ENGINEER'S
LEVEL BOOK
No. 410

SD 522

F.B. 522

DIETZGEN
TRADE MARK

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.

MICROFILMED
FEB 1 1964

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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Van Dyke - Pauly alley - MH# T-49 to MH

Sta.	+	H.I.	−	Elev.	Grade	Cut	Staked on 6' offset
BM -				326.16	B82 Pa	−	
TP	1.72	27.88	8.92	18.96	—	—	
1+80.45 TP	1.57	20.53	10.02	10.51	—	—	
	1.14	11.65	12.25	299.40	—	—	5.71 a/c stub set 3' low
0+00	1.00	300.40	12.49	87.91	9.14% 282.50	5.41	MH# T-49 2x2 - 10' S on ℄
+25			12.63	87.77	84.78	2.99	
Top +40 wall			7.1	(293.3)	←	—	1.94 .44
+50			11.35	89.05	87.07	1.98	
+75			8.11	92.29	89.36	2.93	2.25 .44 2.69 #173
1.			4.39	96.01	91.64	4.37	
+25 TP			1.00	299.40	93.93	5.47	
+50	12.53	311.93	7.13	304.80	96.21	8.59	
+80.45 TP			1.44	310.49	299.00	11.49	MH# 125 - 2x2 on ℄ + 6' offset E & W.

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Sta.	+	H.I.	-	Elev.	Grade 4.59%	Cut	Staked on 6' offset W.
0+00				310.49	299.00	11.49	MH #125
+25	11.71	322.20	8.98	13.22	300.01	13.21	
+50			6.75	15.45	301.30	14.15	
+75			4.85	17.35	302.44	14.91	
1			3.70	18.50	303.59	14.91	
+25			2.47	19.73	304.74	14.99	
+50			1.51	20.69	305.89	14.80	
+75	TP		0.79	21.41	307.03	14.38	
2	8.93	30.34	8.30	22.04	308.18	13.86	Grade Sheet #174
+25			7.29	23.05	309.33	13.72	
+50			6.71	23.63	310.48	13.15	
+75			6.10	24.24	311.62	12.62	
3			5.62	24.72	312.77	11.95	
+25			4.95	25.39	313.92	11.37	
+50			4.65	25.69	315.07	10.62	
+75			4.15	26.19	316.21	9.98	
4			3.55	26.79	317.36	9.43	
+25			3.05	27.29	318.51	8.78	
+40			2.91	27.43	319.20	8.23	MH #124 – 2×2 at center + 6' E + W.
TP			5.11	25.23			
	4.86	30.07	3.95	26.14	S.B. 326.16		

Cont'd from Page 2

Sta.	+	H.I.	-	Elev.	Grade 2.015%	Cut	Staked on 6' offset			
0+00				327.43	319.20	008.23	#124-			
+25	7.36	334.79	9.88	324.91	19.70	5.21				
+50			9.60	325.19	20.21	4.98				
+75			9.91	2488	20.71	4.17				
1			8.64	26.15	21.22	4.93				
+25			5.25	29.54	21.72	7.82				
+50			4.56	30.23	22.22	8.01				
+75			4.22	30.57	22.73	7.84				
2			3.80	30.99	23.23	7.76			# 181	
+25			3.68	31.11	23.73	7.38				
+50			3.54	31.25	24.24	7.01				
+75			3.50	31.29	24.74	6.55				
3 TP			3.50	31.29	25.25	6.04				
+25	6.09	37.38	6.63	30.75	25.75	5.00				
+40			6.86	30.52	326.05	4.47	#123			

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Sta.	+	H.I.	-	Elev.	Grade 2.008 %	Cut.	Staked on 6' offset W.			
0+00		337.38	6.86	30.52	326.05	4.47	MH #123			
+25			6.78	30.60	26.55	4.05				
+50			6.59	30.79	27.05	3.74				
+75			5.78	31.60	27.56	4.04				
1			5.38	32.00	28.06	3.94				
+25			4.21	33.17	28.56	4.61				
+50			3.85	33.53	29.06	4.47				
+75			3.33	34.05	29.56	4.49				
2			2.85	34.53	30.07	4.46				#182
+25			2.08	35.30	30.57	4.73				
+50 TP			1.06	336.32	31.07	5.25				
+75	7.36	43.68	6.47	37.21	31.57	5.64				
3			5.37	38.31	32.07	6.24				
+25			5.34	38.34	32.58	5.76				
+41.08			5.16	38.52	332.90	5.62	MH #122			
BM			3.84	339.84	339.83	—				

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Smole
Chisholm } 4-22-22

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Sta	+	H.I.	–	Elev.	Grade 1.212%	Cut.	Staked on 6' offset W.
0+00				338.52	332.90	5.62	MH#122
+25	6.63	45.15	6.64	38.51	33.20	5.31	
+50			6.64	38.51	33.51	5.00	
+75			6.72	38.43	33.81	4.62	
1			6.12	39.03	34.11	4.92	
+25			4.87	40.28	34.42	5.86	
+50			4.66	40.49	34.72	5.77	
+75			4.34	40.81	35.02	5.79	
2			4.50	40.65	35.32	5.33	
+25			4.19	40.96	35.63	5.33	#183
+50			4.07	41.08	35.93	5.15	
+75			3.86	41.29	36.23	5.06	
3	TP		3.59	41.56	36.54	5.02	
+25	6.40	47.96	6.21	41.75	36.84	4.91	
+50			6.10	41.86	37.14	4.72	
+75			5.60	42.36	37.45	4.91	
4			5.54	42.42	337.75	4.67	MH#121

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Sta	+	H.I.	-	Elev.	Grade 1.212%	Cut					
0+00	From Page 5	347.96	5.54	342.42	337.75	4.67	M#121				
+25			5.28	42.68	38.05	4.63					
+50			5.00	42.96	38.36	4.60					
+75			4.65	43.31	38.66	4.65					
1			4.51	43.45	38.96	4.49					
+25			4.27	43.69	39.27	4.42					
+50			3.99	43.97	39.57	4.40					
+75			3.47	44.49	39.87	4.62					
2			3.17	44.79	40.17	4.62					#184
+25	P		2.73	45.23	40.48	4.75					
+50	6.34	51.57	6.09	45.48	40.78	4.70					
+75			5.78	45.79	41.08	4.71					
3			5.28	46.29	41.39	4.90					
+25			5.42	46.15	41.69	4.46					
+50			4.97	46.60	41.99	4.61					
+70			5.24	46.33	42.23	4.03					
4+00			3.95	47.62	342.60	5.02	#120				

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Sta.	+	H.I.	-	Elev.	Grade .521%	Cut	Staked on 6' offset W.				
0+00		351.57	3.95	347.62	342.60	5.02	#120				
+25			3.37	48.20	42.73	5.47					
+50			3.59	47.98	42.86	5.12					
+75			3.26	48.31	42.99	5.32					
1			3.18	48.39	43.12	5.27					
+25	TP		2.61	48.96	43.25	5.71					
+50	7.73	56.69	7.29	49.40	43.38	6.02					
+75			6.85	49.84	43.51	6.33					#185
2			6.33	50.36	43.64	6.72					
+25			5.98	50.71	43.77	6.94					
+50			5.16	51.53	43.90	7.63					
+80			4.86	51.83	344.06	7.77	#119				

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Smale
Chisholm } 4-22-22

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Sta	+	H.I.	-	Elev.	Grade .521%	Cut				
0+00		356.69	4.86	351.83	344.06	7.77		#119		
+25			4.71	51.98	44.19	7.79				
+50			4.32	52.37	44.32	8.05				
+75			4.02	52.67	44.45	8.22				
1			3.81	52.88	44.58	8.30				
+25			3.48	53.21	44.71	8.50				
+50	TP		3.28	53.41	44.84	8.57				
+75	5.37	58.78	4.74	54.04	44.97	9.07				#186
2			4.15	54.63	45.10	9.53				
+25			4.15	54.63	45.23	9.40				
+50			3.94	54.84	45.36	9.48				
+80			4.37	54.41	45.52	8.89		#118		
BM			5.23	53.55	?	BP-N.W. Pauly + Klauber				

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Sta.	H.I.	H.I.	–	Elev.	Grade .52%	Cut.	Staked on 6' offset W.		
0+00		358.78	4.37	354.41	345.52	8.89	#118		
+30			5.17	53.61	45.68	7.93			
+50			4.60	54.18	45.78	8.40			
+75			4.86	53.92	45.91	8.01			
1			4.24	54.54	46.04	8.50			
+25			3.93	54.85	46.17	8.68			
+50			3.76	55.02	46.30	8.72			
+75			3.58	55.20	46.43	8.77			
2	6.32	61.52	5.92	55.60	46.56	9.04			#187
+25			5.93	55.59	46.69	8.90			
+50			5.64	55.88	46.82	9.06			
+75			5.64	55.88	46.95	8.93			
3			5.35	56.17	47.08	9.09			
+25			4.69	56.83	47.21	9.62			
+40			4.72	56.80	347.29	9.51	#117		

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Smole } 4-22-22
Chisholm

Sta.	+	H.I.	−	Elev.	Grade	Cut	Staked-on 6' offset W.	
					.52 %			
0+00		361.52	4.72	356.80	347.29	9.51	#117	
+25			4.67	56.85	47.42	9.43		
+50			4.32	57.20	47.55	9.65		
+75			4.43	57.09	47.68	9.41		
1			4.43	57.09	47.81	9.28		
+25			4.18	57.34	47.94	9.40		
+50	TP		3.69	5.7.83	48.07	9.76		
+75	5.51	63.34	5.60	57.74	48.20	9.54		
2			5.39	5795	48.33	9.62		#188
+25			5.30	58.04	48.46	9.58		
+50			5.11	58.23	48.59	9.64		
+75			5.12	58.21	48.72	9.49		
3			4.86	58.46	48.85	9.61		
+25			4.92	58.39	48.98	9.41		
+39 3/			4.71	358.59	49.06	9.53	#116	
					S.B			
BM	4.46	363.09	3.97	359.12	359.10	B.P. N.W. Pauly + Univ.		

