

Dr. 14-Bk. 21

OFFICE OF COUNTY ENGINEER
RAMSEY CO. MINN.

PLA 17 Survey

STEWART AVE.

From 4th St. To 7th St.

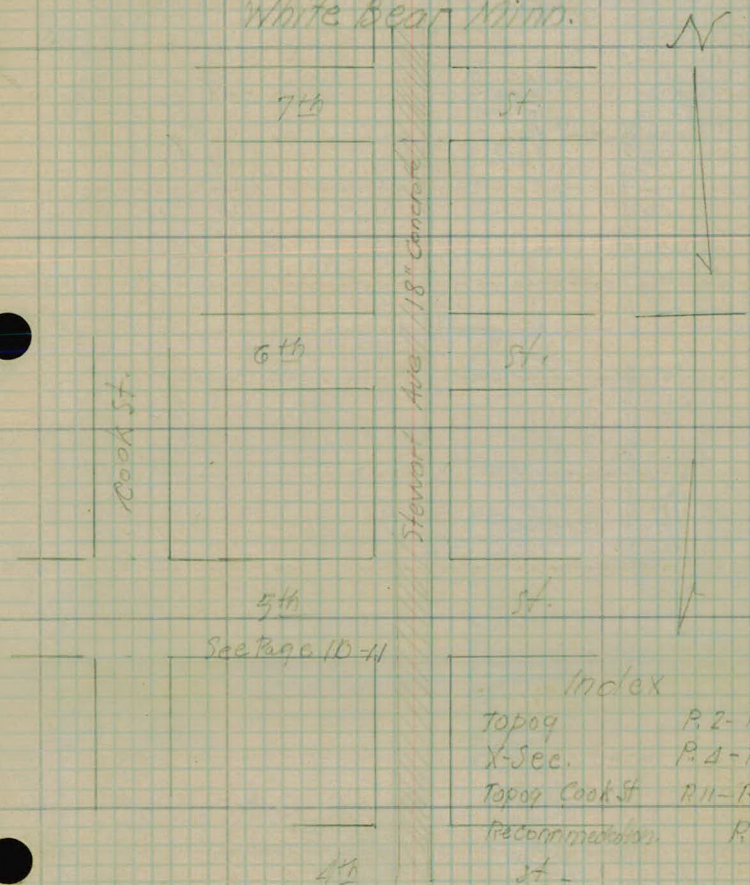
Road Acc't. No.

Date Filed 1936

File D 14 B, 21

Drainage Plan Survey. Stewart Ave.

North's Prop Line 4th St. to 7th St.
White Bear Minn.



W. H. Carlson
June 10, 1936

5

4

+897 } Prop Line
+899 } X-Walk.

+ E 5th St.

3

2

140

0+0 = North Prop Line.

+97-14" Maple 31'

+52-12" Maple 31'

+06-12" Maple 31'

+07-14" Maple 31'

+22-14" Maple 31'

S.W. 39.0-34.5

+82-R.R. 22'

1000' cover over hole

+85-Non cover 34.5

+47-Non cover 34.5

+12-12" Elm - 31.5

S.W. 39.0-34.5

+48-18" Elm 32'

+48-R.P. 22.5

+41-Ent.

+28-24" Elm. 31'

+07-8" Elm. 31'

+90-16" Elm. 31'

+76-M.Hole - 15'

+72-14" Elm. 31.5

+64-R.P. 22.5

+62-M.H. 15.5

+38-24" Maple 32'

+11-Ent.

+87-11" Maple

+57-16" Elm.

+41-14" Maple

+28-12" "

+10-12" Maple 32'

S.W. 38.5-34.0

S.W. 16'

4' Well

+00 P.P. 33.5

+82-3" Elm 30.5

+45-3" Elm 30.

+87-3" Elm 30

+76-R.P. 32.5

+62-4" Elm 30

+35-6" Elm 31

+14-6" Elm 31

S.W. 34.0-38.5

+97-6" Elm 31.5

+82-5" Elm 36'

+29-12" Maple 27'

+06-12" Elm - 26.5

+84-18" Elm. 27

+61-12" Elm 27

+56-13" Elm 28

+51-Ent. 27

+37-14" Elm. 27

+14-16" Elm 27

+90-14" Elm 27'

+66-R.P. 20'

+53-Ent.

+43-Silver Pop 29

+42-Ent. Row 110'

+15-Tree 40'

+05-Beg. Sect. Tree

S.W. 16'

4'

6' Well

4' Well

4' Well

4' Well

4' Well

4' Well

4' Well

4' Well

4' Well

4' Well

4' Well

4' Well

4 Fourth St.

13

12

+ 11.0 } = N. Prop. Line.
 + 06.5 } X-Walk.

