W

416

DIETZGEN

[illegible]
LEVEL BOOK

No. 410

EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and
SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

Distances from Center of Roadway for Cross-Sectioning

Roadway 16 feet wide. Side Slopes 1 on 1.
For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	0
1	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	1
2	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	2
3	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	3
4	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	4
5	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	5
6	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	6
7	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	7
8	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	8
9	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	9
10	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	10
11	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	11
12	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	12
13	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	13
14	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	14
15	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	15
16	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	16
17	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	17
18	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	18
19	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	19
20	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	20
21	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	21
22	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	22
23	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	23
24	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	24
25	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	25
26	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	26
27	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	27
28	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	28
29	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	29
30	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	30
31	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	31
32	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	32
33	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	33
34	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	34
35	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	35
36	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	36
37	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	37
38	46.0	46.1	46.2	46.3	46.4	46.5	46.6	46.7	46.8	46.9	38
39	47.0	47.1	47.2	47.3	47.4	47.5	47.6	47.7	47.8	47.9	39
40	48.0	48.1	48.2	48.3	48.4	48.5	48.6	48.7	48.8	48.9	40

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 30.6. For same slopes but other widths of roadbed, correct above figures by one-half difference in width of roadbed; thus in example above, for 20 ft. roadbed distance will be 30.6+(20—16)÷2 or 2 ft. added to 30.6 =32.6. For slopes of 1 on 1½ see inside of back cover.

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Pg. **Index**

Core Trench Finals

Core Trench Excavation

Sloped Section – Sched. Item 7.

Neat Line Tr. Calculated to Bottom El. – Pg. 34

Slope Section Begins	Bottom El. (& Top 6' Neat Line Tr. Ex Pg 34)	Top El. See Profile at ℄ Red checks with X Sec Sheet				
N 3015	748.1 ✓	751.1 ✓	$\frac{6+12}{2} \times 3$ ✓			
3020	748.1 ✓	751.1 ✓	Same Section			
20	748.1 ✓	752.3 ✓	See End	Sec.		Sheet 2
30	744.0 ✓	752.0 ✓	"	"	"	" 3
40	737.8 ✓	745.8 ✓	"	"	"	" 1
50	721.4 ✓	729.4 ✓	"	"	"	" 9
60	715.1 ✓	723.1 ✓	"	"	"	" 9
70	709.5 ✓	717.5 ✓	"	"	"	" 1
80	702.6 ✓	710.6 ✓	"	"	"	" 1
90	696.4 ✓	704.4 ✓	"	"	"	" 3
3100	691.0 ✓	699.0 ✓	"	"	"	" 4
10	686.6 ✓	694.6 ✓	"	"	"	" 3
20	680.8 ✓	688.8 ✓	"	"	"	" 6
30	678.8 ✓	686.8 ✓	"	"	"	" 2
40	671.0 ✓	679.0 ✓	"	"	"	" 2
50	665.2 ✓	673.2 ✓	"	"	"	" 2

Core Trench Excavation

Cal by [illegible]
Ck. " [illegible]

End Area Sq. ft	Average End Area	Length Section	Volume Cu ft	Cu Yds.
27.00 ✓				
	27.00 ✓	5' ✓	135.00 ✓	
27.00 ✓	—	—	—	
43.83 ✓	75.165 ✓	10. ✓	751.65 ✓	
106.50 ✓	109.95 ✓	10 ✓	1099.50 ✓	
113.40 ✓	110.40 ✓	10 ✓	1104.00 ✓	
107.40 ✓	106.495 ✓	10 ✓	1064.95 ✓	
105.59 ✓	104.535 ✓	10 ✓	1045.35 ✓	
103.48 ✓	101.605 ✓	10 ✓	1016.05 ✓	
99.73 ✓	98.315 ✓	10 ✓	983.15 ✓	
96.90 ✓	90.12 ✓	10 ✓	901.20 ✓	
83.34 ✓	94.23 ✓	10 ✓	942.30 ✓	
105.12 ✓	94.96 ✓	10 ✓	949.60 ✓	
84.80 ✓	86.90 ✓	10 ✓	869.00 ✓	
89.00 ✓	96.285 ✓	10 ✓	962.85 ✓	
103.57 ✓	107.205 ✓	10 ✓	1072.05 ✓	
110.84 ✓	114.29 ✓	10 ✓	1142.90 ✓	
	Carried Forwd.		14039.55	

Core Trench Excavation
Sloped Section

Item 7. Neat line Tr. Cal. to Bottom El. on Page 32.

	Bottom	Top			Carried fowd.	Sq ft End Area	Average End Area	Length Section	Volume Cu ft.
							Brought Forwd.		14039.55
H 3160	659.5	667.5	See Enl. Sec.	Sheet 5		117.74	98.095	10.	980.95
70	660.2	668.2	" "	" 5		78.45	94.315	10.	943.15
80	652.0	660.0	"	" 6		110.18	110.56	10.	1105.60
90	647.0	655.0	"	" 5		110.94	113.755	10.	1137.55
3200	640.6	648.6	"	" 5		116.57	115.44	10.	1154.40
10	635.6	643.6	"	" 6		114.31	104.245	10.	1042.45
20	631.6	639.6	"	" 6		94.18	93.19	10.	931.90
30	629.6	637.6	"	" 5		92.20	98.955	10.	989.55
40	622.1	630.1	"	" 7		105.71	107.71	10.	1077.10
50	617.0	625.0	"	" 7		109.71	107.985	10.	1079.85
60	613.1	621.1	"	" 7		106.26	117.895	10.	1178.95
70	607.8	615.8	"	" 7		129.53	119.375	10.	1193.75
80	603.2	611.2	"	" 7		109.22	114.985	10.	1149.85
90	597.0	605.0	"	" 8		120.75	121.175	10.	1211.75
3300	592.5	600.5	"	" 8		121.60	111.850	10.	1118.50
10	588.1	596.1	"	" 8		102.10	102.950	10.	1029.50
20	582.5	590.5	"	" 10		103.80	88.355	5.	441.775
25	579.6	587.6	"	" 9		72.91	72.04	5.	360.20
30	578.7	586.7	"	" 9		71.17	84.27	4	337.08
34	578.7	586.7	" ~~(1411.95)~~	" 10		97.37			
								Total	32503.405

1203.83

27)25661.
950

Core Trench Excavation

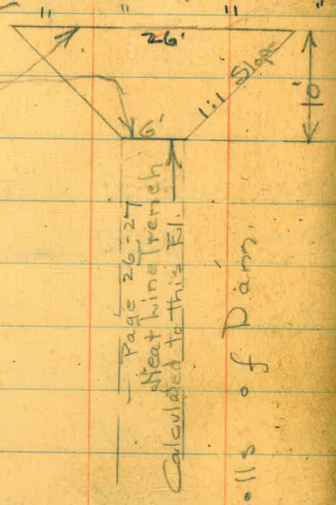
Sloped Section - Less 8x6 Neat Line Trench which is Calculated on Pg. 25

Item - 7

	Bottom	Top		Sq. ft.	Aver.	Dist.	Cu ft
N 3334	578.7	586.7	See Enl. Sec Sheet 10	49.37	55.905	6'	335.43
40	578.6	586.6	See Enl. Sec. on X Sec Sh	62.44 (31.22)			
50	565.9	573.9	" " " Sheet 10	20.10			
60	562.3	570.3	See X Sec Sheet	1.76			
70	562.3	570.3	See Enl. Sec Sheet 10	19.91			
80	551.7	559.7	See X Sec Sheet	0.08			
90	546.3	554.3	See Enl. Sec. Sheet 10	4.74			
3400	545.1	553.1	" " " " 13	28.65			
10	542.9	550.9	" " 11	32.27			
20	540.1	548.1	" " 11	9.21			
30	539.2	547.2	" " 11	23.50			
40	538.1	546.1	" " 11	(23.74) 47.48			
			Total	195.18	x10		1951.80
							2287.23 = 84.71

Core Trench Excavation
Item 12 Sloped Section

See Enl. Sec Sheet 11 " " " " 12



See X Sec. Rolls of Dam.

	Bottom	Top	Sq ft End Area	Average End Area	Length Section	Volume Cu ft	Vol Cu Yds.
N3440	536.1	546.1	119.34				
				107.79	x 10.	1077.90	
50	528.2	538.2	96.24				
				127.39	x 10.	1273.90	
60	530.3	540.3	158.53				
				159.15	x 10.	1591.50	
70	528.3	538.3	159.76				
				159.78	x 10.	1597.80	
80	527.9	537.9	159.80				
				159.90	x 10.	1599.00	
90	528.1	538.1	160.00				
				160.00	x 10.	1600.00	
3500	528.0	538.0	160.00				
				160.00	x 10.	1600.00	
10	528.1	538.1	160.00				
				159.97	x 10.	1599.70	
20.	528.0	538.0	159.95				
				159.98	x 10.	1599.80	
30	528.6	538.6	160.00				
				160.00	x 10.	1600.00	
40	528.9	538.9	160.00				
				160.00	x 10.	1600.00	
50	528.8	538.8	160.00				
				159.91	x 10.	1599.10	
60	528.5	538.5	159.82				
				159.80	x 10.	1598.00	
70	528.7	538.7	159.77				
				159.80	x 10.	1598.00	
80	528.7	538.7	159.83				
				159.88	x 10.	1598.80	
90	528.6	538.6	159.93				
				159.92	x 10.	1599.20	
3600	528.8	538.8	159.92				
				159.94	x 10.	1599.40	
10	529.0	539.0	159.96				
				159.94	x 10.	1599.40	
20	528.9	538.9	159.92				
				159.96	x 10.	1599.60	
				Carried Forwd		29531.10	

Core Trench Excavation
Sloped Section

Item 12

	Bottom	Top
N 3630	529.1	539.1
40	529.3	539.3
50	529.7	539.7
60	530.6	540.6
70	531.0	541.0
80	531.8	541.8
90	532.7	542.7
3700	533.8	543.8
10	534.8	544.8
20	535.5	545.5
30	536.0	546.0
40	536.6	546.6
50	537.6	547.6
60	539.2	549.2
70	540.7	550.7
80	542.3	552.3
90	547.0	557.0

See x Rolls of Dam

Sq. ft End Area	Average End Area	Length Section	Volume Cu. ft.	Volume Cu. Yds.
	Brought Forwd		29531.10	
160.00				
	160.00	10.	1600.00	
160.00				
	159.99	10.	1599.90	
159.98				
	159.99	10.	1599.90	
160.00				
	160.00	10.	1600.00	
160.00				
	159.96	10.	1599.60	
159.92				
	159.92	10.	1599.20	
159.92				
	159.94	10.	1599.40	
159.96				
	159.98	10.	1599.80	
160.00				
	160.00	10.	1600.00	
160.00				
	160.00	10.	1600.00	
160.00				
	160.00	10.	1600.00	
160.00				
	159.98	10.	1599.80	
159.96				
	159.98	10.	1599.80	
160.00				
	160.00	10.	1600.00	
160.00				
	160.00	10.	1600.00	
160.00				
	160.00	10.	1600.00	
160.00				
			55128.50	2041.80

7

Core Trench Excavation
Sloped Section

Item 7 Less Neat line Trench Ex. to This El

Station	Bottom	Top			Sq ft End Area	Average End Area	Length Section	Volume Cu ft	Volume Cu. yds.
N 3790	547.0	551.0	(See X Sec Sheets. → Ex. for Sloped Sec Less 6' Neat Line Tr Ex. to top of Sloped Sec See page 28.)		100.00	81.10	10.	811.00	
3800	551.4	559.4		See Enl Sheet 13	62.20	62.85	10.	628.50	
10	561.9	569.9		" " See on X Sec	63.50	48.51	10.	485.10	
20	568.0	576.0	See Enlarged Sec Sheet 14		33.52	29.33	5.	146.65	
25	570.7	578.7	" " " Int. " 14		25.13	12.56	5	62.80	
30	571.2	579.2	See Sections No Sloped Ex.		0.00	0.00	7'	0.00	=
37	571.5	579.5	" " " "		0.00				
								2134.05	79.04

Item 7. Sloped Section – No Neat Line Trench deduction as Neat Line Cal. to bottom Elev. (Pg 38

Station	Bottom	Top			Sq ft End Area	Average End Area	Length Section	Volume Cu ft
N 3837	571.5	579.5	8 x 6 Interpolated Sec See Section – No Sloped Sec 5	Sheet 13.	48.00	46.80	3.	140.40
40	572.0	579.6	7.6 x 6 " " " " "		45.60	50.51	5.	252.55
45	577.3	585.3	See Interpolated Sec	" 13	- 55.42	82.39	5.	411.95
50	588.8	596.8	" Enlarged Sheet 15		109.37	111.32	10.	1113.20
60	599.8	607.8	See Enl. Sec Sheet 15		113.27	111.48	10.	1114.80
70	606.7	614.7	" " " " 15		109.70	112.33	10.	1123.30
80	615.9	623.9	See. Enl. Sec " 16		114.95	111.92	10.	1119.20
90	621.9	629.9	" " " " 16		108.90	83.05	10.	830.50
3900	627.0	635.0	See X Sec Sheet Sloped Sec		57.20	78.51	10.	785.10

Carried Forwd. 6891.00

Core Trench Excavation
Sloped Section

Item 7. No Heat Line Trench, No Deductions as Heat Line Trench
Cal. to Bottom Elev. See Page 39.

