

W253

FIELD BOOK

No. 385 F

MICROFILMED

FB # 253

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THE FREDERICK POST CO.
ENGINEERING and DRAFTING SUPPLIES
IRVING PARK STATION
CHICAGO, ILL.

Index

Dulzura Conduit

Profiles & Levels with Floor
Parking Grades of Conduit.

Beq. of Flume #15 - Sta. 373+51
to

Tunnel No 6 (End) Sta. 547+69

Pages 5-69

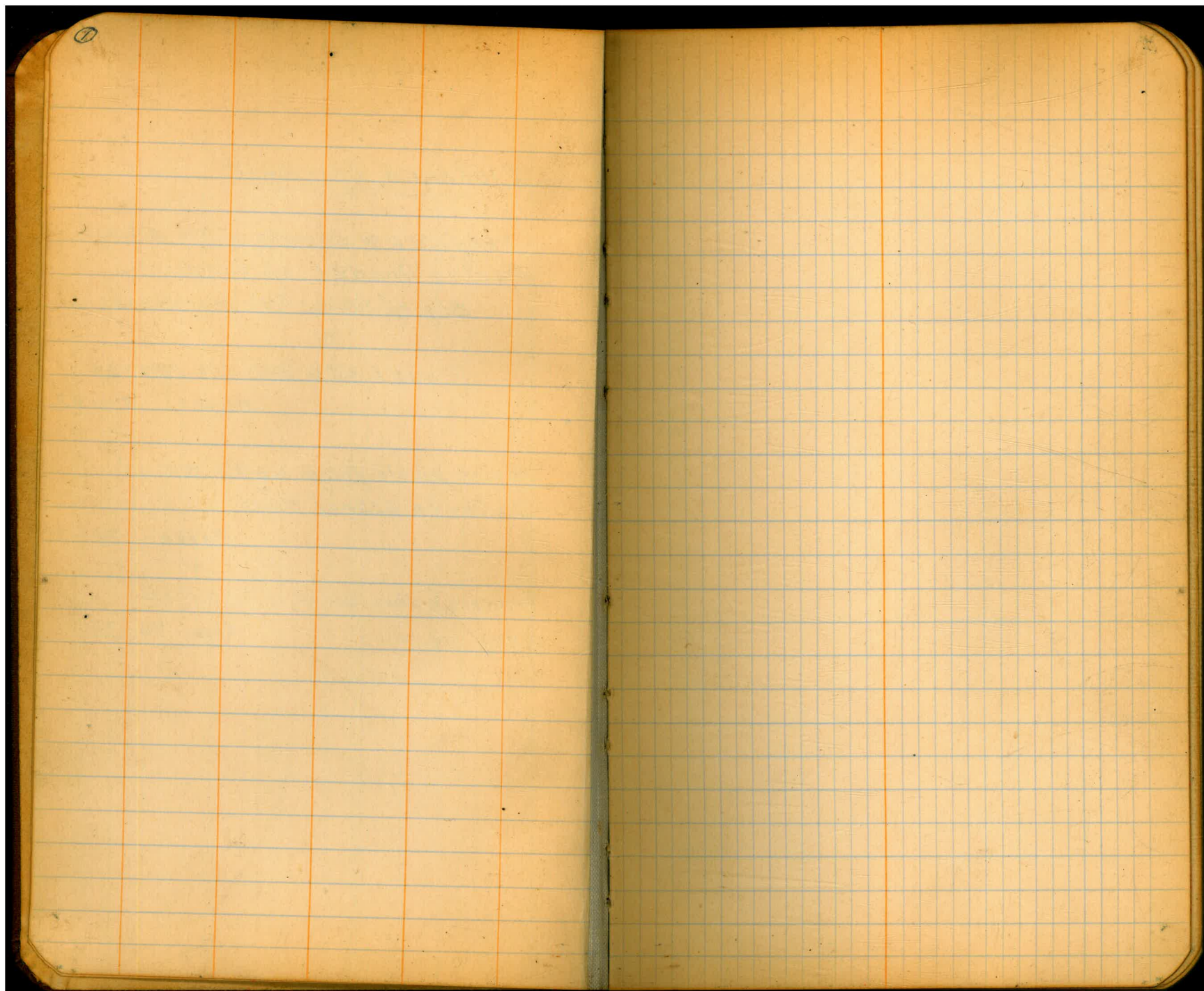
Bench Levels from U.S.G.S. B.M. at
Dulzura School House

