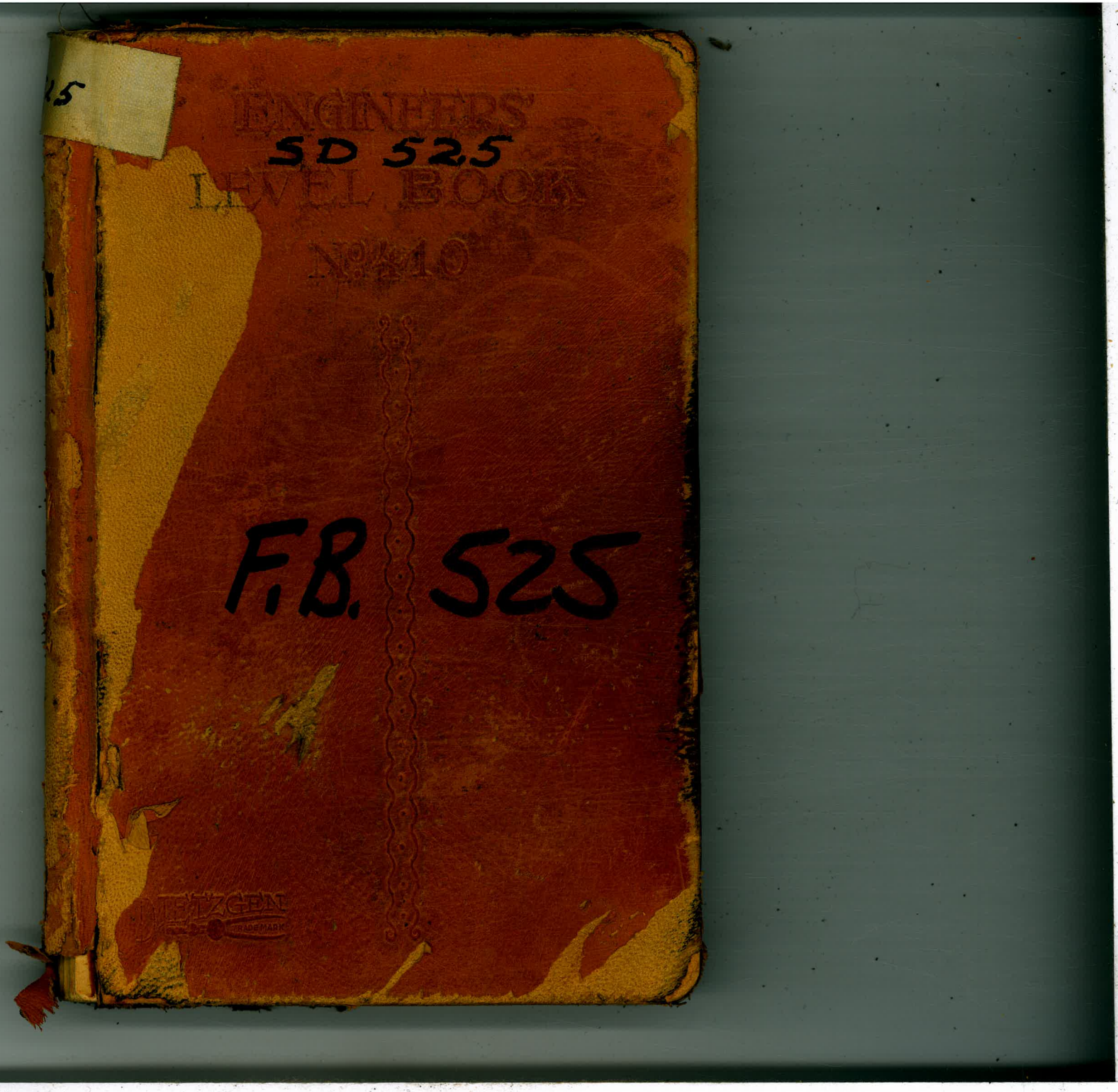
ENGINEERS'
LEVEL BOOK
No. 10
SD 525
F.B. 525
DIETZGEN

1340

EUGENE DIETZGEN CO.
DRAWING MATERIALS, MATHEMATICAL and
SURVEYING INSTRUMENTS
Chicago New York San Francisco New Orleans Pittsburg Toronto

Distances from Center of Roadway for Cross-Sectioning
Roadway 16 feet wide. Side Slopes 1 on 1.
For Single Track Embankment.

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

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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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Daley - Sisson alley MH #267 - F.T. 31.

Chisholm } 7-28-'22
Brown }

Sta.	+	H.I.	−	Elev.	Grade .4995%	Cut	Staked on 6' offset North
~~0+00~~	From Page 68 Book No. 6			329.40	325.00	4.40	MH #267
+25	5.32	334.72	5.14	329.58	325.12	4.46	
+50			5.07	329.65	325.25	4.40	
+75			5.07	329.65	325.37	4.28	Grade Sheet 372
1+00			5.01	329.71	325.50	4.21	
+25			5.05	329.67	325.62	4.05	
+50			4.84	329.88	325.75	4.13	
+75			4.69	330.03	325.87	4.16	
N.W. 2+00 ℄			4.55	330.17	326.00	4.17	MH #266
	Street Grade MH #266			329.90			

Cont'd on Page 2

Cont'd from Page 1

Sta. N.W.	+	H.I.	−	Elev.	Grade 1.58%	Cut	Staked on 6' offset West
0+00		334.72	4.55	330.17	326.00	4.17	MH # 266
+25			4.77	329.95	326.40	3.55	
+50 TP			3.26	331.46	326.79	4.67	
+75	11.09	342.55	8.25	334.30	327.19	7.11	
1+00			7.32	335.23	327.58	7.65	Grade Sheet # 373
+25			6.83	335.72	327.98	7.74	
+50			6.39	336.16	328.37	7.79	
+75			5.90	336.65	328.77	7.88	
2+00			5.20	337.35	329.16	8.19	
+25			4.85	337.70	329.56	8.14	
+50			3.93	338.62	329.95	8.67	
+75			3.67	338.88	330.35	8.53	
3+00			3.16	339.39	330.74	8.65	
+10			2.94	339.61	330.90	8.71	MH # 265

Cont'd on Page 3

Cont'd from Page 2

Sta.	+	H.I.	-	Elev.	Grade 1.587%	Cut	Staked on 6' offset West.
0+00		342.55	2.94	339.61	330.90	8.71	MH # 265
+25TP			2.40	340.15	331.30	8.85	
+50.	8.19	348.34	7.70	340.64	331.69	8.95	
+75			7.00	341.34	332.09	9.25	
1+00			6.92	341.42	332.48	8.94	
+25			5.92	342.42	332.88	9.54	
+50			5.50	342.84	333.27	9.57	Grade Sheet 374
+75			5.23	343.11	333.67	9.44	
2+00			5.05	343.29	334.06	9.23	
+25			4.58	343.76	334.46	9.30	
+50			4.40	343.94	334.85	9.09	
+75			4.27	344.07	335.25	8.82	
3+00			4.03	344.31	335.64	8.67	
+10.1	TP		4.33	344.01	335.80	8.21	MH # 264
B.M.	2.08	346.09	3.01	343.08	343.10		B.P. N.W. Klauber & Sisson

Cont'd on Page 4

Cont'd from Page 3

Sta.	+	H.I	−	Elev.	Grade .764 %	Cut	Staked on 6' offset West
0+00		348.34	4.33	344.01	335.80	8.21	MH # 264
+25	2.08	346.09	5.35	340.74	335.99	4.75	
+50			5.25	340.84	336.18	4.66	
+75			5.02	341.07	336.37	4.70	
1+00			4.13	341.96	336.56	5.40	
+25			1.06	345.03	336.76	8.27	Grade Sheet # 375
+50 TP			0.67	345.42	336.95	8.47	
+75	3.78	349.20	3.18	346.02	337.14	8.88	
2+00			3.73	345.47	337.33	8.14	
+25			3.84	345.36	337.52	7.84	
+50			4.12	345.08	337.71	7.37	
+75			4.62	344.58	337.90	6.68	
3+00			4.70	344.50	338.09	6.41	
+25			4.94	344.26	338.28	5.98	
+40			4.86	344.34	338.40	5.94	MH # 263

Cont'd on Page 5

Cont'd from Page 4

Sta.	+	H.I.	-	Elev.	Grade .765%	Cut	Staked on 6' offset West
0+00		349.20	4.86	344.34	338.40	5.94	MH # 263
+25			4.59	344.61	338.59	6.02	
+50			4.27	344.93	338.78	6.15	
+75			3.73	345.47	338.97	6.50	
1+00			3.20	346.00	339.17	6.83	
+25 TP			3.15	346.05	339.36	6.69	
+50	6.68	352.73	6.67	346.06	339.55	6.51	Grade Sheet # 376
+75			6.62	346.11	339.74	6.37	
2+00			6.24	346.49	339.93	6.56	
+25			5.58	347.15	340.12	7.03	
+50			5.20	347.53	340.31	7.22	
+75			4.98	347.75	340.50	7.25	
3+00			5.26	347.47	340.70	6.77	
+25			5.75	346.98	340.89	6.09	
+39.84			5.81	346.92	341.00	5.92	MH # 262

Cont'd on Page 6

Cont'd from Page 5

Sta.	+	H.I.	−	Elev.	Grade 1.555%	Cut	Staked on 6' offset West
0+00	From Page 73 Book No.6			353.40	346.30	7.10	MH # 261
+25	7.23	360,63	6.54	354.09	346.69	7.40	
+50			6.16	354.47	347.08	7.39	
+75			5.77	354.86	347.47	7.39	
1+00			5.18	355.45	347.86	7.59	
+25			4.87	355.76	348.24	7.52	Grade Sheet # 378
+50			4.49	356.14	348.63	7.51	
+75			4.35	356.28	349.02	7.26	
2+00			4.27	356.41	349.41	7.00	
+25			3.64	356.99	349.80	7.19	
+50			3.05	357.58	350.19	7.39	
+75			2.88	357.75	350.58	7.17	
3+00 TP			1.70	358.93	350.97	7.96	
+25	6.68	365,61	6.45	359.16	351.35	7.81	
+40 68			6.04	359.57	351.60	7.97	MH # 260