Station	Bottom	Top			Sq.ft. End Area	Average End Area	Length Section	Volume Cu.ft.	Volume Cu.Yds.
						Brought Forwd.		6891.00	
N 3910	640.7	648.7	See End. Sec	Sheet 16	99.82				
						110.22	10.	1102.20	
20	646.0	654.0	See End Sec.	" 17	120.62				
						121.22	10.	1212.20	
30	651.4	659.4	See End Sec	" 17	121.82				
						117.86	10.	1178.60	
40	654.6	662.6	See X Sec	" 17	113.90				
						110.16	10.	1101.60	
50	660.8	668.8	See End. Sec	" 18	106.42				
						86.53	10.	865.30	
60	665.1	673.1	" " "	" 18	66.64				
						88.10	10.	881.00	
70	671.4	679.4	" " "	" 18	109.56				
						98.00	10.	980.00	
80	674.7	682.7	See End. Sec.	" 19	86.45				
						—	—		
3980	676.0	682.7	" " "	" 19	78.65				
						82.72	10.	827.20	
90	682.7	688.7	" " "	" 20	86.79				
						81.90	10.	819.00	
4000	686.8	693.0	" " "	" 20	77.00				
						84.15	10.	841.50	
10	691.2	697.3	" " "	" 21	91.30				
						91.88	10.	918.80	
20	695.8	701.5	" " "	" 21	92.45				
						97.62	10.	976.20	
30	700.0	707.1	" " "	" 21	102.78				
						100.35	10.	1003.50	
40	703.5	710.7	" " "	" 22	97.93				
						98.04	10.	980.40	
50	710.5	716.9	" " "	" 22	98.15				
						112.34	10.	1123.40	
60	713.2	722.8	" " "	" 22	126.52				
						113.46	10.	1134.60	
70	718.0	725.0	" " "	" 23	100.40				
						104.43	10.	1044.30	
80	723.9	731.5	" " "	" 23	108.47				
						114.57	10.	1145.70	
				Sub Total	2444.37	Carried Forwd.		25026.50	

Core Trench Excavation
Sloped Section

Se Pg 41.

Item 7. No Neat line Trench deduction as Neat Line Trench, Cal to bottom El

	Bottom	Top.		Sq ft. End Area	Average End Area	Length Section	Volume Cu. ft.	Volume Cu yds.
					Brought Forwd.		25026.50	
N4090	727.9	736.8	See Enlarged Sec Sheet 23	120.67				
					113.63	10.	1136.30	
4100	733.2	740.6	" " " 24	106.60				
					96.63	10.	966.30	
10	738.7	744.2	" " " 24	86.66				
					91.40	10.	914.00	
20	742.1	749.5	" " " 25	96.13				
					95.56	10.	955.60	
30	746.0	753.5	" " " 26	95.00				
					108.63	10.	1086.30	
40	749.9	759.0	" " " 26	122.25				
					100.08	10.	1000.80	
50	754.4	759.0	" " " 27	77.92				
					87.30	10.	873.00	
60	759.1	765.9	" " " 27	96.68				
					—	—	—	
60	762.9	765.9	" " " 27	73.88				
					64.92	10.	649.20	
70	768.1	770.0	" " " 25 Slope Sec Up Stream	55.95				
					44.77	10.	447.70	
80	770.0	770.0	" " " " Sheet 25	33.60				
				—			33055.70	1224.29

Excavation Summary Core Trench Sloped Section

Item 7

		Cu Yds.
N3015 to N3334	=	1203.83
N3334 to N3440	Less Neat Line	84.71
N3790 to N3837	" " "	79.04
N3837 to N4180	=	1224.29
		2591.87 Cu Yds.

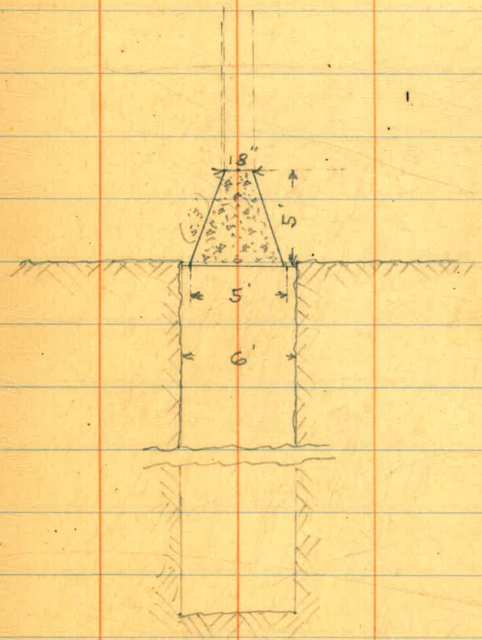
Item 12.

N3440 to N3790. 2041.80 Cu Yds.

Sketch Transition Section Concrete Core Wall

✓ W

Area = 16.25 sq. ft.



CORE TRENCH EXCAVATION

ITEM-12 SLOPED SECTION

From - North 3440 to North 3790

Volume as Shown on Pages 5+6 Cu ft 55128.50

SECTION-6' NEAT LINE Cu. ft.

North 3334 to N. 3440 Pg 25+26 = 14497.20

North 3440 to N. 3790 Pg 26+26 = 53940.00

North 3790 to N. 3837 Pg 28 = 8979.00

Cu ft. 132544.70

Total Item 12 in Core Trench =

= ~~4,943.54~~ Cubic Yards = 4909.06

(See est 11)

For Sketches See Page 29

F.O. June 24, 1933

6' Neat line trench Excavation

Note: top elev. = top of Sloped Section

Item 12

North	Top. Elev.	Bottom Elev.	Height	Mean	Dist.	Area □'
3334	586.7	560.5	26.2			
				27.2	2	54.40
36	86.6	58.4	28.2			
				28.35	4	113.40
40	86.6	58.1	28.5			
40	86.6	59.6	27.0			
				22.35	10	223.50
50	73.9	56.2	17.7			
				16.9	10	169.00
60	70.3	54.2	16.1			
				16.85	5	84.25
65	70.3	52.7	17.6			
				19.35	5	96.75
70	70.3	49.2	21.1			
				18.8	5	94.00
75	65.0	48.5	16.5			
				17.85	5	89.25
80	59.7	40.5	19.2			
				21.8	5	109.00
85	57.0	32.6	24.4			
				23.35	5	116.75
90	54.3	32.0	22.3			
					Total	1150.30

Item 12. Core Trench Excavation

North	Top	Bottom	Ht.	Mean	Dist	Area □′
				Br. Forwd		1150.30
3390	54.3	29.0	25.3			
				25.55	10	255.50
3400	53.1	27.3	25.8			
				25.3	10	253.00
10	50.9	26.1	24.8			
				24.25	10	242.50
20	48.1	24.4	23.7			
				24.2	10	242.00
30	47.2	22.5	24.7			
				26.45	6	158.70
36	46.6	18.4	28.2			
				28.55	4	114.20
3A40	46.1	17.2	28.9			
						2416.20

Trench 6′ wide = × 6
Total Cu ft 14497.20

Core Trench Excavation.

6′ Neat line trench

Item 12

North	Top (6′ Neat)	Bottom	Ht.	Mean	Dist	Area □′
3440	536.1	517.2	18.9			
				15.85	10	158.50
50	28.2	15.4	12.8			
				13.3	5	66.50
55	29.2	15.4	13.8			
				15.35	5	76.75
60	30.3	13.4	16.9			
				16.8	10	168.00
70	28.3	11.6	16.7			469.75
70	28.3	03.4	24.9 12.45 ½			
80	27.9	03.2	24.7			
90	28.1	02.3	25.8			
3500	28.0	01.9	26.1			
10	28.1	01.8	26.3			
20	28.0	01.6	26.4			
30	28.6	01.0	27.6			
40	28.9	00.5	28.4			
50	28.8	00.8	14.0 ½ 28.0	211.75	10	2117.50

Forwd → 2587.25

Item 12

Core Trench Excavation

North	Top (6' Neat)	Bottom	Height	Brought forward	2 587.25
			14.0 ½ 355.0		
3560	528.5	501.0	27.5		
70	28.7	01.4	27.3		
80	28.7	01.7	27.0		
90	28.6	01.7	26.9		
3600	28.8	02.1	26.7		
10	29.0	02.5	26.5		
20	28.9	02.8	26.1		
30	29.1	02.8	26.3		
40	29.3	02.9	26.4		
50	29.7	02.2	27.5		
60	30.6	02.6	28.0		
70	31.0	02.3	28.7		
80	31.8	02.7	29.1		
90	32.7	03.0	29.7		
3700	33.8	04.4	29.4		
10	34.8	06.1	28.7		
20	35.5	08.4	27.1		
30	36.0	09.9	26.1		
			12.15		
40	36.6	12.3	24.3	521.15x10	5211.50
			Forwd-		7798.75

6' Neat Line Trench — Item 12.

North	Top (6 neat)	Bottom	Height	Mean	Dist.	Area □'
				Brought	Forwd.	7798.75
3740			24.3	23.45	10	234.50
3750	37.6	15.0	22.6			
				22.50	10	225.00
60	39.2	16.8	22.4			
				22.35	2.5	55.88
62.5	39.6	17.3	22.3			
				22.65	7.5	169.87
70	407	17.7	23.0			
				23.8	10	238.00
80	42.3	17.7	24.6			
				26.8	10	268.00
90	47.0	18.0	29.0			
						8990.00
		Trench width =				x 6
N3440 to N 3790		Total		Cu ft		53,940.00

Core Trench Excavation -

Item 12 6' NEAT LINE TRENCH

Note: Top elev. = Top of sloped section.