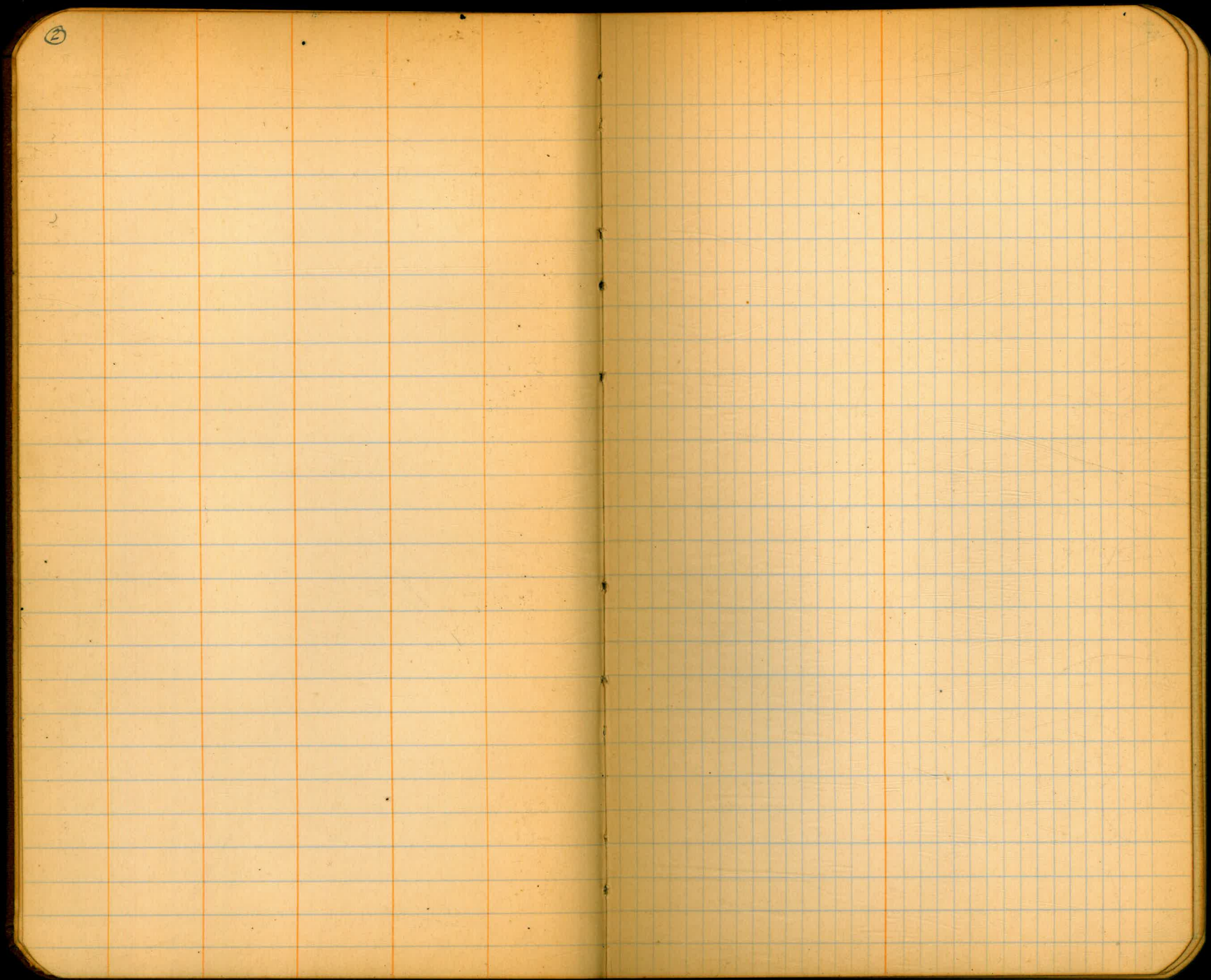
Pages 75-79

Troverse thro Sec 14, 11 T185 R2E

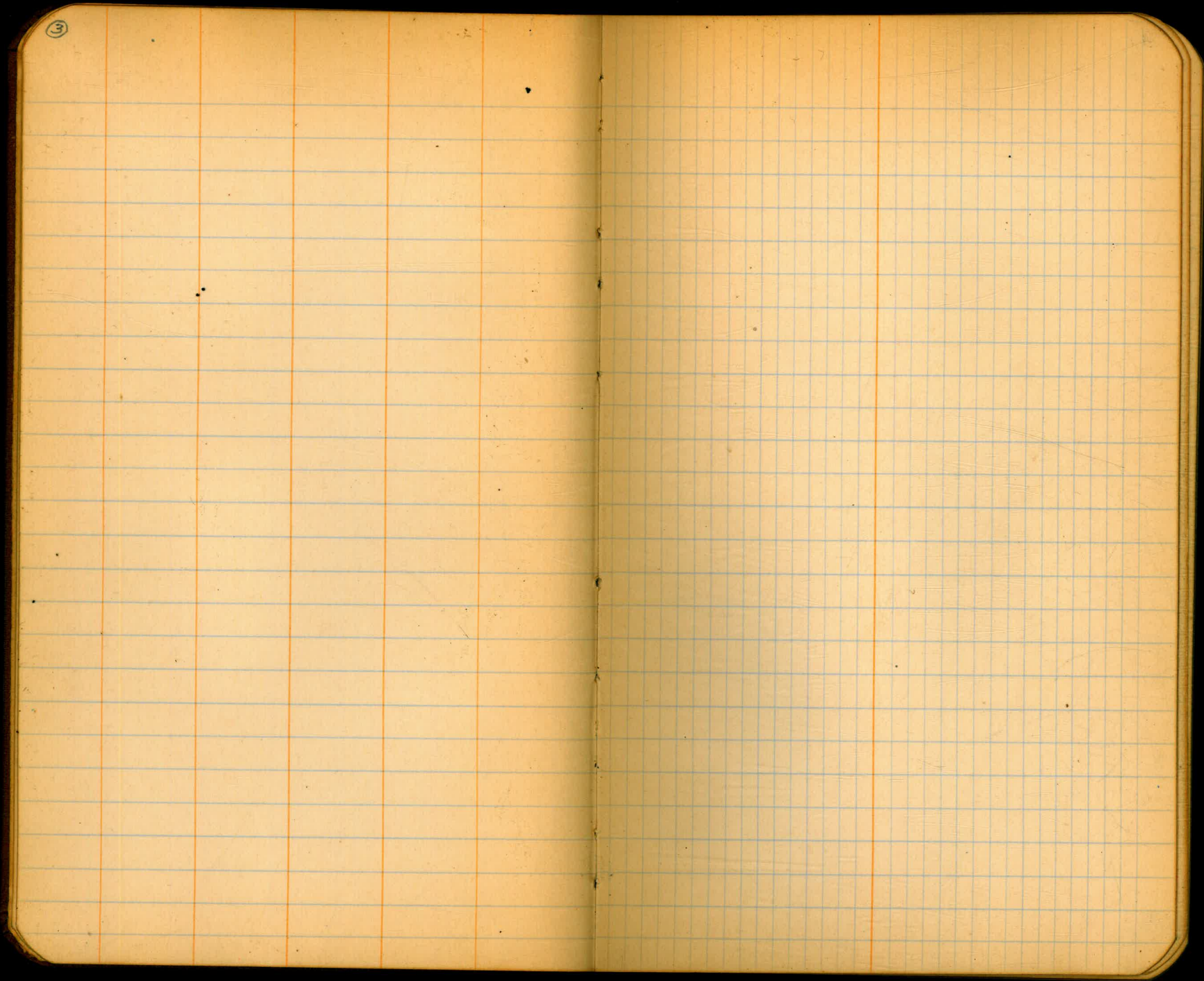
S. Bdy Sec. 11

Pages 70-72





②



④

⑤ B.M. - On Boulder 8' Lt. 373+50 1479.50 B.M.
1, 29 1480.79

373+63.0 Back
373+51.00 Ahead
East End Flume No 15

+62.5 Trestle Bent

373+77.13 Δ "

373+91.83 Δ "

374+06.51 Δ "

374+21.23 Δ "

+28 "

+36 "

+43.5 "

374+51.28 Δ "

+58.5 "

374+65.92 Δ "

+73.5 "

All Sections taken at Trestle Bents.

Jan. 5 '28
Ward - Notes
McBain - Rod
Duermit - Ch.

1480.79 H.I. Profile

60° 4.6 7.25 7.25 8.2
8 4 3 2.5
8.17 8.17 8.2 7.2 7.2 0.4
± conc. 0 2.5 3 4 7

70° 8.3 9.8 8.3 10.0 10.2 7.4
8 3 8 0 5 8

Edge Boulder 13.7 8.5 12.0 11.5 5.1 4.7
Down 10' - Up 20' 4 8 0 7 11 18

Edge Boulder 15.5 15.0 8.4 12.9 12.7
9 6 8 0 16

60° 15.6 14.5 8.5 13.6 13.7 11.2
22 12 8 0 10 15

60° 15.5 15.0 13.4 8.5 11.8 9.2 30°
20 7 6 8 0 10 10

60° 15.2 15.2 12.6 8.5 12.0 10.7 6.8 5.8
18 7 5 8 0 8 11 17

80° 15.7 15.6 8.5 13.7 12.0 7.5 12.5
17 6 8 0 6 10 15

70° 26.3 8.5 17.8 15.5 6.2 10°
17 8 0 6 15

70° 23.6 8.5 17.3 13.4 8.3 6.7 60°
