286

Final Cross Sections

77+83 — 204+13.7

W286

286

Our Leather Bound Engineers Note Books are carried in the following rulings:

No. 380 LEVEL BOOK. Left and Right Hand Page the same as Left Hand Page of this Book.

No. 382 FIELD BOOK. Left Hand Page as in this Book, Right Hand Page 4 x 4 to the inch, Center Line Red.

No. 384 MINING TRANSIT BOOK. Left Hand Page as in this Book, Right Hand Page 8x8 to the inch, Center Line Red.

No. 385 FIELD BOOK. Left Hand Page as in this Book, Right Hand Page 8 vertical and 4 horizontal lines to the inch, Center Line Red.

We also carry the Note Books listed above, bound in extra strong Fabri-Hide (otherwise the same quality of book), which can be furnished at a somewhat lower price.

In ordering Fabri-Hide covered books, add the letter *"F"* to catalog number.

O.R.-S.D. 2nd. Main Pipe Line.
U.S.G.S. Datum.

INDEX.

Final Cross Sections - Trench Excavation - Schedule I.

O.R.-S.D. 2nd Main Pipe Line
Final Cross Sections
Sta. 77+83.2 to Sta. 204+18.7
Contd. from Book #285.

Clear + Warm: Feb. 4. 1930.
Converse - Notes
Hill - Grades
Elliott - ℄
Simpson - Rod
Walton - Tape

Sta.	Grade	Elev.	Dist.	L.C.	℄	R.C.	End Area	Av. E. Area	Cu. Yds.
77+83.2	381.9	388.1		8.0 / 2.91	6.2	5.0 / 2.41	30.71		
			.6223					28.27	17.59
78	378.6	383.8		6.0 / 2.41	5.2	5.0 / 2.41	25.84		
			.4704					26.50	12.47
+12.7	376.2	381.9		4.7 / 2.41	5.7	6.4 / 2.51	27.15		
			1.1038					30.24	33.38
+42.5	372.7	379.4		5.2 / 2.41	6.7	8.8 / 3.11	33.33		
			1.0185					36.83	37.51
+70	370.4	378.5		6.0 / 2.41	8.1	10.3 / 3.49	40.33		
								36.70	20.39
						Chd. T.M.M.			121.34
						Calc. om. R.E.			Comp. to ✱ chd. A.C.L.

M.R.E.

M.R.E.

78+85	369.2	375.8		5.0 / 2.41	6.6	9.0 / 3.16	33.07
							33.08 · 18.38 ·
79	368.0	374.7		5.0 / 2.41	6.7	8.8 / 3.11	33.09
							35.07 · 25.98 ·
+20	365.6	372.9		5.8 / 2.41	7.3	9.8 / 3.36	37.05
							35.22 · 19.57 ·
+35	363.9	370.8		4.9 / 2.41	6.9	8.7 / 3.09	33.39 ~~35.36~~
							29.19 · 16.22 ·
+50	362.1	367.1		3.8 / 2.41	5.0	7.0 / 2.66	24.99
							26.67 · 34.57 ·
+85	358.0	363.8		5.0 / 2.41	5.8	6.9 / 2.64	28.35
			1.0963				29.58 32.43 ·
							147.15 ✓
							Chd. T.M.M.
							Comptd. & chd. A.C.L.
					m.n.e.		Calc. T.M.O.E.

							End Areas	Cu. Yds
80+14.6	352.7	359.1		5.2 / 2.41	6.4	7.5 / 2.79	30.82 ~~30.86~~	
			.5704					34.22 · 19.52 ·
+30	349.0	356.6		6.6 / 2.56	7.6	8.8 / 3.11	37.61	
			17.66	.6542				38.83 · 25.40 ·
80+47.66 = 80+36.66	344.8	352.8		7.2 / 2.71	8.0	9.1 / 3.19	40.06	
			23.34	.8642				39.26 · 33.93 ·
+60	340.1	348.0		6.8 / 2.61	7.9	8.6 / 3.06	38.47	
								35.99 · 37.32 ·
+88	334.4	341.2		6.0 / 2.41	6.8	8.0 / 2.91	33.52	
			.5444					32.12 · 17.49 ·
81+02.7	332.0	338.3		5.4 / 2.41	6.3	7.4 / 2.76	30.72	
			.5518					25.02 · 13.81 ·
							Compt'd. M.M.	147.47
							Chd. A.C.L.	Compt'd & chd. A.C.L.

CH. CH. R.

✓ M.D.R

						End Areas	Cu. Yds
81+17.6	330.5	334.5		4.0 2.41	4.0	4.0 2.41	19.32
							13.04 · 7.25
+32.6	330.0	331.4			1.4		6.76
			.3852				3.38 · 1.30
+43	330.0	330.0			0.0		0
			.5778				00
+58.6	330.0	330.0			0.0		0
			.0425				0.48 · 0.02
+59.75	330.0	330.2			0.2		0.96
			.5537				5.79 · 3.21
+74.7	330.6	332.8			2.2		10.63
			.5518				15.46 · 8.53
							Compt'd. T.M.M.
							Chd. A.C.L. 20.31
							Compt'd. & chd. A.C.L.

ch. L.M.H.

m. D.E.

							End Areas	Cu. Yds
81+89.6	332.3	336.5		3.2 / 2.41	4.2	5.2 / 2.41	20.29	
			.5482					22.83 · 12.52
82+04.4	335.2	340.3		4.1 / 2.41	5.1	6.8 / 2.61	25.38	
			.5333					24.22 · 12.92
+18.8	339.2	343.9		3.7 / 2.41	4.7	6.0 / 2.21	23.06	
			.6741					26.02 · 17.54
+37	344.9	350.9		4.6 / 2.41	6.0	7.4 / 2.76	28.98	
			.8778					29.16 · 25.60
+60.7	352.4	358.5		5.5 / 2.41	6.1	6.6 / 2.56	29.35	
			.5297					30.67 · 16.25
+75	355.9	362.5		6.0 / 2.41	6.6	7.2 / 2.71	31.98	
			.5518					30.66 · 16.92

Compld. T.M.M.
Chd. A.C.L.: 101.75 ✓
Compld. & chd. A.C.L.

ch. L.H.H.

✓ M.N.E.

82+89.9	359.4	365.4		5.5 / 2.41	6.0
			.3741		
83	361.0	367.4		5.8 / 2.41	6.4
+25	365.0	370.9		5.6 / 2.41	5.9
+40	367.4	373.4		5.5 / 2.41	6.0
+55	369.9	377.1		6.6 / 2.56	7.2
+75	373.1	380.1		6.2 / 2.46	7.0

Ch. & H.H.

✓ m.D.C.

End Areas		Cu. Yds
6.8 / 2.61	29.34	
	30.39	11.37
7.4 / 2.76	31.43	
	30.32	2807
6.8 / 2.61	29.21	
	29.27	16.26
6.8 / 2.61	29.34	
	32.36	17.98
8.0 / 2.91	35.39	
	34.58	25.62
7.6 / 2.81	33.78	
	32.36	29.96

Compld. T.M.M.
Chd. A.C.L.

129.26
Compld & Chd. A.C.L.

84	377.1	383.5		6.0 / 2.41	6.4
			.7520		
+20.3	380.4	386.2			5.8
			1.1038		
+50.1	384.0	388.9			4.9
			.7370		
+80.1	385.4	390.7			5.3
85	385.5	391.8			6.3
+25	385.6	392.0			6.4

Ch. L.H.H.

m.B.f.

End Areas	Cu. Yds
6.8 / 2.61 30.95	
	29.48 · 22.17 ·
28.01	
	25.84 · 28.52 ·
23.67	
	24.63 · 27.37 ·
25.60	
	28.03 · 20.66 ·
30.45	
	30.70 · 28.43 ·
30.95	
	33.03 · 30.58 ·
Compt'd. T.M.M.	
Chd. A.C.L.	157.73
Compt'd Chd. A.C.L.	

				End Areas	Cu. Yds
85+50	385.8	393.0	7.2	35.12	
					32.05 · 39.65
+83.4	386.0	392.0	6.0	28.98	
					29.47 · 18.12
86	386.0	392.2	6.2	29.95	
					30.45 · 28.19
+25	386.0	392.4	6.4	30.95	
					31.97 · 29.60
+50	386.0	392.8	6.8	33.00	
					30.99 · 28.69
+75	386.0	392.0	6.0	28.98	
					2898 · 26.83
				Comptd. T.M.M.	
				Chd. A.C.L.	171.08
					Comptd + Chd. A.C.L.

Ch. L.H.H. ✓ m. R. E.

					End Area	Cu. Yds
87	386.0	392.0		6.0	28.98	
						29.22 27.05
+25	386.0	392.1		6.1	29.46	
						29.22 27.05
+50	386.0	392.0		6.0	28.98	
						30.48 28.22
+75	386.0	392.6		6.6	31.98	
						31.22 28.91
88	386.0	392.3		6.3	30.45	
						32.52 30.11
+25	386.0	393.1		7.1	34.59	
						33.02 30.57
	Ch. L.H.H.			m.d.E	Compt'd. T.M.M. Chd. A.C.L.	171.91 Compt'd+Chd. A.C.L.

Total to here 1168.0

					End Area	Cu. Yds
88+50	386.0	397.5		6.5	31.45	
					31.71	58.72
89	386.0	397.6		6.6	31.98	
					30.48	56.45
+50	386.0	397.0		6.0	28.98	
					27.53	50.98
90	386.0	391.4		5.4	26.08	
					31.99	71.09
+60	383.3	391.0		7.7	37.90	
			.7334		34.94	25.62
+79.8	382.4	388.6		6.6	31.98	
			1.1074		32.23	35.69

Cmptd. T.M.M.
Chd. A.L.L.

298.55 Total to here
Cmptd & Chd. A.C.L.

this book R = 1466.55
Chd. M.M.C. A.C.L.

