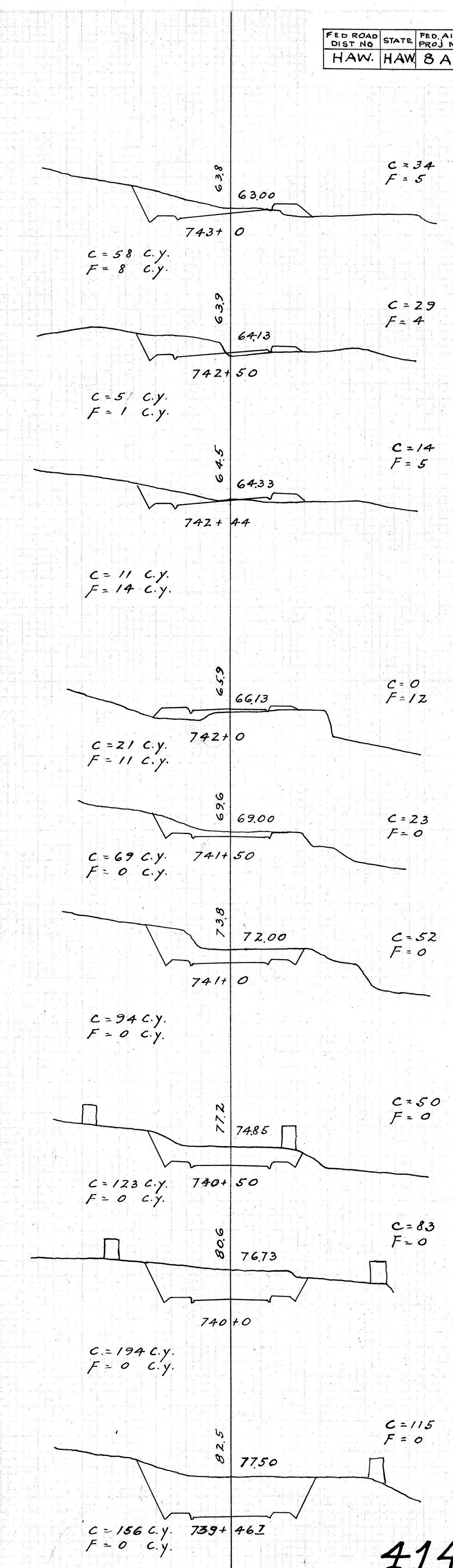
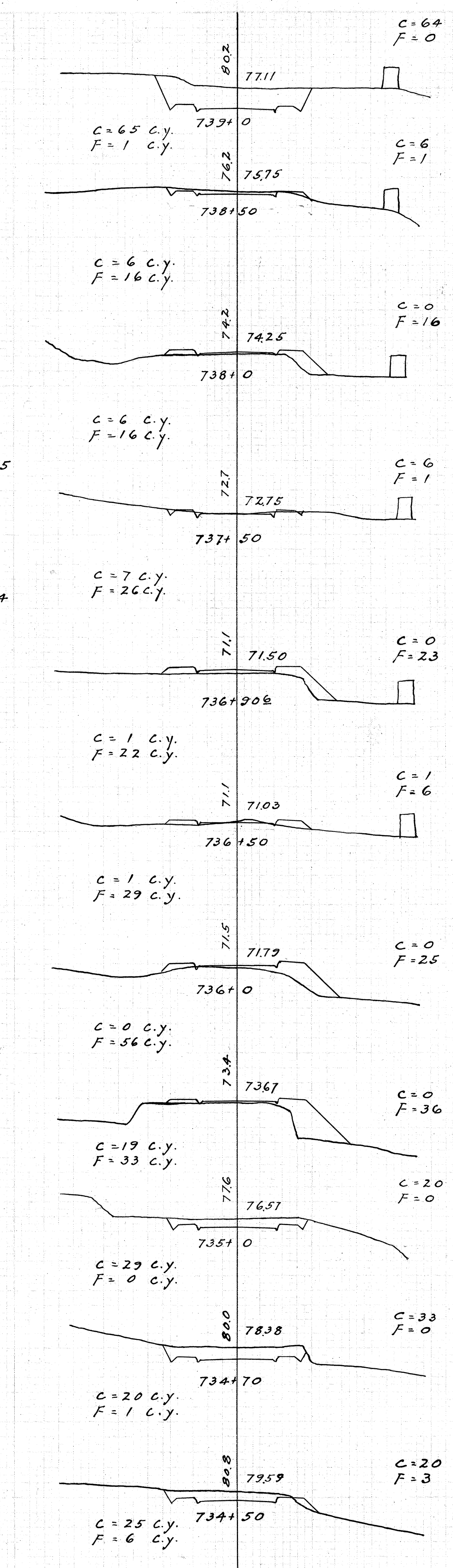
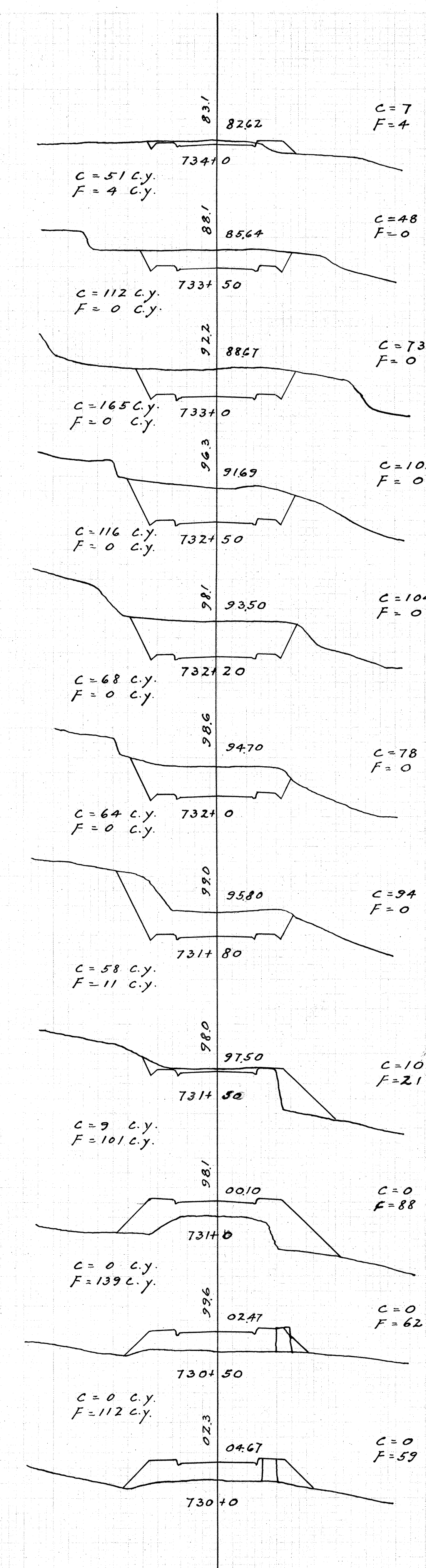
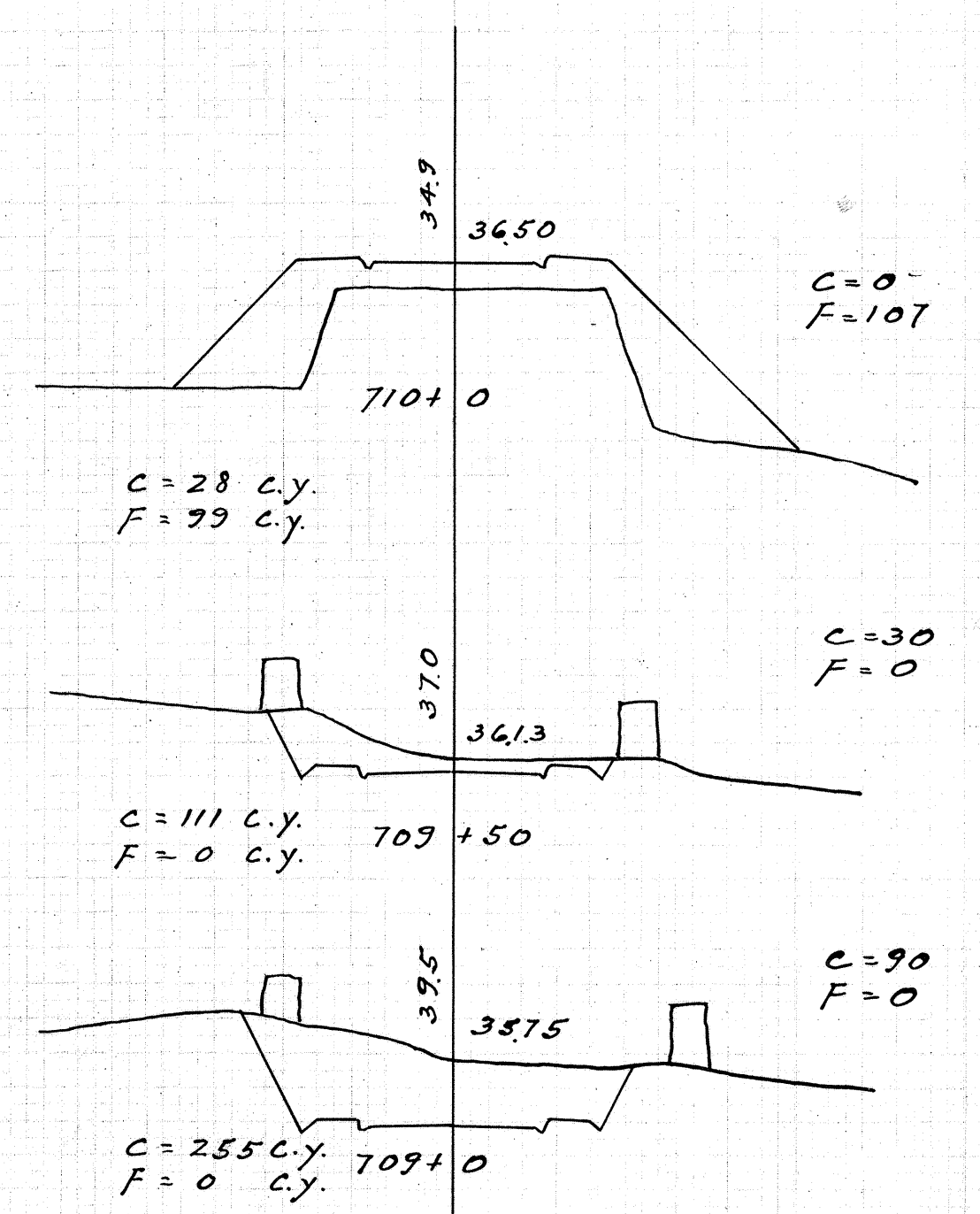
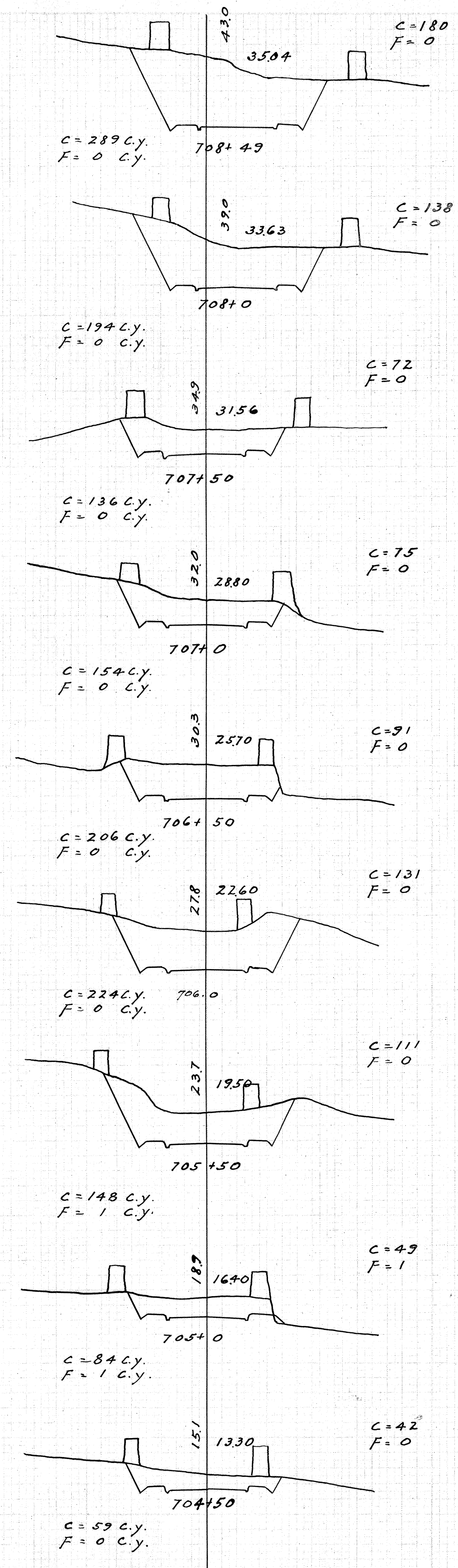
4148.23

As Shown Original Sheet No. 4148.23

1

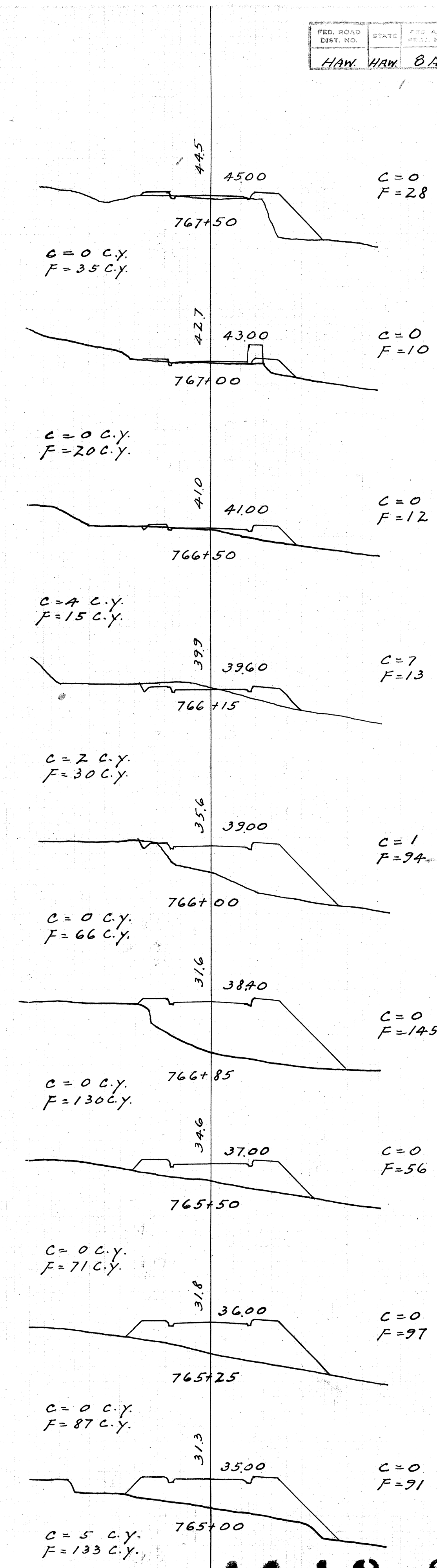
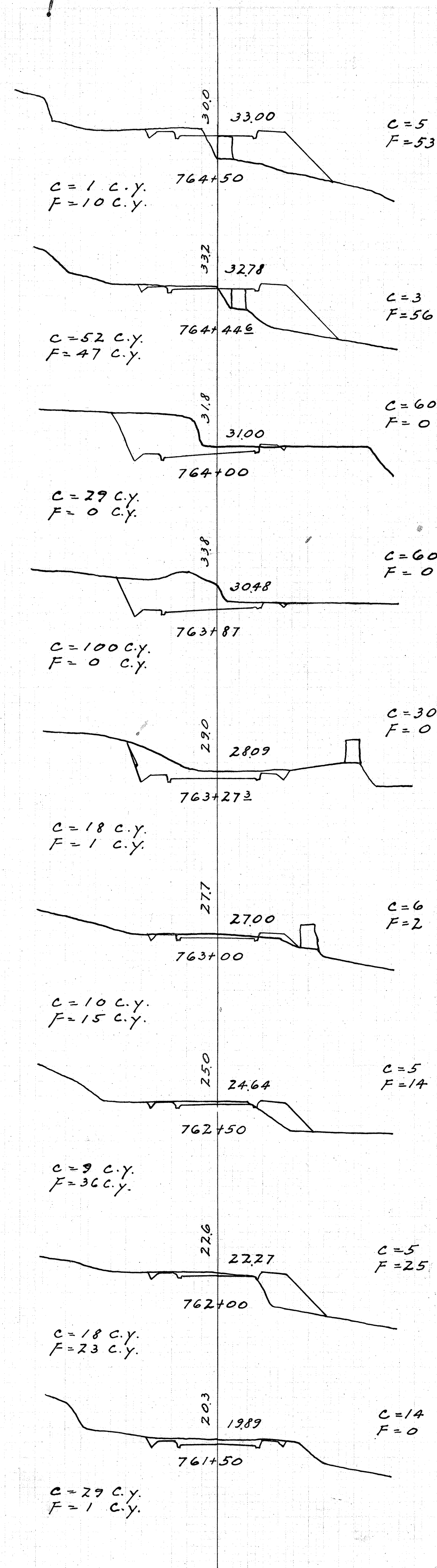
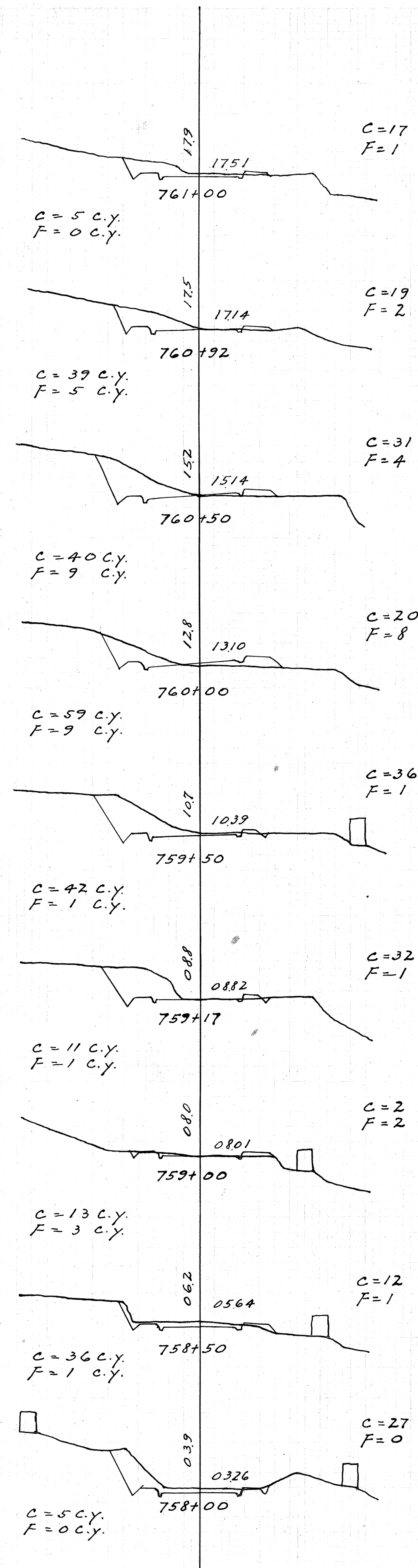
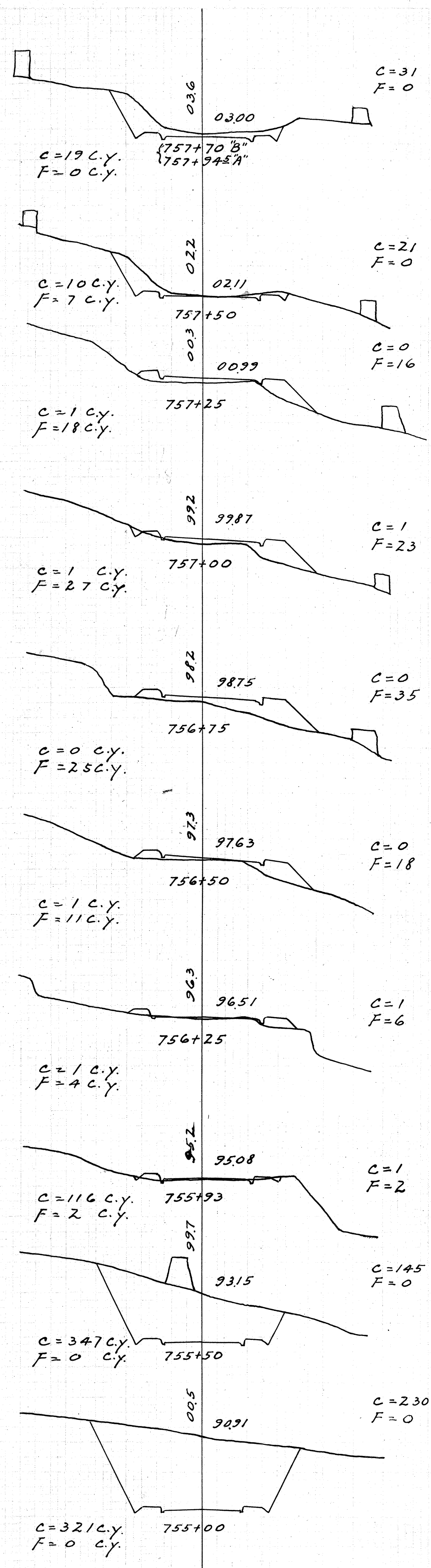
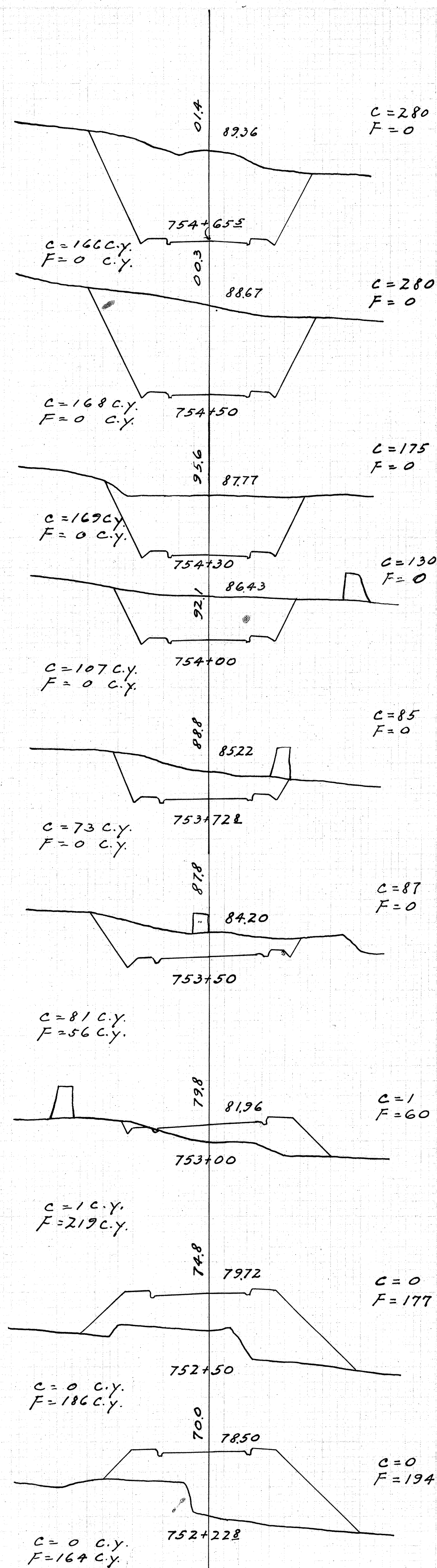
ORIGINAL SURVEY
NO. 4148.23
DATE 10/1/53
BY J. H. HARRIS
CHECKED BY J. H. HARRIS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	HAW.	8 A	1953	23	53

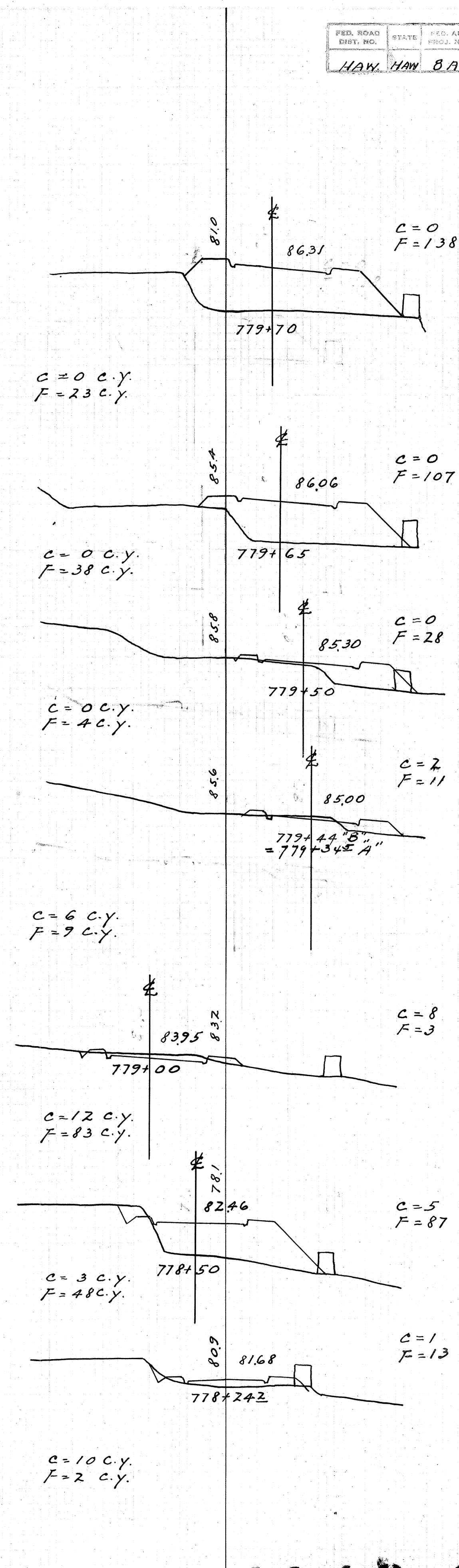
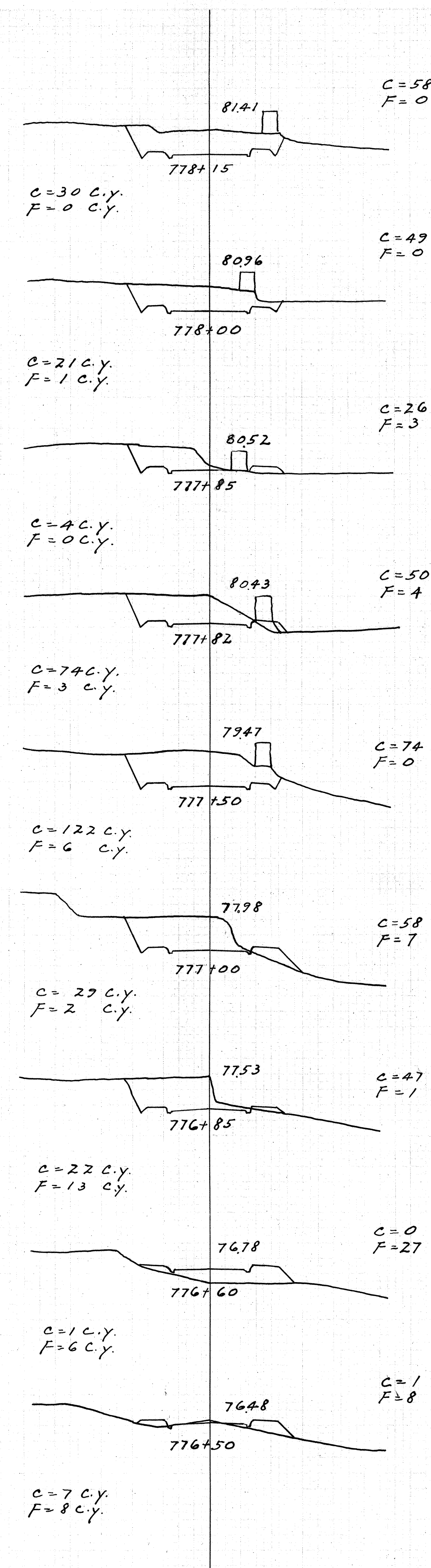
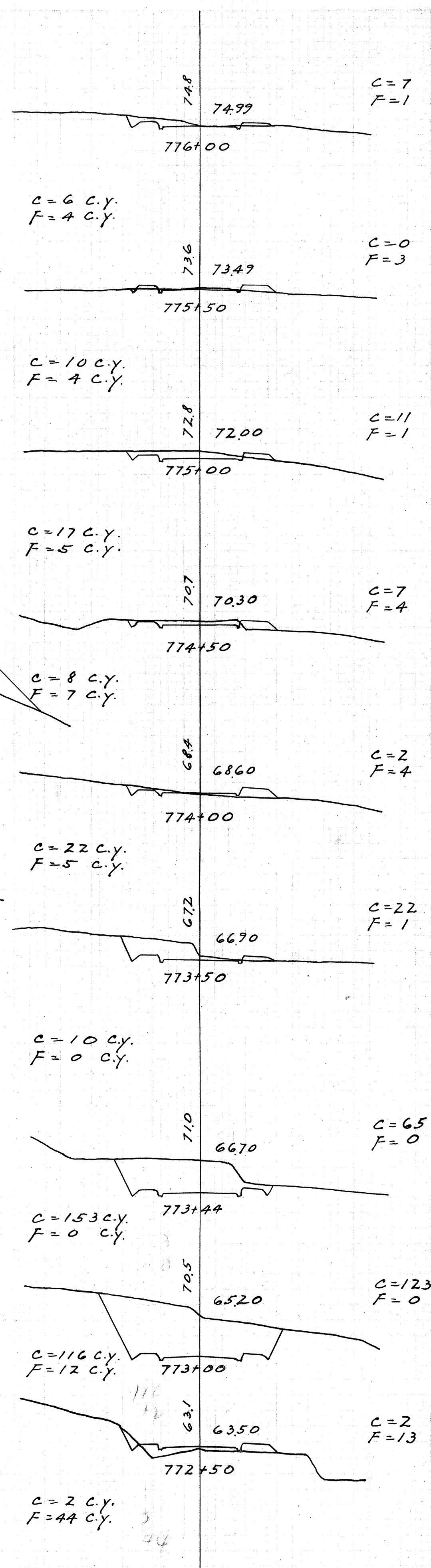
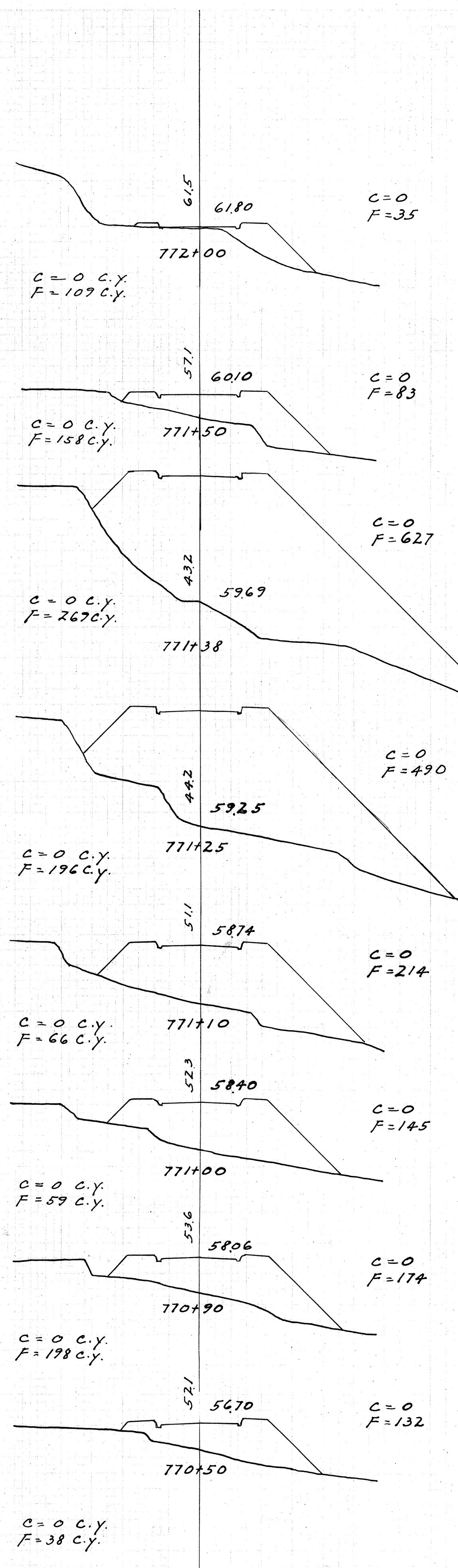
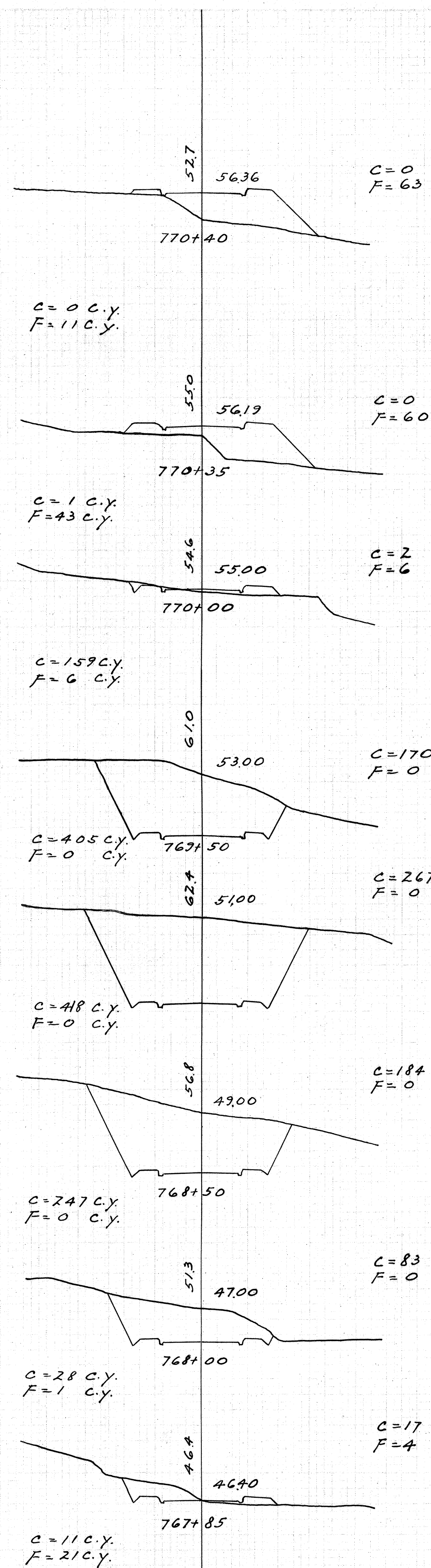


