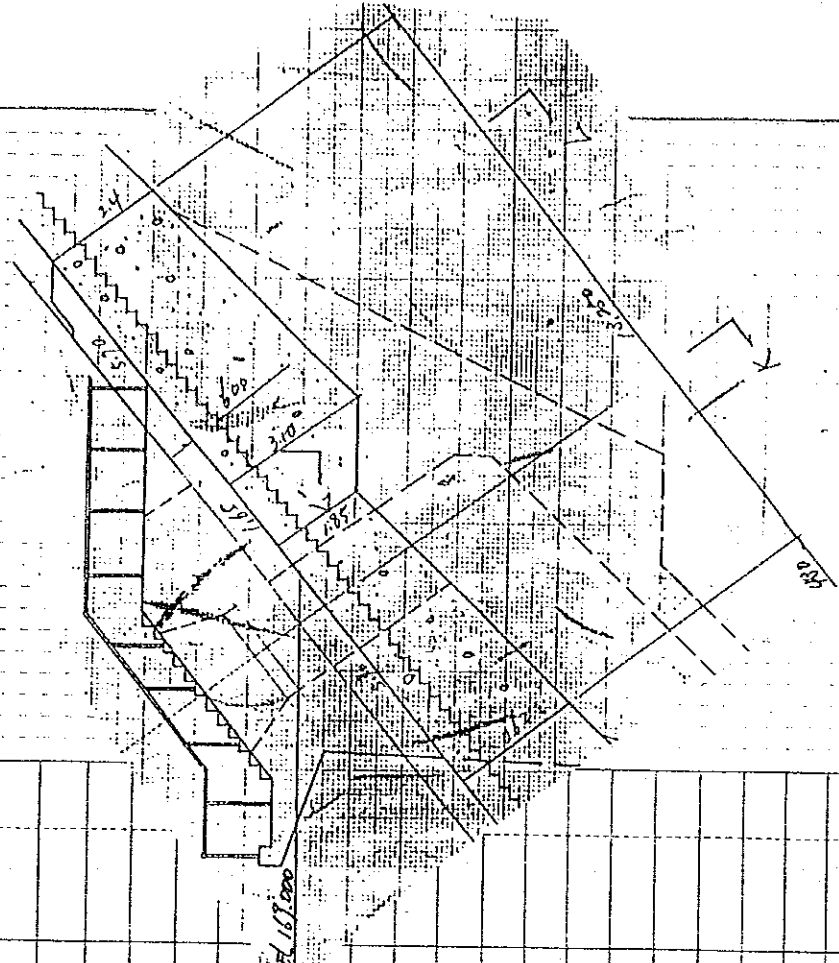


Working Division: E2 Concrete Work

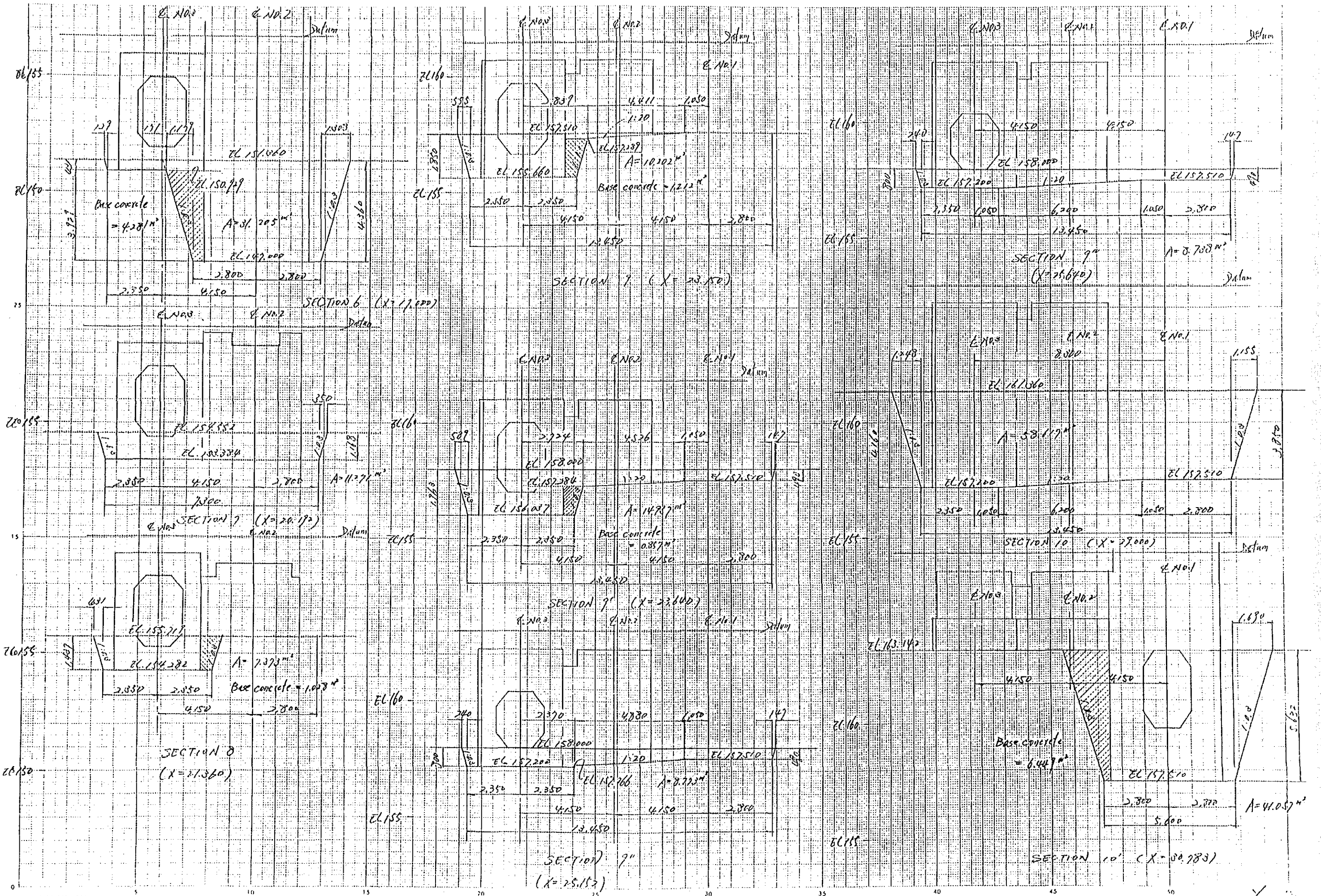
Description	Calculation Details	Unit	Quantity	Remarks
2-102	Concrete class C			
	No. 3 Jute take			
	Block S B = 3.30 m			
	$\frac{1}{2} (2.62 + 1.85) \times 3.30 \times 5.70 = 43.515$			
	$\frac{1}{2} (1.85 + 3.10) \times 3.30 \times 1.65 = 13.496$			
	$\frac{1}{2} (3.0 + 2.40) \times 3.30 \times 5.70 = 51.728$			
	Total 108.719 m ²			
	A = 32.945 m ²			

