EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

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

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

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

CITY ENGINEER'S OFFICE

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Made in U. S. A.

Walker Hazard Hurdin

Powder House Canyon Trunk Sewer

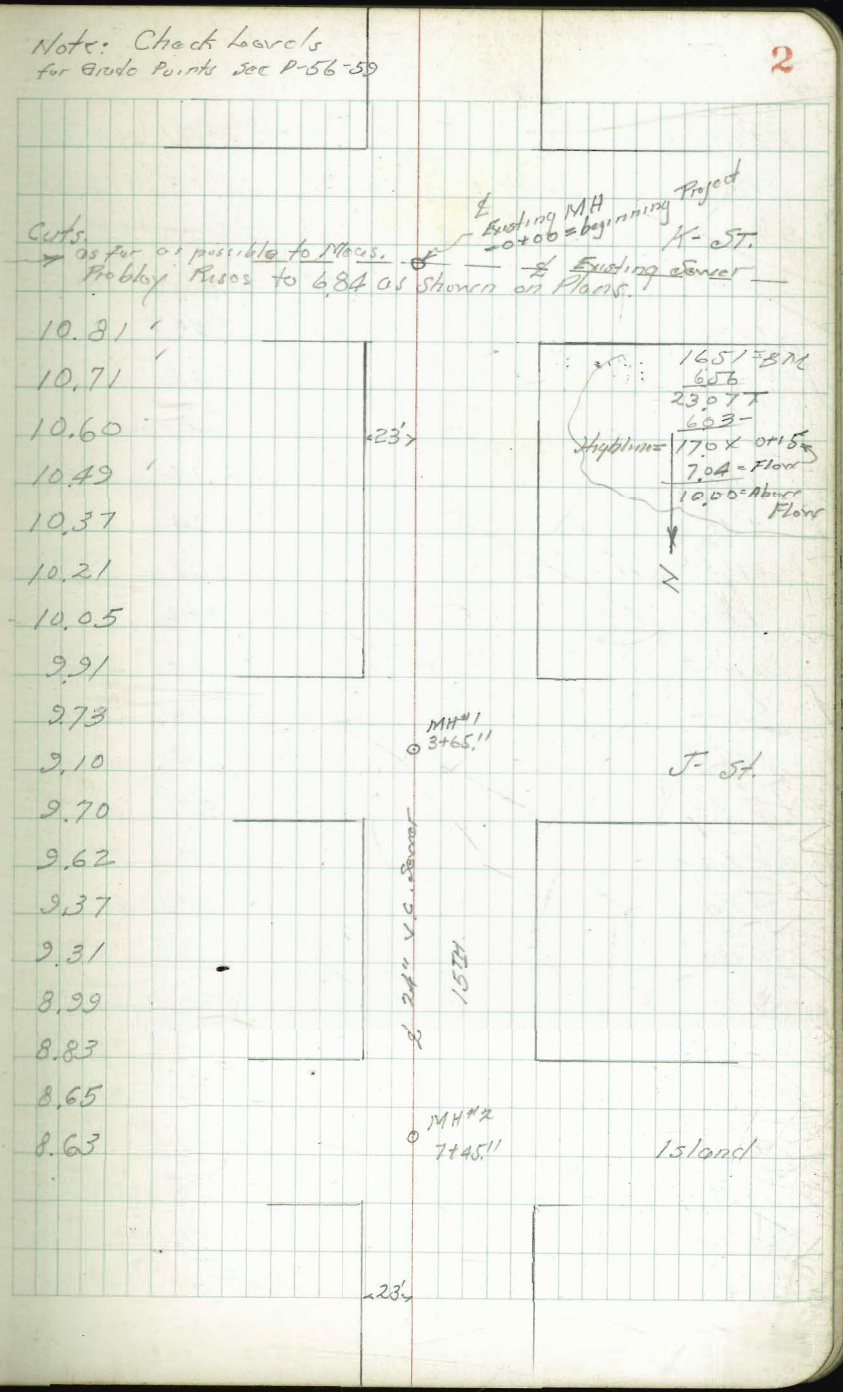
Construction Grades #7 Between 15th & K and U.S.N. Hospital

Plans #1049, 1050, 1051-D

Stations					
FB 16/14/16				B.M. #14-B SW 7" tack K-15th	
0+00 = ℄ MH 15th & K	8.29	24.80		16.51	
chk Rim MH			7.50	17.30	
0+00 on Flow to North			18.26	Elev. Inlet 6.54 = Flow	El. Flow Line 6.84 = Flow
+25			6.82	17.98	7.17
+45			6.66	18.14	7.43
+75			6.38	18.42	7.82
1+00			6.16	18.64	8.15
+55			5.56	19.24	8.87
2+00			5.13	19.67	9.46
+50			4.64	20.16	10.11
2+95			4.19	20.61	10.70
3+25			3.97	20.83	11.10
3+65.11 = MH #1	P.O.T.		4.08	20.72	11.62
4+00			3.02	21.78	12.08
4+55			2.38	22.42	12.80
5+00			2.04	22.76	13.39
T.P. +50	7.48	30.83	1.45	23.35	14.04
6+00			7.14	23.69	14.70
+50			6.65	24.18	15.35
7+00			6.17	24.66	16.01
+45.11 = MH #2	16/14/16		5.60	25.23	16.60
chk B.M. #30 NW. BP Island x 15th			5.51	25.32	
				25.35	
				.03	

Cont. P-3

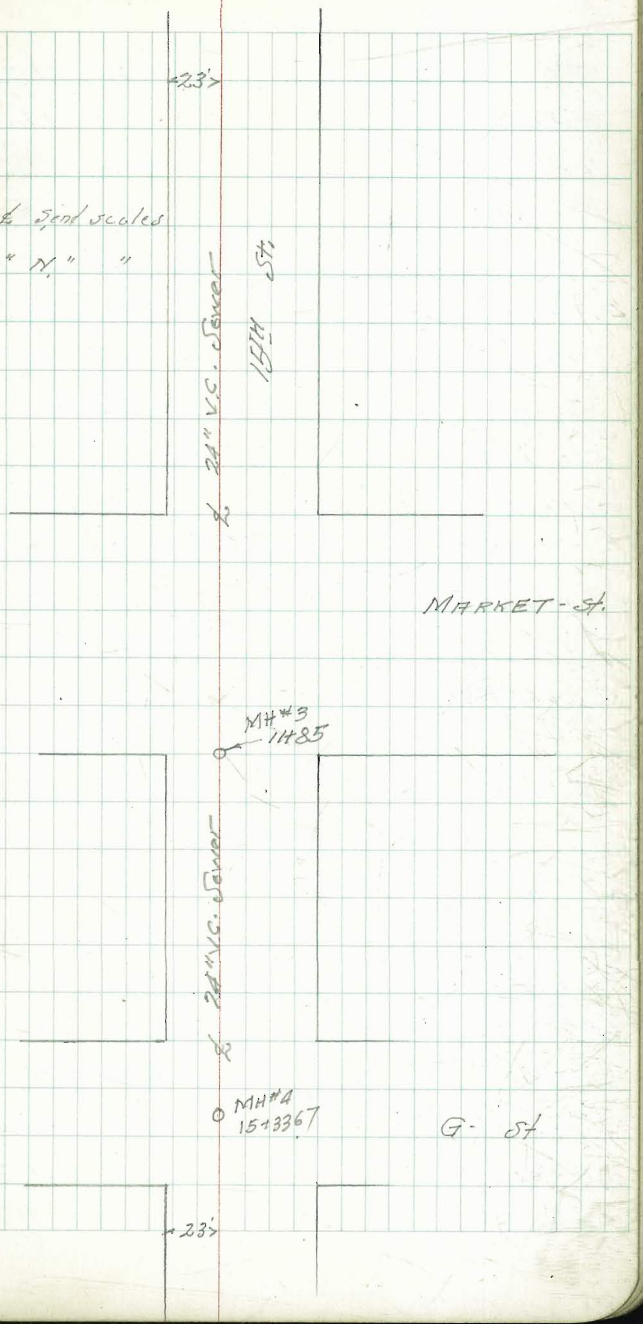
Note: Check Levels for Grade Points see P-56-59



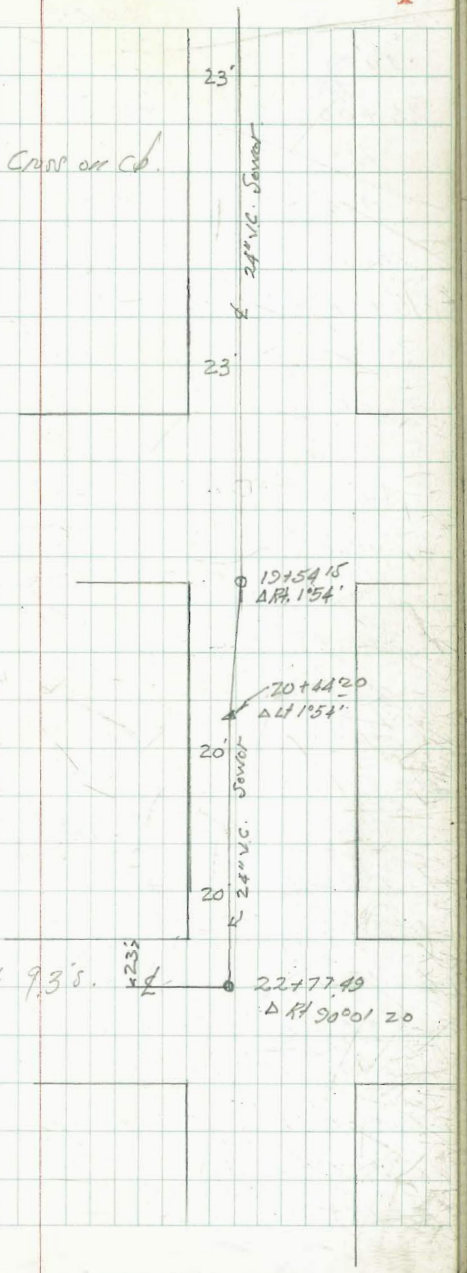
Powder Canyon Sewer Const.

Cont. from Pg 2

		30.83			
8+00			5.32	25.51	17.32
+50			4.70	26.13	17.97
9+00			4.04	26.79	18.63
+24			3.37	27.46	18.94
+48	chk BM #31 5&7 Hucks. Market & 15th		3.38	27.45	12.26
T.P.	4.41	34.29	Δ.95	29.88	
				29.9% 0.04 Error.	
10+00			6.13	28.16	19.94
+40			5.35	28.94	20.46
10+76.57 = Δ Lt. 0°04'30			4.65	29.64	20.94
T.P.	8.58	38.46		29.88	
11+00	1.31 ft		9.23	29.23	21.25
+28			8.30	30.16	21.61
+46			8.32	30.14	21.85
11+85 = ℄ MH #3			8.14	30.32	22.36
		38.48 = T corrected see below			
12+20			7.96	30.52	22.97
+60			7.43	31.05	23.67
13+00			6.83	31.65	24.37
+50	1.75 ft		6.23	32.25	25.24
14+00			5.48	33.00	26.12
+50			4.75	33.73	26.99
15+00			4.06	34.42	27.87
Made Angle here 15+33.67 = MH #4	Δ Lt. 0°07'		3.49	34.99	28.46
+70	1.75 ft		3.13	35.35	29.10
16+00	1.75 ft		2.40	36.08	29.63
Chk BM #32 NE. BP G-15th	2.90	38.48	2.90	35.56 35.58	from T 38.48

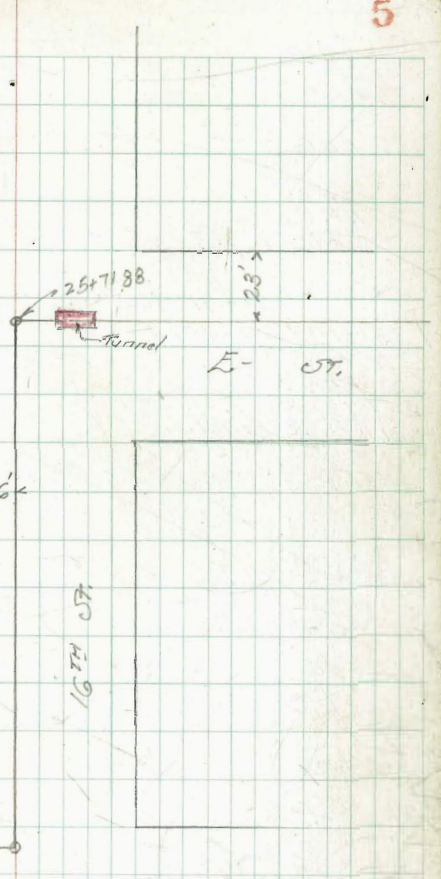


		38.48				
T.P.	9.60	47.67	041	38.07		
Stations				Elev. Stake	Elev. Flow Line	Cuts.
16+45			10.43	37.24	30.42	6.82 9.3' Rt. Cross on Cb.
17+00			9.06	38.61	31.38	7.23 " "
+50			7.84	39.83	32.25	7.58 " "
18+00	1.75 %		6.71	40.96	33.13	7.83 " "
+40			5.78	41.89	33.83	8.06 " "
+80			4.74	42.93	34.53	8.40 " "
Sur. 7" tack F. 15th						
Chk. B.M. #33			4.73	42.94		
19+05			4.88	42.79	34.97	7.82 " ℄
+23			4.67	43.00	35.29	7.71 " ℄
Δ Rt. 1°54'30"						
19+54.15 = MH #5			4.76	42.91	35.83	7.08 " "
+90			3.85	43.82	36.55	7.27 7.8' Rt.
20+44.20 = Δ Lt. 1°54'30"			2.85	44.82	37.27	7.55 " 6.3' Rt.
+90			1.81	45.86	38.01	7.85 " "
21+35			0.77	46.90	38.73	8.17 " "
T.P.	1.6 %	7.45	54.66	0.46	47.21	
21+80				6.77	47.89	39.45	8.44 " "
22+25				5.70	48.96	40.17	8.79 " "
Δ Rt. 90°01'20"						
22+77.49 = MH #6				4.98	49.68	41.00	8.68 " " 6.3' ℄ 9.3' ℄
7" tack E = 15th						
S.E. Chk B.M. #34				4.85	42.81	
23+20				4.69	49.97	41.30	8.67 " 9.3' ℄
+60				3.98	50.68	41.58	9.10 " "
24+00	0.1 %			3.15	51.51	41.86	9.65 " "
+35				2.47	52.19	42.10	10.09 " "



Stations				Elev Stakes	Elev. Flow Line
		5466			
24+70 T.P.			1.58	53.08	42.35
25+00	0.7% 6.06	59.85	0.87	53.79	42.56
+293	0.7%		5.56	54.29	42.76
+46	Tack		5.37	54.48	42.88
Chk. BM	SW 16th & E		5.89	53.96	
	△ Lt 90°02				
25+71.88 = MH #7			4.99	54.86	43.06
T.P.	5.81	59.77	5.89	53.96	
26+00			5.16	54.61	43.26
+40			4.90	54.87	43.54
+80			4.83	54.94	43.82
27+20			4.71	55.06	44.10
+60			4.61	55.16	44.38
28+00			4.38	55.39	44.66
+40	0.7%		4.87	54.90	44.94
+80			4.68	55.09	45.22
29+10 T.P.	△ Rt. 89°59' 252		4.29	55.48	45.43
29+35.26 = MH #8		6.502	4.27	55.50	45.60
SW. Cor 16th & Broadway					Not Listed in FB 1617
Chk. BM			9.39	55.63	
29+70			8.33	56.69	45.84
30+00	from Check Levels		P-56 =	57.36	46.05
+40			5.62	59.40	46.33
+80	0.7%		4.18	60.84	46.61
31+20			2.65	62.37	46.89
T.P.	7.35	70.97	1.40	63.62	
	△ Lt 90°01				
31+63.9 = MH #9			6.77	64.20	47.19

Cuts	offsets
10.73'	9.3' Rt
11.23'	"
11.53'	"
11.60'	"
11.80'	9.3' Rt
11.35'	7.7' Lt
11.33'	"
11.12'	"
10.96'	"
10.78'	"
10.73'	"
9.96'	"
9.87'	"
10.05'	"
2.90'	19.93' = Rest 3-28-47
10.85'	"
11.31'	"
13.07'	"
14.23'	"
15.48'	"



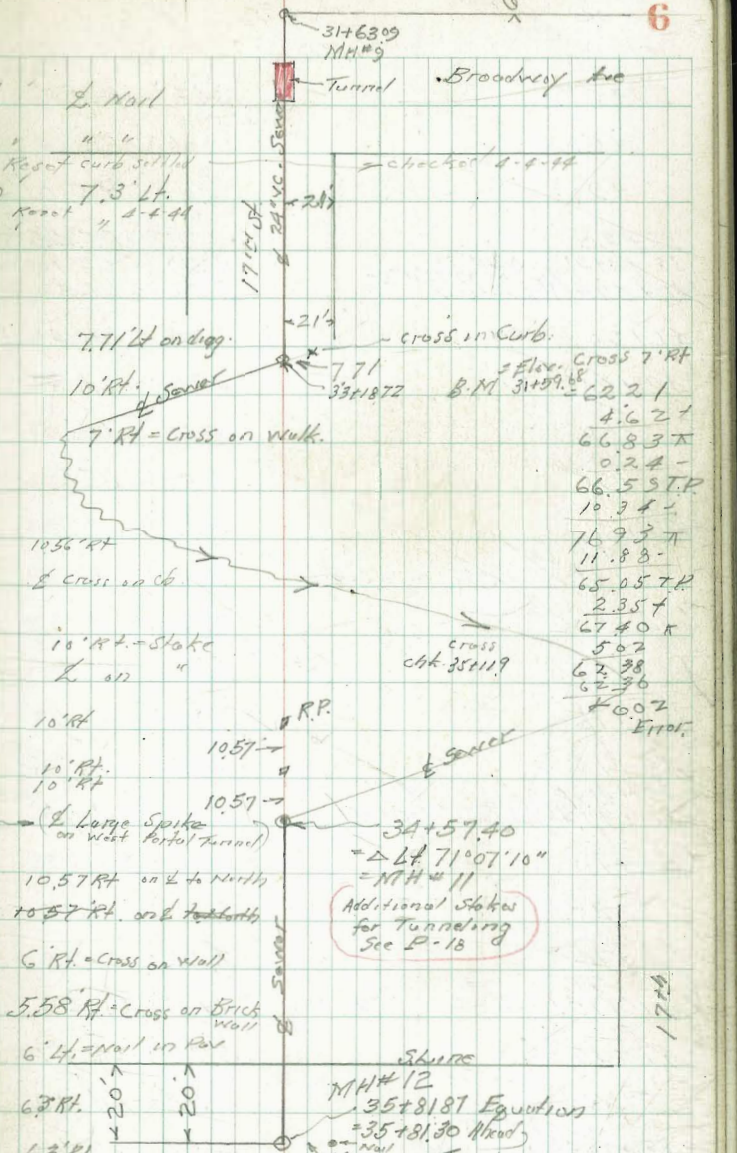
Stations				Elev. Stakes	Elev. Flow line
		70.97			
31+89	℄ Sand Tunnel		6.63	64.34	47.37
32+06	℄ " "		6.75	64.22	47.49
			6 3 31		
+40			7.64	63.33	47.73
T.P.			6 2 29		
+80	3.43	65.73	8.67	62.30	48.01
	Δ Rt 71°07'30"				
33+18.72	= MH #10		4.41	61.32	48.28
+50			3.69	62.04	48.51
33+73.68 = 31+59.68	P.O.T. = E. 7th Line Equation.		3.52	62.21	48.69
T.P.	5.98	61.93	9.78	55.95	

Additional Grades for Tunnels etc.