North	Top	Bottom	Ht.	Mean	Dist.	Area□
3790	557.0	518.0	39.0			
				39.5	10	395.00
3800	594	19.4	40.0			
				38.2	4	152.80
04	63.6	27.2	36.4			
				38.05	5	190.25
09	68.9	29.2	39.7			
				38.6	2	77.20
11	70.5	33.0	37.5			
				38.15	4	152.60
15	73.0	34.2	38.8			
				37.3	5	186.50
20	76.0	40.2	35.8			
				35.15	2	70.30
22	77.1	42.6	34.5			
				30.80	1	30.80
23	77.7	50.6	27.1			
				27.25	2	54.50
25	78.7	51.3	27.4			

Forwd. Sub Total 1309.95

Core Trench Excavation

Item 12

North	Top	Bottom	Ht.	Mean	Dist	Area□'
				Br. Forwd.		1309.95
3825	78.7	58.7	20.0			
				18.2	5	91.00
30	79.2	62.8	16.4			
				13.65	7	95.55
37	79.5	68.6	10.9			
						1496.50
			Width trench			x 6'
N3790 to N3837 —	Total	Cu. ft.				8979.00

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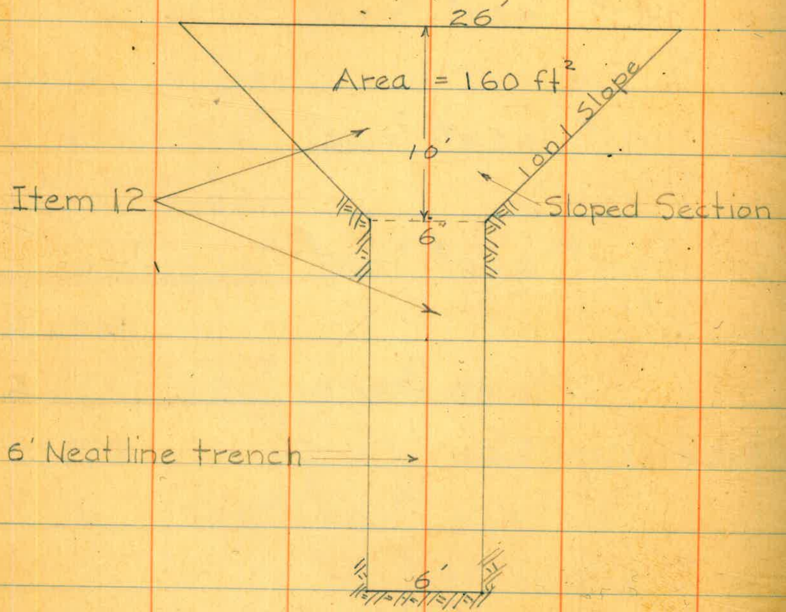
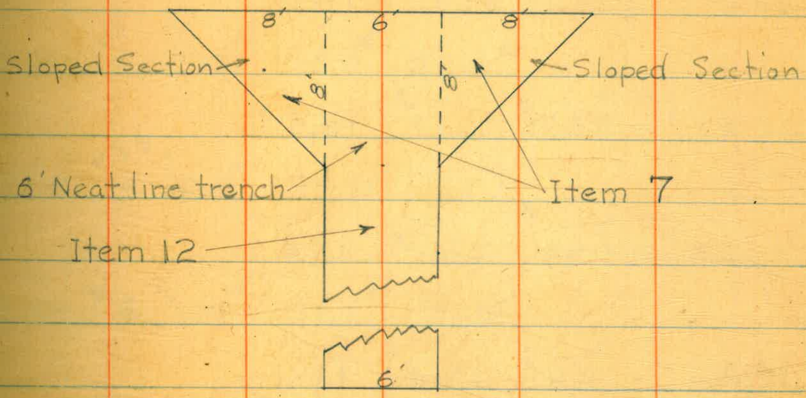
SKETCH OF CORE TRENCH EXC.

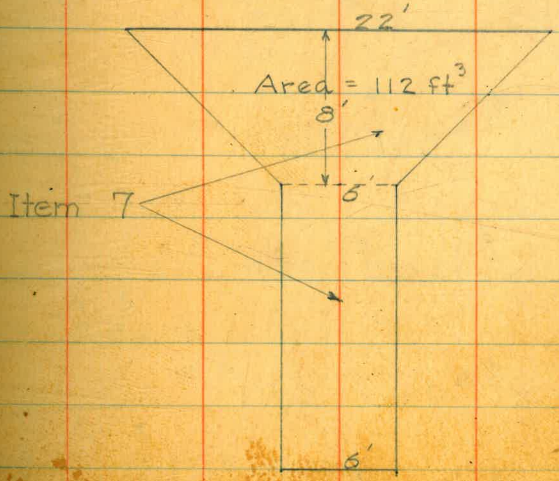
From North 3440 to N. 3790



From N. 3334 to N. 3440 and from N. 3790 to N. 3837



From N. 3334 South and From N. 3837 North



CORE TRENCH EXCAVATION

ITEM 7 6' NEAT LINE TRENCH

North	Top	Bottom	Ht.	Mean	Dist	Area□
3334	578.7	560.5	18.2			
				18.35	4	73.40
30	78.7	60.2	18.5			
				18.75	2	37.50
28	79.1	60.1	19.~~4~~0			
				18.1	3	54.30
25	79.6	62.4	17.2			
				17.1	1	17.10
24	80.2	63.2	17.0			
				17.65	7	123.55
17	84.3	66.0	18.3			
17	84.3	70.6	13.7			
				15.9	7	111.30
10	88.1	70.0	18.1			
				19.65	7	137.55
3303	91.2	70.0	21.2			
				22.5	8	180.00
3295	94.7	70.9	23.8			
				Forwd-		734.70

Core Trench Excavation

Item 7- - 6' Neat Line-

North	Top	Bottom	Ht.	Mean	D	Area□
3295	94.7	70.9	23.8	Brought	Forwd	734.70
				22.9	5	114.50
90	97.0	75.0	22.0			
				19.55	1	19.55
89	97.6	80.5	17.1			
				19.05	9	171.45
80	603.2	82.2	21.0			
				21.5	4	86.00
76	05.0	83.0	22.0			
76	05.0	89.8	15.2			
				16.05	6	96.30
70	07.8	90.9	16.9			
				17.3	2	34.60
68	08.9	91.2	17.7			
				18.9	5	94.50
63	11.5	91.4	20.1			
				20.0	3	60.00
60	13.1	93.2	19.9			
				Forwd-		1411.60

Core Trench Excavation
Item 7- 6' Neat Line

North	Top	Bottom	Ht.	Mean	D	Area □'
			Brought Forward			1411.60
3260	613.1	593.2	19.9			
				19.4	5	97.00
55	15.0	96.1	18.9			
				18.55	5	92.75
50	17.0	98.8	18.2			
				19.4	5	97.00
45	19.6	99.0	20.6			
				21.4	5	107.00
40	22.1	99.9	22.2			
				24.5	8	196.00
32	28.1	601.3	26.8			
32	28.1	12.2	15.9			
				16.6	2	33.20
30	29.6	12.3	17.3			
				17.8	6	106.80
24	30.8	12.5	18.3			
				15.20	.5	7.60
23.5	30.9	18.8	12.1			
				12.20	3.5	42.70
20	31.6	19.3	12.3			
				Forwd		2191.65

Core Trench Excavation
Item 7- 6' Neat Line

North	Top	Bottom	Ht.	Mean	D	Area □
			Brought Forward			21.91.65
3220	31.6	19.3	12.3			
				12.4	1	12.40
19	32.0	19.5	12.5			
				10.85	1	10.85
18	32.4	23.2	9.2			
				10.70	8	85.60
10	35.6	23.4	12.2			
				12.45	1	12.45
09	36.1	23.4	12.7			
				11.85	5	59.25
04	38.6	27.6	11.0			
				11.7	4	46.80
3200	40.6	28.2	12.4			
				13.15	3	39.45
3197	42.5	28.6	13.9			
				13.55	3	40.65
94	44.4	31.2	13.2			
				14.4	4	57.60
90	47.0	31.4	15.6			
			Forwd —			2556.70

Core Trench Excavation
Item 7. 6' Neat Line.

North	Top	Bottom	Ht.	Mean	D	Area □'
3190	647.0	631.4	15.6	Brot Forwd		2556.70
				16.05	2	32.10
88	48.0	31.5	16.5			
				13.95	2	27.90
86	49.0	37.6	11.4	11.50	1	11.50
85	49.5	37.9	11.6			
				11.3	.5	5.65
84.5	49.8	38.8	11.0			
				11.75	3.5	41.12
81	51.5	39.0	12.5			
				11.8	1	11.80
80	52.0	40.9	11.1			
				8.9	4	35.60
76	55.3	48.6	6.7			
				8.05	6	48.30
70	60.2	50.8	9.4			
				8.9	10	89.00
60	59.5	51.1	8.4			
				9.2	3	27.60
57	61.2	51.2	10.0			
				10.6	5	53.00
52	64.1	52.9	11.2			
				Forwd.		2940.27

Core Trench Excavation
Item 7- 6' Neat Line.

North	Top	Bottom	Ht.	Mean	D	Area □'
3152	64.1	52.9	11.2	Brought Forwd		2940.27
				11.7	2	23.40
50	65.2	53.0	12.2			
				14.65	9	131.85
41	70.4	53.3	17.1			
				16.85	1	16.85
40	71.0	54.4	16.6			
				16.45	1	16.45
39	71.8	55.5	16.3			
				17.85	9	160.65
30	78.8	59.4	19.4			
				18.45	8.5	156.83
21.5	80.6	63.1	17.5	13.45	.5	6.73
21	80.6	71.2	9.4			
				9.6	1	9.60
20	80.8	71.0	9.8			
				10.65	2	21.30
18	82.0	70.5	11.5			
				13.3	8	106.40
10	686.6	71.5	15.1	Forwrd		3590.33

Core Trench Excavation
Item 7 6' Neat Line.

North	top	bottom	Ht	Mean	D	
				Brot Forwd		3590.33
3110	686.6	671.5	15.1			
				15.95	5	79.50
05	88.8	72.1	16.7			
				13.55	5	67.75
3100	91.0	80.6	10.4			
				12.15	6	72.90
3094	94.2	80.3	13.9			
				13.4	4	53.60
90	96.4	83.5	12.9			
				12.7	2	25.40
88	97.6	85.1	12.5			
				13.8	8	110.40
80	702.6	87.5	15.1			
				16.55	4	66.20
76	05.4	87.4	18.0			
				16.55	3	49.65
73	07.5	92.4	15.1			
			31.9	15.95	3	47.85
70	09.5	92.7	16.8			
			Forwd			4163.58

33

Core Trench Excavation
Item 7 - 6' Neat Line.

North	top	bottom	Ht.	Mean	D	
				Brot. Forwd		4163.58
3070	709.5	692.7	16.8			
				18.6	8	148.80
62	14.0	93.6	20.4			
				19.90	2	39.80
60	15.1	95.6	19.5			
				18.60	4	74.40
56	17.6	99.8	17.8			
				19.05	4	76.20
52	20.1	99.8	20.3			
				16.1	1	16.10
51	20.8	708.9	11.9			
				12.05	1	12.05
50	21.4	09.2	12.2			
				18.55	10	185.50
40	37.8	12.9	24.9			
			51.5	25.75	6	154.50
34	41.5	14.9	26.6			
			49.1	24.55	1-	24.55
33	42.1	19.6	22.5			
			Forwd			4895.48

Core Trench Excavation
Item 7. 6' Neat Line.

North	top	bottom	height	Mean	D	Area □'
				Brot. Forwd		4895.48
3033	742.1	19.6	22.5			
				23.2	3	69.60
30	44.0	20.1	23.9			
				24.05	1	24.05
29	44.4	20.2	24.2			
				23.35	1	23.35
28	44.8	22.3	22.5			
				23.55	8	188.40
20	48.1	23.5	24.6			
				24.45	2.3	56.24
17.7	48.1	23.8	24.3			
				23.55	.2	4.71
17.5	48.1	25.3	22.8			
				22.45	2.5	56.13
15	48.1	26.0	22.1			
15	54.9	26.0	28.9			
				29.40	4	117.60
11	57.0	27.1	29.9			
				30.2	1	30.20
10	57.6	27.1	30.5			
				Forwd		5465.76

Note: These Sec. figured for Transition of 3' to 8' on Bottom To be Checked with Final Ex here.

