

Bk. 107 - Dr. 16

OFFICE OF COUNTY ENGINEER
RAMSEY CO. MINN.

Alignmt. & Levels Survey

SILVER LK. E. OUTLET DITCH

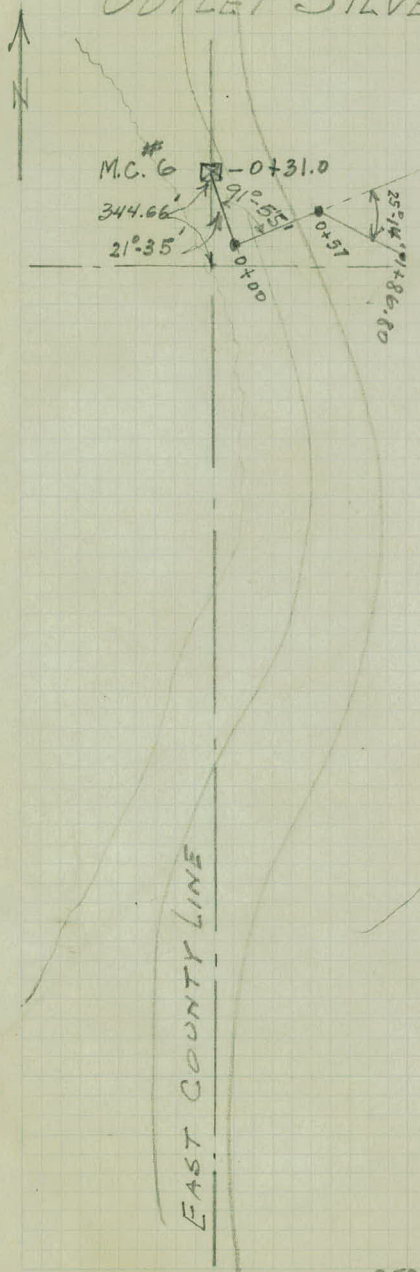
From Silver Lake "E" To Long Lake

Road Acc't. No.

Date Filed 3-23-44

File

ALIGNMENT OUTLET SILVER LAKE. EAST



1/4 LINE - SEC. 6
T-29 - R. 21

EAST COUNTY LINE

958.52

984.56

978.25
977.2
974.76
975.26
974.56

silver

County Line R 22 W

R 21 W

T 29 N.

Align

Proposed Ditch To Long Lake

From Silver Lake to Long Lake

6-30-47 HAW

AM

L.C.

CF

5-136 (Ident.
D.W.R. & E)

Sta Pt. ΔL ΔR

6+38.40 P.1 41°47' ✓

1+86⁸⁰ P.1 11°27' ✓

0+57 P.1 ✓ 25°14'

0+00 P.1 88°05' ✓

-0+31 P.1. M.C #6 21°35'

Sec. 1

Description

Hub

Hub

Hub

Mon

Co. Rd "D"

Mon N.E. Sec 1-

5th

P. 1

Δ L +

Δ R 1

26+50⁸⁰

19° 50'

V

26+42[✓]

2 Twin City Lines Tracks

23+45²⁰

P. 1

25° 10'

V

23+32⁰⁹

Bog 10" Tile ?

8+96²⁰

P. 1

58° 00'

Description

Hole in Abut.

Hub

Sta

Pt.

ΔL

ΔR

34+17.0

P.1

11° 10'

31+63.30

P.1

End Tyle Line

15° 36'

✓

29+03.50

P.1

18° 46'

✓

27+51.20 ✓ P.1

12° 20'

✓

Description

Sta

Pt.

ΔL

ΔR

42+23²⁰

36°05'

