

CONVENTIONAL SIGNS

STATE LINE	-----	TIMBER	
COUNTY LINE	-----	BRUSH	
TOWNSHIP OR RANGE LINE	-----	ORCHARD	
SECTION LINE	-----	ROCK LEDGE	
QUARTER LINE	-----	SAND	
SIXTENTH LINE	-----	EDGE OF CUT	
RIGHT-OF-WAY LINE	-----	TOE OF EMBANKMENT	
PRESENT ROAD 1/4" LINE	-----	CATCH BASIN	
LIMITED ACCESS	-----	MANHOLE	
PROPERTY LINE (Except Land Lines)	-----	DROP INLET	
VACATED PLATTED PROPERTY	-----	FIRE HYDRANT	
CORPORATE OR CITY LIMITS	-----	ARC LAMP	
TRUNK HIGHWAY CENTER LINE	-----	OTHER LAMPS (Tale Kind)	
RETAINING WALL	-----	RAILROAD CROSSING SIGN	
STEAM RAILROAD	-----	RAILROAD CROSSING BELL	
ELECTRIC RAILROAD	-----	ELECTRIC WARNING SIGN	
RAILROAD RIGHT-OF-WAY LINE	-----	CROSSING GATE	
CREEK	-----	CATTLE GUARD	
RAPIDS OR WATERFALL	-----	OVERHEAD (Highway Over)	
DRY RUN	-----	UNDERPASS (Highway Under)	
DRAINAGE DITCH	-----	ABUTMENT, WALL & PIER	
HIGH TENSION LINE	-----	BRIDGE	
POWER POLE LINE	-----	CULVERT	
TELEPHONE OR TELEGRAPH LINE	-----	BUILDING (One Story Frame)	
TELEPHONE CONDUIT	-----	C-CONCRETE S-STONE T-TILE B-BRICK ST-STUCCO	
GUARD RAIL	-----	HEDGE	
WIRE FENCE	-----	IRON PIPE	
RAILROAD SNOW FENCE	-----	STONE MONUMENT	
BOARD OR HIGHWAY SNOW FENCE	-----	WOOD STAKE OR HUB	
STONE WALL OR FENCE	-----	MEANDER CORNER	
GAS MAIN	-----		
WATER PIPE	-----		
SEWER PIPE	-----		
DRAIN TILE	-----		
GRAVEL PIT	-----		
SAND PIT	-----		
CLAY PIT	-----		
ROCK QUARRY	-----		
SPRINGS	-----		
MARSH	-----		

**OFFICE OF COUNTY ENGINEER
RAMSEY COUNTY
CONSTRUCTION PLAN FOR GRADING AND SURFACING
McKNIGHT ROAD
FROM SEVENTH AV. (C.S.A.H.29) TO COUNTY ROAD C (C.S.A.H.23)**

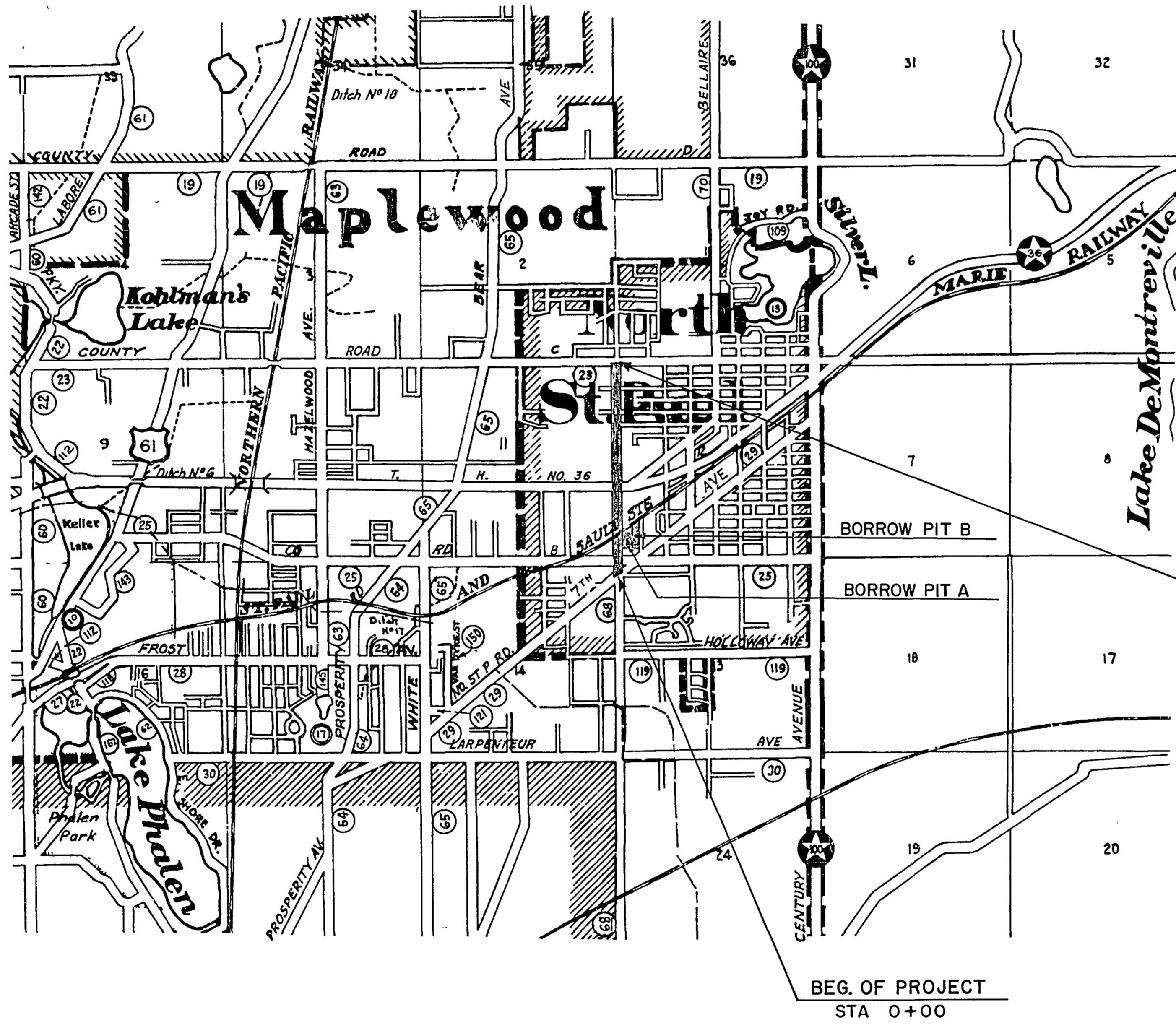
GROSS LENGTH	5766 FEET	1.09 MILES
BRIDGES-LENGTH	FEET	MILES
EXCEPTIONS-LENGTH	FEET	MILES
NET LENGTH	5766 FEET	1.09 MILES

INDEX

SHEET NO	DESCRIPTION
1	TITLE SHEET
2	ESTIMATED QUANTITIES & TYPICAL SECTIONS
3	DRAINAGE STRUCTURES
4-5	PLAN SHEETS
6-15	CROSS SECTIONS

SCALES

PLAN, 1 inch = 100 Feet	PROFILE, Horiz 1 inch = 100 Feet	Vert. 1 inch = 10 Feet	
		WORKING PLANS { Horiz 1 inch = 100 Feet	
	CROSS-SECTIONS 1 inch = 10 Feet	LAYOUT, 1 inch = 2640 Feet	



NOTE: SECTION NUMBERS READ FROM THE SOUTH

PIT DATA

- Borrow PIT NO. A Located at S.E. Cor. Soo Line R.R. & McKnight Rd Dead Haul
- Borrow PIT NO. B Located at S.W. Cor Soo Line R.R. & 3rd Street Dead Haul
- PIT NO. Located in Dead Haul
- PIT NO. Located in Dead Haul

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 _____ COUNTY ENGINEER REG NO 5013 DATE 11/21/60

RECOMMENDED FOR APPROVAL _____ COUNTY ENGINEER DATE 11/21/60
 APPROVED _____ CHAIRMAN OF RAMSEY COUNTY BOARD DATE 11/21/60

RECOMMENDED FOR APPROVAL _____ DISTRICT ENGINEER DATE 11-1
 APPROVED _____ STATE AID ENGINEER DATE 11-1

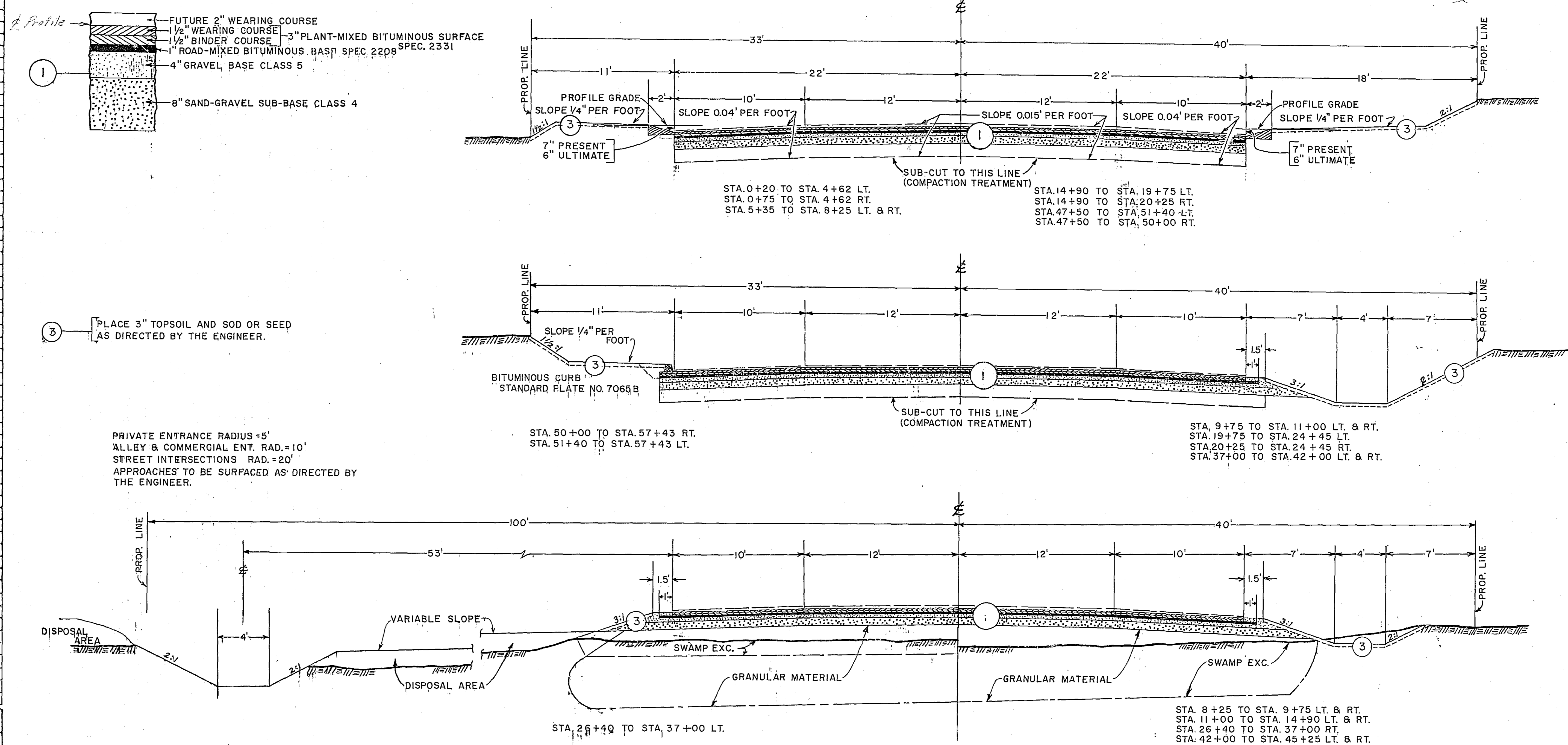
— SPECIFICATIONS —
 THE "SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" DATED MAY 1, 1959 SHALL GOVERN.

MICRO-FILMED

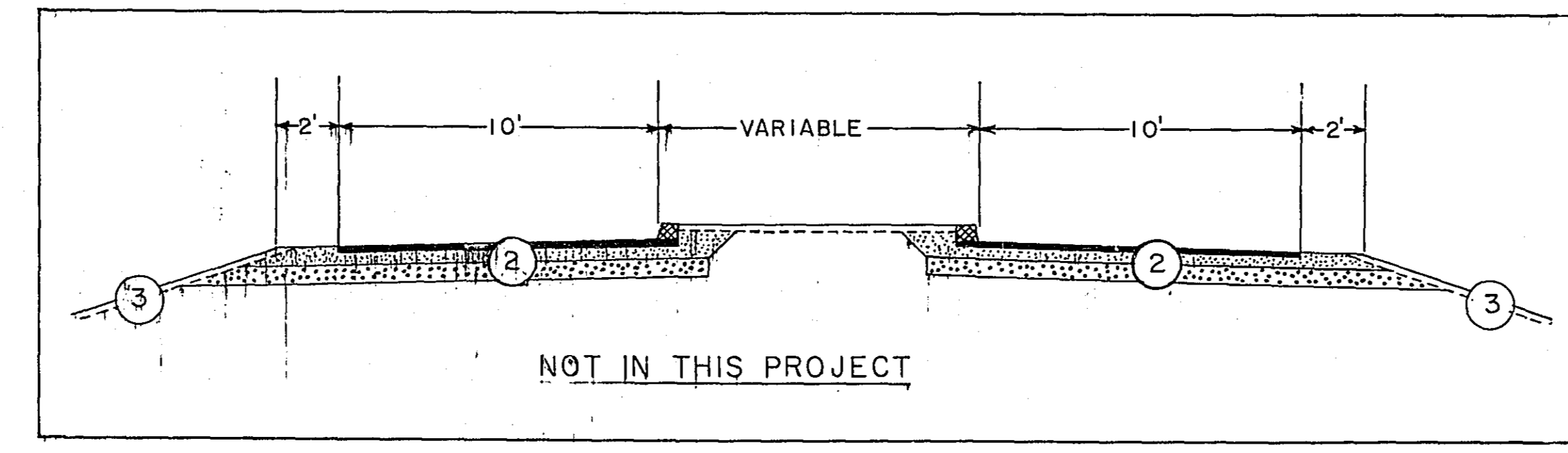
ESTIMATED QUANTITIES			
SPEC. NO.	DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITIES
2101.501	CLEARING	ACRE	0.3
2101.502	CLEARING	TREE	33
2101.506	GRUBBING	ACRE	0.3
2101.507	GRUBBING	TREE	33
2104.501	REMOVE PORTABLE CULVERTS (48" APRONS)	LINEAR FOOT	16
2105.501	CLASS A EXCAVATION	CUBIC YARD	27,464
2105.508	BORROW EXCAVATION (CLASS A) PIT A & B	CUBIC YARD	15,024
2105.506	BORROW EXCAVATION (CLASS A) PIT A, GRANULAR	CUBIC YARD	11,189
2123.506	1 CU. YD. DRAGLINE (SPECIAL SWAMP EXCAVATION)	HOURLY	500
2201.527	GRAVEL SUB-BASE IN PLACE (CLASS 4)	CUBIC YARD (V.M.)	8,100
2202.527	GRAVEL BASE IN PLACE (CLASS 5)	CUBIC YARD (V.M.)	4,500
2208.501	BITUMINOUS MATERIAL FOR PRIME COAT	GALLON	9,100
2208.503	BITUMINOUS MATERIAL FOR MIXTURE	GALLON	15,700
2208.506	AGGREGATE	TON	1,407
2331.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	1,450
2331.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	225
2331.511	BITUMINOUS MIXTURE (BINDER COURSE)	TON	2,180
2331.511	BITUMINOUS MIXTURE (WEARING COURSE)	TON	2,250
2501.511-24	F. & I. C.M. PIPE CULVERT 24"	LINEAR FOOT	128
2501.511-36	F. & I. C.M. PIPE CULVERT 36"	LINEAR FOOT	90
2501.512-22	F. & I. C.M. PIPE ARCH CULVERT 22" SPAN	LINEAR FOOT	34
2501.521-18	F. & I. S.C. PIPE CULVERT (CLASS 2) 18"	LINEAR FOOT	46
2501.521-24	F. & I. S.C. PIPE CULVERT (CLASS 2) 24"	LINEAR FOOT	48
2501.521-36	F. & I. S.C. PIPE CULVERT (CLASS 2) 36"	LINEAR FOOT	48
2501.522-29	F. & I. S.C. PIPE ARCH CULVERT (CLASS 2) 29" SPAN	LINEAR FOOT	50
2503.512-15	F. & I. R.C. PIPE SEWER (CLASS 2) 15"	LINEAR FOOT	160
2503.512-18	F. & I. R.C. PIPE SEWER (CLASS 2) 18"	LINEAR FOOT	214
2503.512-48	F. & I. R.C. PIPE SEWER (CLASS 2) 48"	LINEAR FOOT	74
2503.521	INSTALL R.C. PIPE SEWER (48" APRON)	LINEAR FOOT	8
2506.506	CONSTRUCT MANHOLES, TYPE A	LINEAR FOOT	9.7
2506.506	CONSTRUCT MANHOLE, SPECIAL	LINEAR FOOT	7.1
2506.507	CONSTRUCT CATCH BASINS, TYPE G	LINEAR FOOT	9.2
2506.511	RECONSTRUCT MANHOLES	LINEAR FOOT	14.3
2506.516	F. & I. CASTING ASSEMBLIES	ASSEMBLY	4
2506.522	ADJUST FRAME & IRING CASTINGS	ASSEMBLY	18
2515.531-24	F. & I. METAL APRON FOR 24" C.M. PIPE CULVERT	APRON	2
2515.532-22	F. & I. METAL APRON FOR C.M. PIPE ARCH CULVERT 22" SPAN	APRON	2
2515.541-15	F. & I. CONCRETE APRON FOR 15" R.C. PIPE SEWER	APRON	4
2515.541-18	F. & I. CONCRETE APRON FOR 18" S.C. PIPE SEWER	APRON	2
2515.541-24	F. & I. CONCRETE APRON FOR 24" S.C. PIPE SEWER	APRON	2
2515.541-36	F. & I. CONCRETE APRON FOR 36" S.C. PIPE SEWER	APRON	12
2515.542-29	F. & I. CONCRETE APRON FOR S.C. PIPE ARCH SEWER 29" SPAN	APRON	2
2535.501	BITUMINOUS CURB	LINEAR FOOT	1,370
2574.501	ROADSIDE SEEDING	ACRE	4
2574.511	SEED (CLASS 15)	POUND	120
2574.511	SEED (CLASS 16)	POUND	180
2576.501	SODDING	SQUARE YARD	800

STANDARD DETAIL PLATES	
3000 B	REINFORCED CONCRETE PIPE
3014	REINFORCED CONCRETE PIPE-ARCH
3040	ODDRUGATED METAL PIPE-ARCH
3100 B	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3110	CONCRETE APRON FOR REINFORCED CONCRETE PIPE-ARCH
3122 A	METAL APRON FOR C.M. PIPE ARCH/CULVERTS
3123 A	METAL APRON FOR C.M. PIPES
#0000 & 40060	MANHOLE OR CATCH BASIN
4101 A	RING CASTING FOR MANHOLE OR CATCH BASIN
4106 B	BATCH BASIN FRAME CASTING
4108 B	GRATE CASTING FOR CATCH BASIN
4101 C	CURB BOX CASTING FOR CATCH BASIN
4100 D	MANHOLE STEEP CASTING
7065 B	BITUMINOUS CURB
8003	WARNING SIGNS
9102 A	SODDING AT PIPE CULVERT ENDS