		66.83	4.51	62.32	
33+66.7	= E. 6th Line 17th		4.92-℄	61.91	48.64
33+73.68 = 31+59.68	Above Equation				48.69
			4.34	62.49	
32+00			5.04 ℄	61.79	48.99
+35			3.51	63.32	49.25
+72.9			0.45	66.38	49.54
			0.24	66.59	
32+94.4			1.49-℄	65.34	49.74
		76.93			
	Δ Lt. 71°07'10"		7.73	69.20	
34+57.40	= MH #11		8.79	68.14	50.93
		61.93			
35+11.9			+0.43	62.36	51.34
35+51.2			3.11	58.82	51.63
35+81.87 = 35+81.30	Δ Rt 90°02 MH #12		5.57	56.36	51.86
36+20			3.80	58.13	52.17
36+55			2.37	59.56	52.45
36+90			0.94	60.99	52.73
T.P.	10.50	71.70	0.73	61.20	

Cont. P-7

Cuts		
16.97	℄ Wall	
16.73	" "	
15.58 = Reset curb settled		= checked 4-4-44
15.60	7.3' Lt.	
14.28 Reset " 4-4-44		
14.29		
13.04	7.71 ℄ on digg.	= cross in Curb.
13.53	10' Rt. = Sewer	
	7 71 33+18.72	B.M. = Elev. Cross 7' Rt 31+59.68 = 62.21
13.52	7' Rt = Cross on walk.	
13.68	10.56' Rt	
13.27	℄ Cross on Cb	
13.50	10' Rt. = Stake	cross Cht. 35+11.9
12.80	℄ on "	
14.07	10' Rt	
16.84	10' Rt.	
16.85	10' Rt.	
15.60	℄ Large Spike on West Portal Tunnel	
		34+57.40 = Δ Lt 71°07'10" = MH #11
18.27	10.57 Rt. on ℄ to North	
17.21	10.57 Rt. on ℄ to North	
11.02	6' Rt. = Cross on Wall	
7.19	5.58 Rt. = Cross on Brick wall	
4.50	6' Lt. = Nail in Pav	
6.96	6.3' Rt.	
7.11	6.3' Rt.	
8.26		



Flow line 62.21
4.62 /
66.83 T
0.24 -
66.59 T.P.
10.38 -
76.93 T
11.88 -
65.05 T.P.
2.35 T
67.40 R
.02
67.38
67.36
.02 Error.

C. 57

Walker Hazard
3-20-44
Hurdin

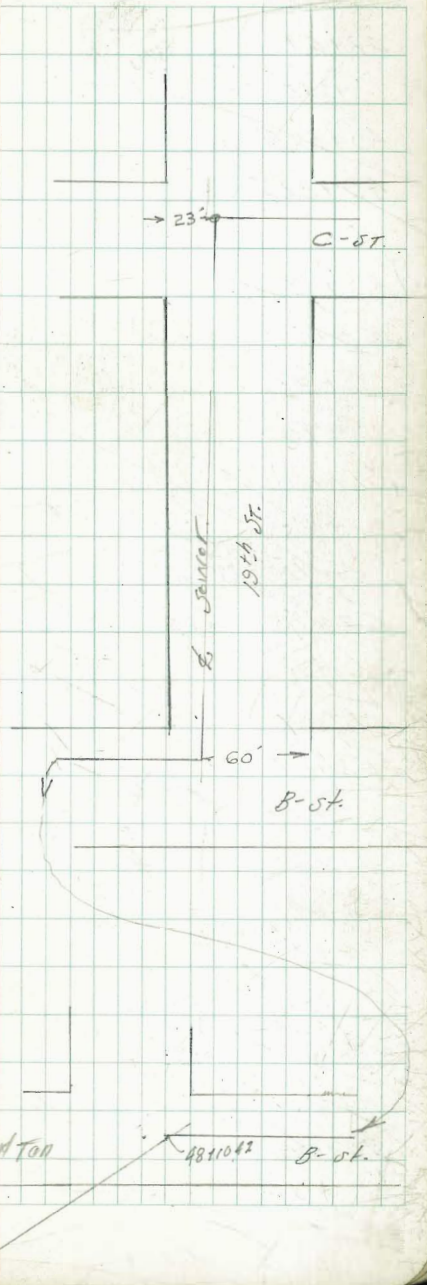
Boulder Canyon Sewer

Cont from P 6

71.70

37+25			.944	62.26	53.01	9.25	6.3' Rt. = cross on 6
+60			7.86	63.84	53.29	10.55	6.3' Rt. " "
+90			6.69	65.01	53.53	11.48	" " "
38+20			6.25	65.45	53.77	11.68	6.3' Rt. = Null in Line
38+49.97 = 41+57.46	MH#13 Δ = 89°35' Equation	18" Lt	5.60	66.10	53.97	12.13	6.3' Rt. Null on L to N
			5.38	66.32	53.97	12.35	9' Rt. on L to N
41+90			5.28	66.42	54.23	12.19	9' Rt. = Null
42+25			4.89	66.81	54.51	12.30	9' " = cross on 6
+60			5.63	66.07	54.79	11.28	8.3' Rt. = cross on 6
+95			6.08	65.62	55.07	10.55	8.3' " " "
43+30 TP			6.66	65.04	55.35	9.69	8.0' " " "
43+65	2.02	66.41	7.31	64.39	55.63	8.76	8.0' " " "
44+00			2.54	63.87	55.91	7.96	7.3' " " "
+35			3.06	63.35	56.19	7.16	7.3' " " "
+75			3.74	62.67	56.51	6.16	7.0' " " "
45+10			4.33	62.08	56.79	5.29	6.5' " " "
45+40.93 = 45+77.74	Δ Rt 89°38'15" Equation ahead MH#14		5.14	61.27	57.04 57.14	4.23 = Sta 44+11 4.13' Cut	13.10' Rt on diag.
46+10			4.12	62.29	57.40	4.89	9.3' Rt. cross on 6
+45			3.10	63.31	57.68	5.63	" " " "
+74 TP			2.23	64.18	57.91	6.27	" " " "
47+10	6.86	72.12	1.15	65.26	58.19	7.07	" " " "
47+45			5.75	66.37	58.47	7.90	" " "
786			4.93	67.19	58.74	8.45	" " "
48+10.42	MH#15 Δ 51°14'24"		4.52	67.60	58.98	8.62	10.31' Rt on diag.
48+10.42		MH#15	4.36	67.76	58.98	8.78	10' Rt = Rt ∠ to Formation
SE Br. with 6 & 8							
Chk. 8 MH#42			1.94	70.18			
				70.17 = 8 MH.			
				0.01 = Error			

Cont. P. 8



Powder Canyon Trunk Sewer Const.
Cont. from P-7

Stations.				El. Stakes	El. Flow Line	Cuts.	
		72.12					
48+47			4.05	68.07	59.27	8.80	10' Rt. = Nail in Pav.
+84.5			3.89	68.23	59.57	8.66	10' Rt. = Cross on C.
49+08.5			3.63	68.49	59.76	8.73	10' Rt. = Nail in Pav.
49+32.5			1.80	70.32	59.95	10.37	10' Rt. " " "
	7.03	77.20		70.17	8.M.		
49+65			6.61	70.59	60.20	10.39	10' Rt. Stake
50+00			6.02	71.18	60.48	10.70	"
+35			5.22	71.98	60.75	11.23	"
+70			4.76	72.44	61.03	11.41	"
51+00			4.49	72.71	61.27	11.44	"
+35			4.13	73.07	61.54	11.53	"
+70	pot. = MH #16		3.60	73.60	61.82	11.78	"
T.P. 52+10	11.44	85.71	2.93	74.27	62.10	12.17	"
+49			6.29	79.42	62.37	17.05	"
+85			8.85	76.86	62.62	14.24	"
53+20			9.96	75.75	62.87	12.88	"
+55			9.98	75.73	63.11	12.62	"
+90			9.72	75.99	63.36	12.63	"
54+25			8.99	76.72	63.60	13.12	"
+60			8.25	77.46	63.85	13.61	"
+95			7.23	78.48	64.10	14.38	"
55+27.96	△Lt 0°32' = MH #17		5.21	80.50	64.33	16.17	"
+65			5.30	80.41	64.59	15.82	"
56+00			8.30	77.41	64.84	12.57	"
+35			7.02	78.69	65.08	13.61	"

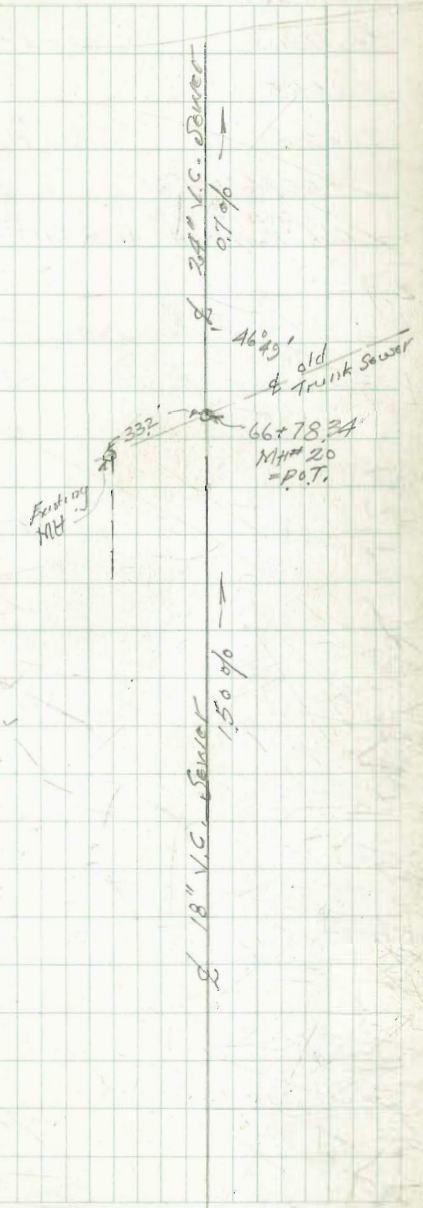
Boulder Canyon Trunk Sewer Construction.

		85.71			Elevs. Flow
56+70			5.21	80.50	65.33
57+05			4.48	81.23	65.58
+40			4.13	81.58	65.82
TP 57+78	7.87	90.07	3.51	82.20	66.07
58+10			7.28	82.79	66.31
+45			7.50	82.57	66.56
+80			7.29	82.78	66.80
59+15			6.93	83.14	67.04
59+50 = MH #18	△ Rt 2°30'		6.09	83.98	67.28
+85			4.93	85.14	67.52
60+20			4.21	85.86	67.77
+55			3.16	86.91	68.01
+90			3.46	86.61	68.26
61+25			2.44	87.63	68.50
+60			1.94	88.13	68.75
+95			1.63	88.44	68.99
62+30			1.84	88.23	69.24
+65			2.33	87.74	69.48
63+00			2.20	87.87	69.73
63+37.24 = 63+09	Equation △ Lt. 43°36'30" MH# 19		1.04	89.03	69.99 in Bride
Chk BM	B.P. #45		0.27	89.80	Pershing Drive
				89.81 = BM	
				0.01	
TP	0.71	89.74	1.04	89.03	
63+45			2.92	86.82	70.24
+80			7.16	82.58	70.48

Cuts.	offsets	
15.17	10' Rt.	
15.65	"	
15.76	"	
16.13	"	
16.48	"	
16.01	"	
15.98	"	
16.10	"	
16.70	"	on split
17.62	"	
18.09	"	
18.90	"	
18.35	"	
19.13	"	
19.38	"	
19.45	"	
18.99	"	
18.26	"	
18.14	"	
19.04	10.77	Rt R.P. 21.54 on Bisector.
16.58	10' Rt.	
12.10	"	

Powder Canyon Trunk Sewer Construction.

Station.		Powder Canyon 89.74		Elev. Stakes	Fl. Flowline	Cuts
64+15			9.94	79.80	70.73	9.07 ' 10' Rt.
T.P. +50	6.69	84.71	11.72	78.02	70.97	7.05 ' "
+85			10.06	74.65	71.22	3.43 ' "
65+20			9.53	75.18	71.46	3.72 ' "
+55			9.07	75.64	71.71	3.93 ' "
+90			9.88	74.83	71.95	2.88 " "
66+20			9.15	75.56	72.16	3.40 "
+50 = P.O.T. elev. old sewer			4.72	79.99	72.38	7.61 "
66+78.34 = MH #20			4.45	80.26	72.58	7.68 "
T.P.	7.98	91.41	1.28	83.43		
67+13.65			3.21	88.20	73.11	15.09 Nail in Pole
Chk BM #45 · P-9			1.60	89.81	OK.	
67+52.55			4.48	86.93	73.69	13.24 10' Rt.
+52.55 Lt.			4.92	86.49	73.69	12.80 Lt.
+78.45			4.39	87.02	74.08	12.94 10' Rt. Nail in Pav
+78.45 Lt. Nail			4.61	86.80	74.08	12.72 Lt. Nail " "
68+05.41			4.59	86.82	74.48	12.34 10' Rt. Nail " "
68+05.41 Lt.			4.77	86.64	74.48	12.16 Lt. Nail " "
+40			5.18	86.23	75.00	11.23 10' Rt. " "
+75			3.46	87.95	75.53	12.42 "
69+10			3.14	88.27	76.05	12.22 "
T.P. +45	4.50	93.64	2.27	89.14	76.58	12.56 "
+80			4.27	89.37	77.10	12.27 "
70+15			7.73	85.91	77.63	8.28 "
+50			5.97	87.67	78.15	9.52 "



Walker
Hazard
Hardin 4-25-44

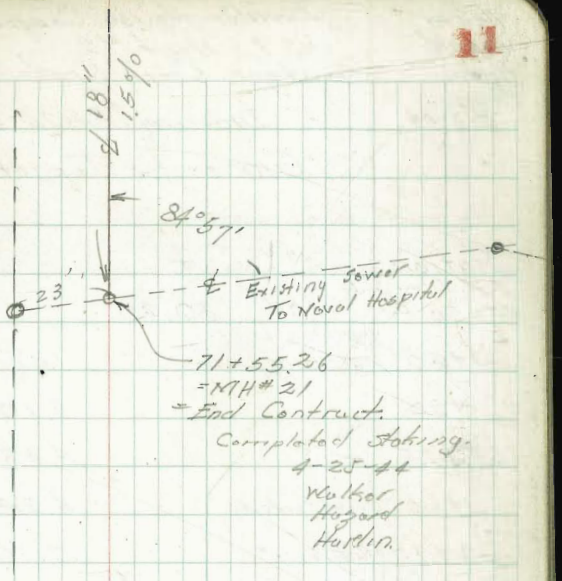
Powder Canyon Trunk Sewer Const.

Stations	x 9364		Elev. Stakes.	Elev. Flow line
70+85		5.27	88.37	78.67
71+20		5.59	88.05	79.20
+55.26 = MH #21		5.13	88.51	79.73
				F.S. 1614-26
Chk. Rim MH. 22 Rt. 71+55.26 (Cross on)		3.76	89.88	OK

Powder Canyon Unit #2

See Page 13

Cuts	offsets
9.70	10' Rt
8.85	"
8.78	"



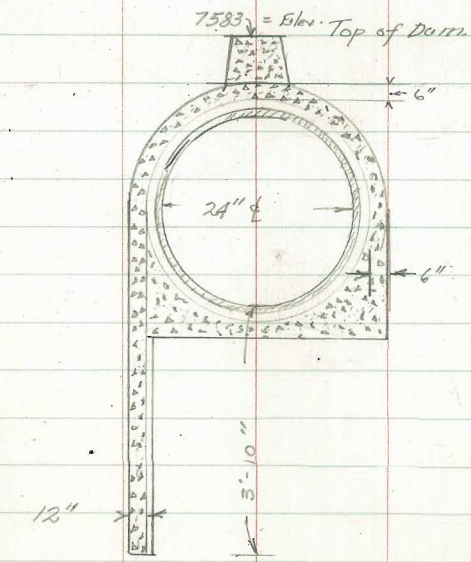
Completed Staking.
4-25-44
Walker
Hazard
Hardin.

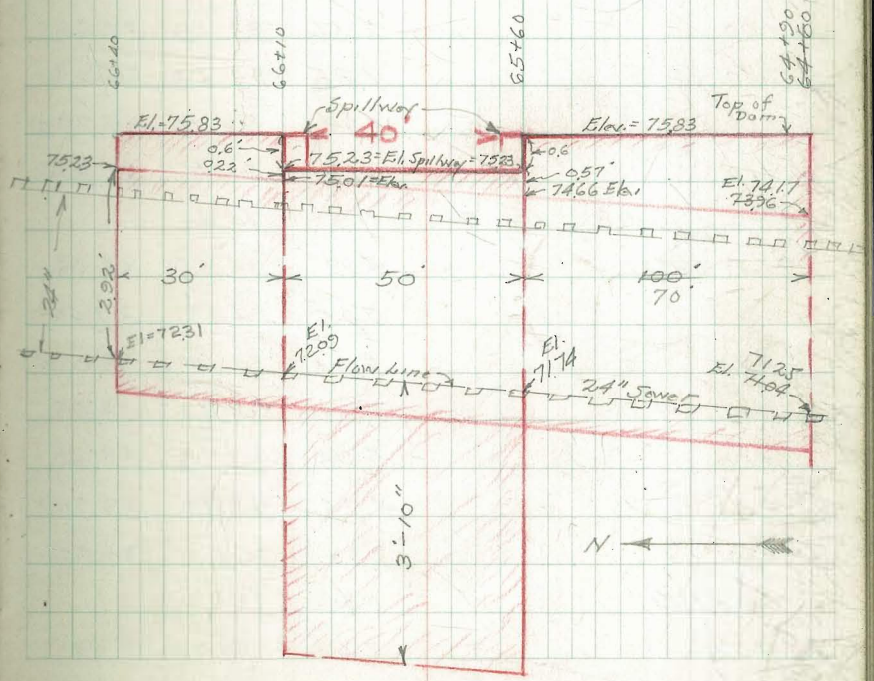
Walker
Hazard
Hardin
Beggs
5-3-44

Powder House Canyon Trunk Sewer
NO 7 - Unit #2
Switzer Creek Crossing Concrete-Pipe Protection
Drawing #2826-B
Grades for Top of Dam.

Station		Elev. Stakes	Elev. Top Dam	Cuts -	offsets.
B.M. Elev. Stake					
64+50 P-10	1.98	80.00	78.02		
beginning Dam					
64+60 = beginning cradle	1.87		78.13	75.83	+ 2.30 - 10' Rt of ℄ Pipe
+90	5.10		74.90	75.83	- 0.93 "
65+25	4.98		75.02	75.83	- 0.81 "
+60 = S. end Spillway	4.24		75.76	75.83	- 0.07 "
66+10 = North end "	5.16		74.84	75.83	- 0.99 "
+40 = End Dam	0.80		79.20	75.83	+ 3.37 "

Note: Change in Location from Plans to Location as shown in sketch to better fit Existing channel Switzer Creek.
by per BD. Phelps
5-4-44





Walker
Huzard
Hurdin
9-6-44

Powder Canyon Trunk Sewer Construction
Unit #2

Drawing # 1045 to 1048-D

		2.45	102.20		99.75	B.M.#47 Spk. in Pole 77+92
T.P.		3.69	95.65	10.24	91.96	
=71+55.26	Existing MH #21 = Beginning Unit #2			5.99	89.66	=Rim MH
				9.97		Elev. Flow 79.73 = Map 79.69
71+55.26	on Flow			15.96		
72+00				7.03	88.62	80.57
+40				6.52	89.13	81.31
+80				5.58	90.07	82.06
73+20				4.64	91.01	82.80
+60				3.69	91.96	83.55
74+00				2.56	93.09	84.29
+40				1.85	93.80	85.04
+80				1.54	94.11	85.78
75+10				1.19	94.46	86.34
T.P.	P.O.T. = MH #22	6.08	100.54	1.19	94.46	
75+40				5.99	94.55	86.90
+80				5.95	94.59	87.46
76+20				5.94	94.60	88.02
+60				5.92	94.62	88.58
77+00				5.28	95.26	89.14
+40				4.75	95.79	89.70
+80				3.90	96.64	90.26
Chk B.M.#47				0.80	99.74	
78+20				2.68	97.86	90.82

Cont. P-14

Cuts	offsets
8.05	
7.82	
8.01	
8.21	
8.41	
8.80	
8.76	
8.33	
8.12	
7.65	
7.13	
6.58	
6.04	
6.12	
6.09	
6.38	
7.04	

Powder Canyon Trunk Sewer
Cont. from P. 13

		100.54				
78+60			1.92	98.62	91.38	7.24
78+95.7 = P.O.T. NH #23			1.58	98.96	91.88	7.08
79+25			0.80	99.74	92.29	7.45
T.P.	639	106.13	0.80	99.74		
+60			5.54	100.59	92.78	7.81
80+00			4.84	101.29	93.34	7.95
+20			5.39	100.74	93.90	6.84
+80			6.06	100.07	94.46	5.61
81+20			6.58	99.55	95.02	4.53
chk BM #48			2.01	104.12		
+60			4.41	101.72	95.58	6.14
82+00			3.56	102.57	96.14	6.43
+40			2.52	103.61	96.70	6.91
+80			2.64	103.49	97.26	6.23
83+28 = P.O.T. NH #24			2.20	103.93	97.93	6.00
T.P.	1032	114.25	2.20	103.93		
83+60			10.20	104.05	98.38	5.67
84+00			9.76	104.49	98.94	5.55
+40			8.71	105.54	99.50	6.04
+80			7.35	106.90	100.06	6.84
85+20			5.47	108.78	100.62	8.16
+60			4.74	109.51	101.18	8.33
chk. BM #49			2.13	112.12		
86+00			1.56	109.69	101.74	7.95
+40			3.98	110.27	102.30	7.97

78+95.7
This NH Placed Here to Intercept Line from US Naval Hospt. Per request Eng. (CH).