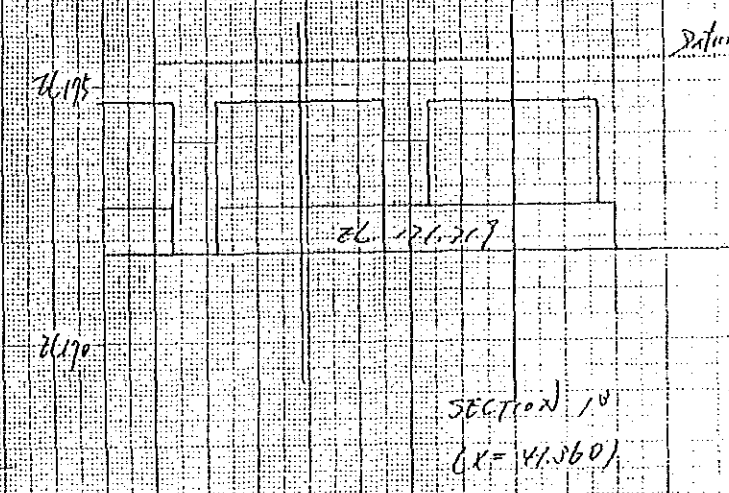
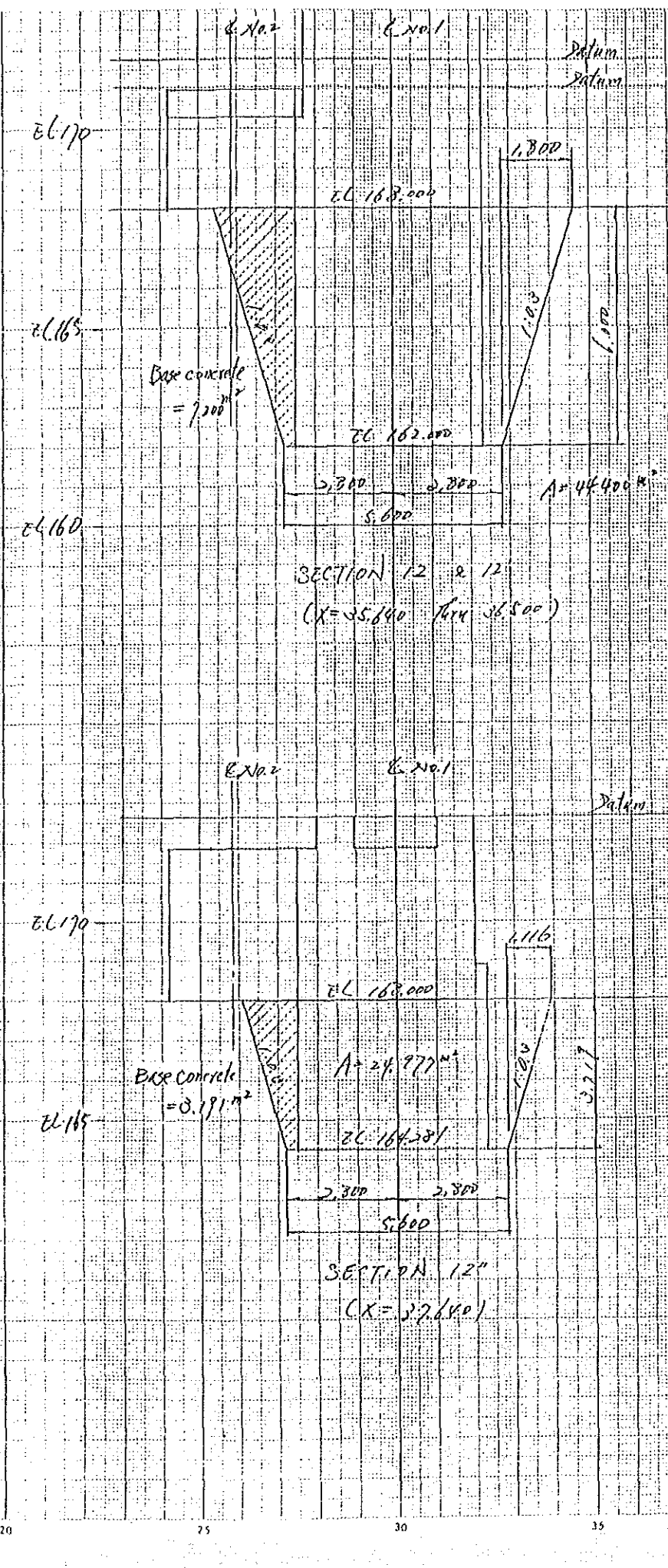
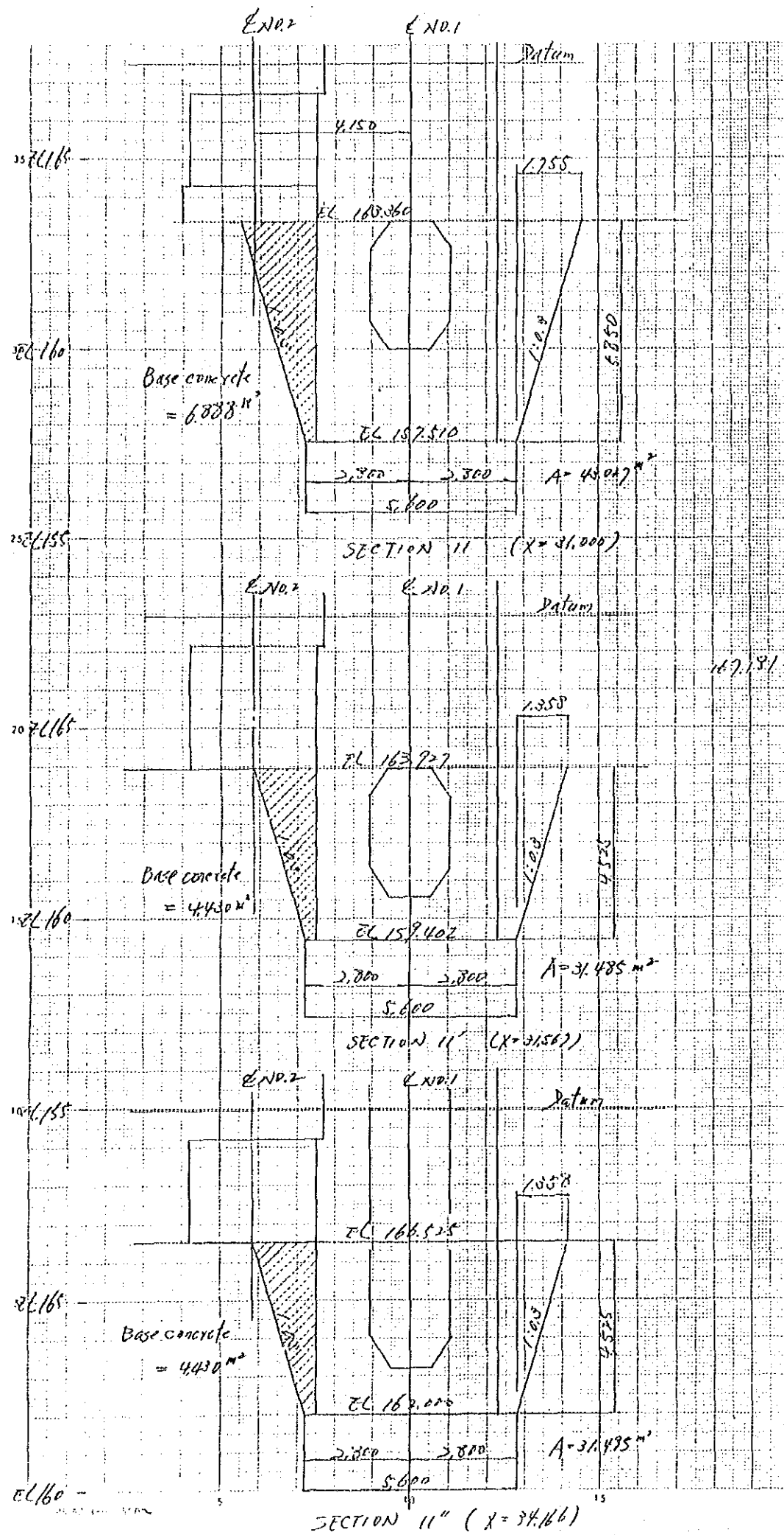