40+13⁰⁰

20°00' ✓

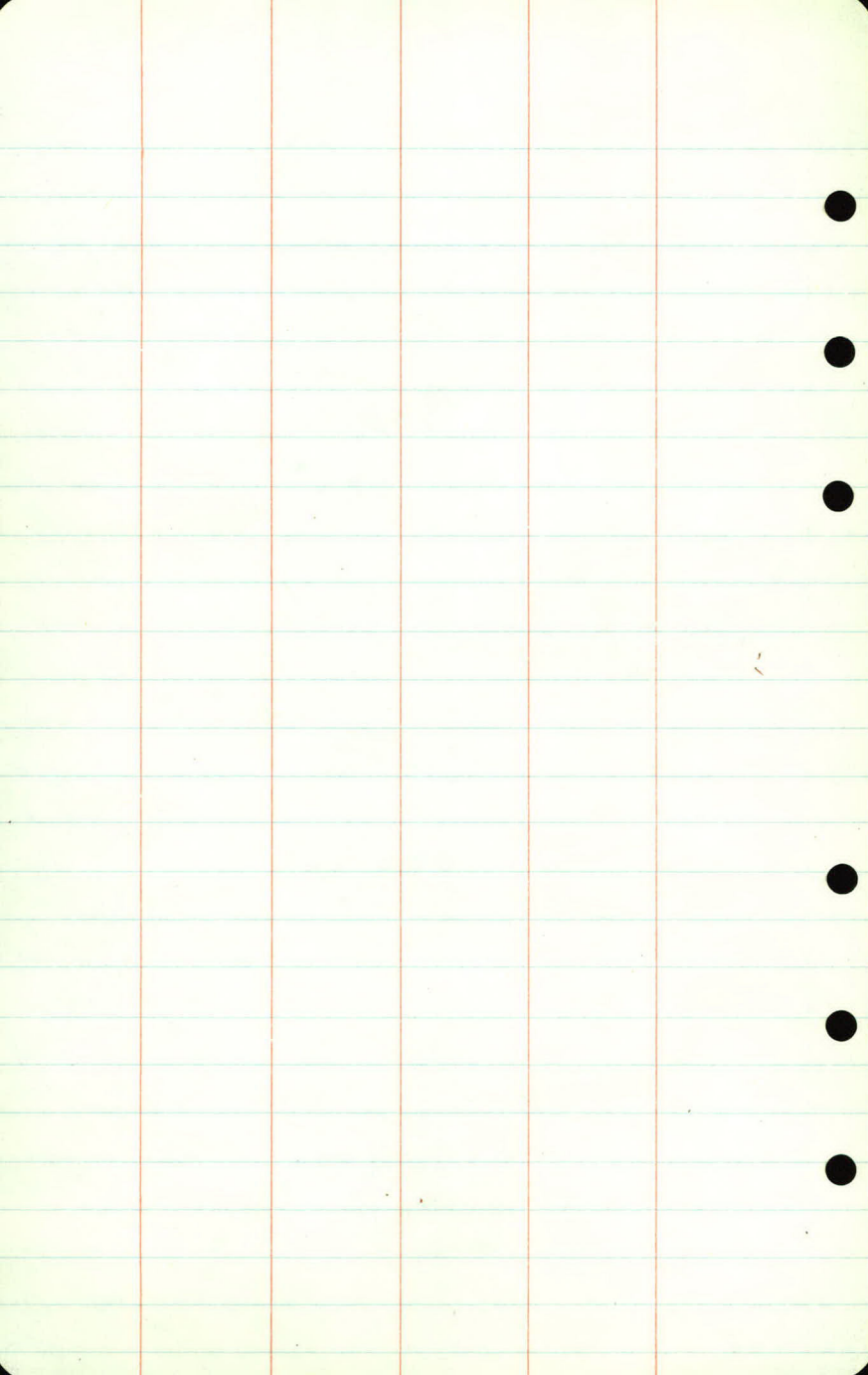
38+11⁵⁰ P.1

68°00' ✓

36+01⁵⁰ P.1

196°00' ✓

Description



4

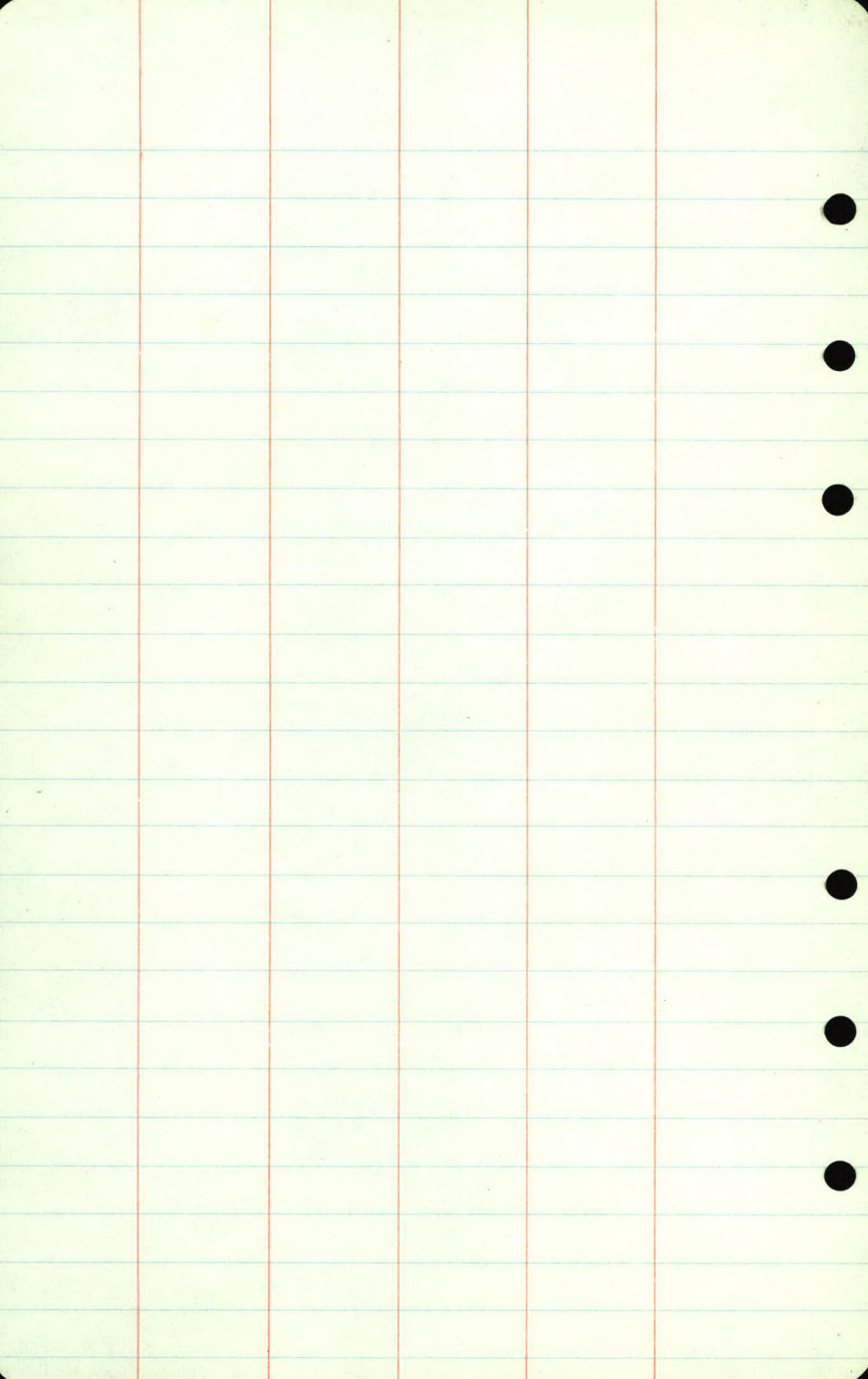
Bench Levels

No St Paul

Sta	+	Σ	-	Elev
B.M	7.82	999.16		991.34
	3.00	998.86	3.30	995.86
	5.58	998.82	4.62	994.24
	4.52	998.45	5.89	993.93
	13.02	1009.49	1.98	996.47
	0.97	1009.26	1.20	1008.29
	1.75	998.74	12.27	996.99
B.M			5.43	993.31

Top of sill No St. Paul Pump Ho

Spk in P.P. # 2L East End Silver Lake
200' 30 Sta 0+57



Profile Levels

Ditch to Long Lake

Sta	+	π	-	Elev
B.M	3.95	997.26	✓	993.31

✓ 0+00

✓ +12

✓ +23

✓ +26

Edge Pave

✓ +36

2 Pave

✓ +46

Edge Pave.

✓ +48

✓ +51

✓ +57

✓ +63

✓ 1+00

Lt

£

Rt

Spk in P.P#24 200' So. Sta 0+57

W.S Silver Lake $\frac{6.70}{90.56}$ $\frac{5.9}{91.36}$ $\frac{5.1}{92.16}$ $\frac{4.0}{93.26}$ $\frac{4.12}{93.14}$ $\frac{4.74}{92.52}$ $\frac{5.56}{91.70}$ $\frac{5.32}{91.94}$ $\frac{5.5}{91.76}$ $\frac{9.0}{88.26}$ $\frac{10.8}{86.46}$

Low Spot.

W.S. Pothole

13.1

11.35

 $\frac{12.3}{84.96}$

$$\begin{array}{r} 997.26 \\ 11.35 \\ \hline 985.91 \end{array}$$

Sta + π - Elev

997.26

✓
1786⁸⁰ P.1 Beg Ditch

✓ 2

✓ 3

✓ 4

✓ 5

T.P. 0.18 984.56 ✓ 1288 984.38

✓ 6

✓ +38 P.1

✓ 7

✓ 8

✓ +96²⁰ P.1

✓ 9

✓ 10

L.

£

Rt

Ditch

$$\begin{array}{r} 11.8 \\ \hline 85.46 \end{array}$$

$$\begin{array}{r} 10.7 \\ \hline 86.56 \end{array}$$

$$\begin{array}{r} 11.6 \\ \hline 85.66 \end{array}$$

$$\begin{array}{r} 10.7 \\ \hline 86.56 \\ \text{Ditch} \end{array}$$

$$\begin{array}{r} 12.4 \\ \hline 84.86 \end{array}$$

$$\begin{array}{r} 12.8 \\ \hline 84.46 \end{array}$$

$$\begin{array}{r} 14.2 \\ \hline 83.06 \end{array}$$

Ditch

$$\begin{array}{r} 4.6 \\ \hline 79.96 \end{array}$$

$$\begin{array}{r} 3.8 \\ \hline 80.76 \end{array}$$

$$\begin{array}{r} 4.9 \\ \hline 79.66 \end{array}$$

$$\begin{array}{r} 7.5 \\ \hline 77.06 \end{array}$$

$$\begin{array}{r} 9.5 \\ \hline 75.06 \end{array}$$

$$\begin{array}{r} 10.8 \\ \hline 73.76 \end{array}$$

$$\begin{array}{r} 10.9 \\ \hline 73.76 \end{array}$$

Ditch

$$\begin{array}{r} 11.9 \\ \hline 72.66 \end{array}$$

$$\begin{array}{r} 11.7 \\ \hline 72.86 \end{array}$$

Sta + π - Elev

984.56

11 ✓

T.P. 2.57 977.39 ✓ 9.74 974.82

12 ✓

13 ✓

14 ✓

15 ✓

16 ✓

17 ✓

18 ✓

T.P. 6.45 978.25 ✓ 5.59 971.80

19 ✓

20 ✓

21 ✓

22 ✓

Lt

£

Rt

Ditch

$$\begin{array}{r} 12.8 \\ 71.96 \\ \hline \text{Ditch} \end{array}$$

$$\begin{array}{r} 12.2 \\ 72.36 \\ \hline \end{array}$$

$$\begin{array}{r} 6.8 \\ 70.69 \\ \hline \end{array}$$

$$\begin{array}{r} 5.7 \\ 71.69 \\ \hline \end{array}$$

$$\begin{array}{r} 6.6 \\ 70.79 \\ \hline \end{array}$$

$$\begin{array}{r} 6.1 \\ 71.29 \\ \hline \end{array}$$

$$\begin{array}{r} 6.9 \\ 70.49 \\ \hline \end{array}$$

$$\begin{array}{r} 6.4 \\ 70.99 \\ \hline \text{Ditch} \end{array}$$

$$\begin{array}{r} 7.1 \\ 70.29 \\ \hline \end{array}$$

Ditch

$$\begin{array}{r} 8.0 \\ 69.39 \\ \hline \end{array}$$

$$\begin{array}{r} 7.1 \\ 70.29 \\ \hline \end{array}$$

$$\begin{array}{r} 8.4 \\ 68.99 \\ \hline \end{array}$$

$$\begin{array}{r} 7.2 \\ 70.19 \\ \hline \end{array}$$

$$\begin{array}{r} 8.2 \\ 69.19 \\ \hline \end{array}$$

$$\begin{array}{r} 7.5 \\ 69.89 \\ \hline \end{array}$$

$$\begin{array}{r} 8.8 \\ 69.45 \\ \hline \end{array}$$

$$\begin{array}{r} 8.0 \\ 70.25 \\ \hline \end{array}$$

$$\begin{array}{r} 8.5 \\ 69.75 \\ \hline \end{array}$$

$$\begin{array}{r} 8.2 \\ 70.05 \\ \hline \text{Ditch} \end{array}$$

$$\begin{array}{r} 8.7 \\ 69.55 \\ \hline \end{array}$$

$$\begin{array}{r} 8.3 \\ 69.95 \\ \hline \end{array}$$

Sta + K - Elev
978.25

23 ✓

+32 ✓

CONC. LINED STEEL PIPE 12" O.S.?
Beg Tile Line +2" 10"

✓ +45²⁰

P.1

24 ✓

25 ✓

T.P.

26 ✓

T.P. 4.41 981.72 ✓ 0.94 977.31

+26 ✓ Beg 6'x6' Conc Box Culv

+33 ✓

✓ +50⁸⁰

B.M. 6.92 984.76 ✓ 3.88 977.84

✓ +63 End Box Culv

27 ✓

+51⁷⁰

977.84
1.24
879.68

12

Lt.

2

Rt

8.8
69.45

10.08
Inv
68.17
Ditch

6.7
71.55

6.6
71.65

Ditch

5.6
72.65

6.7
71.55

4.3
73.95

7.2
71.05

11.8
69.92

12.0
69.72

11.8
69.92

N.W Cor S. Abut 6'x6' Culv.