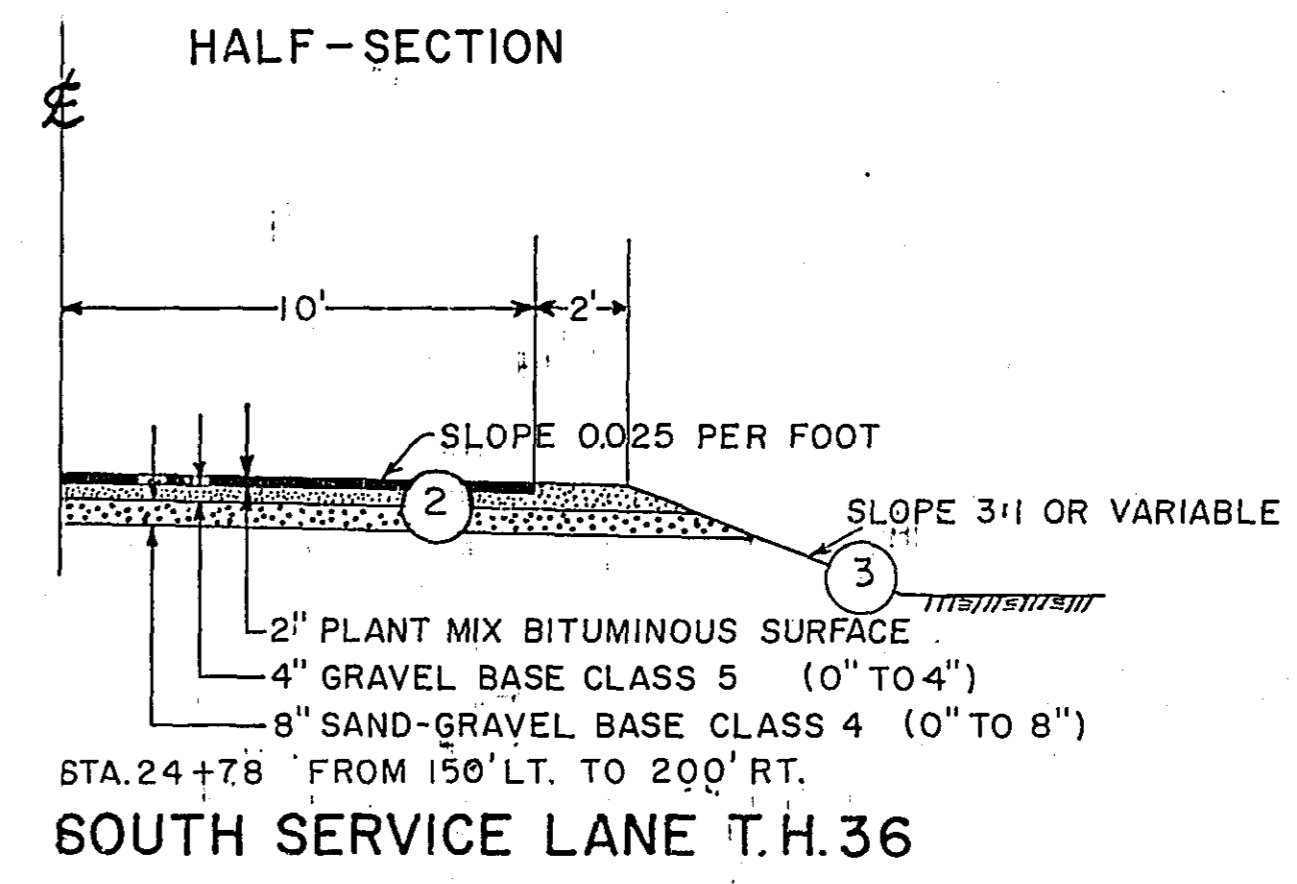
TYPICAL SECTIONS



PRIVATE ENTRANCE RADIUS = 5'
ALLEY & COMMERCIAL ENT. RAD. = 10'
STREET INTERSECTIONS RAD. = 20'
APPROACHES TO BE SURFACED AS DIRECTED BY THE ENGINEER.



NOT IN THIS PROJECT



SOUTH SERVICE LANE T.H. 36

Sta. 31+30 ±
F&I. 36'x48" S.C.P.Culv.
F&I. 2'-36" S.C. Aprons

Sta. 35+00 ±
F&I. 18'x48" S.C.P.Culv.
F&I. 2'-18" S.C. Aprons

Sta. 38+25 ±
F&I. 18'x50" S.C.P.Culv.
F&I. 2'-18" S.C. Aprons

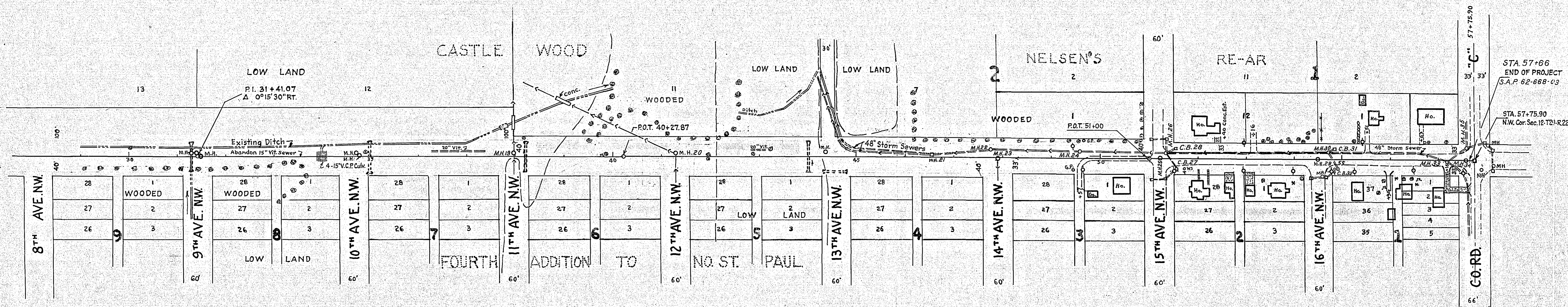
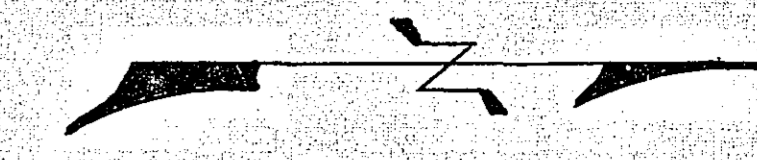
MANHOLES TO BE REMOVED
INCIDENTAL WORK
Sta. 31+30 Lt.6 Sta. 31+40 Lt.6
Sta. 31+46 ± Sta. 34+70 Lt.7
Sta. 34+75 Lt.2 Sta. 44+37 Lt.9

Sta. 44+00 ±
F&I. S.C.P.A. 50 L.F. Span = 29"
F&I. 2'-S.C.P.A. Aprons

Sta. 44+57 Rt. 30'
F&I. C.M.P.A. 34 L.F. Span = 22"
F&I. 2'-C.M.P.A. Aprons

INCIDENTAL WORK
Sta. 34+02 ±
Remove 4 15" V.C.P. Culv.

Sta. 38+00 Lt.70'
Do Not Disturb Sewer



COMPACTION TREATMENT
EXCAVATE TO INDICATED DEPTH BELOW PROFILE GRADE.
BACKFILL TO WITHIN 1.3' OF PROFILE GRADE WITH
SUITABLE MATERIAL FROM LOCAL AND ADJACENT CUTS
OR FROM BORROW PIT, INCLUDING 20' TO 1' TAPERS
AT EACH END.

EXCAVATE 2.3' BELOW PROFILE GRADE
STA. 0+00 TO STA. 5+65
STA. 9+75 TO STA. 11+00
STA. 37+00 TO STA. 42+00

EXCAVATE 3.3' BELOW PROFILE GRADE
STA. 5+65 TO STA. 8+00
STA. 15+00 TO STA. 18+80
STA. 18+50 TO STA. 20+50
STA. 21+50 TO STA. 24+60
STA. 46+00 TO STA. 57+43

EXCAVATE 4.3' BELOW PROFILE GRADE
STA. 16+80 TO STA. 18+50
STA. 20+50 TO STA. 21+50

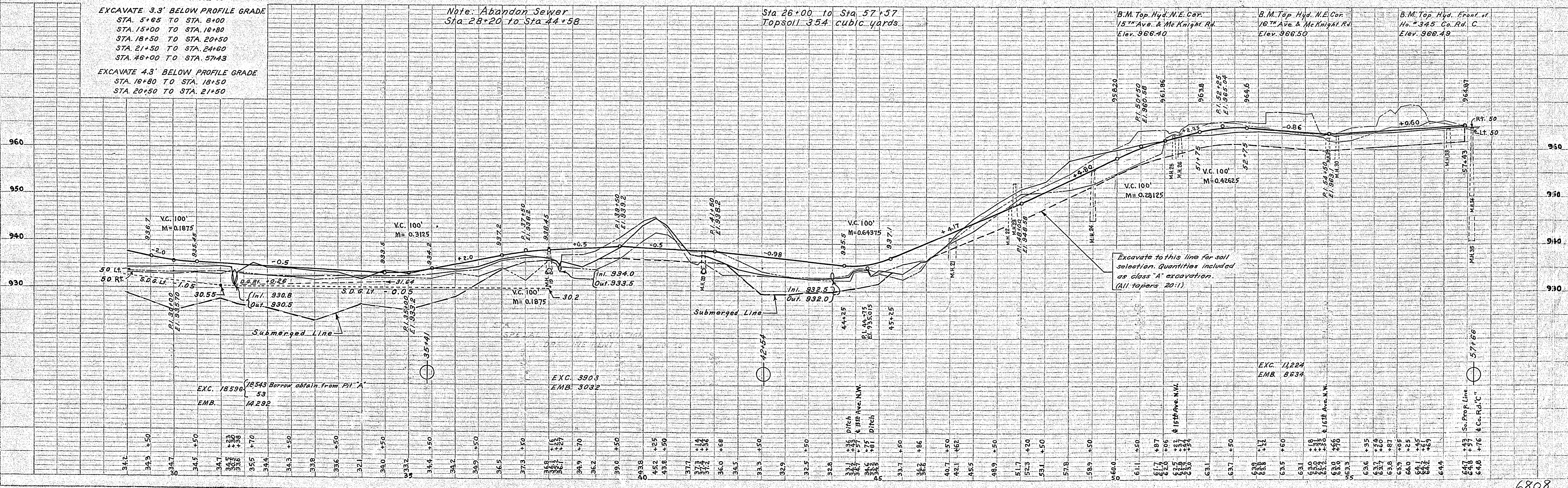
Note: Abandon Sewer
Sta. 28+20 to Sta. 44+58

Sta. 26+00 to Sta. 57+57
Topsoil 354 cubic yards

B.M. Top Hyd. N.E. Cor.
15th Ave. & Mc Knight Rd.
Elev. 966.40

B.M. Top Hyd. N.E. Cor.
16th Ave. & McKnight Rd.
Elev. 966.50

B.M. Top Hyd. Front of
Ho. 345 Co. Rd. C
Elev. 966.49



PLAN

DATE	
BY	
CHECKED	
APPROVED	
NO.	

PROFILE

DATE	
BY	
CHECKED	
APPROVED	
NO.	

STATION-ELEVATION
C

EXCAVATION / EMBANKMENT
SUB TOTALS CU. YD. CUT FILL

STATION-ELEVATION
C

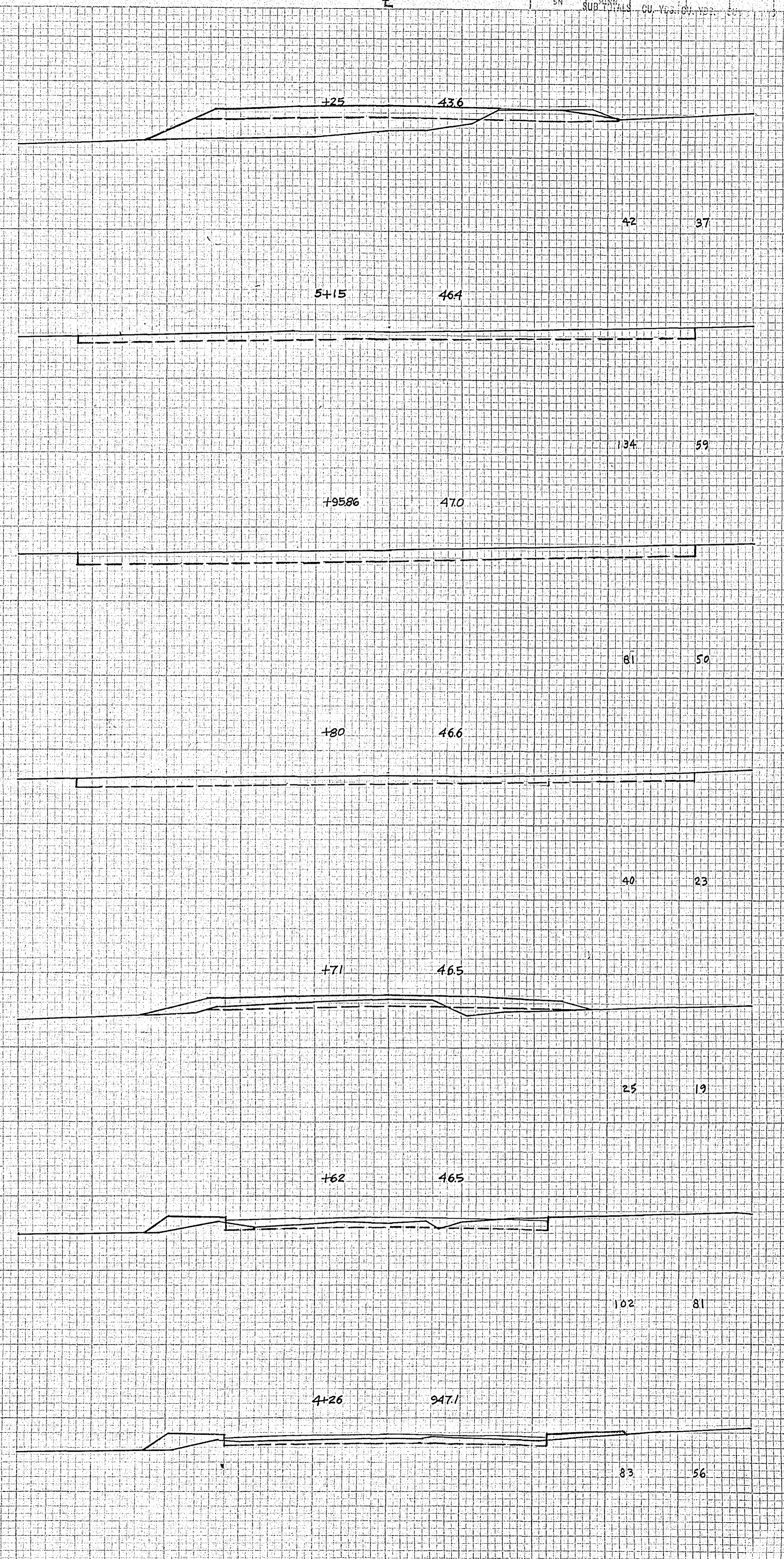
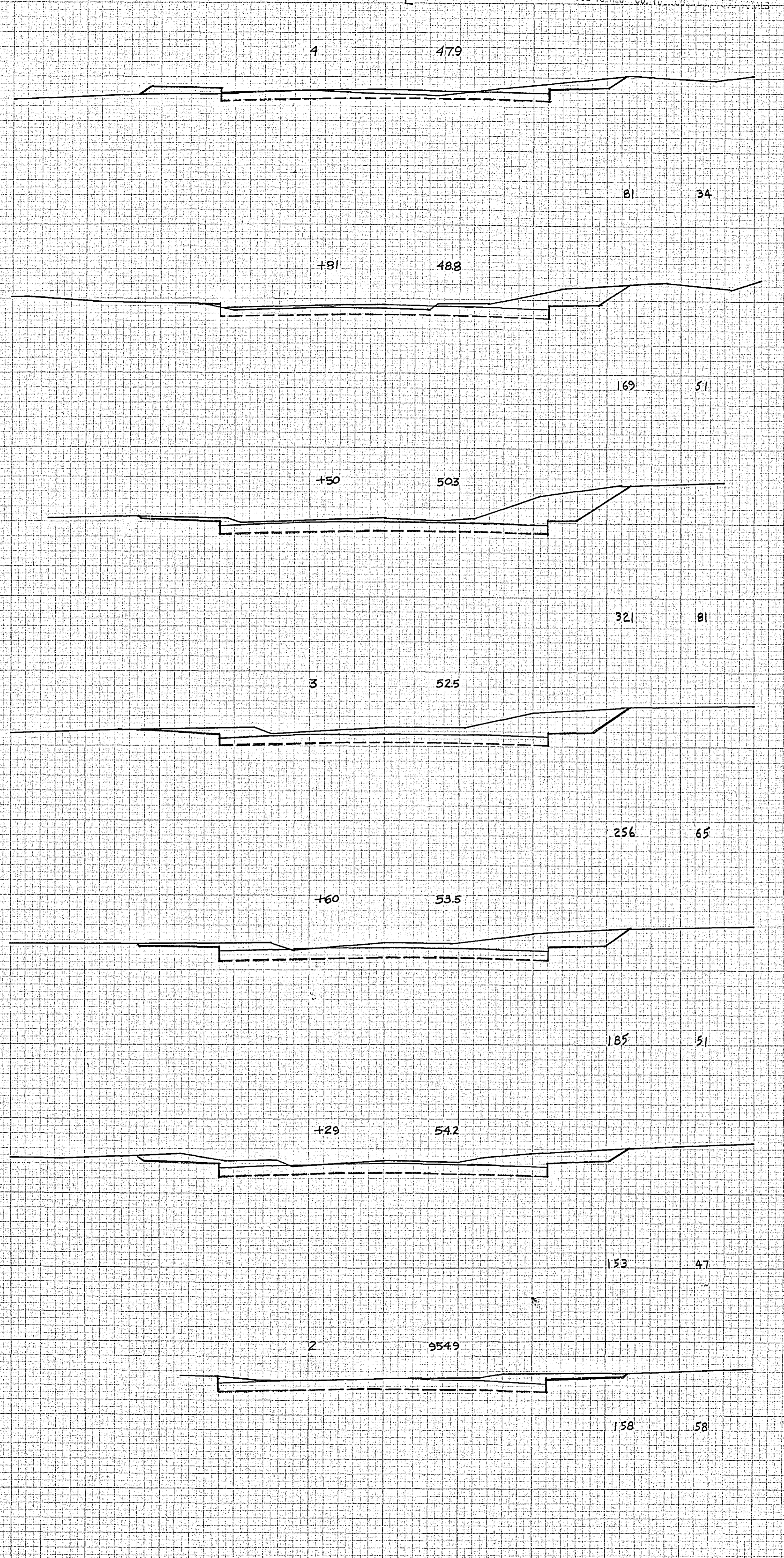
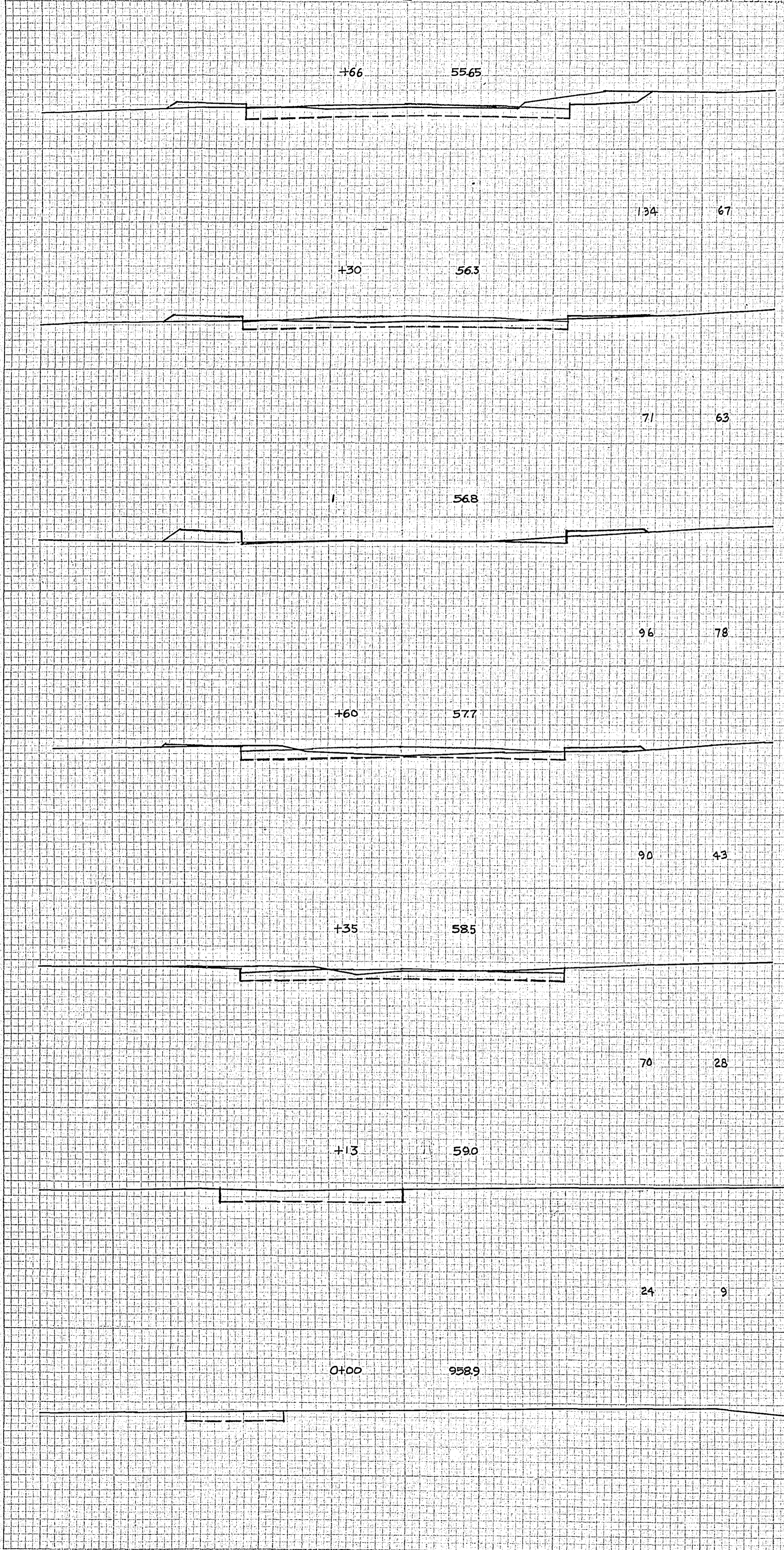
EXCAVATION / EMBANKMENT
SUB TOTALS CU. YD. CUT FILL