Cont'd on Page 7

Cont'd from Page 6

Sta.	+	H.I.	−	Elev.	Grade 1.369%	Cut	Staked on 6' offset West.
0+00		365.61	6.04	359.57	351.60	7.97	MH # 260
+30			7.20	358.41	352.01	6.40	
+50			6.96	358.65	352.28	6.37	
+75			5.30	360.31	352.63	7.68	
1+00			4.77	360.84	352.97	7.87	
+25			4.36	361.25	353.31	7.94	
+50			4.00	361.61	353.65	7.96	Grade Sheet # 379
+75			3.68	361.93	354.00	7.93	
2+00			3.83	361.78	354.34	7.44	
+25			3.67	361.94	354.68	7.26	
+50 TP			3.31	362.30	355.02	7.28	
+75	5.92	368.22	5.61	362.61	355.36	7.25	
3+00			5.36	362.86	355.71	7.15	
+13 32			5.20	363.02	355.89	7.13	MH # 259

Cont'd on Page 8

Cont'd from Page 7

Chisholm / Brown 7-28-22

Sta.	+	H.I.	−	Elev.	Grade 1.368%	Cut	
0+00		368.22	5.20	363.02	355.89	7.13	Staked on 6' offset West
+25			4.93	363.29	356.23	7.06	
+50			4.76	363.46	356.57	6.89	
+75			4.78	363.44	356.92	6.52	
1+00			4.74	363.48	357.26	6.22	
+25			4.24	363.98	357.60	6.38	Grade Sheet # 380
+50			3.99	364.23	357.94	6.29	
+75			4.02	364.20	358.28	5.92	
2+00			3.99	364.23	358.63	5.60	
+25 TP.			3.53	364.69	358.97	5.72	
+50	4.72	369.41	4.51	364.90	359.31	5.59	
+75			4.24	365.17	359.65	5.52	
3+00 22			4.18	365.23	360.00	5.23	F.T. # 31
B.M.			4.83	364.58	364.55	B.P. N.W. Orange + Sisson	

~ End of Sewer ~

Thomas – Daley alley MH # 288 – MH # 286

Sta.	+	H.I.	–	Elev.	Grade
B.M.	From Book No. 6		Page 67	331.39	10.818%
TP	2.55	333.94	12.51	321.43	
0+00	8.68	330.11	11.32	318.79	311.20
+25			8.10	322.01	313.90
+50			7.65	322.46	316.61
+72 L			6.58	323.53	319.00

Cont'd on Page 10

Chisholm } 7-30-22
Brown }

Cut	Staked on 6' offset East.		F.T. # 34
	2x2 hub on 6' offset W. from center		
7.59		MH # 124 J	
8.11			
5.85			
4.53		MH # 288	
		Grade Sheet # 383	

Cont'd from Page 9

Chisholm
Brown } 7-30-22

Sta. W. Side	+	H.I	−	Elev.	Grade 12.453%	Cut	
0+00		330.11	11.32	318.79	311.00	7.79	Staked on 6' offset West. MH # 124T
+25			6.13	323.98	314.11	9.87	
+50 TP			2.71	327.40	317.23	10.17	
+75	12.88	340.28	10.09	330.19	320.34	9.85	
1+00			7.17	333.11	323.45	9.66	Grade Sheet # 384
+25			5.09	335.19	326.57	8.62	
+50			2.14	338.14	329.68	8.46	
+75 TP			0.11	340.17	332.79	7.38	
+87 9	9.78	349.95	9.11	340.84	334.40	6.44	MH # 287

Cont'd on Page 11

Cont'd from Page 10

Sta	+	H.I.	−	Elev.	Grade 1.868%	Cut	Staked on 6' offset West
0+00		349.95	9.11	340.84	334.40	6.44	MH # 287
+25			8.18	341.77	334.87	6.90	
+50			7.29	342.66	335.33	7.33	
+75			6.73	343.22	335.80	7.42	
1+00			5.98	343.97	336.27	7.70	
+25			5.56	344.39	336.74	7.65	Grade Sheet #521
+50			4.94	345.01	337.20	7.81	
+75			4.48	345.47	337.67	7.80	
2+00			4.00	345.95	338.14	7.81	
+25			3.28	346.67	338.60	8.07	
+50			2.83	347.12	339.07	8.05	
+75			2.24	347.71	339.54	8.17	
+99 73			2.03	347.92	340.00	7.92	MH # 286

Reed – Thomas alley MH# 115T – MH# 311
MH# 115T – MH# 307

Chisholm, Brown } 8-3-'22

Sta. B.M.	+	H.I.	–	Elev. 331.00	Grade 22.69%	Cut
TP	4.45	335.45	8.98	326.47		
TP	0.10	326.57	10.72	315.85		
TP	0.26	316.11	13.08	303.03		
TP	1.32	304.35	12.33	292.02		
TP	0.43	292.45	12.65	279.80		
W.S. 0+00	3.11	282.91	9.22	273.69	268.00	5.69
+25 TP			0.33	282.58	273.67	8.91
+50	13.00	295.58	7.25	288.33	279.35	8.98
+75			1.61	293.97	285.02	8.95
TP			0.31	295.27		—
1+00	11.77	307.04	7.27	299.77	290.69	9.08
W.S. +27.8			5.61	301.43	297.00	4.43

Cont'd on Page 13

2x2 at 6' offset E. from center of MH# 306
So 6 P. 48

Grade Sheet #385

MH # 115T
Staked on 6' offset W.

MH # 310

Chisholm / Brown 8-3-32

Cont'd from Page 12

Sta.	+	H.I	−	Elev.	Grade	Cut	
W.S.					1.927%		
0+00		307.04	5.61	301.43	297.00	4.43	MH # 310
+25			5.08	301.96	297.48	4.48	Staked on 6' offset E.
+50			3.61	303.43	297.96	5.47	
+75			3.62	303.42	298.45	4.97	
1+00			3.32	303.72	298.93	4.79	
+25			2.93	304.11	299.41	4.70	
+55 68			1.61	302.43	300.00	2.43	MH # 311
TP.			11.77	295.27			
TP	0.37	295.64	13.06	282.58			
B.M.	0.38	282.96	9.27	273.69	273.69		W.S. of MH ring at ℄ E. & W. at MH # 115T From Page 12 This Book

Cont'd from Page 14

Chisholm / Brown 8-3-22

Cont'd from Page 13

	+	H.I.	−	Elev.	Grade 22.641%	Cut	Staked on 6' offset East
W.S. 0+00		282.96	9.27	273.69	268.00	5.69	MH # 115T
+25 TP			6.35	276.61	273.66	2.95	
+50	12.65	289.26	2.29	286.97	279.32	7.65	
TP			0.66	288.60	[illegible]	—	
+75	12.37	300.97	6.33	294.64	284.98	9.66	
TP			0.45	300.52	[illegible]	—	Grade Sheet # 386
1+00	11.44	311.96	9.97	301.99	290.64	11.35	
+20			5.63	306.33	295.17	11.16	
TP			0.13	311.83		—	
1+50	11.07	322.90	10.03	312.87	301.96	10.91	
+75 E.S. 92			6.58	316.32	307.62	8.70	
+89			5.41	317.49	311.00	6.49	MH # 309

Cont'd on Page 15

Cont'd from Page 14

Sta.	+	H.I.	−	Elev.	Grade 2.758%	Cut	Staked on 6' offset West
ES.							
0+00		322.90	5.41	317.49	311.00	6.49	MH # 309
+25			4.34	318.56	311.69	6.87	
+50			5.43	317.47	312.38	5.09	
+75			4.80	318.10	313.07	5.03	
1+00			4.98	317.92	313.76	4.16	Grade Sheet # 410
+25			2.83	320.07	314.45	5.62	
TP			1.56	321.34			
+50	10.37	331.71	9.03	322.68	315.14	7.54	
+75			7.76	323.95	315.83	8.12	
2+00			6.60	325.11	316.52	8.59	
+25			5.83	325.88	317.21	8.67	
+50			5.23	326.48	317.90	8.58	
+75			4.83	326.88	318.58	8.30	
+90			4.36	327.35	319.00	8.35	MH # 308

Cont'd on Page 16

Cont'd from Page 15

Sta.	+	H.I.	−	Elev.	Grade 2.758%	Cut	Staked on 6' offset West
0+00		331.71	4.36	327.35	319.00	8.35	MH # 308
+25			3.51	328.20	319.69	8.51	
+50			2.98	328.73	320.38	8.35	
+75			2.14	329.57	321.07	8.50	
1+00 TP.			1.95	329.76	321.76	8.00	Grade Sheet # 411
+25	6.69	336.45	6.30	330.15	322.45	7.70	
+50			5.77	330.68	323.14	7.54	
+75			5.28	331.17	323.83	7.34	
2+00			4.97	331.48	324.52	6.96	
+25			4.66	331.79	325.21	6.58	
+50			4.29	332.16	325.90	6.26	
+75			3.95	332.50	326.58	5.92	
+90			4.10	332.35	327.00	5.35	MH # 307
B.M.			5.44	331.01	331.00		2x2 at 6' offset E. from center of MH #306

Pueblo – Mission alley MH# 438 – MH# 433

Chisholm } 8-9-32
Brown }

Staked on 6' offset East

Sta.	+	H.I	–	Elev			
B.M.				333.44	.551		
TP	8.88	342.32	6.21	336.11			
TP	0.44	336.55	11.62	324.93			
W.S.							
0 + 00	11.31	336.24	12.92	323.32	318.40	4.92	MH# 109T
+ 25			13.04	323.20	318.54	4.66	
+ 50			10.52	325.72	318.68	7.04	
+ 75			8.99	327.25	318.81	8.44	
1 + 00			5.66	330.58	318.95	11.63	
+ 25			5.98	330.26	319.09	11.17	Grade Sheet # 501
+ 50			5.47	330.77	319.23	11.54	
+ 75			4.93	331.31	319.36	11.95	
2 + 00			3.95	332.29	319.50	12.79	
+ 25			2.92	333.32	319.64	13.68	
+ 50			1.41	334.83	319.78	15.05	
+ 75			1.59	334.65	319.92	14.73	
3 + 00 TP			0.54	335.70	320.05	15.65	
+ 25	6.60	342.30	6.18	336.12	320.19	15.93	
+ 50			5.76	336.54	320.33	16.21	
+ 75			5.90	336.40	320.47	15.93	

B.P. N.W. Pueblo + University

Cont'd on Page 18

Cont'd from Page 17

	+	H.I.	−	Elev.	Grade	Cut	Staked on 6' offset East
4+00		342.30	5.30	337.00	320.60	16.40	
+25			5.45	336.85	320.74	16.11	
+50			5.86	336.44	320.88	15.56	
+71.8			6.08	336.22	321.00	15.22	M# 438 5195
B.M.(S.D.)			8.85	333.45	333.41		B.P. N.W. University & Pueblo.