Powder Canyon Trunk Sewer

Cont. from P-14

		114.25			El. Flow	Cuts
86+70			3.56	110.69	102.72	7.97
+95 = MH#25			3.33	110.92	103.07	7.85
87+20			2.88	111.37	103.42	7.95
T.P.	6.85	118.22	2.88	111.37		
+60			5.79	112.43	103.98	8.45
88+00			5.16	113.06	104.54	8.52
+40			6.42	111.80	105.10	6.70
+80			6.91	111.31	105.66	5.65
89+20			5.39	112.83	106.22	6.61
+60			4.71	113.51	106.78	6.73
90+00			3.31	114.91	107.34	7.57
+40			2.18	116.04	107.90	8.14
90+80 = MH#26		Δ Lt. 1°49'	1.69	116.53	108.46	8.07
91+20			2.56	115.66	109.02	6.64
+60			2.67	115.55	109.58	5.97
92+00			0.85	117.37	110.14	7.23
T.P.	8.02	125.39	0.85	117.37		
+40			7.24	118.15	110.70	7.45
+80			7.08	118.31	111.26	7.05
93+20			7.31	118.08	111.82	6.26
+60			5.94	119.45	112.38	7.07
94+00			5.32	120.07	112.94	7.13
94+42.42 = Δ Lt. 6°57'30"		MH#27	4.57	120.82	113.53	7.29
+70			4.03	121.36	114.02	7.37
95+00			3.93	121.46	114.55	6.91

Cont. P. 16

Powder Canyon Trunk Sewer

Cont. from P. 15

Stations				Fl. Station	Fl. Flow Line	Cuts	Offsets
		125.39					
95+40			3.23	122.16	115.26	6.90	
+80			2.45	122.94	115.97	6.97	
96+20			1.60	123.79	116.68	7.11	
96+63.23 = 96+64.04	Δ Rt. 24°27'30" MH #28 Ahead		1.14	124.25	117.46	6.79	
TP	8.17	132.42	1.14	124.25			
97+00			7.49	124.93	118.07	6.86	
+40			8.56	123.86	118.75	5.11	
+80			7.25	125.17	119.43	5.74	
98+18.10 = MH #29	Δ Lt. 16°40'20"		5.19	127.23	120.08	7.15	
+60			4.38	128.04	120.80	7.24	
99+00			3.94	128.48	121.48	7.00	
+40			3.36	129.06	122.16	6.90	
+80			2.71	129.71	122.84	6.87	
100+20			2.25	130.17	123.52	6.65	
+60			2.01	130.41	124.20	6.21	
TP	8.42	138.83	2.01	130.41			
101+00			7.74	131.09	125.88	5.21	
+40			7.19	131.64	125.56	6.08	
+80			6.63	132.20	126.24	5.96	
102+20 = MH 30	D.O.T.		6.13	132.70	126.91	5.79	
+60			5.40	133.43	127.59	5.84	
chk. B.M. 52			2.71	136.12			
	~~2.71~~			136.15 - DH.			
103+00			4.35	134.48	128.27	6.21	

				El. Stokes	El. Flow Line	Cuts
		138.83				
103+40			4.15	134.68	128.95	5.73
+80			3.93	134.90	129.63	5.27
104+20			3.37	135.46	130.31	5.15
+60			2.25	136.58	130.99	5.59
105+00			0.98	137.85	131.67	6.18
T.P.	10.42	148.27	0.98	137.85		
105+35			2.51	138.76	132.27	6.49
+70			8.74	139.53	132.87	6.66
105+94	P.O.T. MH #31		8.20	140.07	133.27	6.80
106+30			6.99	141.28	133.88	7.40
+65			6.10	142.17	134.48	7.69
107+00			5.12	143.15	135.07	8.08
+40			4.38	143.89	135.75	8.14
+80			4.08	144.19	136.43	7.76
108+20			3.97	144.30	137.11	7.19
+60			3.76	144.51	137.79	6.72
109+00			3.49	144.78	138.47	6.31
+40			3.16	145.11	139.15	5.96
T.P.	7.94	153.05	3.16	145.11		
109+82	P.O.T. MH #32		7.20	145.85	139.87	5.98
110+20			6.75	146.30	140.48	5.82
+60			6.67	146.38	141.12	5.26
111+00			6.49	146.56	141.76	4.80
+40			5.28	147.77	142.40	5.37
+80			4.18	148.87	143.04	5.83

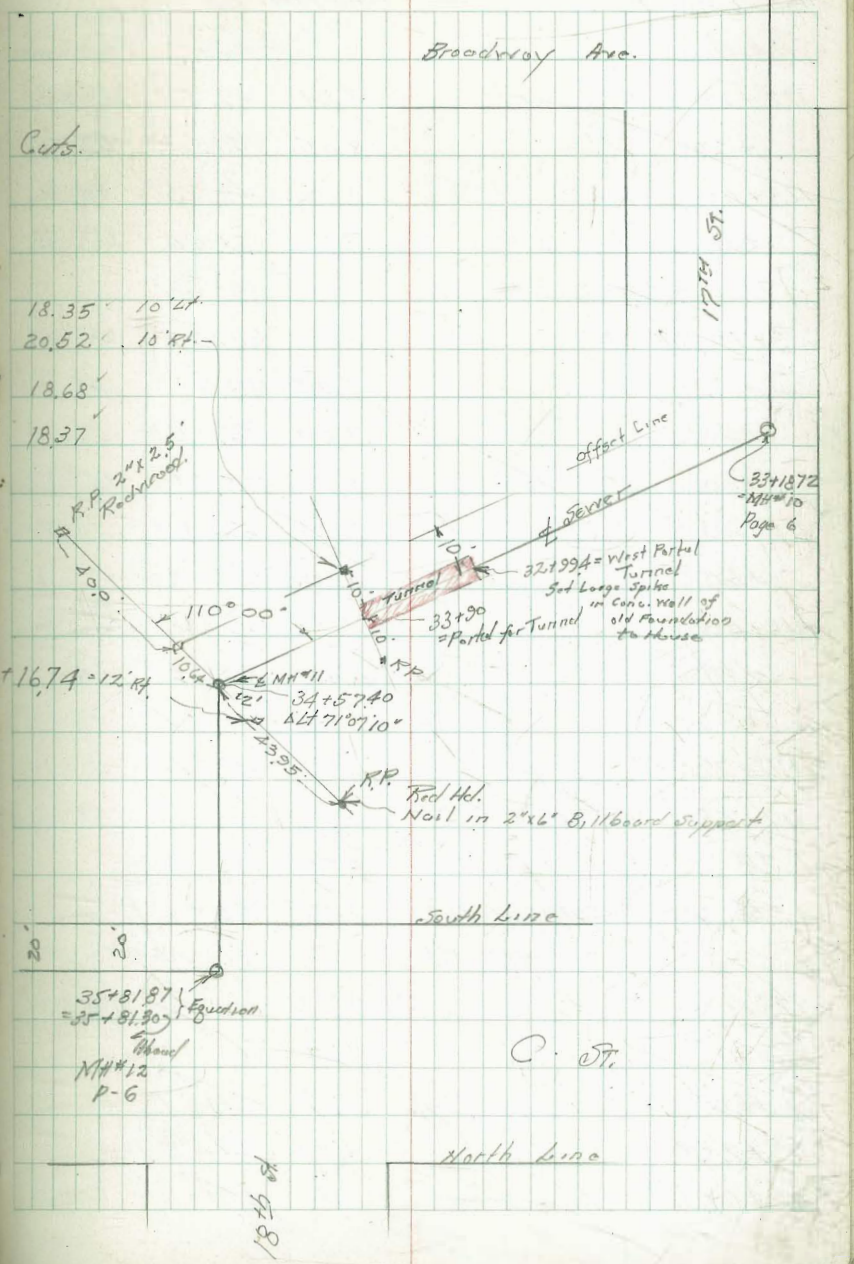
Cont. P-19

Walker
Hazard
Hurdin
4-4-44

Powder Canyon Trunk Sewer Const. Unit #1

Additional stakes set for Tunneling etc. as shown in sketch

Station	+ Rod	− Rod	Elev. Stakes	Elev. Flow Line
32+994 = West Portal Tunnel	4.87	73.01		49.74
℄M on stake 10.57' Rt 34+57.40 P-C			68.14	
33+90 = East Portal		4.24	68.77 = 10' Lt	
		2.07	70.94 = 10' Rt	50.42'
34+25		3.65	69.36	50.68'
34+57.40 ℄ MH #11 Δ Lt. 71°07'10"		3.71	69.30	50.93'
Ck. 35+11.9 = Cross on Wall Page 6		10.64	62.37	
			62.36 P-6	
			0.01	
4-17-44 Walker Hazard Hurdin	Re set stake for MH #11			Elev. Cross on Wall 35+11.9 P-6
	8.86	71.24	62.36	
		3.57	67.67	50.93



Walker / Hazuid / Hardin 9-7-44

Powder Canyon Trunk Sewer Const.
Unit #2
Cont. from 17

Station				Elev. Stakes	Elev. Flow Line	Cuts.	Offsets
		153.05					
112+20			3.51	149.54	143.68	5.86	
+60			3.08	149.97	144.32	5.65	
113+00			2.50	150.55	144.96	5.59	
+35			1.41	151.64	145.52	6.12	
TP	9.92	161.56	1.41	151.64			
113+70 = MH #33			8.27	153.29	146.08	7.21	
114+00			7.75	153.81	146.57	7.24	
+40			7.01	154.55	147.22	7.33	
+80			6.25	155.31	147.87	7.44	
115+20			5.38	156.18	148.52	7.66	
+60			4.74	156.82	149.18	7.64	
116+00			4.38	157.18	149.83	7.35	
+40			3.46	158.10	150.48	7.62	
+80			3.00	158.56	151.13	7.43	
117+20	Δ Rt 7°09'		1.97	159.59	151.78	7.81	
117+58.60 = MH #34			1.56	160.00	152.40	7.60	
TP	5.91	165.91	1.56	160.00			
Chk. B.M. #35 FB 161-17			2.38	163.53	Sph. on Pole 38'-11 118+10		
	4.01	167.54		163.53	= Above B.M.		
118+00			7.02	160.52	153.13	7.39	
40			6.87	161.17	153.83	7.34	
+80			5.87	161.67	154.54	7.13	
119+20			5.21	162.33	155.24	7.09	
+60			5.43	162.11	155.25	6.86	

Boulder Canyon Trunk Sewer Const.

Cont. from P-19

Station				El. Stakes	Elev. Flowline	Cuts	offsets
		167.54					
120+00			5.22	162.32	156.65	5.67	
+40			4.57	162.97	157.36	5.61	
+80			4.08	163.46	158.06	5.40	
121+20	2=MH#35	See P-24	3.19	164.35	158.83	5.52	~~5.91~~ Grade changed from 120+47 to 121+60 See P-24
+60			2.96	164.58	159.46	5.12	
TP 122+00	9.41	174.70	2.25	165.29	160.16	5.13	
+40			8.96	165.74	160.87	4.87	
+80			8.58	166.12	161.57	4.55	
123+20			7.87	166.83	162.28	4.55	
+60			6.67	168.03	162.98	5.05	
124+00			5.91	168.79	163.68	5.11	
+35			4.80	169.90	164.30	5.60	
+70			3.88	170.82	164.92	5.90	
125+09.43	Δ 5°10'						
125+34.43	=MH#36		2.65	172.05	165.61	6.44	
+70			2.10	172.60	166.32	6.28	
TP 126+00	11.81	185.06	1.45	173.25	166.92	6.33	
+40			10.83	174.23	167.72	6.51	from 125+34.43 to 130+00 See Rechecks Page 30 as this line Stakes more disturbed
+80			9.51	175.55	168.52	7.03	
127+20			8.25	176.81	169.32	7.49 Replaced	
+60			7.20	177.86	170.12	7.74	
128+00			7.20	177.86	170.92	6.94	
+40			6.06	179.00	171.72	7.28	
+80			4.23	180.83	172.52	8.31	
129+20			4.75	180.31	173.32	6.99	

Powder Canyon Trunk Sewer Const.

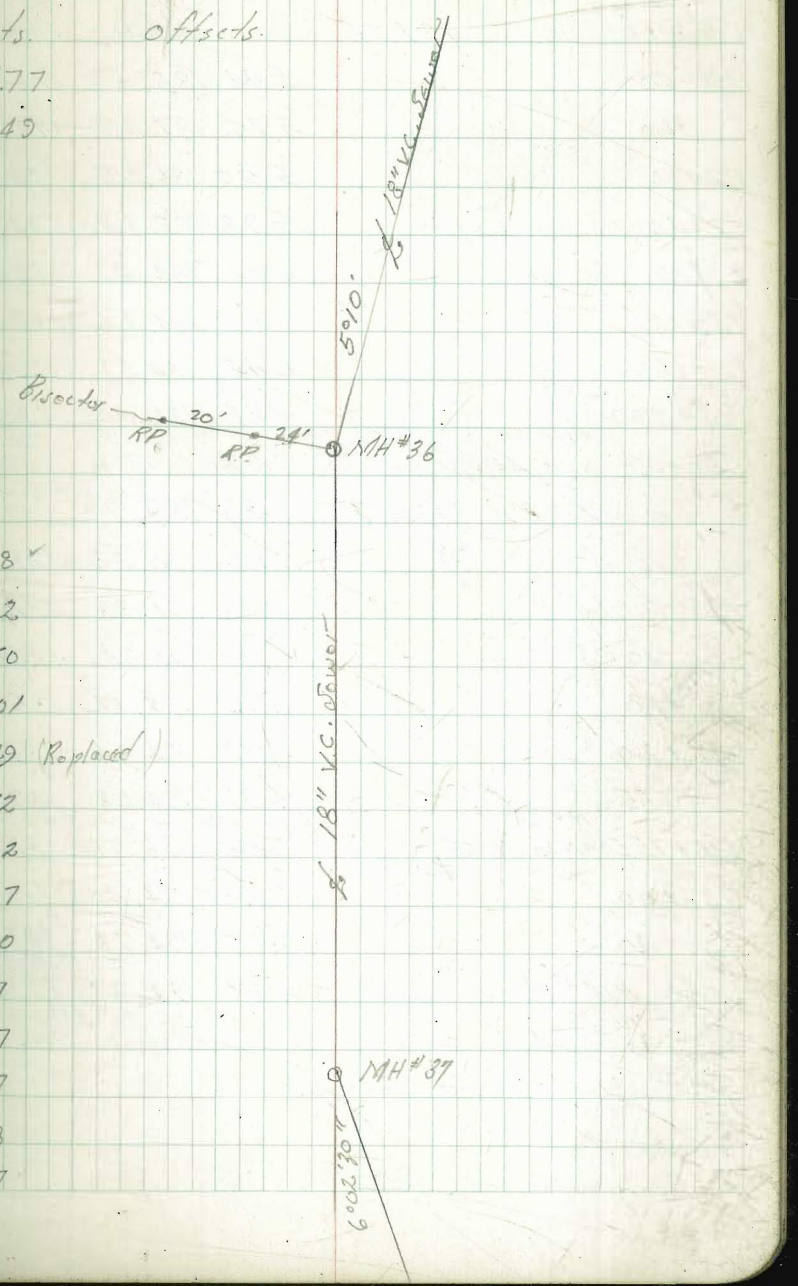
Cont. from P. 20

Stations					El. Stakes	Cuts	Offsets
		185.06					
129+60			5.17	179.89	174.12	5.77	
130+00 = MH #37			4.65	180.41	174.92	5.49	
T.P.	1101	191.42	4.65	180.41			
chk. BM #58 = NE Cor Hd Wall Morley Drive			2.84	188.58	Chisled Cross Top of Wall		
				188.55 = BM			
				0.03			

Re-check Stakes from Station 125+34.43 to 130+00
as some were disturbed by Bulldozer.

				Stake MH #36 = 172.05		
		12.68	184.73			
= 125+09.43 = 125+34.43 = MH #36			12.68		165.61	
+70			12.13	172.60	166.32	6.28
126+00			11.49	173.24	166.92	6.32
+40			10.51	174.22	167.72	6.50
+80			9.20	175.53	168.52	7.01
127+20			8.12	176.61	169.32	7.29 (Replaced)
+60			6.89	177.84	170.12	7.72
128+00			6.89	177.84	170.92	6.92
+40			5.74	178.99	171.72	7.27
+80			3.91	180.82	172.52	8.30
129+20			4.44	180.29	173.32	6.97
+60			4.84	179.89	174.12	5.77
MH #37 T.P.	Δ = 6° 02' 30" Lt.					
130+00	10.86	191.25	4.34	180.39	174.92	5.47
+40			10.29	180.96	175.48	5.48
+80			8.44	182.81	176.04	6.77

Cont. P. 22



Walker Hardham Beggs 10-26-44

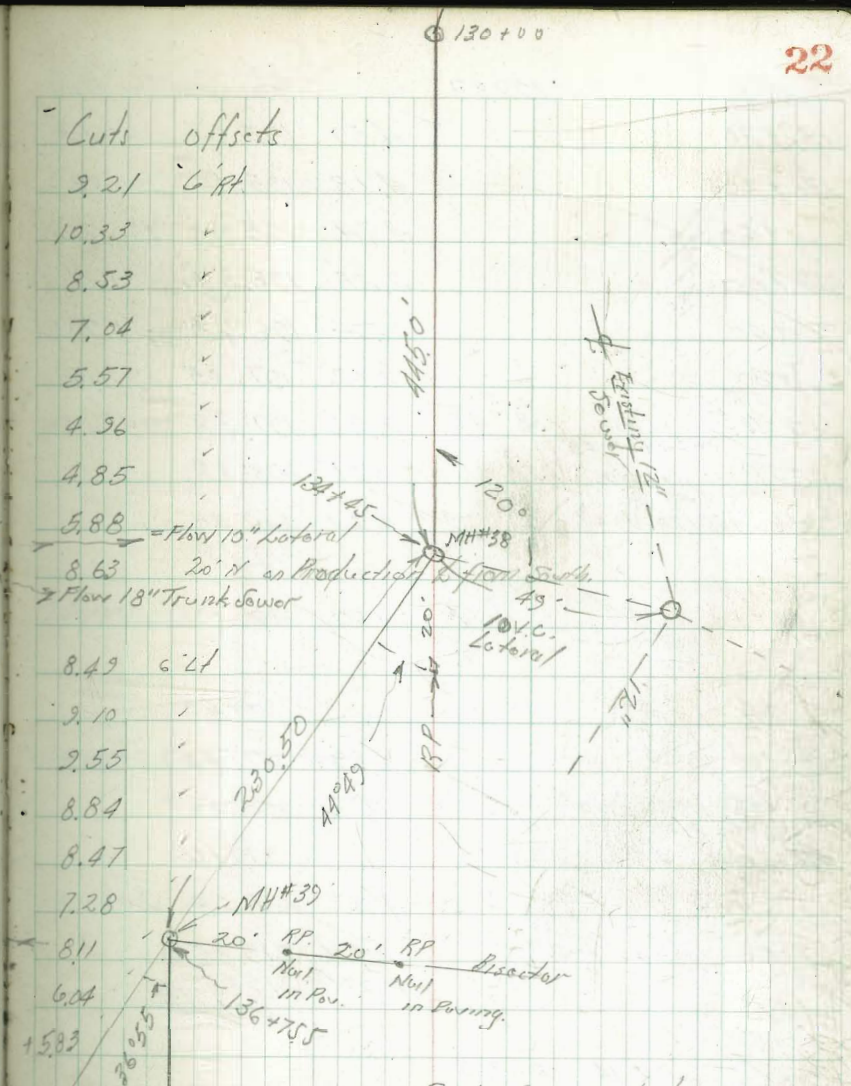
Powder Canyon Trunk Sewer Const.