14 8 0 5 9 13

80° 21.8 8.6 17.6 16.0 12.0 5.9 Vert. 10'
11 8 0 4 5 12

90° 20.7 8.7 17.3 15.0 7.0 Vert. 10'
9 8 0 5 13

70° 25.4 8.7 18.6 15.3 11.7 8.3 10°
11 8 0 6 7 12

⑥ + H.I. - Elev.
1480.79

374+82

+90

374+98.00 Δ

4.50 1476.29 TP.

2.58 1478.87

375+06

375+13.52 Δ

+21

+29.5

+41

+50.5

+63.5

+79.5

+93

376+08.5

1480.79 H.I.

Flume Profile
Ground Profile

10° 25.0 8.6 17.2 14.0 8.0 6.2 70° ↗
10

10° 22.2 19.5 8.7 15.6 8.1 2.0 80° ↗
11

40° 23.0 18.3 8.6 13.6 11.5 6.7 2.4 70° ↗
14

1478.87 H.I.

21.0 18.4 6.7 13.6 9.3 4.4 0.4 same
13

23.2 19.0 17.8 6.8 12.6 8.8 2.0 +2.4
13 9 6 5 10 16

24.5 19.0 6.8 13.3 8.5 2.6 +1.5
13 6 4 0 6 8 15

23.4 20.0 19.4 6.8 13.9 10.2 4.0 +1.4
14 9 7 4 0 4 7 14

23.6 20.0 19.3 6.7 16.5 13.5 7.6 5.5
15 9 6 4 0 5 10 17

29.8 28.7 26.8 6.7 20.8 11.0 2.8
17 10 3 4 0 7 18

45° 41.2 37.6 6.9 30.8 27.1 22.5 45° ↗
14 6 4 0 9 18

45° 43.0 39.7 6.9 37.0 34.0 60° ↗
17 11 4 0 25

45° 38.8 28.7 6.8 30.0 25.8 30.0 25.5 70° ↗
17 7 4 0 12 28 41

38.7 35.8 31.0 27.5 6.9 25.0 17.1 14.0 11.7
23 14 11 8 4 0 8 13 26

①

+

H. 1.

-

Elev.

