

Book #23, Dr. 11

OFFICE OF COUNTY ENGINEER
RAMSEY CO. MINN.

Drainage Survey

ELMER ST.

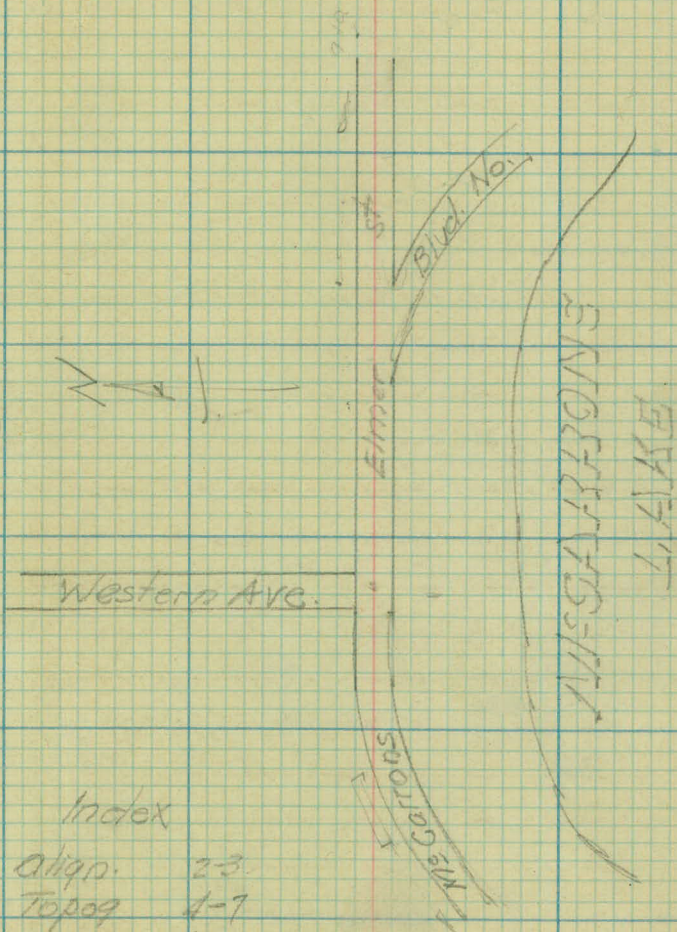
From _____ To _____

Road Acc't. No. _____

Date Filed 1-6-36

File 11

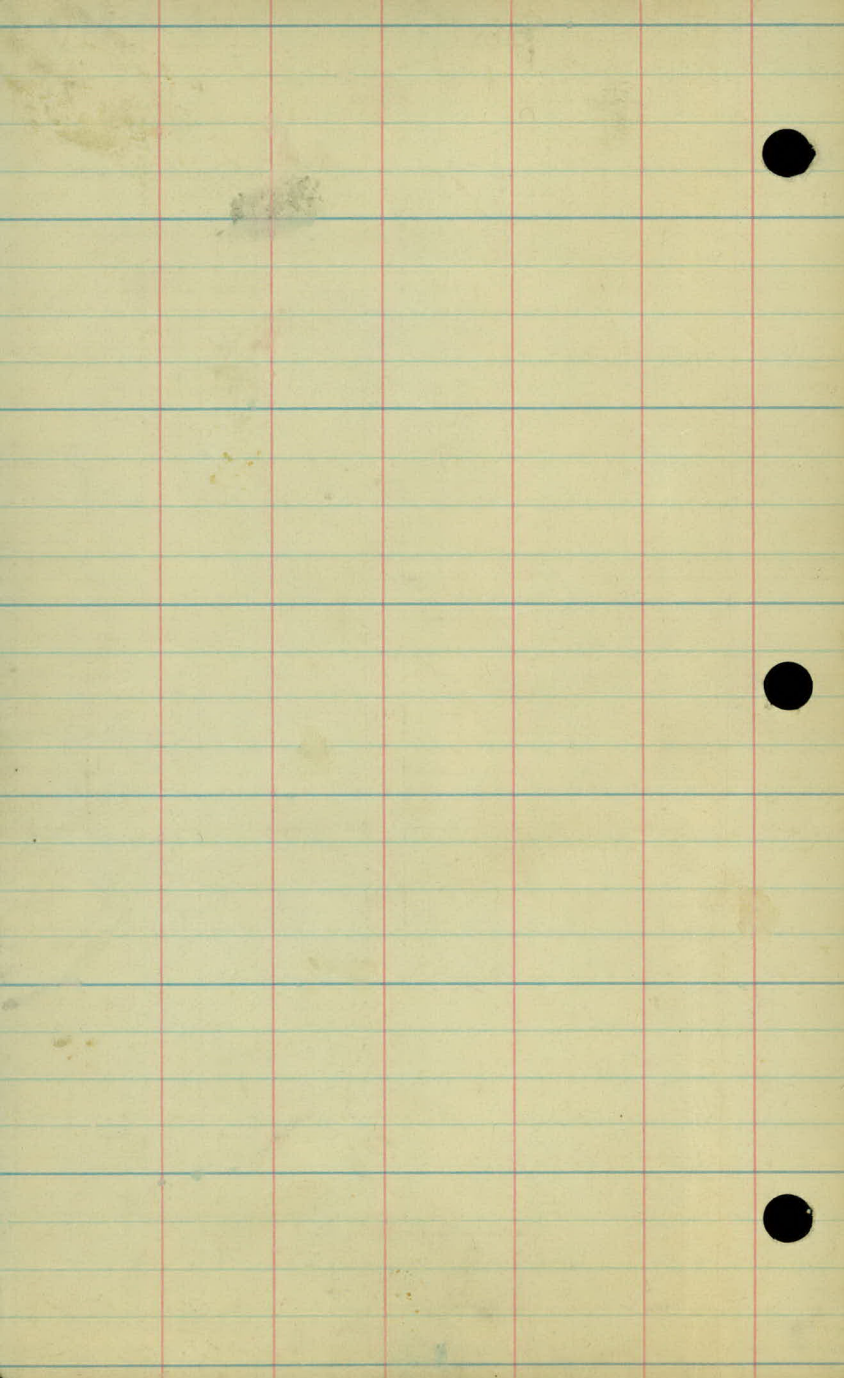
Drainage Survey.



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align.	2-3.
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W. H. Carlson
Nov. 14, 1935



alignement.

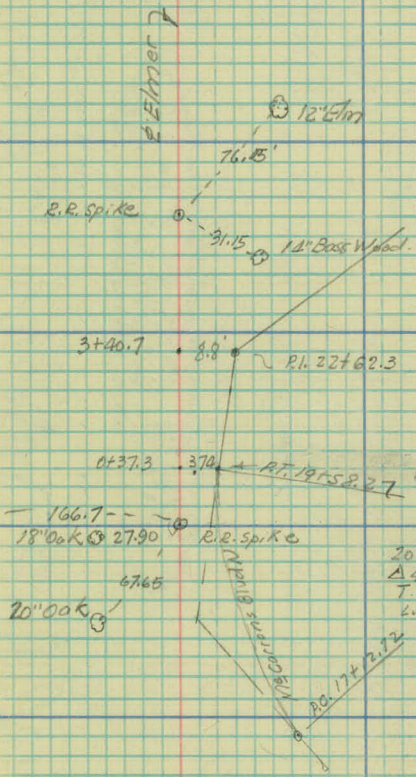
Station Point Lt. A Rt.

26+17.43 E Rice St

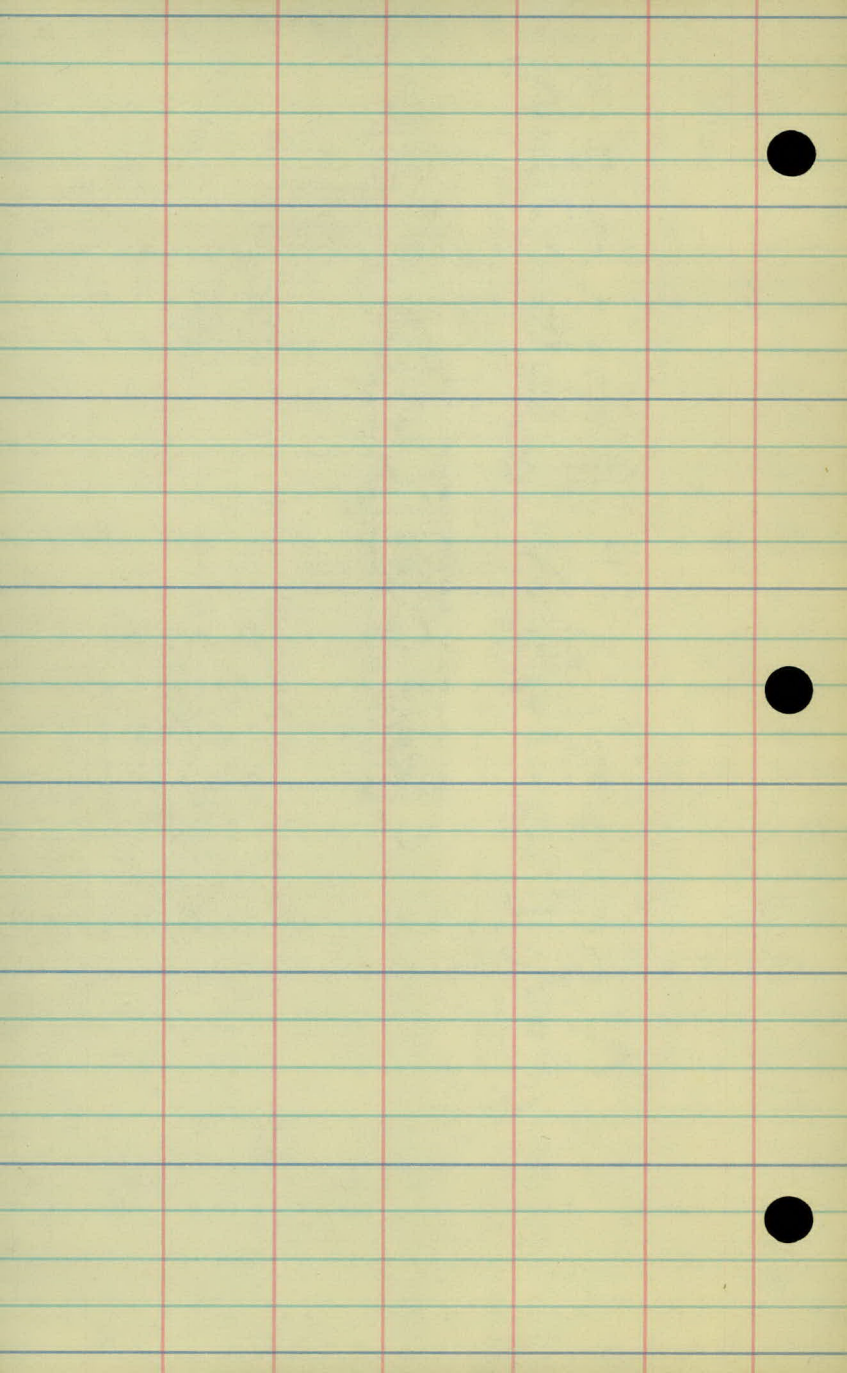
4+41.45 P.O.T.