Working Division: E2 Concrete Work

Description	Calculation Details	Unit	Quantity	Remarks
E2/02	Concrete class c			
	No. 7 Intake			
	Block 5 B = 3.30 m			
	$\frac{1}{2} (2.62 + 1.85) \times 3.30 \times 5.90 = 42.575$	^m		
	$\frac{1}{2} (1.85 + 3.14) \times 3.30 \times 1.65 = 13.496$	^m		
	$\frac{1}{2} (3.10 + 2.40) \times 3.30 \times 5.70 = 51.718$	^m		
	Base concrete			
	$x = 2.850 \text{ m Sec. 10'}$			
	$\frac{1}{2} (16.44) \times 0.933 = 3.008$	^m		
	Sec 10' - Sec 11'			
	$\frac{1}{2} (6.44 + 6.888) \times 0.27 = 1.447$	^m		
	Sec 11' ~ Sec 11'			
	$\frac{1}{2} (6.888 + 4.410) \times 0.167 = 3.209$			
	Sec 11' ~ Sec 11'			
	$\frac{1}{2} (4.430 + 4.430) \times 2.537 = 11.514$			
	Sec 11' ~ Sec 12'			
	$\frac{1}{2} (4.430 + 7.200) \times 1.474 = 8.571$			
	Sec 12' ~ Sec 12'			
	$\frac{1}{2} (7.20 + 7.20) \times 0.860 = 6.192$			
	Sec 12' ~ Sec 12'			
	$\frac{1}{2} (7.20 + 3.171) \times 1.140 = 5.923$			
	Sec 12' ~ Sec 13'			
	$\frac{1}{2} 3.171 \times 3.720 = 5.935$			
	Total		154.518	