11

+ E 7th St.

+ 64.1 } X-Walk
 + 56.6 } S. Prop. Line.

6" X 20' C.M. →

10

9

8

+ 51.3 } Prop. Line
 + 46.8 } X-Walk.

+ E 6th St.

7

+ 99.1 } X-Walk.
 + 95.1 } Prop. Line

6

+12-Ent.

+60-P.P. 25

+95-Mend. culv. 42'

+71-S. end culv. 42'

Ditch opening
21'

+39-4' Walk 41'

+04-Fence Cor. 49.5

+55-8' Fence 40'

+37-14" Maple 32'

+21-10" Maple 31'

+06-12" Maple 32'

+97-2.3' Walk 40'

+92-14" Maple 32'

+76-17" Maple 32'

+45-P.P. 42.5

+46-8' Walk 39.2-34.5

+39-Iron Cover thru Walk.

+06- " " " "

S.W. 39.1 - 34.6

Iron Cover thru Walk 15.2

+64-14" Maple 31'

+30-12" " 31'

+47-P.P. 34'

+67-Fence Cor. 40

+25-Fire Hydr. 32'

(7th St.) +67-B.P. 31'

+32-48'-4" 6' 6"

+97-4' Walk 35'

+25-2' Top 31'
+07-P.P. 31'

+90-4' Walk 49.5

+40-2.45' Walk 34.5

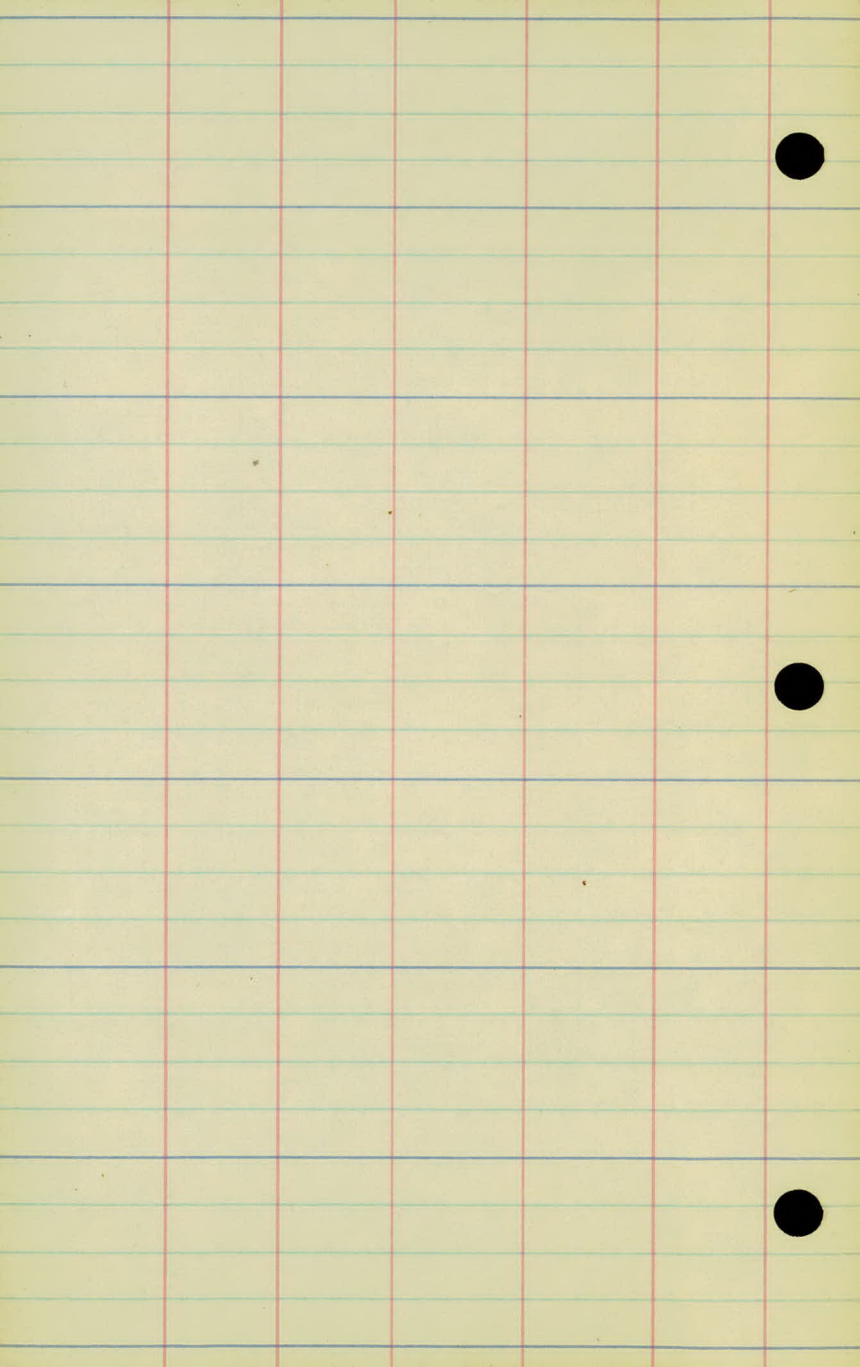
+93-2.5' Walk 35'

