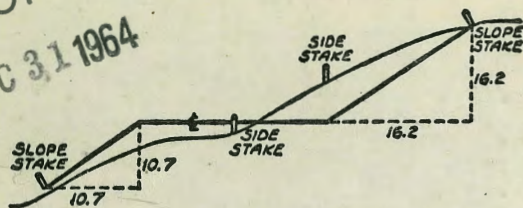


2040

Alvarado
Canyon Sewer

MICROFILMED
DEC 31 1964



50°-12'
780
= 5' back
+ 6' off

DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING
SLOPE 1 TO 1. ROADWAY OF ANY WIDTH

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	0
1	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	1
2	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	2
3	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	3.90	3
4	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	4
5	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	5
6	6.00	6.10	6.20	6.30	6.40	6.50	6.60	6.70	6.80	6.90	6
7	7.00	7.10	7.20	7.30	7.40	7.50	7.60	7.70	7.80	7.90	7
8	8.00	8.10	8.20	8.30	8.40	8.50	8.60	8.70	8.80	8.90	8
9	9.00	9.10	9.20	9.30	9.40	9.50	9.60	9.70	9.80	9.90	9
10	10.00	10.10	10.20	10.30	10.40	10.50	10.60	10.70	10.80	10.90	10
11	11.00	11.10	11.20	11.30	11.40	11.50	11.60	11.70	11.80	11.90	11
12	12.00	12.10	12.20	12.30	12.40	12.50	12.60	12.70	12.80	12.90	12
13	13.00	13.10	13.20	13.30	13.40	13.50	13.60	13.70	13.80	13.90	13
14	14.00	14.10	14.20	14.30	14.40	14.50	14.60	14.70	14.80	14.90	14
15	15.00	15.10	15.20	15.30	15.40	15.50	15.60	15.70	15.80	15.90	15
16	16.00	16.10	16.20	16.30	16.40	16.50	16.60	16.70	16.80	16.90	16
17	17.00	17.10	17.20	17.30	17.40	17.50	17.60	17.70	17.80	17.90	17
18	18.00	18.10	18.20	18.30	18.40	18.50	18.60	18.70	18.80	18.90	18
19	19.00	19.10	19.20	19.30	19.40	19.50	19.60	19.70	19.80	19.90	19
20	20.00	20.10	20.20	20.30	20.40	20.50	20.60	20.70	20.80	20.90	20
21	21.00	21.10	21.20	21.30	21.40	21.50	21.60	21.70	21.80	21.90	21
22	22.00	22.10	22.20	22.30	22.40	22.50	22.60	22.70	22.80	22.90	22
23	23.00	23.10	23.20	23.30	23.40	23.50	23.60	23.70	23.80	23.90	23
24	24.00	24.10	24.20	24.30	24.40	24.50	24.60	24.70	24.80	24.90	24
25	25.00	25.10	25.20	25.30	25.40	25.50	25.60	25.70	25.80	25.90	25
26	26.00	26.10	26.20	26.30	26.40	26.50	26.60	26.70	26.80	26.90	26
27	27.00	27.10	27.20	27.30	27.40	27.50	27.60	27.70	27.80	27.90	27
28	28.00	28.10	28.20	28.30	28.40	28.50	28.60	28.70	28.80	28.90	28
29	29.00	29.10	29.20	29.30	29.40	29.50	29.60	29.70	29.80	29.90	29
30	30.00	30.10	30.20	30.30	30.40	30.50	30.60	30.70	30.80	30.90	30
31	31.00	31.10	31.20	31.30	31.40	31.50	31.60	31.70	31.80	31.90	31
32	32.00	32.10	32.20	32.30	32.40	32.50	32.60	32.70	32.80	32.90	32
33	33.00	33.10	33.20	33.30	33.40	33.50	33.60	33.70	33.80	33.90	33
34	34.00	34.10	34.20	34.30	34.40	34.50	34.60	34.70	34.80	34.90	34
35	35.00	35.10	35.20	35.30	35.40	35.50	35.60	35.70	35.80	35.90	35
36	36.00	36.10	36.20	36.30	36.40	36.50	36.60	36.70	36.80	36.90	36
37	37.00	37.10	37.20	37.30	37.40	37.50	37.60	37.70	37.80	37.90	37
38	38.00	38.10	38.20	38.30	38.40	38.50	38.60	38.70	38.80	38.90	38
39	39.00	39.10	39.20	39.30	39.40	39.50	39.60	39.70	39.80	39.90	39
40	40.00	40.10	40.20	40.30	40.40	40.50	40.60	40.70	40.80	40.90	40
41	41.00	41.10	41.20	41.30	41.40	41.50	41.60	41.70	41.80	41.90	41
42	42.00	42.10	42.20	42.30	42.40	42.50	42.60	42.70	42.80	42.90	42
43	43.00	43.10	43.20	43.30	43.40	43.50	43.60	43.70	43.80	43.90	43
44	44.00	44.10	44.20	44.30	44.40	44.50	44.60	44.70	44.80	44.90	44
45	45.00	45.10	45.20	45.30	45.40	45.50	45.60	45.70	45.80	45.90	45
46	46.00	46.10	46.20	46.30	46.40	46.50	46.60	46.70	46.80	46.90	46
47	47.00	47.10	47.20	47.30	47.40	47.50	47.60	47.70	47.80	47.90	47
48	48.00	48.10	48.20	48.30	48.40	48.50	48.60	48.70	48.80	48.90	48
49	49.00	49.10	49.20	49.30	49.40	49.50	49.60	49.70	49.80	49.90	49
50	50.00	50.10	50.20	50.30	50.40	50.50	50.60	50.70	50.80	50.90	50

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Distance of slope stake from side or shoulder stake for any width roadway, slope 1 to 1. If ground is nearly level, the cut or fill at side stake is located by the double entry method in left column and top row. The number in body of table in same row and column gives distance from side stake to slope stake. If ground is not level estimate the difference in elevation between the side stake and slope stake, lower target by this amount if cut, elevate if fill. Add this amount to cut or fill and find distance in table. Set up rod at this point, and line of sight should cut target. If it does not make the slight adjustment necessary.

TABLE XIII—CORRECTIONS FOR TANGENTS AND EXTERNALS

These corrections are to be added to the approximate values, found by dividing the tangent, or external, for a 1° curve (Table VIII) by the degree of curve, in order to obtain the true tangents, or externals. Intermediate values may be obtained by interpolation.

FOR TANGENTS ADD

Central Angle	DEGREE OF CURVE													
	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°
10°	.03	.06	.09	.13	.16	.19	.22	.25	.28	.31	.34	.38	.42	.46
15°	.04	.10	.14	.19	.24	.29	.34	.39	.45	.51	.53	.58	.63	.68
20°	.06	.13	.19	.26	.32	.39	.45	.51	.58	.65	.72	.79	.84	.90
25°	.08	.16	.24	.33	.40	.49	.58	.67	.75	.83	.90	.99	1.06	1.14
30°	.10	.19	.29	.39	.49	.59	.69	.79	.89	.99	1.09	1.20	1.29	1.39
35°	.11	.22	.34	.47	.58	.69	.79	.81	.92	1.04	1.29	1.42	1.54	1.66
40°	.13	.26	.40	.53	.67	.80	.93	1.06	1.20	1.34	1.49	1.64	1.79	1.94
45°	.15	.30	.44	.60	.76	.91	1.06	1.21	1.37	1.52	1.70	1.87	2.04	2.21
50°	.17	.34	.51	.68	.85	1.02	1.19	1.36	1.54	1.72	1.91	2.10	2.29	2.48
55°	.19	.38	.57	.76	.95	1.14	1.32	1.52	1.72	1.92	2.14	2.35	2.56	2.77
60°	.21	.42	.63	.84	1.05	1.27	1.49	1.71	1.94	2.17	2.38	2.60	2.83	3.07
65°	.23	.46	.69	.93	1.16	1.40	1.64	1.88	2.13	2.38	2.63	2.88	3.13	3.39
70°	.25	.51	.76	1.02	1.28	1.54	1.80	2.06	2.33	2.60	2.88	3.16	3.44	3.72
75°	.27	.56	.83	1.12	1.40	1.69	1.98	2.27	2.57	2.87	3.16	3.47	3.78	4.09
80°	.30	.61	.91	1.22	1.53	1.84	2.15	2.46	2.78	3.10	3.44	3.78	4.12	4.46
85°	.33	.66	1.00	1.33	1.68	2.02	2.36	2.70	3.05	3.40	3.77	4.14	4.55	4.89
90°	.36	.72	1.09	1.45	1.83	2.20	2.57	2.94	3.32	3.70	4.10	4.50	4.91	5.32
95°	.39	.79	1.19	1.55	2.00	2.40	2.80	3.20	3.61	4.02	4.40	4.98	5.38	5.83
100°	.43	.86	1.30	1.74	2.18	2.62	3.06	3.50	3.95	4.40	4.88	5.37	5.85	6.34
110°	.51	1.03	1.56	2.08	2.61	3.14	3.67	4.21	4.76	5.31	5.86	6.43	7.01	7.60
120°	.62	1.25	1.93	2.52	3.16	3.81	4.45	5.11	5.77	6.44	7.12	7.80	8.50	9.22

FOR EXTERNALS ADD

Central Angle	DEGREE OF CURVE													
	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°
10°	.001	.003	.004	.006	.007	.008	.009	.011	.012	.014	.015	.017	.018	.020
15°	.003	.007	.010	.014	.018	.023	.027	.029	.032	.035	.039	.043	.047	.051
20°	.006	.011	.017	.022	.028	.034	.038	.045	.051	.057	.063	.070	.076	.083
25°	.009	.018	.027	.036	.046	.056	.065	.074	.083	.093	.106	.120	.127	.135
30°	.013	.025	.038	.051	.065	.078	.090	.103	.116	.129	.149	.170	.179	.188
35°	.018	.035	.054	.072	.086	.109	.131	.153	.175	.197	.213	.230	.247	.264
40°	.023	.046	.070	.093	.117	.141	.172	.203	.234	.265	.277	.290	.315	.341
45°	.030	.060	.093	.119	.153	.184	.216	.254	.289	.325	.351	.378	.411	.445
50°	.037	.075	.116	.151	.189	.227	.266	.305	.345	.384	.425	.467	.508	.550
55°	.046	.093	.142	.188	.236	.283	.332	.381	.420	.479	.530	.582	.641	.700
60°	.056	.112	.168	.225	.283	.340	.398	.457	.516	.575	.636	.697	.774	.851
65°	.067	.135	.204	.273	.343	.412	.483	.554	.625	.697	.771	.845	.922	1.01
70°	.080	.159	.240	.321	.403	.485	.568	.652	.735	.819	.906	.994	1.08	1.17
75°	.095	.182	.266	.353	.440	.528	.618	.707	.797	.877	.971	1.07	1.18	1.29
80°	.110	.220	.332	.445	.558	.671	.787	.903	1.02	1.13	1.25	1.38	1.50	1.62
85°	.128	.259	.391	.524	.657	.790	.926	1.06	1.20	1.34	1.47	1.62	1.76	1.91
90°	.149	.299	.450	.603	.756	.910	1.07	1.22	1.38	1.54	1.70	1.87	2.03	2.20
95°	.174	.350	.522	.706	.885	1.06	1.25	1.43	1.62	1.80	1.99	2.18	2.38	2.58
100°	.200	.401	.604	.809	1.01	1.22	1.43	1.64	1.85	2.06	2.28	2.50	2.73	2.96
110°	.268	.536	.806	1.08	1.35	1.63	1.91	2.20	2.48	2.76	3.05	3.35	3.66	3.96
120°	.360	.721	1.08	1.45	1.82	2.19	2.57	2.95	3.33	3.72	4.11	4.50	4.91	5.32

Alvarado Canyon Sewer (Final line) 1-32

" " " MH3 to MH#5 Detail line 33-35

Catactin Canyon (Reservoir Drive) 36-42

X-sec. for fill 16+80 to 17+84 44-

" " " 20+00 to 22+25 45-46

Bridge ties 47

Sewer Cosgrove Mesa Line 48-57

Sewer prolim Fairmount to Vista Pl. pump 58-61

Re-X-sec. Hilledale Rd. Pump House line 62-63

Alvarado Canyon Sewer
Rerun with new stationing

0+00 + 167+66⁶⁶

Sommermayr
McCoy
Allen
Bunch

1-9-50
N.O. 20129

Ref. books - F.B. 1629
" 1631
" 1703
" 1873
" 2003
" 205A

INDEXED

T.K.
JAN 18 1950

Sheets 1A15D to 1A21D Incl.

