

Bk 21 - Dr. 16

OFFICE OF COUNTY ENGINEER
RAMSEY CO. MINN.

Drainage Survey 1

JOHANNA BLVD & Co. Rd. "D"

From..... To.....

Road Acc't. No.

Date Filed 10-26-39

File

pr 16 BK 21

~~MAINTENANCE~~

Ditch Survey

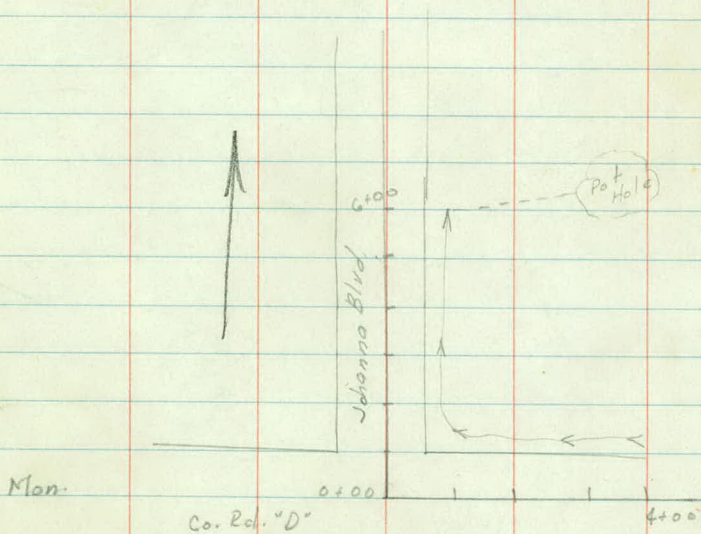
School Grds.

Co. Rd. "D" & Johanna Blvd

9/28/39

Party
R.O.R.
A.M.
L.G.
C.F.

4 Sheets.



Cross Sections
Co. Rd. "D"

Sta	+	π	-	Elev.
B.M.	3.34	103.34		100.00
0+10	Edge Pav't.		3.65	99.69
+23	Present Ditch		4.2	99.1
+33			4.2	99.1
+50			4.3	99.0
1			4.7	98.6
+50			4.5	98.8
2			3.9	99.4
+50			3.8	99.5'
3			3.8	99.5'
+50			4.5	98.8
4			5.2	98.1

Top Men Co. Rd D. & Johanna Blvd.

$\frac{3.70}{50}$

$\frac{3.65}{50}$

$\frac{3.7}{50}$

$\frac{4.4}{50}$ $\frac{4.7}{26}$ $\frac{4.3}{19}$ 4.2

$\frac{3.5}{50}$ $\frac{3.7}{36}$ $\frac{4.4}{28}$ $\frac{5.0}{26}$ $\frac{4.5}{21}$ 4.2

$\frac{3.4}{50}$ $\frac{4.0}{31}$ $\frac{5.0}{23.25}$ $\frac{4.5}{19}$ 4.3

$\frac{2.9}{50}$ $\frac{4.4}{28}$ $\frac{5.0}{26.22}$ $\frac{4.8}{20}$ 4.7

$\frac{4.9}{50}$ $\frac{4.8}{33}$ $\frac{4.6}{28}$ $\frac{5.3}{27.26}$ $\frac{4.1}{19}$ 4.5

$\frac{3.7}{50}$ $\frac{3.7}{34}$ $\frac{5.1}{29.25}$ $\frac{4.2}{22}$ $\frac{3.5}{16}$ 3.9

$\frac{3.8}{50}$ $\frac{4.0}{34}$ $\frac{5.0}{28.24}$ $\frac{3.6}{19}$ 3.8

$\frac{4.5}{50}$ $\frac{4.2}{34}$ $\frac{5.2}{29.25}$ $\frac{3.8}{21}$ 3.8

$\frac{4.4}{50}$ $\frac{4.4}{34}$ $\frac{5.6}{29}$ $\frac{5.6}{23}$ $\frac{4.7}{18}$ 4.5

$\frac{7.2}{50}$ $\frac{6.8}{21}$ $\frac{5.3}{13}$ 5.2

Cross Sections
Sohanna Blvd.

Sta.	+	X	-	Elev.
B.M.	5.67	105.67		100.00
0 + 18	Shldr	Co Rd "D"	5.8	99.9
+ 25	Ditch	" " "	5.8	99.9
+ 31			5.9	99.8
+ 50			5.8	99.9
1			5.6	100.1
+ 50			5.1	00.6
2	Thru Entrance		4.9	00.8
+ 50			5.0	00.7
3			5.2	00.5
+ 50			5.6	00.1
4			5.8	99.9
+ 50			6.3	99.4

Top Mon Johanna Blvd & Co. Rd. "D"

5.8 $\frac{6.0}{10}$ $\frac{6.6}{23}$ $\frac{7.0}{50}$

5.8 $\frac{6.1}{10}$ $\frac{6.5}{17}$ $\frac{6.0}{19}$ $\frac{7.2}{29}$ $\frac{7.4}{50}$

5.9 $\frac{6.1}{10}$ $\frac{6.2}{17}$ $\frac{7.0}{22}$ $\frac{6.5}{33}$ $\frac{6.4}{50}$

5.8 $\frac{6.1}{10}$ $\frac{6.3}{17}$ $\frac{6.9}{21}$ $\frac{5.8}{33}$ $\frac{5.8}{50}$

5.6 $\frac{6.0}{10}$ $\frac{6.4}{14}$ $\frac{6.5}{24}$ $\frac{5.9}{31}$ $\frac{5.6}{50}$

5.1 $\frac{5.5}{10}$ $\frac{5.7}{13}$ $\frac{5.9}{24}$ $\frac{5.4}{30}$ $\frac{5.4}{50}$

