

Book 99 Dr 16

OFFICE OF COUNTY ENGINEER
RAMSEY CO. MINN.

Drainage Survey

CO. RD "E"

From Centerville Rd To Labore Av.

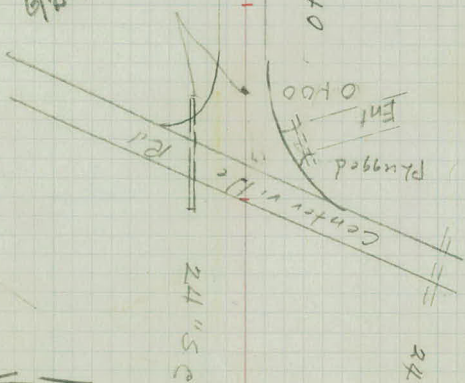
Road Acc't. No.

Date Filed. 1-30-43

File.

25' Average
Dist From R.R. to
Ditch

drawn up and
original sent to
Mr. Walterhoff.
4/22/12 WJB



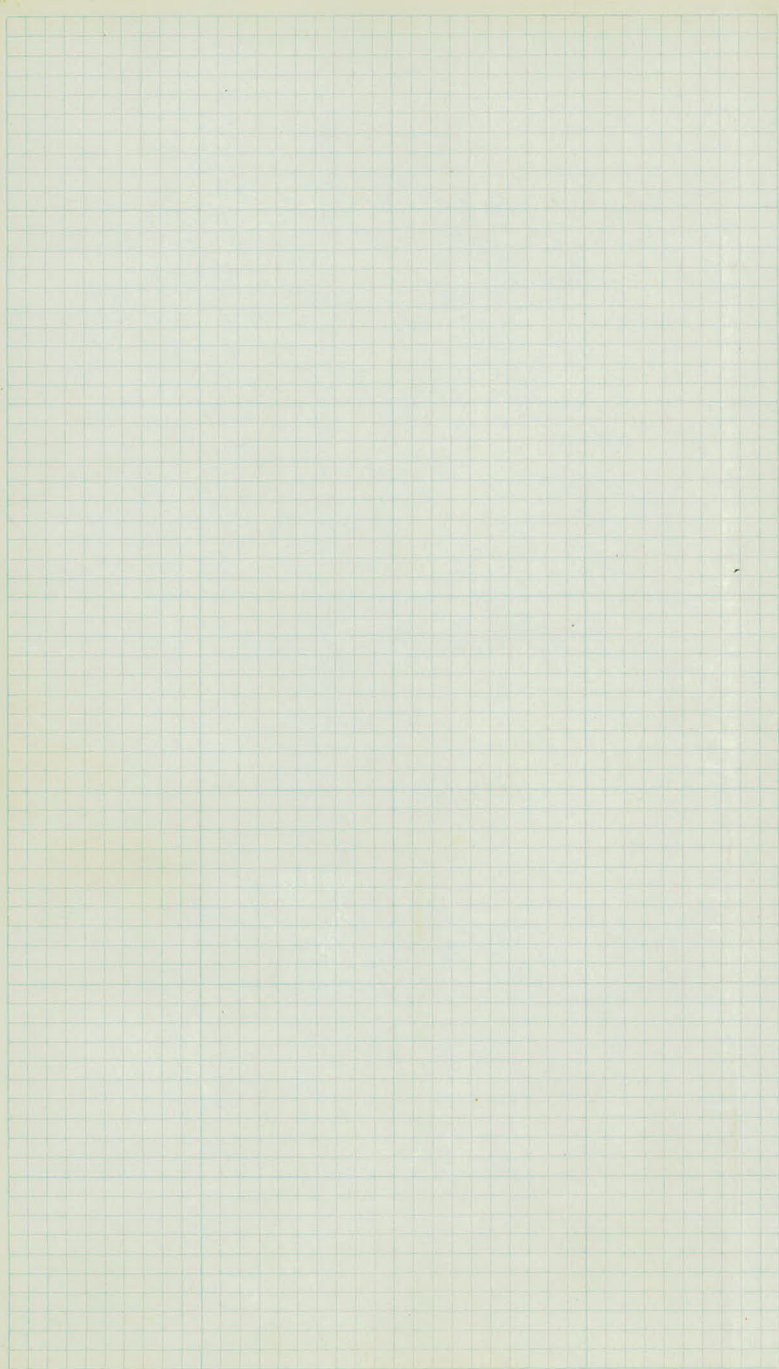
Co Rd "E"

0400 55' East of Int of Centerville Rd
& Co Rd "E"

Plugged
Ent 0400

24" S.E.