1478.87

+225

376+36.78A

+45

+525

+605

+685

+77

+85

+925

377+005

+085

+165

+24

1478.87 H. 1.

45°

24.5
1421.9
76.9 Flume
213.2
011.7
77.2
135.0
22

45°

24.4
1116.4
67.0
213.0
08.6
83.1
131.0
21

40°

21.0
912.5
56.9
211.0
09.4
56.5
72.2
15

40°

23.2
716.6
66.9
212.0
010.1
44.2
81.8
13+1.0
17

40°

24.0
1219.5
66.9
212.5
010.0
62.2
8+2.4
14

35°

21.3
811.1
46.9
210.2
09.0
43.7
5+0.6
9+4.0
1423.6
1418.2
66.9
212.0
010.7
43.1
5+1.0
8+3.6
1224.3
1418.4
67.0
212.6
08.5
63.7
10+2.4
1222.8
1117.5
76.9
213.3
011.5
37.3
52.4
91.5
12+3.0
1324.2
1519.8
1015.3
47.0
210.6
09.2
34.9
51.2
9+1.0
1423.5
1419.4
816.2
57.0
211.8
09.0
43.4
8+1.6
12+3.1
15same
slope21.8
1117.3
57.0
213.3
011.1
45.7
72.2
11+2.6
15

same

22.0
1117.8
57.0
213.3
010.0
55.1
100.4
15

⑦
⑧
+ H.I. - Elev.
1478.87

+2 377+32

376 +90

+4 +48

+5 +55

+6 +64

+6 +72
377+79.80 Δ

+7 +815

+8 +895

+9 +97

377+378+055

+08 +135

+16 +22

+24 +30

1478.87 H.I.

Flume Ground

23.3 12	19.0 6	7.0 ±	14.8 0	13.8 3	10.5 5	3.0 8	+0.8 14
23.3 12	18.7 6	7.0 ±	14.3 0	12.7 4	6.8 7	9.1 10	+1.0 14
24.7 12	18.8 6	7.0 ±	13.8 0	12.0 5	1.1 7	+2.4 11	
24.3 12	20.0 6	7.1 ±	15.7 0	14.0 2	11.5 3	6.5 4	+1.5 +3.0 10 12
24.2 12	20.4 6	7.1 ±	15.5 0	10.3 4	8.6 8	+0.8 17	
23.4 12	18.7 6	7.2 ±	13.7 0	13.0 4	5.7 9	0.6 16	
21.7 12	17.2 6	7.2 ±	12.8 0	8.5 5	+1.5 14		
19.5 12	15.2 6	7.1 ±	10.2 0	8.4 5	3.6 9	+2.4 15	
19.0 12	14.8 6	7.1 ±	10.3 0	7.8 5	2.7 9	+1.6 15	
19.0 12	13.7 6	7.1 ±	10.0 0	8.7 4	0.9 10	+2.4 14	
18.4 12	13.6 6	7.1 ±	10.0 0	8.4 4	6.6 7	+1.6 +3.2 13 16	
18.6 12	12.8 6	7.1 ±	10.0 0	8.6 4	6.2 7	+2.5 16	
17.7 12	14.2 6	7.2 ±	9.8 0	9.3 3	5.6 9	0.0 14	

⑨

+

H.I.
1478.87

-

Elev.

7.63 1471.24 T.P.