Cont'd on Page 19

Cont'd from Page 18

Chisholm } 8-9-22
Brown

	+	H.I.	−	Elev.	Grade 6.986%	Cut	Staked on 6' offset West
0+00				323.32	318.40	4.92	MH # 109T N 195
+25	11.24	334.56	10.15	324.41	320.15	4.26	
+50			6.05	328.51	321.89	6.62	
+75			2.82	331.74	323.64	8.10	
1+00 TP			0.75	333.81	325.39	8.42	
+25	9.88	343.69	6.85	336.84	327.13	9.71	Grade Sheet # 502
+50			7.61	336.08	328.88	7.20	
+75			8.05	335.64	330.63	5.01	
+94 67			7.58	336.11	332.00	4.11	MH # 437

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Cont'd from Page 19

	+	H.I.	−	Elev.	
					1.809%
0+00		343.69	7.58	336.11	332.00
+25			6.58	337.11	332.45
+50			5.28	338.41	332.90
+75			4.46	339.23	333.36
1+00			3.13	340.56	333.81
+25			2.17	341.52	334.26
+50			1.18	342.51	334.71
+75 TP			0.30	343.39	335.17
2+00	10.49	353.88	9.53	344.35	335.62
+25			9.10	344.78	336.07
+50			7.81	346.07	336.52
+75			7.19	346.69	336.97
3+00			6.20	347.68	337.43
+25			5.35	348.33	337.88
+50			5.10	348.78	338.33
+75			4.88	349.00	338.78
4+02 26			4.83	349.05	339.28

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Chisholm
Brown } 8-9-22

Staked on 6' offset West

4.11	MH # 437	5 21'
4.66		
5.51		
5.87		
6.75		
7.26		
7.80	Grade Sheet # 503	
8.22		
8.73		
8.71		
9.55		
9.72		
10.25		
18.45		
10.45		
10.22		
9.77	MH # 436	

Cont'd from Page 20

	+	H.I.	−	Elev.	Grade 2.70%	Cut	Staked on 6' offset North
0+00		353.88	4.83	349.05	342.70	6.35	MH # 436
+11 10			4.88	349.00	343.00	6.00	MH # 435

Street Grade	MH # 436	348.60	
" "	MH # 435	348.80	

Grade Sheet #504

Cont'd on Page 22

Cont'd from Page 21

Sta. N.W	+	H.I.	−	Elev.	Grade 2.467	Cut	Staked on 6' offset West
0+00		353.88	4.88	349.00	343.00	6.00	MH # 435
+25			3.43	350.45	343.62	6.83	
+50			2.32	351.56	344.23	7.33	
+75 TP			1.79	352.39	344.85	7.54	
1+00	9.33	361.72	8.34	353.38	345.47	7.91	
+25			7.62	354.10	346.08	8.02	Grade Sheet #505
+50			6.78	354.94	346.70	8.24	
+75			6.41	355.31	347.32	7.99	
2+00			5.86	355.86	347.93	7.93	
+25			4.82	356.90	348.55	8.35	
+50			4.51	357.21	349.17	8.04	
188			3.97	357.75	349.91	7.84	MH # 434

Cont'd on Page 23

Contd from Page 22

Sta.	+	H.I.	−	Elev.	Grade 2.467%	Cut	Staked on 6' offset West
0+00		361.72	3.97	357.75	349.91	7.84	MH # 434
+25			3.37	358.35	350.53	7.82	
+50			3.02	358.70	351.14	7.56	
+75			2.73	358.99	351.76	7.23	
1+00 TP			2.15	359.57	352.38	7.19	
+25	7.26	366.83	7.02	359.81	352.99	6.82	Grade Sheet # 506
+50			6.90	359.93	353.61	6.32	
+75			6.37	360.46	354.23	6.23	
2+00			6.02	360.81	354.84	5.97	
+25			5.53	361.30	355.46	5.84	
+50			5.12	361.71	356.08	5.63	
+75			4.83	362.00	356.69	5.31	
2+87 35			4.82	362.01	357.00	5.01	MH # 433
TP			5.20	361.63			
B.M.	7.70	369.33	2.68	366.65	366.60		B.P. N.W. Mission & Orange

End of Sewer

Chisholm
Brown
8-11-27

Anna St. sewer MH # 436 - MH # 432

Sta	+	H.I.	−	Elev.	Grade .4%	Cut	Staked on 6' offset South
N.W. 0+00				349.05	339.28	9.77	MH # 436
+25	0.53	349.58	0.68	348.90	339.38	9.52	
+50			1.78	347.80	339.48	8.32	
+75			2.50	347.08	339.58	7.50	Grade Sheet # 507
1+00			3.29	346.29	339.68	6.61	
+25			4.13	345.45	339.78	5.67	
+50			5.07	344.51	339.88	4.63	
S.W. +78 84			8.38	341.20	340.00	1.20	MH # 432

Street Grade 343.25

Cont'd on Page 25

Wisconsin Ave Sewer MH # 432 – MH # 429
Cont'd from Page 24

Chisholm } 8-11-22
Brown }

Sta. S.W.	+	H.I.	–	Elev.	Grade 1.561%	Cut	
0+00		349.58	8.38	341.20	340.00	1.20	MH # 432
+25			5.46	344.12	340.39	3.73	
+50			4.95	344.63	340.78	3.85	Staked on 6' offset W.
+75			4.51	345.07	341.17	3.90	
1+00			3.98	345.60	341.56	4.04	
+25			3.46	346.12	341.95	4.17	
+50 TP			2.98	346.60	342.34	4.26	
+75	11.56	358.16	11.01	347.15	342.73	4.42	Grade Sheet # 508
2+00			10.13	348.03	343.12	4.91	
+25			9.17	348.99	343.51	5.48	
+50			8.49	349.67	343.90	5.77	
+75			7.45	350.71	344.29	6.42	
3+00			6.66	351.50	344.68	6.82	
+10			6.27	351.89	344.84	7.05	MH # 431

Street Grade 350.15

Cont'd on Page 26

Chisholm } 8-11-22
Brown }

Cont'd from Page 25

Sta.	+	H.I.	−	Elev.	Grade 1.565%	Cut	
0+00		358.16	6.27	351.89	344.84	7.05	MH # 431
+25			5.50	352.66	345.23	7.43	
+50			5.24	352.92	345.62	7.30	Staked on 6' offset West
+75			4.74	353.42	346.01	7.41	
1+00			4.50	353.66	346.41	7.25	
+25			4.20	353.96	346.80	7.16	
+50 TP			3.49	354.67	347.19	7.48	
+75	7.68	362.35	7.91	354.44	347.58	6.86	Grade Sheet #509
2+00			9.25	353.10	347.97	5.13	
+35			12.05	350.30	348.52	1.78	
+50			10.61	351.74	348.75	2.99	
+75			8.66	353.69	349.14	4.55	
3+00			7.14	355.21	349.54	5.67	
N.W. +16 77			6.93	355.42	349.80	5.62	MH # 429

Street Grade 358.05

Cont'd on Page 27

Orange Ave. sewer MH# 430 – MH# 417
Just E of Boundary.

Chisholm & Brown 8-11-27

Sta.	+	H.I.	–	Elev	Grade 3.813%	Cut	Staked on 6' offset South
0+00		362.35	6.93	355.42	350.00	5.42	MH# 429
+25			5.70	356.65	350.95	5.70	
+50			4.30	358.05	351.91	6.14	
+75			3.42	358.93	352.86	6.07	
1+00			2.34	360.01	353.81	6.20	Grade Sheet # 510
+25			1.55	360.85	354.77	6.08	
+50			0.84	361.51	355.72	5.79	
+83 54			0.92	361.43	357.00	4.43	MH# 430 Orange E of Boundary.

Street Grade MH# 430 – 361.00

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Cont'd from Page 27

Sta.	+	H.I.	−	Elev.	Grade 1.483%	Cut	Staked on 6' offset North
0+00		362.35	6.93	355.42	350.00	5.42	MH # 429
+25			7.16	355.19	350.37	4.82	
+50			5.65	356.70	350.74	5.96	
+75			3.32	359.03	351.11	7.92	
1+00 TP			1.56	360.79	351.48	9.31	
+25	6.42	367.21	5.28	361.93	351.85	10.08	Grade Sheet # 511
+50			4.80	362.41	352.22	10.19	
+75			5.40	361.81	352.60	9.21	
2+00			5.79	361.42	352.97	8.45	
+25			5.44	361.77	353.34	8.43	
+50			4.97	362.24	353.71	8.53	
+75			4.52	362.69	354.08	8.61	
3+03 96			4.12	363.09	354.51	8.58	MH # 428
				362.88			

Cont'd on Page 29

Cont'd from Page 28

Orange Ave
33rd to 7th & 33rd

Sta.	+	H.I.	−	Elev.	Grade
					1.489
0+00		367.21	4.12	363.09	354.51
+25			3.66	363.55	354.88
+50			3.26	363.95	355.25
+75			3.07	364.14	355.63
1+00 TP			2.88	364.33	356.00
+25	6.60	370.93	6.32	364.61	356.37
+50			6.09	364.84	356.74
+75			5.67	365.26	357.12
2+00			5.43	365.50	357.49
+25			4.98	365.95	357.86
+50			4.66	366.27	358.23
+75			4.30	366.63	358.60
+98 72			4.11	366.82	358.96
B.M.			4.29	366.64	366.60
	Street Grade			366.88	

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Chisholm & Brown 8-11-33

CHt	
8.58	Staked on 6' offset North
8.67	MH # 428
8.70	
8.51	
8.33	
8.24	Grade Sheet #512
8.10	
8.14	
8.01	
8.09	
8.04	
8.03	
7.86	MH # 427 Orange + 33 ft.
B.P. N.W.	Mission & Orange

Cont'd from Page 29

33rd Alley E.

