Dr. 13 Book 11

W.P.A. ENGINEERS OFFICE

DIST. No 3

Survey Notes

NEW Brighton

Butcher Street.

Butchers St
New Brighton

E. B. McDonough Engr
H. Schraudt Rod
C. Coe Rod
M. Flaherty Rod

Location & Topog Notes
of
Butchers Street
New Brighton

0+00 = Int of Cleveland Ave.
and
Butchers Street.

Location has followed old road as far possible

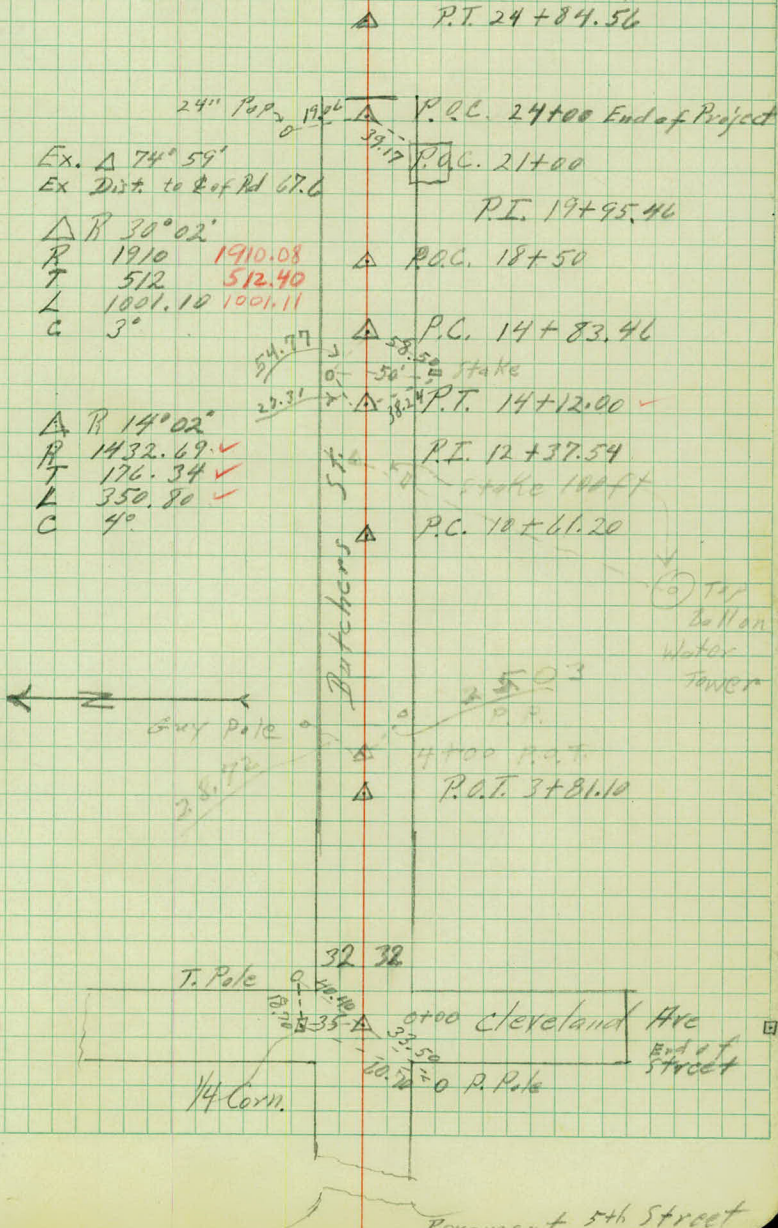
(2)

			P.T.	24+84.56 15° 01'
				24+50 14° 30'
			P.O.C.	24+00 13° 45'
				23+50 13° 00'
				23+00 12° 15'
				22+50 11° 30
				22+00 10° 45'
				21+50 10° 00'
			P.O.C.	21+00 9° 15'
				20+50 8° 30
				20+00 7° 45
				19+50 7° 00'
				19+00 6° 15'
			P.O.C.	18+50 5° 30'
P.T.	14+12	7° 01'		18+00 4° 45'
	14+00	6° 47'		17+50 4° 00'
	13+50	5° 47'		17+00 3° 15'
	13+00	4° 47'		16+50 2° 30'
	12+50	3° 47'		16+00 1° 45
	12+00	2° 47'		15+50 1° 00'
	11+50	1° 47'		15+00 0° 15'
	11+00	= 0° 47'	P.C.	14+83.46 0° 00'

P.C. 10+61.20 = 0° 00'

0+00 = Int. of Cleveland Ave. & Butcher St.

E. B. McDonough Engr.
H. Schrandt Rod.
C. Cox Rod.
M. Flaherty Rod.



4

24+12 ℄ of Drive

24+09 ℄ of Drive

24+00

23+88 24" Cott. Wood 15'L

23+77 12" Pap. 16'L

23+62 18" " 16'L

23+56 16" " 16'L

23+47 10" " 16'L

23+38 10" " 16'L

23+18 24" Pap 15'L

22+98 24" Pap 14'L

22+88 20" Pap 16'L

22+79 36" " 17'L

22+30 T.P. 18'L

23+78 house 33'R

23+58 house 33'R

23+35 PPole

23+34 TPole

23+20 4" Elm 17'R

22+92 Fence 30'R

22+77 Tree 22'R

22+75 Fence Com. 31'R

22+38 Apple Tree 23'R

22+27 Apple tree 24 R

22+06 Garage 33'R

21+86 PP 26'R

21+84 Garage 31 R

21+50 ℄ of Drive

21+05 24" Pap 18'L

21+00 18" " 14'L

20+74 T.P. 18'L

20+60 RR 22'R

Note No. Topog notes necessary be for Sta. 20+00

(7)

E. B. McDonough Engr

4-19-36

New Brighton

Levels from

5th Ave & 8th St.

to

East End of Butchers St.

along 5th Ave to Butchers St.

B.M. Spike in Aerial Pole

in road of Brick house N.W.

Corn. 8th St. & 5th Ave.

8

Out

	Rd.+	H.I.	Rd.-	Elev.
B.M.	+0.11	896.51		896.40
T.P.			8.67	887.84
	+0.43	888.27		
B.M.			1.15	887.12
	2.15	889.27		
			3.79	885.48

In

	Rd+	H.I.	Rd-	Elev.
B.M.	3.91	889.39		885.48
			2.27	887.12
	1.20	888.32		
			0.49	887.83
	8.66	896.49		
			0.09	896.40

Out

	Rd+	H.I.	Rd-	Elev.
B.M.	+0.11	885.59		885.48
T.P.			-3.29	882.30
	+2.17	884.47		
T.P.			-0.18	884.29

Out

P.P. S.W. Corn. 5th Ave. & 8th St.