□ = Set 1/2 Red wood hub + disk

▣ Also = Replaced pine stub with R.W. hub + disk

✓ = checks "D" sheet

Δ^s shown in red $\frac{0^{\circ}00'}$ = change from
thus "D" sheet.

Tie outs for M.H. etc. Set 6/4/50

Note

1

Stationing throughout line
checks "D" sheets.

Δ^s corrected at following places.

M.H. # 3 - sta. 11+53.78

" # 4 - " 14+19.75

" # 5 - " 18+49.24

Δ point " 99+59.70

M.H. 24 " 100+14.76

Δ point " 100+91.63

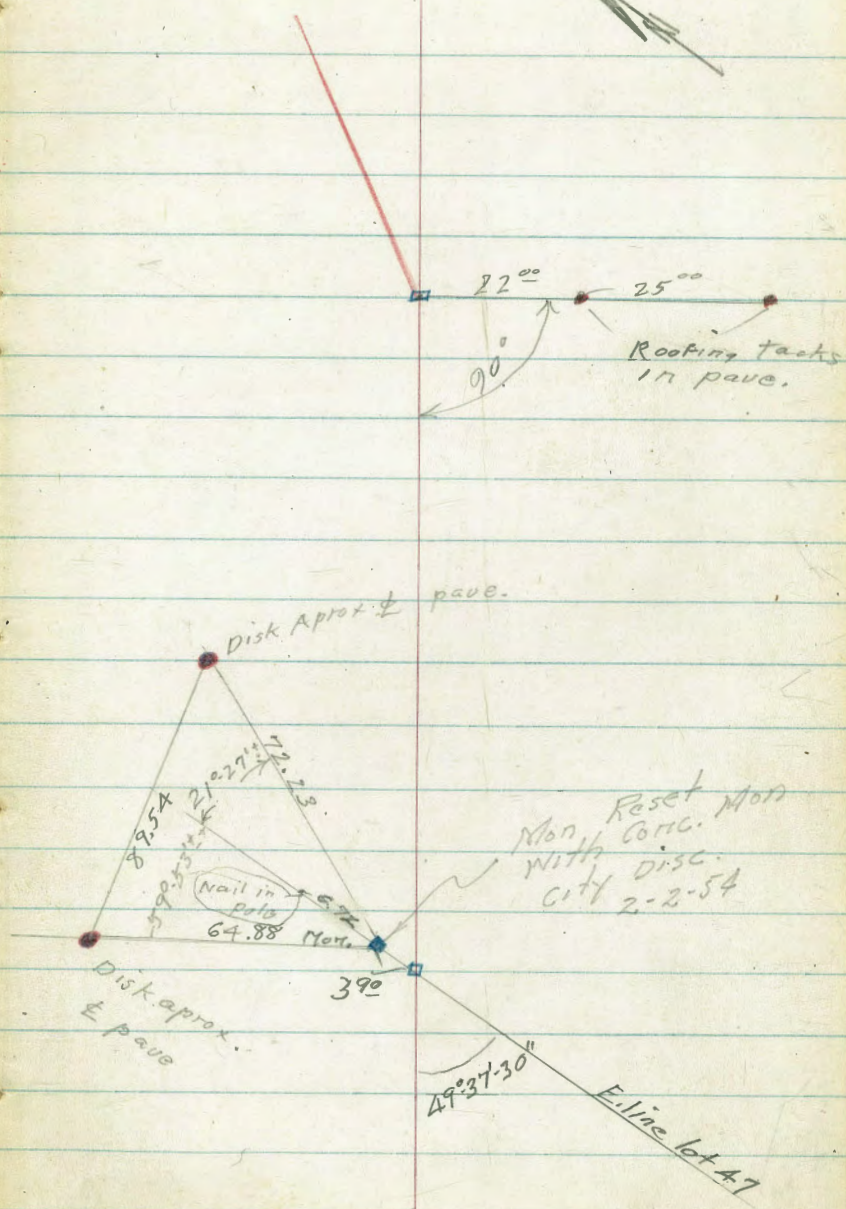
Δ shown in black are Δ^s shown
on "D" sheets. Δ^s shown in
red are Δ^s turned in field 1/1/50

Alvarado Trunk Sewer

✓ 6+91.18 Δ 15° 49' Lt. = M.H.#2

✓ 1+57.48 = M.H.#1 Δ 10° 54' Rt.

0+00 = Exist 24" pipe - (1415-D)



Mon. Reset Mon
with CONC.
CITY 2-2-54

(MH#3 to M.H.#5 = P33 to 35)
 See P. 33 for detail
 of line.

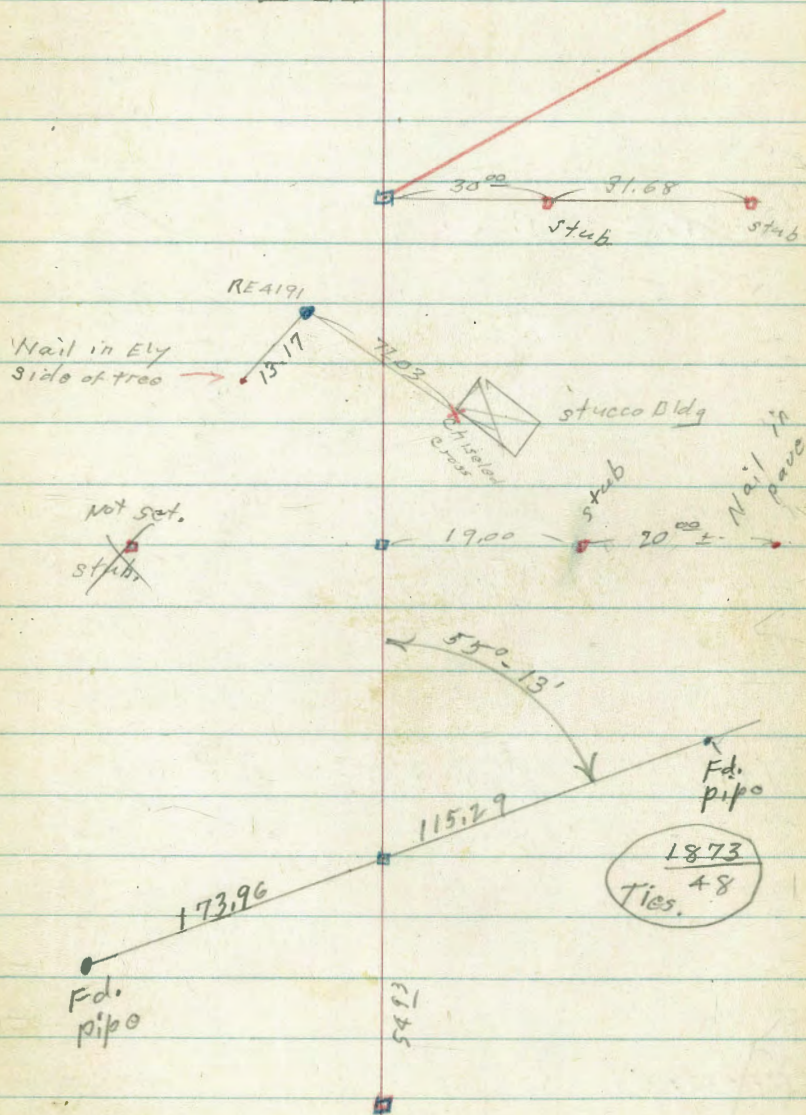
3

= M.H.#3. $\Delta 59^{\circ}-09' RT$
 $\checkmark 11+53 \overline{78} = \Delta \overline{59.39' 30 RT}$

7+89' \pm P.O.T.

7+46" = sly. line Heintzelman Ave.
 Stub.

$\checkmark 6+9/18 \Delta 15^{\circ}-49' Lt.$



M.H.#5 $\Delta 11^\circ - 42' RT$
 $18 + 49.24 = \Delta 11^\circ - 43' RT$ ∇

✓ $16 + 34.62 = P.O.T.$

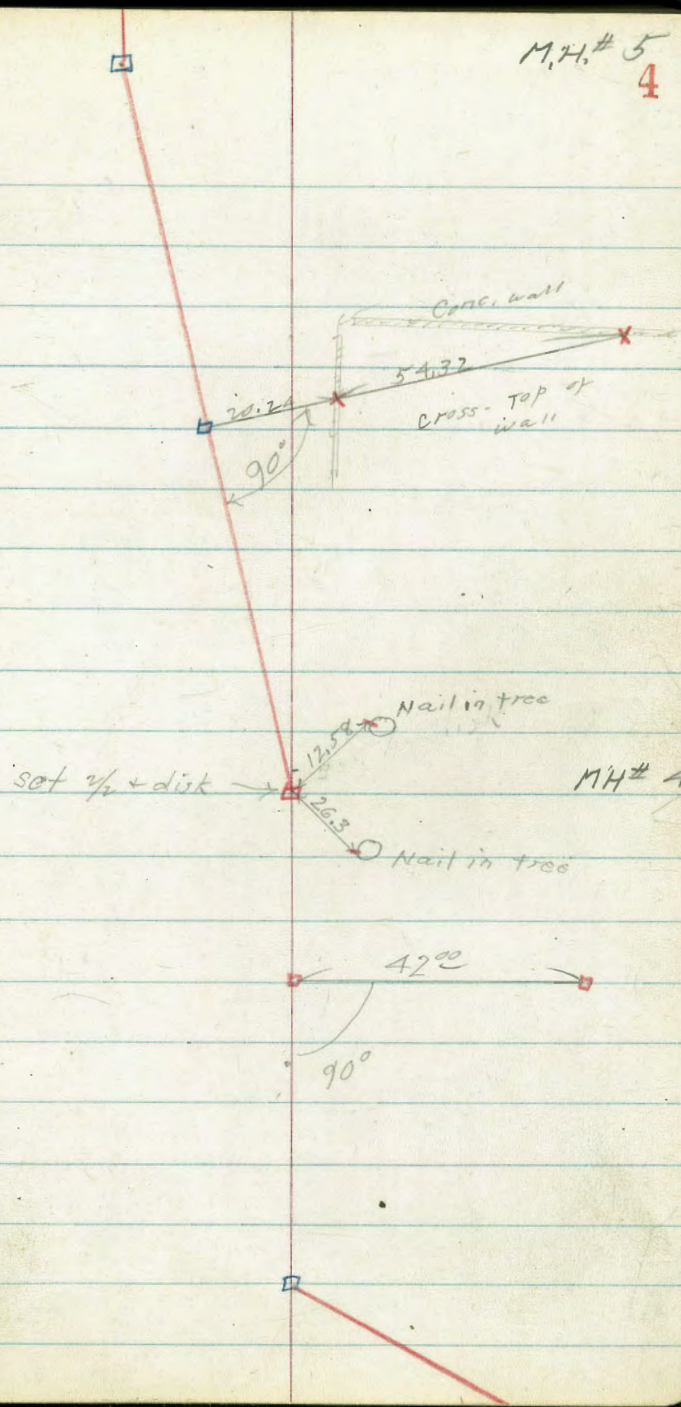
Δ Hub not found

✓ $14 + 19.75 = \Delta 11^\circ - 45' LT$
 ~~$14 + 19.75 = \Delta 11^\circ - 51' LT = M.H. \# 4$~~

$13 + 62 \pm = \frac{1}{2} + disk. P.O.T.$

$11 + 53.78$

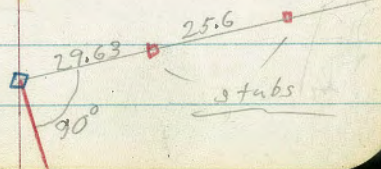
M.H.# 5
4



✓ 24 + 13⁰³ ✓ P.O.T.