+45-P.P. 30.5

+46.8-X-Walk 34.5-30

6th St. +34-Iron cover thru
to 8-Iron " " " " Walk.
S.W. - 34.2-38.8'

Iron cover thru Walk 14.5



X-sections.

Sta.	+	π	-	Elev.
B.M.	2.34	946.88		946.54
T.P.	4.41	944.25	3.04	939.84
B.M.			1.05	
9+00 =	N. Prop Line 4th			939.65

140

100

240

340

+29.7 Approx Ea.P.L. 5th.

+47 - Gutter Line

+59.7 Approx of 5th

939.35

+75 Gutter Line

3+89.7 N. Prop Line.

B.M. 2.72 944.53 2.44 941.81

4+20

540

Top Hyd. Cor. Banning & Fourth.

Drainage East & West from (Stewart on 4th)

Top Hyd. Cor. Stewart & Fourth.

$\frac{4.25}{34}$	$\frac{4.4}{16}$	$\frac{4.8}{16}$	$\frac{4.65}{90}$	4.60	$\frac{4.66}{90}$	$\frac{4.9}{16}$	$\frac{4.4}{16}$	$\frac{4.4}{34}$
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$\frac{4.48}{34}$	$\frac{4.8}{20}$	$\frac{4.63}{90}$	4.57	$\frac{4.4}{9}$	$\frac{4.4}{14}$	$\frac{4.7}{31}$	$\frac{2.9}{37}$
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$\frac{4.87}{34}$	$\frac{5.0}{24}$	$\frac{5.2}{20}$	$\frac{4.73}{9}$	$\frac{4.71}{9}$	$\frac{4.81}{9}$	$\frac{4.7}{16.5}$	$\frac{5.1}{22}$	$\frac{4.7}{40}$
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$\frac{5.07}{34}$	$\frac{5.1}{21}$	$\frac{5.7}{20}$	$\frac{4.9}{13}$	$\frac{4.88}{9}$	$\frac{4.83}{9}$	$\frac{4.92}{9}$	$\frac{4.8}{16}$	$\frac{5.4}{20}$	$\frac{5.4}{22}$	$\frac{5.0}{23}$	$\frac{4.3}{40}$
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$\frac{5.1}{34}$	$\frac{5.2}{21}$	$\frac{5.7}{20}$	$\frac{5.3}{9}$	4.88	$\frac{4.95}{9}$	$\frac{5.0}{16}$	$\frac{5.5}{18}$	$\frac{5.5}{20}$	$\frac{5.0}{22}$	$\frac{4.7}{40}$
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$\frac{6.0}{150}$	$\frac{5.9}{100}$	$\frac{6.0}{50}$	$\frac{5.8}{76}$	$\frac{5.0}{16}$	$\frac{4.92}{90}$	$\frac{4.86}{90}$	$\frac{4.93}{9}$	$\frac{5.7}{24}$	$\frac{6.1}{50}$	$\frac{6.3}{100}$
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Drains West Res. P.

Drains East

$\frac{5.8}{150}$	$\frac{5.7}{100}$
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$\frac{4.96}{90}$

$\frac{5.7}{100}$

$\frac{6.2}{150}$	$\frac{5.8}{100}$	$\frac{5.7}{50}$	$\frac{5.4}{32}$	$\frac{4.93}{9}$	$\frac{4.92}{9}$	$\frac{5.06}{9}$	$\frac{5.6}{20}$	$\frac{4.0}{44}$	$\frac{6.3}{100}$
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$\frac{5.12}{25}$	$\frac{5.17}{17}$	$\frac{4.90}{9}$	$\frac{4.86}{9}$	$\frac{4.93}{9}$	$\frac{5.2}{12}$	$\frac{5.3}{38}$
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Top Hyd. N.E. Cor. 5th & Stewart.