4.85 1476.09

378+36.73 Δ

+44

+52⁵+60⁵+68⁵+76⁵

+85

+93

379+01

+09

+17

+25⁵

+34

1476.09 H.I.

Flume
Ground

15.8	12.3	7.5	8.0	6.7	4.0	+2.3
12	6	±	0	4	9	15

22.2	16.2	7.4	10.8	7.5	4.8	+0.8
12	6	±	0	4	9	15

25.2	20.6	7.4	14.0	9.6	+0.8
12	6	±	0	7	18

28.1	22.7	7.4	17.2	11.2	3.5	+2.2
12	6	±	0	6	12	18

27.2	21.6	7.4	17.8	11.5	7.2	+0.4
12	6	±	0	8	12	17

28.0	23.0	7.4	18.3	13.0	6.2	+0.4
12	6	±	0	6	11	17

27.8	23.3	7.5	18.6	13.0	8.7	3.4
12	6	±	0	8	11	17

27.0	21.6	7.5	17.7	10.4	1.0	
12	6	±	0	9	18	

26.8	20.7	7.4	16.5	8.4	+0.3	
12	6	±	0	9	18	

25.6	23.2	7.5	17.4	9.0	3.6	+0.3
12	6	±	0	7	13	17

25.4	23.4	7.5	16.1	6.3	+0.5	
12	6	±	0	12	17	

22.4	18.2	7.55	13.0	9.2	+2.0	
12	6	±	0	5	17	

18.2	14.7	7.5	10.1	6.6	+2.0	+4.0
12	6	±	0	6	12	15

⑩ + H.L. - Elev.
 1476.09

379+41

+49

379+57⁰⁰ Δ

+65

+73

+81

+89

+97

380+045

+13

+205

+285

+445

1476.09 H.L.
 Flume
 Grounds

12.3 12	8.3 6	4.5 7	6.7 0	6.3 3	5.7 5	+3.6 11	+4.6 13
11.8 15	8.0 9	4.5 7	7.0 0	5.7 3	+5.0 12		
11.4 15	7.7 9	4.5 7	7.4 0	6.3 5	+5.2 13		
12.2 14	8.1 8	4.6 7	7.3 0	5.4 6	+4.7 13		
13.4 13	9.1 7	4.6 7	7.3 0	6.8 3	5.0 8	+4.4 13	
16.0 13	11.0 7	4.6 7	7.6 0	6.8 4	3.7 8	+4.8 16	
17.4 12	14.0 6	4.6 7	11.4 0	9.5 3	6.0 9	0.6 16	
21.2 12	17.8 6	4.6 7	12.2 0	8.1 8	0.0 13		
20.8 12	16.7 6	4.7 7	12.9 0	9.2 6	1.8 10	0.0 19	
17.8 12	13.8 6	4.6 7	10.6 0	7.3 6	+1.2 12		
18.3 12	15.2 6	4.7 7	11.5 0	7.0 7	5.0 8	+0.2 16	
21.0 12	17.4 6	4.65 7	14.0 0	10.0 5	5.0 10	1.8 15	
26.3 12	19.6 6	4.8 7	15.6 0	8.5 7	5.7 9	1.5 16	

(11)

+

H.I.

-

Elev.

1476.09

1476.09 H.I.

380+60.75 Δ

+73

+81

+89

+98

381+135

+30

+375

+46

+54

381+69.39 Δ

+77

381+86.76 Δ

			Flume	Ground					
80°	26.0	23.5	7.6	16.0	15.0	7.5	3.4	+0.4	
90°	9	6	±	0	3	5	11	18	
90°	25.7	22.5	4.7	13.4	11.4	7.3	+1.5	+3.2	
90°	9	6	±	0	3	6	14	18	
80°	14.4	11.4	4.7	12.2	9.3	3.6	+1.7	+3.8	
80°	11	6	±	0	3	6	11	15	
90°	14.4	11.1	4.6	7.9	8.4	0.0	+5.6		
90°	11	6	±	0	4	6	15		
90°	14.7	13.0	4.65	7.5	6.8	+5.5			
90°	11	8	±	0	6	11			
90°	14.3	9.7	4.7	9.3	7.3	+2.6	+7.8		
90°	6	±	0	4	6	13			
90°	10.7	8.1	4.7	7.4	6.9	0.8	+4.5	+6.0	
90°	5	7	±	0	3	4	10	17	
90°	11.2	7.7	4.7	7.1	6.1	+3.8	+5.8		
90°	9	5	±	0	4	7	16		
80°	8.4	4.7	7.2	6.6	1.4	+2.6	+5.4	+8.0	
80°	6	±	0	4	4	7	10	16	
80°	8.5	4.7	7.3	6.7	+1.3	+6.9			
80°	6	±	0	3	4	14			
160°	18.4	16.5	4.8	8.2	7.6	0.6	+4.8		
160°	8	4	±	0	4	5	12		
160°	16.5	14.4	4.85	8.6	7.2	0.7	+4.6		
160°	8	3	±	0	5	7	13		
160°	11.9	10.9	4.8	8.0	6.8	0.3	+5.0		
160°	10	3	±	0	5	6	11		

12

+ H.I. -
1476.09 4.67

B.M. - On Top of Ledge 12' Lt, 382+00 (W. End Flume #15)

1471.42 B.M.

8.67 1480.09 H.I.

382+00

1471.50 X

+05.4
W. End Flume #15

71.50

+25

71.48

+50

71.46

+75

71.44

383+00

71.42

+25

71.40

+50

71.38

+75

71.36

384+00

71.34

+25

71.32

4.54 1475.55 T.P.

4.48 1480.03 H.I.

+50

71.30

Dec. 28-27

Ward - Notes

Duermit - Ler.

M.S. Bain - Rod

1480.09 H.I.

+05.42
End Flume

4.7
4

4.7
2.5

8.7
2

71.4

8.7
2

8.7
2

4.7
2.5

4.7
4

71.39

8.70 in Flume

71.42

75.45

7.64
TOP Lt. Wall

8.67

75.40
7.69
TOP Rt. Wall

75.64

7.75

71.24

8.85

75.71
4.38

75.63

7.76

71.39

8.70

75.73
7.36

75.67

7.72

71.32

8.77

75.56
7.53

75.60

7.79

71.21

8.88

75.69
7.42

75.48

7.61

71.34

8.75

75.49
7.60

75.54

7.55

71.19

8.90

75.53
7.56

75.49

7.60

71.19

8.90

75.40
7.69

75.46

7.63

71.17

8.92

75.53
7.56

75.49

7.60

71.15

8.94

75.57
7.52

1480.03 H.I.

75.45

7.58

71.15

8.88

75.44
7.59

(3)

H.L.
1480.03

Elev.