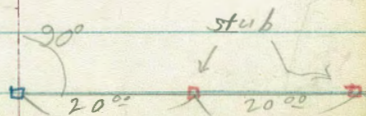
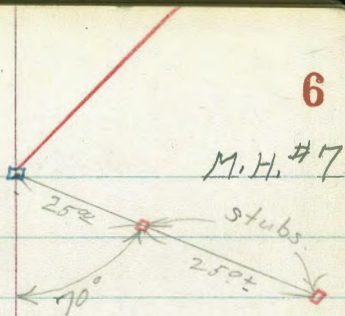
page 6
M.H.#6

18 + 49²⁴



✓ 30+08⁰³ Δ 46°-40' RT.
M.H.#7

✓ 24+13⁰³



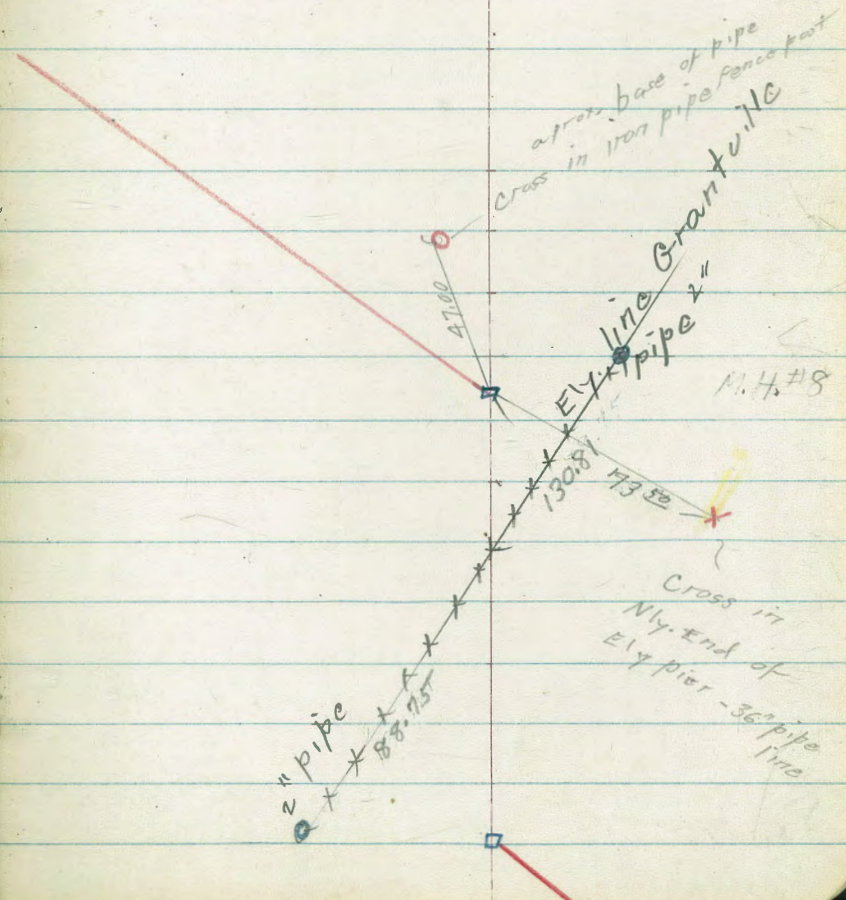
35+00

M.H.#8

✓ 32+35⁶³ Δ 54°-32' Lt.

✓ 31+33⁹⁰ = E.L. Grantville
Δ 39°-27' Rt. off E

✓ 30+08⁰³



✓ 42+50⁰⁰

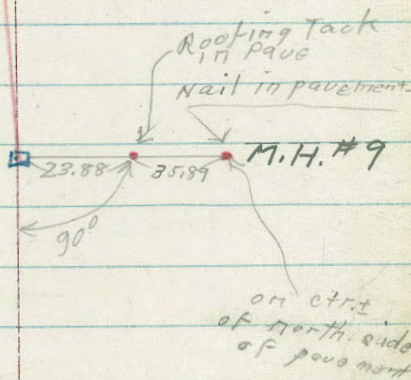
✓ P.O.T.

✓ 36+17 63 Δ 20-32' Lt.

35+00⁰⁰

8

M.H. #10



M.H.#11
✓ 48+78⁰⁰ ✓ P.O.T.

9

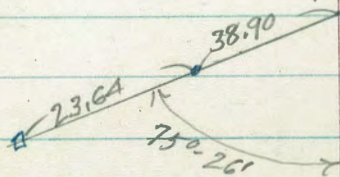
✓ 42+50⁰⁰

M.H.#12.

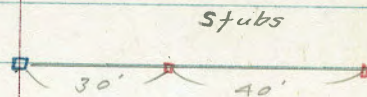
 \checkmark 53+56⁸³ Δ 7° 54' Rt

 \checkmark 52+30⁸³

 Ely. side 5' above ground.
 Nail in tree

 2x2 Hub.
 under Sycamore tree

 75-26
 14-34
 70-00
48+78⁰⁰ P.O.T.

✓ MH. #13
58+80 ⁶³ P.O.T. ✓



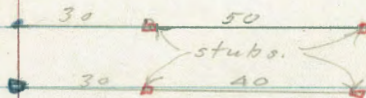
✓ 53+56 ⁸³

✓
 $64 + 30i = \text{stub P.O.T.}$

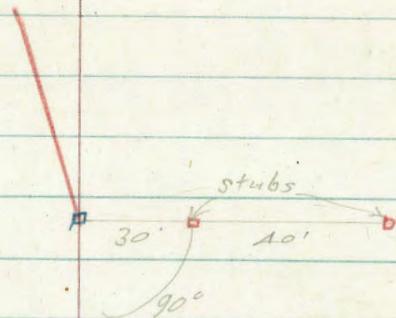
✓
 $64 + 00.63 = \text{P.O.T.} = \text{M.H.} \# 14$

✓
 $58 + 80 \overset{63}{\text{}}$

12



M.H. #15 ^{reset}
 68+61.93 Δ 14° 59' 21".



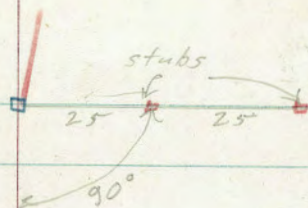
64+30± stub P.O.T.

30 40

M.H.#16
v 74+28 11 $\Delta 3^{\circ}06'$ RT.

v 68+61 93

14



73+25

BM
30 FT
ON TREE

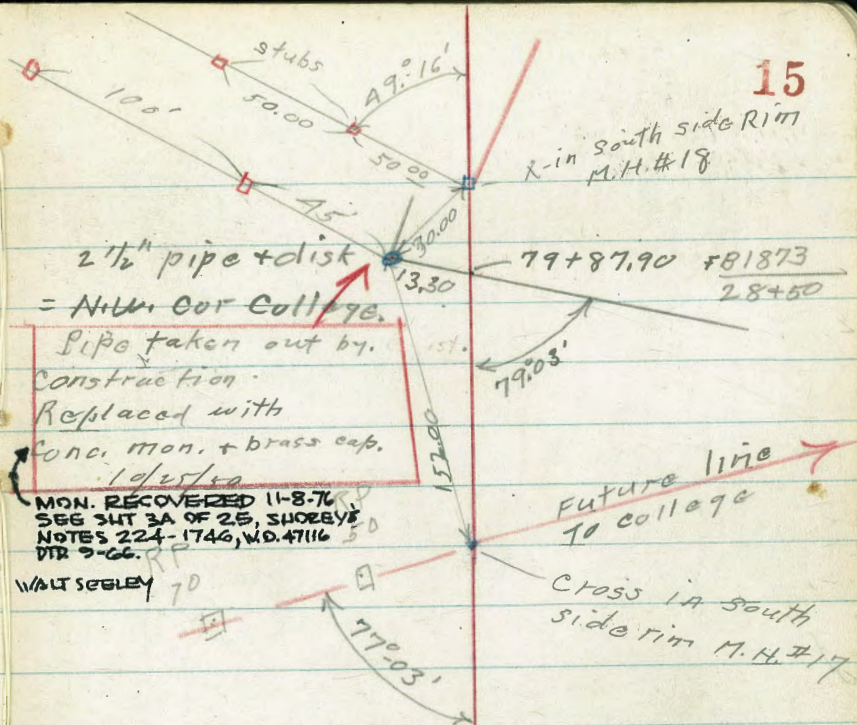


M.H. #17 now #18
 $\sphericalangle 80+18'' \Delta 16^{\circ}-57'-30''$ Rt.

M.H. #s changed
 to conform to "D" sheets

now M.H. #17

$78+38.63$ = stub for college connection



2 1/2" pipe + dist
 = NW cor College.
 Pipe taken out by
 construction.
 Replaced with
 conc. man. + brass cap.
 1.0/2/50
 MON. RECOVERED 11-8-76
 SEE 34T 3A OF 25, SHOREBY
 NOTES 224-1746, W.D. 47116
 DTR 9-66.
 WALT SEELEY 70

15

x in south side rim
 M.H. #18

$79+87.90$ ± 81873
 $28+50$

$79+03'$

Future line
 to college

Cross in south
 side rim M.H. #17

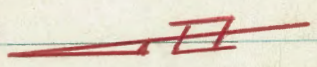
Note = EL. top of Man. = 118.78
 " x in rim M.H. #18 = 121.83

B.M. #16 $\frac{0277}{79} = 119.53$
 3.20
 $122.73 \times$

$122.73 \times$
 3.95
 $118.78 = \text{Man.}$

122.73
 0.90
 $121.83 = x \text{ in M.H.}$
 $\#18$

$74+28''$



Now# 19
M.H.# 18
✓ 86+08.97 Δ 28°-43' RT

18
M.H.# 17
✓ 80+18.4

16

²¹
M.H.#~~20~~

✓ 90+80.00 P.O.T.

²⁰
M.H.#~~19~~

✓ 88+60.00 P.O.T.

¹⁹
M.#18

✓ 86+08.97

201
□

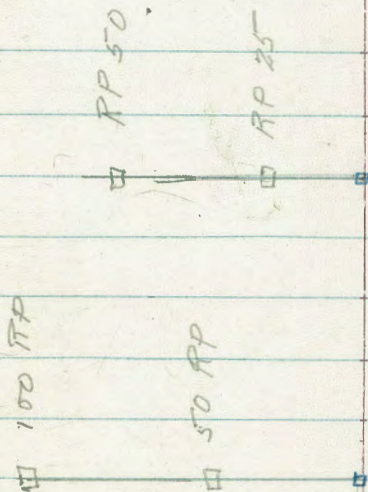
250
□

²⁴
 ✓ M.H. #22 ✓
 95+83.87 $\Delta 22^{\circ}-26'$ Rt.

²³
 ✓ M.H. #22 ✓
 94+40.00 P.O.T.

²²
 ✓ M.H. #21 ✓
 92+40.00 P.O.T.