24" S.E.



Levels

Co Rd 'E'

Ditch No Side

From X Drain under Centerville Rd
East 3383' To 24" X Drain

6-19-42

HAW

LC

AM

C.F

Sta	+	$\bar{A}$	-	Elev Assumed
B.M	9.52	909.52		900.00

Inv West End 24"

0+00 Inv East End 24"

+50

1

+50

2

+50

3

+50

4

+50

5

~~2~~
Pave

Ditch

High Ground

INV East End 24" S.C Pipe Under Centerville + Co Rd E'

19.0
10.52

04.2
5.3

00.0
9.52

6.0 03.5

03.9 5.6

01.0
8.5

5.9 03.6

03.9 5.6

00.7
8.8

6.3 03.2

04.1 5.4

00.9
8.6

6.9 02.6

04.2 5.3

00.8
8.7

6.8 02.7

04.2 5.3

00.9
8.6

7.0 02.5

04.2 5.3

00.8
8.7

7.6 01.9

04.2 5.3

00.6
8.9

6.9 02.6

04.2 5.3

01.6
7.9

7.3 02.2

04.2 5.3

01.2
8.3

7.3 02.2

04.1 5.4

01.2
8.3

6.6 02.9

Sta	+	π	-	Elev
		909.52		
5+50				
T.P.	5.22	909.33	5.41	904.11

L

+08

+25' R.R Ditch

+30 R.R Ballast

+32 Top West Rail

+39 " East "

+41 Ballast

+45' R.R Ditch

+50

7

+34

★
Pave

★
Ditch

High
Ground

04.1 5.4

8.2 01.3

7.3 02.2

03.9 5.4

7.4 01.9

6.7 02.6

6.3 03.0

7.3 02.0

5.8 03.5

5.29 04.0

5.29 04.0

5.8 03.5

6.8 02.5

04.0 5.3

7.3 02.0

6.5 02.8

04.1 5.2

8.0 01.3

6.1 03.2

04.1 5.2

8.2 01.1

6.0 03.3

Sta + π - Elev

90933

7+40

West End 9" CM

+50

+70

East End 9" CM

8

+50

9+00

+36

West End 15" CM

+56

East " 15" CM

10

+50

11

+50

✱
Pave

✱
Ditch

High
Ground

Inv

04.1 5.2 01.5 7.80 8.00 01.3 6.4 02.9

04.1 5.2 7.6-01.7 6.1 03.2

04.1 5.2 ^{01.2}
8.06 8.1-01.2 6.2 03.1

04.1 5.2 01.0 8.3 5.7 03.6

04.1 5.2 00.9 8.4 6.6 02.7

04.1 5.2 01.1 8.2 6.6 02.7

04.1 5.2 ^{Inv}
01.0
8.30 8.4-00.9 6.9 ^{02.4} 02.0
7.3

04.1 5.2 ^{01.0}
8.26 8.7-00.6 7.0 02.3

04.1 5.2 00.8 8.5 7.4 01.9

04.1 5.2 00.4 8.9 7.8 01.5

04.1 5.2 00.6 8.7 7.8 01.5

04.1 5.2 00.6 8.7 7.4 01.9

Sta + π - Elev

909.33

12+00

+50

T.P. 6.17 9.10.43 5.07 904.26

13

+50

14

+50

15

+50

16

+50

+54 West 15" V. +

+84 East 15" V. +

±
Pave

Ditch

High
Ground

04.1 5.2 00.6 8.7 7.6 01.7

04.1 5.2 00.1 7.2 7.8 01.5

04.2 6.2 00.5 7.7 8.8 01.6

04.3 6.1 00.3 10.1 8.6 01.8

04.5 5.9 01.0 7.4 8.2 02.2

04.6 5.8 01.1 7.3 7.8 - 02.6

04.7 5.7 01.3 9.1 7.6 02.8

04.9 5.5 01.6 8.8 7.3 03.1

05.0 5.4 01.7 8.7 7.0 03.4

05.1 5.3 01.8 8.6 6.8 03.6

05.1 5.3 01.1 Inv 02.0
7.03 8.4 6.8 03.6

05.1 5.3 01.5 01.9
8.87 8.5 6.9 03.5

Sta	+	λ	-	Elev
		910.43		

17

+50

18

+50

19

+50

20

+50

T.P.	5.59	911.32	4.70	905.73
------	------	--------	------	--------

21

+50

22

+22	West	12"	V.1
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±
Pave

Ditch

High
Ground

05.1	5.3	01.5	8.9	7.1	03.3
05.2	5.2	01.4	9.0	7.4	03.0
05.3	5.1	01.6	8.8	7.3	03.1
05.3	5.1	02.0	8.4	7.0	03.4
05.3	5.1	02.0	8.4	7.0	03.4
05.4	5.0	02.2	8.2	7.0	03.4
05.5	4.9	02.2	8.2	6.7	03.7
05.6	4.8	02.3	8.1	6.7	03.7
05.7	5.6	02.5	8.8	7.6	03.7
05.7	5.6	02.6	8.7	8.0	03.3
05.8	5.5	02.4	8.9	7.4	03.9
05.8	5.5	Inv 02.2 9.04	02.4 8.9	7.9	03.4