CH. L.H.H.

						End Area		Cu. Yds
91+09.7	379.9	386.6			6.7	32.48		
							32.48	35.61
+39.3	375.0	381.7			6.7	32.48		
				1.0778			31.22	33.65
+68.4	367.9	374.1			6.7	29.95		
				1.1704			29.95	35.05
92	358.8	365.0			6.7	29.95		
				.3926			28.50	11.19
+10.6	355.8	361.4			5.6	27.05		
				1.0499			27.29	28.50
+38.8	345.7	351.4			5.7	27.53		
				1.5259			24.87	37.95
						Comptd. T.M.M.		
						Chd. A.C.L.		181.95 ✓
							Comptd. & Chd. A.C.L.	

CA L. HH

					End Area	Cu. Yds
92 +80	328.0	332.4		4.6	22.22	
			.3407			11.11 · 3.79 ·
+89.2	328.0	328.0		0.0	0	
						0.0
93 +32.4	328.0	328.0		0.0	0	
						16.50 · 10.75 ·
+50	328.0	334.8		6.8	33.00	
						34.34 · 31.80 ·
+75	336.6	343.9		7.3	35.67	
						36.22 · 33.54 ·
94	345.1	352.6		7.5	36.78	
			.4518			36.22 · 16.36 ·
					Comptd. M.M.	
					Chd. A.C.L.	96.24
						Comptd + Chd. A.C.L.

Ch. 4 H.P.

					End Areas	Cu. Yds.
94 +12.2	349.3 ✓	356.6		7.3	35.67 ✓	
			1.0668			39.14 · 41.75 ·
+41	357.9 ✓	366.4		8.5	42.60 ✓	
			1.0853			47.10 · 51.12 ·
+70.3	364.0 ✓	373.9		9.9	51.60 ✓	
			1.1			49.75 · 49.23 ·
95	367.6 ✓	375.3		7.7	37.90 ✓	
						28.61 · 52.98 ·
+50	371.6 ✓	375.6		4.0	19.32 ✓	
						21.73 · 16.10 ·
+70	373.2 ✓	378.2 ✓		5.0	24.15 ✓	
			1.3445			29.10 · 39.12 ·
					Comptd. T.M.M.	
					Chd. A.C.L.	250.30 ✓
						Comptd & Chd. A.C.L.

Ch. L.M.H.

					End Area	Cu. Yds
96+06.3	379.0	386.0		7.0	34.05	
			1038			30.55 · 33.72 ·
+36.1	382.6	388.2		5.6	27.05	
						25.89 · 28.71 ·
+66.1	384.0	389.1		5.1	24.63	
						26.80 · 29.78 ·
+96.1	383.0	389.0		6.0	28.98	
			1038			30.99 · 34.21 ·
97+25.9	379.8	386.6		6.8	33.00	
			7079			35.73 · 25.28 ·
+45	376.3	384.1		7.8	38.47	
			3852 ·			36.53 · 14.07 ·
					Compt'd. T.M.M	165.77
					Chd. A.C.L.	Compt'd + Chd. A.C.L.

CH. 4 H.H.

+55.4	374.4	381.5		7.1	
+84.4	366.7	373.6		6.9	
			.3926		
+95	363.0	370.4		7.4	
98+12.7	356.8	361.5		4.7	
			.2277		
+25	352.0	356.0		4.0	
+34	352.0	352.0		0.0	

End Area | Cu. Yds

34.59

34.05 · 36.57 ·

33.52

34.87 · 13.69 ·

36.22

29.46 · 19.31 ·

22.70

21.01 · 9.57

19.32

9.66 · 3.22 ·

0

0.0

Compt'd. M.M. 82.36 ✓

Chd. A.C.L. Compt'd & Chd. A.C.L.

A.C.L. H.H.

Feb. 6. 1930. Converse - Notes
Clear + Warm Hill - Grades
Elliott - Rod
Simpson - Rod.

					End Areas	Cu. Yds
98+65.5	352.0	352.0		0.0	0	
						12.56 · 4.42 ·
+75	352.0	357.2		5.2	25.12	
						28.55 · 10.57 ·
+85	355.9	362.5		6.6	31.98	
			.4371			33.82 · 14.78 ·
+96.8	360.6	367.9		7.3	35.67	
			.5630			35.67 · 20.08 ·
99+12	366.0	373.3		7.3	35.67	
			.4889			33.82 · 16.53 ·
+25	370.5	377.1		6.6	31.98	
			.5482			34.38 · 18.85 ·

Compt'd. T.M.M. 85 · 27 ·
Chd. A.C.L. Compt'd + Chd. A.C.L.

Ch. L.H.H.

99+40	374.4	381.9		7.5
			.5222	
+54.1	378.2	384.3		6.1
			.5889	
+70	381.2	387.2		6.0
			.5037	
+83.6	383.8	389.5		5.7
100	385.6	391.5		5.9
			.6017	
+13.4	387.1	392.3		5.2
			.5407	

Ch. L.H.M.

End Area	Cu. Yds	
36.78		
26.57		
	33.12	17.30
29.46		
	29.22	17.21
28.98		
	28.25	14.23
27.53		
	28.02	17.02
28.50		
	26.81	13.31
25.12		
	26.57	14.37
Compted. T.M.M.		93.44
Chd. A.L.L.	Compted + Chd. A.L.L.	

+28	387.6	393.4		5.8
			.5704	
+43.4	388.2	393.6		5.4
			.9852	
+70	388.2	394.5		6.3
101	388.2	394.1		5.9
			1.1038	
+19.8	388.2	393.0		4.8
			.5630	
+45	387.6	392.4		4.8
			.5482	

Ch. L.H.H.

End Area	Cu. Yds
28.01	
	27.04 · 15.42 ·
26.08	
	28.27 · 27.85 ·
30.45	
	29.47 · 32.74 ·
28.50	
	25.89 · 28.52 ·
23.18	
	23.18 · 13.05 ·
23.18	
	21.01 · 11.52 ·
Comptd. M.M.	129.10

Ch. A.C.L. Comptd. Chd. A.C.L.

+59.8	387.1	391.0		3.9
			1038	
+89.6	383.6	386.6		3.0
			.3852	
107	381.5	384.6		3.1
+19	377.8	381.1		3.3
+50	370.4	374.3		3.9
+75	364.4	369.2		4.8

ch. L.H.H.

End Area	Cu. Yds
18.84	
16.66	18.39
14.49	
14.73	5.67
14.97	
15.45	10.87
15.94	
17.39	19.97
18.84	
~~19.32~~	
21.01	19.45
23.18	
~~23.67~~	
24.39	22.58
	96.93

Compld. T.M.M.
Chd. A.C.L.

Compld. & Chd. A.C.L.

force
2647.87

103	358.5	363.7		5.3
1+14	355.2	361.4		6.3
1+30	351.4	356.9		5.6
1+50	346.6	352.8		6.3
1+75	340.6	346.6		6.0
104+04	330.9	340.4		9.5

ch. L.H.

End Area	Cu. Yds
25.60	
	28.03 · 14.53 ·
30.45	
	28.75 · 17.04 ·
27.05	
	28.75 · 21.30 ·
30.45	
	29.72 · 27.52 ·
28.98	
	38.96 · 41.85 ·
48.93	
	38.96 · 25.97 ·
Comptd. T.M.M.	148.21
Chd. A.C.L.	Comptd + Chd. A.C.L.

						End Area	Cu. Yds
+22	324.8	330.8		6.0		28.98	
							28.02 · 18.68
+40	318.7	324.3		5.6		27.05	
							27.53 · 20.39
+60	312.0	317.8		5.8		28.01	
							22.70 · 8.41
+70	312.0	315.6		3.6		17.39	
			.2x0				8.69 · 1.74
+75.4	312.0	312.0		0.0		0	
			.9093				0.0
105 +24.5	312.0	312.0		0.0		0	
							8.94 · 5.13
						Compld. T.M.M.	54.35
						Chd. A.C.L.	Compld & Chd. A.C.L.

Total to here in this book - 28 SO-43
A.C.L.
7/14/30

					End Area	Cu. Yds
+40	312.0	315.7		3.7	17.87	
					19.08	7.07
+50	314.5	318.7		4.2	20.29	
					23.19	21.46
+75	320.8	326.2		5.4	26.08	
					30.60	28.33
106	327.2	334.4		7.2	35.12	
					37.08	21.97
+16	330.9	338.8		7.9	39.05	
					37.09	30.22
+38	335.9	343.1		7.2	35.12	
					34.32	15.25
					Comptd. T.M.M.	124.30
	Ch. L.H.H.				Chd. A.C.L.	Comptd. & Chd. A.C.L.

					End Area	Cu. Yds
+50	338.7	345.6		6.9	33.52	
					31.25	23.15
+70	344.7	350.7		6.0	28.98	
					29.22	32.47
107	353.7	359.8		6.1	29.46	
					28.50	13.30
+12.6	358.5	364.2		5.7	27.53	
			28.5		27.29	28.81
+41.1	367.9	373.5		5.6	27.05	
			.5518		29.76	16.42
+56	371.4	378.1		6.7	32.48	
					31.22	16.42
					Compt'd. Tm.m.	130.57
					Chd. A.L.L.	Compt'd & Chd A.L.L.

Ch. L.T.M.

					End Area	Cu. Yds
+70.2	374.8	381.0		6.2	29.95	
					31.48	18.43
+86	377.1	383.9		6.8	33.00	
					31.97	16.58
108	379.1	385.5		6.4	30.95	
			1.1074		32.50	35.99
+29.9	381.1	388.1		7.0	34.05	
			.5593		33.78	18.89
+45	380.9	387.8		6.9	33.52	
			.5518		31.25	17.24
+59.9	380.7	386.7		6.0	28.98	
			1.0853		26.33	28.58
					Compld. TM.M.	135.71
	ch. L.H.H.				Chd. A.L.L.	Compld & Chd. A.L.L.