Core Trench Excavation
Item 7. 6' Neat Line.

North	top	bottom	height	mean	D	
				Br. Forwd		5465.76
3010	57.6	27.1	30.5			
				30.9	1	30.90
09	58.4	27.1	31.3			
				31.3	3	93.90
06	61.0	29.7	31.3			
06	61.0	40.1	20.9			
				21.05	1	21.05
05	61.8	40.6	21.2			
05	61.8	52.9	8.9			
				10.5	4	42.00
01	65.2	53.1	12.1			
				9.75	1	9.75
3000	66.0	58.6	7.4			
				9.0	5	45.00
2995	69.6	59.0	10.6			
				7.7	1	7.70
94	70.4	65.6	4.8			
				2.4	2.5	6.00
91.5	72.2	72.2	0.0			
				Forwrd		5722.06

Core Trench Excavation
Item 7 - 6' Neat Line.

North	top	bottom	height	mean	D	Sq ft
				Brooght Forwrd		5722.06
2991.5	72.2	72.2	0.0			
				0.55	1.5	0.82
90	73.3	72.2	1.1			

N 3334 to N 2990 — Total = 5722.88

Width of Trench = 6'

5722.88 × 6 = 34 337.28 Cu ft

= 1271.75 Cu Yds.

CORE TRENCH EXCAVATION

ITEM 7. 6' NEAT LINE TRENCH

North	Top (6' Neat)	Bottom	Ht.	Mean	D	Area□'
3837	571.5	568.6	02.9			
				1.45	1	1.45
38	71.6	71.6	00.0			
40	72.0	72.0	00.0			
				2.25	5	11.25
45	77.3	72.8	4.5			
				5.55	1	5.55
46	79.6	73.0	6.6			
				10.1	4	40.40
50	88.8	75.2	13.6			
				15.0	5	75.00
55	94.3	77.9	16.4			
				18.55	5	92.75
60	99.8	79.1	20.7			
				21.4	3	64.20
63	601.9	79.8	22.1			
				21.3	6	127.80
69	06.0	85.5	20.5	Forwd-		418.40

Item 7

North	Top	Bottom	Ht.	Mean	D	Area□'
				Brought Forwd		418.40
3869	06.0	85.5	20.5			
				20.8	1	20.80
70	06.7	85.6	21.1			
				24.3	8	194.40
78	14.1	86.6	27.5			
				28.3	2	56.60
80	15.9	86.8	29.1			
				31.3	9	281.70
89	21.3	87.8	33.5			
				33.55	1	33.55
90	21.9	88.3	33.6			
				33.6	1	33.60
91	22.4	88.8	33.6			
				34.95	9	314.55
3900	27.0	90.7	36.3			
				31.65	1	31.65
01	28.4	601.4	27.0			
				33.3	9	299.70
10	40.7	01.1	39.6			
				Forwd		1684.95

Core Trench Excavation

Item 7

North	Top	Bottom	Ht.	Mean	D	Area □'
			Brought Forwd			1684.95
3910	640.7	601.1	39.6			
				39.85	1	39.85
11	41.2	01.1	40.1			
				36.55	.5	18.27
11.5	41.5	08.5	33.0			
				33.00	2.5	82.50
14	42.8	09.8	33.0			
				34.6	6	207.60
20	46.0	09.8	36.2			
20	46.0	15.7	30.3			
				29.0	4	116.00
24	48.2	20.5	27.7			
				29.3	6	175.80
30	51.4	20.5	30.9			
				31.2	2	62.40
32	52.0	20.5	31.5			
32	52.0	28.1	23.9			
				25.1	8	200.80
40	54.6	28.3	26.3			
				27.5	4	110.00
44	57.1	28.4	28.7	Forwd-		2698.17

Item 7

North	Top	Bottom	Ht.	Mean	D	Area □'
			Brot. Forwd			2698.17
3944	57.1	28.4	28.7			
				24.75	1.5	37.12
45.5	58.0	37.2	20.8			
				21.5	4.5	96.75
50	60.8	38.6	22.2			
				22.35	2	44.70
52	61.7	39.2	22.5			
				20.85	2	41.70
54	62.5	43.3	19.2			
				19.3	6	115.80
60	65.1	45.7	19.4			
				20.25	8	162.00
68	70.1	49.0	21.1			
				20.5	1	20.50
69	70.8	50.9	19.9			
				20.05	1	20.05
70	71.4	51.2	20.2			
				20.35	5	101.75
75	73.0	52.5	20.5			
				Forwd		3338.54

Stem 7

CORE TRENCH EXCAVATION.

North	top	bottom	Ht	Mean	D	
			Brought Forward			3338.54
3975	673.1	55.7	17.4			
				18.2	5	91.00
80	74.7	55.7	19.0			
80	76.0	68.2	7.8			
				11.15	10	111.50
90	82.7	68.2	14.5			
				16.45	9	148.05
99	86.4	68.0	18.4			
				16.1	1	16.10
4000	86.8	73.0	13.8			
				14.7	5	73.50
05	89.0	73.4	15.6			
				16.6	4	66.40
09	90.8	73.2	17.6			
				15.5	1	15.50
10	91.2	77.8	13.4			
				15.55	10	155.50
20	95.8	78.1	17.7			
				18.65	5.5	102.57
25.5	97.9	78.3	19.6	Forwd		4118.66

Stem 7

North	top	bottom	Ht	Mean	D	
			Brot. Forwd			4118.66
4025.5	697.9	678.3	19.6			
				20.7	4.5	93.15
30	700.0	678.2	21.8			
				23.65	10	236.50
40	03.5	78.0	25.5			
				26.55	3	79.65
43	05.6	78.0	27.6			
				24.25	1	24.25
44	06.3	85.4	20.9			
				22.95	6	137.70
50	10.5	85.5	25.0			
				25.5	4	102.00
54	11.6	85.6	26.0			
				24.1	1	24.10
55	11.8	89.6	22.2			
				22.8	5	114.00
60	13.2	89.8	23.4			
				25.6	10	256.00
70	18.0	90.2	27.8			
				Forwd		5186.01

CORE TRENCH EXCAVATION

Stem 7 North	top	bottom	Ht	Mean	D	
			Brot. Forwd			5186.01
4070	718.0	690.2	27.8			
				28.1	1	28.10
71	18.6	90.2	28.4			
72	19.2	93.8	25.4	26.9	1	26.90
				27.75	8	222.00
80	23.9	93.8	30.1			
				31.7	8	253.60
88	27.1	93.8	33.3			
88	27.1	99.5	27.6			
				28.0	2	56.00
90	27.9	99.5	28.4			
				30.8	9	277.20
99	32.7	99.5	33.2			
99	32.7	705.5	27.2			
				27.45	1	27.45
4100	33.2	05.5	27.7			
10	38.7	05.7	33.0			
20	42.1	05.8	36.3			
30	46.0	05.9	40.1			
40	49.9	05.9	44.0			
				Forwd		6077.26

Stem 7

North	top	bottom	Ht	Mean	D	
			Brought Forwd			6077.26
4150	754.4	705.9	48.5			
60	59.1	05.9	53.2			2423.50
			242.35×10			
60	62.9	05.9	57.0			
				58.55	6	351.30
66	66.0	05.9	60.1			
				61.25	4	245.00
70	68.1	05.7	62.4			
				63.45	5.5	348.97
0+00 = $75^{\underline{5}}$	70.0	05.5	64.5			
				64.3	14.6	938.78
$0+14^{\underline{6}}$	70.0	05.9	64.1			
				64.4	5.4	347.76
+20	70.0	05.3	64.7			
				64.65	10	646.50
+30	70.0	05.4	64.6			
				64.55	11.6	748.78
40		5.5				
$+41^{\underline{6}}$	70.0	05.5	64.5			
				Forwd		12127.85

CORE TRENCH EXCAVATION.

North	top	bottom	Ht.	mean	D	Sq ft √
			Brought Forward			12127.85
$0+41^{6}$	746.4	705.5	40.9			
				25.15	14.7	369.70
$+56^{3}$	15.4	06.0	9.4			
				9.4	3	28.20
5+10 ogee = $+59^{3}$	154	06.0	9.4			
N 3837 to N 4160 to Ogee Sta 5+10 Total						12525.75

Trench 6' wide 6 x 12525.75 = 75154.50 Cu ft

2 783.50 Cu yds

~~2,782.87~~

SUMMARY OF CORE TRENCH EXCAVATION

Schedule Item 12

North 3334 to 3837

FB 416 6' neat line and sloped top.

~~4,941.34~~

~~4,943.54~~ Cubic yards

Schedule Item 7

FB 416 30-35 North 2990 to 3334 6' neat line

1271.75 Cubic yards

FB 416 38-42 North 3837 to 5+10 ogee 6' neat line

2783.50 Cubic yards

North 3015 to 3440 and 3790 to 4160 sloped top

CORE. TRENCH EXCAV.

Sloped section sched Item 7

North	Area	mean	dist	Cu. ft.
3015	27.0			
		27.0	5	135.00
3020	27.0 *			
30	110.35 ?.			
40	113.40 ?	not found 7/17/34 N.		
50	111.38 ~~112.00~~			
60	111.35 ~~112.00~~			
70	112.00 x m.			
80	98.53 ~~97.76~~			
90	87.66			

CORE TRENCH EXCAV.

North.	Area □'		
3100	~~74.35~~		
10	~~90.89~~		
20	~~73.52~~		
30	112.00 ✓		
40	112.00 ✓		
50	112.00 ✓		
60	112.00 ✓		
70	112.00		
80	~~103.46~~ ✓		
90	112.00		
3200	112.00		
10	106.32 ✓		
20	96.11 ✓ X		
30	112.00	2143.23 ×10	21,432.30
		112 × 80 =	8,960 " "
3310	112.00		
20	105.65 ✓		
30	71.40 ~~58.20~~	190.75 ×10 =	1,907.5 " "
		69.45 × 4 =	277.8 " "
34	80.70		

good

sloped section

3334	38.13			
		49.62 ×6 =	297.72	cu.ft.
40	61.12 ✓			
50	20.10 ✓			
60	0.00 ✓			
70	19.87 ✓			
80	0.00 ✓			
90	8.30 ✓			
3400	27.50 ✓			
10	32.28 ~~32.71~~			
20	9.15 ~~8.86~~			
30	23.65 ✓			
40	59.08 ✓	201.09 ×10 =	2,010.9	" "

good

CORE TRENCH EXCAV.

3790	100 ✓		
3800	64 ✓		
10	64 ✓		
20	33.47 ✓		
30	0.00 ✓		
37	0.00	211.47 x 10	2,114.7 Cu.ft.