Point on pavement

Top nut of Hydrant across St. from City Hall

Top nut of Hydrant N.E Corn of Front & 5th

In

Top nut of Hydrant N.E Corn 5th & Front

Top " " " across St. from City Hall

Point on pavement

Back into B.M.

Top nut of Hydrant N.E. Corn 5th & Front St.

Top of Guard rail post

Top of Guard rail post

10)

884.29

	Rd +	HI	Rd -	Elev.
	+6.20	890.49		
T.P.			0.00	890.49
	+8.53	899.02		
T.P.			-1.61	897.41
	+4.43	901.84		
T.P.			6.05	895.79
	+2.28	898.07		
B.M.			6.11	891.96

Checked on run of day before

Out

Hardware store to Sec. 14 corn

B.M.	+0.20	892.16		891.96
T.P.			-5.93	886.23
	+5.91	892.14		
T.P.			-0.56	891.58
	+8.48	900.06		
T.P.			-0.50	899.56
	+7.80	907.36		
T.P.			-2.14	905.22
	+3.95	909.17		
B.M.			-6.22	902.95

Top of stake ℄ side of Road

Marker on ℄ of pavement

Marker on ℄ of pavement

Top of 2nd Step S.W. Corn of Hardware Store Corn Butchers St. & 5th Ave.

Out
Hardware Store to 1/4 Corn. Cleveland & Butchers St.

Same as above

Top of culvert marker 5-60

Top of rock ℄ of Road

Top of rock ℄ of Road

Top of rock ℄ of Road

Top of 1/4 Corn Mnt. Corn. Cleveland & Butchers St.

12)

	Rd +	HI	Rd -	Elev.	
		909.17			
B.M.			3.64	905.53	checked on old run ✓
	+1.62	907.15 ✓			
T.P.			-10.24	896.91 ✓	
	0.57	897.48 ✓			
T.P.			-9.80	887.68 ✓	
	+2.70	890.38 ✓			
B.M.			-4.98	885.40 ✓	
T.P.			-3.12	887.26 ✓	
	+7.87	895.13 ✓			
T.P.			-0.89	894.24 ✓	
	+10.17	904.41 ✓			
B.M.			-5.00	899.41 ✓	
T.P.		899.58 ?	0.17	904.24 ✓	
	+10.79	915.03 ✓			
T.P.			0.27	914.76 ✓	
	8.88	923.64 ✓			
B.M.			6.98	916.66 ✓	
T.P.			3.72	919.92 ✓	
	3.02	922.94 ✓			
			-1.89	921.05 ✓	

Spike in P.P. 15 ft. R of 0+80

Rock on L side of Road

Rock on ℄ of Road

Spike in T.P. 18 ft. L of 6+50
Rock on ℄ of Road

Top of rock ℄ of Road

Top of iron pipe, Lot Corn 30 ft. R of 13+50
Rock on ℄ of Road

Top of rock ℄ of Road

Spike in T.P. 20 ft. L of 19+20
Top of rock ℄ of Road

N. W. Corn. of Top step of house 40 ft. R of 23+64

14

E. B. McDonough Engr
C. Coe Rod
M. Flaherty Rod
H. Schrandt Rod

Cross Sections of Butchers Street New Brighton Minn.

0+00 = Int of Cleveland Ave. and Butchers St.

16

Sta.	+	HI	−	Elev
B.M.	5.43	910.96		905.53
0+00				04.4
0+10				04.3
0+14				04.3
0+21				04.3
0+50				04.2
1+00				04.3
1+50				03.9
2+00				02.6
2+50				900.5

L R

Spike in R.P. 15 ft. R of 0+80

8.2/50			6.6/0		6.1/50		
8.2/50	7.9/18		6.7/0		6.2/50		
7.9/50	6.2/20	7.8/15	6.7/0	6.5/19	7.1/50		
8.0/50	6.0/14	7.6/9	6.7/0	6.9/14	6.3/18	5.5/30	5.4/50
8.4/50	7.7/20	6.4/5	6.8/4	6.8/0	6.7/25	5.4/30	5.7/39	5.1/50
9.4/50	7.2/31	6.0/10	7.0/7	6.7/0	6.4/14	5.7/25	4.4/50	
9.6/50	7.5/34	5.5/17	7.3/9	7.1/0	7.3/20	5.2/35	3.1/50	
8.3/50	7.3/38	5.0/20	8.9/5	8.4/0	8.5/15	5.2/25	2.3/38	1.6/50
8.2/50	4.5/34	6.2/25	10.6/10	10.5/0	10.6/12	0.6/35	0.3/50	

18

Sta	+	HI	−	Elev.
		910.96		
3+00				897.9
TP	1.99	90 2.30	10.65	900.31
3+50				94.8
4+00				91.7
B.M.	6.87	892.27		885.40
4+21				90.8
4+50				89.8
5+00				88.0
5+50				86.9
6+00				84.4
B.M.	4.34	889.74		885.40

8.0 / 50	5.5 / 28	5.0 / 25	13.1 / 0	12.9 / 13	1.4 / 39	1.7 / 50	12.7 / 12

Top of Rock

1.5 / 50	1.0 / 34	1.0 / 22	7.6 / 14	7.5 / 0	8.2 / 13	+3.0 / 30	+2.0 / 50

12.5 / 50	9.8 / 20	10.7 / 13	10.6 / 0	11.0 / 9	5.7 / 19	6.8 / 25	7.9 / 50

Spike in T.P. 15 ft. L of 6 +50

5.6 / 50	3.6 / 28	1.6 / 15	1.5 / 0	1.5 / 6	2.1 / 10	1.4 / 20	2.7 / 50

9.0 / 50	7.3 / 24	2.2 / 11	2.5 / 5	2.8 / 7	6.0 / 16	6.1 / 50

12.0 / 50	10.1 / 25	4.3 / 12	4.3 / 0	4.7 / 5	10.7 / 17	11.6 / 50

12.6 / 50	11.8 / 30	6.3 / 18	5.4 / 0	11.6 / 13	13.2 / 26	14.0 / 50

12.8 / 50	12.6 / 38	8.0 / 24	6.0 / 3	7.9 / 0	13.5 / 12	14.4 / 50

Spike in T.P. 18 ft. L of 6 +50

20

Sta.	+	HI	−	Elev
6+50		889.74		83.4
7+00				82.1
7+50				82.9
8+00				82.0
8+50				85.2
9+00				86.4
9+50				88.8
B.M.	0.60	900.01		899.41
9+74				89.4
10+00				89.9
10+50				90.9