					End Area	Cu. Yds
+89.8	378.5	383.4		4.9	23.67	
					25.60	28.73
109+19.5	374.4	380.1		5.7	27.53	
					28.25	16.22
+35	371.7	377.7		6.0	28.98	
			1.1185		26.57	29.72
+65.5	366.5	371.5		5.0	29.15	
			.5518		24.39	13.46
+80.1	364.6	369.5		5.1	24.63	
			.2185		22.22	4.86
+86	364.3	368.4		4.1	19.80	
					13.76	4.59
					Compld. TM.m	97.58
					Chd. A.C.L.	Compld & Chd. A.C.L.

Ch. L.H.H.

					End Area	Cu. Yds.
+95	364.0	365.6		1.6	7.73	
			.2852		3.86	1.10
110+02.7	364.0	364.0		0.0	0	
					00	
+11.5	364.0	364.0		0.0	0	
			.1148		4.59	0.53
+14.6	364.0	365.9		1.9	9.18	
			.1079		10.38	1.11
+17.5	365.0	367.4		2.4	11.59	
					16.42	7.60
+30	368.6	373.4		4.4	21.25	
			.6079		25.12	15.26
					Compld. TM.M.	25.60
	Ch. 4 H.H.				Chd. A.C.L.	Compld. + Chd. A.C.L.

					End Area	Cu. Yds
+46.4	373.2	379.4		6.0	28.98	
			.1667		32.32	15.08
+59	375.8	383.1		7.3	35.67	
			.6223		39.39	21.37
+75.8	379.2	386.0		6.8	33.00	
			.5259		38.10	20.04
+90	380.9	389.5		8.6	43.20	
			.5778		41.71	24.10
111+05.6	382.8	390.9		8.1	40.21	
			1.1079		38.50	42.63
+35.5	384.0	391.5		7.5	36.78	
					37.62	34.14
						157.36

Ch. L.H.H.

Computd. J.M.M.
Chd. A.C.L. Computd & Chd. A.C.L.

113+50

					End Area	Cu. Yds
+60	384.0	391.8		7.8	38.47	
					36.26	20.15
+75	384.0	391.0		7.0	34.05	
					28.37	26.27
112	384.0	388.7		4.7	22.70	
					18.84	13.96
+20	384.0	387.1		3.1	14.97	
					7.48	7.76
+48	384.0	384.0		0.0	0	
			1.8593		0.0	
+98	384.0	384.0		0.0	0	
			A371		3.38	1.48
						69.6

Ch. L.H.H.

Compt'd. T.M.M.
Chd. A.C.L. Compt'd & Chd. A.C.L.

				End Area	Cu. Yds
113+10	384.0	385.4	1.4	6.76	
				8.95	7.82
+35	384.0	386.1	2.1	10.14	
				13.76	7.65
+50	384.0	387.6	3.6	17.39	
				19.08	17.67
+75	385.2	389.5	4.3	20.77	
				22.99	21.24
114	386.3	391.5	5.2	25.12	
				25.60	23.70
+25	387.5	392.9	5.4	26.08	
				25.84	23.93

Ch. L.H.H.

Compld. T.M.M. 102.01

Chd. A.L.L. Compld. Chd. A.L.L. Total 3693.18

to Here

				End Area	Cu. Yds
+50	388.7	394.0	5.3	25.60	
				25.36 · 23.48 ·	
+75	389.9	395.1	5.2	25.12	
				25.36 · 23.48 ·	
115	391.0	396.3	5.3	25.60	
				25.84 · 14.36 ·	
+15	390.9	396.3	5.4	26.08	
				26.80 · 34.74 ·	
+50	390.5	396.2	5.7	27.53	
				27.29 · 35.38 ·	
+85	390.2	395.8	5.6	27.05	
				29.25 · 21.67	
					153.11

Ch. L.H.H.

Compt'd. J.M.M.
Chd. A.C.L. Compt'd & Chd. A.C.L.

116+05	388.9	395.4		6.5
			.3667	
+14.9	388.3	394.1		5.8
			1.3	
+50	384.4	390.7		6.3
+65	382.7	389.1		6.4
117	378.8	384.4		5.6
+10	377.7	382.8		5.1

End Area	Cu. Yds
31.45	
	29.73 · 10.90 ·
28.01	
	29.23 · 38.00 ·
30.45	
	30.70 · 17.06 ·
30.95	
	29.00 · 37.59 ·
27.05	
	25.84 · 9.57 ·
24.63	
	25.12 · 27.91 ·

Compld. TM.M. 141.03 ✓

Chd. A.C.L. Compld+Chd. A.C.L.

+40	372.9	378.2	5.3	
+70	366.8	373.2	6.4	
118	360.7	366.5	5.8	
+25	355.6	360.4	4.8	
+50	350.5	355.5	5.0	
+75	345.4	351.1	5.7	

Ch. L.H.H.

End Area	Cu. Yds
25.60	
	28.27 · 31.41 ·
30.95	
	29.48 · 32.76 ·
28.01	
	25.59 · 23.69 ·
23.18	
	23.66 · 21.91 ·
24.15	
	25.84 · 23.93 ·
27.53	
	28.26 · 26.17 ·
	159.87

Compted. M.M.M.
Chd. A.C.L. Compted & Chd. A.C.L.

Total to here this book = 4147.19.
Chkd. M.M.M. A.C.L.

					End Area	Cu. Yds
119	340.2	346.2		6.0	28.98	
						28.25 · 15.70 ·
+15	337.2	342.9		5.7	27.53	
						23.18 · 21.46 ·
+40	332.0	335.9		3.9	18.84	
						15.70 · 5.82 ·
+50	330.0	332.6		2.6	12.56	
			.3816			6.28 · 2.40 ·
+60.3	330.0	330.0		0.0	0	
			.5815			00 ·
+76.0	330.0	330.0		0.0	0	
						3.38 · 1.13 ·
						46.51

Ch. H.H.

Compld. T.M.M.

Chd. A.L.L. Compld & Chd. A.L.

				End Area	Cu. Yds
+85	330.0	331.4	1.4	6.76	
					15.45 · 5.72 ·
+95	330.0	335.0	5.0	24.15	
					27.80 · 25.74 ·
120+20	336.4	342.9	6.5	31.45	
					28.52 · 31.69 ·
+50	344.0	349.3	5.3	25.60	
					26.57 · 24.60 ·
+75	350.3	356.0	5.7	27.53	
					26.08 · 24.15 ·
171	355.7	360.3	5.1	24.63	
					26.56 · 19.68 ·
					131.58

Comptd. T.M.M.
Chd. A.C.L. Compt'd Chd. A.C.L.

+20	359.2	365.1		5.9
+30	361.1	366.9		5.8
+45	364.1	369.6		5.5
			5630	
+60.2	367.1	372.3		5.2
			.7334	
+80	369.8	375.3		5.5
+90	371.1	376.7		5.1

Ch. L.H.H.

End Area	Cu. Yds
28.50	
	28.25 · 10.46 ·
28.01	
	27.29 · 15.16 ·
26.57	
	25.84 · 14.55 ·
25.12	
	25.84 · 18.95 ·
26.57	
	25.60 · 9.48 ·
24.63	
	25.84 · 19.14 ·
Comptd. T.M.M.	87.74
Chd. A.L.L.	Comptd & Chd. A.L.L.

				End Area	Cu. Yds
122+10	372.6	378.2	5.6	27.05	
				26.32	14.62
+25	373.7	379.0	5.3	25.60	
				28.27	26.18
+50	375.5	381.9	6.4	30.95	
				28.76	26.63
+75	377.4	382.9	5.5	26.57	
				29.78	27.58
123	377.4	384.2	6.8	33.00	
				31.72	23.50
+20	377.4	383.7	6.3	30.45	
				31.98	15.40
				Compt'd. T.M.M.	133.91
	Ch. L.H.H.			Chd. A.L.L.	Compt'd & Chd. A.L.L

+33	377.4	384.3		6.9
+50	377.4	384.1		6.7
+70	377.4	382.5		5.1
124	377.4	383.2		5.8
+20	377.4	382.4		5.0
+50	377.4	382.9		5.5

Ch. L.H.H.

End Area	Cu. Yds
33.52	
	33.00 · 20.78 ·
32.48	
	28.55 · 21.15 ·
24.63	
	26.32 · 29.24 ·
28.01	
	26.08 · 19.32 ·
24.15	
	25.36 · 28.18 ·
26.57	
	30.05 · 27.82 ·
	146.49

Compt'd. T.M.M.

Chd. A.C.L. Compt'd. & Chd. A.C.L.

				End Area	Cu. Yds
+75	377.4	384.3	6.9	33.52	
				31.49	29.16
125	379.2	385.3	6.1	29.46	
				32.29	59.80
+50	382.8	390.0	7.2	35.12	
				34.58	44.83
+85	385.3	392.3	7.0	34.05	
				35.69	19.83
176	386.4	394.0	7.6	37.33	
				37.05	13.72
+10	387.1	394.6	7.5	36.78	
				34.38	19.10
				Compld. TM. M.	186.44
	Ch. 4 HH.			Chd. A.C.L.	Compld. & Chd. A.C.L.

+25	388.2	394.8		6.6
+50	O.K. 390.00	395.8		5.8
+75	390.2	396.8		6.6 ~~6.8~~
177	390.4	397.6		7.2 ~~7.6~~
+25	390.5	397.6		7.1 ~~7.5~~
+50	390.7	397.3		6.6 ~~7.7~~

Ch. L.H.H.