0+00 E Western Ave.

N.W. 1/4, S.W. 1/4 of N.E. 1/4 13-29-23



20°-G. RT
 $\Delta 49^{\circ}12'$
 T. 131.83
 L.C. 246.00



Topography

$$19 + 58.22 = RT.$$

19

11'-9'

45 - 11-10'

18

9'-11'

Flume

2' 8" Plank  - 2' 8" Plank
Stone Riprap Bottom

450 6-12'

+12.27-P.C.

17

7'-11'

Tarula =

0+37.3-3.74'-North

0+0-Elmer

+12-End Flume 32-27'

+01-Flume 29'-24'

Trap

+03-Flume 28'-24'

+08-Flume 28'-15'

+55-Plank Wall-27'

+16-Culv 25' 36" X 14 C.M.

+09-Culv. 27' 014.

ENT

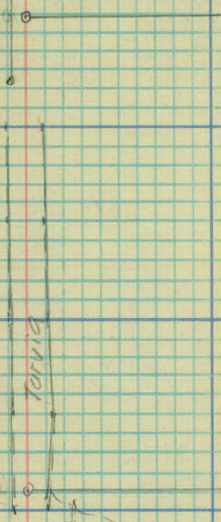
1011.9

ENT

+07-Culv. 24'

15" X 20" C.M.

+85-Culv. 24'



4

14' dth. 18'

150-8 h/d 1-15

17' 48'

130-10'-30'

3

SH/d 1-15' & 4-24'

SH/d 1-13' 150-0-20'

2

7-18'

150-5-16'

1

6'-14'

Detail of Flume

Same as

150-6-14'

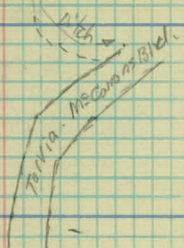
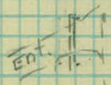
0/0

6'-15'

+419-18' } 2.5" x 20' C.M.
+49-Culv-19 }

+72-Culv-16.3'
22.5' x 22'
+50-Culv-57'

+49-Culv-19 }
+25-Culv-19 } 24' x 24' C.M.



SHALL

+21-Flume 22'-18'
+05-End-Trap 22-17
+97-Begin-Trap 22-17'
+83-Flume 20'-16'

+36-Culv-18' } 15" x 36' C.M.
+02-Culv-16' } NEW.

+32-Culv-20' }
+12-Culv-20' } 12' x 20' C.M.
OLD.

10

9

13-13.

8

14-13'

7

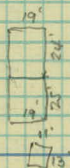
13-14'

6

13-14

5

7



+64- Cor. Garage 32'

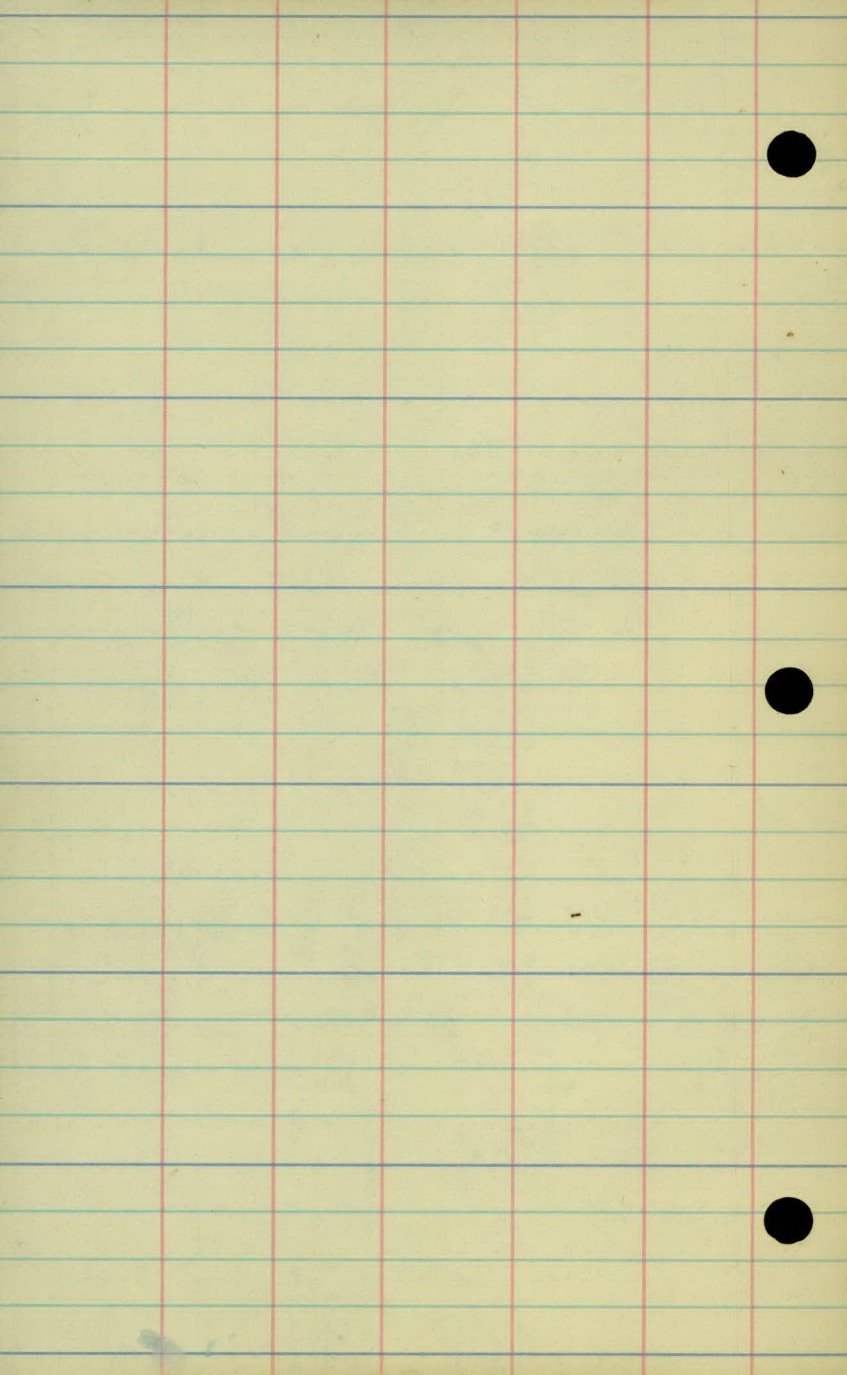
+40- Cor. Barn.

+14 Cor. Barn - 32'

+04- N.E. Cor. 43'

+04- N.W. Cor. Shed - 41'

for
 { Culvert 12' x 20' S.M.
 for 18'



Cross-Sections

Sta.	+	π	-	Elev.
B.M.	0.03	877.67		877.64
	1.12	866.33	12.46	865.21

17+0

17+50

18+0

T.P.	12.82	878.03	1.12	865.21
------	-------	--------	------	--------

+50

19+0

B.M.	9.46	887.04	0.39	877.64
------	------	--------	------	--------

0+0

0+33

27.

2

RT

(9)

Spike 20" oak 35' lt. Sta. 0-02

$\begin{array}{r} 13.0 \\ 50 \\ \hline 53.3 \end{array}$
 $\begin{array}{r} 114 \\ 31 \\ \hline 54.9 \\ 14.2 \\ \hline 52.1 - \text{Culv.} \end{array}$
 $\begin{array}{r} 13.3 \\ 28 \\ \hline 53.0 \end{array}$
 $\begin{array}{r} 133 \\ 25 \\ \hline 53.0 \end{array}$
 $\begin{array}{r} 106 \\ 23 \\ \hline 55.7 \end{array}$

$$\begin{array}{r} 9.1 \\ 57.2 \\ \hline 57.2 \end{array} \quad \begin{array}{r} 10.5 \\ 23 \\ \hline 55.8 \end{array} \quad \begin{array}{r} 12.7 \\ 50 \\ \hline 53.6 \end{array} \quad \begin{array}{r} 53.2 \\ 13.1 \\ \hline = 66.3 \end{array}$$

13.9
 $57.2 = \text{Culv.}$ ✓
 $57.2 \quad 57.5$
 $\frac{91}{50} \quad \frac{88}{46} \quad \frac{101}{42} \quad \frac{88}{39} \quad \frac{87}{27} \quad \frac{97}{25} \quad \frac{97}{24} \quad \frac{87}{22} \quad \frac{71}{13}$
 $\text{old } 0.76 \quad 57.2 \quad 57.5 \quad 57.6 \quad 56.6 \quad 56.6 \quad 57.6 \quad 59.2$

$\begin{array}{r} 13 \\ \hline 60.0 \end{array}$	$\begin{array}{r} 75 \\ 21 \\ \hline 58.8 \end{array}$	$\begin{array}{r} 86 \\ 47 \\ \hline 57.7 \end{array}$	$\begin{array}{r} 4.0 \\ 52 \\ \hline 62.3 \end{array} \times$	54.3
--	--	--	--	--------

7.2	5.2	5.1	5.1	3.8	3.1	2.4	3.6	5.2	5.2	3.8	1.8	+2.4
50	31	28	25	23	14	6.9	20	23	24	26	40	50
64.1	63.1	61.2	61.2	63.0	63.2		62.7	61.1	61.1	62.5	64.5	64.7

6.0	7.0	10.5	12.2	12.2	11.0	10.9	10.0	11.1	11.7	13.0	13.0	8.7	8.7
50	43	30	28	27	26	16	68.0	72	56	38	40	45	52
72.0	71.0	67.5	65.8	65.8	67.0	67.1		66.9	66.3	65.0	65.0	69.1	69.2

3.5	4.9	5.9	8.1	8.1	6.3	5.7	6.6	6.8	7.5	7.7	5.7	4.6
50	35	24	22	21	19	13	25	29	34	36	50	
74.5	73.1	72.1	69.9	69.9	71.7	72.3	71.4	71.2	70.5	70.3	72.3	73.4

$$\frac{5.5}{27.5} = \text{culv. - W. end}$$
$$\frac{4.1}{73.9} = \text{cu/v.}$$

Western Ry

2.7 = Cult. k. end.
84.5
75.3

$$\frac{7.7}{75.3} = Cu/V.$$

102	103	12.2	15.7	15.7	12.8	12.5
50	41	19	16	15	12	
76.8	76.7	74.8	71.3	71.3	74.2	74.5

9.8
24
77.2

Sta.	+	π	-	Elev.
		887.04		

0+50

1+0

1+50

T.P.	12.95	898.69	1.30	885.74
------	-------	--------	------	--------

2+0

2+50

T.P.	10.89	906.84	2.74	895.95
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3+0

3+50

44

2

24

(10)

