587

ENGINEER'S

LEVEL BOOK

No. 10

FB 587

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.

100
59

F.B. 587

Levels on Bottom of Water Ditch Page
from S.P.L. of El Cajon to N.P.L. of Klauber
1 - 3

Levels on Ditch Alley Van Dyke
& Pauly to Klauber 3 - 6

Levels on Ditch Alley Van Dyke & Pauly
to Alley Pacific & Swift. 6 - 10

Upas St. Pipeline - Align,
levels, grades & const. notes. 15 - 68

Levels on Botton of Water Ditch
S.P.L. of El Cajon to N.P.L. of Klauber

Sta	+	H	−	Elev
				359.10
	6.36	365.46		
T.P.			5.51	359.95
	4.62	364.57		
T.P.			4.22	360.35
	5.65	366.00		
T.P.			2.42	363.58
	6.38	369.96		
0+00			9.2	360.76
1+00			8.4	361.56
2+00			7.8	362.16
3+00			7.5	362.46
4+00			8.7	361.26
5+00			9.2	360.76
6+00			10.0	359.96
T.P.			9.97	359.99
	6.38	367.37		

Ellis
Walker
Preston

10-2-23

1

1

B.M. N.W.Cor Pauly & Union Ave (Book 72)

S.W.Cor Pauly & Anna St.

S.W.Cor Pauly & Orange

S.P.L. El Cajon Ave Botton of ditch

Top of pipe

" " "

" " "

" " "

" " "

N.P.L. Orange Ave " " "

Levels on Bottom of Water Ditch SPL of El Cajon Ave
N.P.L. of Klauber

Sta	+	⊼	−	Elev.				Ellis Walker Preston	10-2-23	
0+00		367.37	7.8	359.77	✓	SPL Orange Ave		Top of pipe		
1+00			8.4	358.97	✓			Bottom of Ditch		
2+00			8.0	359.37	✓			"	"	"
3+00			8.1	359.27	✓			"	"	"
4+00			8.2	359.17	✓			"	"	"
5+00			8.8	358.57				"	"	"
T.P.			4.49	362.88						
	4.20	367.00								
5+76[14]			8.2	358.80		N.P.L. of Anna St.		Bottom of Ditch		
0+00			8.6	358.40		S.P.L. of Anna St		Bottom of Ditch		
1+00			8.6	358.40				"	"	"
2+00			8.8	358.20				"	"	"
3+00			8.7	358.30				"	"	"
4+00			10.1	356.90				"	"	"
5+00	(4.49)	363.59	6.7	356.9		Ditch not completed		"	"	"
6+00			8.2	355.4				NPL Univ Ave		
T.P.			6.43	360.59						

5+00+6+00 use ⊼ 363.59

Levels on Bottom of Water Ditch S.P.L. of El Cajon to N.P.L. of Klauber and Center of Alley Pauly Van Dyke

Ellis Walker Preston 10-2-23

Sta	+	H	−		
				360.57	
	2.95	363.52			
0+00			7.2	356.32	Ditch not completed. S.P.L. Unic Ave
1+00			7.7	355.82	Bottom of Ditch
2+00			8.2	355.32	Bottom of Ditch
3+00			8.4	355.12	
4+00			9.4	354.12	
5+00			10.0	353.52	
6+00			11.3	352.22	N.P.L. Klauber
T.P.				359.10	N.W.C. Pauly & Unic
	2.86	361.96			
T.P.			8.41	353.55	N.W.C. Pauly Klauber
	6.23	359.78			
℄ Alley Pauly Van Dyke					
0+00			8.05	351.73	Center 12x10 T. (on Top.) 18' South of ℄ Klauber
1+00			8.79	350.99	Top of Pipe
1+45			9.0	350.80	W.P.L. Pauly
0+00			9.15	350.63	E.P.L. "

Levels on pipe line S.P.L. El Cajon To - N.P.L. Klauber and Center of Alley

Pauly & van Dyke — Ellis, Walker, Preston, Dibel

Sta	+	⊼	−	Elev		
1+00		359.78	9.29	350.49		Botton of Ditch
2+00			8.70	351.08		"
2+70			7.28	352.50	W.P.L. Fairmount.	Top of Pipe
B.M.			4.47	355.31	N.W. Cor. Fairmount & Klauber.	
	4.29	359.60				
0+00			8.4	351.20	E.P.L. Fairmount	Bottom Ditch
1+00			8.2	351.40		"
2+00			8.5	351.10		"
2+?			8.7	350.90	W.P.L. Colonial.	"
B.M.				355.31	N.W.Cor. Fairmount & Klauber	
	3.63	358.94				
0+00			7.40	351.54	E.P.L. Colonial	Top of Pipe
1+00			8.27	350.67		"
2+00			9.72	349.22		"
2+?			10.34	348.60	W.P.L. Highland	"
T.P.			8.03	350.91	S.W. Cor. Highland	"
	3.78	354.69				

Levels on pipe line Klauber St

Sta	+	⊼	—	Elev		
0+00		35469	6.46	348.23	E.P.L. Highland	Top of Pipe
1+00			7.53	347.16		" "
2+00			8.23	346.46		" "
2+70			9.61	345.08	W.P.L. Cabrillo	" "
0+00			9.76	344.93	E.P.L. Cabrillo	" "
1+00			9.55	345.14		" "
2+00			9.62	345.07		" "
2+?			10.93	343.76	W.P.L Chanoeune	Bottom of Ditch
T.P.			6.77	347.92	NW Cor " Klauber	
	4.25	352.17				
0+00			9.18	342.99	E.P.L. Chanoune	Top of Pipe
1+00			7.75	345.42		" " "
2+00			9.07	343.10		" " "
2+?			11.23	341.94	W.P.L. Mentone	" " "
T.P			9.26	343.91	SE Cor - Mentone + Klauber	
	4.46	348.37				Top of Pipe
0+00			7.05	341.32	E.P.L. Mentone	" " "
1+00			7.34	341.03		" " "
2+00			7.36	341.01		" " "
2+?			7.55	340.82	W.P.L Merlo	" " "

Sta.	+	H.I.	−	EL	
T.P.		348.37			
			5.39	342.98	S.W. curb of Menlo + Klauber
	6.41	349.39			Top of Pipe
0+00			8.01	341.38	EPL Menlo
1+00			6.03	343.36	" " "
2+00			6.64	342.75	" " "
2+70			9.22	340.17	" " "
0+00			9.81	339.58	WPL Sierra
1+00			10.06	339.33	EPL Sierra
2+00			10.35	339.04	" " "
2+70			10.55	338.84	" " "
BM				353.55	WPL Euclid
					NW Cor Pauly + Klauber
	6.15	359.70			
E. Alley Pauly Van Dyke 0+00			8.24	351.36	Top of Pipe
1+00			7.75	351.95	" "
EPL Van Dyke			7.55	351.15	EPL Van Dyke " "
WPL Van Dyke 0+00			7.73	351.97	WPL Van Dyke " "
1+00			8.53	350.17	" "

Sta	+	⊼	−	Elev	
2+00		359.70	8.74	350.96	
E.P.L Copeland 2+?			9.11	350.59	
W.P.L Copeland 0+00			9.56	35.014	
T.P.			7.12	352.58	
	0.02	352.60			
1+00			4.75	347.85	
2+00			6.34	346.26	
E.P.L. Stockton 2+?			7.80	344.80	✓
W.P.L Stockton 0+00			8.65	343.95	✓
T.P.			9.67	342.93	
	1.76	344.69			
1+00			4.55	340.14	✓
2+00			7.90	336.79	✓
E.P.L. Conklin 2+?			11.60	333.09	✓
E.P.L Conklin 0+00			12.52	332.17	✓
1+00			9.55	335.14	✓
2+00			7.23	337.46	✓
2+?			4.66	340.03	✓
T.P.			2.31	342.38	

	Top of	Pipe
E.P.L. Copeland	✓	✓
W.P.L Copeland.	✓	✓
N.W. Cor. Copeland	✓	✓
	✓	✓
	✓	✓
	✓	✓
E.P.L. Stockton	✓	✓
W.P.L. Stockton	✓	✓
	✓	✓
	✓	✓
	✓	✓
	✓	✓
E.P.L. Conklin	✓	✓
W.P.L. Conklin	✓	✓
	✓	✓
F		
E.P.L. Central		

Levels on Pipe Line Klauber St ...

Sta	+	⊼	−	Elev			
	5.41	347.79		342.38			
0+00			7.03	340.76	✓	W.P.L. Central	Top of Pipe
1+00			7.25	340.54	✓		✓ ✓
2+00			7.80	339.99	✓		✓ ✓
2+?			7.80	339.99	✓	E.P.L. Sissons Ave	✓ ✓
0+00			7.52	340.27	✓	W.P.L. Sissons Ave	✓ ✓
1+00			8.82	338.97	✓		✓ ✓
2+00			9.96	337.83	✓		✓ ✓
2+?			11.00	336.79	✓	E.P.L. Daley	✓ ✓
T.P.			9.24	338.55			✓ ✓
	0.00	338.55				N.W. Cor. Daley	✓
0+00			2.94	335.61	✓	W.P.L. Daley	✓ ✓
1+00			9.46	329.09	✓		✓ ✓
				338.55		T.P. N.W. Cor Daley	✓ ✓
	0.64	339.19					✓ ✓
T.P.			13.08	326.11			✓ ✓
	0.45	326.56					✓ ✓
2+00			6.10	320.46	✓		✓
2+?			9.73	316.83	✓	E.P.L. Thomas	

Levels on Pipe Line Klauber St West

Sta	+	π	−	Elev	
0+00		326.56	9.71	316.85	✓
1+00			3.90	322.66	✓
T.P			0.43	326.13	✓
	12.99	339.12			
2+00			7.53	331.59	✓
2+?			4.10	335.02	✓
0+00			2.84	337.28	✓
T.P.			0.31	338.81	
	10.39	349.20			
1+00			10.70	338.50	✓
T.P			2.74	346.46	
	5.53	351.99			
2+00			10.46	341.53	✓
2+?			9.14	342.85	✓
0+00			8.44	343.55	✓ ✓
1+00			8.15	343.80	✓ ✓
2+00			7.38	344.61	✓ ✓
2+?			6.89	345.10	✓

Ellis
Walker
Preston
Lowdermyer

W.P.L. Thomas	Top of Pipe	
	✓	✓
	✓	✓
	✓	✓
	✓	✓
E.P.L. Reed	✓	✓
W.P.L. Reed	✓	✓
	✓	✓
T.P. N.W. Cor. Cherokee		
	✓	✓
E.P.L. Cherokee	✓	✓
W.P.L. Cherokee	✓	✓
	✓	✓
	✓	✓
E.P.L. Story	✓	✓

Levels on Pipeline Klamath St West

12-26-23
Ellis
Walker
Preston

	Stg	+	π	−	Elev		
0+			35199				
1+	0+00			7.13	344.86		West P.L. Storey
T.	1+00			6.86	345.13	✓	
	2+00			6.48	345.51	✓	
2+	2+?			6.12	345.89	✓	E.R.L. Wilson
2+	T.P.			3.06	348.93		
0+		7.98	35691				
T.	0+00			10.28	346.63	✓	W.P.L. Wilson
	1+00			9.59	347.32	✓	
1+	2+00			7.41	349.30	✓	
T.1	T.P.			4.50	352.41		S.E. Cor. Pacific + Klamath
	?	1.34	35375				
2+	2+?			4.04	349.71	✓	E.R.L. Pacific
2+	0+00			4.72	349.03		W.P.L. ✓
0	1+00			9.09	344.66		
1	Alley Pacific + Swift			11.27	342.48		End of Pipe 12-26-23
2							
2							

Levels on Pipe Line in Alley Between Pauly & Van Dyke
From Klauber to Clark 5' East of ℄ of Alley

Jan 9-1924 Ellis Walker Preston Lawdmyer

Page 11

11

Sta	+	π	−	Elev	
NW Cor Pauly & Klauber BM				353.55	
	6.24	359.79			
SPL Klauber					
0+00			8.36	351.43	Top of Pipe
1+00			7.24	352.55	" "
2+00			8.90	350.89	" "
3+00			10.36	349.43	" "
T.P			7.60	352.19	
	0.56	352.75			
4+00			5.76	346.99	Top of Pipe
5+00			6.67	346.08	" "
NPL Castle					
6+00			8.10	344.65	" "
SPL Castle					
0+00			9.70	343.05	" "
1+00			9.80	342.95	" "
2+00			11.32	341.43	" "
3+00			13.00	339.75	
T.P			11.04	341.71	
	1.79	343.50			
4+00			4.22	339.28	

Levels on Pipe Line in Alley Between Pauly - Van Dyke From S.P.L. Klauber to Clark 5' East of Center Alley

Ellis
Walker
Preston
Land Surveyor

Sta	+	⊼	—	Elev	
5+00		343.50	5.34	338.16	
N.P.L. Howard					
6+00			6.60	336.90	
S.P.L. Howard					
6+00			7.51	335.99	
1+00			8.51	334.99	
2+00			11.72	321.78	
T.P.			9.75	333.78	Nail in Light Pole
	1.22	334.99			
3+00			6.40	328.59	
4+00			6.60	328.39	
5+00			6.70	328.29	
N.P.L. of Clark					
6+00			11.40	323.77	
13' S. of C. of Clark 5' E. of C. of Alley					
0+00			12.40	322.57	
T.P.			11.26	323.71	
	4.30	328.01			
1+00			10.00	318.01	
W.P.L. Pauly					
1+P			11.30	316.71	
E.P.L. Pauly					
0+00			10.70	317.31	
1+00			8.00	320.01	
5' East of C. of Alley					
1+? mX			5.10	322.91	

Stg	+	π.	—	Elev	
2+00		338.01	2.70	325.31	
T.P.			0.43	327.58	
WPL Fairmont	9.62	337.20			
2+?			9.00		
EPL Fairmont					
0+00			8.50		
1+00			8.00		
5'E of ℄ of Alley					
1+?			7.20		
T.P.			5.47	331.93	on Curb Alley Return
	0.58	332.51			
S.P.L. Clark St Alley			3.77	328.74	On Top of pipe S.P.L. Clark St.
1+00			6.52	325.99	
2+00			4.86	325.65	
3+00			7.42	325.09	
4+00			9.56	322.95	
5+00			12.53	319.98	
T.P.			13.00	319.51	On top of Rock
	0.62	320.13			
6+00			5.25	314.88	N.P.L. center Top of Pipe
			10.84	309.29	N. Curb Line of center st Top of Pipe

Ellis Walkup Preston Hastings

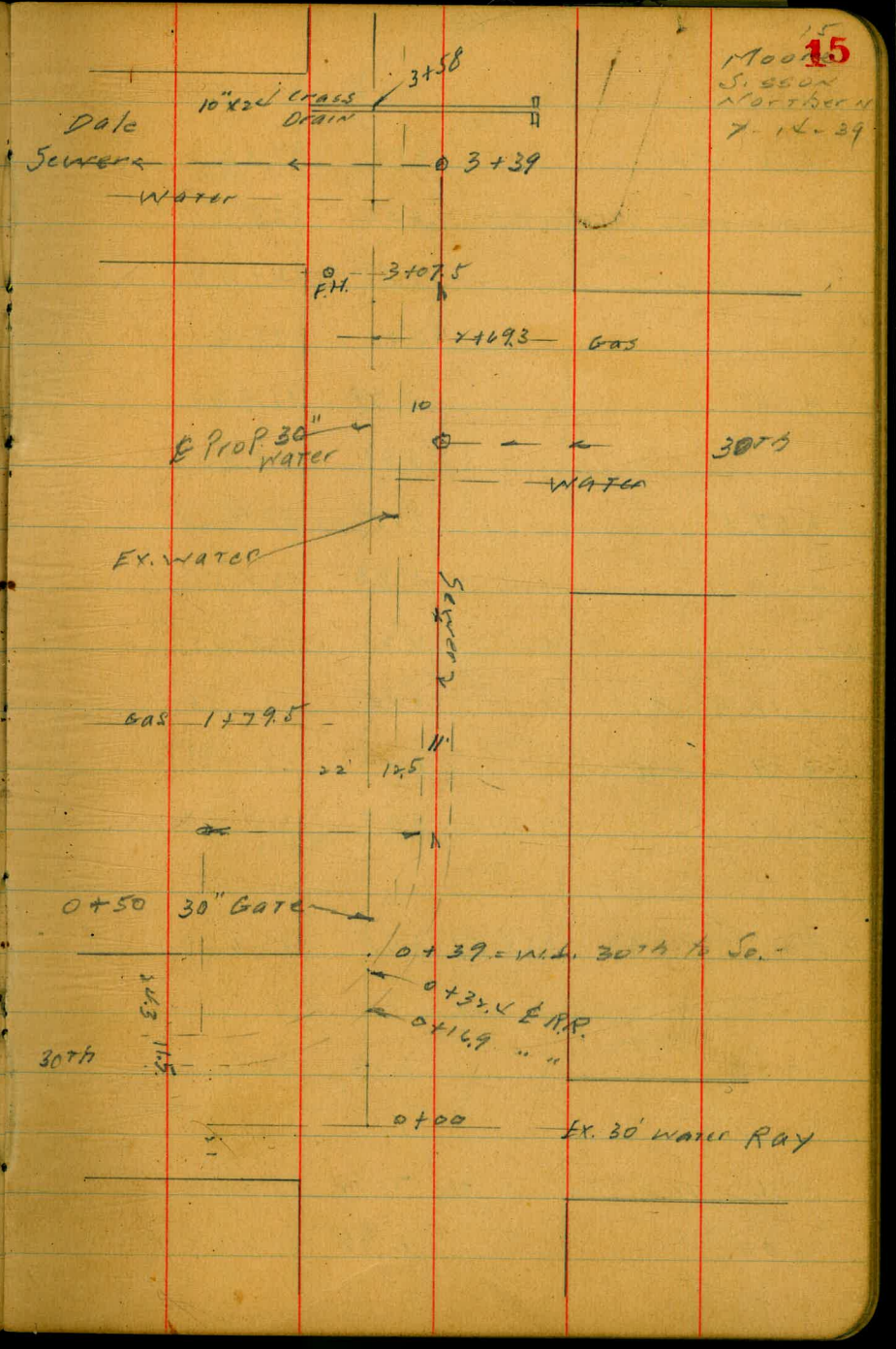
Sta	+	π	−	EL	
		320.13	11.58	308.55	South curb line - center st Top of Pipe
			5.44	314.69	" P.L. center st. on top of pipe
T.P.			4.48	315.65	on top of Rock
	1.12	316.77			
1+00			2.56	314.21	Top of Pipe
2+00			3.56	313.21	" " "
3+00			4.68	312.09	" " "
4+00			6.95	309.82	" " "
5+00			9.21	307.56	" " "
T.P.			7.62	309.15	on Nail in tel. Pole at sta. 6+10
T.P.	0.75	309.90			
6+00			7.17	302.73	N.P.L. Chatauma St
6+00			10.03	299.87	15' N of S.P.L. of Chatauma St.
1+00			8.09	301.81	
1+?			7.80	302.10	E.P.L. of Fairmount Ave
T.P.			4.22	305.68	T.P.B.M. on Mont. N.W.Cor Hollywood & Fairmount.