4148.23AA

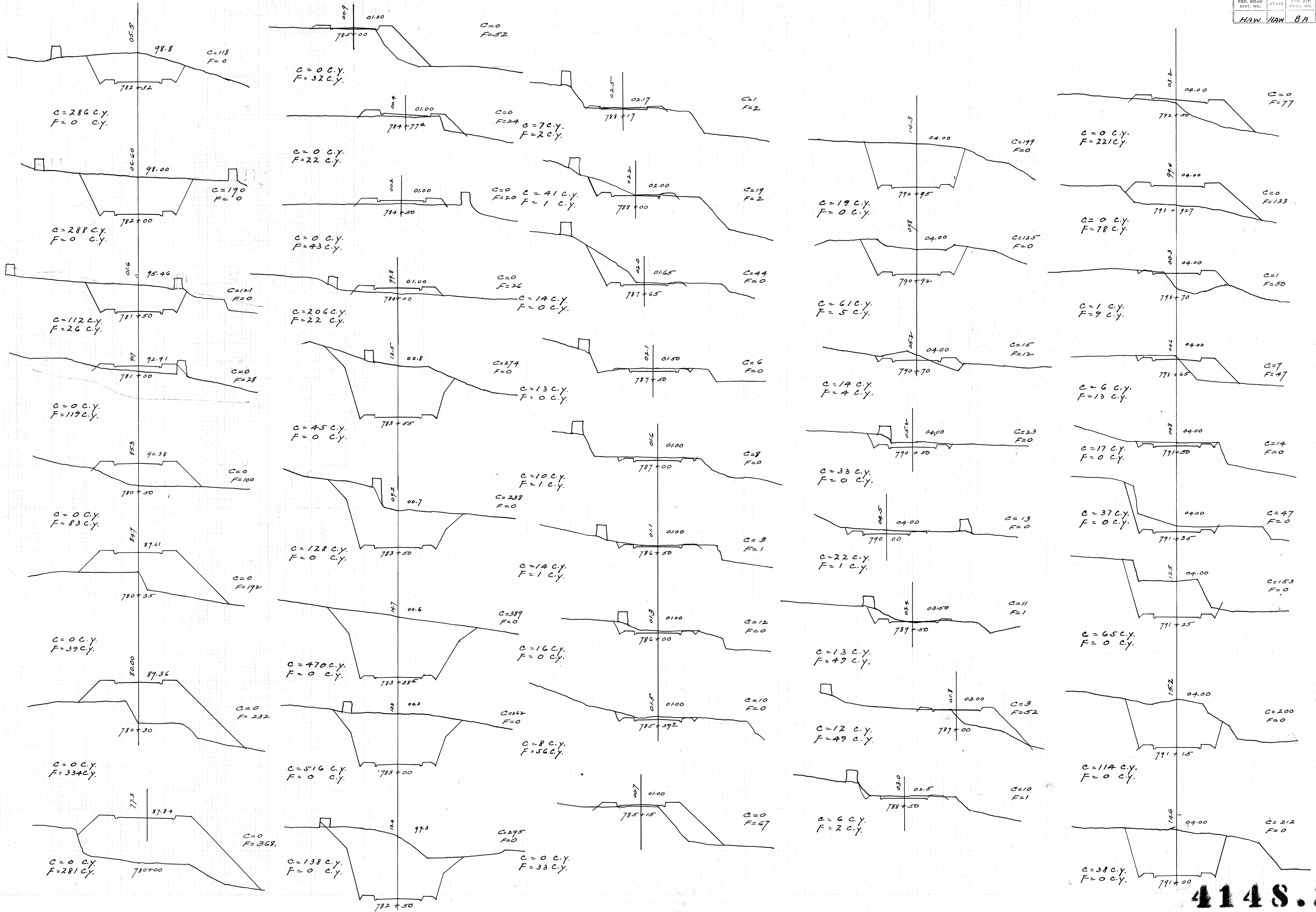
Plan No.	Pocket No.	Folder No.	Plan No.
6	10	2	

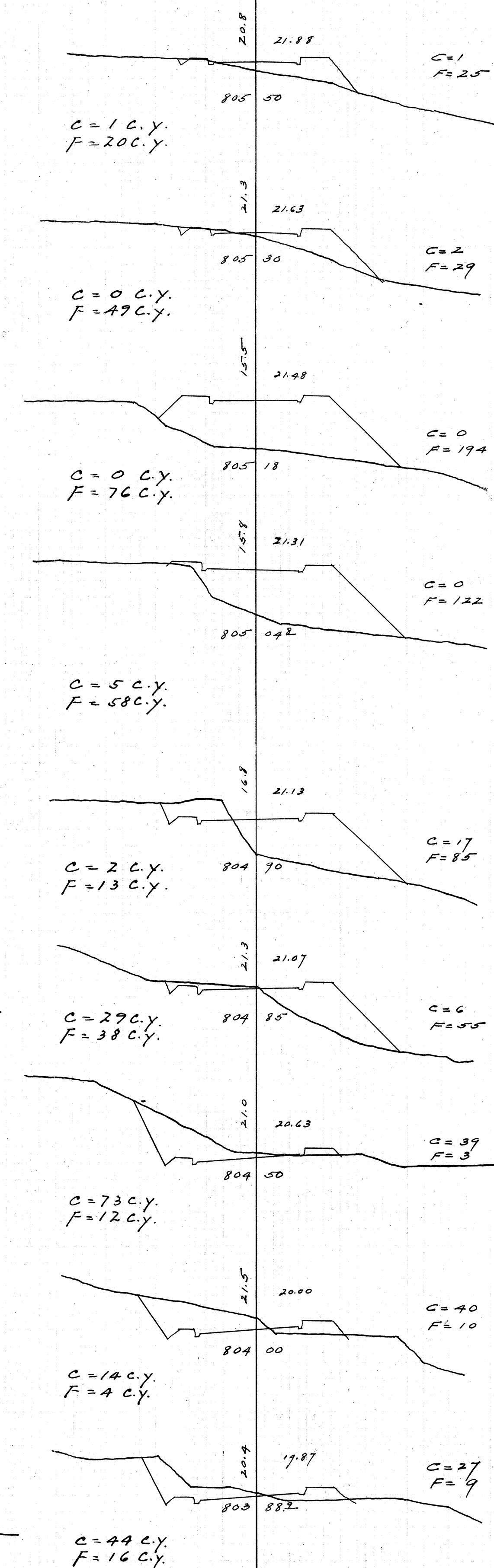
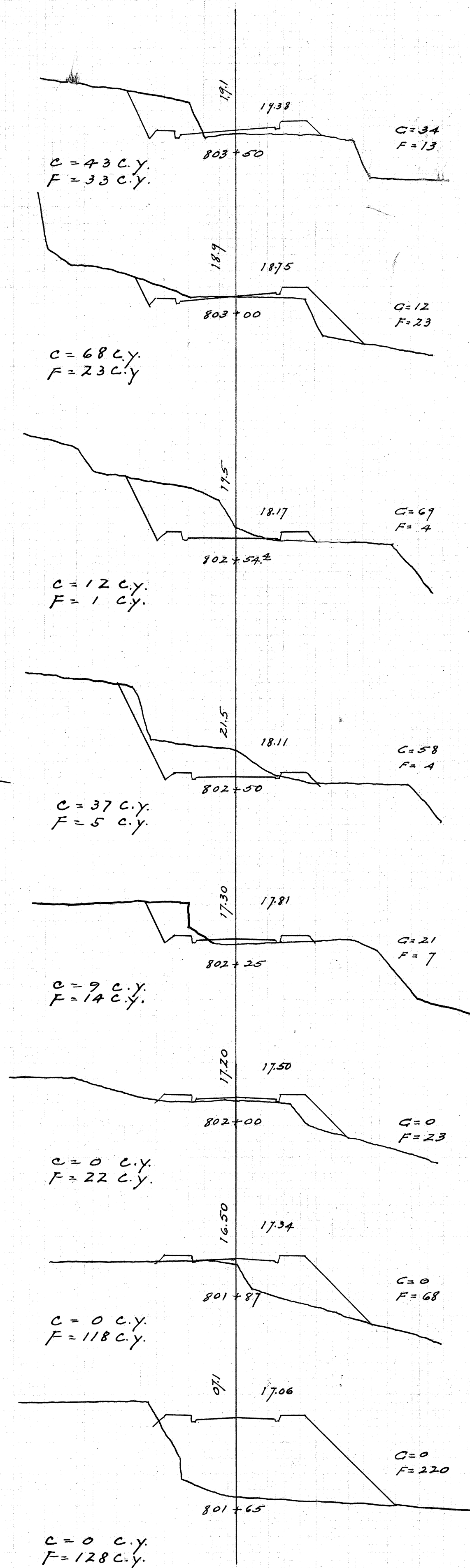
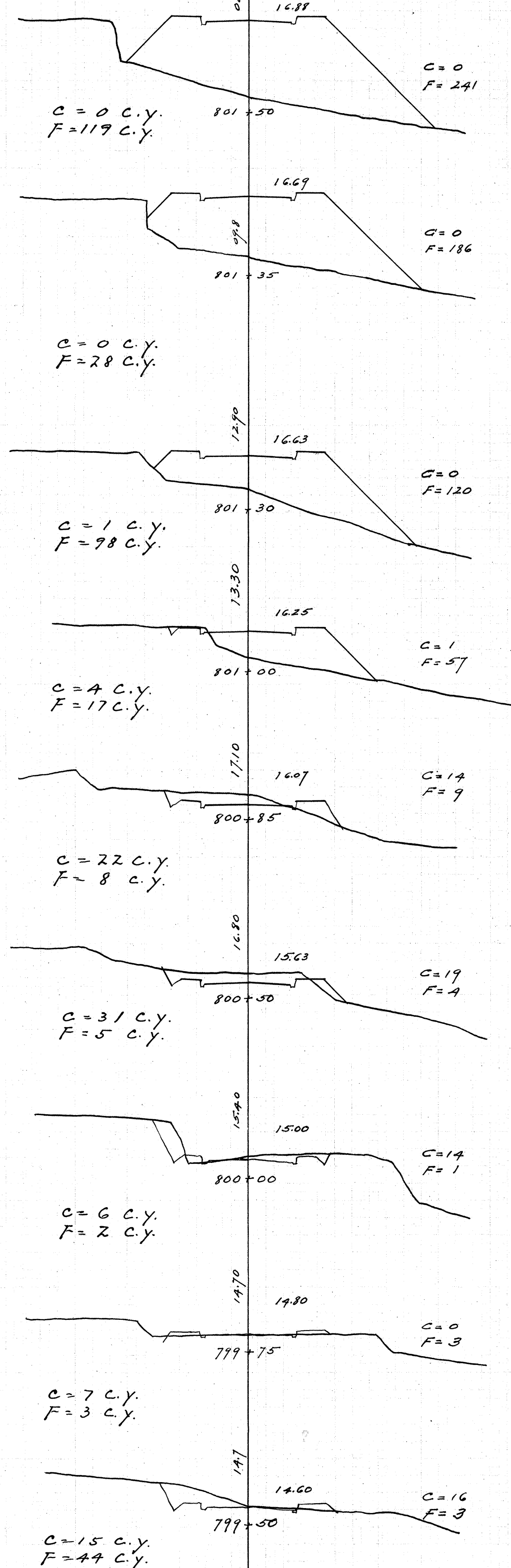
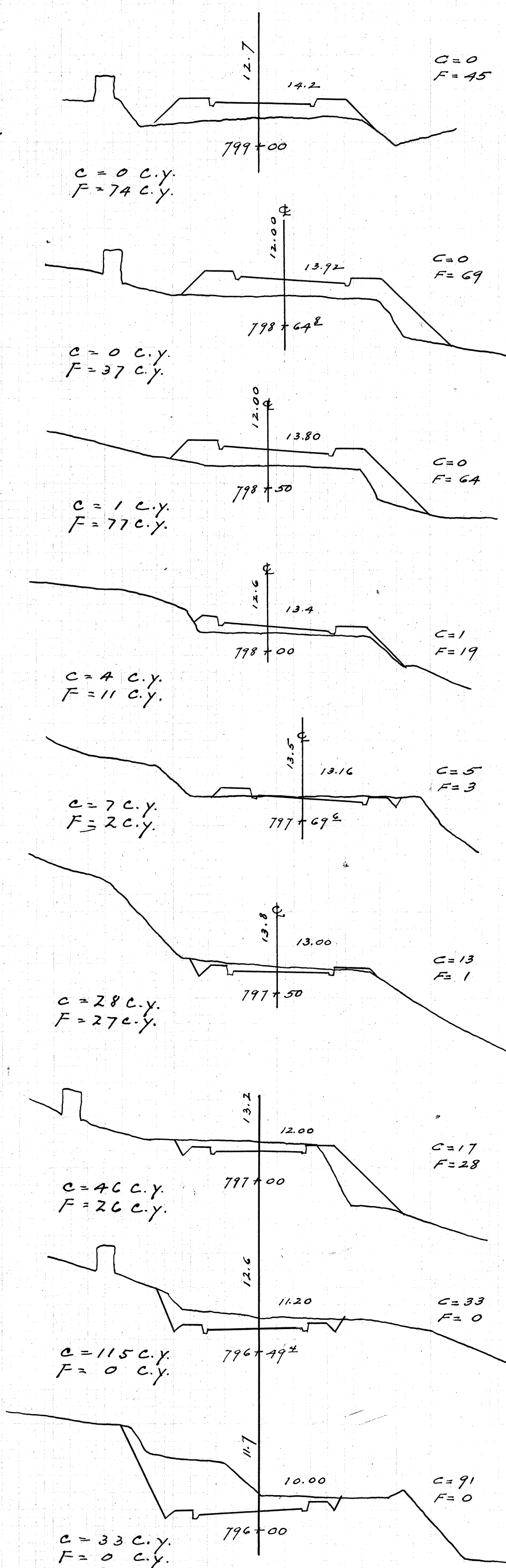
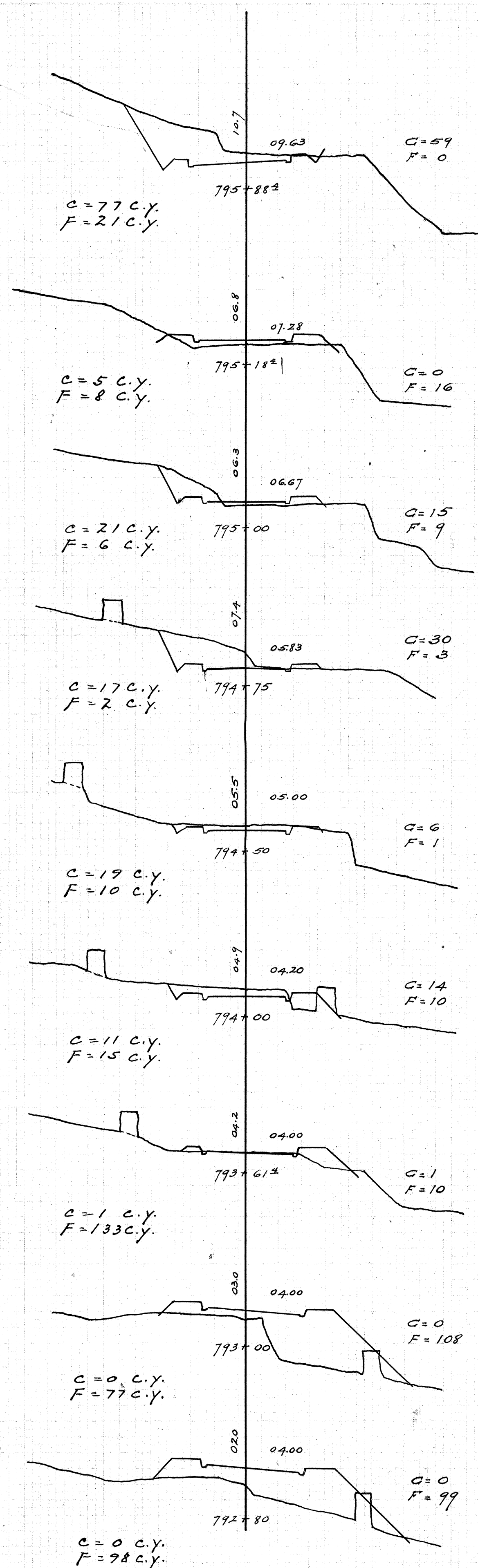


4148.24

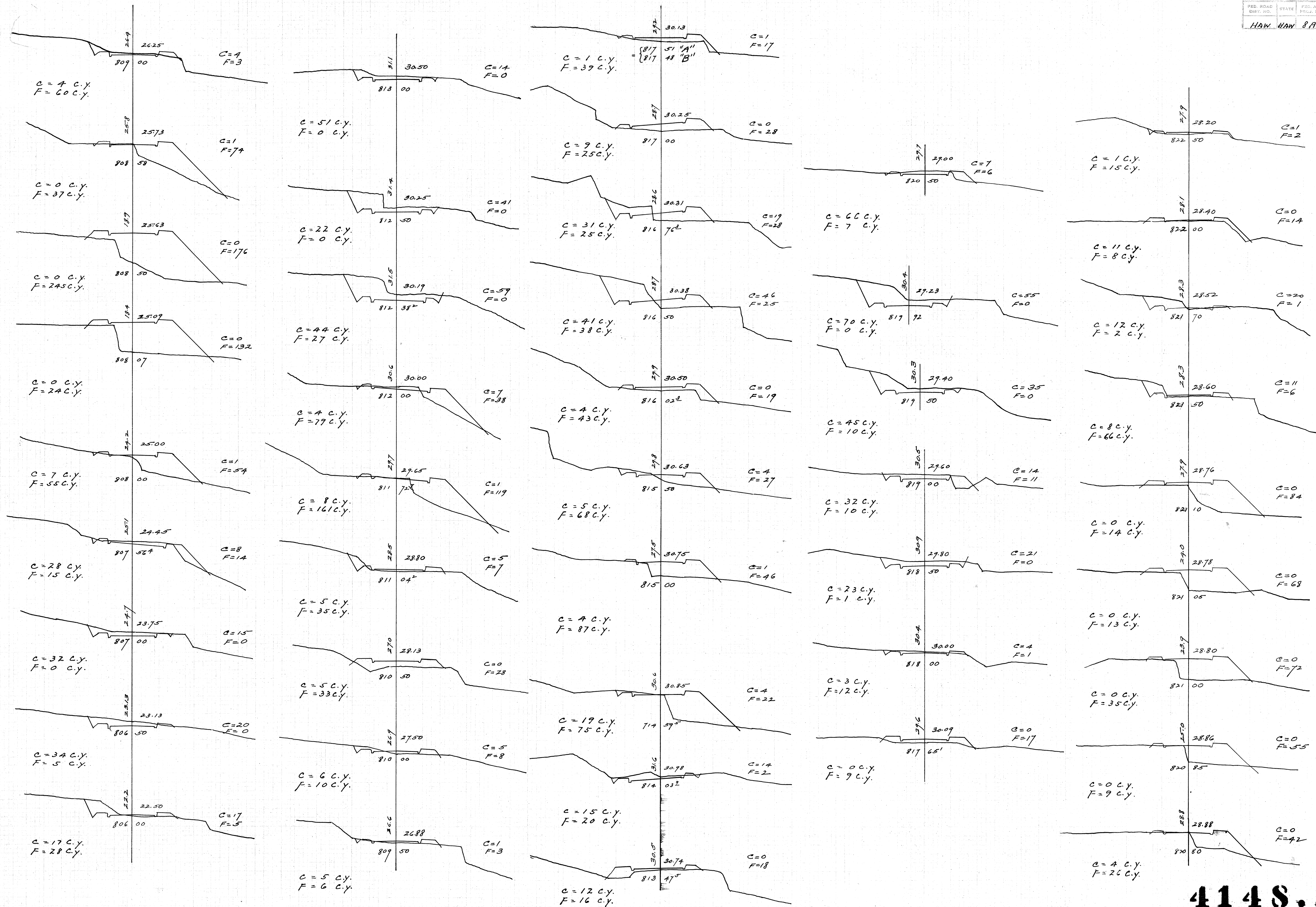


4148.25

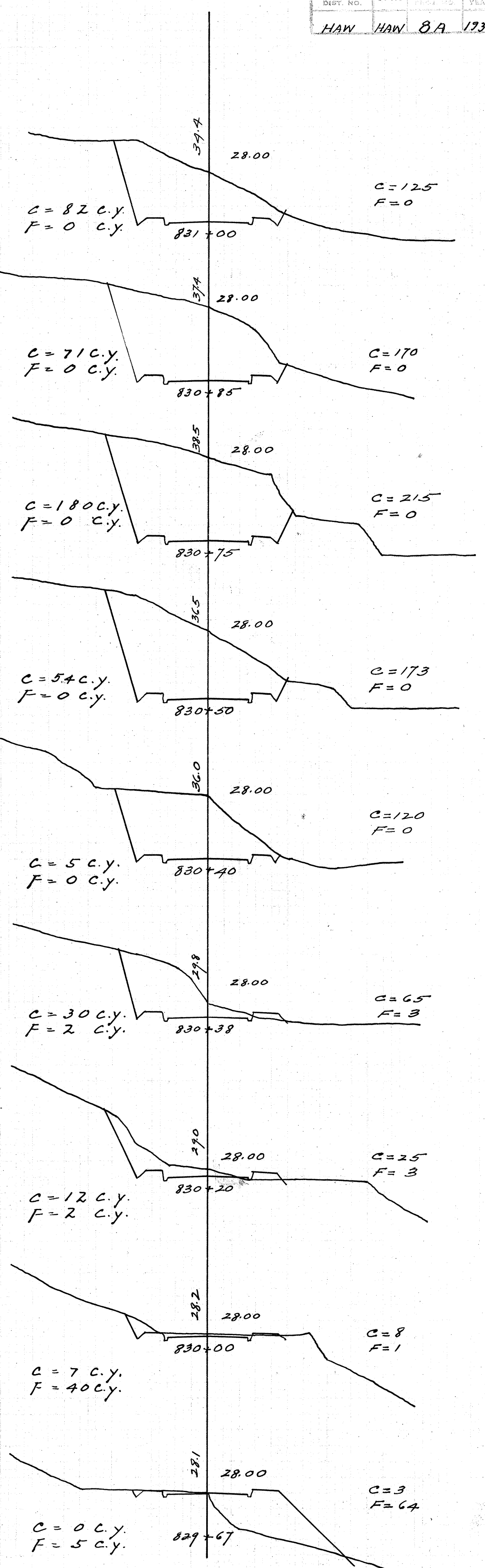
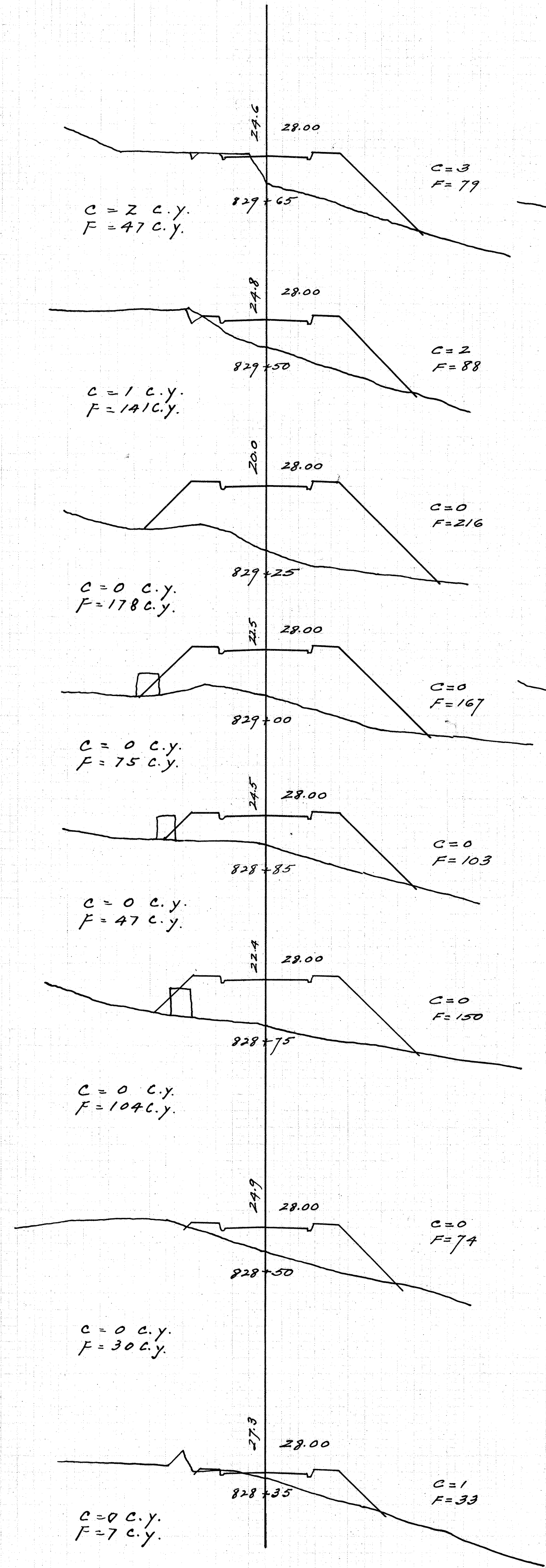
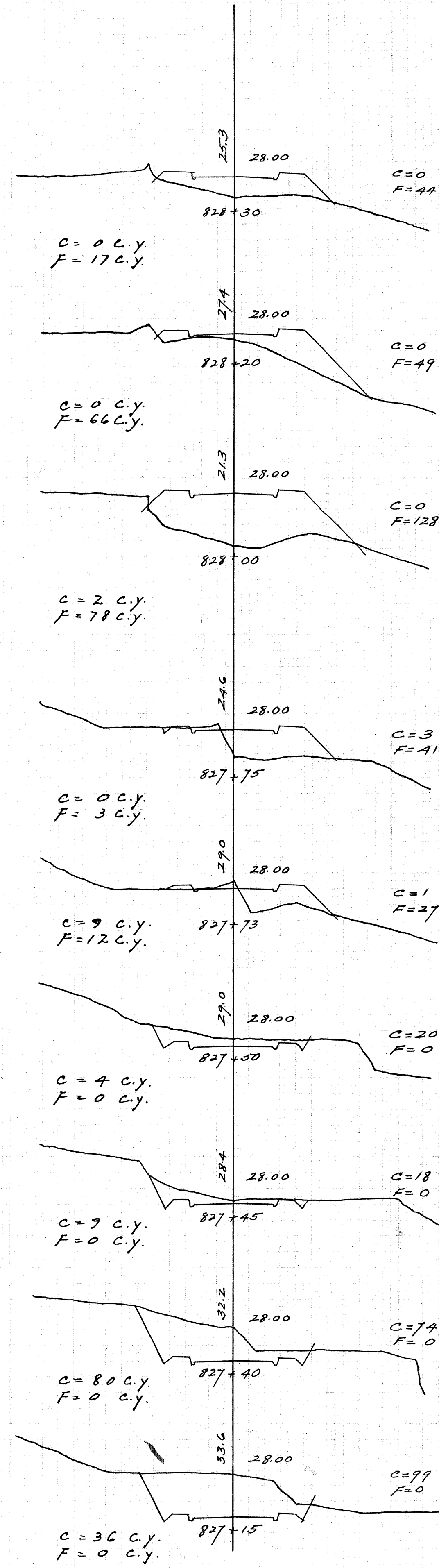
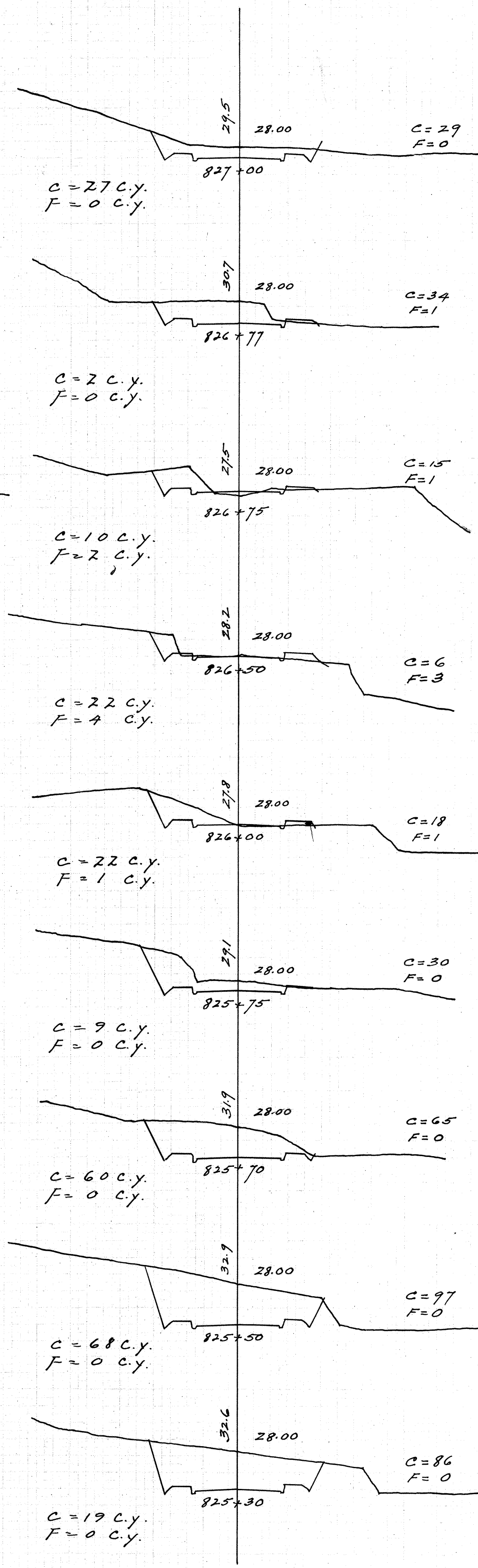
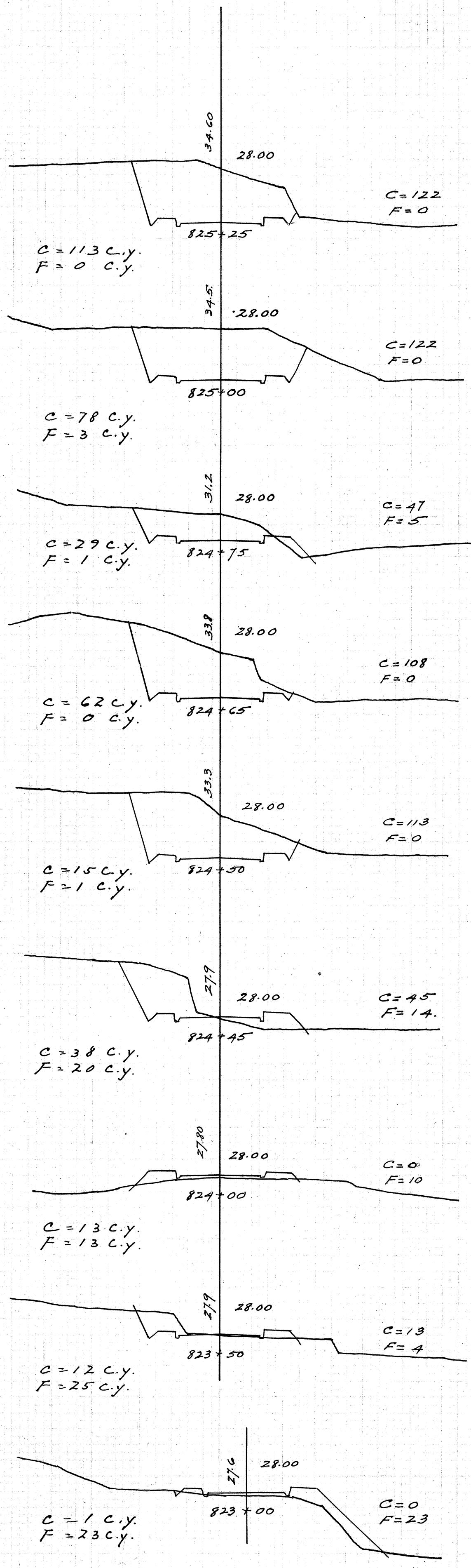