✓

$$\begin{array}{r} 5.1 \quad 6.0 \quad 10.6 \quad 10.6 \quad 9.0 \quad 8.2 \quad 7.2 \quad 10.0 \quad 9.0 \quad 7.7 \quad 8.3 \\ 44 \quad 24 \quad 185 \quad 17 \quad 14 \quad 15 \quad 20 \quad 21 \quad 37 \quad 50 \\ \hline 81.9 \quad 81.0 \quad 76.4 \quad 76.4 \quad 78.0 \quad 78.8 \quad 77.8 \quad 77.0 \quad 78.0 \quad 79.3 \quad 78.7 \end{array}$$

✓

$$\begin{array}{r} 35 \quad 5.0 \quad 6.8 \quad 6.8 \quad 5.0 \quad 4.6 \quad 5.1 \quad 6.0 \quad 6.0 \quad 4.7 \quad 3.6 \quad 3.8 \\ 25 \quad 18 \quad 20 \quad 17 \quad 16 \quad 18 \quad 20 \quad 21 \quad 24 \quad 32 \quad 50 \\ \hline 83.5 \quad 82.0 \quad 80.2 \quad 80.2 \quad 82.0 \quad 82.4 \quad 81.9 \quad 81.0 \quad 81.0 \quad 82.3 \quad 83.4 \quad 83.2 \end{array}$$

2150

$$\begin{array}{r} 1.7 \quad 4.4 \quad 4.4 \quad 2.4 \quad 1.3 \quad 1.1 \quad 1.6 \quad 2.0 \quad 0.7 \quad +1.0 \quad +1.3 \\ 22 \quad 19 \quad 17 \quad 15 \quad 85.7 \quad 8 \quad 17 \quad 23 \quad 24 \quad 31 \quad 50 \\ \hline 85.7 \quad 82.6 \quad 82.6 \quad 84.6 \quad 85.9 \quad 85.4 \quad 85.0 \quad 86.3 \quad 88.0 \quad 88.3 \end{array}$$

$$\begin{array}{r} 7.8 \quad 12.2 \quad 12.2 \quad 10.1 \quad 9.5 \quad 9.4 \quad 10.0 \quad 10.3 \quad 6.7 \quad 5.6 \quad 6.0 \\ 25 \quad 19 \quad 17 \quad 14 \quad 71 \quad 71 \quad 18 \quad 22 \quad 26 \quad 32 \quad 50 \\ \hline 90.9 \quad 86.5 \quad 86.5 \quad 88.6 \quad 89.2 \quad 89.3 \quad 98.7 \quad 88.4 \quad 92.0 \quad 93.1 \quad 92.7 \end{array}$$

$$\begin{array}{r} 2.5 \quad 7.5 \quad 7.5 \quad 6.4 \quad 5.9 \quad 5.6 \quad 6.0 \quad 6.9 \quad 4.6 \quad 3.7 \quad 4.9 \\ 28 \quad 20 \quad 17 \quad 14 \quad 92.8 \quad 5 \quad 15 \quad 24 \quad 27 \quad 32 \quad 50 \\ \hline 96.2 \quad 91.2 \quad 91.2 \quad 92.2 \quad 93.1 \quad 92.7 \quad 91.8 \quad 94.1 \quad 95.0 \quad 93.8 \end{array}$$

$$\begin{array}{r} 3.2 \quad 13.0 \quad 13.0 \quad 11.3 \quad 10.9 \quad 10.7 \quad 10.8 \quad 11.6 \quad 8.7 \quad 8.4 \\ 30 \quad 19 \quad 17 \quad 15 \quad 9 \quad 18 \quad 27 \quad 30 \quad 50 \\ \hline 93.6 \quad 93.8 \quad 93.8 \quad 95.5 \quad 95.9 \quad 96.1 \quad 96.0 \quad 95.2 \quad 98.1 \quad 98.4 \end{array}$$

 10.6 = Cu/V. W end.

$$\begin{array}{r} 9.4 \\ 96.2 \end{array} = \text{Cu/V. Z end}$$

$$\begin{array}{r} 9.0 \quad 9.0 \quad 7.0 \quad 7.1 \quad 7.0 \quad 8.3 \quad 5.0 \\ 19 \quad 17 \quad 15 \quad 99.7 \quad 17 \quad 25 \quad 50 \\ \hline 97.8 \quad 97.8 \quad 99.8 \quad 99.8 \quad 99.8 \quad 98.5 \quad 01.8 \end{array}$$

905.84

440

T.P.

10.83

9144.61

3.06

903.78

4412

3450

440

4450

540

5450

640

750

740

750

X

$\frac{6.6}{18.5}$	$\frac{6.6}{17}$	$\frac{4.5}{14}$	$\frac{4.6}{02.2}$	$\frac{5.6}{27}$	$\frac{7.1}{32}$	$\frac{8.1}{50}$	$\frac{8.5}{69}$	$\frac{8.7}{97}$	$\frac{8.7}{97}$
00.2	00.2	02.3		01.2					
						ditch.	10440		
						99.7	98.7	98.3	96.1

$\frac{11.7}{02.9}$	$\frac{12.0}{02.6}$	$\frac{13.5}{01.1}$	$\frac{6.0}{08.6}$	$\frac{6.6}{08.0}$	$\frac{7.1}{07.5}$

54
30
09.2

10.8
35
15.4

$\frac{10.5}{33}$	$\frac{2.5}{28}$	$\frac{12.5}{175}$	$\frac{12.3}{16}$	$\frac{10.1}{13}$	$\frac{9.8}{04.8}$	$\frac{9.9}{73}$	$\frac{10.7}{16}$	$\frac{10.7}{19}$	$\frac{6.5}{26}$	$\frac{6.1}{59}$
15.1	12.1	02.1	02.1	04.3						08.5

$\frac{4.7}{75}$	$\frac{9.5}{19}$	$\frac{9.5}{18}$	$\frac{7.8}{15}$	$\frac{8.0}{06.6}$	$\frac{2.9}{14}$	$\frac{9.4}{17}$	$\frac{9.4}{18}$	$\frac{6.9}{21}$	$\frac{6.8}{50}$
09.9	05.1	05.1	06.8						

9.6 = Cult. W. end.
05.0

9.4 = Cult. W. end.

8.95 = " C. end. 9.66
05.6

8.8 = Cult. End

$\frac{5.4}{22}$	$\frac{8.0}{185}$	$\frac{6.5}{13}$	$\frac{6.5}{08.1}$	$\frac{6.7}{15}$	$\frac{8.1}{19}$	$\frac{6.8}{22}$	$\frac{6.8}{50}$
09.2	04.6	08.1					07.8

$\frac{5.3}{22}$	$\frac{7.3}{19}$	$\frac{7.3}{18}$	$\frac{5.4}{13}$	$\frac{5.5}{09.1}$	$\frac{5.7}{14}$	$\frac{7.8}{19}$	$\frac{10.8}{41}$	$\frac{10.8}{41}$
09.3	07.3	07.3	09.2				03.8	8/149.

$\frac{5.3}{24}$	$\frac{6.7}{215}$	$\frac{6.7}{18}$	$\frac{4.6}{13}$	$\frac{4.8}{09.8}$	$\frac{5.1}{14}$	$\frac{7.8}{20}$	$\frac{8.2}{31}$	$\frac{8.2}{31}$
09.3	07.9	07.9	10.0				06.4	13/149.

085

$\frac{5.0}{24}$	$\frac{6.1}{21}$	$\frac{6.1}{17}$	$\frac{4.1}{13}$	$\frac{4.2}{10.4}$	$\frac{4.5}{13}$	$\frac{6.3}{18}$	$\frac{6.3}{50}$	$\frac{6.0}{22}$	$\frac{8.7}{50}$
09.6	08.2	08.2	10.5						05.9

09.1

$\frac{3.3}{24}$	$\frac{5.5}{205}$	$\frac{5.4}{175}$	$\frac{3.7}{13}$	$\frac{3.6}{11.0}$	$\frac{3.8}{13}$	$\frac{5.7}{17.5}$	$\frac{5.7}{20.5}$	$\frac{3.1}{25}$	$\frac{5.6}{50}$
11.3	09.1	09.2	10.9						09.0

914.61

840

+50

940

T.P.

2.20

912.44

+50

1040

+50

T.P.

12.13

924.35

2.39

912.22

10.22

932.25

2.32

924.03

□ #5

0.32

931.93

□ #4

10.11

922.14

□ #3

1.43

920.14

13.54

918.71

T.P.

2.95

909.49

13.60

906.54

□ #2

1.12

897.08

13.53

895.96

T.P.

0.95

884.59

13.44

883.64

□ #1 = 040

10.11

874.48

B.M.

6.95

877.64

909.6
 $\begin{array}{r} 2.3 \quad 3.5 \quad 5.0 \quad 4.8 \quad 3.0 \quad 2.8 \quad 3.2 \quad 4.7 \quad 4.7 \quad 3.2 \quad 4.1 \\ 27 \quad 23 \quad 21 \quad 17 \quad 14 \quad 11.8 \quad 13 \quad 17 \quad 20 \quad 23 \quad 50 \\ 12.3 \quad 11.1 \quad 09.6 \quad 09.8 \quad 11.6 \quad 11.8 \quad 13 \quad 17 \quad 20 \quad 23 \quad 50 \\ 10.5 \end{array}$

910.3
 $\begin{array}{r} 1.8 \quad 2.3 \quad 4.4 \quad 2.5 \quad 2.6 \quad 2.8 \quad 4.7 \quad 4.7 \quad 3.6 \quad 5.5 \\ 25 \quad 21 \quad 18 \quad 13 \quad 12.0 \quad 13 \quad 18 \quad 20 \quad 23 \quad 50 \\ 12.8 \quad 10.3 \quad 10.2 \quad 12.1 \quad 12.0 \quad 13 \quad 18 \quad 20 \quad 23 \quad 50 \\ 09.1 \end{array}$

910.3
 $\begin{array}{r} 1.7 \quad 4.3 \quad 4.2 \quad 2.2 \quad 2.2 \quad 2.5 \quad 4.5 \quad 4.5 \quad 3.4 \quad 5.4 \\ 25 \quad 21 \quad 18 \quad 13 \quad 12.4 \quad 13 \quad 18 \quad 20 \quad 22 \quad 50 \\ 12.9 \quad 10.3 \quad 10.4 \quad 12.4 \quad 12.4 \quad 13 \quad 18 \quad 20 \quad 22 \quad 50 \\ 09.2 \end{array}$