Cont. from P-21

Stations			El. Stakes	El. Flow Line
		191.25		
131+20		5.44	185.81	176.60
+60		3.76	187.49	177.16
132+00		5.00	186.25	177.72
+40		5.93	185.32	178.28
+80		6.84	184.41	178.84
133+20		6.89	184.36	179.40
+60		6.44	184.81	179.96
134+00		4.85	186.40	180.52
	MH#38			181.82
134+45 =	Δ Rt. 44°49	1.47	189.78	181.13
T.P.	9.89 199.67	1.47	189.78	
+70		9.29	190.38	181.89
135+00		7.79	191.88	182.78
+40		6.14	193.53	183.98
+80		5.65	194.02	185.18
136+20		4.83	194.84	186.37
+55		4.99	194.68	187.40
	MH#39	This stake Reset See P-25		
136+75.50 =	Δ Lt. 36°55	3.56	196.11	188.00
137+00		5.27	194.40	188.36
+40		4.89	194.78	188.95
				N.E. B.P. Upost Florida
Chk. BM #59		4.80	194.87	
			194.86 BM	
			0.01	

Cont. P-23

Cuts	offsets
9.21	6' Rt.
10.33	"
8.53	"
7.04	"
5.57	"
4.96	"
4.85	"
5.88	= Flow 10" Lateral
8.63	20' N. of Production of 18" from South.
= Flow 18" Trunk Sewer	
8.49	6' Lt.
9.10	"
2.55	"
8.84	"
8.47	"
7.28	"
8.11	"
6.04	"
5.83	"



Grades for 10" Lateral

			134+45 20' Rt.
5.26	195.04	189.78	
		Elev. Flow	
		189.78 181.82	= 10" at 1.14% 7.96
5.04	1900	183.00 + 7.40	

				Elev. of Stake	Elev. Flow	Cuts	offsets	
		199.67						
137+80				4.59	195.08	189.54	5.54	6' Lt.
138+20				4.13	195.54	190.13	5.41	"
+60				3.74	195.93	190.72	5.21	"
139+00				3.35	196.32	191.31	5.01	"
+40				2.94	196.73	191.90	4.83	"
+80				2.62	197.05	192.50	4.55	"
140+11.5 T.P.	11.08	208.46		2.29	197.38	192.94	4.44	"
→ Cont. P-25								
T.P.	12.46	220.61		0.31	208.15			
chk 145+20 P-27				3.21	217.40			
					217.39			
					0.01			
142+39.0 = 142+49.0 NH #41 (Above)				4.50	216.11	200.33	15.78	6' Rt. This stake set Temp. as Contr. Wishes to blade off
~~T.P.~~	~~4.96~~	~~222.36~~			~~217.40~~			
~~146+00 = Reset~~				~~4.89~~	~~217.47~~	~~203.83~~	13.64	6' Rt.
~~chk 145+40 P-27~~				~~2.26~~	~~220.76~~			
145+60 P-27					217.16			
BM. on Stake	4.96	222.12						
146+00				4.89	217.23	203.83	13.40	6' Rt. Reset 3rd time see P-
chk 146+40 P-27				2.26	219.86			
				P-27 =	219.85			
					0.01 diff.			
BM. Stake 145+20 P-27	6.14	223.53			217.39			
144+10 Temp Stake				4.22	219.31	201.93	17.38	No time Grade only. Set Temp. Stake for Roughing out.

Walker
Hurdlin
Boggs
10-5-44

Powder Canyon Sewer
Change Grade to Clear Existing 12" Trunk Sewer at Station 121+24.02

Station			Flow 18"
18" Line layed to = 120+47 =	169.06		157.41
+80		5.60	163.46	157.85
121+24.02 = MH #35 Brk.		4.71	164.35	158.43
Pipe in Ahead from Hole = 121+60 = Brk.				159.41

(Above Layout = Void - No Change from Plans)

1.76% ↓ 13.4% ↓ 2.7% ↓ 1.76% ↓

P-20
Elev. Stake 121+24.02 = 164.35
4.71 +
169.06 π

+5.61
+5.92

Flow as in = 159.41
121+60

1.76% 120+47 13.4% 121+24.02 2.7% 1.76% ℄ Ext. 12" ℄ 18" N

Powder Canyon Sewer Cont.

Walker Hagood Hurlin 10-18-44

			Elev. Stakes P-23	Elev. Flow Line	Cuts	Offsets
140+11.5 P-23		208.53	=197.38	192.94	+4.44	6'Lt. = Chisled Cross on walk
140+44			10.72	197.81	193.42	+4.39	15'Lt. = " "
+70			10.25	198.28	193.80	+4.48	" "
141+0246 Equation =140+77.60	=ΔRt 90°04'	MH#41	10.07	198.46	194.27	+4.19	6'Lt. = 6'N. 6'Lt. = Cross on ℄ to South.
141+80	Ahead		~~7.06~~	~~201.47~~	~~195.85~~	+5.62	6'Lt. = Stake
~~+60~~			~~3.30~~	~~205.23~~	~~197.35~~	+7.88	Reset See "Notes" Below
~~142+00~~					~~198.85~~		
~~142+39.10~~	Δ Lt.				~~200.83~~		
~~142+49.10~~	Ahead	MH#42					

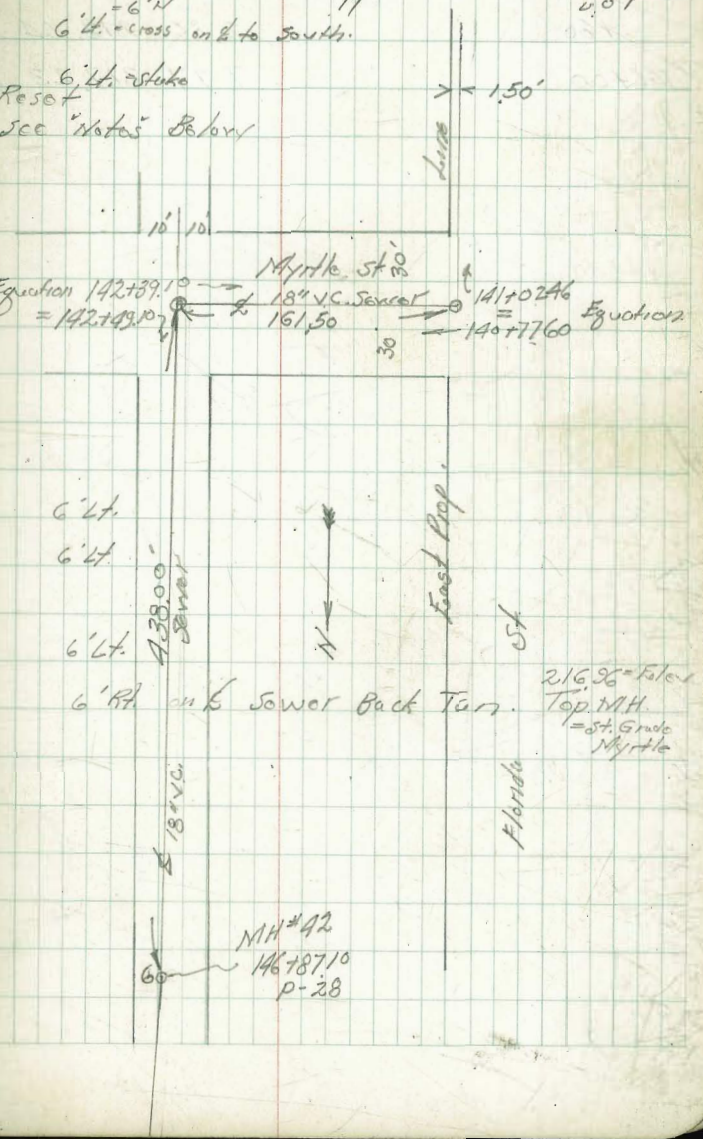
10-24-44

					BM#60
141+0246 Chk. =140+77.60	8.92	209.22	200.30		
	MH#41		10.75	198.47	
141+20			7.77	201.45	195.85
+60			4.13	205.09	197.35
T.P.	11.04	219.00	1.26	207.96	
142+00			8.12	210.88	198.85
142+39.10 = 142+49.10	MH#42 Equation Δ Lt. 89°36' Normal Ahead		3.62	215.38	200.33
142+80			4.15	214.85	200.64
143+20			4.57	214.43	201.04
+60			4.28	214.72	201.44
144+00			2.68	216.32	201.84
+40			2.99	216.01	202.24

Cont. P-26

Cross in walk
Elev. Stake Mottle 197.38
11.15 +
208.53 K
8.24 -
200.29
-200.30
0.01

Chk BM#60 — FB 1614 17



216.26 = Elev. Top MH. = St. Grade Myrtle

℄ Sewer Back Turn.

Walker
Hardin
Boggs - 10-24-44

Powder Canyon Trunk Sewer Const. Unit #2

219.00

Stations		Elev. Stakes	Elev. Flow line	Cuts	offsets
144+80		2.32	216.48	202.64	13.84	6' Rt.
145+20		2.01	216.99	203.04	13.95	"
+60		2.36	216.64	203.44	13.20	"
146+00		1.77	217.23	203.84	13.39	"

Cont. P.27

146+40

Walker Hugoniot & Hadden 10-18-44

Powder Canyon Trunk Sewer Unit #2

Station			Elev. Flowline
MH #51	2.65	222.59	219.94
145+20	5.20	217.39	203.03
+60	5.43	217.16	203.43
146+00	4.73	218.46	203.83
+40	2.74	219.85	204.23
146+87.10 = Δ 4.0°24	MH #42 Brk 2.92	219.67	204.71
147+20	3.15 3.00	219.44 219.59	205.25
+60	3.13	219.46	205.90
148+00	9.56	213.03	206.55
+40	11.01	211.58	207.21
+80	10.94	211.65	207.86
149+20	9.67	212.92	208.51
+60	6.18	216.41	209.16
150+00	2.52	220.07	209.81

for check Levels See P. 30

27

14.36	6' Rt.	Reset See P-26
13.73	6' Rt	Knocked out by Grader. and
14.63	6.0' Rt stake	Reset See P-23
15.62	6.8' Rt "	
14.96	6.5' Rt Cross on Conc. Wall	
14.~~74~~ 19	6.5 " " " " "	
13.56	6.5' " " " " "	
6.48	6' Rt	
4.37	"	
3.79	"	Line Change - See P. 28
4.41	"	
7.25	"	
10.26	7.7' Rt. chiseled cross on Wall	

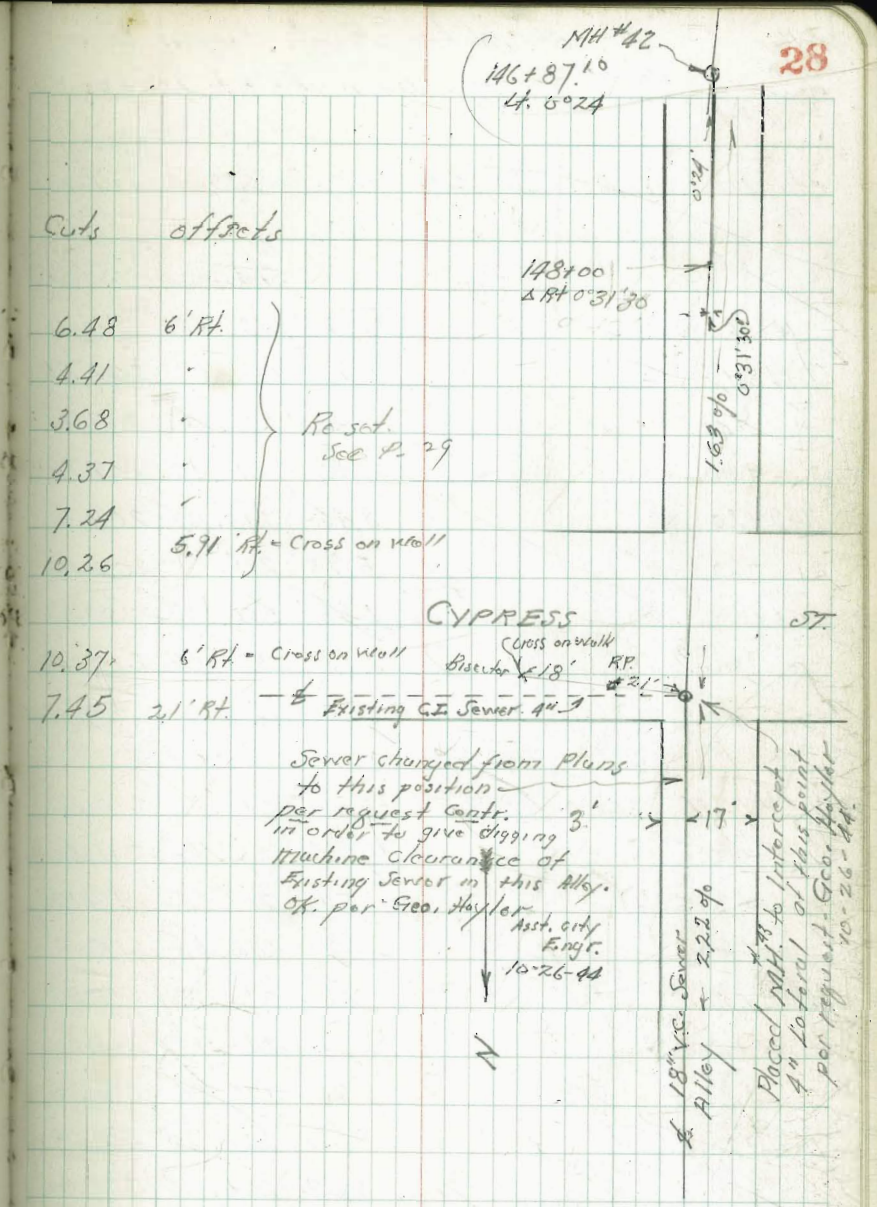
Walker
Hardin
Seggs 10-26-44

Powder Canyon Sewer Unit #2
Line Change from 148+00. P-27

Stations			Elev. Stakes	Elev. Flow line 8" V.C. #61
	2.28 222.22		219.94	
148+00 = △ Rt 0°31'30		2.19	213.03	206.55
+40		10.60	211.62	207.21
+80		10.68	211.54	207.86
149+20	16.3%	9.34	212.88	208.51
+60		5.82	216.40	209.16
150+00		2.15	220.07	209.81
T.P.	4.22 224.16	2.28	219.94	
150+20.23 △ 0°38'00 Lt		3.65	220.51	210.14
150+43.53 = MH #43		6.19	217.97	210.52

Cont. P-29

22.2%

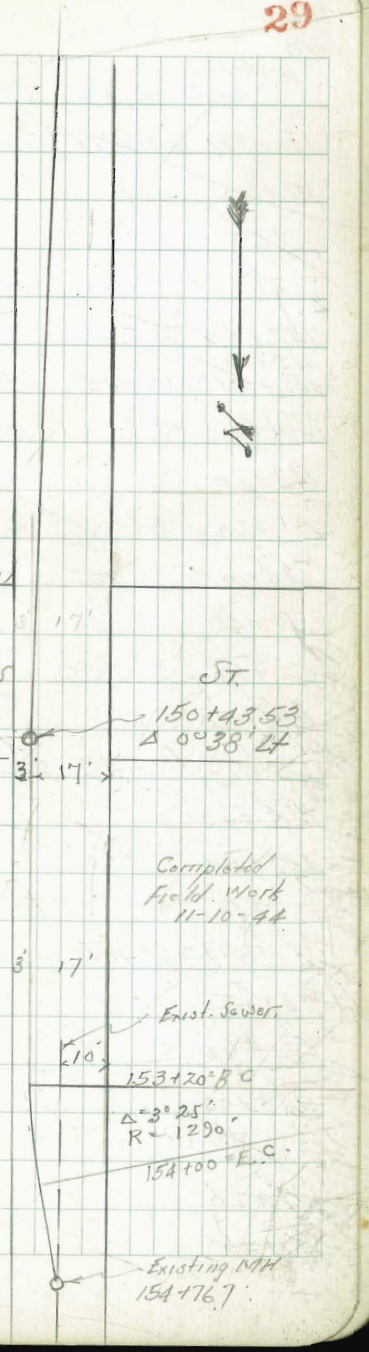


Walker
Hardin
Beggs
11-8-44

Re set Stakes Powder Canyon Sewer
Unit # 2 from Station 148+ to 150+00

Station				BM #61 Chiseled cross in Hd wall 219.94	Elev Flow line	Cuts	offsets.	
chk 147+60				2.07	219.48			
148+00				8.78	212.77	206.55	+ 6.22	6' Rt.
+40				10.49	211.06	207.21	+ 3.85	"
+80				9.85	211.70	207.86	+ 3.84	"
149+20				8.46	213.09	208.51	+ 4.58	"
+60				5.78	215.77	209.16	+ 6.61	"
chk 150+00			1.63 ft	1.48	220.07	209.81	+ 10.26	5.91 Rt = Cross on Hd wall
chk 150+20.33				1.03	220.52	210.14		
11-10-44						BM #61		
		9.78	229.72		219.94		Cuts	offsets
150+43.53 - PI	Δ 4°38'			12.09	217.63	210.52	+ 7.11	6' Rt.
+80				12.26	217.46	211.30	+ 6.16	"
151+20				11.57	218.15	212.19	+ 5.96	"
+60			2.22 ft	11.09	218.63	213.08	+ 5.55	"
152+00				11.43	218.29	213.97	+ 4.32	"
+40				10.99	218.73	214.86	3.87	"
+80				9.76	219.96	215.75	4.21	"
153+20	B.C.			8.32	221.40	216.64	4.76	"
+60	3°25 R=1290 T=40'			6.67	223.05	217.53	5.52	6.6' Rt.
154+00	= E.C.			3.93	225.79	218.42	7.37	8.4' Rt.
+40				1.16	228.56	219.31	9.25	10.55 Rt.
+76.7				3.95	225.77	220.14	5.63	13' Rt.
on Floor Exist. MH.				3.58	220.14	220.14		

on South side Cypress St.



Walker
Hardin
Boggs
10-24-44

Check Levels on Stakes
Powder Canyon Trunk Sewer Unit #2
Cont. from P-78

		8.39	208.69	200.30	BM#60 Diff.
140+776	MH#41			198.46	.01
141+20			7.24	201.45	✓
+60			3.61	205.08	.01
T.P.		10.94	218.90	207.96	✓
142+00			8.03	210.87	.01
142+39.10 = 142+49.10	MH#42		3.52	215.38	✓
+80			4.06	214.84	.01
143+20			4.48	214.42	.01
+60			4.19	214.71	.01
144+00			2.59	216.31	.01
+40			2.90	216.00	.01
+80			2.42	216.48	✓
145+20			1.91	216.99	✓
T.P.		5.42	221.68	216.26	
145+60			5.02	216.66	.02
146+00			4.42	217.26	.03
+40			1.79	219.89	.04
+87.10	MH#43		1.95	219.73	.06
147+20			2.19	219.49	.04
+60			2.18	219.50	.04
148+00			8.63	213.05	.02
~~+40~~			+0.06	+11.62	-.04
~~149+20~~			~~8.77~~	~~212.91~~	~~.01~~
~~149+60~~			~~5.22~~	~~216.46~~	~~.05~~

Const. Notes-See P-27

2.2168

150+00		~~1.59~~	~~220.49~~ ~~.02~~
Chk. BM#61 = Cross in Hdwall Cypress #		1.70	219.28 .04
	6.29	224.67	~~5.38~~
	4.22	224.16	219.94
148+00		11.13	213.03 ✓
+40		12.55	211.61 .01
+80		12.63	211.53 .01
149+20		11.29	212.87 .02
+60		7.77	216.39 .01
150+00		4.09	220.07 ✓
+20.23		3.64	220.52 .01
7+43.53	MH#43	6.19	217.97 ✓

Adjust. .04

Walker
Hazaid
Hardin
11-20-91

POWDER CANYON SEWER UNIT #2
Reset stakes North of Cypress St.