$\frac{5.15}{25}$	$\frac{5.5}{21}$	$\frac{5.12}{9}$	$\frac{5.06}{9}$	$\frac{5.13}{9}$	$\frac{5.4}{21}$	$\frac{5.44}{38}$
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$\frac{4.94}{21}$	$\frac{5.4}{23}$	$\frac{5.1}{15}$	$\frac{4.89}{9}$	$\frac{4.86}{9}$	$\frac{4.95}{9}$	$\frac{5.1}{21}$	$\frac{5.15}{34}$
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Sta. + π - Elev.

944.53

6+0

+95.1 So. Prop Line

7+73.2 Approx. $\pm 0.5h$

See Page 9

940.78

7+51.3 No. Prop. Line.

T.B.M.

5.17

945.21

4.49

940.04

8+0

+50

9+0

+50

10+0

10+56.6 So. Prop Line.

940.54

10+83.8 = Approx $\pm 7th$ (See P. 8) 940.89

T.B.M.

2.96

942.25

11+11 No. Prop Line

4.

2

1st

6.

$\frac{4.75}{35}$ $\frac{5.2}{22}$ $\frac{4.61}{90}$ $\frac{4.54}{-}$ $\frac{4.62}{9.0}$ $\frac{5.1}{23}$ $\frac{4.8}{34}$

$\frac{4.57}{35}$ $\frac{4.6}{24}$ $\frac{4.5}{14}$ $\frac{4.35}{90}$ $\frac{4.30}{-}$ $\frac{4.39}{9}$ $\frac{4.6}{24}$ $\frac{4.41}{35}$

$\frac{4.75}{0}$

$\frac{4.48}{345}$ $\frac{4.5}{22}$ $\frac{4.24}{90}$ $\frac{4.18}{-}$ $\frac{4.28}{9}$ $\frac{4.4}{35}$

Walk N.W. cor.

$\frac{4.95}{31}$ $\frac{5.0}{24}$ $\frac{5.4}{21}$ $\frac{4.8}{13}$ $\frac{4.87}{90}$ $\frac{4.80}{-}$ $\frac{4.87}{9}$ $\frac{5.0}{16}$ $\frac{5.3}{21}$ $\frac{5.1}{26}$ $\frac{5.0}{39}$

$\frac{4.70}{34}$ $\frac{5.0}{25}$ $\frac{5.5}{20}$ $\frac{5.0}{16}$ $\frac{4.84}{9}$ $\frac{4.78}{-}$ $\frac{4.84}{9}$ $\frac{4.9}{15}$ $\frac{5.3}{20}$ $\frac{4.9}{39}$

$\frac{5.0}{34}$ $\frac{5.0}{25}$ $\frac{5.4}{21}$ $\frac{4.8}{17}$ $\frac{4.79}{9}$ $\frac{4.74}{-}$ $\frac{4.82}{9}$ $\frac{4.9}{17}$ $\frac{5.4}{21}$ $\frac{4.8}{36}$

$\frac{4.7}{39}$ $\frac{5.1}{25}$ $\frac{5.7}{22}$ $\frac{5.0}{17}$ $\frac{4.79}{9}$ $\frac{4.74}{-}$ $\frac{4.82}{9}$ $\frac{5.0}{17}$ $\frac{5.6}{22}$ $\frac{5.2}{28}$ $\frac{4.8}{40}$

$\frac{4.6}{40}$ $\frac{5.1}{28}$ $\frac{5.7}{21}$ $\frac{5.0}{17}$ $\frac{4.76}{9}$ $\frac{4.70}{-}$ $\frac{4.80}{9}$ $\frac{4.9}{17}$ $\frac{5.0}{26}$ $\frac{4.5}{40}$ Yard.

Dibb.

Walk $\frac{4.32}{40}$ $\frac{4.6}{21}$ $\frac{5.8}{21}$ $\frac{4.6}{19}$ $\frac{4.25}{9}$ $\frac{4.67}{-}$ $\frac{4.76}{9}$ $\frac{4.58}{17}$ $\frac{4.57}{26}$ $\frac{4.32}{40}$ Walk

$\frac{4.32}{-}$

Top N.W. N.E. cor. 7th & Stevedo. t.

$\frac{4.76}{40}$ $\frac{4.4}{19}$ $\frac{4.58}{9}$ $\frac{4.51}{-}$ $\frac{4.89}{9}$ $\frac{4.4}{19}$ $\frac{4.32}{40}$

Sta.

+

π

-

E/eV

945.21

11+50

12+0

13+0

941.92

2.96

942.25

41.

2

12.