4.9 $\frac{5.3}{10}$ $\frac{6.2}{26}$ $\frac{5.8}{36}$ $\frac{5.8}{50}$

5.0 $\frac{5.3}{10}$ $\frac{5.8}{16}$ $\frac{5.6}{31}$ $\frac{5.8}{50}$

5.2 $\frac{5.7}{10}$ $\frac{6.2}{15}$ $\frac{7.0}{22}$ $\frac{7.0}{41}$ $\frac{7.7}{50}$

5.6 $\frac{6.0}{10}$ $\frac{6.4}{14}$ $\frac{7.8}{19}$ $\frac{8.3}{27}$ $\frac{8.9}{50}$

5.8 $\frac{6.2}{10}$ $\frac{6.6}{14}$ $\frac{7.9}{18}$ $\frac{8.3}{26}$ $\frac{7.7}{35}$ $\frac{7.7}{50}$

6.3 $\frac{6.6}{10}$ $\frac{7.0}{14}$ $\frac{7.2}{22}$ $\frac{7.1}{37}$ $\frac{7.6}{50}$

Sta.

+

K

-

Elev.

105.67

5

7.1

98.6

+50

7.9

97.8

6

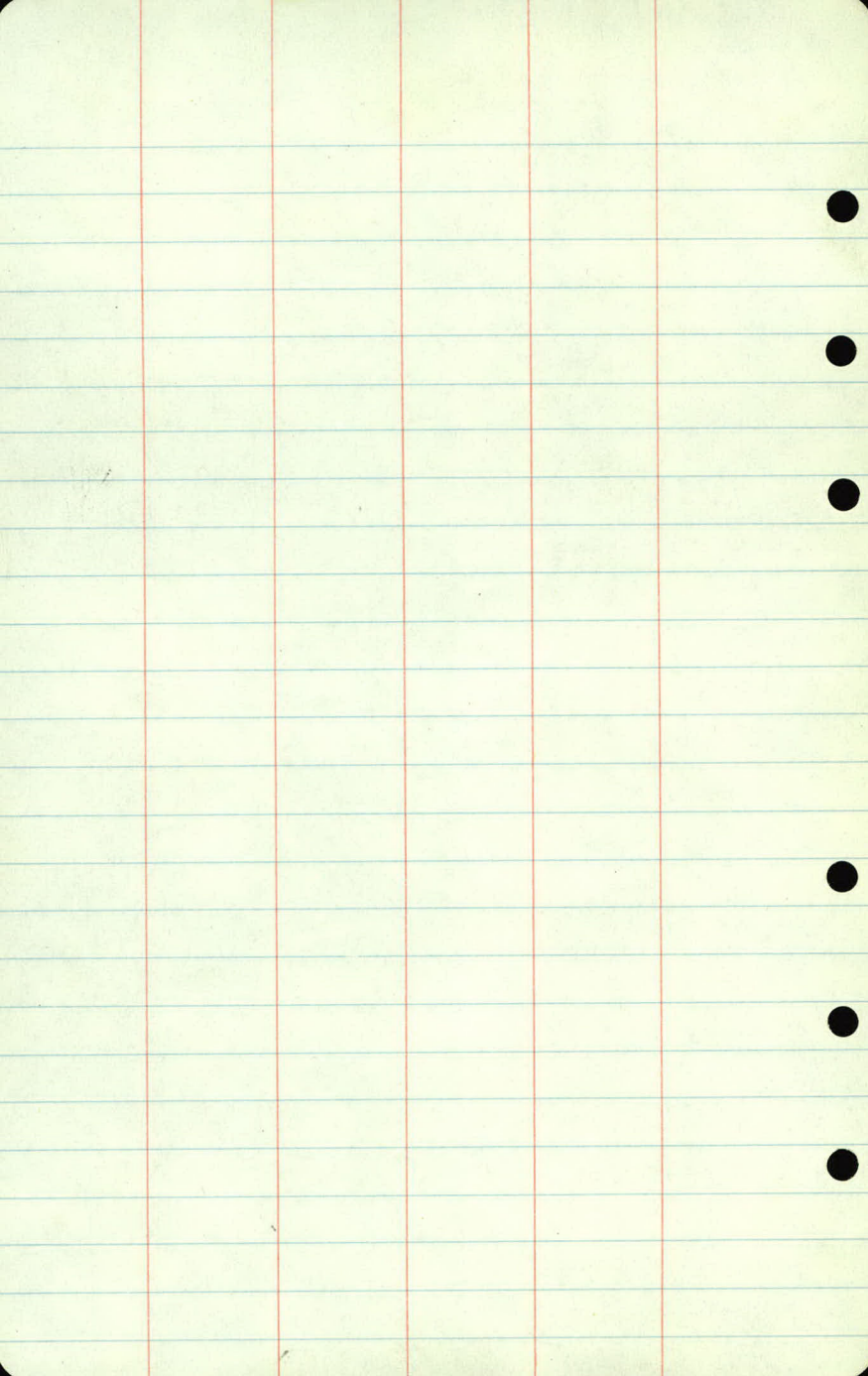
8.6

97.1

$$7.1 \quad \frac{7.4}{8} \quad \frac{8.2}{16} \quad \frac{10.5}{23} \quad \frac{11.0}{35} \quad \frac{12.2}{50}$$

$$7.9 \quad \frac{8.2}{8} \quad \frac{8.5}{13} \quad \frac{10.8}{20} \quad \frac{12.5}{28} \quad \frac{14.2}{50}$$

$$8.6 \quad \frac{8.9}{8} \quad \frac{9.1}{13} \quad \frac{14.0}{23} \quad \frac{18.0}{50}$$



Slope Stakes

Blue tops

Ditch at Sohanna Blvd & "D"

Staked- 10-5-39

3 pages

R.O.P.
A.M.
L.G.
C.F.

