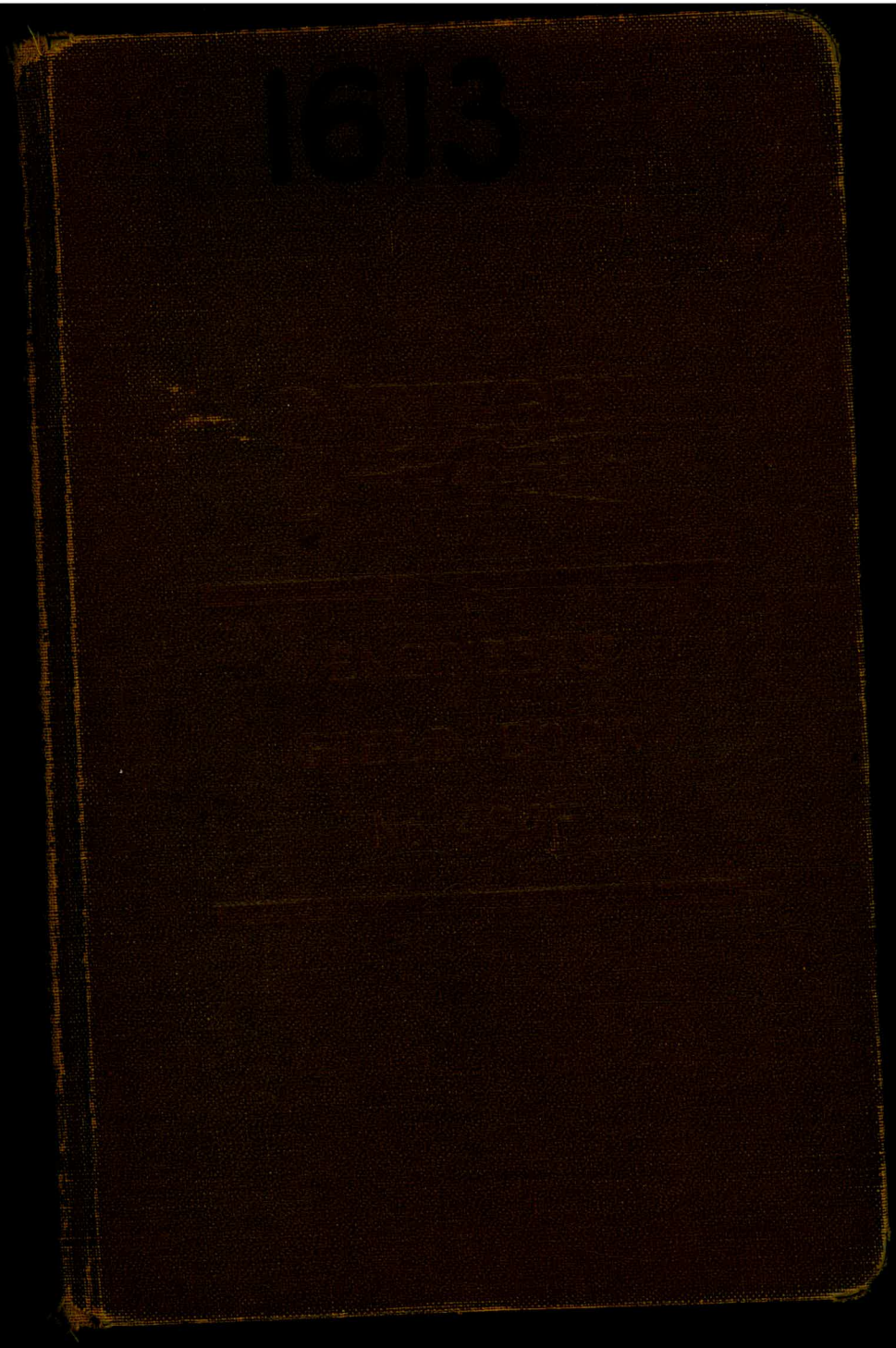

1613

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.

The paper stock of this book is made of a **high grade 50% rag paper having a water resisting surface.** This book is sewed with **Bing Special Enamel Waterproof Thread.**

Made in U. S. A.

Walter Wells
D. Farrow
9-29-41

"ALIGNMENT" "A" Line

POWDER HOUSE CANYON TRUNK LINE SEWER

from K-st to University Ave.

Bench Mark Levels F.B. 1614-16-18
Profile Levels F.B. 1614-19

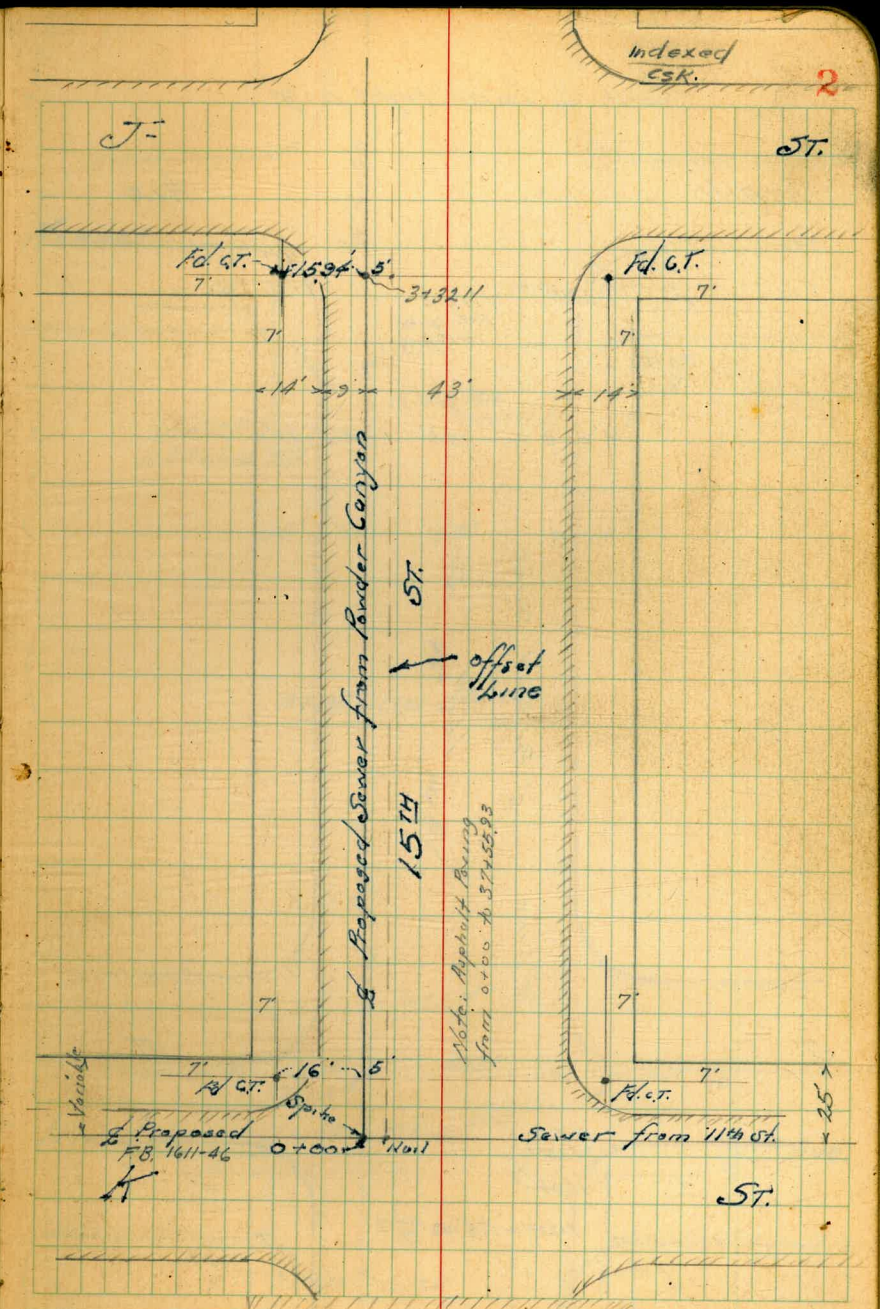
Station	Align Lt.	Deflection Rt	Magnetic Bearing	True Bearing
3+32.11 = Int. South 7' line J-St.				

See revised location Pg 42.

0+00

Indexed
CSK.

2



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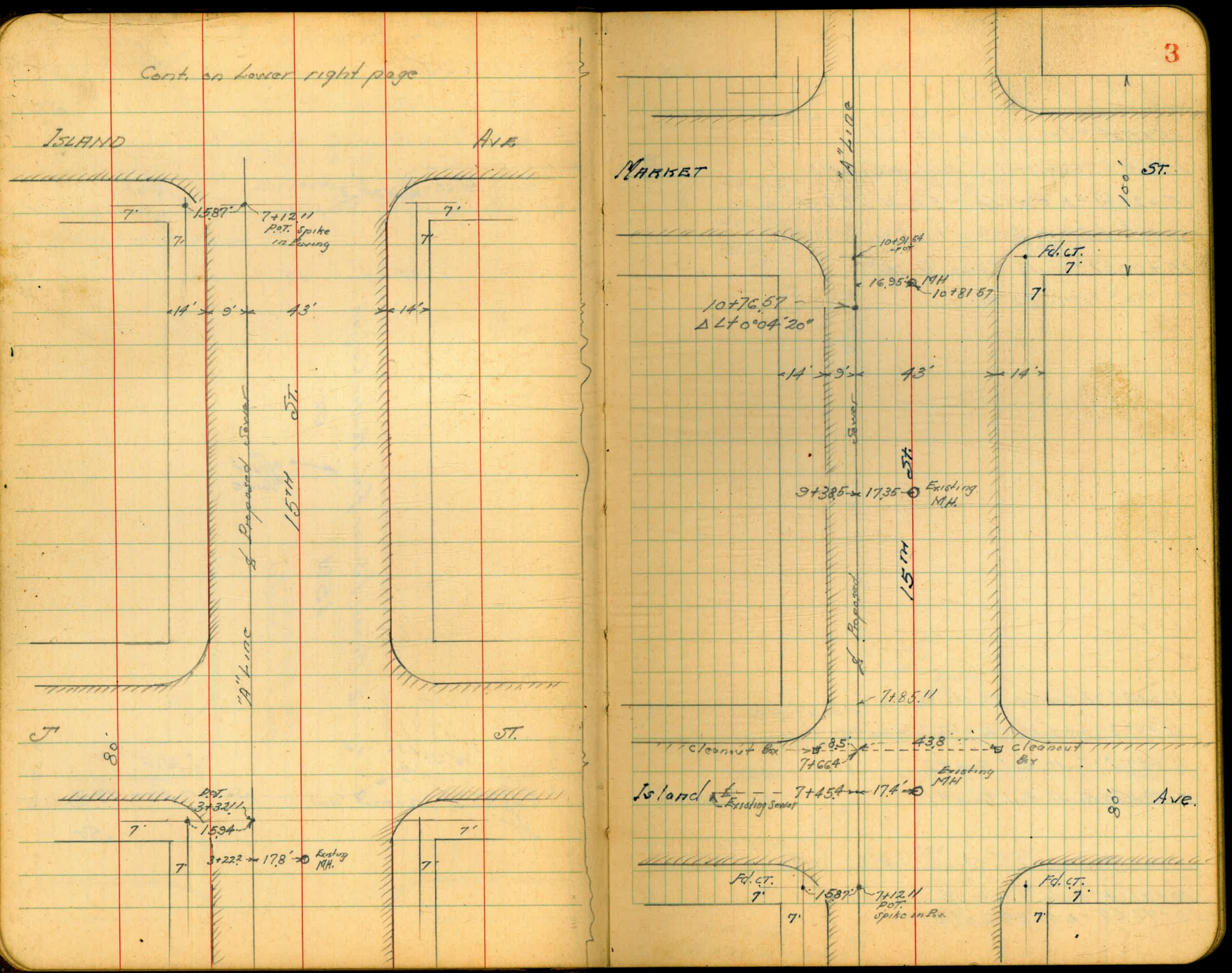


"A" Line

15+58.4 = Drain Inlet 22.1' Lt.

15+31.6 = Intersection Existing Sewer

15+28.67 = Δ 0°07' Lt. = 5' South of ℄ G-St.

15+08.3 = ℄ Drain Grating Inlet on W 21.8' Lt.
P.O.T.

15+00.67 = South 7' Line G-St.

15 +06.4 = MH, 3.8' Rt.

11+84.6 = ℄ Existing MH 18.6' Rt.

11 +67.3 = Int. culvert to cleanout Box #3 - 7.7' Lt. #4 = 42.15' Rt.

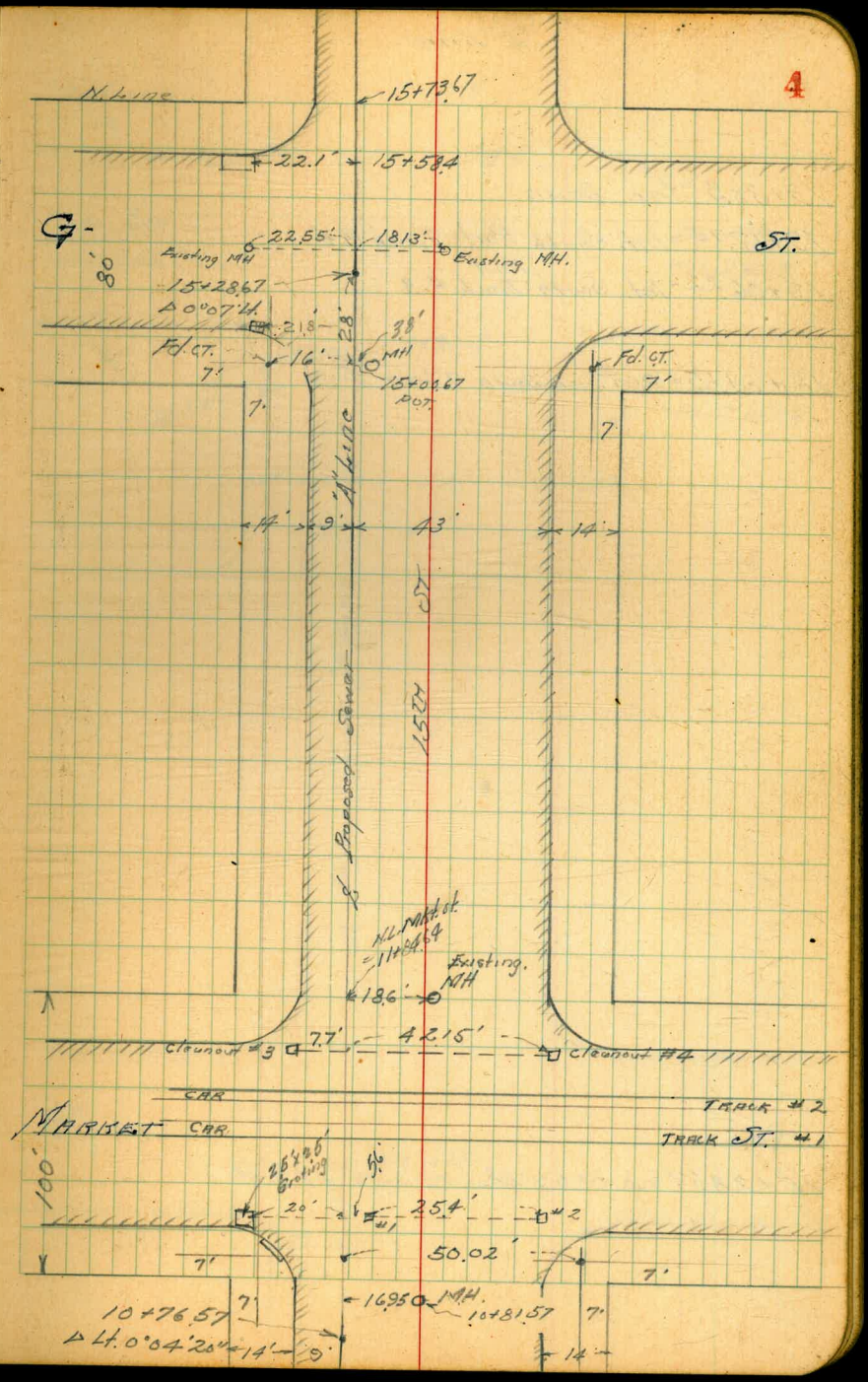
11 +39.67 = South Rail Track #2

11+29.67 = South Rail Track #1

11+02.10 = Intersection Cleanout Boxes. 5.6' Rt. = ℄ #1, 31' Rt. = ℄ #2

10+91.64 = South 7' Line Market - P.O.T.

10+76.57 = Δ 0°04'20" Lt.



"A" Line

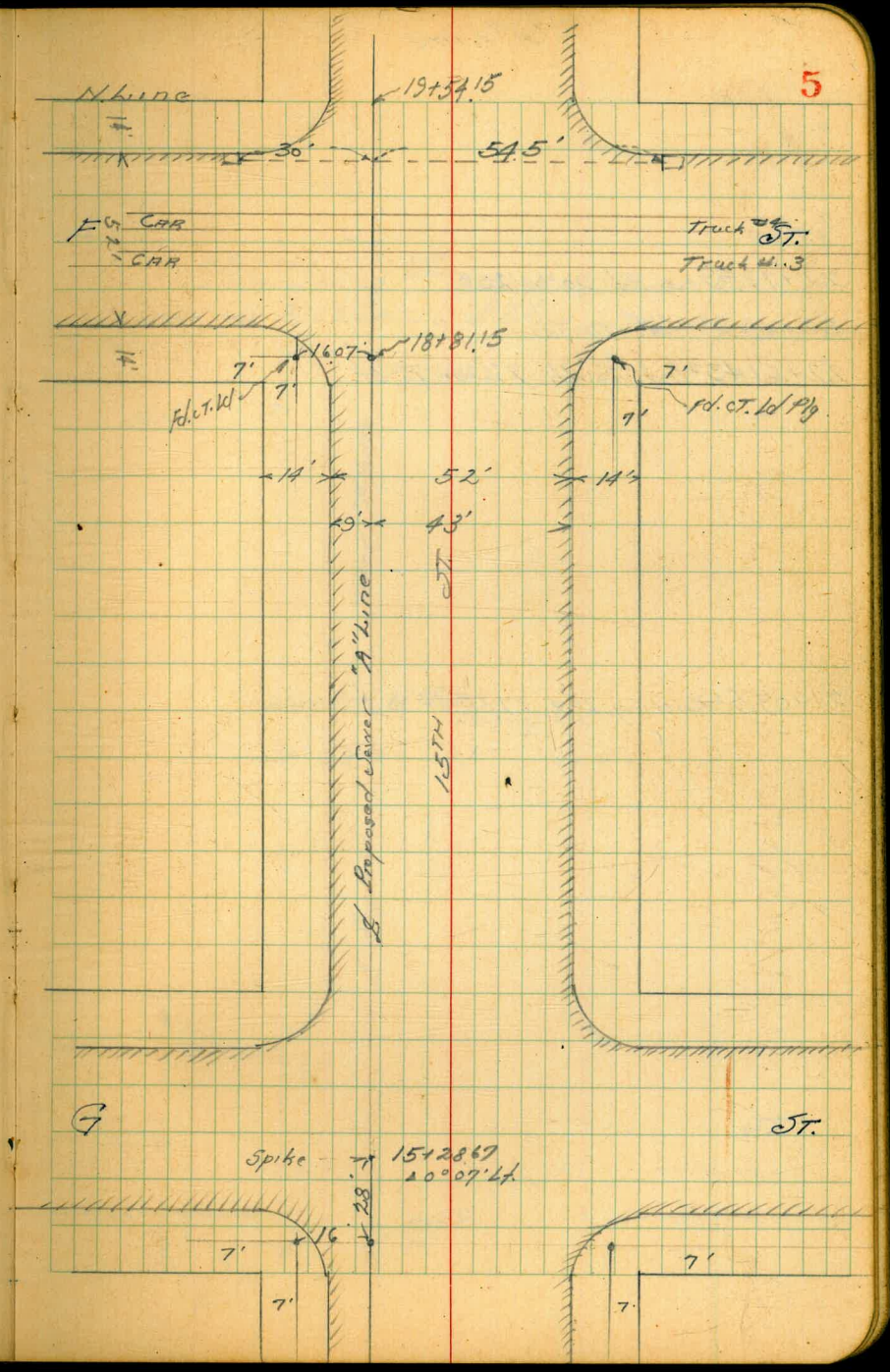
19+38.3 = Int. Drain

19+17.73 = Int. South Rail Track #4

19+06.22 = Int. South Rail Track #3

18+81.15 = P.O.T. on South 7½ line F St.

15+28.67 = Δ 0° 07' Lt. = 5' South of ℄ G St.



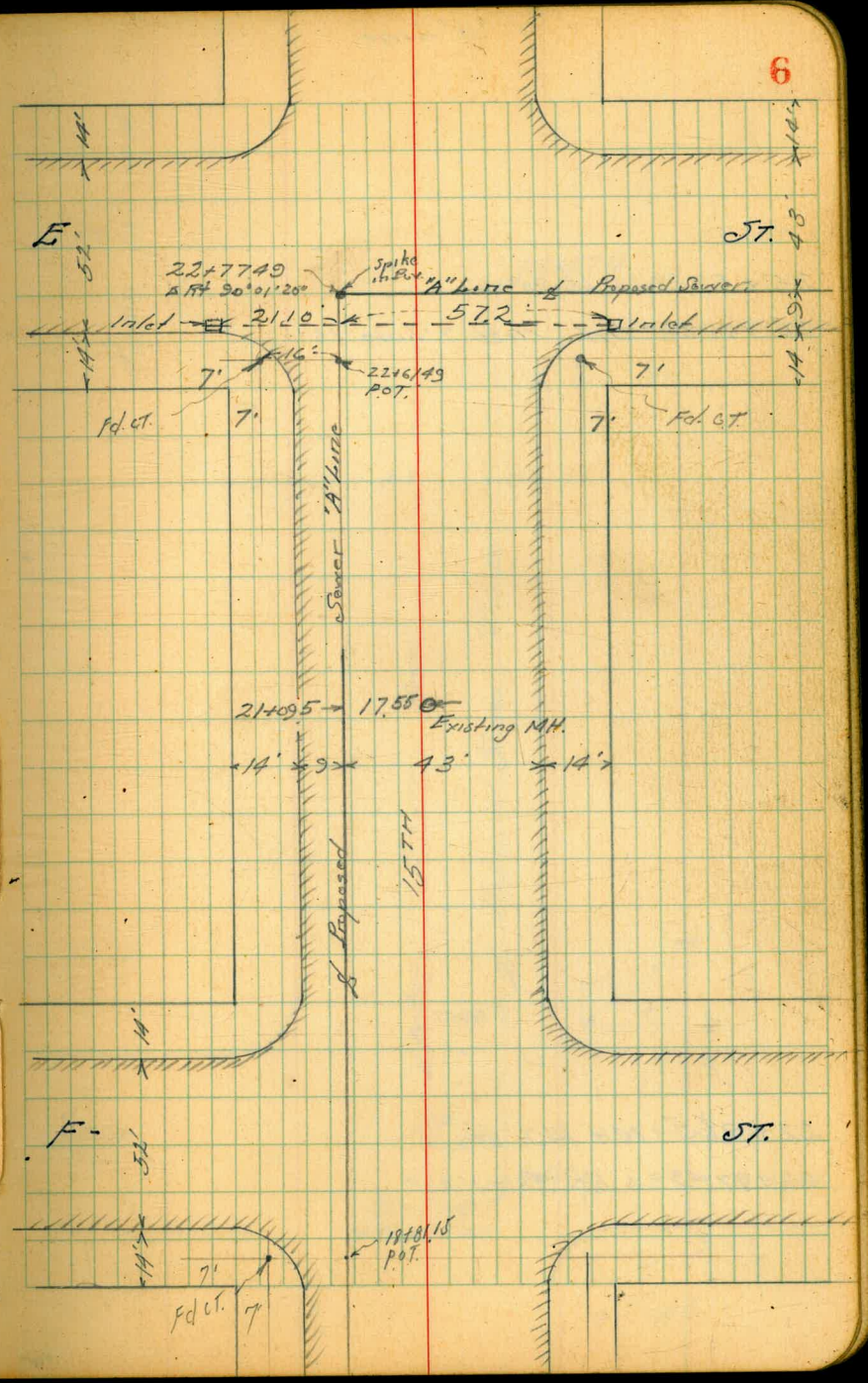
"A" Line

22+77.49 = Δ Rt 90°01'20"

22+69.64 = Int. Drain

22+61.49 = Int. South 7' Line E-St.

21+09.5 = Existing MH 17.55 Rt to ℄



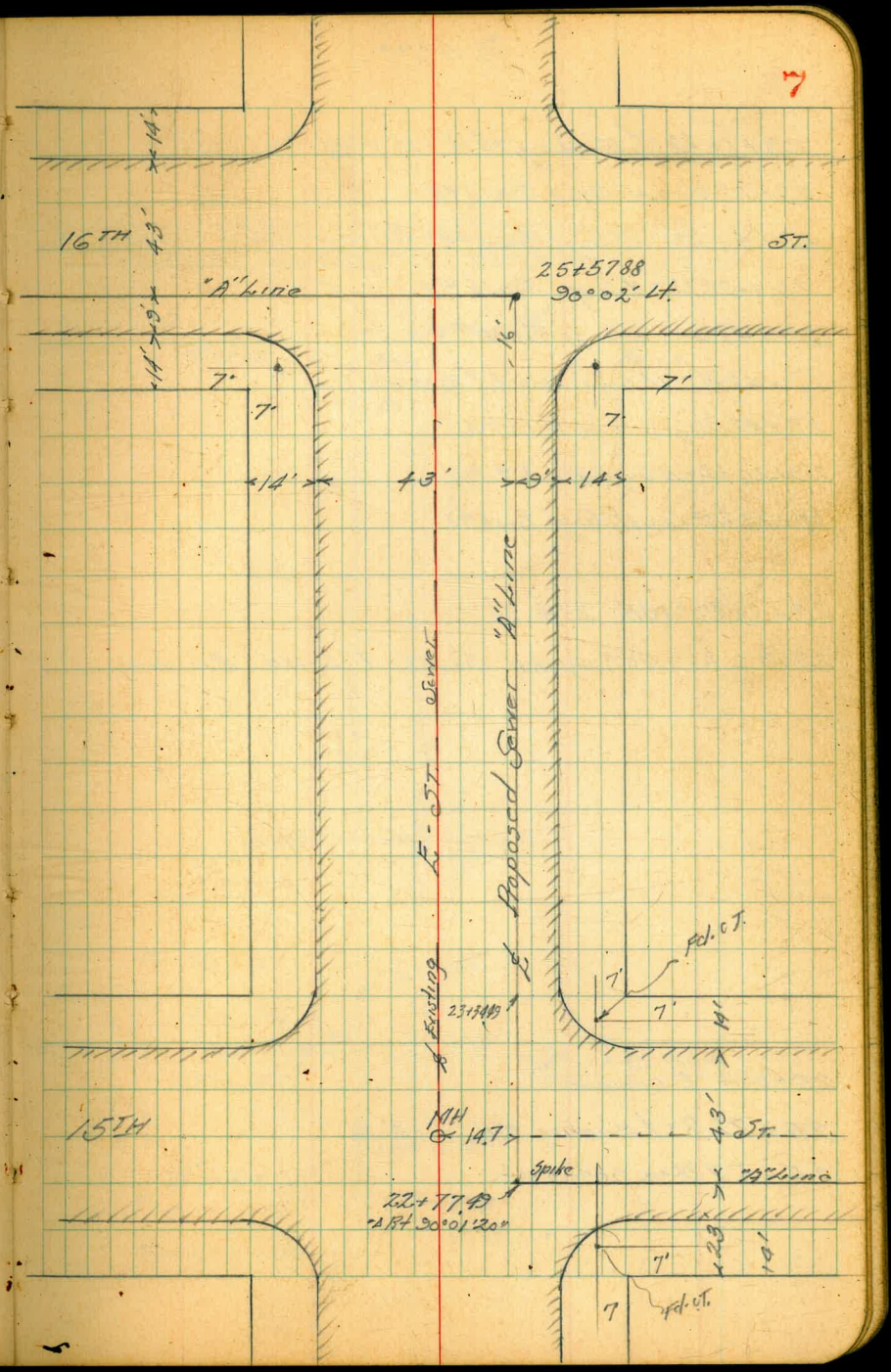
"A" Line

25+57.88 = Δ Lt. 90°02'

25+41.88 = Int. West 7' Line 16th

22+96.5 = MH 14.7' Lt.

22+77.49 = Δ Rt. 90°01'20"



"A" Line

29+60.29 = ℄ Existing MH 15.7' Rt.

29+62.66 = N. Gage Truck #4

29+57.92 = S. Gage Truck #4

29+52.65 = N Gage Truck #3

29+47.90 = S. Gage Truck #3

29+48.46 = N. Gage Truck #2

29+42.30 = S. Gage Truck #2

29+26.62 = N Gage Truck #1

29+18.20 = South Gage Truck #1

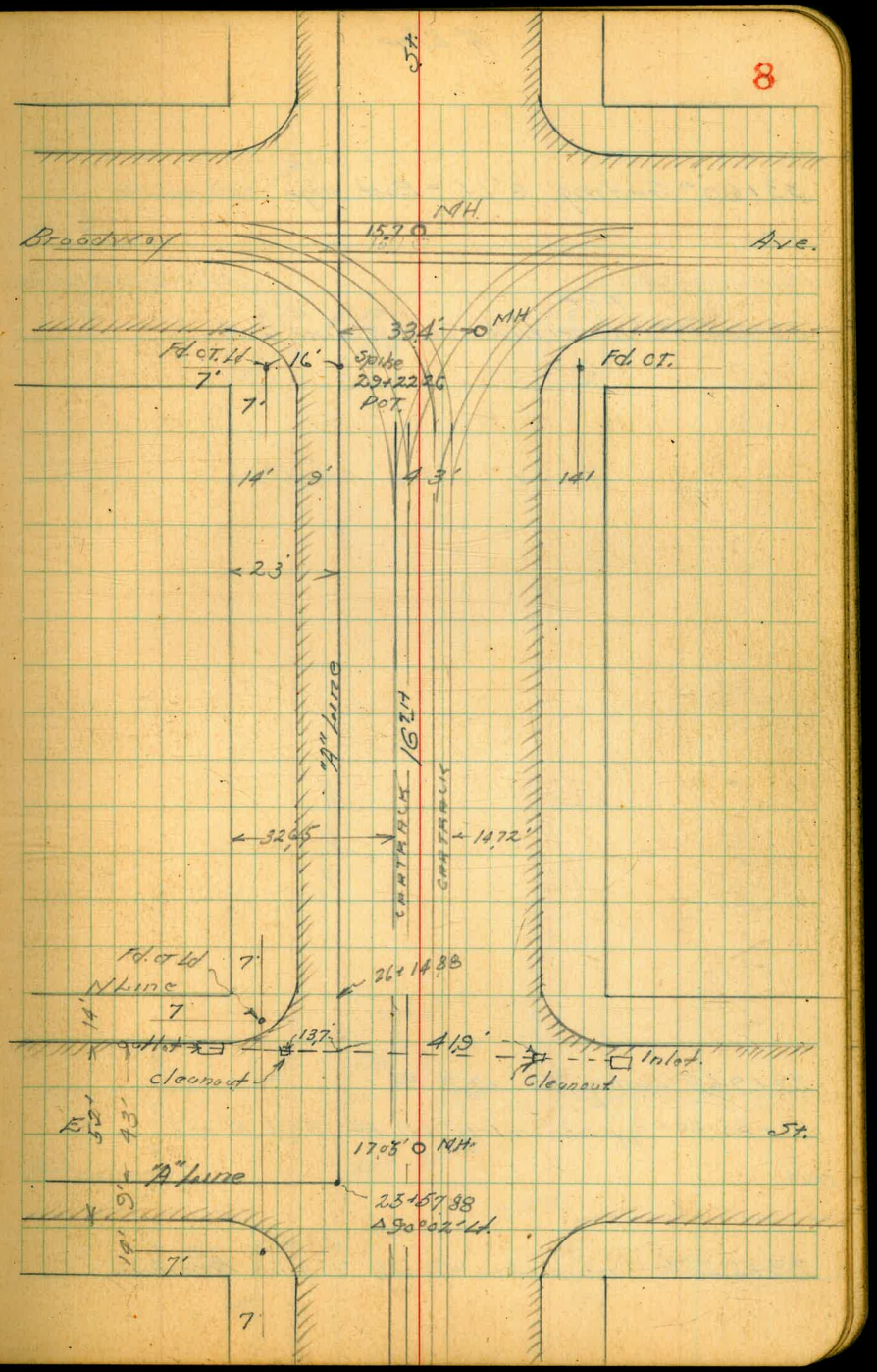
29+39.30 = MH. 33.4' Rt.