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Lateral Sewers – Copeland-Van Ilyke alley –

Sta.	+	H.I.	–	Elev.	Grade	Cut	Staked on 6' offset W.
BM –				301.89		B.P.	N.W. Stockton at Center.
TP	2.78	304.67	5.28	299.39	—	—	
0+75 TP	3.86	303.25	12.78	290.47	—	—	
TP	2.38	292.85	13.00	279.85	—	—	
TP	0.14	279.99	12.54	267.45	—	—	
TP	0.20	267.65	12.89	254.76	—	—	?
0-05 TP	0.54	255.30	11.54	243.76	237.78	5.98	MH # T-44 - 1x2 on ℄ - 5' So. of MH center -
0+00			11.44	43.86	237.80	6.06	Take grade from W/S MH ring at ℄ E & W.
+32			13.23	42.07	238.80	3.27	MH # 147 - 2x2 at center & 6' E & W.

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Grade Sheet #190

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Sta.	+	H.I.	-	Elev.	Grade	Cut	Staked on 6' offset W.
0+00		255.30	13.23	242.07	238.80	3.27	MH # 147 - 2X2 at center & 6' E & W.
TP			0.54	54.76	—	—	
+25	12.60	267.36	9.70	257.66	48.35	9.31	
+45			6.31	61.05	256.0	5.05	MH # 146 - 2X2 at center & 6' E & W.

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Grade Sheet # 191

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Sta.	+	H.I.	−	Elev.	Grade 8.269%	Cut	
0+00		267.36	6.31	261.05	256.0	5.05	Staked on 6' offset W. MH # 146 - 2x2 at center & 6' E & W.
+25			3.95	63.41	258.07	5.34	
+50			2.88	64.48	60.13	4.35	
+75			1.78	65.58	62.20	3.38	
TP			0.32	267.04	—	—	
1	11.79	278.83	12.72	66.11	64.27	1.84	
+25			10.68	68.15	66.34	1.81	Note - Slopes west - ℄ ± 3' higher than offset line.
+50			10.81	68.02	68.40	F 0.38	
+75			4.68	74.15	70.47	3.68	Grade Sheet #192
2 TP			2.15	276.68	72.54	4.14	
+25	13.10	289.78	11.34	78.44	74.60	3.84	
+60			9.03	80.75	277.50	3.25	MH #145 - 2x2 at center & 6' E & W.

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Sta.	+	H.I.	−	Elev.	Grade 8.269%	Cut.	Staked on 6' offset W.
0+00		289.78	9.03	280.75	277.50	3.25	MH# 145 – 2X2 at center & 6' E & W.
+25			6.05	83.73	79.57	4.16	
+50 TP			1.99	287.79	81.63	6.16	
+75	12.52	300.31	9.87	90.44	83.70	6.74	
1			7.70	92.61	85.77	6.84	
+25			5.18	95.13	87.84	7.29	
+50			3.30	97.01	89.90	7.11	
+75 TP			1.35	298.96	91.97	6.99	
2	11.43	310.39	9.84	300.55	94.04	6.51	
+25			7.94	302.45	96.10	6.35	
+60			6.11	304.28	299.00	5.28	MH# 144 – 2X2 at center & 6' E & W.

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Smale, Chisholm } 4-26-22

Sta.	+	H.I.	−	Elev.	Grade 2.94%	Cut	Staked on 6' offset W.
0+00		310.39	6.11	304.28	299.00	5.28	Mt#144 - 2x2 at center + 6' E + W.
+25			7.06	303.33	99.74	3.59	
+50			6.65	303.74	300.47	3.27	
+75			6.61	303.78	301.21	2.57	
1			2.81	307.58	301.94	5.64	
+25 TP			0.96	309.43	302.68	6.75	
+50	9.75	319.18	9.24	309.94	303.41	6.53	
+75			7.93	311.25	304.15	7.10	Grade Sheet #194
2			7.33	311.85	304.88	6.97	
+25			6.70	312.48	305.62	6.86	
+50 ✓			6.06	313.12	306.35	6.77	
+75 ✓			5.20	13.98	307.09	6.89	
3			4.78	14.40	307.82	6.58	
+25			4.13	15.05	308.56	6.49	
+40			4.01	15.17	309.00	6.17	Mt#143 - 2x2 at center + 6' E + W

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Sta.	+	H.I.	-	Elev.	Grade 2.958%	Cut	Staked on 6' offset W.
0+00		319.18	4.01	315.17	309.00	6.17	MH #143 - 2X2 at center & 6' E & W.
+25			3.58	15.60	309.74	5.86	
+50			3.01	16.17	310.48	5.69	
+75 TP			2.55	316.63	11.22	5.41	
1	9.64	326.27	9.00	17.27	11.96	5.31	
+25			8.20	18.07	12.70	5.37	
+50			7.74	18.53	13.44	5.09	Grade Sheet #1 195+50
+75			6.96	19.31	14.18	5.13	
2			6.32	19.95	14.92	5.03	
+25			5.48	20.79	15.66	5.13	
+50			4.80	21.47	16.40	5.07	
+75			3.77	22.50	17.13	5.37	
3			3.12	23.15	17.87	5.28	
+25			2.23	24.04	18.61	5.43	
+38			1.94	24.33	319.00	5.33	MH #142 - 2X2 at center & 6' E & W.
TP			3.29	322.98	S.B.		
BM	6.53	329.51	3.35	326.16	326.16	B.P.	N.W. Van Dyke at Clark.

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~~Cont'd on Page 17~~

Lateral - Stockton-Copeland Valley -
MH# T-43 to ~~#~~ T-#24

Smale
Chisholm } 4-28-22

Sta.	+	H.I.	-	Elev.	Grade	Cut -	Staked on 6' offset West.
BM				301.89			
TP	2.78	304.67	5.28	299.39			
TP	3.86	303.25	12.78	290.47			
TP	2.38	292.85	13.00	279.85			
TP	0.14	279.99	12.54	267.45			
TP	0.20	267.65	12.89	254.76			
TP	0.54	255.30	11.44	243.86			
TP	0.25	244.11	6.93	237.18			
0-10	0.73	237.91	10.05				MH T-43 - 1x2 on ℄ 10' S. of MH center.
0+00 TP			9.02	228.89	224.70	4.19	Take grade from MH ring at ℄ - E & W.
+38.1 TP	5.22	234.11	2.54	231.57	225.00	6.57	MH # 178 - 2x2 at center & 6' E & W.

Grade Sheet # 199

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Sta.	+	H.I.	-	Elev.	Grade 38.88%	Cut	Staked on 6' offset W.
0+00				231.57	225.00	6.57	MH# 178 - 2x2 at center ≈6' E & W.
+25	13.09	244.66	0.10	244.56	34.72	9.84	
+50	12.87	257.43	3.44	253.99	44.44	9.55	
TP	—		0.06	257.37	—	—	Grade Sheet # 200 5-15-22
+75	13.08	270.45	9.46	260.99	54.16	6.83	
+90			6.01	264.44	260.00	4.44	MH # 177

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Sta.	+	H.I.	-	Elev.	Grade 10.625%	Cut.	Staked on 6' offset W.
0+00		270.45	6.01	64.44	260.00	4.44	MH#177
+25			2.39	268.06	62.66	5.40	
TP			0.15	270.30	—	—	
+50	12.79	283.09	10.66	272.33	65.31	7.02	
+75			7.14	75.95	67.97	7.98	
1			4.52	78.57	70.62	7.95	Grade Sheet #196
+25			3.02	80.07	73.28	6.79	
+50			1.57	81.52	75.94	5.58	
+60			0.88	282.21	277.00	5.21	MH#176

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Sta.	+	H.I.	-	Elev.	Grade	Cut	Staked on 6' offset W.
0+00				282.21	277.00	5.21	MH #176
+25	12.74	294.95	11.36	283.59	77.98	5.61	
+50			9.17	85.78	78.96	6.82	
+75			7.66	87.29	79.93	7.36	
1			6.11	88.84	80.91	7.93	
+25			2.99	91.96	81.89	10.07	
+50			2.07	92.88	82.87	10.01	
+75			1.37	93.58	83.84	9.74	
2 TP			0.43	294.52	84.82	9.70	Grade Sheet #197
+25	9.84	304.36	8.96	95.40	85.80	9.60	
+50			7.82	96.54	86.78	9.76	
+75			6.82	97.54	87.76	9.78	
3			5.96	98.40	88.74	9.66	
+25			5.54	98.82	89.71	9.11	
+40			5.21	99.15	290.30	8.85	MH #175

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Sta.	+	H.I.	-	Elev.	Grade	Cut		Staked on 6' offset W.
0+00		304.36	5.21	99.15	290.30	8.85	MH # 175-	
+25			4.67	99.69	90.43	9.26		
+50			4.25	300.11	90.55	9.56		
+75			3.63	300.73	90.68	10.05		
1			3.46	300.90	90.80	10.10		
+25			2.95	301.41	90.93	10.48		
+50			2.96	301.40	91.05	10.35		
+75	3.55	304.95	3.36	301.59	91.18	10.41		Grade Sheet #198
2			3.72	301.23	91.30	9.93		
+25			4.61	300.34	91.43	8.91		
+50			5.42	299.53	91.55	7.98		
+75			7.79	97.16	91.68	5.48		
3			9.42	95.53	91.80	3.73		
+250			8.90	96.05	91.93	4.12		
+40			8.06	296.89	292.00	4.89	F.T. #24	
					S.B			
BM	9.38	306.27	4.38	301.89	301.89	BP- N.W. Stockton at Center.		