		Co. Rd "D"	± G.R.	Ditch Elev.
Sta	+	±	Elev.	
B.M.	457	104.57	100.00	
0+20				98.0
1+50			99.75	98.06
1+50			99.70	98.16
+50			99.65	98.26
2			99.60	98.36
+50				98.5

Top Mon Johanna Blvd é "D"

4.82

6.51

4.87

6.41

4.92

6.31

4.97

6.21

6.07

Johanna Blvd.

Sta	+	π	-	Elev.
B.M.	5.68	105.68		100.00
0+21				98.0
+50				98.0
1				97.9
+50				97.8
2				97.6
+50				97.5
3				97.4
+50				97.3
4				97.2

Top Mon Johanna Blvd E D

7.68 Cut 1.0

7.68 Cut 1.1

7.78 C 2.0

7.88 Cut 2.0

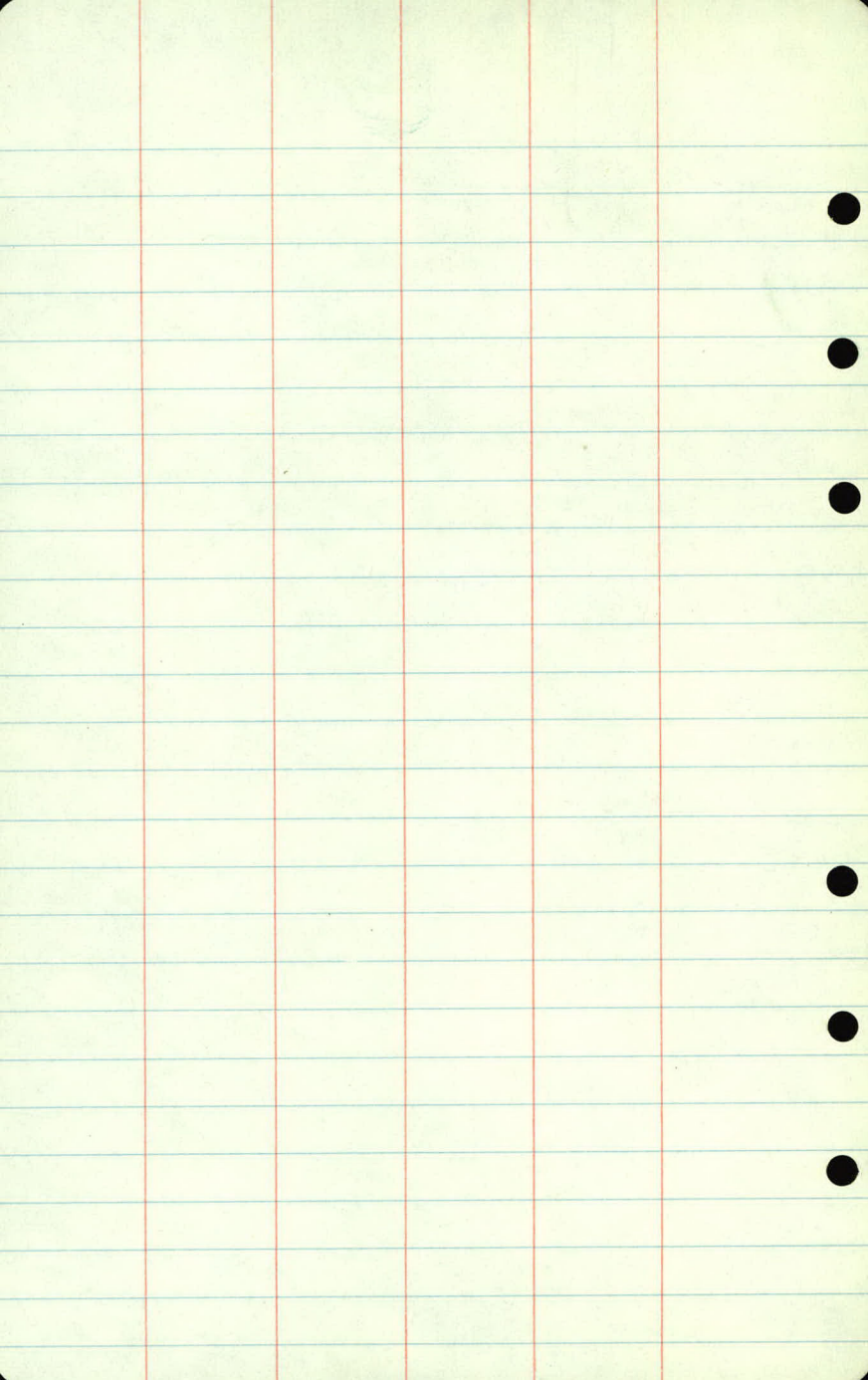
7.98 Cut 2.0

8.08 Cut 2.0

8.18 Cut 1.0

8.28 C

8.48



Plan Sarvey

Co. Ed D.

Johanna Blvd.