STATION-ELEVATION
C

FED. ROAD DIST. NO. EX. DIST. NO. FEDERAL DIST. NO. SHEET NO. TOTAL SHEETS
SN SUB TOTALS CU. YD. CUT FILL

FINAL SURVEY PLOTTED DATE
NOTE BOOK NO. AREAS CHECKED

ORIGINAL SURVEY PLOTTED DATE
NOTE BOOK NO. AREAS CHECKED



STATION-ELEVATION

EXCAVATION | EMBANKMENT
SUB TOTALS CU. YDS. CU. YDS. SUB TOTALS

STATION-ELEVATION

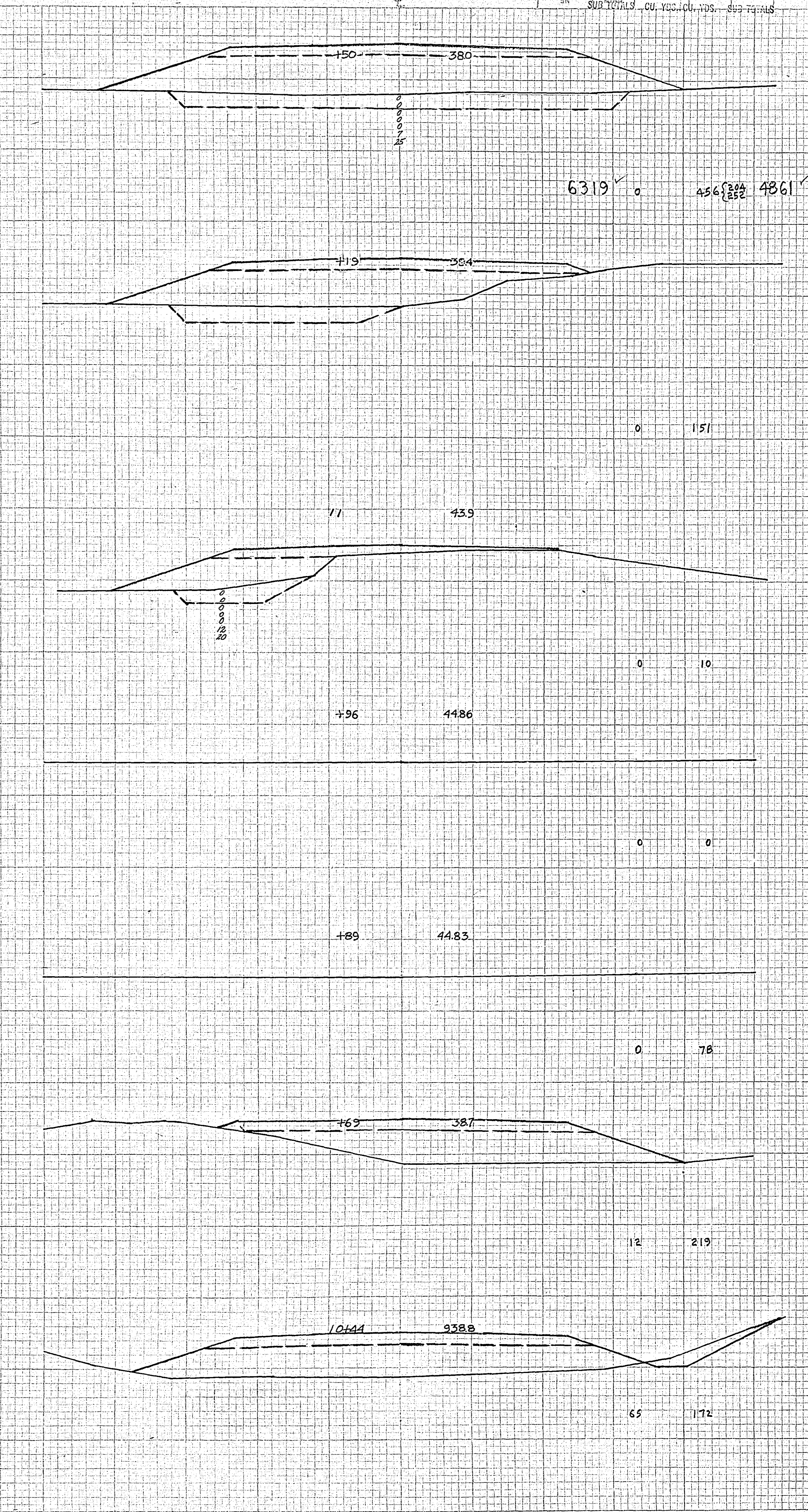
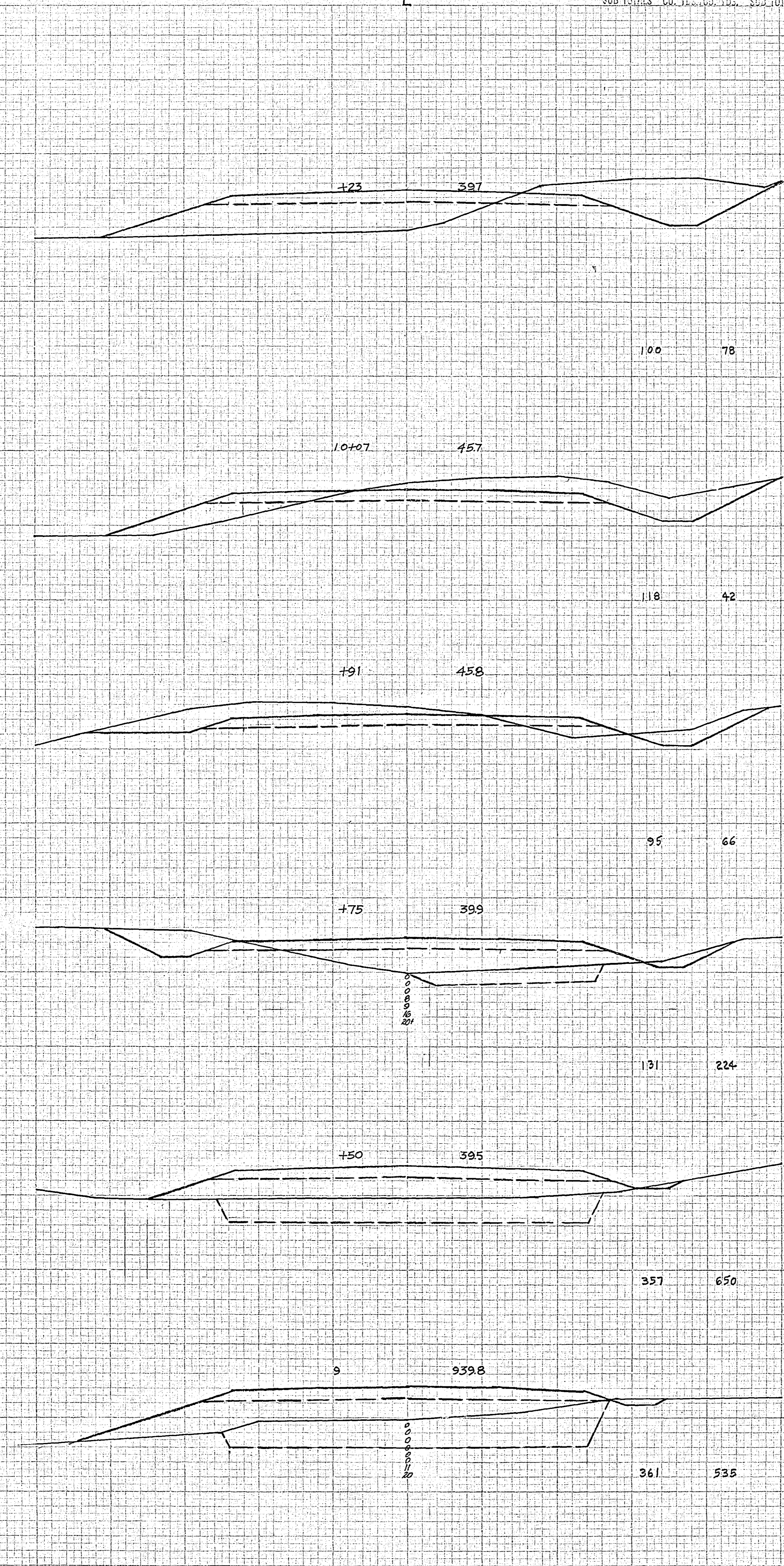
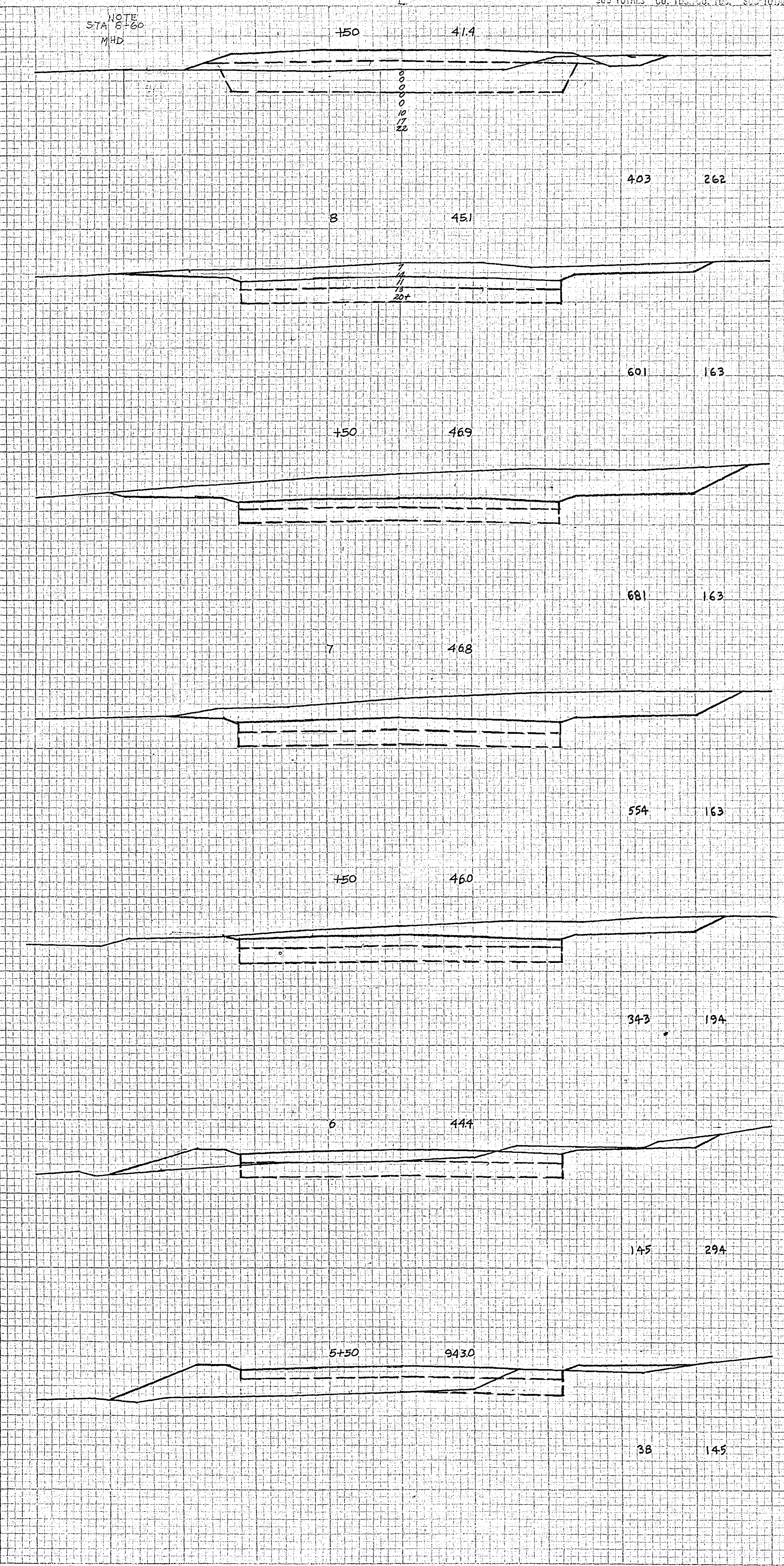
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SUB TOTALS CU. YDS. CU. YDS. SUB TOTALS

STATION-ELEVATION

RED. ROAD DIST. NO. PROJECT LOCATION CONTRACT NO. SHEET NO. OF TOTAL SHEETS
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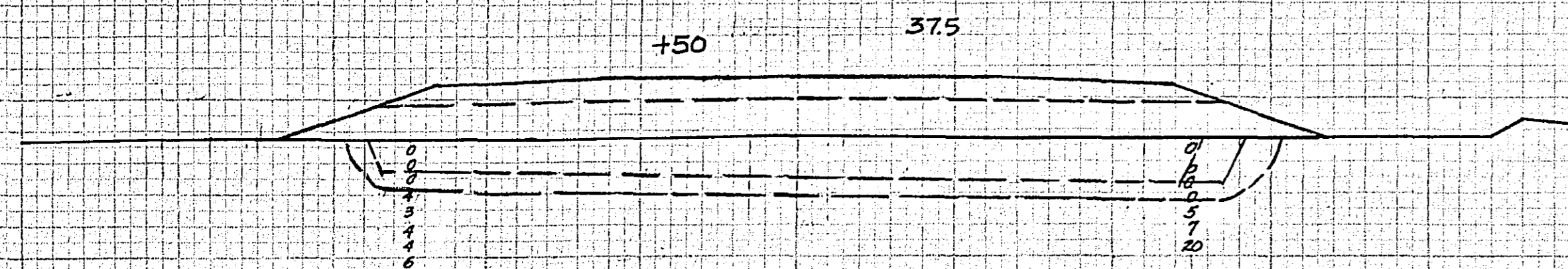
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NOTE BOOK NO.

DATE
37
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NOTE BOOK NO.