Upas St. 30" Water Main

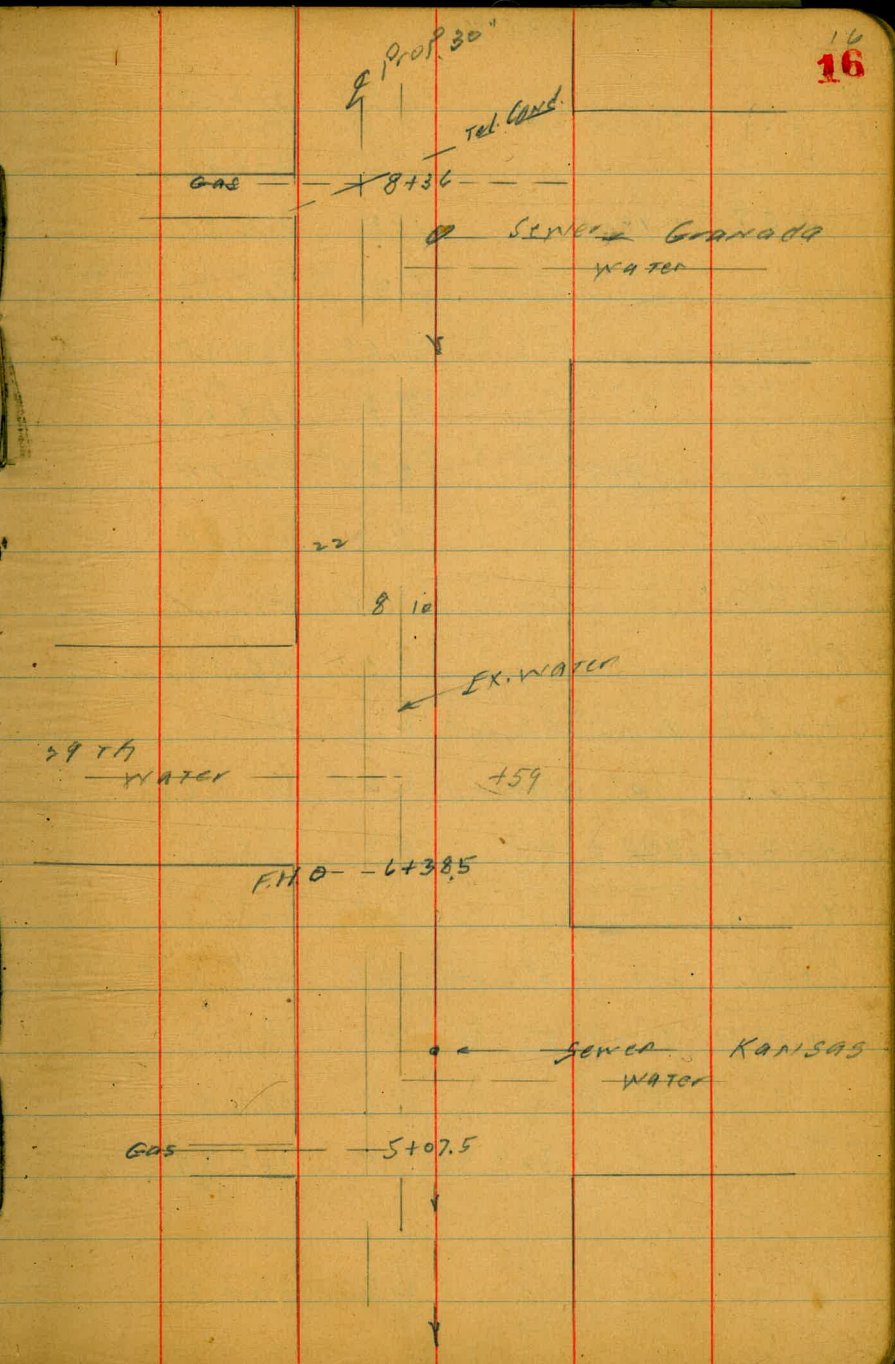
30th to 5th St

Note! check up { Sewer Lat. / Water Sec.

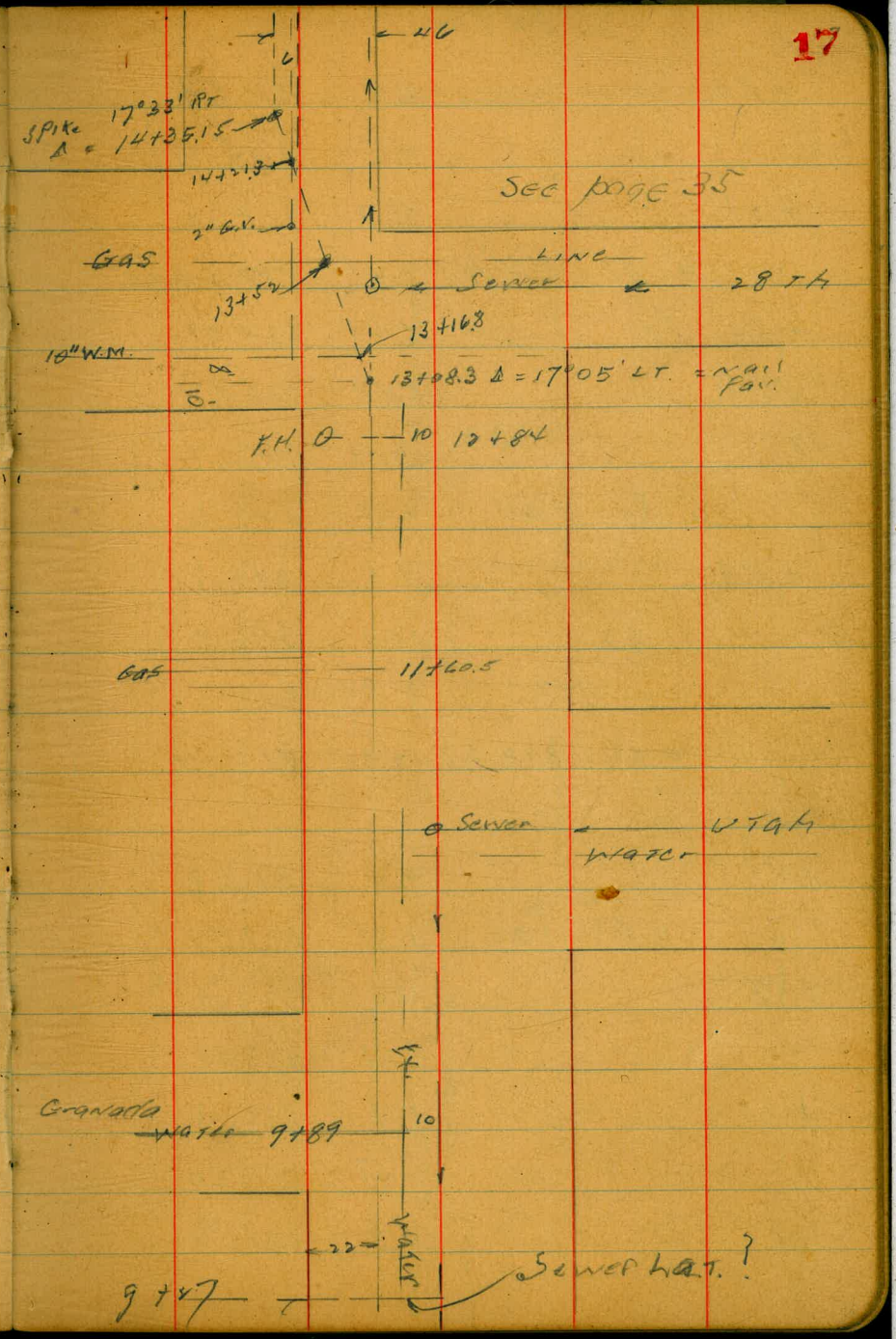
NE BP		4.32	329.86	325.54 Upas Kant.
0 0	Pav		2.43	327.23
+ 16.9			2.69	327.17
+ 32.4			2.73	327.13
+ 89			2.98	326.88
+ 50			3.05	326.81
1			3.30	326.56
+ 50			3.71	326.15
+ 79.5			3.91	325.95
2			4.07	325.84
+ 50			4.57	325.29
+ 69.3			4.93	324.93
3			5.53	324.33
+ 07.5			5.71	324.36
+ 39	Water		5.77	324.09
+ 39	Sewer		5.88	323.98
"	"	M.H. 18' Rt.	5.70 Rim	
	"	"	12.87 F.L.	316.99



		329.86		
3+50			6.02	323.84
+58	Pav		6.23	323.63
"	4 Rt F.H.	30 x dr.	6.30	323.56
"	27 Lt "	10 "	7.87	321.99
4			6.21	323.65
+50			5.77	324.09
5			5.31	324.55
+07.5			5.18	324.68
+50			4.86	325.00
6			4.27	325.59
+38.5	F.H.		3.98	325.88
+59	Water		3.84	326.02
7			3.27	326.59
T.P.	893	335.51	3.48	326.58
+50			8.23	327.28
8			7.58	327.93
+36	Int. Tel. + gas		7.04	328.49
+50			6.88	328.63

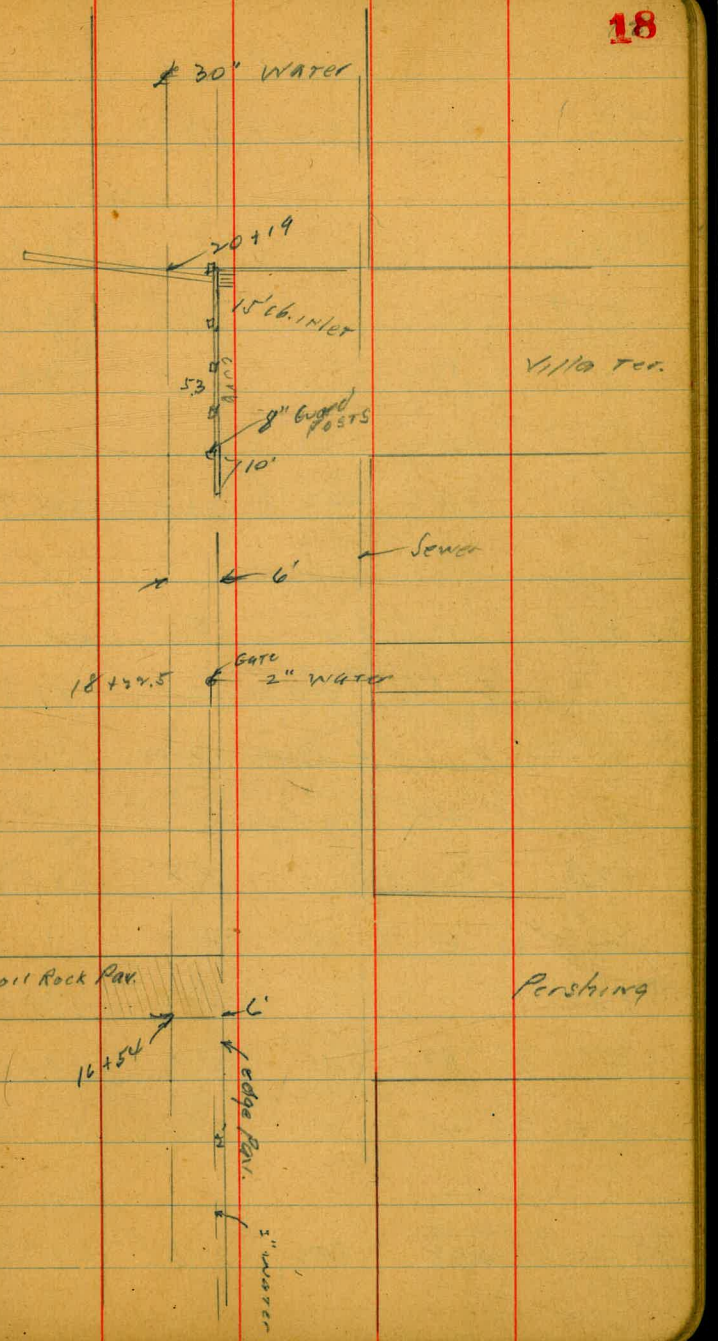


		385.51			
9			6.23	329.28	
	+27 = Sewer Lat.		5.82	329.69	
	+50		5.66	330.05	
	+89 Water		5.14	330.37	
10			5.22	330.29	
	+50		5.66	329.85	
11			5.84	329.67	
	+60.5 gas		6.07	329.44	
12			6.21	329.30	
	+50		6.38	329.13	
13			6.43	328.88	
	+08.3 Δ 17°05' LT		6.60	328.91	
	+16.8 10" Water		6.64	328.87	
	+52 Int. gas Line		6.71	328.80	
14			6.92	328.59	
	+21.3 INT. of 2" Water		7.3	328.2	off Par.
	+35.15 Δ 17°33' RT		7.7	327.8	6' So. of edge Pav.
	" 6' RT Pav.		7.7	327.8	
T.P.	0.91	329.30	7.12	328.39	
15			2.5	326.8	



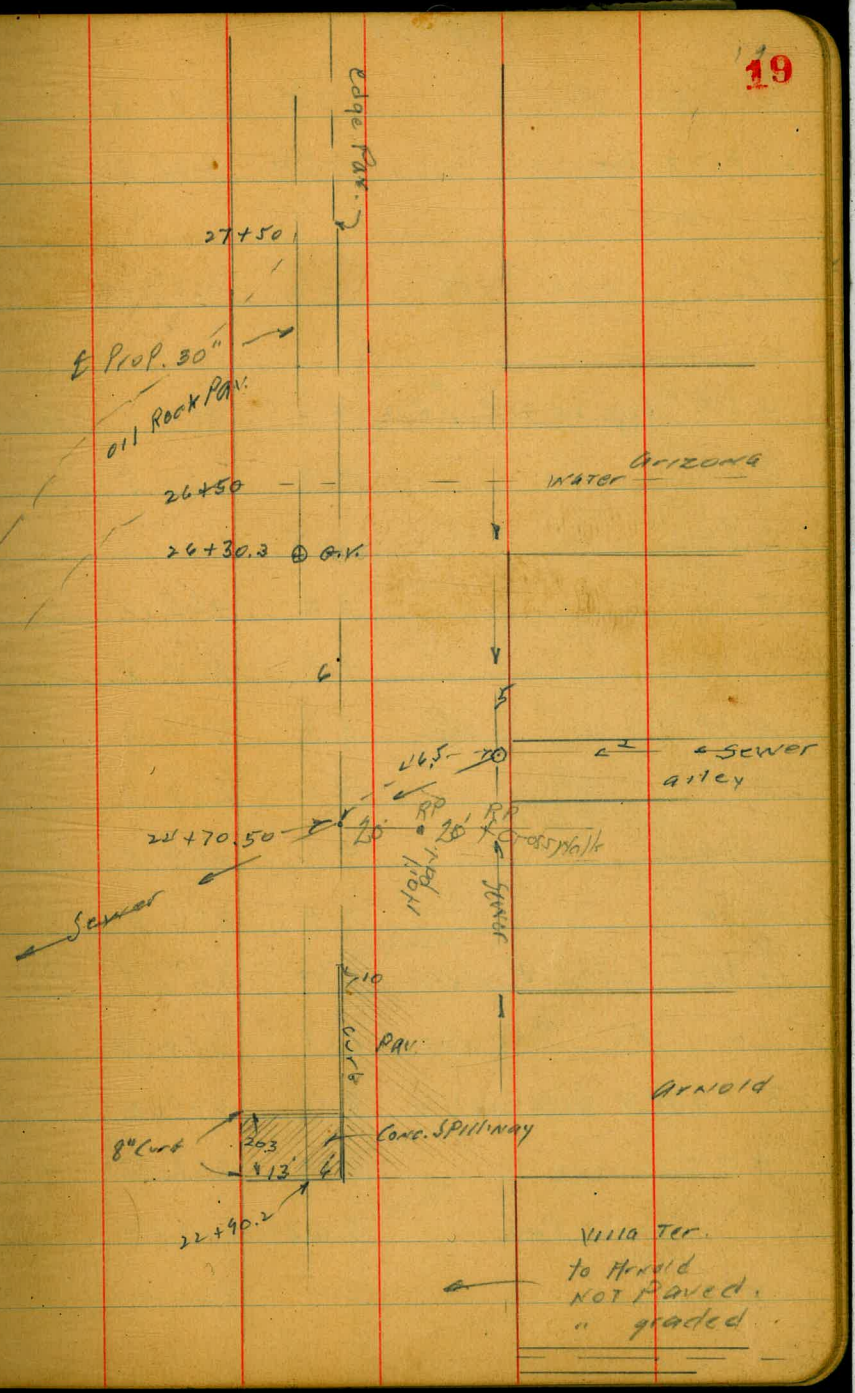
See page 35

		329.30		
+50			3.4	325.9
16			4.1	325.2
+31			4.7	324.6
"	6' RT	edge Pav.	4.61	324.69
+54	Pav		5.23	324.07
+74	"		5.49	323.81
17			6.6	322.7
"	6' RT	Pav.	6.13	323.0
+50			9.4	319.7
18			13.3	316.0
T.P.	0.7	316.67	12.90	316.44
+22.5			2.8	313.9
"	6' RT	Pav.	2.95	313.72
+37			4.0	312.7
"	6' "	"	4.23	312.44
+50			5.4	311.3
"	"	"	6.07	310.60
+85			10.8	305.9