July 3, 1940

RP
AM
LG
CF

Brownup
7/10/40
WJB

Sta.	Pt.	LT.	Angle.	RT.
------	-----	-----	--------	-----

6+00

3+00

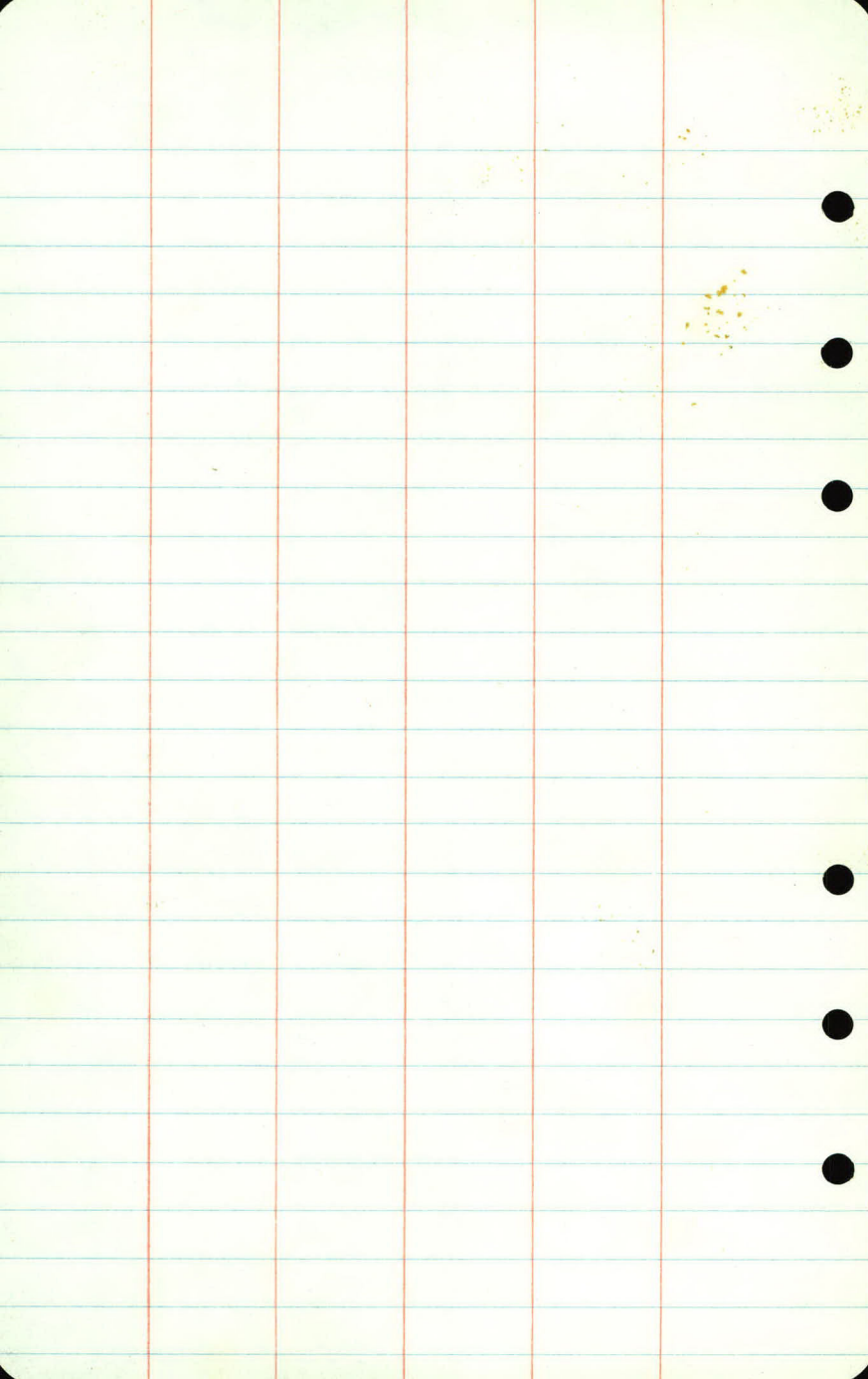
P.I.

1°15'

0+00

98° 16'

□



Topography

Co. Rd. "D"
from Johanna Blvd 600' East

6

26

5

13

4

14

3

15

2

18'

+84 Sp/ing 35

1

20'

0100

+10 Pave. x 3 1/2

+15 End Rad. 55'

+65 Bay Rad 14

+95 P.P. - 17

+90 Ent.

+58 Sapling 36

+37 Sapling 36

+16 Sapling 36

+13 P.P. 16

+97 Sapling 35

+77 Sapling 35

+59 Sapling 35

+40 Sapling 36

+22 Sapling 36

+02 Sapling 36

+63 P.P. 20

+62-6" Birch 42

+39 Ent.

12" x 20" C.M. 24'

+42 Cor. W. 30'

+34 End Curb 35

+31 4" Elm 36

100-15" B.E. 35

Curb. 33.6- S.W. 29.6

+90 15" B.E. 37

+47-8" B.E. 35

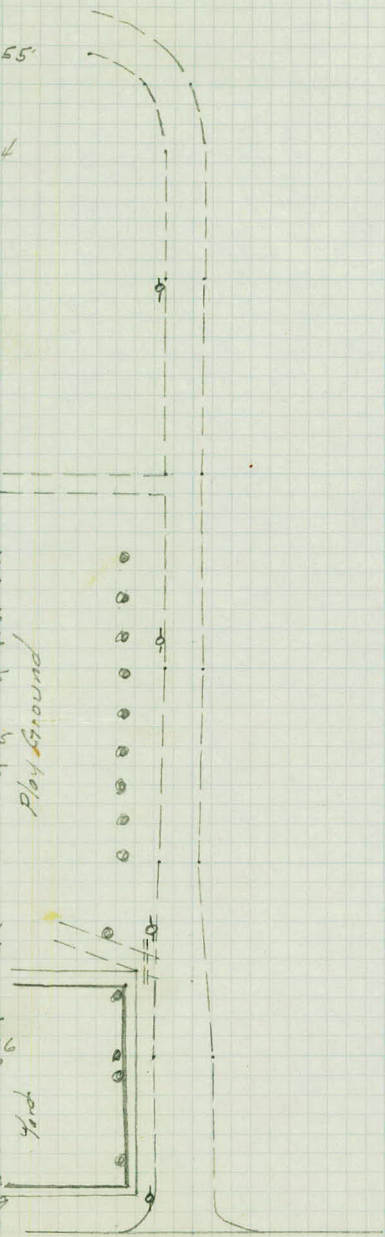
+33 Cor. Curo 33

+29 Cor. S.W. 29

+29 P.P. 23

Play Ground

4th





Cross Sections

Co. Rd. "D"

from Jehanna Blvd 600' East.