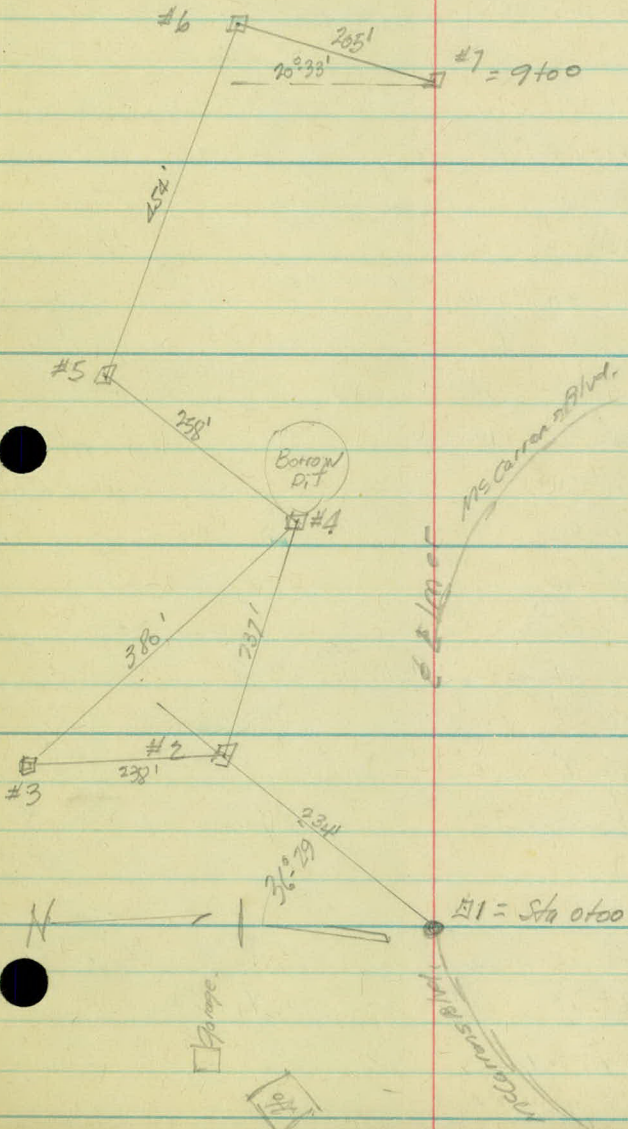
10.1.10.9.10

910.3
 $\begin{array}{r} 1.8 \quad 4.3 \quad 4.1 \quad 2.0 \quad 2.0 \quad 2.4 \quad 4.3 \quad 4.8 \quad 6.3 \\ 25 \quad 21 \quad 18 \quad 13 \quad 12.6 \quad 13 \quad 18 \quad 20 \quad 50 \\ 12.8 \quad 10.3 \quad 10.5 \quad 12.6 \quad 12.6 \quad 13 \quad 18 \quad 20 \quad 50 \\ 09.3 \end{array}$

909.6
 $\begin{array}{r} 3.4 \quad 4.6 \quad 4.5 \quad 2.0 \quad 1.8 \quad 2.0 \quad 4.1 \quad 5.4 \quad 6.3 \\ 23 \quad 21 \quad 18 \quad 13 \quad 12.8 \quad 13 \quad 17 \quad 28 \quad 50 \\ 11.2 \quad 10.0 \quad 10.0 \quad 12.6 \quad 12.8 \quad 13 \quad 17 \quad 28 \quad 50 \\ 09.3 \end{array}$

909.8
 $\begin{array}{r} 4.8 \\ 4.1 \end{array}$

STADIA	Object	Az.	Dist.	Ver. A.	Rod	Elev.	
B1 0 to 6 Elmer B.S. Elmer. 90°							
B1		+ 5.2	$\Sigma = 879.7$			874.48	
SAV cor House	297°-44'	181'			2.5	77.2	
BE "	304°-54'	167'			2.5	77.2	
	316°-13'	163'			2.3	77.4	
	325°-43'	298'			1.3	78.4	
SE Cor Garage	322°-52'	197'			1.3	78.4	
SW Cor Garage	317°-45'	201'			1.3	78.4	
	331°-27'	183'			6.0	73.7	
Edge of Drive	310°-20'	111'			5.1	74.6	
	325°-47'	113'			8.5	71.2	
Toe of Slope of Elmer's	0°-20'	92'			3.7	76.0	
Edge of Western St	6°-50'	92'			0.0	79.7	
"	18°-36'	97'		+2.8,	0.0	79.7	
	0°-45'	140'	+1.10		-2.4	77.3	?
B#2	36°-29'	234'				895.96	
B#2	+ 5.0	$\Sigma = 901.00$				895.96	
	127°-45'	255'	+1°-30'	+4.1,	-0.9	00.1	?
	122°-8'	210'	+3°-30'	+12.8,	+7.8	08.8	?
	155°-2'	114'			11.7	89.3	
	201°-15'	98'			17.3	83.7	
	247°-45'	95'			17.2	83.8	
End of Road	278°-0'	116'			13.0	88.0	
	163°-53'	23'			8.0	93.0	
	129°-35'	112'			3.7	97.3	
B#4	106°-08'	237'					
B#3	359°-01'	238'					



Object	As.	Dist	Ver. A	Red	Elev.
* B#3	+5.1	7923.8			98.71
	210°-27'	182'		21.0	02.8
	191°-55'	147'		17.4	06.4
	161°-43'	202'		14.2	09.6
	142°-28'	300'		7.3	16.5
	127°-9'	275'		1.8	22.0
	147°-18'	176'		7.9	15.9
	151°-20'	85'		10.0	13.8
	208°-30'	88'		10.0	13.8
	221°-40'	134'		14.2	09.6
Ridge	262°-0'	86'		10.3	13.5
..	262°-0'	45'		6.6	17.2
	208°-0'	91'		13.1	10.7
	351°-30'	130'		13.1	10.7
	9°-50'	180'		9.0	14.8 ✓
	30°-20'	203'		5.7	18.1
	48°-55'	283'		.6	23.2
	62°-27'	242'	+7.7, +1°50'	+2.6	26.4
	62°-27'	175'		3.5	20.3
	81°-26'	220'	+8.3, +2°10'	+3.2	27.0
	81°-26'	135'		3.2	20.6
	37°-0'	163'		3.7	20.1
	6°-43'	100'		5.5	18.3
	53°-30'	38'		3.4	20.4
	327°-53'	25'		5.4	18.4
	119°-55'	103'		7.5	16.3
	104°-42'	224'		2.9	20.9

Ridge

Obj.	Ag	Dist	Ver A	Rob	Elev.
		137°-35' 322'		4.7	19.1
		142°-7' 302'		7.4	16.4
to #4		142°-48' 380'			
T@ #4	+4.8	$\pi = 926.90$			922.14
		$\pi 926.90$			

to #2	106-08'				
Rim Bottom Pit	72°-15'	62'		1.0	25.9
"	86°-0'	95'		3.1	23.8
"	104°-56'	114		9.0	17.9
"	128°-20'	117		11.3	15.6
"	145°-0'	92		10.1	16.8
	174°-7'	66		11.0	15.9
Bot. of Pit	159°-8'	56		19.4	07.5
	128°-36'	32		19.1	07.8
	103°-40'	61		19.1	07.8
	112°-55'	97		19.2	07.7
	92°-48'	83		14.2	12.7
	130°-10'	100		21.0	05.9
	100°-40'	180		14.3	12.6
	82°-25'	181		10.7	16.2
to #5	43°-19'	258			

T@ #5	+5.0	$\pi = 936.9$	936.90	931.93
	176°-35'	53'	8.6	28.3
	214°-0'	80'	9.4	27.5
	219°-43'	148'	9.4	27.5
	269°-5'	122	15.0	21.9

Rim Burrow Pit

Obj Az Dist Ver Δ Rod Elev

7 936.90

311°-45'	157'		14.0	22.9
316°-20'	198'		10.8	26.1
329°-45'	274'		9.2	27.7
343°-33'	275'		7.0	29.9
00°-0'	247		5.1	31.8
1°-0'	157'		1.6	35.3
340°-0'	141'		7.2	29.7
324°-0'	57		5.6	31.3
33°-38'	50'		2.3	34.6
39°-30'	170'	+1° ^{+3.5} 10'	-1.5	35.9
40°-55'	250'	+0°10'		?
62°-20'	248'		7.4	29.5
45°-15'	420'	+0° ^{+6.1} 50'	+1.1	38.0
54°-18'	507		1.0	35.9
60°-0'	426		3.3	33.6
69°-0'	515		9.6	27.3
81°-30'	672		3.1	33.8
89°-35'	622		6.8	30.1
98°-32'	480		9.1	27.8
83°-13'	454		8.2	28.7
74°-41'	420		9.7	27.2
78°-14'	300		15.8	21.1
99°-0'	323		19.0	17.9
101°-0'	245		19.2	17.7
103°-43'	187		16.0	20.9
103°-45'	123		12.2	24.7

Obj Az Dist Ver Δ Rod Elev

π 936.90

103°-45' 114' 8.8 28.1

71°-25' 115' 5.3 31.6

#6 105°-7' 454' 11.95 924.95

@ #6 +5.05 π=930.00 π 930.00

258°-30' 121' 12.5 17.5

257°-45' 205' 15.0 15.0

255°-4' 322' 18.8 11.2

255°-4' 380' 19.0 11.0

233°-38' 190' 15.7 14.3

182°-30' 115' 15.0 15.0

148°-10' 153' 15.7 14.3

Ridge 104°-40' 268' 9.3 20.7

75°-0' 275' 2.2 27.8

91°-0' 192' 8.0 22.0

67°-40' 104' 2.7 27.3

121°-5' 42' 6.1 23.9

239°-0' 55' 8.8 21.2

#7=9+00 200°-34' 205' 17.6 9124

@ #7=Sk.

to #6 20°-33' 205'