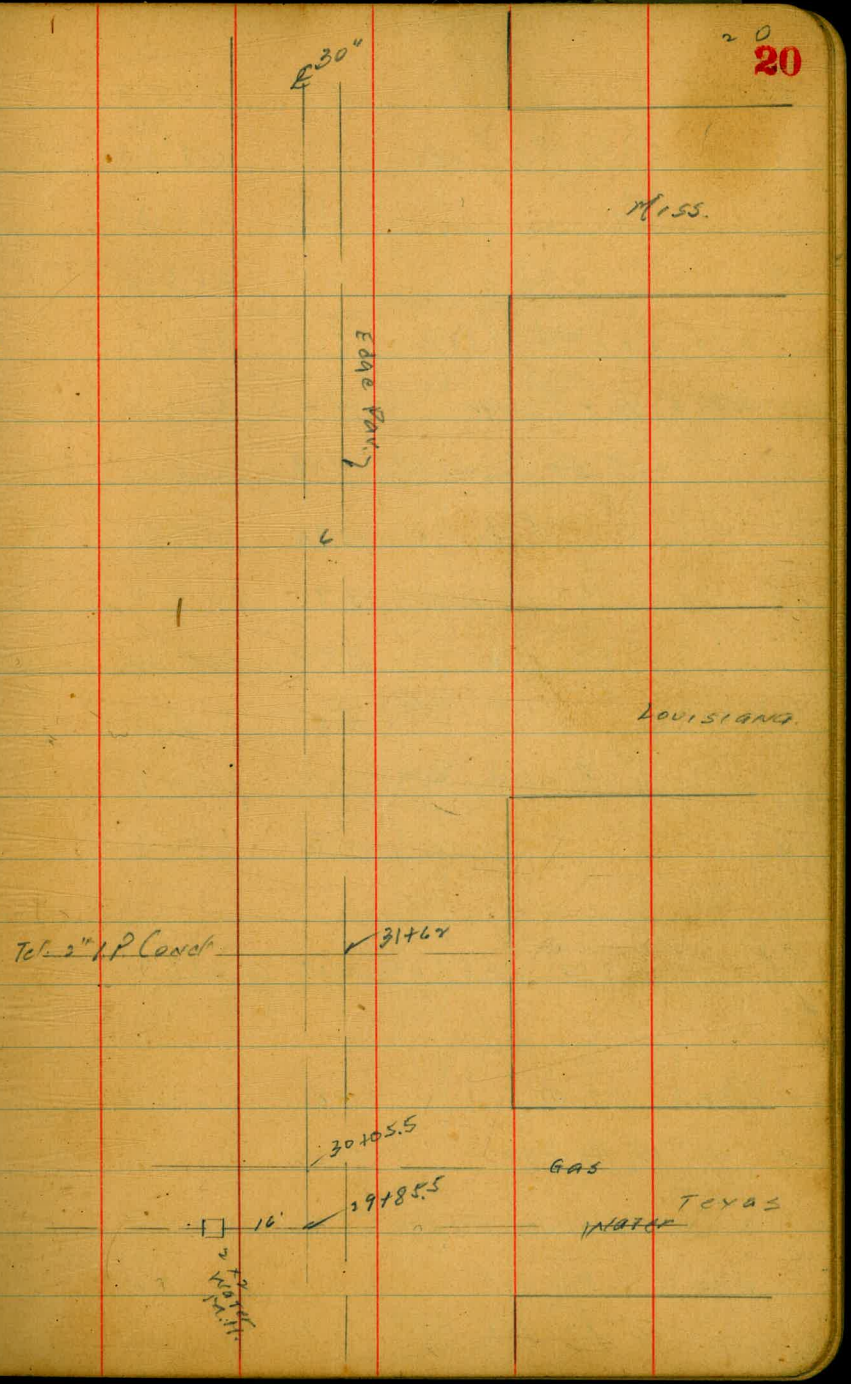


		316.67			
T.P.	0.1'	304.57	12.36	304.31	
19+30			5.1	299.3	
+69			10.8	293.6	
"	6' Rt Pav		11.61	293.0	
T.P.	0.61	297.56	12.47	291.95	
20+19	Int Drain		5.7	286.9	on fill
"	6' Rt. Top grate		4.67	281.89	
"	" " F.L. Box		16.90	275.66	of CG inlet
"	15' Lt. Toe fill		15.6	277.0	
+78	Shoulder "		7.0	285.6	
"	21' Lt Flowline		21.5	271.1	18" Conc. Pipe
+80			14.4	278.2	
"	8' Rt. Shoulder fill		11.6	281.0	
"	20 Lt. Toe fill		21.6	270.0	
T.P.	0.98	280.69	12.85	279.71	

This fill is 100% adobe.

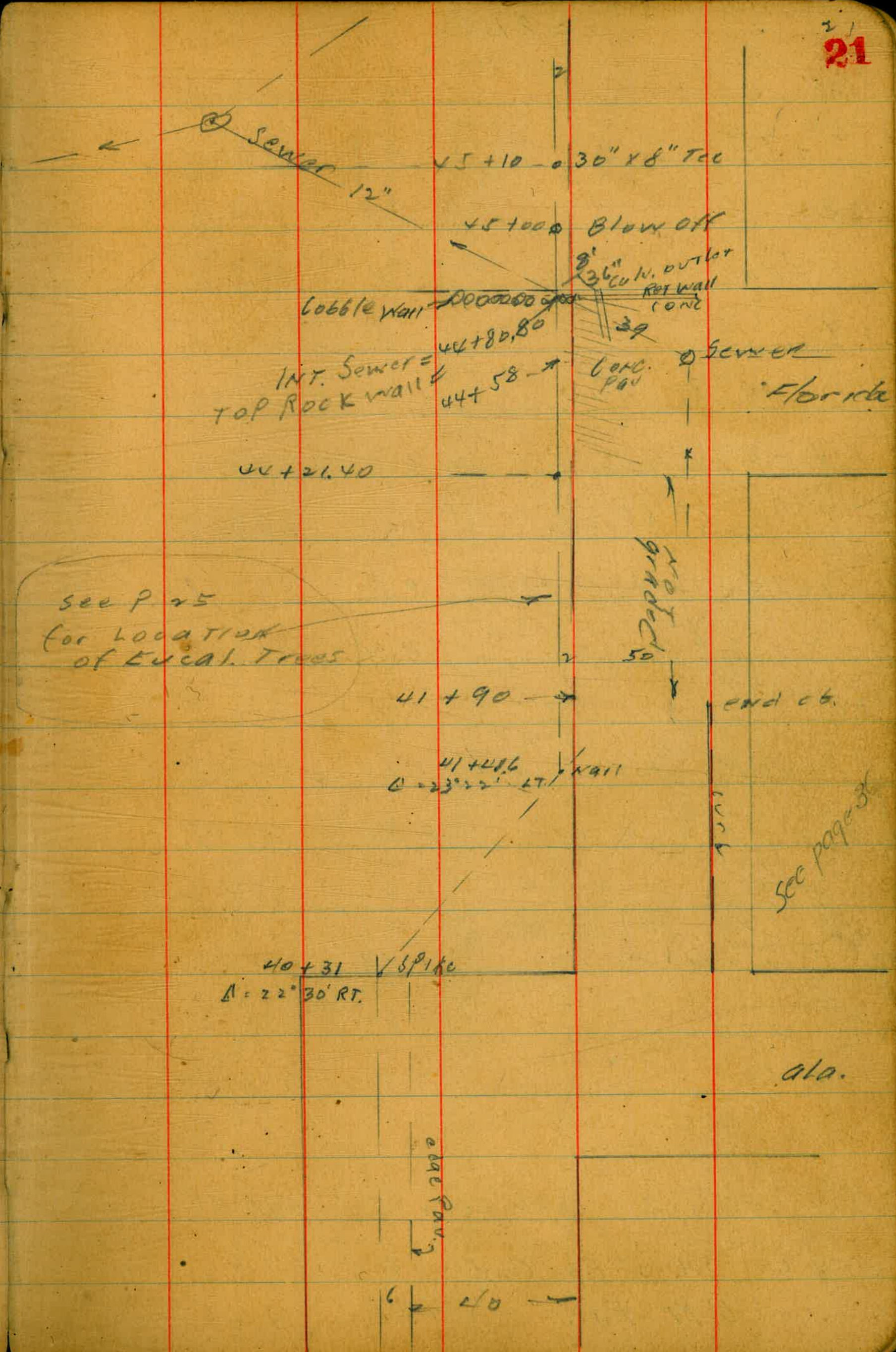


		28049			
21	on fill		7.9	272.8	
21+20	Toe "		15.0	263.7	
T.P.		0.03	268.11	124'	268.08
+50	beg. of approx 4' fill			4.0	264.1 ofadobe
+80				3.6	264.5
+90				2.5	265.6
22				3.0	265.1
+15				3.3	264.8
+30				3.9	264.2
+40				4.4	263.7
+50				4.1	264.0
+70				4.4	263.5
+90.2	Top Sidewall			6.82	261.29 Spillway
"	FL Spillway			8.17	259.94
23	+10.5 Side wall "			8.00	260.11
+10.5				6.28	261.43
"	6' RT Pav.			7.03	260.08
+15				5.5	262.6

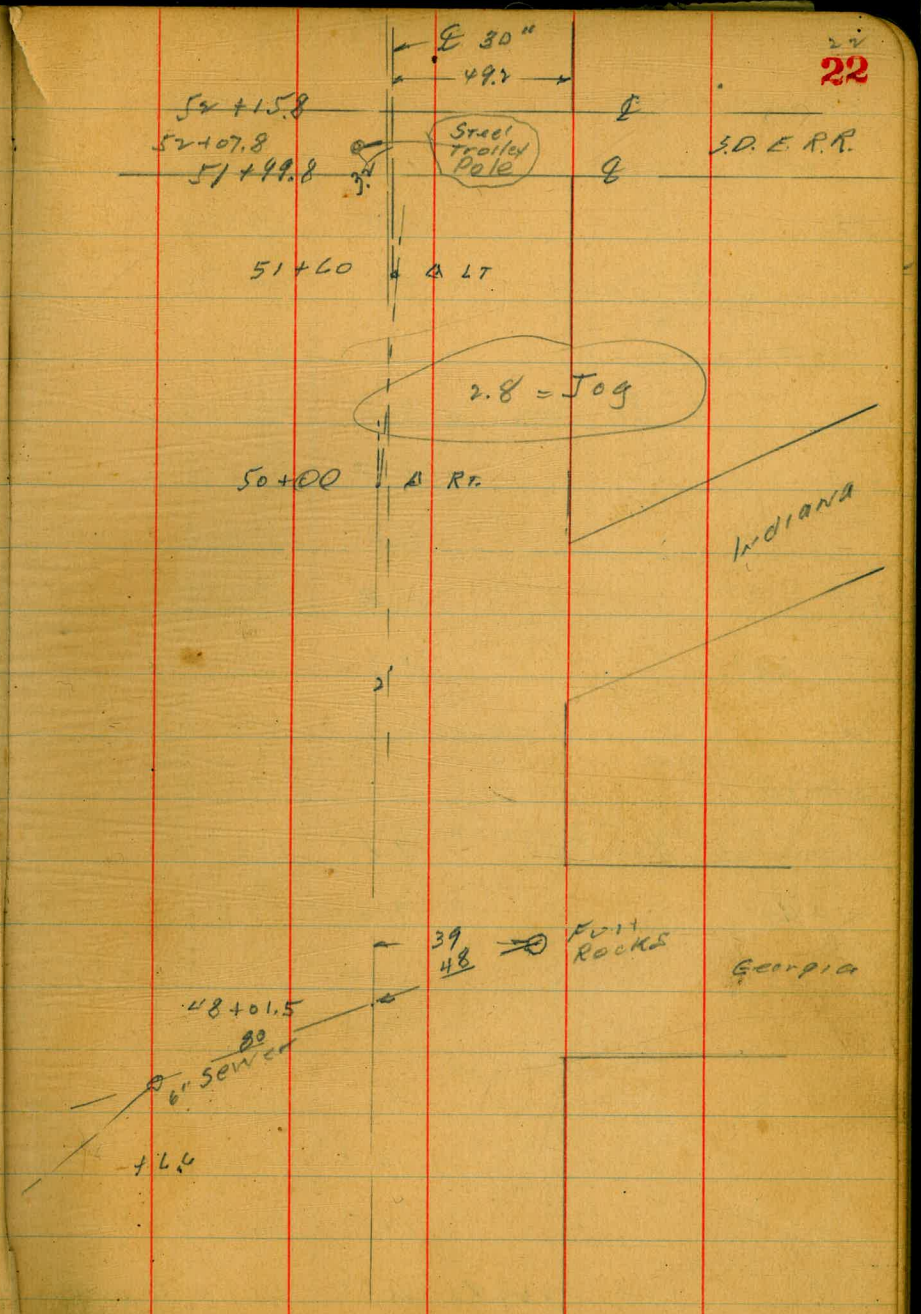


		268.11			
23+55			5.2	262.9	
"	6' Rt Top cb.		4.72	263.39	
"	Pav.		5.87	262.24	
24			4.6	263.5	
+50	End 4" fac1		5.0	263.1	
+70.5	Int Sewer		4.4	263.6	
"	44.5 Rt Sewer MH		4.49	263.62	Rim
"	" F.L. "		13.96	254.15	F.L.
25			3.7	264.4	
"	6' Rt. Pav.		3.80	264.31	
+30			3.0	265.1	
"	6' Rt Pav		3.23	264.88	
26			0.3	267.8	
T.P.	13.10	281.02	0.19	267.92	
+30.3	E.L. Ariz.		11.8	269.2	
"	6' Rt. Pav.		12.02	269.00	
+50	east edge oil Pav.		11.2	268.8	
+90.3	Pav. oil		10.4	270.4	
"	6' Rt. A.C. Pav		10.96	270.06	