7

$$\frac{4.7}{4.0} \quad \frac{4.4}{2.4} \quad \frac{4.5}{1.6} \quad \frac{4.37}{9.0} \quad \frac{4.31}{9.0} \quad \frac{4.41}{9.0} \quad \frac{4.4}{1.5} \quad \frac{5.2}{1.8} \quad \frac{4.8}{4.0}$$

$$\frac{4.2}{4.0} \quad \frac{4.5}{1.9} \quad \frac{4.1}{9.0} \quad \frac{4.05}{9.0} \quad \frac{4.14}{9.0} \quad \frac{4.1}{1.5} \quad \frac{6.8}{2.3} \quad \frac{6.2}{3.9} \quad \frac{4.0}{1.5}$$

$$\frac{4.4}{4.4} \quad \frac{4.9}{2.8} \quad \frac{3.6}{1.6} \quad \frac{4.4}{1.0} \quad 3.29 \quad \frac{3.37}{9} \quad \frac{3.5}{1.5} \quad \frac{5.8}{2.5} \quad \frac{5.8}{2.0} \quad \frac{4.0}{1.5}$$

1641 N.E. Cor. 7th & Stewart

Sta. + π - Elev.

7th St. X-Sections

B.M. 3.34 945.89 942.75

going West on 7th See Page 6

0 to 10 + 83.8 on Stewart 940.59

0 + 42

1 + 0

2 + 0

going East on 7th St.

0 to 10 + 83.8 on Stewart

0 + 50

1 + 0

2 + 0

Hwy N.E. Cor. 7th & Stewart

South = Lt

L
5.00

Rt = North

$\frac{4.67}{27}$	$\frac{5.0}{16}$	$\frac{5.83}{12}$	$\frac{4.9}{12}$	$\frac{4.8}{12}$	$\frac{4.9}{12}$	$\frac{5.7}{12}$	$\frac{4.8}{15}$	$\frac{4.61}{27}$
		$F_{bu} = 2.00$				$\frac{12}{12} = H. line$		Prop Line

$\frac{4.67}{27}$	$\frac{4.71}{23}$	$\frac{5.3}{14}$	$\frac{5.0}{9}$	$\frac{4.7}{12}$	$\frac{5.1}{12}$	$\frac{5.5}{14}$	$\frac{4.8}{17}$	$\frac{4.65}{27}$
								Prop

$\frac{4.45}{28}$	$\frac{4.55}{20}$	$\frac{4.8}{17}$	$\frac{5.0}{13}$	$\frac{5.2}{8}$	$\frac{4.9}{12}$	$\frac{5.0}{9}$	$\frac{5.2}{12}$	$\frac{4.6}{20}$	$\frac{4.67}{27}$
									PK

North = Lt

L
5.00

Rt = South

$\frac{4.67}{27}$	$\frac{4.7}{23}$	$\frac{5.0}{14}$	$\frac{5.1}{7}$	$\frac{5.1}{6}$	$\frac{5.7}{10}$	$\frac{4.7}{18}$	$\frac{4.66}{27}$
					$\frac{10}{10} = A. line$		PL

$\frac{4.35}{27}$	$\frac{4.44}{23}$	$\frac{5.2}{14}$	$\frac{5.0}{7}$	$\frac{5.0}{6}$	$\frac{5.3}{10}$	$\frac{4.6}{18}$	$\frac{4.49}{27}$
							PL

$\frac{3.9}{27}$	$\frac{3.9}{23}$	$\frac{4.6}{12}$	$\frac{4.3}{12}$	$\frac{4.8}{10}$	$\frac{3.9}{17}$	$\frac{3.98}{27}$
						PL

Sta.	+	π	-	Elev
	4.87	944.91		940.04

Going West on 6th St.

0+00 = (7+73.2 Stewart) See P. 6 940.78

0+50

1+0

1+50

2+0

Going East on 6th St.

0+00 = (7+73.2 Stewart)

0+50

1+0

1+50

South = Lt

E

Rt = North.

4.63P.L. $\frac{5.2}{28}$ $\frac{5.4}{16}$ $\frac{5.1}{13}$ $\frac{4.8}{0}$ $\frac{5.0}{13}$ $\frac{4.8}{17}$ $\frac{4.77}{28}$

P.L.

 $\frac{6.1}{100}$

Low spot.

 $\frac{6.2}{28}$ $\frac{5.8}{15}$ $\frac{4.8}{6}$ $\frac{4.7}{-}$ $\frac{5.3}{15}$ $\frac{4.8}{22}$ $\frac{4.71}{28}$

P.L.

Drying
← South

Low spot.

 $\frac{6.8}{28}$ $\frac{6.2}{18}$ $\frac{5.4}{13}$ $\frac{4.7}{6}$ $\frac{4.7}{-}$ $\frac{5.3}{13}$ $\frac{4.8}{23}$ $\frac{4.61}{28}$

P.L.