29+22.26 = P.O.T. Spike South 7' Line Broadway.

25+97.3 = ℄ Drain

25+72.8 = ℄ Existing MH 17.05' Rt.

25+57.88 = Δ 90°02' Lt.



"A" Line

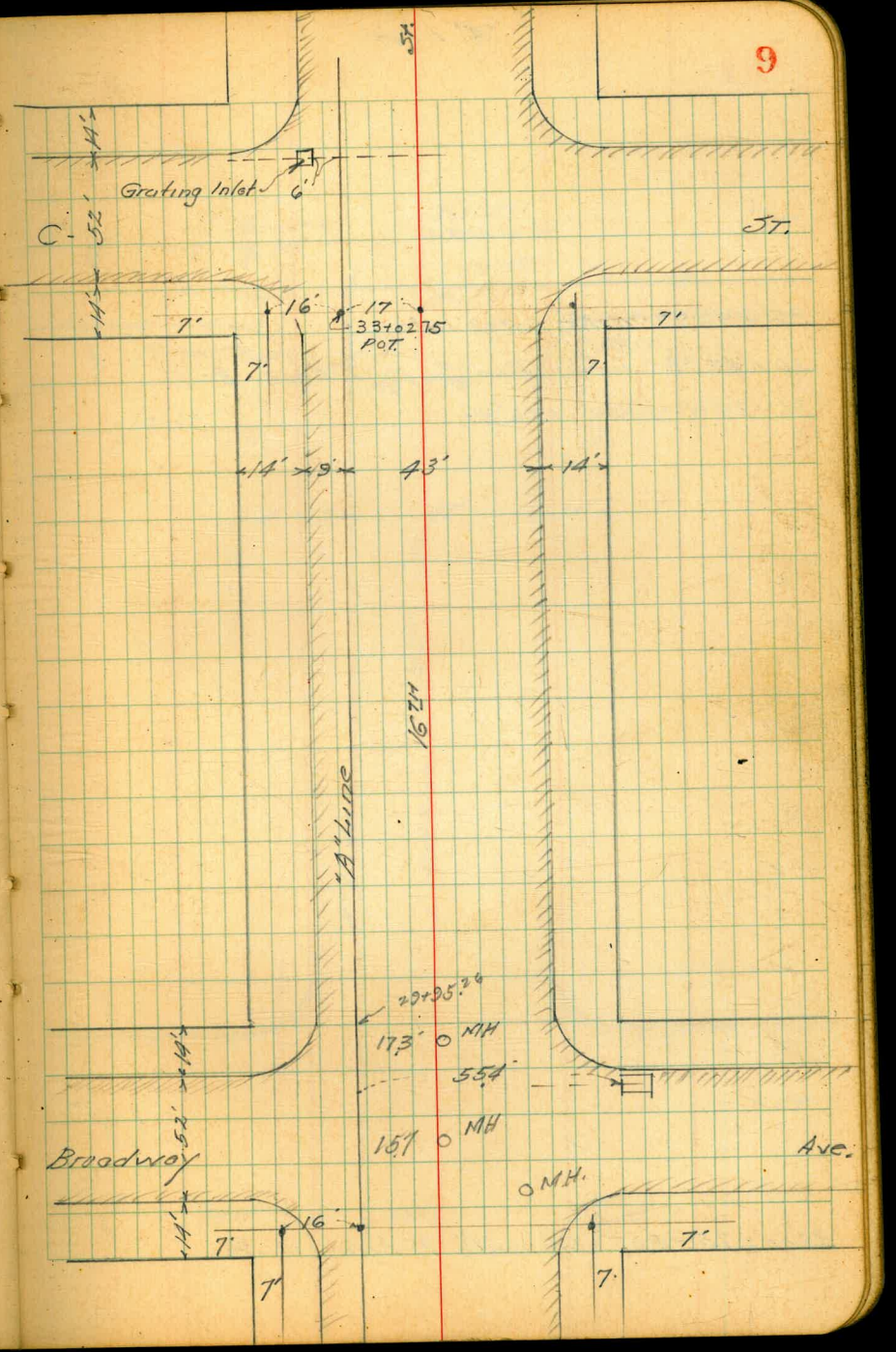
33+60 = Grating 6' Lt. = East edge

33+02.75 = POT Intersection South 7' line C. St.

29+95.5 = Existing MH 17.3' Rt.

29+80.00 = opposite inlet - on Rt 55.4 Rt of ℄

29+22.26 = Intersection South 7' line Broadway.



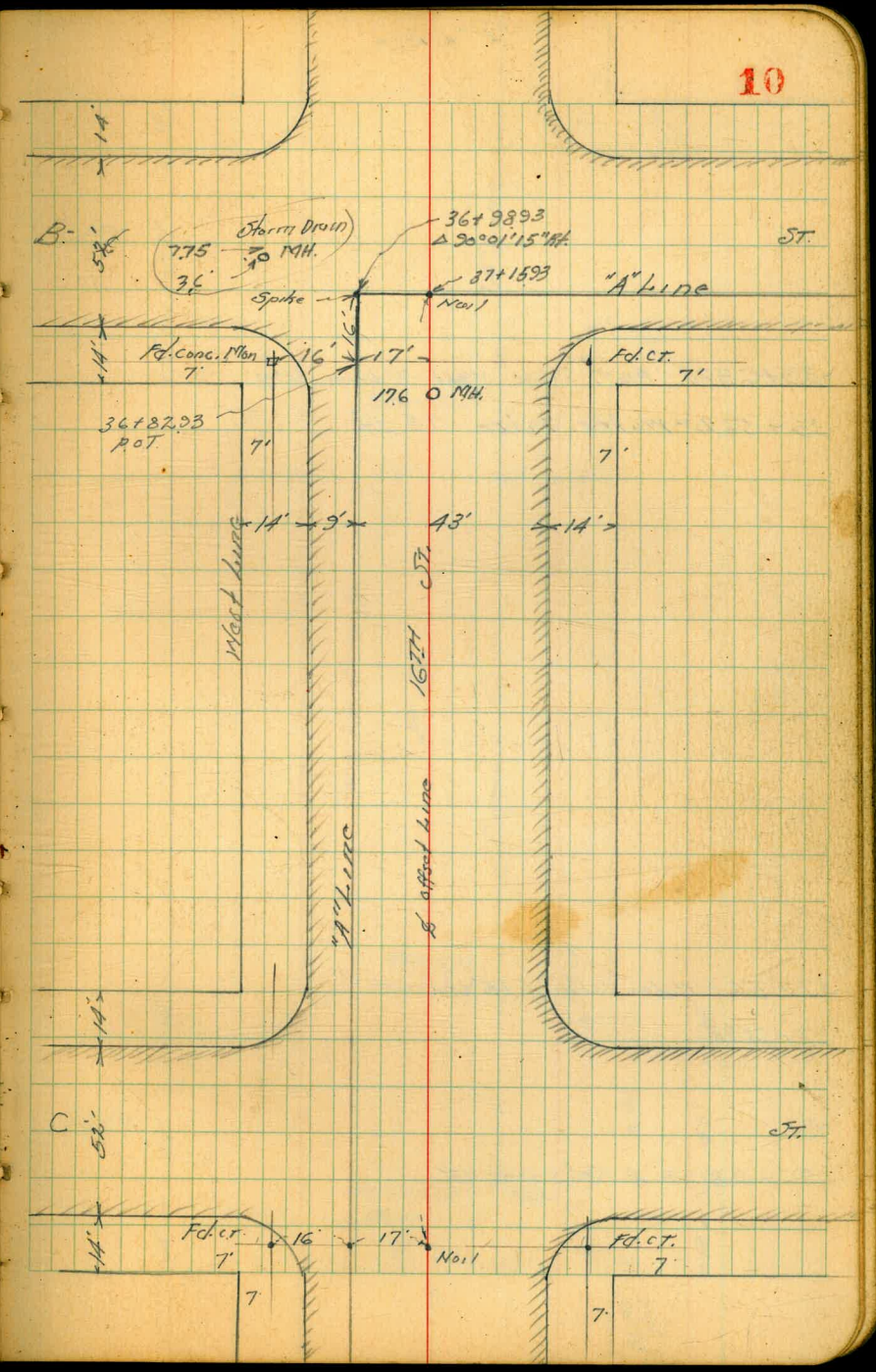
"A" Line

36+98.93 = Δ Rt. 90°01'15"

36+82.93 = P.O.T. Intersection South 7' Line B-St.

36+73.07 = ℄ MH. 17.6' Rt.

33+02.75 = P.O.T. - Int. South 7' Line C-St.



"A" Line

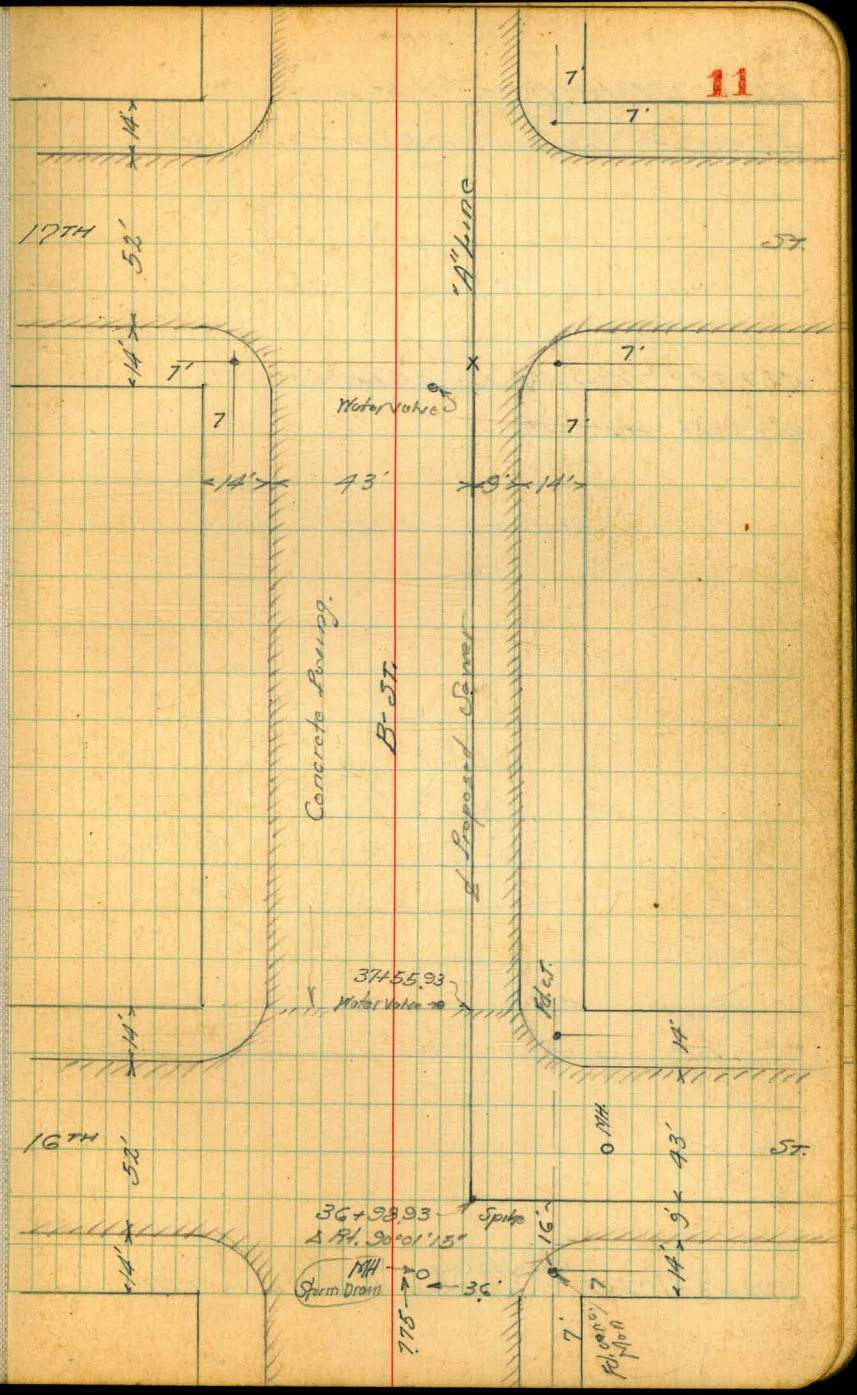
39+63.27 P.O.T. Cross West 7' Line Mtb

39+56.2 = Water Valve 7.8' Lt.

37+56 = Water Valve 6.35' Lt.

37+55.93

36+98.93 Δ Rt. 30°01'15"



"A" Line

43+16.2 = Water Valve 6.7 Lt.

43+09.36 = P.O.T. Wall Intersection East 7' Line 18th

39 42+37.0 = Water Valve 6.5 Lt.

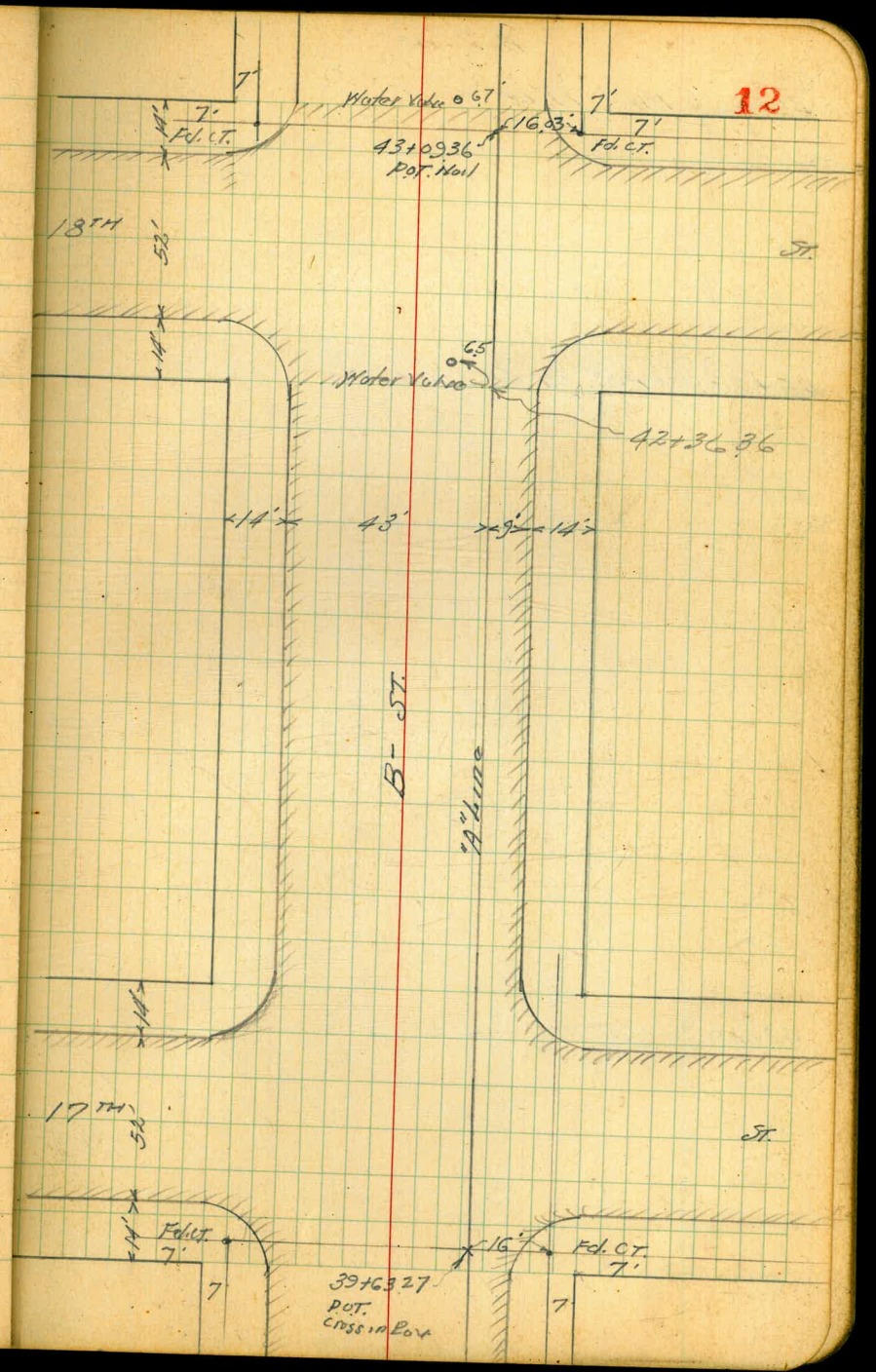
39 42+36.36 = W.L. 18th

37+

37+

36

39+63.27 = P.O.T. Cross in Curve. Intersection West 7' Line 17th

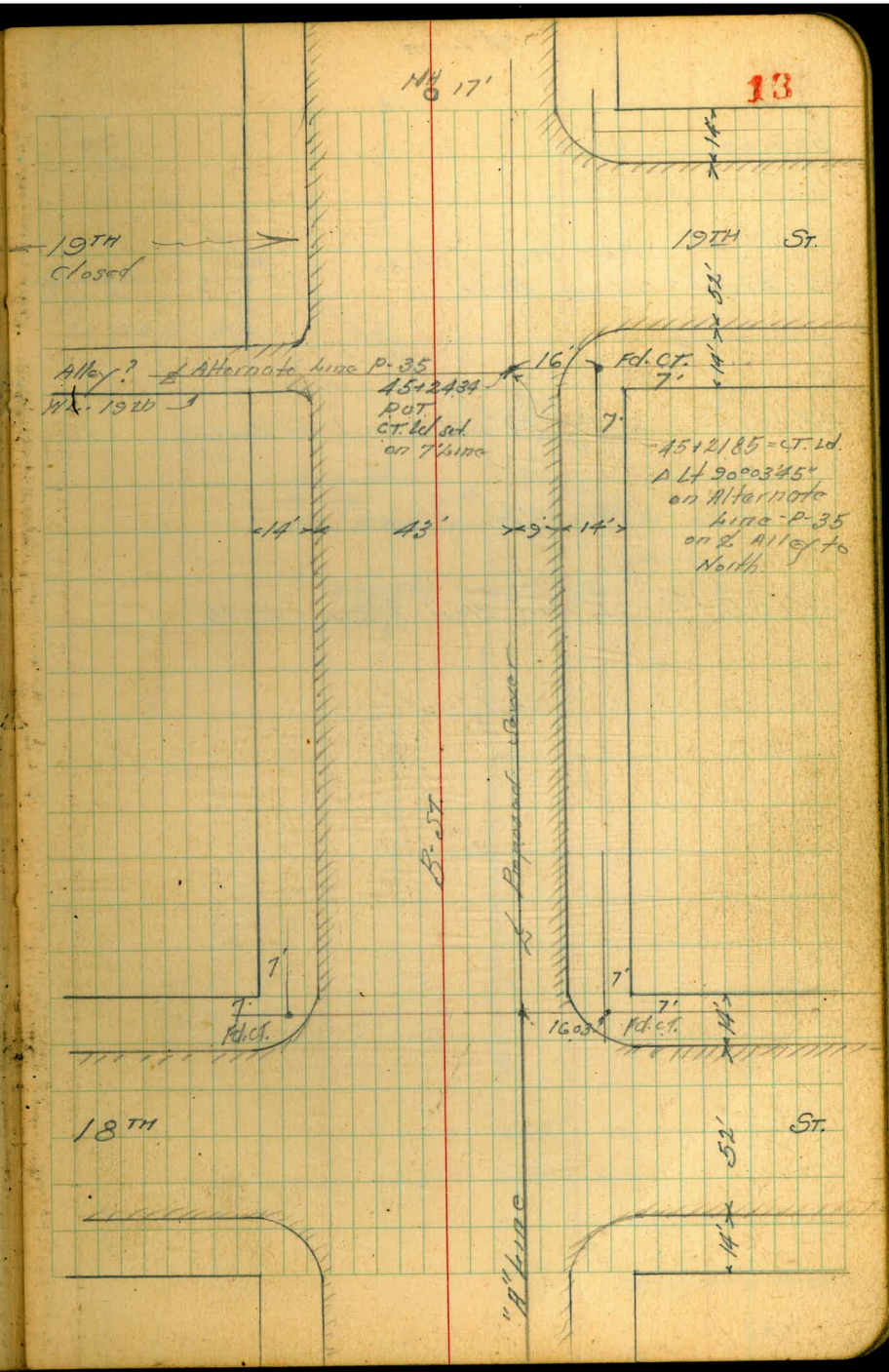


"A" Line

46+00.5 MH 17' Lt.

45+24.34 = P.O.T. C.T. set West 7' Line 19th St.

43+09.36 = P.O.T. Nail int. E. 7' Line 18th



"A" Line

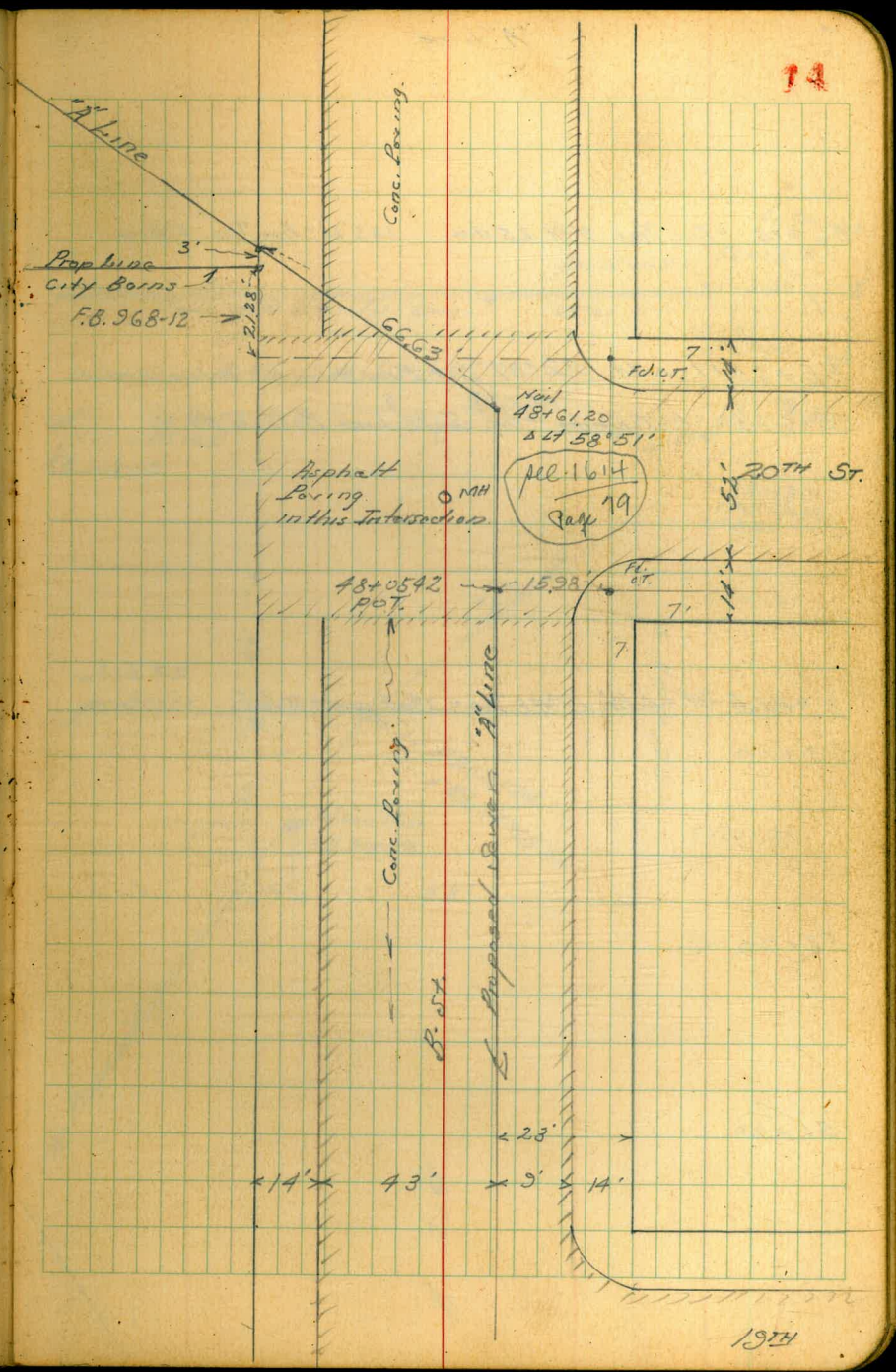
50+00

P.O.T. Paving Stake
49+27.83 = N Line B-St.

48+61.20 Δ 58°51' Lt. Nail in Paving.

48+38.42 = ℄ MH 17' Lt.

48+05.42 = P.O.T. Nail West 7' Line 20th



"A" Line

56+18 = Euc Tree 9' Rt 2.5' dia. 12.5' Lt = Euc. Tree 2' dia.

55+85.17 = Δ Lt. 22°37' Set Par. Stake 0.3' below Surface

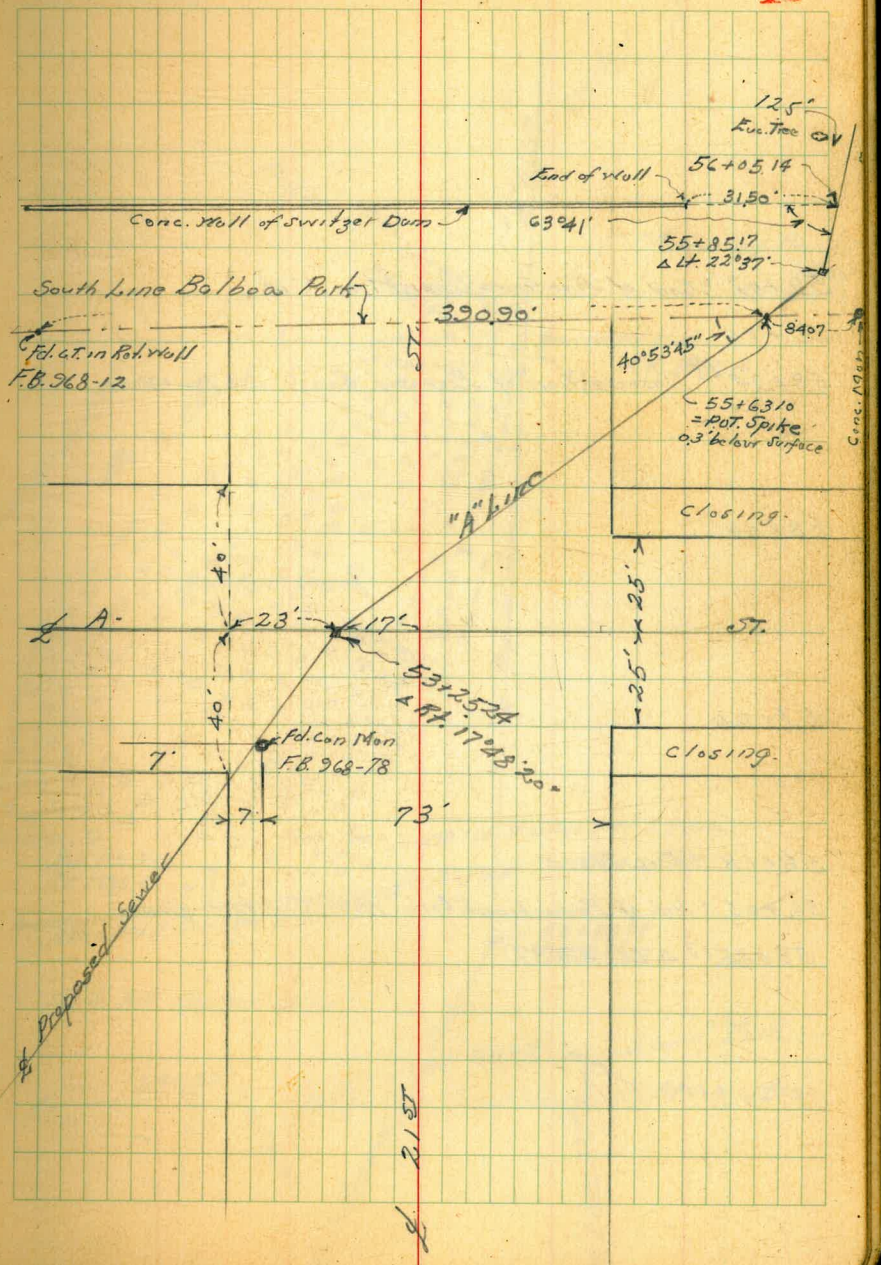
55+63.10 = P.O.T. Spike = Int. South Line Balboa Park.

53+25.24 = Δ Rt. 17°48'20" Set par. stake 0.2' below Surface

53+00

52+00

51+00



"A" Line

59+07 = End of Pine Grove Last Tree 2' Lt.

59+00

58+94.25 = Intersection of Proposed Road. set Por. Stake

58+00

57+00

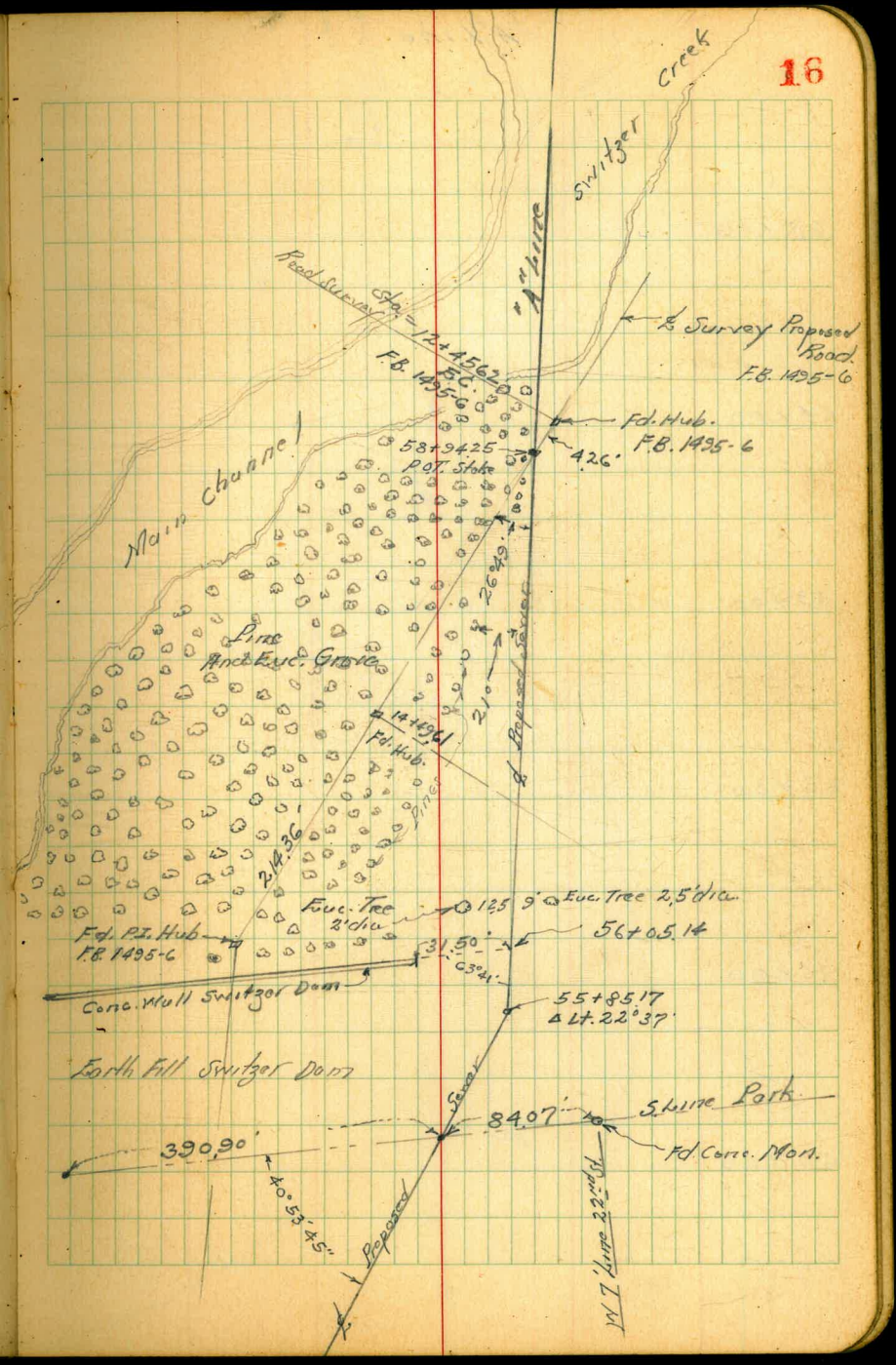
56+18 = Euc. Trees.