℄

9.6/50 8.4/32 5.9/22 3.8/5 6.3/0 10.4/15 12.0/50

Rt. 11.1/50 10.6/15 12.0/8 7.6/0

Lt. 7.9/8 3.9/22 8.4/32 8.1/50

4.9/50 3.1/35 3.5/28 3.5/8 5.7/4 6.8/0 10.2/16 12.5/43 13.0/50

1.5/50 2.6/40 5.2/32 3.5/25 3.1/7 7.7/0 9.5/50

1.4/50 2.5/47 4.8/32 4.8/27 2.6/21 2.5/8 4.5/0 6.0/5 6.7/23 7.0/50

1.4/50 4.2/27 2.0/18 1.7/3 3.3/0 6.0/6 8.9/50

+3.2/50 +1.4/16 2.8/23 1.2/16 0.9/0 4.1/8 7.8/50

Top of Iron pipe Lot Corn. 30 ft. R. of 13+50

3.5/50 5.0/33 11.8/22 11.1/16 10.6/0 13.2/8 16.5/36 18.1/50

2.5/50 3.0/35 12.1/21 10.0/13 10.1/0 11.8/10 11.4/19 16.2/50

+1.3/50 1.8/32 10.2/20 10.5/15 8.8/11 9.1/0 9.1/7 11.0/15 10.6/21 14.0/50

22)

Sta	+	HI	−	Elev
11+00		900.01		92.1
11+50				93.1
12+00				94.2
12+50				95.3
13+00				96.8
13+50				98.3
B.M.	10.88	910.29		899.41
14+00				900.1
14+50				01.7
15+10				03.8
15+50				05.7

6.4 / 50	7.8 / 27	10.1 / 19	9.6 / 14	7.8 / 8	7.9 / 0	7.9 / 10	9.6 / 15	11.0 / 29	11.0 / 50

10.5 / 50	10.3 / 16	6.7 / 7	6.9 / 0	7.0 / 11	10.0 / 19	9.7 / 23	7.8 / 50

10.6 / 50	10.4 / 17	5.8 / 7	5.8 / 0	5.8 / 8	9.5 / 14	9.1 / 39	7.4 / 50

5.4 / 50	8.6 / 35	7.9 / 15	4.5 / 8	4.7 / 0	4.7 / 5	7.3 / 14	8.4 / 32	6.2 / 50

4.0 / 50	6.2 / 29	5.5 / 14	3.0 / 5	3.2 / 0	3.4 / 9	4.9 / 17	5.7 / 25	4.0 / 50

0.0 / 50	1.7 / 24	3.3 / 16	1.7 / 9	1.7 / 0	1.8 / 9	3.5 / 13	3.4 / 30	2.7 / 50

Top of iron pipe Prop. Corn. 30 Rt of 13 + 50

7.0 / 50	9.5 / 18	10.3 / 13	9.9 / 9	10.2 / 0	10.1 / 10	12.0 / 16	11.7 / 29	11.9 / 50

6.2 / 50	7.3 / 23	9.4 / 15	8.6 / 10	8.6 / 0	8.5 / 10	9.4 / 13	10.0 / 50

2.8 / 50	4.4 / 22	7.7 / 14	6.4 / 10	6.5 / 0	6.7 / 9	6.9 / 15	8.1 / 50

+0.5 / 50	2.3 / 22	5.2 / 14	4.4 / 11	4.6 / 0	4.5 / 15	7.0 / 50

24)

Sta	+	HI	−	Elev.
16+00		910.29		07.6
B.M.	0.28	916.94		916.66
16+50				09.2
17+00				10.5
17+50				11.7
18+00				13.3
B.M.	7.03	923.69		916.66
18+50				14.3
19+00				15.4
19+~~25~~				16.0
19+50				16.5
19+90				17.5

℄

+1.2 / 50 | 0.0 / 20 | 7.0 / 13 | 2.4 / 11 | 2.7 / 0 | 2.5 / 10 | 4.5 / 50

Spike in T.P. 20ft. L of 19+20

6.3 / 50 | 6.6 / 19 | 7.7 / 14 | 7.4 / 13 | 7.7 / 0 | 7.6 / 7 | 5.0 / 15 | 9.8 / 50

5.4 / 50 | 6.0 / 26 | 6.8 / 16 | 6.0 / 12 | 6.4 / 0 | 6.6 / 7 | 7.6 / 15 | 9.3 / 50

2.8 / 50 | 3.7 / 22 | 4.7 / 14 | 5.2 / 0 | 5.3 / 7 | 6.6 / 15 | 8.3 / 50

+3.5 / 50 | +1.0 / 23 | 4.0 / 15 | 3.6 / 12 | 3.6 / 0 | 3.4 / 8 | 4.5 / 19 | 5.6 / 50

Same as above

7.8 / 50 | 5.0 / 24 | 5.8 / 14 | 5.5 / 12 | 9.4 / 0 | 8.7 / 10 | 9.4 / 20 | 9.1 / 50

4.2 / 50 | 5.5 / 25 | 8.1 / 16 | 8.2 / 11 | 8.3 / 0 | 5.4 / 8 | 5.7 / 17 | 8.0 / 28 | 7.3 / 50

5.9 / 50 | 6.9 / 29 | 8.3 / 22 | 8.9 / 17 | 7.8 / 11 | 7.7 / 0 | 7.9 / 8 | 8.6 / 11 | 7.8 / 16 | 7.2 / 50

6.4 / 50 | 7.2 / 40 | 10.0 / 30 | 9.8 / 23 | 7.3 / 12 | 7.2 / 0 | 7.4 / 8 | 7.0 / 11 | 7.5 / 15 | 7.5 / 50

9.2 / 50 | 9.7 / 28 | 7.9 / 17 | 4.0 / 10 | 6.2 / 0 | 6.2 / 7 | 7.0 / 10 | 5.8 / 16 | 6.7 / 50

20)

Sta	+	HI	-	Elev.
20+25		923.69		18.6
20+50				19.2
21+00				20.3
21+50		& of Road into Plant		19.9 on R
22+00				19.0
22+30				18.4
B.M. 1	1.14	922.19		921.05
22+50				18.2
23+00				17.5
23+50				16.6
24+00				15.6