End Area	Cu. Yds
31.98	
	30.00 · 27.78 ·
28.01	
	30.00 27.78
	~~30.50~~ · ~~28.24~~ ·
31.98	
~~33.00~~	
	33.55 31.06
	~~35.16~~ · ~~32.55~~ ·
35.12	
~~37.33~~	
	34.86 32.28
	~~37.06~~ · ~~34.31~~ ·
34.59	
~~36.78~~	
	33.29 30.82
	~~35.45~~ · ~~33.29~~ ·
31.98	
~~35.12~~	
	36.09 20.05
	39.78 · ~~22.10~~ ·

Compld. T.M.M.

Chd. 169.77

Grade Change
Compld. 9/29/30 T.M.M.

				End Area	Cu. Yds
+65	390.8	398.9	8.1 ~~8.8~~	40.21 ~~44.44~~	
				37.94 ~~42.32~~	14.05 ~~15.68~~
+75	390.9	398.2	7.3 ~~8.1~~	35.67 ~~40.21~~	
				34.59 ~~39.34~~	10.25 ~~11.66~~
+83	391.0 ~~390.1~~	397.9	6.9 ~~7.8~~	33.52 ~~38.47~~	
				29.32 ~~34.21~~	11.95 ~~13.94~~
+94	391.1 ~~390.1~~	396.3	5.2 ~~6.2~~	25.12 ~~29.95~~	
				23.67 ~~28.74~~	15.78 ~~19.16~~
1+78 +12	391.2 ~~390.1~~	395.8	4.6 ~~5.7~~	22.22 ~~27.53~~	
				18.12 ~~23.91~~	15.44 ~~20.39~~
+35	391.4 ~~390.1~~	394.3	2.9 ~~4.2~~	14.01 ~~20.29~~	
				15.46 ~~21.98~~	8.59 ~~12.21~~
					76.06

Ch. L.H.H.

Compt'd. M.M.M.

Chd.

Total to Here 5125.69 M.D.E 9/29/30

Grade Change Computed 9/29/30 M.M.M.

						End Area	Cu. Yds	
+50	391.5 / 390.1	395.0			3.5 / 4.9	16.91 / ~~23.67~~		
							13.05 / ~~19.80~~	12.08 / ~~18.33~~
+75	391.6 / ~~390.2~~	393.5			1.9 / ~~3.3~~	9.18 / ~~15.94~~		
							7.00 / 14.00	2.59 / 5.19
+85	391.7 / ~~390.1~~	392.7			1.0 / ~~2.5~~	4.83 / ~~12.07~~		
							7.97 / ~~15.45~~	4.43 / 8.56
129	391.8 / ~~390.2~~	394.1			2.3 / ~~3.9~~	11.11 / ~~18.84~~		
							5.55 / 10.14	1.85 / 3.38
+09	391.9 / ~~390.2~~	390.5			0.0 / ~~0.3~~	0.0 / ~~1.45~~		
			88'				5.905 / ~~8.08~~ / 5.32 / 10.99	~~2.39~~ / 1.75 / ~~1.58~~ / 3.26
+17	392.0 / 390.2	394.2		2.2 / 5.0 / 2.41	2.2 / 4.0	A.C.L. ~~16.19~~ / ~~10.63~~ / 20.53	~~18.47~~ / ~~15.70~~ / ~~25.24~~ / 16.29	~~8.89~~ / ~~7.56~~ / ~~10.28~~ / 7.84
			13'			11.81	Compld. T.M.M.	30.54
	Ch. L.H.H.					Chd.	Total to Here M.D.E.	5156.23 / ~~5155.78~~ A.C.L. 10/9/30

Grade Change
Compld. 9/29/30 T.M.M.

March 3, 1930.
Cloudy + Cool.

Converse - Notes
Hill - Grades
Elliott - π
Simpson - Rod

End Area
Cu. Yds

+30	392.0r / ~~390.2~~	396.8		3.6 / 2.41	4.8	4.2 / 2.41	20.77 / ~~29.45~~

Continued in Book 291 page 40

~~42.52~~ 18.35

Total to here
This book (-5218.52
(N.G see page 40)

~~+50~~	~~390.2~~	393.7		4.8 / 2.41	3.5	0.7 / 2.41	15.09

Section thru Deep Cut - 12° Bottom - Vertical Slopes.

July 2, 1930

Elliott π notes
Bailey Rod
Soper Tape

Additional Sections Taken out from 3° on the left + 9° on the right.

Void see page 48

	New Pipe Grade	℄ Elev.	Lt.				Pipe	Rt			
+50	390.2r	393.7	394.0	395.3	4.8	3.5	0.7	394.4	2.0	3.1	395.0	396.0
			36°	13°	2.41	to	2.4	5.0	8.0	9.0	17°	36°
+75	390.2r	392.4	399.1	400.6	398.0	5.0	2.2	0.6	394.3	1.8	4.5	399.4	399.9
			50°	13°	5°	3.0		1.8	5.8	5.7	9.0	17°	44°
130	390.3r	391.8	406.3	405.8	401.3	400.3	6.1	1.5	1.5	394.5	2.9	5.1	400.5	403.0
			37°	19°	11°	4°	3.0		1.4	3.0	8.2	9.0	13°	43°
+25	390.3r		410.9	409.0	404.0	403.5	8.2	2.3	2.0	394.6	4.7	6.6	403.1	405.1	407.5	407.1
			37°	20°	11°	5°	3.0		1.4	3.3	5.0	9.0	15°	22°	30°	50°

Ch. 4 H.

12° Width - Vertical Slopes

			Lt					Rt				
+50	390.3	393.8	413.0 411.8 407.5 407.0	8.1	3.5	3.0		394.6	4.8	7.2	396.8 412.2 410.7	
			30° 20° 13° 6°	3.0	℄	1.7		3.3	5.0	9.0	15° 30° 50°	
+75	390.3	394.4	414.0 412.2 409.4 407.9	8.3	4.1	3.6		394.3	4.8	7.5	410.2 411.9 415.4 419.7	
			34° 20° 15° 7°	3.0		2.3		3.6	5.0	9.0	15° 20° 33° 50°	
+88			406.0 403.8		4.5	3.7		394.4	5.5	8.0	410.7 417.2 416.2	Void - See page 48
			40° 12°			2.4		3.6	5.0	9.0	16° 38° 50°	
131	390.3	395.1	415.7 414.0 411.5 407.0	7.0	4.8	3.8		394.6	6.2	8.4	413.2 418.8 417.6	
			40° 20° 11° 5°	3.0		2.5		3.7	5.0	9.0	18° 37° 50°	
+25	390.3	394.8	421.5 420.5 414.6 414.6 407.1	11.1	4.5	3.6		394.6	5.5	8.3	416.3 421.3 420.7	
			35° 25° 15° 11° 5°	3.0		2.0		3.6	5.0	9.0	21° 38° 50°	
+50	390.4	396.3	427.7 424.2 417.4 417.1 407.1	11.4	5.9	4.5		394.5	6.6	8.6	418.5 421.4 423.9 423.5	
			40° 30° 17° 12° 5°	3.0		2.5		3.6	5.0	9.0	22° 30° 40° 50°	
+75	390.4	395.4	429.8 427.9 418.7 418.7 408.5	10.1	5.0	3.8		394.7	5.3	8.7	422.0 425.9 428.4	
			40° 22° 17° 13° 6°	3.0		2.0		4.0	5.0	9.0	24° 43° 50°	

Ch. 4 H.R.

12° Width - Vertical Slopes

Sta.	Grade	Elev.	Dist.	L.C.	℄		R.C.	End Area	Av. End Area	Cu. Yds.
132	390.4	395.3	428.8 427.4 420.5 420.1 407.1	9.7	4.9	4.5 / 2.0	394.6 / 4.0 6.6 / 5.0 9.0 / 7.0	424.1 427.8 427.3		
			40° 30° 20° 14° 6°	3.0				26° 42° 50°		
+25	390.4	395.3	428.5 425.3 421.1	8.8	4.9	3.9 / 2.0	394.7 / 3.6 6.1 / 5.0 8.2 / 7.0	423.7 427.5 428.1		
			40° 30° 15°	3.0				25° 36° 50°		
+50	390.4	393.7	403.0 400.7	4.9	3.3	3.3 / 2.0	394.9 / 3.8 6.0 / 5.0 8.6 / 7.0	423.6 425.2 429.0 428.0		
			40° 20°	3.0				22° 30° 40° 50°		
+75	390.5	395.3	426.8 426.6 421.0 408.0	9.2	4.8	4.8 / 2.0	395.2 / 3.8 6.5 / 5.0 9.1 / 7.0	423.2 428.7 428.5		
			40° 21° 17° 5°	3.0				22° 38° 50°		
133	390.5	395.5	429.1 426.3 421.1 420.0 408.0	8.0	5.0	4.1 / 2.0	394.7 / 3.5 6.6 / 5.0 9.4 / 9.0	422.2 428.0 427.4		
			40° 30° 20° 14° 6°	3.0				20° 38° 50°		
+25	390.5	394.7	428.6 425.0 419.5 418.5	9.5	4.7	3.6 / 2.0	394.5 / 3.2 5.7 / 5.0 8.7 / 9.0	421.3 427.5 426.1		
			40° 30° 20° 12°	3.0				20° 40° 50°		

Void see page 48

CH. L.H.