56+05 = Int. of Production Conc. Wall Switzer Dam.

55+85.17 Δ Lt. 22°37'

22.07

55+63.10 = P.O.T. Sph = Int. St. Park.



"A" Line

65+00

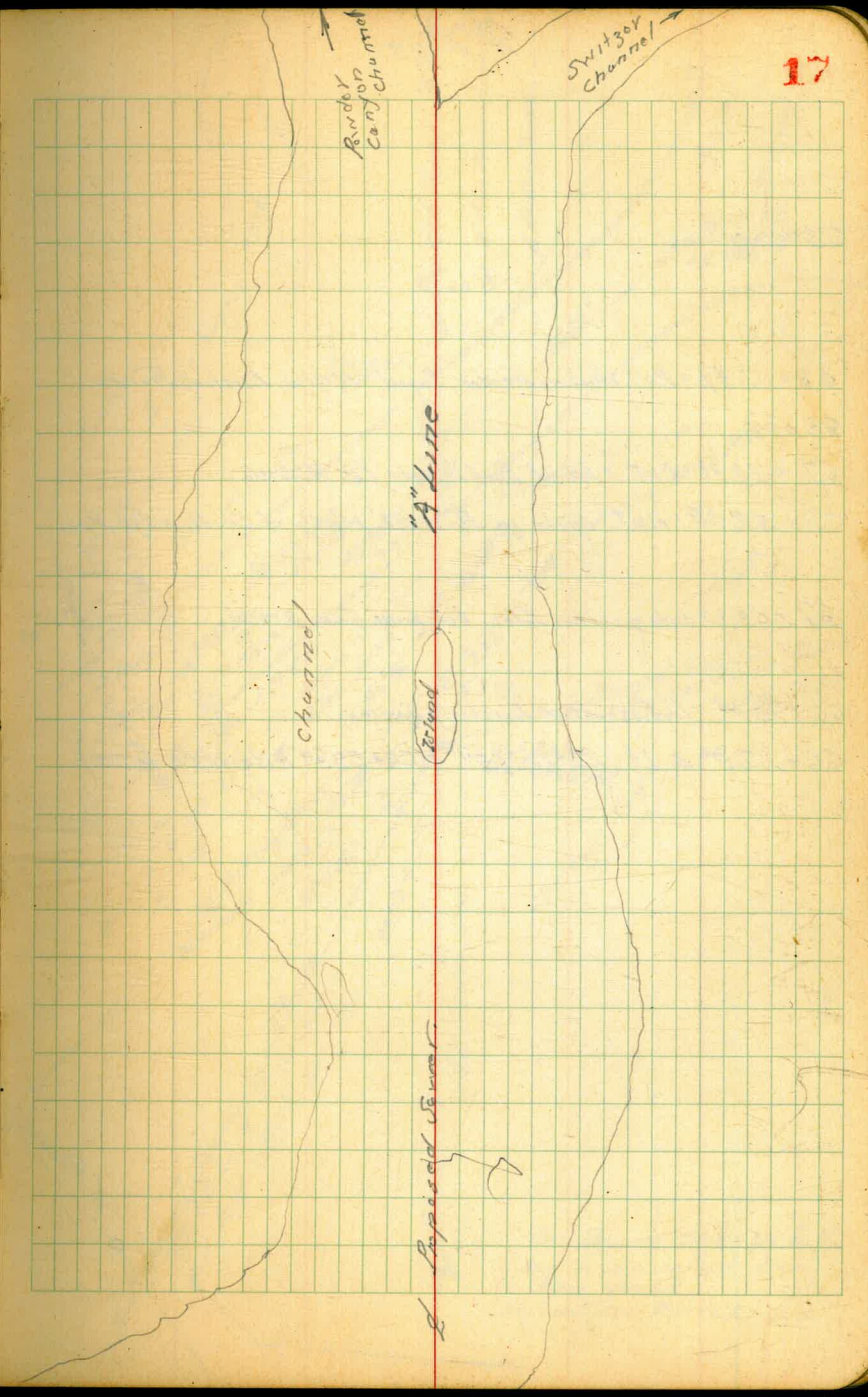
64+00

63+00

62+00

61+00

60+00



"A" Line

69+00

68+05.47 = P.O.T. Nail in Header Board = N. edge Existing Paving

68+00

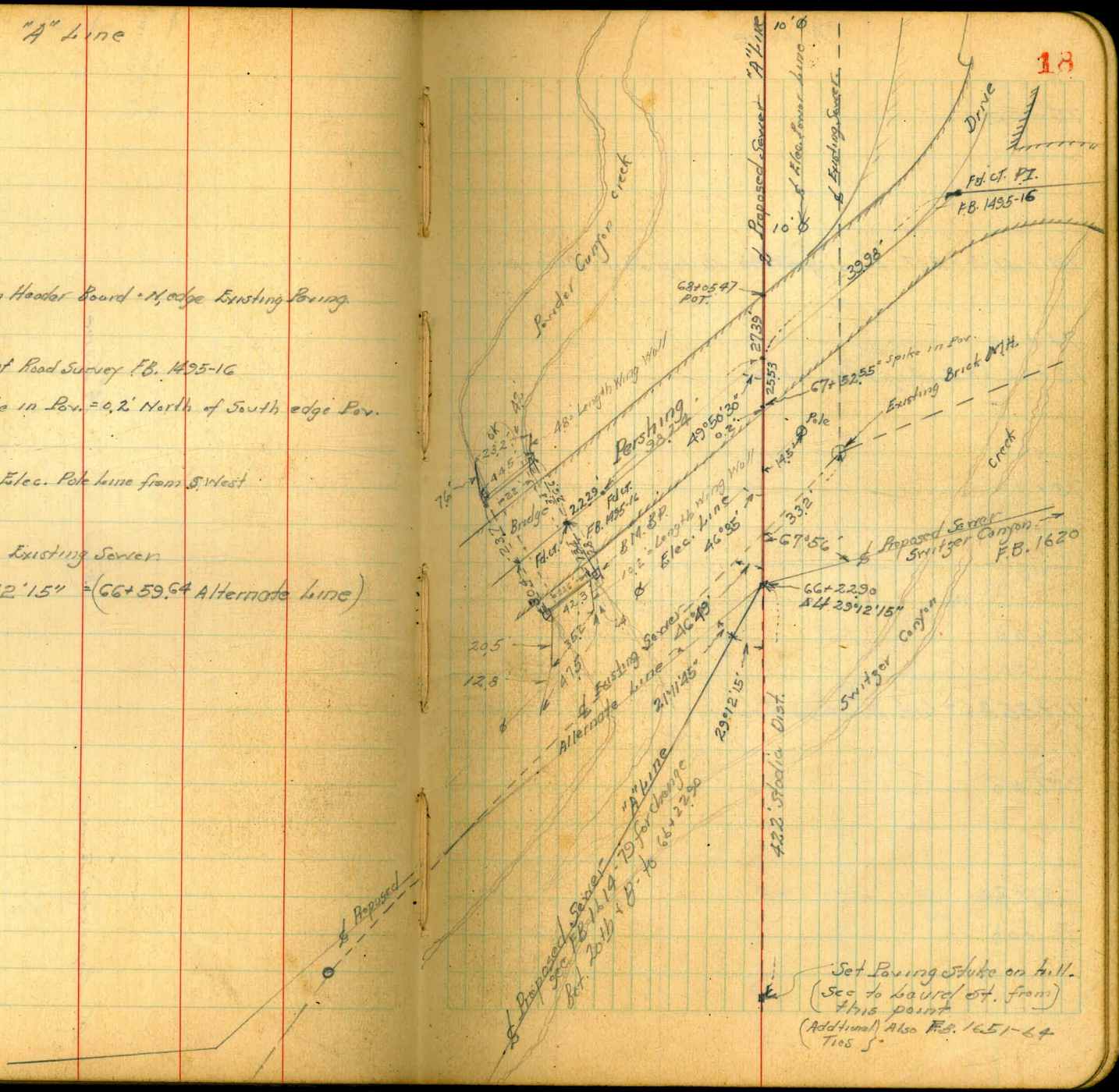
67+78.08 = P.O.T. = Int. of Road Survey F.B. 1495-16

67+52.55 = P.O.T. Spike in Pav. = 0.2' North of South edge Pav.

67+03.8 = Intersection Elec. Pole line from S. West

66+78.34 = Intersection Existing Sewer

66+22.90 Δ Lt. 29°12'15" = (66+59.64 Alternate Line)



"A" Line

75+00

74+41.19 = P.O.T. Paving Stake in top Soil Dump

74+00

73+82.5 = Existing M.H. 21' Rt.

73+00

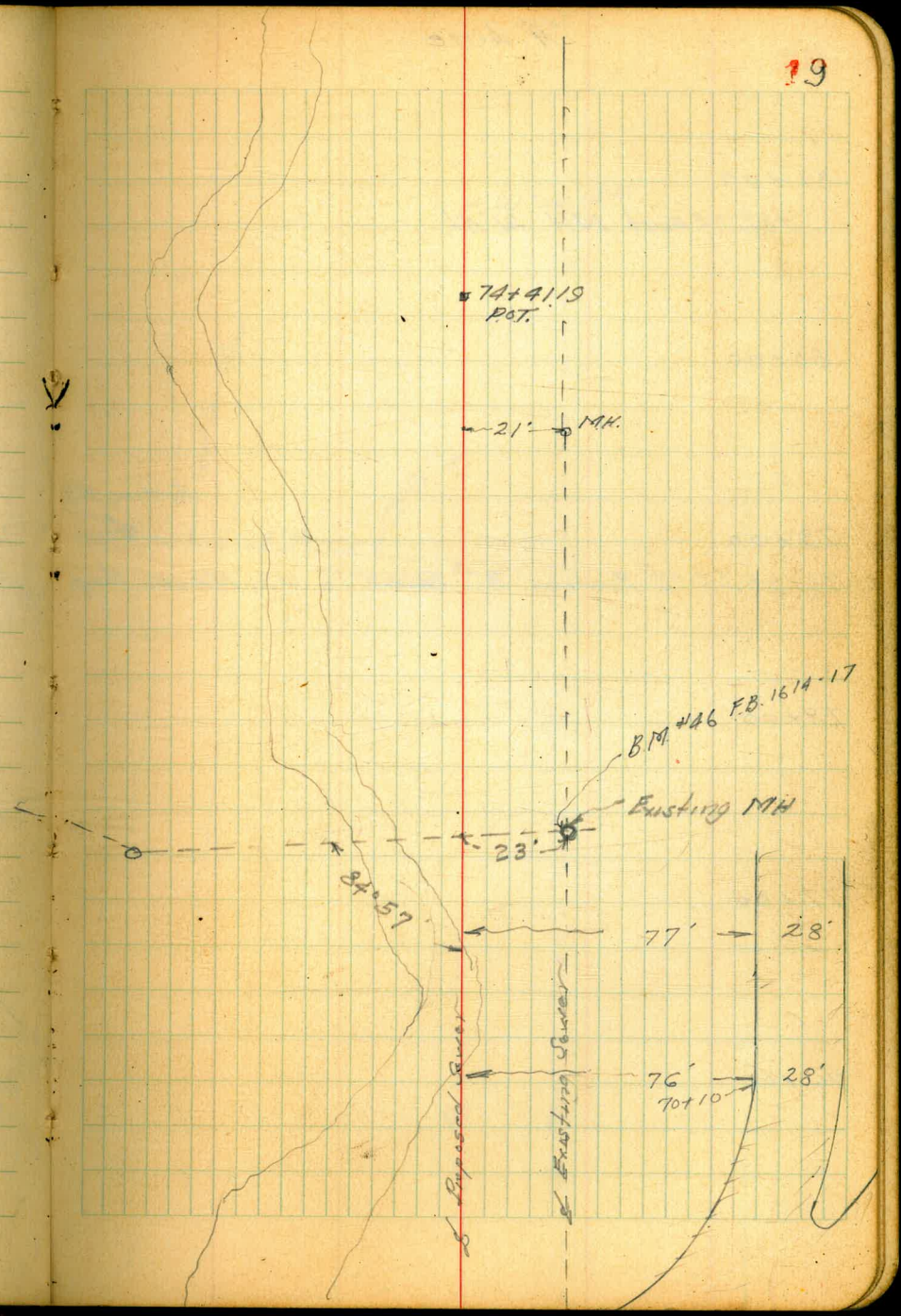
72+00

71+55.26 = Int. Existing Sewer.

71+00

+20

70+00



"A" Line

81+00

+82 = ℄ Exist. MH 21' Rt

80+00

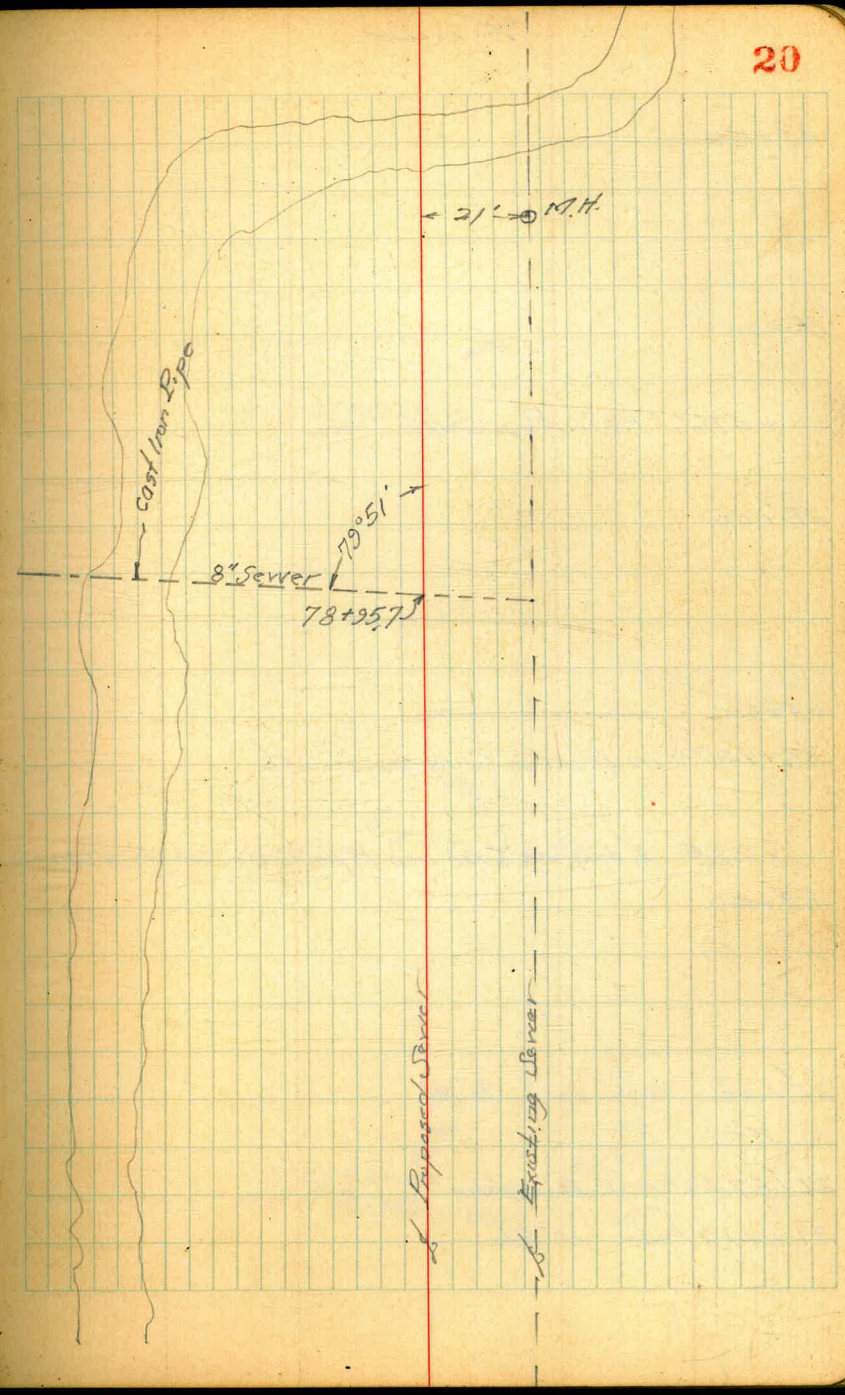
79+00

78+95.7 ± = ℄ Existing 8" Sewer To U.S. NAVAL Hosp.

78+00

77+00

76+00



"A" Line

87+00

86+00

+47.66 = P.O.T. Pav. Stake

85+00

84+00

83+70 = ℄ in Border Canyon Road

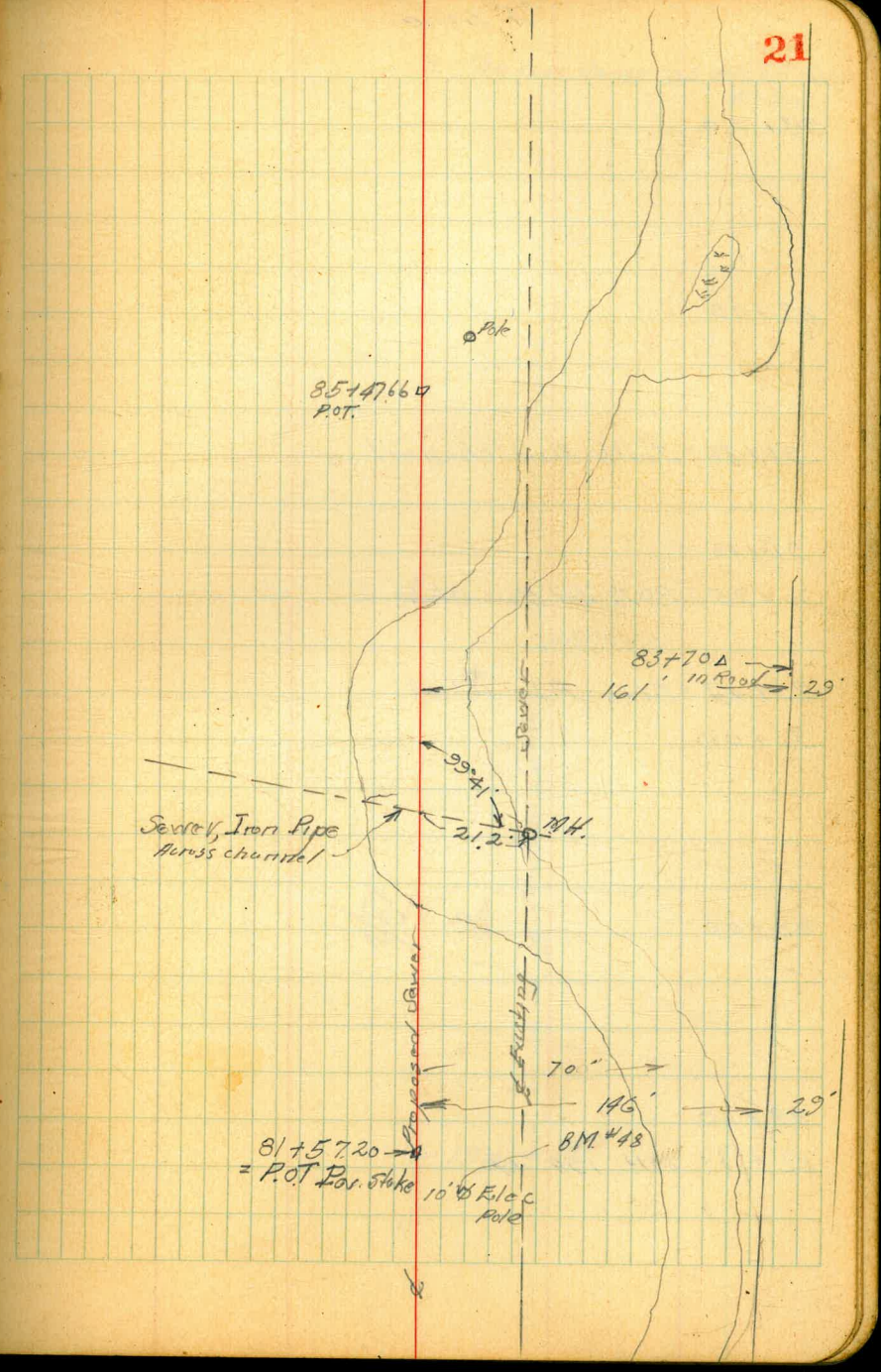
+28.6 = ℄ Existing Cast Iron Pipe to Sewer M.H. = 21.2' Rt.

83+00

82+00 channel 70' Rt.

81+57.20 = P.O.T. Pav. Stake

81+41 = Elec. Pole 10' Rt.



"A" Line

93+00

92+00

91+86 = South Bank channel

91+00

90+95 = P.O.T. set Pave. Stake

90+47 = Elec. Pole 10' Rt

90+00

89+00

See 1651

88+00

87+83 = MH 19.4' Rt

← This line same as black line p-23

BM #50

Existing Sewer

Proposed Sewer

19.4' MH

"A" Line

98+18.10 = Δ Lt. 16°40'20" Set Perm. Stake

+17.8 = 13.5' Lt. to Δ in Wing Wall

97+15.5 6.5' Rt. to Δ in Wing Wall

+93 = End Wing Walls 8.7' Rt 24.5' Lt.

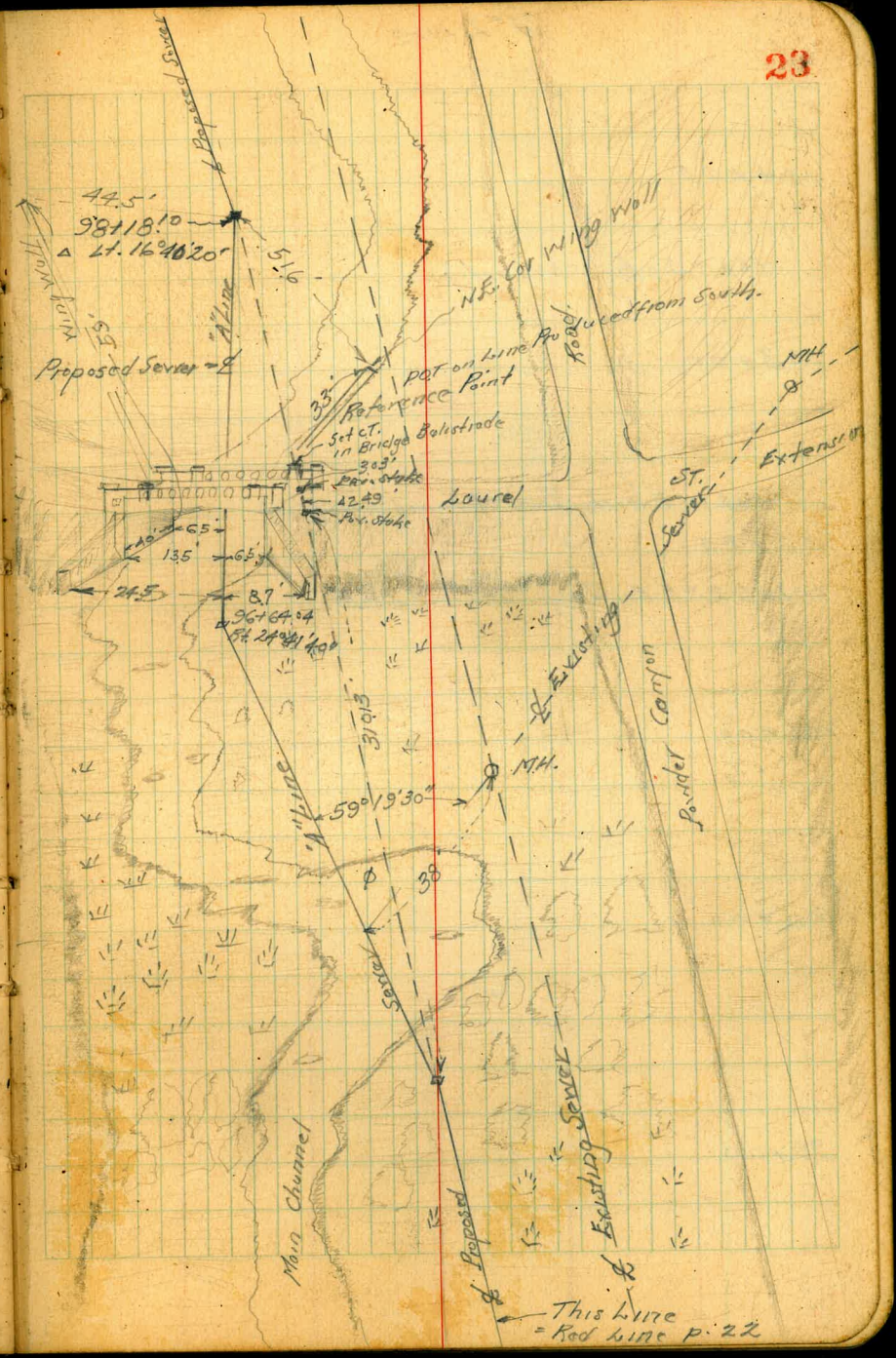
96+64.04 Δ Rt 24°41'40"

94+67 = Elec. Pole 9' Rt.

94+60.4 = Int Sewer Produced

See Levels 165 B

93+90 Δ 8°50' Lt.



"A" Line

104+00

+60 = S. edge channel

103+00

+12 = ℄ Wash from channel overflow

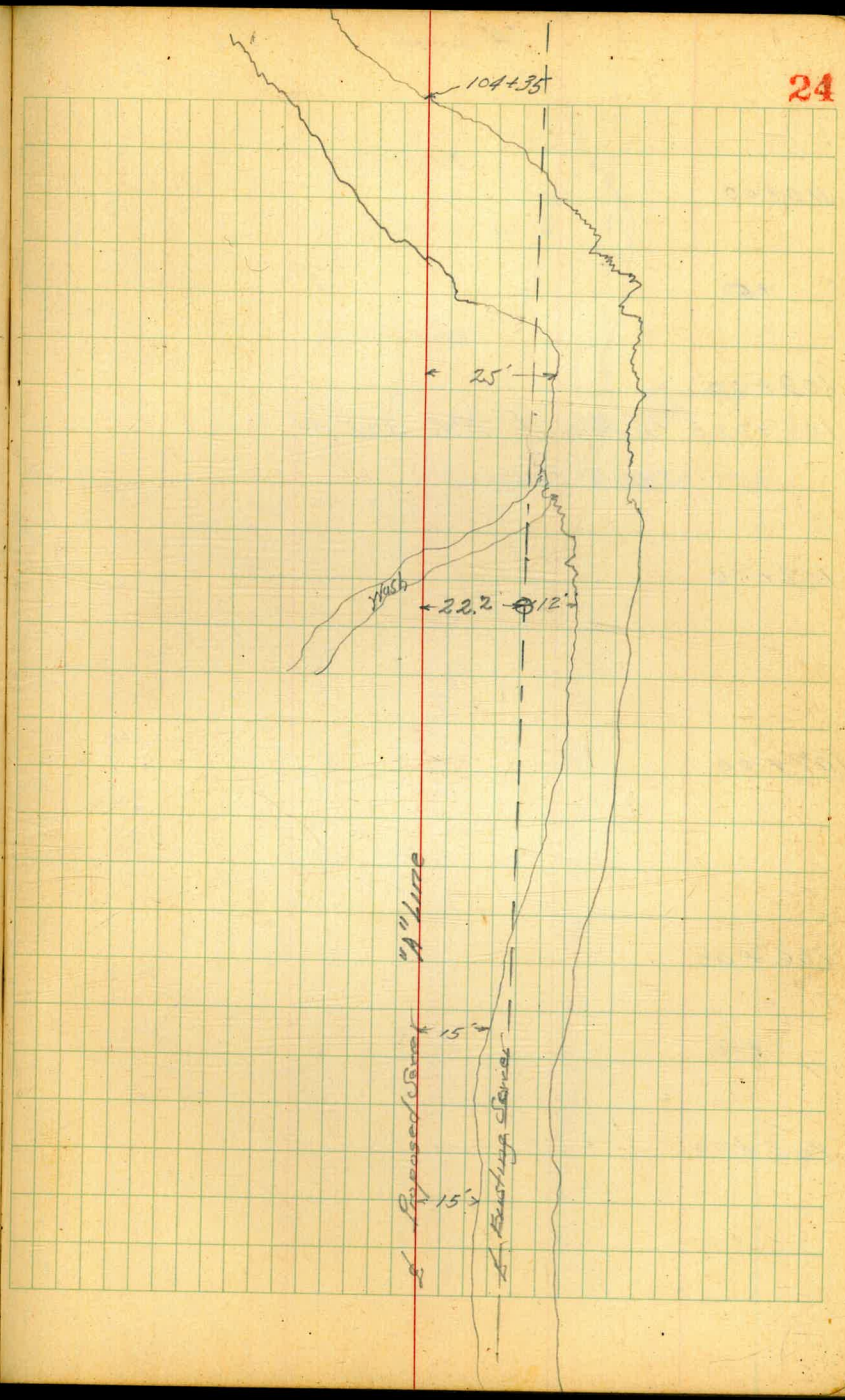
102+00

101+92 = ℄ Existing MH. 22.2' Rt.

101+00

100+00

99+00



"A" Line

110+00

+60

109+00

108+92.5 = ℄ Existing MH. 30.8' Rt.