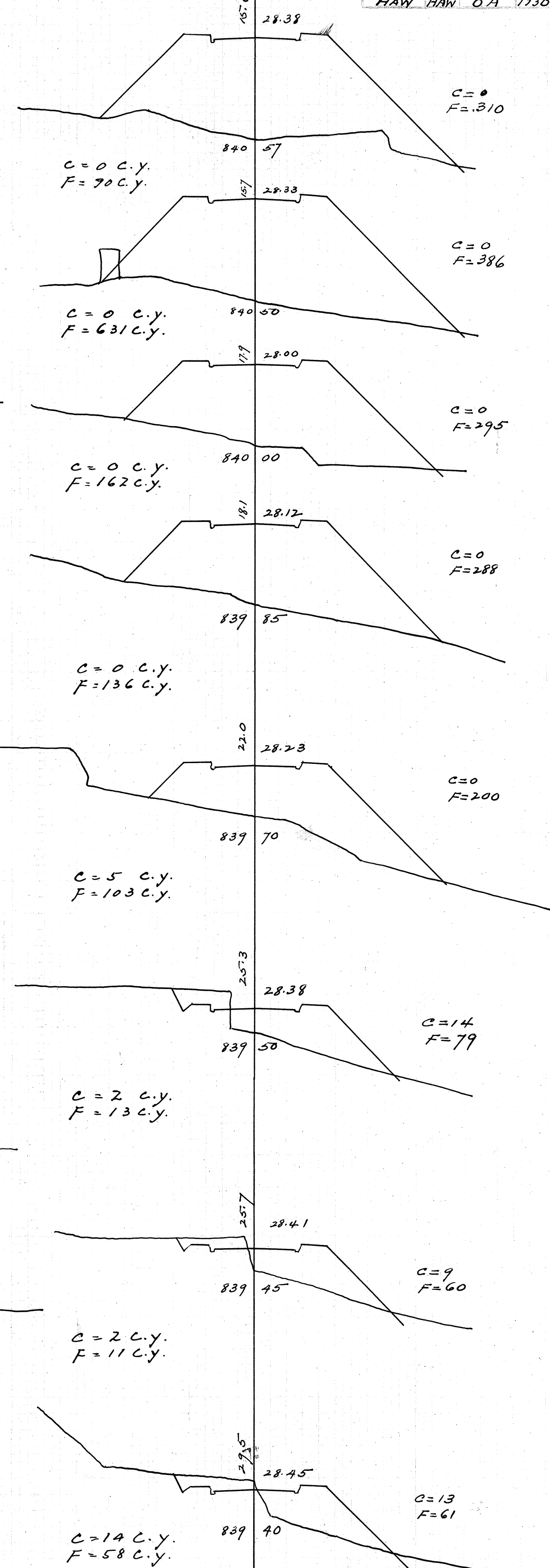
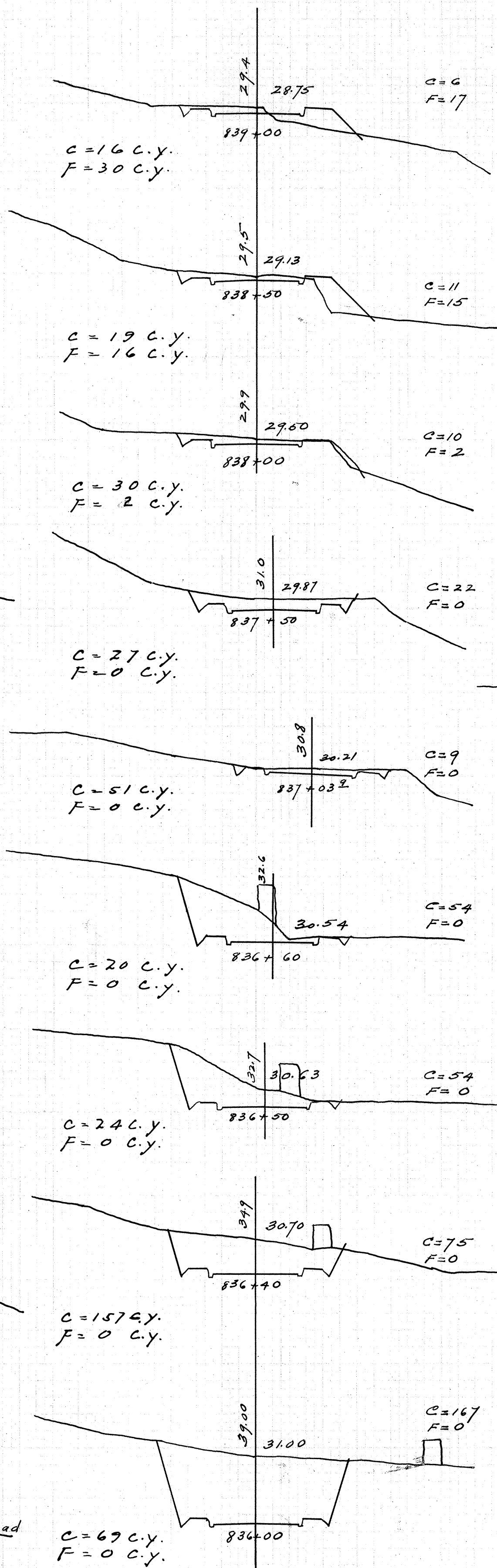
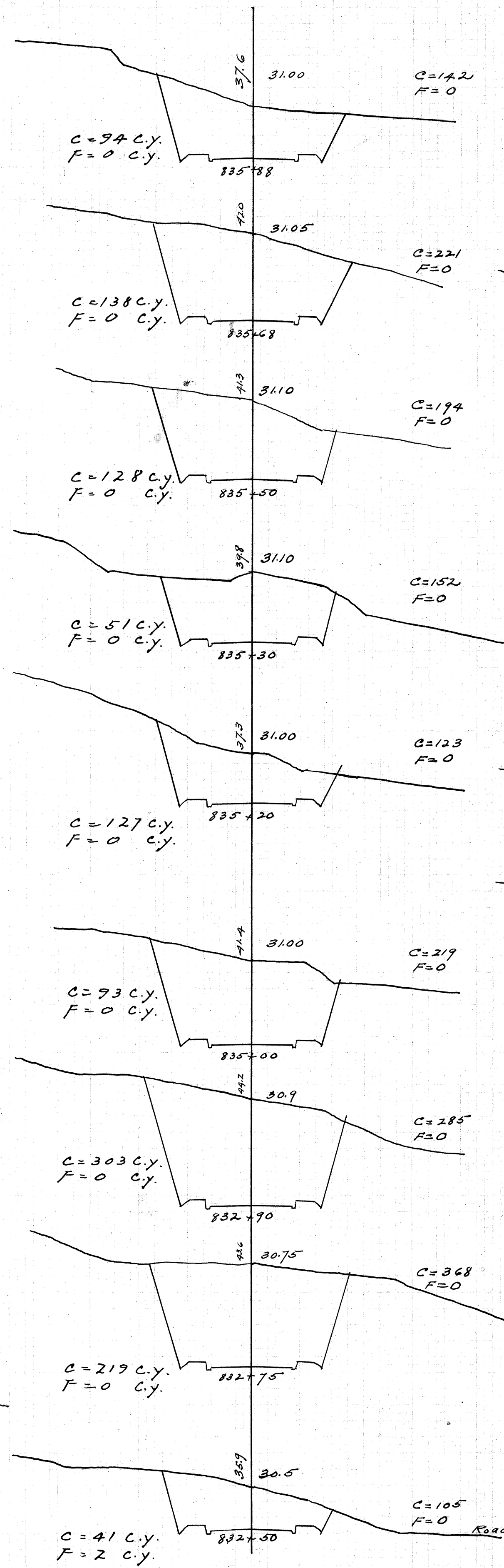
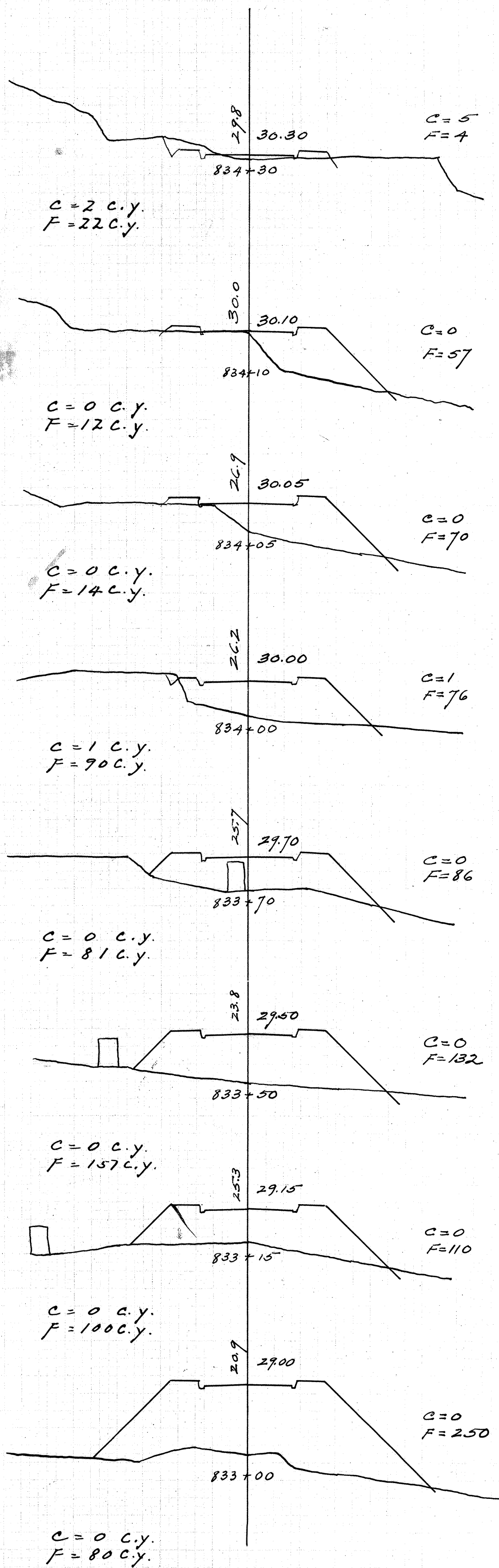
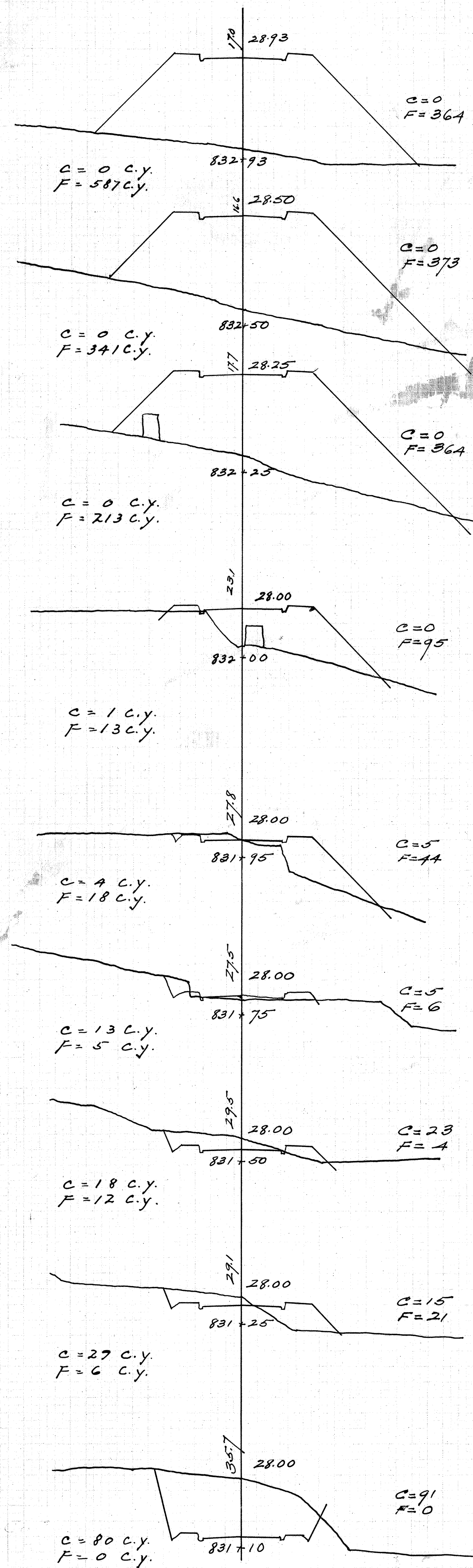


4148.27

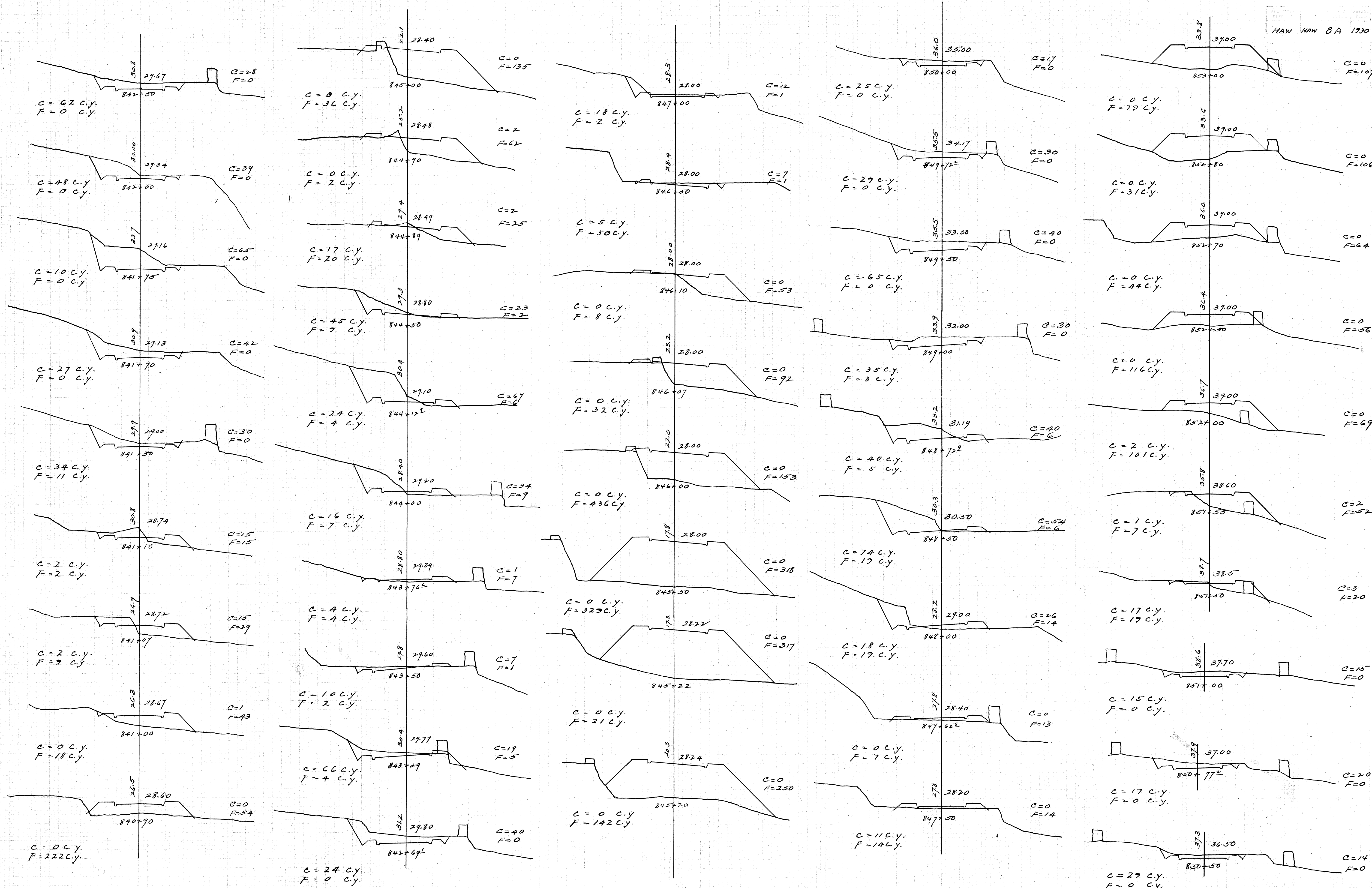


4148.28

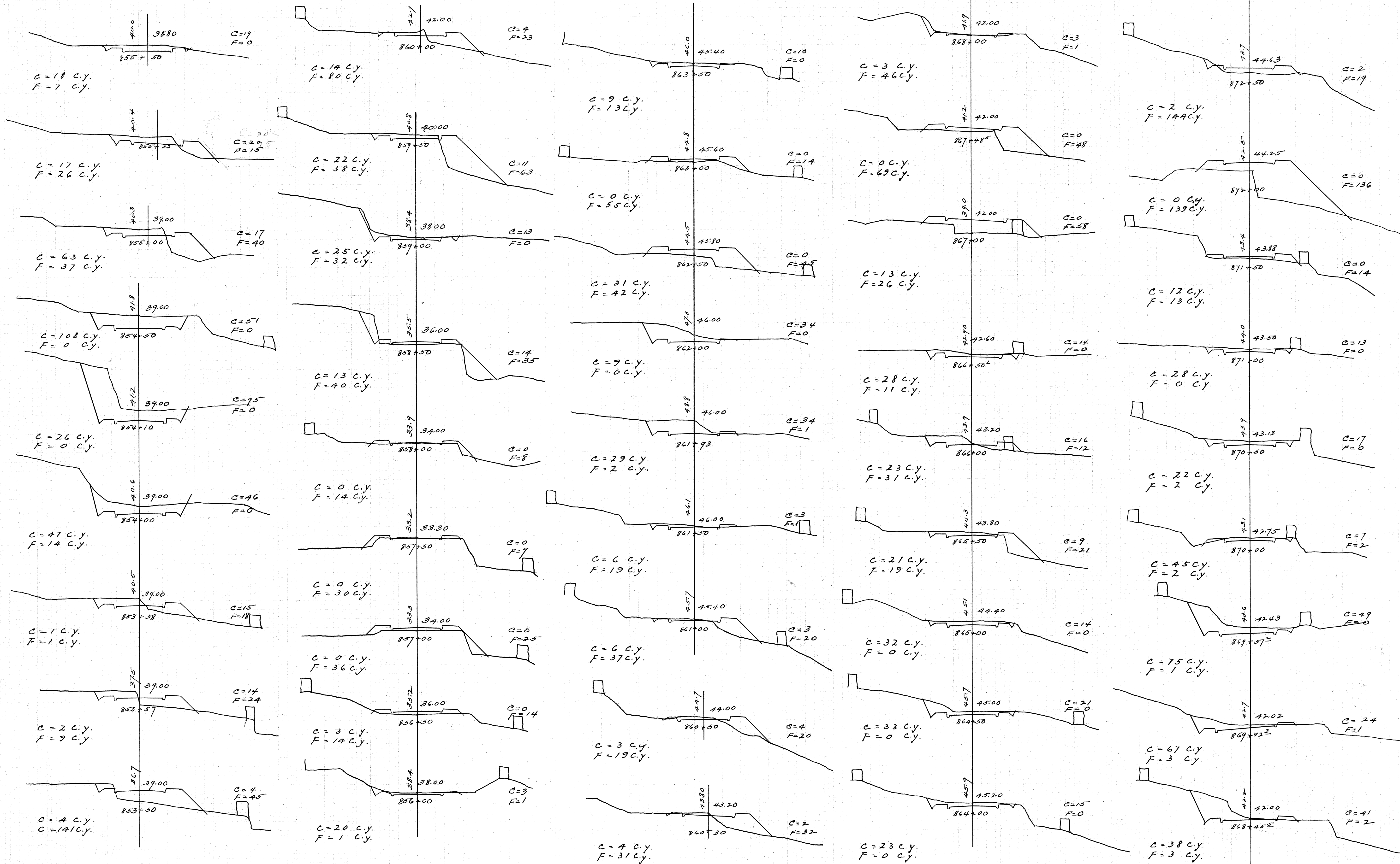




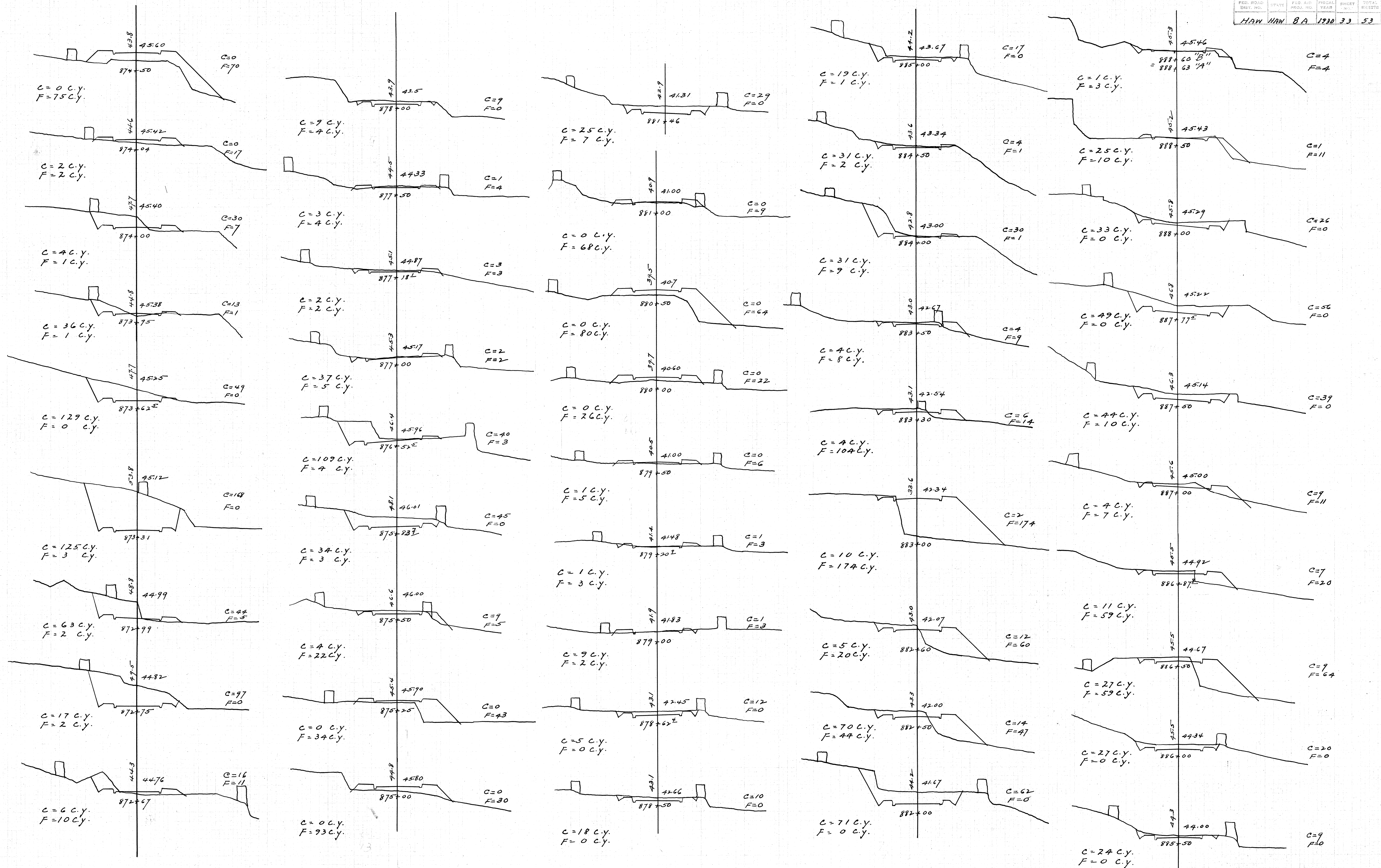
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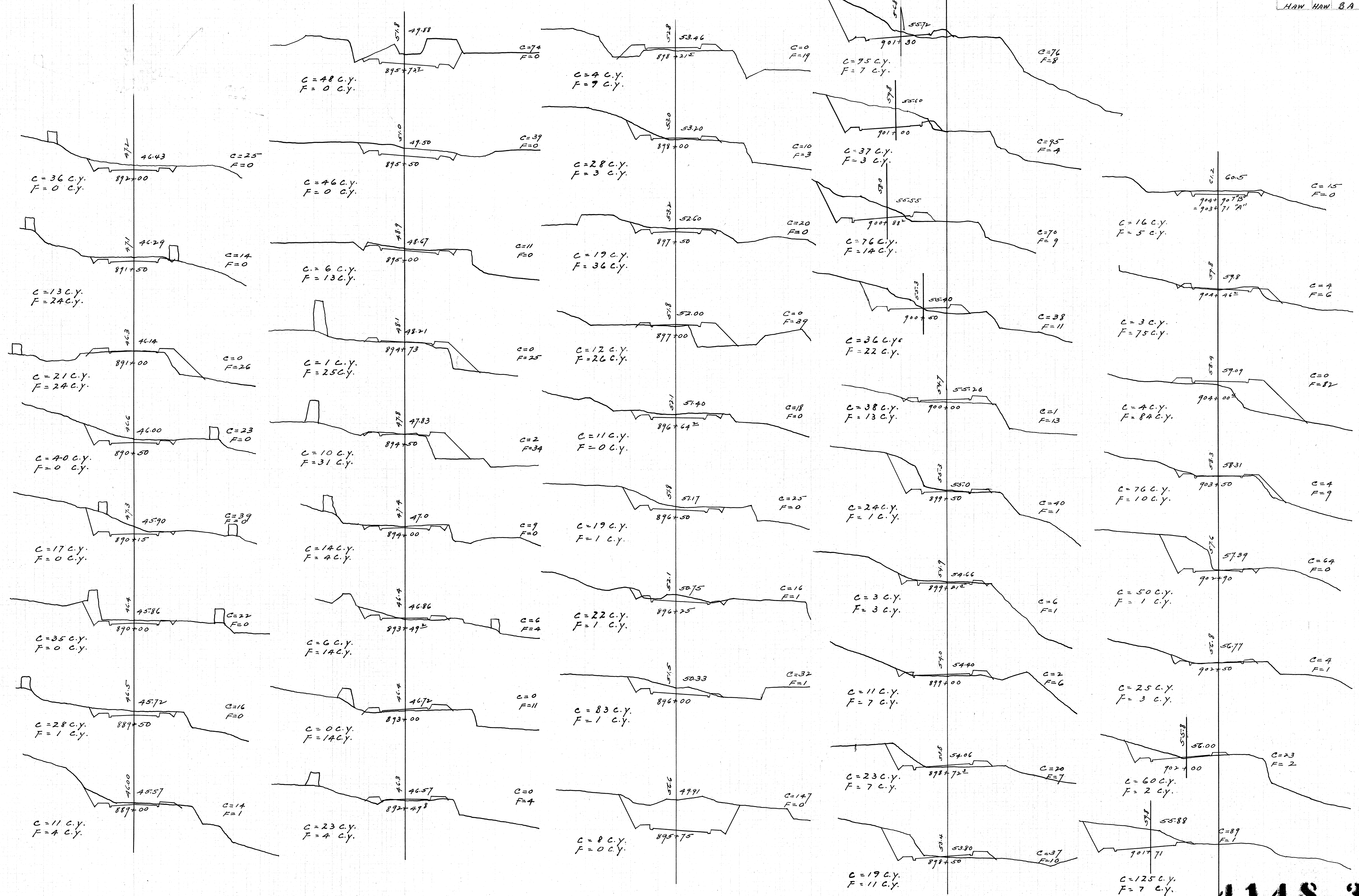
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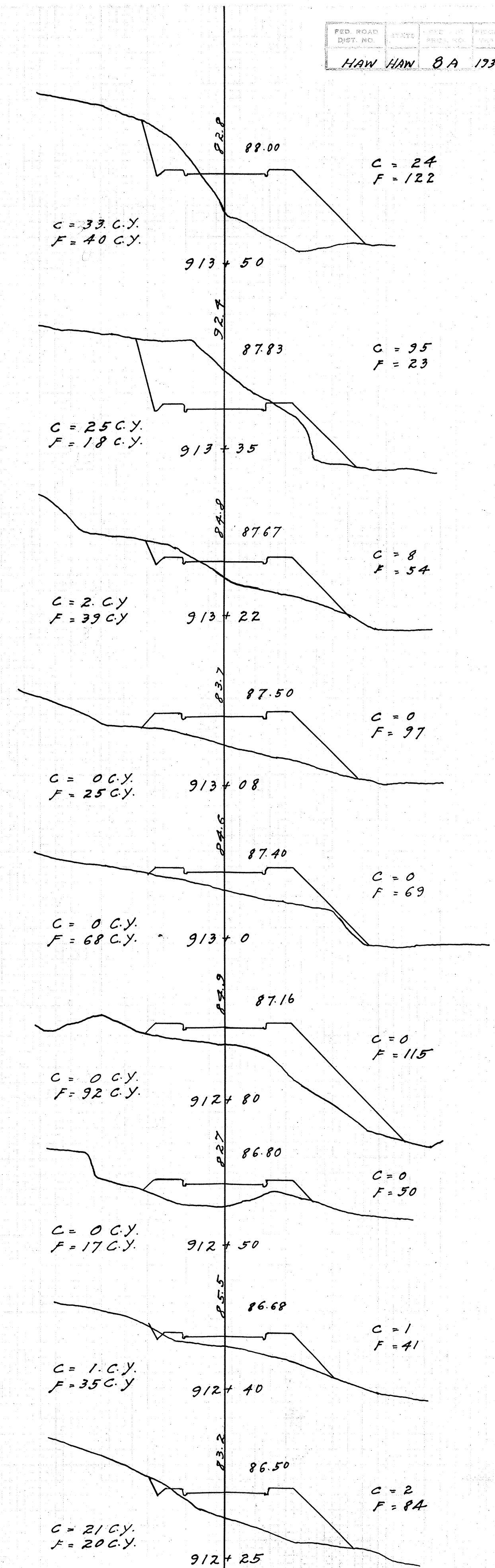
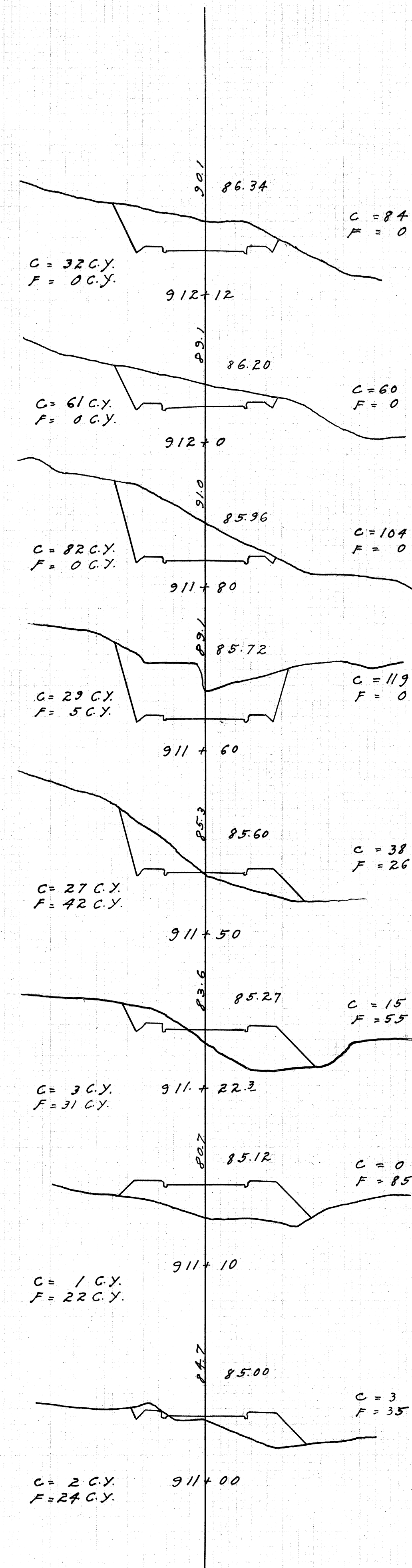
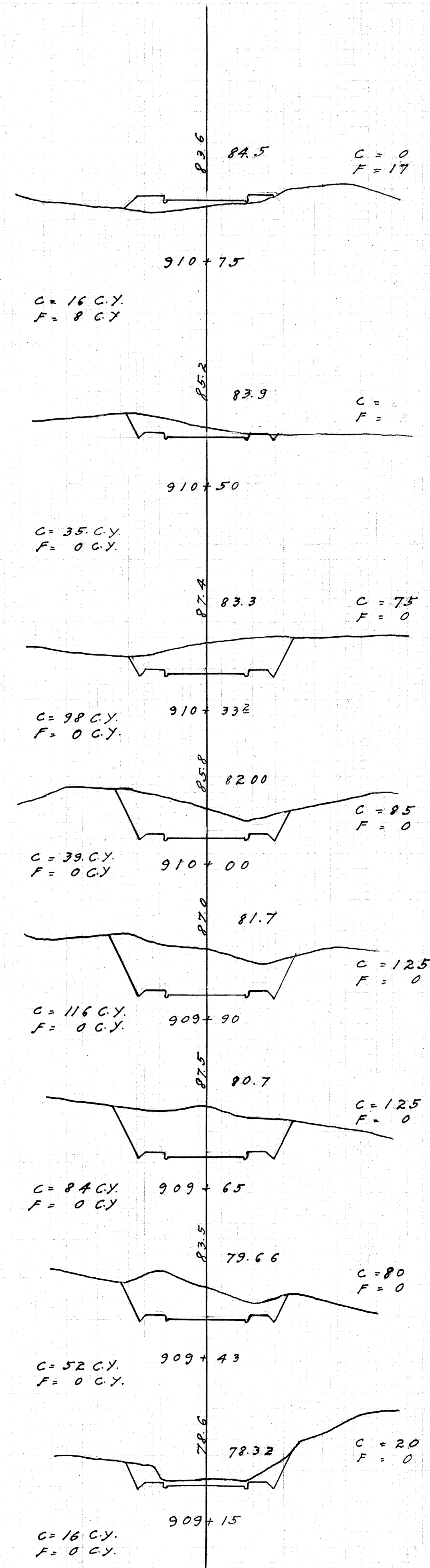
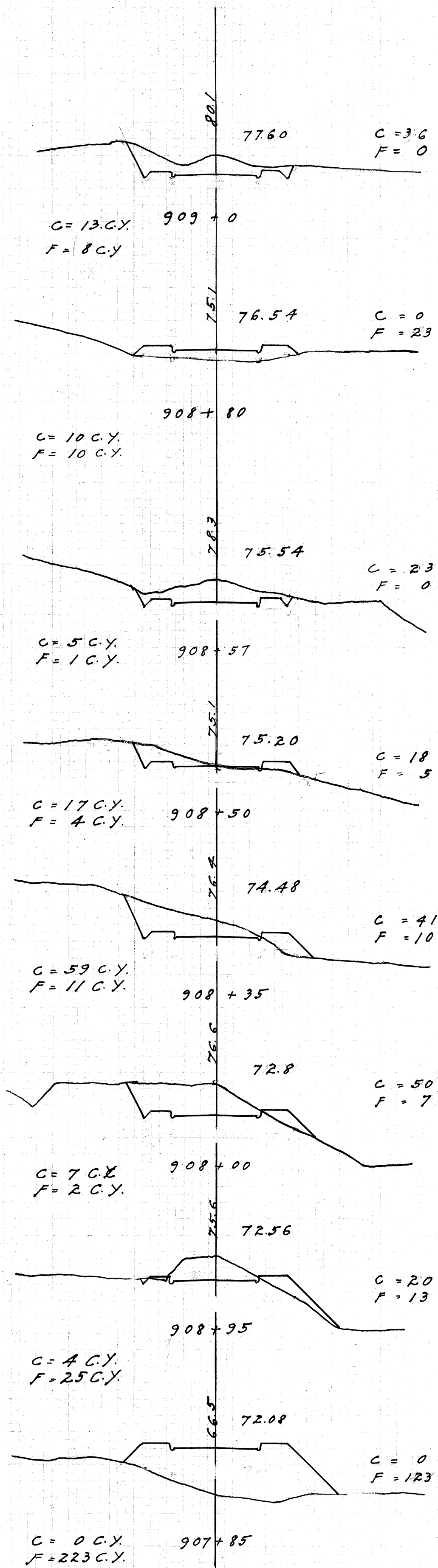
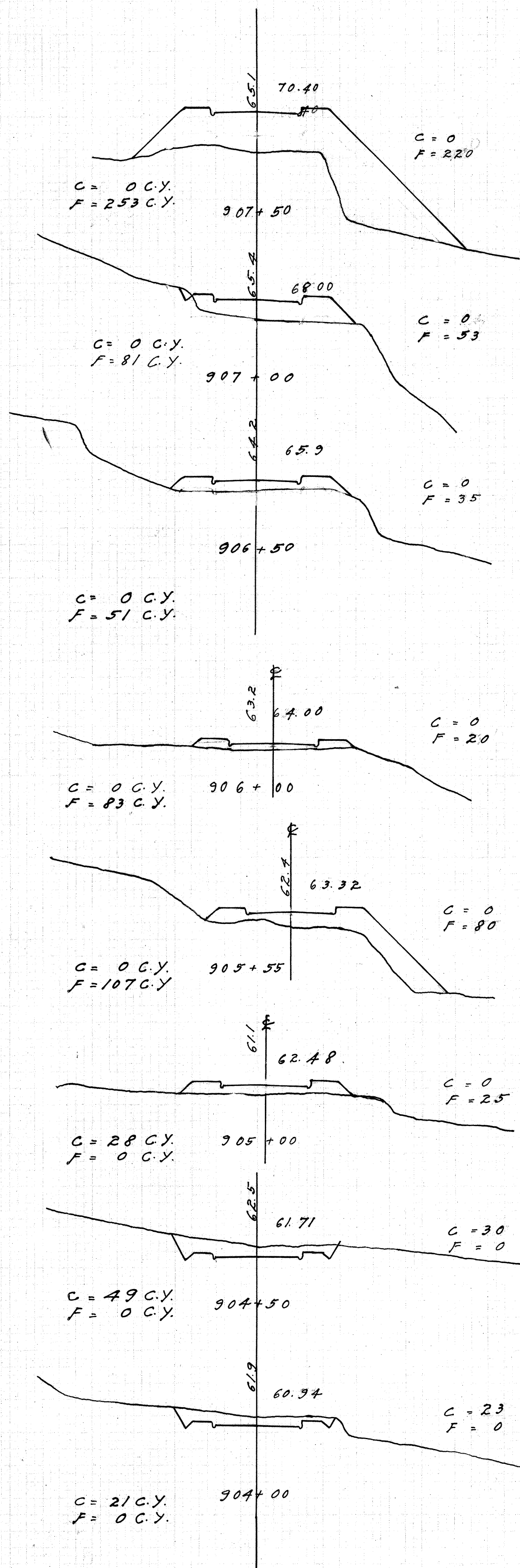
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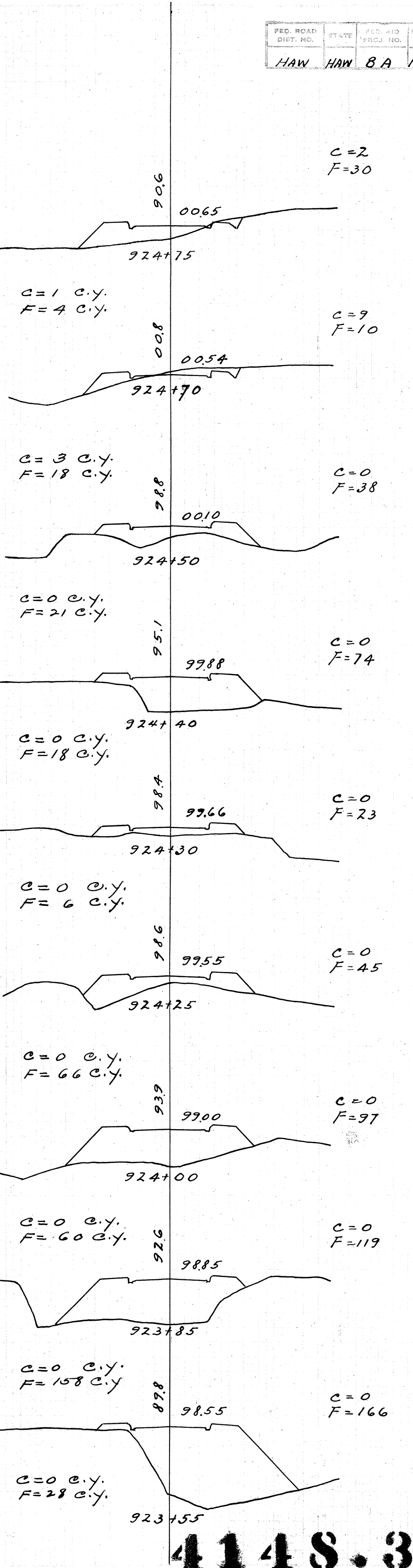
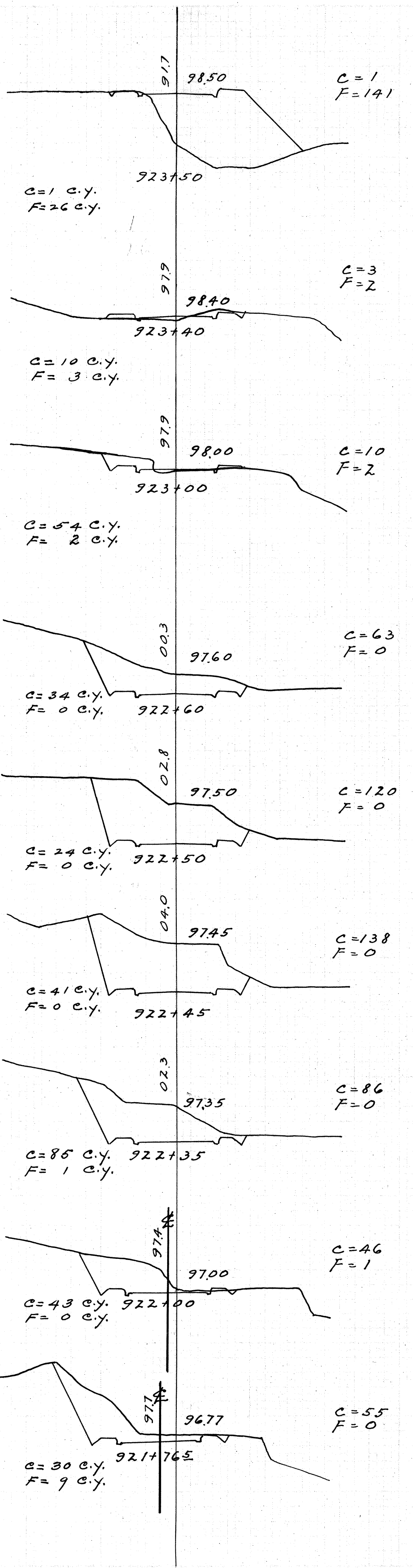
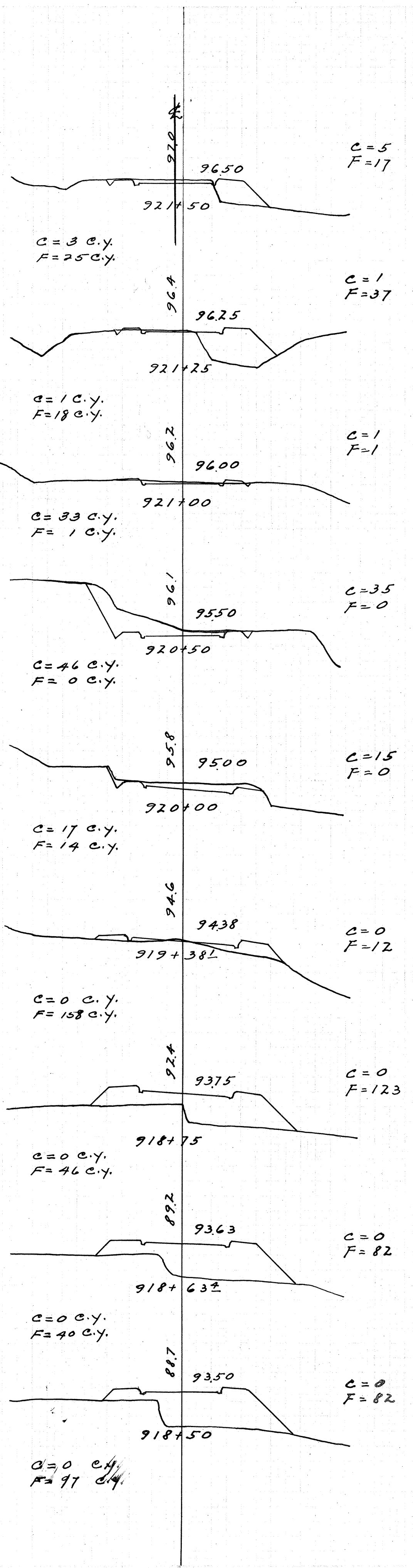
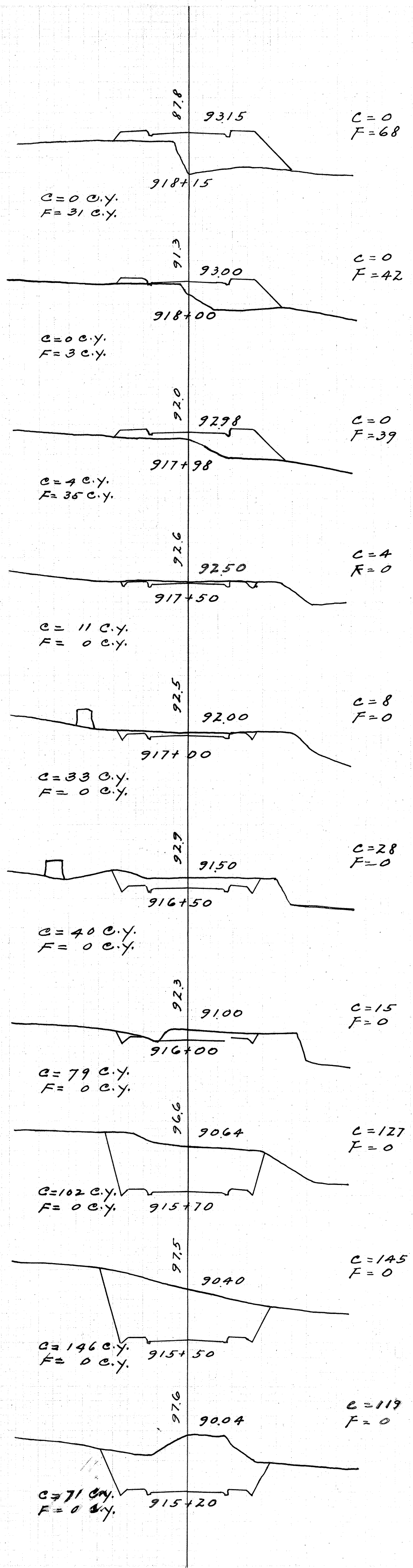
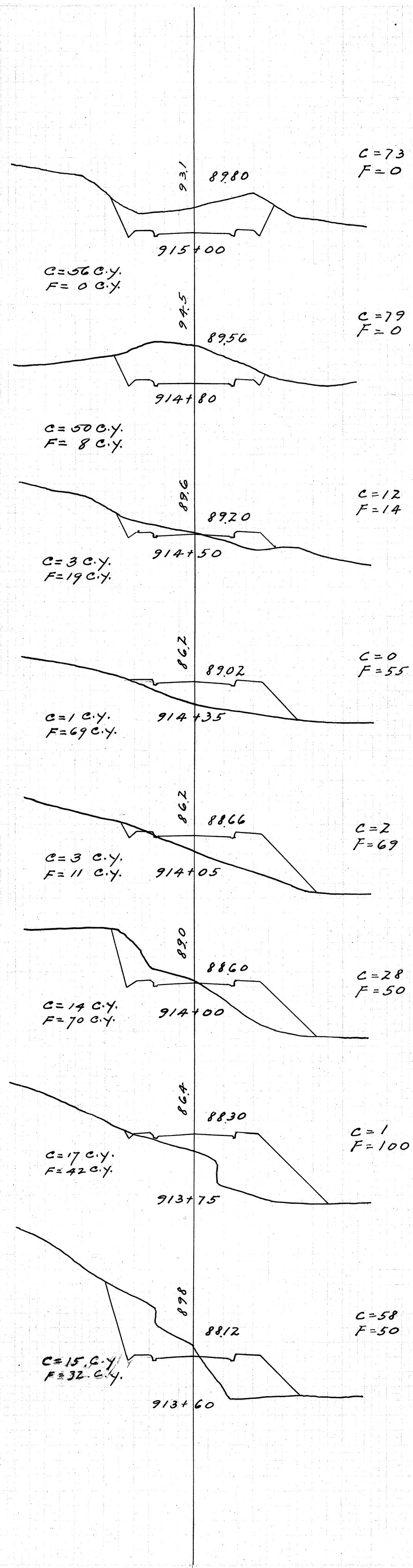
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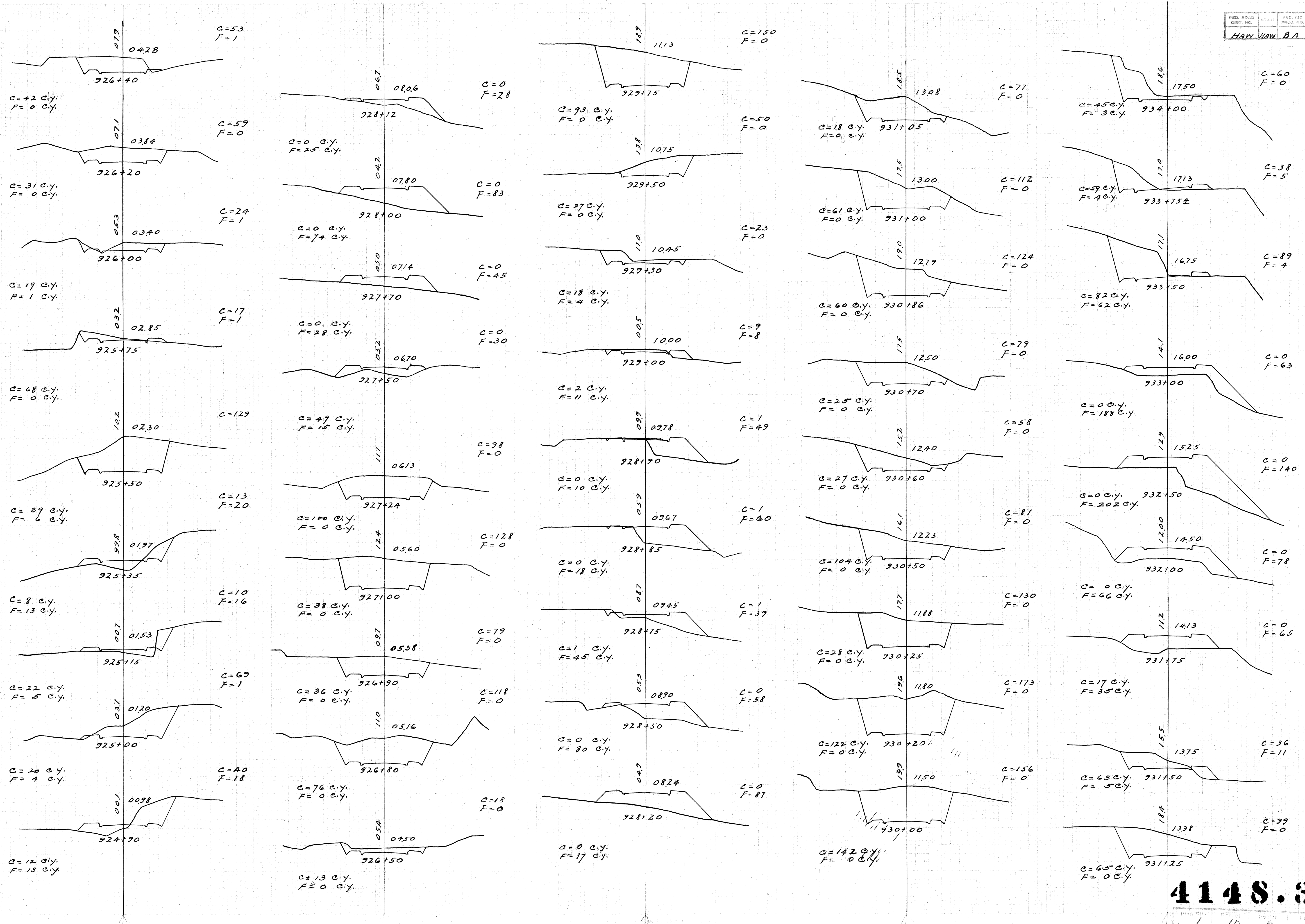