Sta.	+	H.I.	−	Elev.	Grade 2.92%	Cut
0+00		370.93	4.11	366.82	358.96	7.86
+25			3.48	367.45	359.69	7.76
+50			3.18	367.75	360.42	7.33
+75			2.91	368.02	361.15	6.87
1+00			2.54	368.39	361.88	6.51
+25 TP			2.27	368.66	362.61	6.05
+50 N.W.	6.62	375.28	6.36	368.92	363.34	5.58
+72 5/12			6.08	369.20	364.00	5.20
		Street Grade		369.70		

Staked on 6' offset North

MH # 427 S of 33 St in Alley

Grade Sheet # 518

MH # 417

Cont'd on Page 31

Cont'd from Page 30

Alley BC 40

Sta. N.W	+	H.I.	−	Elev.	Grade .796%	Cut	Staked on 6' offset West
0+00		375.28	6.08	369.20	364.00	5.20	MH # 417
+25			6.90	368.38	364.20	4.18	
+50			5.54	369.74	364.40	5.34	
+75			5.17	370.11	364.60	5.51	
1+00			4.62	370.66	364.80	5.86	
+25			4.06	371.22	365.00	6.22	
+50			2.97	372.31	365.19	7.12	Grade Sheet # 519
+75 TP			2.53	372.75	365.39	7.36	
2+00	4.93	377.68	5.23	372.45	365.59	6.86	
+25			5.01	372.67	365.79	6.88	
+50			5.01	372.67	365.99	6.68	
+75			4.86	372.82	366.19	6.63	
3+00			4.83	372.85	366.39	6.46	
+15			4.66	373.02	366.51	6.51	MH # 416.

Cont'd on Page 32

Contd from Page 31

Sta.	+	H.I.	−	Elev.	Grade
0+00		377.68	4.66	373.02	366.51
+25			4.97	372.71	366.71
+50			4.99	372.69	366.91
+75			5.01	372.67	367.11
1+00			4.99	372.69	367.31
+25			5.19	372.49	367.51
+50 TP			5.33	372.35	367.71
+75	5.37	377.72	4.94	372.78	367.91
2+00			5.35	372.37	368.11
+25			4.49	373.23	368.31
+50			4.93	372.79	368.51
+75			4.32	373.40	368.70
3+00			3.57	374.15	368.90
+11.8			3.38	374.34	369.00
TP			5.78	371.94	
B.M.	2.54	374.48	7.85	366.63	366.60

End of Sewer

Cut	
	Staked on 6' offset West
6.51	MH # 416
6.00	
5.78	
5.56	
5.38	
4.98	
4.64	Grade Sheet # 520
4.87	
4.26	
4.92	
4.28	
4.70	
5.25	
5.34	F.T. # 50 Alley BC 40
	B.P. N.W. Mission & Orange

First St & Howard - El Cajon alley sewer
MH#427 - F.T.#52

Chisholm } 8-19-22
Hall }

Sta.	+	H.I.	-	Elev.	Grade .399%	Cut	Staked on 6' offset West
0+00	From Page 29 This Book			366.82	358.96	7.86	MH#427
+25	5.84	372.66	5.60	367.06	359.06	8.00	
+50			5.36	367.30	359.16	8.14	
+75			5.11	367.55	359.26	8.29	
1+00			4.89	367.77	359.36	8.41	
+25			4.57	368.09	359.46	8.63	Grade Sheet #513
+50			4.27	368.39	359.56	8.83	
+75			3.99	368.67	359.66	9.01	
2+00			3.73	368.93	359.76	9.17	
+25			3.36	369.30	359.86	9.44	
+50			3.08	369.58	359.96	9.62	
+60 25			2.98	369.68	360.00	9.68	MH#426

Street Grade 369.72

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Sta.	+	H.I.	-	Elev.	Grade .4%
0+00		372.66	2.98	369.68	360.00
+25			2.63	370.03	360.10
+50 TP			2.21	370.45	360.20
+75	6.66	377.11	6.36	370.81	360.30
1+00			6.11	371.00	360.40
+25			5.86	371.25	360.50
+50			5.59	371.52	360.60
+75			5.21	371.90	360.70
2+00			4.86	372.25	360.80
+25			4.46	372.65	360.90
S.W. +49 BB			4.29	372.82	361.00
	Street Grade			372.52	

Cont'd on Page 35

Cut	
9.68	Staked on 6' offset West
9.93	MH # 426
10.25	
10.51	
10.60	
10.75	Grade Sheet #514
10.92	
11.20	
11.45	
11.75	
11.82	MH # 425
0.10	

Cont'd from Page 34

Sta.	+	H.I.	−	Elev.	Grade .4%	Cut
0+00		377.11	4.29	372.82	361.00	11.82
+25			5.33	371.78	361.10	10.68
+50			4.95	372.16	361.20	10.96
+75			6.11	371.00	361.30	9.70
1+00			6.41	370.70	361.40	9.30
+25			6.67	370.44	361.50	8.94
+50 TP			7.11	370.00	361.60	8.40
+75	3.54	373.54	3.28	370.26	361.70	8.56
2+00			3.36	370.18	361.80	8.38
+25			3.91	369.63	361.90	7.73
+50			4.17	369.37	362.00	7.37
+75			4.70	368.84	362.10	6.74
3+00			5.09	368.45	362.20	6.25

Staked on 6' offset South
in Highland Park Blvd
MH # 425 – Alley ± 33rd St.

Grade Sheet #515

MH # 424

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Sta.	+	H.I.	−	Elev.	Grade .47%	Cut	Staked on 6' offset South
0+00		373.54	5.09	368.45	362.20	6.25	MH # 424
+25			5.81	367.73	362.30	5.43	
+50			6.16	367.38	362.40	4.98	
+75			7.05	366.49	362.50	3.99	
1+00			7.72	365.82	362.60	3.22	
+25			9.27	364.27	362.70	1.57	Grade Sheet # 516
+50 TP			8.28	365.26	362.80	2.46	
+75	8.76	374.02	7.78	366.24	362.90	3.34	
2+00			6.94	367.08	363.00	4.08	
+25			6.25	367.77	363.10	4.67	
+50			5.33	368.69	363.20	5.49	
+75			4.80	369.22	363.30	5.92	
3+00			4.43	369.59	363.40	6.19	MH # 423

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Cont'd from Page 36

Sta	+	H.I.	−	Elev.	Grade .4%	Cut	Staked on 6' offset South
0+00		374.02	4.43	369.59	363.40	6.19	MH # 423
+25			4.45	369.57	363.50	6.07	
+50			4.32	369.70	363.60	6.10	
+75			3.77	370.25	363.70	6.55	
1+00 TP			3.46	370.56	363.80	6.76	
+25	6.05	376.61	5.58	371.03	363.90	7.13	Grade Sheet # 517
+50			5.09	371.52	364.00	7.52	
+75			4.86	371.75	364.10	7.65	
2+00			4.17	372.44	364.20	8.24	
+25			3.84	372.77	364.30	8.47	
+50			3.41	373.20	364.40	8.80	
+75			3.24	373.37	364.50	8.87	
3+00			2.90	373.71	364.60	9.11	F.T. 52
TP			10.91	365.70			
TP	6.50	372.20	1.40	370.80			
B.M.	2.84	373.64	6.97	366.67	366.60		B.P. N.W. Orange + Mission

End of Sewer

#17

Sta.	+	H.I.	−	Elev.
0+00				
+25				
+50				
+75				
1+00				
+25				
+50				
+75				
2+00				

Mentone – Menlo alley sewer MH #24 – MH #23

Chisholm } 8-12-22
Hall }

Sta.	+	H.I.	–	Elev.	Grade .3%	Cut	
0+00	From Book No.2 Page 9			346.73	337.45	9.28	Staked on 6' offset W.
							MH # 24
+25	9.01	355.77	8.16	47.61	337.53	10.08	
+50			7.38	48.39	337.60	10.79	
+75			6.34	49.43	337.68	11.75	
1+00			5.31	50.46	337.75	12.71	Grade Sheet # 399
+25			4.21	51.56	337.83	13.73	
+50			3.51	52.26	337.90	14.36	
+75			4.13	51.64	337.98	13.66	
2+00			4.28	51.49	338.05	13.44	
+25			4.34	51.43	338.13	13.30	
+50 TP			4.64	351.13	338.20	12.93	
+75	1.82	352.95	2.43	350.52	338.28	12.24	
3+00			3.25	49.70	338.35	11.35	
+25			3.58	49.37	338.43	10.94	
+50			4.37	48.58	338.50	10.08	
+75			4.86	48.09	338.58	9.51	
4+00			5.28	47.67	338.65	9.02	MH # 23
B.M.			1.83	351.12	351.18		B.P. N.W. University & Mentone