+55 = S. Bank Channel

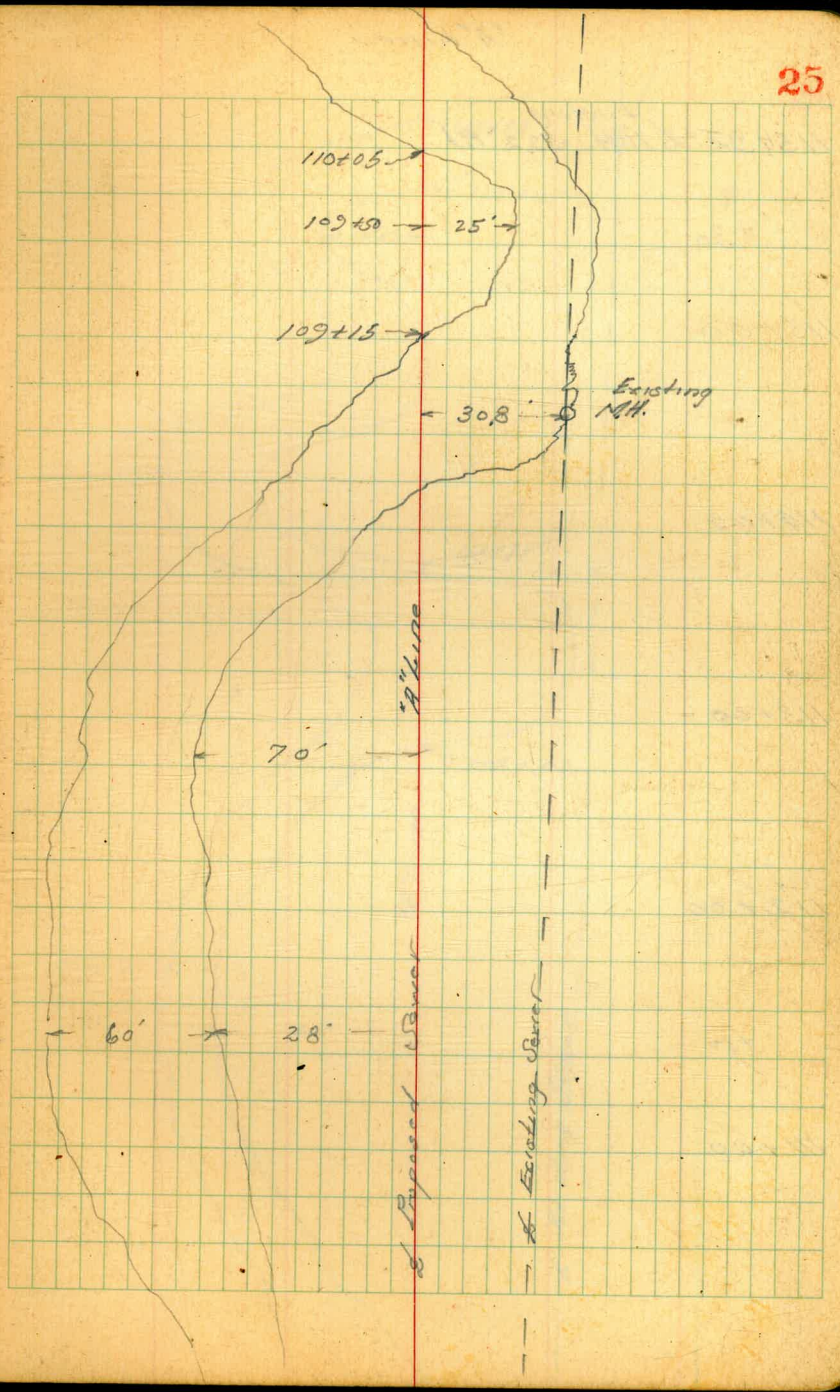
108+00

107+00

106+00

+50

105+00



"A" Line

Existing
115+92 ℄ Hill 39.2' Rt

+30

115+00

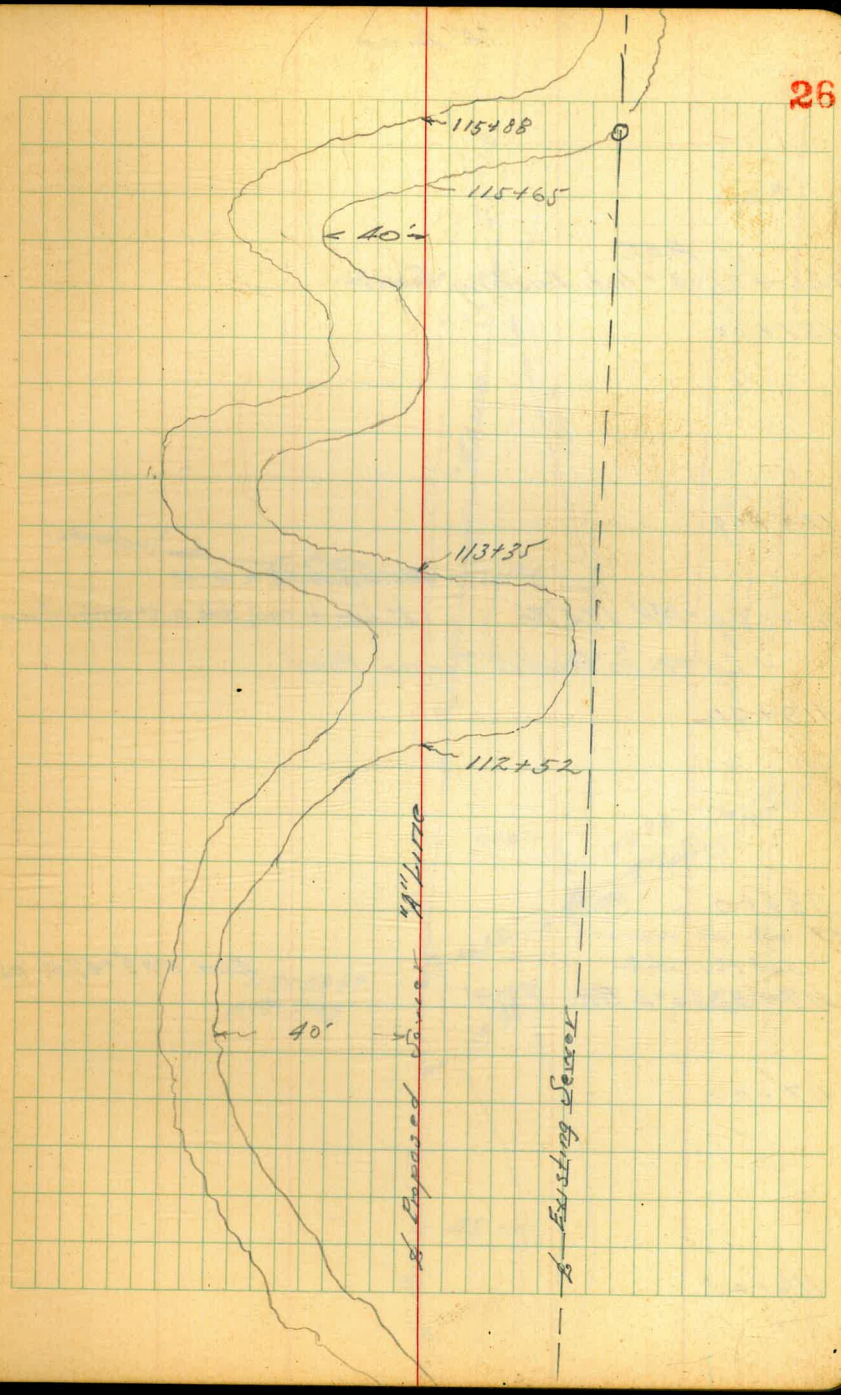
114+00

113+00

112+00

+50

111+00



"A" Line

P.O.T.
121 + 21.03 = Int. Existing Sewer.

121 + 00

120 + 00

Elevations F.B. IL 14-42
119 + 67.6 = MH. 17.4' Rt. 8" Line to West, With a 6" Under Same
+20 = Δ in Powder Canyon Road

119 + 00

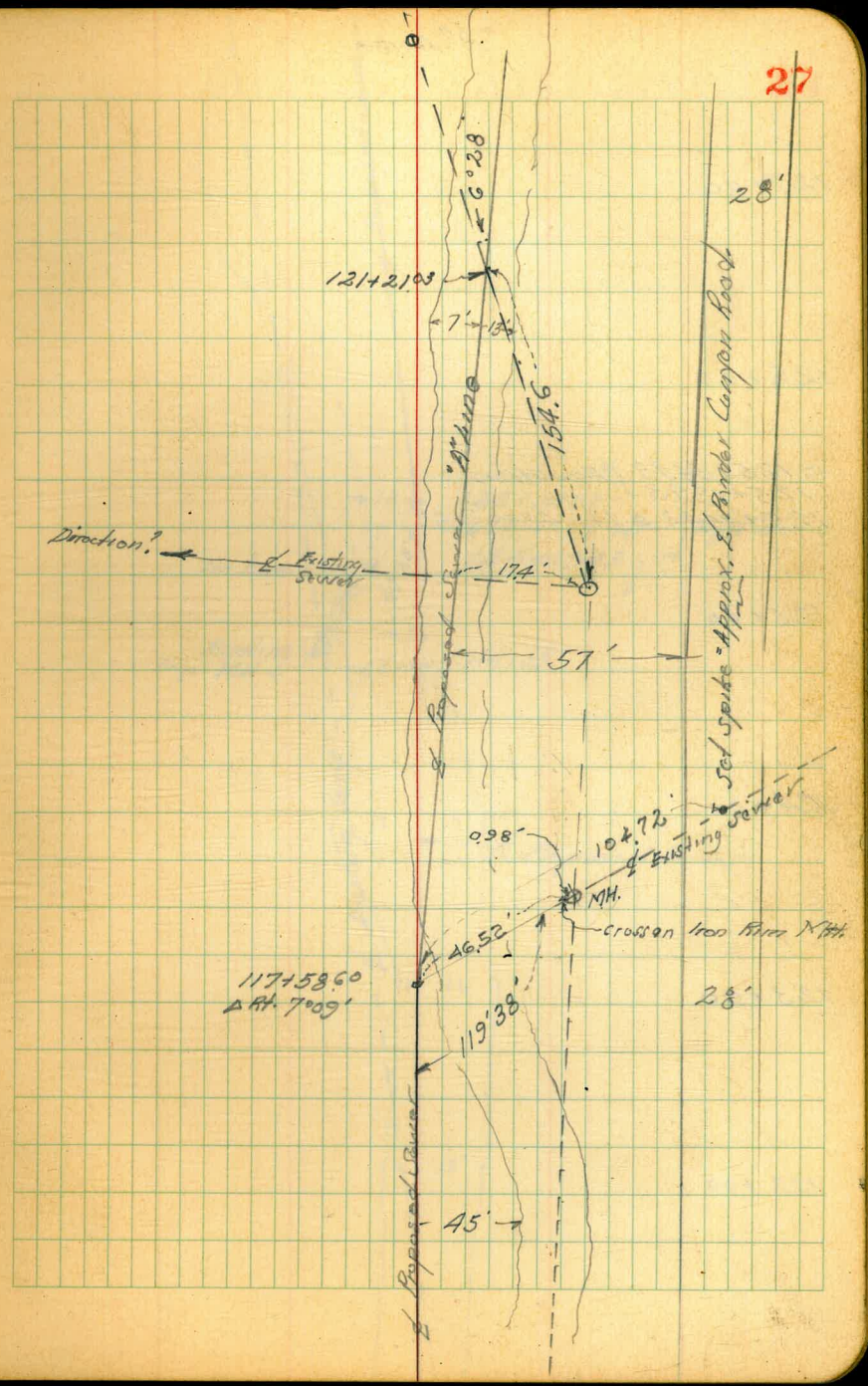
118 + 00

Set Pvt. Stake
117 + 58.60 = Δ Rt. 7°09'

Exist. MH ℄ = 47.55' Rt.

117 + 00

116 + 00



"A" Line

127+00

126+00

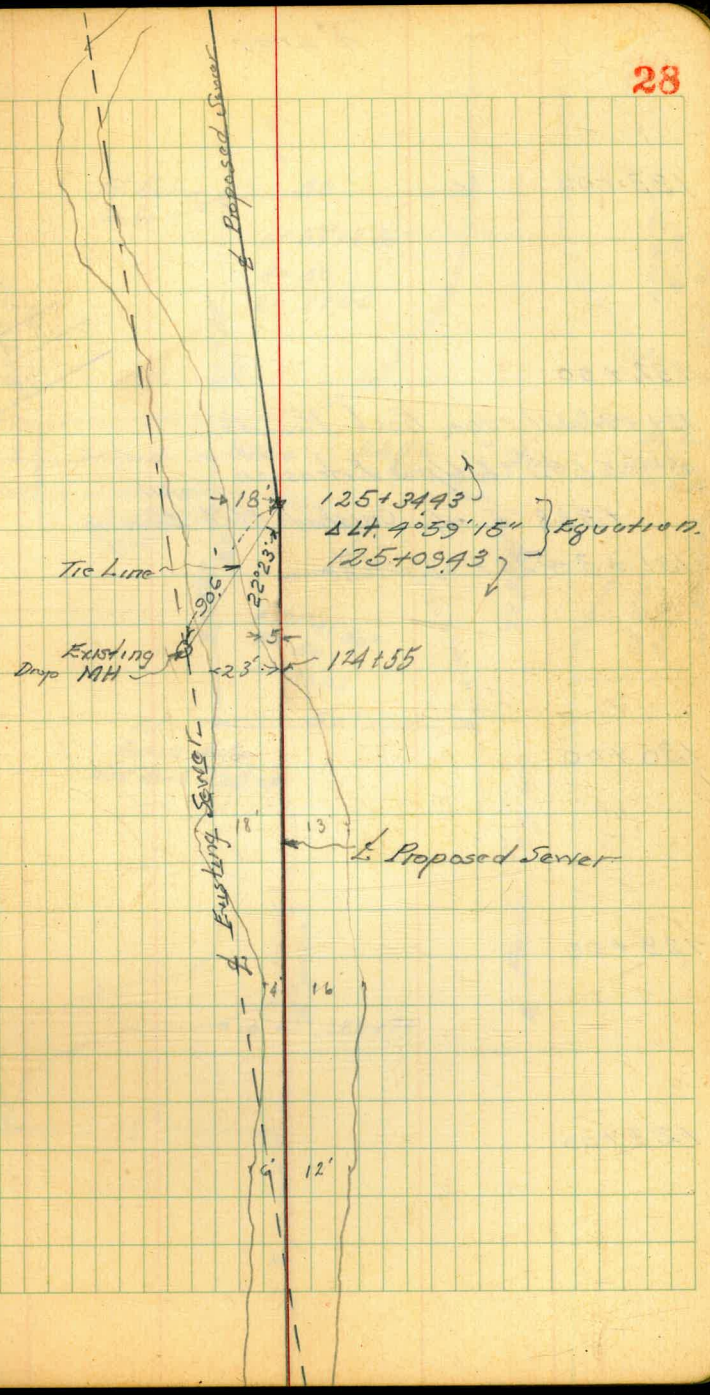
= 125+34.43 } Equation
125+09.43
~~125+34.43~~ Δ Lt. 4°59'15"

125+00

124+00

123+00

122+00



"A" Line

133+00

132+00

131+72 = N. edge Rock Paving.

131+55.49 = ℄ Upas Extension

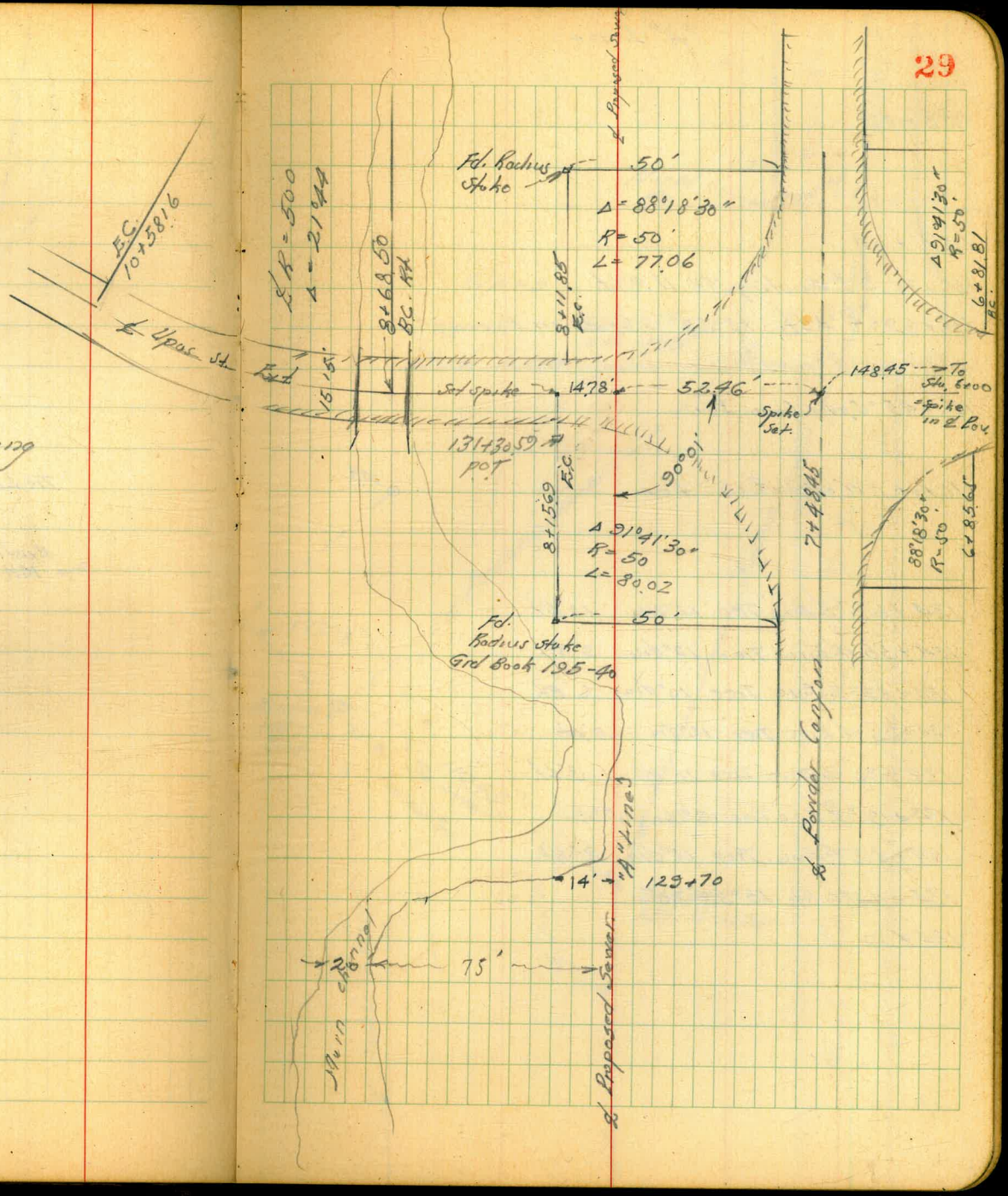
+38.8 = S. edge Crushed Rock Paving

131+30.59 = P.O.T. Stake

130+00

129+00

128+00



"A" Line

138+00

137+00

136+75.3 = ℄ Existing MH 11.6' Lt.

136+69.64 = Δ Lt. 13°59' Cross in Paving

136+45 = S. edge Conc. Pav.

136+00 = W. edge Back. Pav.

134+63 = ℄ Euc Tree 12" dia. 10' Rt

134+55 = ℄ Euc. Tree 12" dia. 9' Rt.

134+33 = ℄ Euc Tree 10" dia. 6' Rt

134+29 = ℄ Euc. Tree 12" dia 5' Lt

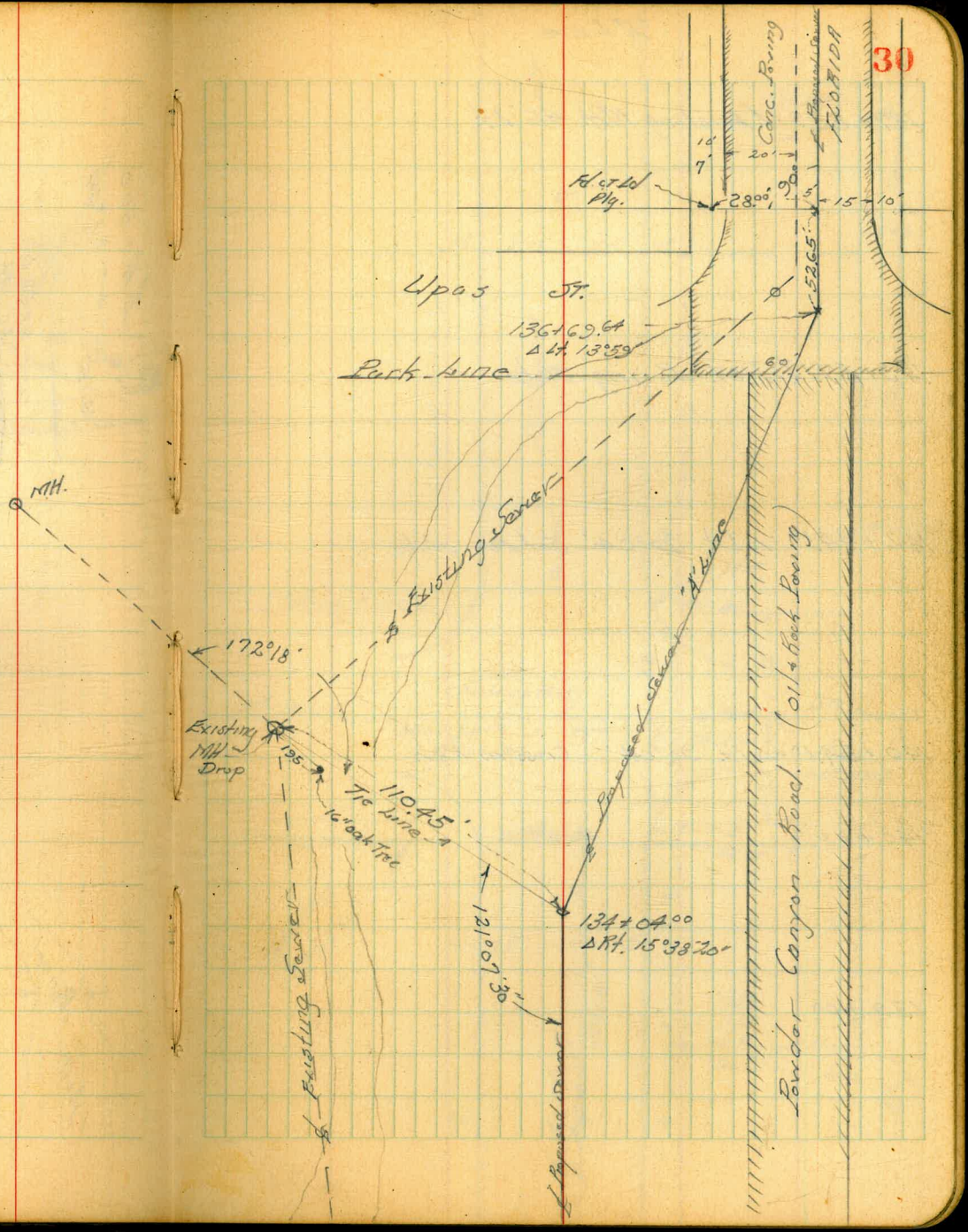
134+20 = ℄ Euc Tree 10" dia 3' Lt.

134+19 = ℄ Euc Tree 18" dia. 5' Rt

134+12 = ℄ Euc. Tree 18" dia. 8' Rt

134+04 = Δ Rt. 15°38'20"

134+00



"A" Line

147+83.9 = ℄ Existing M.H. 4.6' Lt.

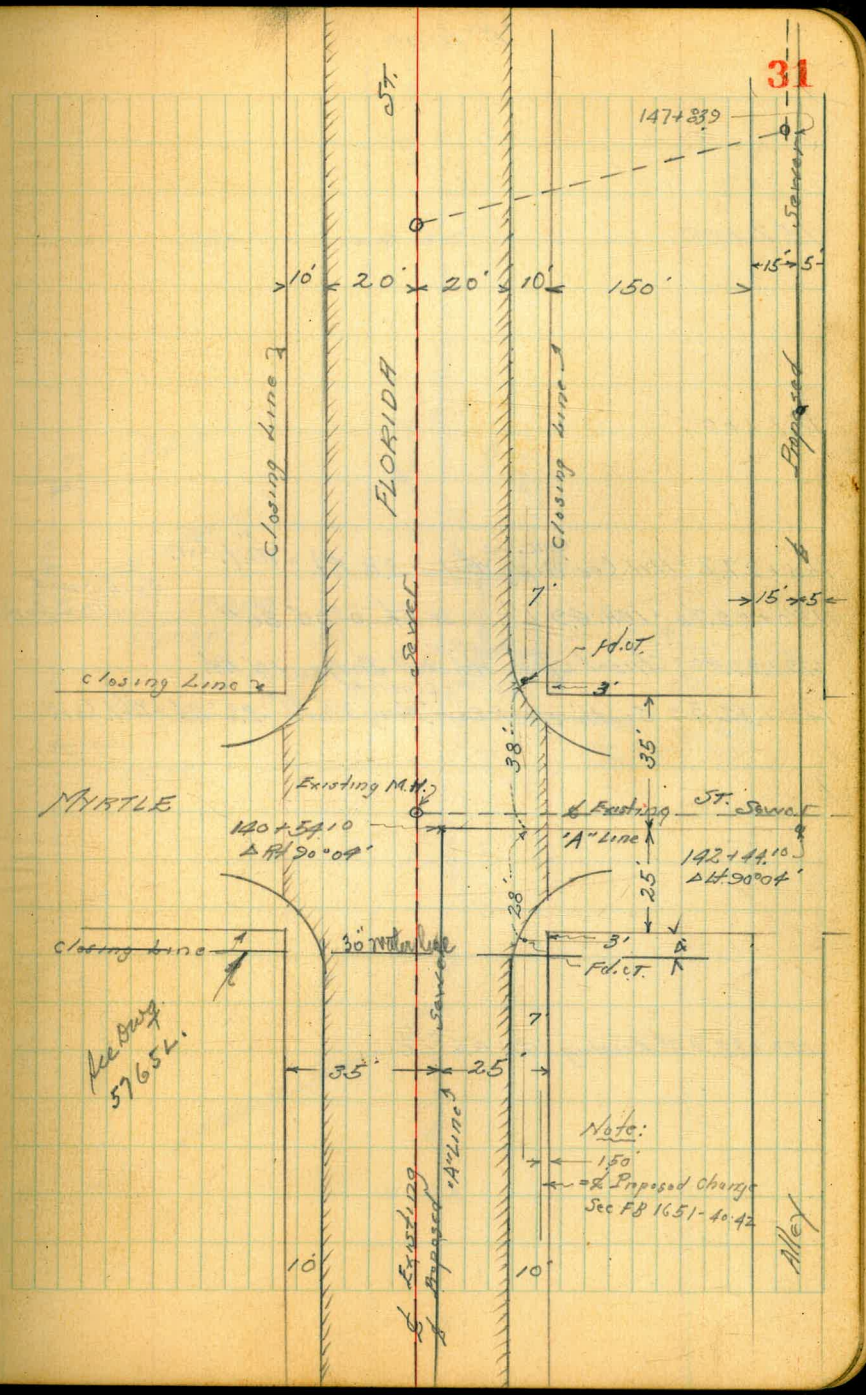
143+57.17 = P.O.T. Paving Stake

142+44.10 = Δ Lt. 90°04' Set Pav. Stake

140+54.10 = Δ Rt. 90°04' Cross in Pav.

140+00

139+00



"A" Line

152+00

151+00

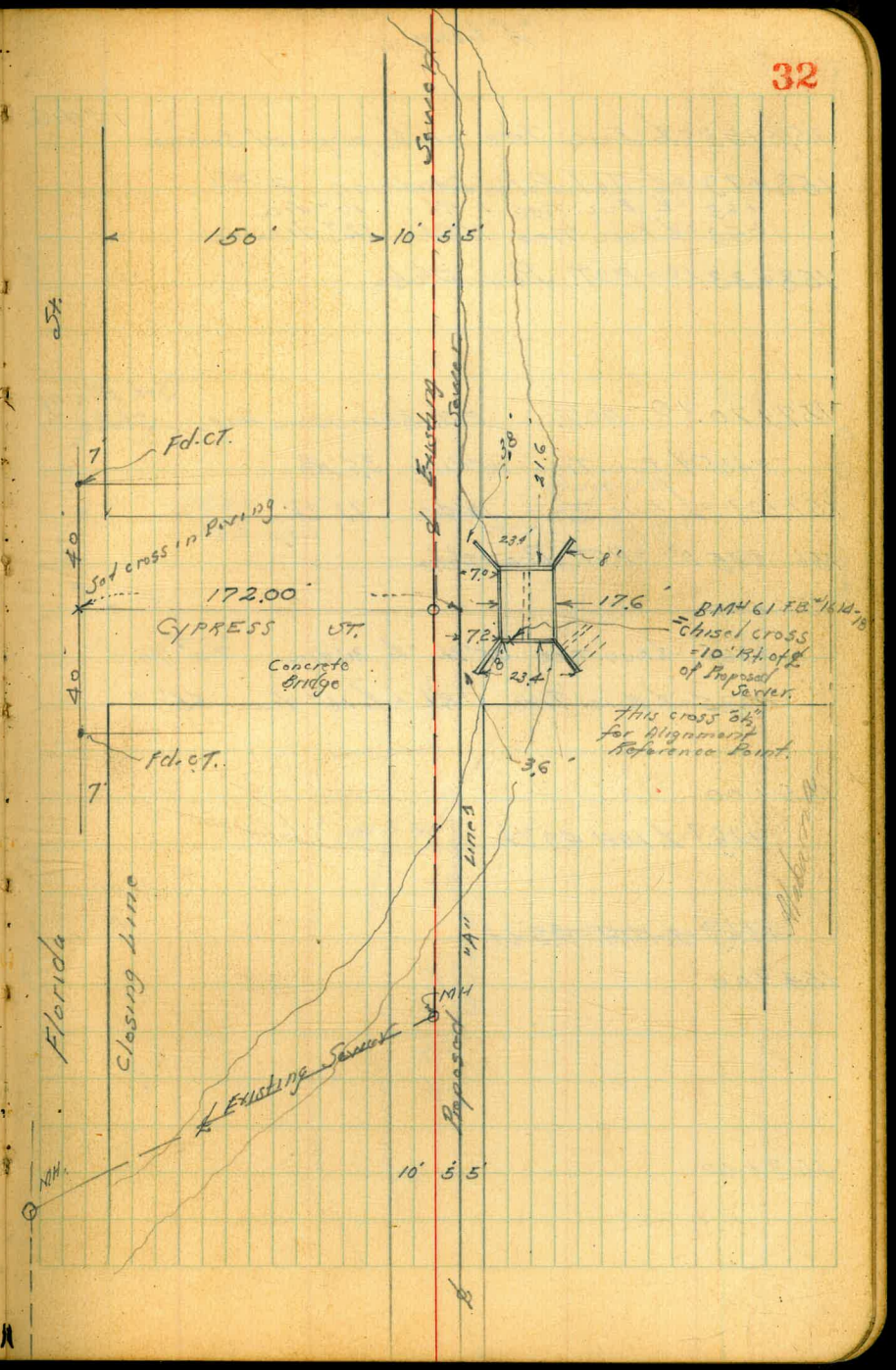
150+27.2 = NW. Cor. Conc. Wing Wall 3.8 Rt. = W'ly. Cor.

150+09.70 = MH. 4.9 Lt. Δ Rt 0°00'30" Spike set in oiled Surface

149+99.40 = Chisel cross Hd. Wall Bridge 10' Rt.

149+92.3 = South West Cor. Concrete Wing Wall 3.6' Rt. = W'ly. Cor.

147+83.9 ℄ Existing MH 4.6' Lt.



"A" Line

158+93 = ℄ Euc. Tree on ℄ proposed Sewer 10" dia.

158+79 = ℄ Tel Pole Deadman 2' Rt.

+63 = ℄ Euc. Tree 1' Rt. 10" dia.

+53 = ℄ Euc Tree 1' Rt. 12" dia.

158+33.10 = P.O.T. Lav. Stake

157+70.10 = P.O.T. = ℄ Robinson Ave. Set Paving Stake

+45.5 = ℄ Euc. Tree 10" dia. 3.5' Rt.

157+27 = ℄ Euc. Tree 10" dia 12' Lt.

156+45.00 = P.O.T. Lav. Stake

156+00

+96.5 = ℄ Euc. Tree 3.5' Lt. = ℄ 30" dia. 70' Tall

+69.5 = ℄ Euc. Tree 1' Rt. = ℄ 16" dia. 55' "

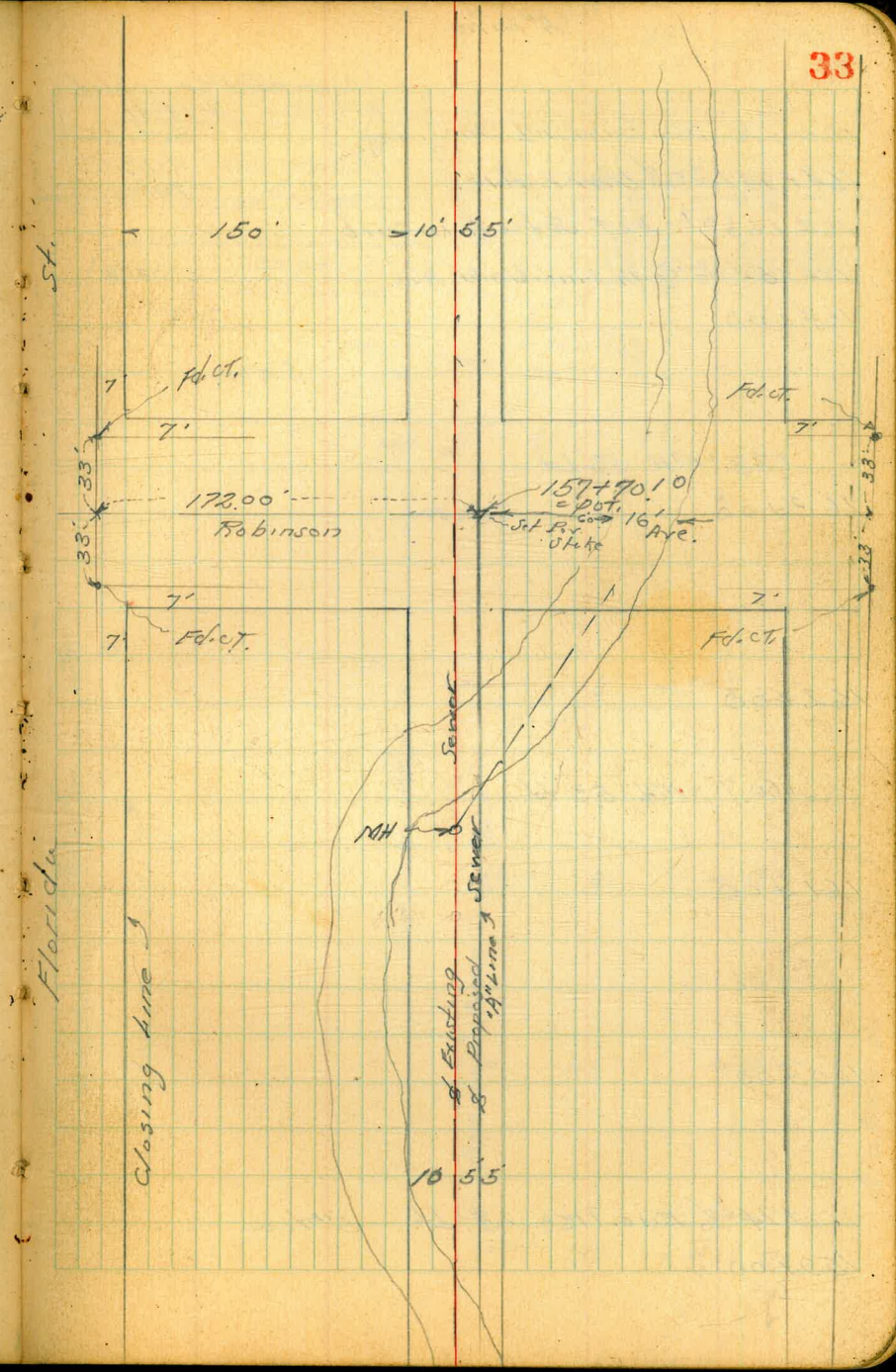
155+00

+76.7 = ℄ MH 4.9' Lt.