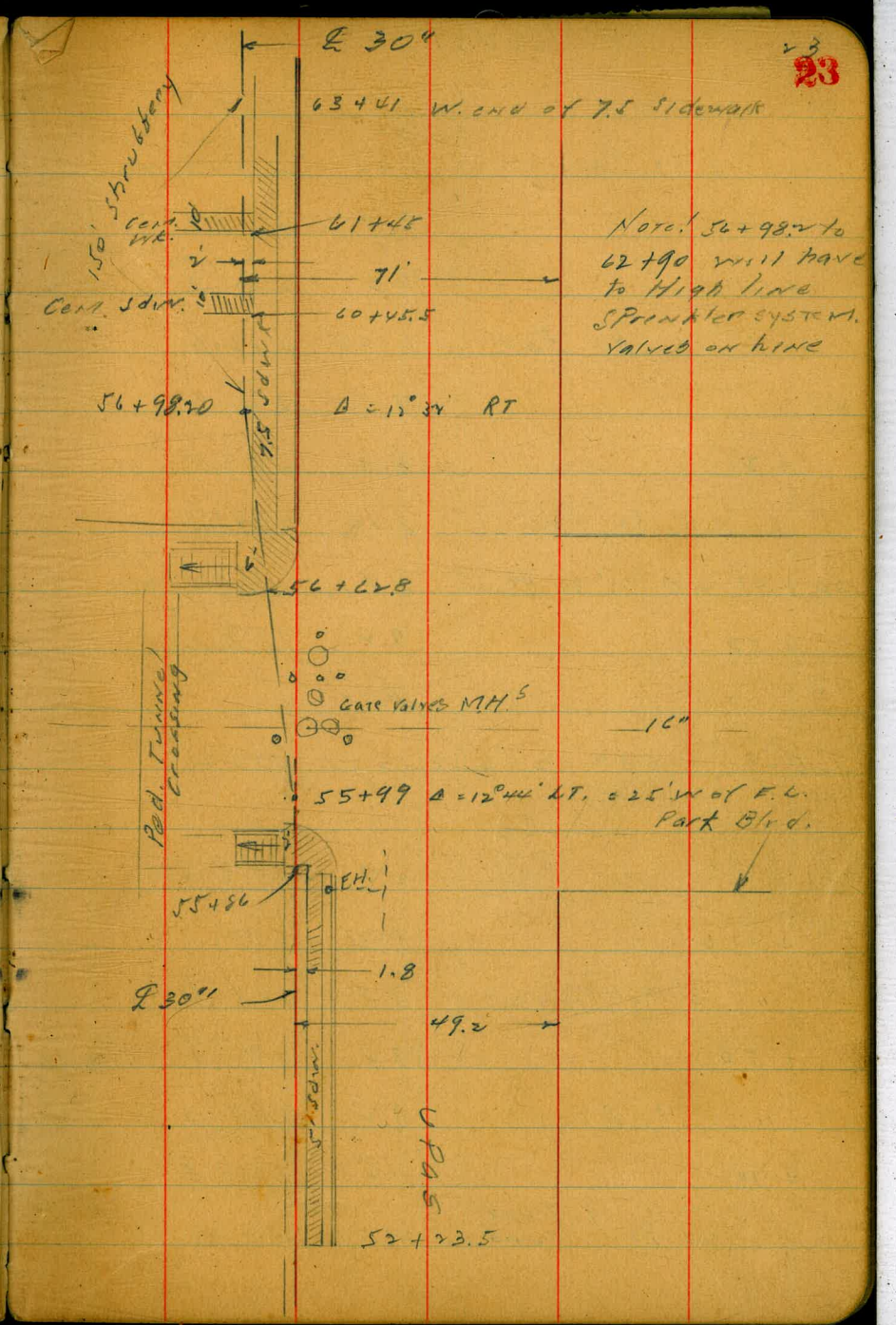
check up F.L. of M.H. to South



		281.0		
27			10.4	270.6
+50			8.0	273.0
28			5.8	275.2
+50			3.0	278.0
29			1.0	280.0
"	6' Rt Pav		1.10	279.92
+50			0.5	280.5
"	6' Rt "		0.44	280.58
+85.5	Water Line		0.9	280.1
"	6' " "		0.48	280.34
30			1.0	280.0
+05.5	Gas Line		1.1	279.9
"	6' " "		0.94	280.08
+50			1.4	279.6
"	6' " "		1.47	279.55
31			1.8	279.2
+50			2.4	278.6
T.P.	1.93	280.50	1.45	278.57
31+62	Tel. 2" Pipe Cond.		1.9	278.6
"	6' Rt Pav.		1.87	278.63

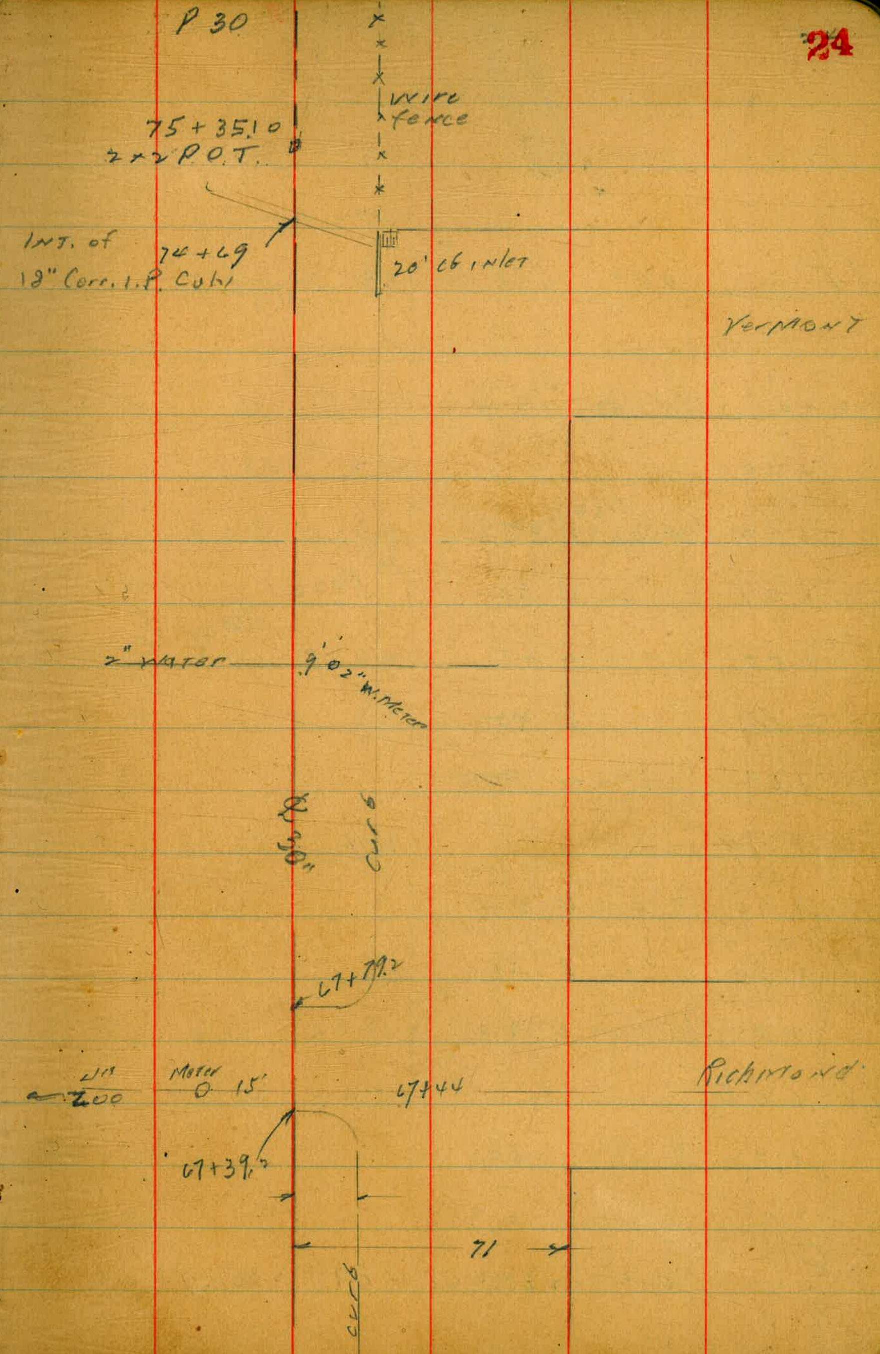


		280.50		
33			2.1	278.4
+50			2.4	278.1
33			2.9	277.6
"	6' Rt Par		3.0 ±	277.48
+60			3.5	277.0
"	6' Rt Par		3.51	276.99
34			3.9	276.6
+50			4.3	276.2
35			4.9	275.6
+50			5.1	275.4
36			6.0	274.5
+30			6.8	273.7
"	6' Rt Par		7.71	272.79
+90			7.8	272.7
"	" " "		8.00	272.50
37			7.9	272.6
+50			9.4	271.1
38			10.9	269.6
+50			12.4	268.1
T.P.		0.14 ± 267.81	12.83	267.67



			267.81			
39				1.5	266.3	
"	6' Rt. Pav.			2.03	265.78	
+50				3.9	263.9	
+71				6.0	261.8	
"	6' Rt. Pav.			6.65	261.16	
40				7.5	260.3	
+21				8.4	259.4	
"	6' Rt. Pav			8.36	259.45	
40+31	= Δ 22°30' Rt.			8.4	259.4	w.l. ala.
+50				9.2	258.6	
T.P.		0.52	256.12	12.21	255.60	
41				2.7	253.4	
+41.64				4.0	250.1	
"	3' Rt in cut			7.5	248.6	
+50				7.0	249.1	
"	4 Rt "			9.0	247.1	
+90				11.6	244.5	
"	43' Rt Top end Curb			14.10	242.02	

P 30



		254.12		
42			12.3	243.8
T.P.	000	243.18	12.94	243.18
42+07	15.5 Rt = Service M.H.			
+40			4.2	239.0
+42	Tree Euc. 3' Lt			
+47	" 4' Rt		10" to 12" Diam.	
+55	" 6 Lt			
+58	" 3 Rt			
+69	" 2 Rt			
+70			11.4	231.8
+76	" 6 Lt			
+80	" 3' Rt			
+84	" 4 Lt			
+85			15.4	227.8
+92	" 2 Lt.			
T.P.	011	230.40	12.89	230.29

		230.40		
Pool.				
43	Tree on line		7.0	223.4
+09	" 1' Rt			
+14	" 4 Lt			
+16	" 2 Rt			
+23	" 4 Lt			
+35			13.9	216.5
T.P.	0.23	217.71	12.94	217.48
+55	Tree 7' Lt			
+60	" 1 Rt			
+65			7.9	209.8
+67	" 5 Lt			
+95			12.9	204.8
T.P.	0.34	205.19	12.86	204.87
44+20			7.3	197.9
+28			10.6	194.6
	" 2' Rt Pav.		11.05	194.14

		205.19			
44+58			11.1	194.1	
"	2' Rt	Rim	11.1	194.1	
"	32 "	Rim M.H.	11.80	193.39	Florida St
"	32 "	F.L. " "	17.8v	187.37	
+80.8	Int.	Sewer Line	11.66	193.53	Cobble Top wall
+81.8	creek	Bot.	15.7	189.5	
"	8' Rt.	F.L. Outlet	16.7 →	188.5 →	36"
v5	"	"	16.v	189.0	Culv.
+43	N edge	creek	15.v	189.8	
+50			13.8	191.4	
+75			12.v	192.8	
v6			8.4	196.6	
T.P.	12.15	216.47	0.67	204.5v	
+45			5.4	211.4	
T.P.	10.35	224.88	0.14	214.53	
+45			8.8	218.1	
+80			3.1	223.8	

		226.88			
47			1.8	225.1	
+10			2.0	224.9	
+47			11.1	7158	
T.P.	7.74	221.73	17.89	213.99	
+77			10.8	210.9	
48+01.5	Int	Sewer	14.6	207.1	Bot. Wash
"	48' Rt	Rim M.H.	9.33	212.40	
"	" "	F.L. "	15.34	206.39	
48+47			0.0	221.7	
T.P.	17.97	232.66	0.24	221.69	
+80			5.5	229.0	
T.P.	30.v	247.10	0.38	234.08	
v9			13.v	233.9	

		247.10				
497+20			5.8	241.3		
T.P.	1.86	259.55	0.41	246.69		
+70			3.1	256.5		
T.P.	12.17	271.71 271.21	0.01	259.54 259.04		
504+00 Δ		RT	6.7	265.0		
T.P.	12.87	284.41 283.91	0.17	271.54 271.04		
+30			12.4	272.0		
+50			7.6	276.8		
T.P.	12.41	296.44 295.94	0.38	284.03 283.53		
+75			11.3	285.1		
511+25			5.0	291.4		

		295.94 296.44				
517+60		Δ LT.	0.6	295.8		
T.P.	4.56	300.79 300.29	0.21	296.23 295.73		
+70			4.4	296.4		
+75			4.1	294.7		
52		ON E rail E Tr.	7.61	293.18		
+14		" " rail "	7.57	293.22		
+23.5		beg Cent. sdw	6.9	293.9		
"		1.8 RT.	6.88	293.91	5 edge sdw	
+50			6.9	293.9		
53			6.8	294.0		
+50			6.3	294.5		
54			6.1	294.7		
+50			5.8	295.0		
55			5.4	295.4		
+50			4.9	295.9		
+84		C. edge RET	4.49	296.10		
+95		Top CB "	4.87	295.97		
"		gut. Par	5.38	295.41		

		30079 300.79			
55+99.0	▷		5.21	295.58	
56+16			4.92	295.85	
"	2.5 Rt ℄ W.M.H.		4.92	295.85	
"	1.0 Lt Gate V		4.92	295.85	
+26			4.84	295.95	
"	2' Rt	" "	4.84	295.95	
+62.8	gut Far		5.70	295.09	
"	Top of Ret.		5.11	295.68	
+89.2	S. edge 7.5 cem. wk.		5.03	295.76	
56+98.2	Δ 12°32' Rt		5.3	295.5	
"	2' Rt edge sdw.		5.15	295.64	
58	" " " "		6.20	294.59	
T.P. S.W. B.P.	2.22	297.97 297.47	5.02	295.75 295.25	upper Park Blvd 295.80
59	2' Rt. edge sdw.		4.55	293.42	
60	" " "		5.65	292.32	
+45.5	edge cross "		6.14	291.83	
+55.5	to School " "		6.22	291.75	

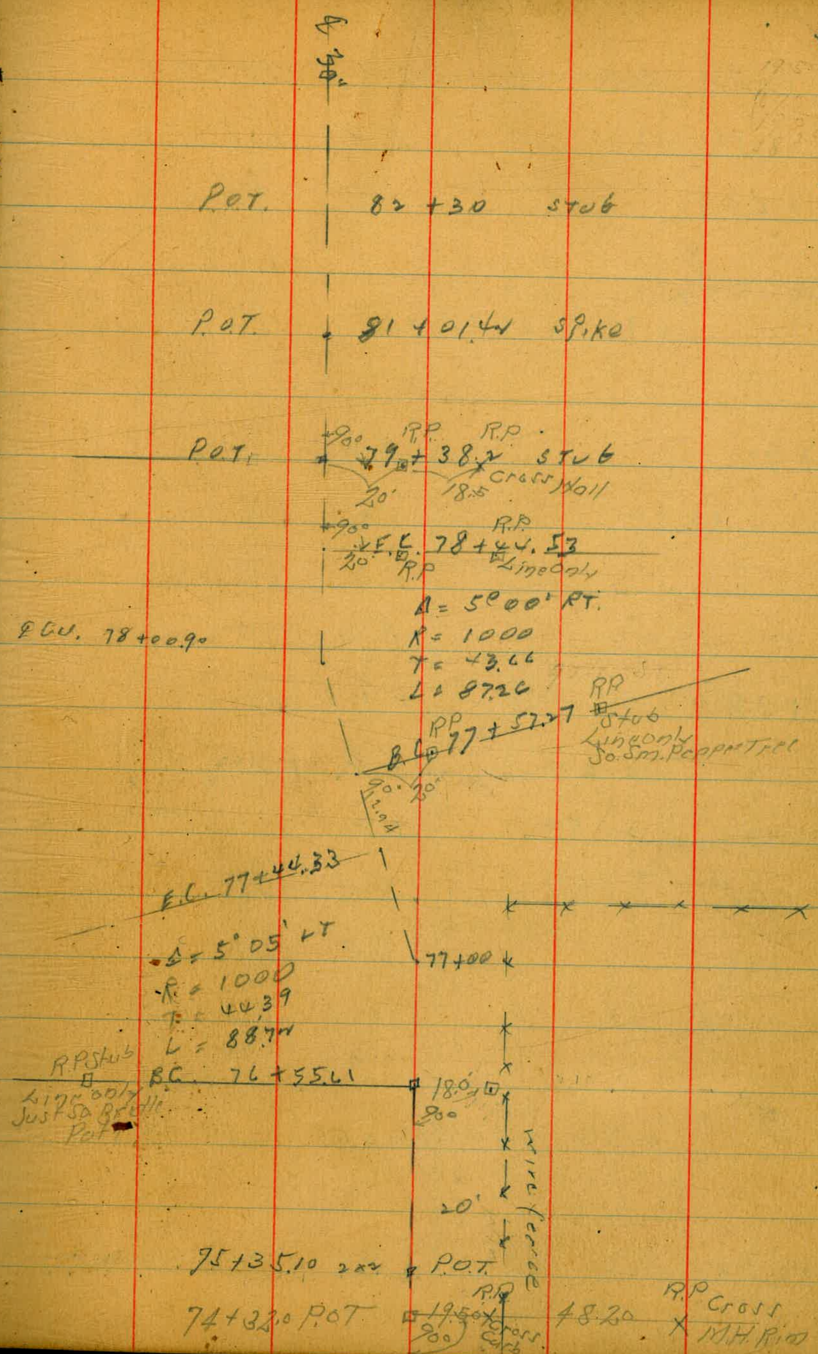
		297.47 297.97			
61+00	2' Rt	edge 7.5 walk	6.75	291.22	Note: Sewer Lat. from School near 61+00
+45	10' Cem wk. to School		7.30	290.67	
+55	" "		7.38	290.59	Please check up.
62	2' Rt edge 7.5 wk		7.92	290.05	
T.P.	2.28	292.64 292.14	7.61	290.36 289.86	
.63	2' Rt. edge sdw		3.66	288.98	
+41	" " "		4.10	288.54	← N end 7.5 walk
64			5.1	287.5	
65			5.8	286.8	
66			6.4	286.2	
67			8.4	284.2	
T.P.	1.56	285.69 285.19	8.51	284.13 283.63	
67+39.2	cb.		1.56	284.13	2' Rt
"	gut		2.4	283.3	
+44	oil Pav.		2.4	283.3	

		28519 / 285.69			
67+79.2	gut		2.7	283.0	
"	cb 2' Rt.		1.99	283.70	
68			2.1	283.6	
+02	Eucal Tree 2' Rt				
+25	" " on line				
+50			3.0	282.7	
69	(6" to 12" Eucal. Trees)		3.7	282.0	
+50			4.4	281.3	
70			5.5	280.2	
"	20 Rt cb		4.79	280.92	
"	" " gut		5.54	280.15	Pav
+50			5.7	280.0	
71			5.3	280.4	
+50			4.8	280.9	
72			4.8	280.9	
+50			5.6	280.1	
"	cb 20' Rt		7.22	278.47	
"	gut " "		7.98	277.71	
+73	Eucal. Tree on line				
+82	" " 2' Lt				
+90	" " 3' Rt				