Sta + π - Elev

711.32

22+46 Foot End 12"

23

+50

24

+50

25

+50

26

+50

27

+50

28

Save

Ditch

High Ground

		Inv			
		02.3		02.5	
05.8	5.5	9.04	8.8	7.0	04.3
05.9	5.4		02.4 8.9	7.3	04.0
05.9	5.4		02.7. 8.6	7.3	04.0
06.0	5.3		02.9. 8.4	7.1	04.2
06.1	5.2		03.5. 7.8	6.7	04.6
06.1	5.2		03.2. 8.1	6.1	05.2
06.2	5.1		03.4. 7.9	5.5	05.8
06.2	5.1		03.3. 8.0	5.9	05.4
06.3	5.0		02.6. 8.7	5.9	05.4
06.3	5.0		03.0. 8.3	5.7	05.6
06.2	5.1		03.3 8.0	4.9	06.4
06.0	5.3		03.1 8.1	5.1	06.2

Sta	+	π	-	Elev
-----	---	-------	---	------

911.32

28+50

T.P.	3.46	909.14	5.64	905.68
------	------	--------	------	--------

29

+50

+98	West End	12" Dredge Pipe	02.1
-----	----------	-----------------	------

+24	East	15" C.M. (Plugged)	01.5
-----	------	--------------------	------

+50

31

+52	West End	12" C.M. (Plugged)	00.2
-----	----------	--------------------	------

+74	East	12" "	899.5
-----	------	-------	-------

32

+50

33

£
Pave

Ditch

H.gh
Ground

05.7	5.6	02.5	8.8	59	05.4
05.4	3.7	01.9	7.2	39	05.2
05.1	4.0	02.5	6.6	45	04.6
04.7	4.4	Inv 02.1 7.02	02.3 6.8	46	04.5
04.5	4.6	01.5 7.57	02.3 6.8	48	04.3
04.2	4.9	02.1	7.0	48	04.3
03.7	5.4	01.5	7.6	56	03.5
03.1	6.0	Inv 00.2 8.94	01.0 8.1	7.2	01.9
02.9	6.2	99.5 9.57	00.4 8.7	8.0	01.1
02.6	6.5	99.0	10.1	78	99.3
02.0	7.1	96.8	12.3		
01.4	7.7	96.0	13.1		

Sta	+	π	-	Elev
		909.14		

33+50

+83

Mon.