Grade

1480.03 H.L.

+75		1471.28
385+00		71.26
+25		71.24
+50		71.22
+75		71.20
386+00		71.18
+25		71.16
+50		71.14
+75		71.12
387+00		71.10
+25		71.08
+50		71.06
	4.48	1475.55 TP
	4.12	1479.67
+75		71.04

75.44 4.59	71.17 8.86 £	75.45 7.58	
75.44 4.59	71.01 8.02 £	75.44 7.59	71.14 8.89 £
75.39 7.64	70.98 7.05 £	75.39 7.64	
75.34 4.69	71.02 7.01 £	75.39 7.64	
75.33 4.70	71.08 8.95 £	75.42 7.61	
75.29 4.74	71.01 8.02 £	75.32 7.71	71.07 8.96 £
75.16 4.87	70.99 8.04 £	75.17 7.86	
75.19 4.84	70.96 8.07 £	75.25 7.78	71.04 8.99 £
75.12 7.91	71.07 8.96 £	75.14 7.89	
75.25 4.78	70.99 8.04 £	75.18 7.85	
75.20 4.83	70.96 8.07 £	75.23 7.80	
75.23 4.80	70.83 8.20 £	75.26 7.77	70.96 8.07 £
	1479.67 H.L.		
75.17 4.50	70.93 8.74 £	75.25 7.92	

19

+ H.I. 1479.67

- Elev. $\frac{1}{2}$ Grade

388+00		1471.02
+25		71.00
+38		70.99
Beq. Top Slab.		
+50		70.98
+75		70.96
389+00		70.94
+06		70.94
End Top Slab and		
Beq. Pavement		
+25		70.92
+46		70.90
End Pavement		
+50		70.90
+75		70.88
390+00		70.86

Concrete Top
but no pavement
Pavement

4.02 1475.65 B.M.

B.M. - Spt. in Hub 12' Lt 390+00

3.64 1479.29

1479.67 H.I.

75.16	70.75	75.18	70.90
4.51	8.92	4.99	8.77
75.10	70.79	75.10	
4.57	8.88	4.57	
75.07	70.72	75.05	
4.60	8.95	4.62	
75.06	70.77	75.00	
4.61	8.90	4.67	
75.07	70.94	75.03	
4.60	8.73	4.64	
75.05	70.80	75.10	
4.62	8.87	4.57	
75.03	70.60	75.07	70.80
4.64	9.07	4.60	8.97
75.00	70.61	74.97	
4.67	9.06	4.70	
75.03	70.65	75.00	70.73
4.64	9.02	4.67	8.94

4.21
Bottom Slab
Elev.

4.29
B. Slab
Elev.

(15)

+ H.I. -
1479.29

Elev. Φ
Grades

1479.29 H.I.

+25	1470.84
+50	70.82
+75	70.80
391+00	70.78
+25	70.76
+50	70.74
+75	70.72
392+00	70.70
+25	70.68
+50	70.66
+75	70.64
393+00	70.62
+25	70.60

74.85 7.77	70.65 8.64 ±	71.78 7.51
74.95 7.34	70.62 8.67 ±	71.92 7.37
75.01 7.28	70.57 8.72 ±	71.96 7.33
74.97 7.32	70.54 8.75 ±	71.99 7.30
74.86 7.43	70.35 8.77 ±	71.88 7.41
74.87 7.41	70.48 8.81 ±	71.89 7.40
74.86 7.43	70.54 8.75 ±	71.85 7.44
74.84 7.45	70.50 8.79 ±	71.81 7.42
74.83 7.46	70.46 8.83 ±	71.86 7.43
74.86 7.43	70.41 8.88 ±	71.77 7.52
74.77 7.52	70.48 8.81 ±	71.84 7.45
74.71 7.58	70.38 8.91 ±	71.78 7.51
74.71 7.58	70.27 9.02 ±	71.76 7.53

8.70.63
±

70.55
8.27
±

16	+	H.I.	-	Elev.	Grades	
		1479.29				
+50				1470.58		
			4.75	1474.54	T.P.	
	4.69	1479.23				
+57.5				70.58		
Beq. Flume #16	↑ Flume #16 ↓					
+75				70.56		
+97.5					70.54	
End Flume						
394+00					70.54	
+25					70.52	
+50					70.50	
+75					70.48	
395+00					70.46	
+25					70.44	
+50				70.42		
+75				70.40		
396+00				70.38		

1479.29 H.I.
 70.67
 4.62 70.45 74.80
 8.84 7.49
 1479.23 H.I.

70.46	70.48	74.46
4.77	8.75	7.77
	70.27	
	8.96	
70.40	70.40	74.37
7.83	8.83	7.86
	70.38	
70.58	8.85	74.49
7.65		7.74
	70.28	
70.56	8.95	74.60
4.67		7.63
	70.31	
70.55	8.92	74.65
4.68		7.58
	70.25	
70.54	8.98	74.65
7.69		7.68
	70.23	
70.55	9.00	74.53
4.68		7.70
	70.08	
70.52	9.15	74.52
7.71		7.71
	70.07	
70.53	9.16	74.52
7.70		7.71
	69.98	
70.48	9.25	74.31
4.75		7.92
	69.91	
70.45	9.32	74.54
4.78		7.69

70.29
 8.94
 7

70.25
 8.98
 7

17	+	H.I.	-	Elev.	±	Grade
		1479.23				
+25				1470.36		
			3.90	1475.33	TP	
	7.50	1482.83				
+50				70.34		
+75				70.32		
+90				70.31		
Beq. Top Slab						
397+00				70.30		
+18				70.28		
End Top Slab.						
+25				70.28		
+50				70.26		
			8.58	1474.25	TP.	
	4.84	1479.09				
+75				70.24		
398+00				70.22		
+25				70.20		
+50				70.18		

← Conc. Top
 No Bottom

71.89
 7.94
 Bottom Slab

1479.23 H.I.

71.47	70.03	71.25
4.76	2.20	4.78
	±	

1482.83 H.I.

71.34	70.05	71.30
8.49	12.78	8.53
	±	
71.35	70.14	71.43
8.48	12.69	8.40
	±	
71.35	70.17	71.48
8.48	12.66	8.35
	±	