		28519 / 285.69			
73			6.8	278.9	
+08	Eucal Tree 2' Lt.				
+50			7.7	278.0	
+52	" " 1' Lt				
+60	" " " "				
+70	" " 2 Rt				
+87	" " on line				
74			8.3	277.4	
+20	beg. fill		8.3	277.4	
+33	on fill		7.0	278.7	
+38	on fill		8.4	277.1	
"	20 Rt cb		9.28	276.41	
"	" grate		10.34	275.35	
"	" FL Box		16.64	269.05	cb inlet
+42	Shoulder fill		9.6	276.1	
T.P.	0.55	275.47 / 274.97	10.77	264.92 / 274.42	
T.P.	0.40	262.88 / 262.38	12.99	262.48 / 261.98	
7[illegible]+69	(Top Int.)	Corr. 18 I.P.	5.66	257.22	also toe fill
+85			11.0	251.9	

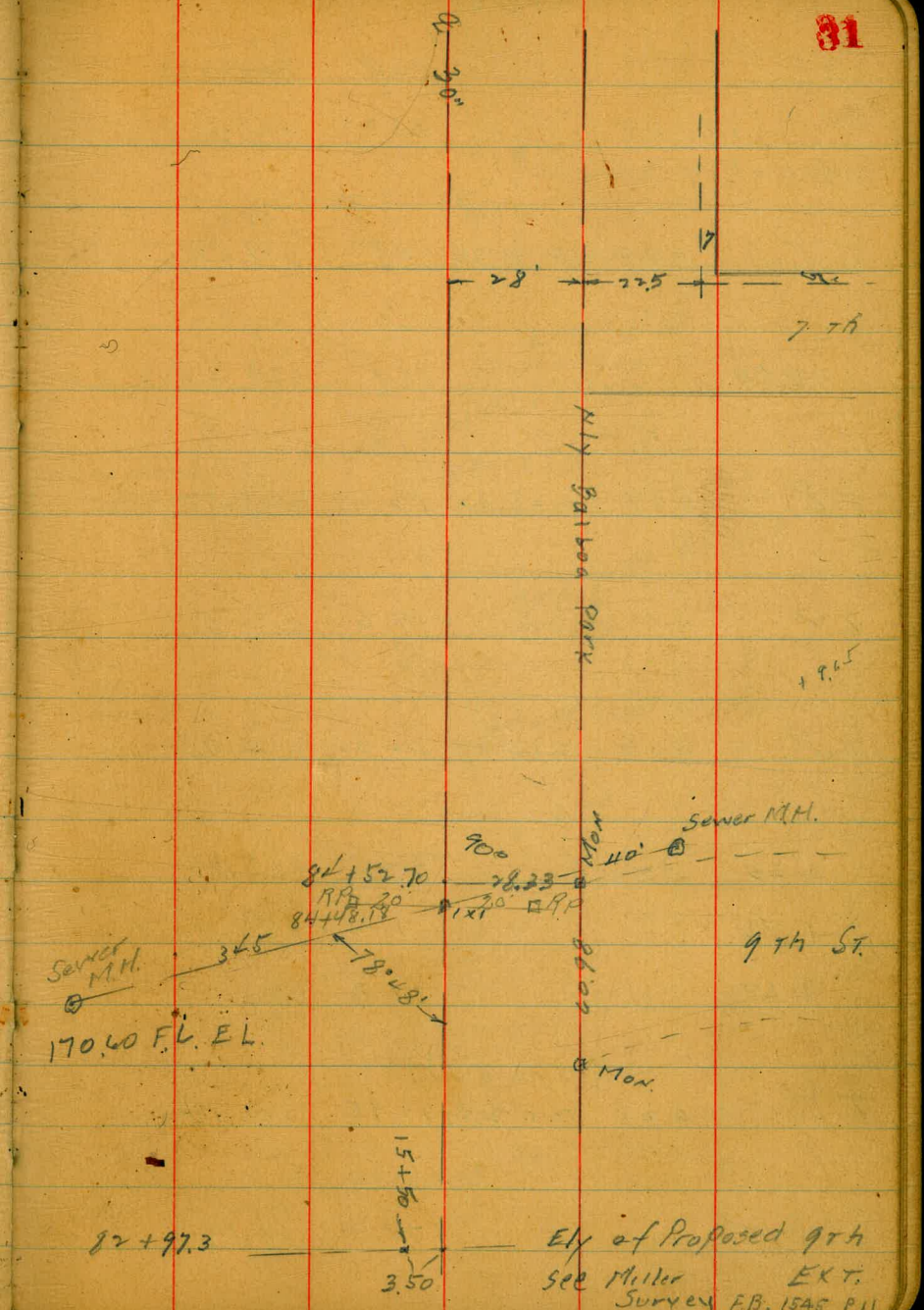
		~~264.38~~ 262.88		
75			12.8	250.1
" 10 LT			18.0	244.9
+35			14.6	248.3
" 10 LT			18.6	244.3
+75			13.6	249.3
76			12.6	250.3
" 10 LT			16.6	246.3
T.P.	5.70	256.64 / 256.14	11.94	250.94 / 250.44
74+55.61 B.C. LT.			6.5	256.1
" 10 LT			10.0	246.6
+99.97			5.2	251.4
77+44.33 EC			8.7	247.9
" 10 LT			12.0	244.6
+57.27 BC RT			11.3	245.3
" 10 LT.			14.2	242.4
+80			16.7	239.9
" 10 LT			20.0	236.6
78+00.90			11.2	245.4
" 10 LT			14.5	242.1

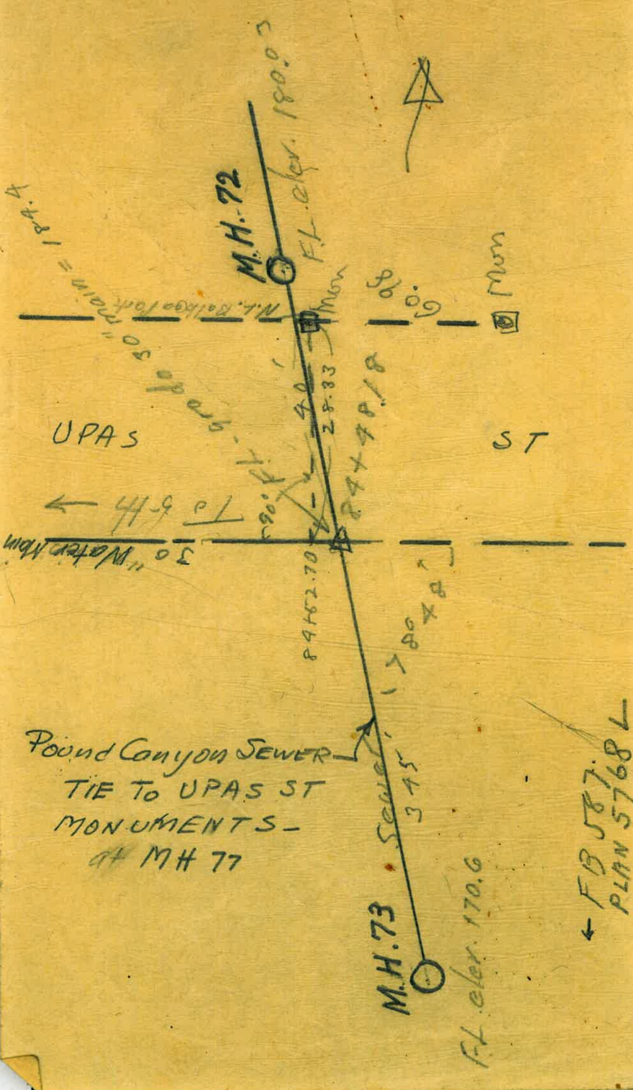
shots LT. to show slope side of canyon



		256.14 256.64		
78+44.53	EC		4.9	251.7
" 10	LT		8.0	248.6
+60			2.4	254.2
T.P.	10.90	265.17 264.67	2.37	254.27 253.77
+80			8.5	256.7
" 10	LT.		12.1	253.1
79			3.8	261.4
"	10 LT		8.0	257.2
+38.2			+1.5	266.7
"	10 LT		3.8	261.4
"	2 RT		+2.5	267.7
+45			5.8	259.4
80			9.0	256.2
" 10	LT.		14.5	250.7
T.P.	0.32	252.81 252.31	2.68	252.49 251.99
+50			7.5	245.3
" 10	LT		10.0	242.8

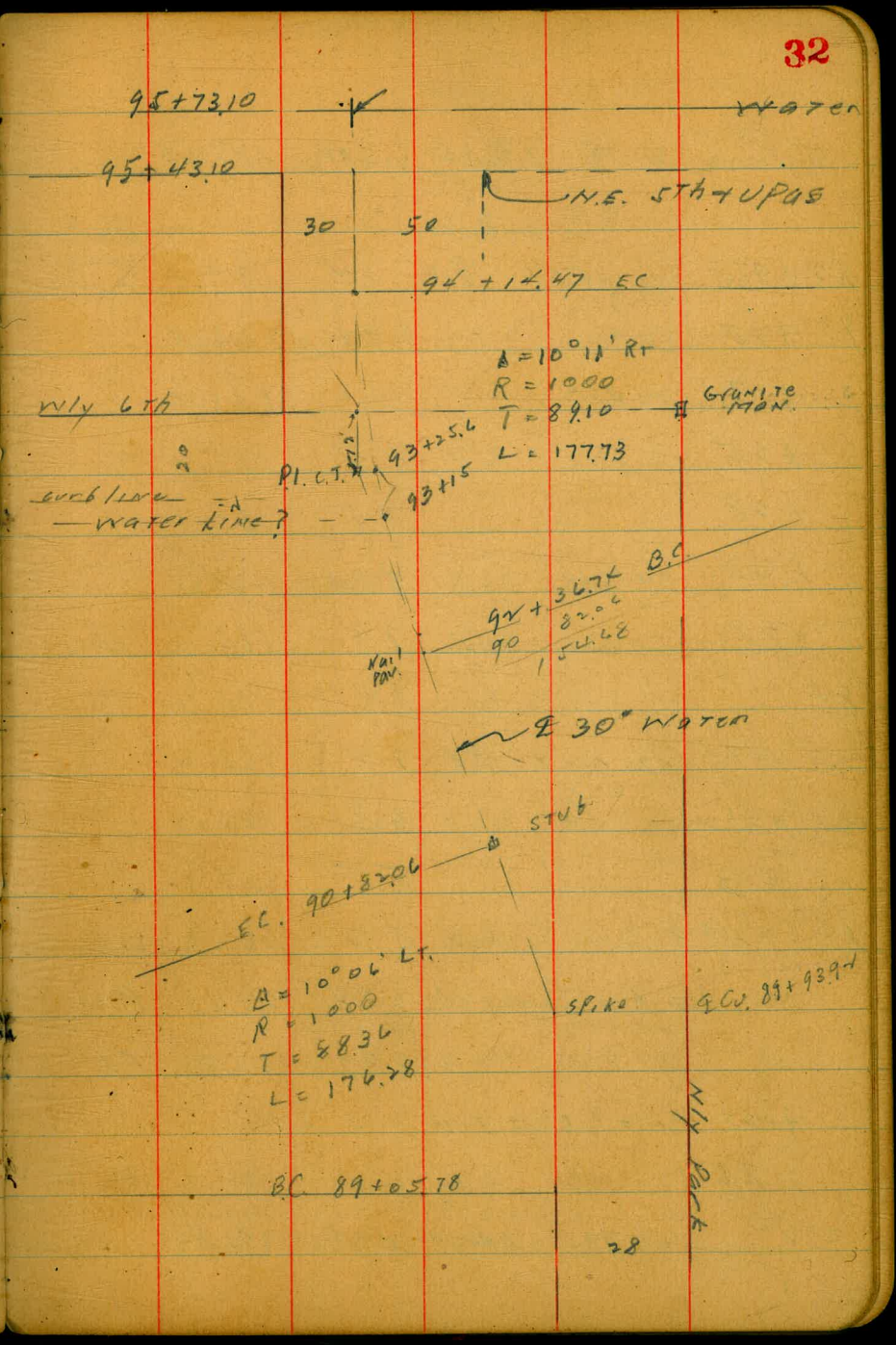
N/Y
Rim
Canon





Pound Canyon SEWER
TIE TO UPAS ST
MONUMENTS -
at MH 77

		252.31 252.81		
81			11.8	241.0
"	10 LT		12.0	239.8
		240.74		240.00
T.P.	0.74	240.24	12.81	239.50
+50			11.01	229.7
		228.14		228.09
T.P.	0.07	227.64	12.67	227.57
8 W			9.6	218.5
		215.59		215.43
T.P.	0.16	215.09	12.71	214.93
+30	STUB		2.28	213.31
+50			7.2	208.4
+60			13.3	202.3
		202.92		202.64
T.P.	0.28	202.42	12.95	202.14
+75			7.1	195.8



		202.92 / 202.47		189.98	
T.P.	2.58	192.36 / 192.56	12.9K	189.48	
		proposed			watch grade here
82+97.3	Int. of E.L.	9.6	3.2	189.4	
83 +15	.		9.1	283.5	
+17	Wash		11.6	181.0	
+25	"		11.5	181.1	
+28			9.5	183.1	
+40			8.1	184.5	
+75			7.6	185.0	
84			7.4	185.2	
+07	E edge dirt Rd		7.2	185.4	
+31	W. " "		6.9	185.7	
+33			5.5	187.1	
84 +48.8	Int. Sewer		5.0	187.6	Line
"	40' Rt Sewer MH		2.88	189.68	Rim
"	" " "		2.53	180.03	FL.
+61	Small olive tree		3' Lt.		
+85			0.0	192.6	
T.P.	12.99	205.29 / 204.79	0.26	192.39 / 191.80	

		204.79 / 205.29			not bearing
85+01	Small olive tree		on line		
+10			5.8	199.5	
T.P.	13.06	218.19 / 217.69	0.16	205.13 / 204.63	
+45			4.3	213.9	
T.P.	13.07	230.84 / 230.34	0.42	217.77 / 217.27	
+78			4.0	226.8	
+80			1.3	229.5	
T.P.	12.94	243.00 / 242.50	0.78	230.06 / 229.56	
86+00			3.6	239.4	
T.P.	13.17	256.13 / 255.63	0.04	242.96 / 242.46	
+40			0.6	255.5	
T.P.	12.07	268.17 / 267.67	0.03	256.10 / 255.60	

		~~267.67~~ 268.17		
+45			5.8	262.4
87			0.6	267.6
T.P.	6.06	273.66 273.16	0.57	267.60 267.10
+50 small tree on line			5.2	268.5
88			2.9	270.8
T.P.	9.55	279.47 278.97	3.74	269.92 269.42
+50			5.3	274.2
89			0.9	278.6
T.P.	11.30	290.20 289.70	0.57	278.90 278.40
+50 beg. of Lawn			8.7	281.5
+93.92			6.8	283.4
+99.9			6.4	283.8
" 21.5 Rt	Scb		6.97	283.23
" " "	gut		7.44	282.74

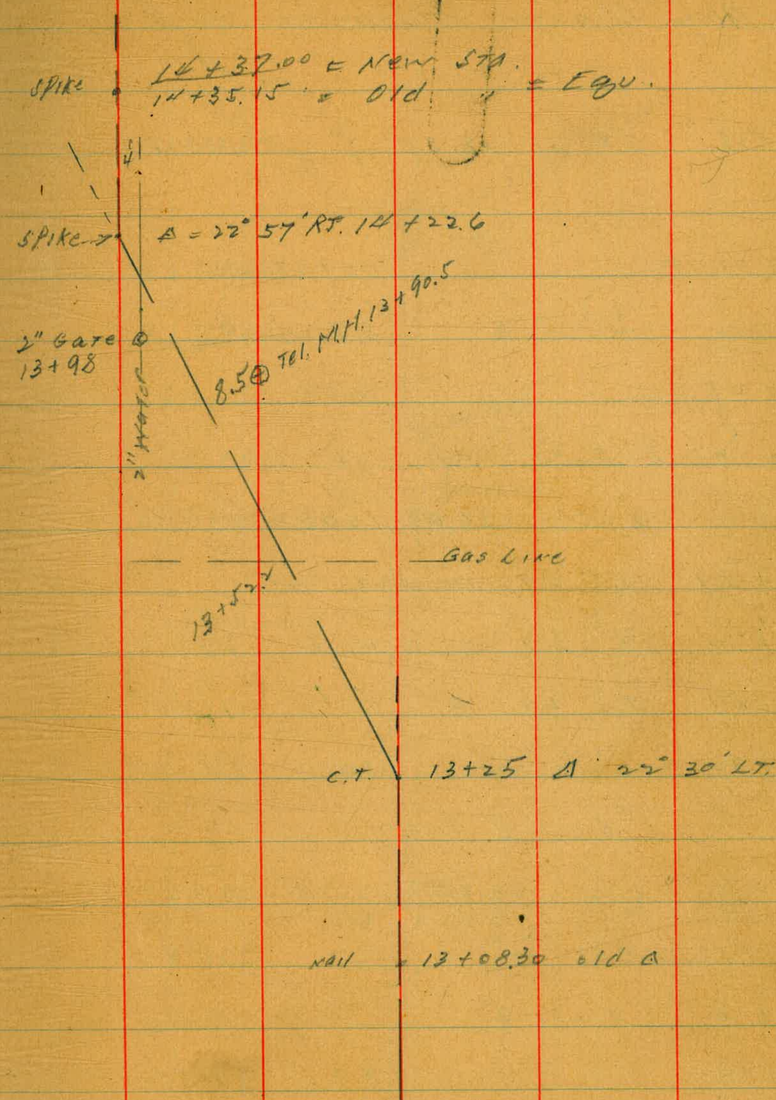
		~~289.70~~ 290.20			
90+30			3.8	286.4	
T.P.	6.11	295.48 294.98	0.83	289.37 288.87	
90+82.06 E.C.			4.6	290.9	
91 Strt			4.8	290.7	
+50			4.2	291.3	
92			4.6	290.9	
+15 edge oil Rd			5.8	289.7	end Lawn
+36.74 BC Rt.			5.4	290.1	
+41 beg. Pav.			5.39	290.09	EL 6th So.
93+15 Int. W 3			4.33	289.15	
+25.6			4.40	289.08	
94+14.47 E.C.			7.89	287.59	
95			9.16	286.32	
+43.10 EL 5th			9.75	285.73	
+73.10 on Pav.			10.27	285.21	
SW cor 4th & Pas			4.42	288.86 288.36	289.02
					0.66
					.16