PM #61
P-29
Flow Line

Station	4.04	223.98		212.94		Cuts	offsets
				El. stakes	Elev.		
150+80			7.05	216.93	211.30	5.63	6' Rt.
151+20			6.80	217.18	212.19	4.99	"
+60			6.10	217.88	213.08	4.80	"
152+00			5.77	218.21	213.97	4.24	"
+40			5.50	218.48	214.86	3.62	"
+80			4.58	219.40	215.75	3.65	"
153+20=BC			2.58	221.40	216.64	4.76	

Page #29 Stakes OK. Not disturbed

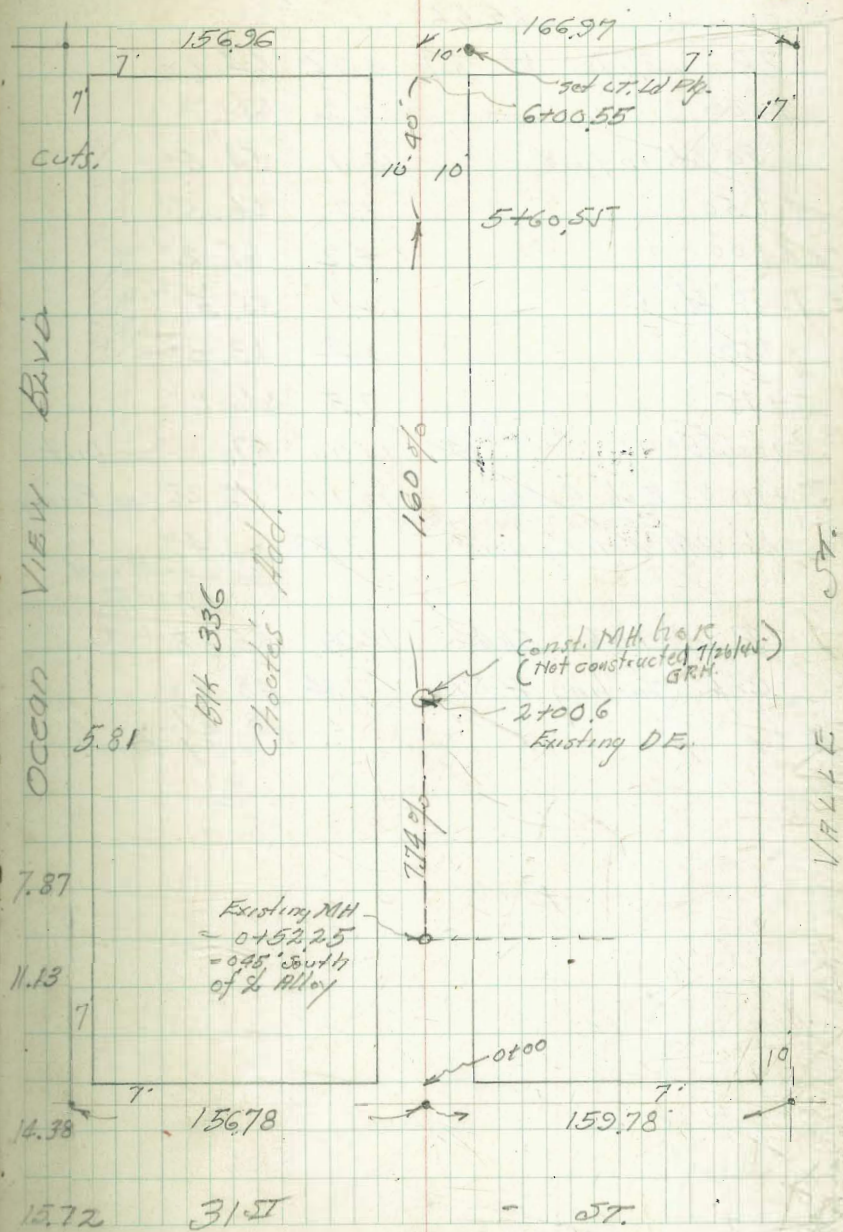
154+76.7

Walker
Hazard
Hardin
6-13-45

SEWER Const. GRADES
in Alley Block 336 - CHOATES ADD.
And Profile Levels on 2 Alley.

	0.52 49.13		48.61	N.W.-S.E. Ocean View & 31st
Elev. 31st				
0+00	on Paving.	7.40	41.73	Elev. Flow
+50		6.2	42.9	
+52.25	on Rim = ℄ Existing Drop MH.	5.85	43.28	
0+52.25	on Flow to South	24.59	24.54	24.54 = South
"	" Flow to East	14.12	35.01	35.01 = East
T.P.	10.81 54.09	5.85	43.28	
1+00		10.1	44.0	
+50		8.3	45.8	
+90		4.8	49.3	
2+00.6	on stub by ole Const.	3.60	50.49	
2+00.6	Flow at MH.	7.60		46.49
2+20	℄ on Ground	1.6	52.5	
~~2+20~~	~~= ℄ Proposed MH~~			
2+20	4' Rt. on stub.	1.48	52.61	46.80
T.P.	12.31 65.56	0.84	53.25	
+40	= ℄ on Ground	11.0	54.6	
2+40	on stub 4' Rt.	10.57	54.99	47.12
+80	on Ground	6.6	59.0	
2+80	on stub 4' Rt.	6.66	58.90	47.76
20' Rt of ℄ in yard		13.3	52.3	
3+20	℄ Ground	2.9	62.7	
3+20	on stub 4' Rt.	2.78	62.78	48.40
3+50	℄ Ground	1.0	64.6	
3+50	on stub 4' Rt.	0.96	64.60	48.88

Cont. P-33



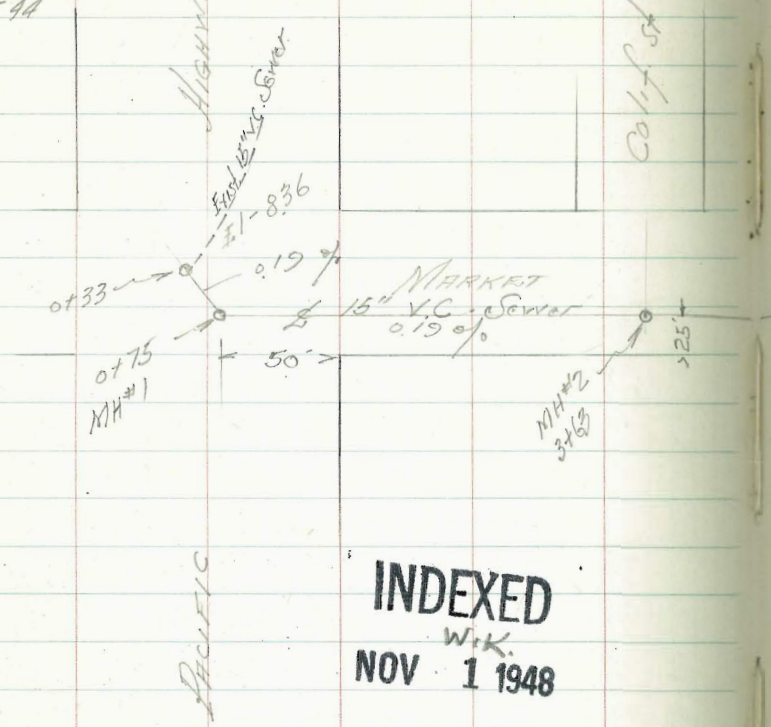
Sewer Alley Blk 336 Cont. from P-32

		65.56		
T.P.	3.77	68.37	0.26	64.60
4+00			2.2	66.2
50' Lt. in yard			13.9	54.5
4+50			1.9	66.5
5+00			3.2	65.2
50' Lt. " "			12.9	55.5
+50			5.7	63.0
+75			7.3	61.1
6+00.55 = Lt. 32 Yd St.			10.9	57.5 on Dirt
+10.55 E.b. Gutter Ocean View - 32nd			12.11	56.26 on Paving
Chk BM Sw. Top Hyd			7.88	60.49
				60.40 = Record
				0.09 = diff.
T.P.	1.06	5644	12.99	55.38
Chk. Starting BM			7.84	48.60
				48.61
				0.01 Error.

14.3% Sewer Grade

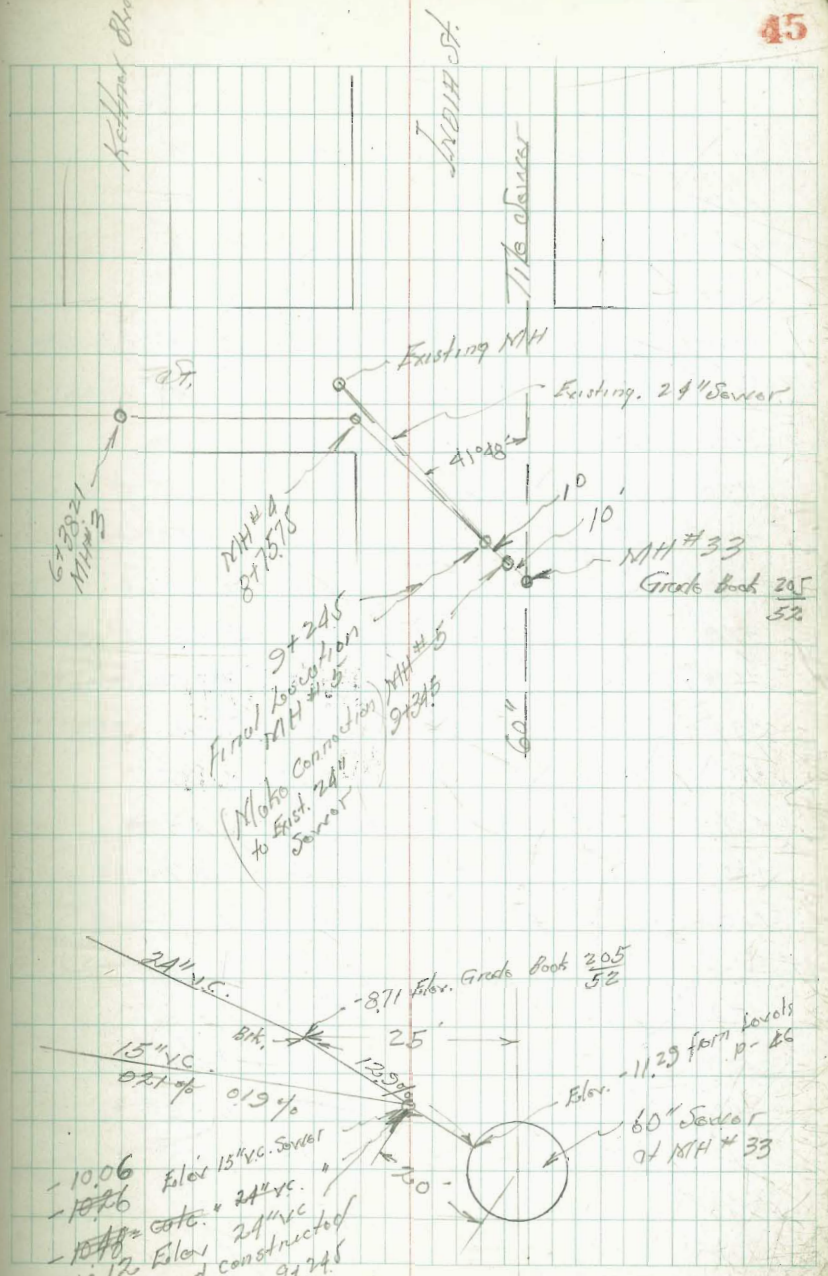
Walker
Hardin
Beggs
11-6-44

Sketch Market St. Sewer
for Const. Notes see P-47-48



Note: Found Elev. of Flow line at 0+33 to be -8.36 Elev. and run grades on 0.21 % ~~to Station 9+34.5 Which is the intersection of Existing 24" Line~~ → 0.19 % to Station 9+24.5 = Int. Existing 24" Line

11-16-44. 2nd Note: after 24" Sewer uncovered by Contractor, the flow line Elev was found to be El. -10.12 (permission to change the plan Grade of .21 % to .19 % by: Hal Jorgenson, City Engrs.)
Geo Hoyler



Walker notes Hurdin Rod Beggs

— Check levels —

Market St. Sewer Const. from Pacific & MKT to Indio & MKT. for Grades see P-97

	4.17	5.57		1.40	difference
0+33	Rim Existing MH.		2.08	3.49	.01
0+75			2.20	3.37	.02
1+00			2.22	3.35	.02
+30			2.35	3.22	"
1+60			2.72	2.83	.01
+90			3.13	2.44	"
2+20			3.51	2.06	.01
+50			3.87	1.70	.01
+80			4.22	1.35	"
3+10			4.58	0.99	.01
+40			5.11	0.46	.01
+63	MH #1		4.98	0.59	"
+90			5.45	0.12	.01
4+20			4.82	0.75	"
+50			4.77	0.80	"
+80			4.70	0.87	.02
5+10			4.56	1.01	.01
+40			4.44	1.13	"
+70			4.31	1.26	"
6+00			4.16	1.41	.01
+38.7			3.77	1.80	"
T.P.	5.10	6.50	4.17	1.40	
6+70			4.58	1.92	.01
7+00			4.63	1.89	.02
		6.50			
7+30			4.55	1.95	.02
+60			4.50	2.00	.02
+90			4.37	2.13	.02
8+20			4.32	2.18	.02
T.P.	4.96	7.36	4.10	2.40	
8+50			5.08	2.28	.01
+75.75	MH #4		4.95	2.41	"
9+05.12			5.21	2.15	.01
+34.5			4.92	2.44	.01
Old Rim	MH		4.75	2.61	"
			13.70		
Flow 24° from NW			18.65	-11.29	

Walker
Hardin
Briggs.
11-6-44

MARKET ST. SEWER CONSTRUCTION
from Pacific Highway to India St.
Plan # 6328-L (Sketch P. 45)

Prelim. FB. 16 46 77

6.03 — 7.43 — 1.40

S.W. S.P. Market & Kettner

Stations				Fl. Stakes	Fl. Flow line	Cuts.	offsets
0+33	on Rim Existing MH		3.93 11.76	3.50	-8.36	+11.86	on Rim MH
"	on Flow Existing MH		15 79	-8.36	-8.36		
					-8.44	11.83	
+75 - ℄ MH #1				4.04	3.39	-8.45	+11.84 9.3' Rt. Cross on ℄
					-8.47	11.84	
1+00				4.06	3.37	-8.50	+11.87 " " " "
					-8.53	11.75	
+30				4.21	3.22	-8.56	+11.78 "
					-8.59	11.43	
+60				4.59	2.84	-8.62	+11.46 "
					-8.64	-11.08	
+90				4.99	2.44	-8.69	+11.13 "
					-8.70	10.77	
2+20				5.36	2.07	-8.75	+10.82 "
					-8.76	10.47	
+50				5.72	1.71	-8.81	+10.52 "
					-8.82	10.17	
+80				6.08	1.35	-8.86	+10.23 "
					-8.87	9.87	
3+10				6.43	1.00	-8.94	+9.94 "
					-8.93	9.40	
+40				6.96	0.47	-9.00	+9.47 "
					-8.97	9.56	
+63 = ℄ MH #2				6.84	0.59	-9.05	+9.64 "
					-9.02	9.13	
+98				7.32	0.11	-9.11	+9.22 "
					-9.08	9.83	
4+20	5.81	6.56	7.5	6.68	0.75	-9.17	+9.92 "
					-9.14	9.94	
+50				5.76	0.80	-9.21	+10.04 "
					-9.19	10.08	
+80				5.67	0.89	-9.30	+10.19 "
					-9.25	10.27	
5+10				5.54	1.02	-9.31	+10.38 "
					-9.31	10.44	
+40				5.43	1.13	-9.43	+10.56 "
					-9.37	10.63	
+70				5.30	1.26	-9.49	+10.75 "

		6.56 T			-9.42
6+00			5.14	1.42	-9.55
					9.50
+38.2 = MH#3			4.76	1.80	-9.63
					9.56
+70			4.62	1.94	-9.70
					9.61
7+00			4.67	1.89	-9.76
					9.67
+30			4.59	1.97	-9.82
					9.73
+60			4.54	2.02	-9.88
					9.79
+90			4.41	2.15	-9.95
					9.84
8+20			4.36	2.20	-10.01
T.P	5.06	7.49	4.13	2.43	
					9.90
8+50			5.20	2.29	-10.07
					-9.95
+75.75 = MH#4 ΔRt 32°08'06"			5.08	2.41	-10.12
					-10.00
9+05.12			5.33	2.16	-10.19
+24.5 = MH#5					→ 10.06 15"VC
9+29.5 = MH#5			5.06	2.43	-10.36
					-10.48 =
(chk. Rim MH 60" 10' SE of MH#5)			4.88	2.61	
				2.59 =	FB1646
				.02	78

Chk. SV. B.P. Indian Market			5.09	2.40	
				2.42	
				.02	

Grades for Tunnel from 0+33 to 0+75 - P47

			Rods	Elev. Strike	B.M. = Elev. on Main 1+30 P-47
	5.13	8.35		3.22	
T.P.	2.50	-4.65 T	15.50	-7.15	
Station					Elev. Flow
0+78	——— on Flow	→	-3.88	-8.53	-8.45
0+75 = ℄ MH#1			4.01	-8.66	-8.44
0+33			0.00	-4.65	-8.36

10.84
10.97 9.3' Rt. Cross in Curb
11.30
11.43 " " "
11.50
11.64 " " "
11.50
11.65 " " "
11.64
11.79 " " "
11.75
11.90 " " "
11.94
12.10 " " "
12.04
12.21 " " "
" " "
12.19
12.36 " " "
12.36
12.53 " " "
12.16
12.35 Nail in Pav.
Existing Flow = -10.12 = 24" V.C.
12.69
Calc. Flow Existing 24" Hobart

0+33 Chk. Rim MH P-47 — 8.35 T − 4.85 = 3.50 = Rim O.K.

- 0.08 = Pipe Low by this Amount
- 0.22
+ 3.71

Walker Hardin Beggs

10-26-44

Powder Canyon Sewer. Check Elev

Re-stake MH #39

Existing 4" Water Main

Station.		T			
P-22					
	5.60	200.46		194.86	BM #59 NE 8th Bypass & Florida
137+05					
Top Valve Stem 4" Water Line			10.96	189.50	= Top Valve
Floor 18" at 137+05				188.43	

Re-stake MH #39 Page 22

				Sewer Elev. Flow Line	Cut	offset
136+75.50 = Δ 36'55		6.06	194.40	188.00	6.40	10' Lt. on Bisector
chk 137+00 P-22		6.07	194.39			
			194.40			
			0.01			

Walker
H-yard
10-18-44
Hardin

Boulder Canyon Sewer Unit #2

Rough Grader on ℄ of Sewer
(For Blasting.)

					BM #61	
chiseled cross in Hd Wall 10'Rt 149+99±		2.95	222.89		219.94	FB 1614-18
Station					Elev Flow	
146+87.10	MH #42			4.99	217.90	204.71	13.19
147+55				6.14	216.75	205.82	10.73
148+50				5.52	217.37	207.36	10.01
149+50				8.11	214.78	208.99	5.79
150+20				3.10	219.79	210.13	9.66
151+00				5.60	217.29	211.43	5.86
T.P.		12.38	228.80	6.47	216.42		
151+30.3	MH #43			10.16	218.64	211.93	6.7
152+00				9.48	219.32	213.58	5.74
+90				7.66	221.14	215.71	5.43
153+50				6.10	222.70	217.13	5.57
154+20				0.70	228.10	218.79	9.31
chk BM #62				4.16	224.64 224.63		

Walker
Hazard
Hardin

4-17-41

Grades for Reconstruction of Side walk that was removed by Construction of Powder Canyon Trunk Sewer.

on 16th St. From E to Broadway and on Broadway 16th to 17th St.

Note same stations used as Sewer

Stations				Cut or Fill	
E.L. 16th = 4' E of P.C. Ref.					
P.C. Ref. on E. St					
E.C. " " 16th					
4' N of Above E.C.	60.23				
= 26+28.88 = M.L. E. St		5.43	54.80	54.87	-0.07
+40		5.33	54.90	54.90	Grade ✓
+80		5.24	54.99	54.99	✓
27+20		5.15	55.08	55.08	✓
+60 Brk.		5.01 / ~~5.06~~	55.22 / 55.17	55.22 / ~~55.17~~ 55.36	✓ Nail Hd. = Grd.
28+00		4.87	55.36	55.26 / 55.40	~~+0.10~~
+40 Brk		5.13	55.10	~~55.35~~	~~-.25~~ -0.30
+80		4.92	55.31	55.44	-0.13
29+10		4.72	55.51	55.51	Grade
29+29.26 S.L. Broadway		4.67	55.56	55.56	Left out
4' N = cb. B.C. ~~10~~ Rad. E.C. 10' C.R. on Broadway		4.64	55.59	55.59	Grade
				55.68	Left out
E.L. Broadway 29+41.76	64.99	9.28	55.71	55.71	Grade ✓
+70		8.22	56.77	56.77	✓
30+00		7.11	57.88	57.88	✓
+40		5.63	59.36	59.36	✓
30+80		4.15	60.84	60.84	

Cont. P-53

16th & E P-54
B.M. S.W. Track 53.96
.627+
60.23 T
4.59-
55.64 T.P.
9.35+
64.99 T

Note. Made Brk in Grade to better fit existing curb & Light Standard Base at 28+00

Side walk Const.