Sta	+	K	-	Elev.
B.M.	3.18	103.18.		100.00
0+00	± Johanna Blvd		3.18	00.00.
+10	Edge Pavement		3.49	99.69.
+18	Shldr		3.5	99.7.
+23	Ditch		3.5	99.7.
+29	Edge Walk		3.5	99.7.
+33	Edge Walk		3.5	99.7.
+33	Top Curb		3.5	99.7.
+50			3.7	99.5.
1			4.0	99.2.
+38			4.0	99.2.
+31 - 12" C.M.	} Ent Curb.			
+44			4.0	99.2.
+				
+51	F.L. - 12" C.M.		4.0	99.2.
T.P.	4.66	104.79.	3.06	100.12.

Top Mon. Co. Rd. D at Johanna Blvd.

$$\frac{3.33}{50} \quad 3.18 \quad \frac{3.25}{50}$$

$$\frac{3.58}{50} \quad 3.49 \quad \frac{3.56}{50}$$

$$\frac{3.5}{50} \quad \frac{3.7}{33} \quad \frac{3.8}{18} \quad \frac{3.5}{11} \quad 3.5$$

$$\frac{4.9}{50} \quad \frac{5.1}{28} \quad \frac{3.8}{22} \quad \frac{3.6}{7} \quad 3.5$$

98.1

$$\frac{3.10}{50} \quad \frac{3.12}{29} \quad \frac{5.0}{28} \quad \frac{3.8}{18} \quad 3.5$$

98.1

$$\frac{3.02}{50} \quad \frac{3.09}{33} \quad \frac{3.12}{29} \quad \frac{5.1}{23} \quad \frac{3.8}{18} \quad \frac{3.4}{7} \quad 3.5$$

98.1

$$\frac{2.88}{50} \quad \frac{2.46}{33} \quad \frac{3.09}{33} \quad \frac{3.12}{29} \quad \frac{5.1}{23} \quad \frac{3.8}{18} \quad \frac{3.4}{7} \quad 3.5$$

98.1

$$\frac{2.8}{50} \quad \frac{2.4}{23} \quad \frac{3.07}{33} \quad \frac{3.13}{29} \quad \frac{5.1}{23} \quad \frac{4.0}{19} \quad \frac{3.4}{7} \quad 2.7$$

98.3

$$\frac{2.0}{50} \quad \frac{2.47}{33} \quad \frac{3.09}{33} \quad \frac{3.15}{29} \quad \frac{4.9}{23} \quad \frac{4.2}{20} \quad \frac{3.8}{8} \quad 4.0$$

$$\frac{1.55}{50} \quad \frac{2.36}{34} \quad \frac{2.96}{34} \quad \frac{3.07}{30} \quad \frac{3.6}{23} \quad \frac{4.0}{19} \quad \frac{3.6}{7} \quad 4.0$$

$$\frac{5.05}{25}$$

$$\frac{1.58}{50} \quad \frac{2.35}{34} \quad \frac{2.93}{36} \quad \frac{3.08}{30} \quad \frac{3.6}{21} \quad \frac{3.9}{19} \quad \frac{3.6}{6} \quad 4.0$$

F.L. 98.29

$$\frac{3.4}{50} \quad \frac{3.4}{39} \quad \frac{3.7}{30} \quad \frac{4.7}{25} \quad \left(\frac{4.89}{25} \right) \quad \frac{3.6}{19} \quad \frac{4.0}{16} \quad \frac{3.6}{5} \quad 4.0$$

Sta	L	π	-	Elev.	
		104.78			
2			5.4	99.4	
	+50		5.2	99.6	
3			5.1	99.7	
	+50		5.8	99.0	
4			6.9	97.9	
	+50		8.0	96.8	
5			8.6	96.2	
	+50		9.0	95.8	
6			9.5	95.3	
B.M.			4.77	100.01	100.00

$$\begin{array}{r} 5.2 \\ 50 \end{array} \quad \begin{array}{r} 5.0 \\ 34 \end{array} \quad \begin{array}{r} 6.5 \\ 28.24 \end{array} \quad \begin{array}{r} 5.2 \\ 20 \end{array} \quad \begin{array}{r} 5.0 \\ 6 \end{array} \quad 5.4$$

$$\begin{array}{r} 5.2 \\ 50 \end{array} \quad \begin{array}{r} 5.4 \\ 33 \end{array} \quad \begin{array}{r} 6.5 \\ 30.24 \end{array} \quad \begin{array}{r} 4.8 \\ 17 \end{array} \quad \begin{array}{r} 5.0 \\ 13 \end{array} \quad \begin{array}{r} 4.9 \\ 6 \end{array} \quad 5.2$$

$$\begin{array}{r} 5.4 \\ 50 \end{array} \quad \begin{array}{r} 5.7 \\ 33 \end{array} \quad \begin{array}{r} 6.8 \\ 30.24 \end{array} \quad \begin{array}{r} 5.3 \\ 20 \end{array} \quad \begin{array}{r} 5.0 \\ 12 \end{array} \quad \begin{array}{r} 4.9 \\ 3 \end{array} \quad 5.1$$

$$\begin{array}{r} 5.8 \\ 50 \end{array} \quad \begin{array}{r} 5.9 \\ 34 \end{array} \quad \begin{array}{r} 7.1 \\ 31.23 \end{array} \quad \begin{array}{r} 6.2 \\ 19 \end{array} \quad \begin{array}{r} 5.7 \\ 13 \end{array} \quad \begin{array}{r} 5.7 \\ 5 \end{array} \quad 5.8$$

$$\begin{array}{r} 8.8 \\ 50 \end{array} \quad \begin{array}{r} 8.3 \\ 22 \end{array} \quad \begin{array}{r} 6.9 \\ 17 \end{array} \quad \begin{array}{r} 6.9 \\ 11 \end{array} \quad \begin{array}{r} 6.7 \\ 5 \end{array} \quad 6.9$$