13.6
71.16

14.0
70.76

13.9
70.86

549

+

K

-

E/cv

984.76

V 28

V 2450

T.P

0.39

975.26

9.89

974.87

V +90

29 V

V +03⁵⁰

P.1

V +40

30 V

31 V

V +63³⁰

V End 10" V.7 T.1c

32 V

33 V

T.P

1.25

966.30

10.21

965.05

34

Lt

L

Rt

$$\begin{array}{r} 15.8 \\ \hline 68.96 \end{array}$$

$$\begin{array}{r} 15.0 \\ \hline 69.76 \end{array}$$

$$\begin{array}{r} 6.1 \\ \hline 69.16 \end{array}$$

$$\begin{array}{r} 8.8 \\ \hline 66.46 \end{array}$$

$$\begin{array}{r} 7.5 \\ \hline 67.76 \end{array}$$

$$\begin{array}{r} 7.1 \\ \hline 68.16 \end{array}$$

$$\begin{array}{r} 7.8 \\ \hline 67.46 \end{array}$$

$$\begin{array}{r} 9.1 \\ \hline 66.16 \end{array}$$

Ditch

$$\begin{array}{r} 12.5 \\ \hline 62.76 \end{array}$$

$$\begin{array}{r} 15.0 \\ \hline 60.26 \end{array}$$

$$\begin{array}{r} 6.3 \\ \hline 60.00 \end{array}$$

$$\begin{array}{r} 12.39 \\ \hline 62.87 \end{array}$$

12.9 Ground

$$\begin{array}{r} 11.5 \\ \hline 63.76 \end{array}$$

$$\begin{array}{r} 13.3 \\ \hline 61.96 \end{array}$$

$$\begin{array}{r} 5.7 \\ \hline 60.60 \end{array}$$

Sta + K - Elev

966.30

34+17'0 P.I

35

36

+01'50 P.I

37

38

+11'50 P.I

39 ✓

40 ✓

+13

41 ✓

T.P 1.76 961.10 6.96 959.34

42 ✓

Lt

Z

Rt

Ditch

$$\begin{array}{r} 63 \\ \hline 60.00 \end{array}$$

$$\begin{array}{r} 59 \\ \hline 60.40 \end{array}$$

$$\begin{array}{r} 71 \\ \hline 59.20 \end{array}$$

$$\begin{array}{r} 62 \\ \hline 60.10 \end{array}$$

$$\begin{array}{r} 75 \\ \hline 58.80 \end{array}$$

$$\begin{array}{r} 64 \\ \hline 59.90 \end{array}$$

$$\begin{array}{r} 75 \\ \hline 58.80 \end{array}$$

$$\begin{array}{r} 65 \\ \hline 59.80 \\ \text{Ditch} \end{array}$$

$$\begin{array}{r} 77 \\ \hline 58.60 \end{array}$$

Ditch

$$\begin{array}{r} 84 \\ \hline 57.90 \end{array}$$

$$\begin{array}{r} 71 \\ \hline 59.20 \end{array}$$

$$\begin{array}{r} 72 \\ \hline 59.10 \\ \text{Ditch} \end{array}$$

$$\begin{array}{r} 92 \\ \hline 57.10 \end{array}$$

Ditch

$$\begin{array}{r} 96 \\ \hline 56.70 \end{array}$$

$$\begin{array}{r} 87 \\ \hline 57.60 \end{array}$$

$$\begin{array}{r} 10.3 \\ \hline 56.00 \end{array}$$

$$\begin{array}{r} 85 \\ \hline 57.80 \end{array}$$

$$\begin{array}{r} 94 \\ \hline 56.90 \end{array}$$

$$\begin{array}{r} 62 \\ \hline 54.90 \end{array}$$

Sta + π - Elev

961.10

42+23²⁹ P.1

43 ✓

44 ✓

45 ✓

46 ✓

T.P. 6.32 958.58 8.84 952.26

47 ✓

48 ✓

49 ✓

50 ✓

51 ✓

+08

+11 ± ditch 300' N. STH⁴ 36

Lt

R

Rt

$$\begin{array}{r} 6.6 \\ \hline 54.50 \end{array}$$

$$\begin{array}{r} 8.3 \\ \hline 52.80 \end{array}$$

$$\begin{array}{r} 9.4 \\ \hline 51.70 \end{array}$$

$$\begin{array}{r} 10.0 \\ \hline 51.10 \end{array}$$

$$\begin{array}{r} 10.3 \\ \hline 50.80 \end{array}$$

$$\begin{array}{r} 7.9 \\ \hline 50.68 \end{array}$$

$$\begin{array}{r} 7.8 \\ \hline 50.78 \end{array}$$

$$\begin{array}{r} 8.1 \\ \hline 50.48 \end{array}$$

$$\begin{array}{r} 8.1 \\ \hline 50.48 \end{array}$$

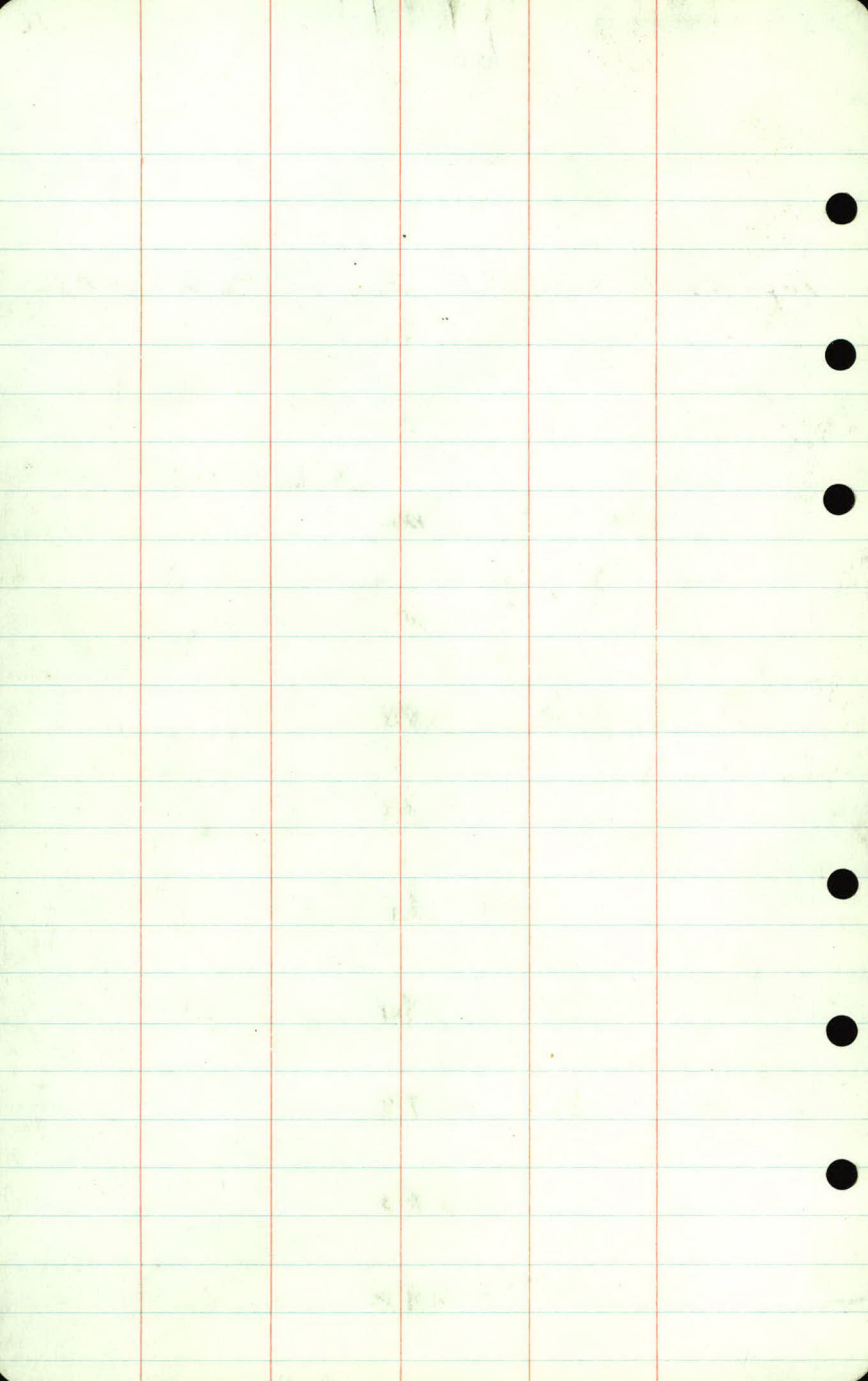
$$\begin{array}{r} 7.8 \\ \hline 50.78 \end{array}$$

$$\begin{array}{r} 8.3 \\ \hline 50.28 \end{array}$$

$$\begin{array}{r} 9.2 \\ \hline 49.38 \end{array}$$

Sta	+	π	-	Elev
		958.58		
T.P.	8.80	961.73	5.65	952.93
B.M.			8.60	953.13

Top Abut. X on N.E. End of Culv. stH #36



Stadia

OF Pathole on Base
Prop Washington Co

ALL Shots are at present Edge Water

7-7-42

HAW

AM

LC

Pt

Angle

Siding

At 6+38⁴⁰

Backsight

To P.I Sta 1+86⁸⁰ =

0°00'