Cont. from P-52

Station 64.99			Elev. N edge walk
31+20	2.67	62.32	62.32
+42.09 = W.L. 17th St	1.87	63.12	63.12
+46.09 = B.C. 10'R on Broadway	4.88	63.20	63.20
E.C. Rt. on 17th	1.31 4.27	63.77 63.81	63.81
~~1.4 South of E.C.~~			
~~- Existing curb~~			~~63.35~~
- S.L. Broadway	4.20 4.13	63.88 63.95	63.88
3.6 ± E.V.C. curb Broken at this point			64.27

Grade

Elev
31+42.09 63.12
1.96
68.08

Walker
Hozard
Hudson
4-17-44

Check Levels on Existing Curb.
on 16th St. from E. St. to Broadway
And on Broadway from 16th to 17th Sts.
To Determine Settlement in Curb
for Line and Grade because of
Trunk Sewer Construction of
Powder Canyon Sewer.
for
Sewer Const. Notes. See Page 5-11

64.57

Station				
				Line .09 in.
31+20		2.48	62.09	0.28 Low
+42.09 = W.L. 17th St.		1.51	63.06	2.6 N of SL.
+56.99 = W.C.b Line 17th		1.28	63.29	
TP	5.14	0.28	64.29	

BM. SW7' Yuck
16th & E Page 56

	5.60	59.56	53.96	
Stations-				
26+28.88 = NW. E St.		4.74	54.82	Line ok.
				Line ok.
26+40		4.72	54.84	.03 Low
+80		4.63	54.93	Line ok. .07 in
27+20		4.53	55.03	.03 Low .03 in
+60		4.48	55.11	.05 Low .07 in
28+00		4.18	55.38	.01 Low .03 in
+40		4.73	54.83	.07 Low Line ok
+80		4.51	55.05	.04 Low
29+10		4.17	55.39	0.11 Low
+35.26 MH		4.05	55.51	
TP	8.92	3.91	55.65	
29+29.26 Prop.		9.06	55.51	
29+41.26 = E Line 16th St.		8.91	55.66	
+70		8.12	56.45	Line 0.10 in 0.24 Low
30+00 in Drive		7.42	57.15	0.17 in
+40		5.32	59.25	0.15 Low 0.10 in
+80		3.84	60.73	0.11 Low

				10' SL.
32+56.09 = W.C.b 17th		4.20	65.23	
" on SL.		5.72	63.71	
C.b. 31+63.09		5.25	64.18	
31+89 E		5.14	64.29	
32+06 E		5.25	64.18	
+80		7.16		
32+40		6.20	63.23	
+80		7.16	62.27	

Walker
Hazard
Hardin
(March 1st 1944)

~ Check Levels ~
Powder Canyon Sewer
Trunk Line
For
Const Grades see P-2-

		8.14	24.65	16.51
0+00 - on Rim MH			7.36	17.29
0+25			6.67	17.98 ✓
+45			6.50	18.15 .01
+75			6.24	18.41 .01
1+00			6.02	18.63 .01
+50			5.42	19.23 .01
2+00			5.00	19.65 .02
+50			4.50	20.15 .01
+95			4.04	20.61 ✓
3+25			3.83	20.82 .01
+65.1' = MH #1			3.93	20.72 ✓
4+00			2.87	21.78 ✓
T.P. +55		7.60	30.01	2.24 22.41 .01
5+00				7.27 22.74 .01
+50				6.67 23.34 .01
6+00				6.31 23.70 .01
+50				5.83 24.18 ✓
7+00				5.35 24.66 ✓
145.1' MH #2 ℄ Island Ave				4.79 25.22 .01
8+00 N.W. B.P. Island & 15th				4.51 25.50 .01
Chk BM #30				4.69 25.32 ✓
+50				3.88 26.13

30.01

9+00				3.22 26.79 ✓
T.P.	7.20	34.36		2.85 27.16 ✓
9+24 on ℄ Sand Scale				6.91 27.45 .01
+48 " " N. "				6.92 27.44 .01
10+00				6.20 28.16 ✓
+40				5.42 28.94 ✓
10+76.57 = Δ ℄ 0°04'30"				4.71 29.65 .01
T.P. Chk BM #31 p-3	8.73	38.61		4.48 29.88 ✓
11+00				9.39 29.22 .01
+28 ℄				8.45 30.16
+46 ℄				8.47 30.14
11+85				8.29 30.32 ✓
38.63π Corrected See P-3				
12+20				8.11 30.52 ✓
+60				7.59 31.04 .01
13+00				6.99 31.64 .01
+50				6.39 32.24 .01
14+00				5.63 33.00 ✓
+50				4.90 33.73 ✓
15+00				4.21 34.42 ✓
+33.67 = MH.				3.64 34.99 ✓
15+70				3.28 35.35 ✓
16+00				2.56 36.07 .01
+45				1.39 37.24 ✓
T.P.	9.54	47.60		0.57 38.06
17+00				8.99 38.61 ✓

Cont P-56

Powder Canyon Sewer Const.
Check Levels

Station				
	47.60			
17+50		7.77	39.83	-
18+00		6.65	40.95	.01
+40		5.72	41.88	.01
+80		4.68	42.92	.01
19+05 on ℄		4.82	42.78	.01
+23		4.60	43.00	✓
+54.5 = MH.		4.70	42.90	.01
+99		3.78	43.82	✓
20+44.20 = ΔH.		2.78	44.82	✓
+90		1.75	45.85	.01
21+35		0.71	46.89	.01
T.P.	7.43	54.63	0.40	47.20 .01
+80			6.75	47.88 .01
22+25			5.68	48.95 .01
22+77.49 = MH.			4.96	49.67 .01
23+20			4.67	49.96 .01
+60			3.96	50.67 .01
24+00			3.12	51.51 -
+35			2.45	52.18 .01
+70			1.57	53.06 .02
25+00 T.P.	6.39	60.17	0.85	53.78 .01
+29.3 ℄			5.88	54.29 -
+46 ℄			5.69	54.48
25+71.88 = MH			5.32	54.85 .01

	5.59	59.55		53.96 ✓ 7' Track SW 16½ ℄ E
26+00			4.93	54.62 .01
+40			4.67	54.88 .01
+80			4.60	54.95 .01
27+20			4.48	55.07 .01
+60			4.38	55.17 .01
28+00			4.15	55.40 .01
+40			4.65	54.90 -
+80			4.45	55.10 .01
29+10			4.06	55.49 .01
+35.26 T.P. = MH 9.50		65.01	4.04	55.51 .01
+70			8.30	56.71 .02
30+05			7.65	57.36 60-10 NCP Set on 15+
+40			5.60	59.41 .01
+80			4.15	60.86 .02
31+20			2.62	62.39 .02 SW 7' Track 17+55 Boundary
T.P.	7.40	71.03	1.38	63.63
31+63.09 = MH.			6.82	64.21 .01
+89 ℄			6.69	64.34 -
32+06 ℄			6.81	64.22 -
+40			7.70	63.33 -
+80 T.P.	4.02	66.32	8.73	62.30 ✓
33+18.72 = MH			4.99	61.33 .01
+80			4.27	62.05 .01
33+73.68 P.O.T. Equation -31+89.68			4.11	62.21 -

Cont. ℗ 55

66.32 ~Check Levels~ Boulder Canyon Sewer

T.P.	7.98	61.88	12.42	53.90	
		61.88=Above Hi.			
35+11.9			+0.49	62.37	.01
+51.2			3.05	58.83	.01
35+81.87=MH 12 =35+81.30 + RH 31.0 0.2			5.50	56.38	.02
36+20			3.74	58.14	.01
+55			2.31	59.57	.01
T.P.	10.60	71.59	0.89	60.99	
36+90			10.58	61.01	
37+25			9.33	62.26	✓
+60			7.75	63.84	✓
37+90			6.57	65.02	.01
38+20			6.13	65.46	.01

71.59

38+44.97					
41+57.46				5.48	66.11 .01
"	9' Rt to E			5.26	66.33 .01
41+90				5.15	66.44 .02
42+25				4.77	66.82 .01
+60				5.51	66.08 .01
+95				5.96	65.63 .01
43+30				6.55	65.04 ✓
+65 T.P.	2.20	66.60		7.19	64.40 .01
44+00				2.72	63.88 .01
+35				3.25	63.35 .01
+75				3.93	62.67 ✓
45+10				4.51	62.09 .01
45+40.93 =45+77.44				5.33	61.27 ✓
46+10				4.30	62.30 .01
+45				3.28	63.32 .01
+74 T.P.				2.41	64.19 .01
47+10	6.83	72.10		1.33	65.27 .01
+45				5.72	66.38 .01
+80				4.90	67.20 .01
48+10.42			Δ Lt 51°14' Ring MH	4.49	67.61 .01
+10.42			Rt to Forward Tan	4.33	67.77 .01 .01 Const.
Chk BM #42				1.91	70.19 .02 orig.
48+47				4.02	68.08 .01
+845				3.86	68.24 .01
49+085				3.60	68.50 .01

~ Check Levels ~
Powder Canyon Sewer Const.
Cont'd from P 57

		72.10			
49+325			1.77	70.33	.01
					B.M.#42
	6.92	77.09		70.17	
49+65			6.50	70.59	
50+00			5.91	71.18	
+35			5.10	71.99	.01
+70			4.65	72.44	
51+00			4.37	72.72	.01
+35			4.01	73.08	.01
+70 T.P.	12.12	85.73	3.48	73.61	.01
52+10			11.45	74.28	.01
+49			6.29	79.44	.02
+85			8.86	76.87	.01
53+20			9.95	75.78	.03
+55			9.98	75.75	.02
+90			9.72	76.01	.02
54+25			9.00	76.73	.01
+60			8.26	77.47	.01
+95			7.23	78.50	.02
55+27.96 = MH#17			5.21	80.52	.02
+65			5.31	80.42	.01
56+00			8.30	77.43	.01
+35			7.02	78.71	.02
+70			5.21	80.52	.02

8573

57+05			4.48	81.25	.02
+40			4.14	81.59	.01
57+75 T.P.	7.71	89.32	3.52	82.21	.01
58+10			7.14	82.78	.01
+45			7.37	82.55	.02
+80			7.15	82.77	.01
59+15			6.80	83.12	.02
59+50 = MH#18			5.95	83.97	.01
+85			4.80	85.12	.02
60+20			4.27	85.65	.01
+55			3.02	86.90	.01
+90			3.32	86.60	.01
61+25			2.31	87.61	.02
+60			1.81	88.11	.02
+95			1.50	88.42	.02
62+30			1.72	88.20	.03
+65			2.21	87.71	.03
63+00			2.07	87.85	.02
63+37.24 = 63+09			0.91	89.01	.02
T.P.	0.89	89.92	0.89	89.03	
63+45			3.10	86.82	
+80			7.34	82.58	
64+15			10.12	79.80	
+50 T.P.	6.49	84.51	11.90	78.02	
+85			9.85	74.66	.01

Walker
Hazard
Harding A-2644

— Check Levels —
Powder Canyon Sewer Const.

		84.51		
65+20			9.34	75.17
+55			8.87	75.64
+90			9.68	74.83
66+20			8.93	75.56
+50			4.52	79.99
+78.34 = MH #20			4.25	80.26
T.P.	7.99	91.42	1.08	83.43
67+13.65			3.23	88.19
+52.55 10' Rt.			4.50	86.92
+52.55 ℄			4.94	86.48
+78.45 10' Rt.			4.41	87.01
+78.45 ℄			4.63	86.79
68+05.47 10' Rt.			4.61	86.81
68+05.47 ℄			4.79	86.63
+40			5.20	86.22
+75			3.48	87.96
69+10			3.15	88.27
T.P. +45	4.58	93.72	2.28	89.14
+80			4.35	89.37
70+15			7.81	85.91
+50			6.05	87.67
+85			5.36	88.36
71+20			5.68	88.04
+55.26 = MH #21 = End Contract Unit #1			5.21	88.51
			3.84	89.88

for Check Levels
Unit #2 See P-75

Levels on Existing Paving.
Pershing Drive + ℄ Powder Canyon Sewer
To determine Settlement if any
because of Sewer Construction.
These Levels taken before Construction

59

91.35

20' W of ℄ Section Parallel to Sewer

S edge Paving	4.97
S 1/4 "	4.96
℄ Pershing "	4.74
N 1/4 "	4.79
N edge "	4.84
10' W. of ℄ Sewer	
N " Paving	4.72
" 1/4 "	4.71
℄ "	4.66
N 1/4 "	4.86
S edge Pav.	4.88
℄ Sewer	
" "	4.86
S 1/4	4.66
℄ Pershing	4.56
N 1/4	4.64
N edge	4.68

Cont P-60

154 91.35 8981

Levels on Pavt.
Cont from P-59

9135

10' E of ℄ of Sewer

N edge Paving.	4.55
" 1/4	4.54
℄	4.40
S 1/4	4.54
S edge	4.69

20' E.

S "	4.47
S 1/4	4.26
℄	4.27
N 1/4	4.41
N edge	4.52

4.75 19.50 7483 45498

11.6 68.0

Walker
Hazard
Hardin

— Powder Canyon Sewer —

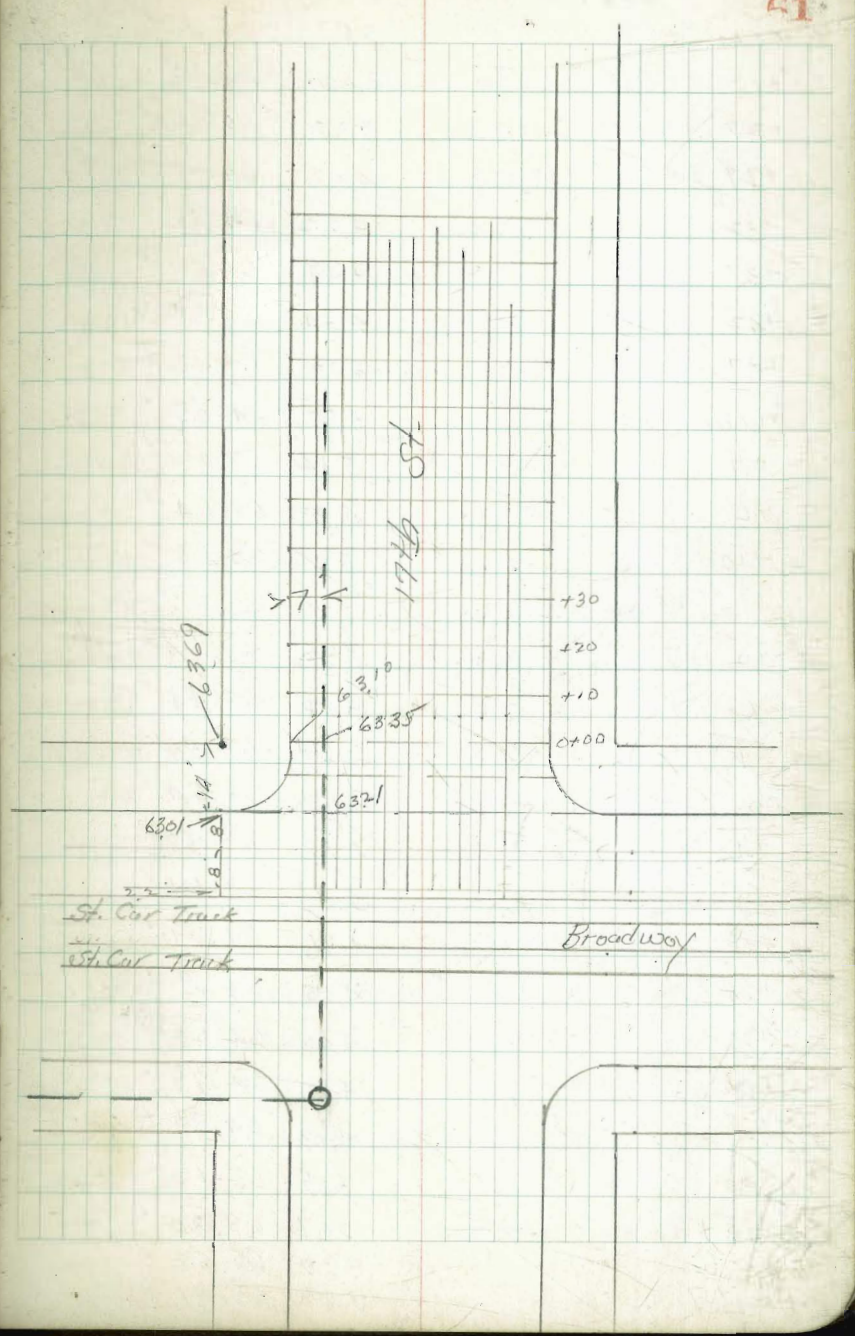
Levels on Paving 17th & Broadway.

To determine Elevations for Patch Work as result of Settlement because of Sewer Construction.

6.65 (6.89) 6232 Elev. Cross 1056' Rt. 33+66.7 - P.C.

0-32.2 = 32'.2 South of N.L. Broadway

-10	on Rail	5.73	63.24
W.L.		5.35	63.62
+7		5.19	63.78
cb.		4.95	64.02
+5		4.76	64.21
+10		4.59	64.38
+15		4.40	64.57
+20		4.20	64.77
+25		4.00	64.97
+30		3.84	65.13
+35		3.69	65.28
+40		3.52	65.45
+45		3.34	65.63
+52 = E cb.		3.14	65.83
cb +7		2.78	66.19
E.L.		2.45	66.52
	0-30 = Shoulder		
E.L.		2.57	66.40
+7'		2.88	66.09
cb.		3.17	65.80
+7		3.41	65.56



6897

0-30

+12	3.57	65.40
+17	3.60	65.28
+22	3.85	65.12
+27	4.02	64.95
+32	4.22	64.75
+37	4.47	64.50
+42	4.64	64.33
+47	4.79	64.18
W cb.	4.92	64.05
+7	5.14	63.83
W.L.	5.33	63.64
+10	5.81	63.16

0-22

-10	5.90	63.07
W.L.	5.53	63.44
+7	5.43	63.54
cb.	5.33	63.64
+4 = W edge Ditch	5.39	63.58
+9 = E " "	5.31	63.66
+15	4.96	64.01
+20	4.68	64.29
+25	4.40	64.57
+30	4.18	64.79
+35	4.03	64.94
+40	3.85	65.12
+45	3.67	65.30
E cb.	3.39	65.58
~~E.L.~~ +7	3.06	65.91

6897

EL	2.70	66.27

0-14 = W cb. Lino Broadway

EL on cb	2.91	66.06
" Gut.	3.33	65.64
+7	3.45	65.52
cb.	3.77	65.20
+7	4.09	64.88
+12	4.32	64.65
+17	4.53	64.44
+22	4.76	64.21
+27	5.06	63.91
+32	5.38	63.59
+37 on cons.	5.66	63.31
+42	5.80	63.17
+47	5.95	63.02
W cb.	6.08	62.89
+7	5.96	63.01
W.L. Gut.	5.96	63.01
" Top cb.	5.18	63.79
+10	6.24	62.73
TP on cb 6.43	⟨68.75⟩ 6.65	⟨62.32⟩
E.C. Ref. Gut NW	5.65	63.10
Int. cb Ref. NW	5.86	62.89

0+00 = W.L. Broadway

W Gut	5.65	63.10
+5	5.92	62.83

W cb	N.L. Cent ✓ 68.75		
+10		5.83	62.92 ✓
+15		5.41	63.34 ✓
+20		5.06	63.69 ✓
+25		4.79	63.96 ✓
+30		4.50	64.25 ✓
+35		4.18	64.57 ✓
+40		3.86	64.89 ✓
+45		3.56	65.19 ✓
E Cut		3.41	65.34 ✓
" cb.		2.81	65.94 ✓
	0+10		
E cb.		3.22	65.53 ✓
Cut.		3.86	64.89 ✓
+7.		3.83	64.92 ✓
+12		3.95	64.80 ✓
+17		4.17	64.58 ✓
+22		4.40	64.35 ✓
+27		4.62	64.13 ✓
+32		4.87	63.88 ✓
+37		5.21	63.54 ✓
+42		5.52	63.23 ✓
+47		5.83	62.92 ✓
W Cut ok		5.90	62.85 ✓
" cb.		5.45	63.30 ✓
	0+20		
W cb		5.69	63.06 ✓
" Cut. ok		6.20	62.55 ✓

68.75 ✓

+05	6.04	62.71 ✓
+10	5.76	62.99 ✓
+15	5.37	63.38 ✓
+20	4.97	63.78 ✓
+25	4.71	64.04 ✓
+30	4.49	64.26 ✓
+35	4.37	64.38 ✓
+40	4.20	64.55 ✓
+45	4.13	64.62 ✓
E Cut	4.18	64.57 ✓
" Cb.	3.50	65.25 ✓
0+30		
E cb	3.95	64.90 ✓
Cut	4.59	64.16 ✓
+7	4.50	64.25 ✓
+12	4.50	64.25 ✓
+17	4.61	64.14 ✓
+22	4.72	64.03 ✓
+27	4.92	63.83 ✓
+32	5.17	63.58 ✓
+37	5.60	63.15 ✓
+42	6.06	62.69 ✓
+47	6.38	62.37 ✓
W Cut.	6.45	62.30 ✓

6875

NW. Return 4 Parts 6'

BC. on Broadway		4.97	63.78 ✓
1		5.04	63.71 ✓
2		5.28	63.47 ✓
3		5.53	63.22 ✓
4 = EC. on 17th		5.51	63.24 ✓
10' N		5.45	63.30 ✓
20' N		5.69	63.06 ✓
30' N		5.99	62.76 ✓
on walk NW Cor	Prop. Lines.	5.06	63.69 ✓
	673 69.05		62.32 Stamping BM

Walker, Hazard, Harden
7-13-44

Ł Grades for Resurfacing Florida St.

From Monroe to Univ. Ave.