Lateral Sewer – Copeland-Van Dyke alley.

Smale, Chisholm, Grey. } 5-1-22

Sta.	+	H.I.	–	Elev.	Grade	Cut	Staked on 6' offset W.
					1.3397%		
0+00	From Page 16			324.33	319.00	5.33	MH #142
+25	8.98	333.31	10.08	23.23	19.33	3.90	
+50			9.90	23.41	19.67	3.74	
+75			9.54	23.77	20.00	3.77	
1			8.53	24.78	20.34	4.44	
+25			5.66	27.65	20.67	6.98	
+50			5.08	28.23	21.01	7.22	
+75			4.64	28.67	21.34	7.33	Grade Sheet #201
2			4.01	29.30	21.68	7.62	
+25			3.44	29.87	22.01	7.86	
+50			2.83	30.48	22.35	8.13	
+75			2.72	30.59	22.68	7.91	
3 TP			2.16	331.15	23.02	8.13	
+25	6.91	338.06	6.41	31.65	23.35	8.30	
+40			6.03	32.03	323.55	8.48	MH # 141

Cont'd from Page 22

Smale, Chisholm, Grey } 5-1-22

Sta.	+	H.I.	−	Elev.	Grade	Cut.	
					1.33%		Staked on 6' offset W.
0+00	From Page 22 -	338.06	6.03	332.03	323.55	8.48	MH # 141
+25			5.97	332.09	23.88	8.21	
+50			5.80	332.26	24.22	8.04	
+75			5.50	32.56	24.55	8.01	
1			5.10	32.96	24.88	8.08	
+25			4.74	33.32	25.21	8.11	
+50			4.32	33.74	25.55	8.19	
+75			4.26	33.80	25.88	7.92	Grade Sheet # 202 -
2			3.94	34.12	26.21	7.91	
+25			3.43	34.63	26.54	8.09	
+50 TP			3.08	334.98	26.88	8.10	
+75	5.83	340.81	5.63	35.18	27.21	7.97	
3			5.46	35.35	27.54	7.81	
+25			5.19	35.62	27.87	7.75	
+41.12			5.04	35.77	328.09	7.68	MH # 140
					S.B.		
BM			3.50	337.31	337.32		B.P. N.W. cor Van Dyke at Howard - B82-P64

Cont'd on Page 24

Cont'd from Page 23

Sta.	+	H.I.	-	Elev.	Grade 1.34%	Cut.	Staked on 6' offset W.
0+00				335.77	328.09	7.68	MH #140
+25	6.69	342.46	6.81	35.65	28.43	7.22	
+50			6.72	35.74	28.76	6.98	
+75			6.96	35.50	29.10	6.40	
1			5.98	36.48	29.43	7.05	
+25			5.09	37.37	29.77	7.60	
+50			4.85	37.61	30.01	7.60	
+75			4.34	38.12	30.44	7.68	
2			4.33	38.13	30.77	7.36	Grade Sheet # 203
+25			4.00	38.46	31.11	7.35	
+50			3.44	39.02	31.44	7.58	
+75			3.53	38.93	31.78	7.15	
3			3.41	339.05	32.11	6.94	
+25	6.26	345.31	6.08	39.23	32.44	6.79	
+40			5.77	39.54	332.64	6.90	MH #139

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Smale, Chisholm, Gray } 5-2-22

Cont'd from Page 24

Sta.	+	H.I.	–	Elev.	Grade 1.339%	Cut.	Staked on 6' offset W.
0+00		345.31	5.77	39.54	332.64	6.90	MH #139
+25			5.84	39.47	32.97	6.50	
+50			5.75	39.56	33.31	6.25	
+75			5.18	40.13	33.64	6.49	
1			4.89	40.42	33.98	6.44	
+25			5.01	40.30	34.31	5.99	
+50			4.44	40.87	34.65	6.22	
+75			4.33	40.98	34.98	6.00	
2			4.23	41.08	35.32	5.76	
+25			3.65	41.66	35.65	6.01	
+50			3.70	41.61	35.99	5.62	
+75			3.35	341.96	36.32	5.64	
3	6.33	348.29	6.29	42.00	36.66	5.34	
+25			6.08	42.21	36.99	5.22	
+39.35			5.51	42.78	337.18	5.60	MH #138–
BM			3.26	345.03	S.B 345.01		B.P. N.W. Van Dyke at Castle – B82-PS.

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Stockton - Copeland alley - MH # T-46

Sta.	+	H.I.	-	Elev.	Grade 15.122%
BM				310.14	
TP	2.86	313.00	12.86	300.14	
TP	0.16	300.30	12.57	287.73	
0+00	4.20	291.93	10.98	280.95	276.00
+25			7.38	84.55	79.78
+50			3.70	88.23	83.56
+75 TP			0.05	291.88	87.34
1	12.53	304.41	9.79	94.62	91.12
+25			5.70	98.71	94.90
+50 TP			0.56	303.85	298.67
+75	12.83	316.68	7.50	309.18	302.44
2+05 2			3.30	313.38	307.00

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Smale, Chisholm, Grey } 5-2-22

Cut — Staked on 6' offset W.

B.P. N.W. Stockton & Clark.

—	
—	
4.95	MH T-46 -
4.77	
4.67	
4.54	Grade Sheet # 210
3.50	
3.81	
5.18	
6.74	
6.38	MH # 173

Cont'd from Page 26.

Smale
Chisholm } 5-2-22
Grey —

Sta.	+	H.I.	−	Elev.	Grade	Cut	Staked on 6' offset W.
0+00		316.68	3.30	313.38	307.00	6.38	MH #173
+25			2.23	314.45	307.36	7.09	
+50	TP		0.71	315.97	307.71	8.26	
+75	7.17	323.14	6.29	316.85	308.07	8.78	Grade Sheet #211
/			5.98	317.16	308.43	8.73	
+25			5.85	317.29	308.79	8.50	
+40			5.95	317.19	309.00	8.19	MH #172

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Cont'd from Page 27.

Smale
Chisholm
Grey

Sta.	+	H.I.	—	Elev.	Grade	Cut.	Staked on 6' offset W.
0+00		323.14	5.95	317.19	2.65% 309.00	8.19	MH#172
+25			8.21	14.93	309.66	5.27	
+50			8.10	15.04	10.32	4.72	
+75			8.07	15.07	10.99	4.08	
1			8.34	14.80	11.65	3.15	
+25			6.97	16.17	12.31	3.86	
BM			1.44	321.70	S.B 321.70	B.P.	N.W. Copeland + Clark
+50			5.31	17.83	12.97	4.86	
+75 TP			2.03	321.11	13.63	7.48	
2	8.71	329.82	7.26	22.56	14.30	8.26	Grade Sheet #212
+25			6.02	23.80	14.96	8.84	
+50			5.42	24.40	15.62	8.78	
+75			4.76	25.06	16.28	8.78	
3			4.00	25.82	16.94	8.88	
+25			3.15	26.67	17.61	9.06	
+40			2.88	26.94	318.00	8.94	MH#171
BM			8.12	321.70	S.B. 321.70	B.P.	N.W. Copeland + Clark.