12° Width - Vertical Slopes

Sta.	Grade	Elev.	Dist.	L.C.	℄	R.C.	End Area	Av. End Area	Cu. Yds.
⊥ +50	390.5	393.9	428.6 / 417.5 / 416.4	408.4 / 9.9 / 3.0	3.4	3.5 / 1.5	394.5 / 3.2 / 5.0 / 7.1 / 9.0	417.5	423.6	422.6
			40° 20° 12°	6°				18°	39°	50°
+75	390.5	393.2	429.4 / 418.7 / 415.2 / 414.5	410.8 / 9.0 / 3.0	2.7	2.7 / 1.6	394.5 / 3.0 / 5.1 / 8.2 / 9.0	418.8	415.1	418.3	419.6
			40° 30° 20° 15°	8°				17°	21°	30°	43°
(134)	390.5	393.5	416.9 / 412.8 / 411.0	417.0 / 407.0? / 10.3 / 3.0	3.0	3.0 / 1.6	394.3 / 3.8 / 3.7 / 5.0 / 5.4 / 9.0	407.7	411.6	415.2	416.5
			35° 25° 9°	5°				19°	18°	30°	40°
+25	390.6	396.0	411.7 / 407.7 / 409.7	408.3 / 7.3 / 3.0	5.4	5.0 / 1.6	394.4 / 3.6 / 4.8 / 5.0 / 5.6 / 9.0	406.4	411.1	413.0
			30° 20° 10°	7°				13°	19°	40°
(+50)	390.6	394.7	407.0 / 406.0 / 404.4	8.8 / 3.0	4.1	3.8 / 1.7	394.0 / 3.5 / 3.7 / 5.5 / 5.7 / 9.0	404.8	406.9	407.8
			30° 20° 7°					15°	19°	40°
+77.42	390.6	397.9	402.7 / 402.2 / 401.8	9.5 / 8.8 / 3.0 / 1.7	7.3	2.5 / 1.5	393.1 / 3.6 / 2.1 / 5.2 / 2.0 / 7.4 / 3.0 / 9.0	399.8	401.7	402.6
			30° 20° 7°					14°	20°	40°

Void see page 98

C.L.H.H.

End Area | Cu. Yds.

+92.4	390.1	396.6	398.8	398.5	20°	7°	7.5 / 3.0	6.5	5.3 / 2.0	2.3 / 3.0	1.8 / 5.5	392.2 / 6.8	2.0 / 9.0	396.1 / 14°	399.2 / 20°

End of 12° width thru deep cut.

Void

134 +92.4	390.1	396.6	7.4 / 2.76	6.5	3.0 / 2.41	28.32		
135+07.3	388.6	395.1	8.0 / 2.91	6.5	5.5 / 2.41	32.12	30.22	

Contd. on Page 5A - This Book

Ch. L.H.H.

Cross-sections Thru Deep Cut Sta 129+00 to Sta 135+00. According to Revised ℄.

7/31/30
Simpson
Leeky
Bliss

Final X Sections in book #291 page 40

clear and warm

B.M # 396.87

			Lt cut	℄ Cut	R Cut	
7.20	404.07					
Grade	℄ Elev.					
129+00	~~3918~~ d 3926		0 1/5 0 1/5	d 0.8	12/25 14/50	Standard Trench at this point.
129+15	~~3920.00~~ 394.00		3 0/5 2 1/5	d 2 0	1 1/2 5 0/5 0	Standard Trench at this point.
129+25	~~3920.8~~ 395.4		2 9/5 3 0/2 5	3.4	3 0/2 5 2 1/5 0	Fill 0 1/7 8 Edge of W.S. Pipe Standard Trench at this point.
129+30	~~3924.05~~ 396.8		2 5/5 3 6/2 5	4.8	4 0/2 5 2 4/5 0	Fill 0 4/7 0 Edge of W.S. Pipe Standard Trench at this point
129+50	392.2	394.7	3 6/10 0 1 6/5 0 2 5/7 0	2 5	0 2/5 0 F 0/6 0	
129+75	392.2	396 1/2	8 2/13 5 8 0/11 0 7 1/2 5 1/2	4 5	0 0/3 8 Fill 1 1/5 0	
130+00	392.2	400.6	13 8/13 1/2 12 2/11 8	9 4/5 8	8.4 0 0/5 0	
			0.13	403.94		
	10.54	414.48				

5' Bottom on left side & and 6' vertical + 1/4:1 slope

	New Pipe Grade	℄ El.	Lt.	℄ cut	Rt.
130+25	392.25	401.3	$\frac{17^{0}}{16^{5}}$ $\frac{14^{8}}{12^{4}}$ $\frac{11^{6}}{6^{4}}$ $\frac{11^{0}}{1^{5}}$	9.0	$\frac{0^{9}}{3^{0}}$ $\frac{0^{0}}{5^{5}}$ Edge W.S Pipe
130+50 V	392.2	399.9	$\frac{20^{9}}{24^{0}}$ $\frac{19^{5}}{16^{0}}$ $\frac{15^{7}}{9^{0}}$ $\frac{15^{2}}{7^{2}}$ $\frac{14^{5}}{3^{0}}$ $\frac{13^{5}}{1^{0}}$	7.1	$\frac{2^{0}}{3^{0}}$ $\frac{1^{0}}{5^{5}}$ Edge W.S Pipe
130+70 V	392.3	400.6	$\frac{20^{4}}{20^{2}}$ $\frac{17^{5}}{12^{0}}$ $\frac{16^{6}}{7^{2}}$ $\frac{15^{0}}{3^{0}}$	8.3	$\frac{3^{0}}{3^{0}}$ $\frac{1^{2}}{5^{5}}$ Edge W.S Pipe
130+86	392.3	396.4	$\frac{11^{6}}{18^{0}}$ $\frac{11^{3}}{13^{0}}$ $\frac{11^{2}}{8^{0}}$ $\frac{6^{8}}{5^{2}}$	4.1	$\frac{3^{4}}{1^{0}}$ $\frac{2^{2}}{5^{5}}$ Edge W.S Pipe
131+00	392.3	400.8	$\frac{24^{6}}{20^{0}}$ $\frac{22^{5}}{16^{0}}$ $\frac{19^{2}}{8^{2}}$ $\frac{19^{2}}{6^{0}}$ $\frac{14^{5}}{1^{5}}$	8.5	$\frac{5^{0}}{1^{0}}$ $\frac{1^{8}}{5^{5}}$ Edge W.S Pipe
T.P.	11.74	426.04	0.18	41430	
131+50	392.3	404.8	$\frac{25^{2}}{15^{0}}$ $\frac{24^{1}}{13^{2}}$ $\frac{24^{2}}{9^{4}}$ $\frac{19^{0}}{3^{4}}$ $\frac{15^{0}}{1^{5}}$	12.5	$\frac{3^{2}}{4^{0}}$ $\frac{2^{4}}{5^{5}}$ Edge W.S Pipe

5' Bottom on Left side & and 6' vertical + ¼:1 slope

7/31/30
Simpson
Lee Ky
Bliss

Part cloudy in P.M.
Warm

	New Pipe Grade	Lt.					& Cut.	Rt.	
132+00	392.4	30.3 / 20.0	28.5 / 16.0	28.0 / 10.5	27.5 / 9.0	19.3 / 6.5	14.7 / 2.0	6.9	3.1 / 1.0	2.6 / 4.0
	90.9									
132+25	392.4	29.9 / 20.0	28.7 / 16.0	26.0 / 11.0	21.7 / 8.9	14.4 / 2.0		8.0	3.5 / 2.0	1.9 / 5.5
132+47	392.4			7.7 / 15.0	5.0 / 5.0			2.7	1.4 / 4.0	1.3 / 5.5
132+73	392.4	30.8 / 21.0	29.5 / 16.0	26.0 / 10.0	20.4 / 7.0	16.8 / 2.0		10.4	2.9 / 2.0	2.0 / 5.5
133+00	392.5		30.6 / 20.0	28.4 / 16.0	21.8 / 9.0	16.7 / 2.5		6.7	3.1 / 4.0	2.5 / 5.5

Simpson
Leeky
Bliss
7/31/30

Clear and warm

	New Pipe Grade	℄ Elev.	Lt.			℄ cut	Rt.	
133+50	392.5	27 7/20	25 0/16	24 1/9 5/	23 5/7 5/	16 6/2 5/	8 4/	2 0/2 0	1 5/5 5/
134+00	392.5	20 0/20 0	19 6/16 0	19 0/8 5/	18 7/4 0		14 0/	0 2/4 0	0 7/5 5/
134+17	392.5		18 0/20 0	17 8/16 0	17 4/7 9/		13 0/	3 5/1 5/	2 7/3 5/ 1 0/5 5/
134+30	392.6	16 7/20 0	16 4/16 0	16 6/7 6/	13 8/3 0	7 7/2 0	5 5/		1 7/5 5/
134+67 63	392.6		12 0/15 0	11 8/12 0	11 2/6 3/		8 9/	8 4/2 0	1 7/4 0	0 7/5 5/
134+82 64		10 5/14 5/	9 1/12 0	8 8/5 7/	8 6/3 0		7 3/	6 3/4 0	2 7/4 5/	0 7/8 0

5' Bottom on left side & and 6' vertical + ¼:1 slope.

Station	Grade	Lt cut			& Cut	Rt. Cut		
134+97	390.57	7.0 / 15.0	6.9 / 10.0	7.2 / 5.3	7.4	4.4 / 6.5	1.0 / 7.5	1.9 / 10.3
135+12	388.05		7.9 / 10.0	7.6 / 5.4	7.6	7.3 / 2.0	5.3 / 6.0	2.9 / 10.0 / 2.6 / 13.5
135+35	382.8		10.3 / 10.0	9.4 / 5.8	10.0	10.4 / 6.5	6.7 / 11.0	6.0 / 15.0
135+50	380.3		8.3 / 10.0	8.3 / 5.6	8.9	8.5 / 5.6	7.0 / 11.5	6.1 / 15.0
135+57	378.9		5.1 / 10.0	5.3 / 5.0	5.8	7.3 / 6.5	6.4 / 13.5	7.5 / 18.0
135+68	377.45		3.0 / 10.0	4.3 / 5.0	6.0	6.7 / 5.0	4.0 / 9.5	3.7 / 17.5
135+77	374.9		3.8 / 10.0	4.0 / 5.0	4.4 / 2.4	4.7	5.0 / 24	5.8 / 7.0

	Grade	Lt Cut		℄ Cut	Rt Cut	
135+85	373.13	8 8/5	9 2/25	9	9 2/25	9 3/5
135+87 88	372.5			9 5		

Contd. from Page 47 - This Book.