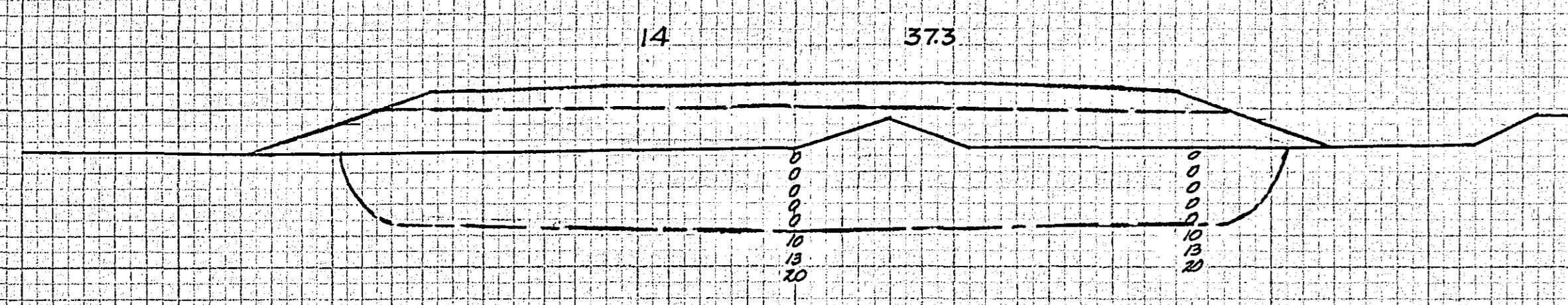


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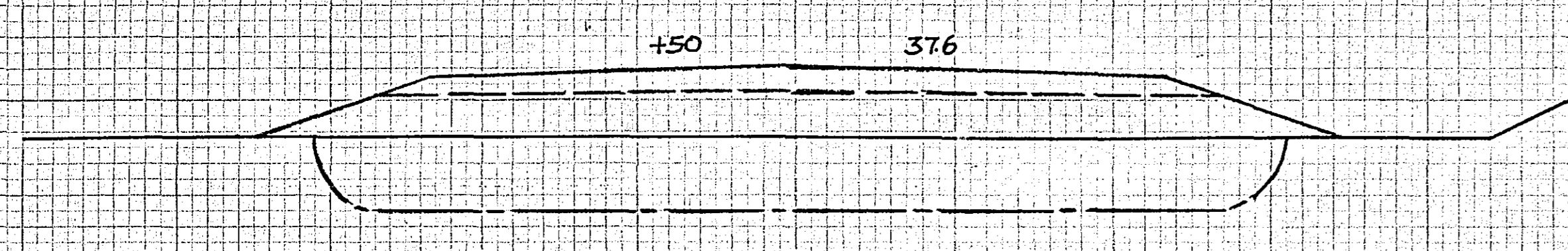
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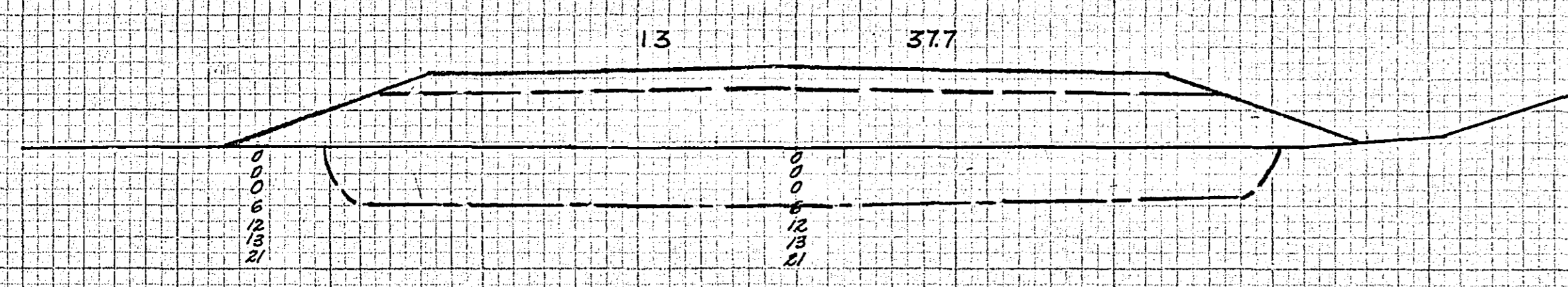
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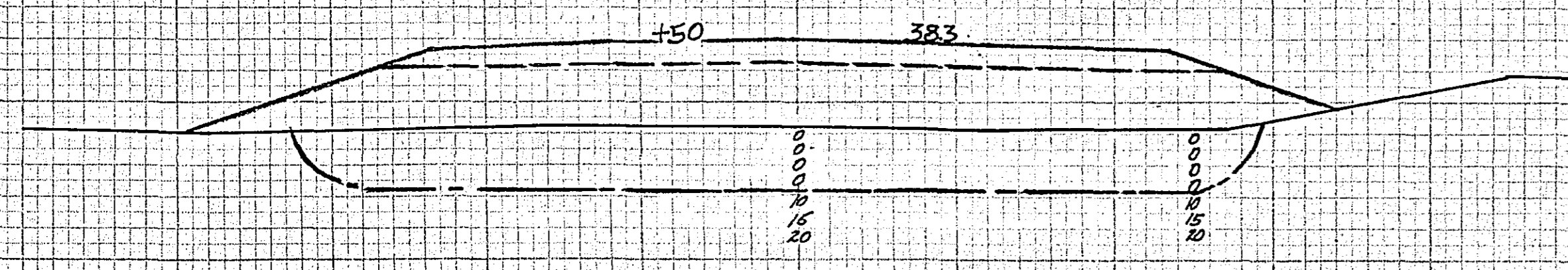
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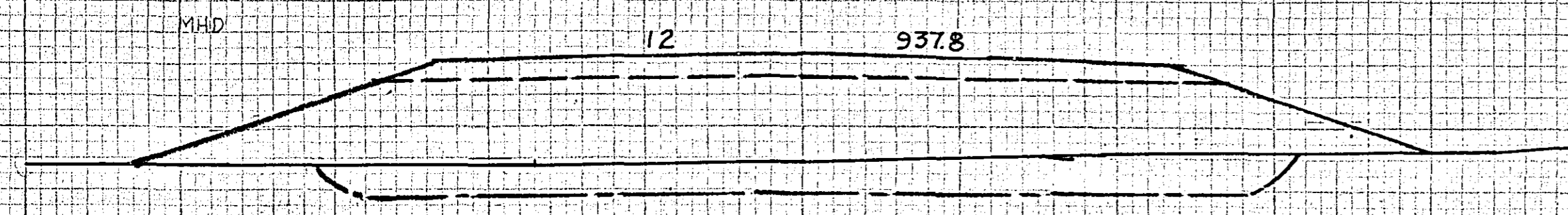
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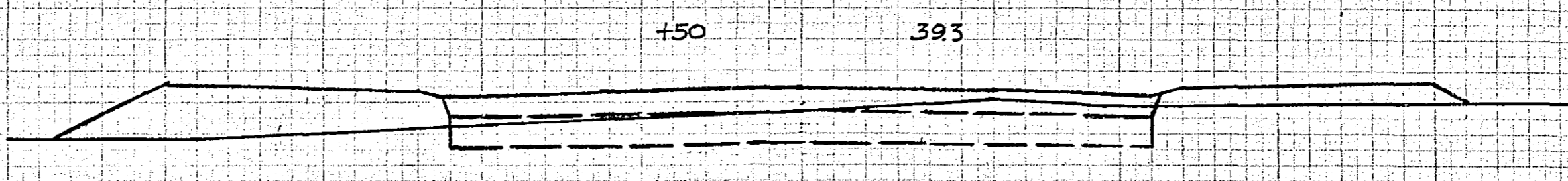
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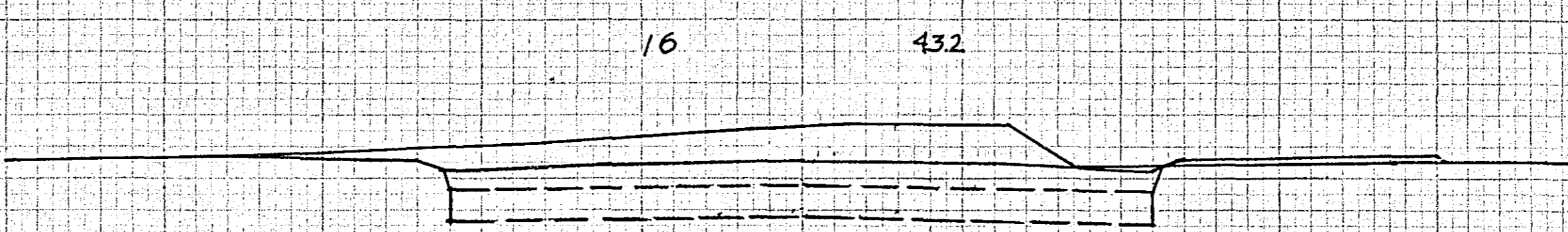
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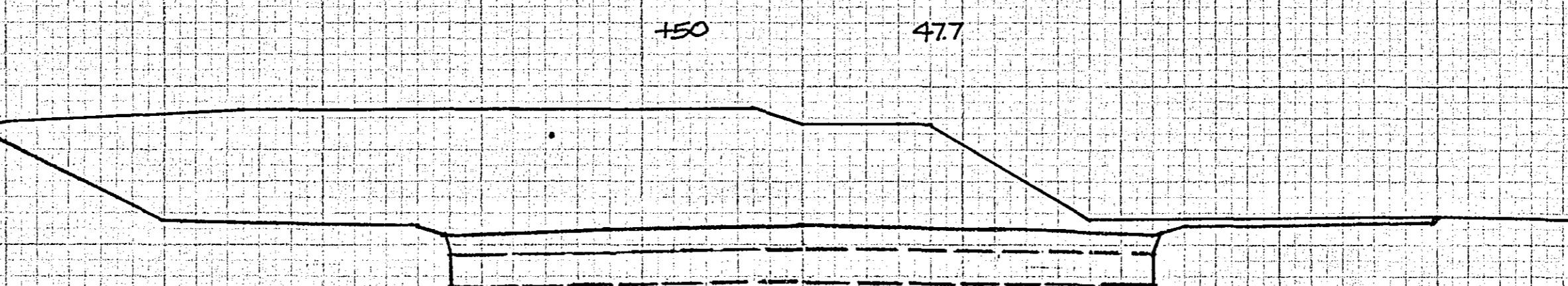
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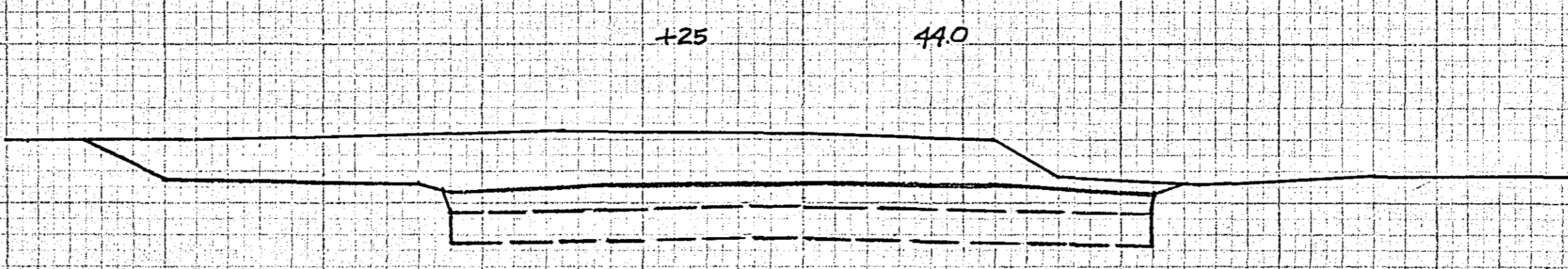
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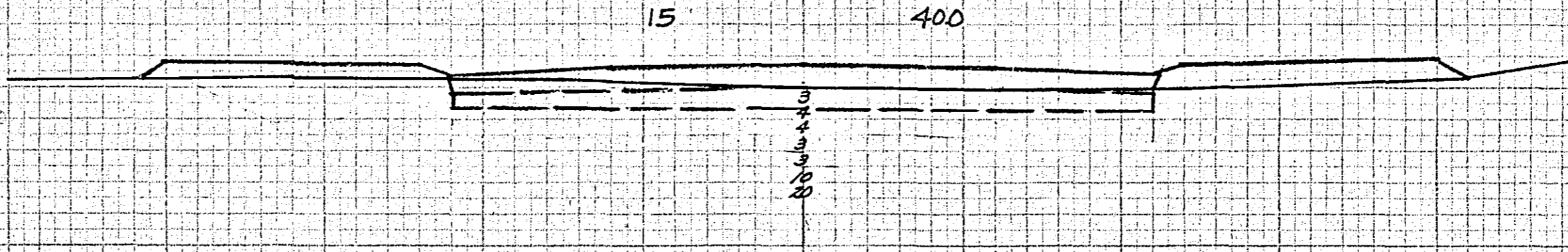
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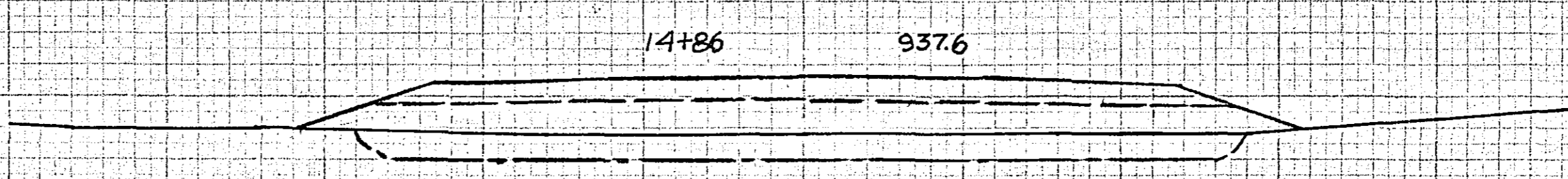
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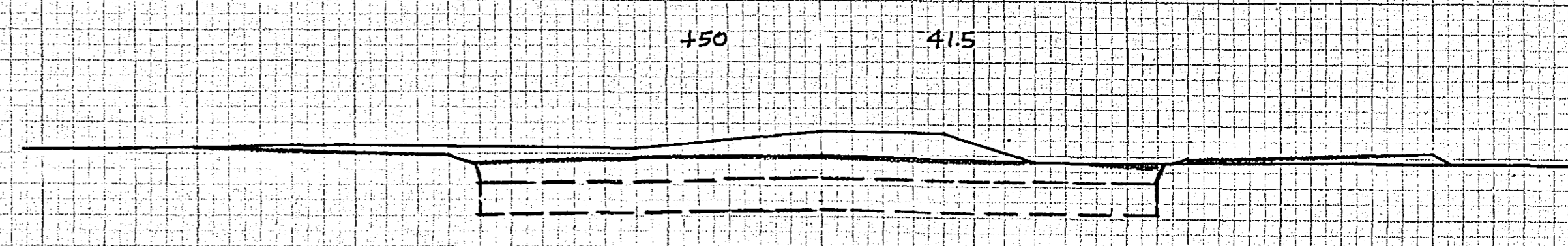
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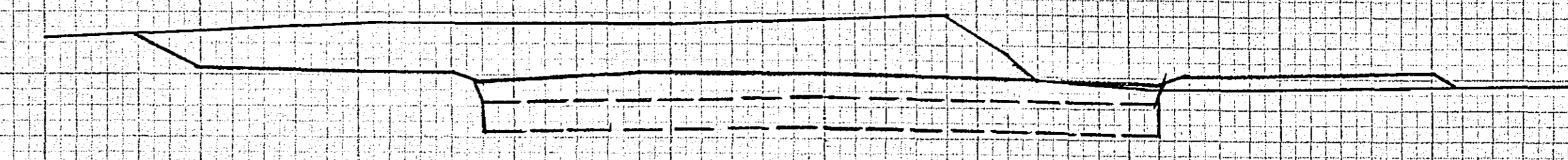
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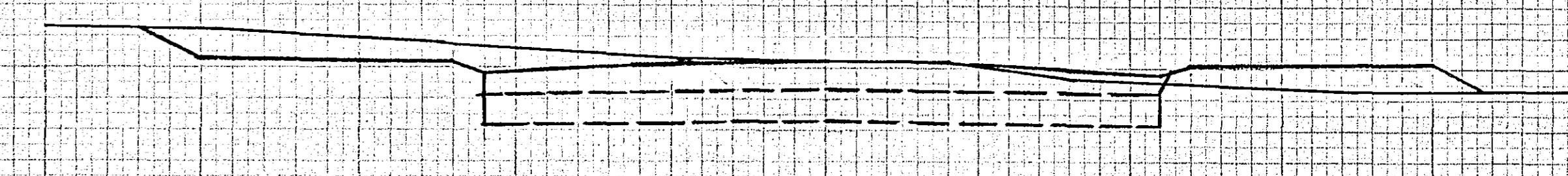
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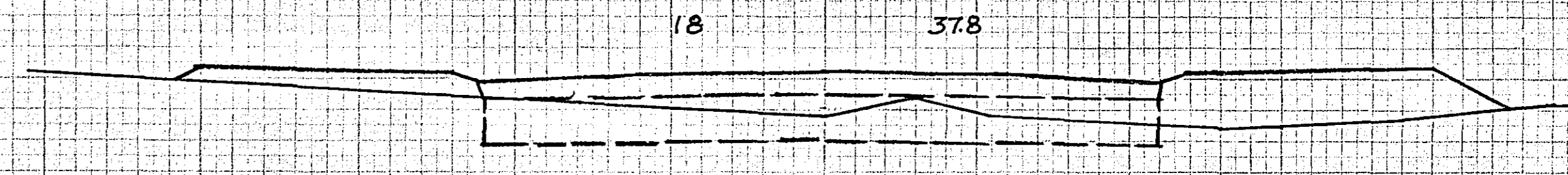
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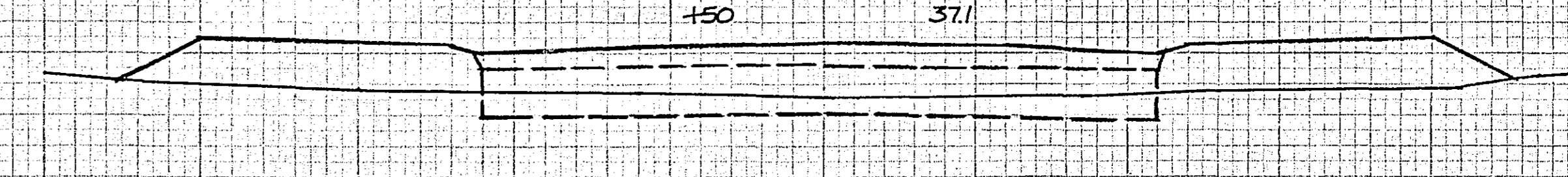
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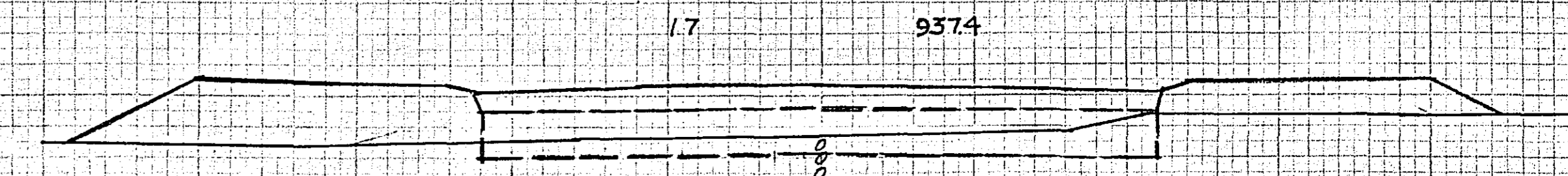
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116 497