24" X Drain 9+L

B.M

8.58 900.56

Check Levels

B.M	8.58	909.14		900.56
-----	------	--------	--	--------

5.18	911.23	3.09	906.05
------	--------	------	--------

4.79	910.43	5.59	905.64
------	--------	------	--------

5.28	909.38	6.33	904.10
------	--------	------	--------

5.14	909.30	5.22	904.16
------	--------	------	--------

B.M

9.30 900.00

X

Ditch

00.8 8.3

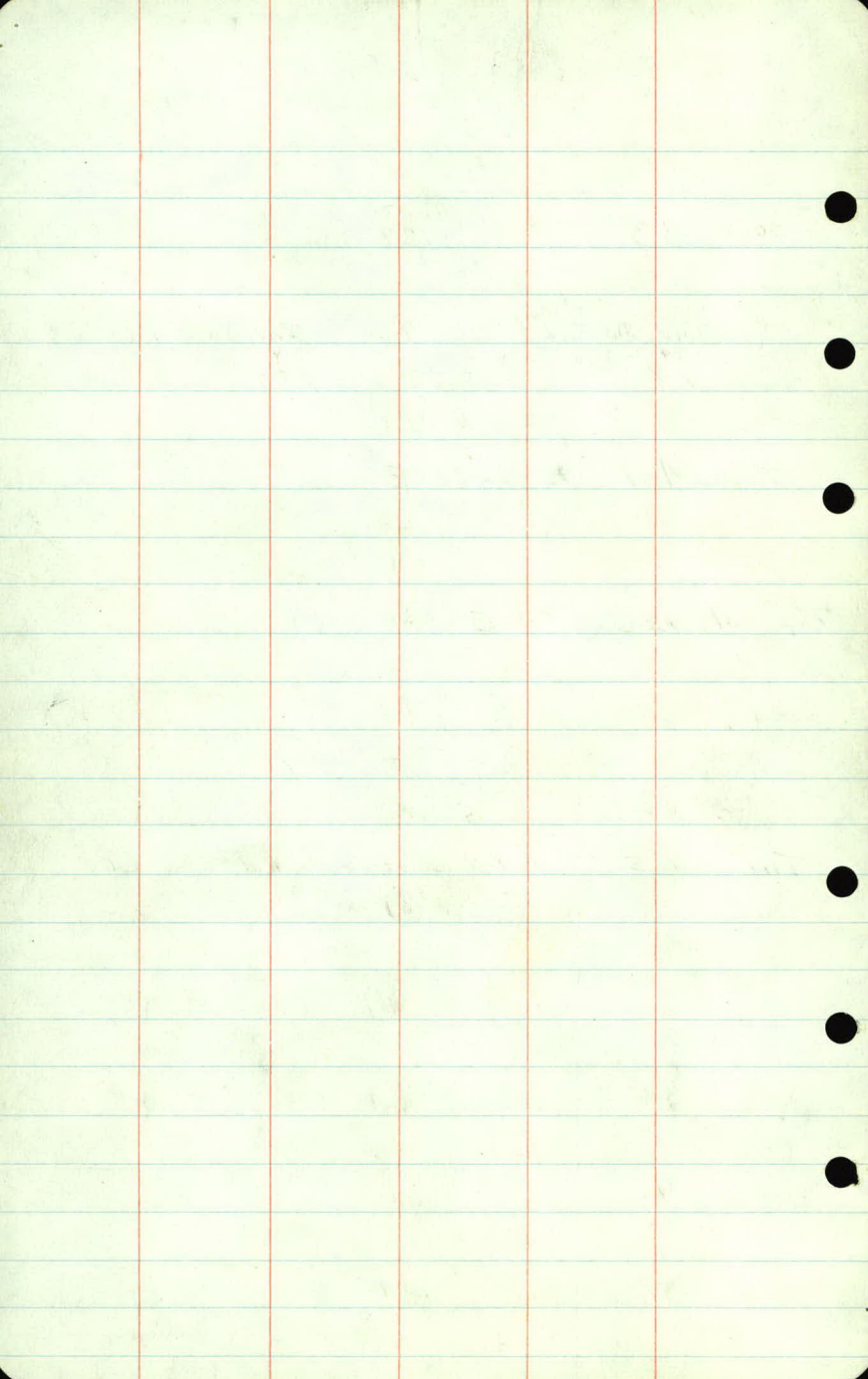
96.2
129
$$\begin{array}{r} \text{Inv So End} \\ 94.2 \\ \hline 14.87 \end{array}$$

$$\begin{array}{r} \text{Inv No End} \\ 93.4 \\ \hline 15.70 \end{array}$$

Top Mon X Co Rd "E"

Top Mon X Co Rd E

Inv 24" S.C Under Centerville Rd + Co Rd E



May 13, 1960

Co Rd E

RR tracks to Centerville Rd

Ditch Profile
North side

Rec. 5/13/60

Reduced 5/16/60 KP

CKD

"

KP

Sta	+	π	-	Elev
BM	2.89	926.58		923.69
0+00			8.54	15.15 918.04
+50			7.8	15.9 918.79
1			7.8	15.9 918.79
+50			8.0	15.7 918.59
+76			7.76	15.93 918.83
2+13			7.67	16.02 918.91
+50			7.3	16.4 919.29
3			7.7	16.0 918.89
+50			7.9	15.8 918.69