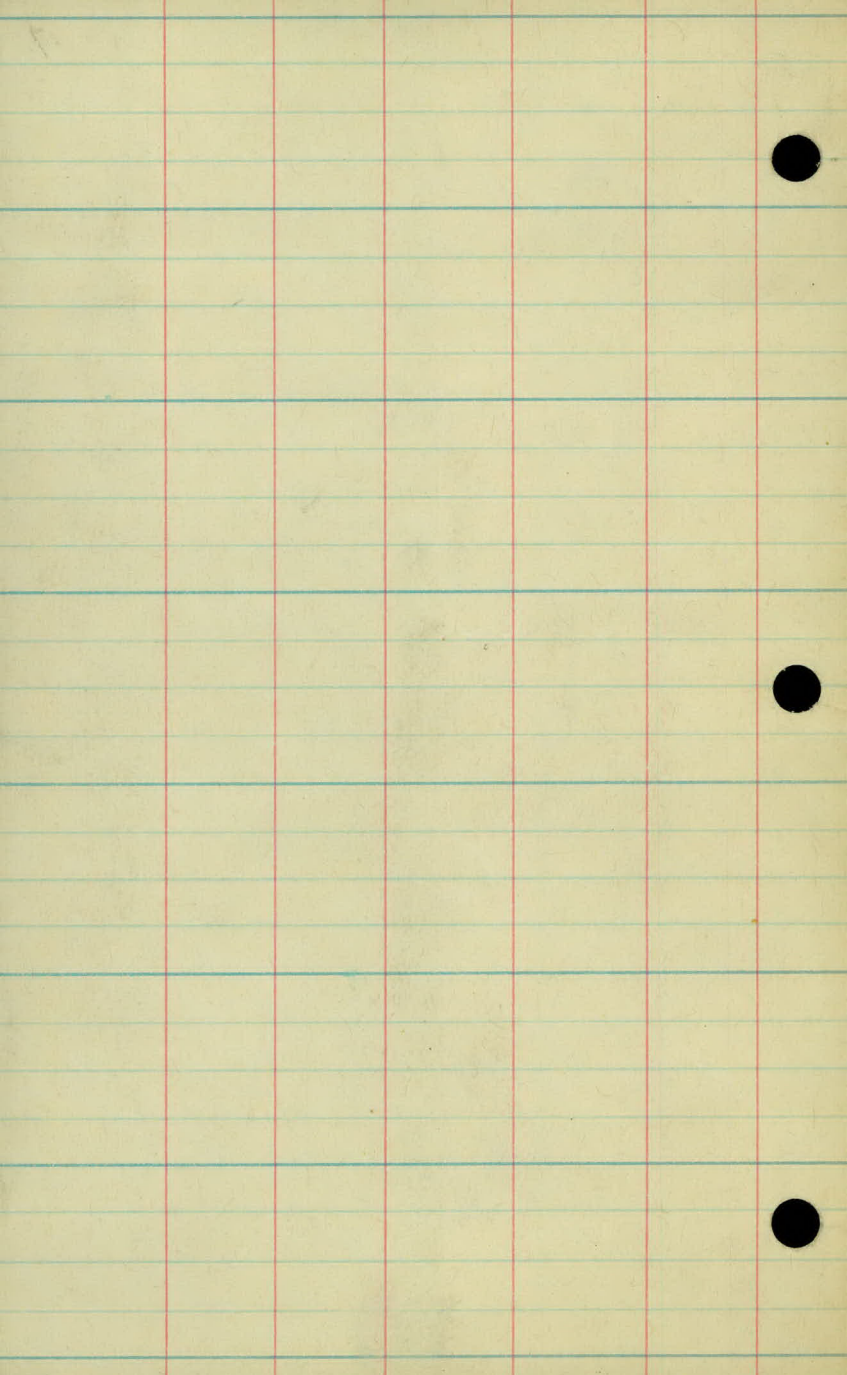
9x90

62 5

50 0

17.6 -

/



3/13/36

H.T. Portell

Levels & X-Sections

No. McCarrons Blvd.

Sta	+	π	-		
BM.	12.00	889.64			877.64
0	12.79	901.89	0.54	889.10	
0	1.08	899.07	390	897.99	
24			1.9	97.2	
25			4.7	94.4	
26			9.0	90.1	
27			12.9	86.2	
0	8.93	895.09	12.91	886.16	
28			12.4	83.7	
29			14.2	80.9	
30			11.1	84.0	
31			6.5	88.6	
32			3.4	91.7	
33			2.3	92.8	
34			2.8	92.3	

R.R. SpK in 20" Oak N.W. Cor. Western & McC. Blv

Sta	+	K	-	
		895.09		
○	4.28	896.53	2.84	892.25
33		X-Section		92.8
	+80			92.5
			Drive Way	Rt
34				92.2
	+50	Low Point		91.8
	+89	W: Line Bauman Garage		91.7
35				
35		± Bauman Gar Rt.		91.7
35+50				91.9
36				92.5
37			1.1	95.4
○	7.27	902.67	1.13	895.40

Sta. 34+00 Top Pavement

$\frac{+2.0}{50}$ $\frac{00}{25}$ $\frac{1.1}{19}$ $\frac{3.7}{10}$ 37 $\frac{4.2}{9}$ $\frac{3.8}{15}$ $\frac{+0.5}{19}$ $\frac{+1.5}{50}$

4.0 $\frac{4.0}{10}$ $\frac{4.9}{32}$ $\frac{6.4}{55}$ $\frac{7.9}{88}$ $\frac{8.2}{100}$

$\frac{+12.8}{100}$ $\frac{+7.8}{59}$ $\frac{00}{21}$ $\frac{3.4}{17}$ $\frac{4.8}{10}$ 43 $\frac{4.4}{12}$ $\frac{5.1}{17}$ $\frac{9.5}{31}$ $\frac{11.7}{50-76}$ Gar. Floor 10.1
124

4.7 $\frac{5.1}{15}$ $\frac{12.3}{32}$ $\frac{15.8}{60}$ $\frac{16.4}{65}$ $\frac{17.0}{75}$ $\frac{16.1}{95}$

$\frac{+12.8}{100}$ $\frac{+5.8}{78}$ $\frac{0.3}{50}$ $\frac{3.6}{25}$ $\frac{4.2}{17}$ $\frac{4.9}{71}$ 4.8 $\frac{5.1}{13}$ $\frac{6.7}{32}$ $\frac{13.8}{51}$ $\frac{13.0}{72}$ $\frac{88}{100}$

Baumann Floor 5.80
145

Top Prop. Fill 8.38

4.8 bar Floor Baumanns 4.78

T.SL

$\frac{10.0}{26}$ $\frac{5.1}{14}$ 4.6 $\frac{4.9}{8}$ $\frac{8.5}{17}$ $\frac{9.3}{24}$

Toe Sl

Toe Slope

$\frac{14.5}{31}$ $\frac{4.6}{11}$ 4.0 $\frac{4.4}{10}$ $\frac{9.3}{19}$ $\frac{10.5}{25}$

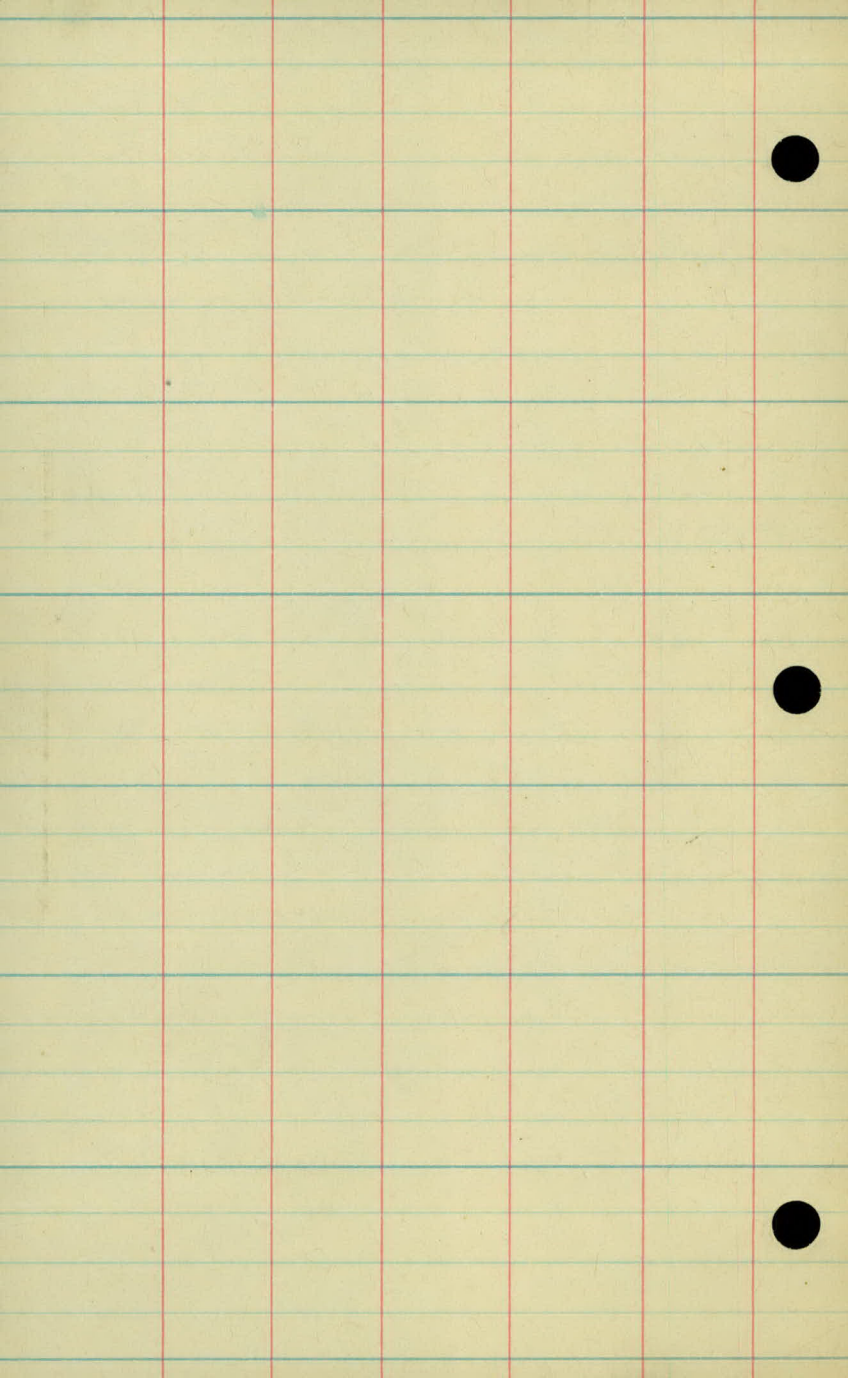
Sta	+	Σ	-	
		902.67		
38			4.7	98.0
39			3.6	99.1
40			4.5	98.2
41			6.2	96.5
42			8.3	94.4
43			10.0	92.7
44			11.8	90.9
○	0.08	890.95	11.80	890.87
45			3.5	86.5
46			8.1	81.9
47			11.9	78.1
+ 15		12.23 & Rice St. Pavement	12.23	878.72
B.M.			10.91	880.04

Top Pavement Sta 44+00

Spk in P.P. N.W. Cor. McC. Blvd + Rice

Sta	+	Σ	-	
		890.95		
①	12.33	894.32	896	881.99
②			0.35	893.97
B.M.				898.64

Guy Pole SE Cor Elmer + Rice BM. Gone pole replac



H.T. Purcell

3-14-36

X-Section Extensions

Elmer St.