 $\frac{6.5}{28}$ $\frac{6.0}{16}$ $\frac{4.9}{6}$ $\frac{4.8}{-}$ $\frac{5.4}{15}$ $\frac{4.7}{23}$ $\frac{4.59}{28}$

P.L.

North = Lt

E

Rt = South

4.63

P.L.

 $\frac{4.77}{28}$ $\frac{4.83}{24}$ $\frac{5.0}{18}$ $\frac{5.2}{16}$ $\frac{4.9}{11}$ $\frac{4.5}{-}$ $\frac{4.7}{8}$ $\frac{5.1}{10}$ $\frac{4.7}{18}$ $\frac{4.6}{24}$ $\frac{4.6}{28}$

P.L.

 $\frac{4.80}{28}$ $\frac{4.9}{24}$ $\frac{4.8}{20}$ $\frac{5.1}{18}$ $\frac{4.7}{9}$ $\frac{4.4}{-}$ $\frac{5.0}{13}$ $\frac{4.7}{18}$ $\frac{4.7}{23}$ $\frac{4.7}{28}$ $\frac{4.88}{28}$ $\frac{4.8}{18}$ $\frac{5.1}{16}$ $\frac{4.6}{-}$ $\frac{5.0}{14}$ $\frac{4.5}{18}$ $\frac{4.1}{25}$ $\frac{4.1}{28}$

Stg.	+	π	-	Elev.
B.M.	2.13	94394		941.81

Going East on 5th St.

0+0 =

0+45 =

0+125 =

0+20 =

0+00 = E Cook St.

0+60

1+0

2+0

3+0

3+71 = 3+89.7 = Stewart Ave See P. 5

E. of Stewart.

4+20

5+0

North Lt

2

Rt = South

10

Hyd cor. 5th & Stewart

938.82 933.34 5.5 Deep.

 $\frac{5.11}{30} = \frac{10.6}{30}$

Top Cover 20.5 = Fl. Line Storm Sewer

 $\frac{9.85}{19} = \text{Fl. Line C.B.}$ $\frac{6.42}{20} = \text{Fl. 937.52}$
top grate.

937.44

9.93

 $\frac{6.5}{13} = \text{Fl. Lips C.B.}$

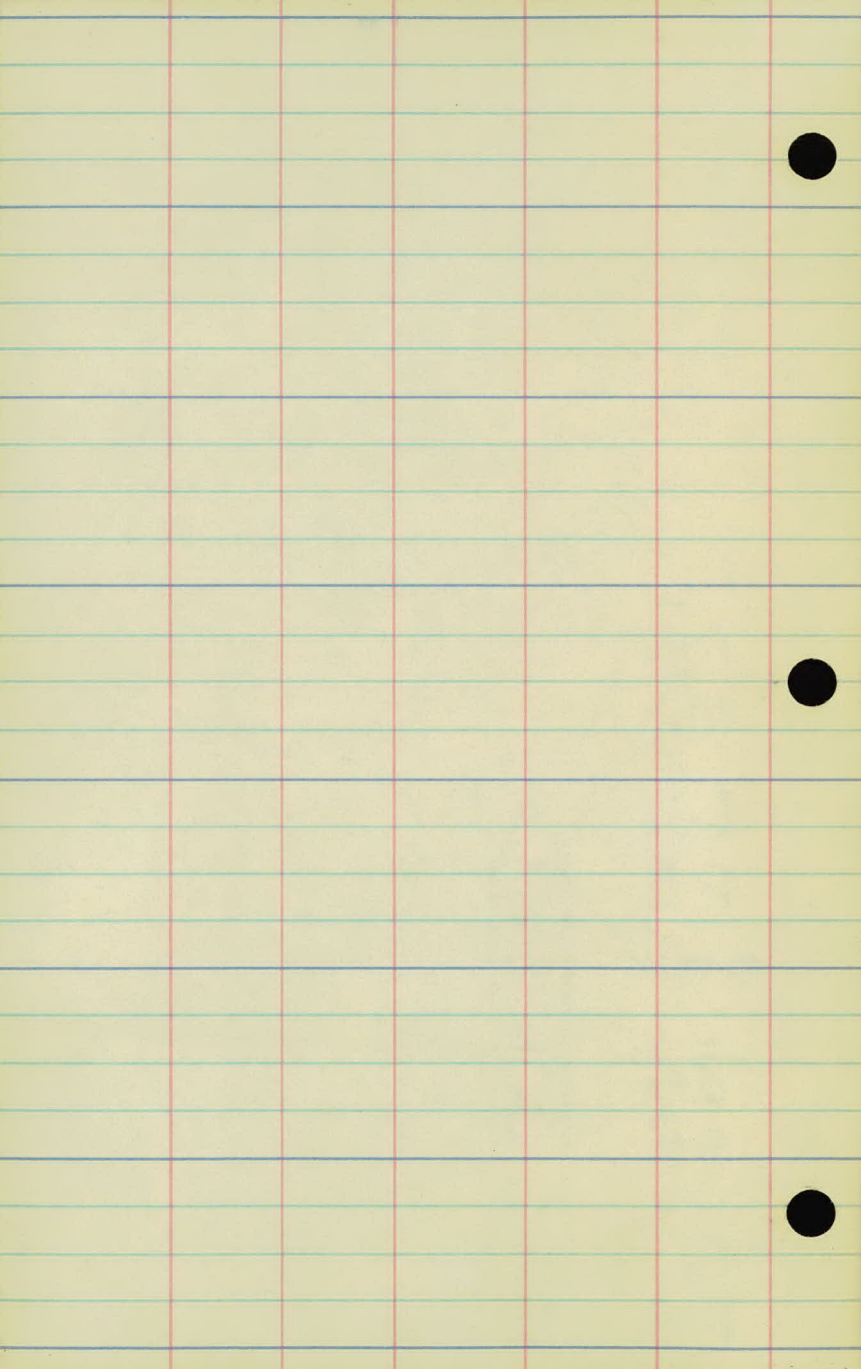
top grate.