4148.34

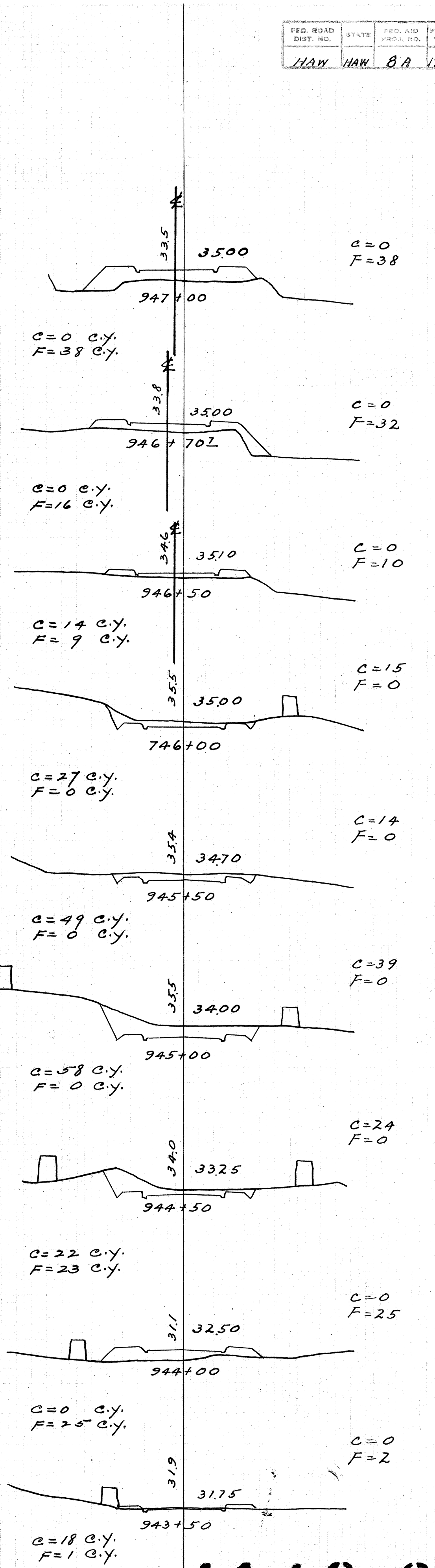
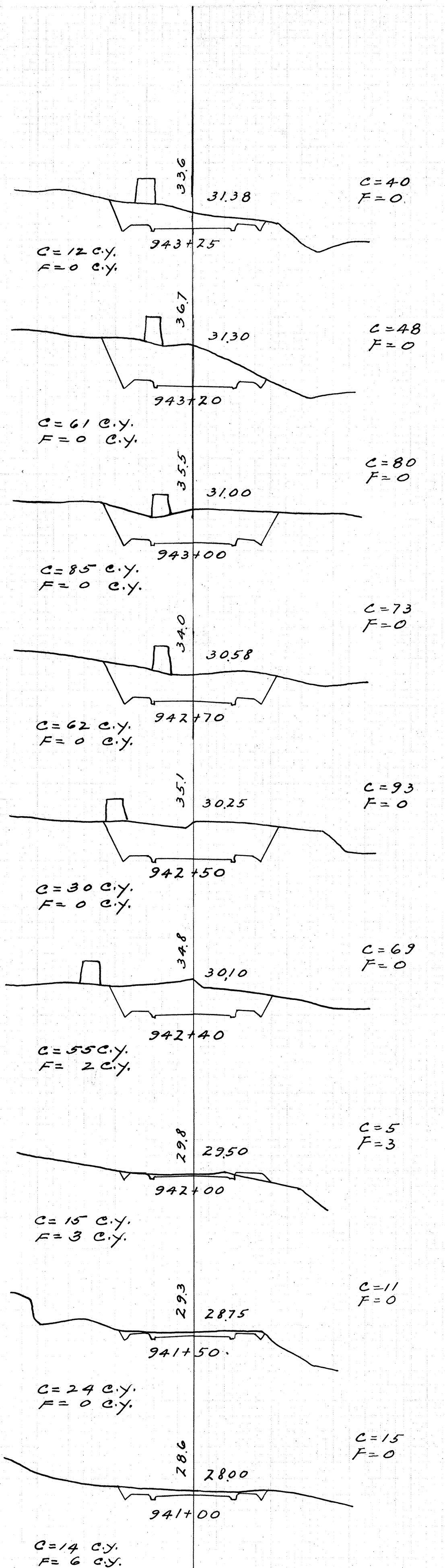
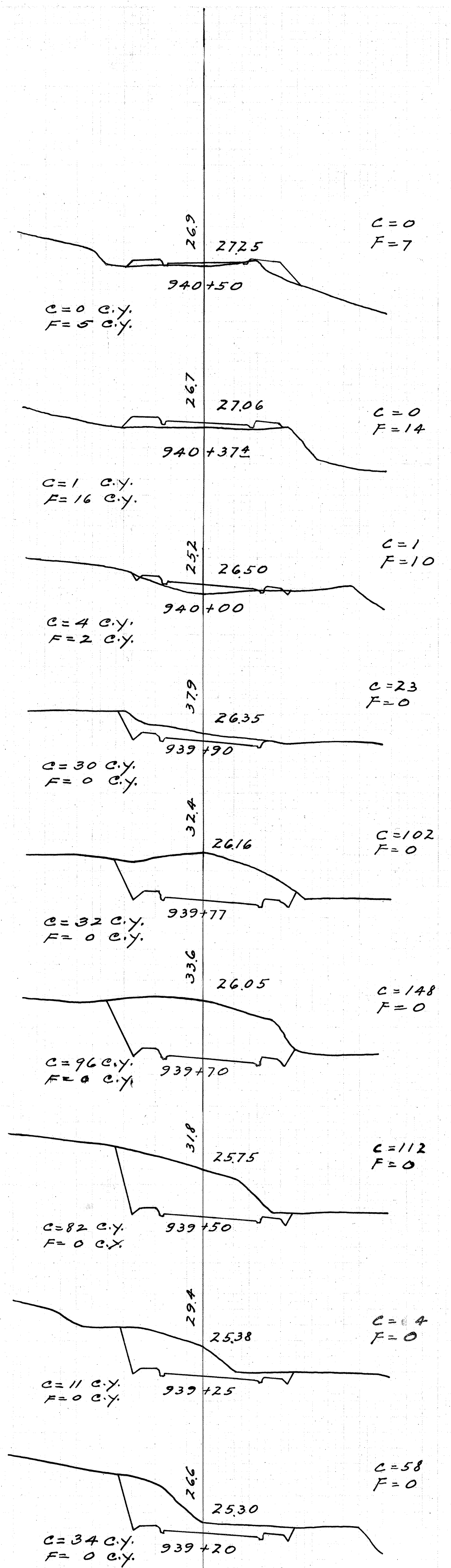
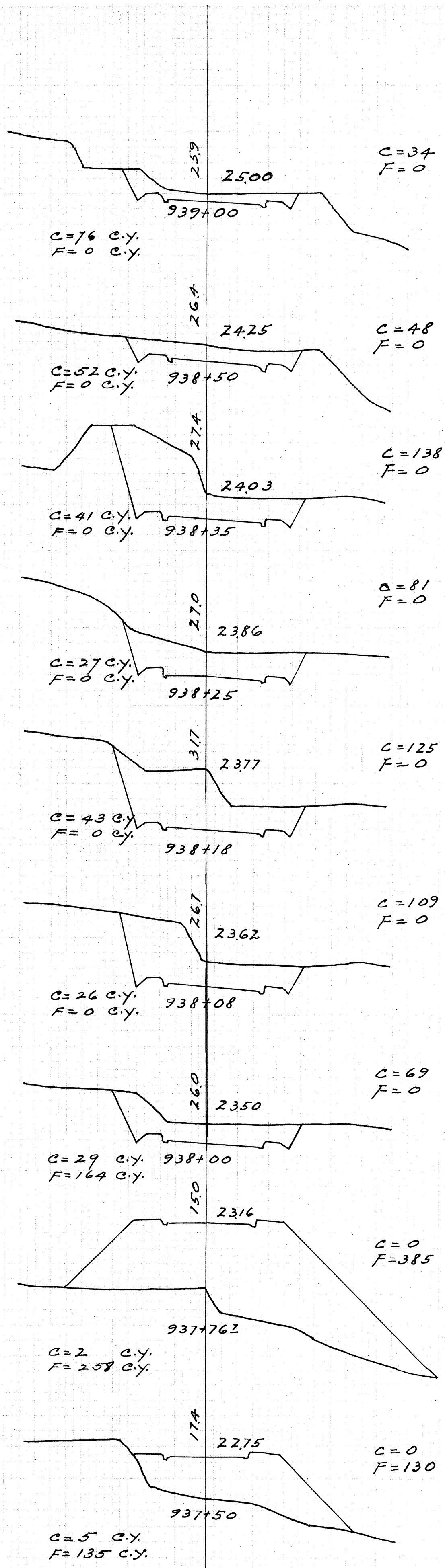
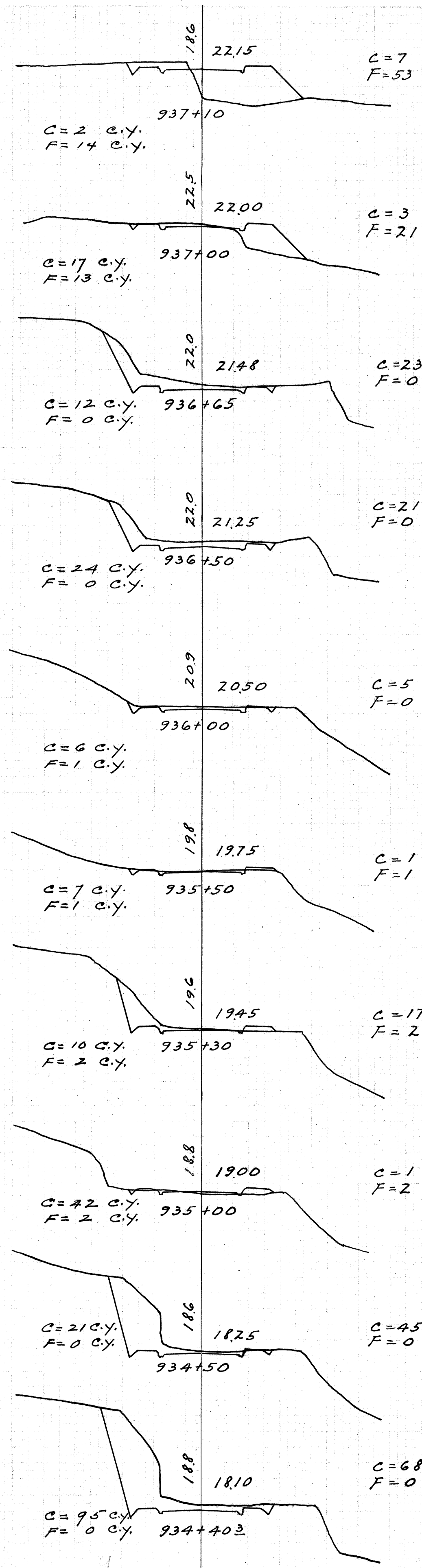


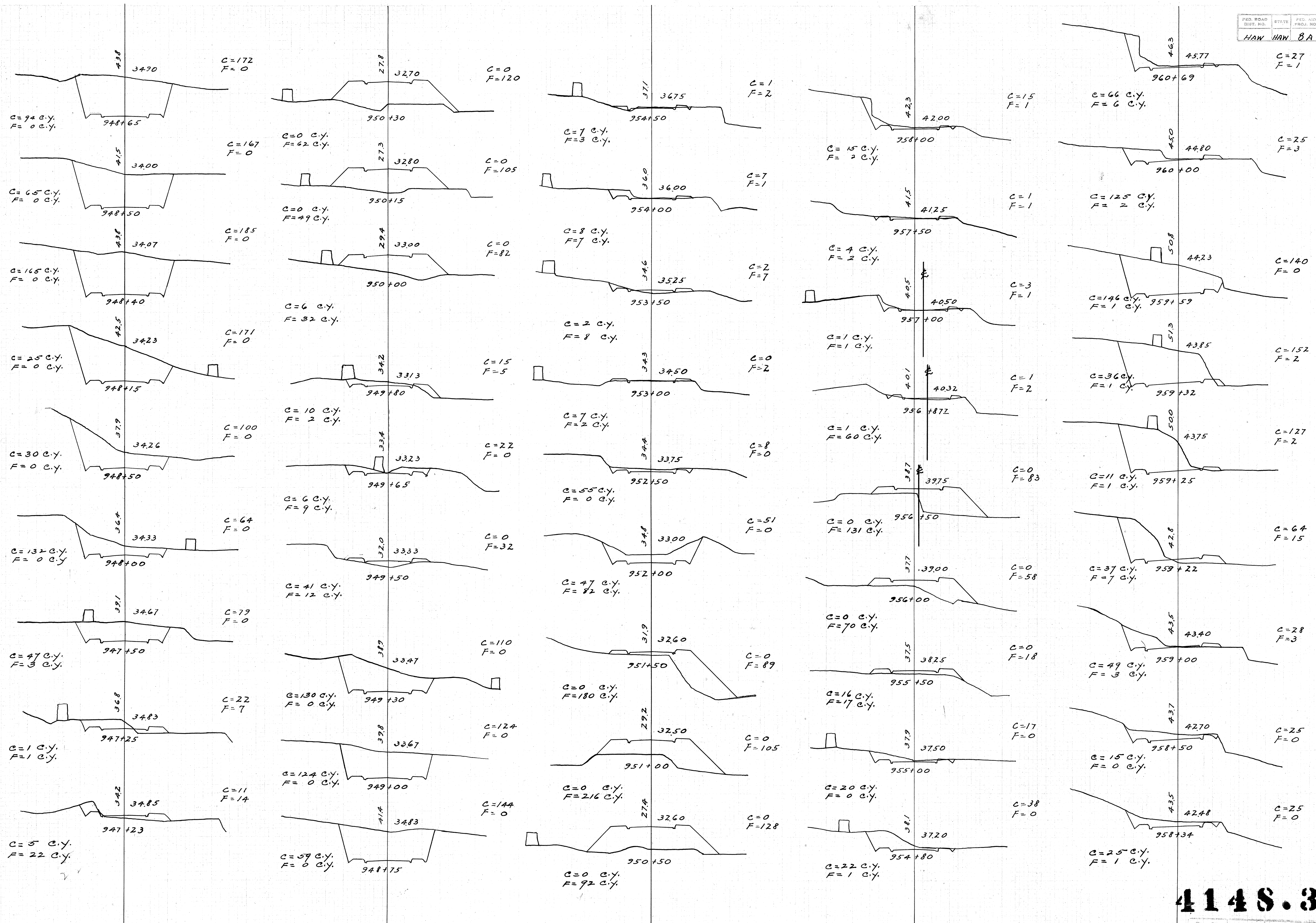
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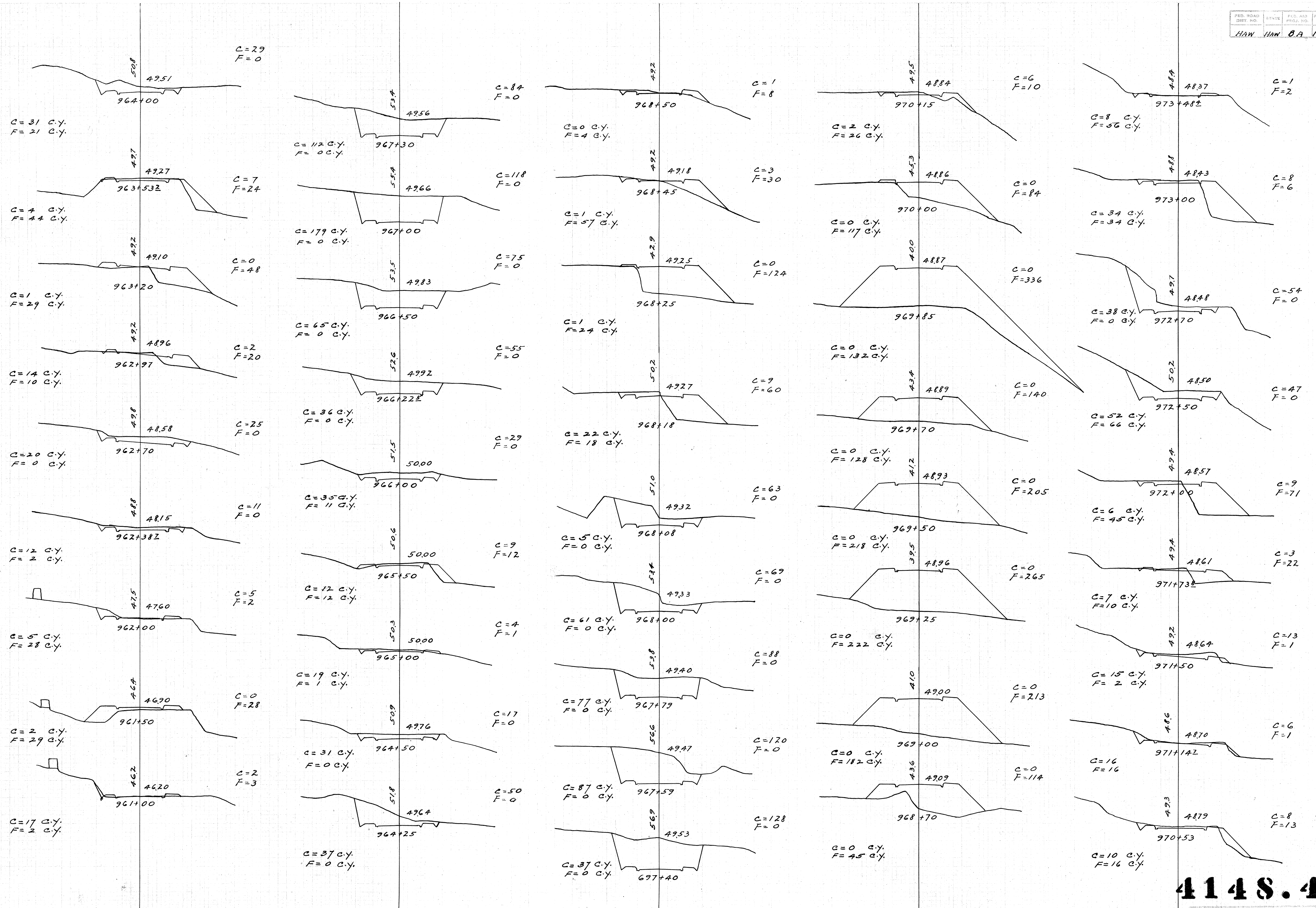