Sta 0+00 to Sta. 6+00

Sta + π

B.M. 10.15 887.79 877.64

0+00 E Western 74.5

1+00

0 12.55 899.86 / 0.48 887.31

2

3

0 2.51 901.70 0.67 899.19

4

0 12.30 911.49 2.51 899.19

5

06.6 06.6 ✓

Note - All section
taken Rt. of E only

RR. SpK in 20" Oak

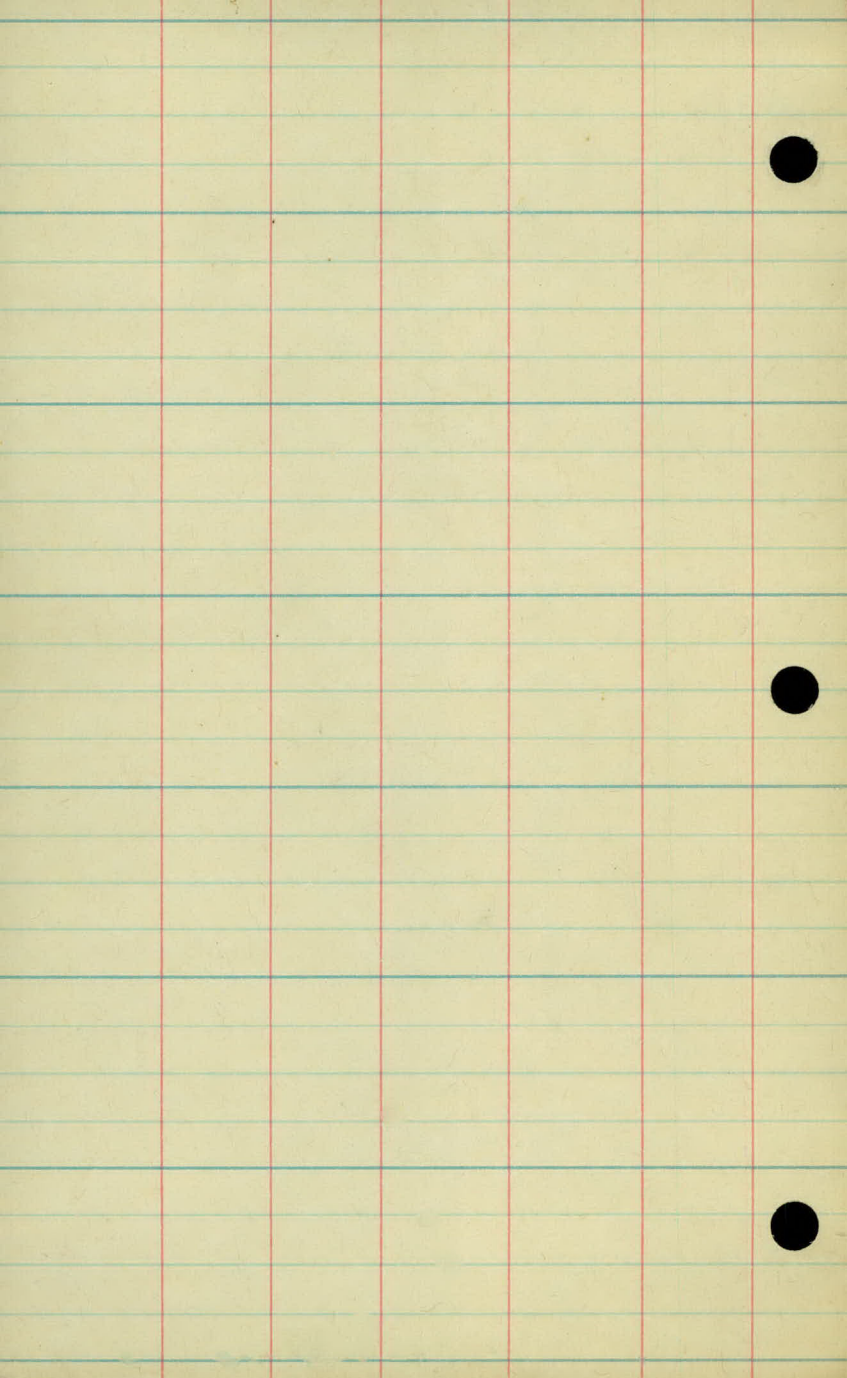
			74.0	74.1	74.2
13.3	<u>13.8</u>	<u>14.5</u>	<u>13.8</u>	<u>13.7</u>	<u>13.6</u>
74.5	<u>16</u>	<u>20</u>	<u>24-50</u>	<u>80</u>	<u>100</u>
	74.0	73.2			
			15.4	11.9	11.0
			<u>250</u>	<u>200</u>	<u>173</u>
			72.4	75.9	76.8
83.8	85.5		83.7	82.6	80.8
<u>4.0</u>	<u>2.3</u>		<u>4.1</u>	<u>5.2</u>	<u>7.0</u>
66	100-135		176	190	200
					12.0
					<u>250</u>
					75.8

92.8	92.4	91.9	89.5	85.1	80.7
<u>7.1</u>	<u>7.5</u>	<u>8.0</u>	<u>10.4</u>	<u>14.8</u>	<u>19.2</u>
60	87	100	132	180	200
					23.0
					<u>250</u>
					76.9

95.1	93.8	90.2	86.1	79.8
<u>4.8</u>	<u>6.1</u>	<u>7.7</u>	<u>13.8</u>	<u>20.1</u>
64	100	151	200	250

98.2	96.3	88.5
<u>3.5</u>	<u>5.4</u>	<u>13.2</u>
100	152	200

06.7	07.8	05.0	01.0	95.1	4 Mc C. Blk
4.8	<u>3.7</u>	<u>6.5</u>	<u>10.5</u>	<u>16.4</u>	<u>94.0</u>
	61	100	141	154	171
				19.2	15.8
				<u>225</u>	<u>200</u>
				92.3	95.7
					96.3



Book 23 - Dr. 11

Check on Culvert under Mc. Carron's
Blvd. So. of Mrs. Alice Mc. Carron
Loft's house draining the swamp
into Mc. Carron's Lake. See letter
Mr. Schulz dated 6/1/37.

75. 6/14/37

Sto.	+	π	-	Elev.
B.M.	0.35	850.49		850.14
T.P.	12.04	851.27	11.76	839.23
B.M.	5.85	851.27	5.85	845.42

Section thru. { 36" x 14' West End. } C.M. Culvert.
 +0+00 = 4' { 44" x 24' East End. }
 McCarran's Blvd

Going West in Ditch 38'

↓

1

✓

3

4

5

6

7

Lt.

2

Rt.

Spike in 10" Fence Post - Ent. to loc. Ho.

Spike in 10" Willow @ Culvert Site.

Inv. West					Inv. East				
9.6	9.8	5.1			10.7	10.0	10.4	11.2	
100	18	10	45	4.7	5.5	20	23	100	
				9	15			200	
841.6					840.6				
					- Surf. of Lake				
					118	131	12.04		
					300	400	415		
					539.23				

8.0	8.3	9.7	8.6	9.2
51	5		6	40

← Up	8.4	8.2	8.6	8.5	9.7	8.0	9.0	8.2	8.6	up.7
	100	84	27	4		4	14	100	150	

← Up	8.3	8.7	9.2	8.7	7.9	9.0	7.3	8.8	8.5	8.4	→ Up
	100	85	31	17	5		4	16	100	175	

← Up	6.7	7.9	8.4	7.4	8.7	7.2	8.7	8.3	8.1	→ Up
	100	50	20	4	8.7	4	25	100	150	

← Up	3.2	6.8	7.6	7.8	7.2	8.6	6.9	8.0	8.4	7.9	7.2	→ Up
	100	84	45	17	4		4	15	25	84	100	

← Up	5.2	7.1	7.3	6.9	8.4	6.6	7.8	7.4	5.3	→ Up
	75	50	28	4		4	27	66	100	

← Up	5.4	6.6	7.4	6.6	8.0	6.4	7.3	7.2	7.4	→ Up
	75	50	29	4		4	18	50	100	

The present culvert is composed of 24' of 42" C.M. pipe & 14' of 36" C.M. pipe. Laid on gravel & rock. If relayed the pipe should be made of uniform size 42" thruout and if lowered additional gravel & rock placed account of soft bottom. The pipe lays true now & is not bowed, the jolt being account of the different sizes of pipe 42" & 36"

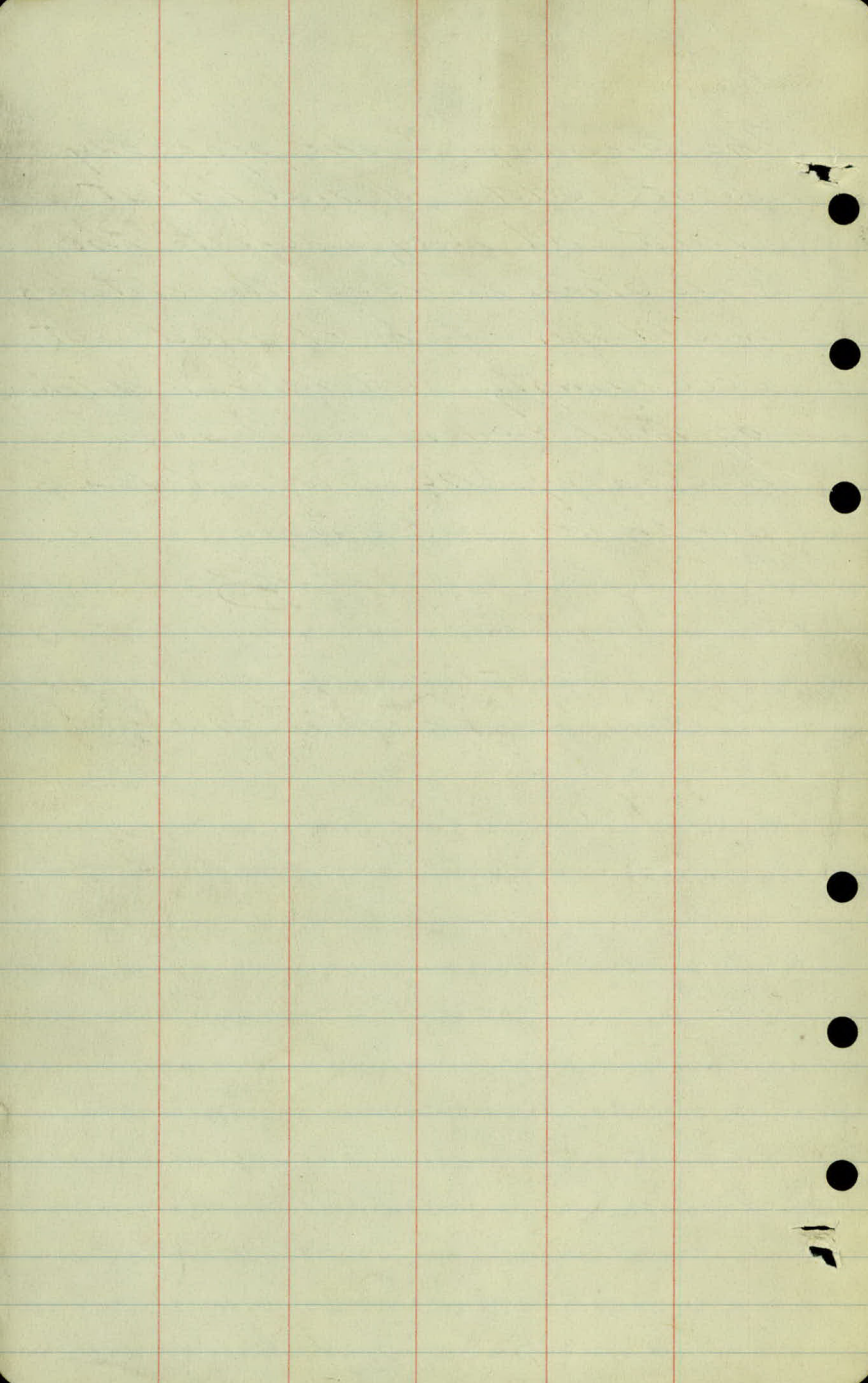
The difference in elevation of inlet & outlet is one foot. The low end is 1.4 feet above present lake level.

The nearby low land draining thru pipe is flat. In excavating the present ditch the dirt was evidently cast along sides preventing to a certain extent the lateral drainage to the ditch.