~~+76.7 = ℄ MH. 4.9' Lt.~~

154+00

153+00



"A" Line

(Alignment Completed 11-14-41 Walker. Wells. Forrow)

Note: No MH. found in Univ. Hill.

164+94.12 = ℄ Univ. Ave.

164+68.01 = P.O.T. Set c.t. in curb

164+54.12 South Line Univ. Ave.

164+00

+23 = MH 5.6' Lt.

163+00

162+00

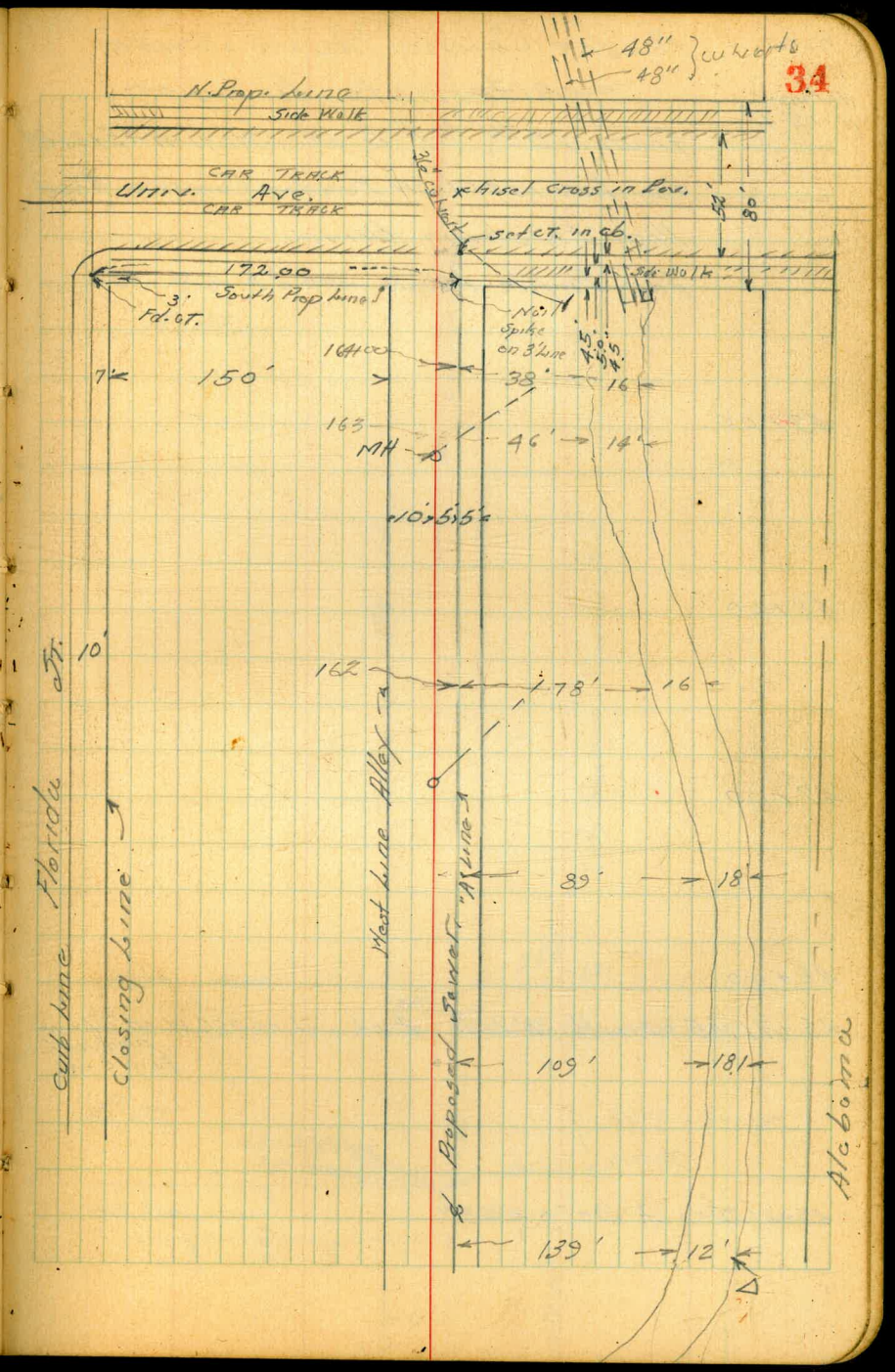
+60.7 - MH 5.3' Lt

161+00

160+00

+14 = ℄ Euc. Tree 1.5' Lt. Studio

159+00



Walker
Wells
D. Forrest
11-12-41

Powder Canyon Trunk Sewer
~Alternate Line~

from 19TH And B-St. Station 45+21.85
to Intersection Powder Canyon Road
And Pershing Drive.
for Profile Levels see FB. 1614-43

49+00

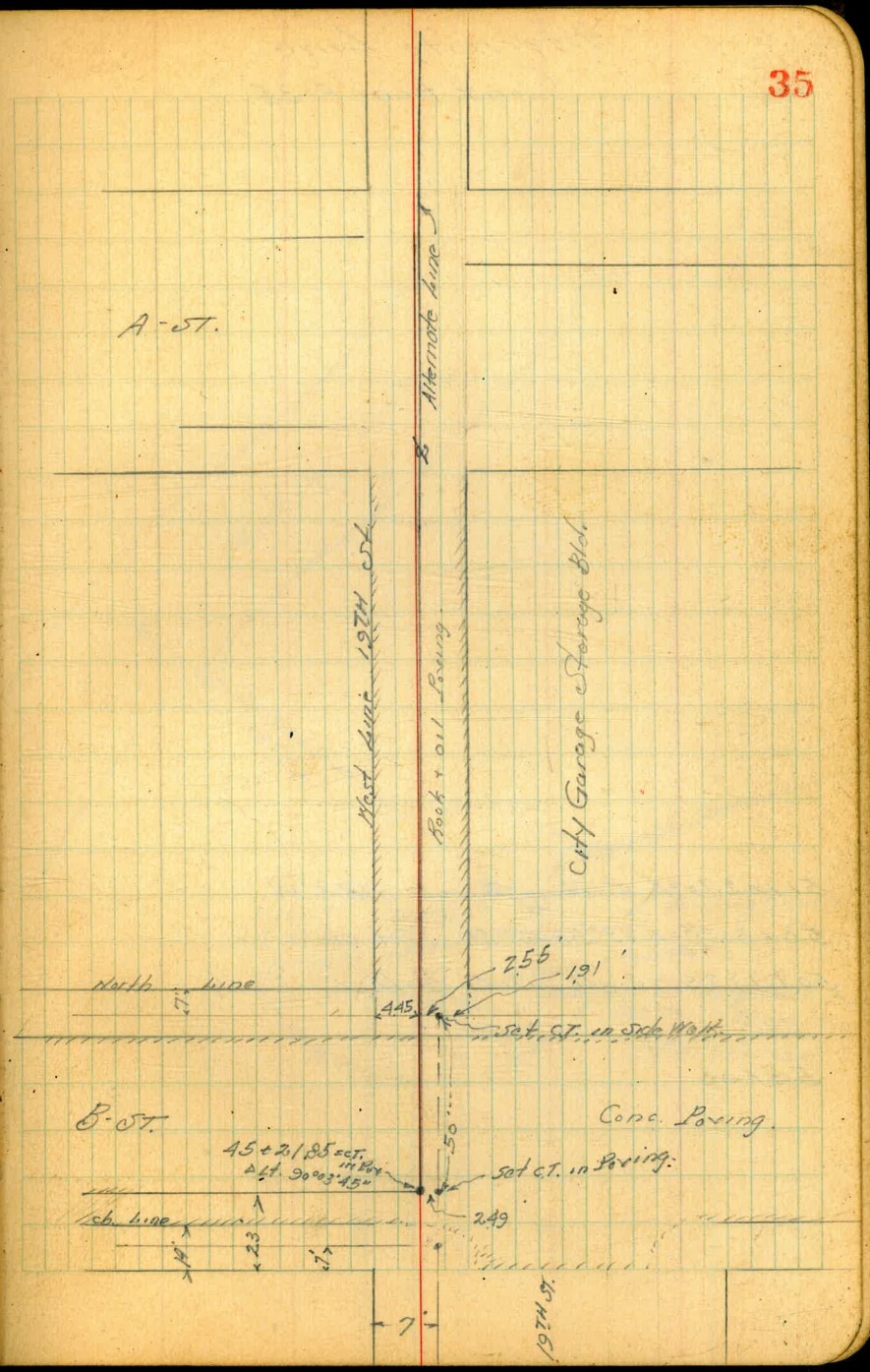
48+00

47+00

46+00

45+71.85 = North 7' Line B-St. Set CT. 255 Rt on 7' Line produced from C-St.

45+21.85 = ΔLt. 90°03'45"



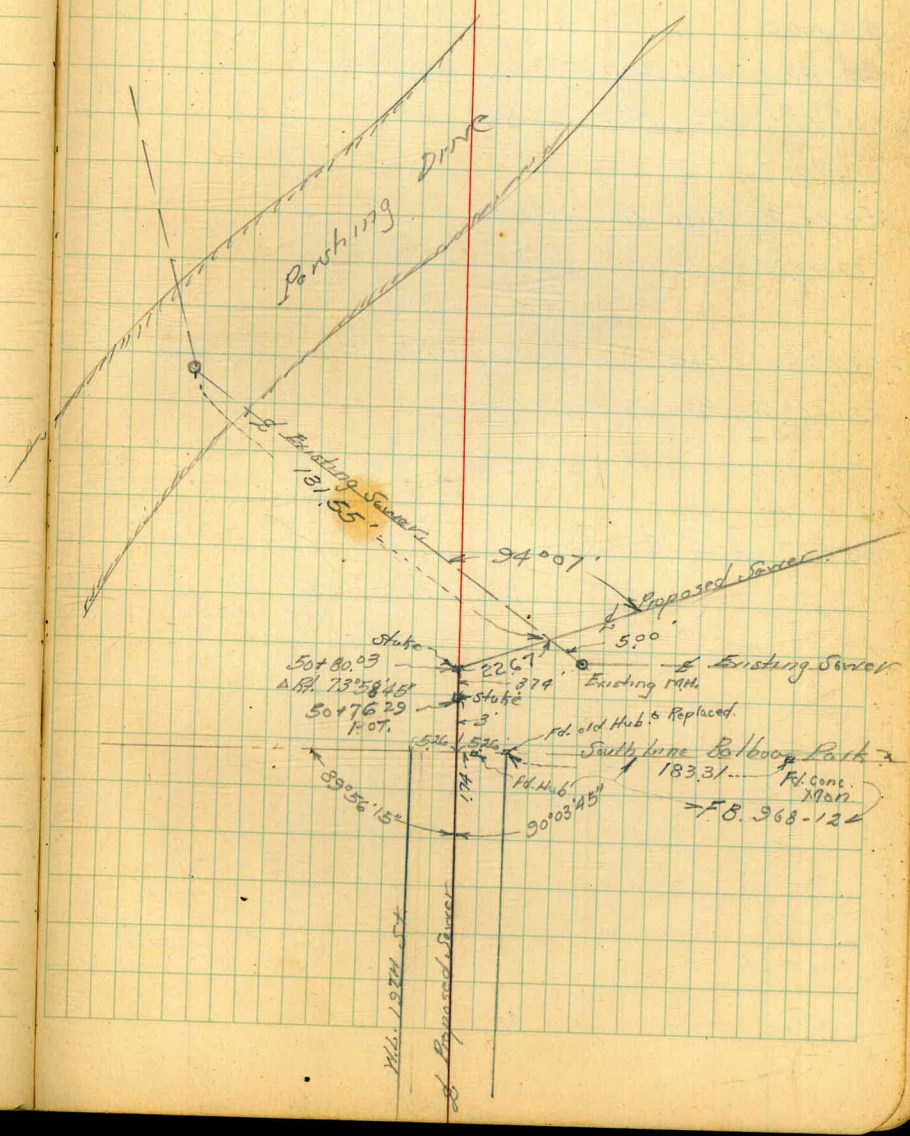
Alternate Line
Cont. from P-35

51+02.70 = ℄ Existing Sewer MH 5' Rt.

50+80.03 = Δ 73°58'45" Rt. Set Stake
6.79

50+73.29 = South Line Balboa Park.

50+00



Alternate Line

Cont. from P. 36

+75

+42

55+00

54+88.0 = Int. 24" Conc. culvert produced 27.1 Lt. to Lip.

+71 = Elec. Pole 13.5' Rt.

+50

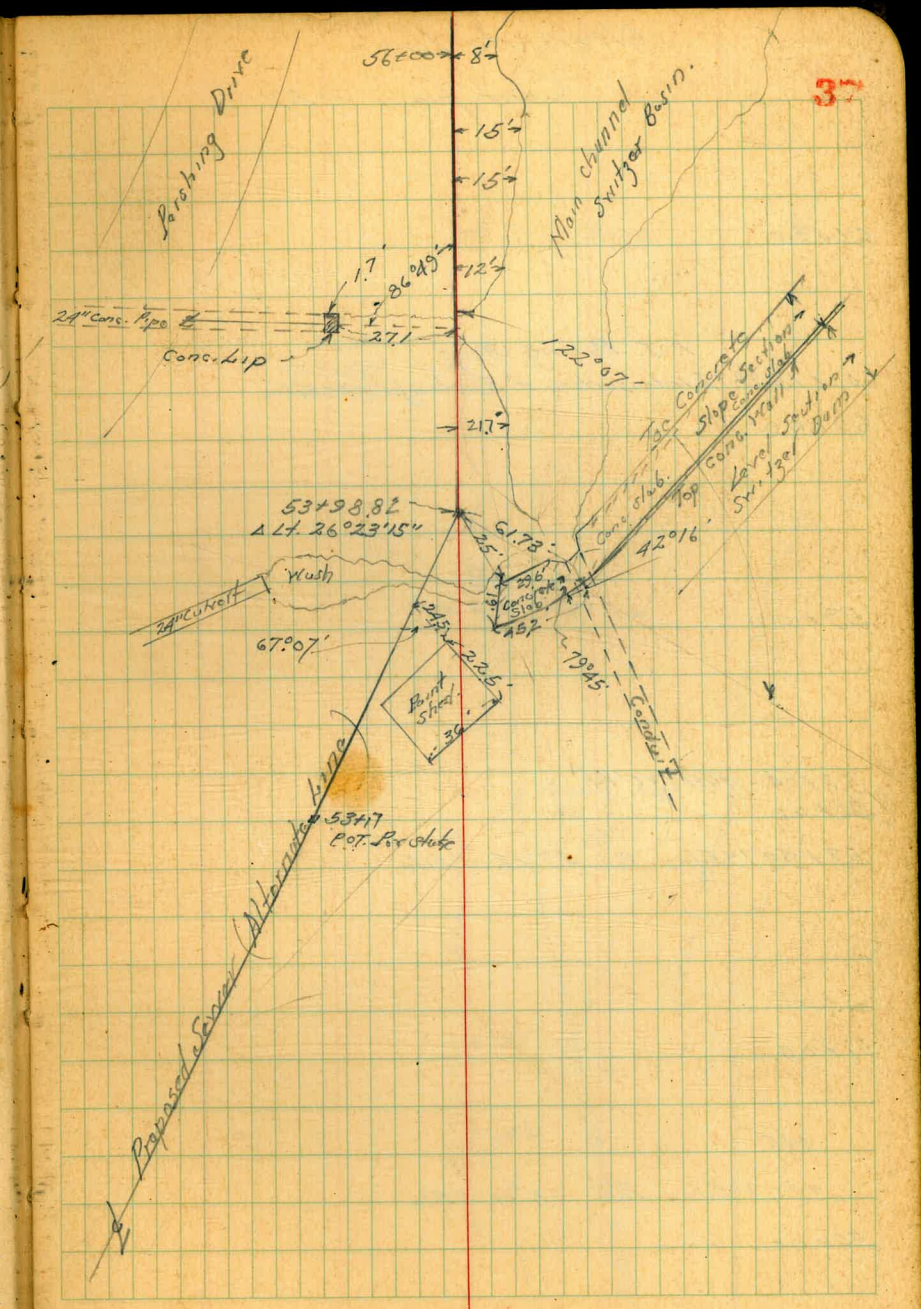
54+02 = Elec. Pole 15.8' Rt.

53+98.82 = Δ Lt. 26°23'15"

53+68.1 = Intersection E.L. side Paint Shed produced.

53+66 = Guy Wire Anchor = 5' Lt.

53+17 = P.O.T. Por. Stake



Alternate Line

Cont. from Pg. 37

61+00

P.O.T. Paving Stake

60+15.98 = ℄ Intersection of Existing Sewer

60+00

59+00

58+04 - MH 135' Rt

58+00

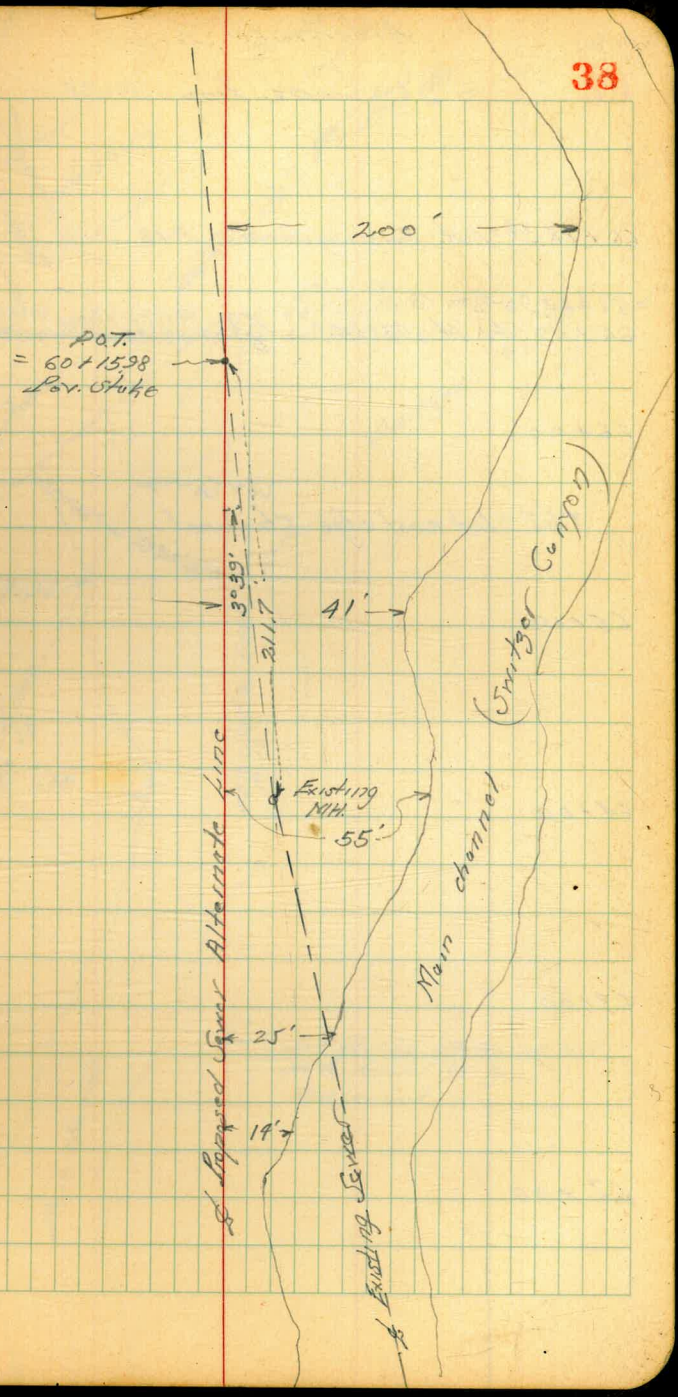
57+93.7 = Elec. Pole 47' Lt = ℄ Pole

57+00

+45

+32.7 = Elec. Pole 55' Rt = ℄ Pole

56+00



Alternate Line

Cont. from P. 38

66+78.34 = Int. Existing Servt. P-18

= 66+22.90 Page 18
66+59.54 Δ Lt 50°24' Equations in Alternate line

66+00

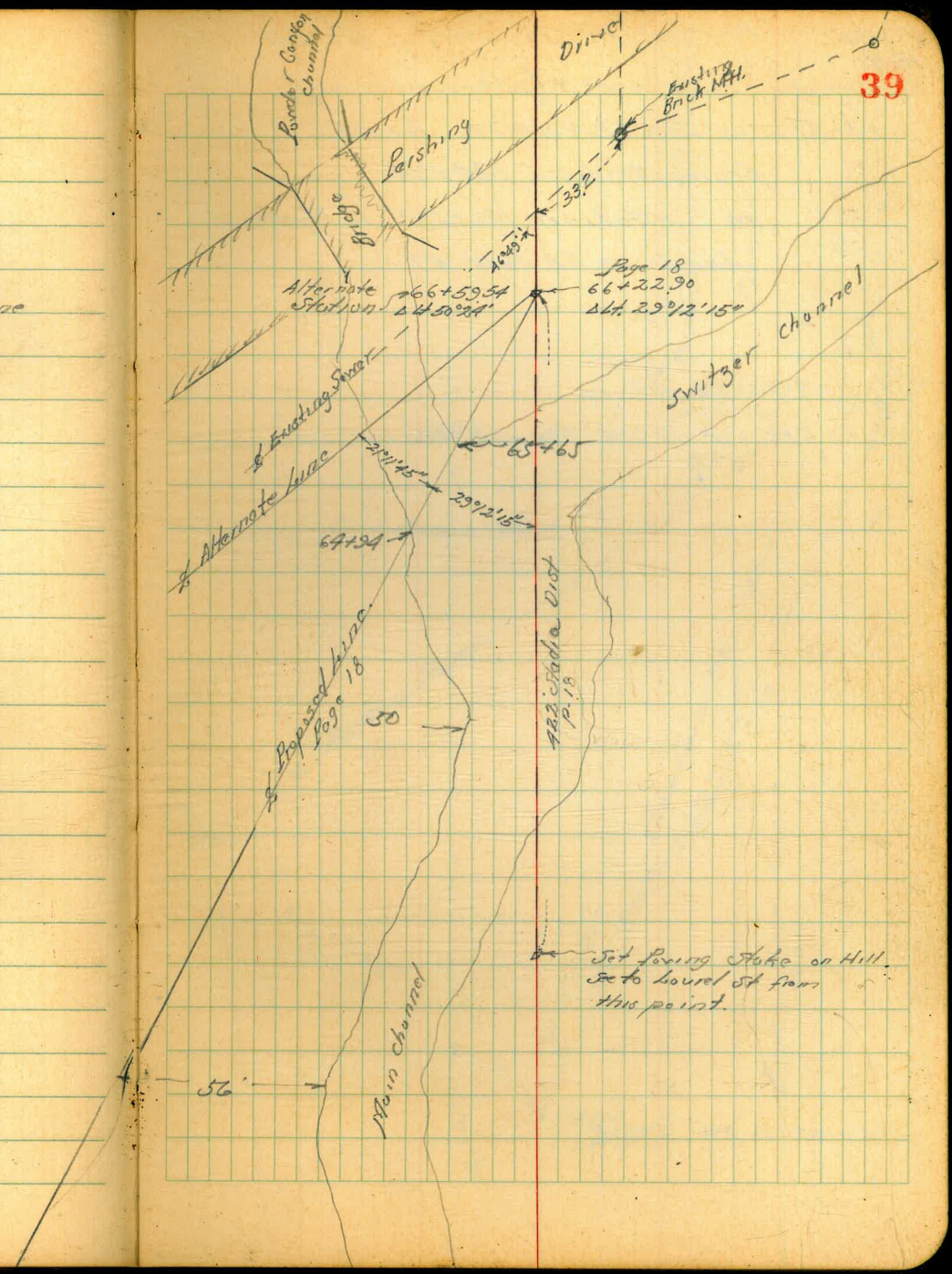
+65 = Int cost edge Channel

65+00

64+00

63+00

62+00



Walker Wells
D. Farrow
11-26-41

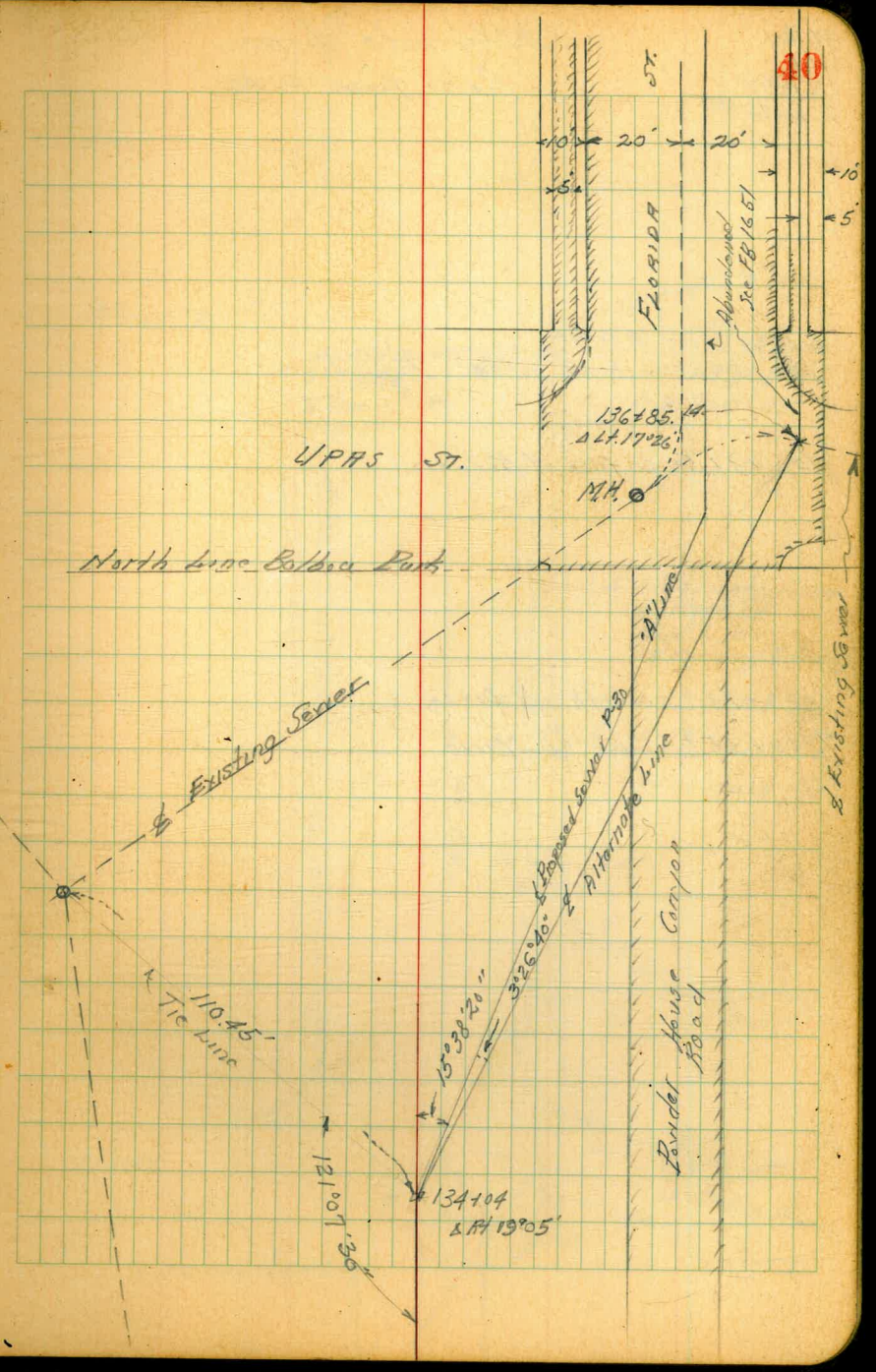
Powder House Canyon Sewer
Alignment (Preliminary)
ALTERNATE LINE.

from Station 134+04
to Station 140+59.05 in Myrtle St
Levels in F.B. 1614-47

Face of
136+97.5 = Cb. Return

136+85.14 ΔLt 17°26' Chiseled cross in Paving.