²¹
 ✓ M.H. #20 ✓
 90+80.00 P.O.T.



flagged to

$\Delta 18^{\circ}-32' Lt.$

$\Delta 13^{\circ}-27' Lt.$ Class on side of rock

$\sqrt{99+59.70}$

$\Delta 44^{\circ}-21' Lt.$

$\sqrt{98+99.97}$

$\Delta 6^{\circ}-27' Lt.$

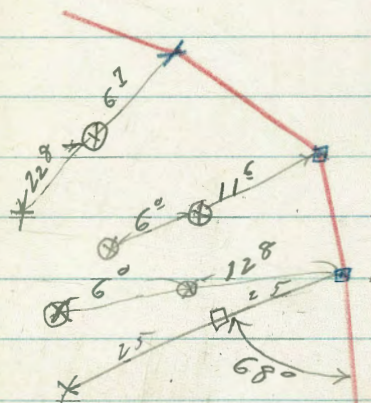
$\sqrt{98+58.47}$

\otimes = painted X & Circle
on split of Δ

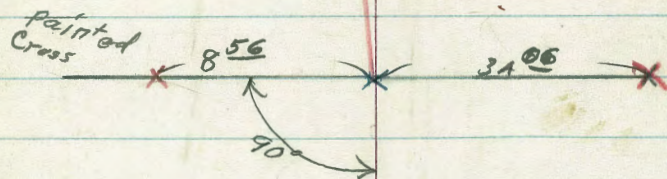
$\Delta 5^{\circ}-30' Lt.$

$\sqrt{97+07.40}$

2A
M.H. # ~~23~~ start C.I.



see p. 47
for ties



✓ $\Delta 21^\circ 51' \text{ RT.}$
✓ $104+67.50$

✓ $\Delta 38^\circ 25' \text{ RT.} = \text{M.H. \#25}$
✓ $103+61.04$

✓ $103+26.78 = \text{stub P.O.T.}$

✓ $\Delta 47^\circ 14' \text{ LT.}$ x on end of rock
✓ $102+64.79$

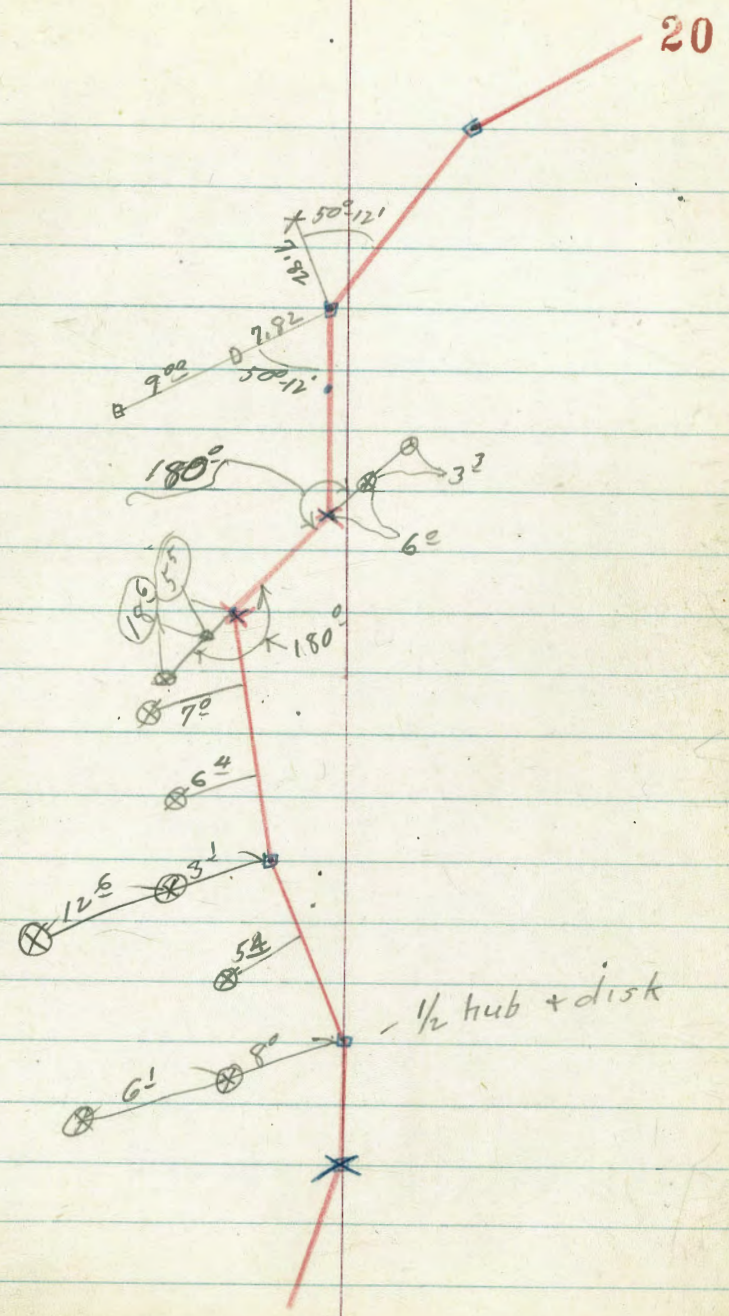
✓ $\Delta 56^\circ 38' \text{ RT.}$
✓ $102+14.95$

✓ $\Delta 10^\circ 44' \text{ RT.}$
✓ $\Delta 13^\circ 06' \text{ RT.}$
✓ $100+91.63$

✓ $100+14.76$
✓ $\Delta 22^\circ 57' \text{ RT.} = \text{M.H. \#24}$
✓ $\Delta 18^\circ 03' \text{ LT.}$

✓ $99+59.70$

(25)



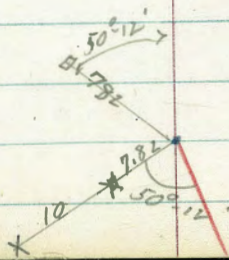
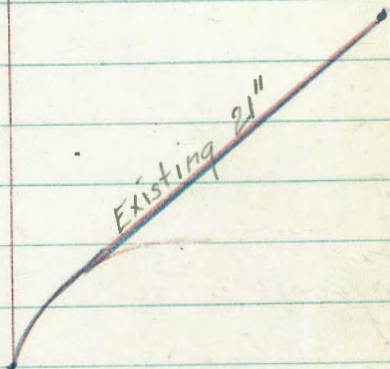
P.O.T.
 $109+37.25 = \text{End Exist. } 21'' \text{ V.C.}$

Meet Existing B.C. - $21''$ V.C. $\frac{\text{FB2003}}{26}$

#27
 M.H.#26
 $107+18.50$

$105+95 \pm = X$ on rock

$104+67.50$



✓
Δ 15°-35' Lt. MH#29
115+00.16
93.15

114+77.01 = stub. P.O.T.

112+55.87

2 21.14

✓
112+55.87 ✓
Δ 16°-00' Lt. ✓

112.55.87

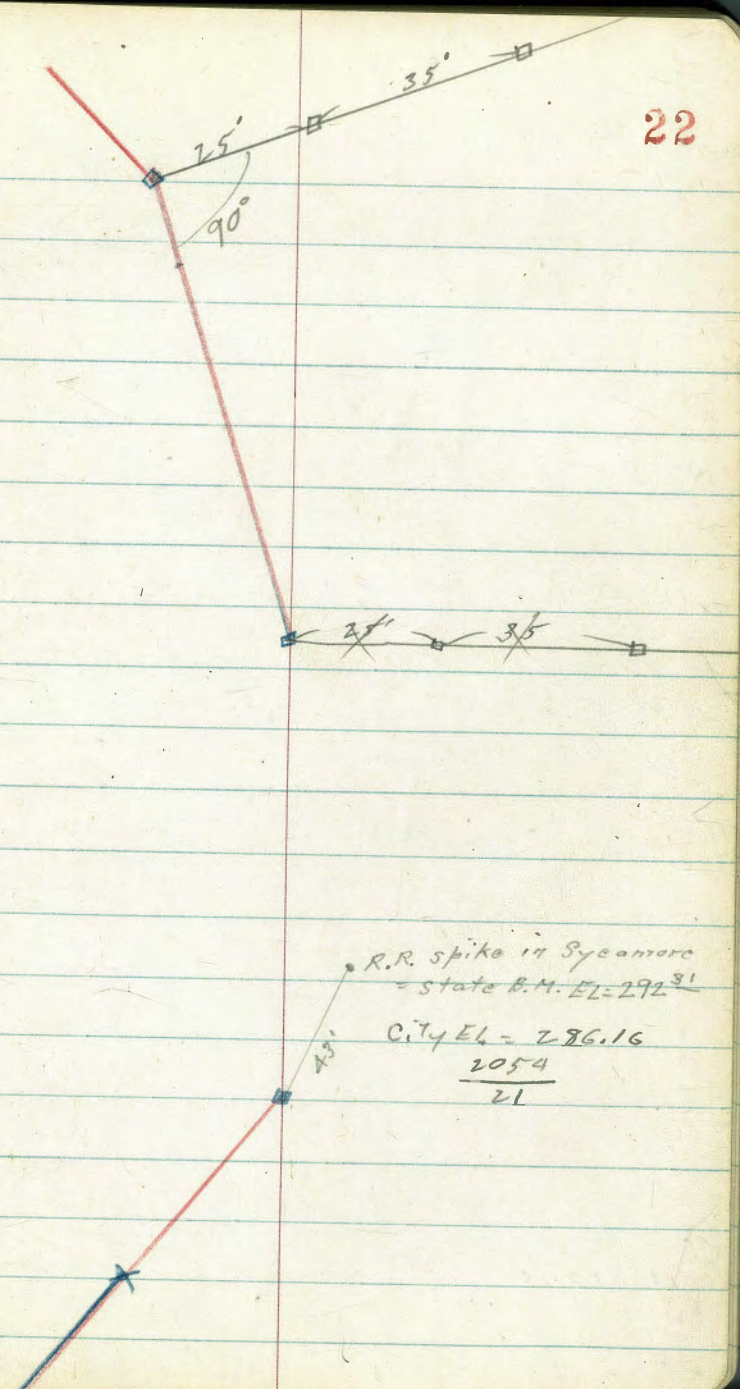
109.886

2 6724

#28
MH#27
✓ Δ 59°-00' Lt.
✓ 109+88.63

51.38

P.O.T.
✓ 109+37.25 = chisel x at end of cone.
en casement



R.R. spike in Sycamore
= State B.M. EL = 292.31
City EL = 286.16
2054
21

121 ~

✓ $\Delta 26^{\circ} 59' 44''$ \triangleleft
 ✓ 118 + 47.47

347 $\frac{30}{100}$

✓ 115 + 0.16 MH #29

40' \square 25' \square
 stub Lath

✓ $\Delta 9^{\circ}-20' \text{ Lt.}$ Δ
✓ $126+73.47$

2 09.07

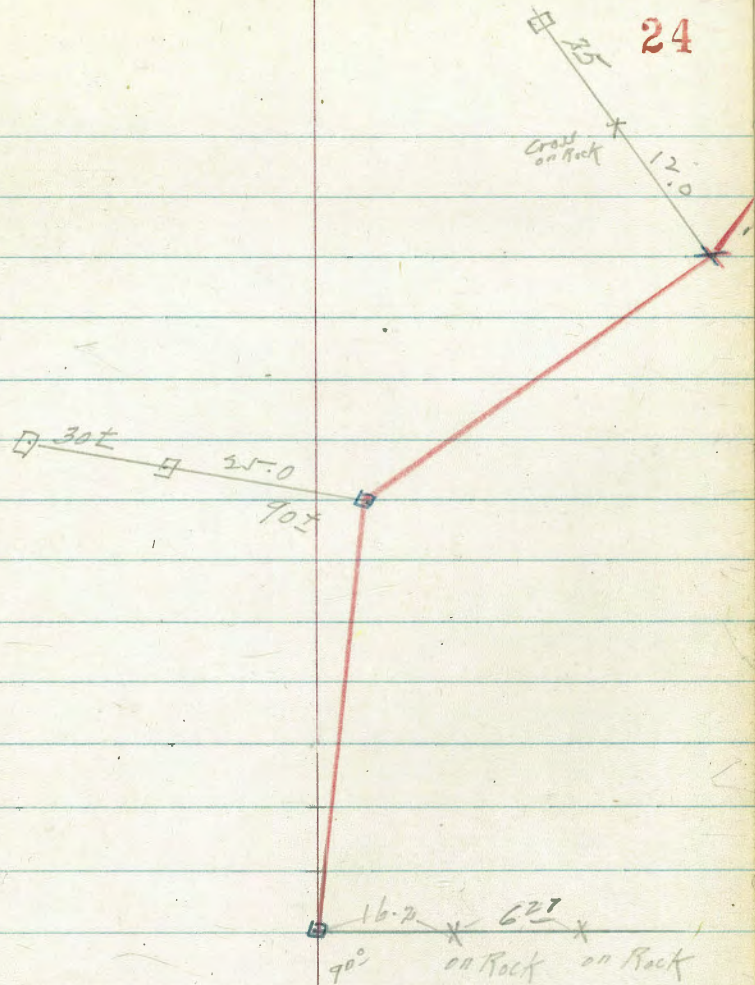
✓ $\Delta 44^{\circ}-20' \text{ Rt.}$ Δ
✓ $124+64.40$