FK
RG
JS
JL
WM

May 13, 1960

2

RR Spike in PP NE Cor E + Centerville Rd

W. End FL 24" SCP Under Tracks

E

E End 24" x 36.5' CM

W. End 24" x 36.5' CM

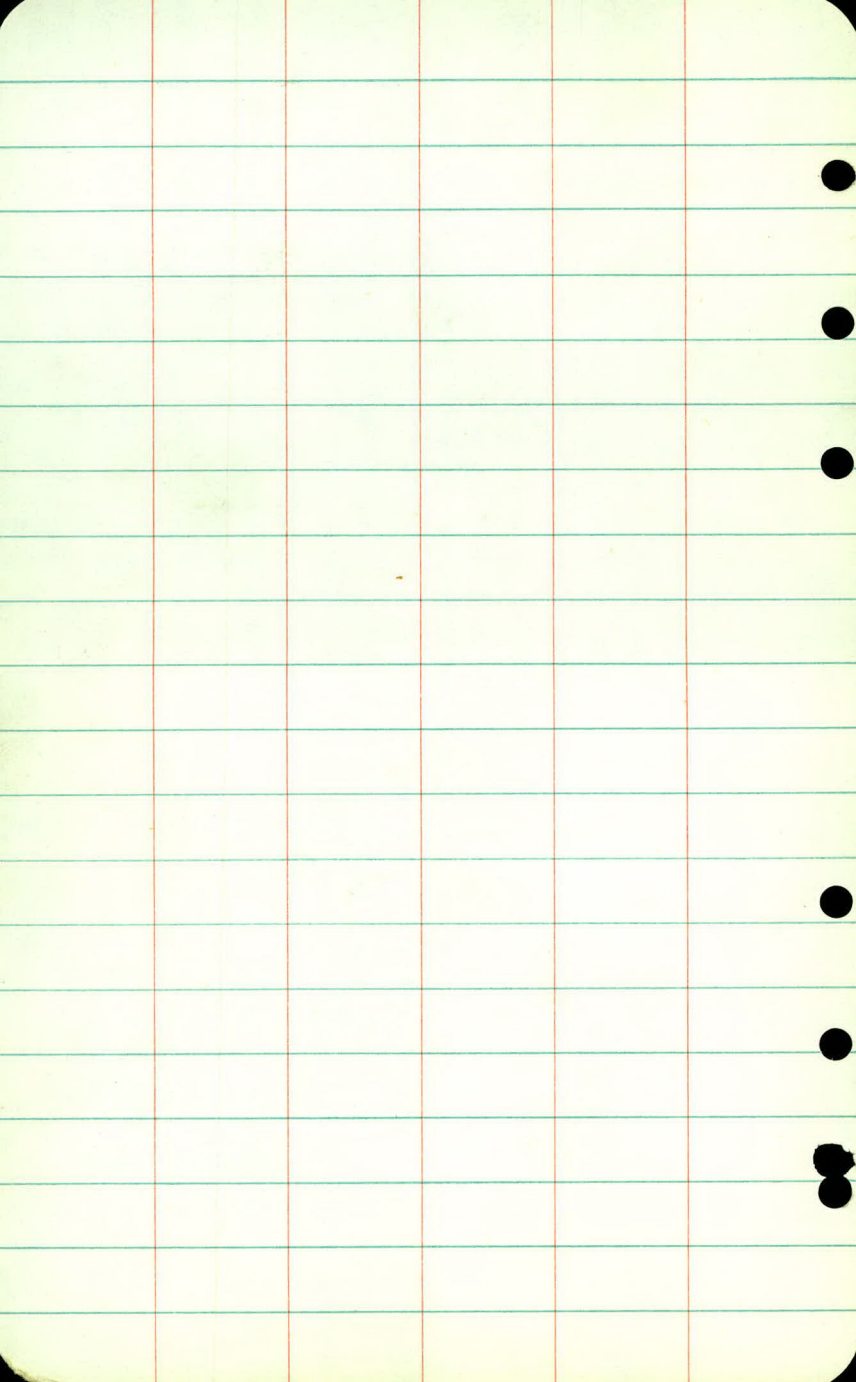
Sta	+	π	-	Elev
4			7.7	16.0 918.89
+50			8.0	15.7 918.59
5			7.8	15.9 918.79
+50			7.6	16.1 918.99
6			7.8	15.9 918.79
+08			8.33	15.36 918.25
			1	

2-23-71 CORRECTED HL

May 13, 1960

3

FL End 24" SCP (E. End)



FK
RG
KP
AB

March 19, 1957

Cool Clear 24°

1

Co. Rd. "E"

Centerville Rd to S.T.H. #61

Rec 3/21/57

3:00 P.M.

L.C.