7.3/50 6.5/27 5.3/16 6.3/12 4.9/8 5.1/0 5.2/8 6.1/12 3.8/18 5.4/50

5.8/50 5.8/40 3.8/19 5.6/17 4.7/10 4.5/0 4.6/6 5.6/9 3.5/14 3.7/25 5.0/50

4.0/50 7.4/43 6.8/20 3.4/10 3.4/0 7.8/10 7.4/15 4.1/35 5.5/50

7.2/50 2.3/28 3.4/10 3.8/0 4.7/14 5.9/35 6.6/50

6.2/50 5.7/15 4.5/10 4.7/0 5.0/8 5.6/14 5.0/19 3.6/31 4.4/32 4.4/50

9.8/50 7.6/25 5.2/11 5.3/0 5.5/8 6.1/13 5.1/19 5.1/50

N. W. Corn. of Top step to house 40 ft Rt of 23+64

9.0/50 8.1/28 5.6/17 3.9/10 4.0/0 4.2/6 5.0/11 5.7/22 5.7/38 4.7/50

9.2/50 8.8/31 7.8/21 4.8/9 4.7/0 4.9/7 5.8/11 5.0/15 5.2/25 3.2/50

8.4/50 9.7/42 9.5/32 7.3/17 5.4/8 5.6/0 5.2/8 4.3/17 2.9/33 1.6/50

5.7/50 6.1/41 9.7/30 7.5/28 8.0/20 6.9/10 6.6/0 6.0/10 4.0/24 3.6/50

1-4-39 (1)

E. B. McDonough Engr
E. W. Higgins Ins
M. Flaherty Rd
C. Coe Rd

New Brighton

Slope Stakes

Butchers Street

Sta	+	H I	−	Elev	Grade Rod
B M.	6.10	911.63		905.53	
0 + 00				904.40	
0 + 10				904.30	
0 + 14				904.30	7.30
0 + 21				904.20	
0 + 50				904.10	7.50
1 + 00				903.80	7.80
	6.23	911.76	6.10	905.53	
1 + 50				903.20	8.6
2 + 00				901.80	10.00

10.6

8.6

L d R (3)

Spike in P.P. 15 ft. R of 0+80

C 0.3 / 27	0.0 / 0	C 0.0 / 26.5
F 0.3 / 17.6	0.0 / 0	C 1.5 / 28.5
C 0.5 / 27.2	C 0.6 / 0	C 1.8 / 29.2
C 1.0 / 28	C 0.8 / 0	C 4.5 / 33.3
C 3.2 / 31.3	C 0.8 / 0	C 7.0 / 36.5

4)

Sta	+	HI	−	Elev	Grade Rod
		911.76			
2+50				899.50	11.9
3+00				897.20	14.6
3+50				894.20	17.6
check B.M.			6.23	905.53	
B.M.	12.34	897.74		885.40	
4+00				891.70	6.0
4+21				890.90	6.8
check B.M.			12.34	885.40	
	4.60	890.00		885.40	
4+50				890.00	6.0
5+00				888.80	1.2
			4.60	889.40	
	5.88	891.28		885.40	
5+50	0.8			887.70	3.60
6+00	2.4			887.00	4.30
6+50	3.1			886.40	4.90
B.M.				885.40	

Grade Rod

C 5.5 / 34.8

C 0.2 / 0

C 10.5 / 42.3

C 5.0 / 38.5

C 0.5 / 0

C 12.3 / 45

C 6.3 / 36

C 0.5 / 0

C 10.2 / 41.8

C 1.2 / 28.3

0.0 / 0

C 4.0 / 32.5

5.0 / 27

F 0.3 / 0

4.4 / 25.8

F 6.9 / 30.8

F 0.6

F 8.4 / 37.8

19.6 / 4.9 / -1.3

4.3 / -0.7

9 / 12.5 / -8.9

20 2/5.9 / -1.6

6.3 / -2.0

3 3 4/12.5 / -8.2

18 8/5.5 / -0.4

7.0 / -2.1

3 8/12.3 / -8.4

Spike in T.P. 18 ft. L of 6+50

6		891.28			
7+00	4.1			886.2	5.1
+50	3.3			886.2	5.1
8+00	4.6			886.6	4.7
8+50	1.9			887.1	4.2
9+00	1.4			888.0	3.3
9+50	0.7			889.0	2.3
10+00	0.1			890.0	1.3
10+50	0.1			891.0	0.3
	12.02	902.98	0.32	890.96	
10				890.0	13.0
10+50				891.0	12.0
	8.19	902.48	8.69	894.29	

26	17.2 / 5.2 / -0.1	9.1 / -4.0	31.4 / 12.3 / -7.2
24	17.0 / 5.1 / 0.0	2.0 / -3.9	31.8 / 12.5 / -7.4
32	17.0 / 4.5 / +0.2	2.8 / -3.1	28.4 / 10.5 / -5.8
26	17.0 / 3.9 / +0.3	6.2 / -2.0	5.2 / 3.3 / -4.1
17	19.0 / 3.3 / 0.0	4.9 / -1.6	27.8 / 8.7 / -5.4
25	17.2 / 2.4 / -1.1	2.3 / 1.0	26 / 7.2 / -4.9
37		1.5 / -0.2	28.4 / 3.0 / -1.7
21		0.4 / -0.1	20.2 / 1.9 / -1.6
27	58.3 / 5.9 / +7.7		
	40.2 / 3.1 / 48.9		

NAIL IN T.P. LI STA. 11+25

8)

902.48

11+00	Co.1			892.00	10.5
11+50	Co.1			93.00	9.5
12+00	Co.1			94.10	8.4
+50	Fo.1			95.40	7.1
13+00	Fo.1			96.90	5.5
+50	Fo.3			98.60	3.9
14+00	Fo.3			900.40	2.1
	11.26	912.13	1.61	900.87	
14+50	Fo.5			902.20	9.9
15+00	Fo.2			04.00	8.1

	L	C	R	
29.5	27.5 / 10.0 / +0.5	10.1 / +0.4	20 / 12.3 / -1.8	30.5
23.5	21.6 / 11.8 / -2.3	9.0 / +0.5	21 / 11.5 / -2.0	22
26	23.8 / 11.8 / -3.4	8.0 / +0.4	23.4 / 11.4 / -3.2	23.5
25.5	25.0 / 11.1 / -4.0	6.8 / +0.3	23.4 / 10.7 / -3.3	24
22.5	22.2 / 8.1 / -2.6	5.6 / -0.1	20.8 / 7.4 / -1.9	21.5
26	23.1 / 5.7 / +0.2	4.1 / -0.2	23.4 / 5.7 / -1.8	24
28	29.3 / 0.4 / +1.7	2.5 / -0.4	27 / 3.7 / -1.6	24
28	28.7 / 8.6 / +1.3	10.4 / -0.5	29.8 / 11.3 / -1.4	30
30	31.0 / 5.3 / +2.8	8.4 / -0.3	25.7 / 8.8 / -0.7	25.5