116 497

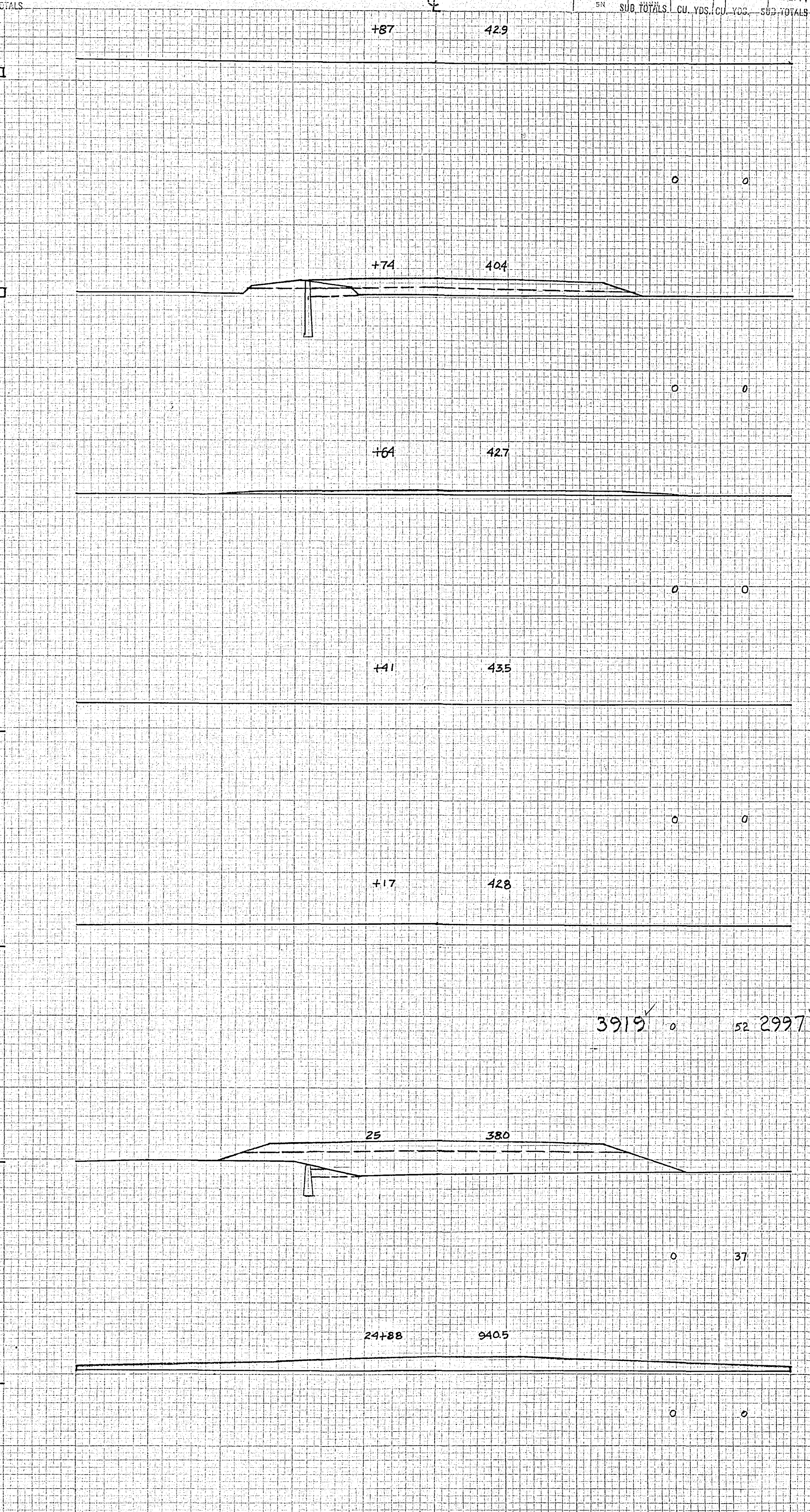
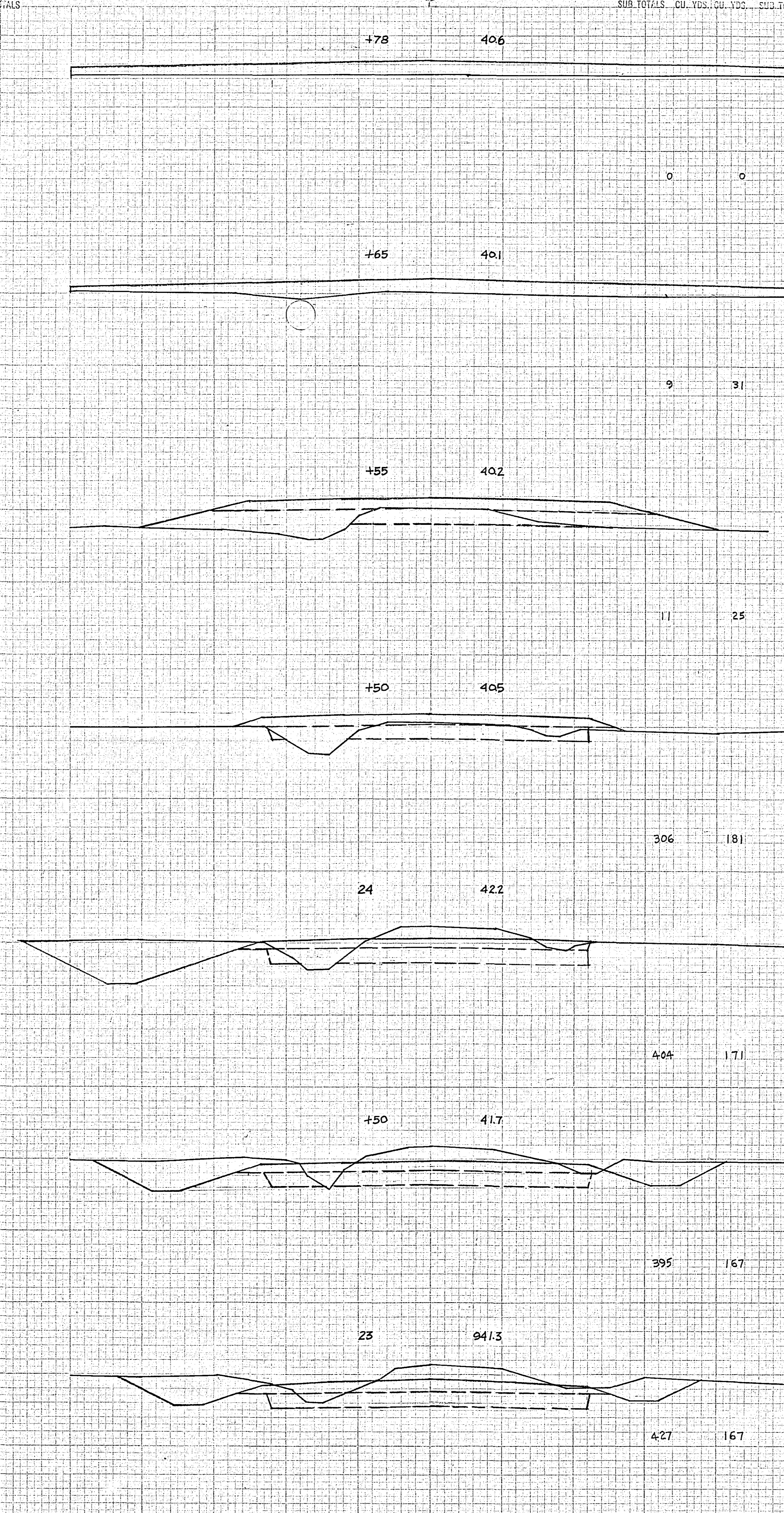
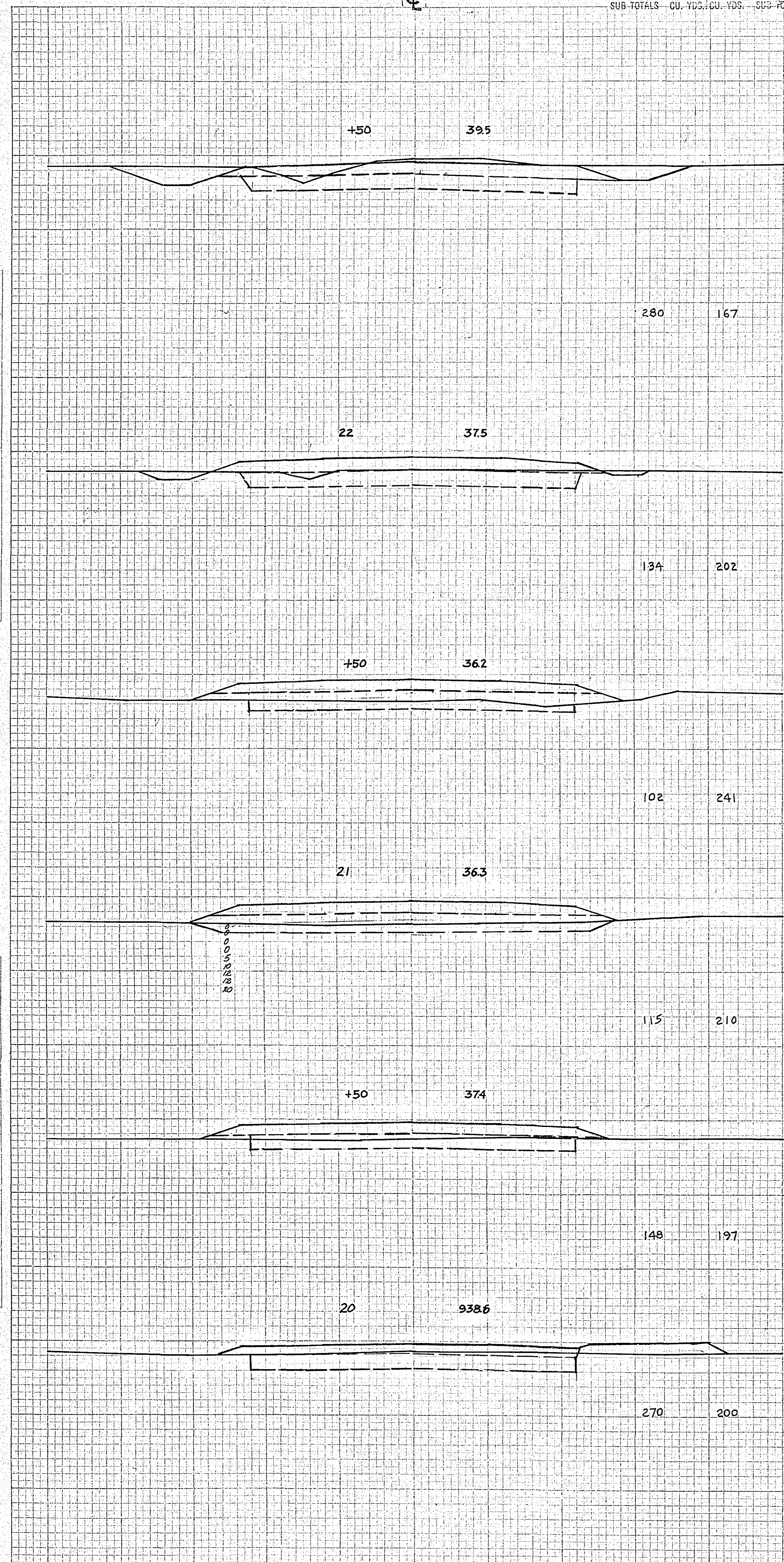


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FINAL SURVEY PLOTTED AREAS CHECKED

ORIGINAL SURVEY PLOTTED AREAS CHECKED



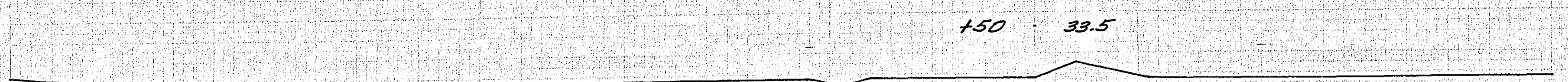
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STATION-ELEVATION

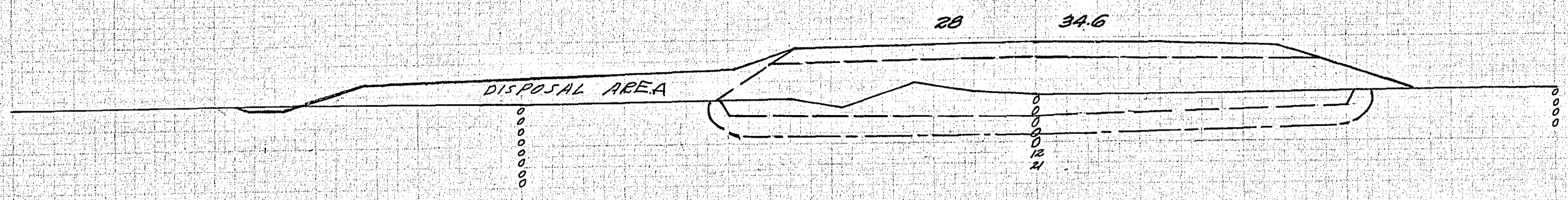
EXCAVATION / EMBANKMENT
SUB TOTALS CU. YDS. CU. YDS. SUB TOTALS

STATION-ELEVATION

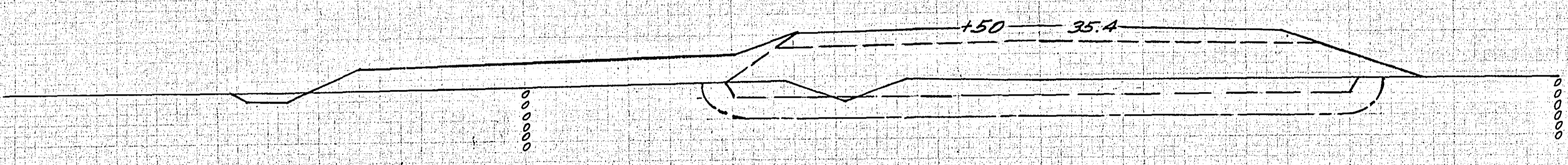
EXCAVATION / EMBANKMENT
SUB TOTALS CU. YDS. CU. YDS. SUB TOTALS



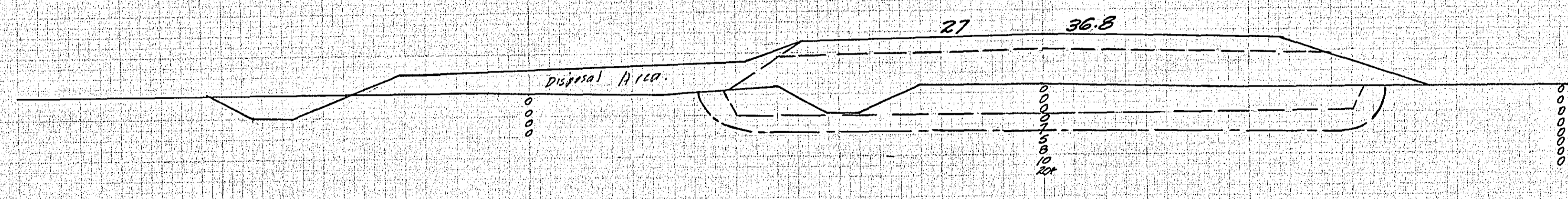
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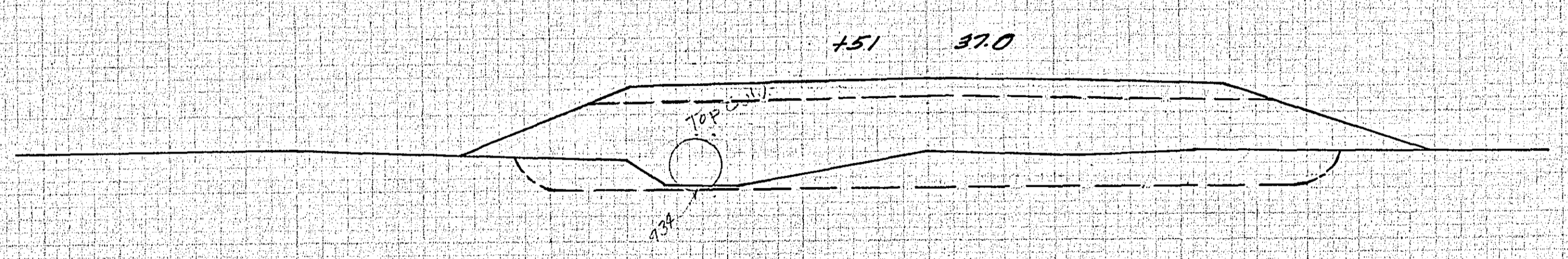
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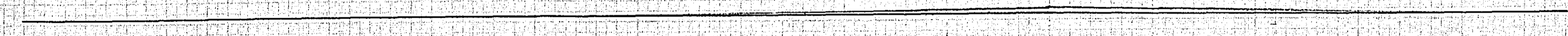


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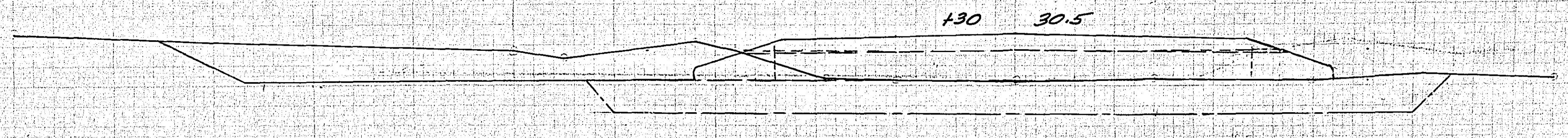


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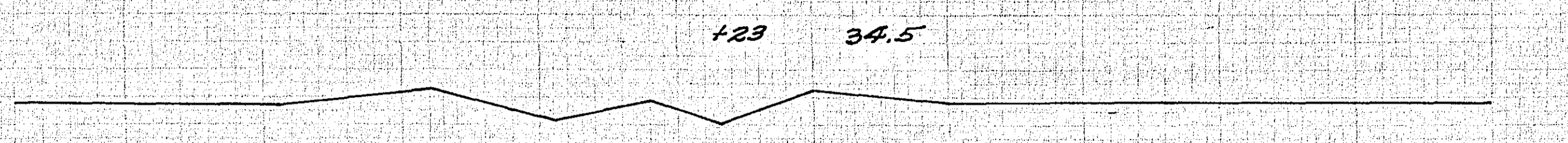
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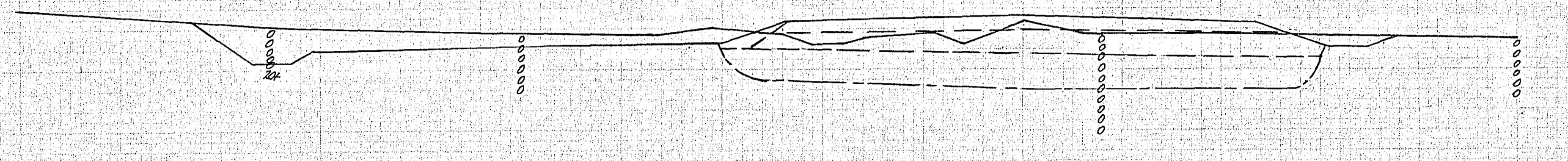
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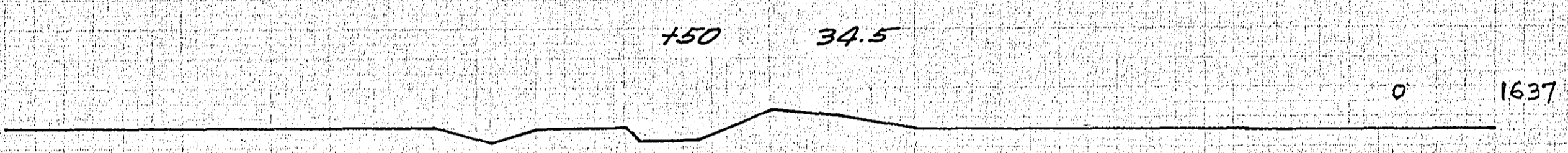
0 428