							End Area	Cu. Yds
135+07.3	388.6	395.1	8.0 / 2.9	6.5	5.5 / 2.4	32.12		30.22 Brt. forward from page 47
			5482				33.22 · 18.21 ·	
+22.1	386.1	393.2	7.6 / 2.8	7.1	6.4 / 2.5	34.32		
			4778				42.62 · 20.36 ·	
	Void							
+35	383.4	393.2		9.8		50.91		
							45.85 · 25.47 ·	
+50	380.3	388.5		8.2		40.79		
							34.40 · 8.92 ·	
+57	378.9	384.7		5.8		28.01		
							30.77 · 10.26 ·	
+66	377.0	383.9		6.9		33.52		
							26.90 · 8.97 ·	
							Cmptd. T.M.M.	
							Chd.	122.41 ·

CH. ENG.

~~+75~~	~~375.2~~	~~379.4~~			~~4.2~~	
135 +77	374.8				4.4 4.7	50
					2.41	2.41
+83	373.5	382.2			8.7	
			.1815			
+87.9	O.K 372.5	381.7			9.2	
			.3370			
+97	371.0	381.3			10.3	
			.2111			
136 +02.7	370.0	379.6			9.6	
			.5518			
+17.6	368.5	373.5			5.0	

Ch. L.H.H.

End Area — Cu. Yds

Continued from Book 291 p. 43

20.29

22.70 — 33.27 — 7.39

32.06 — 9.50

43.83

45.40 · 8.24

46.96

50.65 · 17.07

54.35

51.96 · 10.97

49.57

36.86 · 20.34

24.15

12.08 · 6.71

Compld. T.M.M.

Chd. A.C.L. — 70.72 — 42.83

Compld + Chd A.C.L.

					End Area	Cu. Yds.
+32.6	368.0	368.0		0.0	0	
			1.4518			
39 2					00	
+71.8	368.0	368.0		0.0	0	
			.3037			
					3.62	1.10
+80	368.0	369.5		1.5	7.24	
					17.62	19.58
137+10	368.9	374.7		5.8	28.01	
					28.98	16.10
+25	370.3	375.5		6.2	29.95	
			.5482			
					30.70	16.83
+39.8	371.6	378.1		6.5	31.45	
			.4518			
					31.96	14.44
					Compted. T.M.M.	
					Chd. A.C.L.	68.05
						Compted. & Chd. A.C.L.

	+52	373.0	379.7	6.7	
	+65	374.6	380.2	5.6	
			.5630		
	+80.2	376.4	382.0	5.6	
			.4742		
	+93	377.6	382.2	4.6	
138	+10	379.1	384.3	5.2	
	+25	379.6	385.0	5.4	

Ch. & H.H.

End Area	Cu. Yds
32.48	
	29.76 · 14.33
27.05	
	27.05 · 15.23
27.05	
	24.63 · 11.68
22.22	
	23.67 · 14.90
25.12	
	25.60 · 14.22
26.08	
	24.39 · 13.55
Compt'd. T.M.M.	
Chd. A.L.L.	83.91 ✓
	Compt'd & Chd. A.L.L.

+40	380.0	384.7		4.7
+90	380.1	385.9		5.8
139+15	380.1	385.6		5.5
+33	380.1	387.0		6.9
+50	380.2	387.6		7.4
+62	380.2	386.9		6.7

End Area	Cu. Yds
22.70	
	25.35 · 46.95 ·
28.01	
	27.29 · 25.27 ·
26.57	
	30.05 · 20.03 ·
33.52	
	34.87 · 21.95 ·
36.22	
	34.35 · 15.27 ·
32.48	
	28.80 · 29.87 ·

Compt'd. T.M.M.
Chd. A.C.L.

159.34 ·

Compt'd & Chd. A.C.L.

					End Area	Cu. Yds
+90	380.2	385.4	5.2		25.12	
						27.78 · 10.29 ·
140	380.2	386.5	6.3		30.45	
						28.02 · 15.57 ·
+15	380.2	385.5	5.3		25.60	
						26.08 · 9.66 ·
+25	380.3	385.8	5.5		26.57	
						25.60 · 23.70 ·
+50	380.3	385.4	5.1		24.63	
						26.08 · 24.15 ·
+75	381.0	386.7	5.7		27.53	
						27.53 · 25.49 ·
	Ch. 2+11.				Comptd. M.M.	
					Chd. A.L.L.	108.86
						Comptd + Chd. A.L.L.

			Additional End Area	Ave. Area				
141	381.6	387.4			5.7			
+25	382.3	387.1			4.8			
+33	382.6	390.0		7.6 / 2.8	7.4	6.0 / 2.4		
+50	383.0	390.6	14.56	14.00 ~~13.50~~	7.6			
142	384.3	391.1	13.44 ~~12.44~~	13⅓ 44 ~~12.44~~	6.8		33.14	30.68 · 12.44 ~~11.62~~
+25	385.0	391.9	13.44 ~~12.44~~	6.8 / 2.6 ~~6.72~~ 6.7	6.9	6.8 / 2.6	33.28	46.97 · 34.80 · 4.98 ~~4.60~~
							Compld. M.M. Chd. A.C.L.	Comptd. & Chd A.C.L. 185.26 · ~~41.12~~ 43.35

Note. Marsh excavated 2' wider from 141+0 to 142+45 to provide for drain tile from Tunnel #1 (Vertical cuts)

~~note see sta 141+50~~ Apparently trench was one ~~foot~~ wider on each side without change of slope from original section.

D.T.N

No!

Excavation tapers from a 4.82 bottom at 142+25 to 7.0 bottom and ½:1 slopes at 142+45

			Additional End Area	Ave. Area		End Area	Cu. Yds	Additional cu. yds
141	381.6	387.4			5.7	27.53		
							25.35 · 23.47	
+25	382.3	387.1			4.8	23.18		
							28.87 · 8.55	
+33	382.6	390.0		7.6 / 2.8	7.4	34.56		
							35.94 · 22.63	
+50	383.0	390.6	14.56		7.6	37.33		
				14.00 / ~~13.50~~			35.17 · 65.13 · ~~25.00~~ 25.93	
142	384.3	391.1	~~12.44~~ 13.44		6.8	33.00		
				~~12.44~~ 13.44			33.14 · 30.68 · ~~11.52~~ 12.44	
+25	385.0	391.9	~~12.44~~ 13.44	6.8 / 2.6	6.9	33.28		
				~~6.72~~ 6.7		Compld. To M.M. Chd. A.C.L.	46.97 · 34.80 · ~~4.60~~ 4.98	
						Compld. & Chd A.C.L.	185.26 · ~~41.12~~ 43.35	

Excavation tapers from a 4.82 bottom at 142+25 to 7.0 bottom and ½:1 slopes at 142+45

7° Bottom - ½:1 Slopes

Feb. 7. 1930 Converse - Notes
Clear + Warm Hill - Grades
Elliott - "
Simpson - Rod.

Sta.	Grade	Elev.	Additional End Area	L. C.		℄	R. C.		End Areas Sq. Ft.	Cu. Yds
142+45	385.5	390.0	0.0	9.5 / 8.2	7.7 / 6.0	4.5	6.0 / 4.0	6.5 / 6.7	60.67	
										77.85
+75	386.3	392.6		11.0 / 9.0		6.3	6.3 / 6.6		79.42	
										78.58
143	387.0	394.2		12.7 / 9.8		7.2	6.3 / 3.0	6.1 / 6.5	90.31	
										84.15
+25	387.1	394.6		12.1 / 9.5		7.5	6.5 / 3.0	6.5 / 6.7	91.45	
										85.17
+50	387.2	394.4		12.7 / 9.8		7.2	6.7 / 2.0	6.7 / 6.8	92.51	
										58.03
+66	387.3	395.4		11.9 / 9.4	11.1 / 5.0	8.1	6.8 / 6.9		103.34	
										78.77

Compd. T.M.M. & A.C.L.
Chd. A.C.L. 462.55

7° Bottom – ½:1 Slope

							End Areas Sq. Ft.	Cu. Yds
+86	387.4	397.2	10.0 / 8.5	9.8	9.5 / 2.0	7.6 / 7.3	109.33	
								54.47
144	387.4	396.3	10.4 / 8.7	8.9 / 5.0	8.9	9.0 / 2.0	9.0 / 5.0	8.3 / 7.6	100.74	
								65.63
+18	387.5	394.8	11.4 / 9.2	11.5 / 7.5	7.3	7.3 / 7.1			96.17	
								132.74
+48	387.7	399.6	13.3 / 10.1	13.4 / 7.0	11.9	7.6 / 7.3			142.78	
								164.98
+77	387.8	399.8	17.0 / 12.0	14.8 / 7.0	14.0 / 2.0	12.0	8.1 / 7.5		164.43	
								148.08
145	387.9	401.1	17.0 / 12.0	16.8 / 7.0	15.0 / 2.0	13.2	7.9 / 7.5		183.28	

Compld. T.M.M. A.C.L. 1023.6

Chd. A.C.L. 668.26

7= Bottom - 1/2 : 1 Slope

								End Areas Sq. Ft.	Cu. Yds
+16	388.0	401.6		14.3 / 10.6	14.3 / 4.0	13.6	7.5 / 7.3	162.18	
			.8296						132.89
+38.4	388.1	398.8		19.7 / 13.3	15.2 / 7.0	10.7	8.0 / 7.5	158.18	
			.3445						161.22
+57	388.1	407.7		21.5 / 14.2		19.6	17.7 / 6.5	14.0 / 10.5	309.79
									115.35
+66	388.2	409.7		24.4 / 15.7	23.7 / 8.5	21.5	20.7 / 6.5	16.9 / 12.0	382.15
									102.17
+73	388.2	411.5		22.2 / 14.6	23.3 / 4.0	23.3	22.8 / 3.0	20.7 / 12.0	19.6 / 13.3	406.20
									151.60
+83.5	388.2	408.0		25.2 / 16.1	20.8 / 4.0	19.8	19.6 / 4.0	21.2 / 14.1	373.22
			17.90						220.83

EQUATION
145+93.51 =
145+86.11 CA L.M.A.