$$\begin{array}{r} 9.4 \\ 50 \end{array} \quad \begin{array}{r} 9.4 \\ 26 \end{array} \quad \begin{array}{r} 9.8 \\ 24.22 \end{array} \quad \begin{array}{r} 8.0 \\ 17 \end{array} \quad \begin{array}{r} 7.7 \\ 13 \end{array} \quad \begin{array}{r} 8.0 \\ 11 \end{array} \quad \begin{array}{r} 7.8 \\ 4 \end{array} \quad 8.0$$

$$\begin{array}{r} 9.8 \\ 50 \end{array} \quad \begin{array}{r} 10.1 \\ 25 \end{array} \quad \begin{array}{r} 10.2 \\ 24.22 \end{array} \quad \begin{array}{r} 8.7 \\ 19 \end{array} \quad \begin{array}{r} 8.7 \\ 12 \end{array} \quad \begin{array}{r} 8.5 \\ 4 \end{array} \quad 8.6$$

$$\begin{array}{r} 9.6 \\ 50 \end{array} \quad \begin{array}{r} 9.7 \\ 27 \end{array} \quad \begin{array}{r} 10.0 \\ 25.23 \end{array} \quad \begin{array}{r} 9.1 \\ 19 \end{array} \quad \begin{array}{r} 9.1 \\ 15 \end{array} \quad \begin{array}{r} 9.3 \\ 12 \end{array} \quad \begin{array}{r} 8.9 \\ 6 \end{array} \quad 9.0$$

$$\begin{array}{r} 9.3 \\ 50 \end{array} \quad \begin{array}{r} 9.1 \\ 38 \end{array} \quad \begin{array}{r} 9.8 \\ 36 \end{array} \quad \begin{array}{r} 9.8 \\ 21 \end{array} \quad \begin{array}{r} 9.2 \\ 13 \end{array} \quad 9.5$$

21

4

Topography

JOHANNA BLVD.

from Co. Rd. "D" - 500' N.

5

10

4

10

3

10

2

10

1

10

+66 End Page.

0

10

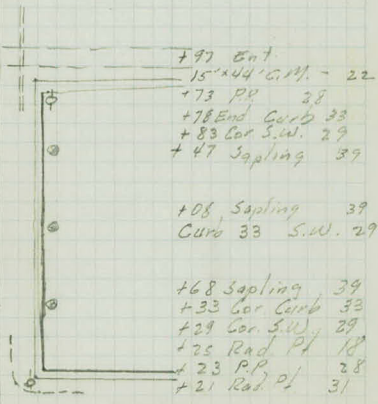


+66 P.P. 26



+47-Undergrad. 231
Tel. Cable Marked
+17 P.P. 27

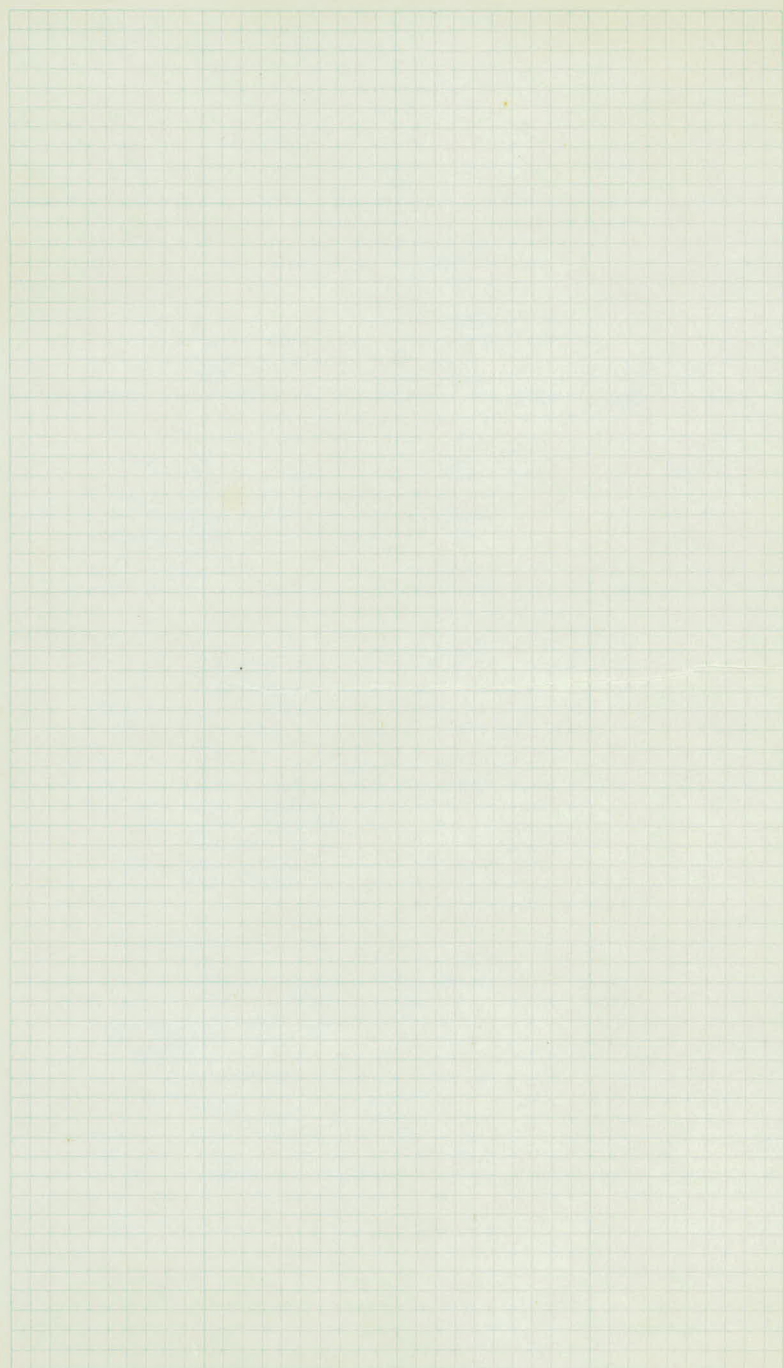
20' Black Top
20' Road



+97 Ent. 15'x44' C.M. - 22
+73 P.P. 28
+78 End. Curve 33
+83 Cor. S.W. 29
+47 Sapling 39

+08 Sapling 39
Curve 33 S.W. 29

+68 Sapling 39
+33 Cor. Curve 33
+29 Cor. S.W. 29
+25 Rad. Pt. 18
+23 P.P. 28
+21 Rad. Pt. 31



Cross Sections

Johanna Blvd.