See previous page



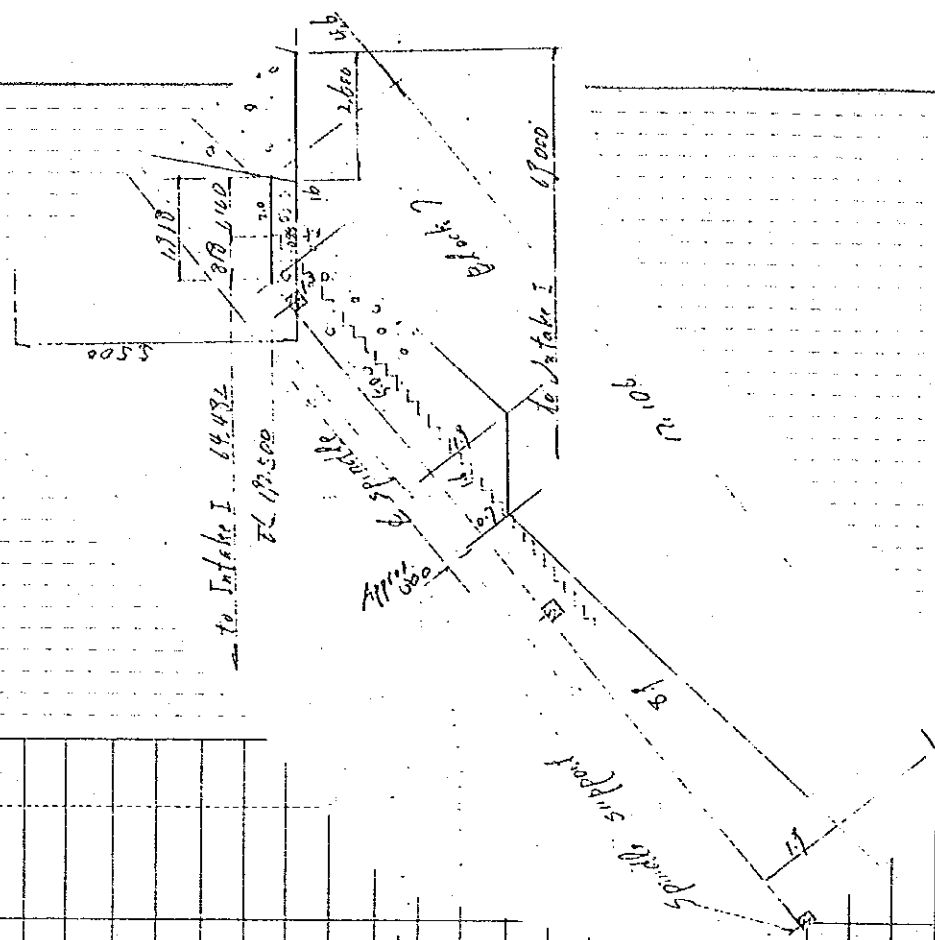


Working Division:

Description	Calculation Details	Unit	Quantity	Remarks	
E2	Concrete work			<p style="text-align: center;">$A = 27.612 \text{ m}^2$</p> <p style="text-align: center;">$B = 3.30 \text{ m}$</p> <p style="text-align: center;">Total. 97.721 m^3</p>	
E2/02	Concrete class C Block 6				
	Same for No. 1, No. 2 and No. 3. Take				
	$\frac{1}{2} (2.4 + 1.3) \times 8.35 \times 3.3 = 50.177$	m^3			
	$\frac{1}{2} (1.3 + 2.5) \times 1.55 \times 3.3 = 9.118$				
	$\frac{1}{2} (2.5 + 1.8) \times 5.1 \times 3.3 = 37.026$				
	Total. 97.721 m^3				

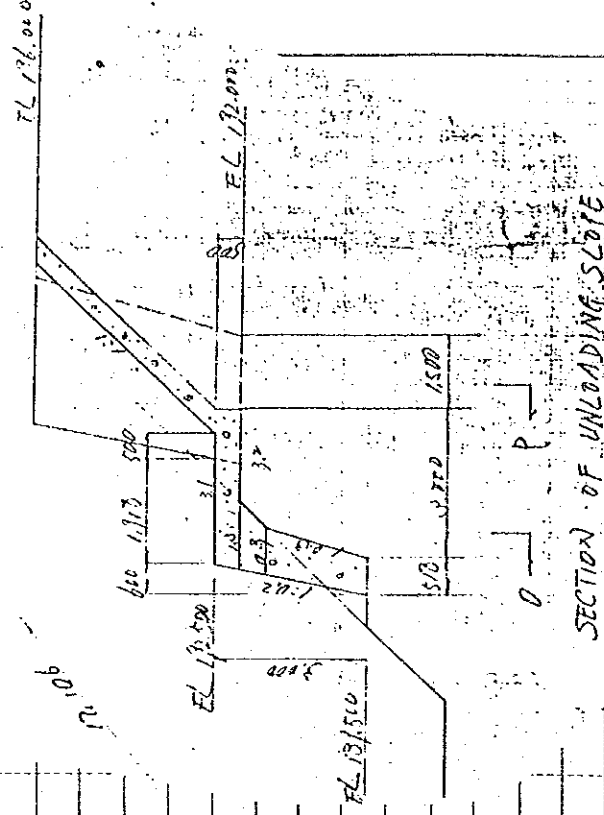
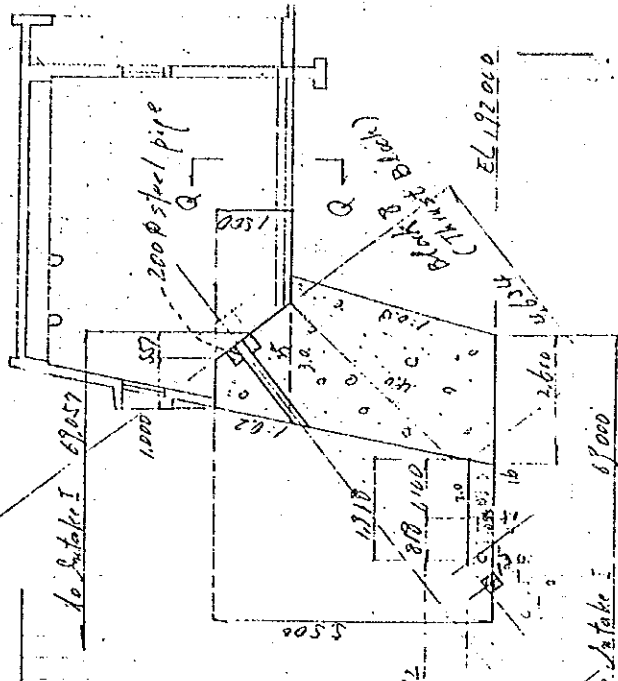
Working Division:

Description	Calculation Details	Unit	Quantity	Remarks
E-2 Concrete Work				
E-2/02 Concrete class C Block	Same for No.1, No.2 and No.3 Intake			
	$\frac{1}{2} (1.9 + 0.7) \times 8.9 \times 3.3 = 38.181$			
	$\frac{1}{2} (0.7 + 1.9) \times 1.6 \times 3.3 = 6.864$			
	$\frac{1}{2} (1.9 + 1.3) \times 5.0 \times 3.3 = 26.400$			
	$\frac{1}{2} 0.85 \times 0.5 \times 3.3 = 0.701$			
	$\frac{1}{2} (1.6 + 2.0) \times 0.5 \times 3.3 = 2.970$			
	Total 75.116			
	A = 22.762 m ²			



Working Division:

Description	Calculation Details	Unit	Quantity
E-2 Concrete Work			
E-2/02 Concrete Mass C	$\frac{1}{2} (260 + 300) \times 400 \times 13.30 = 148,960 \text{ m}^3$		
Thermal Block	$\frac{3}{8} [\frac{1}{2} (2.454 + 1.102) \times 1.50 \times 1.3 + \frac{1}{2} (1.3 + 1.0) \times 1.5 \times 0.5 + 1.0 \times 0.5 \times 0.5 + 0.25 \times 0.25 \times 0.5] = 13.534 \text{ m}^3$		
Sub-total			162.494
Unloading slope	$\frac{1}{2} (0.518 + 0.9) \times 2.0 \times 425 = 60.76 \text{ m}^3$ $\frac{1}{2} (0.90 + 1.30) \times 0.5 \times 425 = 2.338$ $\frac{1}{2} (2.10 + 1.918) \times 0.5 \times 0.85 = 0.854$ $\frac{1}{2} (3.20 + 9.10) \times 0.5 \times 340 = 5.355$ $0.5 \times 3.5 \times 340 = 5.950$		
Sub-total			20.523
Total			183.017



Working Division:

Description	Calculation Details	Unit	Quantity	Remarks
E-2 Concrete Work				
E-2/02 Concrete class C				
Launching slope				
	$5.140 \times 0.50 \times 3.85 = 9.894$	m^3		
	$\frac{1}{2} (2.781 + 1.881) \times 10.00 \times 2.5 = 44.575$			
	$851792 \sim 841722$			
	$851792 \sim 841722$			
	$851792 \sim 841722$			
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	$851792 \sim 841722$			
	$5.140 \times 0.50 \times 3.85 = 9.894$			
	$\frac{1}{2} (2.781 + 1.881) \times 10.00 \times 2.5 = 44.575$			
	$851792 \sim 841722$			
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	Sub-total		275.146	
	Step part			
	$\frac{1}{2} (2.100 + 0.000) \times 10.0 \times 1.35 = 13.50$			
	$851792 \sim 841722$			
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	$851792 \sim 841722$			
	$47 \times 0.90 = 6.472$			
	$\frac{1}{2} (1.841 - 0.000 + 0) \times 5.33 \times 0.90 = 2.428$			
	$\frac{1}{2} (2.100 + 2.537 - 0.000) \times 1.0 \times 0.70 = 1.710$			
	$\frac{1}{2} (2.537 + 0.000) \times 1.80 \times 0.90 = 2.071$			
	$3.33 \times 1.2 = 6.599$			

Working Division:

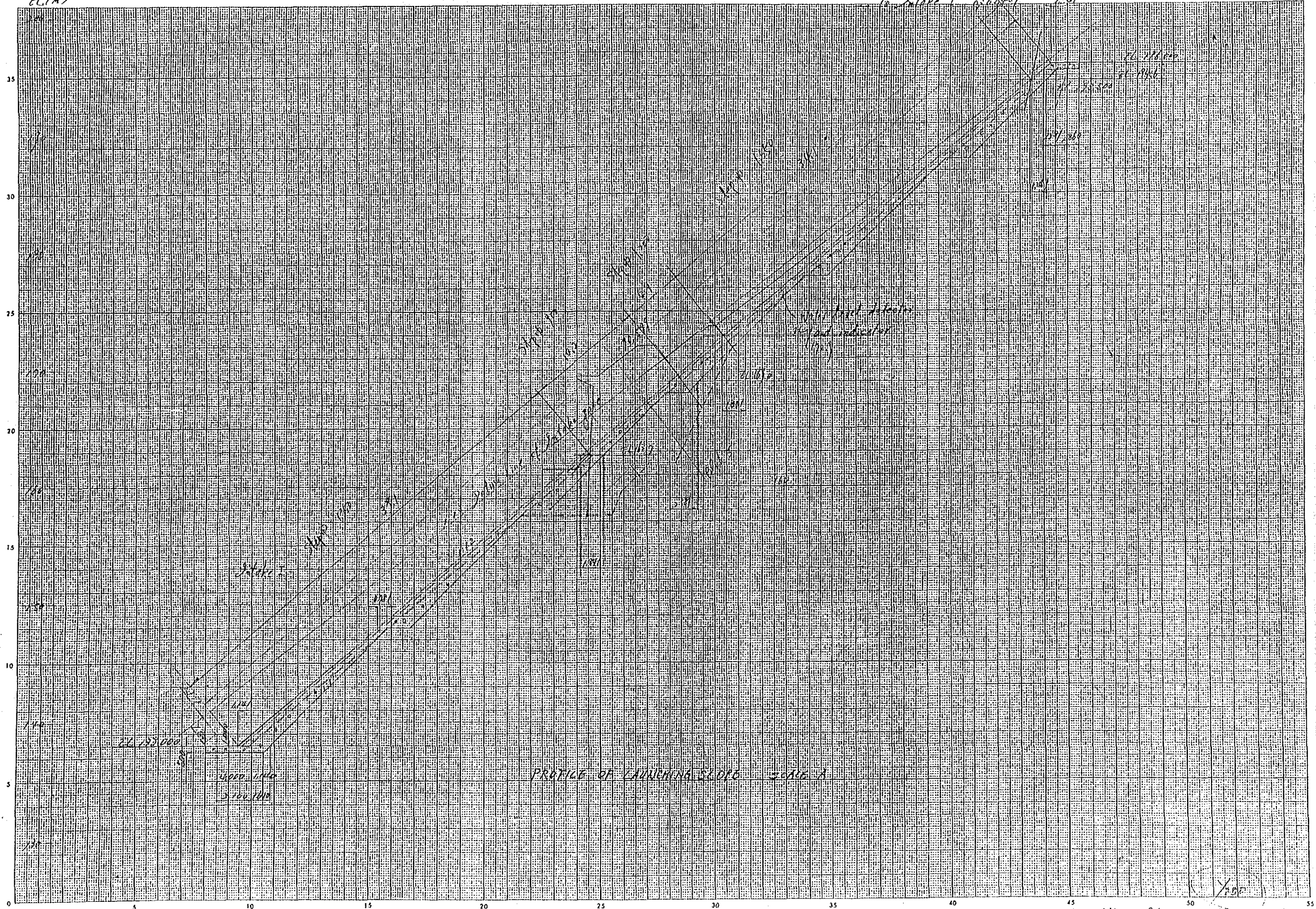
Description	Calculation Details	Unit	Quantity	Remarks
	$26172 \sim 26198 \quad \frac{1}{2} (1801 - 0.78) + 0$			
	$\quad \quad \quad \times 5.1 \times 1550 = 4032$			
	$26177 \sim 26187 \quad \frac{1}{2} (2000 + 0) \times 10.0 \times 1550 = 15500$			
	$26187 \sim 26194 \quad \frac{1}{2} (2000 + 1461 - 0.881)$			
	$\quad \quad \quad \times 46 \times 1550 = 13708$			
	$26194 \sim 26196 \quad \frac{1}{2} (1461 - 0.28) + 1281 - 0.281)$			
	$\quad \quad \quad \times 14 \times 0.70 = 0.578$			
	<u>Sub-total</u> 28.127			
	Base concrete			
	Sec. 1 ~ Sec. 5' $\frac{1}{2} 0.514 \times 0.47' = 0.126$			
	" 9' ~ " 9" $0.514 \times 1.512 = 0.777$			
	" 9' ~ " 9" $0.514 \times 0.488 = 0.251$			
	" 9" ~ " 10 $\frac{1}{2} (0.514 + 4.258) \times 3.36 = 8.854$			
	" 10 ~ " 10' $\frac{1}{2} (4.958 + 7.575) \times 1.783 = 10.923$			
	" 10' ~ " 11 $\frac{1}{2} (7.575 + 8.058) \times 0.217 = 1.676$			
	" 11 ~ " 11' $\frac{1}{2} (8.058 + 5.335) \times 0.567 = 5.797$			
	" 11' ~ " 11" $5.335 \times 2.575' = 13.866$			
	" 11" ~ " 12 $\frac{1}{2} (5.335 + 8.400) \times 1.674 = 10.123$			
	" 12 ~ " 12' $8.400 \times 0.860 = 7.224$			
	" 12' ~ " 12" $\frac{1}{2} (8.400 + 4.218) \times 1.140 = 7.084$			
	" 12" ~ " 13 $\frac{1}{2} 4.028 \times 3.72 = 7.492$			
	Sec. 17 ~ Sec. 17' $\frac{1}{2} 0.517 \times 2.86 = 0.742$			
	" 17' ~ " 17" $0.517 \times 0 = 0$			
	" 17" ~ " 18 $\frac{1}{2} (0.517 + 1.093) \times 1.5 = 1.659$			

Working Division:

Description	Calculation Details	Unit	Quantity	Remarks
Sec. 18 ~ Sec 18'	$\frac{1}{2} (1693 + 1300) \times 0.14 =$	m^2		
" 18' ~ " 17'	$\frac{1}{2} 1300 \times 0.56 =$			
	Sub-total		75.244	
Landing slope		m^2		
d/s self	275.146			
Step	28.127			
Base	75.244			
	Total		<u>428.517</u>	

EL (M)