134+04 ΔRt 19°05'



Walker
Wells
Fullom
11-26-41

Alternate Line

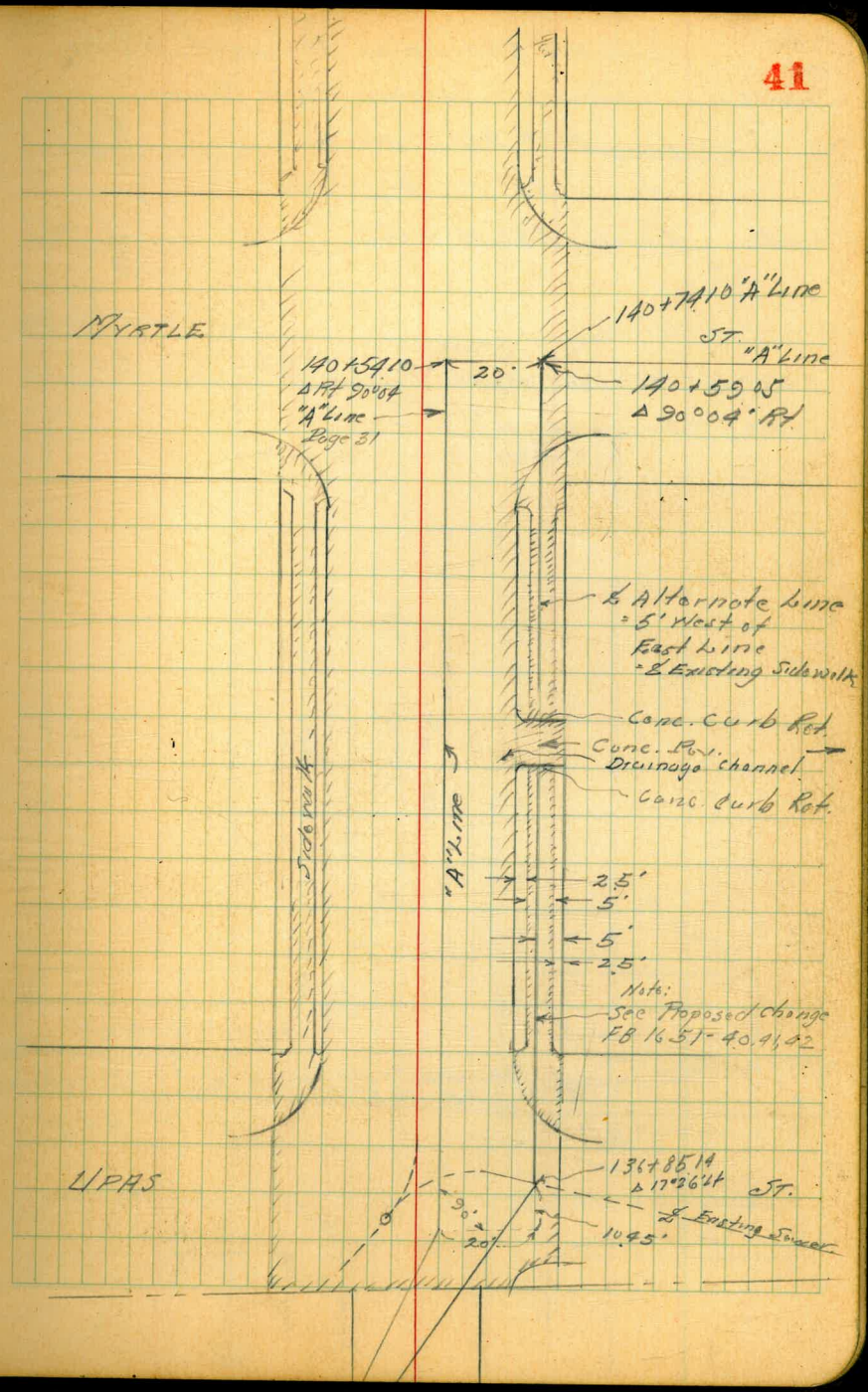
Cont. from P. 40

= 140+74.10 "A" Line
140+59.05 = Δ Rt. 90°04' Equation

140+37.5 = c/b face of Return

139+73.0 = North c/b Drive

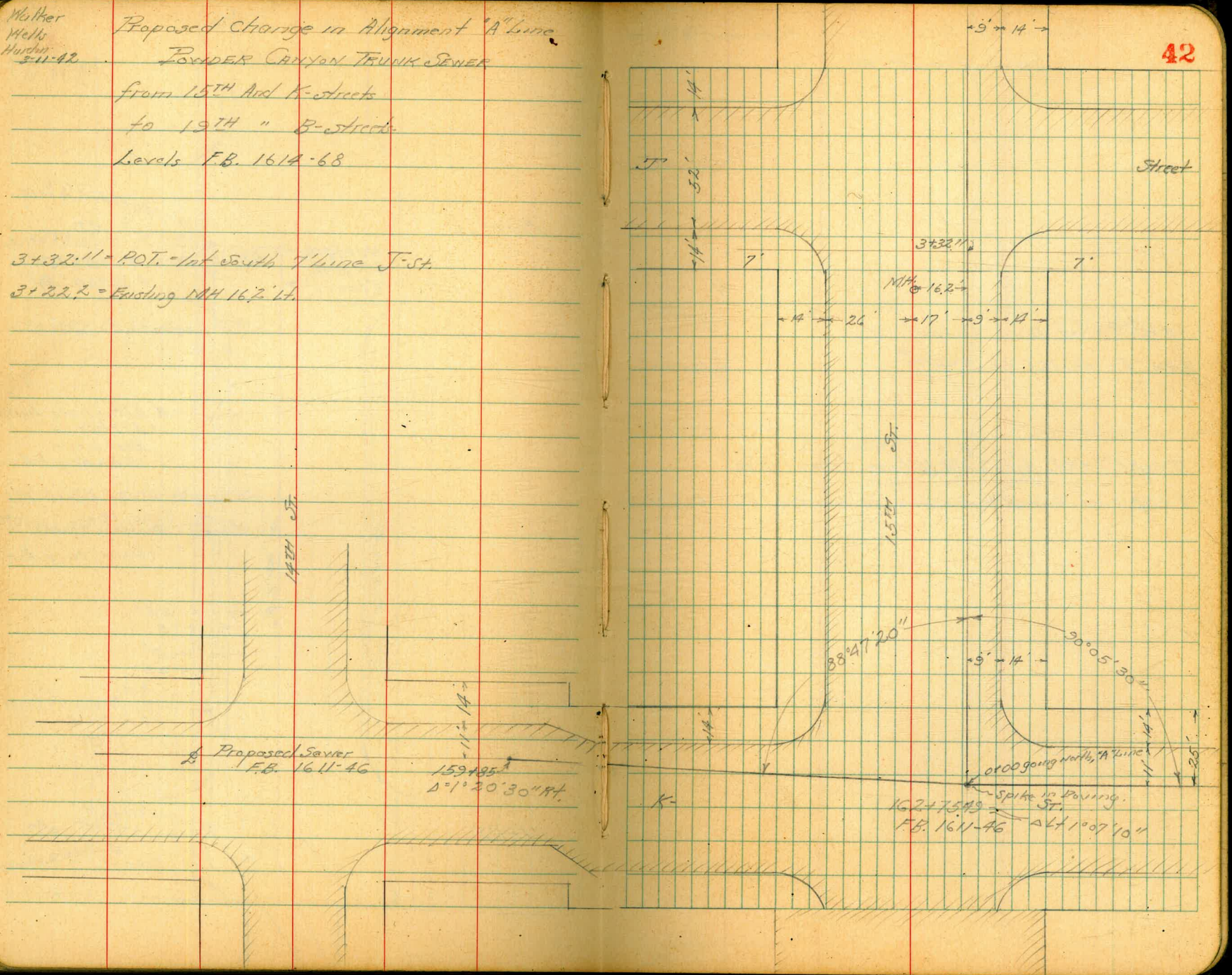
139+55.1 = South c/b Drive



Walker
Wells
Hurdon
3-11-42

Proposed Change in Alignment "A" Line
Powder Canyon Trunk Sewer
from 15TH And K-Streets
to 19TH " B-Streets
Levels F.B. 1614-68

3+32.11 = P.O.T. - Int South 7' Line J-St.
3+22.2 = Existing MH 16.2' Lt.



Proposed change in Alignment, "A" Line

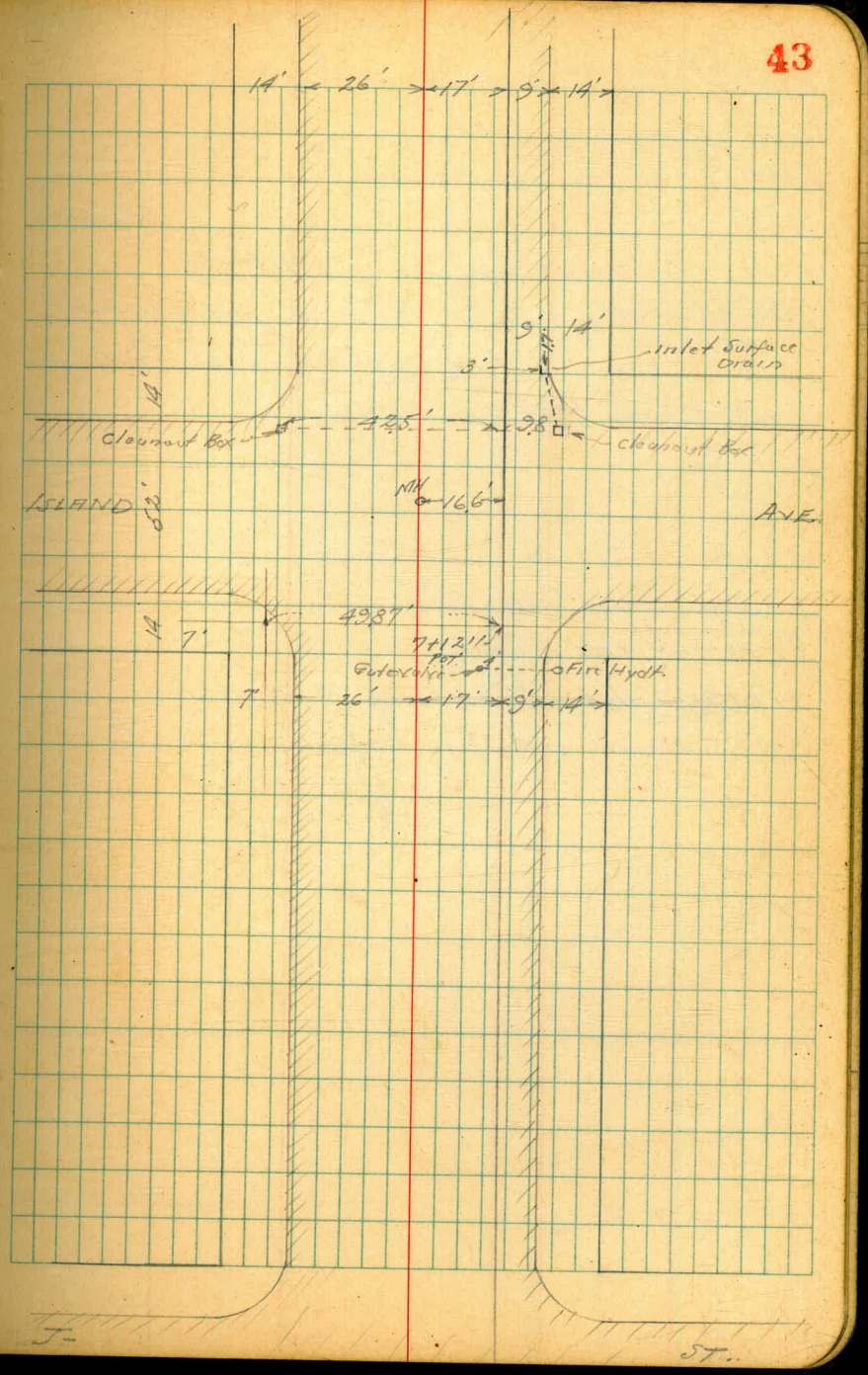
Cont. from P-42

7+66.4 = Int Drain Culvert

7+45.4 = MH 16.6' Lt

7+12.11 = P.O.T. Int South 7' Line Island Ave.

7+04 = Int. Branch Water Line to Fire Hyd. 4' Lt. = Gate Valve



Proposed change in Alignment "A" Line

11+84.64 = Nl. Market St. MH 15.4' Lt.

11+84.6 = Gate valve 6' Lt.

11+67.3 = Int Culvert Surface Drain.

11+02.1 = Int Culvert Surface Drain. 3' Lt. 2'-4" Box

10+91.64 = POT Int South 7' Line Market St.

10+84.3 = valve 7' Lt.

10+81.57 = MH. 17.05' Lt. { 10+81.3 = Int 6" Main to Fire Hydt. Valve = 3.6' Lt.

10+76.57 = Lt. 0°04'20"

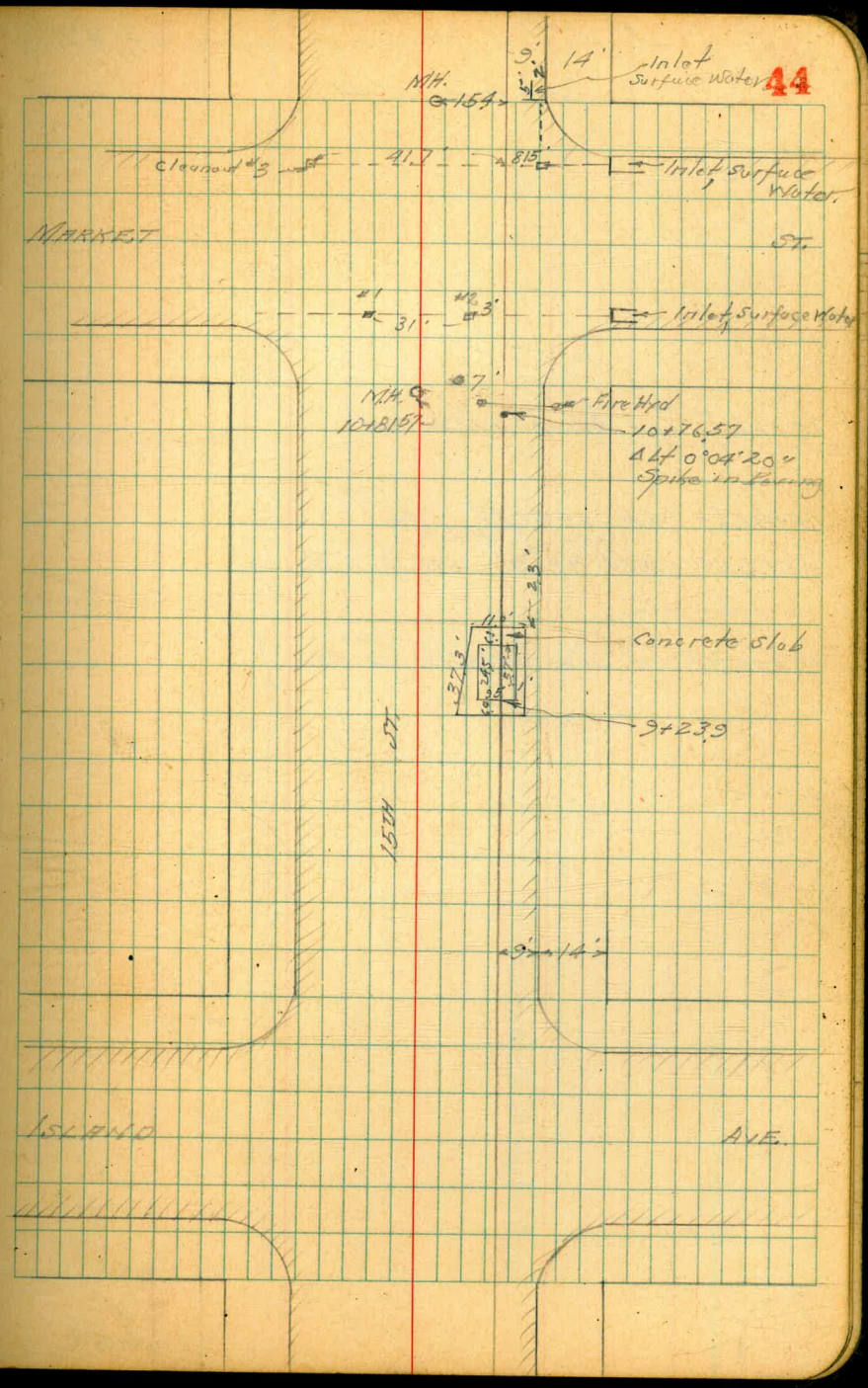
10+00

9+54.7 = N end Conc. Slab.

9+48.4 = N. end scales.

9+23.9 = South end Silverthorne Truck scales

9+17.5 = South end Conc. Slab.



Proposed change in Alignment, "A" Line

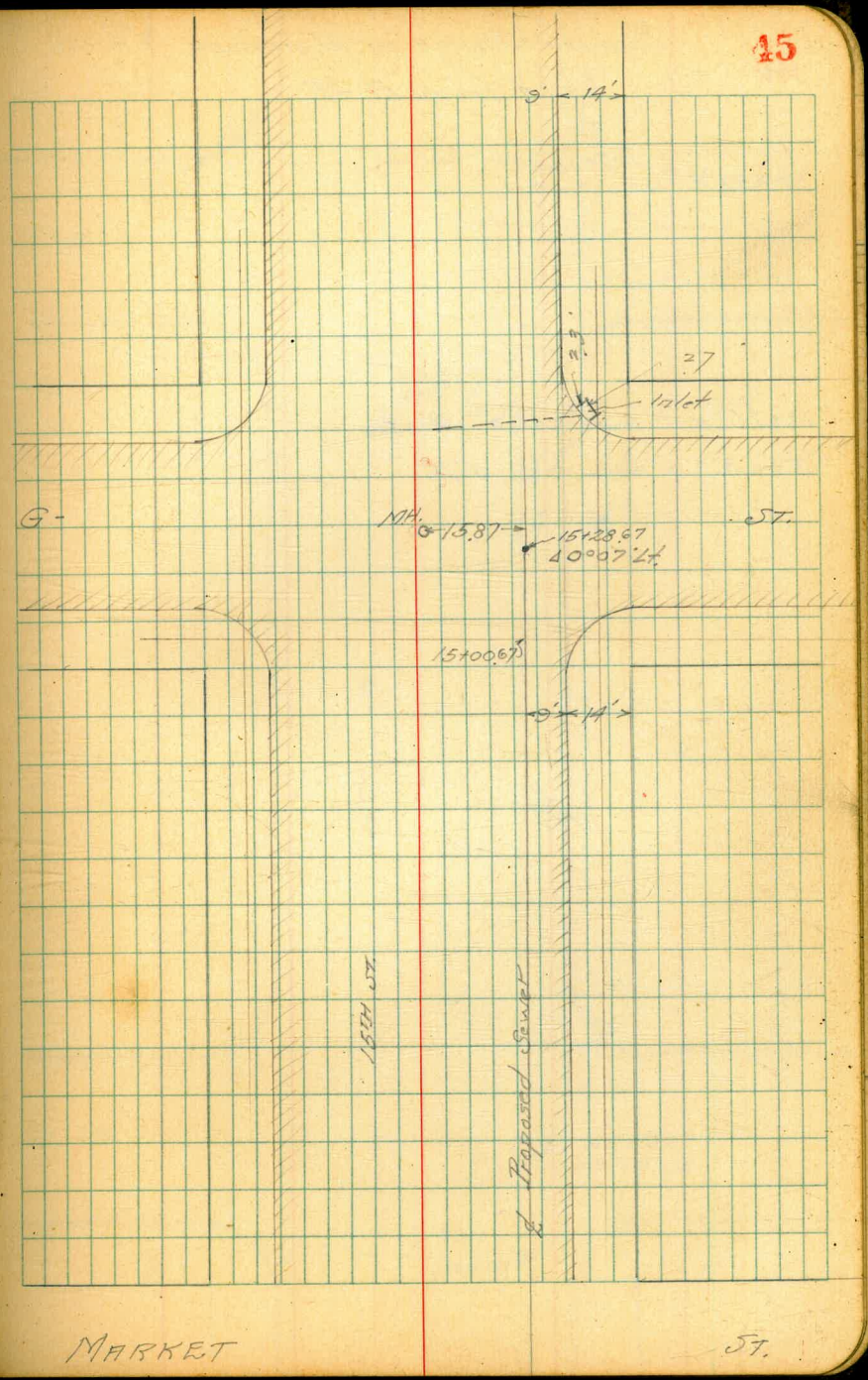
Cont. from P. 44

15+62.3 = Int Appox. 12" culvert

15+31.6 = M.H. 15.87' Lt.

15+28.67 - Δ Lt 0°07' = Nail in Paving.

15+00.67 = Int. South 7' Line G-ST.



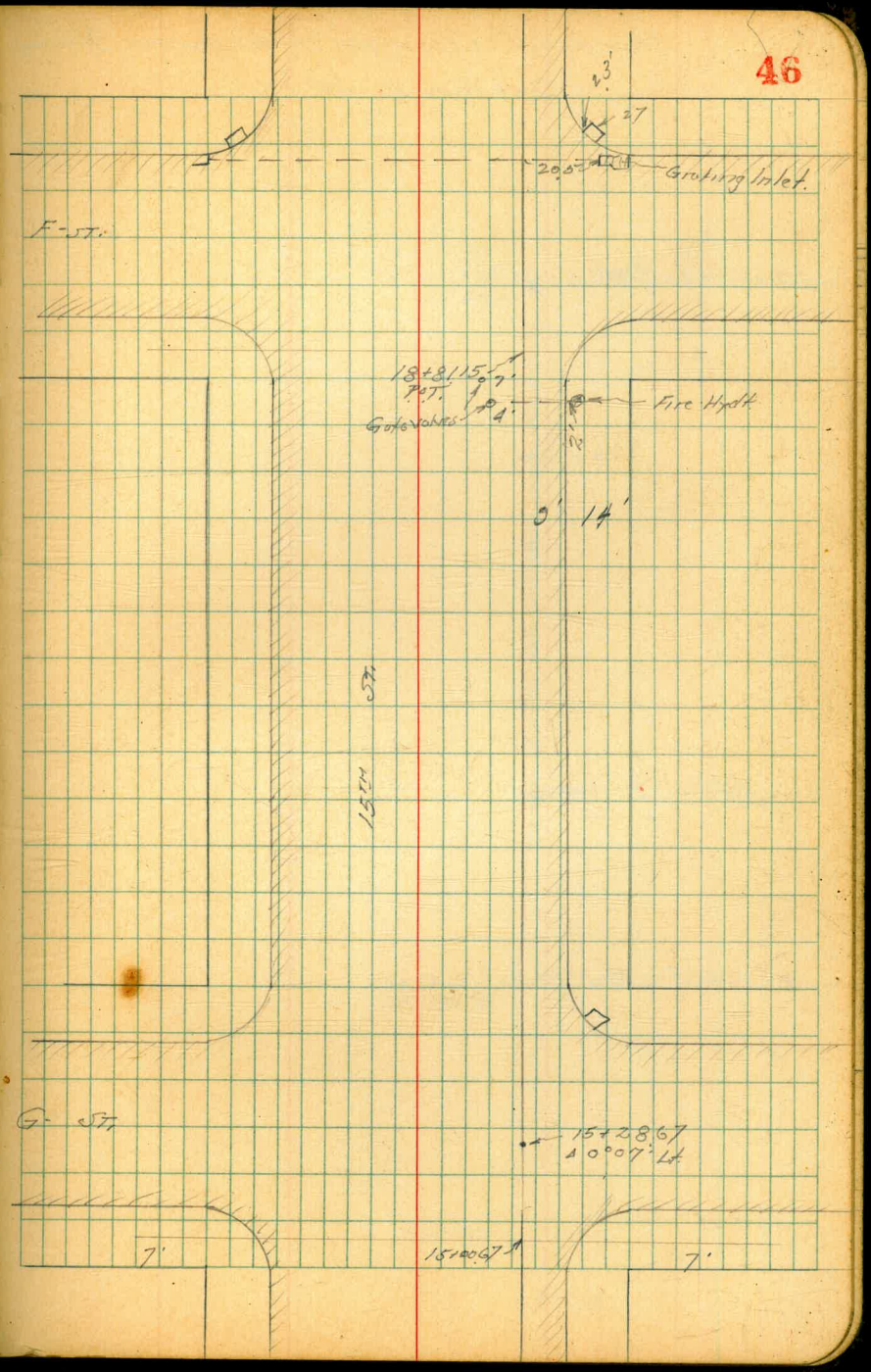
Proposed change in Alignment "A" Line

Cont. from P-45

19+38.3 = Int Drain

18+74 = 6" Gate Valve 7' Lt.

18+68 = 6" Gate Valve 4' Lt.



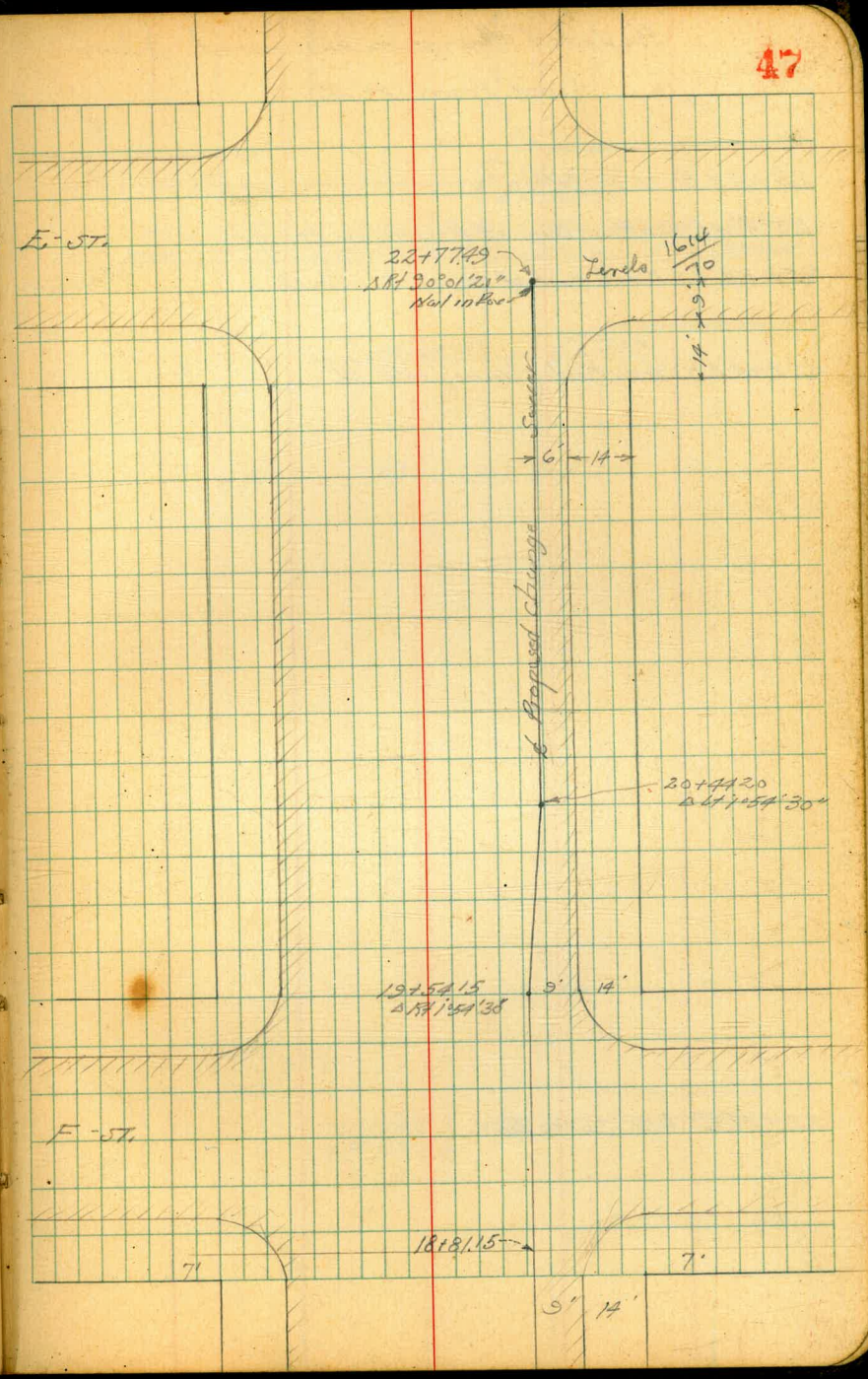
Proposed Change in Alignment, "A" Line

Cont. from P-46

22+77.49 = Δ Rt 90°01'20"

20+44.20 = Δ Lt 1°54'30"

19+54.15 = Δ Rt 1°54'30"



Proposed Change in Alignment, "A" Line

Cont. from P- 47

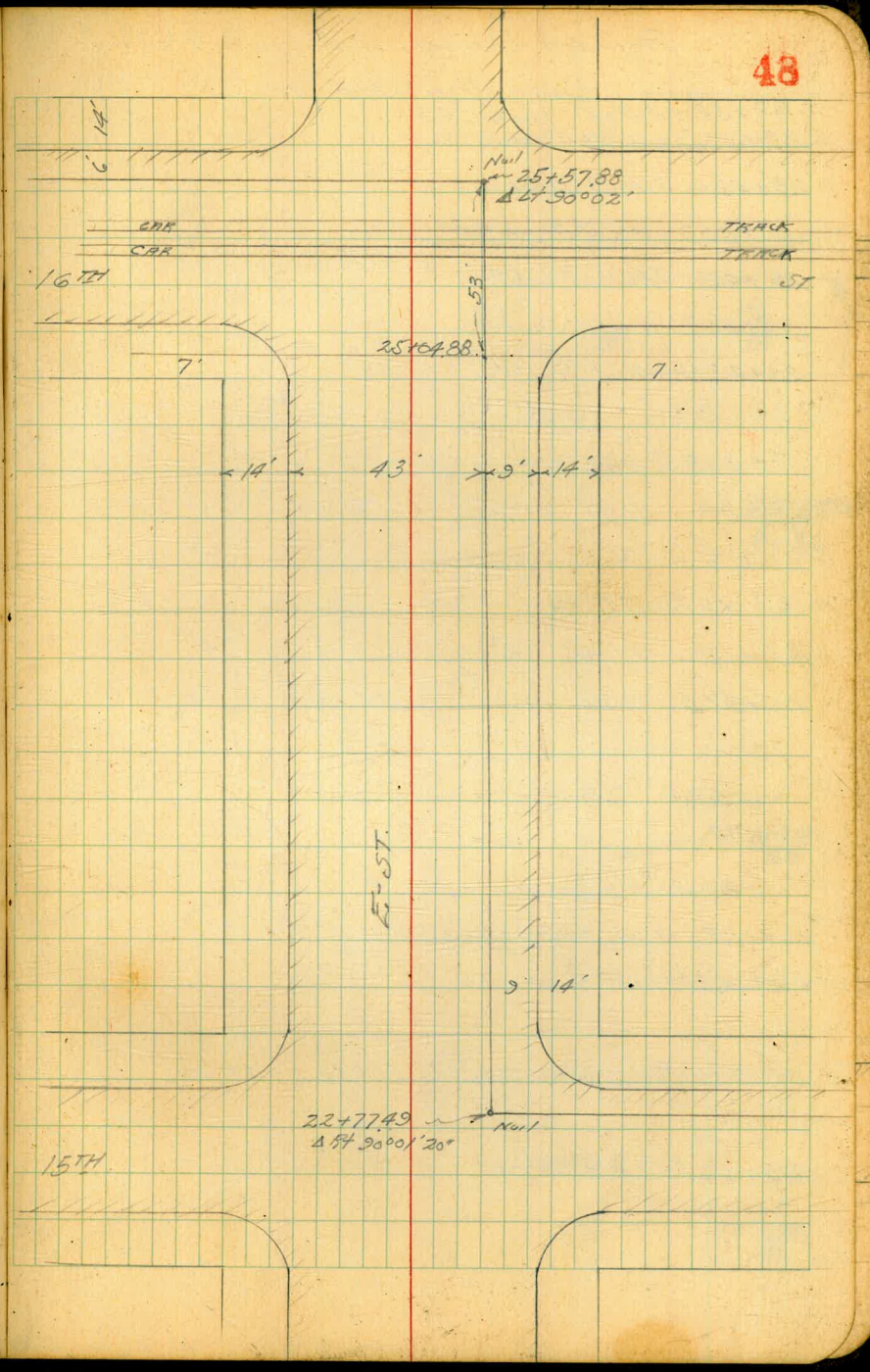
25+57.88 = Δ Lt. 90°02'

25 + 45.% = East Rail of East Car Track

25+30.3 = West Rail of West Car Track.

P.O.T.
25+04.88 = Int. West 7' Line 16th St.

22+77.49 = Δ Rt 90°01'20"



Proposed change in Alignment "A" Line

Cont. from Page 98

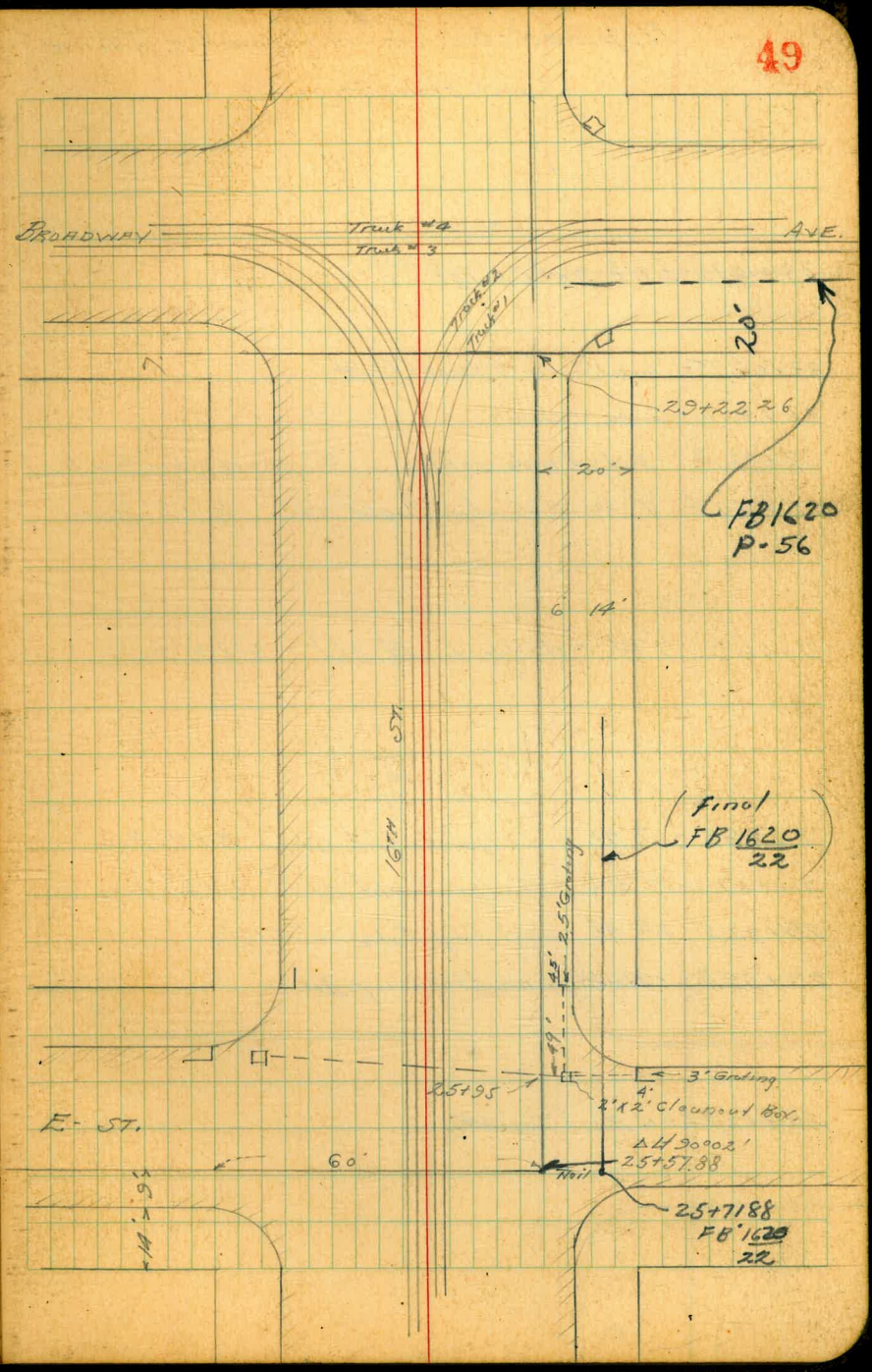
29+58 = S Rail Track #4
29+52.7 = S. Rail Track #3
29+48 = S Rail Track #3
+50.9 = N Rail Track #2
29+45 = S Rail Track #2
+30.7 = N Rail Track #1
29+23.1 = S Rail Track #1
29+12.6 = = 6.8' Rt = W. edge Fire Hydt. at Base
29+08.5 7.2' Rt. = W. edge 10" Steel Guy Pole
28+88 7' Rt. = W. edge Light Std. 2'x2' Base
28+16.6 7' Rt. = W edge Guy Pole 1' dia.
27+87 7.2' Rt. = W. edge Light Std. 2'x2' Base
27+12 7.1' Rt. = W edge Guy Pole 1' dia.
26+97.5 7' Rt = W edge Light Std. 2'x2' Base

+57.6 7.9' Rt = West edge 10" Acacia Tree.