2 15

✓ $\Delta 70-33' \text{ Rt.}$ Δ
✓ $122+49.43$

400 ±

121 ~



= stub = $(= 512 + 1540 \frac{FB205A}{25})$
 $\checkmark 134 + 14 \frac{15}{-} = \text{Tie Ely line State College}$

$\frac{128 \ 65 \ 79}{5 \ 48 \ 36}$

* Freeway

50
376.13

State Hy. Mon.
121 + 49.35 = B.C.

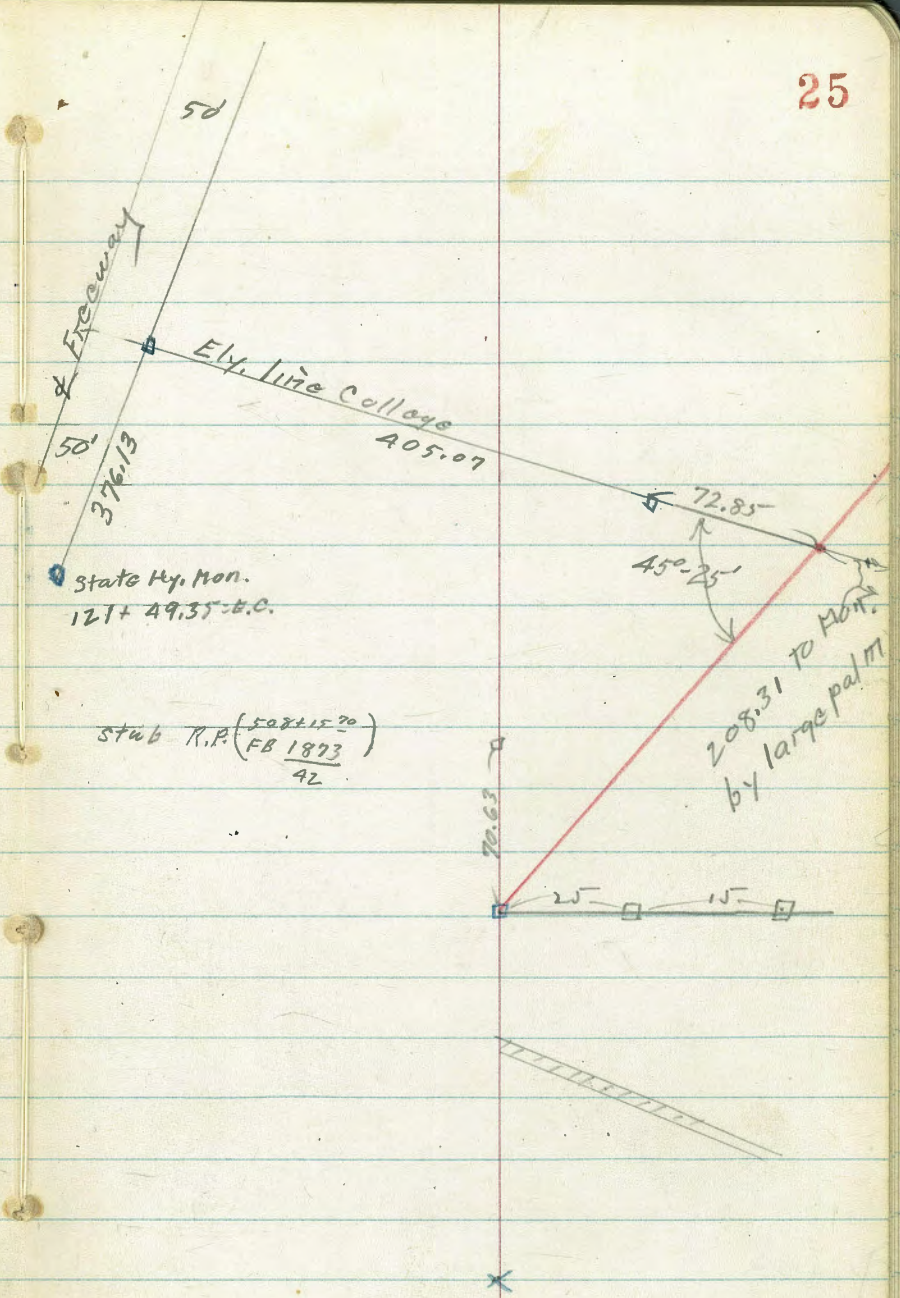
Stub R.P. $(\frac{508 + 1520}{FB \ 1873} \frac{42}{42})$

$\Delta 41^\circ - 53' \text{ RT.} \quad \# 30$
 $\checkmark 128 + 65.79 \quad \text{M.H.} \# 28$

138.04

127 + 75 = Cross end of dam

$\checkmark 126 + 73.47$



#32

M.H. #50

✓ $140 + 50.25 = P.O.T.$

$$\begin{array}{r} 140 + 50.25 \\ 138 + 44.55 \\ \hline 2 + 05.70 \end{array}$$

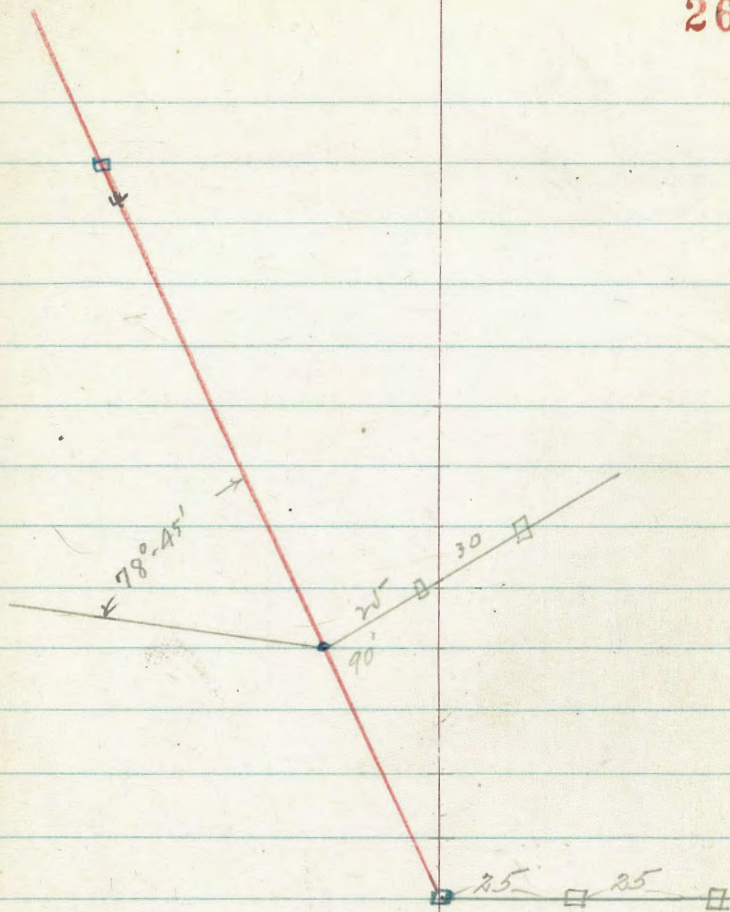
✓ $138 + 44.55$ Future 8" connection (stab)

M.D. 13

✓ $\Delta 39^\circ - 12' \text{ Lt.}$ ✓ $135 + 73.82$ M.H. #29

159.67

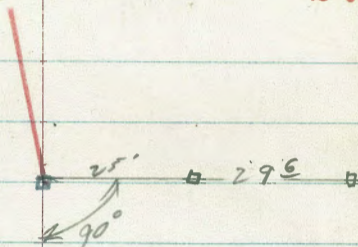
$134 + 14.15$ (College line Int.)
Stub.



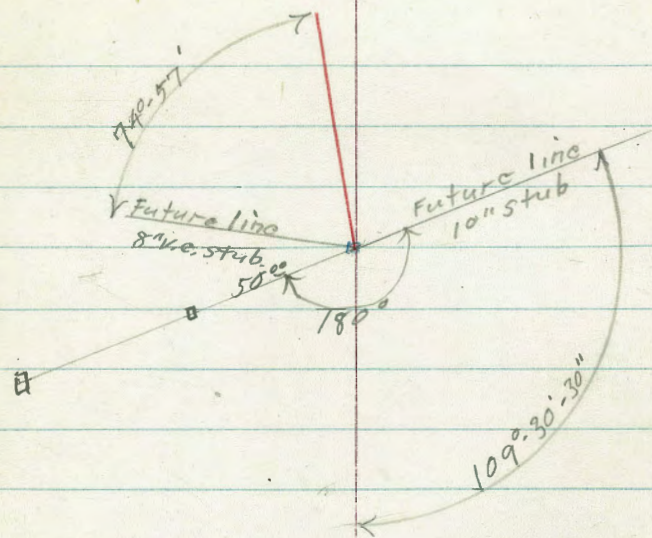
$\Delta \checkmark 4^{\circ} 04' 30'' \text{ Lt.}$ # 33
 $\checkmark 145 + 30.25 = \text{M.H.} \# 31$

$\checkmark 142 + 98.75 = \text{Stub P.O.T.}$

$\checkmark 140 + 50.25 = \text{P.O.T. M.H.} \# 32$



$\Delta 90^{\circ} 58' 30''$ Lt.
 $149 + 87.45 = M.H. \# 32 \text{ } 34$



45720

$145 + 30.25 = M.H. \# 31 \text{ } 33$



✓ $\Delta 00-56'-30''$ Rt. 35
✓ $154+84.61 = M.H. \# 23$

49716

✓ $149+87.45 = M.H. \# 3234$

15' 0 20' 0
90°

✓ ✓
✓ $\Delta 12^{\circ} 08' \text{ Rt.} = 36$
✓ $159 + 17.72 = \text{M.H.} \# 34$

497.16

433.11

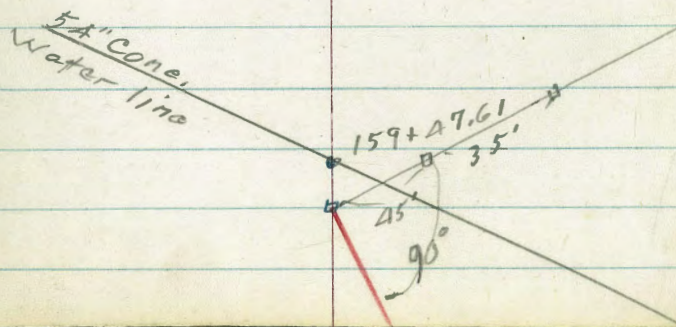
✓ ✓
✓ $154 + 84.61 = \text{M.H.} \# 33 \# 35$