Thomas – Daley alley sewer MH # 285 – MH # 282

Chisholm, Brown } 8-11-22

Sta.	+	H.I.	–	Elev.	Grade 1.614%	Cut	Staked on 6' offset West
0+00	From Page 74 Book 506			354.39	345.50	8.89	MH # 285
+25	6.87	361.26	5.99	355.27	345.90	9.37	
+50			5.61	355.65	346.31	9.34	
+75			5.64	355.62	346.71	8.91	
1+00			5.42	355.84	347.11	8.73	
+25			5.22	356.04	347.52	8.52	
+50			4.84	356.42	347.92	8.50	Grade Sheet # 523
+75			4.68	356.58	348.32	8.26	
2+00			5.00	356.26	348.73	7.53	
+25			4.23	357.03	349.13	7.90	
+50			4.38	356.88	349.54	7.34	
+75			4.01	357.25	349.94	7.31	
3+00 TP			3.91	357.35	350.34	7.01	
+25	6.41	363.76	5.82	357.94	350.75	7.19	
+40.60			5.94	357.82	351.00	6.82	MH # 284

Cont'd on Page 41

Cont'd from Page 40

Sta.	+	H.I.	−	Elev.	Grade .904%	Cut	Staked on 6 offset West
0+00		363.76	5.94	357.82	351.00	6.82	MH # 284
+30		Stake out					
+50			5.59	358.17	351.45	6.72	
+75			4.86	358.90	351.68	7.22	
1+00			4.35	359.41	351.90	7.51	
+25			4.66	359.10	352.13	6.97	Grade Sheet # 524
+50			4.61	359.15	352.36	6.79	
+75			3.79	359.97	352.58	7.39	
2+00			3.76	360.00	352.81	7.19	
+25			3.41	360.35	353.03	7.32	
+50 TP			3.13	360.63	353.26	7.37	
+75	7.40	368.03	6.90	361.13	353.49	7.64	
3+00			6.66	361.37	353.71	7.66	
+32 BI			6.04	361.99	354.01	7.98	MH # 283

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Cont'd from Page 41

Sta.	+	H.I	-	Elev.	Grade .9027	Cut	Staked on 6' offset West
0+00		368.03	6.04	361.99	354.01	7.98	MH # 283
+25			5.98	362.05	354.24	7.81	
+50			5.17	362.86	354.46	8.40	
+75			5.34	362.69	354.69	8.00	
1+00			5.27	362.76	354.91	7.85	
+25			5.20	362.83	355.14	7.69	Grade Sheet # 525
+50			4.71	363.32	355.36	7.96	
+75			4.04	363.99	355.59	8.40	
2+00			4.00	364.03	355.81	8.22	
+25 TP			3.68	364.35	356.04	8.31	
+50	6.66	371.01	6.12	364.89	356.27	8.62	
+75			5.42	365.59	356.49	9.10	
3+00			4.66	366.35	356.72	9.63	
+25			4.94	366.07	356.94	9.13	
+40			4.35	366.66	357.08	9.58	MH # 282
TP			3.29	367.72			
B.M.	3.74	371.46	3.34	368.12	368.12	B.P.	N.W. Orange + Thomas
	Street Grade			366.52			

Cont'd on Page 43

Cont'd from Page 42
Orange Ave sewer MH#282 - MH#258

Sta.	+	H.I.	−	Elev.	Grade .301%	Cut	Staked on 6' offset North
0+00				366.66	357.08	9.58	MH# 282
+25	4.09	370.75	4.27	366.48	357.16	9.32	
+50			4.42	366.33	357.23	9.10	
+75			4.46	366.29	357.31	8.98	
1+00			4.62	366.13	357.38	8.75	Grade Sheet #5-26
+25			4.72	366.03	357.46	8.57	
+50			4.75	366.00	357.53	8.47	
+75			4.77	365.98	357.61	8.37	
2+00			4.83	365.93	357.68	8.25	
+25			4.94	365.81	357.76	8.05	
N.W. 15 +65			4.90	365.85	357.88	7.97	MH# 258
	Street Grade			365.70			

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Cont'd from Page 43

Rexmore Br. sewer MH # 256 - MH # 256

Sta.	+	H.I.	−	Elev.	Grade .3%	Cut	Staked on 6' offset West
0+00		370.75	4.90	365.85	357.88	7.97	MH # 258
+25 TP			5.01	365.74	357.96	7.78	
+50	5.31	371.05	5.43	365.62	358.03	7.59	
+75			5.22	365.83	358.11	7.72	
1+00			5.05	366.00	358.18	7.82	Grade Sheet # 527
+25			5.12	365.93	358.26	7.67	
+50			4.76	366.29	358.33	7.96	
+75			4.68	366.37	358.41	7.96	
2+00			4.50	366.55	358.48	8.07	
+25 S.W.			4.25	366.80	358.56	8.24	
+43			4.17	366.88	358.61	8.27	MH # 257
	Street Grade MH # 257			367.13		F. 0.25	

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Bishop Hall 8-19-'22

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Sta.	+	H.I.	−	Elev.	Grade 3%	Cut
0+00		371.05	4.17	366.88	358.61	8.27
+25			4.04	367.01	358.69	8.32
+50			4.05	367.00	358.76	8.24
+75			3.93	367.12	358.84	8.28
1+00 TP			3.81	367.24	358.91	8.33
+25	4.81	372.05	4.76	367.29	358.99	8.30
+50			4.80	367.25	359.06	8.19
+75			4.66	367.39	359.14	8.25
2+00			4.70	367.35	359.21	8.14
+25			4.67	367.38	359.29	8.04
+50			4.69	367.36	359.36	8.00
+75			4.52	367.53	359.44	8.09
3+00			4.44	367.61	359.51	8.02
+25			4.54	367.51	359.59	7.92
+50			4.51	367.54	359.66	7.88
+75			4.59	367.46	359.74	7.72
4+00 TP			4.63	367.42	359.81	7.61
+25	4.59	372.01	4.93	367.08	359.89	7.19

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Staked on 6' offset West

MH # 257

Grade Sheet # 528

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Sta.	+	H.I.	−	Elev.	Grade	Cut	Staked on 6' offset West
4+50 S.W.		372.01	4.43	367.58	359.96	7.62	
+64			4.28	367.73	360.00	7.73	MH # 256

Grade Sheet # 528

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El Cajon Ave. Sewer MH #256 – MH #255

Chas. Holm / Hall 8-19-22

47

Sta.	+	HI.	–	Elev.	Grade .464%	Cut	Staked on 6' offset North
S.W. 0+00		372.01	4.28	367.73	360.00	7.73	MH # 256
+25			4.42	367.59	360.12	7.47	
+50			4.49	367.52	360.23	7.29	
+75			4.54	367.47	360.35	7.12	
1+00			4.56	367.45	360.46	6.99	
+25			4.57	367.44	360.58	6.86	Grade Sheet # 529
+50			4.48	367.53	360.70	6.83	
+75			4.62	367.39	360.81	6.58	
2+00			4.77	367.24	360.93	6.31	
+25			4.78	367.23	361.04	6.19	
+50			4.78	367.23	361.16	6.07	
+75			4.81	367.20	361.28	5.92	
S.W. 3+08 10			4.97	367.04	361.43	5.61	MH # 255

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Sisson Ave + Daley - Sisson alley MH # 255 - F.T. # 30

Sta.	+	H.I.	-	Elev.	Grade .37%	Cut	Stalked on 6' offset West
0+00		372.01	4.97	367.04	361.43	5.61	MH # 255
+25 TP			5.36	366.65	361.51	5.14	
+50	4.29	370.94	4.42	366.52	361.58	4.94	
+75			4.43	366.51	361.66	4.85	
1+00			4.45	366.49	361.73	4.76	Grade Sheet # 530
+25			4.40	366.54	361.81	4.73	
+50			4.29	366.65	361.88	4.77	
+75			4.35	366.59	361.96	4.63	
S.W. 2+09 ±			4.23	366.71	362.06	4.65	MH # 254
B.M.			4.95	365.99	366.00	B.P. N.W.	Sisson + El Cajon
	Street Grade			366.53		0.15	

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Oysholm Hall 8-19-22

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Sta.	+	H.I.	−	Elev.	Grade .3%	Cut	Staked on 6' offset South
0+00		370.94	4.23	366.71	362.06	4.65	MH # 254
+25	4.47	371.18	5.15	366.03	362.14	3.89	
+50			4.98	366.20	362.21	3.99	
+75			4.63	366.55	362.29	4.26	Grade Sheet # 531
1+00			4.75	366.43	362.36	4.07	
+25			5.00	366.18	362.44	3.74	
+50			4.85	366.33	362.51	3.82	
+72.5			4.87	366.31	362.58	3.73	MH # 253

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Cont'd from Page 49

Sta.	+	H.I.	−	Elev.	Grade .3%	Cut	Staked on 6' offset West.
0+00		371.18	4.87	366.31	362.58	3.73	MH # 253
+25			4.29	366.89	362.66	4.23	
+50			4.83	366.35	362.73	3.62	
+75			4.58	366.60	362.81	3.79	
1+00			4.36	366.82	362.88	3.94	
+25			3.85	367.33	362.96	4.37	
+50			5.01	366.17	363.03	3.14	Grade Sheet # 532
+75 TP			4.31	366.87	363.11	3.76	
2+00	5.47	372.34	5.85	366.49	363.18	3.31	
+25			5.66	366.68	363.26	3.42	
+50			4.50	367.84	363.33	4.51	
+75			4.63	367.71	363.41	4.30	
3+00			4.89	367.45	363.48	3.97	
+25			4.02	368.32	363.56	4.76	
+50			4.96	367.38	363.63	3.75	
+80			4.62	367.72	363.72	4.00	MH # 252