934.0

 $\frac{4.9}{0}$ $\frac{5.76}{30} \quad \frac{5.3}{24} \quad \frac{6.0}{14}$ $\frac{5.4}{10}$ $\frac{6.4}{10}$ $\frac{5.7}{16}$ $\frac{5.60}{28}$ $\frac{5.20}{30} \quad \frac{5.1}{24} \quad \frac{5.9}{15}$ $\frac{5.5}{12}$ $\frac{6.1}{12}$ $\frac{5.5}{19}$ $\frac{5.58}{28}$ $\frac{5.07}{30} \quad \frac{5.2}{18} \quad \frac{5.8}{15}$ $\frac{5.4}{13}$ $\frac{5.9}{13}$ $\frac{5.5}{14}$ $\frac{5.4}{30}$ $\frac{4.87}{30} \quad \frac{5.0}{20} \quad \frac{5.4}{13}$ $\frac{5.3}{14}$ $\frac{5.7}{14}$ $\frac{5.1}{15}$ $\frac{4.8}{30}$ 934.35
 $\frac{7.60}{0}$

5

 $\frac{5.25}{30} \quad \frac{5.3}{18} \quad \frac{5.7}{17}$ $\frac{5.4}{0}$ $\frac{5.8}{7}$ $\frac{5.7}{13}$ $\frac{4.9}{16}$ $\frac{4.2}{20}$ $\frac{5.45}{30} \quad \frac{5.5}{23} \quad \frac{5.9}{15}$ $\frac{5.4}{11}$ $\frac{5.9}{11}$ $\frac{4.4}{16}$ $\frac{4.3}{20}$ Drain
OUT
↓



5th St.

Cook St to Stewart.

4

771- 2 Stewart

-9
+62- Edge Rovern 1-

3

2

1

oto = 2 Cook -

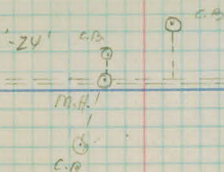
See Stewart Ave Topog P. 2
 Ave X-Sec. P. 5

18' Concrete • Stewart Ave

0+17.5 - E.C.B. 19'