500.00

RO.T.
 $162 + 66.66 = M.H. \# 35 \# 37$

348.94

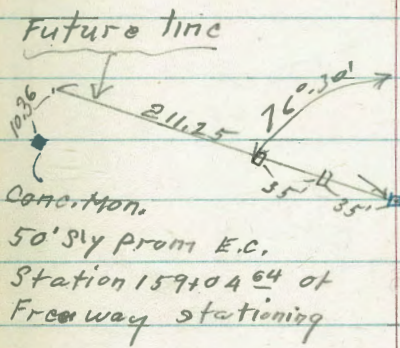
$159 + 17.72 = M.H. \# 34$



Detail of line
M.H. #3 to M.H. #5

32

✓ 167+66.66 M.H. #38
End of line



Detail M.H.#3 to M.H.#5 1/11/50

Δ $11^{\circ}-45'$ Lt. turned 1/11/50
 Δ - shown as $11^{\circ}-51'$ Lt - sheet 1415D

$14 + 19.75 = \text{M.H.}\#4$

$13 + 62 \pm = \frac{1}{2} \text{ disk. P.O.T.}$

$\Delta = 59^{\circ}-09'$ Rt. turned in field 1/11/50

Δ shown as $59^{\circ}-39'-30''$ ^{Rt} sheet 1415-D

$11 + 53.78 = \text{M.H.}\#3$ start detail
(From line on P-3)

alvarado
Canyon
MH 3 to MH 5

33

set $\frac{1}{2}$ disk

INDEXED
Law
MAR 6 1952

17+00.00

16+34.62 = Fd. stub. pat. get $\frac{1}{2}$ + disk

14+19.75 - M.H.#4

$\Delta = 11^{\circ} - 42'$ RT - turned 1-11-50
 Δ shown as $11^{\circ} - 03'$ RT - sheet 1415-D.

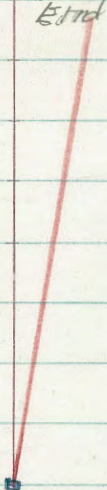
$18+49 \frac{24}{100} = \text{M.H. \#5}$

17+00.00

35

(Line continues on P.-5)

End of detail



Reservoir Drive
Rerun Catactin Canyon

line 1/17/50

INDEXED

Sommermeier
McCoy
Allen
Foy

JAN 10 1950

Levels P.37

original line

F.B. 1873

17+75

□ = set 1/2 disk

stations carried thru from
14+00 to end of line.

No equation

Fd. 1" pipe (conc. filled)
at fence corner

SW Corner
Lot 32

36

29+64.94

10/10/50 2.36' Lt.

change 7/11/50

1421-B-D

~~Δ Now: 0° 45' Lt.~~

~~Δ 10.52 Lt 26+00 ahead
25+99.82 Back~~

25+33.45 FB 1943 = 25+44.70
17+75 This line

22° 58' 30" Rt. 22+30 96

Oct-10-50
See G-277 for
copy to 755

Fd. 3/8" Nail
22+19.71
1793
17

Δ 23° 20' Rt.

21+26.74
Δ 23° 36' Rt.
7-11-50

See 2077
22 10/10/50

Now 10-07-50
18+29.50

Final line 7/11/50

18+15.00 (7/11/50)
Δ 19° 23' Lt

1873 old line
17

Δ is left, sketch wrong

14+55.00
Δ 27° 11' Rt

1873
17

Δ = 62° 44'

N. line to Mesa Colony
Sta. 20' 284.15 479.04
F.B. 1873 Fd 1/2 18 Fd 1/2 18
Fd pipe 18 27ack 18 27ack

29.32

Fd. 14+00

12+01.72

Catoctin Canyon

16+00

371.3 ✓
6.8

37

+66 Edge Creek

369.9 ✓
8.2

+53 Bottom of Creek

368.0 ✓
10.1

+40 Edge Creek

369.7 ✓
8.4

15+00

369.1 ✓
9.0

+55 Hub-New L

368.26 ✓
9.70

14+00

366.6 ✓
11.5

B.M. = 14+00

1873

21

11.46

378.06 ✓

366.60 ✓

378.06 ✓

Catactin Canyon

+50

378.8 ✓
9.8

19+00

377.6 ✓
11.0

T.P. 12.20 (388.61) ✓

165 (376.91) ✓

(388.61) ✓

+50

376.9 ✓
1.5

18+00

375.6 ✓
2.5

+54 Cross Barbwire fence

+50

374.8 ✓
3.3

17+00

373.6 ✓
4.5

16+50

372.5 ✓
5.6

(378.06) ✓

(378.06) ✓

Catoctin Canyon

39

22+00

384.1 ✓
4.521+67⁵⁵

074 23-20' Rt.

383.86 ✓
4.75

+30

383.3 ✓
5.3

21+00

382.2 ✓
6.4

+77

379.8 ✓
8.8

+60

382.0 ✓
6.6

+20

380.4 ✓
8.2

+15

380.0 ✓
8.6

+05

380.4 ✓
8.2

20+00

380.2 ✓
8.4

388.61 ✓

Catoctin Canyon

25+44²⁰ = P.O.T. + Tic P. 36 + $\frac{1873}{75}$

390.56 ✓
6.84
on Hub

25+00

389.3 ✓
8.1

+50

388.8 ✓
8.6

24+00

388.1 ✓
7.3

+50

387.7 ✓
7.7

+20

386.3 ✓
11.1

T.P. 10.60 $\langle 397.40 \rangle$ 1.81 $\langle 386.80 \rangle$

$\langle 397.40 \rangle$ ✓

23+00

386.7 ✓
1.9

+50

385.4 ✓
3.2

22+30.96 = (old sta 22 + 19.71) $\frac{1873}{22}$
P.O.T. 3 X 3 + Nail

385.0 ✓
3.6
Gnd

$\langle 388.61 \rangle$ ✓

$\langle 388.61 \rangle$ ✓

Catoctin Canyon

29+00

+50

T.P. 6.15 $\langle 403.18 \rangle$ 0.37 397.03

28+00

+50

27+00

+50

26+00 = Δ 1^o 52' Lt.

25+60

400.3 ✓
2.9

398.2 ✓
5.0

$\langle 403.18 \rangle$ ✓

396.5 ✓
0.9

395.1 ✓
2.3

394.3 ✓
3.1

395.7 ✓
1.7

394.07 ✓
3.33
Hub

391.0 ✓
6.4

$\langle 397.40 \rangle$ ✓

31+00

+50

30+00

29 +64.94 = $\frac{3}{2}$ in disk

29+40

402.3 ✓
0.9

402.0

1.2
↳ low spot401.9 ✓
1.3401.5 ✓
1.9400.8 ✓
2.34401.0 ✓
2.2

403.18 ✓

Reserve this Book for
 Alvarado Canyon Towers

43

INDEXED
LW
 MAR 6 1952

30' R.P. M.H.#3 (Page 3)

11+53 78

3.22

81.99

B.M.#4

T.P.

9.21

85.21

9.40

76.00

B.M.#3

9.27

2

2.36

85.40

-

83.04

Set spike

Pole 5197 A.G.H.

B.M.#2

5103

84.00

12' L. 1402

8.58

89.03

3.92

80.45

4.66

84.37

0.33

79.71

B.M.#57

6.76

80.04

-

73.28

1619

9

X-sec. for fill back of pipe
1680 to 17+84 7/20/50

17+84

69.3	69.9	76.7	78.7
$\frac{12.5}{40}$	$\frac{11.8}{20}$	5.0	$\frac{3.0}{10}$

17+50 Continued

79.1	82.1	80.7
$\frac{+2.7}{13.0}$	$\frac{-0.4}{15.3}$	$\frac{+1.0}{16.5}$

17+50

69.8	70.4	71.3	72.1	81.7	73.2
$\frac{12.0}{40}$	$\frac{11.3}{20}$	10.4	$\frac{9.6}{10}$	$\frac{0.0}{47}$	$\frac{+8.5}{81}$

17+00

69.8	71.7	71.3	73.0	74.5	78.4
$\frac{12.0}{40}$	$\frac{10.1}{25}$	7.5	$\frac{8.8}{20}$	$\frac{7.3}{60}$	$\frac{3.4}{100}$

16+80

70.0	71.9	71.4	71.2	78.5
$\frac{11.7}{40}$	$\frac{8.8}{30}$	4.3	$\frac{4.5}{50}$	$\frac{3.2}{75}$

17+50

G-277

C
= B.M. "A"

10.87

81.75

70.88 = offset

EL. 6'

81.75

X-sec. for Back fill
20+00 to 22+25

45

T.P. 1.25 84.33 1.85 83.08

84.33

21+00

70.1	70.5	76.3	72.7
14.8	14.4	8.6	2.2
30	22		17

20+85

69.6	70.1	75.5	72.7
15.0	14.8	8.4	2.2
30	22		20

20+50

70.2	70.6	74.9	80.7
14.7	14.3	10.0	4.2
30	17		20

20+25

70.4	71.2	71.3	75.7	80.9	82.9
14.5	13.7	10.6	9.2	4.0	2.0
30	16		20	50	60

20+00

69.9	70.4	76.6	81.1
15.0	14.5	8.3	3.8
30	21		23

84.93

10.04 84.93 — 74.89

B.M.: 6' Lt. stub, 20+50 (Grade = 72.08

c 281
74.89 EL. stub

22+25

70.5	71.1	76.8	80.1
$\frac{13.8}{30}$	$\frac{13.2}{16}$	7.5	$\frac{4.2}{15}$

22+00

70.8	71.8	74.9	77.0	81.8
$\frac{13.5}{30}$	$\frac{12.5}{15}$	9.4	$\frac{7.3}{14}$	$\frac{2.5}{35}$

21+75

71.0	72.3	79.0	75.2	79.5
$\frac{13.3}{30}$	$\frac{12.0}{13}$	10.3	$\frac{9.1}{15}$	$\frac{4.8}{50}$

21+50

70.9	72.3	72.1	77.6	80.0
$\frac{13.4}{30}$	$\frac{12.0}{13}$	10.2	$\frac{6.7}{14}$	$\frac{4.3}{30}$