As to land flooding in Spring of year. This must be due to alternate day thaws & night freezes gradually building up an ice level in the culvert & plugging same.

The lowering of the pipe say
6" at outlet end and 1'4" at
inlet end may alleviate the
situation. However the ditches
would have to be cleaned out
accordingly and lateral ditching
by land owner would be
necessary. The attached levels
cover the situation.

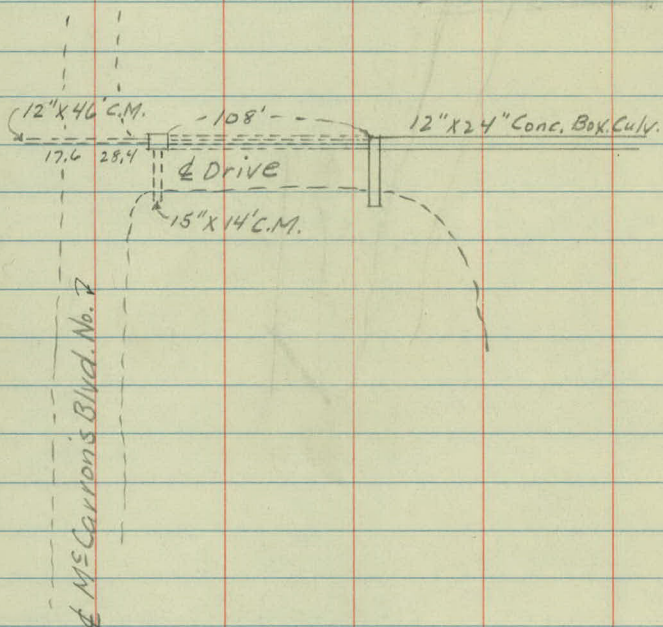
FB



Drainage Survey

McCarroll Bldg 166 E 1st St

Platted by
A. L. Bartholomew
3-3-38



Elmer St

Equr. $23+00$
 $2+37.36 =$

$0+00 =$
4+13.62 Elmer St

$63.68'$
 $72^{\circ}12'$

P.I. 0+63.68

$44'$
 $49^{\circ}05'$

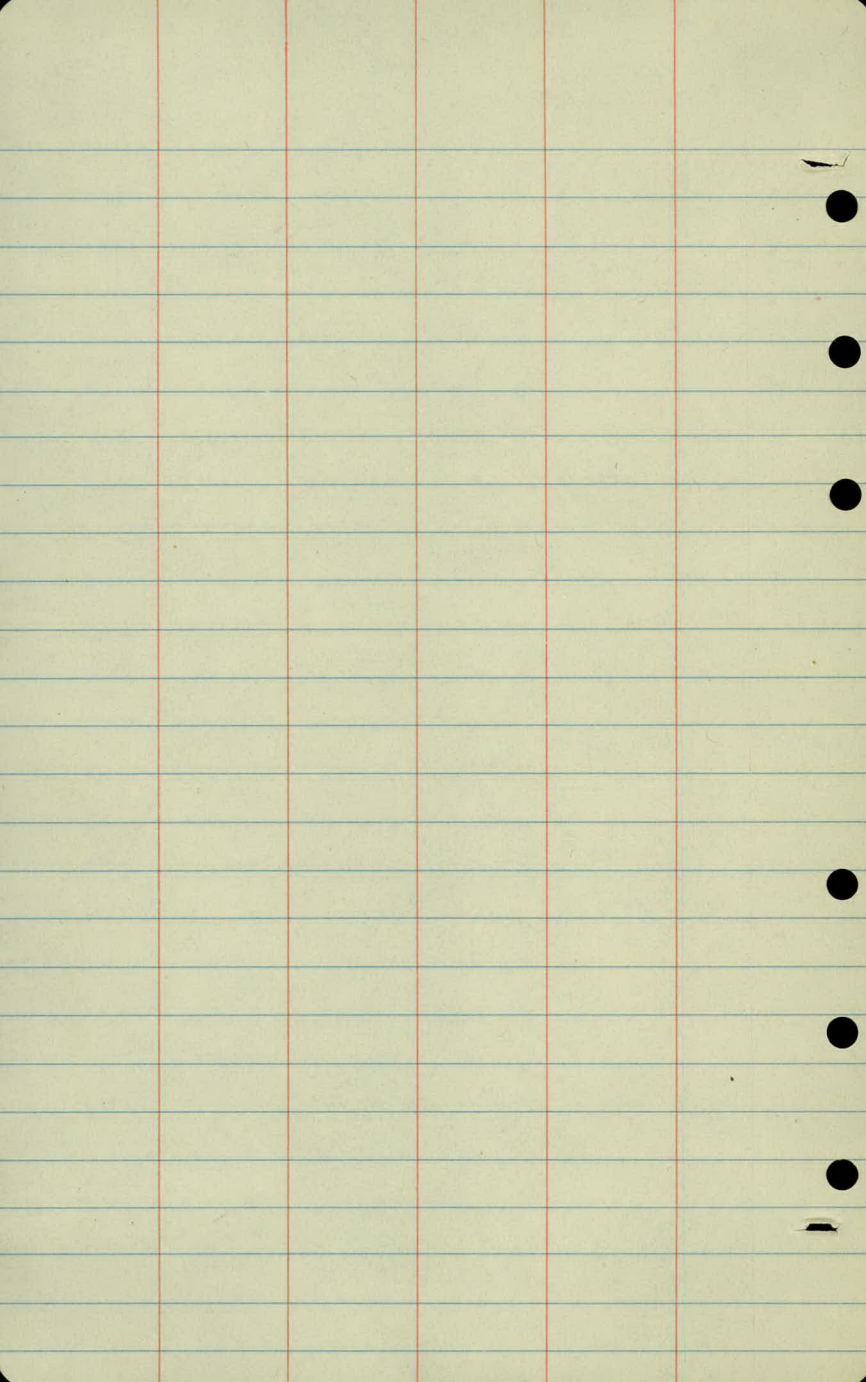
P.I. 140+68

$129.68'$

$29^{\circ}00'$

Elmer St

Western Ave.



X sections

Sta	+	π ✓	-	Elev.
B.M.	6.15	904.94		898.79
0	-20	22+43		903.4
	-15	+48		03.9
0+00		+62.64		03.0
	41.9	+82		02.2
	+34	+97		01.4
+63.88		23+26.32		98.7
+87		+50		99.0
1	+07.68	+70.32	✓	97.3
I.P.	2.56	901.60	5.90	899.04
+50		24+13		97.5
2		+63		96.2
25+00		Elev.		93.7

Lt.

4

Rt.

Spk. in Light Pole Elmer & McGarrone Blvd No

$$\frac{1.5}{15} \quad \frac{15}{15} \quad \frac{10.5}{15}$$

$$\frac{0.8}{15} \quad \frac{1.0}{15} \quad \frac{1.2}{15}$$

$$\frac{1.2}{15} \quad \frac{1.9}{15} \quad \frac{2.6}{15}$$

$$\frac{1.8}{15} \quad \frac{2.7}{15} \quad \frac{3.2}{15}$$

$$\frac{2.0}{15} \quad \frac{13.7}{11} \quad \frac{1.4}{3.0} \quad \frac{3.5}{3.0} \quad \frac{4.5}{15} \quad \frac{4.0}{15}$$

$$\frac{+25}{17} \quad \frac{5.1}{6} \quad \frac{6.2}{15} \quad \frac{6.1}{15}$$

$$\frac{+1.5}{15} \quad \frac{+1.3}{8} \quad \frac{5.9}{2} \quad \frac{6.9}{15} \quad \frac{6.6}{15}$$

$$2.0, \quad \frac{+1.1}{11} \quad \frac{7.6}{15} \quad \frac{7.0}{15}$$

$$\frac{+4.1}{15} \quad \frac{+3.9}{10} \quad \frac{4.1}{4} \quad \frac{5.1}{15} \quad \frac{4.8}{15}$$

$$\frac{+4.4}{15} \quad \frac{0.0}{8} \quad \frac{5.4}{3} \quad \frac{6.4}{6} \quad \frac{6.0}{15} \quad \frac{5.9}{15}$$

$$\frac{2.4}{15} \quad \frac{2.8}{9} \quad \frac{4.3}{5} \quad \frac{8.0}{1} \quad \frac{7.9}{4} \quad \frac{7.5}{4} \quad \frac{7.2}{15}$$

✓
901.60

25 +50

92.2

26

89.5

T.P.

0.70

✓
890.74

11.56

890.04

+50

87.8

27

85.9

+50

83.8

T.P.

3.37

✓
886.00

8.11

882.69

28

82.3

+50

80.8

29

80.4

29

B.M.

671

✓
879.29

Lt.

E

Rt

$$\frac{7.7}{10} \quad \frac{8.6}{6} \quad \frac{9.1}{3} \quad \frac{9.4}{4} \quad \frac{9.2}{4} \quad \frac{9.1}{15}$$

$$\frac{9.7}{10} \quad \frac{11.0}{8} \quad \frac{12.1}{4} \quad \frac{12.1}{4} \quad \frac{11.5}{4} \quad \frac{11.6}{15}$$

$$\frac{1.2}{18} \quad \frac{2.2}{11} \quad \frac{3.4}{4} \quad \frac{2.9}{2} \quad \frac{2.5}{2} \quad \frac{2.7}{15}$$

$$\frac{3.8}{18} \quad \frac{3.9}{18} \quad \frac{5.4}{8} \quad \frac{5.0}{5} \quad \frac{4.8}{4} \quad \frac{4.6}{15}$$

$$\frac{4.6}{18} \quad \frac{7.5}{8} \quad \frac{7.0}{3} \quad \frac{6.9}{4} \quad \frac{6.5}{15}$$

$$\frac{3.4}{18} \quad \frac{3.3}{16} \quad \frac{4.5}{11} \quad \frac{4.3}{5} \quad \frac{3.7}{4} \quad \frac{3.4}{15}$$

$$\frac{6.2}{18} \quad \frac{6.9}{12} \quad \frac{6.7}{6} \quad \frac{5.2}{4} \quad \frac{4.7}{4} \quad \frac{4.6}{15}$$

$$\frac{5.6}{18} \quad \frac{5.6}{11} \quad \frac{7.8}{6} \quad \frac{7.3}{3} \quad \frac{5.6}{4} \quad \frac{5.1}{7} \quad \frac{5.1}{15}$$

(98.3)