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Smole, Chisholm, Gray } 5-2-22

Cont'd from Page 28

Sta.	+	H.I.	-	Elev.	Grade 2.64790	Cut	Staked on 6' offset W.
0+00	From Page 28			326.94	318.00	8.94	MH # 171
+25	8.36	335.30	7.98	27.32	18.66	8.66	
+50			7.60	27.70	19.32	8.38	
+75			7.03	28.27	19.99	8.28	
1			6.45	28.85	20.65	8.20	
+25			5.70	29.60	21.31	8.39	
+50			4.92	30.38	21.97	8.41	
+75			4.55	30.75	22.63	8.12	grades to August - 5-3-22
2			3.90	31.40	23.29	8.11	
+25			3.39	31.91	23.96	7.95	
+50			3.13	32.17	24.62	7.55	
+75			2.47	32.83	25.28	7.55	
3			1.97	33.33	25.94	7.39	
+25	3.99	37.32	4.18	33.14	26.60	6.54	
+40 30			4.05	33.27	327.00	6.27	MH #170
BM			2.55	34.77	334.75		

Cont'd on Page 30

Smale
Chisholm } 5-3-22
Gray

Cont'd from Page 29

Sta.	+	H.I.	–	Elev.	Grade 1.25%	Cut	Staked on 6' offset W.
0+00				333.27	327.00	6.27	MH #170
+25	6.93	340.20	7.89	332.31	27.31	5.00	
+50			7.93	32.27	27.63	4.64	
+75			7.74	3246	27.94	4.52	
1			7.07	33.13	28.25	4.88	
+25			5.44	34.76	28.56	6.20	
+50			5.28	34.92	28.88	6.04	
+75			5.06	35.14	29.19	5.95	Grade Sheet #214
2			4.73	35.47	29.50	5.97	
+25			3.95	36.25	29.81	6.44	
+50			4.01	36.19	30.13	6.06	
+75			3.59	36.61	30.44	6.17	
3			3.29	36.91	30.75	6.16	
+25	7.13	44.04	6.83	37.21	31.06	6.15	
+40			6.39	37.65	331.25	6.40	MH #169

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Smale
Chisholm } 5-3-22
Gray

Sta.	+	H.I.	−	Elev.	Grade 1.252 %	Cut	Staked on 6' offset W.
0+00		344.04	6.39	337.65	331.25	6.40	MH#169
+25			6.34	37.70	31.56	6.14	
+50			5.84	38.20	31.88	6.32	
+75			5.20	38.84	32.19	6.65	
1			4.74	39.30	32.50	6.80	
+25			4.49	39.55	32.82	6.73	
+50			4.30	39.74	33.13	6.61	
+75			3.89	40.15	33.44	6.71	
2			3.87	40.17	33.75	6.42	Grade Sheet #215-
+25			3.84	40.20	34.07	6.13	
+50 TP			3.65	340.39	34.38	6.01	
+75	6.72	347.11	6.49	40.62	34.69	5.93	
3			6.28	40.83	35.01	5.82	
+25			5.95	41.16	35.32	5.84	
+39.3			5.70	41.41	335.50	5.91	MH#168-
BM			4.71	342.40	—		

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Copeland- Van Dyke alley - MH#138 to MH

Smale } 5-4-22
Chisholm }
Gray

Sta.	+	H.I.	-	Elev.	Grade 1.339%	Cut	Staked on 6' offset W.
0+00	From Page 25			342.78	337.18	5.60	MH# 138 South of Landis
+30	7.10	349.88	6.86	43.02	37.58	5.44	
+50			6.39	43.49	37.85	5.64	
+75			6.40	43.48	38.18	5.30	
1			5.95	43.93	38.52	5.41	
+25			5.27	44.61	38.85	5.76	
+50			5.03	44.85	39.19	5.66	
+75			4.73	45.15	39.52	5.63	Grade Sheet #205-
2			4.25	45.63	39.86	5.77	
+25			4.08	45.80	40.19	5.61	
+50			3.70	46.18	40.53	5.65	
+75			3.14	46.74	40.86	5.88	
3 TP			2.54	47.34	41.19	6.15	
+25	7.26	54.60	7.00	47.60	41.53	6.07	
+40			6.45	48.15	341.73	6.42	MH# 137

Cont'd from Page 32

Sta.	+	H.I.	−	Elev.	Grade	Cut	Staked on 6' offset W.
	From				1.347%		
0+00	Page 32	354.60	6.45	48.15	341.73	6.42	MH #137 Alley 72 Near Lot 34
+25			5.79	48.81	42.07	6.74	
+50			5.43	49.17	42.40	6.77	
+75			5.11	49.49	42.74	6.75	
1			5.07	49.53	43.08	6.45	
+25			4.88	49.72	43.41	6.31	
+50			4.21	50.39	43.75	6.64	
+75			3.97	50.63	44.09	6.54	Grade Sheet #206
2			3.51	51.09	44.42	6.67	
+25			2.86	51.74	44.76	6.98	
+50 ✓			2.22	352.38	45.10	7.28	
+75	6.14	358.52	5.55	52.97	45.43	7.54	
3			5.26	53.26	45.77	7.49	
+25			4.95	53.57	46.11	7.46	
+37.85			4.88	53.64	346.28 S.B.	7.36	MH #136 Alley 72 Just S of Wightman
BM			3.89	54.63	354.60	B.P. - N.W. Van Dyke + Klauber S2-18	
	20.50						

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Cont'd from Page 33

Sta.	+	H.I.	−	Elev.	Grade .4%	Cut.	Staked on 6' offset W.	
0+00		358.52	4.88	353.64	346.28	7.36	MH #136	
+30			5.32	53.20	46.38	6.82		
+50			4.99	53.53	46.48	7.05		
+75			4.80	53.72	46.58	7.14		
1			4.60	53.92	46.68	7.24		
+25			4.13	54.39	46.78	7.61		
+50			3.68	54.84	46.88	7.96		
+75			3.42	55.10	46.98	8.12		#207
2 TP			3.03	355.49	47.08	8.41		
+25	5.28	360.77	5.36	55.41	47.18	8.23	BP	
+50			5.24	55.53	47.28	8.25		
+75			5.15	55.62	47.38	8.24		
3			5.11	55.66	47.48	8.18		
+25			5.21	55.56	47.58	7.98		
+40			4.96	55.81	347.64	8.17	MH #135	

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Smale, Chisholm, Gray } 5-5-22

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Sta.	+	H.I.	−	Elev.	Grade .4%	Cut	Staked on 6' offset W.	
0+00		360.77	4.96	355.81	347.64	8.17	MH #135	
+25			5.01	55.76	47.74	8.02		
+50			5.06	55.71	47.84	7.87		
+75			5.09	55.68	47.94	7.74		
1			5.10	55.67	48.04	7.63		
+25			5.06	55.71	48.14	7.57		
+50 TP			5.07	55.70	48.24	7.46		
+75	6.16	61.86	5.89	55.97	48.34	7.63		
2			5.90	55.96	48.44	7.52		#208
+25			5.56	56.30	48.54	7.76		
+50			5.44	56.42	48.64	7.78		
+75			5.05	56.81	48.74	8.07		
3			4.95	56.91	48.84	8.07		
+25			4.59	57.27	48.94	8.33		
+39.3			4.69	57.17	349.00	8.17		
TP			4.55	57.31	—		MH #134	
BM	5.16	62.47	4.28	58.19	S.B 358.15		B.P.-N.W. Van Dyke & Univ.	B61-P52

Cont'd on Page 36

Smalle
Chisholm } 5-5-22
Gray

Cont'd from Page 35

Sta.	+	H.I.	−	Elev.	Grade .3%	Cut	Staked on 6' offset W.
0+00	From Page 35		—	357.17	349.00	8.17	M #134
+20	5.66	62.83	5.74	57.09	49.06	8.03	
1+00			5.28	57.55	49.30	8.25	
+25			5.03	57.80	49.38	8.42	
+50			5.09	57.74	49.45	8.29	
+75			5.12	57.71	49.53	8.18	
2			5.11	57.72	49.60	8.12	
+25			5.07	57.76	49.68	8.08	#209 - 5-12
+50			4.30	58.53	49.75	8.78	
+75			4.55	58.28	49.83	8.45	
3			4.12	58.71	49.90	8.81	
+25			4.07	58.76	49.98	8.78	
+40			3.98	58.85	350.02 S.B.	8.83	M #133
BM			6.09	56.74	356.77	BP. N.W. Univ. v Copeland - B61 - P52	

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Stockton- Copeland alley- MH#168 to MH
Cont'd from Page 31

Smale
Chisholm } 5-4-22
Gray

Sta.	+	H.I.	-	Elev.	Grade 1.25	Cut	Staked on 6' offset W.
0+00	From Page 31-			341.41	335.50	5.91	MH #168
+25	6.84	348.25	5.96	42.29	35.81	6.48	
+50			5.73	42.55	36.13	6.42	
+75			5.67	42.58	36.44	6.14	
1			5.63	42.62	36.75	5.87	
+25			4.82	43.43	37.06	6.37	
+50			5.07	43.18	37.38	5.80	
+75			4.85	43.40	37.69	5.71	
2			4.54	43.71	38.00	5.71	Grade Sheet #216
+25			3.89	44.34	38.31	6.03	
+50			3.88	44.37	38.63	5.74	
+75			3.57	44.68	38.94	5.74	
3 TP			3.45	44.80	39.25	5.55	
+25	7.25	52.05	6.86	45.19	39.56	5.63	
+40			6.91	45.14	339.75	5.39	#167

Cont'd on Page 38

Sta.	+	H.I.	-	Elev.	Grade 1.254%	Cut	Staked on 6' offset W.
0+00		352.05	6.91	45.14	339.75	5.39	#167
+25			6.47	45.58	40.06	5.52	
+50			6.28	45.77	40.38	5.39	
+75			5.88	46.17	40.69	5.48	
1			5.28	46.77	41.00	5.77	
+25			4.82	47.23	41.32	5.91	
+50			4.28	47.77	41.63	6.14	
+75			3.70	48.35	41.94	6.41	
2			3.38	48.67	42.26	6.41	Grade Sheet #217.
+25			3.12	48.93	42.57	6.36	
+50 TP			3.08	348.97	42.89	6.08	
+75	5.68	54.65	5.18	49.47	43.20	6.27	
3			4.76	49.89	43.51	6.38	
+25			4.30	50.35	43.83	6.52	
+38.2			4.76	49.89	344.00	5.89	#166
BM			2.06	52.59	352.50	B.B.- N.W. Klauber & Copeland - S2-18	