✓ V 21°30' 240' ✓

✓ V 351°30' 233' ✓

✓ V 257°19' 250' ✓

✓ V 37°10' 253' ✓

✓ V 357°57' 468' ✓

✓ V 39°38' 342' ✓

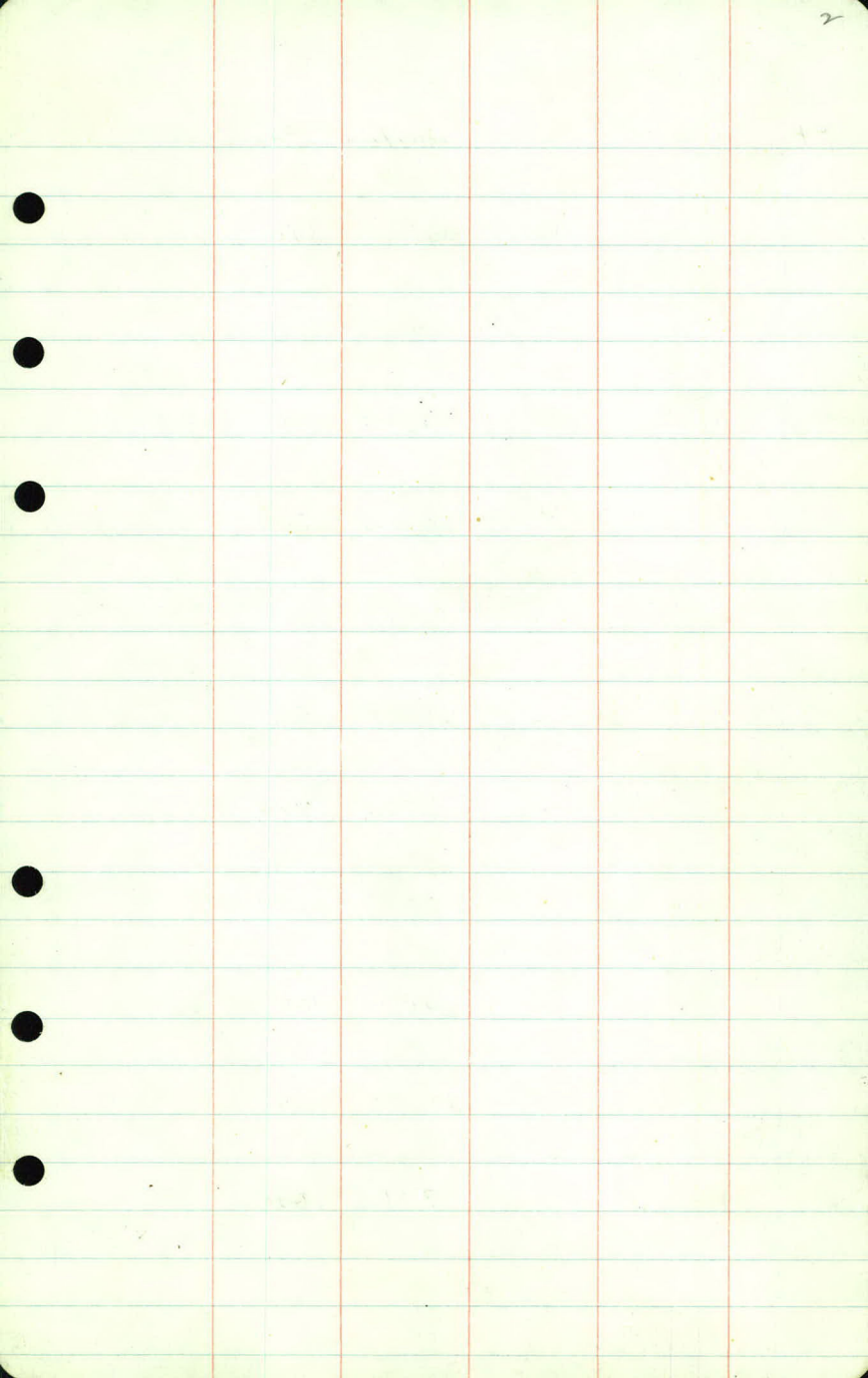
✓ V 349°50' 643' ✓

✓ V 40°33' 480' ✓

✓ V 341°48' 760' ✓

✓ V 36°07' 680' ✓

✓ V 326°44' 865' ✓



pt

Angle

Stadia

✓ 33°12' 850' ✓

✓ 314°18' 730' ✓

✓ 34°04' 900' ✓

✓ 307°15' 765' ✓

✓ 29°30' 1081' ✓

✓ 292°00' 860' ✓

✓ 285°25' 724' ✓

✓ 23°46' 1200' ✓

✓ 285°29' 1000' ✓

✓ 290°46' 1070' ✓

✓ 17°50' 1300'

Pt		Angle	Dis'	
At 23+45 ²⁰	To	8+	= 0°00'	
	V	41°30	1200'	✓
	✓	303°10	608'	✓
	V	36°37'	1010'	✓
	✓	287°32	456'	✓
	V	28°50'	900'	✓
	✓	275°40'	385'	✓
	V	272°30'	325'	✓
	V	31°21'	750'	✓
	✓	254°30'	280'	✓
	✓	37°50'	620'	✓
	✓	236°00'	264'	✓
	V	36°35'	480'	✓

PT

Angle Dist

✓ 221°55' 290' ✓

✓ 51°25' 460' ✓

✓ 206°00' 245' ✓

✓ 209°30' 162' ✓

✓ 50°00' 300' ✓

✓ 236°30' 142' ✓

✓ 259°00' 170' ✓

✓ 6°20' 160' ✓

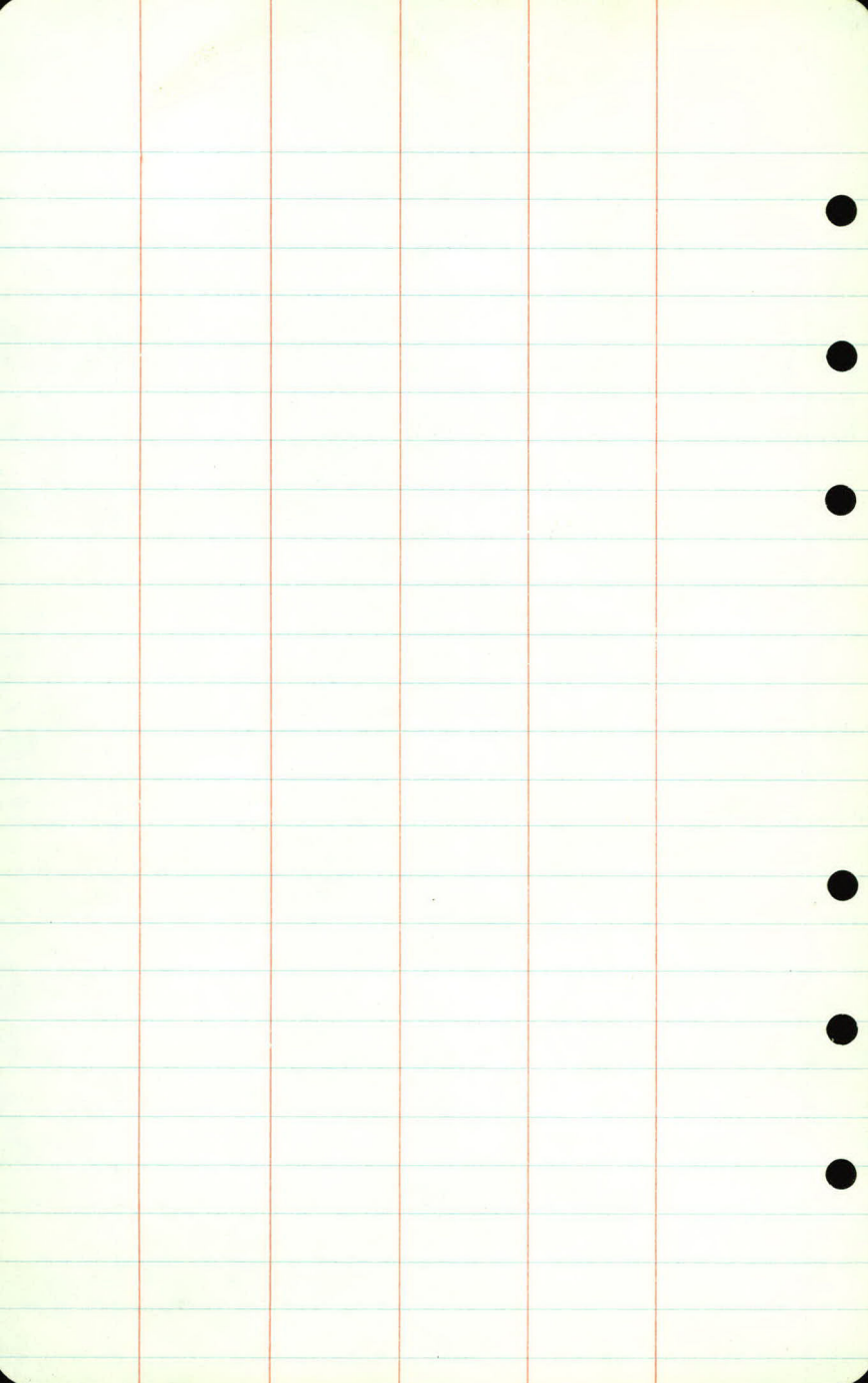
✓ 265°00' 123' ✓

✓ 6°45' 65' ✓

✓ 282°30' 83' ✓

✓ 14°45' 12' ✓

421



6
Stadia

Toys Prop
Washington Co.

ALL Shots at present Edge Water

Pt	Angle	Dist
At 42+23.20	To 40+13.00 = 0°00'	
✓	343°30'	70'
✓	32°36'	75°
✓	331°30'	120'
✓	25°30'	110'
✓	41°30'	160'
✓	324°00'	250'
✓	50°10'	230'
✓	316°45'	370'
✓	50°20'	315'
✓	36°20'	325'
✓	322°00'	505'
✓	16°06'	300'

Pt

Angle

Dist

V 1°13' 300'

✓ 327°30' 820'

✓ 357°20' 430'

✓ 331°45' 880'

✓ 346°45' 520'

✓ 336°00' 900'

✓ 350°30' 580'

✓ 339°20' 760'

✓ 356°50' 570'

✓ 345°45' 1000'

✓ 2°40' 620'

✓ 352°45' 900'