10		912.13			
15+50	F 0.1			905.50	6.3
16+00	C 0.1			907.50	4.6
16+50	C 0.1			909.10	3.0
17+00	0.0			910.50	1.6
	1.14	924.00	0.27	911.86	
17+50	F 0.1			911.80	12.2
18+00	C 0.3			913.00	11.0
18+50	C 0.1			914.20	9.8
19+00	0.0			915.40	8.6
B.M.	7.32	923.98	7.32	916.68	916.66
+50	F 0.1			916.60	7.4
20+00	0.0			917.80	6.2

31.5	3 2.3 / 5.6 / +3.7	6.3 / -0.0	2 5.5 / 6.9 / -0.6	25.5
31.5	3 1.9 / 4.2 / +3.4	4.5 / +0.1	2 3.3 / 4.9 / -0.3	22
29	2 9.5 / 1.2 / +1.8	5.1 / -0.1	2 5.5 / 3.6 / -0.6	25.5
27.5	2 8.0 / 0.6 / +0.8	1.7 / -0.1	2 0.0 / 3.1 / -1.5	20
29	2 9.5 / 10.4 / +1.8	12.2 / 0.0	2 0.8 / 14.1 / -1.9	20.5
35.5	5 5.2 / 5.4 / +3.6	10.9 / +0.1	2 5.2 / 12.0 / -1.0	25.5
34	5 5.2 / 4.2 / +5.6	9.6 / +0.2	2 7.4 / 9.4 / +0.4	27
31.5	5 1.2 / 5.7 / +2.9	8.3 / +0.3	2 7.4 / 8.2 / +0.4	29.5

NAIL IN I.P. 30' LT. STA. 1+10

22	2 1.0 / 7.8 / -2.4	7.4 / 0.0	2 4.1 / 7.8 / -0.4	26
23	1 9.4 / 7.5 / -1.5	6.1 / +0.1	2 1.9 / 5.6 / +0.6	27.5

12

		923.98			
20 t50				18.7	5.3
21				19.2	4.8
t50				19.1	4.9
	1.71	923.45	2.24	921.74	
22				18.6	4.9
t50				17.8	5.7
23				17.0	2.5
t50				16.2	7.3
24				15.4	8.1
			2.43	921.02	

$\frac{+83/4.3}{71.0}$ $\frac{4.7}{70.6}$ $\frac{+80/3.8}{71.5}$

$\frac{31.0/2.0}{72.8}$ $\frac{3.7}{71.1}$ $\frac{+80/4.0}{70.8}$

$\frac{4.0}{70.9}$ $\frac{+27/3.0}{71.9}$

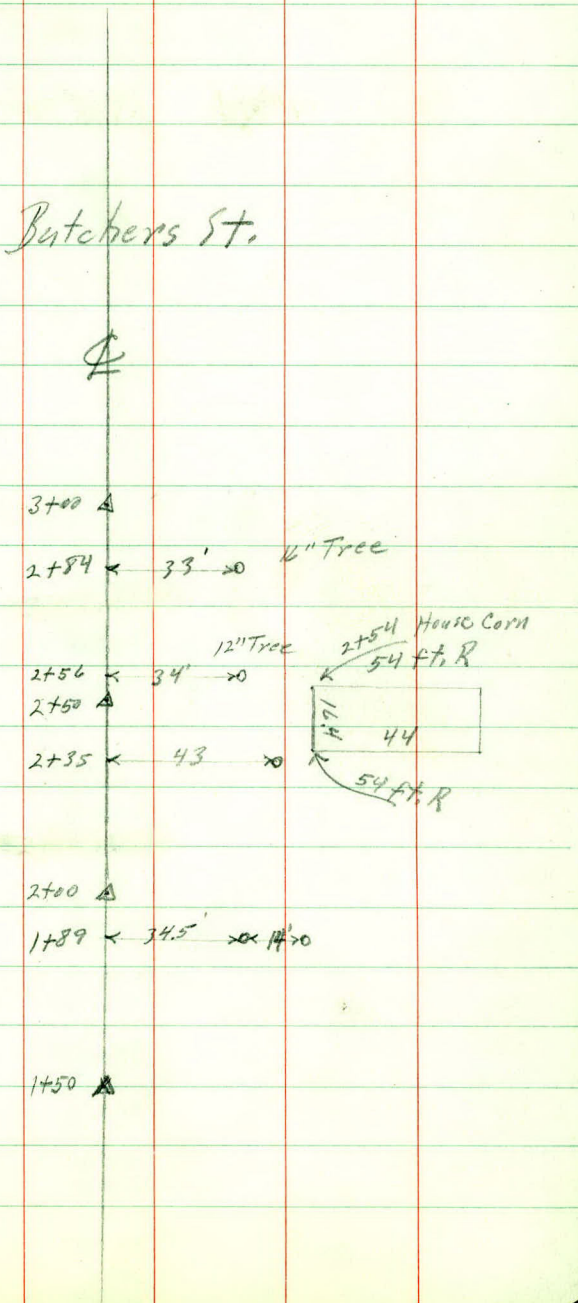
C 0.2 / 27 — 4.6 / +0.3 — +37 / 3.3 / +1.6

F 1.7 / 20.4 — C 0.2 / 0 — D.C. 0.6 / 25.5

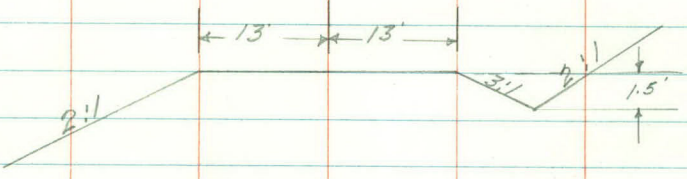
F 2.6 / 22.2 — C 0.3 / 0 — C 0.3 / 27

F 1.7 / 20.4 — 0.6 / 0 — C 3.3 / 31.8

D.C. 0.4 / 25.1 — C 0.0 / 0 — C 3.0 / 31.3


Butchers St.
℄
3+00
2+84
33'
12" Tree
2+56
34'
12" Tree
2+54
House Corn
54 ft. R
2+50
171'
44
2+35
43
54 ft. R
2+00
1+89
34.5'
14'
1+50

X sections
and
Slope Stakes
Butchers St.



Slope and Backslopes to Conform to R/

Sta.	+	H	−	Grade	Gr. Rod.
B.M.	3.48	909.21			(905.53)
0 +00				904.40	
+21				04.2	5.0
+50				04.1	5.1
1				03.8	5.4
+50				03.2	6.0
2				01.8	7.4
+50				899.9	9.3
T.P.	4.97	907.18	6.40	902.81	
3				97.2	10.6
+50				94.2	13.6
T.P.	0.00	894.28	13.50	894.28	
4				91.7	2.6
+21				90.9	3.4

5-18-40
Rain

Lt. & Rt.