Smale, Chisholm, Gray } 5-5-22

Cont'd from Page 38

Sta.	+	H.I.	–	Elev.	Grade .6%	Cut.	Staked on 6' offset W.			
0+00	From Page 38			349.89	344.00	5.89	#166			
+25	7.92	57.81	8.50	49.31	44.15	5.16				
+50			8.09	49.72	44.30	5.42				
+75			8.46	49.35	44.45	4.90				
1			7.75	50.06	44.60	5.46				
+25			6.25	51.56	44.75	6.81				
+50			5.41	52.40	44.90	7.50				
+75			5.16	52.65	45.05	7.60				
2			5.09	52.72	45.20	7.52				218
+25			4.51	53.30	45.35	7.95				
+50			4.52	53.29	45.50	7.79				
+75			4.52	53.29	45.65	7.64				
3 TP			4.59	53.22	45.80	7.42				
+25	5.36	358.58	5.21	53.37	45.95	7.42				
+40			5.54	53.04	346.05	6.09	MH#165			

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Cont'd from Page 39-

Smale
Chisholm } 5-5-'22
Gray

Sta.	+	H.I.	-	Elev.	Grade .604%	Cut	Staked on 6' offset W.				
0+00	From Page 39	358.58	5.54	353.04	346.05	6.99	MH#165				
+25			5.00	53.58	46.20	7.38					
+50			5.24	53.34	46.35	6.99					
+75			5.16	53.42	46.50	6.92					
1			5.28	53.30	46.65	6.65					
+25			5.04	53.54	46.81	6.73					
+50			5.74	52.84	46.96	5.88					
+75			5.72	52.86	47.11	5.75					
2			5.71	52.87	47.26	5.61					#219
+25			5.42	53.16	47.41	5.75					
+50 ~~TP~~			5.41	353.17	47.56	5.61					
+75	6.36	359.53	5.99	53.54	47.71	5.83					
3			5.60	53.93	47.86	6.07					
+25			5.13	54.40	48.01	6.39					
+39.18			4.69	54.84	348.10	6.74		#164			
BM			2.76	356.77							

BP- N.W. Copeland + Univ. B61-P52

Cont'd on Page 41-

Smole
Chisholm
Gray
5-5-22

Cont'd from Page 40

Sta.	+	H.I.	-	Elev.	Grade .3%	Cut	
0+00		359.53	4.69	54.84	348.10	6.74	Staked on 6' offset W. #164
+20			4.68	54.85	48.16	6.69	
1+00			4.45	55.08	48.40	6.68	
+25			3.52	56.01	48.48	7.53	
+50	4.59	60.60	4.17	56.43	48.55	7.88	
+75			3.90	56.70	48.63	8.07	Grade Sheet #220
2			3.79	56.81	48.70	8.11	
+~~25~~			3.47	57.13	48.78	8.35	
+50 TP			3.35	57.25	48.85	8.40	
+75	5.37	62.62	4.95	57.67	48.93	8.74	
3			4.73	57.89	49.00	8.89	
+25			4.69	57.93	49.07	8.86	
+40			4.84	57.78	49.12	8.66	MH #163
TP			6.20	56.42	—	—	
BM	4.30	59.56	2.80	356.76	S.B. 356.77	BP-S.W. Copeland & University. B61-P52	

Cont'd on Page 57-

Van Dyke ~~Copeland~~ - Pauly alley - MH# 116 to F.T. #20

Smale } 5-15-22
Gray }

Cont'd from Page 10

Sta.	~~H.I.~~ +	H.I.	-	Elev.	Grade .521 %	Cut	Staked on 6' offset W.
0+00				358.59	349.06	9.53	MH# 116 -
+20	5.88	364.47	5.87	58.60	49.16	9.44	
1+00			5.52	58.95	49.58	9.37	
+25			4.68	59.79	49.71	10.08	
+50			4.79	59.68	49.84	9.84	
+75			4.74	59.73	49.97	9.76	
2			4.63	59.84	50.01	9.83	Grade Sheet # 189
+25			4.28	60.19	50.23	9.96	
+50			4.19	60.28	50.36	9.92	
+75			4.82	59.65	50.49	9.16	
3 TP			4.70	59.77	50.62	9.15	
+25	6.32	366.09	6.45	59.64	50.75	8.89	
+40			6.12	59.97	350.83	9.14	MH# 115 -

Cont'd on Page 43

Smale } 5-15-22
Gray }

Cont'd from Page 42

Sta.	+	H.I.	−	Elev.	Grade .522	Cut.		
							Staked on 6' offset W.	
0+00		366.09	6.12	59.97	350.83	9.14	MH#115	
+25			5.93	60.16	50.96	9.20		
+50			5.59	60.50	51.09	9.41		
+75			5.30	60.79	51.22	9.57		
1			4.90	61.19	51.35	9.84		
+25			4.81	61.28	51.48	9.80		
+50			4.63	61.46	51.61	9.85		Grade Sheet #229-
+75			4.68	61.41	51.74	9.67		Grades furnished 5-17-22
2			4.65	61.44	51.87	9.57		on copy sheet.
+25			4.65	61.44	52.00	9.44		
+50			4.56	61.53	52.14	9.39		
+75 TP			4.55	61.54	52.27	9.27		
3	4.78	66.32	4.93	61.39	52.40	8.99		
+25			5.20	61.12	52.53	8.59		
+39.2			5.24	61.08	352.60	8.48	MH#114	6" pipe north 8" south.

Cont'd on Page 44

Cont'd from Page 43

Sta.	+	H.I.	-	Elev.	Grade .4%	Cut	Staked on 6' offset W.
0+00		366.32	5.24	61.08	352.80	8.28	MH #114 6" pipe north - 8" south
~~+25~~ 30			5.40	60.92	52.92	8.00	
+50			5.70	60.62	53.00	7.62	
+75			4.79	61.53	53.10	8.43	
1			4.62	61.70	53.20	8.50	
+25			4.33	61.99	53.30	8.69	Grade Sheet #230
+50			4.26	62.06	53.40	8.66	Sofined 5-18
+75			4.36	61.96	53.50	8.46	
2			4.68	61.64	53.60	8.04	
+25			4.77	61.55	53.70	7.85	
+50 TP			4.74	61.58	53.80	7.78	
+75	5.12	66.70	5.24	61.46	53.90	7.56	
3			5.42	61.28	54.00	7.28	
+25			5.25	61.45	54.10	7.35	
+40			5.20	61.50	354.16	7.34	MH #113

Cont'd on Page 45-

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Sta.	+	H.I.	−	Elev.	Grade	Cut	Staked on 6' offset W-
					:399		
0+00		366.70	5.20	61.50	354.16	7.34	MH #113
+25			5.16	61.54	54.26	7.28	
+50			4.80	61.90	54.36	7.54	
+75			4.88	61.82	54.46	7.36	
1			4.69	62.01	54.56	7.45	
+25			4.92	61.78	54.66	7.12	
+50			5.13	61.57	54.76	6.81	
+75			5.02	61.68	54.86	6.82	
2			5.78	60.92	54.96	5.96	Grade Sheet #231
+25			5.67	61.03	55.06	5.97	
+50 TP			5.50	61.20	55.16	6.04	
+75	4.22	65.42	4.44	60.98	55.26	5.72	
3			4.83	60.59	55.36	5.23	
+25			4.38	61.04	55.46	5.58	
NW 3+36.4			3.99	61.43	55.53 (355.50)	5.90	MH # 112
SE.			4.13	61.29	——		
BM			4.50	360.92	360.99		B.P. N.W. Orange + Pauly -
BM			4.43	360.99	361.01		✓ ✓ ✓ + Van Dyke.-

Cont'd from Page 45 -

Sta.	+	H.I.	-	Elev.	Grade	Cut.	Staked on 6' offset N-
					(355.50)		
0+00 NW.				361.43	355.46	5.97	MH #112
+25	4.89	366.32	——		——		Grade Sheet #245
					(355.80)		
+44.67 N.W.			5.10	61.22	355.76	5.46	MH #111

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Smale / Brown } 5-26-22

Cont'd from Page 46.