Outlet to Long Lake

PT

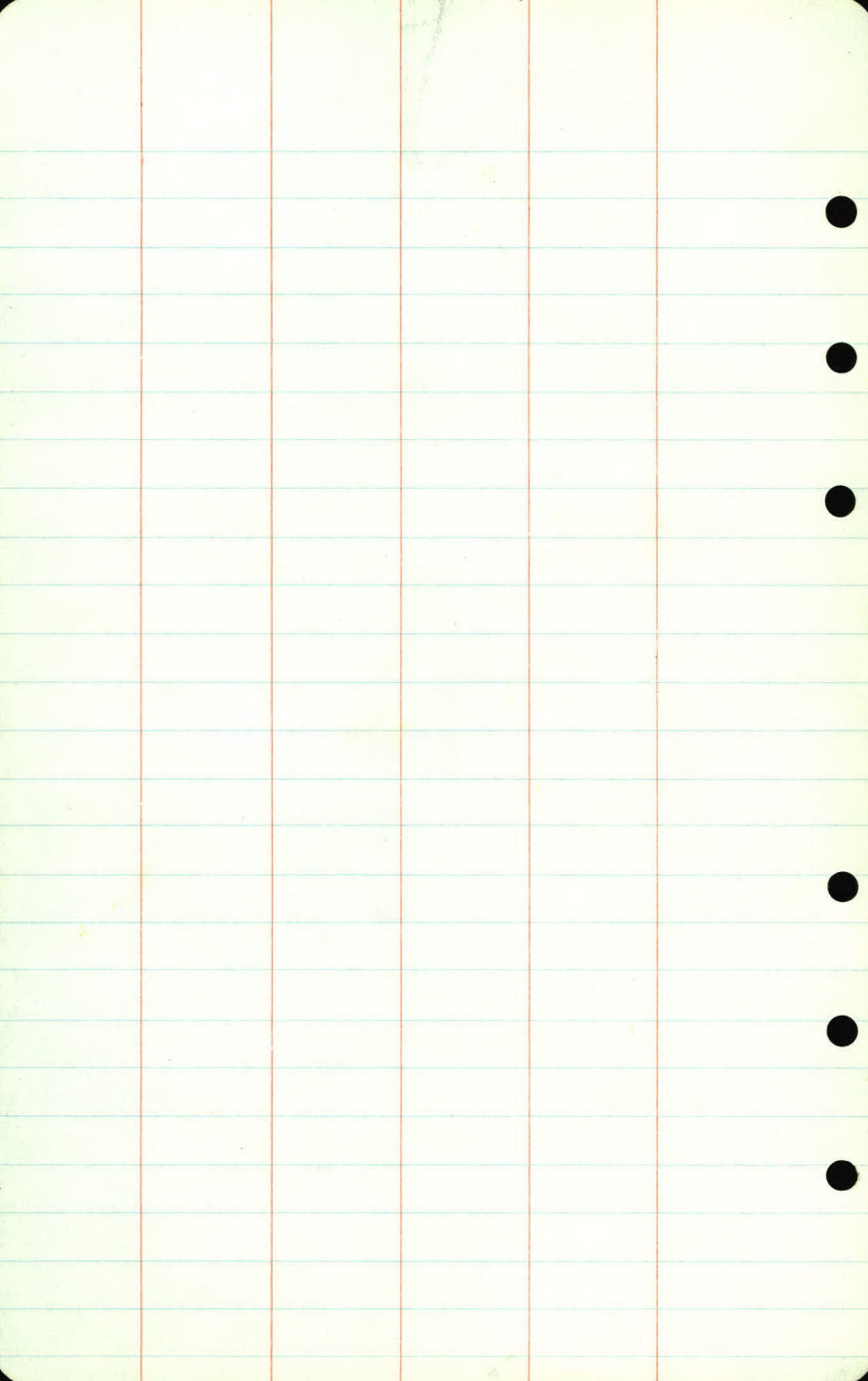
Angle Dist

✓

90°45' 600'

356°30' 880'

End Battery 25-36" Culv at 5TH #36



X Sections

East Co Line

Sta 425+00 to 428+00

7-6-42

HAW

L.C

AM

Sta	+	X	-	Elev
B.M.	4.72	998 03		993.31

425+00

+50

426

+21⁰⁰ P.C.

+50

427

+50

428

428+78

B.M.

Location of Proposed X Drain
4.72 993.31

Lt

E

Rt

SPK in P.P 28' Rt St 424 + 60

$\frac{6.7}{50}$	$\frac{4.9}{47}$	$\frac{5.7}{31}$	$\frac{8.0}{27}$	$\frac{8.0}{21}$	$\frac{5.2}{15}$	$\frac{5.22}{10}$	$\frac{5.30}{9}$	$\frac{5.08}{10}$	$\frac{5.4}{15}$	$\frac{7.4}{21}$	$\frac{7.4}{25}$	$\frac{6.4}{29}$	$\frac{7.6}{35}$
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$\frac{10.2}{36}$	$\frac{8.0}{30-27}$	$\frac{8.4}{26-23}$	$\frac{7.4}{20}$	$\frac{5.4}{14}$	$\frac{5.18}{10}$	$\frac{5.30}{9}$	$\frac{5.36}{10}$	$\frac{5.14}{15}$	$\frac{5.2}{15}$	$\frac{7.2}{24-27}$	$\frac{6.4}{31}$	$\frac{7.4}{35}$	$\frac{8.0}{50}$
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$\frac{10.3}{27}$	$\frac{8.1}{19}$	$\frac{5.4}{15}$	$\frac{5.08}{10}$	$\frac{5.33}{9}$	$\frac{5.64}{10}$	$\frac{5.42}{15}$	$\frac{5.6}{15}$	$\frac{8.5}{22}$	$\frac{8.6}{29}$	$\frac{7.8}{50}$
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$\frac{10.3}{28}$	$\frac{8.7}{23}$	$\frac{6.3}{20}$	$\frac{5.2}{15}$	$\frac{5.00}{10}$	$\frac{5.36}{10}$	$\frac{5.76}{11}$	$\frac{5.53}{11}$	$\frac{5.9}{11}$	$\frac{9.2}{22}$	$\frac{10.4}{27}$	$\frac{10.9}{34}$	$\frac{11.4}{50}$
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$\frac{10.3}{37}$	$\frac{9.1}{34}$	$\frac{6.8}{31}$	$\frac{6.0}{21}$	$\frac{4.8}{15}$	$\frac{4.84}{10}$	$\frac{5.38}{11}$	$\frac{6.04}{11}$	$\frac{5.81}{12}$	$\frac{5.7}{16}$	$\frac{10.3}{23}$	$\frac{11.9}{35}$	$\frac{12.4}{50}$
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$\frac{10.3}{50}$	$\frac{8.8}{45}$	$\frac{6.9}{42}$	$\frac{6.1}{19}$	$\frac{4.8}{14}$	$\frac{4.95}{10}$	$\frac{5.53}{11.3}$	$\frac{6.60}{12.5}$	$\frac{6.20}{17}$	$\frac{6.70}{27}$	$\frac{12.7}{35}$	$\frac{12.7}{50}$	$\frac{14.2}{50}$
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$\frac{10.6}{50}$	$\frac{10.3}{44}$	$\frac{6.2}{37}$	$\frac{6.4}{20}$	$\frac{4.6}{15}$	$\frac{4.82}{10}$	$\frac{5.44}{11}$	$\frac{6.30}{11}$	$\frac{6.07}{17}$	$\frac{6.3}{17}$	$\frac{12.7}{25}$	$\frac{14.9}{42}$	$\frac{15.1}{50}$
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$\frac{9.8}{40}$	$\frac{9.4}{37}$	$\frac{8.1}{31}$	$\frac{5.8}{27}$	$\frac{5.6}{19}$	$\frac{4.0}{15}$	$\frac{4.21}{10}$	$\frac{4.82}{10.5}$	$\frac{5.57}{11.5}$	$\frac{5.34}{16}$	$\frac{5.8}{28}$	$\frac{12.0}{34}$	$\frac{12.3}{50}$	$\frac{12.5}{50}$
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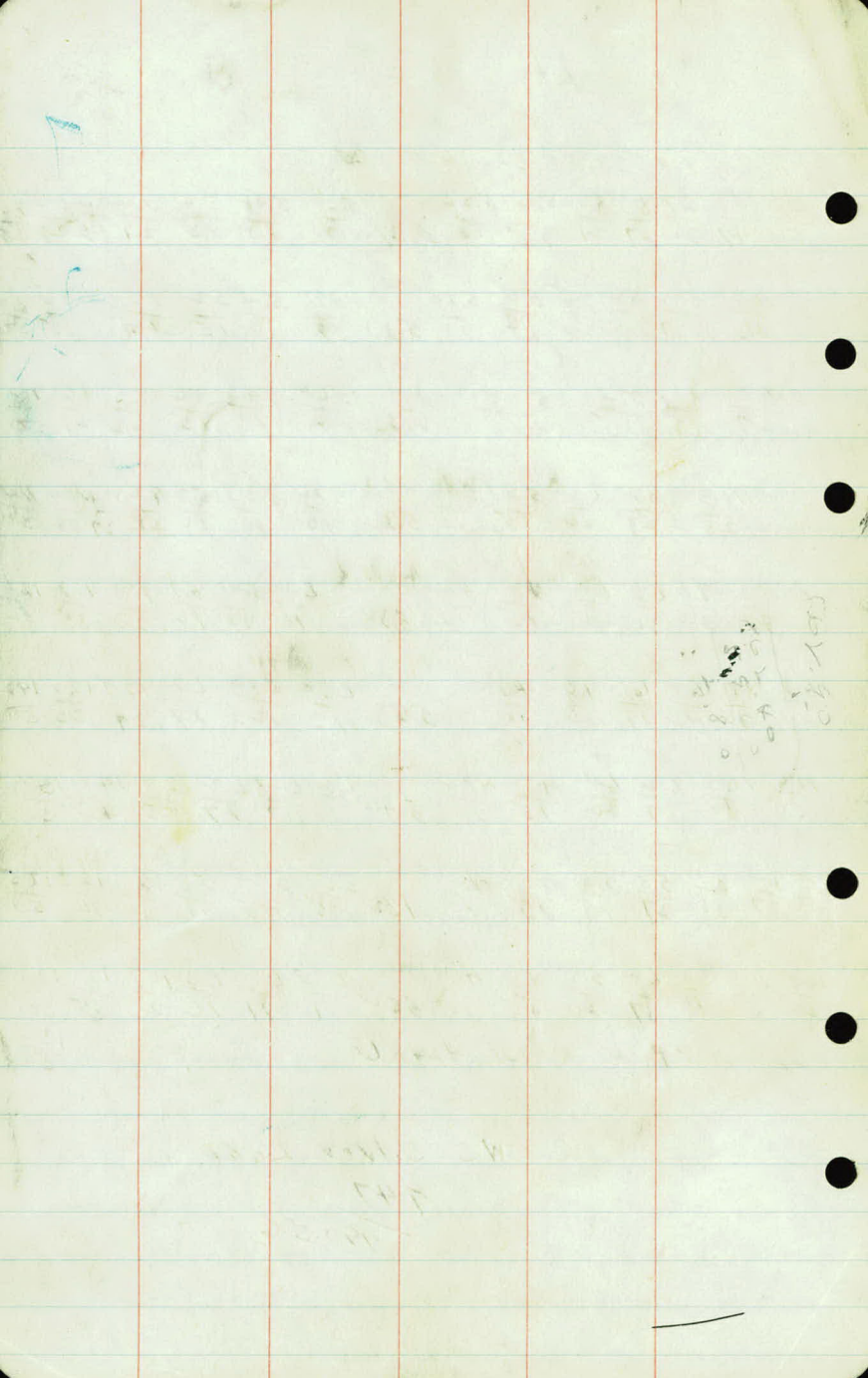
$\frac{10.8}{60}$	$\frac{10.3}{50}$	$\frac{8.8}{41}$	$\frac{6.8}{37}$	$\frac{5.9}{20}$	$\frac{4.8}{15}$	$\frac{4.90}{10}$	$\frac{5.52}{11}$	$\frac{6.35}{11}$	$\frac{6.20}{11}$	$\frac{6.3}{16}$	$\frac{10.9}{23}$	$\frac{12.0}{35}$	$\frac{13.0}{38}$
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SPK in P.P 28' Rt St 424 + 60