Computd. T.M.M. & A.C.L.
Chd. A.C.L. 884.06

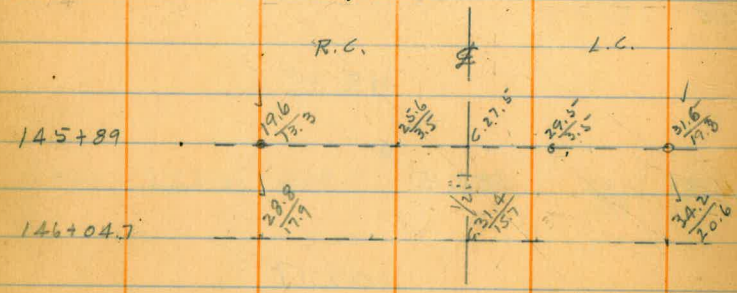
7º Bottom - 1/2 : 1 Slope

End Areas Sq. Ft. / Cu. Yds

551.16
× 549.69

145+89 388.3' 415.8 ↓ 31.6/19.3 29.5/3.5 27.5 25.6/3.5 19.6/13.3

145+93.06 So. Portal Tunnel #1.



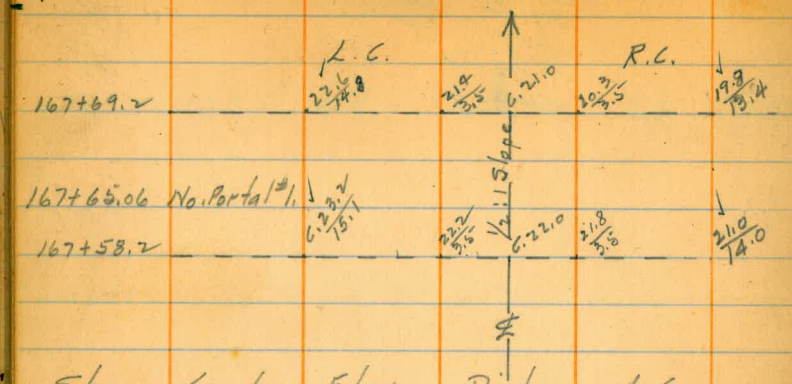
5673.19 Cu. Ft.
G.W.C.
L.H.H.

210.12
G.W.C.
L.H.H.

Sec 145+96.85 Curby Fin. 0/20 L. cut 14.5/12.3 L. 13.75/0 cut 12.7/10.8 R. 0/15.6 R. A = 402.87 Ft²

C.G. L.H.H.

7° Bottom – ½ : 1 Slopes.



Sta.	Grade	Elev.	Dist.	L.C.	℄	R.C.
167+69.2	390.4	411.4		22.6 / 14.8	21.4 / 3.5 21.0	20.3 / 3.5 19.8 / 13.4
			11.8'			
+81	390.4	411.0		21.5 / 14.2	21.1 / 8.0 20.6	19.3 / 5.0 19.4 / 11.0 18.9 / 13.0
			11.0'			
+92	390.4	410.0		21.2 / 14.1	20.8 / 7.0 19.6	18.6 / 6.0 17.8 / 12.4
			8.'			
168	390.4	410.0		21.3 / 14.1	20.9 / 11.0 19.6	19.1 / 12.0
			15'			

End Areas Sq. Ft. / Cu. Yds

2463.29 Cu. Ft.
G.W.C.
& M.H.

91.23
G.W.C.
& M.H.

367.87 ~~29+.74~~

Av. 358.04

156.46
107.10

348.21 ~~198.40~~

Av. 339.11

138.15
107.64

330.01

96.71

322.80

Av. 318.84

Comptd. M.M.
Chd. A.C.L. 177.13

659.68

7° Bottom - ½ : 1 Slope

End Areas Sq. Ft. | Cu. Yds

+15	390.4	410.2		21.8 / 14.4		19.8	17.0 / 5.0	15.9 / 7.0	16.4 / 11.7	314.88	
			23					9.0			250.08
										293.585	219.47
+38	390.4	407.5		20.2 / 13.6	19.1 / 6.0	17.1	14.7 / 8.0	15.6 / 11.3		272.29	
			4407 2378								247.19
											210.14
+61.8	390.4	409.0		20.3 / 13.7	19.7 / 7.0	18.6	17.2 / 5.0	13.5 / 10.2		288.62	
			2444								135.28
+75	390.4	407.9		19.0 / 13.0	18.1 / 4.0	17.5	16.2 / 5.0	13.7 / 10.3		264.81	
											108.36
+87	390.4	405.5		18.2 / 12.6	17.1 / 7.0	15.1	12.7 / 8.0	12.7 / 9.8		222.79	
											154.97
											133.58
169+06	390.4	404.2		17.6 / 12.3	16.4 / 6.0	13.9 / 2.0	13.8	13.7 / 4.0	14.6 / 10.8	215.89 218.81	

Compld. T.M.M. 152.63
Chd. A.C.L. A.C.L.
1047.91

7º Bottom - ½ : 1 Slope

								End Areas Sq. Ft.	Cu. Yds
+25	390.4	405.5	14.9 / 11.0	14.5 / 3.0	15.1	15.3 / 9.0	15.8 / 11.4	217.84	
									199.98
+50	390.4	405.6	14.8 / 10.9		15.2	14.0 / 10.5		213.04	
									197.44
+75	390.4	405.4	14.5 / 10.7		15.0	14.9 / 10.9		213.45	
								Ar 206.6	244.89
									~~304.14~~
170+07	390.4	404.6	13.3 / 10.2		14.2	14.7 / 7.0	14.7 / 10.9	199.79	
									72.93
+18	390.4	402.5	8.4 / 7.7		12.1	14.5 / 6.0	14.7 / 10.9	158.24	
									102.90
+38	390.4	400.4	8.8 / 7.9	9.3 / 5.0	10.0	10.6 / 5.0	11.0 / 9.0	119.59	

Comptd. TM.M. 121.17

Chd. Comptd. Chd. A.C.L.

938.81

7° Bottom - ½ : 1 Slope

End Areas Sq. Ft. | Cu. Yds

+72	390.3	397.1		6.9 / 7.0	7.5 / 3.0	6.8	6.6 / 6.8	72.85
								30.29
+87	390.3	394.3		3.7 / 5.4		4.0	4.3 / 5.7	36.20
			.1536					5.56
+95.3	390.3	390.3				0.0		0
			.1056					
171+01	390.3	390.3				0.0		0
								2.92
+07	390.3	393.4		3.0 / 5.0		3.1	3.1 / 5.1	26.33
								8.17
+14	390.3	394.1		3.6 / 5.3		3.8	5.1 / 6.0	36.70
			20.0					

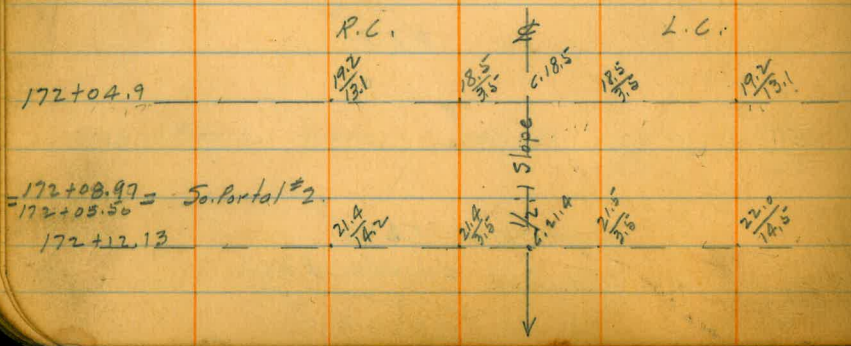
Compld. T.M.M. 54.70

Chd. A.C.L. Compld. & Chd. A.C.L. 101.64

7± Bottom - ½:1 Slope.

End Areas Sq. Ft. | Cu. Yds.

+34	390.3	399.7		10.0 / 8.5	9.4	9.1 / 8.0	110.98		
			14.0				111.63	57.88	
+48	390.3	399.8		9.5 / 8.3	9.5	9.6 / 8.3	112.28		
			18.0				146.08	97.39	
+66	390.3	403.2		13.0 / 10.0	12.9	13.6 / 5.0 ; 13.8 / 10.4	179.87		
			15.0				196.95	109.42	
+81	390.3	405.1		15.0 / 11.0	14.8	14.7 / 10.9	214.03		
			.1885² 23.9				260.11	230.25	
172+04.9	390.3	408.8		19.2 / 13.1	18.5	18.5 / 3.5 ; 19.1 / 13.0	306.18	Chd. TM.M	



2080± c.f.

2042.18
G.W.C.
L.M.H.

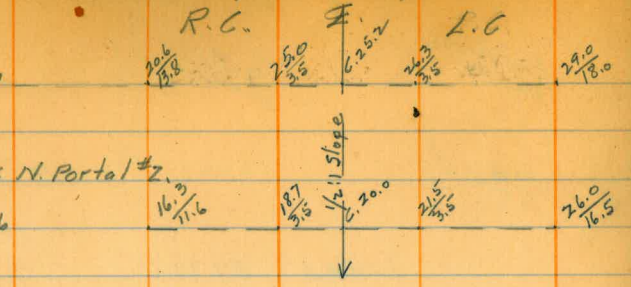
Chd. TM.M.

~~7[illegible]~~

75.64
G.W.C.
L.M.H.

570.58

7° Bottom - ½ : 1 Slopes.