+20.3 6.8' Rt = W edge Guy Pole 1' dia.
26+15.5 7' Rt. = West edge Light Std. 2'x2' Base
26+14.88 = N.L. E- St.

25+95 = Int Drain, 2'-2'x2' cleanout Box = 9.7' Rt

25+57.88 = Δ 4 30°02'



Proposed change in Alignment "A" Line

Cont. from Page 49

33+18.75 = Δ Rt 90°01'15"

33+02.75 = Int. South 7' Line C-St.

32+95.7 = Gate Valve

32+93.2 = 3' Lt. = Gate Valve 7' Rt. = Wedge Fire Hyd.

32+40.4 7' Rt. = W. edge Light std. 2'x2' Base

31+66.9 7' Rt. = W. edge Light std 2'x2' Base

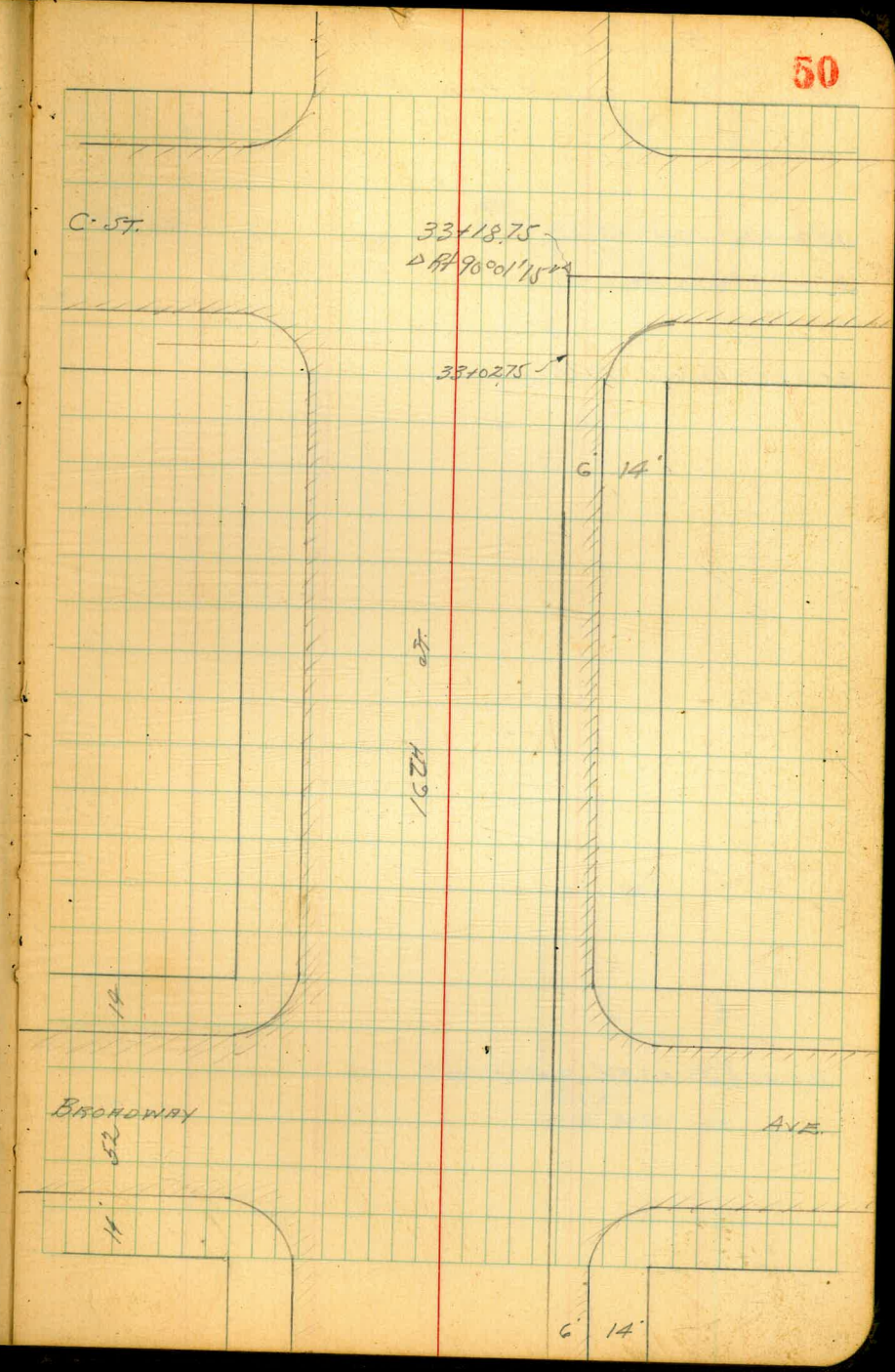
30+83 = 7' Rt. = W. edge Light std. 2'x2' Base

30+09 7' Rt. = W. edge Light std 2'x2' Base

29+96.5 7½' Rt. = Steel Guy Pole 6"x12"

29+95.26 = North Line Broadway Ave.

29+62.72 = N Rail Truck #4



Proposed Change in Alignment, "A" Line

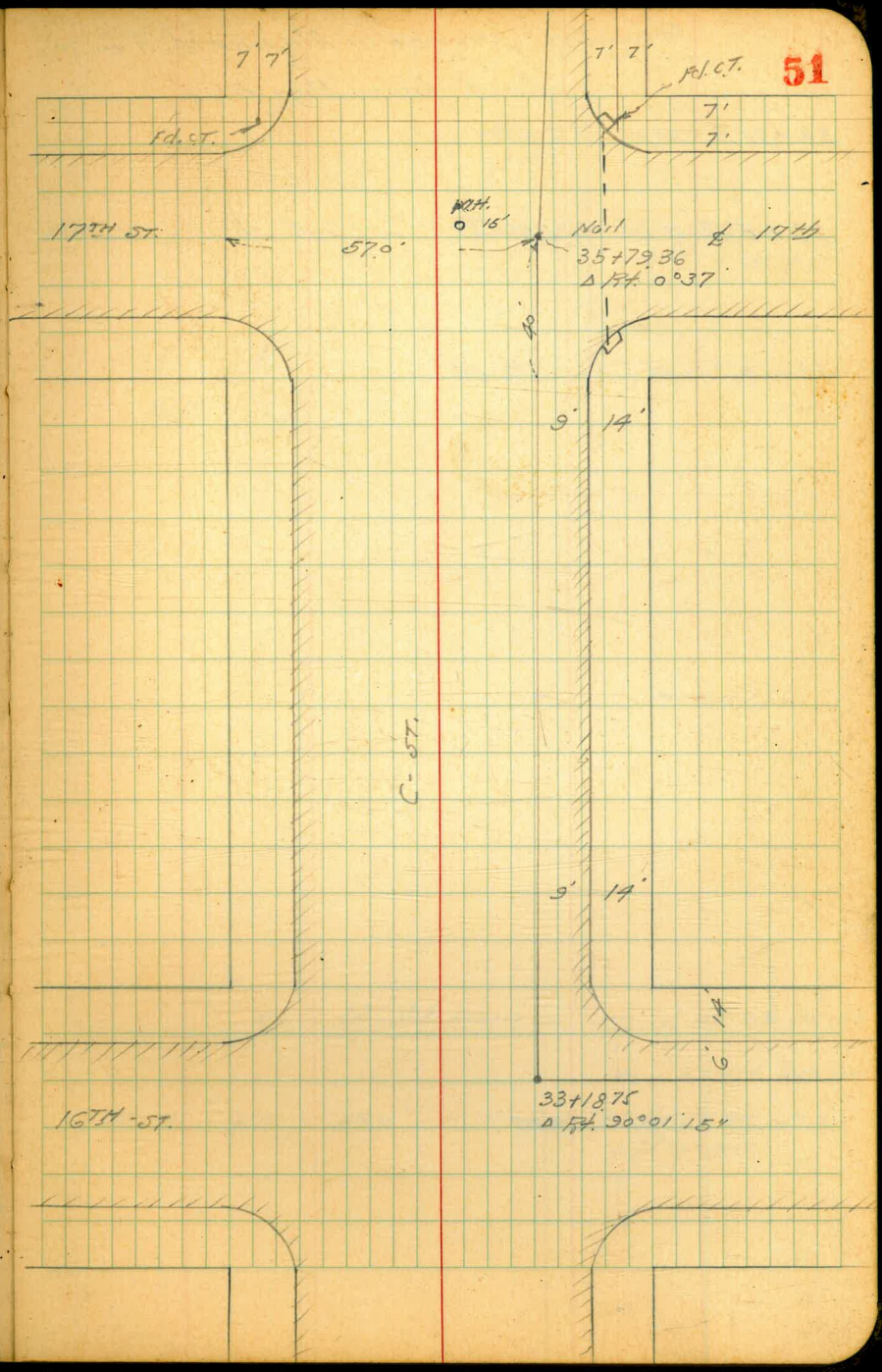
Cont. from P 50

35+81 = PH. 15' Lt.

35+79.36 = Δ Rt. 0°37'

35+29.36 = P.C. 17th

33+18.75 = Δ Rt. 30°01'15"



Proposed Change in Alignment, "A" Line

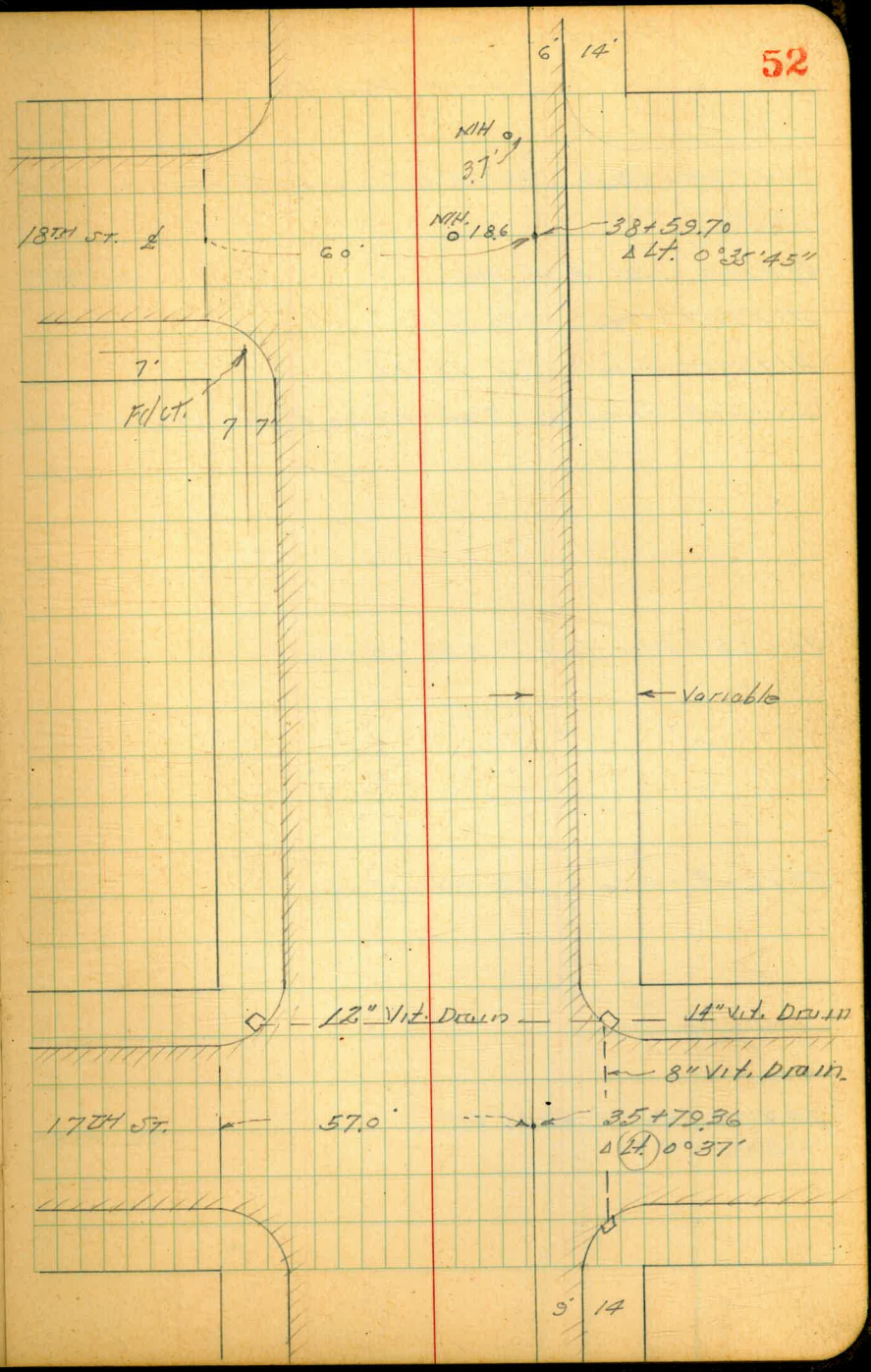
Cont. from Page 51

38+91.3 = M.H. 3.7' Lt.

38+59.7 Δ Lt 0°35'45" on 18th St.

38+19.70 = W. Line 18th St.

35+79.36 = Δ Lt. 0°37'



Proposed Change in Alignment, "A" Line

Cont. from Page 52

41+57.46 = Δ Lt. 89°35'15"

41+10.8 = MH. 4' Lt.

41+00.96 = WL. 19th St.

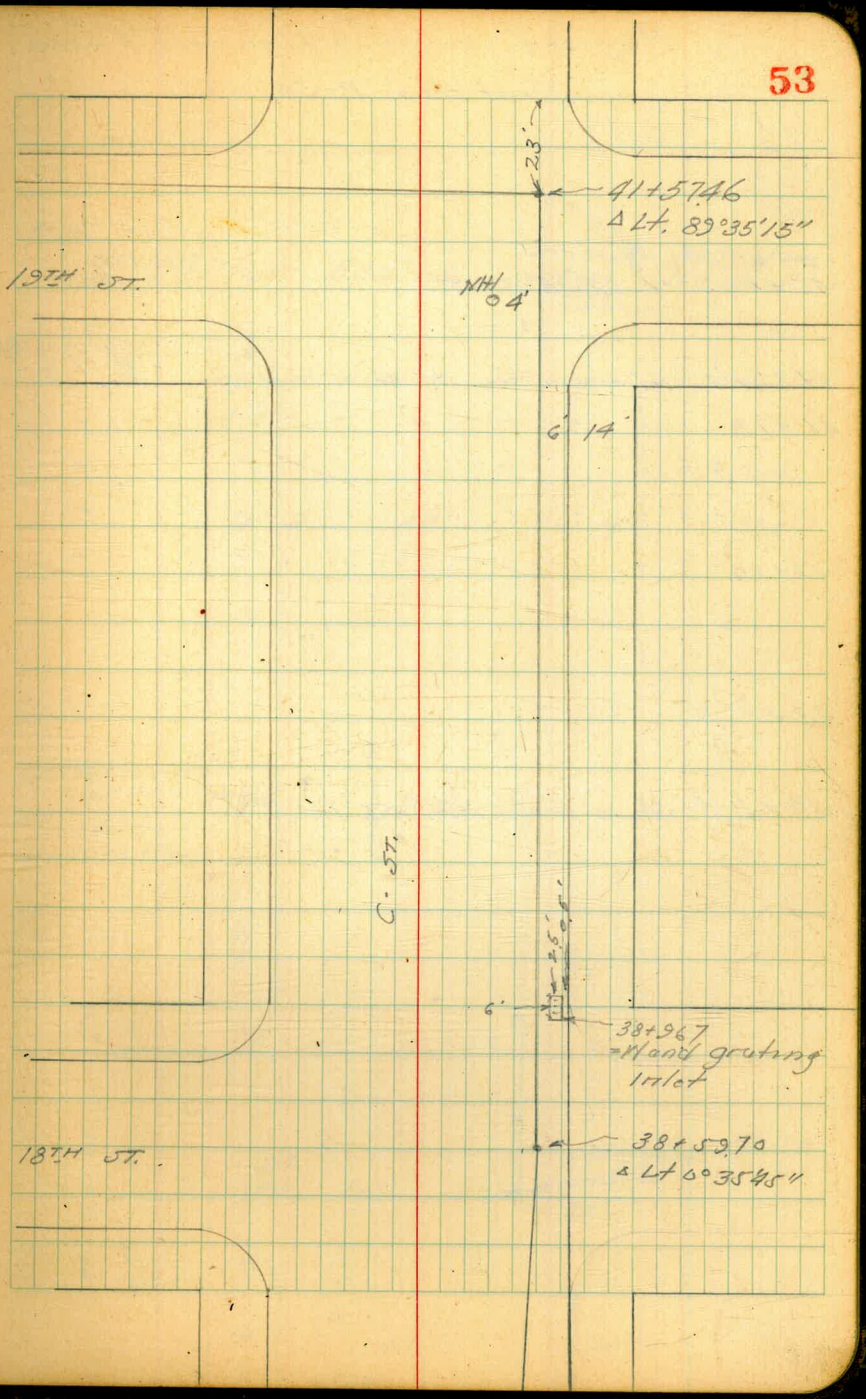
41+00 = Gate Valve 20' Lt.

40+90.4 = Fire Plg. 7' Rt. = N edge, Base 6.5' Lt. = Gate Valve

40+00 = Elec. Pole 7' Rt. = N edge

39+60.4 = Elec. Pole 7.2' Rt. = N edge

38+59.7 = Δ Lt. 0°35'45"



Proposed Change in Alignment, "A" Line

~ Cont. from P-53

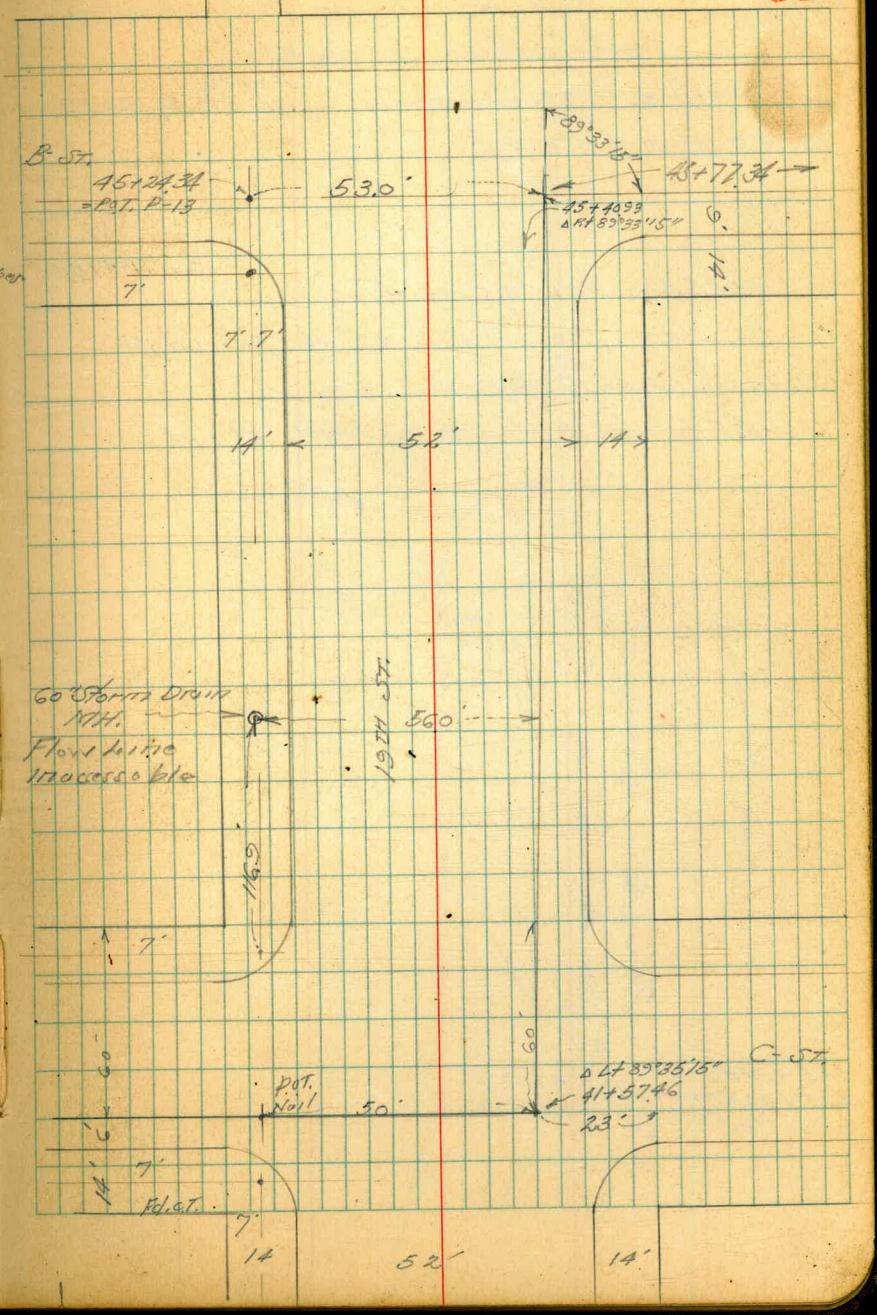
= 45+77.34 Equation.
45+40.93 = Δ 89°33'15" Rt.

overhanging Branches 3' Rt. of ℄ of Proposed Sanit

44+94.2 = 6" Acacia Tree 2.5' Rt. to West edge.
41+78 = " " " " " " " "
+56.3 = " " " " " " " "
+39.5 = " " " " " " " "
44+20 = " " " " " " " "

43+76.8

43+27.4 = Storm Drain MH. 56' Lt.



Walker
Hardin
Reed
4-1-42

Powder Canyon Trunk Sewer 8" Line

Proposed Change in Alignment

from station 125+34.43 Parcels in F.B. 1614-72

to Myrtle street

137+30.82 = Δ Lt. 7°53'

Serial #1929

+51 = Elec. Pole 2.5' Rt. = ∅ 16" dia

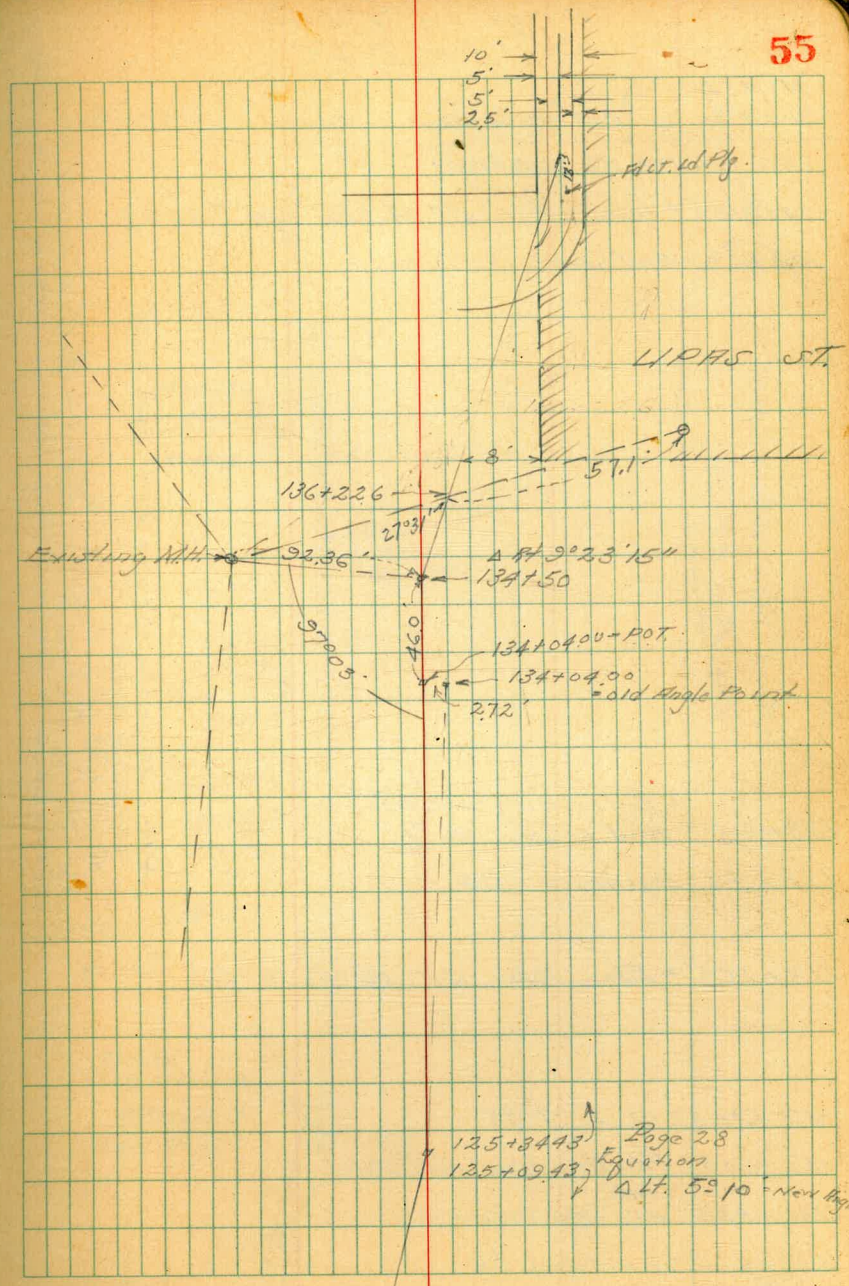
136+45 = opp. Storm Drain 6.2' Rt. = Face Hd Wall

136+39.3 = South end Curtain Wall 8' Rt.

136+22.6 = Int. Existing Sewer MH = 57.1' Rt. on diag.

This Page Abandoned
See New Notes Page 57-58

125+34.43
125+09.43



Change in "A" Line
Cont from P-55

140+54.10 → Equation
140+80 → P.O.T. New Line

140+50 = Δ Rt. 90°04'

140+16.5 = Elec. Pole 3.5' Rt = 16" Pole #3498

140+16.2 = End Conc. Wall on Lt

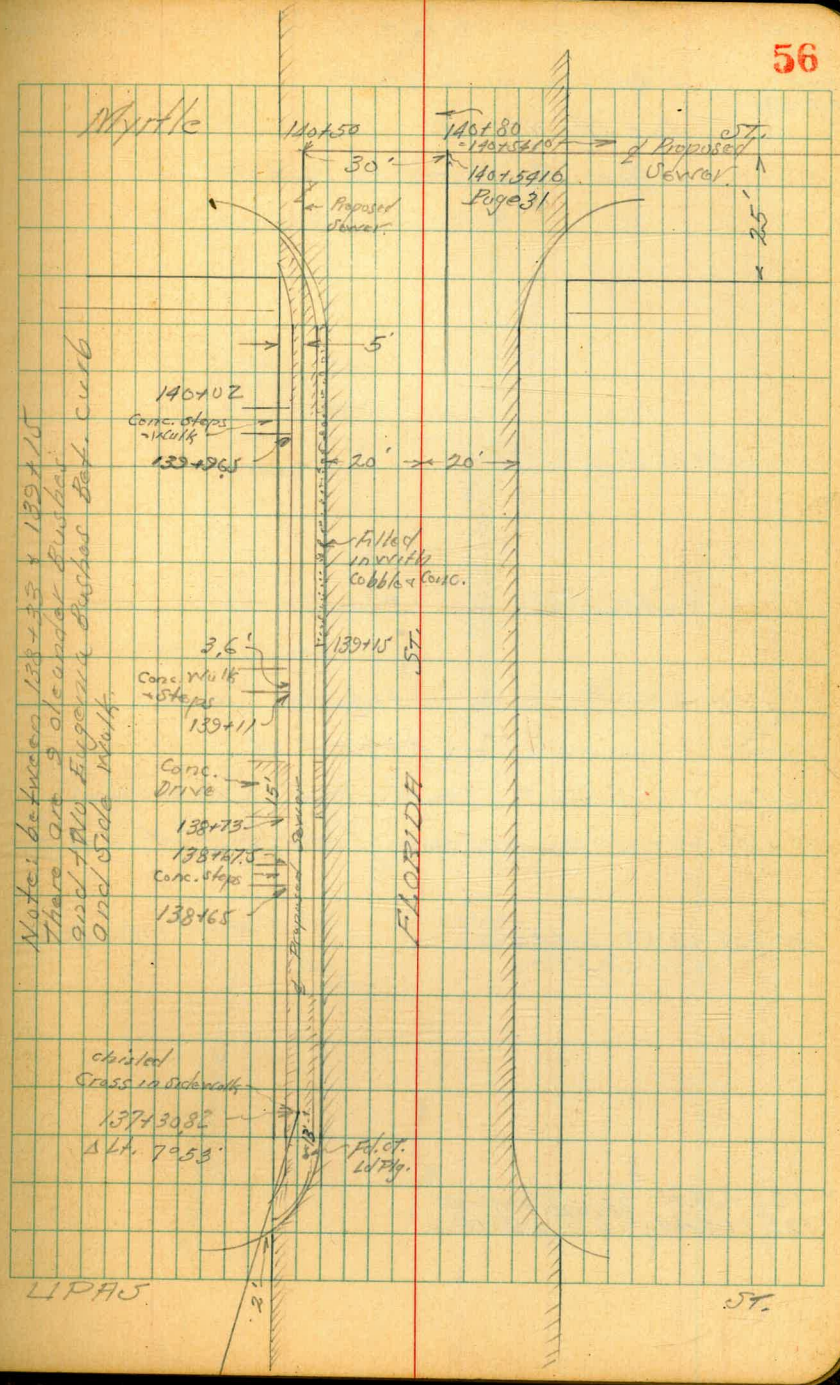
This Page Abandoned
See Page 57-58

Note: Eugenia Hedge bet. side walk and prop. line from 139+72.9 to 139+65.5
Also note: Parking area bet. Cb & Walk is paved with Cobble stone & Concrete from Station 139+15 to Station 138+73

= Beginning Concrete Wall
138+65 = End cobble Wall
138+36 = beginning Cobble Wall

138+15.6 = Elec. Pole 3.5' Rt = ℄ 16" Pole #3438

137+30.82 = Δ Lt. 7°53'
137+10.8 = Int. West edge side Walk
136+88.3 = Int. NLY edge side Walk
136+81.9 = Int. Exist Cb. Paving = 2' Rt.