25 pages

Sta Obj

7+00 £ R.R. Tracks 31' Lt

6+58.5 £ Tracks £

6+00 £ RR Tracks 66' Rt

3+43 Ent Rt

1+25 Edge Pave 10' Rt

1+00 Edge Pave 11.5 Rt

0+80 Pavement 15.3' Rt

0+50 Edge Pave. 21.0' Rt

0+00 £ Center ville Rd Sta ~~34~~+12

March 19, 1957

2

Sta obj

18+54 Ent Rt

17+57 Ent Rt

17+10 Ent Lt

15+97 Ent Rt

9+92 Ent Lt

9+79 Ent Rt

7+98 Fe Ent Lt

7+67 Ent Rt

7+63.62 Iron Ment

March 19, 1957

3

41+01 to 407 Patch

40+74 Ent Rt

40+11 Ent Rt

34+21.3 Mont

32+02 Fe Ent Lt

31+03 Ent Rt

30+53 Ent Lt

22+77 Ent Lt

20+13 Ent Rt

March 19, 1957

4

47+10 End Radius 40' Lt

47+00 Pt. on Radius 31' Rt

46+81 Begin Radius 43' Rt

46+90 Pt. on Radius 21' Lt

46+63 Begin Radius 10' Lt

46+45 End Radius 54' Rt

46+44 Pt. on Radius 28' Rt

46+10 Begin Radius 10' Rt

41+08 Ent Rt

March 19, 1957

5

49+21 Ent Rt

47+77 End Radius 10' Lt

47+48 Pt on Radius 25' Lt

47+46 End Radius 10' Rt

47+32 Begin Radius 57'

46+36 ∇ La Bore Rd Rt 100'

47+25 ∇ La Bore Rd 100' Lt

47+15 ∇ La Bore Rd No ∇

46+99 ∇ La Bore Rd So. ∇

March 19, 1957

6

60+47 Ent Rt

59+27 Ent Rt

58+18 Fe Ent Rt

56+91 Ent Lt

56+31 Ent Rt

55+75 Ent Lt

54+70 Ent Rt

51+66.5 Ent Rt

50+38 Ent Rt

March 19, 1957

7

70+35 30' Ent Lt

68+63 Ent Rt

62+76 End sideroad Rt

62+21 Begin sideroad Rt

61+43 to +52 Patch

60+83 Fe Ent Lt

60+47 to +51 Patch

61+00 Ent Rt

60+79.85 Iron Mont

March 19, 1957

8

Sta Obj

85+90 W. Edge Conc. S.T.H. #61 South Bound

85+44 Beg New State Highway Conc.

83+39 $\pm$ 30' Ent Lt.

83+12 Fe Ent Rt

82+68 $\pm$ 25' Ent Lt

80+61 $\pm$ 20' Ent Lt

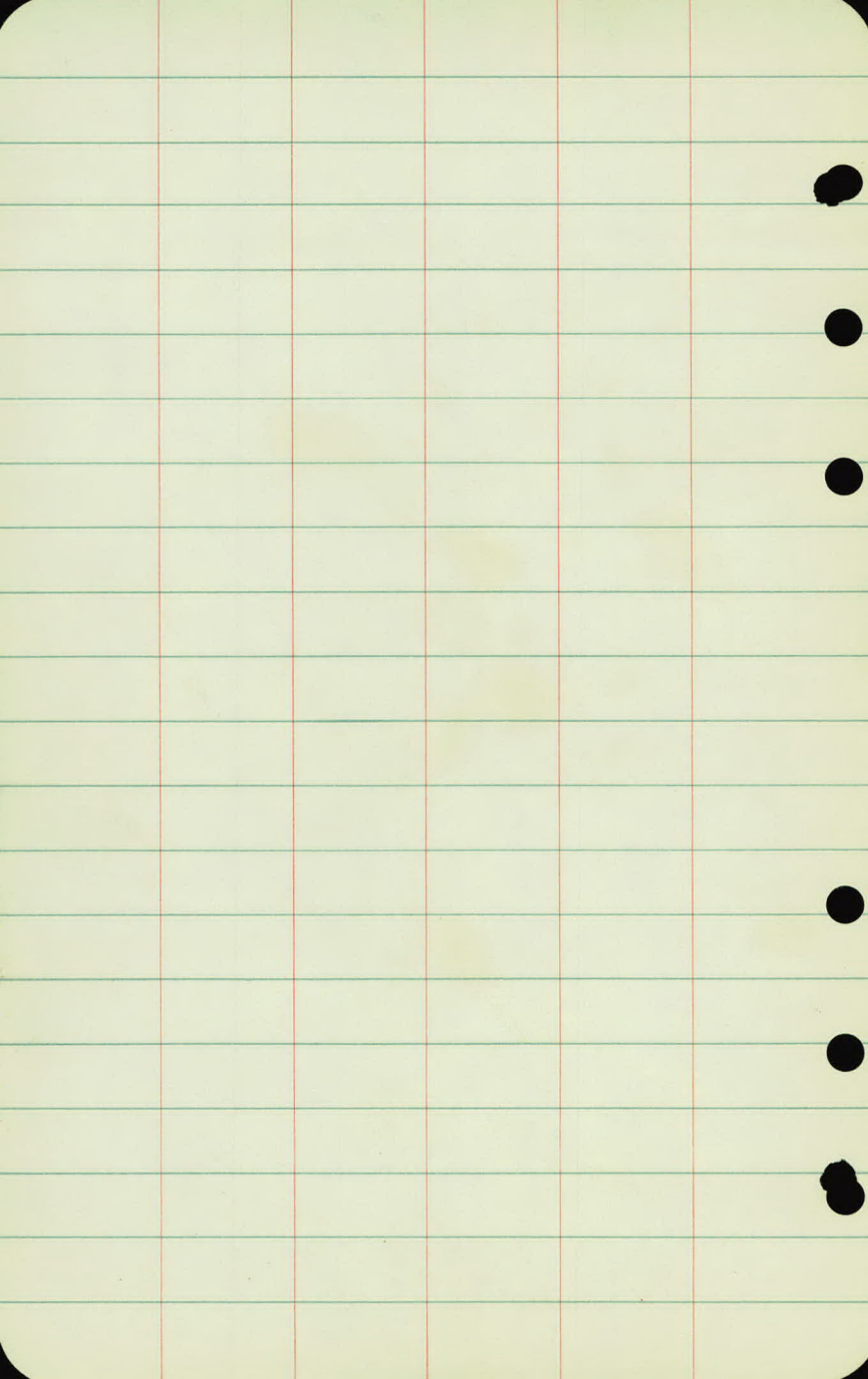
77+92 Ent Rt.