13.6
50

W.S Siver Lake

7.47
990.56



①

Elev

Tile Line Tru Blase Prop
5/5/42

T WILKE

TOP
GROUND

Sta + π - Elev

3.54

π 981.38

23+35 = Inv West

+48 71.4

24 71.6

+42 71.7

25 71.6

+45 71.0

26 71.2

+25 70.1

B M 3.54 977.84

+53 69.9

+66 71.7

27 70.8

+38 71.3

L

Top Tile Gravel over pipe

$$\begin{array}{r} 968.2 \\ \text{Inv } 13.19 \\ \hline \end{array}$$

10.0

9.2

9.8

7.7

$$\begin{array}{r} 968.4 \\ 13.0 \\ \hline \end{array}$$

9.7

9.8

$$\begin{array}{r} 968.1 \\ 13.3 \\ \hline \end{array}$$

10.3

10.2

$$\begin{array}{r} 968.3 \\ 13.1 \\ \hline \end{array}$$

11.3

Top of N.W. Cor. East Hdq. of S. Cor. Culv.

11.5

9.7

10.6

$$\begin{array}{r} 967.6 \\ 13.8 \\ \hline \end{array}$$

10.1

Sta	+	Σ	-	Elev
BM	3.28	981.12		977.84
28				70.0

A90				69.4
-----	--	--	--	------

* +93				67.1
T.P	6.04	973.92	13.24	967.88
29				67.5

30				67.5
----	--	--	--	------

+18				66.8
-----	--	--	--	------

31				66.0
----	--	--	--	------

+65				
-----	--	--	--	--

Top Pipe

Ground Line

Top Hdwr. 'S. C. A. R. CULVERT

10.5

11.7

14.0

$$\begin{array}{r} 965.5 \\ \hline 8.39 \end{array}$$

6.4

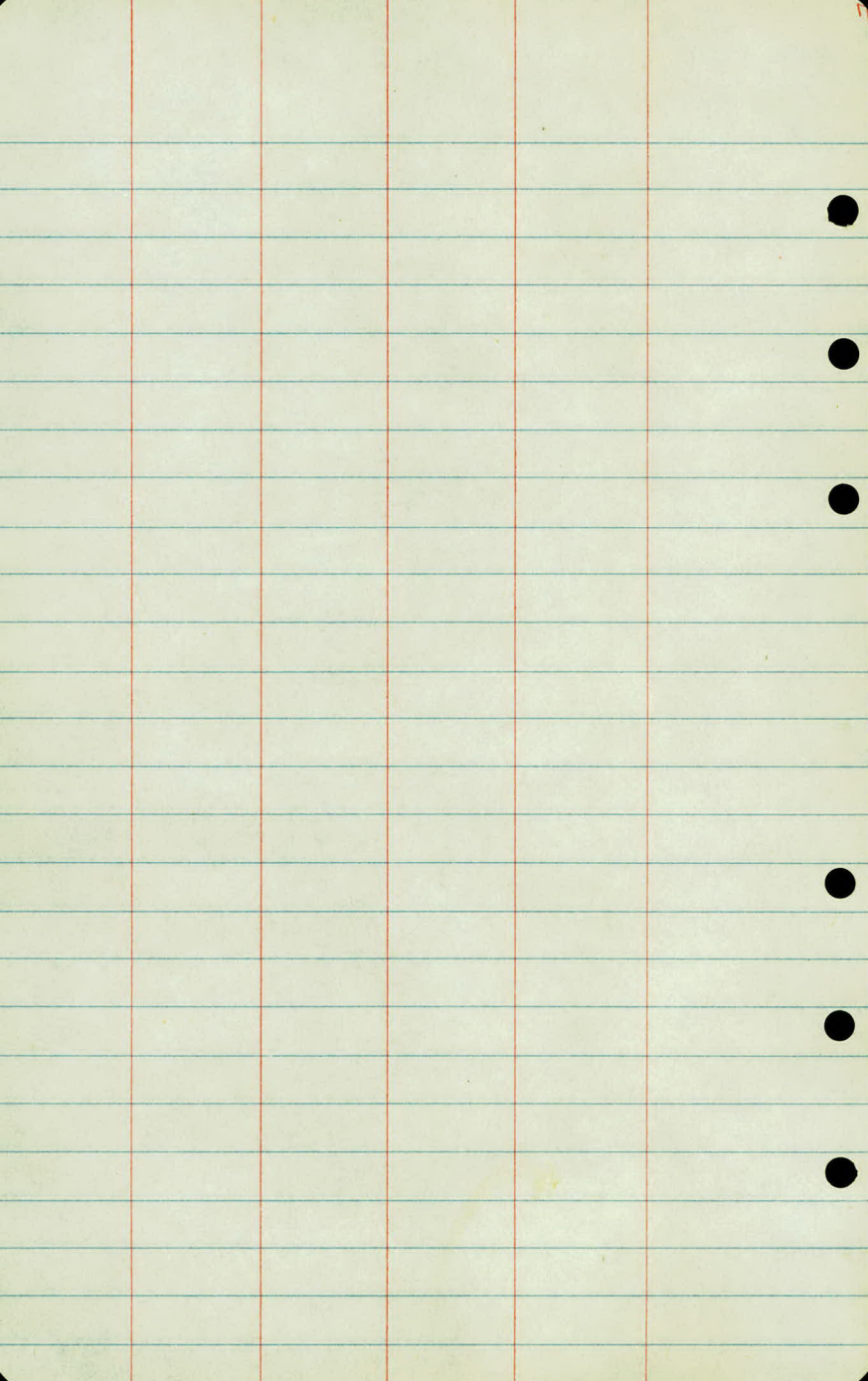
6.4

$$\begin{array}{r} 965.5 \\ \hline 8.46 \end{array}$$

7.1

7.9

$$\begin{array}{r} 962.9 \\ \text{Inv} \overline{1103} \\ \hline \end{array}$$



Page 2 Transit Obs. Line

Date Rec.

 π 984.41

OBJECT	AZIMUTH	STADIA	DIS- TANCE	INTERVALS OR VER. ANGLE			READ. ON ROD	DIFF. OF ELEV.	ELEVATION ABOVE DATUM
				Up+ Down-	No. of Int. or Angle	Rod Equiv.			
G. E.	79°-30	3.92					8.1		76.3
"	195°-30'	2.10					6.4		78.0
"	95°-45'	4.08					11.4		73.0
	178°-45'	3.30					7.2		77.2
to DRAW	186°-00	3.30					4.7		79.7
G. E.	96°-30	5.90					12.9		71.5
"	170°-00'	4.55					5.9		78.5
"	164°-00'	4.45					8.2		76.2
"	106°-00'	5.90					13.1		71.3
"	153°-45'	4.80					9.8		74.6
"	107°-30'	4.85					12.7		71.7
"	144°-00'	5.60					11.3		73.1
"	110°-45'	3.50					11.4		73.0
"	131°-15'	5.25					12.2		72.2
"	111°-15'	2.30					10.2		74.2
"	127°-00'	4.20					12.0		72.4
"	115°-00'	1.30					9.3		75.1

Page 3 Transit Obs. Line
 Date Rec. A 984.41

OBJECT	AZIMUTH	STADIA	DIS- TANCE	INTERVALS OR VER. ANGLE		READ. ON ROD	DIFF. OF ELEV.	ELEVATION ABOVE DATUM
				Up+ Down-	No. of Int. or Angle			
G.E.	129°30'	3.45				11.9		72.5
"	115°15'	0.50				7.9		76.5
"	133°00'	2.50				10.4		74.0
"	153°15'	2.35				10.2		74.2
"	154°00'	1.48				9.0		75.4
	152°30'	0.82				8.5		75.9
Δ # 2	83°51'	6.28				10.46		973.03-

H.I. 4.43

7 977.46

AT Δ # 2

Δ # 1

Δ # 3

G.E.

"

"

"

263°51' 6.28

106°27' 9.90

185°00' 2.03

185°00' 0.85

140°30' 2.33

355°45' 1.48

12°30' 1.50

2.45

6.4

5.4

6.8

4.3

5.1

973.03✓

975.01-

71.1

72.1

70.7

73.2

72.4

Page 4 Transit Obs. Line
 Date 5-13-43 Rec.

OBJECT	AZIMUTH	STADIA	DIS- TANCE	INTERVALS OR VER. ANGLE		READ. ON ROD	DIFF. OF ELEV.	ELEVATION ABOVE DATUM
				Up+ Down-	No. of Int. or Angle			
	π 977.46							
G.E	142°-00'	1.12				6.1		71.4'
TOP DITCH	35°-00'	1.80				5.9		71.6'
⊥ DITCH	35°-00'	1.81				6.6		70.9'
G.E.	94°-30'	2.43				6.2		71.3'
⊥ DITCH	95°-00'	1.23				6.6		70.9'
G.E.	95°-00'	1.03				5.8		71.7'
⊥ DITCH	25°-15'	2.30				6.8		70.7'
G.E	7°-45'	2.05				5.0		72.5'
"	111°-00'	3.60				7.1		70.4'
"	351°-30'	2.05				4.0		73.5'
"	90°-00'	3.43				6.2		71.3'
"	68°30'	3.65				5.6		71.9'
"	348°45'	3.15				2.8		74.7'
"	54°-00'	4.65				3.3		74.2'
"	2°-15'	3.15				4.6		72.9'
⊥ DITCH	16°-00'	3.22				6.2		71.3'
G.E.	54°-00'	4.95				2.3		75.2'

Page. 5.....Transit.....Obs.....Line.....