						End Area	Av. End Area	Cu. Yds			
192+12.0											
192+20.5 N. Portal						2900± cf		~~701.13~~			
192+24.6						2848.41 Cu. Ft.		105.50			
						G.W.C.		G.W.C.			
						L.H.H.		L.H.H.			
192+24.6	388.3	408.3		26.0 / 16.5	21.5 / 3.5	20.0	18.7 / 3.5	16.3 / 11.6	355.84		
			11.4							300.18	Chd. Tm. m. 126.87
+36	388.2	403.7		21.5 / 14.2	20.6 / 11.0	15.5	12.4 / 8.0	12.4 / 9.7	245.12		
			12.0							207.5-0	Chd. Tm. m. 92.27
+48	388.0	399.6		15.8 / 11.4		11.6	12.0 / 9.5		169.87		
			18.0							151.90	Chd. Tm. m. 101.27
+66	387.6	398.7		11.5 / 9.2	11.1 / 7.0	11.1	10.8 / 4.0	9.4 / 8.2	133.92		
			10.2							101.63	Chd. Tm. m. 38.39
+76.2	387.5	394.2		7.2 / 7.1		6.7	6.2 / 6.6		69.35		
			237.0 / 12.8								20.49 / 484.74
+89	386.7	388.7		3.0 / 5.0		2.0	1.5 / 4.2		17.08		
									Chd. Tm. m.		

Trench tapers from 7' bottom at 192+89 to Standard 4.82 Trench at 193+06.1

Sta.	Grade	Elev.	Dist.	L.C.	℄	R.C.	End Area Sq. Ft.	Cu. Yds
193+06.1	385.7	387.5		1.8 / 2.41	1.8	1.8 / 2.41	8.69	8.16
			.7					14.49 · 10.14 ·
+25	383.2	387.2		4.0 / 2.4	4.0	4.8 / 2.4	20.29	
			.4001					27.30 · 10.92
+35.8	381.7	388.6		6.0 / 2.4	6.9	8.4 / 3.0	34.31	
			.7482					36.97 · 27.66 ·
+56	377.3	385.3		8.0 / 2.9	8.0	8.0 / 2.9	39.62	
			.3407					39.62 · 13.50 ·
+65.2	375.5	383.5		8.0 / 2.9	8.0	8.0 / 2.9	39.62	
			.5853					49.10 · 28.74 ·
+81	370.8	382.1		11.4 / 3.65	11.3	9.6 / 3.3	58.58	
								59.32 · 28.56 ·

Compld. T.M.M. Compld. & Chd. A.L.L.
Chd. A.L.L.

119.52 / 8

							End Areas Sq. Ft.	Cu. Yds.	Cu. Yds.
+94	367.0	378.2		12.8 / 4.1	11.2	9.2 / 3.2		60.06 ✓	
			4148. 4111						5650. 23.44
194 +05.2 ✓	363.2 ✓	373.0		12.0 / 3.9	9.8	8.8 / 3.1		52.93 ✓	
			1.0668 ✓						32.98. 35.18
+34	354.7	357.4			2.7			13.04 ✓	
									15.94. 9.45
+50	351.1	355.0			3.9			18.84 ✓	
			4927 ✓						26.72. 13.16
+63.3	348.1	355.4			7.1			34.59 ✓	
			5444 ✓						37.40. 20.36
+78	345.9	354.0			8.1			40.21 ✓	
									31.69. 9.39

Compted. TWM Compted & Chd. A.C.L. ✓
Chd. A.C.L 110.98

					End Areas Sq. Ft.	Cu. Yds.	Cu. Yds.
+86	344.7	349.5		4.8	23.18 ✓		
			.2555 ✓			26.82	6.85
+92.9	343.7	350.0		6.3	30.45 ✓		
			.2630 ✓			34.75	9.14
195	343.1	351.0		7.9	39.05 ✓		
			.8045 ✓			40.52	34.22
+22.8	341.2	349.6		8.4	41.99 ✓		
			.8222 ✓			33.56	27.59
+45	340.2	345.4		5.2	25.12 ✓		
						28.80	5.33
+50	340.0	346.7		6.7	32.48 ✓		
						35.76	9.27

Compt'd. T.M.M. Compt'd & Chd. A.C.L.
Chd. A.L.L. 92.40 ✓

				End Areas Sq. Ft.	Cu. Yds
+57	340.0	347.9	7.9	39.05	
					39.05 · 26.03 ·
+75	340.0	347.9	7.9	39.05	
					42.37 · 15.69 ·
+85	340.7	349.7	9.0	45.69	
					46.97 · 17.40 ·
+95	341.3	350.7	9.4	48.26	
					38.86 · 27.35 ·
196+14	342.6	348.7	6.1	29.46	
					27.77 · 37.03 ·
+50	344.9	350.3	5.4	26.08	
					25.12 · 23.26 ·

Comptd. T.M.M. Comptd & Chd. A.C.L.
Chd. A.C.L. 146.74

					End Areas Sq. Ft	Cu. Yds
+75	346.5	351.5		5.0	24.15 ✓	
						25.36 · 23.48 ·
197	349.0	354.5		5.5	26.57 ✓	
						36.13 · 46.84 ·
+35	352.5	361.5		9.0	45.69 ✓	
						37.34 · 27.66 ·
+55	354.5	360.5		6.0	28.98 ✓	
						29.96 · 22.19 ·
+75	356.5	362.9		6.4	30.95 ✓	
						31.20 · 28.89 ·
198	357.6	364.1		6.5	31.45 ✓	
						29.49 · 27.30 ·

Computed T.M.M. Computed & Chkd. A.C.L.
Chkd. A.C.L

176.36 ✓

					End Areas Sq. Ft.	Cu. Yds
+25	358.7	364.4		5.7	27.53	
					27.29	25.27
+50	359.7	365.3		5.6	27.05	
					27.05	25.05
+75	360.8	366.4		5.6	27.05	
					26.32	24.37
199	361.8	367.1		5.3	25.60	
					26.08	24.15
+25	362.9	368.4		5.5	26.57	
					28.26	26.17
+50	364.0	370.2		6.2	29.95	
					29.71	55.02

Cmptd. T.M.M. Cmptd & Chd. A.C.L.
Chd. A.C.L. 180.03

					End Areas Sq. Ft.	Cu. Yds
200	367.1	373.2		6.1	29.46 ✓	
						30.45 · 56.39 ·
+50	370.2	376.7		6.5	31.45 ✓	
						31.96 · 59.19 ·
201	373.4	380.1		6.7	32.48 ✓	
						33.54 · 18.63 ·
+15	374.4	381.5		7.1	34.59 ✓	
						32.52 · 24.09 ·
+35	375.6	381.9		6.3	30.45 ✓	
						28.26 · 15.70 ·
+50	376.5	381.9		5.4	26.08 ✓	
						24.15 · 28.62 ·

Compt'd. M.M. Compt'd & Chd. A.C.L.
Chd. A.C.L. 202.62 ✓

			Additional End Area.	Average	
+82	377.9	382.5	9.20		4.6
				9.70	
202+10	379.2	384.3	10.20		5.1
				9.80	
+43	380.6	385.3	9.40		4.7
				11.09	
+50	380.9	387.3	12.78		6.4
				12.09	
+75	382.0	387.7	11.40		5.7
				11.10	
203	382.0	387.4	10.80		5.4
				10.90	

Note:
Ward excavated 2' wider from 202+10 to 204+18 to provide for drain tile from Tunnel #3 (Vertical Cut.)

Overbreak Side?

Normal

26.80 · 24.81 · 10.28

26.08

26.32 · 48.79 · 20.19

Compt'd. M.M. Compt'd. & Chd. A.L.L.

Chd. A.L.L. 160.79 ✓ 66.53 ✓

			Additional End Area	Average	
+82	377.9	382.5	9.20		4.6
				9.70	
202+10	379.2	384.3	10.20		5.1
				9.80	
+43	380.6	385.3	9.40		4.7
				11.09	
+50	380.9	387.3	12.78		6.4
				12.09	
+75	382.0	387.7	11.40		5.7
				11.10	
203	382.0	387.4	10.80		5.4
				10.90	

End Areas Sq. Ft	Cu. Yds	Additional Cu. Yds
22.22		
	23.42 ·	24.29 · 10.01
24.63		
	23.67 ·	28.93 · 11.98
22.70		
	26.82 ·	6.95 · 2.88
30.95		
	29.24 ·	27.07 · 11.19
27.53		
	26.80 ·	24.81 · 10.28
26.08		
	26.32 ·	48.79 · 20.19

Compt'd. T.M.M. Compt'd. & Chd. A.C.L.

Chd. A.C.L. 160.79 ✓ 66.53 ✓

			Additional End Area		
+50	382.0	387.5	11.00		5.5
				13.21	
204	382.0	390.5	15.42 To be checked		8.5
				15.16	
+12	382.0	389.9	14.89		7.9
				7.44	

Trench tapers from 4.82 at 204+12 to 7= at 204+18.7.

+18.7 Start of 7.0 Trench. 0.0

Contd. in Book #287. Page 2.

End Areas Sq. Ft	Cu. Yds	Additional Cu. Yds.
26.57		
	34.58 · 64.04 · 24.46	
42.60		
	40.82 · 18.19 · 6.74	
39.05		
Compld. Tm.	68.30 · 16.95 · 1.85	
Chd. A.C.L.		
97.54		
	99.13	33.05

Compld & Chd. A.C.L.

Additional Cu Yds Pg 60 = 43.35

Additional Yds. Pg 78-79 = 99.58

Total pages 1-42 5156.23

Total pages 55-79 7993.08

Total this book 13292.24 MWC

~~M.B.C 10/1/30~~

IMPROVED TABLES
AND
INFORMATION

1'67 20"
1 33
3.00