Sta.	+	H.I.	−	Elev.	Grade (355.80)	Cut	Staked on 6' offset W.
0+00 NW				361.22	55.78	5.44	MH #111
S.E	6.54	67.76	—	—	—	—	
+25			7.24	60.52	55.90	4.62	
+50			5.92	61.84	56.00	5.84	
+75			5.69	62.07	56.10	5.97	
1			5.18	62.58	56.20	6.38	
+25			4.98	62.78	56.30	6.48	
+50			5.15	62.61	56.40	6.21	#246
+75			5.18	62.58	56.50	6.08	
2			4.84	62.92	56.60	6.32	
+25			4.99	62.77	56.70	6.07	
+50			5.03	62.73	56.80	6.93	
+75			3.71	64.05	56.90	7.15	
3' TP			3.69	64.07	57.00	7.07	
+20	4.95	69.02	5.02	64.00	357.08	6.92	MH #110

Cont'd from Page - 47

Sta.	+	H.I.	-	Elev.	Grade .4%	Cut.	Staked on 6' offset W.
0+00		369.02	5.02	364.00	357.08	6.92	M#110
+25			4.83	64.19	57.18	7.01	
+50 - No stake -					No stake		
+75 50			4.68	64.34	57.38 28	6.96	7.06
1 75			4.52	64.50	57.48 38	7.02	7.12
+25 1			4.63	64.39	57.58 48	6.81	6.91
+50 25			5.02	64.00	57.68 58	6.32	6.42
+75 5			4.93	64.09	57.78	6.31	
2			6.10	62.92	57.88	5.04	
+25			5.84	63.18	57.98	5.20	
+50			5.33	63.69	58.08	5.61	
+75			5.15	63.87	58.18	5.69	
3 TP			4.73	364.29	58.28	6.01	
+07	2.84	67.13	2.78	64.35	358.31	6.04	F T # # 20
BM			9.47	57.66	357.725	BP. S.W. Pauly + El Cajon. -	

Copeland - Van Dyke alley - MH #133 to MH #
Cont'd from Page 36

Sta.	+	H.I.	−	Elev.	Grade .3%	Cut.	Staked on 6' offset W.
0+00	From Page 36			358.85	350.02	8.83	MH #133
+25	7.01	65.86	6.52	59.34	50.10	9.24	
+50			6.38	59.48	50.17	9.31	
+75			6.02	59.84	50.25	9.59	
1			5.42	60.44	50.32	10.12	
+25			5.44	60.42	50.40	10.02	
+50			5.38	60.48	50.47	10.01	
+75			4.79	61.07	50.55	10.52	
2			4.60	61.26	50.62	10.64	Grade Sheet #221
+25			4.51	61.35	50.70	10.65	
+50			4.65	61.21	50.77	10.44	
+75			4.40	61.46	50.85	10.61	
3			4.30	61.56	50.92	10.64	
+25			4.40	61.46	51.00	10.46	
+39.2			4.34	61.52	351.04	10.48	MH #132

Cont'd on Page 50

65.86
7.11
58.75

Cont'd from Page 49

Sta.	+	H.I.	−	Elev.	Grade .39%	Cut	Staked on 6' offset W.
0+00	From Page-49			361.52	351.04	10.48	MH #132
~~+25~~ 30	4.70	366.22	5.48	60.74	51.13	9.61	
+50			5.49	60.73	51.19	9.54	
+75			5.01	61.21	51.27	9.94	
1			4.89	61.33	51.34	9.99	
+25			5.28	60.94	51.42	9.52	
+50			4.69	61.53	51.49	10.04	
+75			4.92	61.30	51.57	9.73	
2			4.51	61.71	51.64	10.07	Grade Sheet #222
+25			4.80	61.42	51.72	9.70	
+50			4.95	61.27	51.79	9.48	
+75			4.44	61.78	51.87	9.91	
3 TP			4.90	361.32	51.94	9.38	
+25	4.52	365.84	~~4.26~~ 5.26	61.58	51.02	10.56	
~~+40~~ 35.84 TP			4.14	61.70	352.05	9.65	MH #131

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2+50			3.60	62.24	
	4.26	66.50	5.50	61.00	

Smale } 5-17-22
Gray

Cont'd from Page 50

Sta.	+	H.I.	−	Elev.	Grade	Cut	Staked on 6' offset W.
0+00	From Page 50			361.70	.3% 352.05	9.65	MH # 131
+25	4.14	65.84	4.42	61.42	52.12	9.30	
+50			4.64	61.20	52.20	9.00	
+75			4.19	61.65	52.28	9.37	
1+00			4.84	61.00	52.35	8.65	
+25			4.86	60.98	52.43	8.55	Grade Sheet #223
+50			4.67	61.17	52.50	8.67	Copy to Grandt 5-18-22
+75			4.38	61.46	52.58	8.88	
2			4.32	61.52	52.65	8.87	
+25			4.46	61.38	52.73	8.65	
+50			3.62	62.22	52.80	9.42	
+75			3.41	62.43	52.87	9.56	
3 TP			4.17	61.67	52.95	8.72	
+25	5.15	66.82	5.50	61.32	53.03	8.29	MH # 130
3+40 N.W (+46 for grade)			4.98	61.84	353.07 53.09	8.75	
S.E			5.04	61.78	—	—	

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Smale } 5-17-22
Gray }

Cont'd from Page 51

Sta.	+	H.I.	−	Elev.	Grade	Cut	
					(353.07).308		
0+00 N.W.		366.82	4.98	61.84	353.05	8.79	M# 130 -
S.E.			5.04	61.78	~~53.~~	—	
+25			5.22	61.60	53.15	8.45	Grade Sheet # 224 -
+50			5.28	61.54	53.22	8.32	To Engineer 5-19-22
+75			5.24	61.58	53.29	8.29	
					(353.37)		
+97.4 N.W. (+91.4 for grade)			5.40	61.42	53.39	8.03	M# 129
S.E.			5.37				

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Staked on 6' offset N.

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Sta.	+	H.I.	−	Elev.	Grade (353.37) .299%	Cut	Staked on 6' offset W.
0+00 N.M.		366.82	5.40	61.42	53.35	8.07	#129
S.E.			5.37	61.45	——	——	
+25			5.72	61.10	353.44	7.66	
+50			4.81	62.01	53.52	8.49	
+81			4.15	62.67	53.59	8.08	
1+06			4.65	62.17	53.67	8.50	Grade Sheet #225
+31			4.22	62.62	53.74	8.88	
+56			4.10	62.72	53.82	8.90	
+81			4.06	62.76	53.89	8.87	
2+06 TP			4.09	62.73	53.97	8.76	
+31	6.29	69.02	6.11	62.91	54.04	8.87	
+56			6.32	62.70	54.12	8.58	
+81			4.94	64.08	54.19	9.89	
3+06			5.50	63.52	54.27	9.25	
+14			5.64	63.38	354.31	9.07	MH #128

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Smale / Gray } 5-18-22

Cont'd from Page 53

Sta.	+	H.I.	−	Elev.	Grade .3%	Cut	Staked on 6' offset W.
0+00		369.02	5.64	63.38	354.31	9.07	MH#128
+31			5.31	63.71	54.40	9.31	
+56			5.13	63.89	54.48	9.41	
+81			5.14	63.88	54.55	9.33	
1+06			4.14	64.88	54.63	10.25	
+31			5.66	63.36	54.70	8.66	Grade Sheet # 226
+56			5.61	63.41	54.78	8.63	
+81			4.71	64.31	54.85	9.46	
2+06 TP			5.44	363.58	54.93	8.65	
+31	5.80	69.38	5.84	63.54	55.00	8.54	
+56			5.47	63.91	55.08	8.83	
+81			5.24	64.14	55.15	8.99	
3+06			4.84	64.54	55.23	9.31	
+20			5.43	63.95	355.27	8.68	
BM			5.87	63.51	363.55		MH#127

Cont'd on Page 55

Cont'd from Page 54

Sta.	+	H.I.	−	Elev.	Grade -3%	Cut	Staked on 6' offset W.
0+00	From Page 54			363.95	355.27	8.68	#127
+31	5.60	369.55	5.46	64.09	55.36	8.73	
+56			4.65	64.90	55.44	9.46	
+81			4.57	64.98	55.51	9.47	
1+06			5.10	64.45	55.59	8.86	
+31			5.35	64.20	55.66	8.54	Grade Sheet #227
+56			4.46	65.09	55.74	9.35	
+81			5.08	64.47	55.81	8.66	
2+06			5.14	64.41	55.89	8.52	
+31			4.94	64.61	55.96	8.65	
+56			4.45	65.10	56.04	9.06	
+81			4.76	64.79	56.11	8.68	
3+06 TP			4.70	64.85	56.19	8.66	
+31	2.85	67.70	2.72	64.98	56.26	8.72	
+56			3.41	64.29	56.34	7.95	
+81			3.74	63.96	56.41	7.55	
4+00			3.67	64.03	356.47	7.56	#126

Cont'd on Page 56-

Smale / Gray } 5-22-'22

Continued from Page 55

Sta.	+	H.I.	−	Elev.	Grade	Cut.	Staked on 6' offset W.
					.390		
0+00		367.70	3.67	64.03	356.47	7.56	#126
+31			3.90	63.80	56.55	7.25	
+56			4.65	63.05	56.62	6.43	
+81			4.90	62.80	56.70	6.10	
1+06			5.65	62.05	56.77	5.28	
+31			5.72	61.98	56.85	5.13	Grade Sheet #228
+56			5.80	61.90	56.92	4.98	
+81			6.23	61.47	57.00	4.47	
2+06			6.42	61.28	57.07	4.21	
+36 TP			6.26	61.44	57.15	4.29	
+50	6.85	68.29	6.26	62.03	57.22	4.81	
+75			5.56	62.73	57.30	5.43	
3			5.54	62.75	57.37	5.38	
+25			5.56	62.73	57.45	5.28	
+50			6.00	62.29	57.52	4.77	
+79.8			5.95	62.34	357.61	4.73	F.T. #21
					S.B.		
BM			3.83	64.46	364.51		B.P. - N.W. - Copeland & Olive - B.S.1 - P12
	End of sewer -						