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Chisholm Hall 8-21-22

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Sta	+	H.I.	−	Elev.	Grade 4%	Cut	Staked on 6' offset West
0+00		372.34	4.62	367.72	363.72	4.00	MH # 252
+25			4.40	367.94	363.82	4.12	
+50			4.22	368.12	363.92	4.20	
+75			4.24	368.10	364.02	4.08	
1+00 TP			4.11	368.23	364.12	4.11	
+25	7.43	375.66	6.35	369.31	364.22	5.09	
+50			6.03	369.63	364.32	5.31	Grade Sheet # 533
+75			6.14	369.52	364.42	5.10	
2+00			5.79	369.87	364.52	5.35	
+25			5.15	370.51	364.62	5.89	
+50			5.02	370.64	364.72	5.92	
+75			4.51	371.15	364.82	6.33	
3+00			4.20	371.46	364.92	6.54	
+25			4.06	371.60	365.02	6.58	
+50			3.73	371.93	365.12	6.81	
+70			3.74	371.92	365.20	6.72	MH # 251
B.M.			5.97	369.69	369.67	B.P. N.W.	Olive + □ aley

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Sta.	+	H.I.	−	Elev.	Grade .4%	Cut	Stakes on 6' offset West
0+00		375.66	3.74	371.92	365.20	6.72	MH # 251
+25 TP			3.23	372.43	365.30	7.13	
+50	4.93	377.36	4.59	372.77	365.40	7.37	
+75			4.86	372.50	365.50	7.00	
1+00			4.92	372.44	365.60	6.84	
+25			5.00	372.36	365.70	6.66	
+50			4.79	372.57	365.80	6.77	Grade Sheet # 534
+75			4.78	372.58	365.90	6.68	
2+00			4.78	372.58	366.00	6.58	
+25			4.84	372.52	366.10	6.42	
+50			4.83	372.53	366.20	6.33	
+75			4.99	372.37	366.30	6.07	
3+00			5.18	372.18	366.40	5.78	
+25			5.06	372.30	366.50	5.80	
+50			4.78	372.66	366.60	6.06	
+69 79			4.53	372.83	366.68	6.15	F.T. # 30
TP			5.67	371.69			
B.M.	3.43	375.12	5.43	369.69	369.67		B.P. N.W. Olive & Daley
		End of Sewer					

Orange Ave Sewer MH # 282 — F.T. # 39

Chisholm Hall 8-23-02

Sta. NW	+	H.I.	−	Elev.	Grade .4%	Cut	Staked on 6' offset South
0+00				366.66	362.00	4.66	MH # 282
+25	5.14	371.80	5.20	366.60	362.10	4.50	
+50			5.03	366.77	362.20	4.57	
+75			4.98	366.82	362.30	4.52	
1+00			4.86	366.94	362.40	4.54	
+25			4.75	367.05	362.50	4.55	Grade Sheet # 535
+50			4.61	367.19	362.60	4.59	
+75			4.38	367.42	362.70	4.72	
2+00			4.18	367.62	362.80	4.82	
+25			4.12	367.68	362.90	4.78	
+50			4.22	367.58	363.00	4.58	
+75			4.38	367.42	363.10	4.32	
3+00			4.11	367.69	363.20	4.49	
+30 TP			4.02	367.78	363.32	4.46	MH # 297
	Street Grade			367.78			

Cont'd on Page 54

Cont'd from Page 53

Sta.	+	H.I.	−	Elev.	Grade 4%
0+00		371.80	4.02	367.78	363.32
+25	4.56	372.34	4.51	367.83	363.42
+50			4.21	368.13	363.52
+75			4.29	368.05	363.62
1+00			4.17	368.22	363.72
+25			4.21	368.13	363.82
+50			4.20	368.14	363.92
+75			4.12	368.22	364.02
2+00			3.96	368.38	364.12
+25			3.79	368.55	364.27
+50			3.55	368.79	364.32
+75			3.41	368.93	364.42
3+00			3.38	368.96	364.52
+25			3.38	368.96	364.62
+36 TO			3.29	369.05	364.67
B.M.			4.24	368.10	368.17
	Street Grade F.T. #39			368.95	
		~ End of Sewer ~			

Cut	Staked on 6' offset South
4.46	MH # 297
4.41	
4.61	
4.43	
4.50	
4.31	
4.22	Grade Sheet # 536
4.20	
4.26	
4.33	
4.47	
4.51	
4.44	
4.34	
4.38	F.T. # 39

Achilles Dr. Sewer MH # 257 – F.T. # 38

Sta. S.W.	+	H.I.	–	Elev.	Grade 1.175%
0+00				366.88	358.81
+25	6.07	372.95	5.71	367.24	359.10
+50			5.69	367.26	359.40
+75			5.50	367.45	359.69
1+00			5.40	367.55	359.99
+25			5.25	367.70	360.28
+50			5.10	367.85	360.57
+75			4.98	367.97	360.87
2+00			4.87	368.08	361.16
+25			4.73	368.22	361.45
+51			4.63	368.32	361.76
	Street Grade MH # 281			368.51	

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Chisholm Hall 8-23-22

Cut	Staked on 6' offset South
8.07	MH # 257
8.14	
7.86	
7.76	
7.56	Grade Sheet # 537
7.42	
7.28	
7.10	
6.92	
6.77	
6.56	MH # 281
F.O.I.9	

Contd. from Page 55

Chisholm Hall } 8-23-22

Sta.	+	H.I.	−	Elev.	Grade	Cut	Staked on 6' offset South
0+00		372.95	4.63	368.32	1.176. 361.76	6.56	MH# 281
+25			4.55	368.40	362.05	6.35	
+50 TP			4.39	368.56	362.35	6.21	
+75	5.90	374.46	5.72	368.74	362.64	6.10	
1+00			5.70	368.76	362.94	5.82	
+25			5.56	368.90	363.23	5.67	Grade Sheet # 538
+50			5.36	369.10	363.52	5.58	
+75			5.33	369.13	363.82	5.31	
2+00			5.20	369.26	364.11	5.15	
+25			5.02	369.44	364.41	5.03	
S.W. +50			4.91	369.55	364.70	4.85	MH# 280
	Street Grade			369.51		0.04	

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Sta.	+	H.I.	−	Elev.	Grade .356%
0+00		374.46	4.91	369.55	364.70
+25			5.14	369.32	364.79
+50			5.05	369.41	364.88
+75			4.92	369.54	364.97
1+00 PT			4.62	369.84	365.06
+25	6.00	375.84	5.73	370.11	365.15
+50			5.52	370.32	365.23
+75			5.53	370.31	365.32
2+00			5.42	370.42	365.41
+25			5.11	370.73	365.50
	Street Grade			370.97	

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Chisholm & Hall 8-27-22

Cut	Staked on 6' offset South
4.85	MH ± 280
4.53	
4.53	
4.57	Grade Sheet # 539
4.78	
4.96	
5.09	
4.99	
5.01	
5.23	MH # 296
F.O. 24	

Cont'd from Page 57

Sta.	+	H.I.	−	Elev.	Grade.	Cut
					.442	
0+00		375.84	5.11	370.73	365.50	5.23
+25			4.97	370.87	365.61	5.26
+50			4.88	370.96	365.72	5.24
+75			4.86	370.98	365.83	5.15
1+00			5.02	370.82	365.94	4.88
+25			5.13	370.71	366.05	4.66
+50			5.10	370.74	366.16	4.58
+75			5.31	370.53	366.27	4.26
2+00			5.27	370.57	366.38	4.19
+26.15			5.43	370.41	366.50	3.91
TP			6.06	369.84		
B.M.	5.16	375.00	5.46	369.54	369.55	

Staked on 6' offset South

MH # 296

Grade Sheet # 540

F.T. # 38

2x2 hub at P.I. of 6' offsets So. + W. at MH # 280

Street Grade 370.51

0.10

Thomas Ave sewer MH # 280 - FT. # 37

Sta.	+	H.I.	−	Elev.	Grade .4%
0+00	From Page 56			369.55	364.70
+25	5.46	375.01	5.32	369.69	364.80
+50			5.29	369.72	364.90
+75			5.18	369.83	365.00
1+00			5.09	369.92	365.10
+25			4.86	370.15	365.20
+50			4.70	370.31	365.30
+75			4.57	370.44	365.40
2+00			4.38	370.63	365.50
+25			4.23	370.78	365.60
+50			4.03	370.98	365.71
+75			3.88	371.13	365.81
3+00			3.73	371.28	365.91
+23.04			3.67	371.34	366.00
TP			5.79	369.22	
B.M.	4.18	373.40	5.28	368.12	368.12
	Street Grade			371.50	

Chisholm & Hall 8-28-22

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Cut	Staked on 6' offset West
4.85	MH # 280
4.89	
4.82	
4.83	
4.82	
4.95	
5.01	Grade Sheet # 541
5.04	
5.13	
5.18	
5.27	
5.32	
5.37	
5.34	F.T. # 37
	B.P. N.W. Orange & Thomas
0.16	

El Cajon Ave. Sewer MH # 256 – F.T. # 36

Sta.	+	H.I.	–	Elev.	Grade
0+00				367.73	360.00
+25	6.00	373.73	5.94	367.79	360.10
+50			5.76	367.97	360.20
+75			5.48	368.25	360.30
1+00			5.28	368.45	360.40
+25			4.99	368.74	360.50
+50			4.79	368.94	360.60
+75			4.64	369.09	360.70
2+00			4.42	369.31	360.80
+25			4.19	369.54	360.90
+50			4.05	369.68	361.00
+75			3.80	369.93	361.10
3+00 TP			3.66	370.07	361.20
+25 S.W.	5.96	376.03	5.75	370.28	361.30
+51.2			5.49	370.54	361.40
	Street Grade			370.44	

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Olsholm Hall 8-27-22

Cut	
7.73	Staked on 6' offset South
7.69	MH # 256
7.77	
7.95	
8.05	
8.24	
8.34	Grade Sheet # 542
8.39	
8.51	
8.64	
8.68	
8.83	
8.87	
8.98	
9.14	MH # 279
0.10	