74+40 to +50 Patch

71+46 Ent Rt.

March 19, 1957

9



PK
RG
KP
FS

March 21, 1957
Clear Cool 30°

10

Profile

Sta	+	π	-	Elev
BM	4.95	927.28		922.33

0+00			4.4	22.9
------	--	--	-----	------

+50			4.6	22.7
-----	--	--	-----	------

1			5.0	22.3
---	--	--	-----	------

2			4.8	22.5
---	--	--	-----	------

3			4.7	22.6
---	--	--	-----	------

4			4.6	22.7
---	--	--	-----	------

5			4.8	22.5
---	--	--	-----	------

6			5.0	22.3
---	--	--	-----	------

+55			5.21	22.07
-----	--	--	------	-------

March 21, 1957

11

iron plug N.E. Cor Sec 32 White Bear Twp.

Centerville Rd

Sta	+	π	-	Elev
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		927.28		
--	--	--------	--	--

6 + 62			5.19	22.1
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7			5.0	22.3
---	--	--	-----	------

TP				
----	--	--	--	--

+63.62	4.93	927.26	4.95	922.33
--------	------	--------	------	--------

8			4.9	22.4
---	--	--	-----	------

9			4.9	22.4
---	--	--	-----	------

10			4.9	22.4
----	--	--	-----	------

11			4.8	22.5
----	--	--	-----	------

12			4.8	22.5
----	--	--	-----	------

13			4.7	22.6
----	--	--	-----	------

March 21, 1957

12

iron mant

Sta	+	x	-	Elev
		927.26	22.7	
14			4.6	
			22.9	
15			4.4	
TP	5.39	928.30	4.35	922.91
			23.1	
16			5.2	
			23.3	
17			5.0	
			23.5	
18			4.8	
			23.6	
19			4.7	
			23.7	
20			4.6	
			24.0	
21			4.3	

March 21, 1957

13

Sta + π - Elev.

928.30

22

24.1
4.2

TP 5.04 929.16 4.18 924.12

23

24.3
4.9

24

24.4
4.8

25

24.5
4.7

26

24.5
4.7

+50

24.5
4.7

27

24.6
4.6

+50

24.6
4.6

28

24.5
4.7

March 26, 1957

14

Sta	+	π	-	Elev
		929.16		
28+50			5.0	
29			5.2	
TP	1.72	925.66	5.22	923.94
+ 50			2.1	
30			2.4	
+ 50			2.8	
31			3.4	
+ 50			3.9	
32			4.4	

March 21, 1957

15

Sta	+	π	-	Elev
		925.66		
33			5.20 5.6	
			19.5	
+50			6.2	
			19.0	
34			6.7	
BM			6.89	918.77
+21.3				
+50			7.0 ^{18.7}	
			18.6	
35			7.1	
			18.7	
+50			7.0	
			19.0	
36			6.7	
TP	7.27	926.20	6.73	918.93
			19.6	
37			6.6	

March 21, 1957

16

Stone Mont N $\frac{1}{4}$ Sec 33 White Bear Twp.