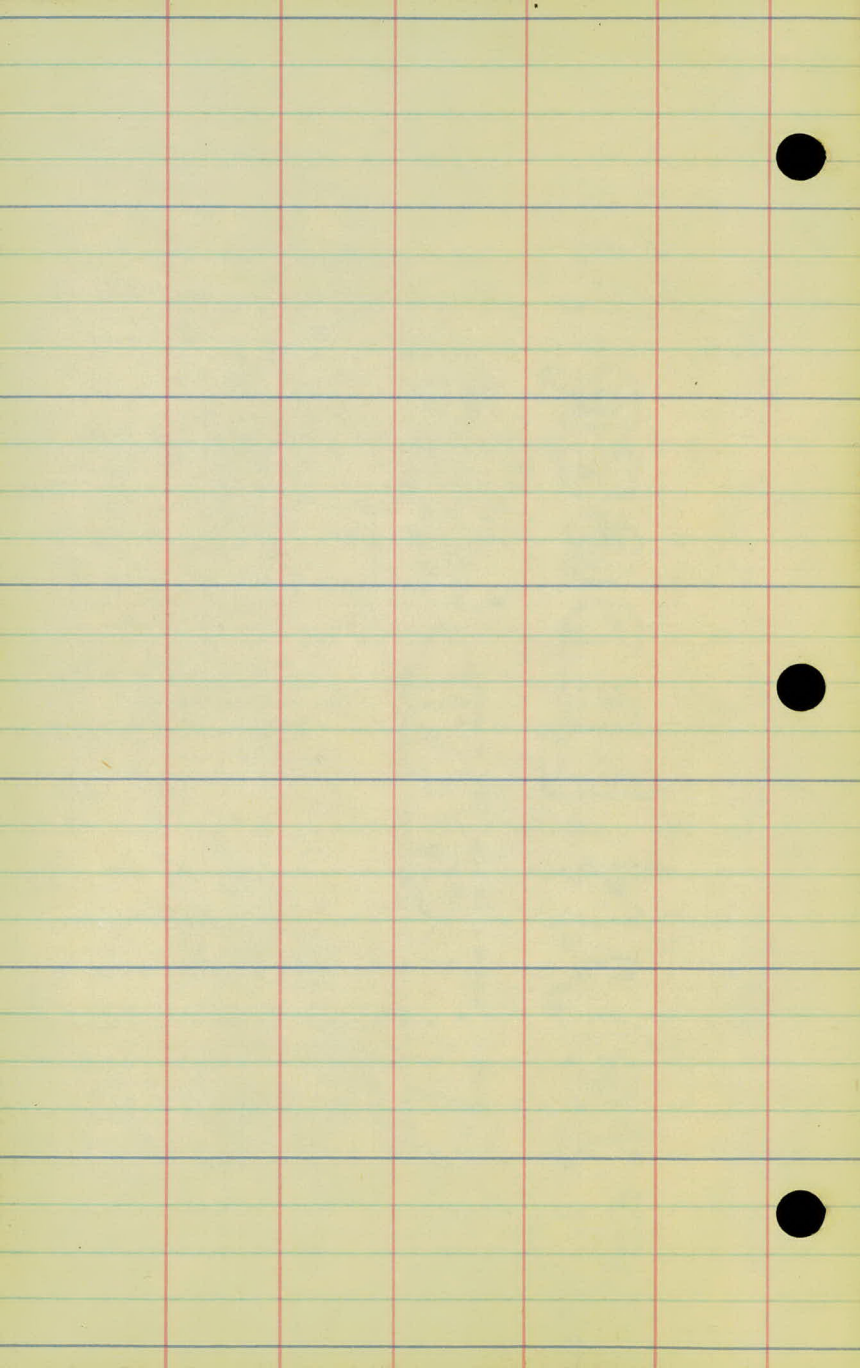
0+14 - Beg Walk - 30'-24' C.B.

0+4.5 - E.M.H. 20.5



0+35 - E.C.B. 13'

12" Pipe



Recommendations.

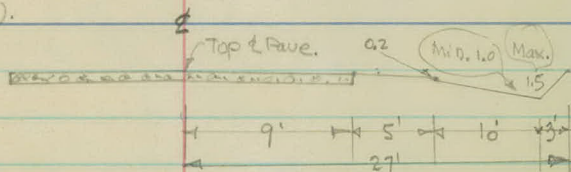
Stewart Ave, 4th St. to 7th St.

Make Ditch at 5th St. Left and Right and the North and South Property Lines 1.5' below top of $\pm$ Pavement (Elev. 939.35) (Ditch 937.85)

At the north Property Line of 4th St. make ditch 1.14' below top of Pavement (Elev. 939.65) (Ditch 938.51), this is a -0.2% Grade.

Then from the north Property Line of 5th St. to South Property Line of 6th St (Elev. 940.28) on a $+0.3\%$ grade the ditch @ 6th will be 1.33' deep (Elev. 938.95)

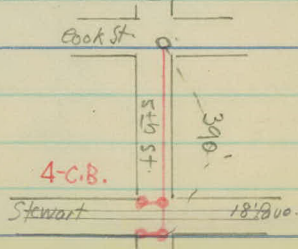
Then from the north Property Line 6th St. to the South Property Line of 7th St. Elev (940.54) on a $+0.2\%$ grade the ditch will be 1.0' deep (Elev. 939.54).



5th St, Cook to Stewart

Place about 390' of 12" Storm Sewer, to connect at Cook St. (See P. 10 X-Sec. P. 12 Topog.) Sewer on a $+0.2\%$ grade and place 4-Catch Basins

Note: Or ditch from 5th & Stewart to 5th & Cook



W. H. Carlson 6/10/36