H. of "D"

Sta.	Δ	π	-	Elev
B.M.	5.62	105.62		100.00
0+00			5.62	00.00

+21	Shoulder		5.70	99.9
-----	----------	--	------	------

+24	Editch		5.74	99.88
-----	--------	--	------	-------

+29	Edge Sidewalk		5.79	99.83
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+33	Edge Sidewalk		5.78	99.84
-----	---------------	--	------	-------

+33	Top Curb		5.78	99.84
-----	----------	--	------	-------

+50			5.72	99.90
-----	--	--	------	-------

1			5.5	00.1
---	--	--	-----	------

+50			5.1	00.5
-----	--	--	-----	------

+75	Ent. Cully. F.L. - 15' x 44' C.M.		4.9	00.7
-----	--------------------------------------	--	-----	------

1 +83	End. sidewalk		4.9	00.7
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2 + 19	Ent. Cully. F.L. 15' x 44' C.M.		4.8	00.8
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Top Mon Johanna Blvd. at D.

$$5.96 \frac{6.0}{10} \frac{6.1}{31} \frac{6.1}{50}$$

$$5.70 \frac{5.99}{10} \frac{6.2}{26} \frac{6.6}{50}$$

$$5.74 \frac{6.01}{10} \frac{6.2}{19} \frac{7.6}{27} \frac{7.4}{50}$$

$$5.79 \frac{6.03}{10} \frac{6.1}{18} \frac{7.4}{24-25} \frac{6.1}{30} \frac{5.59}{33} \frac{5.58}{50}$$

$$5.78 \frac{6.02}{10} \frac{6.1}{18} \frac{7.5}{22-25} \frac{5.60}{29} \frac{5.50}{33} \frac{5.50}{50}$$

$$5.78 \frac{6.02}{10} \frac{6.1}{18} \frac{7.5}{22-25} \frac{5.60}{29} \frac{5.50}{33} \frac{4.95}{33} \frac{4.84}{50}$$

$$5.72 \frac{5.98}{10} \frac{6.0}{17} \frac{7.3}{20-24} \frac{5.55}{29} \frac{5.49}{33} \frac{4.92}{33} \frac{4.7}{50}$$

$$5.5 \frac{5.7}{10} \frac{5.8}{15} \frac{7.6}{20-23} \frac{5.44}{29} \frac{5.32}{33} \frac{4.70}{33} \frac{4.6}{50}$$

$$5.1 \frac{5.4}{10} \frac{5.3}{15} \frac{7.6}{21-24} \frac{5.23}{29} \frac{5.17}{33} \frac{5.52}{33} \frac{4.4}{50}$$

$$4.9 \frac{5.3}{10} \frac{5.4}{16} \frac{7.6}{21-24} \frac{7.87}{22} \frac{5.18}{29} \frac{5.08}{33} \frac{4.45}{33} \frac{4.7}{50}$$

$$4.9 \frac{5.3}{10} \frac{5.5}{18} \frac{5.12}{29} \frac{4.73}{50}$$

$$4.8 \frac{5.2}{9} \frac{5.2}{16} \frac{7.4}{21-24} \frac{7.95}{22} \frac{5.6}{28} \frac{5.7}{50}$$

Sta.	+	π	-	Elev
		105.62		
2 +50			4.9	00.7
3			5.2	00.4
+50			5.5	00.1
4			5.8	99.8
+50			6.2	99.4
5			7.0	98.6
B.M.			5.62	100.00 (100.00)

$$49 \quad \frac{5.2}{10} \quad \frac{5.3}{17} \quad \frac{7.7}{21-24} \quad \frac{5.4}{28} \quad \frac{5.7}{50}$$