Date. 5-13-43.....Rec.....

OBJECT	7977.46			INTERVALS OR VER. ANGLE			READ. ON ROD	DIFF. OF ELEV.	ELEVATION ABOVE DATUM
	AZIMUTH	STADIA	DIS- TANCE	Up+ Down-	No. of Int. or Angle	Rod Equiv.			
G.E.	46°-00'	4.15					5.0		72.5
"	36°-15'	3.74					5.7		71.8
£ DITCH	8°-45'	4.50					5.8		71.7
G.E.	24°-45'	4.25					5.1		72.4
"	11°-15'	4.90					4.8		72.7
"	358°-00'	4.60					4.1		73.4
£ DITCH	7°-45'	5.35					4.4		73.1
G.E.	344°-00'	5.00					2.5		75.0
"	6°-30'	6.60					3.8		73.7
"	347°-00'	6.30					2.5		75.0
"	22°-00'	6.80					1.6		75.9
"	358°-00'	7.20					3.4		74.1
"	21°-30'	8.60					0.5		77.0
"	358°-30'	6.90					3.5		74.0
"	10°-45'	7.15					2.4		75.1

Page 6 Transit. Obs. Line.

Date. Rec.

OBJECT

AZIMUTH

STADIA

Dis-
TANCE

INTERVALS OR VER. ANGLE

Up+ No. of Int.
Down- or Angle

Rod
Equiv.

READ.
ON
ROD

DIFF.
OF
ELEV.

ELEVATION
ABOVE
DATUM

AT Δ #3

 Δ #2

 Δ #4

STATE HUB-"D"

GIVEN CONC. COLV.

B.M. N.W. COR. E. ABUT.

INVERT 12' / CON COLV.

G.E.

"

& N. & S. DITCH

G.E.

"

"

"

"

"

"

"

286°-27' 9.90

216°-23' 7.05

116°-00' 0.076

205°-00' 0.26

336°-30' 1.49

320°-00' 3.20

190°-30' 1.10

300°-15' 2.30

175°-45' 1.40

312°-30' 3.03

157°-00' 2.05

326°-15' 2.66

122°-15' 1.23

339°-00' 2.60

99°-15' 1.09

6.8

1.84

11.48

4.6

7.6

9.2

9.1

8.5

8.8

8.9

7.8

7.8

4.5

6.5

974.98

975.01 ✓

972.88 ✓

977.84

968.2

75.1

72.1

70.5

70.6

71.2

70.9

70.8

71.9

71.9

75.2

73.2

Page 7 Transit Obs. Line.
 Date. 5-13-43 Rec.

OBJECT	<u>7979.68</u>		DIS- TANCE	INTERVALS OR VER. ANGLE		READ. ON ROD	DIFF. OF ELEV.	ELEVATION ABOVE DATUM
	AZIMUTH	STADIA		Up+ Down-	No. of Int. or Angle			
G.E.	341°-30'	3.54				4.3		75.4
"	96°-45'	2.17				6.7		73.0
"	330°-45'	3.60				7.7		72.0
"	115°-30'	2.44				7.9		71.8
"	316°-45'	4.00				8.5		71.2
"	139°-30'	3.45				7.7		72.0
"	322°-00'	4.85				8.0		71.7
"	147°-00'	4.22				6.5		73.2
"	330°-30'	4.50				7.1		72.6
"	159°-45'	3.90				7.8		71.9
"	340°-15'	4.40				4.4		75.3
"	183°-45'	3.78				8.4		71.3
4 N.O.S. DITCH	184°-30'	3.80				9.2		70.5
G.E.	342°-00'	5.30				3.5		76.2
"	184°-00'	4.40				7.5		72.2
"	331°-45'	5.44				6.0		73.7
"	174°-30'	4.15				8.8		70.9

Page... 8 ...Transit... Obs... Line...

Date... 5-13-43 ...Rec...

OBJECT	AZIMUTH	STADIA	DIS- TANCE	INTERVALS OR VER. ANGLE		READ. ON ROD	DIFF. OF ELEV.	ELEVATION ABOVE DATUM
				Up+ Down-	No. of Int. or Angle			
G. E	322° 15'	5.95				7.8		71.9
"	211° 00'	5.00				8.9		70.8
"	315° 45'	5.40				8.1		71.6
"	311° 15'	6.40				7.1		72.6
"	311° 00'	7.20				6.3		73.4
"	223° 00'	6.20				8.8		70.9
⊥ RIDGE	317° 15'	7.60				4.8		74.9
"	319° 30'	7.35				6.6		73.1
⊥ DITCH	228° 15'	5.63				10.3		69.4
G. E.	325° 00'	6.80				7.9		71.8
"	237° 00'	5.10				9.3		70.4
"	330° 00'	7.30				7.7		72.0
"	230° 45'	3.85				9.5		70.2
"	325° 00'	8.00				6.8		72.9
"	220° 45'	3.13				9.3		70.4
⊥ RIDGE	323° 00'	8.30				5.0		74.7
G. E.	188° 00'	2.40				8.7		71.0

Page 9 Transit Obs. Line
 Date 5-13- Rec.

OBJECT	π 979.68			INTERVALS OR VER. ANGLE			READ. ON ROD	DIFF. OF ELEV.	ELEVATION ABOVE DATUM
	AZIMUTH	STADIA	DIS- TANCE	Up+ Down-	No. of Int. or Angle	Rod Equiv.			
E N. & S. DITCH	186°-45'	2.40					10.0		69.7
E RIDGE	329°-00'	8.80					4.8		74.9
G.E.	331°-00'	8.60					6.3		73.4
E DITCH N. & S.	199°-45'	0.59					9.0		70.1
G.E.	203°-45'	0.62					7.7		72.0
"	337°-00'	8.00					7.3		72.4
"	248°-30'	1.60					9.4		70.3
"	341°-30'	8.00					7.2		72.5
"	256°-30'	2.70					9.7		70.0
"	348°-00'	7.70					6.3		73.4
E E. & W. DITCH	263°-00'	2.60					11.3		68.4
G.E.	349°-45'	7.20					4.9		74.8
"	349°-15'	8.60					6.0		73.7
"	263°-30'	4.65					9.5		70.2
"	343°-30'	6.00					4.1		75.6
"	266°-00'	6.00					9.2		70.5
E DITCH	266°-00'	6.05					10.6		69.1

Page 10 Transit Obs. Line

Date. 5-13-43 Rec.

OBJECT	AZIMUTH	STADIA	DIS- TANCE	INTERVALS OR VER. ANGLE			READ. ON ROD	DIFF. OF ELEV.	ELEVATION ABOVE DATUM
				Up+ Down-	No. of Int. or Angle	Rod Equiv.			
G.E.	335°-15'	5.90					5.2		74.5
"	335°-30'	6.03					6.5		73.2
E DITCH	267°-15'	6.10					11.3		68.4
G.E.	341°-00'	6.37					6.2		73.5
"	271°-00'	6.10					9.1		70.6
"	348°-00'	6.90					4.7		75.0
"	272°-30'	5.10					9.1		70.6
"	274°-15'	4.20					9.3		70.4
"	276°-30'	2.35					9.2		70.5
"	279°-30'	2.80					9.8		69.9
"	315°-00'	3.33					8.7		71.0
"	282°-30'	2.10					9.3		70.4
"	312°-00'	3.80					8.9		70.8
"	295°-15'	1.15					8.9		70.8
"	310°-45'	4.63					8.5		71.2
"	317°-30'	0.66					5.3		74.4
"	309°-00'	5.43					8.6		71.1

Page...11...Transit.....Obs.....Line.....

Date...5-13-43...Rec.....

OBJECT	AZIMUTH	STADIA	DIS- TANCE	INTERVALS OR VER. ANGLE		READ. ON ROD	DIFF. OF ELEV.	ELEVATION ABOVE DATUM
				Up+ Down-	No. of Int. or Angle			
K 979.68								
G.E.	303°-00'	6.20					8.4	71.3
HIGH WATER MARK.	10°-00	1.60					0.4	979.30
H.I. 4.60 977.48								
AT Δ # 4								972.88 ✓
# 3	36°-23'	7.05					2.50	974.98
# 5	275°-20' 280°-49'	7.50					2.3	975.18 ✓
G.E.	272°-30'	2.01					5.6	71.9
"	314°-30'	2.82					6.7	70.8
E N.S. DITCH	316°-00'	2.89					9.0	68.5
E "	304°-15'	3.74					6.1	71.4
G.E.	300°-45'	3.80					6.7	70.8
"	271°-15'	3.90					5.8	71.7
"	271°-45'	4.93					4.8	72.7
"	285°-30'	4.96					6.4	71.1
"	260°-15'	3.50					3.7	73.8
E Ditch	294°-00'	5.20					8.4	69.1

Page... 12 ... Transit. ... Obs. ... Line. ...

Date... 5-13-43 ... Rec. ...