Void

3840	45.6
50	112.00
60	112.00
70	112.00
80	106.40 ✓
90	102.44 ✓
3900	48.00
10	102.14 ~~106.77~~

Sloped section

3920	107.67 ✓		
30	109.91 ✓		
40	112.00 ✓		
50	99.80 ✓		
60	73.35 ~~73.04~~		
70	112.00 ✓		
80	77.70 70.00		
90	91.08 ~~86.00~~		
4000	72.51 ~~78.26~~		
10	90.90		
20	88.97		
30	104.10		
40	99.18		
50	103.05		
60	127.00		
70	101.40		
80	108.20		
90	120.30		
4100	107.10	2504.64 x 10 =	25,046.40
4110	115.30		62 182.32

4110 115.30

Void

Core Wall Concrete

Unformed

N 2992.5 to N 4160

T

```
      2 92
      7 20
     53 50
      2 45
     20 00
     17 65
     58 30
     23 45
     47 80
    161 20
      5 29
    174 20
     69 60
     18 75
     60 15
     14 35
     16 75
    120 60
    148 80
     43 80
     19 65
     96 80
    127 80
     49 00
    152 40
     13 55
     48 30
     74 20
    109 60
     67 80
     81 30
     67 20
     15 05
```

ition
check on
machine

COREW

Unformed —

North	top	bo		Elev. tudinal (by 6) eo. 0'
2992.5 ✓ 5/31/34	69.5 ✓			✓
				2.92
94 ✓	69.5 ✓			✓
				20
95 ✓	69.5 ✓	5		✓
				.50
3000 ✓	69.5 ✓	5		
3000 ✓	58.0 ✓	58		✓
				.45
01 ✓	58.0 ✓	5		✓
				.00
05 ✓	58.0 ✓	52		✓
			Forwd	86.07 ✓

Core Wall Concrete

Unformed

N 2992.5 to N 4160

```
         T
     2 92
     7 20
   53 50
     2 45
   20 00
   17 65
   58 30
   23 45
   47 80
  161 20
     5 29
  174 20
   69 60
   18 75
   60 15
   14 35
   16 75
  120 60
  148 80
   43 80
   19 65
   96 80
  127 80
   49 00
  152 40
   13 55
   48 30
   74 20
  109 60
   67 80
   81 30
   67 20
   15 05
```

```
114 10
 78 60
 26 50
  6 90
  5 42
142 38
109 00
 47 55
 35 20
 56 25
103 60
 47 95
  1 80
120 45
 18 30
 61 80
 51 00
 45 30
  4 60
 14 70
 26 90
 66 40
 21 50
 36 30
 97 30
 64 40
 14 20
102 90
 21 60
 12 65
 66 82
  7 67
125 20
218 80
112 50
 69 15
 34 30
 92 75
 20 20
115 85
 93 50
 76 60
 55 40
 85 60
149 85
 20 25
115 25
 27 15
151 20
154 00
151 90
 79 80
 10 00
 88 00
 97 40
154 20
 53 10
111 00
108 20
112 50
 40 00
120 00
 82 75
 55 05
 34 20
 90 75
 19 30
```

```
      76 60
      55 40
      85 60
     149 85
      20 25
     115 25
      27 15
     151 20
     154 00
     151 90
      79 80
      10 00
      88 00
      97 40
     154 20
      53 10
     111 00
     108 20
     112 50
      40 00
     120 00
      82 75
      55 05
      34 20
      90 75
      19 30
     155 60
      20 60
     108 50
      50 30
     192 00
     201 60
      43 60
     227 50
      96 00
     137 70
     153 30
     112 80
     204 00
      40 80
     103 00
      20 80
      63 20
      67 80
      95 10
   4 692 00
     154 20
     110 00
   1 408 00
     109 00
     170 40
     267 50
     200 00
      52 50
     249 00
     223 50
      41 60
     175 20
      52 37
     153 75
     121 80
      97 20
      97 00
     168 60
      55 70
     265 20
```

```
     63 20
     67 80
     95 10
4 692 00
   154 20
   110 00
1 408 00
   109 00
   170 40
   267 50
   200 00
     52 50
   249 00
   223 50
     41 60
   175 20
     52 37
   153 75
   121 80
     97 20
     97 00
   168 60
     55 70
   265 20
   146 80
   128 00
     39 00
     73 80
   137 60
     33 20
   210 00
     27 40
     23 25
     26 90
   115 15
     87 50
     13 90
     93 60
     20 90
     98 00
     12 00
   147 35
     19 75
   104 50
     54 90
   142 50
     46 60
   230 00
     36 25
     71 40
   173 50
   175 00
     37 95
     97 95
   271 60
     17 60
     77 12
   181 20
     87 60
   156 00
   141 00
     25 80
     76 70
     45 50
   249 90
     14 05
```

```
147 35
 19 75
104 50
 54 90
142 50
 46 60
230 00
 36 25
 71 40
173 50
175 00
 37 95
 97 95
271 60
 17 60
 77 12
181 20
 87 60
156 00
141 00
 25 80
 76 70
 45 50
249 90
 14 05
 73 80
  8 30
 81 20
 31 20
 82 80
125 10
 11 50
 64 00
 38 10
 16 80
 14 50
167 30
 15 70
110 25
159 20
 72 00
```

```
     20 30
   165 00
     14 40
     12 40
   241 50
     14 00
   129 60
   193 60
   180 00
     79 50
   102 25
   170 10
     56 60
   274 00
   273 20
   914 40
   352 80
25 948 39 T sq ft
            6 width
155 690.34 cu ft
   381 60
   606 10
   931 48
   345 06
   641 50
   505 99
 3 411 73 T
```

Informed Mr 4160 ft
5710.

```
     76 60
     55 40
     85 60
   149 85
     20 25
   115 25
     27 15
   151 20
   154 00
   151 90
     79 80
     10 00
     88 00
     97 40
   154 20
     53 10
   111 00
   108 20
   112 50
     40 00
```

Addition check on
✓ machine
#72

COREWALL CONCRETE

Unformed – schedule Item 20 (in Elev. longitudinal

North	top 5/31/34	bottom	height	mean	D	(to be x by 6) area. □'
29.92.5	69.5	69.5	0.0			
				1.95	1.5	2.92
94	69.5	65.6	3.9			
				7.2	1	7.20
95	69.5	59.0	10.5			
				10.7	5	53.50
3000	69.5	58.6	10.9			
3000	58.0	58.0	0.0			
				2.45	1	2.45
01	58.0	53.1	4.9			
				5.0	4	20.00
05	*58.0	52.9	5.1			
				Forwd		86.07

Unformied concrete in Core wall
Schedule item 20

	North	top	bottom	height	mean	D	Sq ft
			Brought Forwd				86.07
	3005	58.0	40.6	17.4			
					17.65	1	17.65
	06	58.0	40.1	17.9			
	06	58.0	29.7	28.3			
					29.15	2	58.30
	08	58.0	28.0	30.0			
	08	51.0	28.0	23.0			
					23.45	1	23.45
	09	51.0	27.1	23.9			
					23.9	2	47.80
	11	51.0	27.1	23.9			
					24.8	6.5	161.20
FB 443	17.5	51.0	25.3	25.7			
					26.45	.2	5.29
	17.7	51.0	23.8	27.2			
					27.65	6.3	174.20
	24	51.0	22.9	28.1			
	24	40.0	22.9	17.1			
					17.4	4	69.60
	28	40.0	22.3	17.7			
					Forwd -		643.56

North	top El	bottom	height	Mean	D	Longitudinal Area ft
			Brought Forwd			643.56
3028	740.0	22.3	17.7			
				18.75	1	18.75
29	40.0	20.2	19.8			
				20.05	3	60.15
32	40.0	19.7	20.3			
32	34.0	19.7	14.3			
				14.35	1	14.35
33	34.0	19.6	14.4			
				16.75	1	16.75
34	34.0	14.9	19.1			
				20.1	6	120.60
40	34.0	12.9	21.1			
40	30.0	12.9	17.1			
				18.6	8	148.80
48	30.0	09.9	20.1			
48	24.0	09.9	14.1			
				14.6	3	43.80
51	24.0	08.9	15.1			
				19.65	1	19.65
52	24.0	699.8	24.2			
				Forwd		1086.41

Unformed Concrete in Core Wall
Schedule Item 20

North	top	bottom	height	mean	D	Sq ft
			Brought Forwd			1086.41
3052	724.0	699.8	24.2			
				24.2	4	96.80
56	24.0	99.8	24.2			
56	18.0	99.8	18.2			
				21.3	6	127.80
62	18.0	93.6	24.4 ~~14.4~~			
				24.5	2	49.00
64	18.0	93.4	24.6			
64	12.0	93.4	18.6			
				19.05	8	152.40
72	12.0	92.5	19.5			
72	06.0	92.5	13.5			
				13.55	1	13.55
73	06.0	92.4	13.6			
				16.1	3	48.30
76	06.0	87.4	18.6			
				18.55	4	74.20
80	06.0	87.5	18.5			
			Forwd			1648.46

North	top	bottom	height	Mean	D	Sq ft
			Brought Forwd			1648.46
3080	700.0	687.5	12.5			
				13.7	8	109.60
88	00.0	85.1	14.9			
88	94.0	85.1	089			
				11.3	6	67.80
94	94.0	80.3	13.7			
				13.55	6	81.30
3100	94.0	80.6	13.4			
				16.8	4	67.20
04	94.0	738	20.2			
04	88.0	73.8	14.2			
				15.05	1	15.05
05	88.0	72.1	15.9			
				16.3	7	114.10
12	88.0	71.3	16.7			
12	84.0	71.3	12.7			
				13.1	6	78.60
18	84.0	70.5	13.5			
				13.25	2	26.50
20	84.0	71.0	13.0			
				Forwd		2208.61

Unformed Concrete in Core Wall

FB 408-68

North	top	bottom	height	mean	D	Sq ft.
			Brought Forwd			2208.61
3120	6 78.0	671.0	07.0			
				6.9	1	6.90
21	78.0	71.2	06.8			
				10.85	.5	5.42
21.5	78.0	63.1	14.9			
				16.75	85	142.38
30	78.0	59.4	18.6			
				19.90	6	119.40
36	78.0	56.8	21.2			
36	72.0	56.8	15.2			
				15.85	3	47.55
39	72.0	55.5	16.5			
				17.6	2	35.20
41	72.0	53.3	18.7			
				18.75	3	56.25
44	72.0	53.2	18.8			
44	66.0	53.2	12.8			
				12.95	8	103.60
52	66.0	52.9	13.1			
			Forwd			2725.31

FB 408-68

North	top	bottom	height	mean	D	Sq ft
			Brought Forwd			2725.31
3152	6620	652.9	9.1			
				9.95	5	49.75
57	62.0	51.2	10.8			
				10.95	11	120.45
68	62.0	50.9	11.1			
68	60.0	50.9	9.1			
				9.15	2	18.30
70	60.0	508	9.2			
				10.3	6	61.80
76	60.0	486	11.4			
76	54.0	48.6	5.4			
				10.2	5	51.00
81	54.0	39.0	15.0			
				15.1	3	45.30
84	54.0	38.8	15.2			
84	48.0	38.8	9.2	9.2	.5	4.60
84.5	48.0	38.8	9.2		1.5	
				9.8		14.70
86	48.0	37.6	10.4			
				13.45	2	26.90
88	48.0	31.5	16.5	Forwd		3118.11

Unformed Concrete in Core Wall

North	top	bottom	height	mean	D	Sq ft
		Brought Forward —				3118.11
3188	48.0	31.5	16.5			
				16.6	4	66.40
92	48.0	31.3	16.7			
92	42.0	31.3	10.7			
				10.75	2	21.50
94	42.0	31.2	10.8			
				12.1	3	36.30
97	42.0	28.6	13.4			
				13.9	7	97.30
3204	42.0	27.6	14.4			
				16.1	4	64.40
F.B. 408-63 08	42.0	24.2	17.8			
08	38.0	24.2	13.8			
				14.2	1	14.20
09	38.0	23.4	14.6			
				14.7	7	102.90
16	38.0	23.2	14.8			
		Forwd —				3521.11

North	top	bottom	height	mean	D	Sq ft.
		Brought Forward				3521.11
3216	34.0	23.2	10.8			
				10.8	2	21.60
18	34.0	23.2	10.8			
				12.65	1	12.65
19	34.0	19.5	14.5			
				14.85	4.5	66.82
F.B. 408-63 23.5	34.0	18.8	15.2			
				15.35	.5	7.67
24	28.0	12.5	15.5			
				15.65	8	125.20
32	28.0	12.2	15.8			
32	28.0	01.3	26.7			
				27.35	8	218.80
40	28.0	00.0	28.0			
40	22.0	00.0	22.0			
				22.5	5	112.50
45	22.0	99.0	23.0			
				23.05	3	69.15
48	22.0	98.9	23.1			
			Forwd			4155.50