Walker
Hurdin
Reed
4-2-42

Proposed change in "A" Line Powder Canyon Trunk Sewer.

from Station 125+34.43
to Myrtle St.
for Levels see FB. 1614-72

137+13.29 = Δ Lt. 9°05'30"

136+83.5 = Int. Curb Ret. Also = Edge Pav. (N.W. Cor Pav.)

136+51 = Elec. Pole 2' Rt. = West edge Pole. 16" dia.

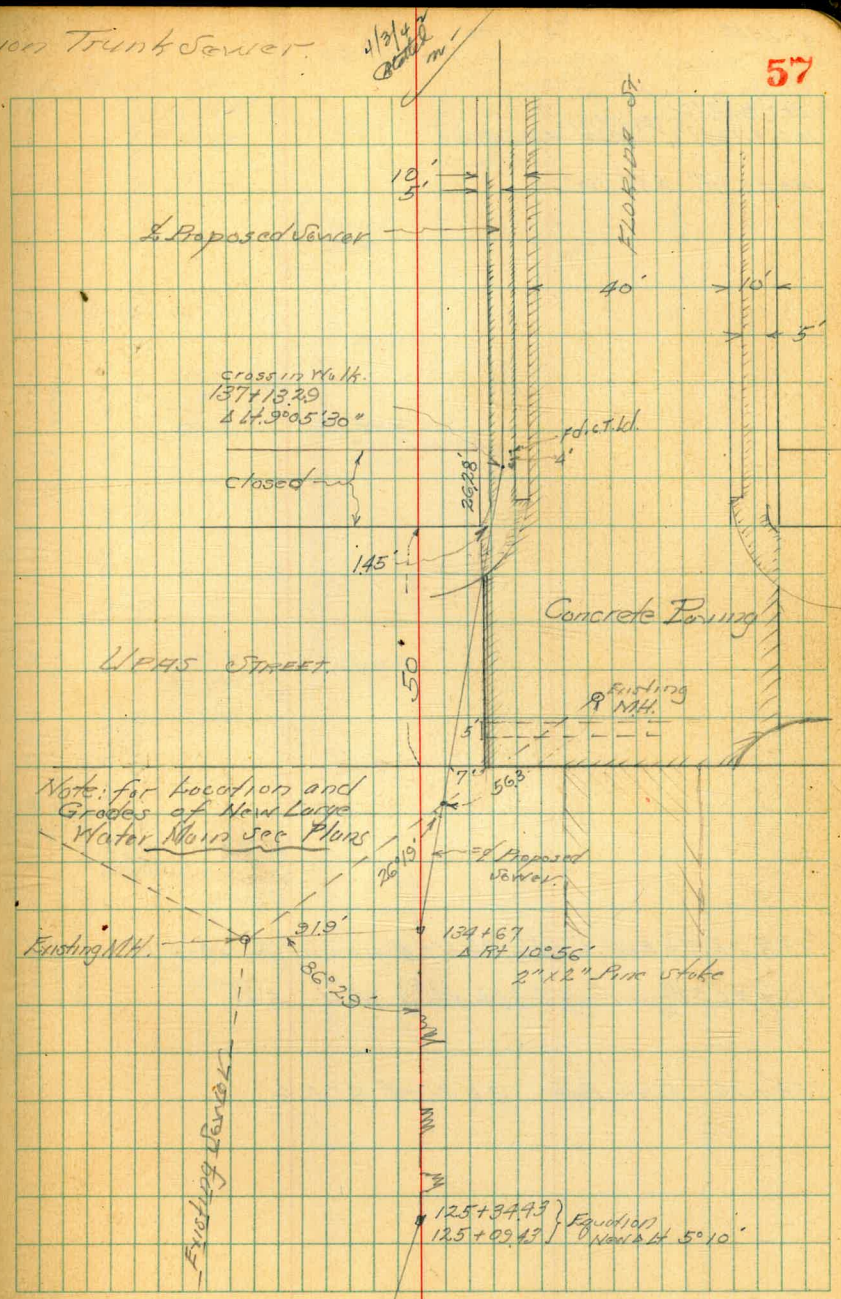
136+45.6 = Opp. end Storm Drain - 5' Rt.
Conc.

136+40 = Int. Balboa Park. Curtain Wall 7' Rt. West edge

136+23.66 = Int Existing Sewer MH. 56.3' Rt. on diag.

134+67 - Δ Rt. 10°56'

= 125+34.43 } Equation.
125+09.43 } Δ Lt. 5°10'



4-2-42

"A" Line
Cont. from P-57

= 140+54.10 } Equation
140+79.47 } P.O.T. this line.

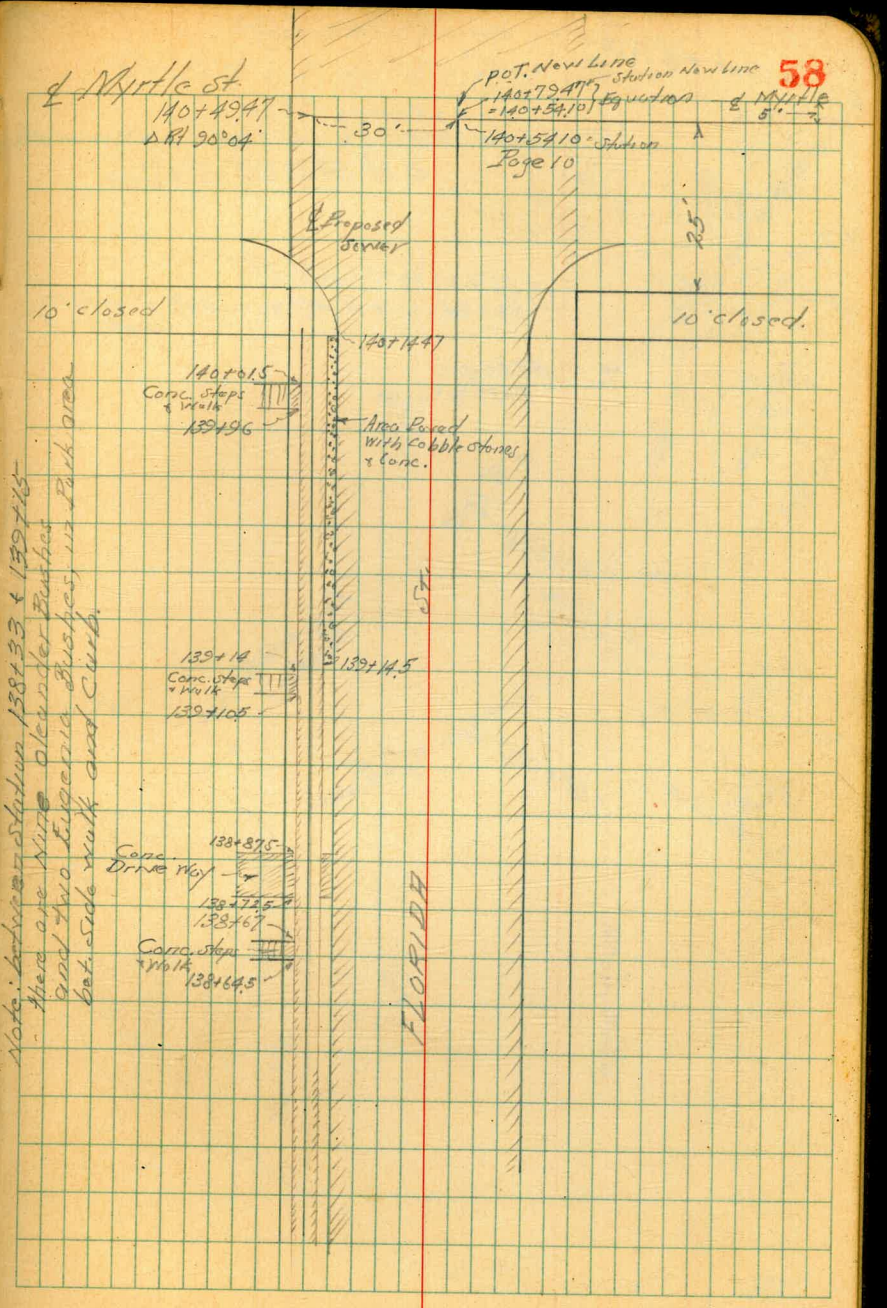
140+49.97 = Δ Rt. 90°04'

Note: Eugenia Hedge Bet. side walk and Prop Line from Station 139+29 to 139+96

138+65 = End Cobble Wall - Beginning Conc. Ret. Wall 5' Lt

138+36 = Beginning Cobble Stone Wall 5' Lt

138+15 = Elec. Pole 3.5' Rt. - ℄ 14" Pole.



Cont F.B. 1614

Proposed change in Sewer
Bet 20th & B to Switzer Dam

= 55+84.66 "A" Line
Spike 56+31.42 = station of this proposed change
Δ Lt. 58°31'30" to "A" Line

Proposed change of Sewer

Stake

"A" Line

55+85.17
"A" Line Station

16.76

= 56+23.70 = F.B. 1614-77
56+24.66 = Δ Lt 46°30' = (P.O.T. of "A" Line 15 Ok)

55+63.10
P.O.T. "A" Line

121°28'30"

133'30'

℄ Proposed

℄ "A" Line

40°53'45"

Stake

4'

Stake
54+88.80
= Δ Rt. 56°57'15"

54+87
= P.O.T.
Int. Park Line

61°37'45"

change of Sewer

(from 20th St. to Switzer Dam Abandoned)

Park Line

F.B. 1614

Walker Hardin Reed 7-29-42

See 1614/99

56+31.82
54+88.8
14+26.7

56+24.66
54+87.8
136.86

215'

57'

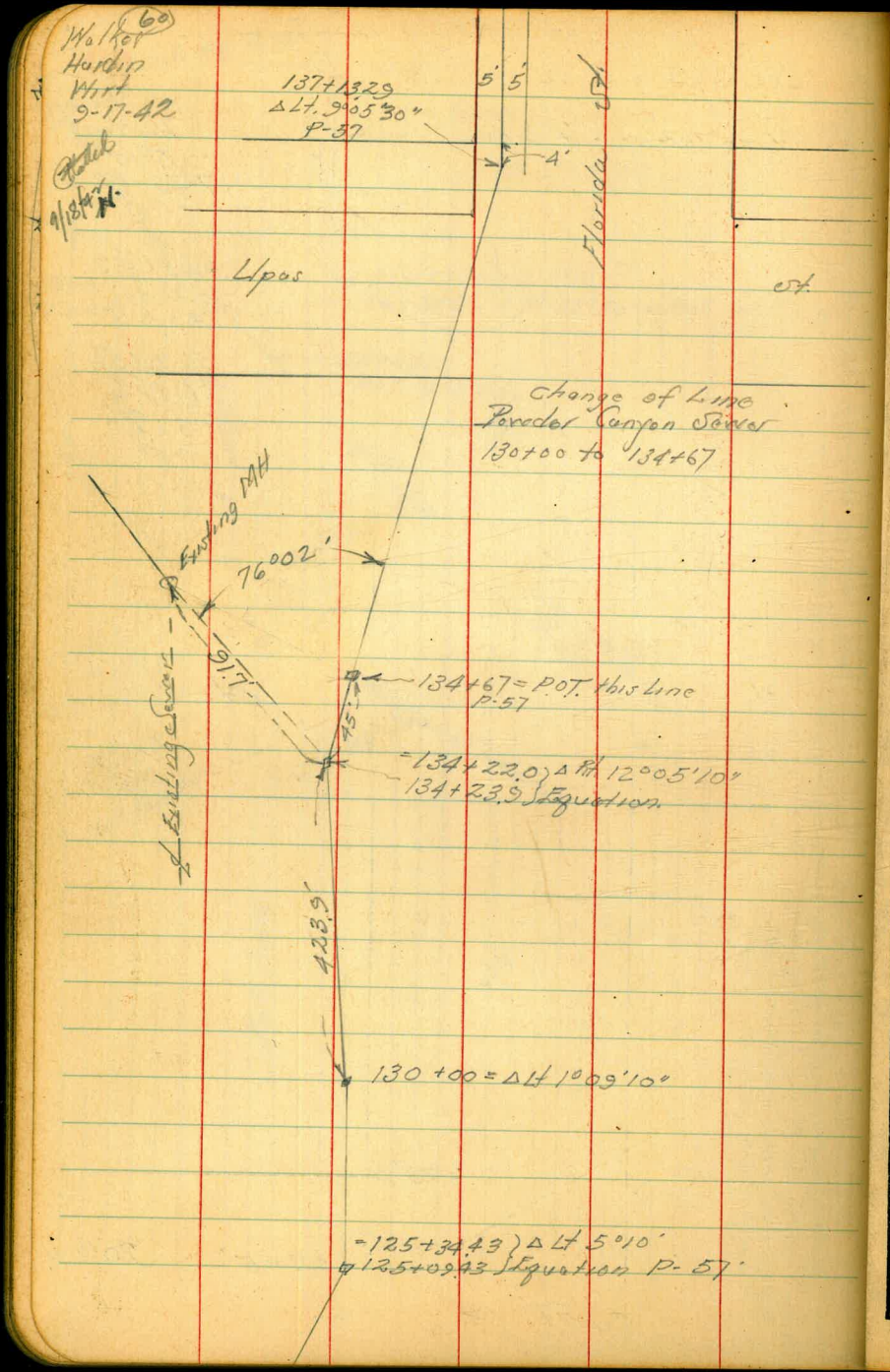
B'

23'

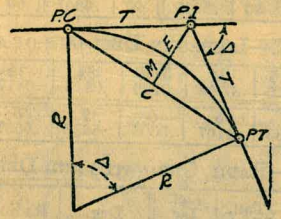
48+67.20
Δ Lt 62°05'

20th St.

57'



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 $\frac{\Delta}{2}$ (3) Length of Curve=L=$100\frac{\Delta}{D}$ (4)

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

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

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

EXPLANATION AND USE OF TABLES

Stations.—Given P. I.=Sta. 161+60.35 to find Sta. of P. C. and P. T. Δ=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÷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÷(2 x 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 91.37. For from Table IV for 1° curve E=960.6 for 8° 20′=960.6÷8⅓=91.27 and from Table V correction=.10 or E=91.37 ft. Or suppose Δ=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 IV.—Tangents and Externals to a 1° Curve.

Central Angle	Tangent	External	Central Angle	Tangent	External	Central Angle	Tangent	External
31°	1589.0	216.3	41°	2142.2	387.4	51°	2732.9	618.4
10′	1598.0	218.7	10′	2151.7	390.7	10′	2743.1	622.8
20	1606.9	221.1	20	2161.2	394.1	20	2753.4	627.2
30	1615.9	223.5	30	2170.8	397.4	30	2763.7	631.7
40	1624.9	226.0	40	2180.3	400.8	40	2773.9	636.2
50	1633.9	228.4	50	2189.9	404.2	50	2784.2	640.7
32	1643.0	230.9	42	2199.4	407.6	52	2794.5	645.2
10	1652.0	233.4	10	2209.0	411.1	10	2804.9	649.7
20	1661.0	235.9	20	2218.6	414.5	20	2815.2	654.3
30	1670.0	238.4	30	2228.1	418.0	30	2825.6	658.8
40	1679.1	241.0	40	2237.7	421.4	40	2835.9	663.4
50	1688.1	243.5	50	2247.3	425.0	50	2846.3	668.0
33	1697.2	246.1	43	2257.0	428.5	53	2856.7	672.7
10	1706.3	248.7	10	2266.6	432.0	10	2867.1	677.3
20	1715.3	251.3	20	2276.2	435.6	20	2877.5	682.0
30	1724.4	253.9	30	2285.9	439.2	30	2888.0	686.7
40	1733.5	256.5	40	2295.6	442.8	40	2898.4	691.4
50	1742.6	259.1	50	2305.2	446.4	50	2908.9	696.1
34	1751.7	261.8	44	2314.9	450.0	54	2919.4	700.9
10	1760.8	264.5	10	2324.6	453.6	10	2929.9	705.7
20	1770.0	267.2	20	2334.3	457.3	20	2940.4	710.5
30	1779.1	269.9	30	2344.1	461.0	30	2951.0	715.3
40	1788.2	272.6	40	2353.8	464.6	40	2961.5	720.1
50	1797.4	275.3	50	2363.5	468.4	50	2972.1	725.0
35	1806.6	278.1	45	2373.3	472.1	55	2982.7	729.9
10	1815.7	280.8	10	2383.1	475.8	10	2993.3	734.8
20	1824.9	283.6	20	2392.8	479.6	20	3003.9	739.7
30	1834.1	286.4	30	2402.6	483.8	30	3014.5	744.6
40	1843.3	289.2	40	2412.4	487.2	40	3025.2	749.6
50	1852.5	292.0	50	2422.3	491.0	50	3035.8	754.6
36	1861.7	294.9	46	2432.1	494.8	56	3046.5	759.6
10	1870.9	297.7	10	2441.9	498.7	10	3057.2	764.6
20	1880.1	300.6	20	2451.8	502.5	20	3067.9	769.7
30	1889.4	303.5	30	2461.7	506.4	30	3078.7	774.7
40	1898.6	306.4	40	2471.5	510.3	40	3089.4	779.8
50	1907.9	309.3	50	2481.4	514.3	50	3100.2	784.9
37	1917.1	312.2	47	2491.3	518.2	57	3110.9	790.1
10	1926.4	315.2	10	2501.2	522.2	10	3121.7	795.2
20	1935.7	318.1	20	2511.2	526.1	20	3132.6	800.4
30	1945.0	321.1	30	2521.1	530.1	30	3143.4	805.6
40	1954.3	324.1	40	2531.1	534.2	40	3154.2	810.9
50	1963.6	327.1	50	2541.0	538.2	50	3165.1	816.1
38	1972.9	330.2	48	2551.0	542.2	58	3176.0	821.4
10	1982.2	333.2	10	2561.0	546.3	10	3186.9	826.7
20	1991.5	336.3	20	2571.0	550.4	20	3197.8	832.0
30	2000.9	339.3	30	2581.0	554.5	30	3208.8	837.3
40	2010.2	342.4	40	2591.0	558.6	40	3219.7	842.7
50	2019.6	345.5	50	2601.1	562.8	50	3230.7	848.1
39	2029.0	348.6	49	2611.2	566.9	59	3241.7	853.5
10	2038.4	351.8	10	2621.2	571.1	10	3252.7	858.9
20	2047.8	354.9	20	2631.3	575.3	20	3263.7	864.3
30	2057.2	358.1	30	2641.4	579.5	30	3274.8	869.8
40	2066.6	361.3	40	2651.5	583.8	40	3285.8	875.3
50	2076.0	364.5	50	2661.6	588.0	50	3296.9	880.8
40	2085.4	367.7	50	2671.8	592.3	60	3308.0	886.4
10	2094.9	371.0	10	2681.9	596.6	10	3319.1	892.0
20	2104.3	374.2	20	2692.1	600.9	20	3330.3	897.5
30	2113.8	377.5	30	2702.3	605.3	30	3341.4	903.2
40	2123.3	380.8	40	2712.5	609.6	40	3352.6	908.8
50	2132.7	384.1	50	2722.7	614.0	50	3363.8	914.5

Table IV.—Tangents and Externals to a 1° Curve.

Central Angle	Tangent	External	Central Angle	Tangent	External	Central Angle	Tangent	External
61°	3375.0	920.2	71°	4086.9	1308.2	81°	4893.6	1805.3
10′	3386.3	925.9	10′	4099.5	1315.6	10′	4908.0	1814.7
20	3397.5	931.6	20	4112.1	1322.9	20	4922.5	1824.1
30	3408.8	937.3	30	4124.8	1330.3	30	4937.0	1833.6
40	3420.1	943.1	40	4137.4	1337.7	40	4951.5	1843.1
50	3431.4	948.9	50	4150.1	1345.1	50	4966.1	1852.6
62	3442.7	954.8	72	4162.8	1352.6	82	4980.7	1862.2
10	3454.1	960.6	10	4175.6	1360.1	10	4995.4	1871.8
20	3465.4	966.5	20	4188.5	1367.6	20	5010.0	1881.5
30	3476.8	972.4	30	4201.2	1375.2	30	5024.8	1891.2
40	3488.3	978.3	40	4214.0	1382.8	40	5039.5	1900.9
50	3499.7	984.3	50	4226.8	1390.4	50	5054.3	1910.7
63	3511.1	990.2	73	4239.7	1398.0	83	5069.2	1920.5
10	3522.6	996.2	10	4252.6	1405.7	10	5084.0	1930.4
20	3534.1	1002.3	20	4265.6	1413.5	20	5099.0	1940.3
30	3545.6	1008.3	30	4278.5	1421.2	30	5113.9	1950.3
40	3557.2	1014.4	40	4291.5	1429.0	40	5128.9	1960.2
50	3568.7	1020.5	50	4304.6	1436.8	50	5143.9	1970.3
64	3580.3	1026.6	74	4317.6	1444.6	84	5159.0	1980.4
10	3591.9	1032.8	10	4330.7	1452.5	10	5174.1	1990.5
20	3603.5	1039.0	20	4343.8	1460.4	20	5189.3	2000.6
30	3615.1	1045.2	30	4356.9	1468.4	30	5204.4	2010.8
40	3626.8	1051.4	40	4370.1	1476.4	40	5219.7	2021.1
50	3638.5	1057.7	50	4383.3	1484.4	50	5234.9	2031.4
65	3650.2	1063.9	75	4396.5	1492.4	85	5250.3	2041.7
10	3661.9	1070.2	10	4409.8	1500.5	10	5265.6	2052.1
20	3673.7	1076.6	20	4423.1	1508.6	20	5281.0	2062.5
30	3685.4	1082.9	30	4436.4	1516.7	30	5296.4	2073.0
40	3697.2	1089.3	40	4449.7	1524.9	40	5311.9	2083.5
50	3709.0	1095.7	50	4463.1	1533.1	50	5327.4	2094.1
66	3720.9	1102.2	76	4476.5	1541.4	86	5343.0	2104.7
10	3732.7	1108.6	10	4489.9	1549.7	10	5358.6	2115.3
20	3744.6	1115.1	20	4503.4	1558.0	20	5374.2	2126.0
30	3756.5	1121.7	30	4516.9	1566.3	30	5389.9	2136.7
40	3768.5	1128.2	40	4530.4	1574.7	40	5405.6	2147.5
50	3780.4	1134.8	50	4544.0	1583.1	50	5421.4	2158.4
67	3792.4	1141.4	77	4557.6	1591.6	87	5437.2	2169.2
10	3804.4	1148.0	10	4571.2	1600.1	10	5453.1	2180.2
20	3816.4	1154.7	20	4584.8	1608.6	20	5469.0	2191.1
30	3828.4	1161.3	30	4598.5	1617.1	30	5484.9	2202.2
40	3840.5	1168.1	40	4612.2	1625.7	40	5500.9	2213.2
50	3852.6	1174.8	50	4626.0	1634.4	50	5517.0	2224.3
68	3864.7	1181.6	78	4639.8	1643.0	88	5533.1	2235.5
10	3876.8	1188.4	10	4653.6	1651.7	10	5549.2	2246.7
20	3889.0	1195.2	20	4667.4	1660.5	20	5565.4	2258.0
30	3901.2	1202.0	30	4681.3	1669.2	30	5581.6	2269.3
40	3913.4	1208.9	40	4695.2	1678.1	40	5597.8	2280.6
50	3925.6	1215.8	50	4709.2	1686.9	50	5614.2	2292.0
69	3937.9	1222.7	79	4723.2	1695.8	89	5630.5	2303.5
10	3950.2	1229.7	10	4737.2	1704.7	10	5646.9	2315.0
20	3962.5	1236.7	20	4751.2	1713.7	20	5663.4	2326.6
30	3974.8	1243.7	30	4765.3	1722.7	30	5679.9	2338.2
40	3987.2	1250.8	40	4779.4	1731.7	40	5696.4	2349.8
50	3999.5	1257.9	50	4793.6	1740.8	50	5713.0	2361.5
70	4011.9	1265.0	80	4807.7	1749.9	90	5729.7	2373.3
10	4024.4	1272.1	10	4822.0	1759.0	10	5746.3	2385.1
20	4036.8	1279.3	20	4836.2	1768.2	20	5763.1	2397.0
30	4049.3	1286.5	30	4850.5	1777.4	30	5779.9	2408.9
40	4061.8	1293.6	40	4864.8	1786.7	40	5796.7	2420.9
50	4074.4	1300.9	50	4879.2	1796.0	50	5813.6	2432.9

TABLE VIII.—NATURAL TRIGONOMETRICAL FUNCTIONS.

Angle	Sine.	Tan.	Cotg.	Cosin.		Angle	Sine.	Tan.	Cotg.	Cosin.	
°						°					
32	.5209	.6249	1.600	.84805	58	30	.6225	.7954	1.257	.78261	30
10	.5324	.6289	1.590	.84650	50	40	.6248	.8002	1.250	.78079	20
20	.5348	.6330	1.580	.84495	40	50	.6271	.8050	1.242	.77897	10
30	.5373	.6371	1.570	.84339	30						
40	.5398	.6412	1.560	.84182	20	39	.6293	.8098	1.235	.77715	51
50	.5422	.6453	1.550	.84025	10	10	.6316	.8146	1.228	.77531	50
						20	.6338	.8195	1.220	.77347	40
33	.5446	.6494	1.540	.83867	57	30	.6361	.8243	1.213	.77162	30
10	.5471	.6536	1.530	.83708	50	40	.6383	.8292	1.206	.76977	20
20	.5495	.6577	1.520	.83549	40	50	.6406	.8342	1.199	.76791	10
30	.5519	.6619	1.511	.83389	30						
40	.5544	.6661	1.501	.83228	20	40	.6428	.8391	1.192	.76604	50
50	.5568	.6703	1.492	.83066	10	10	.6450	.8441	1.185	.76417	50
						20	.6472	.8491	1.178	.76229	40
34	.5592	.6745	1.483	.82904	56	30	.6494	.8541	1.171	.76041	30
10	.5616	.6787	1.473	.82741	50	40	.6517	.8591	1.164	.75851	20
20	.5640	.6830	1.464	.82577	40	50	.6539	.8642	1.157	.75661	10
30	.5664	.6873	1.455	.82413	30						
40	.5688	.6916	1.446	.82248	20	41	.6561	.8693	1.150	.75471	49
50	.5712	.6959	1.437	.82082	10	10	.6583	.8744	1.144	.75280	50
						20	.6604	.8796	1.137	.75088	40
35	.5736	.7002	1.428	.81915	55	30	.6626	.8847	1.130	.74896	30
10	.5760	.7046	1.419	.81748	50	40	.6648	.8899	1.124	.74703	20
20	.5783	.7089	1.411	.81580	40	50	.6670	.8952	1.117	.74509	10
30	.5807	.7133	1.402	.81412	30						
40	.5831	.7177	1.393	.81242	20	42	.6691	.9004	1.111	.74314	48
50	.5854	.7221	1.385	.81072	10	10	.6713	.9057	1.104	.74120	50
						20	.6734	.9110	1.098	.73924	40
36	.5878	.7265	1.376	.80902	54	30	.6756	.9163	1.091	.73728	30
10	.5901	.7310	1.368	.80730	50	40	.6777	.9217	1.085	.73531	20
20	.5925	.7355	1.360	.80558	40	50	.6799	.9271	1.079	.73333	10
30	.5948	.7400	1.351	.80386	30						
40	.5972	.7445	1.343	.80212	20	43	.6820	.9325	1.072	.73135	47
50	.5995	.7490	1.335	.80038	10	10	.6841	.9380	1.066	.72937	50
						20	.6862	.9435	1.060	.72737	40
37	.6018	.7536	1.327	.79864	53	30	.6884	.9490	1.054	.72537	30
10	.6041	.7581	1.319	.79688	50	40	.6905	.9545	1.048	.72337	20
20	.6065	.7627	1.311	.79512	40	50	.6926	.9601	1.042	.72136	10
30	.6088	.7673	1.303	.79335	30						
40	.6111	.7720	1.295	.79158	20	44	.6947	.9657	1.036	.71934	46
50	.6134	.7766	1.288	.78980	10	10	.6967	.6713	1.030	.71732	50
						20	.6988	.9770	1.024	.71529	40
38	.6157	.7813	1.280	.78801	52	30	.7009	.9827	1.018	.71325	30
10	.6180	.7860	1.272	.78622	50	40	.7030	.9884	1.012	.71121	20
20	.6202	.7907	1.265	.78442	40	50	.7050	.9942	1.006	.70916	10
							.7071	1.	1.	.70711	45
											°
	Cosin.	Cotg.	Tan.	Sine.	Angle.		Cosin.	Cotg.	Tan.	Sine.	Angle.

TABLE IX.—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	5.83
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.

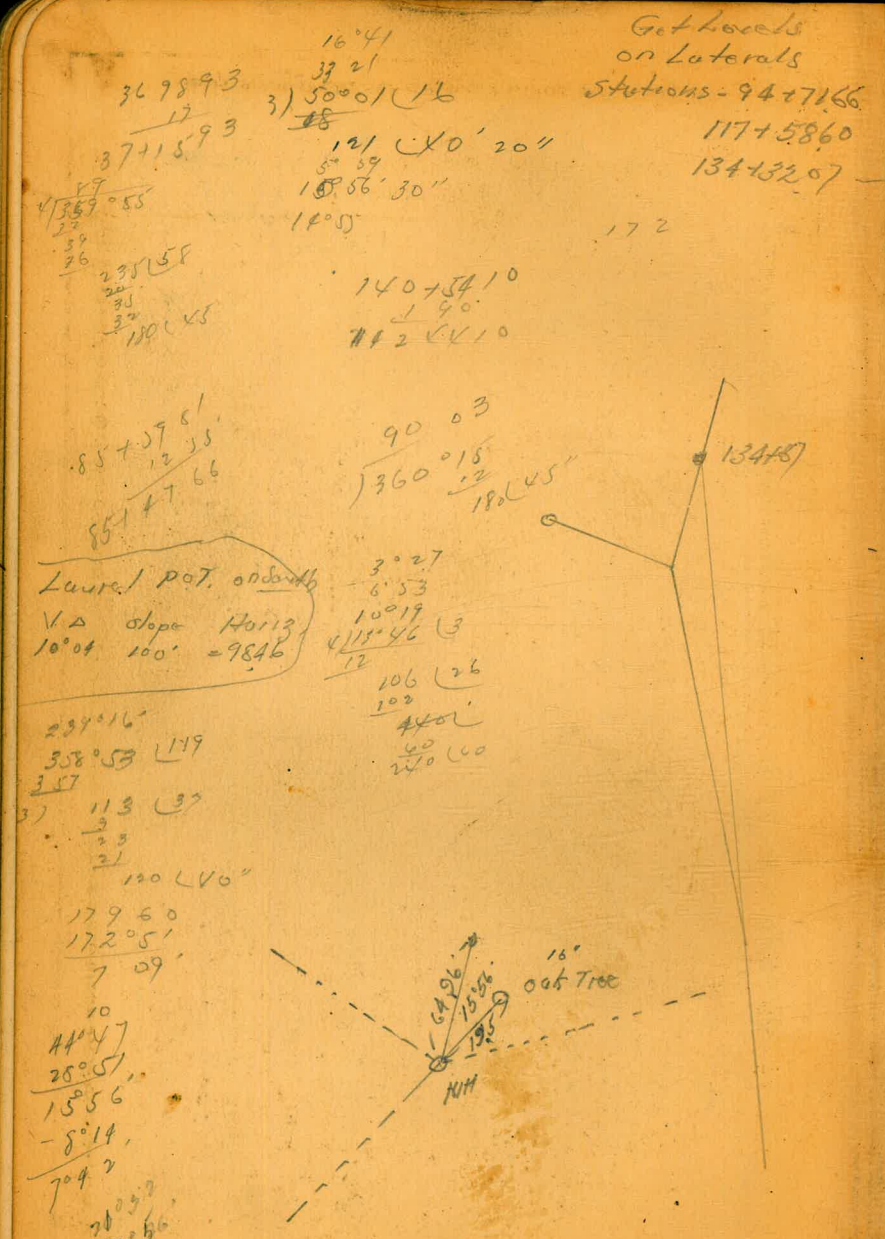
4) 13046 (3
12
106 (26
8
26
24
120 (30

179060
8553
94507

25578 8
57
2641 4 88

1848 15
132
1868

25+57 88
57
2641 4. 88
197
25+95



DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

FB 165-1 6-40

Roadway 16 feet wide. Side Slopes 1 on 1½
For Single Track Embankment.

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

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

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