84.33

97+73.83 = End of beams

97+54.83 = Bent #4

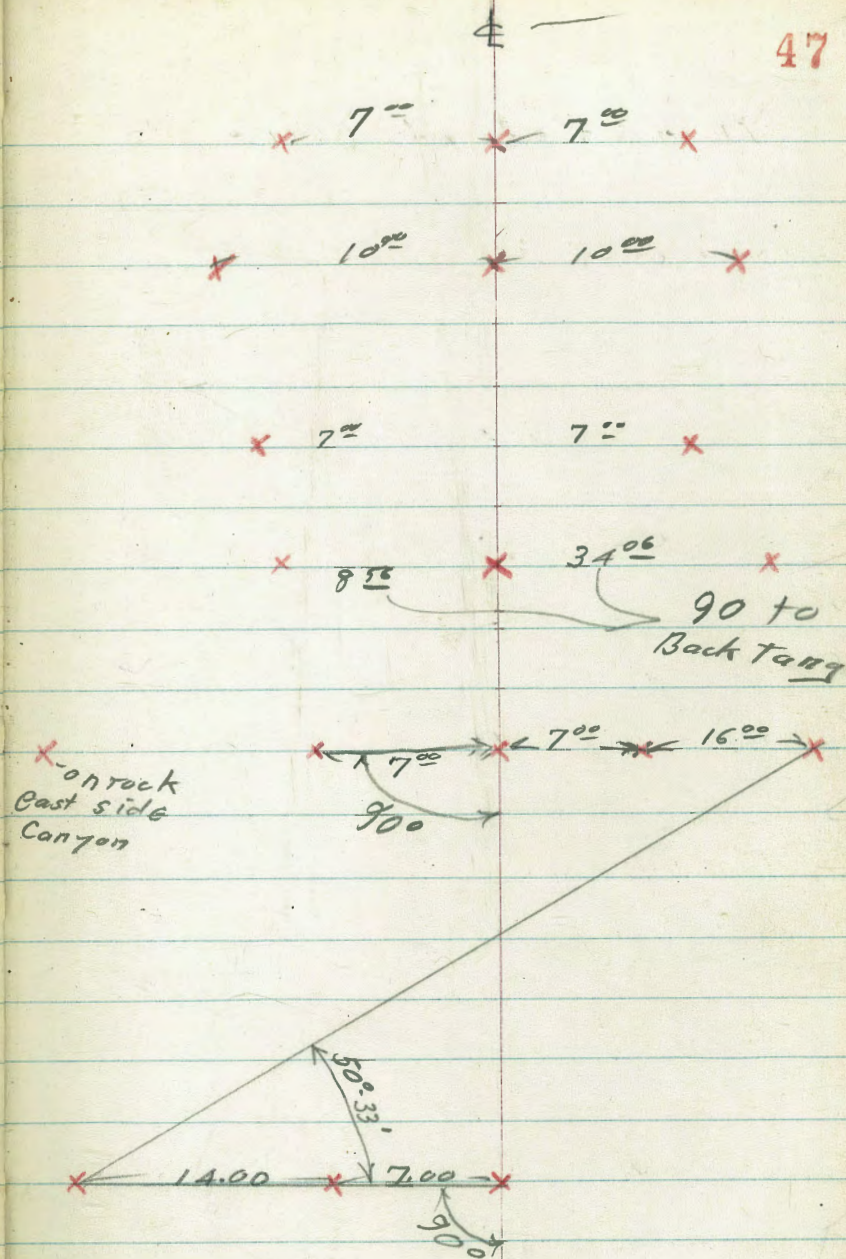
97+09.83 = Bent #3

97+07.40 = Δ 5°-30' Lt.

96+75 = Bent #2

96+30 = Bent #1

47



Cosgrove Mesa Line
from Alvarado Line

12-12-50

Sommermeier

Beqq

Atlan

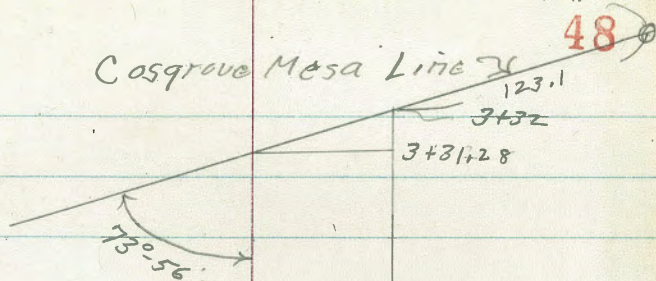
Bunch

See page 52

Cosgrove Mesa Line

M.H.

48



Alvarado line

75° 40'

= 0+00

-0+00

-0-1.65

132+51 Alvarado
L1170

sheet 1420-D

Cosgrove Mesa Line

49

1+AI # 10' Rt. = start wire fence

322.1

1+00 T.Lt. = 14" Pepper

4.4

+50

322.9

3.6

0+00

323.5

3.0

Calc. EL. 0+00 =

317.59

T.P.

2.92

326.46

5.86

323.54

326.46

315.98

M.H. #30 sheet 1420-D. EL. = 315.96

13.42

M.H. #31 sheet 1420-D.

EL. = 318.91

318.89

10.51

329.40

6.50

329.40

-

322.90

B.M. # 21

6277

78

2+50

320.2

6.6

2+49- 6' Lt. = 2-12" willow. (split trunks)

320.5

2+26

6.3

2+16

318.9

7.9

T.P

5.59

326.84

5.21

321.25

326.84

2+00 - 6'

319.4

7.1

1+54

318.6

7.9

1+42

320.8

5.7

326.46

74
Casgrove Mesa Line

check

3.30

323.54 = T.P. #1-P49

3+31.28 = Δ 73°-56' RT.

3+30

3+19 - 10' RT. = end wire fence

3+15

3+14 - 4' RT = E 16" willow

3+00

2+97

2+77

51

322.27

321.53

4.57

5.31

top of
pipe

I.E. Elev.

323.7

3.1

319.7

7.1

318.3

8.5

318.3

8.5

319.8

7.0

326.84

Cosgrove Mesa Line
Alvarado line - 514

12-13-50

Sommertmeyer

Boyer

Allen

Bunch

sheet 8300-L

" 1420-D

Also see P. 48

52

(8300-L)
113°-17'-45"
Existing pipe

5771121

= Δ 113°-17'-45" LT.
(8300-L)

1708⁴⁷ = Δ 90° RT. 0

0+00
135* 73.82 - (1420-D)

Existing
Alvarado line

= 0+00
132+51 - page 48

Cosgrove Mesa Line

±

53

0+80

322.9
5.6

0+70

322.5
6.0

0+50

323.2
5.3

0+03 Ground

325.0
3.5

0+01 I.E. stub to south

319.68
8.83

0+00 = I.E. existing M.H.

318.88
9.63

328.51

5.61 328.51

322.90

BM #21

0 297
78

3.10 327.01 4.60 323.91

Set. B.M.

6.17 322.34

6' RT. 2+19±
Conc. Mon. S.E. Cor. college grounds

2+00

321.8
6.7

1+75

321.3
7.2

1+60

321.0
7.5

1+30

322.4
6.1

1+08⁴⁷ Δ 90° RT.

322.3
6.2

328.51

Cosgrove Mesa Line

55

3+75

319.4

7.6

3+58

320.0

7.0

3+36

321.1

5.9

3+00

321.7

5.3

2+65

322.9

4.1

2+33

322.7

4.3

327.01

4+41± = Invert existing 8" pipe

321.55	323.4
<u>5.46</u>	<u>3.6</u>
I.E.	Natural Ord. El.

4+20

320.6
<u>6.4</u>

4+05

319.4
<u>7.6</u>

4+00

318.9
<u>8.1</u>

3+95

318.2
<u>8.8</u>

3+85

318.5
<u>8.5</u>

327.01

Cosgrove Mesa LITTO

57

5+71¹⁴ Δ N3°-17'-45" Lt.

323.9

1.1

Natural
Ground Elev.

M.H. not built

5+69 I.E. existing 8" line at M.H.

322.49

4.52

I.E.

4+85

329.5

+2.5

4+50

326.0

1.0

327.01

Sewer Prelim. (Pump house #1)
North of Van Dyke (Aldine Dri.)
Fairmount to Talmage Park #2

58

Sommerneyer

1-22-51

Beggs

N.O. 20770

Bunch

Crawford

F.B. 1640-P.51

2124-P.21

see P. 54 for tie to old line

= 3+60⁵² Ahead

1+80120 A 22°-23'-30" Rt.

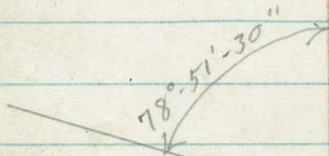
see FB 1640
51-52

INDEXED
Law
MAR 6 1952

see P. 59
for Ties

= 0+00 78°-51'-30" off Ford. Tang.

27+82⁷² A 14°-29'-30" Lt. (2124-20)



= 0+00 to west.
 $\frac{27+82.22}{21}$

$78^{\circ}51'30''$

$\frac{1}{4}$ R.P.

4521

Not to scale

$25+50 - \Delta 9^{\circ}20' Lt. \frac{2124}{20}$

New line F.B. 2124

1799

$12^{\circ}04'$

$152^{\circ}55'A$

14.48

$55+83.23$ (Bliss line)
 $\frac{1640}{32}$

Bliss line F.B. 1640

Also = 0+00 1640-P.51

$55+51.72 = \Delta 14^{\circ}19'30'' Lt. \frac{1640}{32}$

$149^{\circ}20'$

$41^{\circ}40'$

3460
 $\frac{1640}{57}$

59

1/24/51
Bc99
Bunch

1 + 00 + H1

4.2 ^{204.0} / 10
4.7 ^{204.0}
4.2 ^{204.0} / 10
3.5 ^{204.7}
8.1 ^{200.1} / 51
5.8 ^{204.7} / 58
ck

0 + 48

4.4 ^{203.9} / 10
5.4 ^{202.8} / 10
5.4 ^{202.8} / 10
4.7 ^{203.5} / 104
3.5 / 40
4

0 + 3A W side of creek

10.7 ^{197.5}
11.1 ^{197.1}
11.3 ^{196.9}

0 + 23 toe of slope E side of creek

10.7 ^{197.5}
11.0 ^{197.2}
11.7 ^{197.0} / 10

5.63 208.15 12.64 202.52

208.15

0 + 09 Additional levels
P. 6A

0.7 ^{214.5} / 7
1.1 ^{214.1}
1.3 ^{213.9} / 10

0 + 00 = 1/2 27 + 82 = Fairmount 1170

1.61 ^{213.6}

B.M. #1 1.95 215.16 213.21

215.16
B.M. = Nail 15' Lt. 27 + 82 = F.B. 212A / 21

CONT. FB. 2040-P55

$$1 + 80 \text{ 20 L}$$

$$= 3 + 60 \text{ 55}$$

1 + 58

14 50

7 38

211.52

208.15 4.01 204.14

$$\begin{array}{r} 212.8 \\ 4.3 \\ 10 \end{array}$$

$$\begin{array}{r} 207.96 \\ 4.06 \\ 10 \end{array}$$

$$\begin{array}{r} 207.5 \\ 4.0 \\ 10 \end{array}$$

$$\begin{array}{r} 206.7 \\ 4.8 \\ 10 \end{array}$$

$$\begin{array}{r} 206.7 \\ 4.8 \\ 10 \end{array}$$

$$\begin{array}{r} 206.7 \\ 4.8 \\ 10 \end{array}$$

$$\begin{array}{r} 6.2042 \\ 6.9 \\ 10 \end{array}$$

$$\begin{array}{r} 204.5 \\ 7.0 \\ 10 \end{array}$$

$$\begin{array}{r} 6.2042 \\ 6.9 \\ 10 \end{array}$$
211.52

208.15

Re-cross section of
Hilldale Road Pump House Line
Original notes in F.B. 2124-P.47

0+48

14.7
136.5

0+43

8.3
142.9

T.P. 2.79 151.20 6.14 148.41

151.20

0+35

7.0
147.6

0+28

11.1
143.5

0+21

12.1
142.5

0+14

12.4
142.2

= 0+00 ($\frac{2142}{47}$)
8+72.21 - $\Delta 11^\circ 52' 30''$ Lt. $\frac{2124}{4} =$ —
4.91 154.55 — 149.64

5.5
149.1

154.55

20' R.p. to 8172.21 $\frac{2124}{4}$

Hilldale Rd. pump house line:

1+20 = end new edge of wash

1+14 } out in N.Y. bank. of wash.
this is a new cut

1+09 ← start. new edge of wash

1+00

0+85

0+61

0+57

must be
5.3

147.6
3.6

141.9
9.3

147.6
3.6
A
End of new edge
of wash

147.6
3.6

146.8
4.4
4
Edge of
bank

148.6
2.6

145.7
5.5

139.7
11.5

136.4
14.8

151.20

Sewer Prelim. levels

North of Van Dyke (Aldine Dr.)