Spk in P.P. 15' Rt 0+80

63/50 60/31 52/12 50/ 44/14 45/50

68/50 55/36 (C.03 47/21.4) 43/10 56/9 (50/0.0) 49/7 51/16 (C.07 43/21.9) 38/31 39/50

77/50 70/39 (E.10 56/19.5) 47/6 (51/0.0) 47/15 (C.09 47/21.3) 46/27 36/29 38/40 34/50

86/50 (C.04 50/21.3) 46/18 41/5 49/2 (50/10.4) 48/19 (C.09 45/22.3) 43/30 34/35 29/50

86/50 66/34 (C.08 52/22.1) 38/7 51/4 (54/10.6) (C.07 53/21.9) 55/27 42/32 17/37 13/50

80/50 61/36 (C.23 51/25.1) 41/18 32/10 66/3 (70/10.4) (C.05 69/21.5) 65/24 34/33 11/40 07/50

73/50 (C.47 46/29.9) 37/23 43/11 (81/11.2) 88/3 (C.00 93/20.5) 90/22 82/26 25/38 11.3/50

Nail in P.P. Rt 2+50

50/50 (C.08 38/32.0) 27/25 12/8 39/6 (87/11.9) 10.0/2 (C.01 105/20.7) 10.3/25 51/36 11.2/45 L.O.

83/50 (C.57 79/31.9) 80/25 74/12 124/9 (131/10.5) (E.13 138/20.1) 13.4/28 33/44 35/50

22/50 25/36 (C.07 49/21.9) 15/10 08/3 (17/10.9) (E.14 27/20.3) 23/24 28/28 13.0/36 13.0/50

64/50 68/31 (F.33 97/19.6) 56/6 (36/10.2) 31/5 (E.19 35/20.3) 34/25 41/29 33/36 41/50

Sta	+	H	−	Grade	Gr. Rod.
		894.28			
4				90.0	4.3
+50					
5				88.8	5.5
T.P.	3.92	890.81	7.29	886.99	
+50				87.7	3.1
6				87.0	3.8
+29	End 12" Vit 33' Bk.		11.60 Ft. 33' Bk.		
+50				86.4	4.4
B.M.			5.41	885.90	(885.40)
7				86.2	4.6
+50				86.2	4.6
T.P.	5.36	893.57	2.56	888.21	
8				86.6	7.0
+50				87.1	6.5
9				88.0	5.6
T.P.	13.59	903.61	3.55	890.02	
+50				89.0	14.6

5-20-40

Lt. | ℄ | Rt.

10.8/50 | F.6.0 10.3/25.0 | 9.2/6 | 0.3/-2.0 | 4.5/6 | 4.6/25 | R.0.0 5.8/31.1 | 8.0/35 | 8.3/50

13.7/50 | F.8.6 14.1/30.2 | 12.7/7 | 7.8/-2.3 | 6.5/9 | 6.4/26 | R.0.0 7.0/28.0 | 13.0/38.0 | 14.3/50

L.O. | F.7.3 11.4/27.6 | 11.2/15 | 4.5/-1.9 | 4.9/5 | 3.8/25 | R.0.0 4.6/27.4 | 10.3/37 | 11.0/47 | 11.9/50

10.60 Elev. Water | L.O. | F.7.8 11.6/28.6 | 11.1/8 | 5.2/-1.5 | 5.1/10 | 4.8/24 | R.0.0 5.3/25.7 | 11.7/35 | 12.3/50 | 11.62 Water Elev.

L.O. | F.6.7 11.1/26.4 | 10.6/4 | 8.1/-3.7 | 5.0/11 | 4.9/26.0 | 10.0/36 | 11.8/50 | R.0.0 5.9/28.2

Spk. in T.P. 18' Lt. @ 7+50

8.7/50 | F.5.3 9.4/23.6 | 10.1/17 | 9.6/3 | 7.4/-2.8 | 4.7/11 | 4.9/25 | R.0.0 6.1/26.4 | 12.6/38 | 12.9/50

4.2/50 | 5.6/36 | F.3.2 7.8/19.4 | 8.5/7 | 7.8/-3.2 | 4.7/11 | 4.6/25 | R.0.0 6.1/27.5 | 9.8/37 | 11.0/50

2.6/50 | 2.9/35 | C.2.4 4.6/25.3 | 7.2/4 | 8.9/-1.9 | 9.4/3 | 6.7/12 | C.0.0 7.0/20.5 | 7.0/27 | 10.1/37 | 11.8/50

1.9/50 | 3.7/36 | C.2.2 4.3/24.9 | 6.8/5 | 8.4/1 | 8.6/-2.1 | 8.6/5 | 6.3/10 | C.0.0 6.5/20.5 | 6.4/28 | 9.7/37 | 10.2/50

1.5/50 | 2.9/40 | C.1.1 4.5/22.7 | 5.3/19 | 7.2/5 | 7.5/2.0 | 7.6/8 | 6.6/11 | R.1.3 5.8/20.1 | 5.7/27 | 9.8/35 | 10.6/50

9.8/50 | C.4.0 10.6/28.5 | 13.0/6 | 14.0/-1.4 | 16.5/5 | 14.5/11 | R.1.0 15.8/19.5 | 14.9/28 | 17.7/32 | 19.0/42 | 19.5/50

Sta.	+	X	−	Grade	Gr. Rod.
		903.61			
9	+74			89.5	14.1
10				90.0	13.6
	+50			91.0	12.6
11				92.0	11.6
T.P.		10.32	903.90	10.13	893.58
	+50			93.0	10.9
12				94.1	9.8
	+50			95.4	8.5
13				96.9	7.0
	+50			98.6	5.3
~~B.M.~~				~~.94~~ 896.96	~~899.41~~
14				900.4	3.5
	+50			02.2	1.7
T.P.		11.10	914.23	0.77	903.13

Lt. C Rt.