Cont'd from Page 60

Sta.	+	H.I.	−	Elev.	Grade 1.533 %	Cut	Staked on 6' offset South
0+00		376.03	5.49	370.54	361.60	8.94	MH # 279
+25			5.32	370.71	361.98	8.73	
+50			5.18	370.85	362.37	8.48	
+75			4.99	371.04	362.75	8.29	
1+00			4.76	371.27	363.13	8.14	
+25			4.46	371.57	363.52	8.05	
+50			4.27	371.76	363.90	7.86	Grade Sheet # 543
+75			4.03	372.00	364.28	7.72	
2+00			3.80	372.23	364.67	7.56	
+25			3.68	372.35	365.05	7.30	
+50 TP			3.51	372.52	365.43	7.09	
+75	5.74	378.26	5.60	372.66	365.82	6.84	
3+00			5.35	372.91	366.20	6.71	MH # 295
	Street Grade MH # 295			372.83			

Cont'd on Page 62

Cont'd from Page 61

Sta.	+	H I.	−	Elev.	Grade	Cut	Staked on 6' offset South
					.598		
0 + 00		378.26	5.35	372.91	366.20	6.71	MH # 295
+ 25			5.19	373.07	366.35	6.72	
+ 50			5.06	373.20	366.50	6.70	
+ 75			5.01	373.25	366.65	6.60	
1 + 00			4.91	373.35	366.80	6.55	
+ 25			4.81	373.45	366.95	6.50	Grade Sheet # 514
+ 50			4.53	373.73	367.10	6.63	
+ 75			4.36	373.90	367.25	6.65	
2 + 00			4.13	374.13	367.40	6.73	
+ 25			3.94	374.32	367.55	6.77	
+ 50			3.71	374.55	367.70	6.85	
+ 75			3.65	374.61	367.84	6.77	
3 + 00 94			3.40	374.86	368.00	6.86	F.T. # 36
B.M.			4.80	373.46	373.46	B.P. S.W. El Cajon & Reed	

Oj Sholm
Hall 8-27-22

Thomas Ave & Thomas - Daley alley MH # 279 - F.T. # 33

Chisholm Hall } 8-28-22

Sta.	+	H.I.	-	Elev.	Grade .4%	Cut	Staked on 6' offset West
0+00				370.54	361.60	8.94	MH # 279
+25	3.83	374.37	4.43	369.94	361.70	8.24	
+50			5.14	369.23	361.80	7.43	
+75			5.02	369.35	361.90	7.45	
1+00			4.82	369.55	362.00	7.55	Grade Sheet # 545
+25			4.71	369.66	362.10	7.56	
+50			4.50	369.87	362.20	7.67	
+75			4.32	370.05	362.30	7.75	
S.W. 2+09.5			4.13	370.24	362.44	7.80	MH # 278
	Street Grade			370.08		0.16	

Cont'd on Page. 64

Chisholm Hall 8-28-22

Cont'd from Page 63

Sta.	+	H.I.	−	Elev.	Grade 1%	Cut	Staked on 6' offset North
S.W. 0+00		374.37	4.13	370.24	362.44	7.80	MH # 278
+25			4.35	370.02	362.54	7.48	
+50			5.59	368.78	362.64	6.14	
+75			5.98	368.39	362.71	5.65	Grade Sheet # 546
1+00			6.08	368.29	362.84	5.45	
+25			6.34	368.03	362.94	5.09	
S.W. +61.8 TP			6.46	367.91	363.09	4.82	MH # 277

Cont'd on Page 65

Cont'd from Page 64

Sta.	+	H.I.	−	Elev.	Grade 4%
0+00 TP		374.37	6.46	367.91	363.09
+25	5.38	373.29	5.34	367.95	363.19
+50			5.51	367.78	363.29
+75			5.23	368.06	363.39
1+00			5.12	368.17	363.49
+25			4.63	368.66	363 59.
+50			4.85	368.44	363.69
+75			4.70	368.59	363.79
2+00			4.73	369.08	363.89
+25			4.08	369.21	363 99
+50			4.22	369.07	364.09
+75			4.03	369.26	364 19
3+60 TP			3.77	369.52	364 29
+25	6.41	375.93	6.12	369.81	364 39
+50			5.71	370.22	364.49
+77.5			5.50	370.43	364.60
B.M.			6.22	369.71	369.67

Cont'd on Page 66

Cut		Stalked on 6' offset West
4.82		MH # 277
4.76		
4.49		
4.67		
4.68		
5.07		
4.75		Grade Sheet # 547
4.80		
5.17		
5.22		
4.98		
5.07		
5.23		
5.12		
5.73		
5.83		MH # 276
B.P	N.W.	Daley + Olive

Cont'd from Page 65

Chisholm Hall } 8-28-22

Sta.	+	H.I.	-	Elev.	Grade .4%	Cut	Staked on 6' offset West
0+00		375.93	5.50	370.43	364.60	5.83	MH #276
+25			5.23	370.70	364.70	6.00	
+50			4.97	370.96	364.80	6.16	
+75			4.62	371.31	364.90	6.41	
1+00			5.31	370.62	365.00	5.62	
+25			4.40	371.53	365.10	6.43	Grade Sheet #403
+50			4.55	371.38	365.20	6.18	
+75			3.85	372.08	365.30	6.78	
2+00 TP			3.90	372.03	365.40	6.63	
+25	5.72	377.75	5.44	372.31	365.50	6.81	
+50			5.34	372.41	365.60	6.81	
+75			4.99	372.76	365.70	7.06	
3+00			4.66	373.09	365.80	7.29	
+25			4.96	372.79	365.90	6.89	
+50			4.59	373.16	366.00	7.16	
+.80			4.31	373.44	366.12	7.32	MH #275

Cont'd on Page 67

Cont'd from Page 66

Sta.	+	H.I.	−	Elev.	Grade .4%
0 + 00		377.75	4.31	373.44	366.12
+ 25			3.82	373.93	366.22
+ 50			3.82	373.93	366.32
+ 75			3.78	373.97	366.42
1 + 00			3.80	373.95	366.52
+ 25			3.40	374.35	366.62
+ 50 TP			3.73	374.02	366.72
+ 75	5.05	379.07	4.86	374.21	366.82
2 + 00			4.50	374.57	366.92
+ 25			4.75	374.32	367.02
+ 50			4.87	374.20	367.12
+ 75			4.94	374.13	367.22
3 + 00			5.36	373.71	367.32
+ 25			5.93	373.14	367.42
+ 50			5.85	373.22	367.52
+ 60 T			6.18	372.89	367.56
TP			5.12	373.95	
B.M.	2.98	376.93	7.22	369.71	369.67

End of Sewer

Chisholm Hall 9-28-32

67

Cut	
7.32	Staked on 6' offset West.
7.71	MH # 275
7.61	
7.55	
7.43	
7.73	
7.30	Grade Sheet # 404
7.39	
7.65	
7.30	
7.08	
6.91	
6.39	
5.72	
5.70	
5.33	F.T. # 33

B.P. N.W. Daley + Olive

Reed–Thomas alley. MH# 278 – F.T. # 35

Chisholm Hall 9-2-32

Sta.	+	H.I.	–	Elev.	Grade 2.179%	Cut	Staked on 6' offset South
S.W. 0+00	From Page 63 This Book			370.24	362.44	7.80	MH# 278
+25	4.80	375.04	4.76	370.28	362.98	7.30	
+50			5.61	369.43	363.53	5.90	
+75			5.44	369.60	364.07	5.53	Grade Sheet # 405
1+00			5.23	369.81	364.62	5.19	
+25			5.04	370.00	365.16	4.84	
+50			4.67	370.37	365.71	4.66	
+63 37			4.46	370.58	366.00	4.58	MH# 294

Cont'd on Page 69

Cont'd from Page 68

Chisholm Hall 9-2-22

Sta.	+	H.I.	-	Elev.	Grade 7.16%	Cut	
0+00		375.04	4.46	370.58	366.00	4.58	Staked on 6' offset West
+25			4.09	370.95	366.18	4.77	MH # 294
+50			3.72	371.32	366.36	4.96	
+75			3.75	371.29	366.54	4.75	
1+00			3.02	372.02	366.72	5.30	
+25			3.01	372.03	366.90	5.13	
+50 TP			2.89	372.15	367.07	5.08	Grade Sheet # 406
+75	5.71	377.86	5.26	372.60	367.25	5.35	
2+00			5.07	372.79	367.43	5.36	
+25			5.13	372.73	367.61	5.12	
+50			4.81	373.05	367.79	5.26	
+75			4.70	373.16	367.97	5.19	
3+00			4.89	372.97	368.15	4.82	
+25			4.57	373.29	368.33	4.96	
+50			4.17	373.69	368.51	5.18	
+70			4.11	373.75	368.65	5.10	MH # 293

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Cont'd from Page 69

Sta.	+	H.I.	−	Elev.	Grade .7137%	Cut	Staked on 6' offset West.
0+00		377.86	4.11	373.75	368.65	5.10	MH # 293
+25			3.94	373.92	368.83	5.09	
+50			4.04	373.82	369.01	4.81	
+75			3.12	374.74	369.18	5.56	
1+00 TP			3.43	374.43	369.36	5.07	
+25	6.76	381.19	5.93	375.26	369.54	5.72	
+50			6.26	374.93	369.72	5.21	Grade Sheet # 407
+75			5.74	375.45	369.90	5.55	
2+00			5.59	375.60	370.08	5.52	
+25			5.19	376.00	370.25	5.75	
+50			4.95	376.24	370.43	5.81	
+75			4.90	376.29	370.61	5.68	
3+00			4.76	376.43	370.79	5.64	
+25			4.49	376.70	370.97	5.73	
+50			4.30	376.89	371.15	5.74	
+70			4.27	376.92	371.29	5.63	MH # 292

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Chisholm > Hall 9-2-22

Contd from Page 70

Sta.	+	H.I.	-	Elev.	Grade .716
0+00		381.19	4.27	376.92	371.29
+25			3.98	377.21	371.47
+50 TP			3.93	377.26	371.65
+75	5.49	382.75	5.41	377.34	371.83
1+00			5.42	377.33	372.01
+25			5.10	377.65	372.19
+50			4.82	377.93	372.36
+75			4.83	377.92	372.54
2+00			4.92	377.83	372.72
+25			4.46	378.29	372.90
+50			4.85	377.90	373.08
+75			4.80	377.95	373.26
3+00			4.82	377.93	373.44
+25			4.89	377.86	373.62
+50			4.72	378.03	373.80
+78 10			4.73	378.02	374.00
TP			7.09	375.66	
B.M.	4.03	379.69	5.30	374.39	374.35