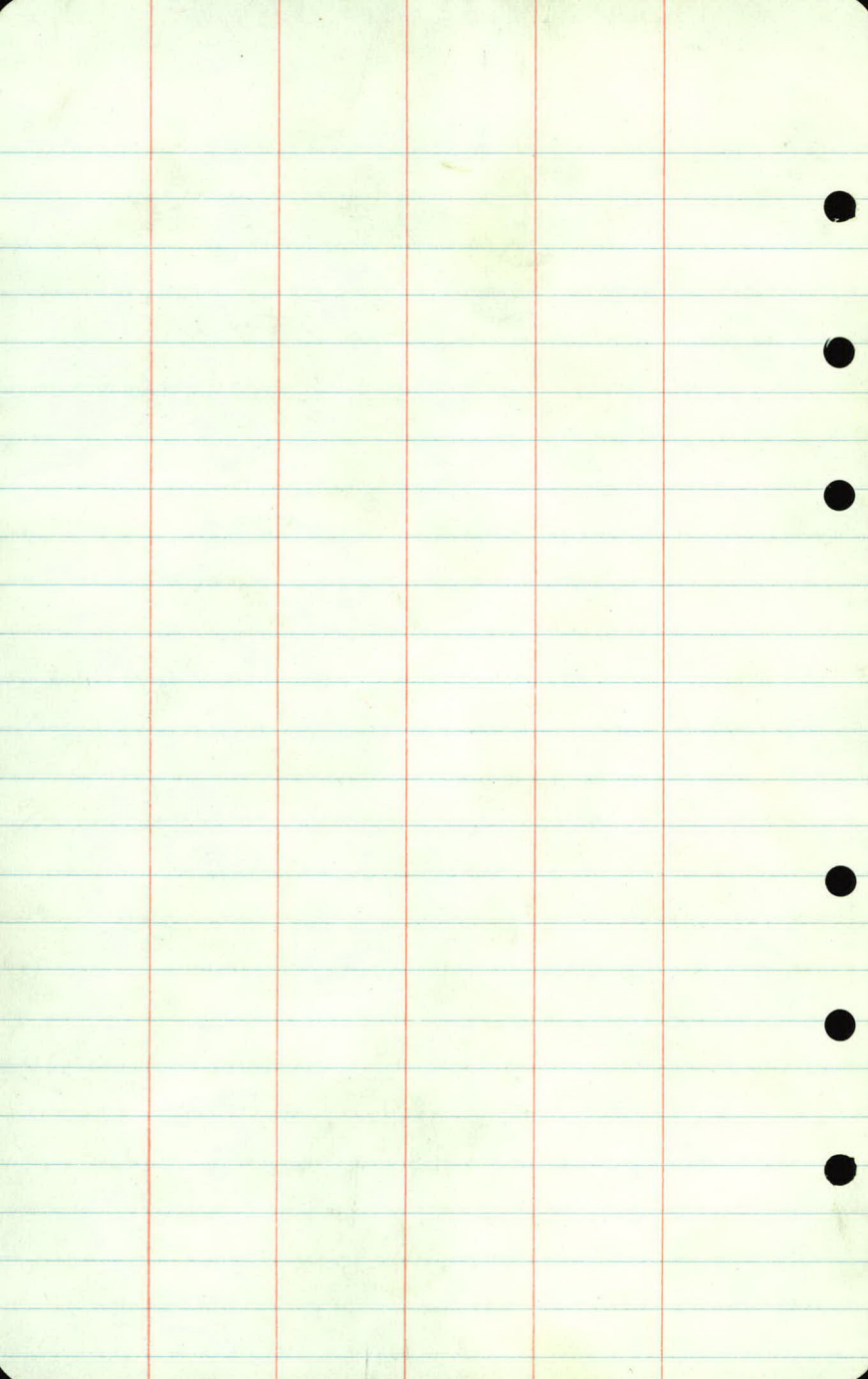
$$52 \quad \frac{5.6}{10} \quad \frac{5.7}{14} \quad \frac{7.8}{21-24} \quad \frac{6.7}{26} \quad \frac{7.8}{50}$$

$$55 \quad \frac{5.9}{10} \quad \frac{6.2}{15} \quad \frac{8.2}{20-22} \quad \frac{7.8}{23} \quad \frac{8.8}{50}$$

$$58 \quad \frac{6.1}{10} \quad \frac{6.3}{13} \quad \frac{8.1}{20-23} \quad \frac{7.8}{35} \quad \frac{7.6}{50}$$

$$62 \quad \frac{6.8}{13} \quad \frac{7.9}{17} \quad \frac{9.2}{22-24} \quad \frac{9.1}{32} \quad \frac{9.5}{50}$$

$$70 \quad \frac{7.3}{9} \quad \frac{7.6}{13} \quad \frac{10.6}{23} \quad \frac{10.8}{31} \quad \frac{12.2}{50}$$



Johanna Blvd at "D"

Grade stakes

Place 12" Conc Pipe.

Sta.	I	π	-	Elev.	
B.M.	5.56	105.56		100.00	
0+24				98.06	7.50
+50				98.01	7.55
+75				97.96	7.60
1				97.91	7.65
+25				97.86	7.70
+50				97.81	7.75
+75				97.76	
2				97.71	
+19				97.67	
		along "D"			
0+23				98.06	
+35				98.08	

Δ^0
 N
 0.
 |
 "
 Grade

Top Mon Johanna Blvd + D

$$\begin{array}{r} 5.50 \\ 20 \end{array}$$

$$\begin{array}{r} 24 \end{array}$$

$$\begin{array}{r} 5.55 \\ 20 \end{array}$$

$$\begin{array}{r} 5.55 \\ 24 \end{array}$$

$$\begin{array}{r} 5.60 \\ 20 \end{array}$$

$$\begin{array}{r} 5.60 \\ 24 \end{array}$$

$$\begin{array}{r} 5.65 \\ 20 \end{array}$$

$$\begin{array}{r} 5.65 \\ 24 \end{array}$$

$$\begin{array}{r} 5.70 \\ 20 \end{array}$$

$$\begin{array}{r} 5.70 \\ 24 \end{array}$$

$$\begin{array}{r} 5.75 \\ 20 \end{array}$$

$$\begin{array}{r} 5.75 \\ 24 \end{array}$$

$$\begin{array}{r} 5.80 \\ 20 \end{array}$$

$$\begin{array}{r} 5.80 \\ 24 \end{array}$$

$$\begin{array}{r} 5.85 \\ 20 \end{array}$$

$$\begin{array}{r} 5.85 \\ 24 \end{array}$$

$$\begin{array}{r} 5.89 \\ 20 \end{array}$$

$$\begin{array}{r} 5.89 \\ 24 \end{array}$$

$$\begin{array}{r} 5.50 \\ 26 \end{array}$$

$$\begin{array}{r} 5.50 \\ 22 \end{array}$$

$$\begin{array}{r} 5.48 \\ 26 \end{array}$$

$$\begin{array}{r} 5.48 \\ 22 \end{array}$$

Note: All Stokes set cut 20ft
to Flow Line 13" Conc. Pipe