4148.37

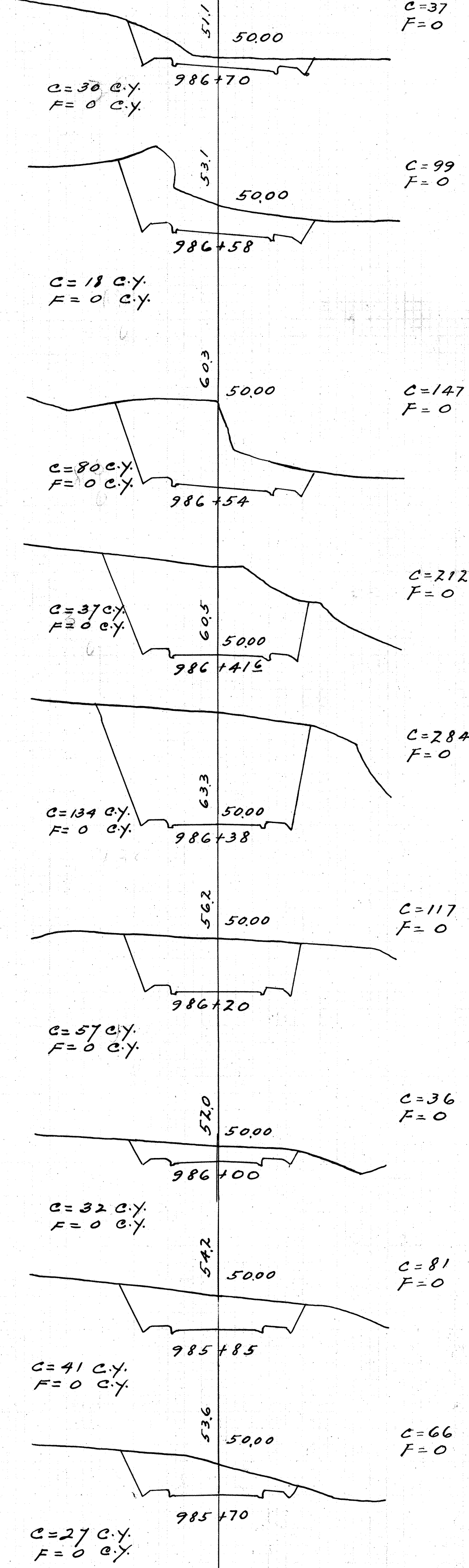
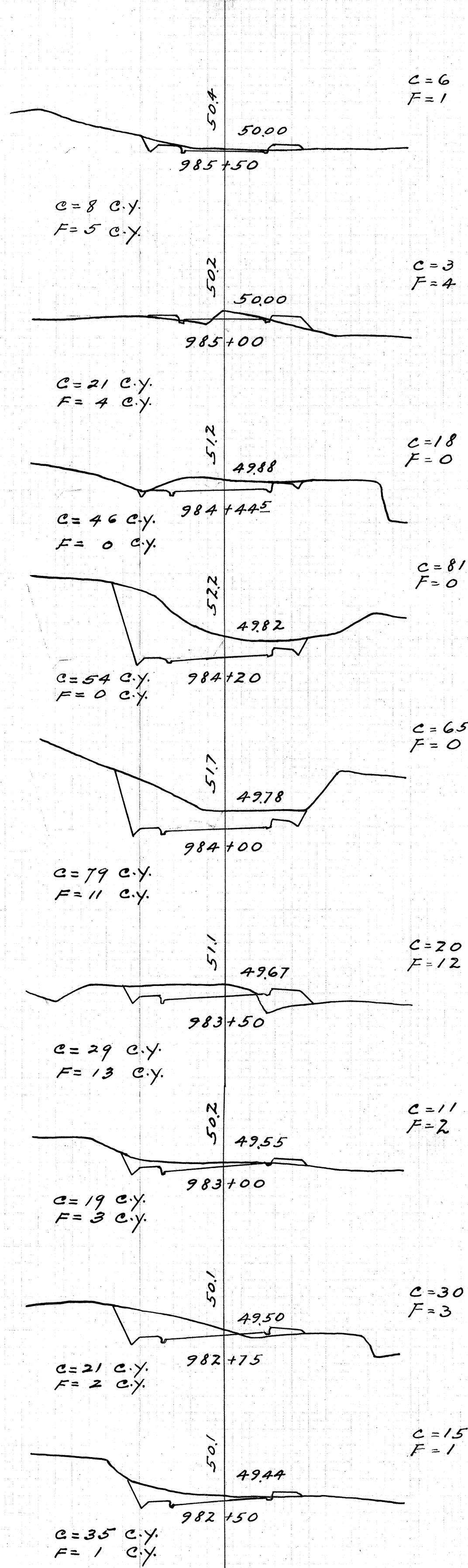
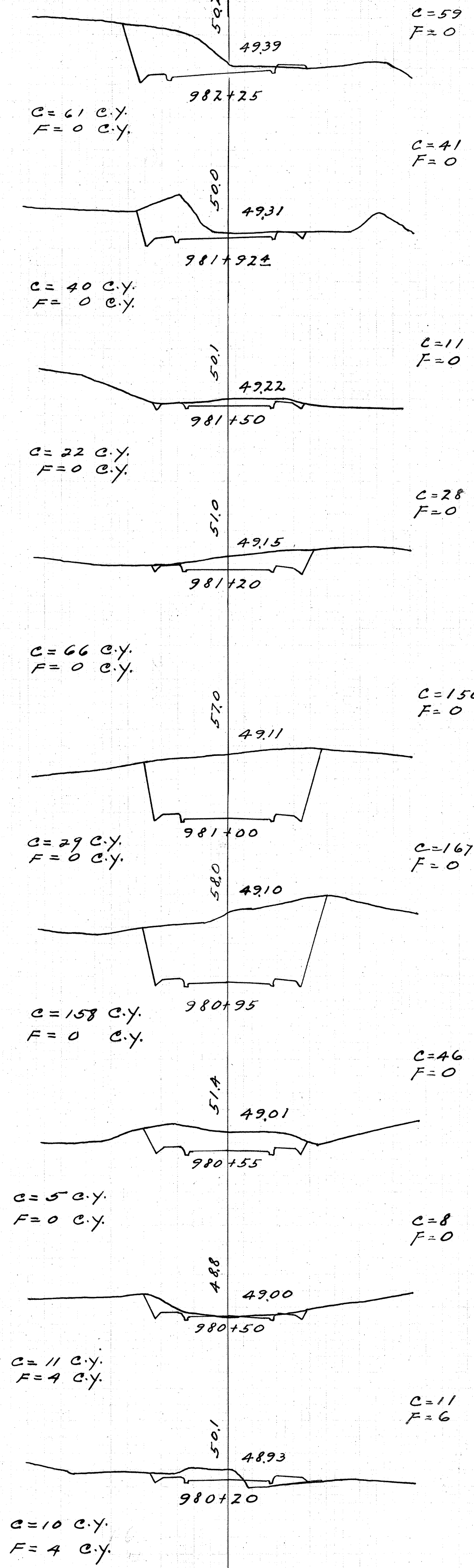
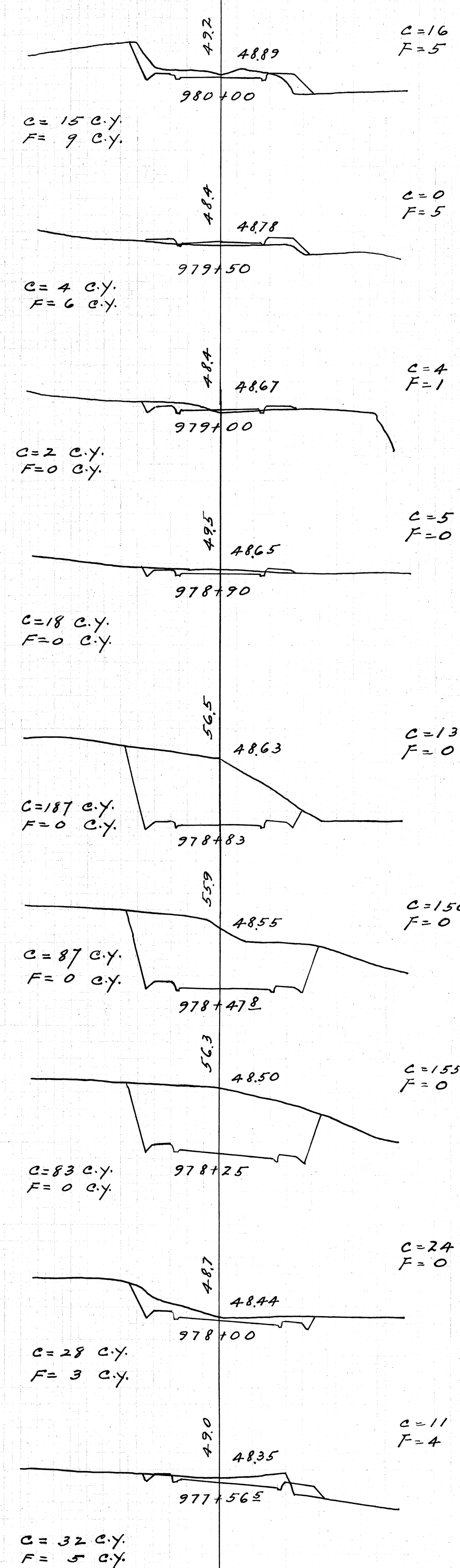
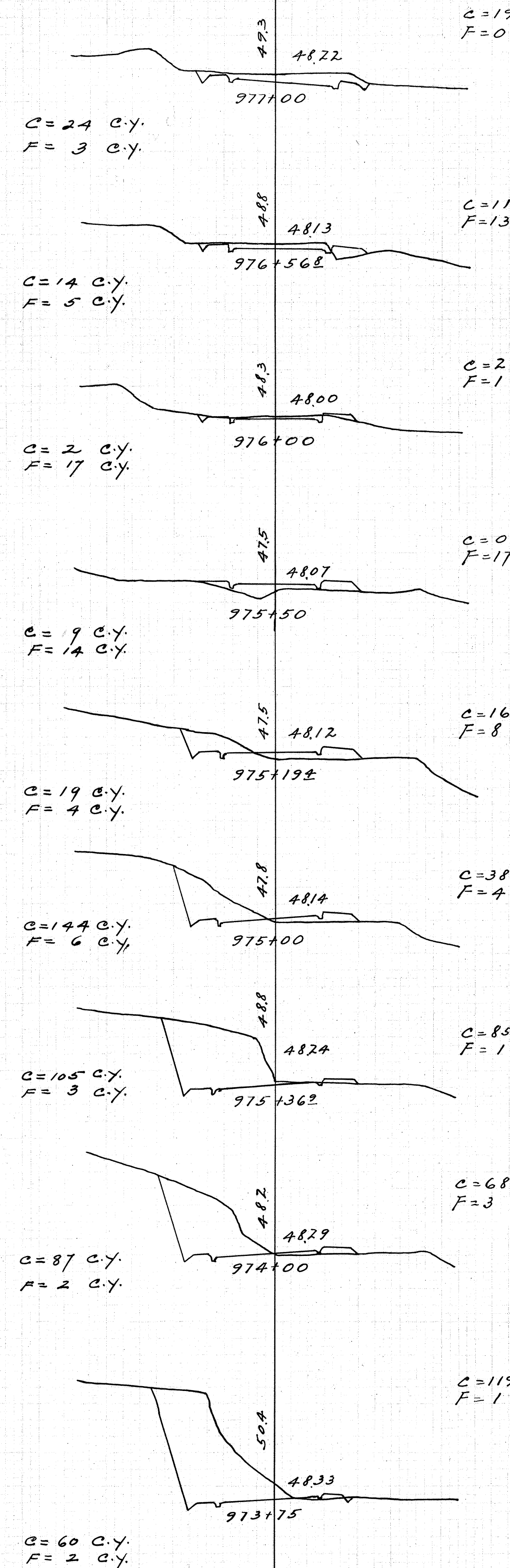




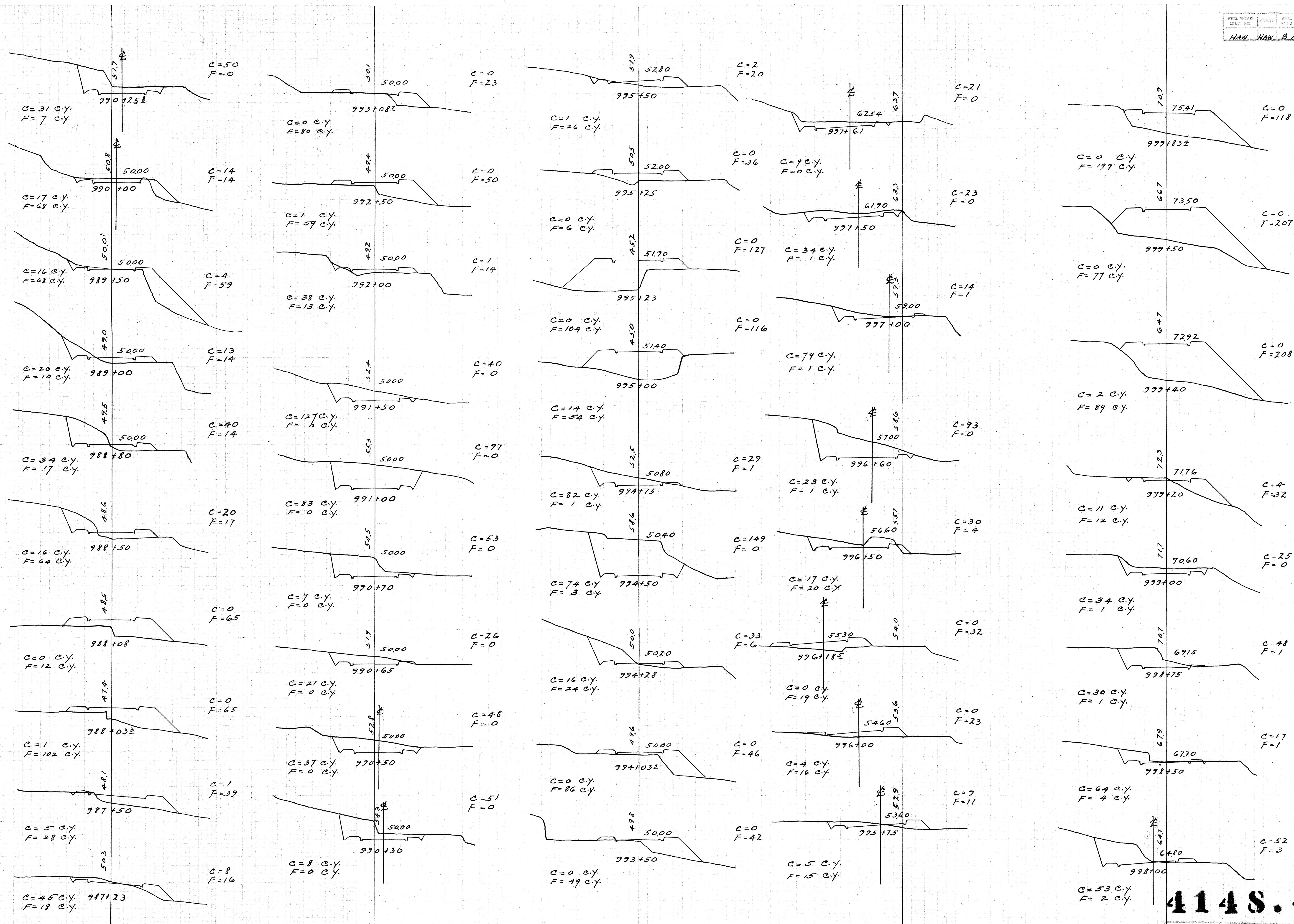
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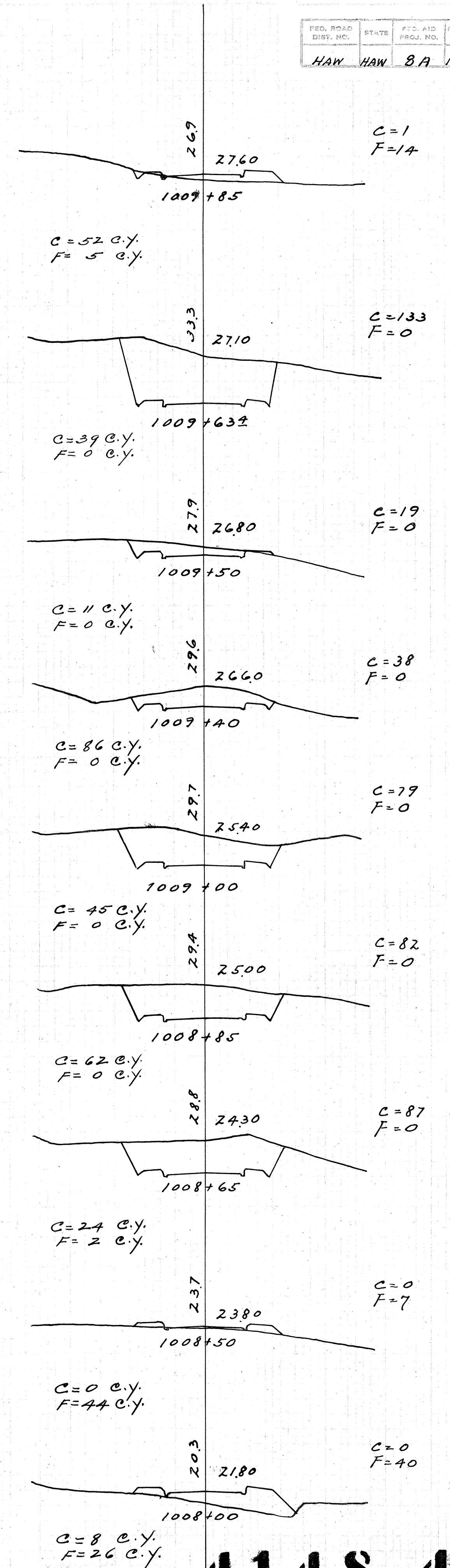
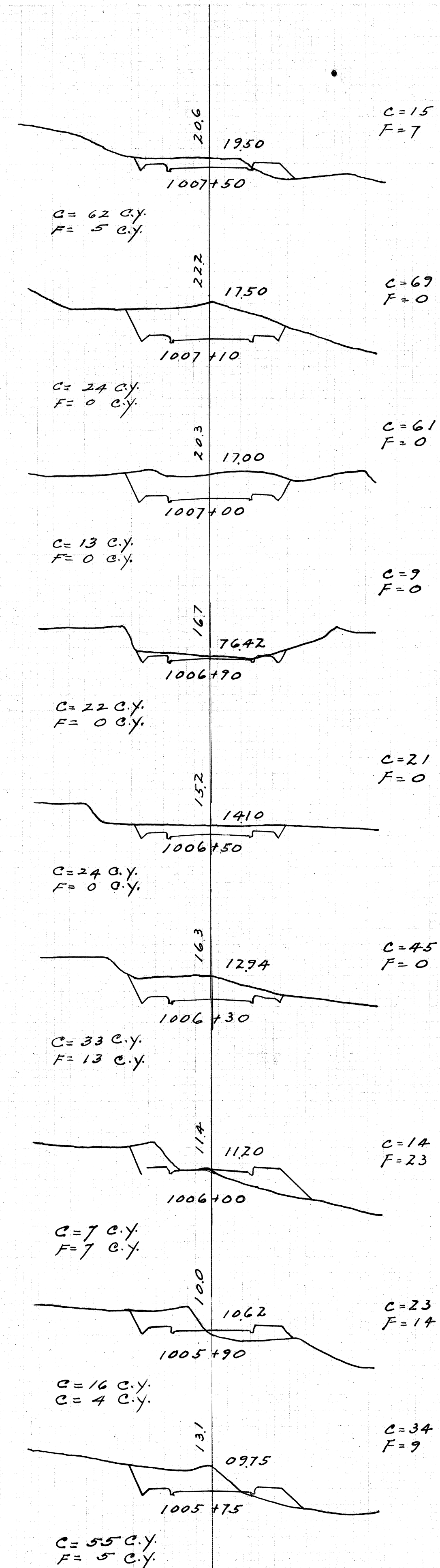
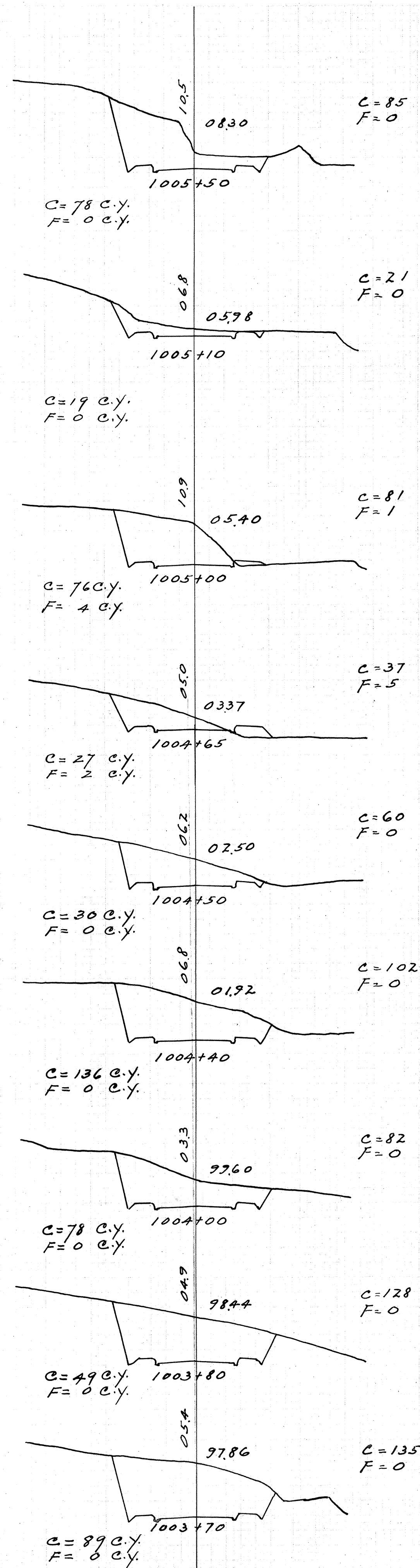
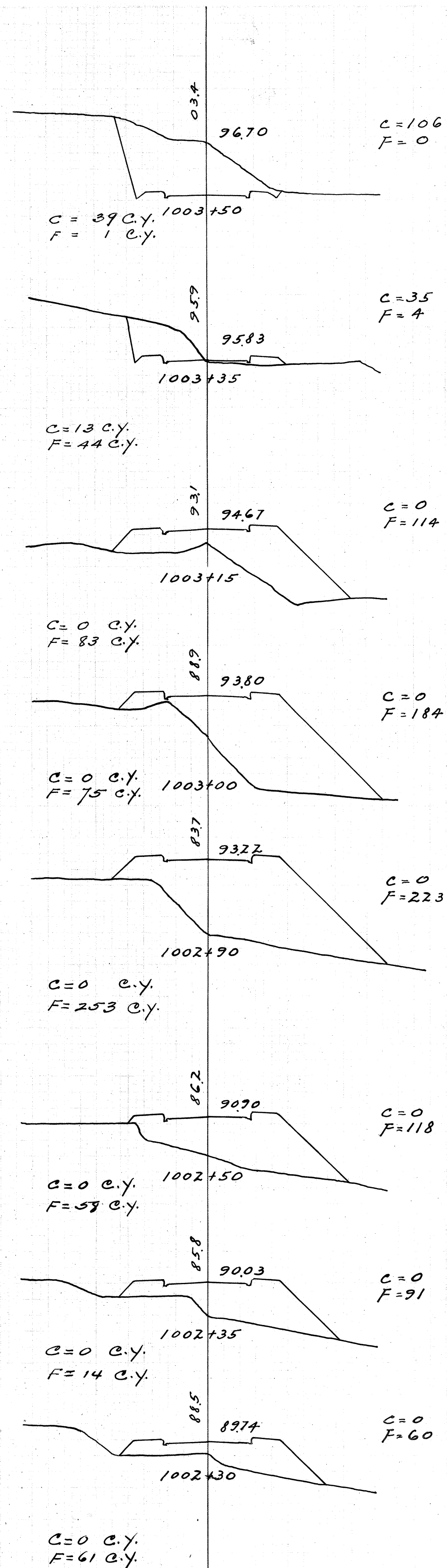
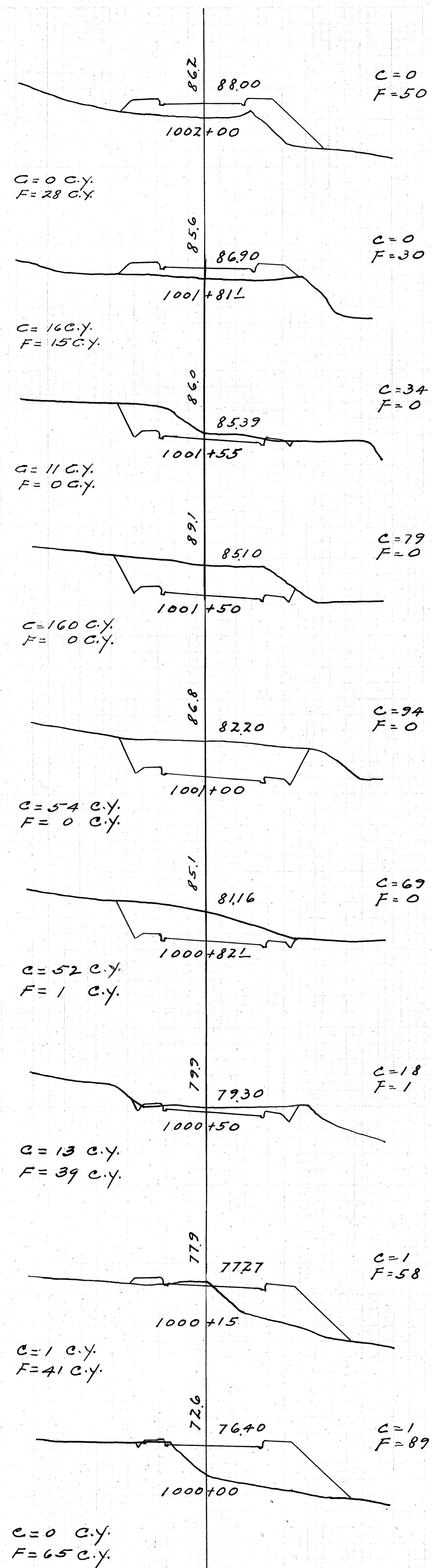
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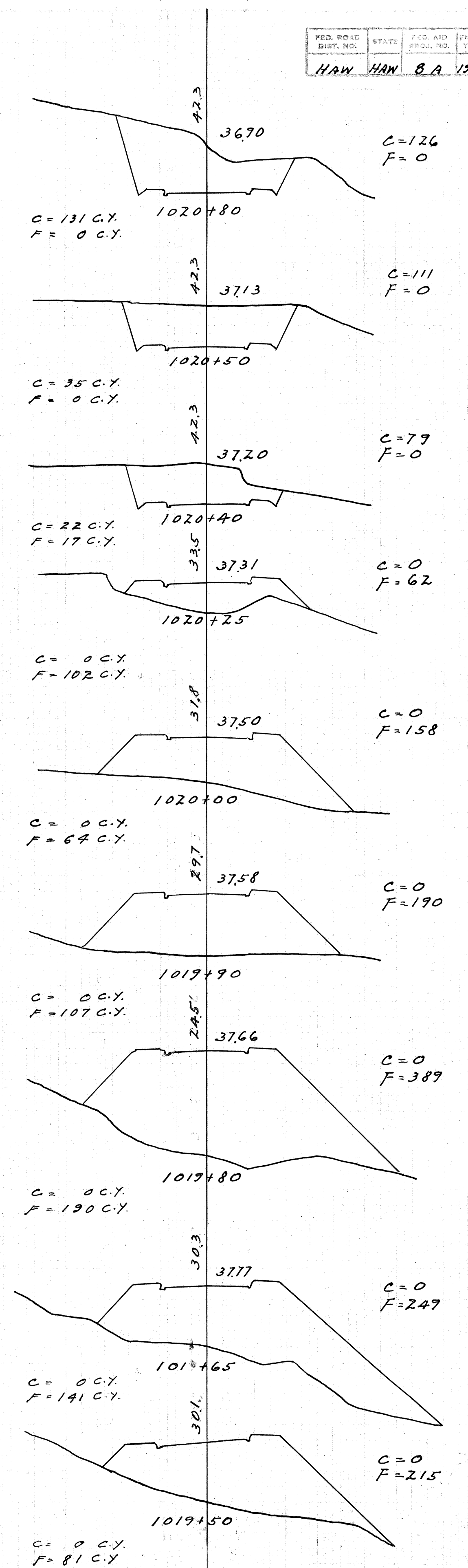
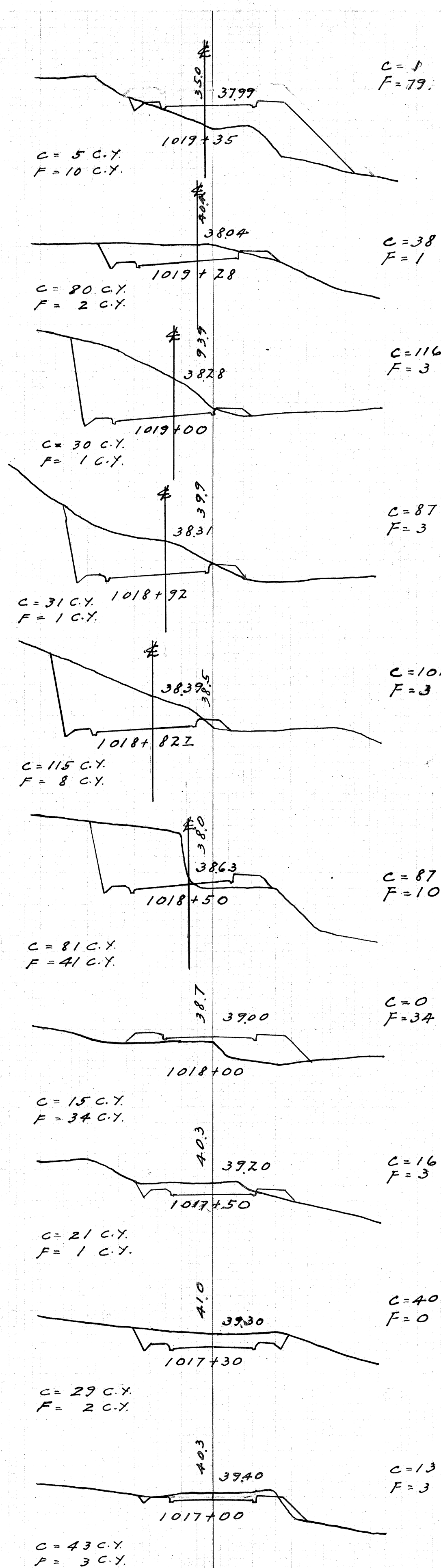
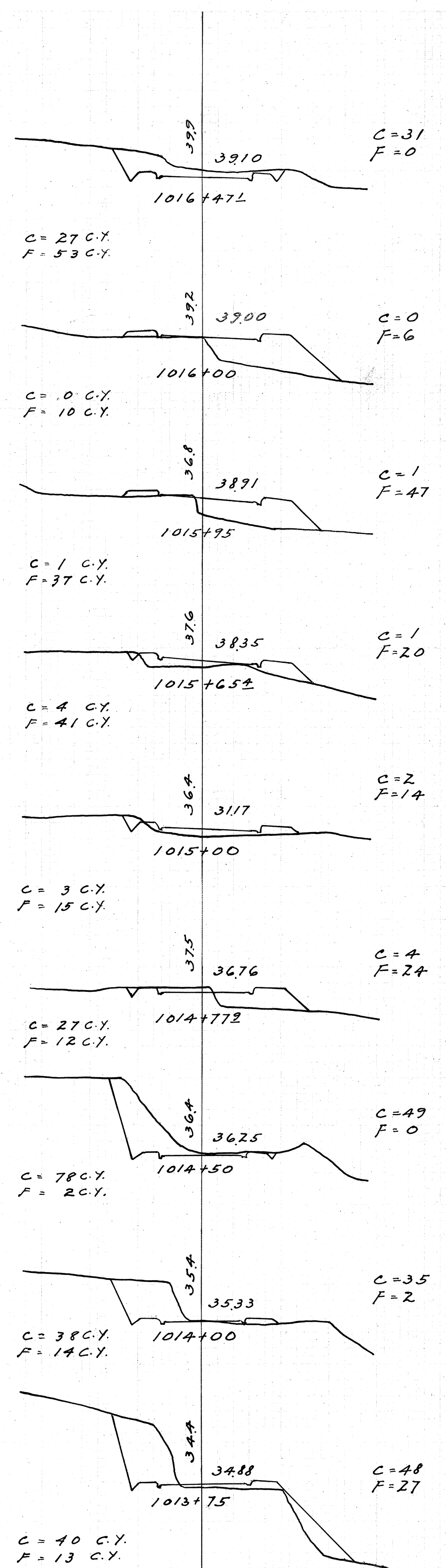
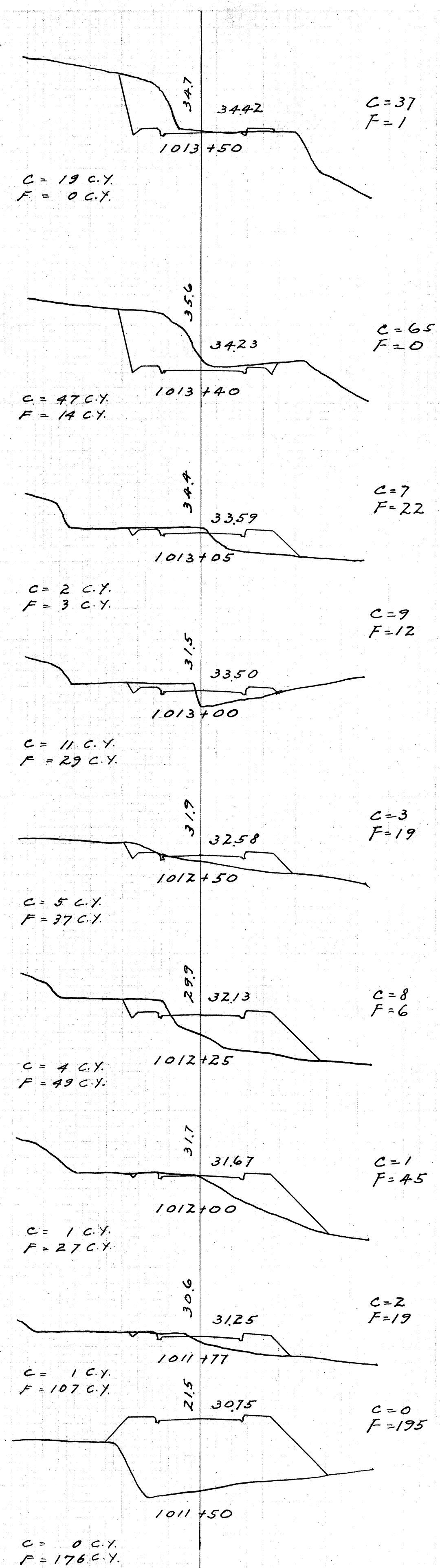
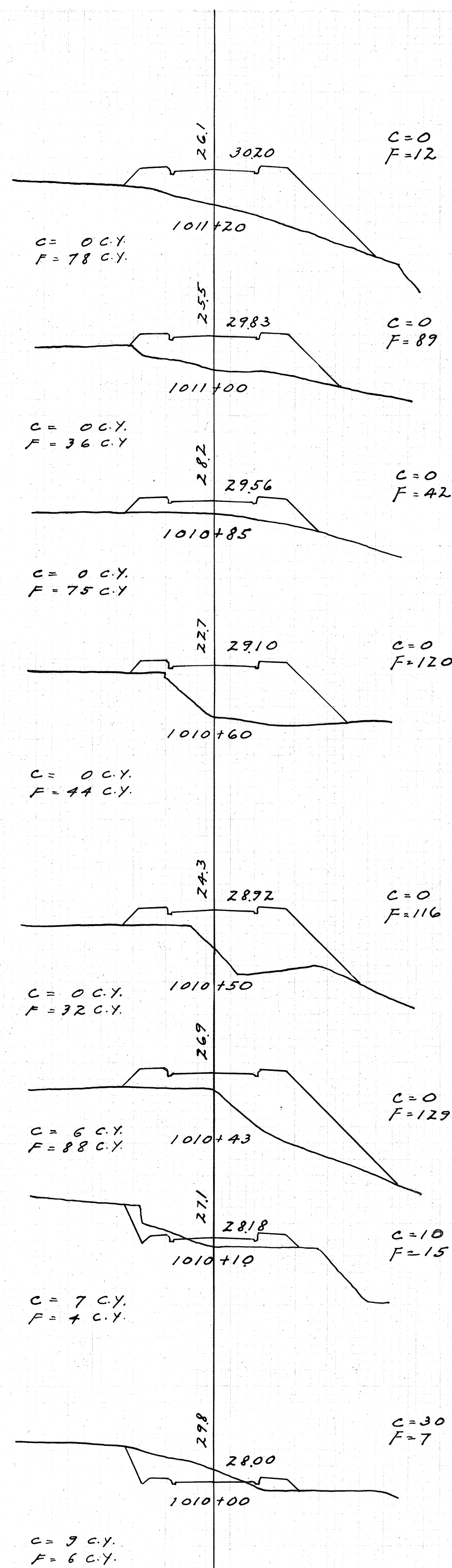
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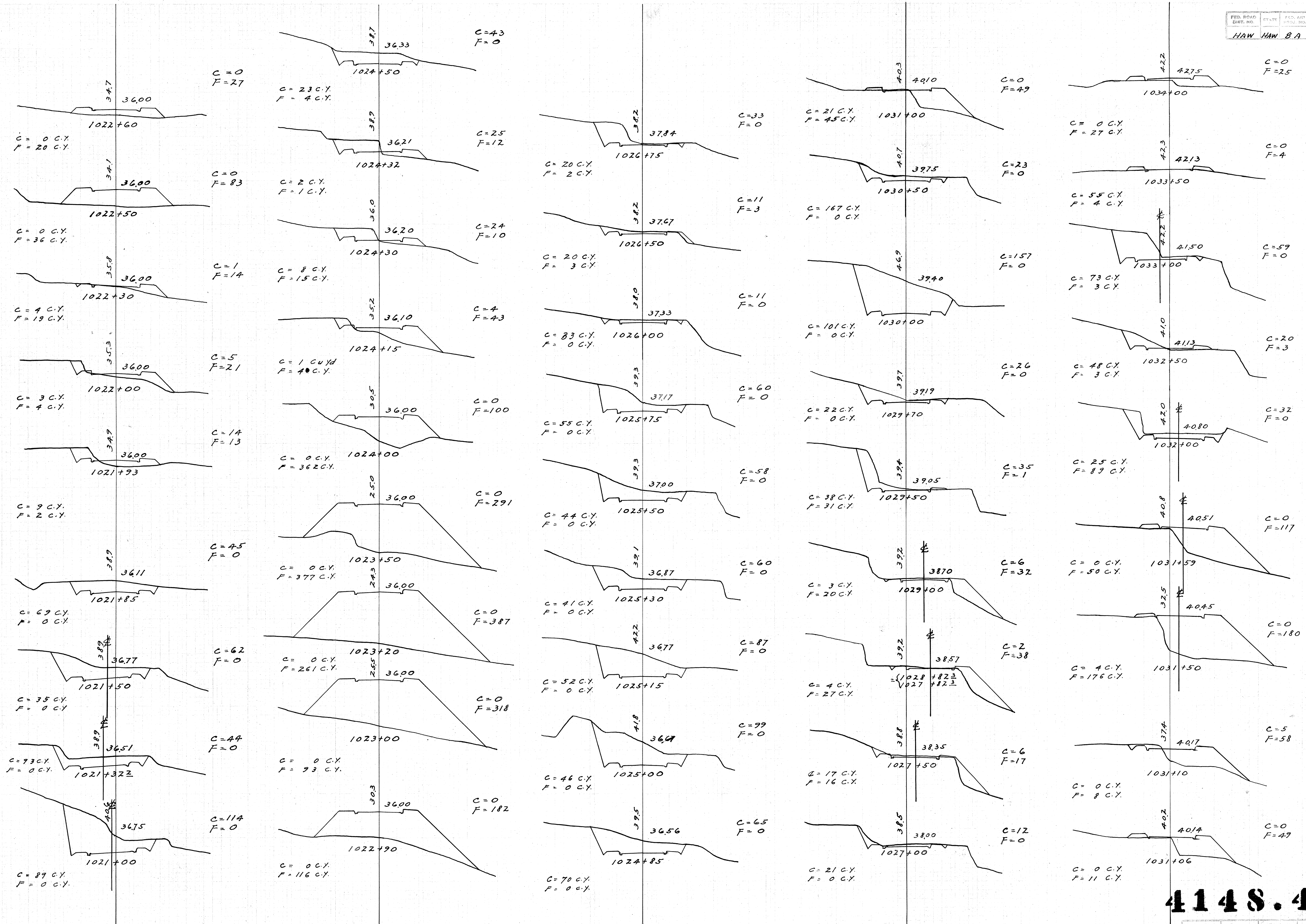
4148.42