7.3/50 (C.6.7) 7.4/32 8.8/7 (14.6/-0.5) 15.4/1 15.0/4 14.1/11 (R.12 14.4/19.9) 14.5/28 14.8/32 18.8/50

5.6/50 (C.8.2) 5.4/32 5.6/24 6.2/10 (13.7/-0.1) 14.6/1 15.3/3 15.3/8 13.6/11 (R.13 13.8/24.1) 13.8/28 15.1/32 15.1/45 14/50

0.0/50 1.0/43 (C.10.5) 2.1/32 4.2/14 5.9/12 (11.5/+1.3) 12.2/3 13.6/6 13.6/9 12.3/11 (R.11 13.0/19.7) 12.8/29 14.8/33 14.3/43 15/50

9.0/50 (C.1.6) 10.0/23.7 11.8/5 (13.4/-1.8) 13.2/8 11.4/11 (R.12 11.9/19.9) 11.6/29 13.1/32 14.6/50

14.2/50 (F.3.5) 1.44/20.0 (14.2/-3.3) 14.2/6 10.7/13 (C.0.0 10.9/20.5) 10.8/29 13.5/35 12.9/50

14.2/50 (F.5.1) 14.9/23.2 (14.2/-4.5) 13.8/5 9.4/11 (R.14 9.9/20.3) 9.8/27 13.2/32 13.1/50

12.7/50 13.5/44 (F.5.2) 13.7/23.4 13.2/9 (12.1/-3.6) 12.5/5 8.1/11 (R.12 8.8/19.9) 8.6/27 10.7/30 12.1/50

8.0/50 8.8/31 (F.3.3) 10.3/19.6 (9.9/-2.9) 9.9/7 6.8/11 (R.11 7.4/19.7) 7.3/27 8.5/30 9.1/50

3.4/50 4.0/33 (C.0.3) 5.1/21.1 5.6/14 5.8/4 (7.0/-1.7) 6.8/8 5.6/12 (R.08 4.0/19.1) 5.6/28 7.4/31 7.2/50

~~Top iron prop 30' Rt. Sta 131+50~~ out

0.0/50 0.4/34 (C.2.3 1.1/25.1) 2.3/5 (3.1/10.4) 4.4/8 3.5/12 (R.08 4.2/19.1) 4.0/30 5.7/35 5.8/50

+0.4/50 (C.2.0 +0.3/24.5) (1.0/+0.7) 1.2/4 2.7/8 3.0/12 2.2/13 (R.07 3.2/18.9) 2.1/32 3.0/36 3.1/50

Sta.	+	H	−	Grade	Gr. Rod.
		914.23			
15				04.0	10.2
+50				05.8	8.4
16				07.5	6.7
+50				09.1	5.1
17				10.5	3.7
T.P.	11.76	924.24	1.75	912.48	
+50				11.8	12.4
18				13.0	11.2
+50				14.2	10.0
19				15.4	8.8
+25				16.0	8.2
+50				16.6	7.6

Lt. R Rt.

4.9/50	C.3.2 70/24.9		8.4/11.8	9.0/4	11.4/8	11.6/12	10.5/13	Rt.1.0 10.7/19.5	10.4/31	10.9/34	11.0/50			
4.0/50	C.4.4 40/29.3	4.5/14	5.9/12.5	6.4/2	9.3/7	9.3/11	8.4/13	Rt.1.2 8.7/19.9	8.7/30	9.3/50				
3.4/50	C.3.6 31/27.7	3.1/16	4.0/12.7	4.0/4	6.6/9	Rt.1.2 7.0/19.9	7.2/28	6.5/30	6.6/36	7.2/50				
3.7/50	C.1.7 34/23.9	3.3/19	3.5/11.6	3.9/8	4.8/12	Rt.1.1 5.5/19.7	5.6/27	4.7/29	5.2/36	5.8/50				
2.1/50	C.0.6 31/21.7		3.6/10.1	4.0/8	3.4/10	Rt.1.1 4.1/19.1	4.2/27	3.9/28	4.3/35	5.4/50				
9.0/50	C.2.4 10.0/25.3	10.3/18	11.1/11.3	12.6/4	12.5/9	11.5/10	Rt.1.3 12.6/20.1	13.0/33	14.8/50					
4.3/50	C.6.1 51/32.0	6.3/14	7.5/13.7	11.0/6	11.0/9	10.5/11	C.0.0 11.2/20.5	11.3/33	13.1/50					
2.0/50	C.6.8 3.2/32.0	4.1/17	5.7/14.3	9.5/6	9.6/11	Rt.1.4 10.1/20.3	9.9/29	9.5/30	10.0/50					
2.2/50	C.4.7 4.1/27.7	5.3/3	6.1/11.7	8.6/5	8.3/12	Rt.1.2 9.1/19.9	9.1/34	8.6/50						
~~9.6/-14.~~	~~9.6/6~~	~~7.5/11~~	C.0.2 8.0/20.7	~~2.3/30~~	~~8.7/31~~	~~8.7/34~~	~~8.2/50~~							
4.4/50	C.0.8 6.8/22.1	7.6/11	9.1/6	9.6/-20	9.6/6	7.5/11	Rt.1.2 7.9/19.9	8.2/30	8.7/31	8.2/34	8.2/50			

Sta.	+	H	−	Grade	Gr. Rod.
		924.24			
19 +90				17.6	6.6
20				17.9	6.3
+25				18.3	5.9
+50				18.7	5.5
21				19.2	5.0
+50				19.1	5.1
22				18.6	5.6
+30				18.1	
+50				17.8	6.4
23				17.0	7.2
T.P.	2.80	920.23	6.81	917.43	
+50				16.2	4.0

Lt. C Rt

72/50 84/37 F3.7 10.0/24.1 101/16 89/-2.6 8.2/8 6.5/11 A1.0 6.8/19.4 6.9/29 7.5/31 6.7/34 6.5/50

77/50 R.05 6.5/18.5 6.4/16 4.9/0.6 4.8/5 6.1/8 6.1/10 5.3/12 C.03 5.2/21.1 5.4/29 6.2/30 6.2/33 4.2/36 LO

64/50 C1.2 3.8/22.9 2.5/11 15/+3.5 16/2 4.5/8 4.5/9 3.8/12 C.08 4.2/22.1 4.2/29 4.7/32 3.7/34 4.0/50

48/50 C.18 3.3/24.1 2.8/17 2.8/+2.3 3.0/5 3.8/15 C.09 4.2/22.3 4.9/28 6.3/50

6.0/50 R.13 5.8/20.1 5.3/14 4.4/4.2 4.4/11 C.05 5.1/21.5 5.0/32 4.7/50

12.0/50 10.8/32 F3.2 9.6/19.4 8.7/7 7.4/-1.0 7.2/2 5.5/9 C.04 6.0/21.3 6.2/29 6.2/30 6.0/50

11.9/50 11.5/34 F4.0 11.2/21.0 10.7/15 9.8/-2.6 6.5/10 C.04 6.8/21.3 7.0/28 8.4/32 7.4/50

5.1/50 6.7/34 7.3/26 F3.0 7.0/19.0 6.2/6 5.1/-1.1 4.1/3 3.0/10 C.09 3.1/22.3 2.8/29 0.9/50

Sta.	+	℄	−	Grade	Gr. Rod.
		920.23			
24				15.4	4.8
+50					
25					
T.P	6.92	922.87	4.28	915.95	
B.M.			1.74	921.13	(921.05)

5-20-40

Lt. & Rt.