71.33	70.07	71.39
8.50	12.76	8.74
	±	
71.34	69.96	71.34
8.49	12.87	8.77
	±	
71.37	70.18	71.29
8.46	12.65	8.54
	±	

1479.09 H.I.

71.31	69.93	71.32
4.72	9.16	4.77
	±	
71.24	69.92	71.28
4.95	9.17	4.81
	±	
71.35	69.90	71.30
4.74	9.19	4.79
	±	
71.32	69.91	71.31
4.77	9.18	4.78
	±	

70.01
 9.08
 ±

13.	+	H.I.	-	Elev.	± Grade
		1479.09			1470.16
	+75				
399+00					70.14
	+25				70.12
	+50				70.10
	+75				70.08

5.40 1473.69 B.M.

B.M. - sph. in Hub 15' Lt. 400+00

5.21 1478.90

400+00					70.06
	+25				70.04
	+50				70.02
	+75				70.00
401+00					69.98
	+25				69.96
	+50				69.94

1479.09 H.I.

71.21 7.82	69.89 9.20 ±	71.24 7.85
71.26 7.83	69.87 9.22 ±	71.19 7.90
71.15 7.94	69.78 9.31 ±	71.20 7.89
71.15 7.94	69.79 9.30 ±	71.12 7.97
71.06 5.03	69.81 9.28 ±	71.02 5.07

69.95
7.14
±

1478.90 H.I.

71.13 7.77	69.83 9.07 ±	71.16 7.74
71.11 7.79	69.77 9.13 ±	71.15 7.75
71.14 7.76	69.75 9.15 ±	71.15 7.75
71.04 7.86	69.73 9.17 ±	71.07 7.83
71.26 7.64	69.79 9.11 ±	71.18 7.72
71.01 7.89	69.59 9.31 ±	71.09 7.81
71.04 7.86	69.61 9.29 ±	71.04 7.86

Station	+	H.I.	-	Elev.	± Grade
		1478.90			1469.92
			5.00	1473.90	TP
402+00	5.66	1479.56			69.90
+25					69.88
+40					69.87
403+00					1469.86
+25					
+29.5					
404+00					

↑
 Beg. Pavement
 ↑
 Beg. Flume #17
 ↓
 End Flume
 ↓
 All Paved except Flume
 ↓

↑
 Existing Pavement
 ↓

1478.90 H.I.		
74.01	69.57	74.08
5.89	9.33	4.82
1479.56 H.I.		
73.98	69.58	73.99
5.58	9.98	5.57
74.07	69.63	74.15
5.79	9.93	5.71
73.95	69.83	73.98
5.61	9.73	5.58
73.97	69.79	73.98
5.57	9.77	5.58
73.84	69.88	73.90
5.72	9.68	5.66
73.65	69.70	73.67
5.91	9.86	5.89
	69.63	
	69.63	
73.63	69.67	73.64
5.93	9.89	5.92
73.84	69.73	73.86
5.72	9.83	5.70
73.95	69.64	73.91
5.61	9.92	5.65
73.92	69.66	73.83
5.69	9.90	5.73

Station	H.I.	Elev.	Grade
20	1479.56		
+25			
+50			
405+00	5.22 1479.00	5.78 1473.78 T.P.	
+75			
405+44			
Beg. Road Culvert			
406+10			
End Culvert			
+25		1469.46	
+29		69.46	
End Pavement			
	4.31 1474.69 B.M.		
	B.M. - On Concrete at S.W. Cor. of W. end of Conduit		
	Top Slab at County Road Crossing.		
	3.63 1478.32		
+50		69.44	
+75		69.42	

Co. Road Culvert
 All Paved

Existing Pavement

-0.08 % Grade

Station	H.I.	Elev.	Grade
	1479.56 H.I.		
	73.93	5.63	9.88
	73.77	5.79	10.02
	73.75	5.81	
	69.68		
	69.5A		
	73.66	5.90	
	1479.00 H.I.		
	73.73	5.27	9.51
	73.76	5.24	9.41
	73.66	5.34	9.50
	73.96	5.04	9.75
	73.61	5.39	9.58
	73.60	5.40	9.77
	73.63	5.37	9.77
	69.42		
	69.53		
	69.53		
	73.60	5.40	
	73.64	5.36	
	73.65	5.35	
	1478.32 H.I.		
	73.58	4.74	9.19
	73.55	4.77	9.36
	69.13		
	68.96		
	73.66	4.66	
	73.62	4.70	

5.06
Bottom Top
Slab

5.06
Bot. Slab

21	+	H.I.	-	Elev.	Grade
		1478.32			
407+00				1469.40	
+25				69.38	
+50				69.36	
+75				69.34	
408+00				69.32	
+25				69.30	
+50				69.28	
+75				69.26	
409+00				69.24	
			5.09	1473.23	TP.
+25	4.59	1477.82			
+50				69.22	
+75				69.18	
410+00				69.16	

1478.32 H.I.		
73.48	7.84	73.56
73.49	7.83	73.48
73.48	7.84	73.49
73.50	7.82	73.46
73.43	7.89	73.45
73.41	7.91	73.44
73.48	7.84	73.39
73.33	7.99	73.37
73.35	7.97	73.31
		69.09
		8.22
		69.03
		8.29
		69.02
		8.80
		69.02
		8.80
		69.02
		8.80
1477.82 H.I.		
73.25	7.57	73.31
73.28	7.54	73.30
73.21	7.61	73.21
73.19	7.63	73.26