+23 34.5

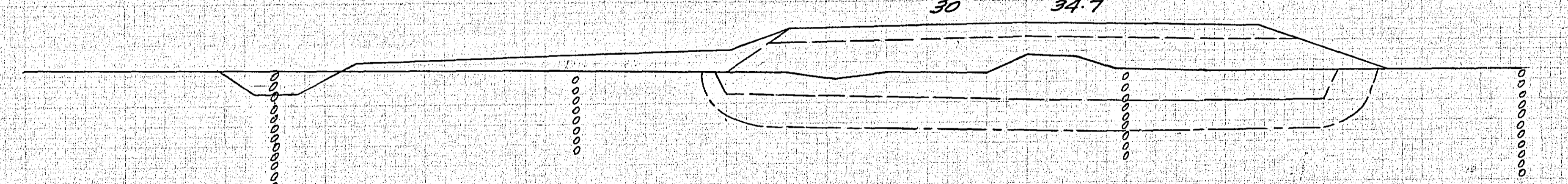


31 34.7

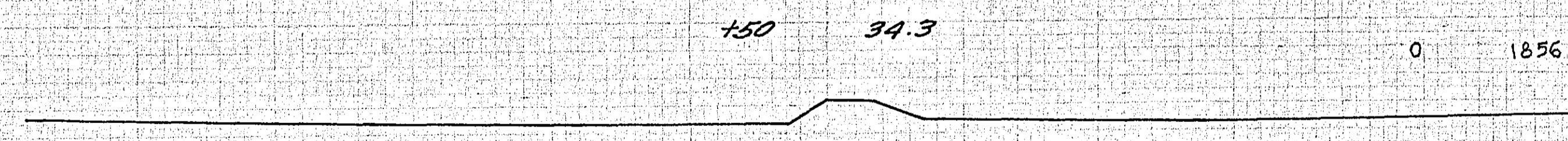


+50 34.5

0 1637

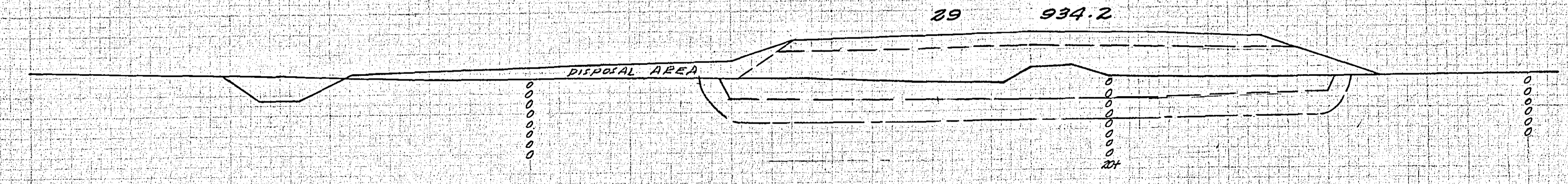


30 34.7



+50 34.3

0 1856



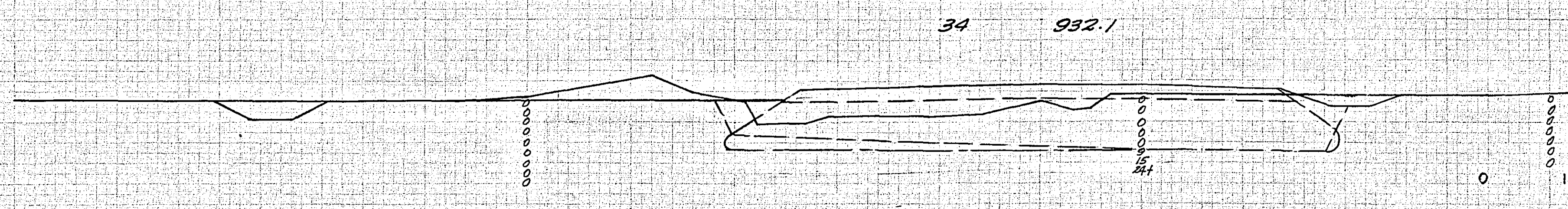
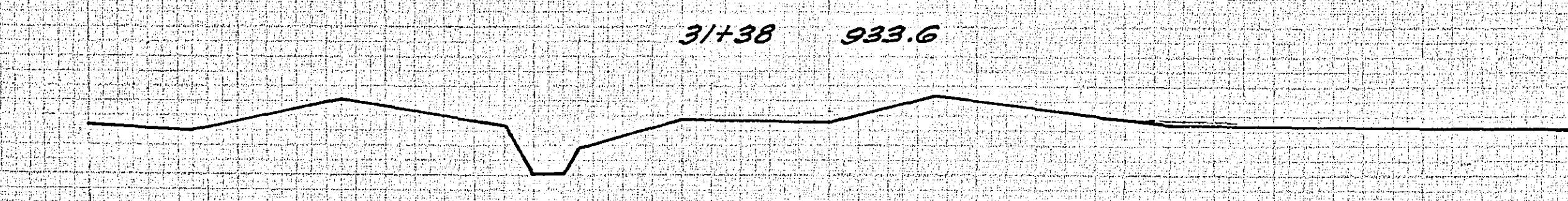
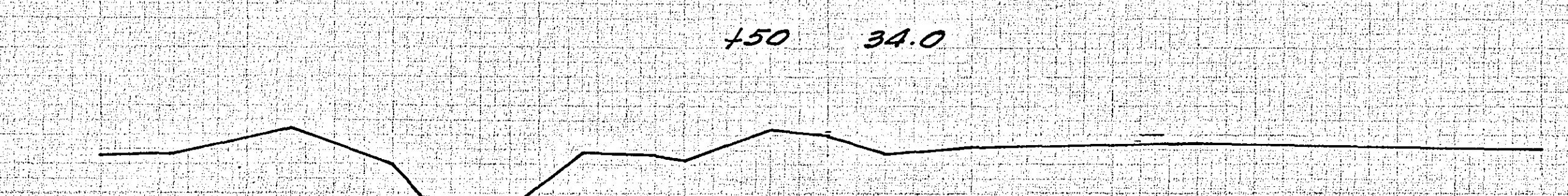
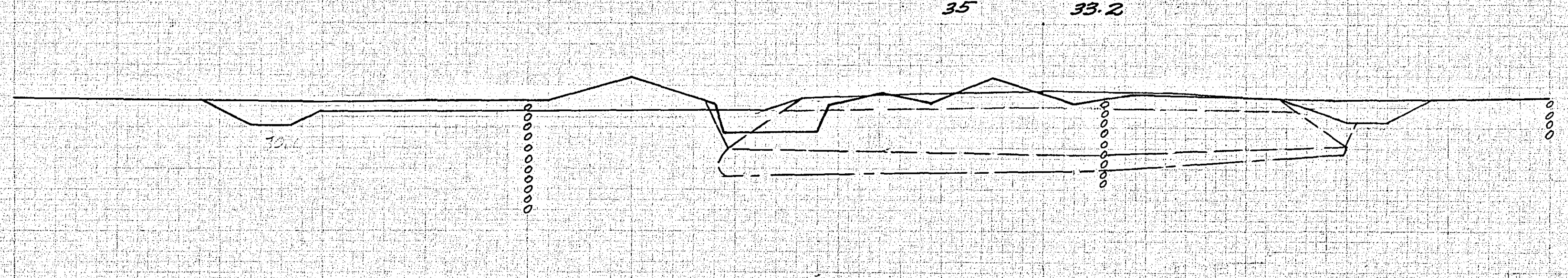
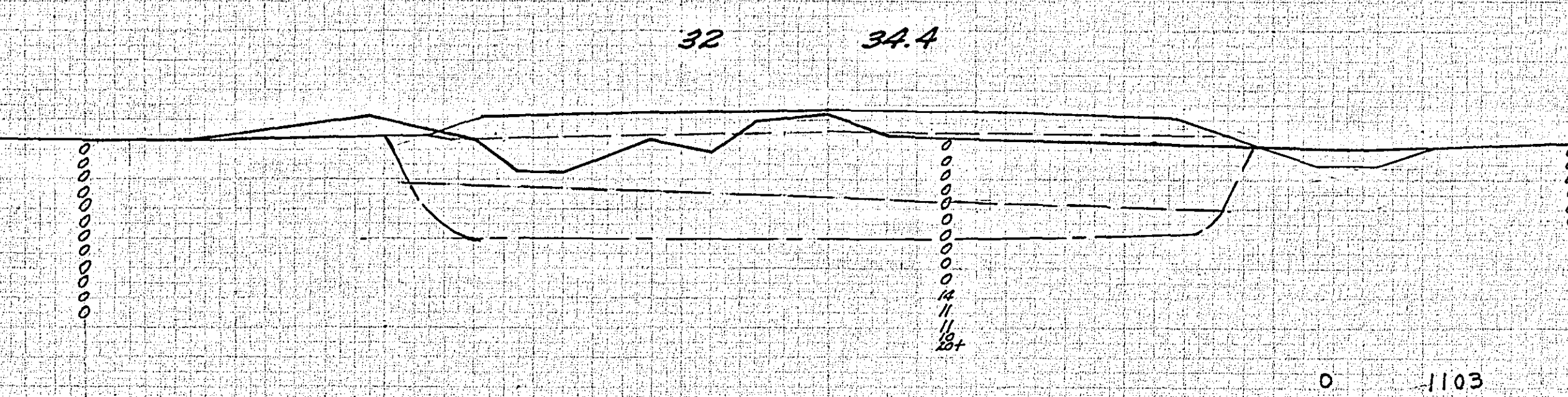
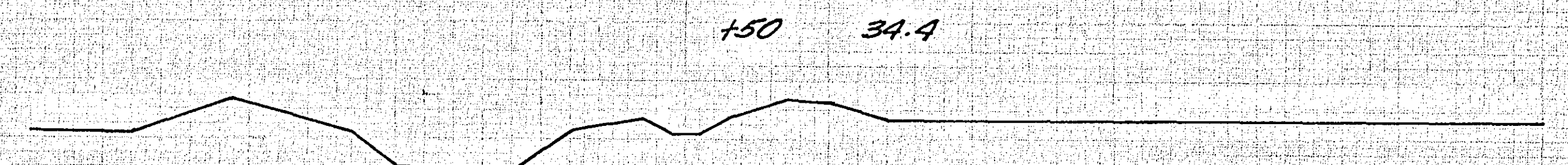
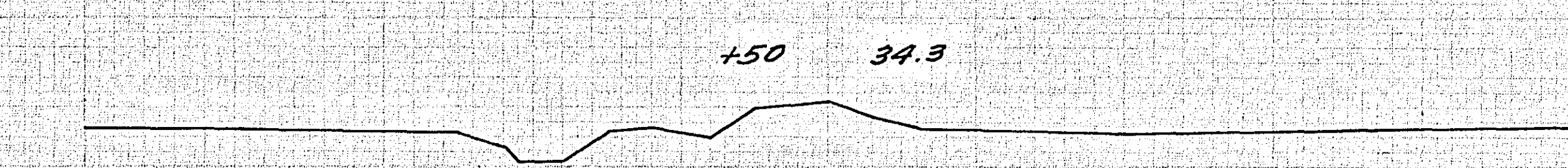
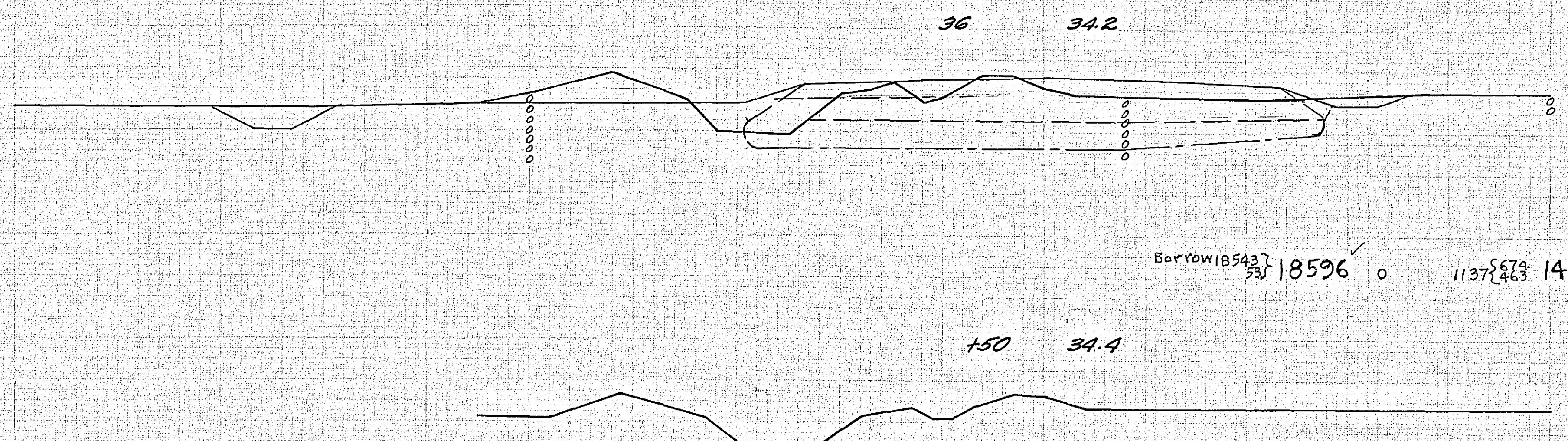
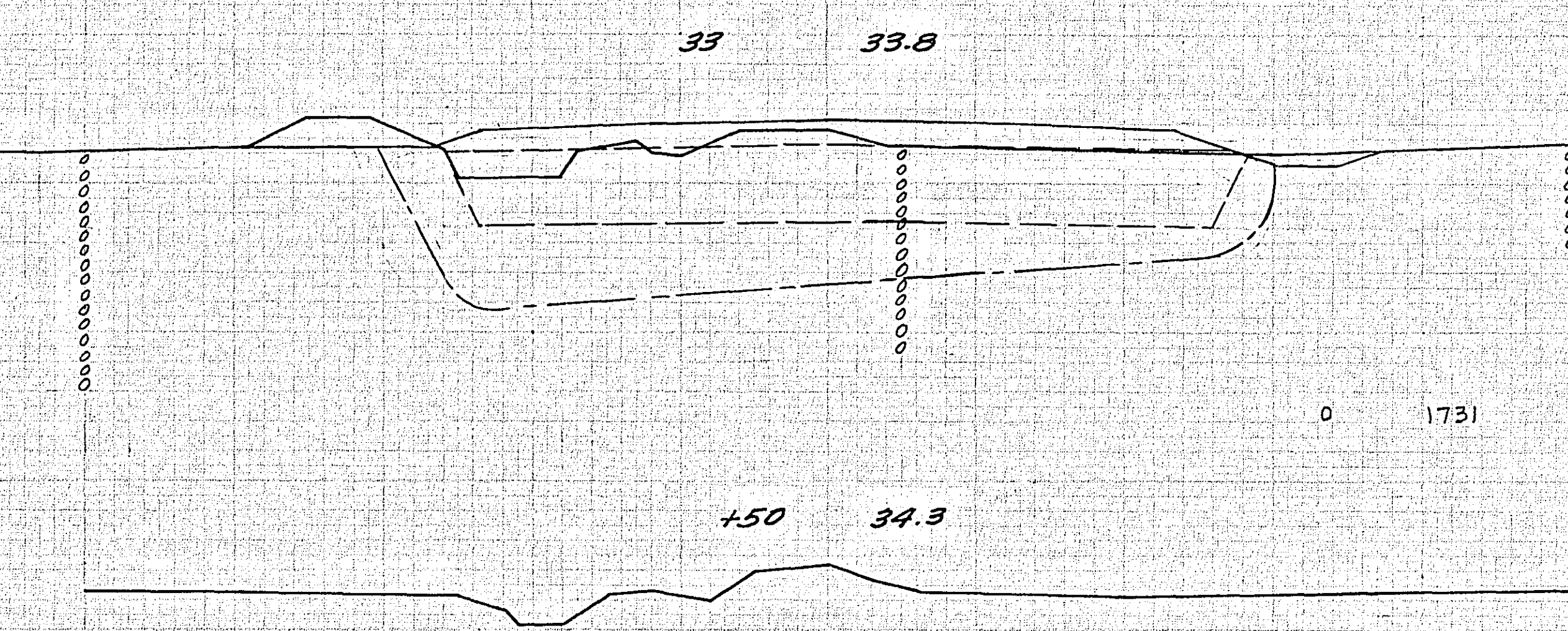
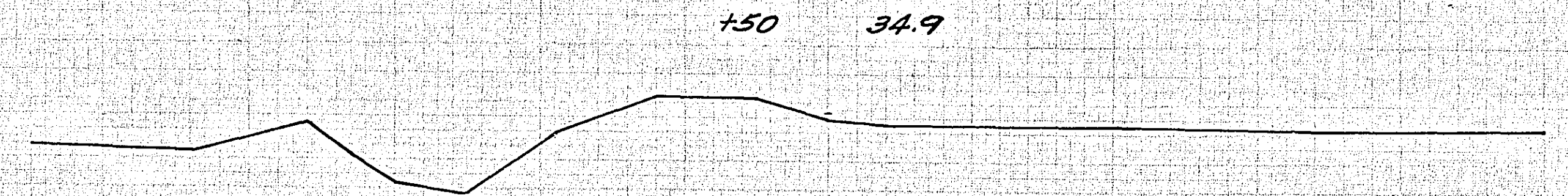
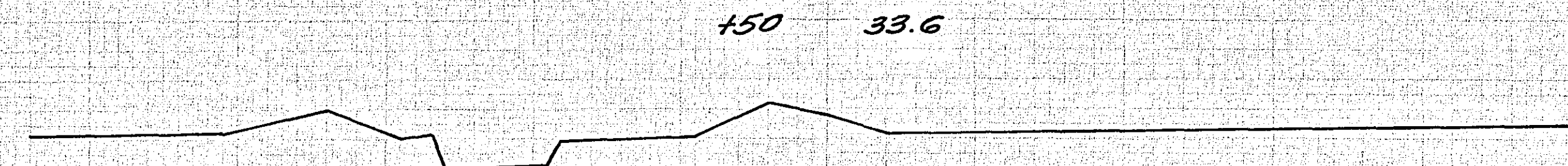
29 34.2

STATION-ELEVATION

EXCAVATION | EMBANKMENT
SUB TOTALS CU. YDS. | CU. YDS. | SUB TOTALS

STATION-ELEVATION

EXCAVATION | EMBANKMENT
SUB TOTALS CU. YDS. | CU. YDS. | SUB TOTALS



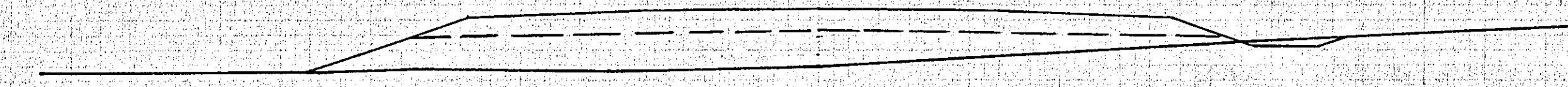
STATION-ELEVATION

EXCAVATION / EMBANKMENT
SUB TOTALS CU. YDS. CU. YDS. SUB TOTALS

STATION-ELEVATION

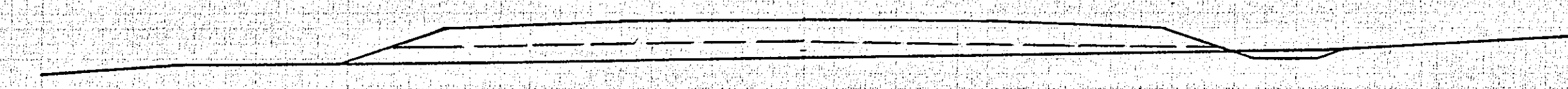
EXCAVATION / EMBANKMENT
SUB TOTALS CU. YDS. CU. YDS. SUB TOTALS

170 34.9



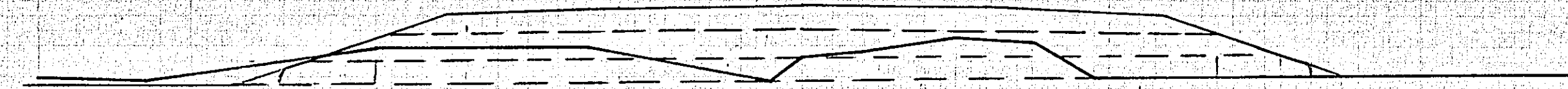
10 137

127 36.1



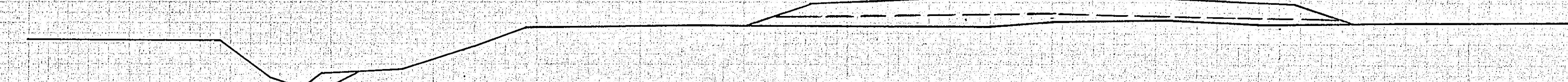
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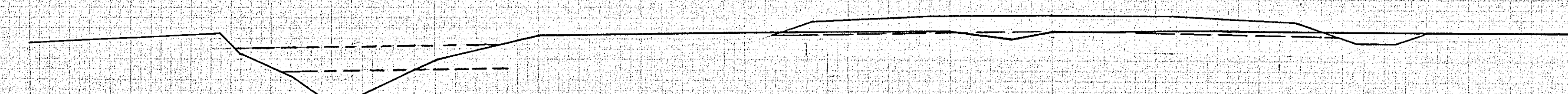
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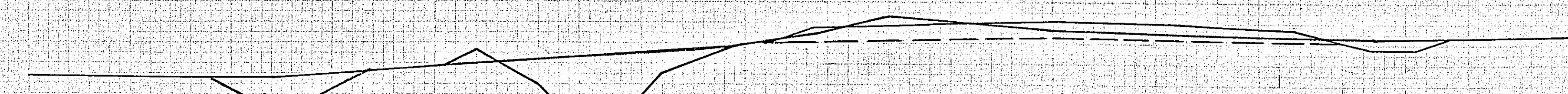
19 28

38 36.8



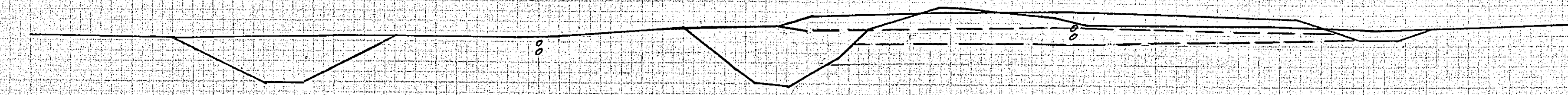
180 81

150 37.3

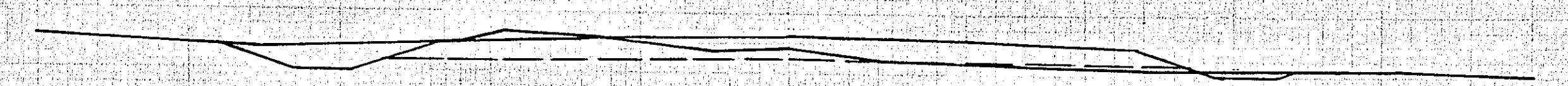


285 161

37 336.5

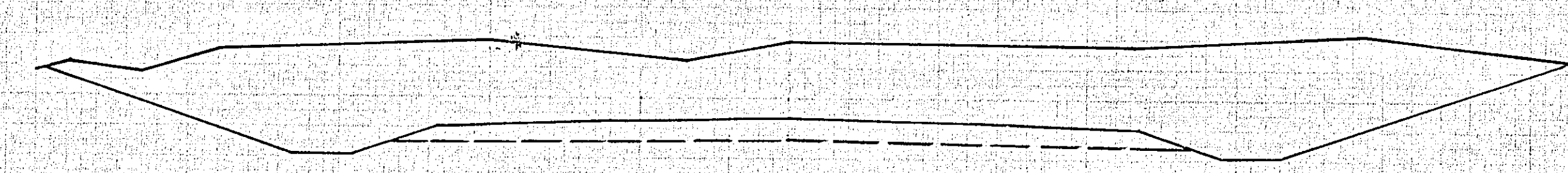


41 37.7



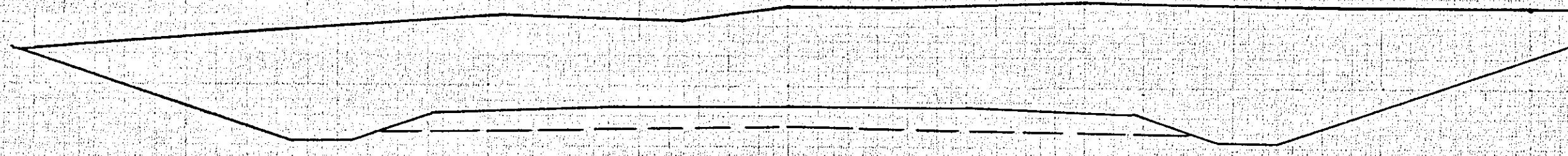
644 81

150 43.8



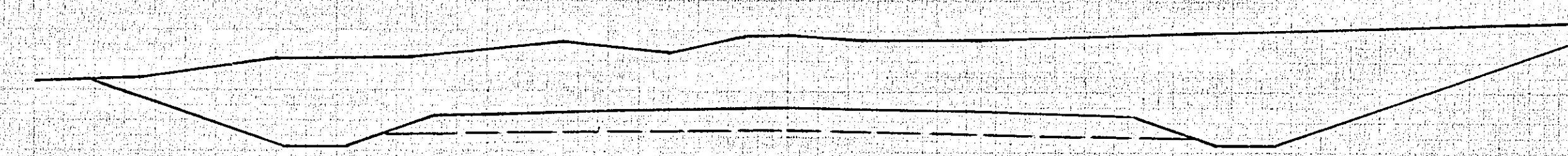
631 41

125 45.2



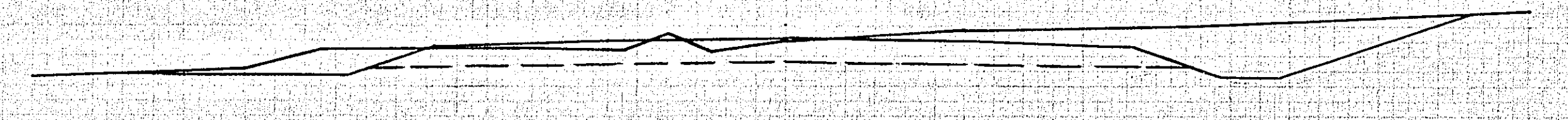
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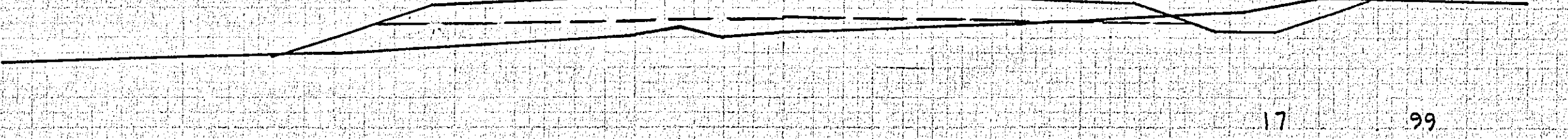
712 81