$\frac{31}{50}$ $\frac{44}{25}$ (F 12.0 / $\frac{68}{11.0}$) $\frac{62}{18}$ $\frac{74}{16}$ $\frac{76}{14}$ $\frac{65}{12}$ $\frac{65}{5}$ ($\frac{60}{-1.2}$) $\frac{39}{9}$ $\frac{40}{19}$ (C 1.3 / $\frac{45}{23.1}$) $\frac{29}{37}$ $\frac{21}{45}$

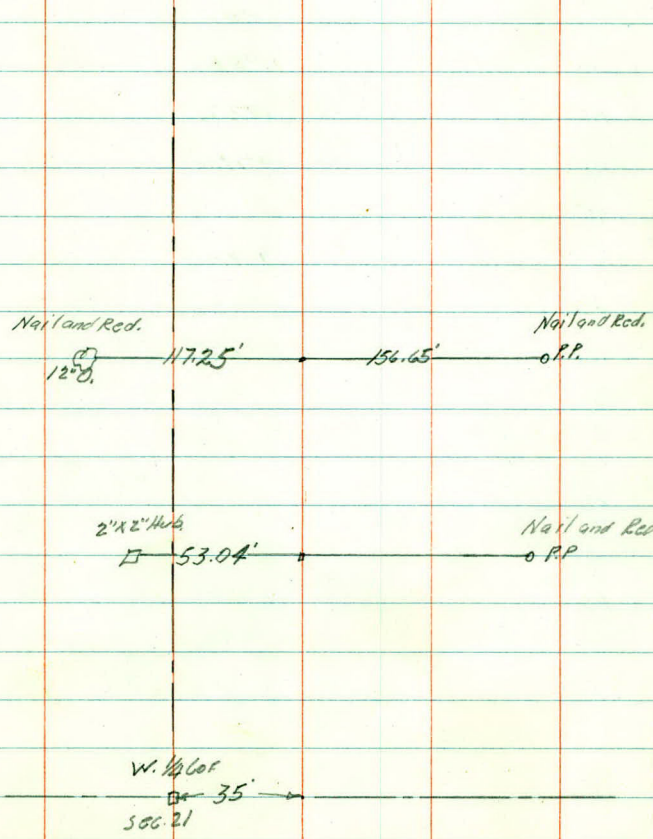
$\frac{50}{50}$ $\frac{65}{17}$ $\frac{43}{12}$ $\frac{70}{9}$ $\frac{72}{6}$ $\frac{46}{4}$ $\frac{51}{7}$ $\frac{48}{11}$ $\frac{41}{16}$ $\frac{49}{31}$ $\frac{57}{33}$ $\frac{49}{30}$ $\frac{52}{30}$

$\frac{47}{50}$ $\frac{48}{29}$ $\frac{56}{9}$ $\frac{58}{12}$ $\frac{83}{14}$ $\frac{84}{16}$ $\frac{66}{19}$ $\frac{72}{25}$ $\frac{74}{50}$ $\frac{79}{50}$

(N.W. Cor. Top Step Ho. 40 Rt 23+04

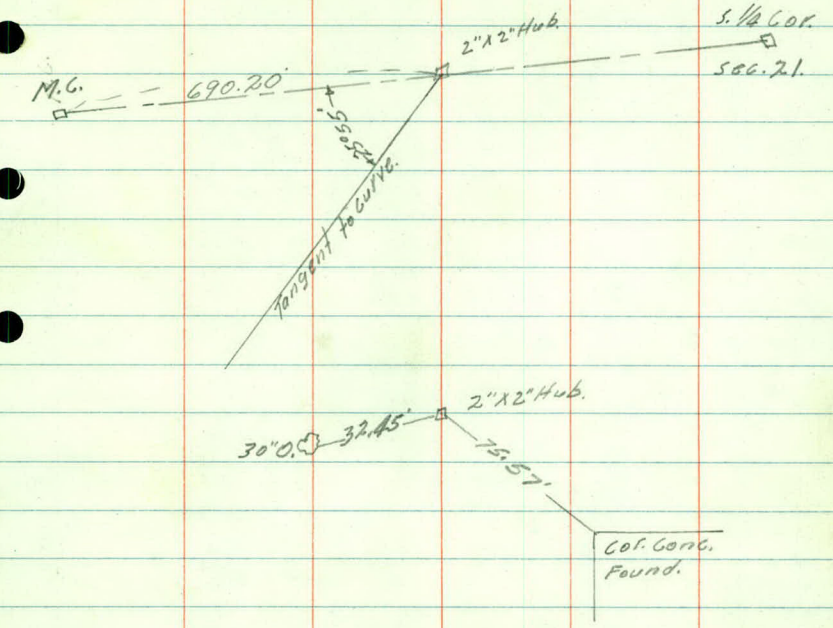
Alignment

Sta		Point	Δ Lt.	Δ Rt	
	+50			9°30.0'	
17				8°44.8'	
	+50			7°59.6'	
16				7°14.4'	
	+50			6°29.2'	
15				5°44.0'	D-3°00'48"
	+50			4°58.8'	R-1901.69'
14				4°13.6'	
	+50			3°28.4'	
13				2°43.2'	
	+50			1°58'	
12				1°12.8'	
	+50			0°27.6'	
11	+19.50	P.C.		0°00'	
1	+88.86	P.I.		5°33'	
0	+00				


Nail and Rcd.
Nail and Rcd.
117.25'
156.65'
P.P.
12" D.
2"x2" Hub
Nail and Rcd.
53.04'
P.P
W. ¼ Cor
35'
Sec. 21

Sta.	Point	Δ Lt	Δ. Et
+62.07	P.O.C.		29°16.1'
30			28°20'
29			26°49.6'
28			25°19.2'
27			23°48.4'
26			22°18.4'
25			20°48.0'
+50	P.O.C.		20°02.8'
24			19°17.6'
+50			18°32.4'
23			17°47.2'
+50			17°02.0'
+23		4°39.4	
22			16°16.8'
+50			15°31.6'
21			14°46.4'
+50			14°01.2'
20			13°16.0'
+50			12°30.8'
19			11°45.6'
+50			11°00.4'
18	P.O.C.		10°15.2
17 +45.14			9°44.0'

5-18-40


S. 1/4 Cor.
Sec. 21.
2"x2" Hub.
M.C.
690.20'
255.22'
Tangent to curve.
2"x2" Hub.
30"O.
32.45'
75.57'
Cor. Cone.
Found.