Sta	+	π	-	Elev
		926.20		
38			5.8	20.4
39			5.0	21.2
40			4.0	22.2
41			3.1	23.1
+50			2.7	23.5
42			2.2	24.0
+50			1.3	24.9
43			0.4	25.8
TP	13.12	938.90	0.42	925.78

March 21, 1957

17

Sta	+	π	-	Elev
		938.90		
43+50			12.0 ^{26.9}	
44			10.8 ^{28.1}	
45			8.2 ^{30.7}	
46			5.7 ^{33.2}	
BM 46+99			3.19	935.71 (935.92)
47			3.2 ^{35.7}	
48			0.7 ^{38.2}	
TP	13.02	951.26	0.66	938.24
49			10.4 ^{40.9}	

March 21, 1957

18

± Laborer Sq. Understood to be from prorated error in
Bench Levels

Sta	+	π	-	Elev
		951.26	43.4	
50			7.9	
			45.9	
51			5.4	
			48.5	
52			2.8	
			51.1	
53			0.2	

TP	9.90	960.99	0.17	951.09
			50.2	
+50			8.8	
			53.3	
54			7.7	
			54.2	
+50			6.8	
			55.0	
55			6.0	

March 21, 1957

19

Sta	+	π	-	Elev
		960.99	56.6	
55+50			5.4	
			56.1	
56			4.9	
			56.5	
+50			4.5	
			56.8	
57			4.2	
			56.9	
+50			4.1	
			56.9	
58			4.1	
			56.8	
+50			4.2	
			56.5	
59			4.5	
			56.4	
+50			4.6	
TP	2.52	958.55	4.96	956.03

March 21, 1957

20

Sta	+	π	-	Elev.
		958.55	16.1 5 2.5	
60				
BM				
+79.85			2.96	955.59
			55.5 5 3.1	
61				
			54.9 3.7	
62				
			54.4 4.2	
63				
			53.9 4.7	
64				
			53.4 5 5.2	
65				
			53.2 5.4	
+50				
			53.2 5.4	
66				

March 26, 1951

21

Iron Mount

Sta	+	π	-	Elev
		958.55		
66+50			53.4 5.2	
67			53.7 4.9	
TP	6.85	960.47	4.93	953.62
68			54.3 6.2	
69			54.9 5.6	
70			55.4 5.1	
71			56.0 4.5	
72			56.7 3.8	
73			57.3 3.2	

March 21, 1957

22

Sta	+	π	-	Elev
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		960.47		
--	--	--------	--	--

74			2.7	
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			2.7	
--	--	--	-----	--

T.P.	8.86	946.67	2.66	957.81
------	------	--------	------	--------

+50			8.5	
-----	--	--	-----	--

			8.5	
--	--	--	-----	--

75			8.0	
----	--	--	-----	--

			8.0	
--	--	--	-----	--

+50			7.5	
-----	--	--	-----	--

			7.5	
--	--	--	-----	--

76			6.7	
----	--	--	-----	--

			6.7	
--	--	--	-----	--

77			4.9	
----	--	--	-----	--

			4.9	
--	--	--	-----	--

78			3.2	
----	--	--	-----	--

			3.2	
--	--	--	-----	--

+50			2.5	
-----	--	--	-----	--

			2.5	
--	--	--	-----	--

March 26, 1957

23

Sta	+	π	-	Elev
-----	---	-------	---	------

		966.67		
--	--	--------	--	--

			64.8	
--	--	--	------	--

79			1.9	
----	--	--	-----	--

				65.5
--	--	--	--	------

+ 50			1.2	
------	--	--	-----	--

				65.9
--	--	--	--	------

80			0.8	
----	--	--	-----	--

				66.2
--	--	--	--	------

TP	5.04	970.93	0.78	965.89
----	------	--------	------	--------

+ 50			4.7	
------	--	--	-----	--

				66.4
--	--	--	--	------

81			4.5	
----	--	--	-----	--

				66.6
--	--	--	--	------

+ 50			4.3	
------	--	--	-----	--

				66.5
--	--	--	--	------

82			4.4	
----	--	--	-----	--

				66.5
--	--	--	--	------

+ 50			4.4	
------	--	--	-----	--

				66.5
--	--	--	--	------

March 21, 1957

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Sta	+	π	-	Elev.
		970.93		
83			66.4 4.5	
+50			66.1 4.8	
84			65.8 5.1	
+50			65.4 5.5	
85			65.0 5.9	
+50			64.6 6.3	
+90			64.5 6.4	
86 + 02.3			64.6 6.3	
BM			6.53	964.40 964.40

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± STH #61 South bound

N.W. Cor Cone Base Traffic Signal Control Box