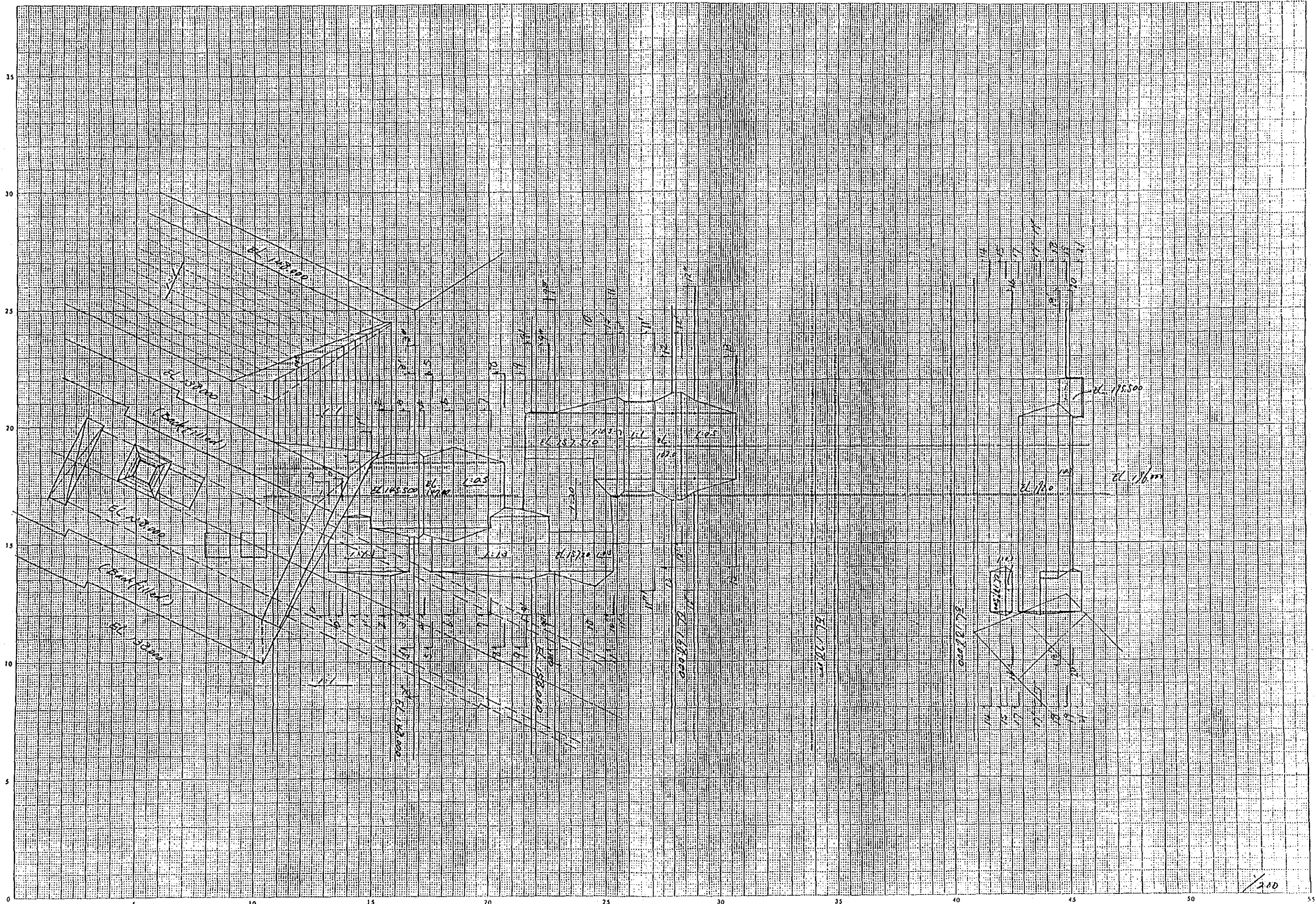
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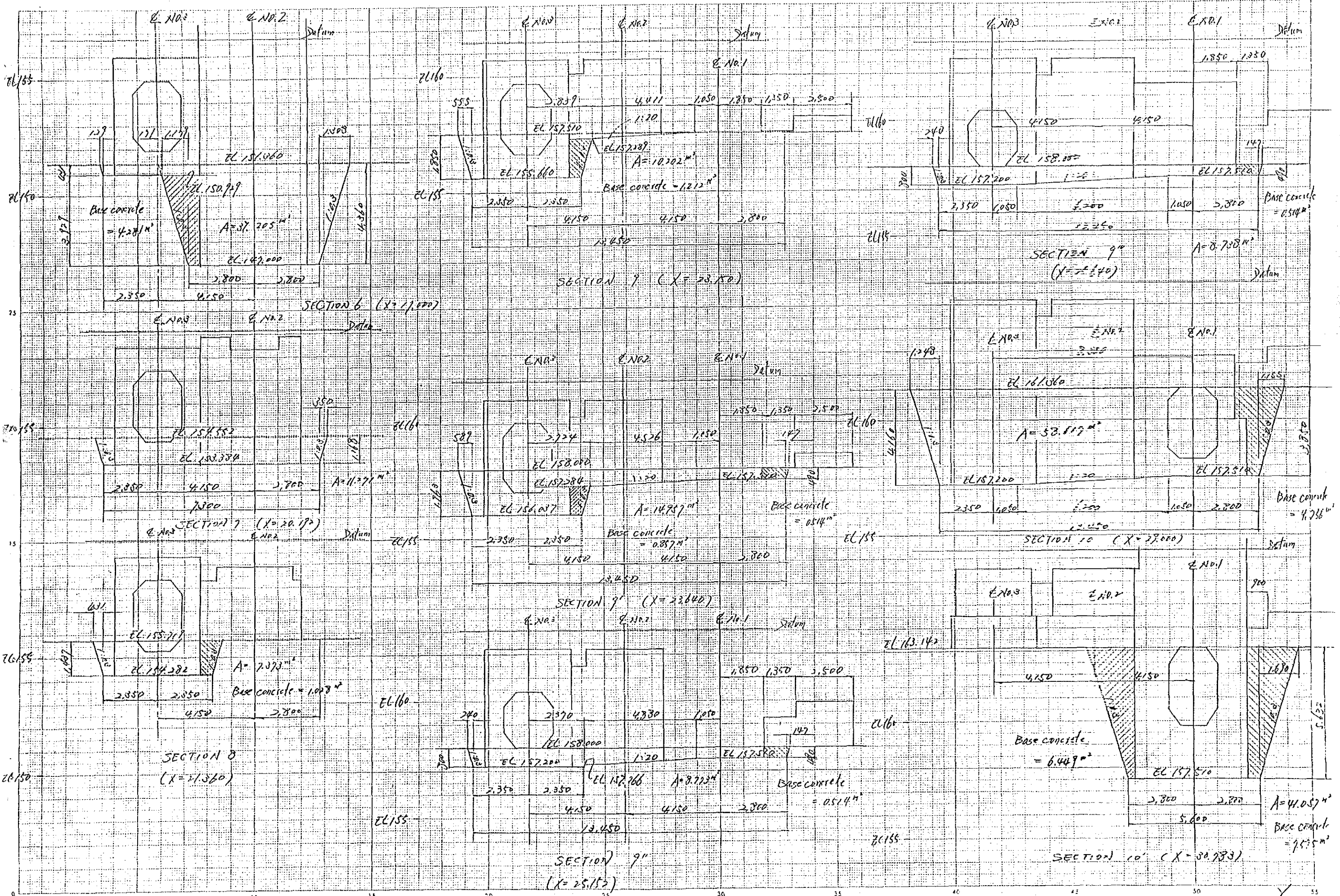