4148.43



4148.44

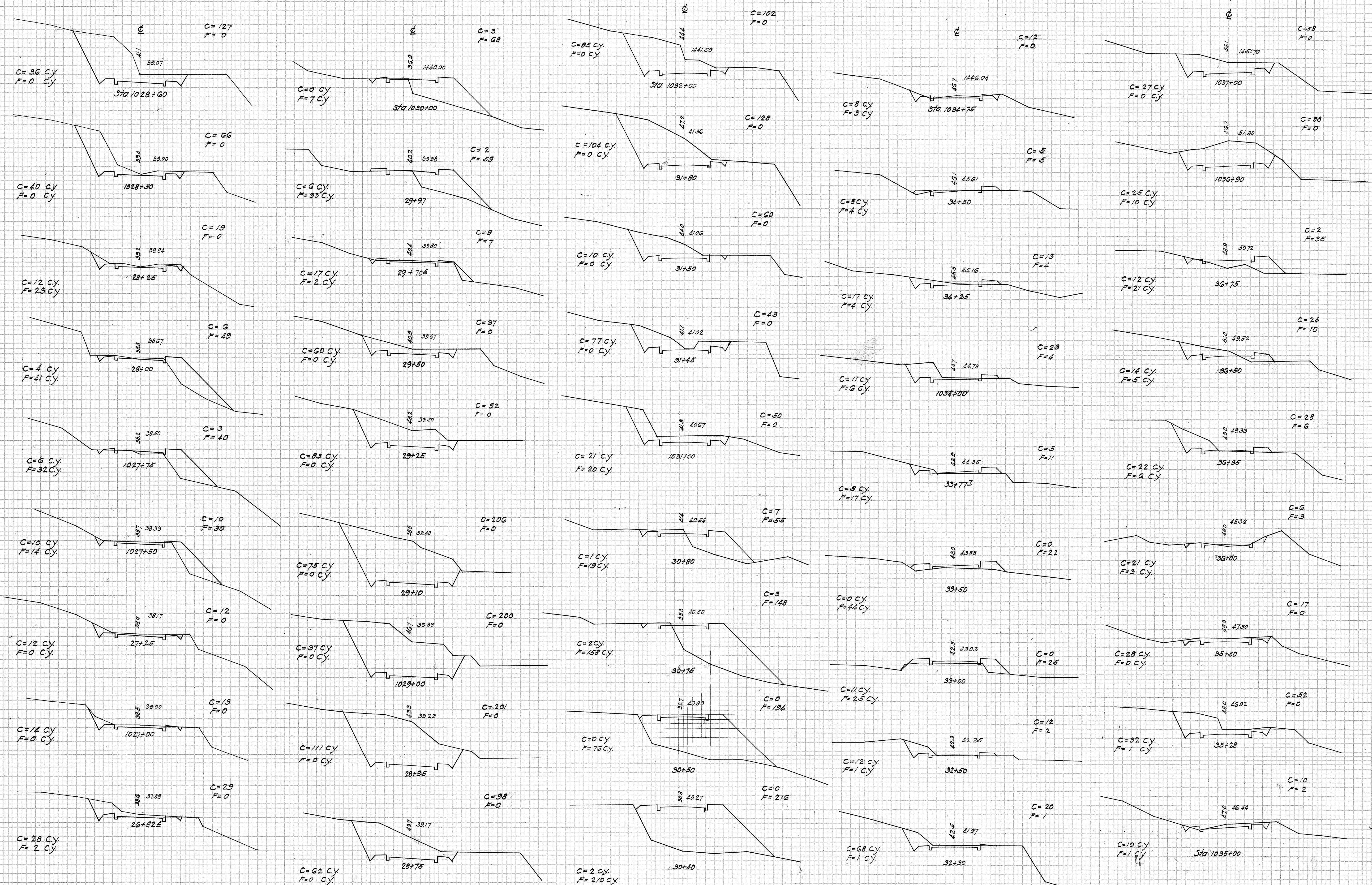


4148.45

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW	HAW	81	1980		

DATE	BY	FINAL SURVEY	SURVEYED	PLOTTED	NOTE BOOK	AREAS CHECKED

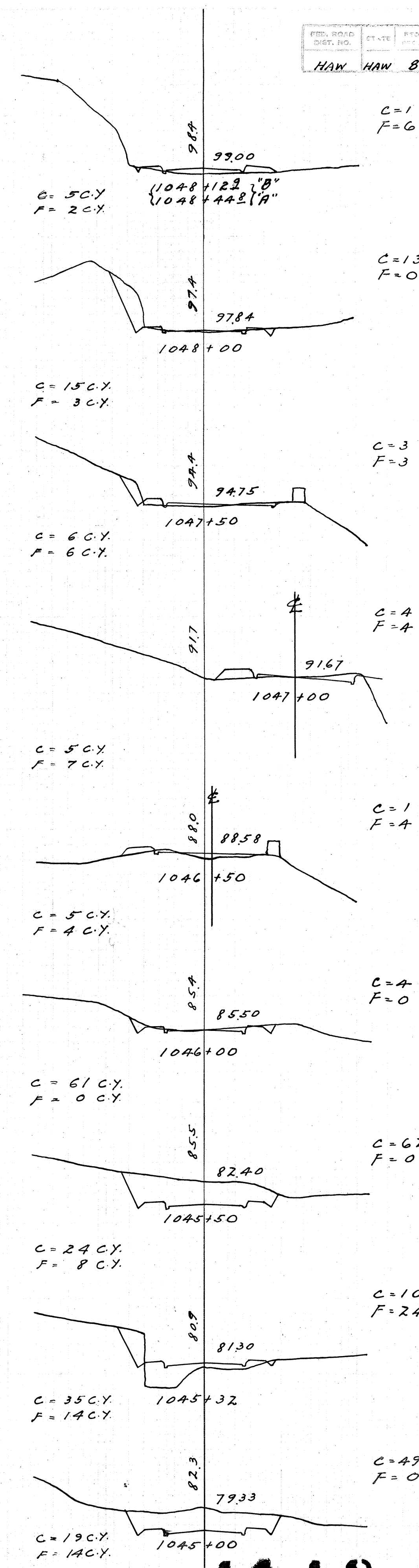
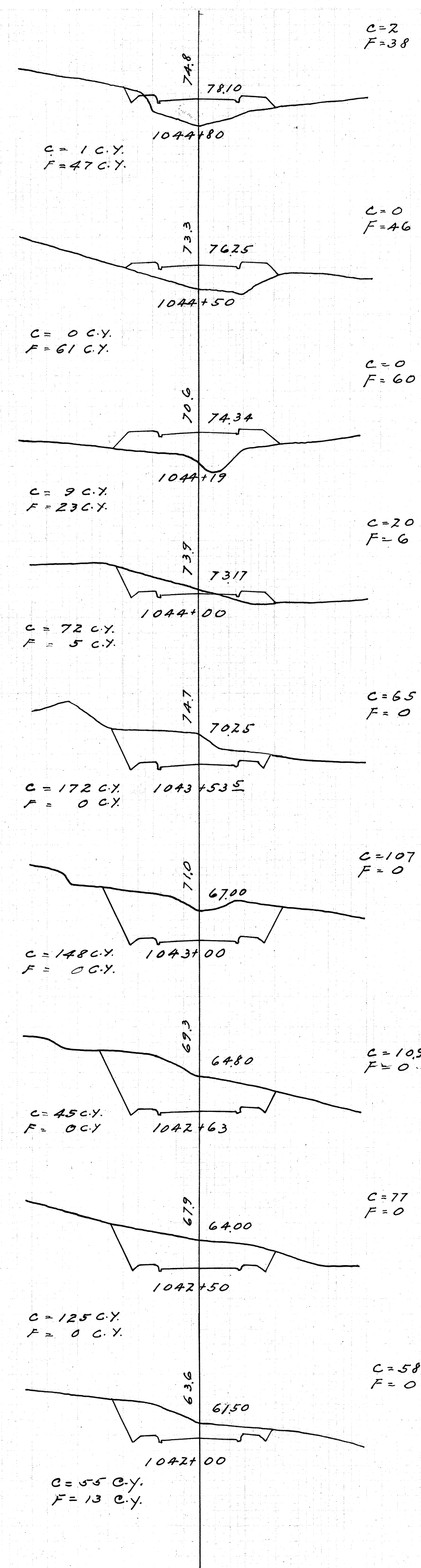
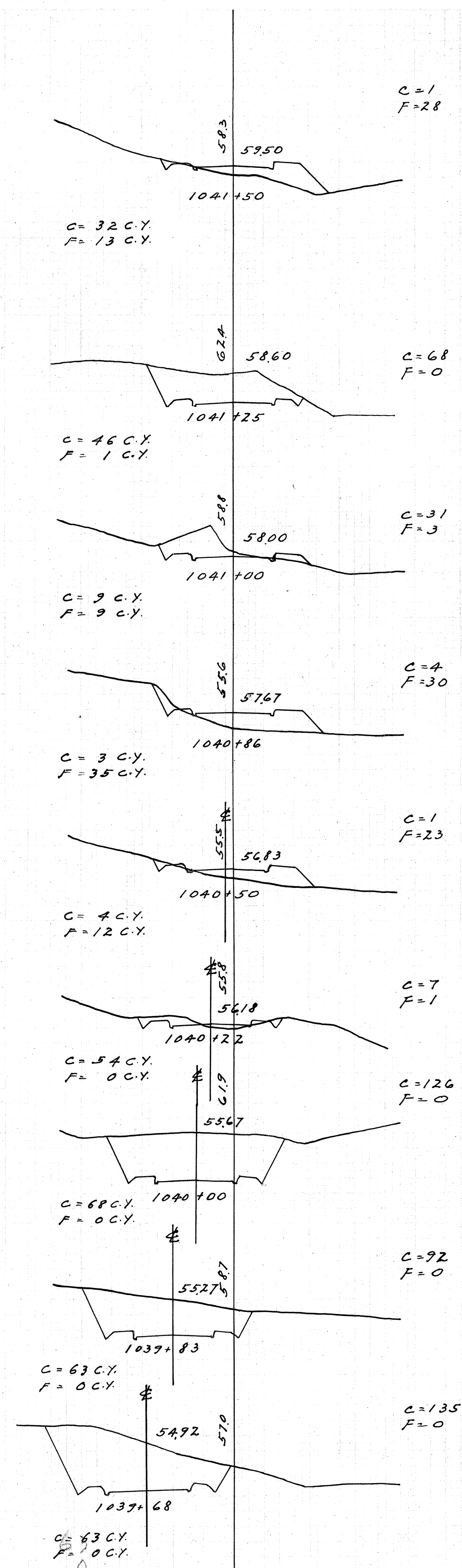
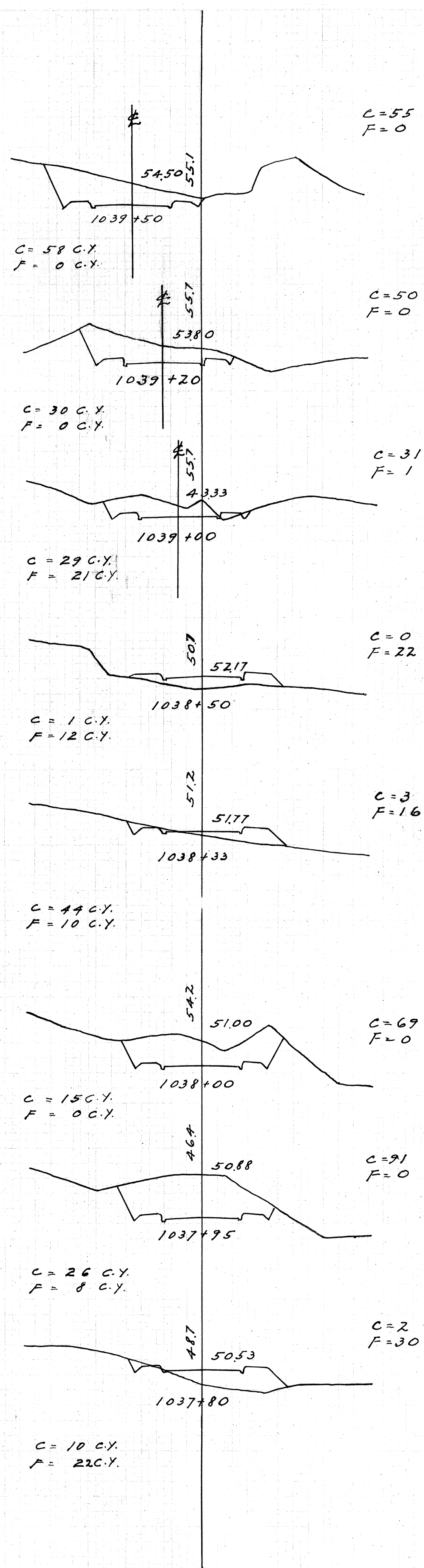
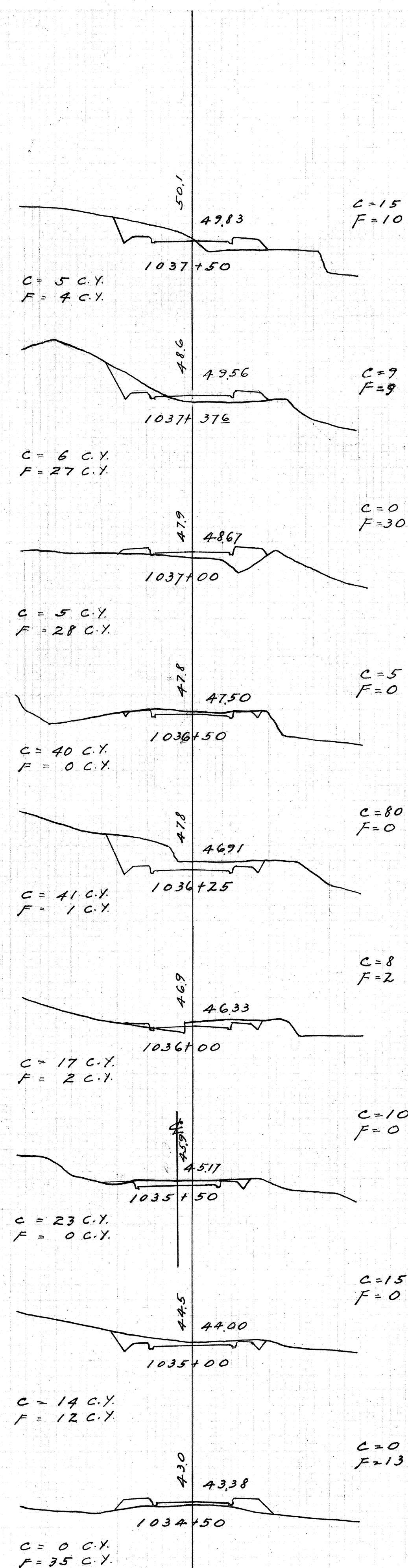
DATE	BY	ORIGINAL SURVEY	SURVEYED	PLOTTED	NOTE BOOK	AREAS CHECKED



NEW CROSS SECTIONS
FOR
LINE "G" STA 1026+00 TO 1035+00
SOUTH BONA ROAD FAP8A

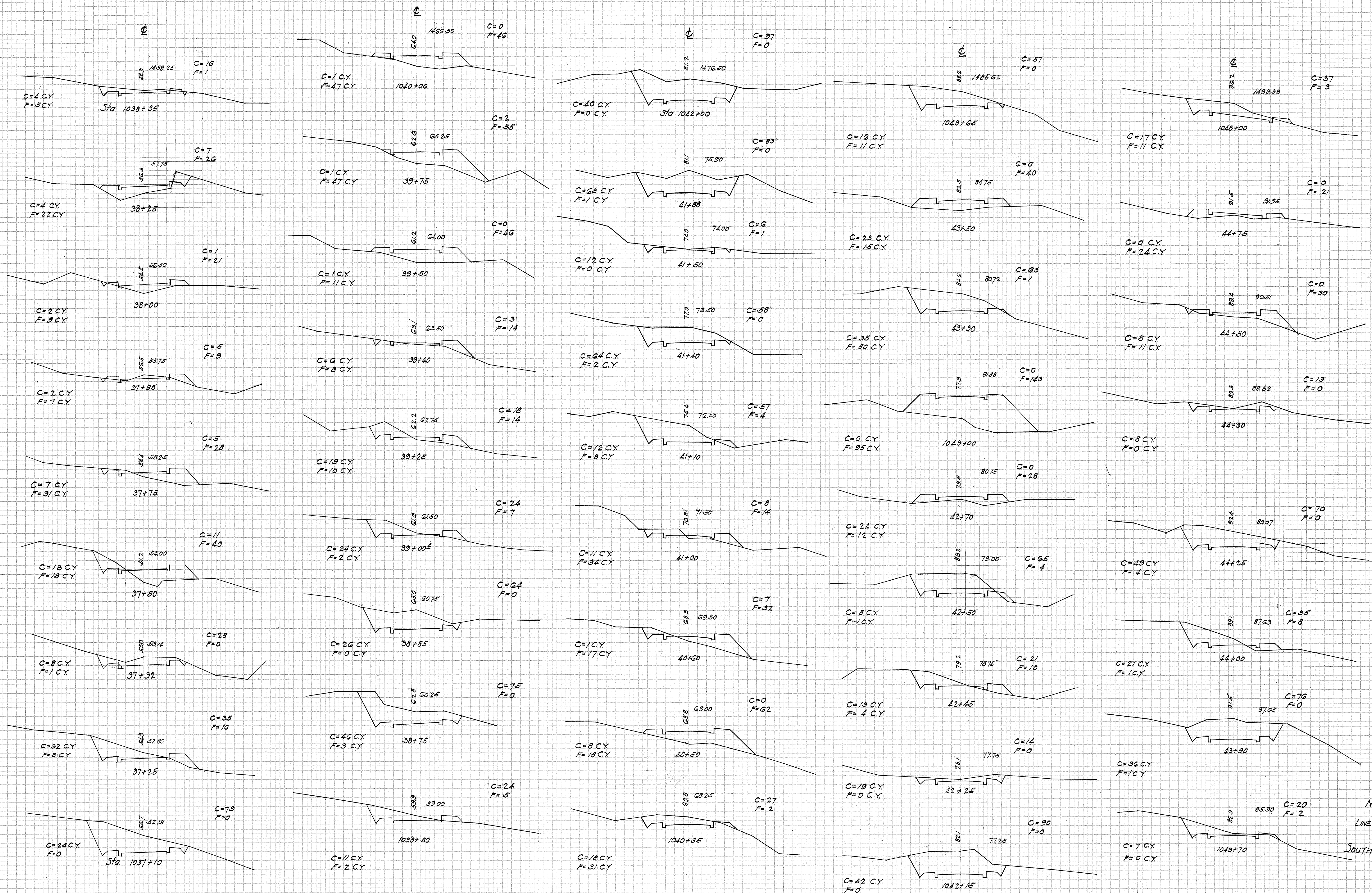
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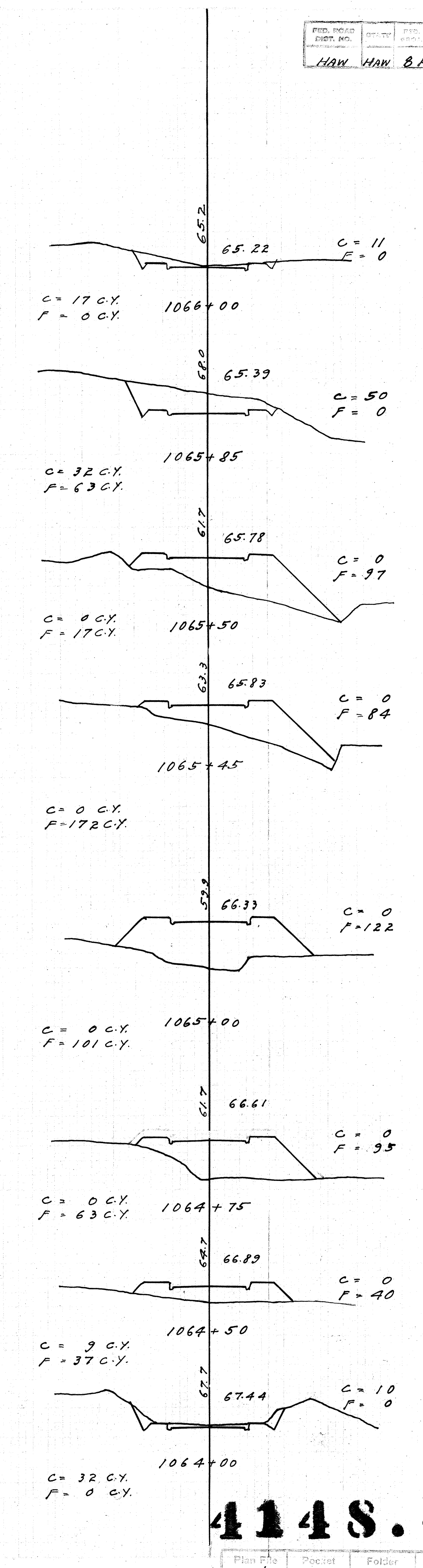
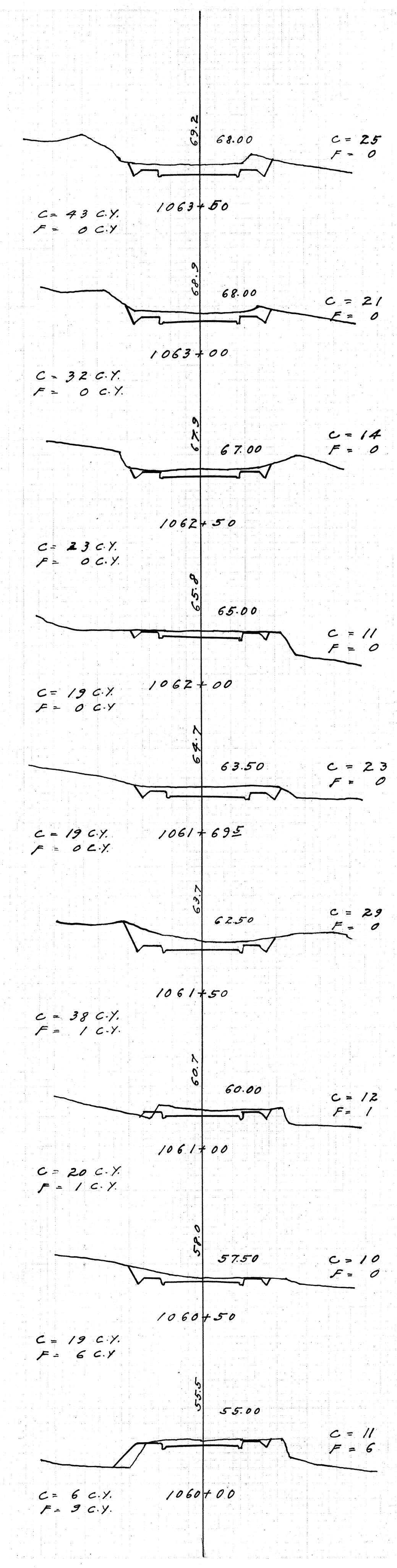
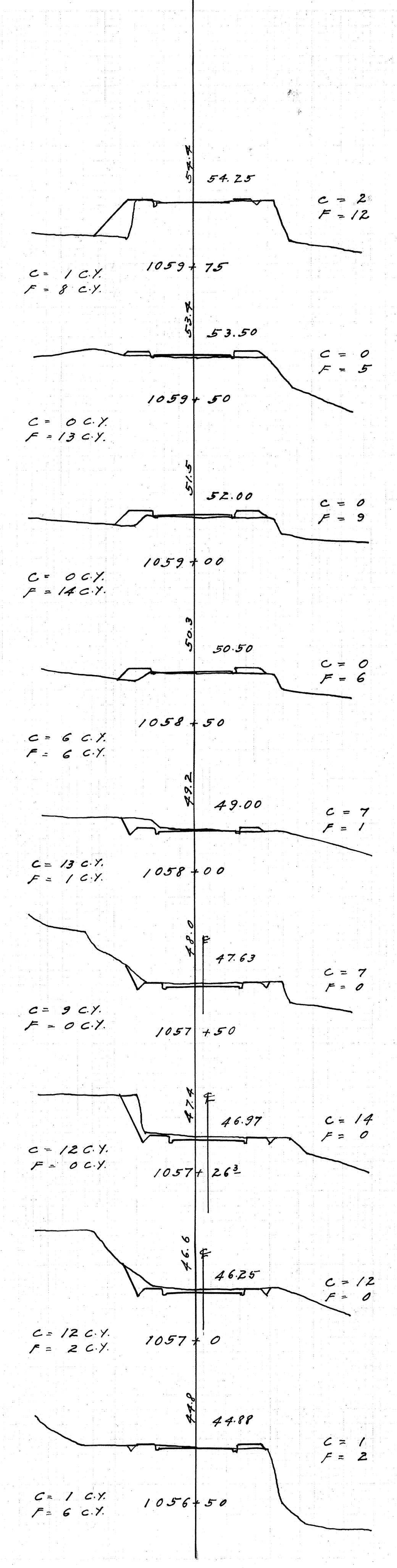
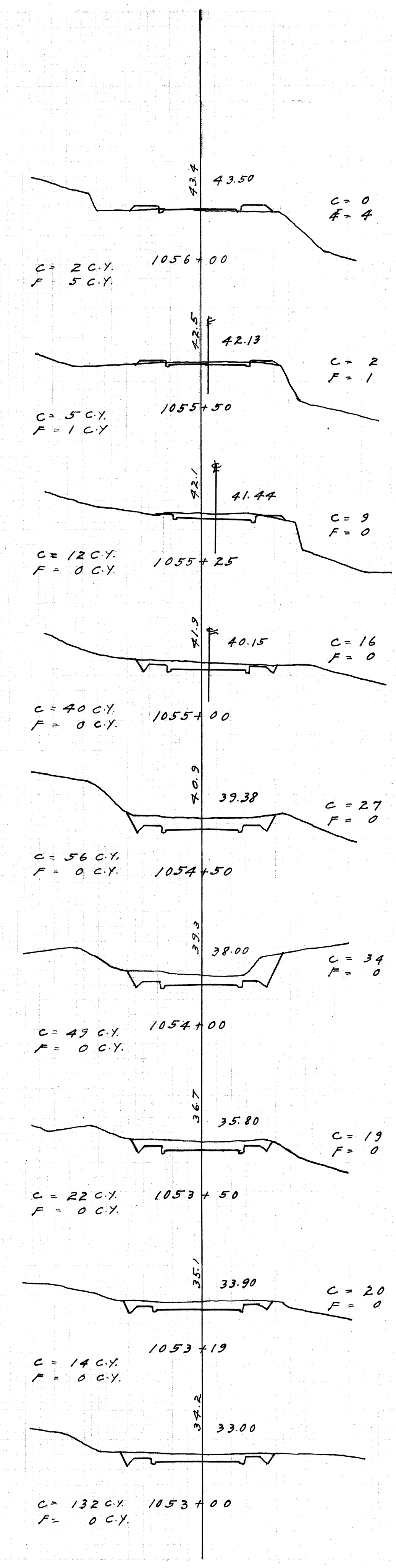
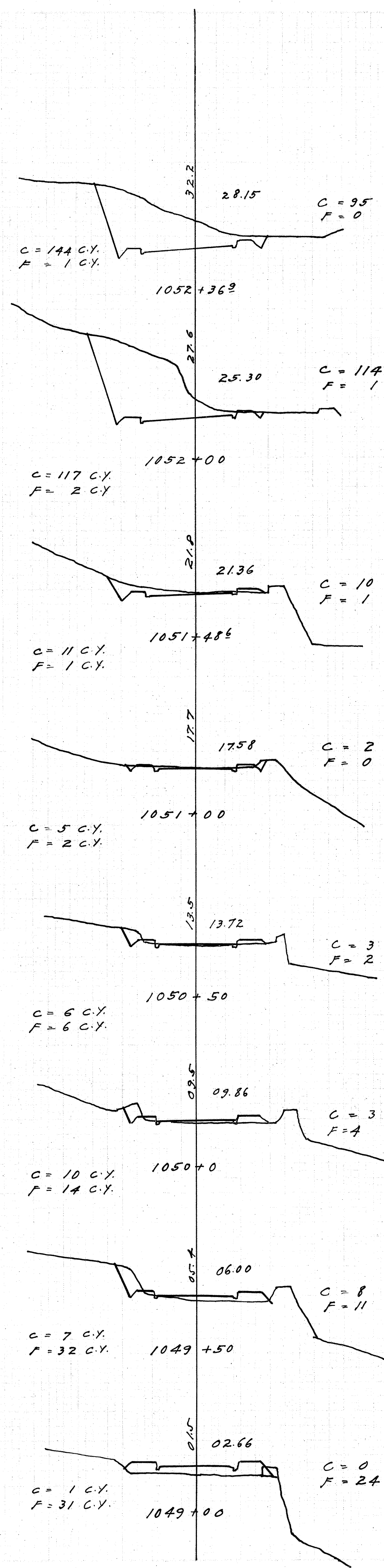
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16	10	N-2	No.