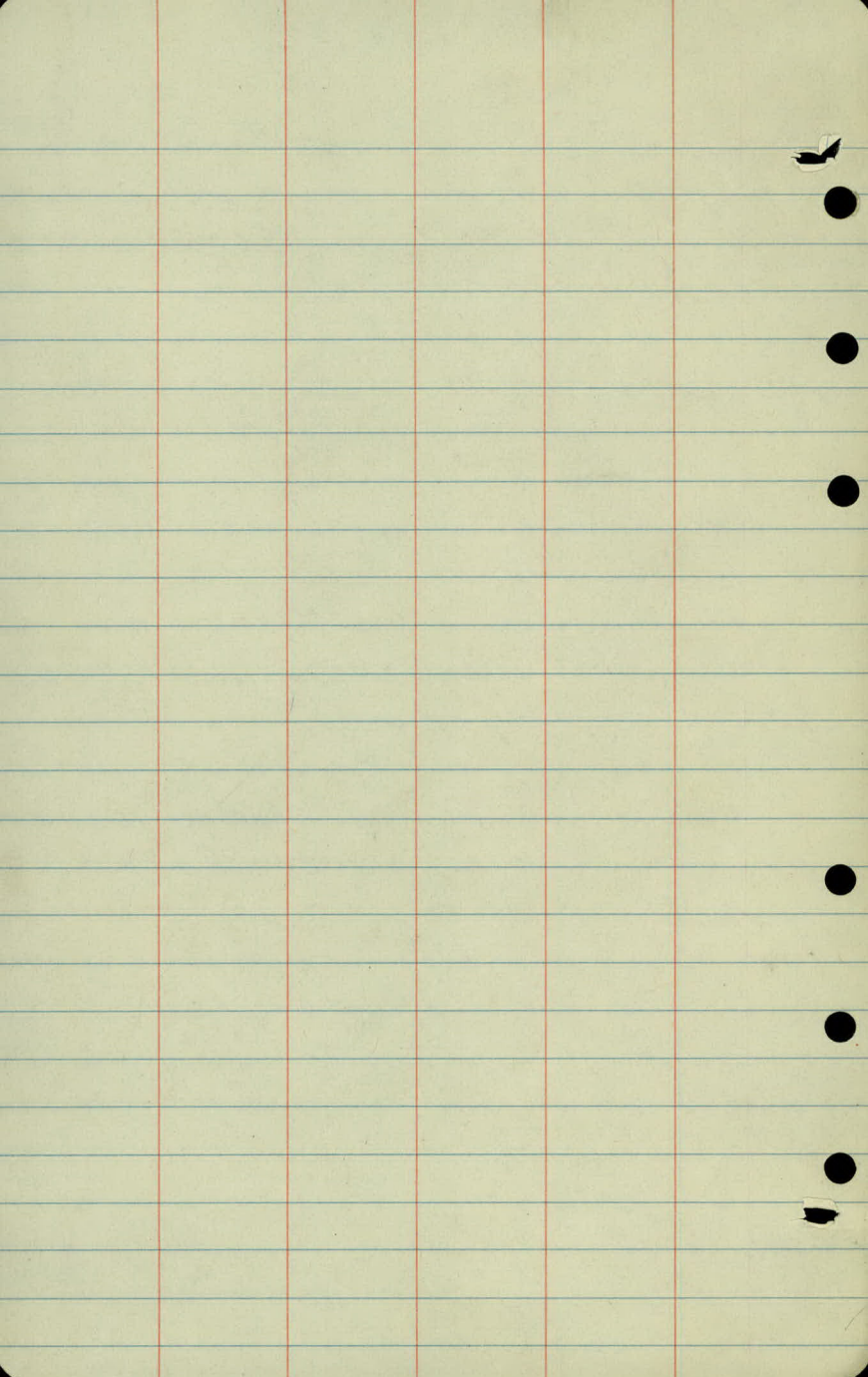
Flow Line $\frac{2.71}{1.75}$

(76.2)

~~98~~ 98 $\frac{7.8}{2.70}$ Flow Line

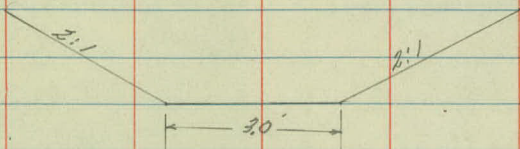
wake →

Top No. End Cuts.



Staking Notes

McCarrons Blvd No. Drainage Situation



TYPICAL GUTTER SECTION

Sta	+	Δ	-	Grade
B.M.	10.14	908.93		898.79
22	+43			901.2
	+48			900.9
	+62.64			899.9
			Handy	98.3
	+82			98.6
	+97			97.6
23	+26.32	$\Delta 11$		95.7
B.M.	3.63	902.42		898.79
	+50			94.9
	+70.92	$\Delta 11$		94.3
24	+13			93.4
	+63			92.4
25				91.7
I.P.	202	896.22	802.2	894.20
	+25			91.2

Gr. Rod.

Lt

L

Rt

Spk in Light Pole Elmer St. & McCarrons Blvd. No.

8.03

(+3.0)

10.63

(+3.5)

13.23

4.72

(+3.5)

(+3.0)

8.12

(+3.24)

9.02

(+3.0)

10.02

(+3.0)

10.72

3.0

(+2.0)

Sta	+	π	-	Grade
		896.22		
25	+50			90.7
26				88.1
	+50			86.3
27				84.5
T.P	003	886.14	10.11	896.11
	+50			82.7
28				80.9
	+50			79.1
T.P	570	854.60	5.24	880.90
29				78.5
Culv to Lake				
0+00				78.50
	+40			76.64
	+70			75.24
1	+10			73.38
+50	& Conc. Box Culv			71.5

- 4.66%

Ditch

Gr Rod

Lt

L

Rt

6.3

8.1 / $\frac{30}{R239}$ $\frac{49}{R29} / 2.3$

8.1

8.1 / $\frac{48}{R23}$ $\frac{70}{+1.1}$ $\frac{61}{R20} / 5.5$

9.9

6.5 / $\frac{74}{R25}$ $\frac{82}{R17} / 9$

11.7

6.6 / $\frac{76}{R25}$ $\frac{101}{R16} / 4.7$

3.4

3.1 / $\frac{26}{R208}$ $\frac{25}{R29} / 3.3$

5.2

2.7 / $\frac{46}{R26}$ $\frac{43}{R27} / 2.9$

7.0

6.1

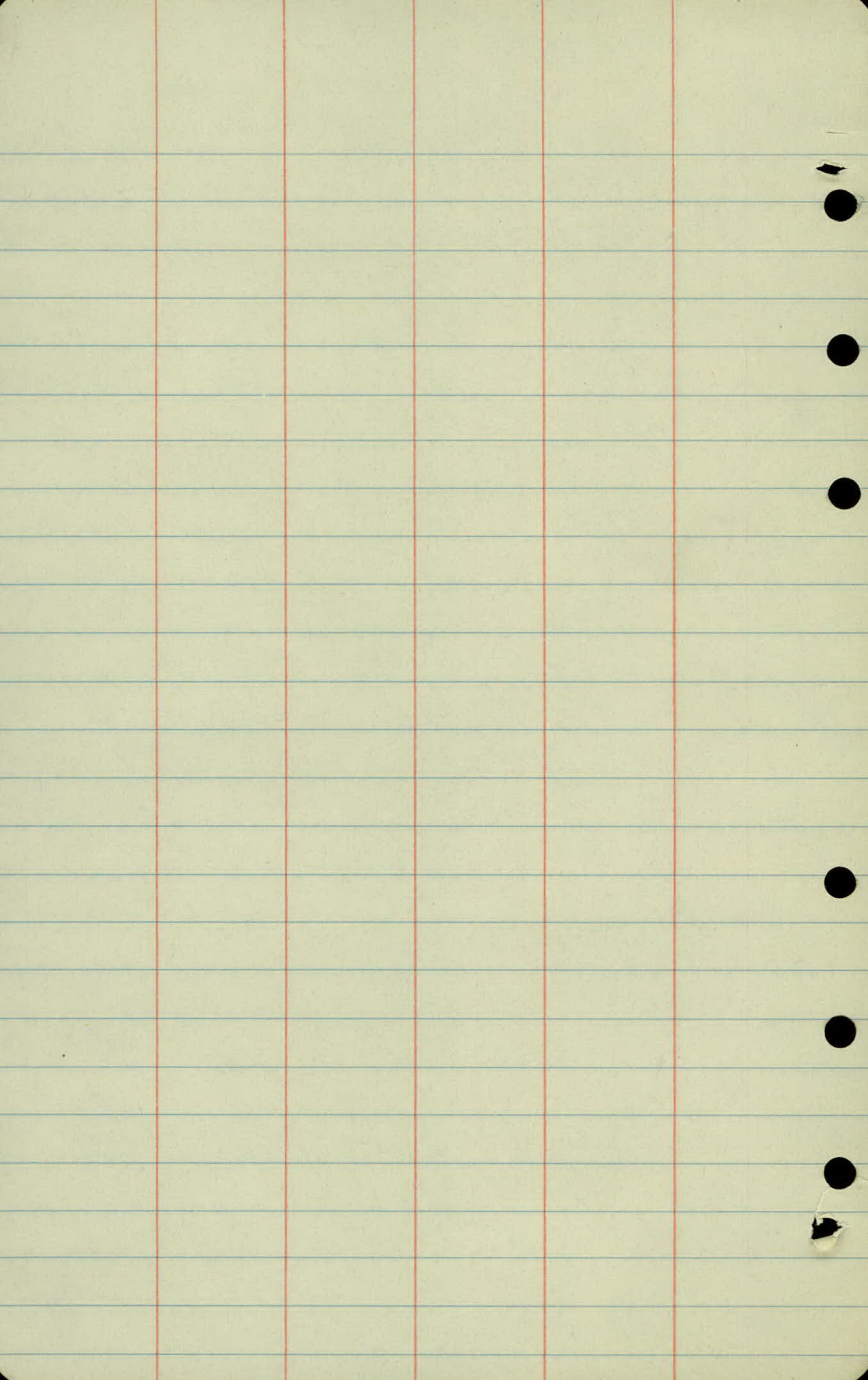
6.1

7.96

9.36

11.22

13.10



McCarrons Blvd No.

Shoulder Widening

Sta	+	X	-	Grade
B.M.	8.37	901.77		893.40
32				891.2
+50				920
33				92.4
+50				92.2
34				91.8
+25				91.6
I.P.	1.22	900.23	4.76	897.01
+50				91.5
35				91.3
+25				91.4
I.P.	1.66	890.53	11.26	886.87
+80				91.8
36				92.1
+43				92.0

15' TOP
 Dr. 00 = 22'
 Cut 0.0 = 25'
 2' ditch

Gr. Rod.	Lt.	R.
Nail in RR 17' Rk 33+10		
10.6	$33.6 / \frac{4.9}{45.7}$	<u>10.6</u>
9.8	$29.8 / \frac{6.6}{43.7}$	<u>9.8</u>
9.4	$28.9 / \frac{6.8}{42.6}$	<u>9.4</u>
9.6	$32.8 / \frac{4.4}{45.2}$	<u>9.6</u>
10.0	$36.3 / \frac{2.5}{41.5}$	
10.2	$37.8 / \frac{1.7}{48.5}$	
8.7	$34.8 / \frac{2.7}{46.8}$	
8.8	$26.5 / \frac{12.3}{-3.5}$	
+ 1.8	$30.0 / \frac{5.7}{-7.0}$	
+ 1.6	$45.0 / \frac{8.4}{+10.0}$	
+ 2.5	$42.0 / \frac{6.6}{+9.0}$	