30" Water

Align. change at 28+75 4 UPas

			328.91	on Pav. 13+08.3
13+25	New Δ	on Pav	4.48	
+53.2		" "	4.68	
+75			4.80	
+90.5			4.78	
"	8.5 Rt.	Top Tel. M.H.	5.08	
14			4.74	
+07	S edge Pav.		4.83	
14+37.0	Δ 22° 57' Rt.		5.4	

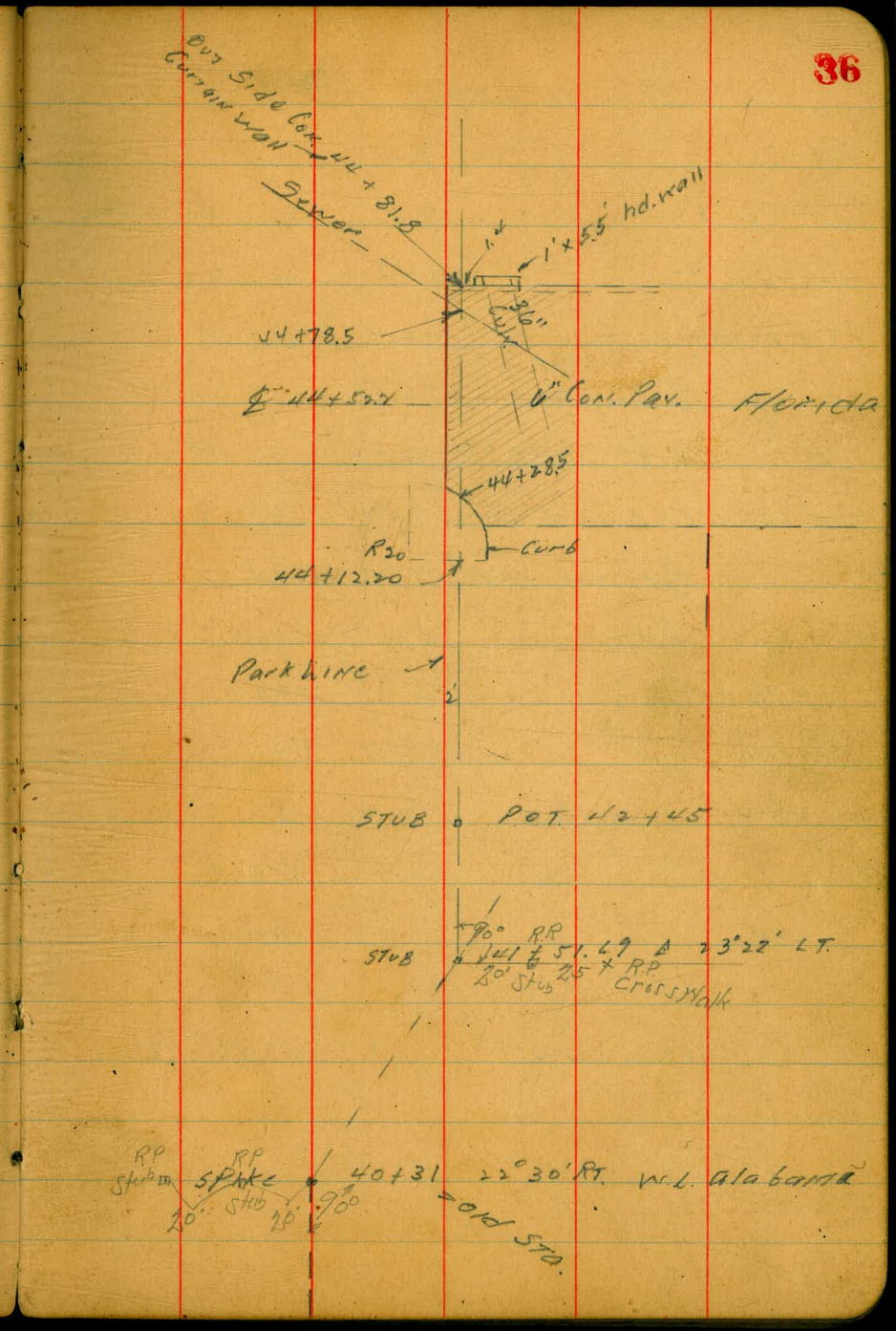
8-10-39



30" Water

Align. Change Alabama W/y.

T.P. P.5	5.39	248.57		243.18	
41 +51.69			12.9	247.28	STUB
42			5.7	242.9	
+45			10.34	238.23	STUB
+47	℄ Euc'l Tree		16" diam.		
T.P.	0.25	236.04	12.78	235.79	
42 +59	1.5 LT.	12" Euc Tree			
+70	2' LT.	"	4.3	231.7	
+81	1.5 LT.	8"	"	"	
+90			10.0	226.0	
43	3' LT.	8" Tree			
T.P.	0.32	223.57	12.79	223.25	
43 +10	2.5 LT.	12"	"	2.2	221.4
+18	1.5 LT.	8"	"		
+40			8.3	215.3	
+61	2' LT	12"	"	12.5	211.1
T.P.	0.05	211.00	12.62	210.95	



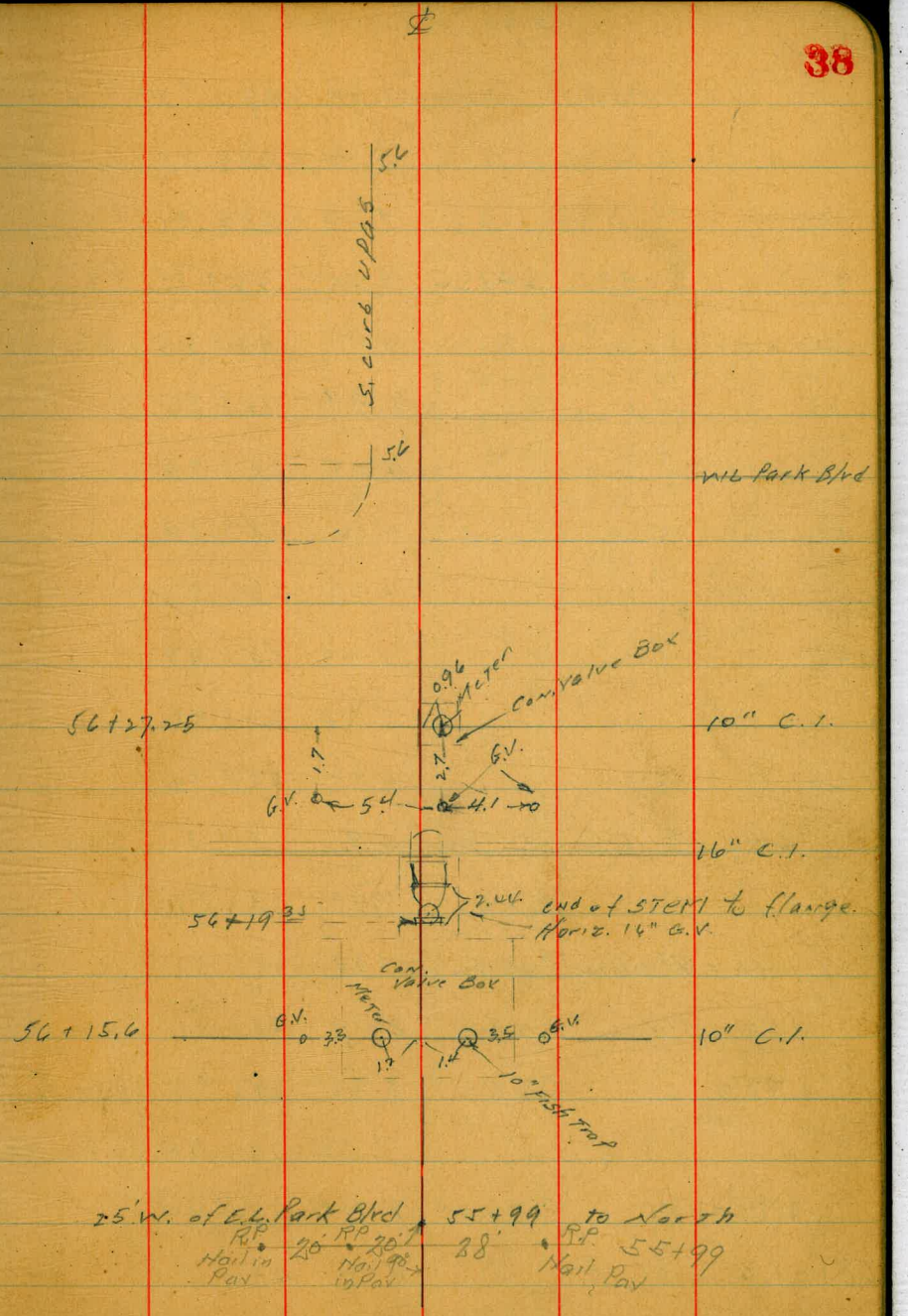
		211.00			
44			7.0	204.0	
" 6	RT		7.8	203.2	
" 10	RT		14.3	196.7	
44 + 12.4			12.4	198.8	
" "	8' RT	Top ob Re	13.50	197.5	
T.P.	0.9 4	199.08	12.84	198.14	
44 + 28.5	Top Curb Return		3.96	195.12	
" "	gutter Par		4.73	194.35	
44 + 52.4	Par		5.05	194.03	
+ 78.5	"		5.64	193.44	
+ 81.8	"		5.73	193.35	
44 + 84	creek bed		10.4	188.9	
45	"	"	11.4	187.9	
+ 20	"	"	9.1	190.0	
Top Concrete Wall			5.53	193.55	193.53

30" Water

Align. Change 55+99 Park Blvd at Upas

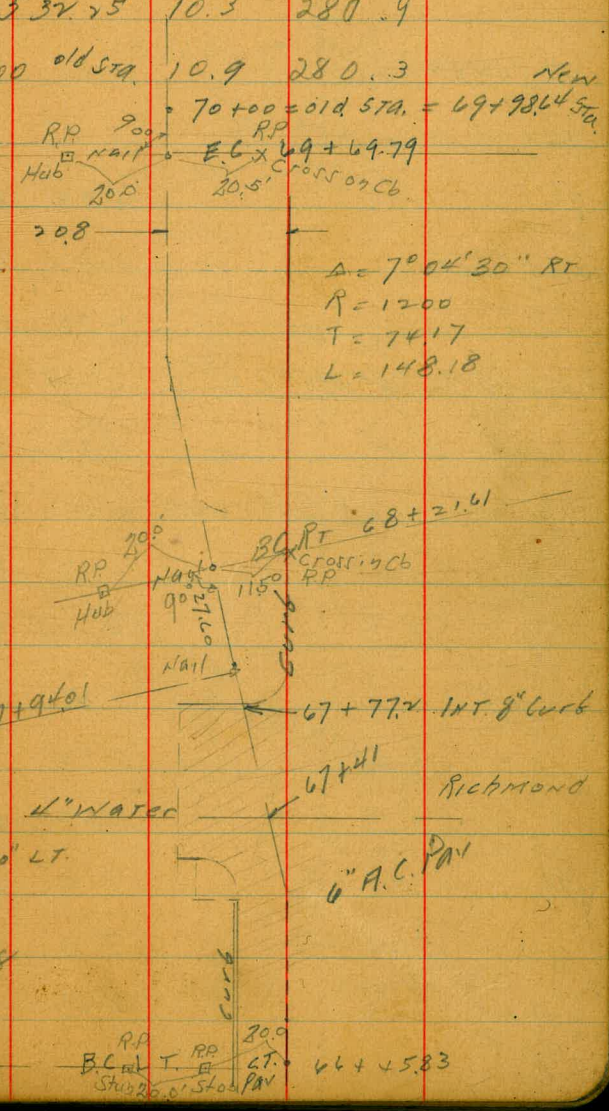
w/y to

SW13P	2.51	298.31	295.80	Upas Park Blvd
56+15.6	10" W. on Pav.	2.37	295.94	
" "	Top of 10" line	5.87	292.44	
56+19.35	on Pav.	2.36	295.97	
" "	Ctr. of 16" Valve Stem	4.36	291.97	℄ of =16" Line
56+27.25	Top Pav	2.35	295.96	
" "	Top of 10" Line	6.00	292.31	
+50	Pav.	2.65	295.66	
57	"	3.26	295.05	
+50	"	3.93	294.38	
58	"	4.50	293.81	
+50	"	5.04	293.27	
59	"	5.58	292.73	
+50	"	6.11	292.20	
60	"	6.68	291.63	
+50	"	7.31	291.00	



		298.31			
41	Pav		7.74	290.55	
+50	"		8.40	289.91	
42	"		9.00	289.31	
T.P	1.93	291.24	9.00	289.31	
+50	Pav		2.44	288.80	
43	"		2.99	288.25	
+50	"		3.54	287.70	
44	"		4.10	287.14	
+50	"		4.72	286.52	
45	"		5.27	285.97	
+50	"		5.78	285.46	
46	"		6.38	284.86	
+45.83 BC LT.			6.9	284.3	Pav
47		1°17.6	7.47	283.77	"
+41 = 4" Water		2°16.5	7.93	283.31	"
+50		2°29.2	8.03	283.21	"
+77.2		3°08.2	8.35	282.89	Out Pav.
"		"	7.50	283.74	Top 6
+940 EC		3°32.25	7.80	283.44	
68+21.61 = BC RT.			8.3	282.9	

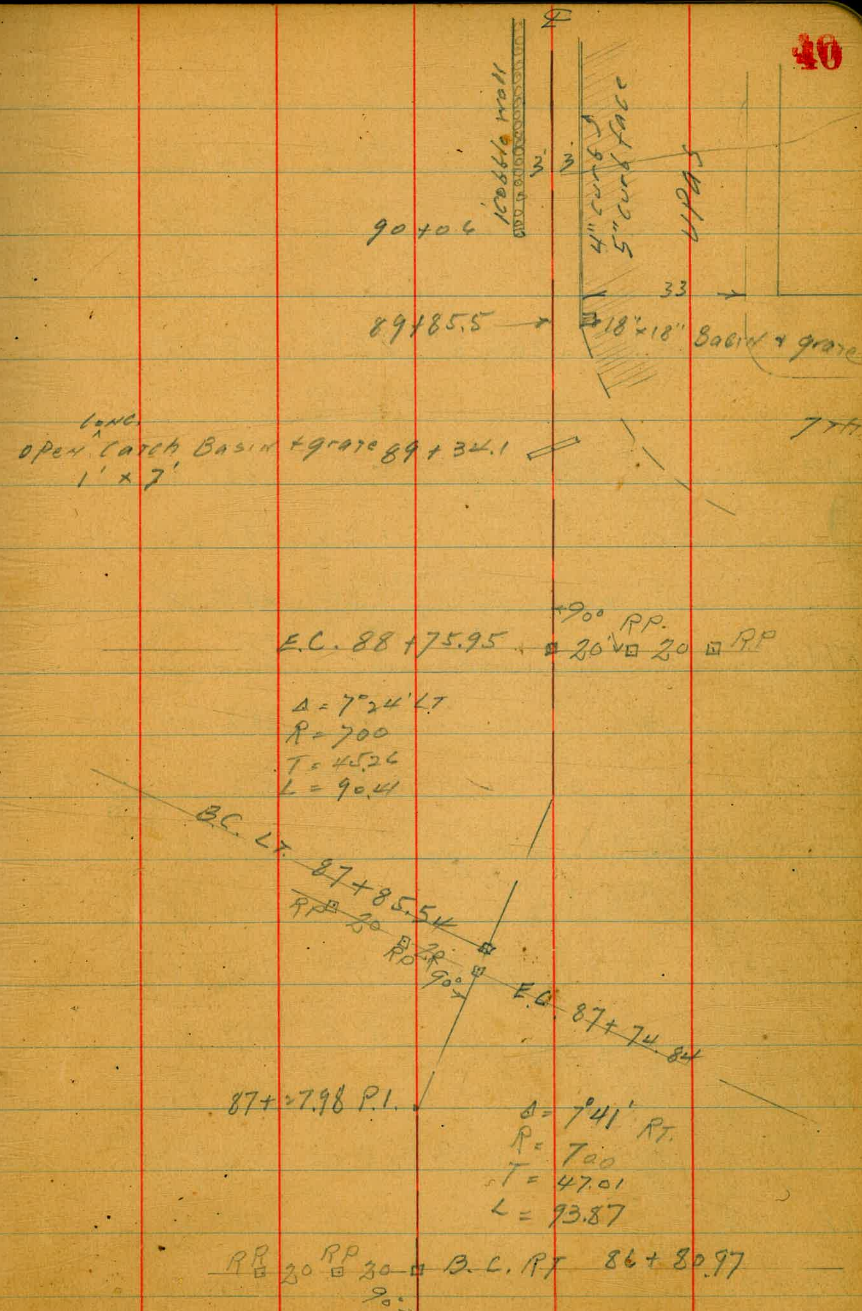
		291.24		
68+50	0°46.66	8.5	282.7	
69	1°52.3	9.2	282.0	
+50	3°03.9	9.8	281.4	
69+69.79 E.C.	3°32.25	10.3	280.9	
69+98.64 = 70+00 old Sta.		10.9	280.3	New