DATE	BY	FINAL SURVEY	SURVEYED	PLOTTED	DATE
		NOTE BOOK	AREAS	CHECKED	

DATE	BY	ORIGINAL SURVEY	SURVEYED	PLOTTED	DATE
		NOTE BOOK	AREAS	CHECKED	





4148.47

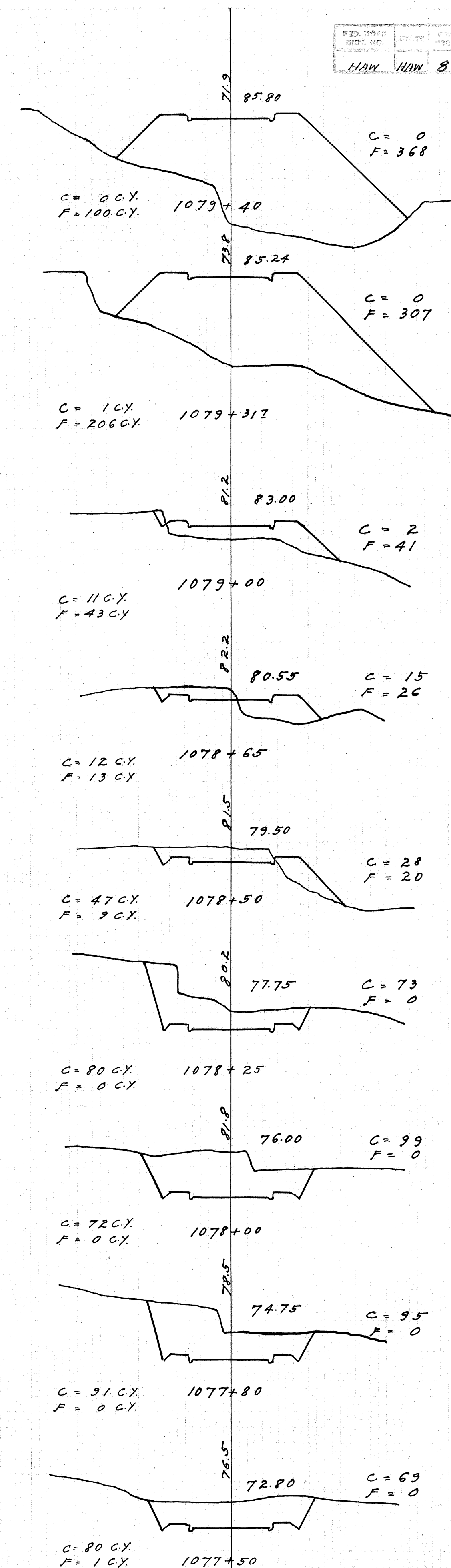
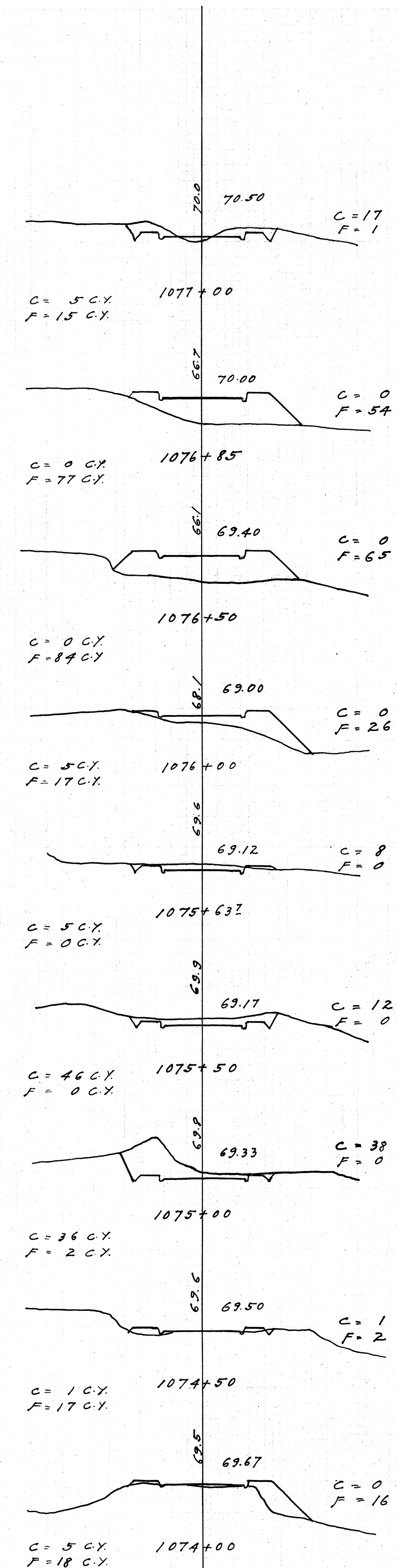
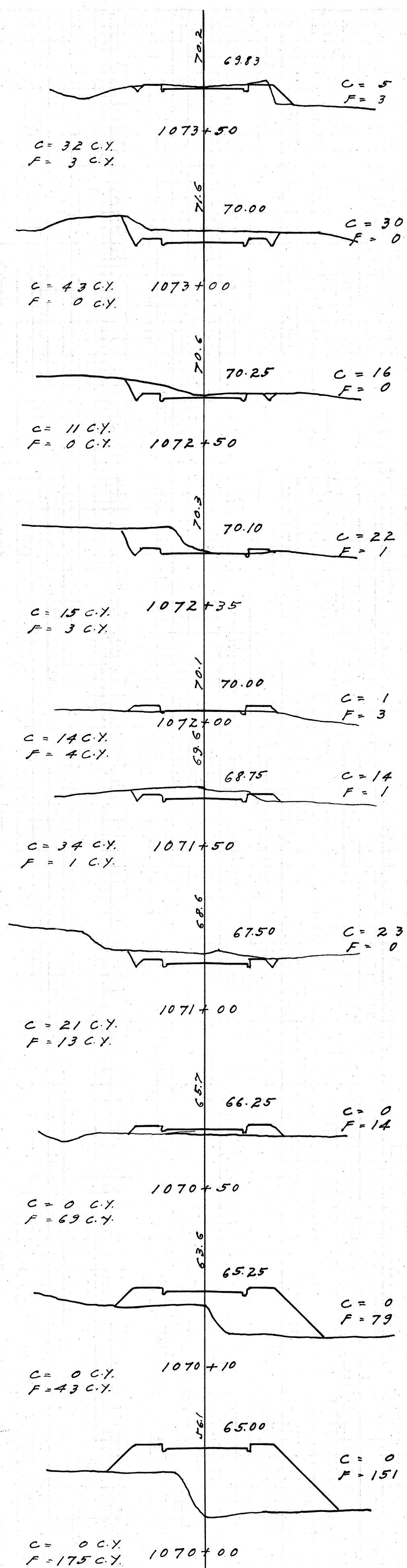
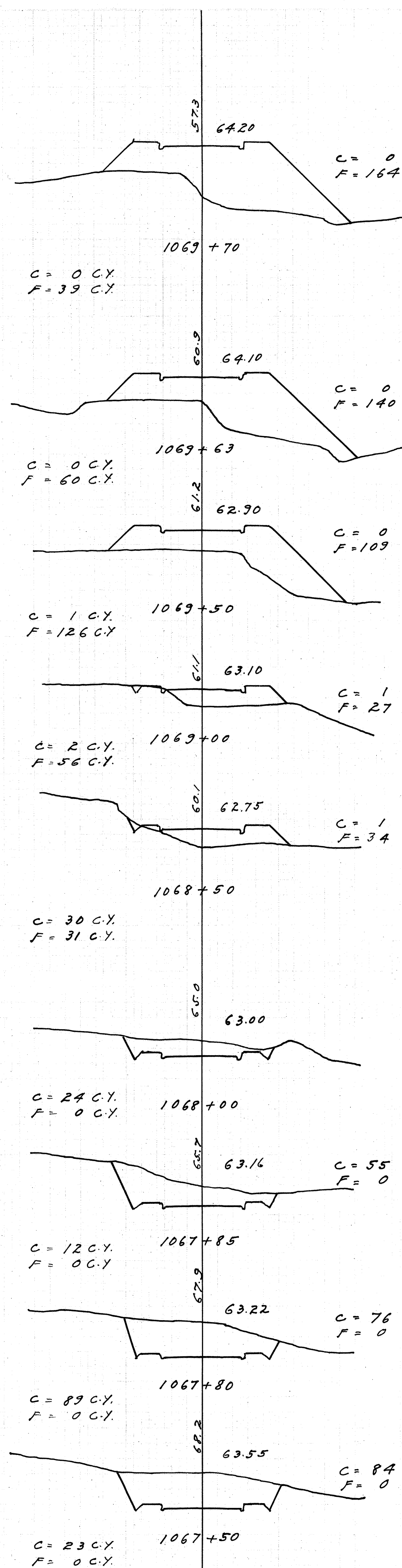
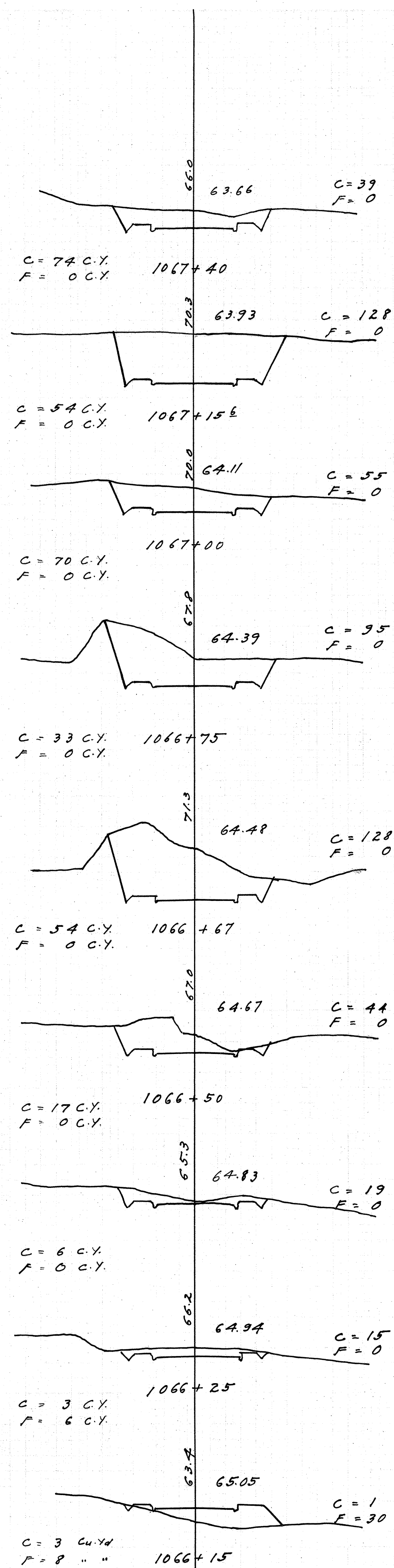
DATE	BY	FINAL SURVEY	PLANNED	NOTED	AREAS CHECKED

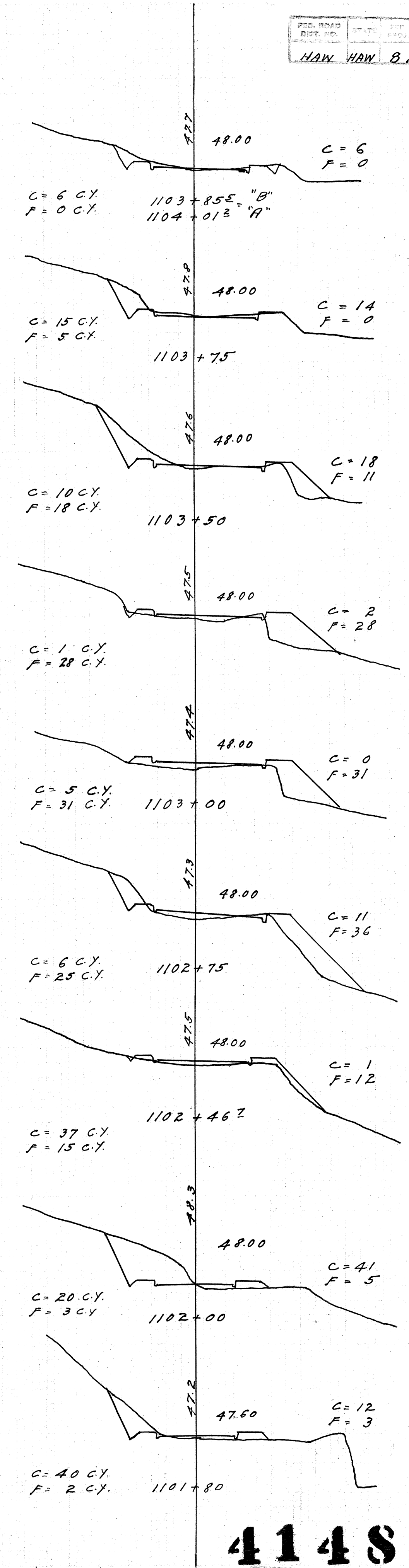
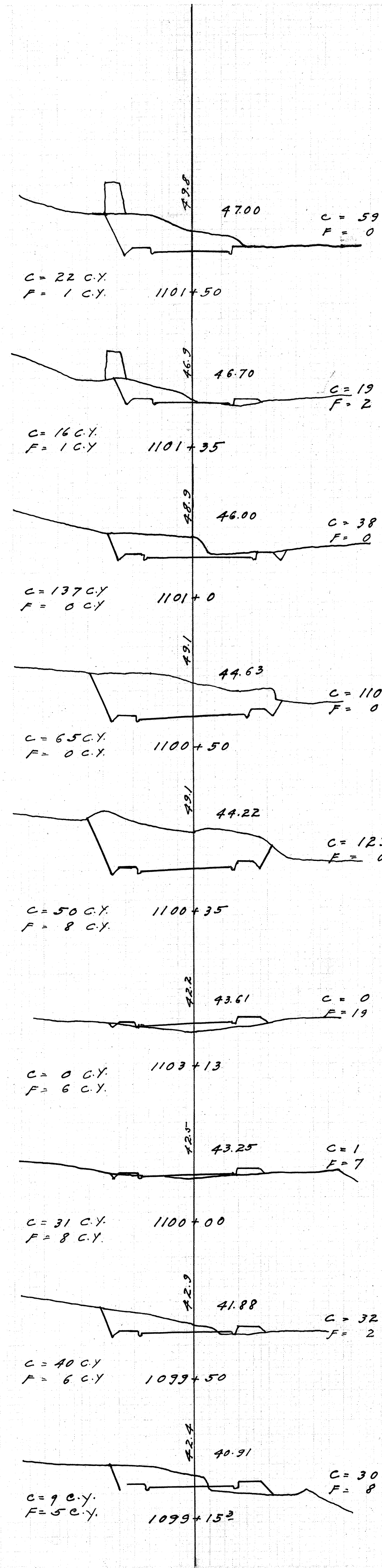
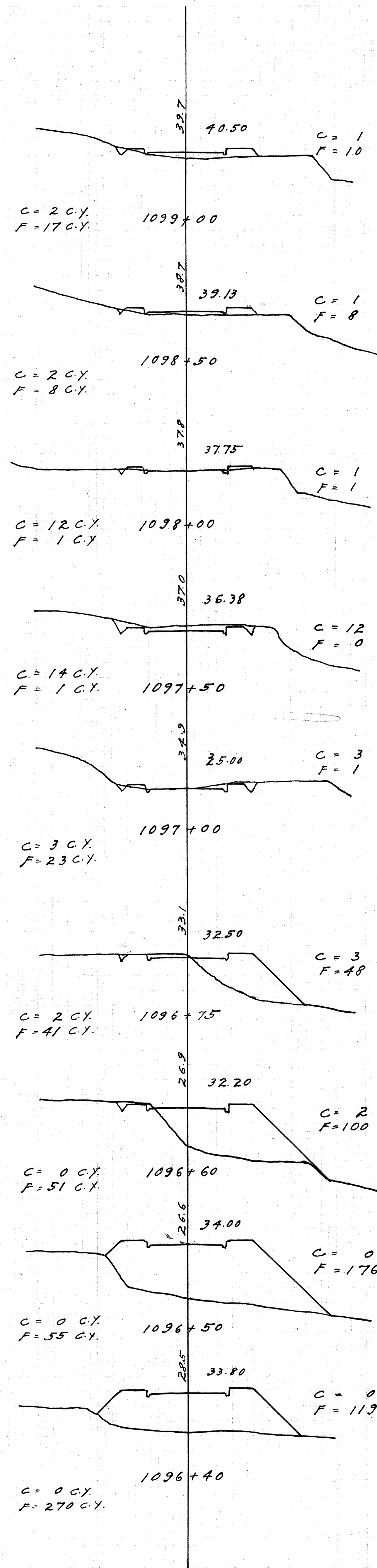
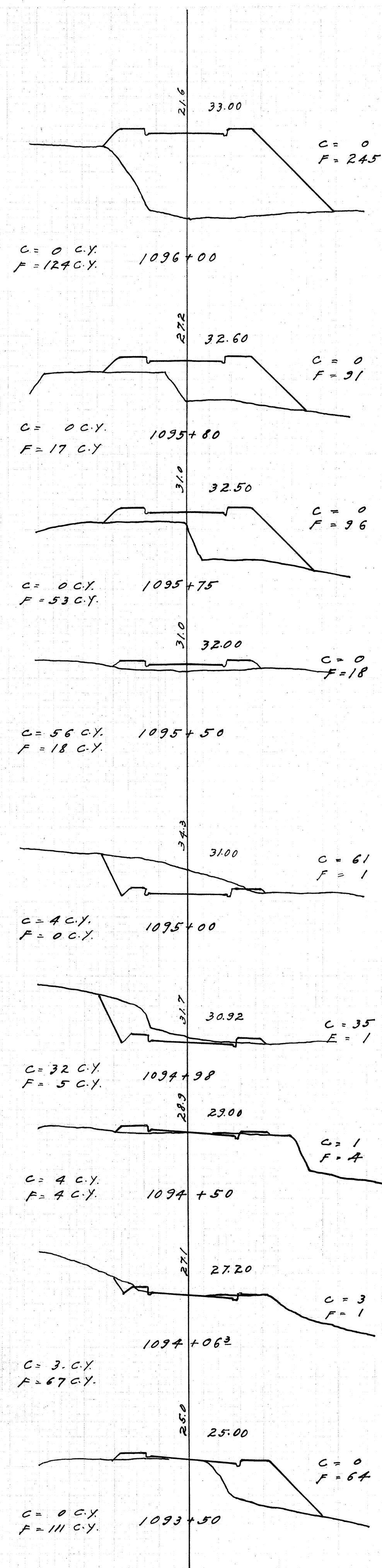
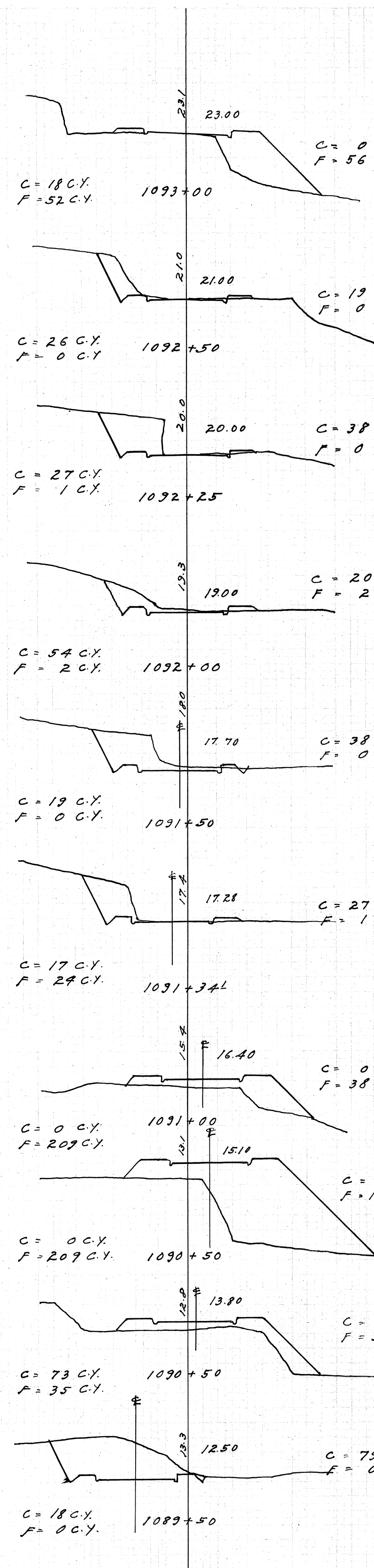
DATE	BY	ORIGINAL SURVEY	PLANNED	NOTED	AREAS CHECKED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	HAW.	8A	1930		

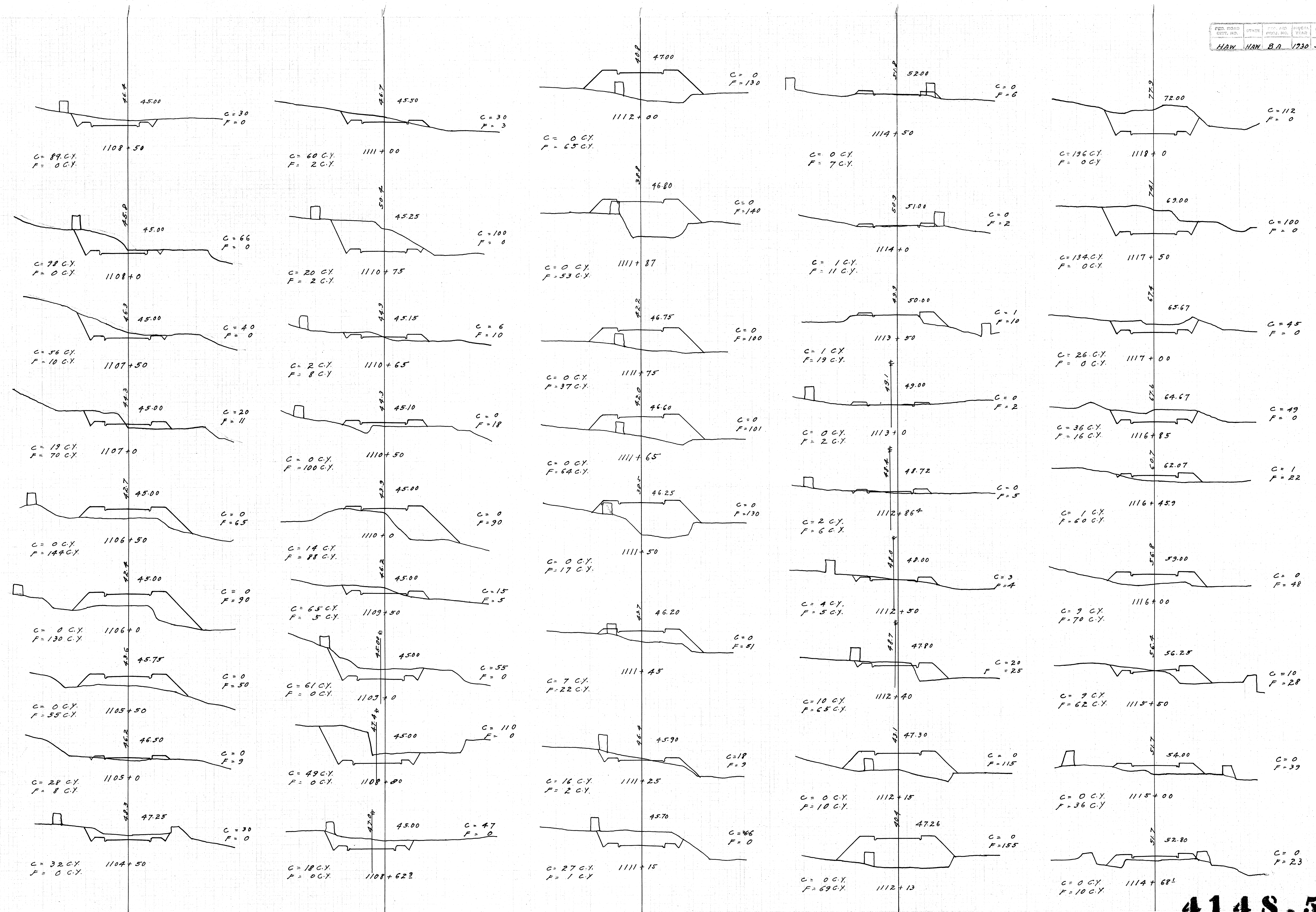
**NEW CROSS-SECTIONS
FOR
LINE "C" STA. 1026+50 TO 1054+50
SOUTH KONA BELT RD. F.A.P. 8A**

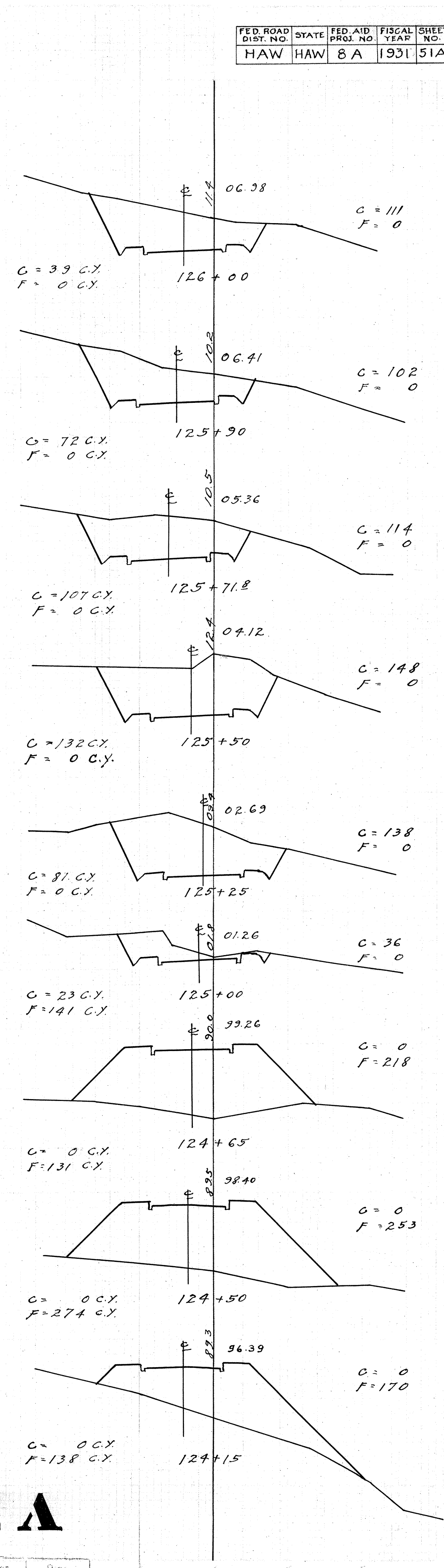
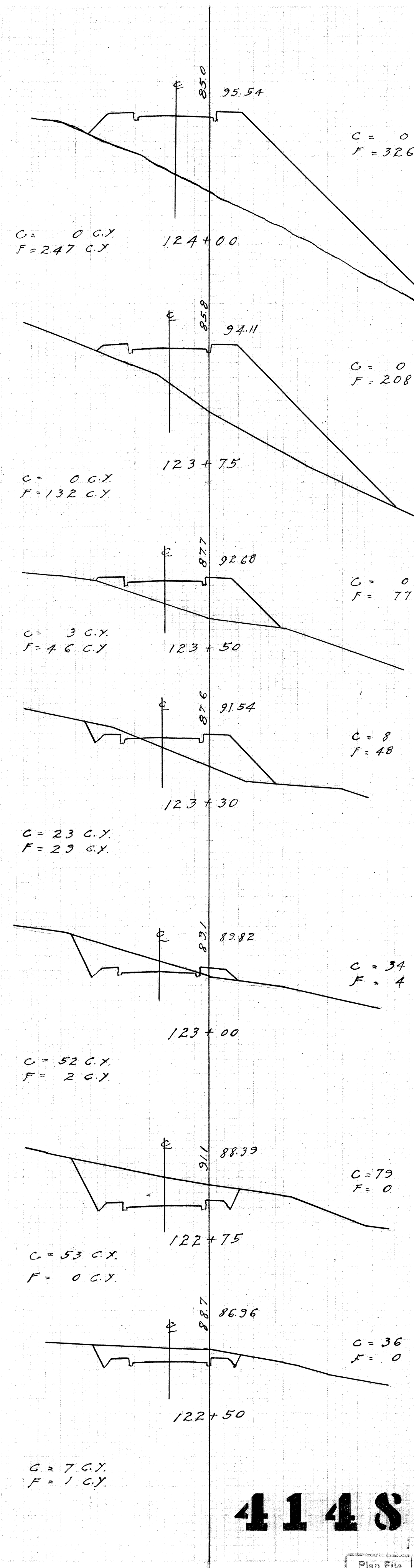
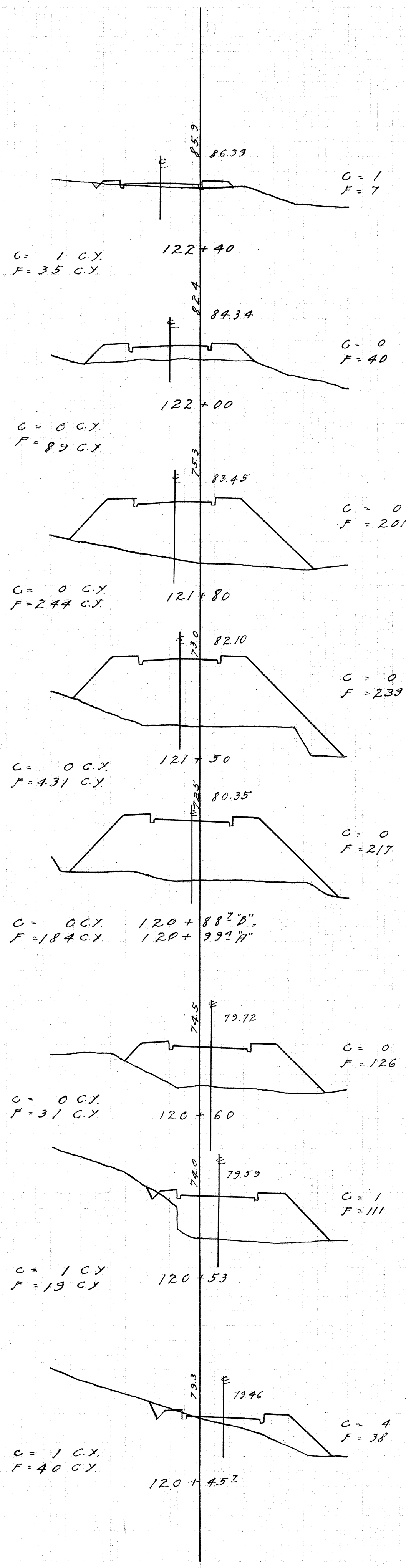
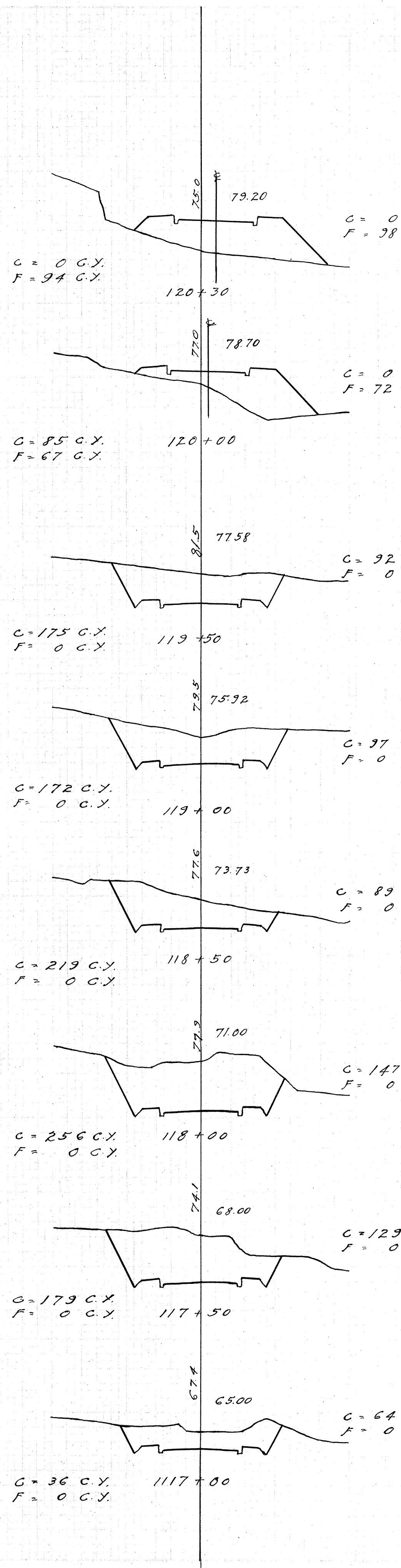
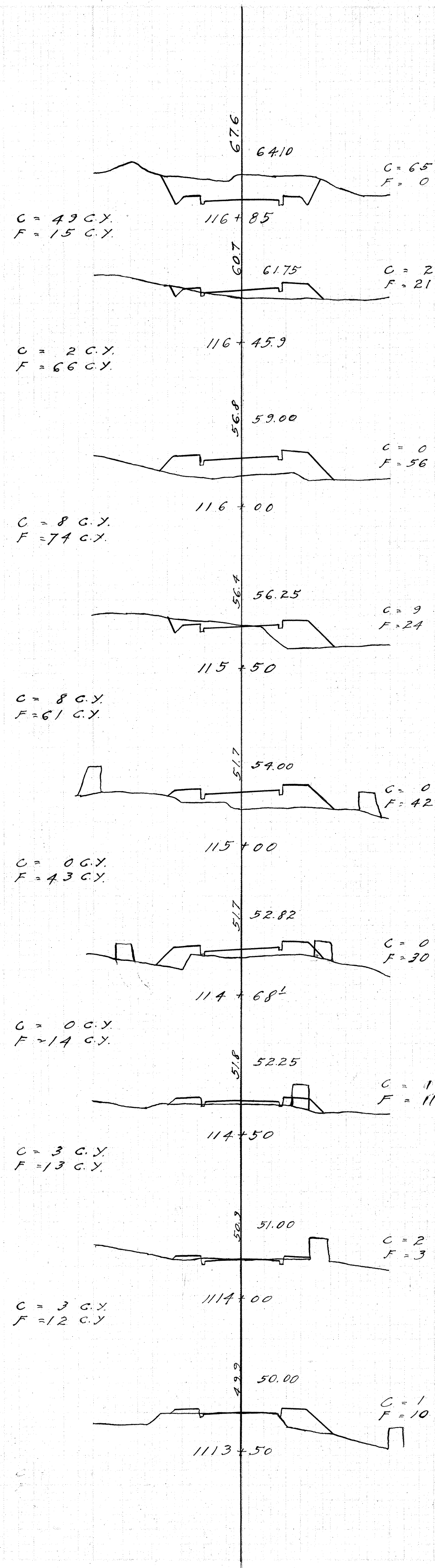
FIELD DATA BY— E.K.B.
PLOTTER BY— E.K.B.
FINISH GRADES BY— A.S.K.
PLANIMETERED BY— E.K.B.
TRACED BY— W.C.V.
DATE: FEB. 1931