Unformed Concrete in Core Wall

North	top	bottom	height	mean	D	Sq. ft.
3248	616.0	598.9	17.1	Brought Forward		4155.50
				17.15	2	34.30
50	16.0	98.8	17.2			
			37.1	18.55	5	92.75
55	16.0	96.1	19.9			
				20.2	1	20.20
56	16.0	95.5	20.5			
56	10.0	95.5	14.5			
			33.1	16.55	7	115.85
63	10.0	91.4	18.6			
				18.7	5	93.50
68	10.0	91.2	18.8			
				19.15	4	76.60
72	10.0	90.5	19.5			
72	04.0	90.5	13.5			
			27.7	13.85	4	55.40
76	04.0	89.8	14.2			
76	04.0	83.0	21.0			
				21.4	4	85.60
80	04.0	82.2	21.8	Forward		4729.70

North	top	bottom	height	mean	D	Sq. ft.
3280	598.0	82.2	15.8	Brought Forward		4729.70
			33.3	16.65	9	149.85
89	98.0	80.5	17.5			
			40.5	20.25	1	20.25
90	98.0	75.0	23.0			
				25.05	5	125.25
95	98.0	70.9	27.1			
				27.15	1	27.15
96	98.0	70.8	27.2			
96	92.0	70.8	21.2			
FB 383-5				21.6	7	151.20
3303	92.0	70.0	22.0			
				22.0	7	154.00
10	92.0	70.0	22.0			
				21.7	7	151.90
17	92.0	70.6	21.4			
17	92.0	66.0	26.0			
				26.6	3	79.80
20	92.0	64.8	27.2	Forwd.		5589.10

Unformed Concrete in Core Wall

North	top	bottom	height	mean	D	Sq.ft.
			Brought Forwd			5589.10
3320	86.0	64.8	21.2			
				22.0	4	88.00
24	86.0	63.2	22.8			
				24.35	4	97.40
28	86.0	60.1	25.9			
				25.7	6	154.20
34	86.0	60.5	25.5			
				26.55	2	53.10
36	86.0	58.4	27.6			
				27.75	4	111.00
40	86.0	58.1	27.9			
40	86.0	59.6	26.4			
				27.05	4	108.20
44	86.0	58.3	27.7			
44	76.0	58.3	17.7			
				18.75	6	112.50
50	76.0	56.2	19.8			
				20.0	2	40.00
52	76.0	55.8	20.2			
			Forwd			6353.50

North	top	bottom	height	mean	D	Sq.ft.
			Brought Forwd			6353.50
3352	70.0	55.8	14.2			
				15.0	8	120.00
60	70.0	54.2	15.8			
				16.55	5	82.75
65	70.0	52.7	17.3			
				18.35	3	55.05
68	70.0	50.6	19.4			
68	67.0	50.6	16.4			
				17.1	2	34.20
70	67.0	49.2	17.8			
				18.15	5	90.75
75	67.0	48.5	18.5			
				19.3	1	19.30
76	67.0	46.9	20.1			
76	60.0	46.9	13.1			
				19.45	8	155.60
84	60.0	34.2	25.8			
84	54.0	34.2	19.8			
				20.6	1	20.60
85	54.0	32.6	21.4	Forwd.		6931.75

Unformed Concrete in Core Wall

North	top	bottom	height	mean	D	Sq. ft.
			Brought Forwd			6931.75
3385	554.0	532.6	21.4			
				21.7	5	108.50
90	54.0	32.0	22.0			
90	54.0	29.0	25.0			
				25.15	2	50.30
92	54.0	28.7	25.3			
92	52.0	28.7	23.3			
				24.0	8	192.00
3400	52.0	27.3	24.7			
				25.2	8	201.60
08	52.0	26.3	25.7			
08	48.0	26.3	21.7			
				21.8	2	43.60
10	48.0	26.1	21.9			
				22.75	10	227.50
20	48.0	24.4	23.6			
				24.0	4	96.00
24	48.0	23.6	24.4			
			Forwd			7851.25

North	top	bottom	height	mean	D	Sq. ft.
			Brought Forwd			7851.25
3424	546.0	523.6	22.4			
				22.95	6	137.70
30	46.0	22.5	23.5			
				25.55	6	153.30
36	46.0	18.4	27.6			
				28.2	4	112.80
40	46.0	17.2	28.8			
40	42.0	17.2	24.8			
				25.5	8	204.00
48	42.0	15.8	26.2			
48	36.0	15.8	20.2			
				20.4	2	40.80
50	36.0	15.4	20.6			
				20.6	5	103.00
55	36.0	15.4	20.6			
				20.8	1	20.80
56	36.0	15.0	21.0			
			Forwd			8623.65

Unformed Concrete in Core Wall.

North	top	bottom	height	mean	D	Sq ft
			Brought Forwd -			8623.65
3456	530.0	515.0	15.0			
				15.8	4	63.20
60	30.0	13.4	16.6			
				16.95	4	67.80
64	30.0	12.7	17.3			
64	28.0	12.7	15.3			
				15.85	6	95.10
70	28.0	11.6	16.4	Forwd to Pg 54.		8849.75
70	28.0	03.4	24.6 12.3			
80	28.0	03.2	24.8			
90	28.0	02.3	25.7			
3500	28.0	01.9	26.1			
10	28.0	01.8	26.2			
20	28.0	01.6	26.4			
30	28.0	01.0	27.0			
40	28.0	00.5	27.5			
50	28.0	00.8	27.2			
60	28.0	01.0	27.0			
70	28.0	01.4	26.6 276.8 Forwd			

North	top	bottom	height	mean	D	Sq. ft.
		Forwd	276.8	Forwd		8849.75
3580	528.0	501.7	26.3			
90	28.0	01.7	26.3			
3600	28.0	02.1	25.9			
10	28.0	02.5	25.5			
20	28.0	02.8	25.2			
30	28.0	02.8	25.2			
40	28.0	02.9	25.1			
50	28.0	02.2	12.9 25.8	469.2	10	4692.00 ~~4897.00~~
				25.7	6	154.20
56	28.0	02.4	25.6			
56	30.0	02.4	27.6			
				27.5	4	110.00
60	30.0	02.6	27.4 13.7			
70	30.0	02.3	27.7			
80	30.0	02.7	27.3			
80	32.0	02.7	29.3			
90	32.0	03.0	29.0			
3700	32.0	04.4	13.8 27.6	140.8	10	1408.00
				27.25	4	109.00
04	32.0	05.1	26.9	Forwd -		15322.95

Unformed Concrete in Core Wall

North	top	bottom	height	mean	D	Sq ft
			Brought Forwd			15322.95
3704	34.0	05.1	28.9			
				28.4	6	170.40
10	34.0	06.1	27.9			
				26.75	10	267.50
20	34.0	08.4	25.6			
				25.0	8	200.00
28	34.0	09.6	24.4			
28	36.0	09.6	26.4			
				26.25	2	52.50
30	36.0	09.9	26.1			
				24.9	10	249.00
40	36.0	12.3	23.7			
				22.35	10	223.50
50	36.0	15.0	21.0			
				20.8	2	41.60
52	36.0	15.4	20.6			
52	38.0	15.4	22.6			
				21.9	8	175.20
60	38.0	16.8	21.2			
				Forwd.		16702.65

North	top	bottom	height	mean	D	Sq ft
			Brought Forwd			16702.65
3760	38.0	16.8	21.2			
				20.95	2.5	52.37
62^{5}	38.0	17.3	20.7			
				20.5	7.5	153.75
70	38.0	17.7	20.3			
				20.3	6	121.80
76	38.0	17.7	20.3			
76	42.0	17.7	24.3			
				24.3	4	97.20
80	42.0	17.7	24.3			
				24.25	4	97.00
84	42.0	17.8	24.2			
84	46.0	17.8	28.2			
				28.1	6	168.60
90	46.0	18.0	28.0			
				27.85	2	55.70
92	46.0	18.3	27.7			
				Forwd.		17449.07

Unformed Concrete in Core Wall

North	top	bottom	height	mean	D	Sq ft
		Brought Forward				17449.07
3792	52.0	18.3	33.7			
				33.15	8	265.20
3800	52.0	19.4	32.6			
3800	60.0	19.4	40.6			
				36.7	4	146.80
04	60.0	27.2	32.8			
				32.0	4	128.00
08	60.0	28.8	31.2			
08	68.0	28.8	39.2			
				39.0	1	39.00
09	68.0	29.2	38.8			
				36.9	2	73.80
11	68.0	33.0	35.0			
				34.4	4	137.60
15	68.0	34.2	33.8			
				33.20	1	33.20
16	68.0	35.4	32.6			
			Forwd			18272.67

FB 383-21

FB 383-622

North	top	bottom	height	mean	D	Sq ft
		Brought Forward				18272.69
3816	74.0	35.4	38.6			
				35.00	6	210.00
22	74.0	42.6	31.4			
				27.40	1	27.40
23	74.0	50.6	23.4			
				23.25	1	23.25
24	74.0	50.9	23.1			
24	78.0	50.9	27.1			
				26.9	1	26.90
25	78.0	51.3	26.7			
25	78.0	58.7	19.3			
				16.45	7	115.15
32	78.0	64.4	13.6			
32	84.0	64.4	19.6			
				17.5	5	87.50
37	84.0	68.6	15.4	13.9	1	13.90
38	84.0	71.6	12.4			
				11.7	8	93.60
46	84.0	73.0	11.0			
				10.45	2	20.90
48	84.0	74.1	9.9	Forwd		18891.27

Unformed Concrete in Core Wall

North	top	bottom	height	mean	D	Sq ft
	Brought Forwd.					18891.27
3848	590.0	574.1	15.9			
				14.0	7	98.00
55	90.0	77.9	12.1			
				12.0	1	12.00
56	90.0	78.1	11.9			
56	600.0	78.1	21.9			
				21.05	7	147.35
63	00.0	79.8	20.2			
				19.75	1	19.75
64	00.0	80.7	19.3			
64	04.0	80.7	23.3			
				20.9	5	104.50
69	04.0	85.5	18.5			
				18.3	3	54.90
72.0	04.0	85.9	18.1			
72.0	10.0	85.9	24.1			
				23.75	6	142.50
78	10.0	86.6	23.4			
				23.3	2	46.60
80	10.0	86.8	23.2	Forwd:		19516.87

North	top	bottom	height	mean	D	Sq ft
	Brought Forward					19516.87
3880	616.0	86.8	29.2			
				28.75	8	230.00
88	16.0	87.7	28.3			
88	24.0	87.7	36.3			
				36.25	1	36.25
89	24.0	87.8	36.2			
				35.7	2	71.40
91	24.0	88.8	35.2			
				34.7	5	173.50
96	24.0	89.8	34.2			
96	34.0	89.8	44.2			
				43.75	4	175.00
3900	34.0	590.7	43.3			
				37.95	1	37.95
01	34.0	601.4	32.6			
				32.65	3	97.95
04	34.0	01.3	32.7			
			Forward:			20338.92

Unformed Concrete in Core Wall

North	top	bottom	height	mean	D	Sq ft
		Brought	Forwd			20338.92
3904	40.0	01.3	38.7			
				38.8	7	271.60
11	40.0	01.1	38.9			
				35.2	0.5	17.60
11^{5}	40.0	08.5	31.5			
				30.85	2.5	77.12
14	40.0	09.8	30.2			
				30.2	6	181.20
20	40.0	09.8	30.2			
20	40.0	15.7	24.3			
				21.9	4	87.60
24	40.0	20.5	19.5			
				19.5	8	156.00
32	40.0	20.5	19.5			
32	40.0	28.1	11.9			
				11.75	12	141.00
44	40.0	28.4	11.6			
				Forwd		21271.04