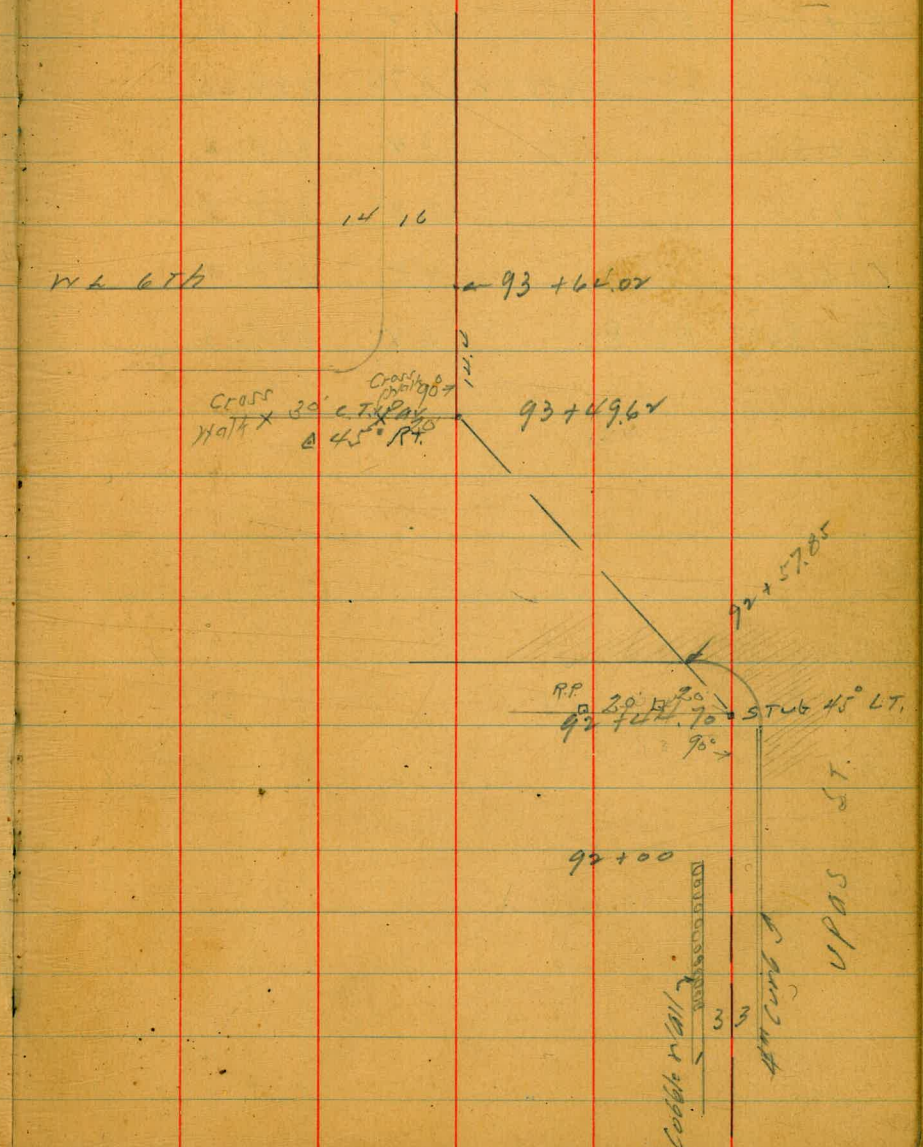
30" Water Align. Change

86+80.97 B.C. to W.L. 6th St.

SWBP	6.00	294.86		288.86	6th & Upas
93+64.07	W.L. 6th		6.00	288.86	Pav
93+49.64	= 45° Rt.		5.87	288.99	"
93			5.20	289.66	"
+57.85			5.06	289.80	gut "
"			4.70	290.16	Top 4" cb.
92+44.70	Δ 45° Lt.		4.79	290.07	
"	3' N		4.73	290.13	" "
92+00	end Cobble wall		5.0	289.9	
"	3' N		4.97	289.89	" "
"	3 S		4.20	290.66	" wall
+50			5.8	289.0	
"	3 N		5.90	288.96	Top cb
"	3' S		4.02	290.84	" wall
91			7.0	287.8	
"	3 N		7.0	287.8	cb
"	3 S		4.47	290.39	Top wall



		≈94.86			
90+50			9.3	285.6	
"	3' N.		9.4	285.62	c6
"	3 S		7.81	287.05	wall
T.P.	0.85	≈85.87	9.4	≈85.02	
90+04			≈.3	283.6	
"	3' N.		≈.36	282.51	c6
"	3 S		1.71	284.16	end wall
89+85.5			3.≈	282.7	
"	3' N		3.23	282.64	c6
"	"		3.86	282.01	grate
"	" FL.	inlet 12" Pipe	5.07	280.80	
89+.50			4.9	281.0	
1 34.10	Top 1'x3' grate		5.94	279.93	
89+00			8.0	277.9	
88+75.95	E.C.		10.10	275.77	
T.P.	0.93	≈76.70	10.10	≈75.77	EC Stub
88+50			3.≈	273.5	
88+≈5			6.0	270.7	



		276.70		
88			7.0	269.7
87+85.5	B.C. LT		7.9	268.8
87+77.8	E.C.		8.2	268.5
T.P.	3.4	271.4	8.70	268.00
87+50			3.4	268.2
87+25			3.5	267.9
87+00			4.0	267.4
86+80.97	B.C. R.		6.1	265.3

Upas St. Pipe Line
Levels on Stubs 6' North of ℄
Sta 79 to 84

BM	10.03	198.55		188.52	on Stub 84+48.18 9193-24
83+91.66	on Stub		13.3	185.3	
83+58.33	" "		14.7	183.9	
83+15	" "		10.3	188.3	
82+82.5	" "		2.2	196.4	
TP	12.62	211.02	0.15	198.40	
82+50	on Stub		4.8	206.2	
TP	12.95	223.70	0.27	210.75	
82+0	on Stub		5.8	217.9	
TP	12.97	236.58	0.09	223.61	
81+50	on Stub		7.7	228.9	
TP	12.32	248.74	0.16	236.42	
81+0	on Stub		9.7	239.0	
80+50	" "		1.4	247.3	
TP	12.48	261.12	0.10	248.64	
80+0	on Stub		7.7	253.4	256.2
79+70	" "		4.0	257.1	
79+40	" "		0.9	260.3	

Nov. 14-39
Sisson
Northern
Osborne

		261.12			
79+15	on Stub		1.26		
TP	3.08	262.94	1.26	259.86	
BM			2.06	260.88	on R.P. Hub 20 N 78+44.53

Grades 7th to 6th on Upas

clear 11/16/39 Hill Soper Remon

	+ s	H.I.	− 's	Elev.	Grade	Cut	
B.M.	4.20	293.06		288.86			Brass plug S.W. cor. 6th + Upas
90+00-3' offset (on curb)			9.8	283.3	278.6 ~~279.0~~ ~~279.0~~	~~4.7~~ ~~5.7~~ 4.3	
90+50-3' offset			7.4	85.7	281.25	4.45 ✓	
91+00-3' offset			5.2	87.9	283.5	4.4	
91+50-3' offset			4.1	89.0	284.5	4.5 ✓	
92+00-3' offset			3.1	90.0	285.5	4.5	
92+44.2-3' offset			2.9	90.2	285.5	4.7 ✓	

Line change Alabama-Florida

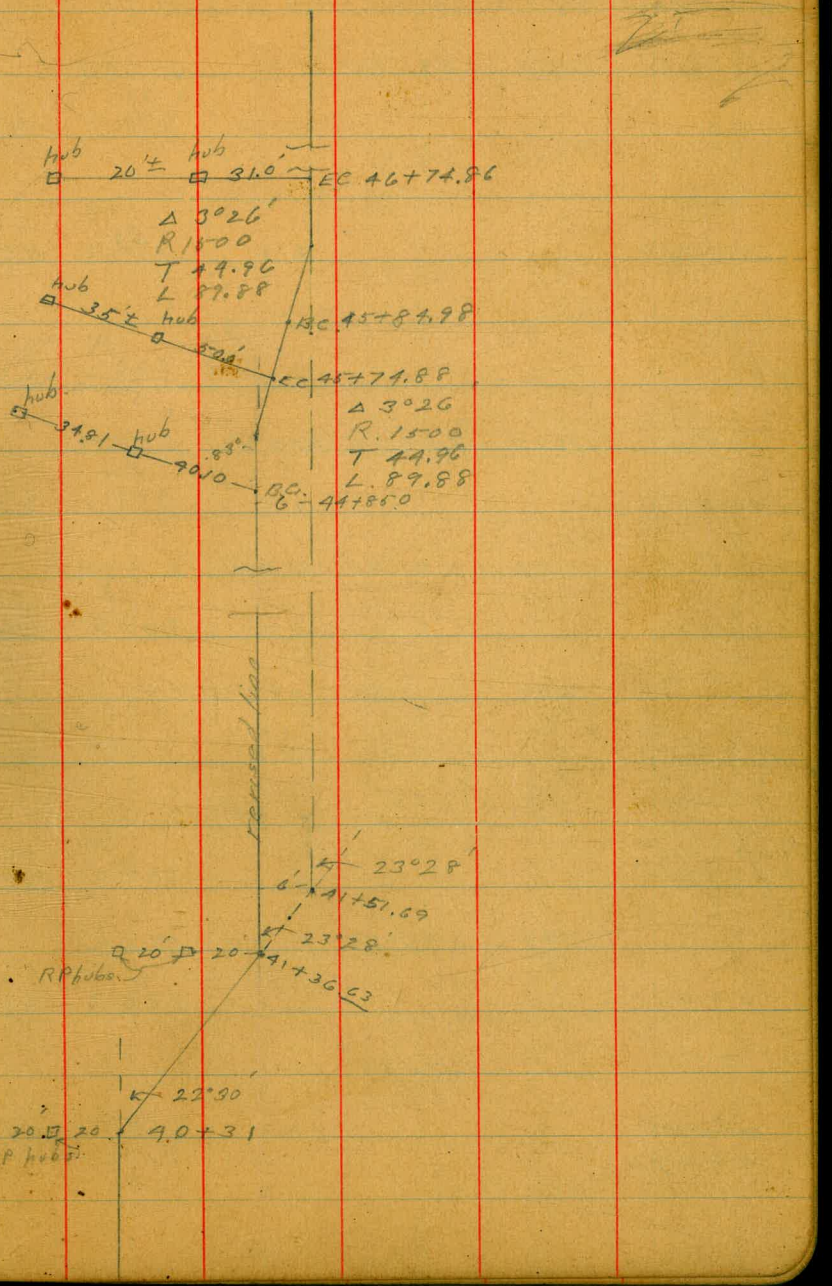
BM.	8.1	255.38		247.28	41+51.69 Hub
	~~46°56'~~ 23°38'L	~~1506 E from △~~			
41+36.63 = PI			4.9	250.5	
+50			5.5	249.9	
+90			9.3	246.1	
42			10.9	244.5	
+15			13.4	242.0	
+40			16.3	239.1	
BM.	11.68	205.07		193.39	
44+00			0.7	204.4	
+19			5.8	199.3	
+24			6.5	98.6	
+28			10.8	94.3	
+50			10.9	94.2	
+75			11.3	93.8	

Hill
Soper
Remmen

11/18/39 clear

Rim M.H. 32'R 44+58

		205.07		
44+80 Top Wall			11.4	193.7 ✓
TP	5.43	198.72 ✓	11.78	193.29 ✓
44+81.5 Toe of Wall			8.7	190.0 ✓
44+85.00 B.C.			9.1	89.6 ✓
45+00			9.0	89.7 ✓
+45			9.1	89.6 ✓
+50			8.1	90.6 ✓
45+74.88 E.C.			5.9	92.8 ✓
45+84.98 B.C.			5.0	93.7 ✓
46+00			2.2	96.5 ✓
TP	12.55	211.20 ✓	0.07	198.65 ✓
TP	13.12	224.02 ✓	0.30	210.90 ✓
46+50			10.5	13.5 ✓
46+74.86 E.C.			0.8	23.2 ✓



Levels over benched section - Park Bvld car line east to Florida St.

Hill Remmen 11/24/39 clear

BM.	3.57	296.75		293.18			E. rail E. trk. Park Bvld line					
5-2			3.5	293.3	287.1	6.2	93.7 / 57.1 / 6.1		ground	grade		
5-1 +50			2.8	294.0	285.7 ~~290.0~~	ve. 8.3	94.5 / 88	51+75	293.2	286.5	6.7	
5-1			7.6	289.2	281.5 ~~282.5~~	ve. 5 7.7	89.1 / 74	88.3 / 81.7 / 6.6	51+25	291.2	284.3	6.9
TP.	0.83	284.68	12.90	283.85					50+75	285.4	277.0	6.4
5-0 +50			5.6	279.1	271.5	7.6	76.8 / 71.5 / 5.3					
TP.	0.28	271.94	18.02	271.66								
5-0			6.3	265.6	259.8 ~~260.6~~	ve. 5.8 5.1	65.0 / 59.8 / 5.2					
TP	0.01	258.99	12.96	258.98								
4-9 +50			9.3	251.7	244.8 ~~245.7~~	ve. 6.0	51.6 / 5.9	289.2 / 3.7 / 292.9 / 7.5 / 285.4	294.0 / 5.6 / 297.6 / 6.4 / 291.2	294.0 / 6.0 / 300.0 / 4.8 / 295.2		
TP	0.41	246.42	12.98	246.21								
4-8 +95			12.0	234.4	227.5 ~~232.1~~	ve. 5.9 6.9	34.5 / 7.0					
TP.	0.92	234.39	12.95	233.47								
4-8 +50			11.1	223.3	217.5 ~~218.6~~	ve. 5.8	23.4 / 5.9					
TP.	1.25	222.58	13.06	221.33								
~~4-8 +25~~ 4-8 +20			3.9	~~218.7~~ 218.3	210.8	7.5						

		222.58			
48+00			5.5	217.1	210.8
47+50			5.8	216.8	210.7
+25				216.7	210.0
47			7.4	215.2	208.3
T.P.	0.24	215.47	7.35	215.23	
46+74.86 E.C.			2.2	213.3	206.6
46+50			6.0	210.5	202.4
T.P.	0.58	203.19	12.86	202.61	
+20				205.2	197.3
46			3.6	199.6	193.8
45+74.28 E.C.			9.9	193.3	190.2
45+50			12.8	190.4	187.2
+20				189.7	185.1
45			14.0	189.2	183.9
44+85			~~14.7~~	~~188.8~~ 188.2	183.0

6.3	217.1 48+00	1.4 S	217.1 48+08	3.1 S
6.1	218.5 H.I.	9.8 S	220.2 H.I.	10.0 S
	208.7 S. end cult. (top)		210.2 N. end 24" conc. cult. (top sta. 48+03±	
6.7				
6.9				
	Sta. 47+00 8 bolts pcg			
7.7				
8.1				
7.9				
5.8				
3.1				
3.2				
4.6				
5.3	℄ elev. 1.0 higher			
5.2	℄ elev. 1.5 higher			

		203.19 ✓		
44+81	bot. wall		13.1	190.1 ✓
44+80	Top wall		9.5	193.7 ✓
44+65	W. side oiled road		9.2	194.0 ✓
44+58	32'R		9.9	193.3 ✓
44+38			8.9	194.3 ✓
44+29			8.6	194.6 ✓
TP	5.50	208.69 ✓	0.00	203.19 ✓
43+70			0.0	208.7 ✓
44+58	32'R		4	193.3 ✓

check on M.H. Moores notes = El. 193.39

				Gr. elev.	Grade	Cut	
M.H. inst.			7.76	193.47			
44+80			7.9	193.3	182.75	10.6	93.7 / 82.8 / 10.9
44+60			7.3	193.9	185.0	8.9	94.0 / 85.0 / 9.0
44+20			4.9	196.3	190.5 ~~189.5~~	5.8	~~97.9~~ / 90.4 / 7.
TP	1.06	201.23	12.58	200.17			
43+80			5.9	206.9	198.2	8.7	107.5 / 98.2 / 9.3
	0.56	212.75	12.79	212.19			
43+30			7.7	217.3	209.0	8.3	17.4 / 09.0 / 8.4
T.P.	0.41	224.98	13.07	224.57			
42+90			11.6	226.0	217.4	8.6	26.2 / 17.4 / 8.8
T.P.	0.56	237.58	13.02	237.02			
42+40			12.4	237.6	228.0	9.6	39.0 / 28.0 / 11.0
42+15					232.7 236.7 VC		42.0 / 32.7 / 9.3
41+90			5.6	244.4	~~238.6~~	7.7	~~44.4~~ / 36.7 / 7.8; 46.1 / 36.7 / 9.4
41+65					240.3	50.6	48.4 / 40.3 / 8.1
T.P.	0.91	250.04	12.71	249.13			50.6 / 43.5 / 7.1
41+36.63 ~~41+40~~			12.4	249.4	243.5 ~~243.1~~	5.9	
		261.84					