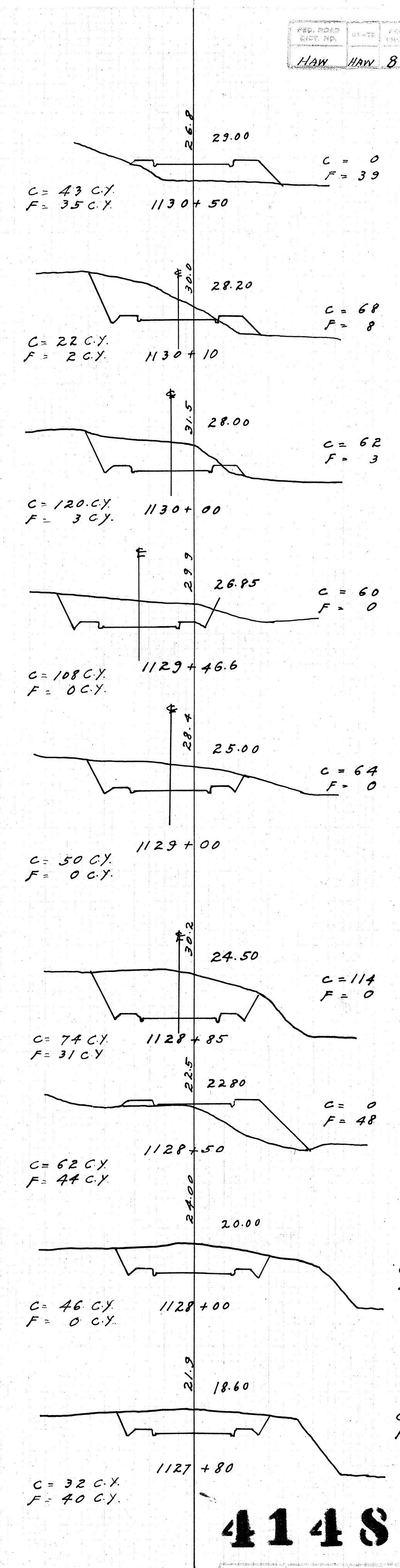
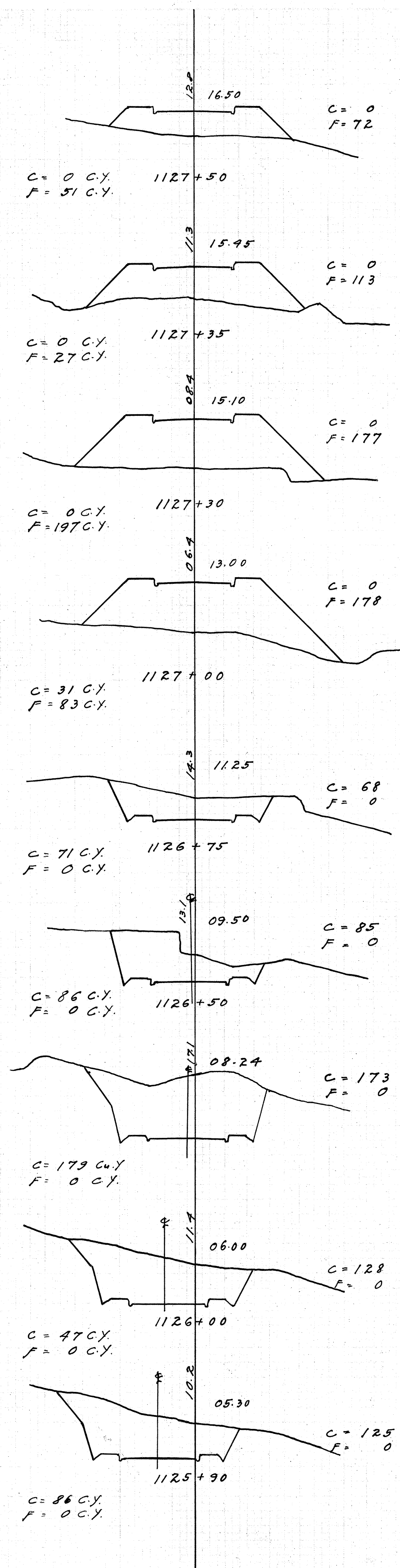
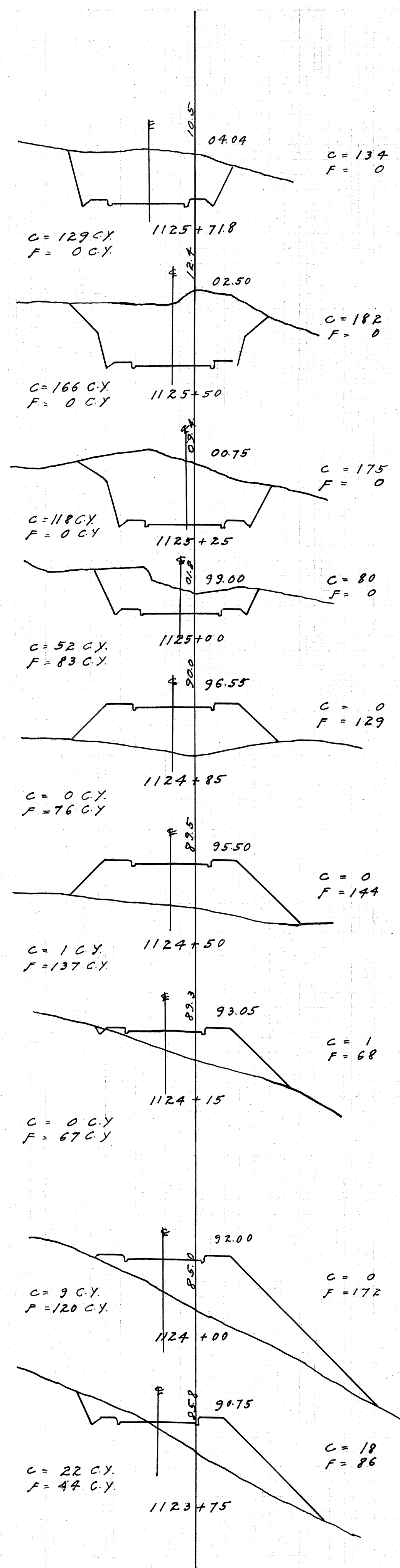
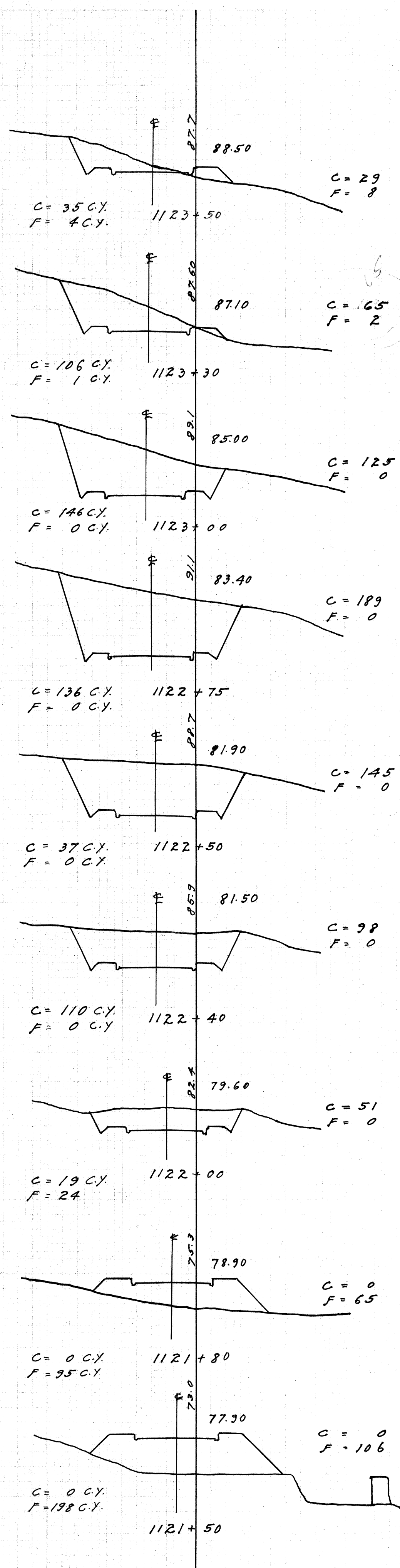
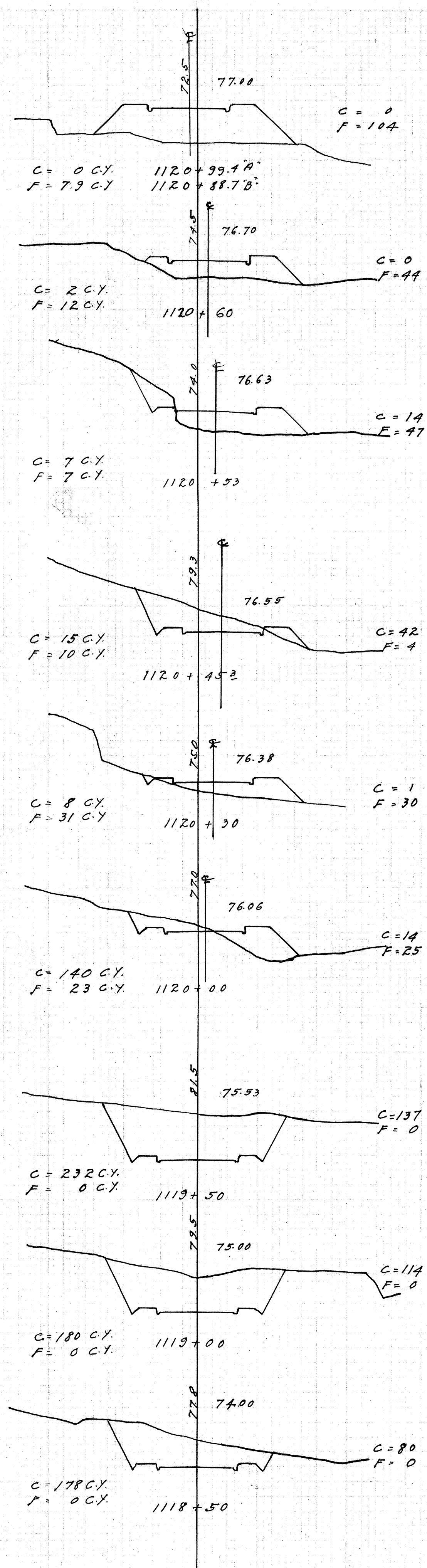


4148.50



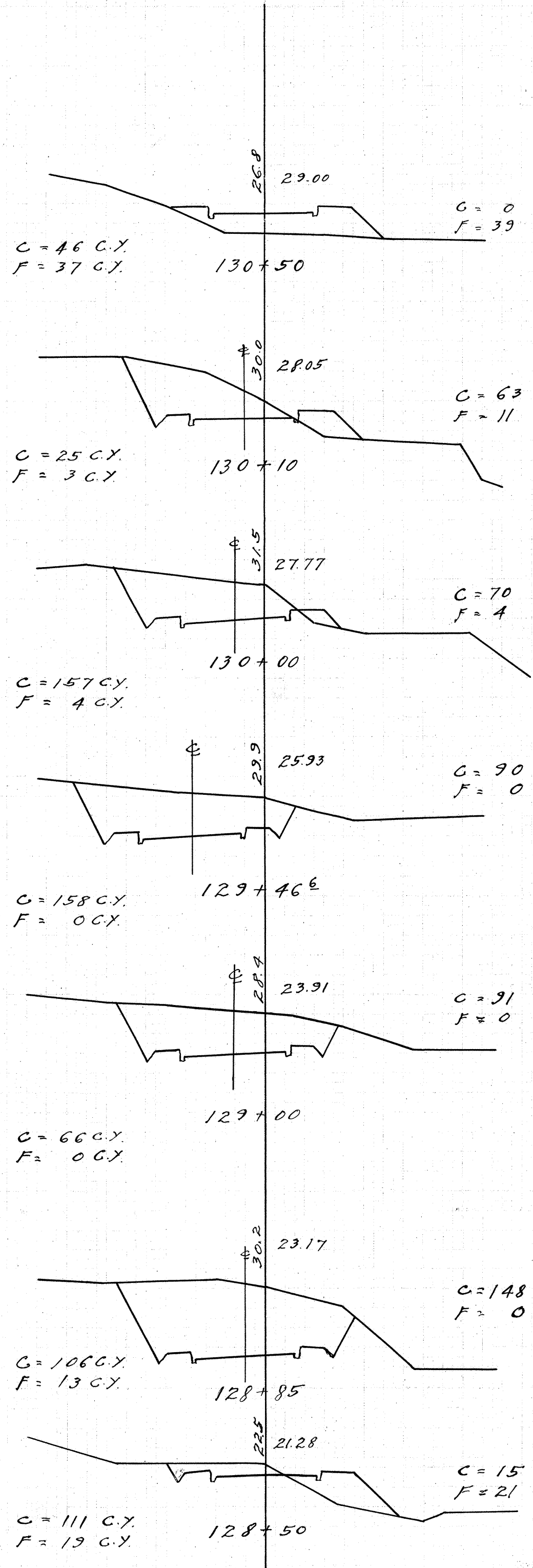
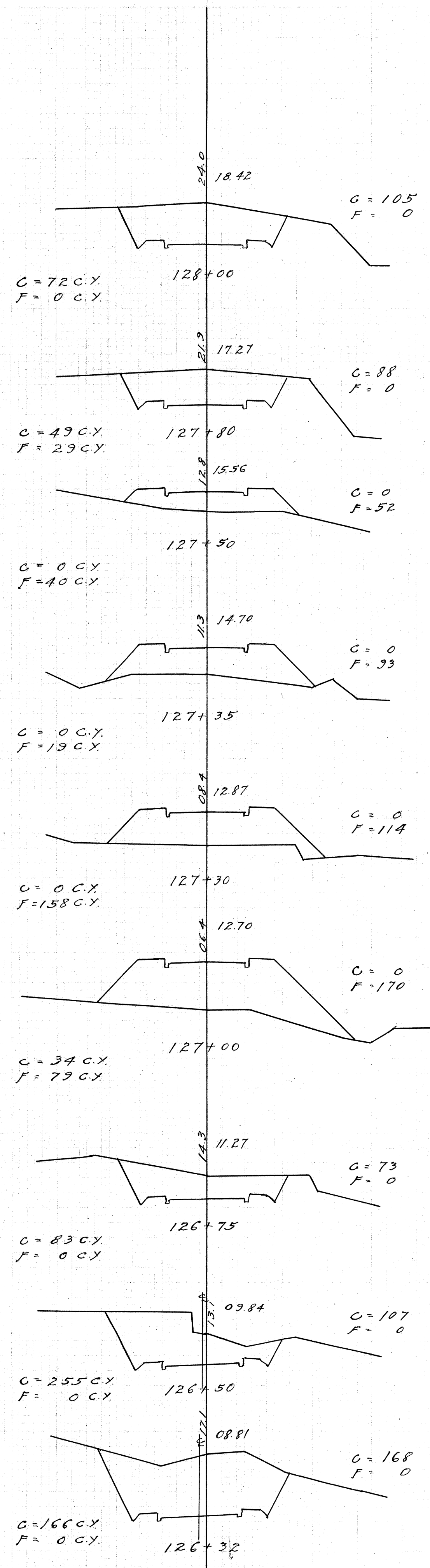


4148.51A



4148.52

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW	HAW	8 A	1931	52A	53

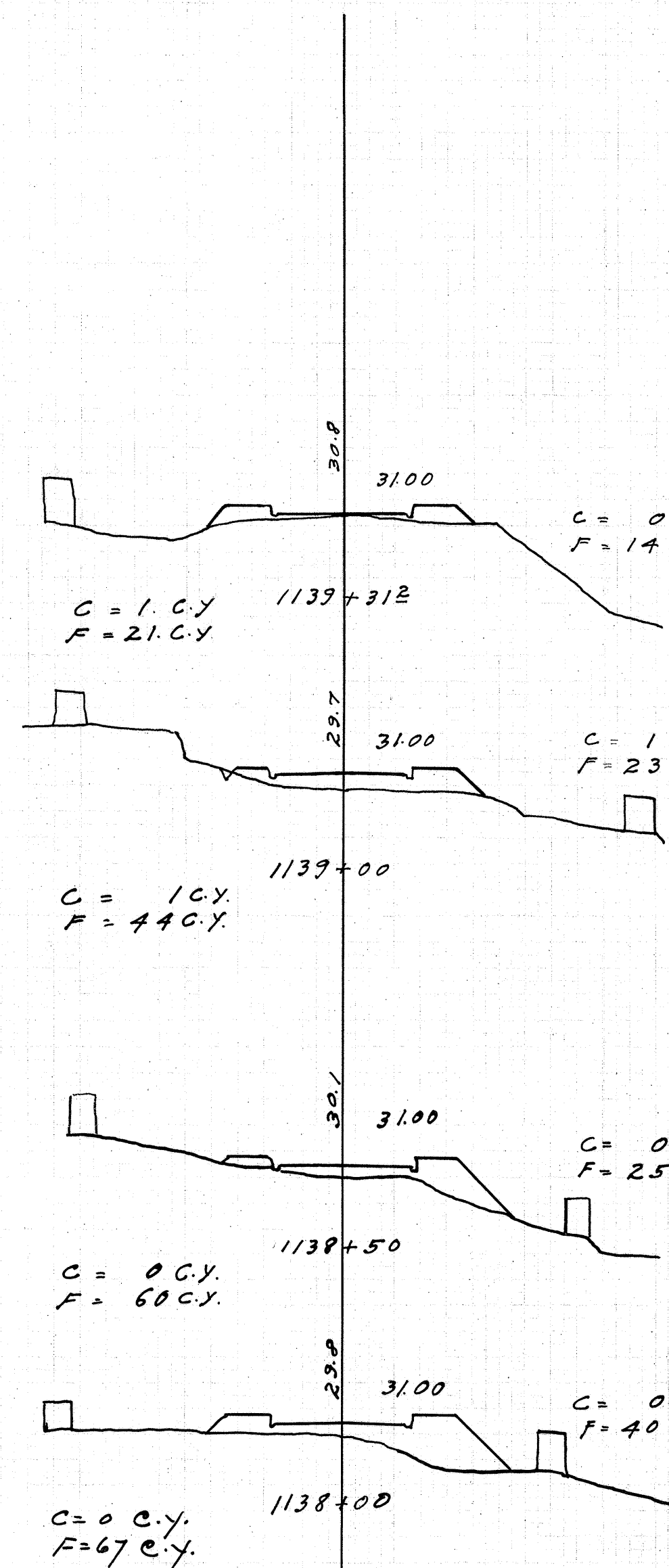
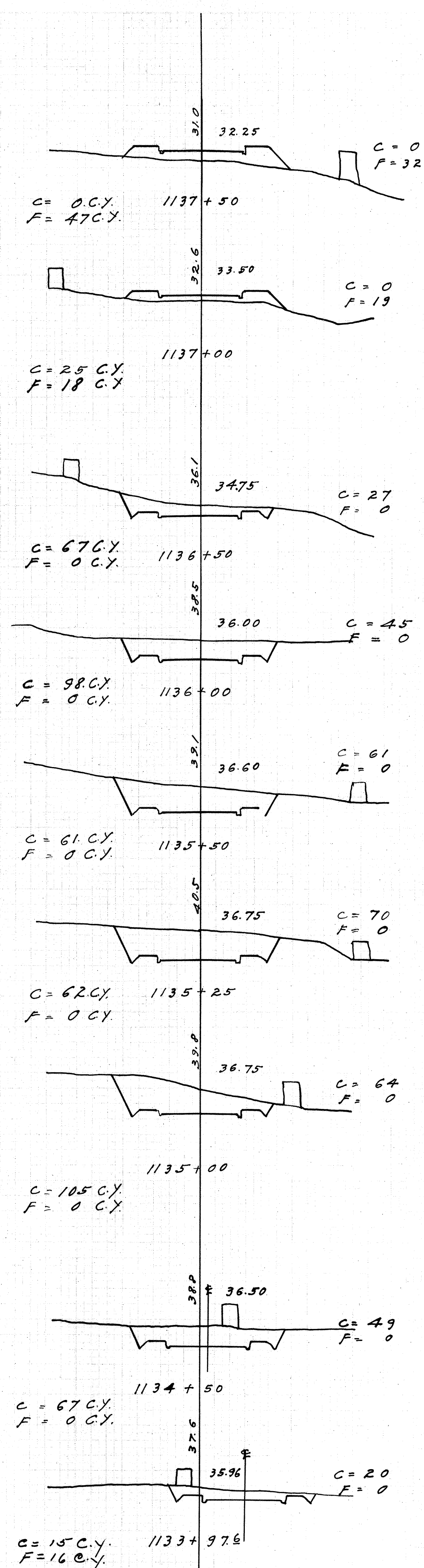
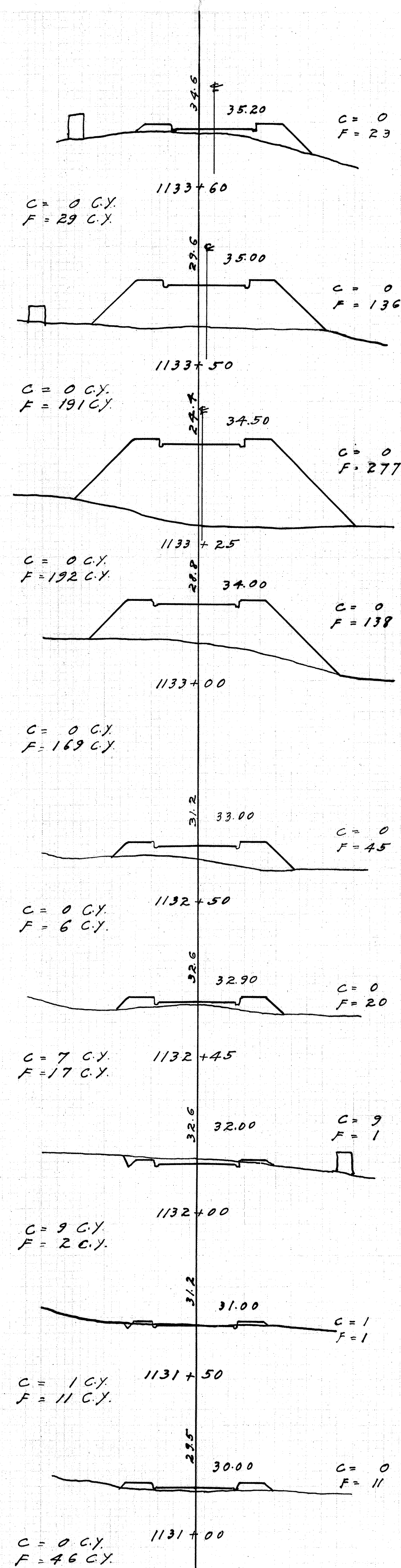


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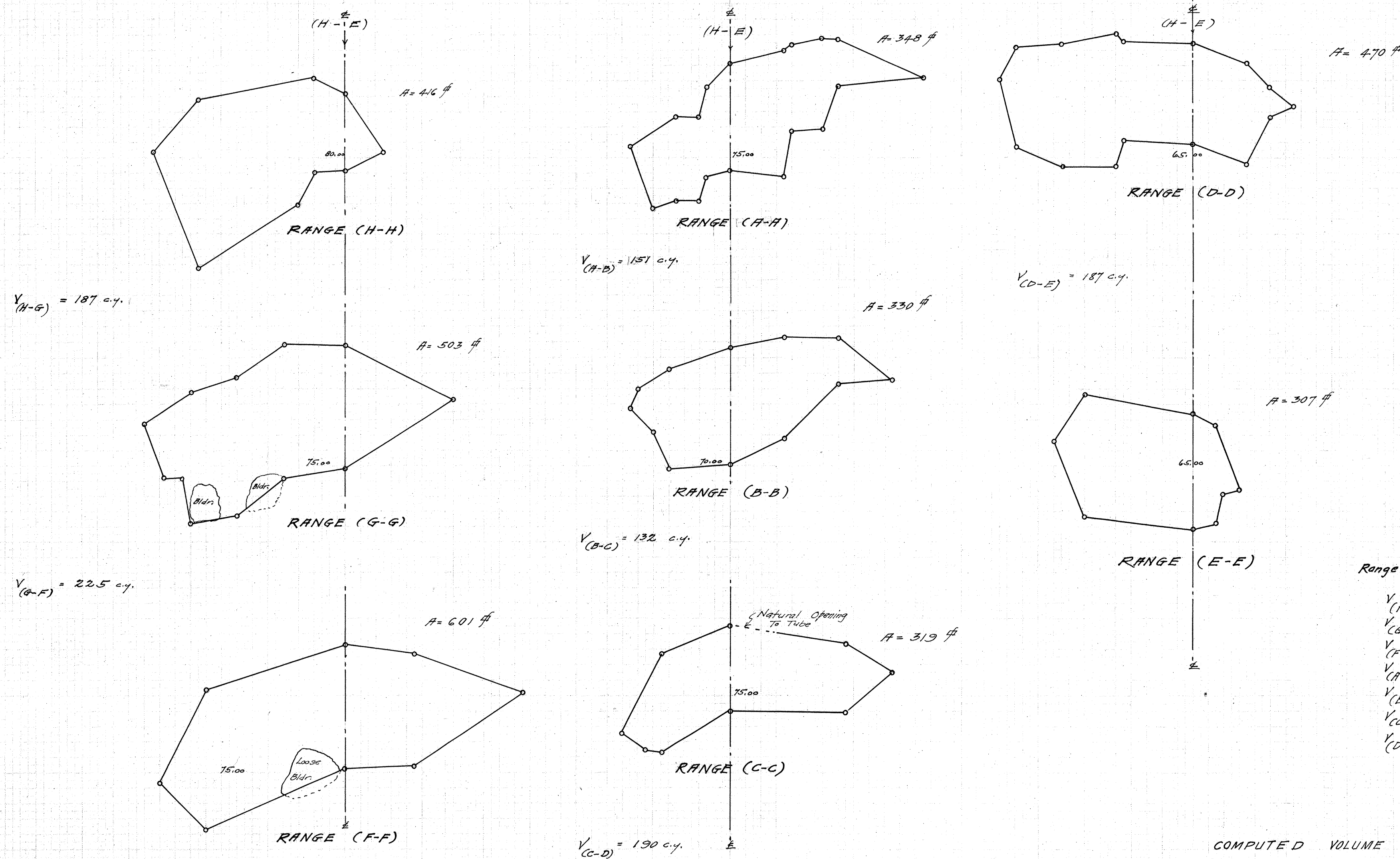
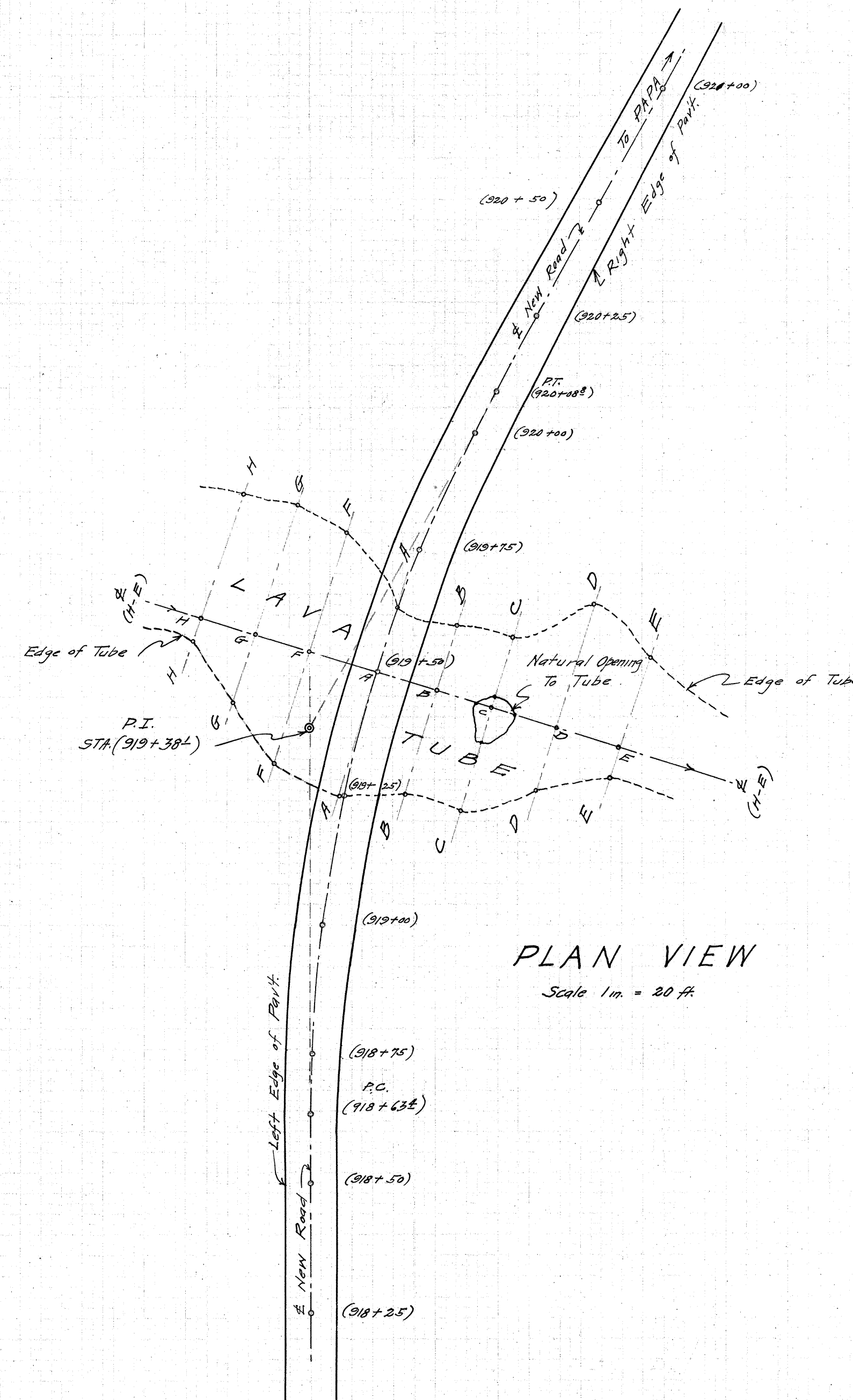
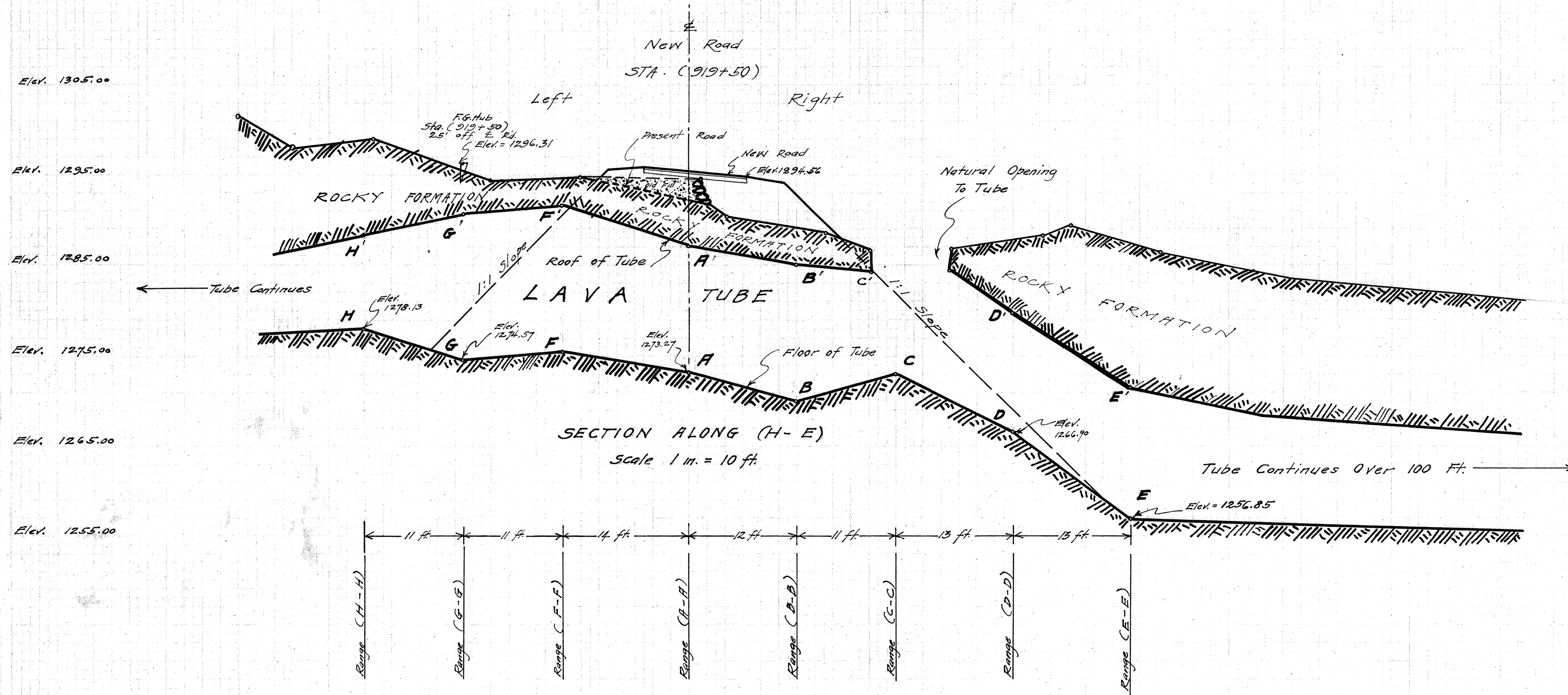
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6	10	2	

As per Original Sheet No. 114152

As per Original Sheet



4148.53



VOLUME OF TUBE
from
Range (H-H) to Range (E-E)

$V(H-G) = 187 \text{ c.y.}$
 $V(G-F) = 22.5 \text{ c.y.}$
 $V(F-A) = 24.6 \text{ c.y.}$
 $V(A-B) = 151 \text{ c.y.}$
 $V(B-C) = 132 \text{ c.y.}$
 $V(C-D) = 190 \text{ c.y.}$
 $V(D-E) = 187 \text{ c.y.}$
 $1318 \text{ c.y.} = \text{Total Volume (H-E)}$

COMPUTED VOLUME OF TUBE WITHIN ROADWAY PRISM = 720 c.y.

X-SECTIONS OF SUBTERRANEAN LAVA TUBE
STA. (919+50)

Scales: { Horizontal 1 in. = 10 ft.
Vertical 1 in. = 10 ft. }

DEPARTMENT OF PUBLIC WORKS
TERRITORY OF HAWAII
PLAN SHOWING LAVA TUBE AT
STA. (919+50)
SOUTH KONA BELT ROAD ----- F.A.P. No. 8 A

Surveyed By: ----- A.S. Kaku
 Drawn By: ----- A.S.K.
 Traced By: ----- A.S.K.
 Scale: ----- As Noted
 Date: ----- Feb. 25, 1931.

APPROVED BY: *John H. Sigler*
TERRITORIAL HIGHWAY ENGINEER

4148.54