150 39.0



206 97

39 336.2



17 99

STATION-ELEVATION

EXCAVATION | EMBANKMENT

SUB TOTALS - CU. YDS. | CU. YDS. - SUB TOTALS

STATION-ELEVATION

EXCAVATION | EMBANKMENT

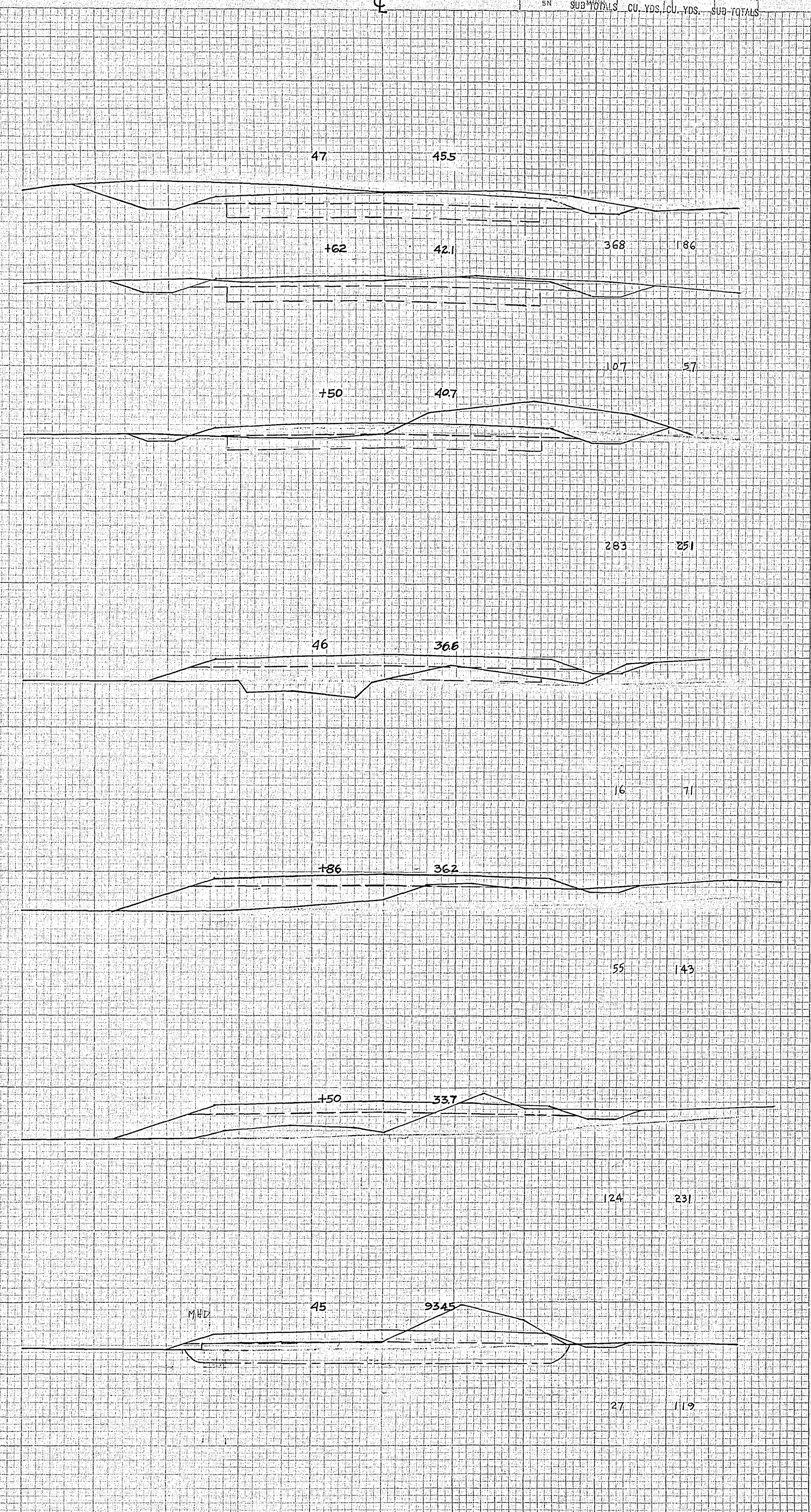
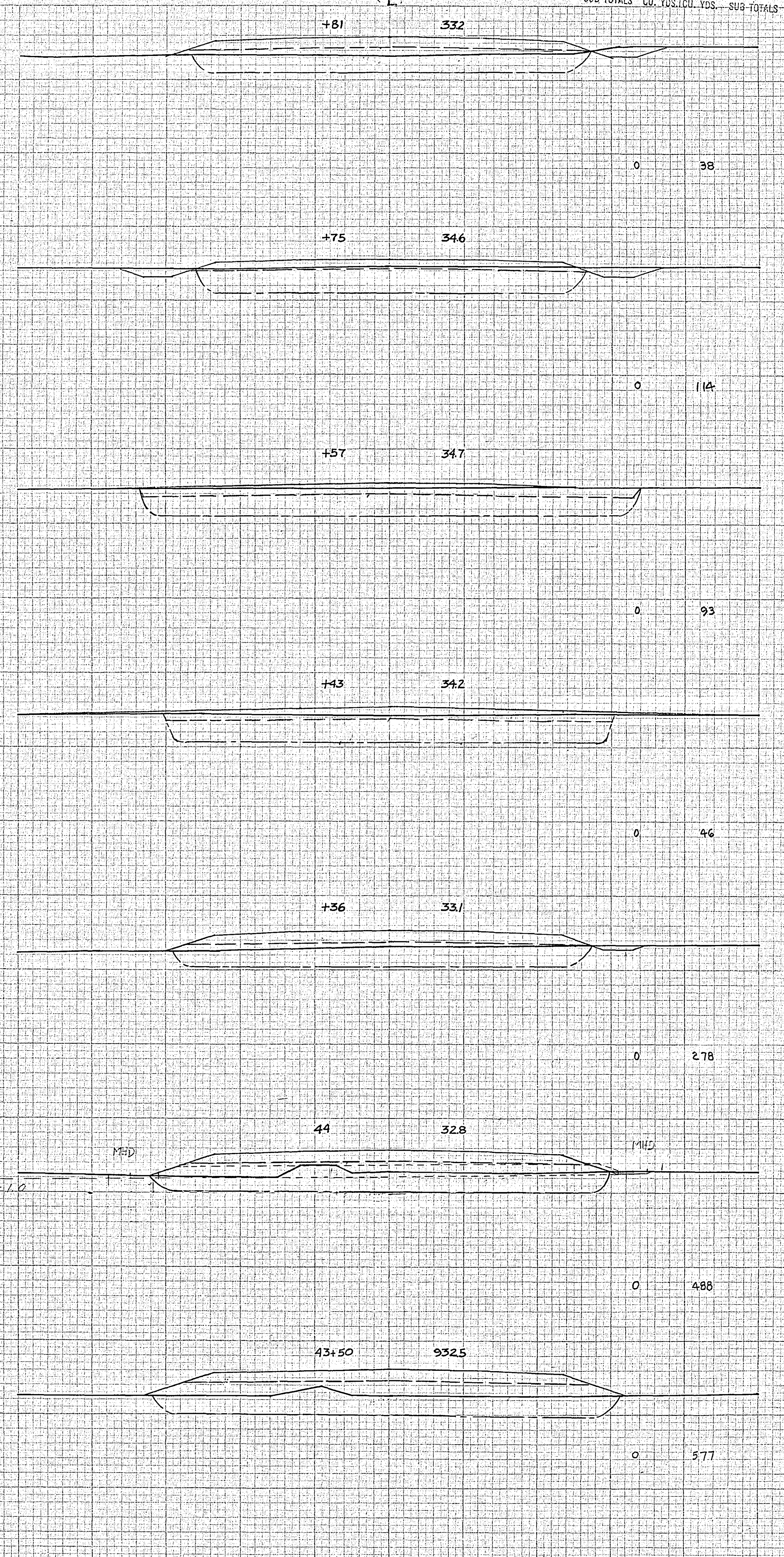
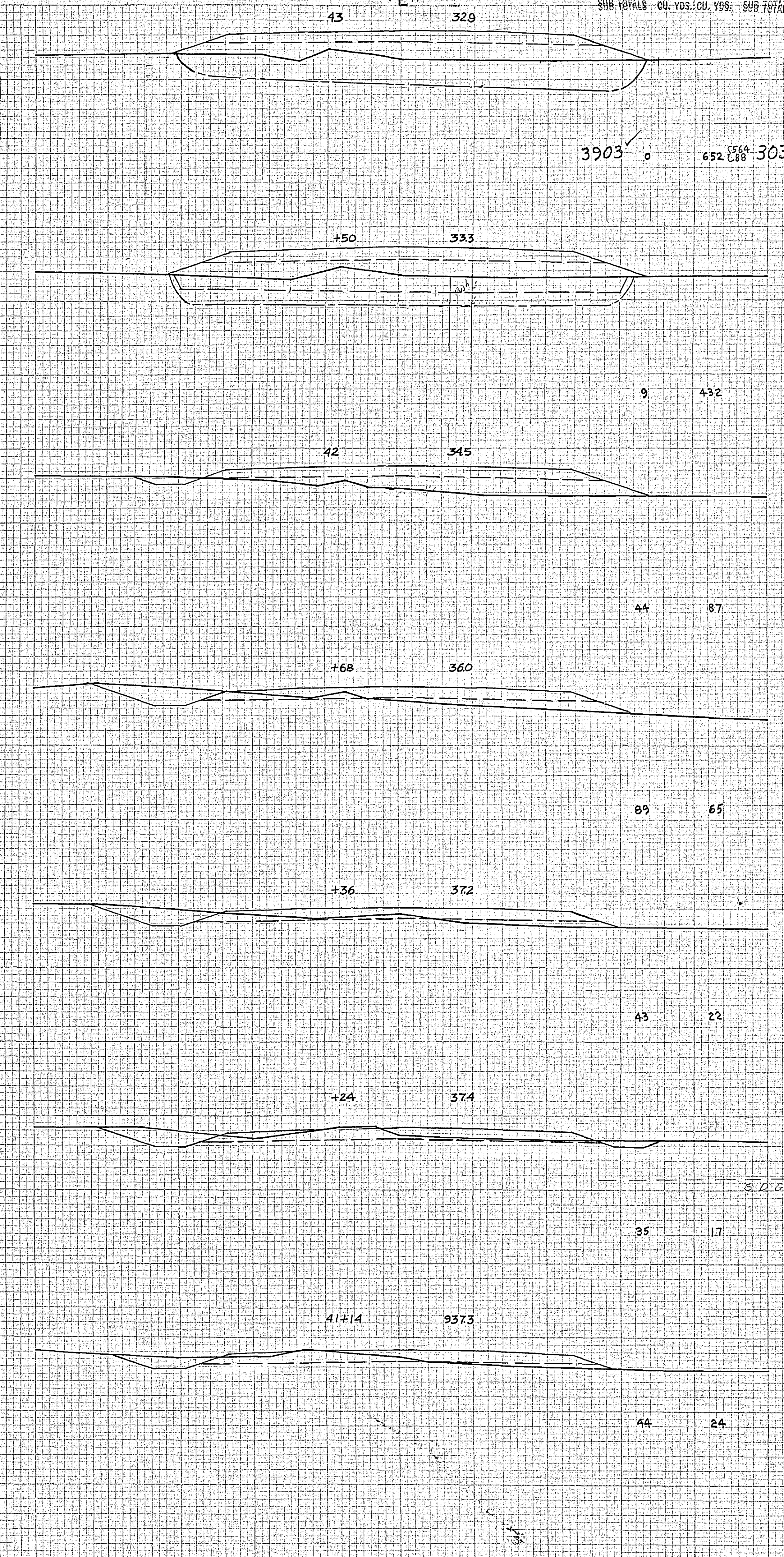
SUB TOTALS - CU. YDS. | CU. YDS. - SUB TOTALS