Stockton-Copeland alley - MH #163 to MH #
Continued from Page 41

Smale
Gray 5-23-22

Sta	+	H.I.	−	Elev:	Grade	Cut.	Staked on 6' offset W.
0+00	From Page 41.			357.78	.390 349.12	8.66	MH #163.
+25	5.92	363.70	5.62	58.08	49.20	8.88	
+50			5.24	58.46	49.27	9.19	
+75			5.39	58.31	49.35	8.96	
1			5.26	58.44	49.42	9.02	
+25			5.30	58.40	49.50	8.90	
+50			5.12	58.58	49.57	9.01	Grade Sheet #235
+75			5.05	58.65	49.65	9.00	
2			5.23	58.47	49.72	8.75	
+25			5.43	58.27	49.80	8.47	
+50			5.79	57.91	49.87	8.04	
+75			5.95	57.75	49.95	7.80	
3			6.17	57.53	50.02	7.51	
+25			6.18	57.52	50.10	7.42	
+39.2			6.14	57.56	350.14	7.42	MH #162

Cont'd on Page 58

Cont'd from Page 57

Smale / Gray } 5-23-22

Sta.	+	H.I.	−	Elev.	Grade .3%	Cut	Staked on 6' offset W.
0+00				357.56	350.14	7.42	MH # 162
+30	6.58	64.14	6.29	57.85	50.22	7.63	
+50			6.17	57.97	50.29	7.68	
+75			5.19	58.95	50.37	8.58	
1			5.28	58.86	50.44	8.42	
+25			5.10	59.04	50.52	8.52	
+50			4.70	59.44	50.59	8.85	Grade Sheet # 236
+75			4.40	59.74	50.67	9.07	
2			3.86	60.28	50.74	9.54	
+25			3.83	60.31	50.82	9.49	
+50			3.08	61.06	50.89	10.17	
+75			3.06	61.08	50.97	10.11	
3 TP			2.94	61.20	51.04	10.16	
+25	5.55	66.75	5.52	61.23	51.12	10.11	MH # 161
+35 33			5.59	61.16	51.15	10.01	

Cont'd on Page 59

351.15

Cont'd from Page 58

Sta.	+	H.I.	−	Elev.	Grade	Cut.	Staked on 6' offset W.
0+00		66.75	5.59	61.16	351.15	10.01	MH# 161
+25			5.20	61.55	51.23	10.32	
+50			5.15	61.60	51.30	10.30	
+75			4.52	62.23	51.38	10.85	
1			4.67	62.08	51.45	10.63	
+25			4.64	62.11	51.53	10.58	
+50			3.72	63.03	51.60	11.43	
+75			4.43	62.32	51.68	10.64	Grade Sheet # 237
2			4.56	62.19	51.75	10.44	
+25			4.21	62.54	51.83	10.71	
+50			4.24	62.51	51.90	10.61	
+75 TP			4.17	62.58	51.98	10.60	
3	4.45	67.03	4.59	62.44	52.05	10.39	
+25			4.64	62.39	52.13	10.26	
+40 19 N.W.			4.19	62.84	(52.17) 52.19	10.65	MH #160
S.E.			4.30	62.73	352.17		
BM-			5.18	61.85	S.B. 361.86		BP- N.W. Copeland at Orange. — B 82-P1

Cont'd on Page 60 & 66

~~361.85~~

Cont'd from Page 59 -

Sta.	+	H.I.	-	Elev.	4% Grade	Cut	Staked on 6' offset S.
					(352.37)		
0+00 N.W.		From Page 59		362.84			M-H # 160
✓ S.E	4.61	67.45	4.72	62.73	352.35	10.38	
+25			4.57	62.88	52.47	10.41	
+50			4.59	62.86	52.57	10.29	
+75			4.60	62.85	52.67	10.18	
1			4.56	62.89	52.78	10.11	#232
+25			4.40	63.05	52.88	10.17	
+50			4.43	63.02	52.98 (353.09)	10.04	
+ S.W.			4.38	63.07	353.11	9.96	M-H #159
2 N.E			4.52	62.93	—	—	
BM			4.71	362.74	S.B. - 362.71		B.P. - N.W. - Stockton + Orange -

Cont'd on Page 61

Cont'd from Page 60 -

Sta	+	H.I.	–	Elev.	Grade (353.09)	Cut	Staked on 6' offset W.
0+00 S.W.		367.45	4.38	363.07	353.07	10.00	MH #159
+25			5.11	62.34	53.19	9.15	
+50			4.78	62.67	53.29	9.38	
+75			4.66	62.79	53.39	9.40	
1			4.43	63.02	53.49	9.53	
+25			4.70	62.75	53.59	9.16	
+50			4.64	62.81	53.69	9.12	Grade Sheet #233
+75 TP			4.61	62.84	53.79	9.05	
2	5.51	68.35	5.26	63.09	53.89	9.20	
+25			4.44	63.91	53.99	9.92	
+50			4.49	63.86	54.09	9.77	
+75			5.37	62.98	54.19	8.79	
3			4.07	64.28	54.29	9.99	
+27			5.03	63.32	354.40	8.92	MH #158
			~~4.26~~	~~64.09~~			

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Cont'd from Page 61

Sta.	+	H.I.	-	Elev.	Grade	Cut -	Staked on 6' offset W.
0 +00		368.35	5.03	363.32	354.40	8.92	MH #158
+25			5.18	63.17	54.50	8.67	
+50			5.13	63.22	54.60	8.62	
+75			4.15	64.20	54.70	9.50	
1			4.98	63.37	54.80	8.57	
+25			4.75	63.60	54.90	8.70	
+50			4.98	63.37	55.00	8.37	
+75			4.66	63.69	55.10	8.59	Grade Sheet #234
2 TP			3.83	64.52	55.20	9.32	
+25	4.86	69.38	5.29	64.09	55.30	8.79	
+50			5.77	63.61	55.40	8.21	
+75			5.70	63.68	55.50	8.18	
3 +00 15			4.80	64.58	355.60 S.B.	8.98	MH #157
BM			4.26	65.12	365.11		S.W.-El Cajon at Stockton

Cont'd on Page 63

Smale / Brown } 5-24-22

Cont'd from Page 62

Sta.	+	H.I.	−	Elev.	Grade .4%	Cut	Staked on 6' offset W.
0+00		369.38	4.80	364.58	355.60	8.98	MH#157
+25			5.34	64.04	55.70	8.34	
+50			4.92	64.46	55.80	8.66	
+75			4.21	65.17	55.90	9.27	
1			4.39	64.99	56.00	8.99	
+25			4.29	65.09	56.10	8.99	
+50			4.88	64.50	56.20	8.30	
+75			4.75	64.63	56.30	8.33	
2 TP			4.21	65.17	56.40	8.77	Grade Sheet #248
+25	4.07	69.24	4.72	64.52	56.50	8.02	
+50			4.81	64.43	56.60	7.83	
+75			4.56	64.68	56.70	7.98	
3			4.76	64.48	56.80	7.68	
+25			4.63	64.61	56.90	7.71	
+50			4.56	64.68	57.00	7.68	
+75			4.30	64.94	57.10	7.84	
4			4.40	64.84	57.20	7.64	
+25			4.78	64.46	57.30	7.16	
+40			4.98	64.26	357.36	6.90	MH#156

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Cont'd from Page 63

Sta.	+	H.I.	-	Elev.	Grade .4%	Cut	Staked on 6' offset W.
0+00		369.24	4.98	364.26	357.36	6.90	MH#156
+25			3.40	65.84	57.46	8.38	
+50 TP			4.34	64.90	57.56	7.33	
+75	3.98	68.88	4.25	64.63	57.66	6.97	
1			3.99	64.89	57.76	7.13	
+25			4.40	64.48	57.76	6.72	
+50			4.56	64.32	57.86	6.46	
+75			2.43	66.45	57.96	8.49	Grade Sheet # 249
2			4.48	64.40	58.06	5.34	
+25			4.30	64.58	58.16	6.42	
+50			3.12	65.76	58.26	7.50	
+75			3.55	65.33	58.36	6.97	
3			3.03	65.85	58.46	7.39	
+25			3.80	65.08	58.56	6.52	
+47 TP			3.53	65.35	358.65	6.70	MH#155 — St. Grade - 365.35
BM	5.08	70.43	4.40	66.03	366.04		

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Cont'd from Page 64 -

Sta.	+	H.I.	-	Elev.	Grade .865	Cut	Staked on 6' offset W.
0+00	From Page -64			365.35	358.65	6.70	MH #155
+25	5.08	370.43	5.51	64.92	58.87	6.05	
+50			5.46	64.97	59.08	5.89	
+75			5.20	65.23	59.30	5.93	
1			5.02	65.41	59.52	5.89	
+25			4.84	65.59	59.73	5.86	
+50			5.01	65.42	59.95	5.47	Grade Sheet # 250
+75			4.92	65.51	60.16	5.35	
2			4.85	65.58	60.38	5.20	
+25			4.41	66.02	60.60	5.42	
+50			4.60	65.83	60.81	5.02	
+75			4.34	66.09	61.03	5.06	
+90 95			4.21	66.22	361.17	5.05	MH #154