Ł Stations	+	π	−	Elev.	Ł Grades S.F.B.P. Monroe + Highland Ł Point Grades	Fills
	2.05	326.66		324.61		
T.P.	1.95	322.00	6.61	320.05		
0+00 = Ł Monroe Ave			1.95	320.05	320.27	-0.22
+25			2.34	319.66	319.82	-0.16
+50			2.80	319.20	319.37	-0.17
+75			3.22	318.78	318.92	-0.14
1+02 = Ł Mission Ave			3.74	318.26	318.44	-0.18
+25			4.15	317.85	318.03	-0.18
+50			4.58	317.42	317.58	-0.16
+75			5.01	316.99	317.13	-0.14
1+86 = PC on W Bk Ł Mission			5.15	316.85	316.93	-0.08
2+00			5.44	316.56	316.68	-0.12
+25			5.92	316.08	316.23	-0.15
+50			6.45	315.55	315.78	-0.23
+75			6.81	315.19	315.33	-0.14
3+00			7.35	314.65	314.89	-0.24
+25			7.80	314.20	314.44	-0.24
+50			8.18	313.82	313.99	-0.17
+75			8.57	313.43	313.54	-0.11
4+00			9.02	312.98	313.09	-0.11
+25			9.52	312.48	312.64	-0.16
+50			10.01	311.99	312.19	-0.20

0.795 %

Cont. from P-65 Florida St.

				Elev. Hub & Grade Elev.		
2 Stations		322.00				
4+75			10.48	311.52	311.74	-0.22
5+00			10.86	311.14	311.30	-0.16
T.P.	2.08	313.22	10.86	311.14		
+25			2.59	310.63	310.85	-0.22
+50			3.07	310.15	310.40	-0.25
+75			3.45	309.77	309.95	-0.18
6+00 "N.L. Meade Ave			3.86	309.36	309.50	-0.14
+40 "℄ " "			4.51	308.71	308.95	-0.24
0+00 "℄ " "			4.98	308.24	308.40	-0.16
+25			5.27	307.95	308.06	-0.11
+50			5.64	307.58	307.71	-0.13
+75			6.01	307.21	307.37	-0.16
1+00			6.40	306.82	307.03	-0.21
+25			6.79	306.43	306.68	-0.25
+50			7.07	306.15	306.34	-0.19
+75			7.44	305.78	306.00	-0.22
2+00			7.82	305.40	305.65	-0.25
+25			8.07	305.15	305.31	-0.16
+50			8.53	304.69	304.97	-0.28
+75			8.80	304.42	304.62	-0.20
T.P.	1.70	306.12	8.80	304.42		
3+00			2.00	304.12	304.28	-0.16
+25			2.35	303.77	303.94	-0.17
+50			2.71	303.41	303.59	-0.18
+75			3.07	303.05	303.25	-0.20

1.79% ↓

1.87 33' ℄

Cont. P-67

Florida St.

Cont. from P. 66

306.12

4+00			3.34	302.78	302.91
+25	PVC.		3.69	302.43	302.56
+50	Brk		4.09	302.03	302.32
+75	EVC.		4.15	301.97	302.13
5+00			4.23	301.89	302.05
+25	~ Transition ~ opp. Basin on East		4.35	301.77	301.96
+50			4.42	301.70	301.87
+75			4.62	301.50	301.68
6+00	= NL El Cajon Intersection Excepted		4.67	301.45	301.45
	T.P. 0.55	301.20 = corrected		300.65 = BM.	
Int.	SW. SP. El Cajon & Florida		5.51	300.61	
0+00	= SL El Cajon		1.47	299.73	299.73
+25			2.36	298.84	299.00
+50	Brk		3.21	297.99	298.16
+75			4.15	297.05	297.19
1+00	= Crown Transition		5.22	295.98	296.23
+25	PVC.		6.09	295.11	295.26
+50			7.17	294.03	294.29
+75	Brk Apparent Full Concave ?		8.05	293.15	293.40
2+00	EVC		8.71	292.49	292.66
+25			9.46	291.74	291.95
+50			10.14	291.06	291.26
+75			10.84	290.36	290.54
3+00			11.62	289.58	289.81
+25			12.24	288.96	289.13

Cont. P. 68

Fills

	-0.13
	-0.13
	-0.29
	-0.16
	-0.16
	-0.19
	-0.17
	-0.18
	Meet existing Rec. here.
	Meet Line.
	-0.16
	-0.17
	-0.14
	-0.25
	-0.13
	-0.26
	-0.25
	-0.17
	-0.21
	-0.19
	-0.18
	-0.26
	-0.17

FLORIDA St.

Cont. from P-67

		30120				
T.P.	2.07	291.03	12.24	288.96		Fills
3+38 ± ML Howard		Ave.	2.32	288.71	288.88	-0.17
"		"	2.85	288.18	288.32	-0.14
0+00 ± St.		"	3.45	287.58	287.75	-0.17
+25			3.92	287.11	287.29	-0.18
+50			4.37	286.66	286.82	-0.16
+75			4.82	286.21	286.36	-0.15
1+00			5.26	285.77	285.89	-0.12
+25			5.80	285.23	285.43	-0.20
+50			6.35	284.78	284.96	-0.18
+75			6.75	284.28	284.50	-0.22
2+00			7.17	283.86	284.04	-0.18
+25			7.65	283.38	283.57	-0.19
+50			8.16	282.87	283.11	-0.24
+75			8.74	282.29	282.64	-0.35
3+00			9.05	281.98	282.18	-0.20
+25			9.47	281.56	281.71	-0.15
+50	Brk.		9.96	281.07	281.25	-0.18
T.P.	0.45	281.52	9.96	281.07		
+75			10.1	280.51	280.73	-0.22
4+00			1.48	280.04	280.21	-0.17
+25			1.99	279.53	279.69	-0.16
+50			2.64	278.88	279.17	-0.29
+75			3.21	278.31	278.65	-0.34
5+00			3.50	278.02	278.13	-0.11

Cont. P. 69

		Florida St				
		281.52				
5+25			4.13	277.39	277.61	-0.22
+50			4.62	276.90	277.09	-0.19
+75			5.12	276.40	276.57	-0.17
6+00	=℄ Polk Ave		5.55	275.97	276.14	-0.17
+40	℄		6.07	275.45	275.64	-0.19
0+00	=℄ " "		6.56	274.96	275.13	-0.17
+25			7.06	274.46	274.60	-0.14
+50			7.67	273.85	274.07	-0.22
+75			8.24	273.28	273.54	-0.26
1+00			8.81	272.91	273.01	-0.10
+25			9.18	272.34	272.46	-0.12
+50			9.86	271.66	271.91	-0.25
TP	059	272.25	9.86	271.66		
1+75			1.07	271.18	271.36	-0.18
2+00			1.56	270.69	270.81	-0.12
+25			2.24	270.01	270.26	-0.25
+50			2.79	269.46	269.71	-0.25
+75			3.27	268.98	269.16	-0.18
3+00			3.76	268.49	268.61	-0.12
+25			4.32	267.93	268.06	-0.13
+50			4.93	267.32	267.50	-0.18
+75			5.58	266.67	266.95	-0.28
4+00			6.00	266.25	266.39	-0.14
+25			6.56	265.69	265.84	-0.15
+50			7.19	265.06	265.28	-0.22

Cont. p. 70

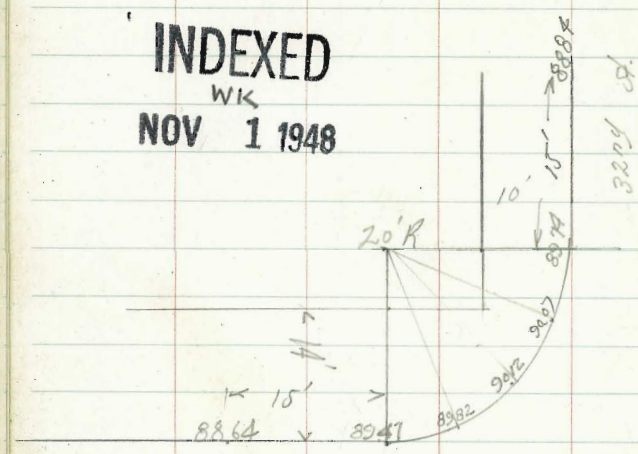
		272.25				
4+75			7.67	264.58	264.73	-.015
5+00			8.24	264.01	264.17	-.016
+25			8.89	263.36	263.62	-.026
+50			9.44	262.81	263.06	-.025
+75			9.91	262.34	262.55	-.021
6+00	= NW Lincoln Ave (80' wide)		10.26	261.99	262.16	-.017
+26.8			10.43	261.82		
			10.78	261.47	261.70	-.023
0+00	= 6' N of CL " "		11.09	261.16	261.33	-.017
T.P.	6.07	267.23	11.09	261.16		
+25			6.22	261.01	261.20	-.019
+50			6.33	260.90	261.07	-.017
+75			6.48	260.75	260.96	-.021
1+00			6.60	260.63	260.82	-.019
+25			6.75	260.48	260.65	-.017
+50			6.92	260.31	260.43	-.012
+75			7.16	260.07	260.24	-.017
2+00			7.33	259.85	260.05	-.020
+25			7.49	259.74	259.90	-.016
+50			7.30	259.93	260.15	-.022
+75			6.54	260.69	260.90	-.021
3+00			4.90	262.33		
+25			3.09	264.20		
T.P.	12.38	272.15	0.46	266.77		
T.P.	11.62	290.21	0.56	278.59		
Chk. SW & P. Union & Florida			3.02	287.19		
				287.08		
				0.11		

Walker
Hazard
Hardin
7-24-44

Const. Stakes for 20°6b Rot.
S.E. 32nd And F-St.

B.P. Sta. 1+00 on F-32nd

0.07 99.23 99.16

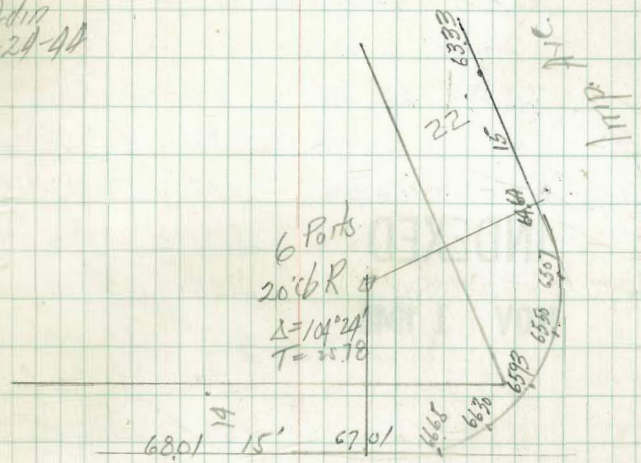


F-St.

Grades
Return NE. 32nd & Imp. Dig

71

Walker
Hazard
Hardin
7-24-44



32nd St

Walker
Hayne
Hatch
7-24-44.

Grades ~ Sidewalk

on South Side - Broadway Ave
from 13th to 14th St.
And on 14th st. (on west)
Bet. Broadway and E St

Levels on Finish Curb.

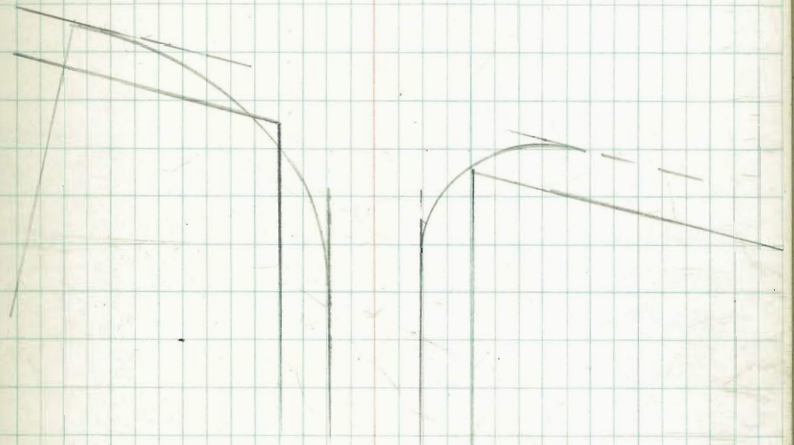
	7.80	58.75		50.95	N.W. St. 14th & E
T.P.	4.56	60.93	2.38	56.37	Elev. N-edge Side Walk
0+00 = Fl. 13th on Hd wall			3.47	57.46	57.56
+25			3.71	57.22	57.42
+50			3.89	57.04	57.28
+75			4.13	56.80	57.14
		Exist. Walk =	4.17	56.76	
1+00			4.34	56.59	57.00
+25			4.58	56.45	56.86
+50	In Drive				56.72
+75			4.61	56.32	56.58
2+00 = W.L. 14th = on Hd wall			4.57	56.34	56.44
	4.43	61.89	3.47	57.46	
0+00			4.33	57.56	57.56
2+00			5.45	56.94	56.94

Levels Sedge Walk.

61.89

0+00	4.26	57.63
+25	4.35	57.54
+50	4.62	57.27
+75	4.85	57.04
1+00	4.82	57.07
+25 on Black Paving	5.08	56.81
+50 " " "	5.17	56.72
+75 " " "	5.24	56.65
2+00 " " "	5.36	56.53

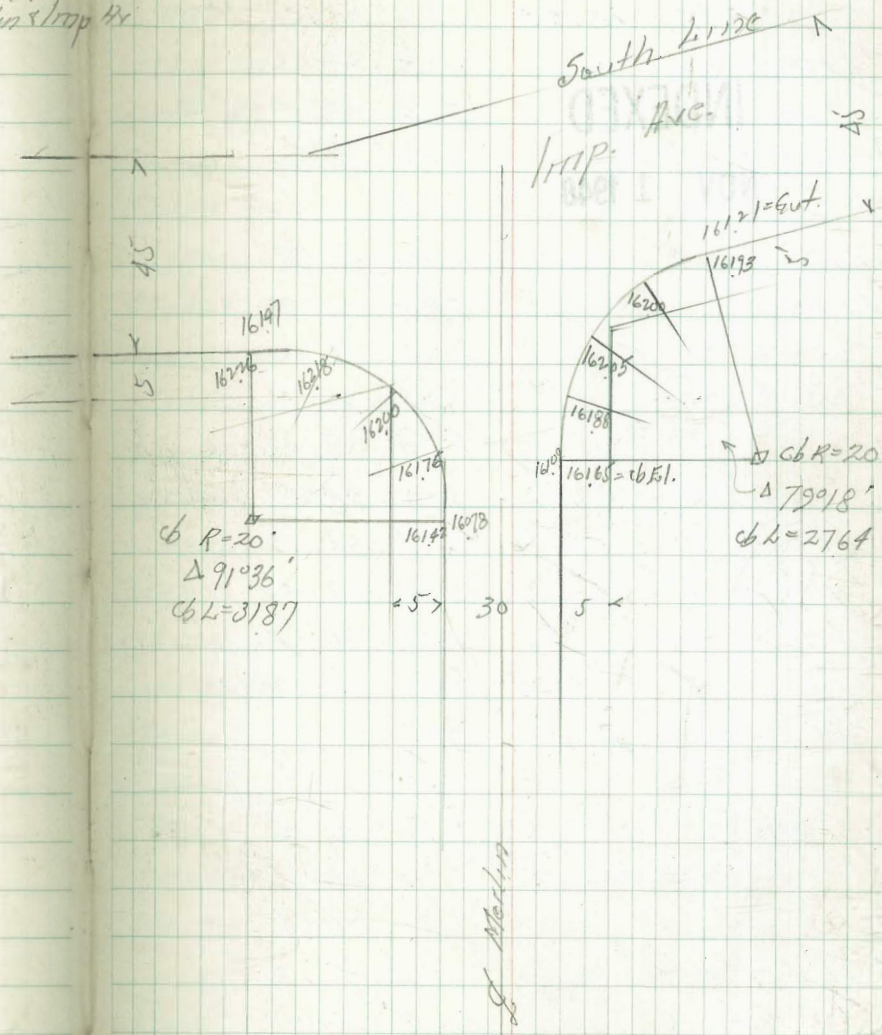
Proposed Grade



Walker
Hazard
Hardin
7-25-44

Grades for Curb Returns.
Imperial Ave & Merlin Drive
Plan # 2776-8

3.79	165.50	161.71	N.E. S.P. Merlin & Imp Av



Walker
Hazard
Hardin
9-7-44

~ Check Levels ~
Powder Canyon Trunk Sewer Unit #2

Cut stake levels = Page 13

	10.05	98.67	88.62	B.M. on stake 72+00
72+00			10.05	88.62
+40			9.54	89.13 diff.
+80			8.59	90.08 .01
73+20			7.65	91.02 .01
+60			6.70	91.97 .01
74+00			5.57	93.10 .01
+40			4.86	93.81 .01
+80			4.54	94.13 .02
75+10			4.20	94.47 .01
+40 MH#22			4.10	94.57 .02
+80			4.07	94.60 .01
76+20			4.06	94.61 .01
+60			4.04	94.63 .01
77+00			3.39	95.28 .02
T.P. +40	10.50	106.31	2.86	95.81 .02
+80			2.65	96.66 .02
Chk BM #47			6.55	99.76
	6.55	106.29 ↑ Corrected		99.74 = BM
78+20			8.44	97.85 .01
+60			7.67	98.62 ✓
+95.7 MH			7.34	98.95 .01
79+25			6.55	99.74

106.29

79+60		5.70	100.59 ✓
80+00		5.00	101.29 ✓
+40		5.56	100.73 .01
+80		6.22	100.07 ✓
81+20		6.74	99.55 ✓
Chk. BM # 48		2.17	104.12 ✓
+60		4.57	101.72 ✓
82+00		3.72	102.57 ✓
+40		2.68	103.61 ✓
T.P. 82+80	10.87	114.37 2.79	103.50 .01
83+28 MH #24		10.44	103.93 ✓
+60		10.31	104.06 .01
84+00		9.88	104.49 ✓
+40		8.83	105.54 ✓
+80		7.47	106.90 ✓
85+20		5.59	108.78 ✓
+60		4.86	109.51
Chk BM #49		2.25	112.12 ✓
86+00		4.68	109.69 ✓
+40		4.11	110.26 .01
+70		3.68	110.69 ✓
+95 MH #25 - Δ Rt 0°11'		3.46	110.91 .01
87+20		2.99	111.38 .01
+60		1.94	112.43 ✓
T.P. 88+00	7.92	120.98 1.31	113.06 ✓
+40		2.18	111.80 ✓

Cont. P- 76

Check Levels - Parador Canyon Sewer Unit #2

Cont. from P-75

120.98

88+80		2.68	111.30	.01
89+20		8.16	112.82	.01
+60		7.48	113.50	.01
90+00		6.08	114.90	.01
+40		4.95	116.03	.01
+80 = MH 26	Δ H 1°49'	4.46	116.52	.01
91+20		5.33	115.65	.01
+60		5.43	115.55	✓
92+00		3.62	117.36	.01
+40		2.84	118.14	.01
+80		2.68	118.30	.01
T.P. 93+26	10.48	2.89	118.09	.01
+60		3.11	119.46	.01
94+00		8.49	120.08	.01
+42.2 = MH 27	Δ H 6°57'30"	7.75	120.82	✓
+70		7.20	121.37	.01
95+00		7.11	121.46	✓
+40		6.41	122.16	✓
+80		5.63	122.94	✓
96+20		4.78	123.79	✓
96+63.23 = 96+64.04	Δ H 24°27'30" MH #28	4.82	124.25	✓
97+00		3.64	124.93	✓
+40		4.70	123.87	.01
+80		3.38	125.19	.02
T.P. 98+18.10	8.22	1.33	127.24	.01

MH #29 = Δ H.