Fairmount to Talmadge Park #2

Sommarmayer

Beag

Allen

Altman

3/18/52

sketch. - P 58

1+00

5.4

204.0

0+50

6.1

203.3

0+35

12.1

197.3

0+33

14.7

195.3

0+27

14.0

195.4

209.35

T.P.

6.87

209.35

10.49

207.48

0+07

3.7

214.6

0+00

7.4

213.6

4.76

217.97

-

213.21

B.M. #1 - P60

217.97

1780 = 1.1

1758

1750

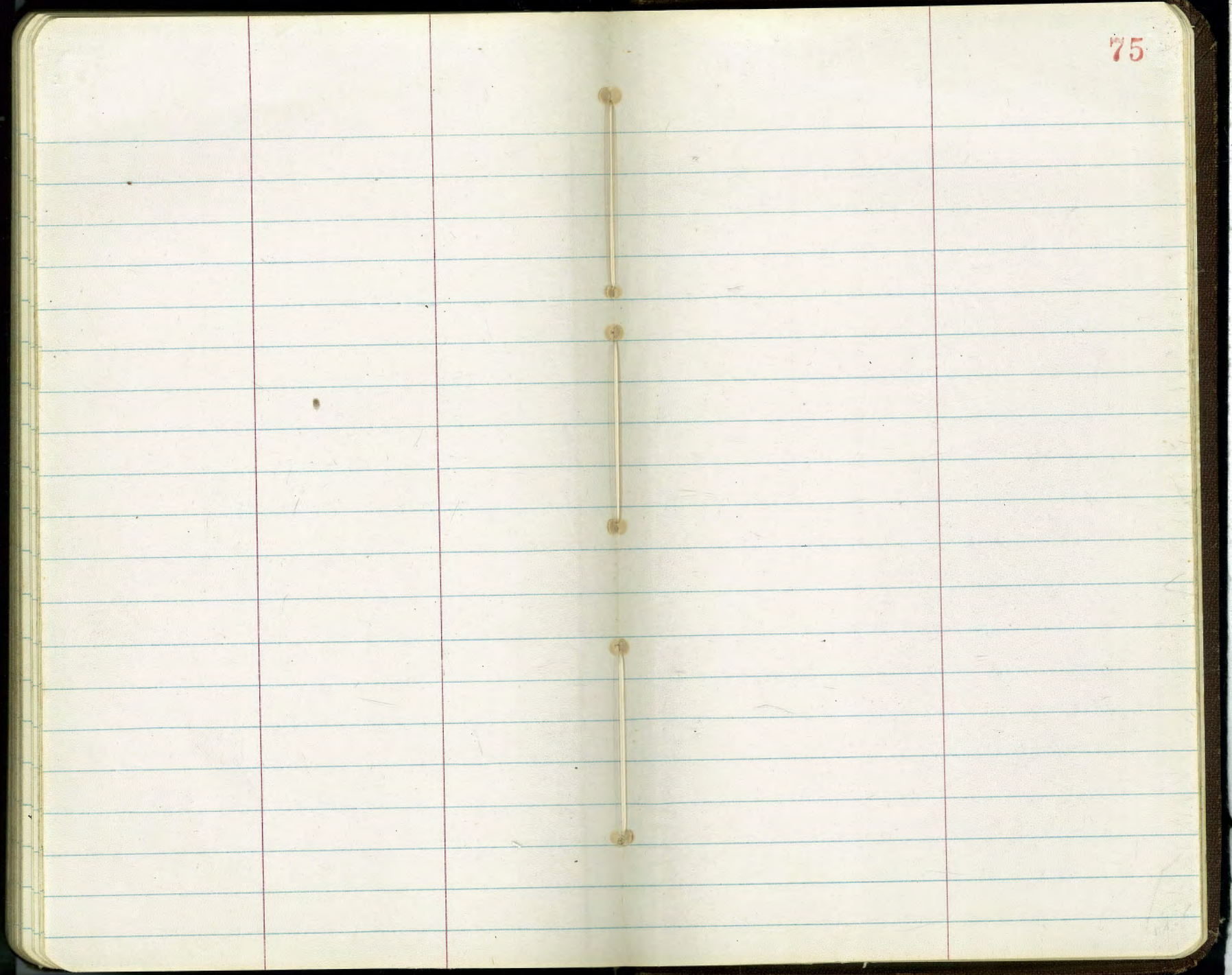
11.9 207.5

2.6 206.8

4.8 204.2

209.35

72



77

78

79

140+50.25

138+44.55

2705.70

145+30.25

138 44.55

6785.70



76-50

37.24
 23 08
 60 32

E
KE

NING.

.9	
1.35	0
2.85	1
4.35	2
5.85	3
7.35	4
8.85	5
10.35	6
11.85	7
13.35	8
14.85	9
16.35	10
17.85	11
19.35	12
20.85	13
22.35	14
23.85	15
25.35	16
26.85	17
28.35	18
29.85	19
31.35	20
32.85	21
34.35	22
35.85	23
37.35	24
38.85	25
40.35	26
41.85	27
43.35	28
44.85	29
46.35	30
47.85	31
49.35	32
50.85	33
52.35	34
53.85	35
55.35	36
56.85	37
58.35	38
59.85	39
61.35	40
62.85	41
64.35	42
65.85	43
67.35	44
68.85	45
70.35	46
71.85	47
73.35	48
74.85	49
76.35	50

18
6
410.8
2.2
2

174 60
19-32
16.1 29
80 44
14
2.55
2.2

15100
447

130-44
49.16
59.77
23.88
3589.

25
36
61
78
6-27
193-33
86-47

86° 56' 44"
86° 51' 29"

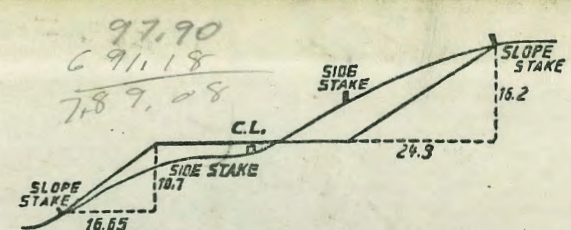
1429.5
1362
58.75

9877
29631

80 19.11
78 3863
1279.108

2449.97
8147
4.02

2167.55



DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING.
SLOPE 1 1/2 TO 1. ROADWAY OF ANY WIDTH.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0.00	0.15	0.30	0.45	0.60	0.75	0.90	1.05	1.20	1.35	0
1	1.50	1.65	1.80	1.95	2.10	2.25	2.40	2.55	2.70	2.85	1
2	3.00	3.15	3.30	3.45	3.60	3.75	3.90	4.05	4.20	4.35	2
3	4.50	4.65	4.80	4.95	5.10	5.25	5.40	5.55	5.70	5.85	3
4	6.00	6.15	6.30	6.45	6.60	6.75	6.90	7.05	7.20	7.35	4
5	7.50	7.65	7.80	7.95	8.10	8.25	8.40	8.55	8.70	8.85	5
6	9.00	9.15	9.30	9.45	9.60	9.75	9.90	10.05	10.20	10.35	6
7	10.50	10.65	10.80	10.95	11.10	11.25	11.40	11.55	11.70	11.85	7
8	12.00	12.15	12.30	12.45	12.60	12.75	12.90	13.05	13.20	13.35	8
9	13.50	13.65	13.80	13.95	14.10	14.25	14.40	14.55	14.70	14.85	9
10	15.00	15.15	15.30	15.45	15.60	15.75	15.90	16.05	16.20	16.35	10
11	16.50	16.65	16.80	16.95	17.10	17.25	17.40	17.55	17.70	17.85	11
12	18.00	18.15	18.30	18.45	18.60	18.75	18.90	19.05	19.20	19.35	12
13	19.50	19.65	19.80	19.95	20.10	20.25	20.40	20.55	20.70	20.85	13
14	21.00	21.15	21.30	21.45	21.60	21.75	21.90	22.05	22.20	22.35	14
15	22.50	22.65	22.80	22.95	23.10	23.25	23.40	23.55	23.70	23.85	15
16	24.00	24.15	24.30	24.45	24.60	24.75	24.90	25.05	25.20	25.35	16
17	25.50	25.65	25.80	25.95	26.10	26.25	26.40	26.55	26.70	26.85	17
18	27.00	27.15	27.30	27.45	27.60	27.75	27.90	28.05	28.20	28.35	18
19	28.50	28.65	28.80	28.95	29.10	29.25	29.40	29.55	29.70	29.85	19
20	30.00	30.15	30.30	30.45	30.60	30.75	30.90	31.05	31.20	31.35	20
21	31.50	31.65	31.80	31.95	32.10	32.25	32.40	32.55	32.70	32.85	21
22	33.00	33.15	33.30	33.45	33.60	33.75	33.90	34.05	34.20	34.35	22
23	34.50	34.65	34.80	34.95	35.10	35.25	35.40	35.55	35.70	35.85	23
24	36.00	36.15	36.30	36.45	36.60	36.75	36.90	37.05	37.20	37.35	24
25	37.50	37.65	37.80	37.95	38.10	38.25	38.40	38.55	38.70	38.85	25
26	39.00	39.15	39.30	39.45	39.60	39.75	39.90	40.05	40.20	40.35	26
27	40.50	40.65	40.80	40.95	41.10	41.25	41.40	41.55	41.70	41.85	27
28	42.00	42.15	42.30	42.45	42.60	42.75	42.90	43.05	43.20	43.35	28
29	43.50	43.65	43.80	43.95	44.10	44.25	44.40	44.55	44.70	44.85	29
30	45.00	45.15	45.30	45.45	45.60	45.75	45.90	46.05	46.20	46.35	30
31	46.50	46.65	46.80	46.95	47.10	47.25	47.40	47.55	47.70	47.85	31
32	48.00	48.15	48.30	48.45	48.60	48.75	48.90	49.05	49.20	49.35	32
33	49.50	49.65	49.80	49.95	50.10	50.25	50.40	50.55	50.70	50.85	33
34	51.00	51.15	51.30	51.45	51.60	51.75	51.90	52.05	52.20	52.35	34
35	52.50	52.65	52.80	52.95	53.10	53.25	53.40	53.55	53.70	53.85	35
36	54.00	54.15	54.30	54.45	54.60	54.75	54.90	55.05	55.20	55.35	36
37	55.50	55.65	55.80	55.95	56.10	56.25	56.40	56.55	56.70	56.85	37
38	57.00	57.15	57.30	57.45	57.60	57.75	57.90	58.05	58.20	58.35	38
39	58.50	58.65	58.80	58.95	59.10	59.25	59.40	59.55	59.70	59.85	39
40	60.00	60.15	60.30	60.45	60.60	60.75	60.90	61.05	61.20	61.35	40
41	61.50	61.65	61.80	61.95	62.10	62.25	62.40	62.55	62.70	62.85	41
42	63.00	63.15	63.30	63.45	63.60	63.75	63.90	64.05	64.20	64.35	42
43	64.50	64.65	64.80	64.95	65.10	65.25	65.40	65.55	65.70	65.85	43
44	66.00	66.15	66.30	66.45	66.60	66.75	66.90	67.05	67.20	67.35	44
45	67.50	67.65	67.80	67.95	68.10	68.25	68.40	68.55	68.70	68.85	45
46	69.00	69.15	69.30	69.45	69.60	69.75	69.90	70.05	70.20	70.35	46
47	70.50	70.65	70.80	70.95	71.10	71.25	71.40	71.55	71.70	71.85	47
48	72.00	72.15	72.30	72.45	72.60	72.75	72.90	73.05	73.20	73.35	48
49	73.50	73.65	73.80	73.95	74.10	74.25	74.40	74.55	74.70	74.85	49
50	75.00	75.15	75.30	75.45	75.60	75.75	75.90	76.05	76.20	76.35	50