13.75 40

19.23

99.3

244.40 41+90
6.37
HI 250.77
13.17
237.60

250.77
9.20
241.57
232.7
C. 8.9 42+15

250.77
3.3
247.47
240.30
C. 7.17 41+65

41+00			8.6	253.2	247.2		6.0	53.4 47.4 6.0		
40+60			5.1	256.7	251.4		5.3	57.5 51.4 6.1	260.1 5.7 265.8 4.6 261.2	
40+31			2.1	259.7	254.0 V.C. 254.6 Br		5.7	59.4 53.0 5.4		
Cor. C/R 40+21	2.39	261.84		259.45						
39+71				261.2	256.5		4.7	60.4 55.5 4.9		
40+00					255.53					

BM	13.06	272.67		25-9.45			Pave. 6'R 40+21	
40+00			12.4	260.11 ✓			60.3	
39+71 Brk.					256.5		61.8 56.8 5.0	
39+50			9.9	262.61 ✓	257.8 ✓	4.8 ✓	63.9 57.8 6.1	
39			6.8	265.7 ✓	261.0 ✓	4.7 ✓	66.3 61.3 5.0	
38+50			5.0	267.5 ✓	262.5 ✓	5.0 ✓	68.1 63.1 5.0	
38			3.2	269.3 ✓	264.1 ✓	5.2 ✓	69.6 64.1 5.5	
37+50			1.5	271.0 ✓	265.6 ✓	5.4 ✓	71.1 65.7 5.4	
37			0.2	272.3 ✓	267.2 ✓	5.1 ✓	72.6 67.5 5.1	
T.P.	10.24	282.63	0.2	272.39	267.5		72.7 67.7 5.0	
36+90 Brk.								73.7
36+50			9.6	273.0	268.0 ✓	5.0 ✓		68.0 5.7
36			8.9	273.7 ✓	268.7 ✓	5.0 ✓	74.5 68.7 5.8	

N.B. Trench excav. 0.3 below grade from 36+00 easterly to 27+00

		282.63						
35+50			8.2	274.4	269.3	5.1	75.4 69.3 6.1	
35			7.6	275.0	270.0	5.0	75.6 70.0 5.6	
34+50			6.8	275.8	270.6	5.2	76.7 70.5 6.2	
34 Brk.			6.2	276.4	271.25	5.1	76.6 71.3 5.3	
33+50			5.5	277.1	271.5	5.6	78.3 71.5 6.8	
33			5.1	277.5	271.8	5.7	77.6 71.8 5.8	
32+50			4.6	278.0	272.0	6.0	78.1 72.0 6.1	
32			4.3	278.3	272.3	6.0	78.4 72.3 6.1	
31+60 Brk.					272.50		78.5 72.9 5.9	
31+50			3.9	278.7	272.6	6.1	78.6 72.6 6.0	
T.P.	6.18	284.82	3.99	278.64				

		28+82									
31				5.7	279.1 ✓	272.9 ✓	6.2 ✓	79.7 72.9 6.3			
30+50				5.3	279.5 ✓	273.3 ✓	6.2 ✓	79.6 73.4 6.3			
30+25 Brk.						273.50			79.8 73.5 6.3		
30				4.7	280.1 ✓	273.6 ✓	6.5 ✓	80.1 73.6 6.4			
29+50				4.2	280.6 ✓	273.7 ✓	6.9 ✓	80.1 73.7 6.8			
29 Brk.				4.9	279.9 ✓	273.75 ✓	6.1 ✓	80.0 73.8 6.2			
28+50 Brk.				7.0	277.8 ✓	272.50 ✓	5.3 ✓	78.5 73.5 5.0			
28				9.4	275.4 ✓	270.2 ✓	5.2 ✓	75.7 70.3 5.0			
T.P. 27+50	212	12/6/39 Hill-Remmon 235.07		11.87	272.95 ✓	268.0 ✓	5.0 ✓	73.0 68.0 5.0			
27				9.6	270.5 ✓	265.7 ✓	4.8	70.6 65.9 4.9			
26+90 Brk.						265.25		70.4 65.8 4.8			
26+50				5.7	269.4 ✓	264.75 ✓	4.6	69.8 65.2 4.6			
26+30 Brk.						264.50		69.2 64.7 4.5			

		275.07										
2C			7.6	267.5 ✓	263.1 ✓	4.4	67.8 63.4 4.4			275.03 11.27 263.76		
25+50			9.8	265.3 ✓	260.7 ✓	4.6	65.9 60.4 5.4					
25+35 Brk.					260.00		65.3 5.3					
25			10.8	264.3 ✓	259.4 ✓	4.9	64.5 5.1					
24+50			11.5	263.6 ✓	258.6 ✓	5.0	63.1 58.6 4.5			22+90	261.3 10.1 271.4 H.I. 6.4	
										21+75	266.0	
24			12.2	262.9 ✓	257.8 ✓	5.1	63.5 57.8 5.7				271.4 4.7	
										21+50	266.7	
23+50			12.9	262.2 ✓	257.0 ✓	5.2	62.7 57.0 5.7				271.4 2.5	
TP	12.63	275.03	12.67	262.40						21+25	268.9	
22+90			13.7	261.3 ✓	256.0 ✓	5.3	✓				271.40 .07 TP. 271.33 13.11	
22+50			11.2	263.8 ✓	257.4	6.4	64.0 57 6.6				284.44 H.I. 11.20	
										21+00	273.24 268.6 4.6	
22			9.9	265.1 ✓	259.2	5.9	✓					
21+75				266.0	260.4 EC	5.6	64.0 60.4 3.6				284.4 0.7	
21+50			8.3	266.7 ✓	262.1 EC 260.7	4.3 5.6	64.1 62.4 1.7				283.7 276.3	
21+25				268.9	265.2	3.7	64.7 62.2 0.5 Fill			20+50	7.4	

		276.03						
21			+0.1	275.1	268.6	6.5	72.7 68.6 4.1	
T.P.	12.71	287.68	0.06	274.97				
20+50			3.8	283.9	276.3	7.6	82.5 76.3 6.2	
T.P.	10.79	298.15	0.32	287.36				
20+20			9.5	288.7	281.0	7.7	86.7 81.0 5.7	
20			8.8	289.4	283.2	6.2	✓	N.B. Trench excavated 0.5 below grade from 19+75 to 21+50.
19+70					286.5		93.6 86.5 7.1	
19+50			2.4	295.8	289.5	6.3	96.4 89.5 6.9	
20+19 6'R		—	10.37	287.78			Top of C.B.	
		12/19/59	Hutt-Rennie					
18+22.5-6'R	1.73	315.45		313.72			L. end concr. para	
19			12.4	303.1	297.0	6.1	303.6 297.0 6.6	
18+50			4.9	310.6	304.2	6.4	11.3 4.2 7.1	
18			0.1	315.4	309.4	6.0	16.0 09.4 6.6	
T.P.	12.86	328.24	0.07	315.38				
17+50			8.9	319.3	313.1	6.2	19.7 13.1 6.6	

		328.24				
17			5.1	323.1	316.4	6.7 ✓ 22.7 16.3 6.
16+50			4.1	324.1	318.1	6.0 ✓ ✓
16			2.9	325.3	319.1	6.2 ✓ 25.7 19.1 6.
15+50			2.2	326.0	320.0	6.0 ✓ 25.9 19.9 6.
15			1.5	326.7	321.0	5.7 ✓
14+50			0.7	327.5	321.05	6.4 ✓
14+22.6			0.1	328.1	321.1	7.0 ✓ 28.3 21.1 7.2
TP	6.28	334.22	0.30	327.94		
13+50			5.5	328.7 ✓	321.2	7.5 ✓
13+25 Brk.			5.3	328.9 ✓	321.25	7.6 ✓
13+00			5.4	328.8 ✓	321.8	7.0 ✓ 28.9 21.8 7.1

		334.22					
12+50			5.2	329.0	322.9	6.1 ✓	29.9 / 23.2 / 6.7
12+25 Brk.					323.50		29.4 / 23.5 / 5.9
12			5.0	329.2	323.6	5.6 ✓	29.3 / 23.6 / 5.7
11+50 (in alley)			5.3	328.9	323.7	5.2 ✓	29.5 / 23.7 / 5.8
11			4.5	329.7	323.9	5.8 ✓	
10+50			4.3	329.9	324.1	5.8 ✓	
10 Brk.			4.0	330.2	324.25 05	6.1 ~~5.9~~ ✓	30.2 / 24.3 / 5.9
9+50			4.1	330.1	323.85 ~~324.1~~	6.2 ~~6.0~~ ✓	29.9 / 24.1 / 5.8
9+25 Brk.			4.4	329.8	323.5 ~~324.00~~	6.3	29.6 ✓ / 24.0 / 5.6
T.P.	2.25	332.18	4.29	329.93			
10+00 ℄			1.90	330.28			Check on ℄ parc. elev 330.29
9			1.8	329.4	323.2 ~~323.5~~	6.2 ~~5.9~~ ✓	29.3 / 23.1 / 6.2

		332.18					
8+50 Brk.			5.5	328.7	322.50	6.2 ✓	286 .225 6.1
7+90 Brk.			4.1	327.8	321.50	6.3	278 .215 6.3
7+50			4.9	327.3	320.9	6.4 ✓	
7			5.6	326.6	320.2	6.4 ✓	
6+65 Brk.			6.5	325.7	319.75	5.9	267 .198 6.4
6			6.7	325.5	319.1	6.4	.252 .191 6.5
5+60			7.1	325.1	318.75	6.3	.247 .184 6.4
5+00			8.1	324.1	318.3	5.8	.240 .183 6.3
4+40			8.6	323.6	317.75	5.8	.240 .178 6.2
T.P.	6.33	329.98	8.53	323.65			
4			6.9	323.6	317.75	5.8	.237 .176 6.1

	329.98						
3+40 Brk.		6.0	324.0	318.1 317.75	5.9	24.0 17.8 6.2	
3		5.6	324.4	318.1	6.3	24.3 18.1 6.2	
2+50		5.0	325.0	318.6	6.4	25.3 18.6 6.7	
2		4.0	326.0	319.1	6.9	25.8 19.1 6.7	
1+50		3.6	326.4	319.6	6.8	26.2 19.6 6.6	
1		3.3	326.7	320.1	6.6	26.6 20.1 6.5	NB. Trench excavated 0.3 below grade from 0-03 to 13+25.
0+50		3.1	326.9	320.5	6.4	26.8 20.5 6.3	
0+00		2.8	327.2	321.0	6.2		
0+16 End Brk		2.91	327.07				

1/16/40
Hill
Soper
Remmen

61

Profile of Sand Backfill Sta 40+31 to Sta 21+05

40+21-6 Ft. Pav.	10.61	270.06 ✓		259.45
40+31			12.8	57.3
40+00			11.5	58.6
39+71			10.5	59.6
39+50			9.1	61.0
39+00			6.1	64.0
38+50			4.6	65.5
38+00			3.0	67.1
37+50			1.2	68.9
TP	9.90	279.93 ✓	0.03	270.03 ✓
37+00			9.8	70.1
36+50			9.1	70.8
36+00			8.5	71.4
35+50			7.7	72.2
35+00			7.2	72.7
34+50			6.5	73.4
34+00			6.0	73.9
33+50			5.9	74.0
TP	10.32	284.50 ✓	5.75	274.18 ✓

		284.50 ✓			
33+00			10.3	74.2	
32+50			9.8	74.7	
32+00			9.3	75.2	
31+50			8.9	75.6	
31+00			9.8	74.7	
30+50			9.3		
30+00			8.9		
29+50			8.6		
29+00			8.6		
28+50			9.5		
26+00			11.6		
TP	2.50	275.56 ✓	11.44	273.06 ✓	
27+50			5.5		
27+00			7.3		
26+50			7.9		
26+00			9.5		
25+50			11.6		
25+00			12.8		
TP	4.45	268.67	11.34	264.22	

Note: At this Station the sand is below the level of the top of the pipe, Easterly from Sta 31+00 to Sta. 26+00

Note: Sand over top of pipe.

offset Sta. 25+00
Rec. Elev. 264.3

		268.67			
24+50			7.1		
24+00			7.6		
23+50			8.5		
22+90			9.6		
22+50			8.4		
22+00			6.5		
21+75			5.6		
21+50			5.3		
21+25			2.1		
21+05			0.1		
			4.35		
			2.87		
			1.12		
TP	12.59	280.14	1.12	267.55	
			10.42		
			7.99		
			5.65		
			3.03		

Note; Sand is below top of the pipe from station 21+50 to 21+05

End of Sand Backfill

Top of bell of first leaded joint Sta. 21+57

		280 14				
			0.44			
TP	12.71	292.41	0.44	279.70		
			10.15			
			8.04			
Set B.M. Nail in 8"x8" post Rt Sta. 29+20						
			2.32			
					Ck on offset 20+20 Rec. Elev. 288.7	
			3.9	288.5		
TP	7.05	297.14	2.32	290.09		
			3.88	293.26	Set B.M. Lead & tack North line of Upas St. 3' offset East line Villa Terrace	

Elev's on sewer hit by trench machine

Sta 3+40	8 offs.	328.93	324.0	
3+39		11.12	317.81	top sewer
"		11.92		bt. "
3+29		6.90	322.03	Top 4" pipe
3+08		6.46	322.47	" 4" " to hydr.

Hill
Remmen
2/10/40

Levels over sand backfill from W. line 30th to sta 13+60

					Pave. subgr.	Curb sta 3+00
B.M.	6.25	329.65		324.40		
2+75			7.6	322.1	324.2	2.1 W. curb line 30th St
3+00			8.3	21.4	23.7	2.3
3+13			8.5	21.2	23.8	2.6
3+26			6.8	23.9	323.5	—
3+40			6.7	24.0	323.4	—
3+59			6.5	23.2	323.0	—
3+61			8.7	21.0	323.0	2.0
4			8.5	21.2	323.1	1.9
+40			7.9	21.8	23.4	1.6
5			8.2	21.5	24.0	2.5
+60			7.9	21.8	24.5	2.7
6			7.6	22.1	25.0	2.9
+65			6.6	23.1	25.4	2.3
7			6.1	23.6	26.0	2.4
+50			5.7	24.0	26.7	2.7
+90			4.9	24.8	27.2	2.4
T.P.	7.21	334.86	2.00	327.65		
8+50			9.0	25.9	28.0	2.1

		334.86				
9			8.1	326.8	328.7	1.9
	+25		7.5	27.4		
	+50		7.6	27.3	29.5	2.2
10			7.5	27.4	29.7	2.3
	+50		7.6	27.3	29.6	2.3
11			7.5	27.4	29.1	1.7
	+50		8.0	26.9	28.8	1.9
12			8.0	26.9	28.7	1.8
	+50		9.0	25.9	28.5	2.6
13			9.6	25.3	28.3	3.0
	+25		10.0	24.9		
	+60		10.2	24.7	28.2	3.5
			5.98	328.88		check on curb at 13+00
14+07			10.2	24.7	27.9	3.2

Levels over sand backfill sta. 20+50 to 22+90

B.M.	0.87	294.13		293.26
T.P.	0.11	281.64	12.60	281.53
20+50			2.2	79.4
21			10.3	71.3
T.P.	2.81	271.44	12.51	269.13
+25			3.3	68.1
+50			6.1	65.3
+75			7.5	63.9
22			8.3	63.1
+50			10.6	60.8
22+90			12.0	59.4
			5.45	265.99

Lead plug in S.W. NE cor. Villa Terrace & Upas

Note Sand badly washed over this section and was thrown back over pipe in places

E. side of conc. apron at Arnold St.

Check on 8" cts. hub sta. 21+75

Changes in loc. of appurtenances

84+30	24" T.
83+22	22½° B.
79+38	A.V.
78+06	11½° B.
60+59	30"x8" T. Hyd.
56+63	A.V.
55+84	A.V.
56+37	30" G.
56+22	30"x16" cross
56+05	30" G.

339.10
4.4.9
363.59

4451

8855

00175
300
.525

4.7

0

27144
5.45
266.00

4
5.25
4.75
.40

193.4
.4
193.8

193.7
.4
193.3

4
2.7
6.8

17
16)281
16
121
112
9

3+39
0+58
2+81

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+.089 =1.597 cu. yds. or practically 160 cu. yds. per 100 ft. If w exceeds 40 ft., use one half and multiply result by 2, if both w and h are large use one half of each and multiply result by 4. Any cross-section may be divided into triangles by the following rule. To the triangle of the sum of the outside cuts (or fills) =h, and ½ the roadbed =w, add the triangles formed by taking the distance out to each break in turn (=w's) by the difference between the cuts (or fills) on each side of it (=h's) always subtracting the outer from the inner.

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.