North	top	bottom	height	mean	D	Sq ft
		Brought	Forwd			21271.04
3944	50.0	28.4	21.6			
				17.2	1.5	25.80
45^{5}	50.0	37.2	12.8			
				11.8	6.5	76.70
52	50.0	39.2	10.8			
52	64.0	39.2	24.8			
				22.75	2	45.50
54	64.0	43.3	20.7			
				17.85	14	249.90
68	64.0	49.0	15.0			
				14.05	1	14.05
69	64.0	50.9	13.1			
				12.3	6	73.80
75	64.0	52.5	11.5			
75	64.0	55.7	8.3			
				8.3	1	8.30
76	64.0	55.7	8.3			
				Forwd -		21,765.09

Unformed Concrete in Core Wall

North	top	bottom	height	mean	D	Sq ft.
		Brought Forwd–				21765.09
3976	76.0	55.7	20.3			
				20.3	4	81.20
80	76.0	55.7	20.3			
80	76.0	68.2	7.8			
				7.8	4	31.20
84	76.0	68.2	7.8			
84	82.0	68.2	13.8			
				13.8	6	82.80
90	82.0	68.2	13.8			
				13.9	9	125.10
FB. 447-5 99	82.0	68.0	14.0	11.5*	1	11.50
4000	82.0	73.0	9.0			
4000	86.0	73.0	13.0			
				12.8	5	64.00
05	86.0	73.4	12.6			
				12.70	3	38.10
08	86.0	73.2	12.8			
08	90.0	73.2	16.8			
				16.80	1	16.80
09	90.0	73.2	16.8			
			Forwd–			22215.79

North	top	bottom	height	mean	D	Sq ft.
		Brought Forwd–				22215.79
4009	90.0	73.2	16.8			
			290	14.5	1	14.50
10	90.0	77.8	12.2			
			239	11.95	14	167.30
24	90.0	78.3	11.7			
24	94.0	78.3	15.7			
				15.7	1	15.70
25	94.0	78.3	15.7			
				15.75	7	110.25
32	94.0	78.2	15.8			
32	98.0	78.2	19.8			
				19.9	8	159.20
40	98.0	78.0	20.0			
40	102.0	78.0	24.0			
				24.0	3	72.00
43	02.0	78.0	24.0			
			40.6	20.3	1	20.30
44	02.0	85.4	16.6			
				16.5	10	165.00
54	02.0	85.6	16.4	Forwd		22940.04

Unformed Concrete in Core Wall

North	top	bottom	height	mean	D	Sq ft
		Brought Forward				22940.04
4054	702.0	685.6	16.4			
				14.4	1	14.40
55	02.0	89.6	12.4			
				12.4	1	12.40
56	02.0	89.6	12.4			
56	06.0	89.6	16.4			
				16.1	15	241.50
71.	06.0	90.2	15.8			
				14.0	1	14.00
72	06.0	93.8	12.2			
72	10.0	93.8	16.2			
				16.2	8	129.60
80	10.0	93.8	16.2			
80	18.0	93.8	24.2			
				24.2	8	193.60
88	18.0	93.8	24.2			
88	22.0	99.5	22.5			
				22.5	8	180.00
96	22.0	99.5	22.5			
			Forwd			23725.54

North	top	bottom	hieght	mean	D	Sq ft.
		Brought Forward				23725.54
4096	26.0	99.5	26.5			
				26.5	3	79.50
99	26.0	99.5	26.5			
99	26.0	705.5	20.5			
				20.45	5	102.25
4104	26.0	05.6	20.4			
04	34.0	05.6	28.4			
				28.35	6	170.10
10	34.0	05.7	28.3			
				28.3	2	56.60
12	34.0	05.7	28.3			
12	40.0	05.7	34.3			
				34.25	8	274.00
20	40.0	05.8	34.2			
				34.15	8	273.20
28	40.0	05.9	34.1			
28	44.0	05.9	38.1			
				38.1	24	914.40
52	44.0	05.9	38.1			
			Forwd-			25,595.59

Unformed Concrete in Core Wall.

North	Top	Bottom	height	Mean	Dst	Sq ft
		Brought Forward-				25595.59
4152	50.0	05.9	44.1			
				44.1	8	352.80
					sq ft	25948.39
60	50.0	05.9	44.1			
Total Sta N 2992.5 to N 4160 Page 46-61						
60	69.5	05.9	63.6			
				63.6	6	381.60
66	69.5	05.9	63.6			
				63.8	9.5	606.10
0+00 ± 75^{5}	69.5	05.5	64.0			
				63.8	14.6	931.48
0+14^{6}	69.5	05.9	63.6			
				63.9	5.4	345.06
+20	69.5	05.3	64.2			
				64.15	10	641.50
+30	69.5	05.4	64.1			
				64.05	7.9	505.99
+37^{9}	69.5	05.5	64.0			3,411.73

Total N 4160 to 0+37.9

Back line of spillway parapet

Remainder of Item 20 conc Calculated in W. end spillway warped section quantities (See page 66)

Width of Trench

× 6' = ~~156,762.96~~ 155,690.34 Cu ft = 5766.31 Cu Yds.

\+ At flume 1.42

Total Unformed Concrete N 2992.5 to N 4160 = 5767.73 Cu Yds

SLOPE SECTION UNDER FLUME BOX

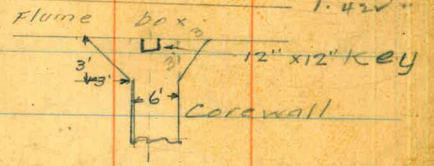
North 3015 to 3019^{8}

4.8 × 3 × 3 = ~~25.2~~ 43.2 ft^{3}

Less Key 4.8 × 1 × 1 = 4.8

~~20.4~~ 38.4 =

~~0.75~~ 1.42 yd^{3}



× 6 = 20,470.38 cubic feet

~~768.16~~ cubic yards

758.16 " "

CORE WALL CONCRETE
Formed - sched. item 21

18 inch wall

6/12/34

North 3000 to 3008 6.5' high
8 × 6.5 × 1.5 = 78.00 Cubic feet

North 3008 to 3016 8' high
8 × 8 × 1.5 = 96.00

North 3016 to 3024 8' high
8 × 8 × 1.5 = 96.00

North 3024 to 3448 15' high
424 × 15 × 1.5 = 9540.00

North 3448 to 3456 18' high
8 × 18 × 1.5 = 216.00

North 3456 to 3464 24' high
8 × 24 × 1.5 = 288.00

North 3464 to 3656 26' high
192 × 26 × 1.5 = 7488.00

North 3656 to 3680 24' high
24 × 24 × 1.5 = 864.00

18666. Cu ft

North 3680 to 3704 22' high
24 × 22 × 1.5 = 792.00

North 3704 to 3728 20' high
24 × 20 × 1.5 = 720.00

North 3728 to 3752 18' high
24 × 18 × 1.5 = 648.00

North 3752 to 3776 16' high
24 × 16 × 1.5 = 576.00

North 3776 to 3944 15' high
168 × 15 × 1.5 = 3780.00

North 3944 to 3952 21' high
8 × 21 × 1.5 = 252.00

North 3952 to 4104 15' high
152 × 15 × 1.5 = 3420.00

North 4104 to 4112 13' high
8 × 13 × 1.5 = 156.00

North 4112 to 4120 7' high
8 × 7 × 1.5 = 84.00

10428. cu ft

Core Wall Concrete - formed.

North 4120 to 4128 13' high

8 x 13 x 1.5 = 156.00

North 4128 to 4136 9' high

8 x 9 x 1.5 = 108.00

North 4136 to 4152 15' high

16 x 15 x 1.5 = 360.00

North 4152 to 4160 12' high

8 x 12 x 1.5 = 144.00

6/12/34.

768. cuft

Total Cuft 2986.
Cu Yds (110.6)

Transition section

North 3000 to 4160

1160 x 16.25 = 18,850.00

Less Space occupied by Flume Box 4.5' High } -74.00
N 3015 - N 3019.8 = 4.8 Long

cuft 18776.
cu yds (695.4)

48,638.00 Cubic ft.

Total Formed N 3000 - N 4160 = 1,801.40 Cu. Yd.

SUMMARY OF CORE WALL CONCRETE

Unformed schedule Item 20

FB 416 46-61

North 2992.5 to 4160

5 767.73 Cubic yards

North 4160 to 0+37.9

758.16
~~768.16~~ Cubic yards

Warped west end of spillway ogee

248.66 Cubic yards

Formed schedule Item 21

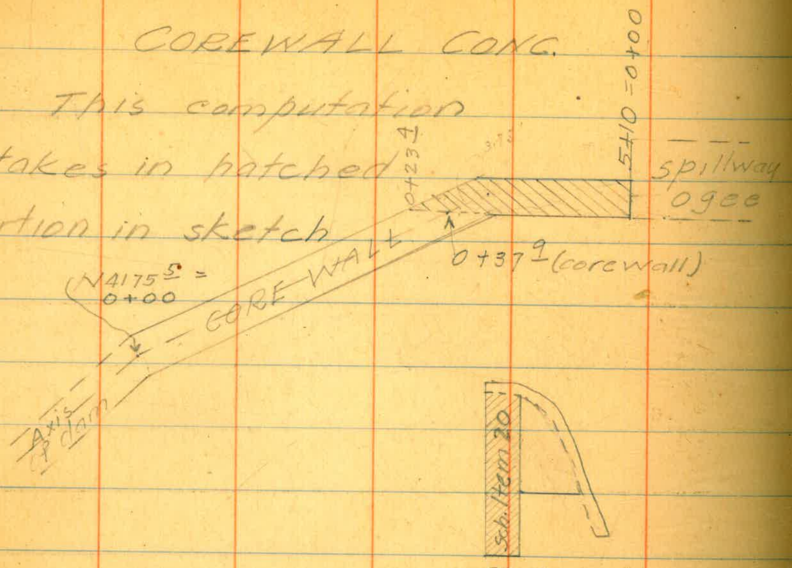
FB 416 62-63

North 3000 to 4160

1,801.40 Cubic yards

COREWALL CONC.

This computation takes in hatched portion in sketch



SECTION

Schedule Item 20 unformed in warped west end of spillway crest

Areas of sections measured with planimeter from plotted cross sections

Sta.	Area.	mean	dist.	cu.ft.
0+00	231.7			
		250.25 ✓	3 ✓	750.75 ✓
0+03	268.8			
		278.3 ✓	3 ✓	834.90 ✓
0+06	287.8			
		293.3 ✓	2 ✓	586.60 ✓
0+08	298.8			
		304.85 ✓	2 ✓	609.70 ✓
0+10	310.9			
		316.45 ✓	2 ✓	632.90 ✓
0+12	322.0			
		328.25 ✓	2 ✓	656.50 ✓
0+14	334.5			
		339.95 ✓	2 ✓	679.90 ✓
0+16	345.4			
		360.3 ✓	1 3 ✓	468.39 ✓
0+17 3	375.2			
		378.1 ✓	1 2 ✓	453.72 ✓
0+18 5	381.0			
				5673.36 ✓

Sta.	Area	mean	dist	Cu ft.
				5673.36
$0+18^{\underline{5}}$	381			
		381.0 ✓	$0^{\underline{6}}$ ✓	228.60 ✓
$0+19^{\underline{1}}$	381			
		250.82 ✓	$2^{\underline{9}}$ ✓	727.38 ✓
0+22	120.65			
		60.32 ✓	$1^{\underline{4}}$ ✓	84.45 ✓
$0+23^{\underline{4}}$	0.0			
				6713.79 ✓ =
				248.66 ✓ Cu. Yd.