End of Sewer

Chisholm & Hall 9-2-22

71

Cut	
5.63	Staked on 6' offset West
5.74	MH # 292
5.61	
5.51	
5.32	
5.46	
5.57	Grade Sheet # 408
5.38	
5.11	
5.39	
4.82	
4.69	
4.49	
4.24	
4.23	
4.02	F.T. # 35

B.P. N.W. Olive + Thomas

Wilson - Storey alley MH # 357 - MH # 356

Cushman Hall 8-30-22

72

Sta.	+	H.I.	-	Elev.	Grade	Cut	Stakes on 6' offset East
B.M.				326.40	22.36 7%		B.P. N.W. Castle & Pacific
TP	8.62	335.02	2.47	332.60			
TP	3.43	336.03	12.82	323.21			
TP	0.30	323.51	10.93	312.58			
W.S. 6+00	7.89	320.47	11.82	308.65	303.40	5.25	MH # 100T
+25			7.89	312.58	308.99	3.59	
+ TP			0.40	320.07			
+50	9.57	329.64	3.78	325.86	314.58	11.28	
+79 ±			0.49	329.15	321.16	7.99	MH # 357
TP			12.46	317.18			
B.M.	0.09	317.27	8.64	308.63	308.65	W/S ring at MH 100T	

Grade Sheet # 401

Contd on Page 73

Cont'd from Page 72

Olsholm Hall 8-30-22

Sta.	+	H.I.	−	Elev.	Grade	Cut	Stakes on 6' offset West
W.S. 0+00	From Page 72			308.65	42.07% 303.40	5.25	M# 100T
TP	6.40	315.05	1.07	313.98			
+25	12.67	326.65	6.85	319.80	313.92	5.88	
TP			1.04	325.61			
+50	12.24	337.85	4.68	333.17	324.44	8.73	Grade Sheet # 402
+60.85			5.20	332.65	329.00	3.65	M# 356
TP			5.25	332.60			
B.M.	2.13	334.73	8.33	326.40	326.40		B.P.N.W. Castle + Pacific

Wilson – Storey alley MH #352 – MH #351

Chisholm Hall 9-6-22

74

Sta.	+	H.I.	–	Elev.	Grade 1.25%	Cut	Staked on 6' offset West.
B.M.				360.45		B.P. N.W. University & Wilson	
0+00	5.03	365.48	6.43	359.05	353.00	6.05	MH #352
+20			6.32	359.16	353.25	5.91	
+							
+							
1+00			5.58	359.90	354.25	5.65	
+25			5.33	360.15	354.56	5.59	Grade Sheet #450
+50			4.73	360.75	354.88	5.87	
+75			4.30	361.18	355.19	5.99	
2+00			4.67	360.81	355.50	5.31	
+25			4.05	361.43	355.81	5.62	
+50			4.11	361.37	356.13	5.24	
+75			3.55	361.93	356.44	5.49	
3+00			3.59	361.89	356.75	5.14	
+25			3.68	361.80	357.06	4.74	
+40			3.23	362.25	357.25	5.00	MH #351
B.M.			5.03	360.45	360.45	B.P. N.W. University & Wilson	

Storey – Cherokee alley MH # 335 – MH # 334

Chisholm Hall 9-5-22

75

Sta.	+	H.I.	–	Elev.	Grade 1.588%	Cut	
B.M.				359.37		B.P. N.W. University & Storey	
0+00	4.94	364.31	6.39	357.92	351.00	6.92	MH # 335
+20			6.51	357.80	351.32	6.48	Staked on 6' offset West.
+50			5.99	358.32	351.79	6.53	
+80			5.86	358.45	352.27	6.18	
1+00			5.85	358.46	352.59	5.87	
+25			5.40	358.91	352.99	5.92	
+50			4.96	359.35	353.38	5.97	Grade Sheet # 409
+75			4.71	359.60	353.78	5.82	
2+00			4.44	359.87	354.18	5.69	
+25			4.06	360.25	354.57	5.68	
+50			3.63	360.68	354.97	5.71	
+75			3.33	360.98	355.37	5.61	
3+00			3.03	361.28	355.76	5.52	
+25			2.86	361.45	356.16	5.29	
+40			2.50	361.81	356.40	5.41	MH # 334
B.M.			4.94	359.37	359.37	B.P. N.W. University & Storey	

Scott – Swift alley MH # 395 – MH # 394

Chisholm / Hall 8-24-'22

Sta.	+	H.I.	–	Elev.	Grade 1.6767%	Cut	Staked on 6' offset West.
B.M.				361.48		B.P.	N.W. Pacific & University
TP	3.92	365.40	5.59	359.81			
0+00	2.72	362.53	8.01	354.52	347.00	7.52	MH # 395
+25			9.51	353.02	347.34	5.68	
1+00			8.13	354.40	348.68	5.72	
+25			6.45	356.08	349.10	6.98	
+50			5.30	357.23	349.51	7.72	
+75			4.44	358.09	349.93	8.16	Grade Sheet # 548
2+00			3.78	358.75	350.35	8.40	
+25			2.66	359.87	350.77	9.10	
+50			2.08	360.45	351.19	9.26	
+75			2.08	360.45	351.61	8.84	
3+00			1.63	360.90	352.03	8.87	
+25			0.97	361.56	352.45	9.11	
+40			1.42	361.11	352.70	8.41	MH # 394
TP			2.72	359.81			
B.M.	5.49	365.30	3.82	361.48	361.48	B.P. N.W. Pacific & University	

Cherokee — Reed alley. Mt# 318 — Mt# 317

Chisholm Hall 8-15-22

Sta.	+	H.I	−	Elev.	Grade 1.029	Cut	Staked on 6' offset West
B.M.				351.97			B.P. N.W. University & Reed
0 + 00	7.20	359.17	5.67	353.50	347.40	6.10	MH # 318
+ 20			5.16	354.01	347.21	6.80	
1 + 00			4.55	354.62	348.43	6.19	
+ 25			4.44	354.73	348.69	6.04	
+ 50			4.44	354.73	348.94	5.79	
+ 75			4.06	355.11	349.20	5.91	Grade Sheet # 550
2 + 00			3.83	355.34	349.46	5.88	
+ 25			2.88	356.29	349.72	6.57	
+ 50			2.23	356.94	349.97	6.97	
+ 75			1.45	357.72	350.23	7.49	
3 + 00			0.98	358.19	350.49	7.70	
+ 25			0.76	358.41	350.74	7.67	
+ 40			0.82	358.35	350.90	7.45	MH # 317
B.M.			7.20	351.97	351.97		B.P. N.W. University + Reed.

		5.63			39
		5.17			663
		.46	5.49		631
		.23	1.19		112
		5.40	1.21		56
			60		607
		49	489		
					25
					431
			330.17		40
			9.52		
			334.69		4.81
			479		
			329 90		
MH 410	5.97		6.82	S	
			6.43		
			5.51		
MH 409	4.32		4.44		75
			4.19	N	361
			4.71		67
MH 412	393		3.64		86
	307				
	Fill 86		2.87		58
			2.12		31
MH 413	7.30	Fill 0.24	7.06		439
MH 414	9.40	F. 002	4.67		
			4.09		

2.398 6

351.2 / 1.4000

1053.6

3464.0

3160.8

3032.0

2809.6

222.4

0998

Calculation of Earthwork.

Width	HEIGHT														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	.02	.04	.06	.07	.09	.11	.13	.15	.17	.18	.20	.22	.24	.26	.28
2	.04	.07	.11	.15	.18	.22	.26	.30	.33	.37	.41	.44	.48	.52	.56
3	.06	.11	.17	.22	.28	.33	.39	.44	.50	.56	.61	.67	.72	.78	.83
4	.07	.15	.22	.30	.37	.44	.52	.59	.67	.74	.81	.89	.96	1.04	1.11
5	.09	.19	.28	.37	.46	.56	.65	.74	.83	.93	1.02	1.11	1.20	1.30	1.39
6	.11	.22	.33	.44	.56	.67	.78	.89	1.00	1.11	1.22	1.33	1.44	1.55	1.67
7	.13	.26	.39	.52	.65	.78	.91	1.04	1.16	1.30	1.42	1.55	1.68	1.81	1.94
8	.15	.30	.44	.59	.74	.89	1.04	1.19	1.33	1.48	1.63	1.78	1.92	2.08	2.22
9	.17	.33	.50	.67	.83	1.00	1.17	1.33	1.50	1.67	1.83	2.00	2.17	2.33	2.50
10	.18	.37	.56	.74	.93	1.11	1.30	1.48	1.67	1.85	2.04	2.22	2.41	2.59	2.78
11	.20	.41	.61	.82	1.02	1.22	1.43	1.63	1.83	2.04	2.24	2.44	2.65	2.85	3.06
12	.22	.44	.67	.89	1.11	1.33	1.56	1.78	2.00	2.22	2.44	2.67	2.89	3.11	3.33
13	.24	.48	.72	.96	1.20	1.44	1.68	1.92	2.16	2.41	2.65	2.89	3.13	3.37	3.61
14	.26	.52	.78	1.04	1.30	1.55	1.81	2.08	2.33	2.59	2.85	3.11	3.37	3.63	3.89
15	.28	.56	.83	1.11	1.39	1.67	1.94	2.22	2.50	2.78	3.06	3.33	3.61	3.89	4.17
16	.30	.59	.89	1.18	1.48	1.78	2.07	2.37	2.67	2.96	3.26	3.56	3.85	4.15	4.44
17	.31	.63	.94	1.26	1.57	1.89	2.20	2.52	2.83	3.15	3.46	3.78	4.09	4.41	4.72
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+.039 =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.

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1½.

For Single Track Embankment.

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

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

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