135.46

				Diff
98+60		7.41	128.05	.01
99+00		6.97	128.49	.01
+40		6.39	129.07	.01
+80		5.74	129.72	.01
100+20		5.28	130.18	.01
+60		5.06	130.40	.01
101+00		4.37	131.09	✓
+40		3.82	131.64	✓
+80		3.25	132.21	.01
102+20 = MH #30		2.76	132.70	✓
+60		2.03	133.43	✓
T.P. 103+00	9.41	0.98	134.48	✓
+20		9.22	134.67	.01
+80		9.00	134.89	.01
104+20		8.43	135.46	✓
+60		7.32	136.57	.01
105+00		6.05	137.84	.01
+35		5.15	138.74	.02
+70		4.38	139.51	.02
+92		3.84	140.05	.02
106+30		2.62	141.27	.01
+65		1.73	142.16	.01
T.P. 107+00	7.18	0.74	143.15	✓
+40		6.48	143.88	.01
+80		6.16	144.17	.02

Unit #2 Powder Canyon Sewer
~check levels~

		150.33		
108+20			6.05	144.28 .02
+60			5.83	144.50 .04
109+00			5.57	144.76 .02
+40			5.24	145.09 .02
109+82 = MH			4.49	145.84 .01
110+20			4.04	146.29 .01
+60			3.95	146.38 "
111+00			3.77	146.56 "
+40			2.58	147.77 "
+80	TP	10.03	1.46	148.87
112+20			9.37	149.53 .01
+60			8.94	149.96 .01
113+00			8.36	150.54 .01
+35			7.28	151.62 .02
+70 MH #33			5.63	153.27 .02
114+00			5.11	153.79 .02
+40			4.37	154.53 .02
+80			3.61	155.29 .02
115+20			2.74	156.16 .02
+60			2.10	156.80 .02
116+00			1.74	157.16 .02
+40	TP	6.62	0.82	158.08 .02
+80		164.70	6.17	158.53 .03
117+20			5.15	159.55

164.70

117+35.60 MH #34			4.73	159.97 .03
Chk. B.M. #55			1.21	163.49 .04
				163.53 = B.M.
417		167.70		
118+00			7.17	160.53 .01
+40			6.51	161.19 .02
+80			6.03	161.67 "
119+20			5.37	162.33 "
+60			5.59	162.11 "
120+00			5.38	162.32 "
+40			4.73	162.97 "
+80			4.24	163.46 "
121+24.0' MH			3.35	164.35 "
+60			3.13	164.57 .01
122+00			2.43	165.27 .02
+20	TP	10.54	1.97	165.73 .01
+80		176.27	10.17	166.10 .02
123+20			9.46	166.81 .02
+60			8.26	168.01 .02
124+00			7.49	168.78 .01
+35			6.39	169.88 .02
+70			5.47	170.80 .02
125+09.43 } 125+34.43 } MH #36			4.29	172.03 .02
+70			3.69	172.58 .02
126+00			3.05	173.22 .03
+40			2.67	174.20 .03
+80	TP	10.10	0.75	175.52
		185.62		

		1856			
127+20			8.83	176.79	.02
+60			7.78	177.84	.02
128+00			7.79	177.83	.03
+40			6.64	178.98	.02
+80			4.82	180.80	.03
129+20			5.33	180.29	.02
+60			5.75	179.87	.02
130+00 TP	10.67	191.06	5.23	180.39	.02
Chk BM #58			2.49	188.57	
				188.55 - BM	
				.002	
	11.60	191.99		180.39	
130+40			11.04	180.95	.01
+80			9.18	182.81	✓
131+20			6.18	185.81	
+60			4.50	187.49	✓
132+00			5.74	186.25	✓
+40			6.67	185.32	✓
+80			7.57	184.42	.01
133+20			7.63	184.36	✓
+60			7.18	184.81	✓
134+00			5.59	186.40	✓
~~+32~~			~~3.59~~	~~188.40~~	
~~+45~~ TP	10.12	199.91	~~2.20~~	~~189.79~~	
+45 TP	9.84	199.62	2.21	189.78	

~~199.91~~

134+70			~~9.42~~	~~190.49~~	.11
~~135+00~~			8.91	~~191.00~~	
		1996.2			
134+70			9.24	190.38	✓
135+00			7.73	191.89	.01
+40			6.09	193.53	✓
+80			5.60	194.02	✓
136+20			4.78	194.84	✓
+55			4.94	194.68	✓
+75.5 NH			3.51	196.11	✓
137+00			5.22	194.40	✓
+40			4.86	194.76	.02
+80			4.55	195.07	.01
138+20			4.07	195.55	.01
+60			3.69	195.93	✓
139+00			3.30	196.32	✓
+40			2.89	196.73	✓
+80			2.58	197.04	.01
140+11.5			2.24	197.38	✓

Check Levels Cont P-30

Walker
Hazard
Hardin
10-18-44

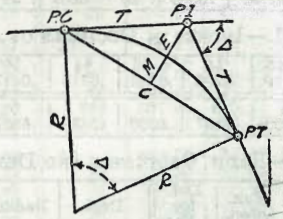
Grades for 6" Water Main
in Alley Block 13 - Mountain View
" 4 - Fairmount Add.
Between 47th & Euclid Ave
from St. University Ave to N.L. Wightman.
Profile #2698 Prelim. Notes: FB 1534 63

Station St. Univ. Ave					Elev. Bottom of ditch
		345.49			
=0+00			4.73	340.76	336.65
735		344.22	3.91	340.31	336.75
+70			4.23	339.99	336.85
1+05			13.27	330.95	336.96
+40	"Brk.		19.08	325.14	337.07
+80	"		5.28	338.94	337.38
2+20	"		3.47	340.75	338.00
+60	"		1.51	342.71	339.07
3+00	TP "	314 346.81	0.55	343.67	339.92
+40	"		2.70	344.11	340.08
+90	"		2.90	343.91	339.67
4+30	"		3.61	343.20	339.03
+70	"		4.63	342.18	338.27
5+10	"		5.09	341.72	337.64
+50	"		5.10	341.71	337.28
6+00.2	"N.L. Wightman		5.62	341.19	337.00
chk. on west curb Alley			5.56	341.25	
				341.24	FB 1534 66
				0.01	

340.68
4.81+
345.49+
6.26-
339.23TP
4.99+
344.22+

Cuts	Offsets
+4.1	5' Lt cross on c6.
+3.6	5' " Stake
+3.2	4.5 "
-6.0	5' "
-11.93	" "
+1.56	" "
+2.8	" "
+3.64	" "
+3.75	" "
+4.0	" "
+4.24	" "
+4.17	" "
+3.9	" "
+4.08	" "
+4.4	" "
+4.2	4.5' cross in curb.

DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES



CURVE FORMULAS

Radius=R=$\frac{50}{\text{sin. } D/2}$ (1) Degree of Curve=D and sin. $\frac{D}{2}=\frac{50}{R}$ (2)

Tangent=T=R tan $\frac{\triangle}{2}$ (3) Length of Curve=L=$100\frac{\triangle}{D}$ (4)

Middle ordinate=M=R(1—cos. $\frac{\triangle}{2}$) (5)=R vers $\frac{\triangle}{2}$ (6)

External=E=T tan $\frac{\triangle}{4}$ (7)=R ÷ cos. $\frac{\triangle}{2}$—R (8)=R exsec $\frac{\triangle}{2}$ (9)

Long Chord=C=2 R sin. $\frac{\triangle}{2}$ (10) △=Central Angle

EXPLANATION AND USE OF TABLES

Stations.—Given P. I.=Sta. 161+60.35 to find Sta. of P. C. and P. T. △=62° 10′ D=8° 20′. From Table IV for 1° curve T=3454.1 and ÷8⅓=414.49 ft. From Table V correction=.36 or T=414.85 ft. P. C.=Sta. P.I.—T=157 +45.50. Also from (4) L=746.00 and P. T.=Sta. P. C.+L=164+91.50.

Offsets.—Tangent offsets vary (approximately) directly with D and with square of the distance. Thus tangent offset for Sta. 158 on above curve is 2.16 ft. found as follows. From Table III tangent offset for 100 ft.=7.27 ft. Distance=158—Sta. P. C.=54.50, hence offset=7.27 $(54.50 \div 100)^2$=2.16 ft. Also square of any distance divided by twice the radius equals (approximately) the distance from tangent to curve. Thus $(54.50)^2 \div (2 \times 688.26)$=2.16 ft.

Deflections.—Deflection angle=½ D for 100 ft., ¼ D for 50 ft., etc. For c ft.=(in minutes) .3 x C x D° or=defl. for 1 ft. from Table III x C. For Sta. 158 of above curve=.3 x 54.5 x 8⅓=136.2′ or 2° 16.2′, or=2.50 x 54.5=136.2′ from Table III. For Sta. 159 deflection angle=2° 16.2′ +8° 20′ ÷2=6° 26.2′, etc.

Externals.—May be found in similar manner to tangents. Thus E for curve above is 115.37. For from Table IV for 1° curve E=960.6 for 8° 20′=960.6 ÷8⅓=115.27 and from Table V correction=.10 or E=115.37 ft. Or suppose △=32° and E is measured and found to be 42 ft. What is D? From Table IV E=230.9 and ÷42=5.5 or D=5° 30′.

Table VI.—Corrections for Sub-Chords and Long Chords.

D	FOR SUB-CHORDS ADD 10	20	30	40	50	60	70	80	90	Excess of arc per 100 ft.
4°	.00	.00	.01	.01	.01	.01	.01	.01	.00	.02
6	.00	.01	.01	.02	.02	.02	.02	.01	01	.05
8	.01	.02	.02	.03	.03	.03	.03	.02	.01	.08
10	.01	.02	.03	.04	.05	.05	.05	.04	.02	.13
12	.02	.04	.05	.06	.07	.07	.07	.05	.03	.18
14	.02	.05	.07	.08	.09	.10	.09	.07	.04	.25
16	.03	.06	.09	.11	.12	.12	.12	.09	.05	.33
18	.04	.08	.11	.14	.15	.16	.15	.12	.07	.41
20	.05	.10	.14	.17	.19	.20	.18	.15	.09	.51
22	.06	.12	.17	.21	.23	.24	.22	.18	.10	.62
24	.07	.14	.20	.25	.28	.28	.26	.21	.12	.74
26	.09	.17	.24	.29	.32	.33	.31	.25	.15	.86
28	.10	.19	.27	.34	.37	.38	.36	.29	.17	1.00
30	.11	.22	.31	.39	.43	.44	.41	.33	.19	1.15
32	.13	.25	.36	.44	.49	.50	.47	.38	.22	1.31
34	.15	.28	.40	.50	.55	.57	.53	.43	.25	1.48
36	.17	.32	.45	.56	.62	.64	.59	.48	.28	1.66
38	.18	.36	.51	.62	.70	.71	.66	.53	.31	1.86
40	.21	.40	.56	.69	.77	.79	.73	.59	.35	2.06
42	.23	.44	.62	.76	.85	.87	.81	.65	.38	2.28
44	.25	.48	.68	.84	.94	.96	.89	.72	.42	2.50
46	.27	.52	.75	.92	1.02	1.05	.98	.78	.46	2.74
48	.30	.57	.81	1.00	1.12	1.14	1.06	.86	.50	2.99
50	.32	.62	.89	1.09	1.21	1.24	1.15	.93	.55	3.24
52	.35	.67	.96	1.18	1.31	1.35	1.25	1.01	.59	3.52
54	.38	.73	1.04	1.28	1.42	1.46	1.35	1.09	.64	3.80
56	.41	.78	1.12	1.38	1.53	1.57	1.46	1.17	.69	4.09
58	.44	.84	1.20	1.48	1.65	1.69	1.57	1.26	.74	4.40
60	.47	.91	1.29	1.59	1.76	1.81	1.68	1.35	.80	4.72

D	LONG CHORDS 200	300	400	500
1	199.99	299.97	399.92	499.85
2	199.97	299.88	399.70	499.39
3	199.93	299.73	399.32	498.63
4	199.88	299.51	398.78	497.57
5	199.81	299.24	398.10	496.20
6	199.73	298.90	397.26	494.53
7	199.63	298.51	396.28	492.57
8	199.51	298.05	395.14	490.31
9	199.38	297.54	393.86	487.75
10	199.24	296.96	392.42	484.90
12	198.90	295.63	389.12	478.34
14	198.51	294.06	385.22	470.65
16	198.05	292.25	380.76	461.86
18	197.54	290.21	375.74	452.02
20	196.96	287.94	370.17	441.15
22	196.32	285.44	364.06	429.30
24	195.63	282.71	357.43	416.53
26	194.87	279.76	350.30	402.89
28	194.06	276.59	342.69	388.43
30	193.18	273.20	334.61	373.20
32	192.25	269.61	326.08	357.28
34	191.26	265.81	317.12	340.73
36	190.21	261.80	307.77	323.61
38	189.10	257.60	298.03	305.99
40	187.94	253.21	287.94	287.94
42	186.72	248.63	277.51	269.54
44	185.44	243.87	266.78	250.85
46	184.10	239.93	255.78	231.95
48	182.71	233.83	244.51	212.92

Note.—When a chord of less than 100 ft. is used the corrections given in the above table should be added to the nominal length of chord to get the length which should be used in order that the 100 ft. points will check with those obtained by using the standard 100 ft. chord. Thus in locating a 14° curve by 25 ft. chords measure 25'.06 for each chord. Long chords are useful in passing obstacles.

Table VII.—Middle Ordinates for Rails in Feet.

Deg. of Curve	LENGTH OF RAILS 32	30	28	26	24	22	20
1°	.022	.020	.016	.013	.011	.009	.008
2	.045	.038	.034	.029	.025	.021	.017
3	.067	.058	.051	.044	.037	.031	.026
4	.089	.079	.069	.060	.050	.042	.035
5	.112	.099	.086	.074	.063	.053	.044
6	.134	.117	.102	.088	.076	.064	.052
7	.156	.137	.120	.104	.088	.074	.061
8	.179	.158	.137	.119	.100	.085	.070
9	.201	.175	.153	.133	.112	.095	.078
10	.223	.196	.171	.148	.125	.106	.087
11	.245	.216	.188	.163	.139	.117	.096
12	.268	.236	.206	.179	.151	.128	.105
13	.290	.254	.222	.192	.163	.138	.113
14	.312	.275	.239	.207	.175	.148	.122
15	.334	.295	.257	.223	.188	.159	.131

Deg. of Curve	LENGTH OF RAILS. 32	30	28	26	24	22	20
16°	.356	.313	.273	.236	.200	.170	.139
17	.378	.333	.290	.252	.213	.180	.148
18	.400	.351	.306	.265	.225	.190	.156
19	.423	.371	.324	.280	.238	.201	.165
20	.445	.392	.341	.296	.250	.212	.174
21	.466	.410	.357	.309	.262	.222	.182
22	.487	.430	.375	.325	.275	.233	.191
23	.509	.450	.390	.338	.287	.243	.199
24	.531	.469	.408	.354	.299	.253	.208
25	.552	.486	.424	.367	.311	.263	.216
26	.573	.506	.441	.382	.323	.274	.225
27	.594	.524	.457	.396	.335	.284	.233
28	.618	.545	.475	.411	.348	.294	.242
29	.638	.564	.491	.424	.361	.303	.250
30	.660	.583	.508	.438	.374	.313	.259

Slope Reductions.

When distances are measured on a slope they may be reduced to the equivalent horizontal distance by the following approximate rule:—subtract from the slope distance the square of the rise divided by twice the slope distance. Thus for a slope distance of 250.3 ft. and a rise of 15 ft. correction=$15^2 \div 2 \times 250.3$=.45 (by slide rule) or horizontal distance=250.3—.45=249.85. When vertical angle=V. A. is measured horizontal distance=slope distance—slope distance (1—Cos. V. A.). Thus for slope distance of 248.7 ft. and V. A. of 4° 20′ from Table VIII Cos=.99714 and correction=1—.99714=.00286 per foot or total of .286× 2½ (near enough)=.57 and horizontal distance=248.7—.57=248.13 ft.

Trigonometrical Formulas.

See fig. (a).

sin. $A=\frac{a}{c}$

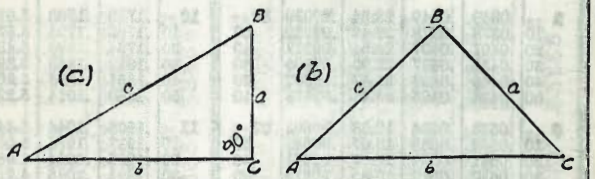
cos. $A=\frac{b}{c}$

tan. $A=\frac{a}{b}$

cot. $A=\frac{b}{a}$

sec. $A=\frac{c}{b}$

cosec. $A=\frac{c}{a}$



Formula for Solving Triangles.

Given	Sought.	Right triangles. See fig. (a).
a, c	A, B, b	$\sin. A=\frac{a}{c}$, $\cos. B=\frac{a}{c}$, $b=\sqrt{(c+a)(c-a)}$
a, b	A, B, c	$\tan. A=\frac{a}{b}$, $\cot. B=\frac{a}{b}$, $c=\sqrt{a^2+b^2}$.
A, a	B, b, c	$B=90°-A$, $b=a \cot. A$, $c=\frac{a}{\sin. A}$.
A, b	B, a, c	$B=90°-A$, $a=b \tan. A$, $c=\frac{b}{\cos. A}$.
A, c	B, a, b	$B=90°-A$, $a=c \sin. A$, $b=c \cos. A$
Given	Sought.	Oblique triangles. See fig. (b).
A, B, a	b	$b=\frac{a \sin. B}{\sin. A}$
A, a, b	B	$\sin. B=\frac{b \sin. A}{a}$
a, b, C	$A-B$	$\tan. \frac{1}{2}(A-B)=\frac{(a-b)\tan. \frac{1}{2}(A+B)}{a+b}$
a, b, c	A	If $s=\frac{1}{2}(a+b+c)$, $\sin. \frac{1}{2}A=\sqrt{\frac{(s-b)(s-c)}{bc}}$, $\cos. \frac{1}{2}A=\sqrt{\frac{s(s-a)}{bc}}$, $\tan. \frac{1}{2}A=\sqrt{\frac{(s-b)(s-c)}{s(s-a)}}$, $\sin. A=\frac{2\sqrt{(s-a)(s-b)(s-c)s}}{bc}$
A, B, C, a	area	$\text{area}=\frac{a^2 \sin. B \sin. C}{2 \sin. A}$.
A, b, c	area	$\text{area}=\frac{1}{2} b c \sin. A$
a, b, c	area	$s=\frac{1}{2}(a+b+c)$, $\text{area}=\sqrt{s(s-a)(s-b)(s-c)}$

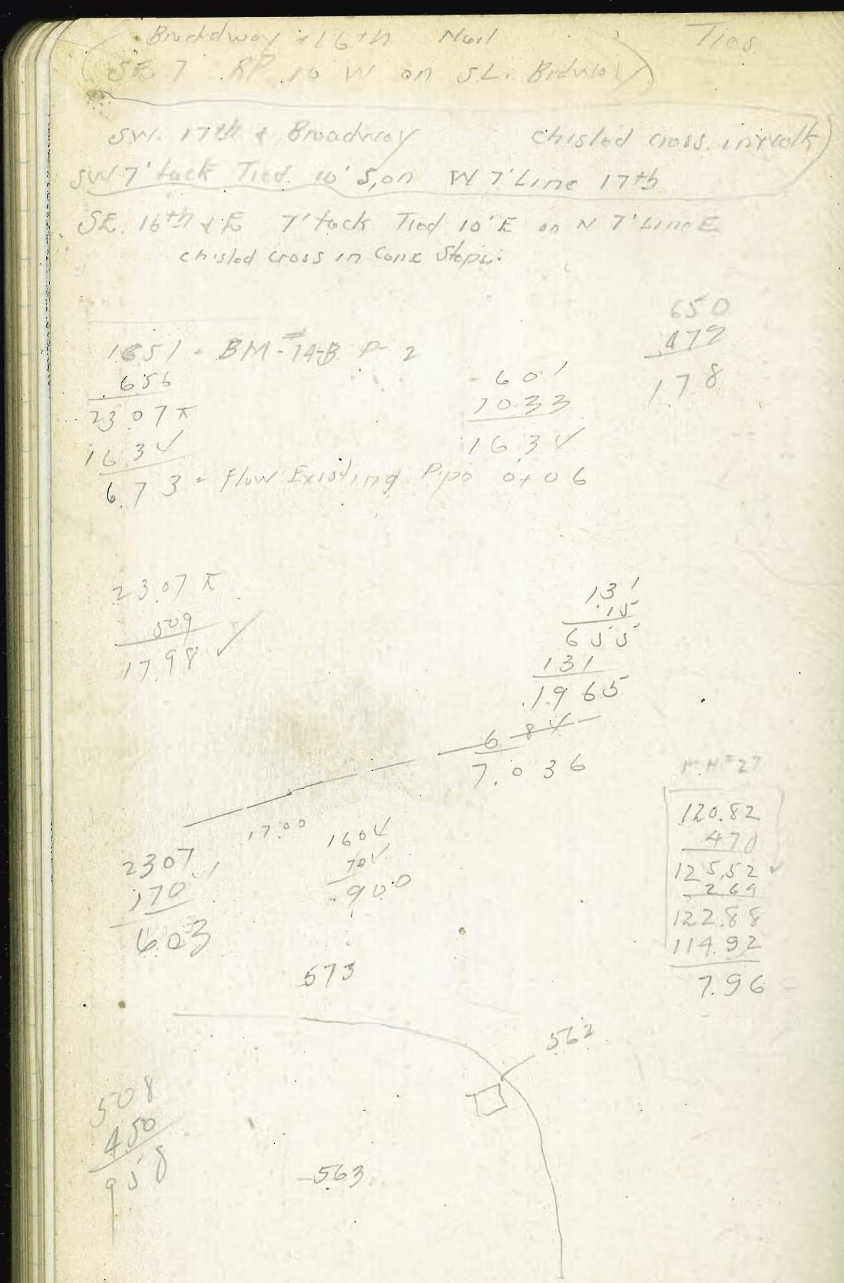
271.55

150700 148

220.07

209

279.46



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.