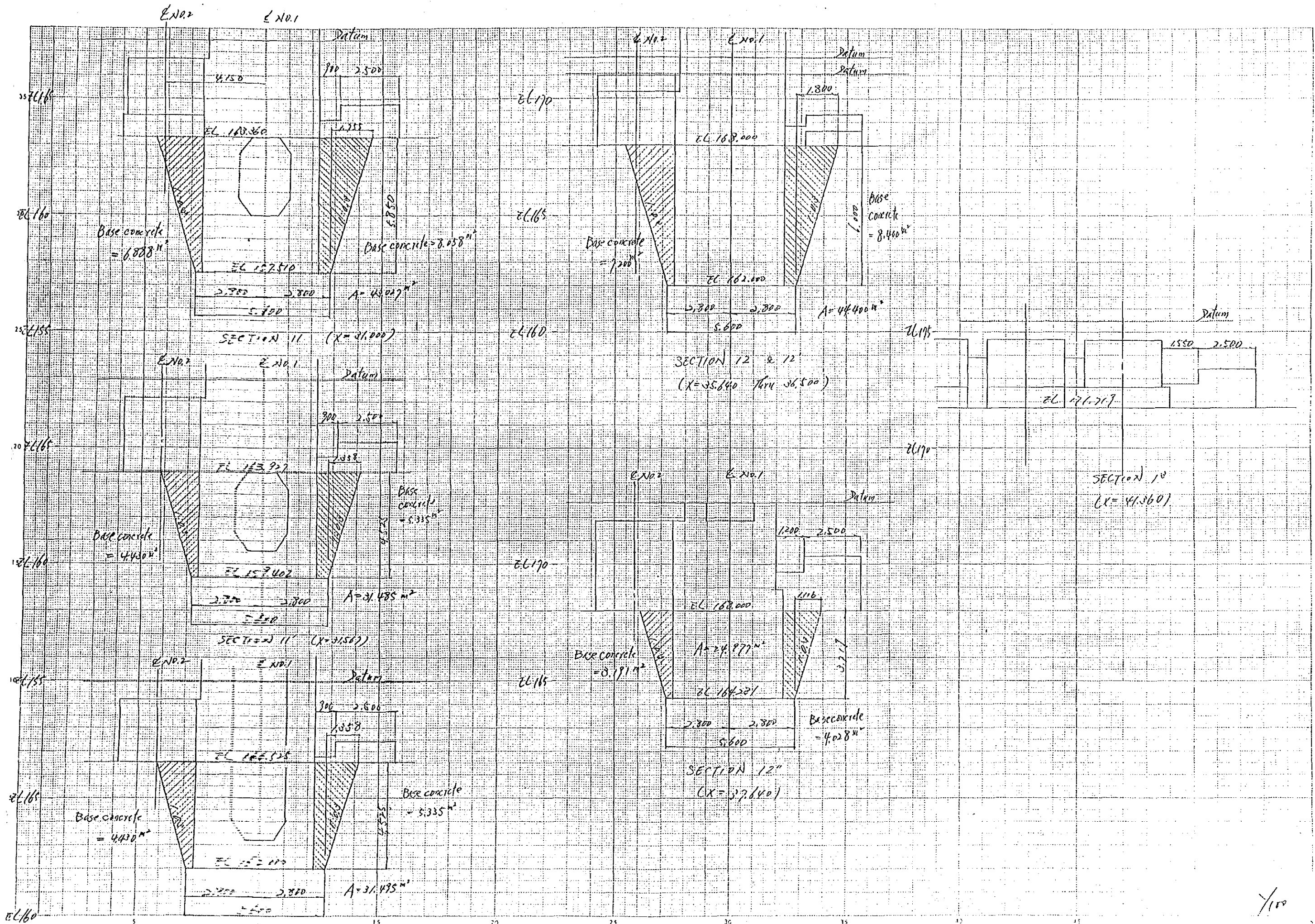
PROFILE OF LAUNCHING SLOPE - Stage A

VI-4-96

SECEL NO 2521C







SECTION 11 (X=34.166)

VI-4-99

1/100