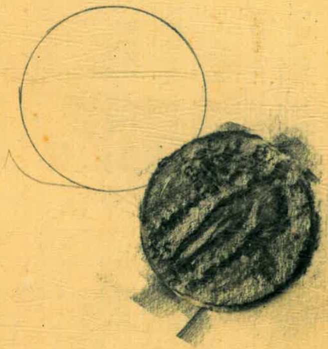


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TABLE IX.—CALCULATION OF EARTHWORK.

Width	HEIGHT 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	.02	.04	.06	.07	.09	.11	.13	.15	.17	.18	.20	.22	.24	.26	.28
2	.04	.07	.11	.15	.18	.22	.26	.30	.33	.37	.41	.44	.48	.52	.56
3	.06	.11	.17	.22	.28	.33	.39	.44	.50	.56	.61	.67	.72	.78	.83
4	.07	.15	.22	.30	.37	.44	.52	.59	.67	.74	.81	.89	.96	1.04	1.11
5	.09	.19	.28	.37	.46	.56	.65	.74	.83	.93	1.02	1.11	1.20	1.30	1.39
6	.11	.22	.33	.44	.56	.67	.78	.89	1.00	1.11	1.22	1.33	1.44	1.55	1.67
7	.13	.26	.39	.52	.65	.78	.91	1.04	1.16	1.30	1.42	1.55	1.68	1.81	1.94
8	.15	.30	.44	.59	.74	.89	1.04	1.19	1.33	1.48	1.63	1.78	1.92	2.08	2.22
9	.17	.33	.50	.67	.83	1.00	1.17	1.33	1.50	1.67	1.83	2.00	2.17	2.33	2.50
10	.18	.37	.56	.74	.93	1.11	1.30	1.48	1.67	1.85	2.04	2.22	2.41	2.59	2.78
11	.20	.41	.61	.82	1.02	1.22	1.43	1.63	1.83	2.04	2.24	2.44	2.65	2.85	3.06
12	.22	.44	.67	.89	1.11	1.33	1.56	1.78	2.00	2.22	2.44	2.67	2.89	3.11	3.33
13	.24	.48	.72	.96	1.20	1.44	1.68	1.92	2.16	2.41	2.65	2.89	3.13	3.37	3.61
14	.26	.52	.78	1.04	1.30	1.55	1.81	2.08	2.33	2.59	2.85	3.11	3.37	3.63	3.89
15	.28	.56	.83	1.11	1.39	1.67	1.94	2.22	2.50	2.78	3.06	3.33	3.61	3.89	4.17
16	.30	.59	.89	1.18	1.48	1.78	2.07	2.37	2.67	2.96	3.26	3.56	3.85	4.15	4.44
17	.31	.63	.94	1.26	1.57	1.89	2.20	2.52	2.83	3.15	3.46	3.78	4.09	4.41	4.72
13	.33	.67	1.00	1.33	1.67	2.00	2.33	2.67	3.00	3.33	3.67	4.00	4.33	4.67	5.00
19	.35	.70	1.06	1.41	1.76	2.11	2.46	2.82	3.17	3.52	3.87	4.22	4.57	4.92	5.28
20	.37	.74	1.11	1.48	1.85	2.22	2.59	2.96	3.33	3.70	4.07	4.44	4.81	5.18	5.56
21	.39	.78	1.17	1.55	1.94	2.33	2.72	3.11	3.50	3.89	4.28	4.67	5.06	5.44	5.83
22	.41	.81	1.22	1.63	2.04	2.44	2.85	3.26	3.67	4.07	4.48	4.89	5.30	5.70	6.11
23	.43	.85	1.28	1.70	2.13	2.56	2.98	3.41	3.83	4.26	4.68	5.11	5.54	5.96	6.39
24	.44	.89	1.33	1.78	2.22	2.67	3.11	3.56	4.00	4.44	4.89	5.33	5.78	6.22	6.67
25	.46	.92	1.39	1.85	2.31	2.78	3.24	3.70	4.17	4.63	5.09	5.56	6.02	6.48	6.94
26	.48	.96	1.44	1.92	2.41	2.89	3.37	3.85	4.33	4.82	5.30	5.78	6.26	6.74	7.24
27	.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00	6.50	7.00	7.50
28	.52	1.04	1.55	2.07	2.59	3.11	3.63	4.15	4.67	5.18	5.70	6.22	6.74	7.26	7.78
29	.54	1.07	1.61	2.15	2.68	3.22	3.76	4.30	4.83	5.37	5.91	6.44	6.98	7.52	8.06
30	.56	1.11	1.67	2.22	2.78	3.33	3.89	4.44	5.00	5.55	6.11	6.67	7.22	7.78	8.33
31	.57	1.15	1.72	2.30	2.87	3.44	4.02	4.59	5.17	5.74	6.32	6.89	7.46	8.04	8.61
32	.59	1.18	1.78	2.37	2.96	3.56	4.15	4.74	5.33	5.92	6.52	7.11	7.70	8.30	8.89
33	.61	1.22	1.83	2.44	3.05	3.67	4.28	4.89	5.50	6.11	6.72	7.33	7.94	8.55	9.17
34	.63	1.26	1.89	2.52	3.15	3.78	4.40	5.04	5.67	6.29	6.93	7.56	8.18	8.81	9.44
35	.65	1.30	1.94	2.59	3.24	3.89	4.53	5.18	5.83	6.48	7.13	7.78	8.42	9.08	9.72
36	.67	1.33	2.00	2.67	3.33	4.00	4.66	5.33	6.00	6.67	7.33	8.00	8.67	9.33	10.00
37	.68	1.37	2.06	2.74	3.42	4.11	4.79	5.48	6.17	6.85	7.54	8.22	8.91	9.59	10.28
38	.70	1.41	2.11	2.82	3.52	4.22	4.92	5.63	6.33	7.03	7.74	8.44	9.15	9.85	10.56
39	.72	1.44	2.17	2.89	3.61	4.33	5.05	5.78	6.50	7.22	7.95	8.67	9.39	10.11	10.83
40	.74	1.48	2.22	2.96	3.70	4.44	5.18	5.92	6.67	7.41	8.15	8.89	9.63	10.37	11.11

Table gives cu. yds. in 1 ft. of a triangle of given width and height. Corrections for tenths of width are one tenth the values found under each height considering the widths from 1 to 9 as tenths and similarly the corrections for tenths of height are one tenth the figures opposite width considering the heights from 1 to 9 as tenths. Thus if w =16.2 and h =5.3, cu. yds. =1.48+.028+.089 =1.597 cu. yds. or practically 160 cu. yds. per 100 ft. If w exceeds 40 ft., use one half and multiply result by 2, if both w and h are large use one half of each and multiply result by 4. Any cross-section may be divided into triangles by the following rule. To the triangle of the sum of the outside cuts (or fills) =h, and ½ the roadbed =w, add the triangles formed by taking the distance out to each break in turn (=w's) by the difference between the cuts (or fills) on each side of it (=h's) always subtracting the outer from the inner.

1.5 top
1' bottom

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1½.

For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.2	8.3	8.5	8.6	8.8	8.9	9.1	9.2	9.4	0
1	9.5	9.7	9.8	10.0	10.1	10.3	10.4	10.6	10.7	10.9	1
2	11.0	11.2	11.3	11.5	11.6	11.8	11.9	12.1	12.2	12.4	2
3	12.5	12.7	12.8	13.0	13.1	13.3	13.4	13.6	13.7	13.9	3
4	14.0	14.2	14.3	14.5	14.6	14.8	14.9	15.1	15.2	15.4	4
5	15.5	15.7	15.8	16.0	16.1	16.3	16.4	16.6	16.7	16.9	5
6	17.0	17.2	17.3	17.5	17.6	17.8	17.9	18.1	18.2	18.4	6
7	18.5	18.7	18.8	19.0	19.1	19.3	19.4	19.6	19.7	19.9	7
8	20.0	20.2	20.3	20.5	20.6	20.8	20.9	21.1	21.2	21.4	8
9	21.5	21.7	21.8	22.0	22.1	22.3	22.4	22.6	22.7	22.9	9
10	23.0	23.2	23.3	23.5	23.6	23.8	23.9	24.1	24.2	24.4	10
11	24.5	24.7	24.8	25.0	25.1	25.3	25.4	25.6	25.7	25.9	11
12	26.0	26.2	26.3	26.5	26.6	26.8	26.9	27.1	27.2	27.4	12
13	27.5	27.7	27.8	28.0	28.1	28.3	28.4	28.6	28.7	28.9	13
14	29.0	29.2	29.3	29.5	29.6	29.8	29.9	30.1	30.2	30.4	14
15	30.5	30.7	30.8	31.0	31.1	31.3	31.4	31.6	31.7	31.9	15
16	32.0	32.2	32.3	32.5	32.6	32.8	32.9	33.1	33.2	33.4	16
17	33.5	33.7	33.8	34.0	34.1	34.3	34.4	34.6	34.7	34.9	17
18	35.0	35.2	35.3	35.5	35.6	35.8	35.9	36.1	36.2	36.4	18
19	36.5	36.7	36.8	37.0	37.1	37.3	37.4	37.6	37.7	37.9	19
20	38.0	38.2	38.3	38.5	38.6	38.8	38.9	39.1	39.2	39.4	20
21	39.5	39.7	39.8	40.0	40.1	40.3	40.4	40.6	40.7	40.9	21
22	41.0	41.2	41.3	41.5	41.6	41.8	41.9	42.1	42.2	42.4	22
23	42.5	42.7	42.8	43.0	43.1	43.3	43.4	43.6	43.7	43.9	23
24	44.0	44.2	44.3	44.5	44.6	44.8	44.9	45.1	45.2	45.4	24
25	45.5	45.7	45.8	46.0	46.1	46.3	46.4	46.6	46.7	46.9	25
26	47.0	47.2	47.3	47.5	47.6	47.8	47.9	48.1	48.2	48.4	26
27	48.5	48.7	48.8	49.0	49.1	49.3	49.4	49.6	49.7	49.9	27
28	50.0	50.2	50.3	50.5	50.6	50.8	50.9	51.1	51.2	51.4	28
29	51.5	51.7	51.8	52.0	52.1	52.3	52.4	52.6	52.7	52.9	29
30	53.0	53.2	53.3	53.5	53.6	53.8	53.9	54.1	54.2	54.4	30
31	54.5	54.7	54.8	55.0	55.1	55.3	55.4	55.6	55.7	55.9	31
32	56.0	56.2	56.3	56.5	56.6	56.8	56.9	57.1	57.2	57.4	32
33	57.5	57.7	57.8	58.0	58.1	58.3	58.4	58.6	58.7	58.9	33
34	59.0	59.2	59.3	59.5	59.6	59.8	59.9	60.1	60.2	60.4	34
35	60.5	60.7	60.8	61.0	61.1	61.3	61.4	61.6	61.7	61.9	35
36	62.0	62.2	62.3	62.5	62.6	62.8	62.9	63.1	63.2	63.4	36
37	63.5	63.7	63.8	64.0	64.1	64.3	64.4	64.6	64.7	64.9	37
38	65.0	65.2	65.3	65.5	65.6	65.8	65.9	66.1	66.2	66.4	38
39	66.5	66.7	66.8	67.0	67.1	67.3	67.4	67.6	67.7	67.9	39
40	68.0	68.2	68.3	68.5	68.6	68.8	68.9	69.1	69.2	69.4	40

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 41.9. For same slopes but other widths of roadbed correct above figures by one-half difference in width of roadbed; thus in example above for 20 ft. roadbed distance will be 41.9+(20—16)÷2 or 2 ft. added to 41.9 =43.9. For slopes of 1 on 1 see inside of front cover.

Made in Germany.