OBJECT	AZIMUTH	STADIA	DIS- TANCE	INTERVALS OR VER. ANGLE		READ. ON ROD	DIFF. OF ELEV.	ELEVATION ABOVE DATUM
				Up+ Down-	No. of Int. or Angle			
G. E.	254°-15'	2.65				3.9		73.6
"	246°-15'	1.67				4.1		69.4
4 Ditch	288°-45'	6.60				7.3		70.2
G. E.	263°-15'	4.10				3.6		73.9
"	280°-00'	6.15				5.5		72.0
"	266°-30'	5.90				1.0		76.5
"	270°-30'	6.65				0.0		77.5

H. I. 4.58

X 979.71 ✓

AT Δ #5

975.13 ✓

Δ #4 ~~95°-27'~~ 100°-47' 7.50

7.9 971.81

Δ #1 ~~323°-20'~~ 328°-40' 7.53

1.1 78.6

G. E. 165°-12' ~~159°-45'~~ 0.75

2.7 77.0 ✓

" 90°-57' ~~85°-30'~~ 0.90

8.1 71.6 ✓

" 337°-27' ~~332°-00'~~ 0.89

7.2 72.5 ✓

" 291°-42' 286°-15' 1.02

3.9 75.8 ✓

" 300°-42' 295°-15' 2.05

3.6 76.1

95

B.M. TOP HEADWALL SPILLWAY. 992.48

Page 13 Transit Obs. Line. FROM SILVER L. TO BLASE PROP.

Date 5-13-43 Rec.

OBJECT	AZIMUTH	STADIA	DIS- TANCE	INTERVALS OR VER. ANGLE			READ. ON ROD	DIFF. OF ELEV.	ELEVATION ABOVE DATUM
				Up+ Down-	No. of Int. or Angle	Rod Equiv.			
G.E.	334°-27'	329°-00'	2.40				7.2		72.5✓
"	324°-57'	319°-30'	3.33				6.7		73.0✓
"	307°-42'	302°-15'	3.70				4.4		75.3✓

H.I. 4.75

AT Δ[#] 1

Δ[#] 5

M.C.[#]

148°-40' 7.53

283° 20'

CONTINUATION OF SURVEY OCT. 14, 1943

H.I. 4.80

Σ 984.46

{ H.W.
A.W.L.
A.M.
L.G.

AT Δ[#] 1

Δ[#] 5

Δ[#] 1-A

148°-40' 7.53

221°-18' 3.73

H.I. 5.05

{ 991.89'
991.96' = 991.92

+ 1°-08' + 7.38 - 5.0 + 2.38

AT Δ[#] 1-A

Δ[#] 1

To Δ[#] 1 B

"

41°-18' 3.73

208°-40' 3.10

103°-30' 2.05

12.30

+ 1°-40' + 9.01 - 5.0 + 4.01

11.9

979.66

975.13

986.84

986.84✓

979.66

995.93

980.00

Page.....Transit.....Obs.....Line.....

Date.....Rec.....

OBJECT	AZIMUTH	STADIA	DIS- TANCE	INTERVALS OR VER. ANGLE		READ. ON ROD	DIFF. OF ELEV.	ELEVATION ABOVE DATUM
				Up+ Down-	No. of Int. or Angle	Rod Equiv.		
G. E	136°20'	3.45				8.7		83.2
"	121°00	2.07				11.0		80.9
"	146°40	4.15				0.6		91.3
✕ Draw	138°00	1.80				9.3		82.60
G. E	161°15	4.05		+	1°20'	+9.42	5.0	+4.42 96.3
"	105°40	1.26		+	1'	9.5		82.4
"	159°10	3.27				2.1		89.8
"	119°30	0.43				5.1		86.8
"	150°35'	2.53				6.3		85.6
✕ Draw	155°00	1.23				7.6		84.3
G. E	165°35'	1.86				4.6		87.3
✕ Draw	179°00'	1.14				6.5		85.4
G. E	172°30'	2.73				3.8		88.1
"	267°45'	0.49				5.1		86.8
"	178°15'	3.40		+	1°20'	+7.91	5.0	+2.91 94.8
"	220°40	0.89				5.3		86.6
"	190°05'	2.75		+	1°32'	+7.35	5.0	+2.35 94.3

Page.....Transit.....Obs.....Line.....

Date.....Rec.....

OBJECT	AZIMUTH	STADIA	DIS- TANCE	INTERVALS OR VER. ANGLE		READ. ON ROD	DIFF. OF ELEV.	ELEVATION ABOVE DATUM
				Up+ Down-	No. of Int. or Angle			
✕ Draw	196°30'	145				63		85.6 -
Gr. E	192°15'	210				5.4		86.5
✕ Draw	213°45'	170				62		85.7
Gr. E	177°45'	1.60				5.0		86.9
"	209°15'	1.98				6.0		85.9
"	207°30'	226				4.6		87.3
Toe Rd Slope	273°40'	1.44				4.0		87.9
"	230°15'	190				59		86.0
"	220°00'	2.60				29		89.0
Gr. E	207°30'	2.65		+	1°10'	+5.40	5.0	+0.40 92.3
✕ Pothole	209°15'	300		+	0°55'	+4.80	5.0	-0.20 91.7
Gr. E	216°30'	310		+	1°12'	+6.50	5.0	+1.50 93.4
"	214°35'	230				5.0		86.9
"	120°00'	290				11.7		80.2
Δ#1B	H.I. 4.50?		1000.44	π	1000.44			995.93
To #1A	28°40'	3.10				13.6		986.84
To #								

Page.....Transit.....Obs.....Line.....

Date.....Rec.....

OBJECT	AZIMUTH	STADIA	DIS- TANCE	INTERVALS OR VER. ANGLE		READ. ON ROD	DIFF. OF ELEV.	ELEVATION ABOVE DATUM
				Up+	No. of Int. Down- or Angle			
2 Rd	266°00'	1.00				27	+0.3	997.7
"	303°00'	0.83				45	+0.5	95.9
"	335°20'	1.11				5.8	+0.6	94.6
"	349°00'	1.63				67	+0.5	93.7
"	353°16'	2.20				73	+0.8	93.1
GE At Foot 3 Poplar Trees	336°00'	1.57				82		92.2
GE " " 2 " "	323°15'	1.15				65		93.9

972.10

W.S. IN BLASE POT HOLE

Page...1...Transit.....Obs. *W. L. Ke.*...Line. *West Pop. Line. S. Ward Ave.*
 Date...*9-21-43*...Rec.....Loc. *Contour. 990.70 & 988.50*

OBJECT	AZIMUTH	STADIA	DISTANCE	INTERVALS OR VER. ANGLE		READ. ON ROD	DIFF. OF ELEV.	ELEVATION ABOVE DATUM
				Up+ Down-	No. of Int. or Angle			
<i>S.E.</i> At <i>NE</i> HE <i>Cor</i> Lot 14 Block 3								
<i>S.E.</i> NE To HE <i>Cor</i> Lot 18 =	0° 00'							
Normal Elev	179° 10	3.46						
Cont 990.70	185° 25	3.58						
" "	191° 50	3.25						
Normal 988.50	184.15'	2.68						
" 990.70	196° 00	3.00						
2 Rd	209° 00	2.84						
Cont 988.50	184° 50	1.92						
South Inv X Drain	178° 30'	1.54						
Cont 990.70	214° 30	2.27						
"	224° 25	2.05						
"	234° 00	1.71						
"	250° 10	1.34						
"	266° 10	1.23						
"	285° 40	1.10						

- 1.2 Below W.S. (W.S. SILVER L.)
 = 988.69

Page... 2 Transit Obs. *W. H. K.* Line

Date Rec.

OBJECT	AZIMUTH	STADIA	DIS- TANCE	INTERVALS OR VER. ANGLE			READ. ON ROD	DIFF. OF ELEV.	ELEVATION ABOVE DATUM
				Up+ Down-	No. of Int. or Angle	Rod Equiv.			
<i>Cont. 990.70</i>	<i>304°40'</i>	<i>0.87</i>							
<i>"</i>	<i>330°00'</i>	<i>0.74</i>							
<i>"</i>	<i>346°50'</i>	<i>0.75</i>							
<i>2 Rd</i>	<i>22°20'</i>	<i>0.65</i>							
<i>Cont 990.70</i>	<i>30°15'</i>	<i>0.65</i>							
<i>"</i>	<i>47°30'</i>	<i>1.27</i>							
<i>"</i>	<i>42°00'</i>	<i>2.35</i>							
<i>"</i>	<i>39°45'</i>	<i>2.70</i>							
<i>"</i>	<i>35°00'</i>	<i>3.46</i>							
<i>Cont 988.50</i>	<i>36°30'</i>	<i>3.50</i>							
<i>"</i>	<i>44°15'</i>	<i>2.80</i>							
<i>"</i>	<i>57°00'</i>	<i>2.35</i>							
<i>"</i>	<i>72°30'</i>	<i>2.13</i>							
<i>"</i>	<i>88°00'</i>	<i>2.15</i>							
<i>"</i>	<i>106°00'</i>	<i>2.37</i>							
<i>"</i>	<i>122°20'</i>	<i>2.60</i>							
<i>"</i>	<i>140°40'</i>	<i>2.90</i>							

Page.....Transit.....Obs.....Line.....

Date.....Rec.....

OBJECT	AZIMUTH	STADIA	DIS- TANCE	INTERVALS OR VER. ANGLE			READ. ON ROD	DIFF. OF ELEV.	ELEVATION ABOVE DATUM
				Up+	No. of Int.	Rod			
Cont 988.50	157°15'	2.68		Down-	or Angle	Equiv.			
"	167°30'	2.21							
"	174°00'	1.75							
No Inv 15" CM	188°24'	1.08							Elev 987.25
Cont 988.50 ^{shore line} No. Rd.	205°45'	1.00							
"	237°00'	0.92							
"	221°15'	0.62							
"	180°20'	0.68							
"	186°20'	1.02							
Cont 989.50	200°00'	1.14							
"	216°30'	1.08							
"	235°30'	1.02							
"	245°20'	0.77							
"	232°00'	0.44							
"	185°15'	0.48							
"	177°15'	0.86							

ELEV. TOP FOUNDATION OF HOUSE ON LOT. 18

996.87