Cont'd on Page 1 - Book No. 5 -

5th St. - Gopeland alley -
Cont'd from Page 59 -

Sta	+	H.I.	−	Eley.	Grade	Cut	Staked on 6' offset W.
N.W. 0+00	From Page 59 -			362.84	(352.37) 52.35	10.49	M/# 160 6" pipe
S.E.	5.27	368.11	5.38	362.73	52.39	—	
+25			5.33	62.78	52.47	10.31	
+50			5.38	62.73	52.57	10.16	
+75			5.50	62.61	52.67	9.94	Grade Sheet #238
/			5.59	62.52	52.77	9.75	
+25			5.61	62.50	52.87	9.63	
S.E. +51 S			5.68	62.43		—	
N.W.			5.77	62.34	(352.98) 352.96	9.38	M/# 133

Cont'd on Page 67

Cont'd from Page 66

Sta.	+	H.I.	−	Elev.	4% Grade (352.98)	Cut.	Staked on 6' offset W.
S.E		368.11	5.68	362.43	—		MH # 153
N.W			5.77	62.34	352.96	9.38	
+25			6.63	61.48	353.08	8.40	
+50			5.60	62.51	53.18	9.33	
+75			5.39	62.72	53.28	9.44	
1			4.87	63.24	53.38	9.86	
+25			5.43	62.68	53.48	9.20	
+50			5.35	62.76	53.58	9.18	
+75			5.60	62.51	53.68	8.83	Grade Sheet # 239
2			4.66	63.45	53.78	9.67	
+25			5.07	63.04	53.88	9.16	
+50 TP			4.14	63.97	53.98	9.99	
+75	4.35	68.32	5.16	63.16	54.08	9.08	
3			5.18	63.14	54.18	8.96	
+25			5.15	63.17	54.28	8.89	
+50			4.83	63.49	54.38	9.11	
+75			5.04	63.28	54.48 (354.58)	8.80	
4 +00			5.00	63.32		8.74	MH # 152

Cont'd on Page 68

Cont'd from Page 67

Sta	+	H.I.	–	Elev.	Grade .4%	Cut	Staked on 6' offset W.
0+00		68.32	5.00	363.32	354.58	8.74	M/#152
+25			5.24	63.08	54.68	8.40	
+50			4.99	63.33	54.78	8.55	
+75			5.07	63.25	54.88	8.37	
1			4.72	63.60	54.98	8.62	
+25			3.85	64.47	55.08	9.39	
+50 TP			4.40	63.92	55.18	8.74	
+75	6.23	70.15	5.53	64.62	55.28	9.34	
2			5.86	64.29	55.38	8.91	
+25			4.98	65.17	55.48	9.69	Grade Sheet #240
+50			5.83	64.32	55.58	8.74	
+75			5.71	64.44	55.68	8.76	
+95			5.22	64.93	55.78	9.15	
3+25			5.14	65.01	55.88	9.13	
+50			5.66	64.49	55.98	8.51	
+75			5.88	64.27	56.08	8.19	
+87.4			5.88	64.27	356.13	8.14	M/#151
BM			7.21	62.94	62.955	B.P.– S.W.– El Cajon + Copeland–	

Cont'd on Page 69

Sta.	+	H.I.	−	Elev.	.4% Grade	Cut −	Staked on 6 offset W. −
0+00				364.27	356.13	8.14	MH # 151
+25	4.49	68.76	4.57	64.19	56.23	7.96	
+50			4.32	64.44	56.33	8.11	
+75			4.81	63.95	56.43	7.52	
1			4.51	64.25	56.53	7.72	
+25			4.46	64.30	56.63	7.67	
+50			3.51	65.25	56.73	8.52	
+75			5.09	63.67	56.83	6.84	Grade Sheet #241
2			4.86	63.90	56.93	6.97	
+25			5.09	63.67	57.03	6.64	
+50			3.28	65.48	57.13	8.35	
+75			5.42	63.34	57.23	6.11	
3 +87			5.22	63.54	357.28	6.26	MH # 150

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Cont'd from Page 69 –

Sta.	+	H.I.	–	Elev.	Grade .4%	Cut –	Staked on 6' offset W.
0+00				63.54	357.28	6.26	MH #150
+25	5.11	68.65	4.80	63.85	57.38	6.47	
+50			4.89	63.76	57.48	6.28	
+75			4.95	63.70	57.58	6.12	
1			5.22	63.43	57.68	5.75	
+25			5.43	63.22	57.78	5.44	
+50			4.32	64.33	57.88	6.45	
+75			4.55	64.10	57.98	6.12	
2			4.64	64.01	58.08	5.93	Grade Sheet #242
+25			4.05	64.60	58.18	5.42	
+50			3.47	65.18	58.28	6.90	
+75			3.35	65.30	58.38	6.92	
3			3.93	64.72	58.48	6.24	
+25	5.94	70.66	6.59	64.07	58.58	5.49	
+40			6.09	64.57	358.64	5.93	MH #149
BM			6.15	64.51	364.51		

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Cont'd from Page 70

Sta.	+	H.I.	−	Elev.	Grade	Cut	Staked on 6' offset W.
0+00		70.66	6.09	64.57	.490 358.64	5.93	MH #149
+25			6.29	64.37	58.74	5.63	
+50			4.77	65.89	58.84	7.05	
+75			4.78	65.88	58.94	6.94	
1			4.79	65.87	59.04	6.83	
+25			4.89	65.77	59.14	6.63	
+50			4.75	65.91	59.24	6.67	Grade Sheet #243
+75			4.62	66.04	59.34	6.70	
2			4.05	66.61	59.44	7.17	
+25			3.52	67.14	59.54	7.60	
+50 TP			3.36	67.30	59.64	7.66	
+75	4.64	71.94	4.49	67.45	59.74	7.71	
+90			4.54	67.40	359.80	7.60	MH #148

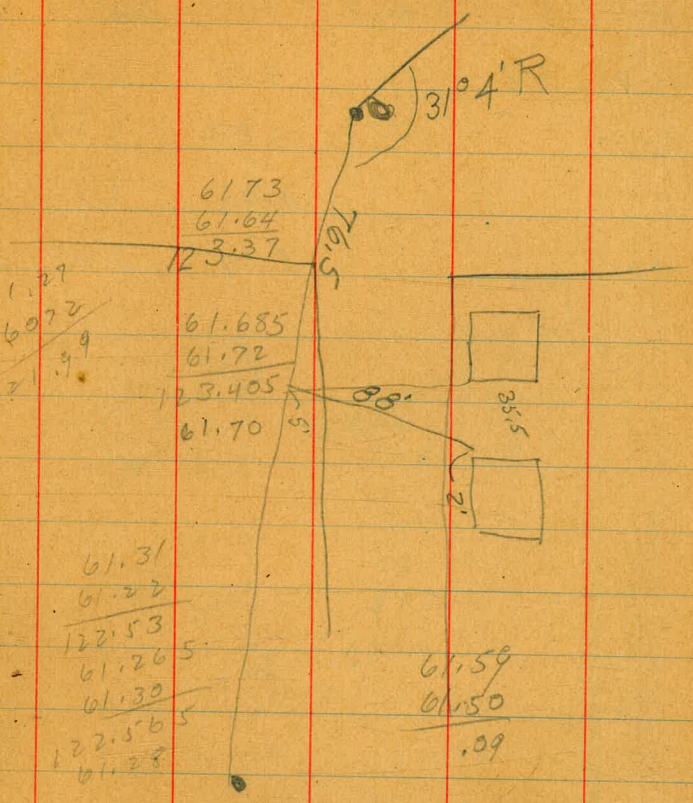
Cont'd - Book 50.5 - P2

Goldsmith - E/S - 84.2 N. of N. curb

W/S - 82.7 N. of N. curb

MH #130				61.42	
				~~61.84~~	
		66.10		61.31	
	4.68	~~66.52~~	4.79	~~61.73~~	
				61.22	
			4.88	~~61.64~~	
				61.30	
			4.80	~~61.72~~	
				61.72	
MH #131				61.84	
	4.25	66.09	4.50	61.59	
			4.59	61.50	
			4.65	61.34	
West -				361.43	
	4.89	66.32	5.57	60.75	
					60.72
			5.63	60.69	
					61.00
			5.05	61.27	
				61.22	
East	5.10	66.32	5.14	61.18	
			5.25	61.07	61.12
			5.77	60.55	

3783 - Thomas



61.73
61.64
123.37

61.29
60.72
121.99

61.685
61.72
123.405
61.70

61.31
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122.53
61.265
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60.83

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.09

61.55
61.34
122.89
61.45

				3.6	
90	5.02	8.62	5.02	~~8.62~~ 3.6	0.00
+90 75	~~5.02~~		4.95	3.67	- .36
+75 50			4.88	3.74	.96
+25			4.93	3.69	1.56
0 +00			5.14	3.48	2.16

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4.06
57.78
3.64
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287
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1.148

665
57.28
56.13
1.15

5.71

4.06
53.58
57.64
3.84
53.94
.70

4.65

3.79

4.02

57.64
3.64
54.00

50.00
165.00
100.00
315.00

3.38

2+97 4 E- M121-120.
Burnett-Paley.

Calculation of Earthwork.

349.2

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
18	.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	5.33
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.

4243- Copeland
Eis,

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	25.2	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.

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