STATION-ELEVATION

FED. ROAD DIST. No. EXCAVATION No. EMBANKMENT No. SHEET No. TOTAL SHEETS

FINAL SURVEYED PLOTTED
SURVEY PLOTTED
NOTE BOOK NO. AREAS CHECKED

ORIGINAL SURVEYED PLOTTED
SURVEY PLOTTED
NOTE BOOK NO. AREAS CHECKED



STATION-ELEVATION
⊕

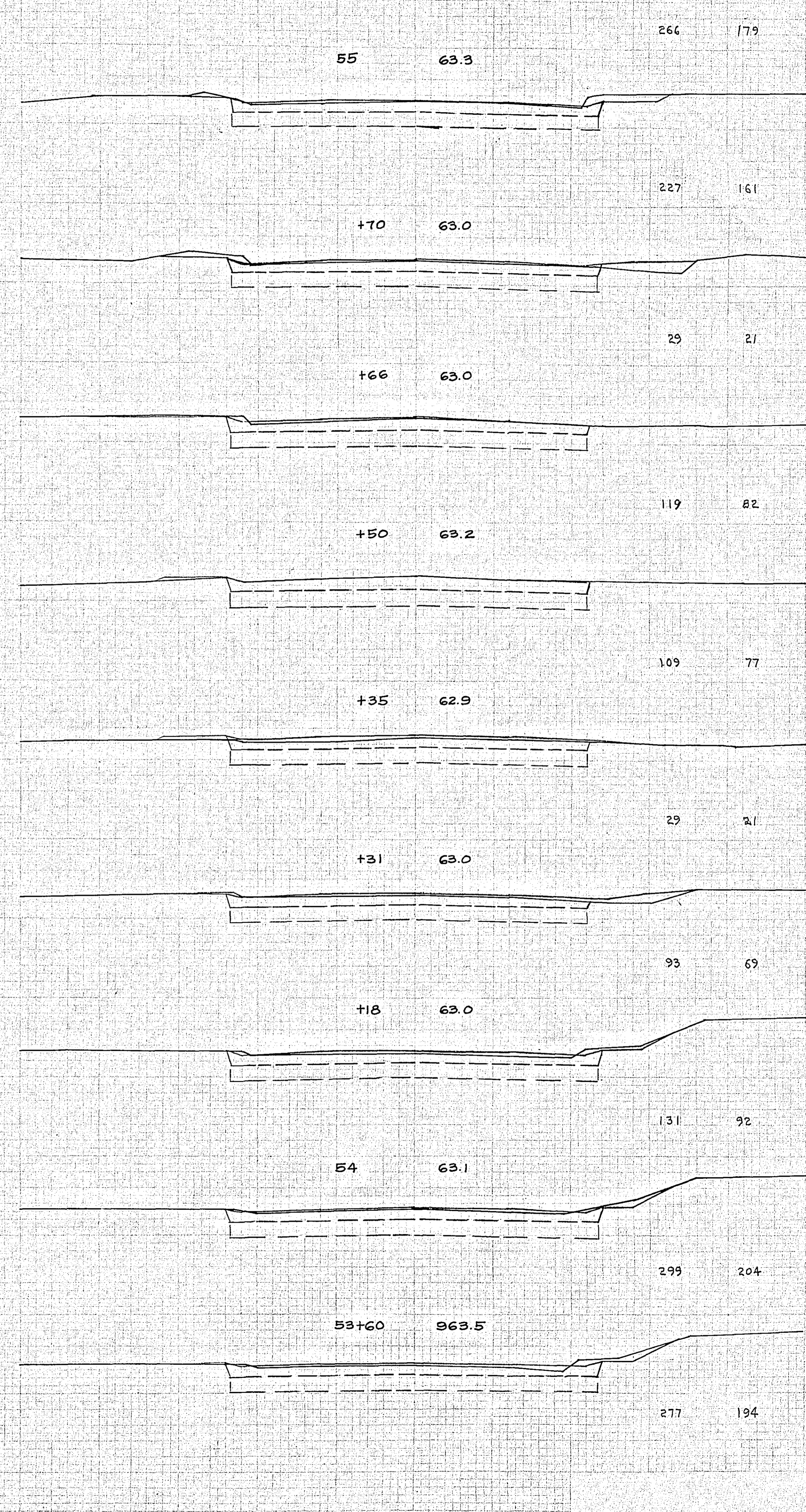
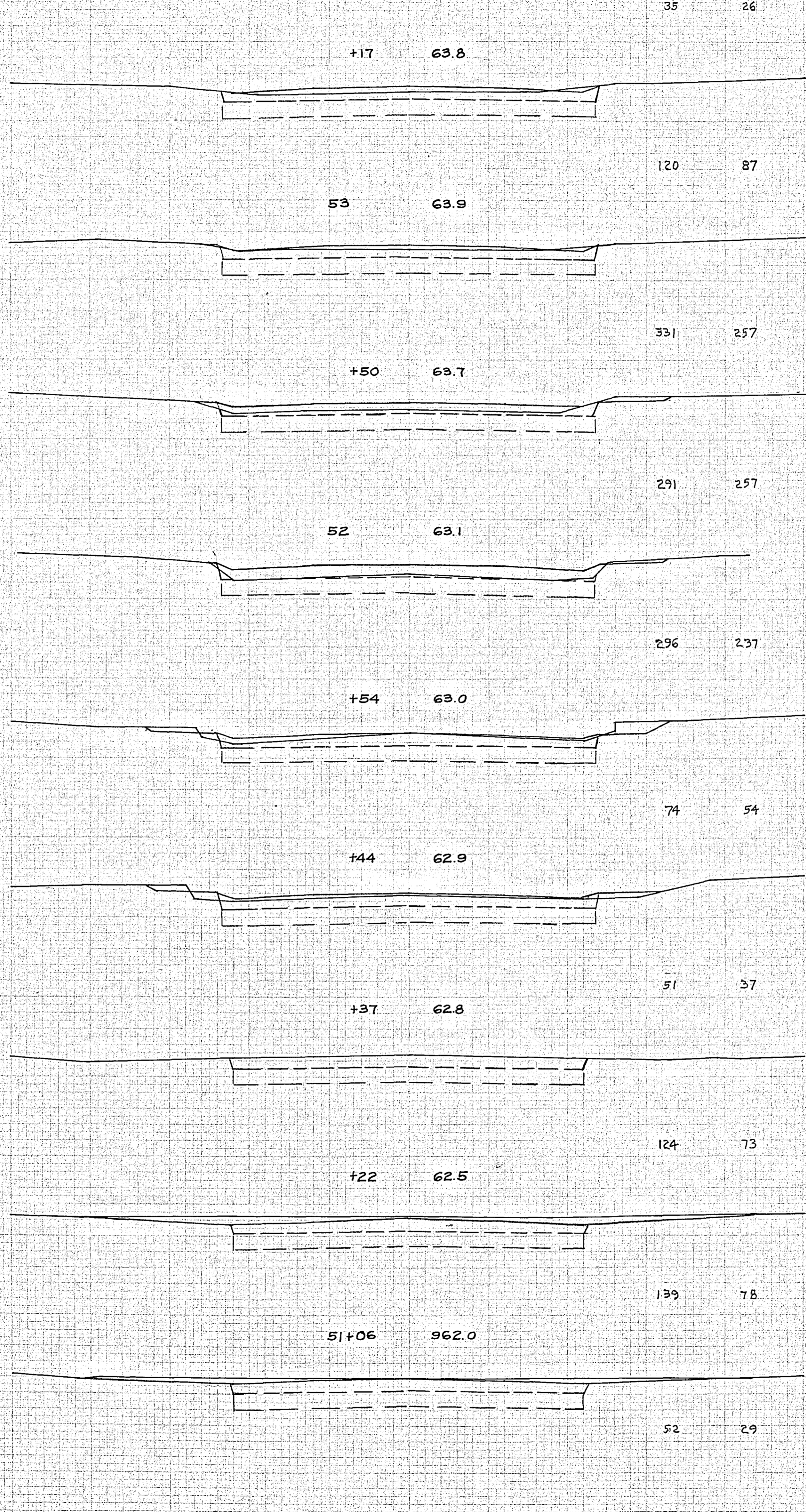
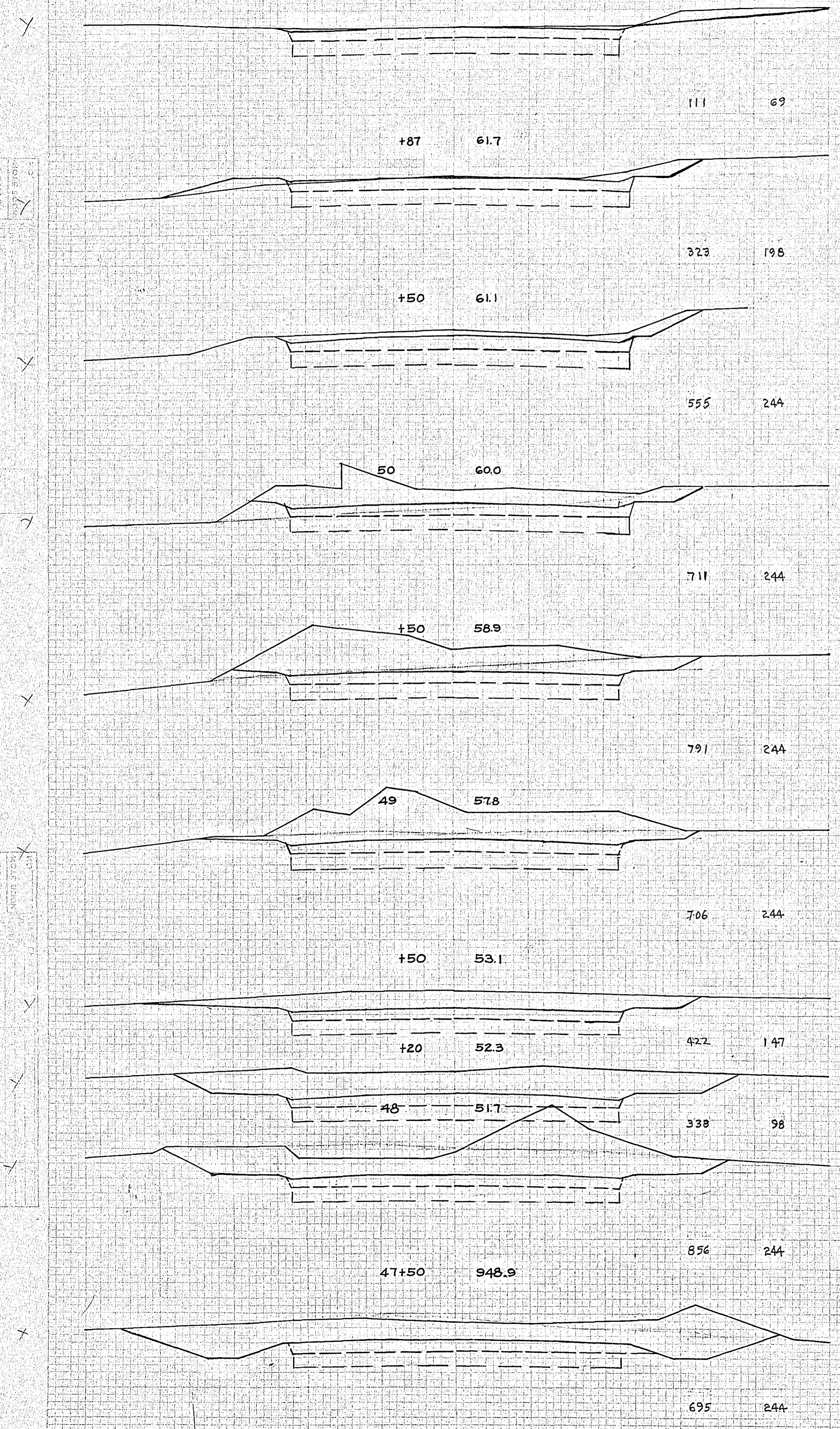
EXCAVATION | EMBANKMENT
SUB TOTALS CU. YDS. | CU. YDS. | SUB TOTALS

STATION-ELEVATION
⊕

EXCAVATION | EMBANKMENT
SUB TOTALS CU. YDS. | CU. YDS. | SUB TOTALS

STATION-ELEVATION
⊕

EXCAVATION | EMBANKMENT
SUB TOTALS CU. YDS. | CU. YDS. | SUB TOTALS

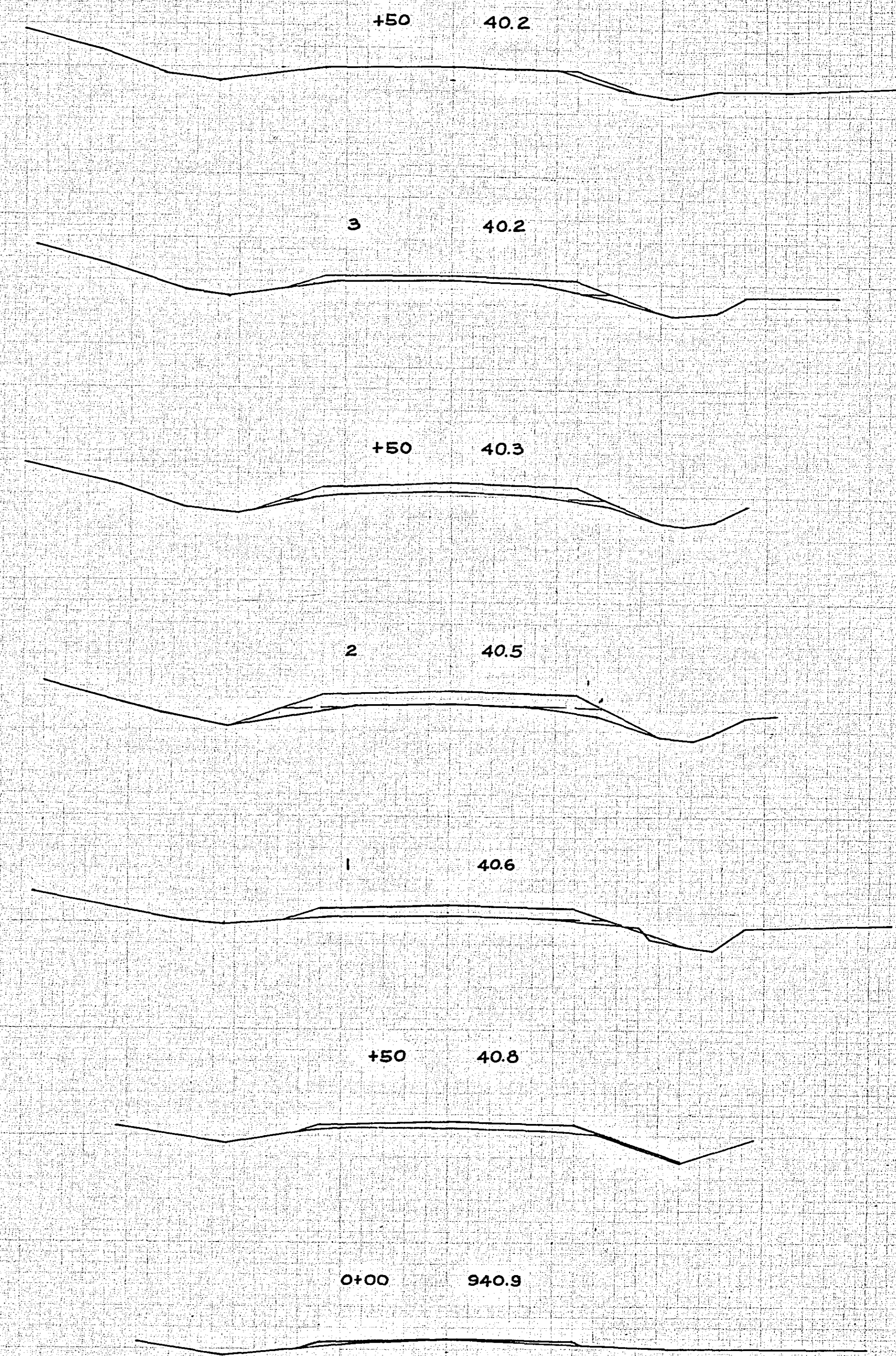
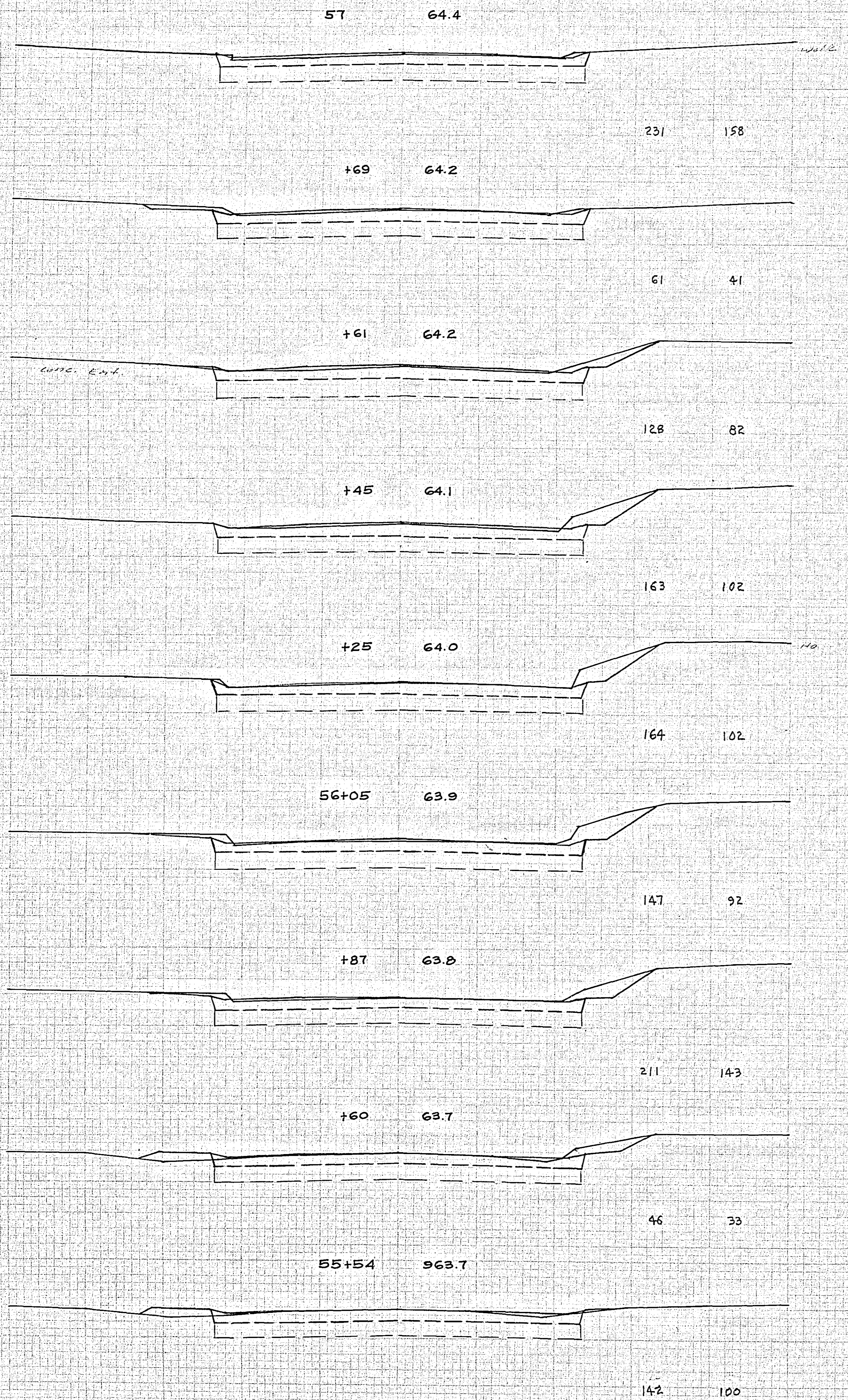


STATION-ELEVATION
Ⓢ

EXCAVATION | EMBANKMENT
SUB-TOTALS CU. YDS. CU. YDS. SUB-TOTALS

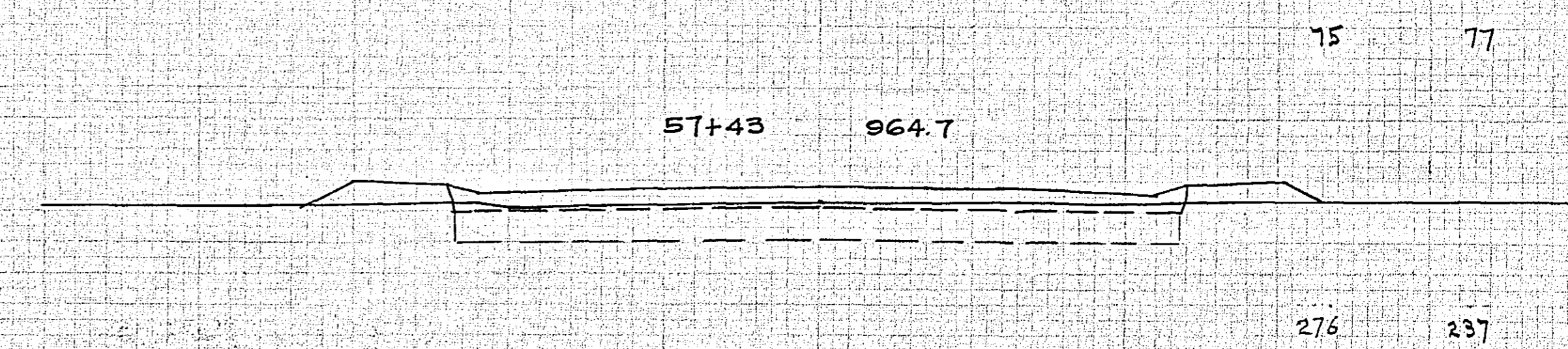
STATION-ELEVATION
Ⓢ

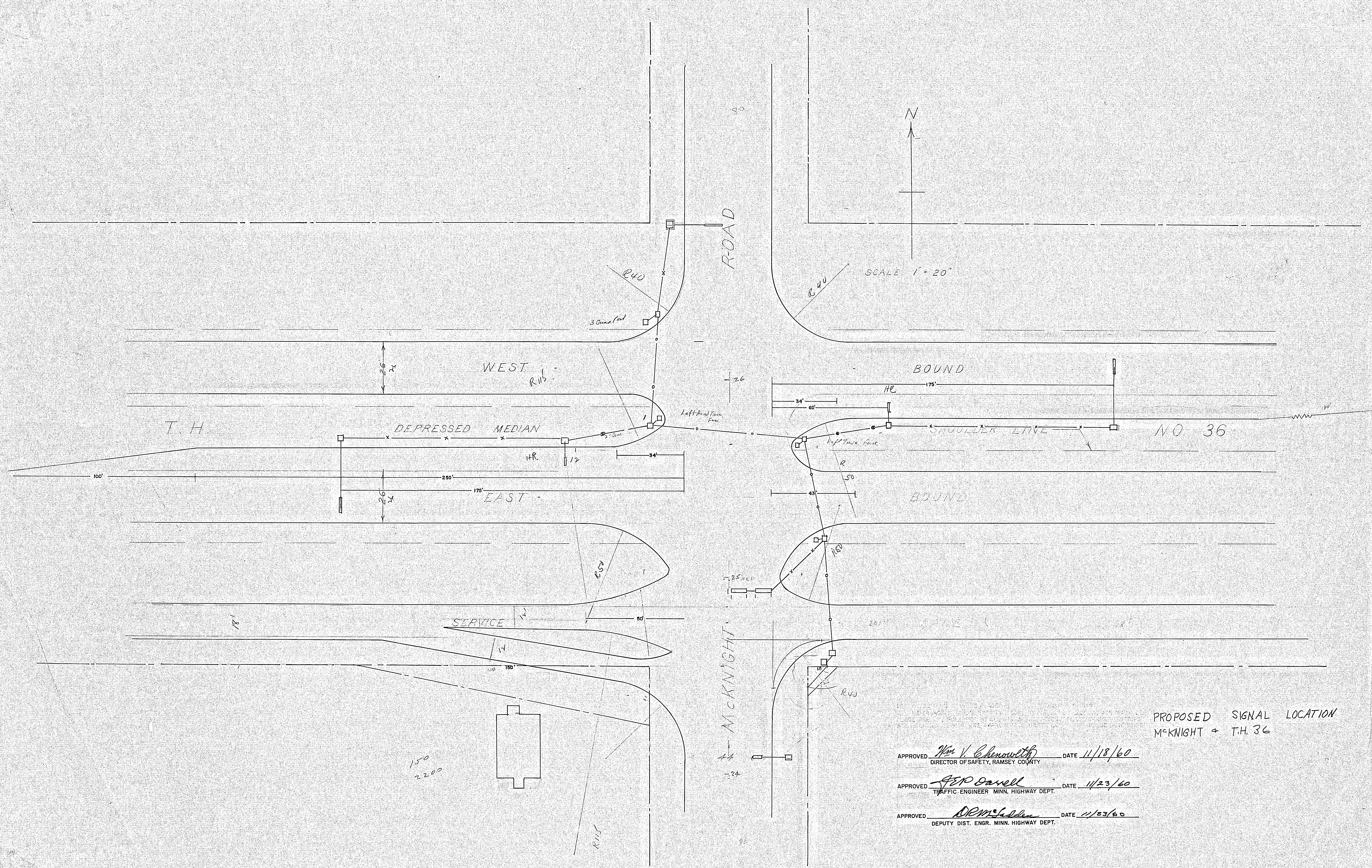
EXCAVATION | EMBANKMENT
SUB-TOTALS CU. YDS. CU. YDS. SUB-TOTALS



T.H. 36 SERVICE LANE

Borrow - 26213
 27464 } 53677
 +57 64.8 } 11224 8634 41290





APPROVED *Wm V. Chenoweth* DATE 11/18/60
 DIRECTOR OF SAFETY, RAMSEY COUNTY
 APPROVED *ASD Farrell* DATE 11/23/60
 TRAFFIC ENGINEER MINN. HIGHWAY DEPT.
 APPROVED *DRM Sullivan* DATE 11/23/60
 DEPUTY DIST. ENGR. MINN. HIGHWAY DEPT.

PROPOSED SIGNAL LOCATION
 MCKNIGHT + T.H. 36