22	+	H.I.	-	Elev.	±
		1477.82			Grade
+ 25				1469.14	
			3.50	1474.32	
		B.M. - Spt. in Hub 20 Lt. 910+00 = 1474.33 B.M.			
		3.53		1477.86	
+ 50				69.12	
+ 75				69.10	
411+00				69.08	
+ 25				69.06	
+ 50				69.04	
+ 75				69.02	
412+00				69.00	
+ 25				68.98	
+ 50				68.96	
			4.72	1473.14	T.P.
		5.17		1478.31	
+ 75				68.94	
413+00				68.92	

Dec. 29-'27		
Ward - Notes	Dvermit - Level	M ^s Bain - Rod
1477.82 H.I.		
73.25	68.87	73.27
4.57	8.75	4.55
±	±	±
1477.86 H.I.		
73.25	68.91	73.22
4.61	8.75	4.64
±	±	±
73.22	68.85	73.24
4.64	9.01	4.62
±	±	±
73.16	68.81	73.18
4.70	9.05	4.68
±	±	±
73.17	68.84	73.19
4.69	9.02	4.67
±	±	±
73.12	68.75	73.08
4.74	9.11	4.78
±	±	±
73.10	68.86	73.13
4.76	9.00	4.73
±	±	±
73.05	68.74	73.15
4.81	9.12	4.71
±	±	±
73.07	68.79	73.05
4.79	9.07	4.81
±	±	±
73.04	68.78	73.05
4.82	9.08	4.81
±	±	±
1478.31 H.I.		
73.03	68.88	73.05
5.28	9.73	5.26
±	±	±
72.93	68.66	73.04
5.38	9.65	5.27
±	±	±

+

H.I.

-

Elev.

±
Grade

1478.31

+25

1468.90

+50

68.88

+75

68.86

414+00

68.84

+25

68.82

+50

68.80

+75

68.78

5.01 1473.30 TP.

4.10 1477.40

415+00

1468.76

+25

68.74

+50

68.71

+75

68.69

416+00

68.66

+25

68.64

- 0.10 ± Grade

1478.31 H.I.

72.93
5.38 9.74 5.33
68.57
72.98

72.93
5.38 9.63 5.32
68.68
72.99

73.01
5.30 9.55 5.35
68.76
72.96

72.93
5.38 9.64 5.33
68.67
72.98

72.89
5.42 9.51 5.40
68.80
72.91

72.82
5.49 9.79 5.50
68.52
72.81

72.88
5.43 9.78 5.54
68.53
72.77

1477.40 H.I.

72.77
7.63 8.94 7.58
68.46
72.82

72.78
7.62 8.98 7.57
68.52
72.83

72.77
7.63 8.91 7.65
68.49
72.75

72.80
7.60 8.90 7.71
68.50
72.69

72.79
7.61 8.96 7.61
68.44
72.79

72.76
7.64 8.93 7.67
68.47
72.73

68.68
2.63
±

68.61
2.70
±

68.54
8.86
±

68.51
8.89
±

24	+	H.I.	—	Elev.	± Grade
		1477.40			
+50				1468.61	
+75				68.59	
417+00				68.56	
+25				68.54	
+50				68.51	
			4.68	1472.72	TP
	3.11	1475.83			
+75				68.49	
418+00				68.46	
+25				68.44	
+50				68.41	
+75				68.39	
419+00				68.36	
+25				68.34	
+50				68.31	

1477.40 H.I.		
72.73	68.36	72.70
4.67	9.04	4.70
	±	
72.71	68.47	72.74
4.63	8.93	4.66
	±	
72.73	68.42	72.73
4.67	8.98	4.67
	±	
72.67	68.28	72.67
4.73	9.12	4.73
	±	
72.60	68.22	72.66
4.80	9.18	4.74
	±	
1475.83 H.I.		
72.73	68.39	72.74
3.10	7.44	3.09
	±	
72.60	68.23	72.61
3.23	7.60	3.22
	±	
72.50	68.18	72.46
3.33	7.65	3.37
	±	
72.53	68.16	72.55
3.30	7.67	3.28
	±	
72.41	68.02	72.51
3.42	7.81	3.32
	±	
72.49	67.87	72.45
3.34	7.96	3.38
	±	
72.49	68.09	72.34
3.34	7.74	3.79
	±	
72.48	68.16	72.36
3.35	7.67	3.77
	±	

68.44
8.96
±
68.43
8.97
±
68.37
9.03
±
68.33
7.50
±
68.31
7.52
±
68.24
7.59
±

25	+	H.I.	-	Elev.	±
		1475.83			<u>Grade</u>
+75				1468.29	
420+00				68.26	
		3.39		1472.44	
B.M. - Spk. in Hub 12' Lt. 420+00 = 1472.42 B.M.					
		4.99		1477.41	
+25				68.24	
+50				68.21	
+75				68.19	
421+00				68.16	
+25				68.14	
+50				68.11	
+75				68.09	
422+00				68.06	
+25				68.04	
		5.10		1472.31 TP	
		4.74		1477.05	

1475.83 H.I.

72.49	68.13	72.40
3.34	7.70	3.43
	±	
72.47	68.03	72.46
3.36	7.80	3.37
	±	

1477.41 H.I.

72.42	67.86	72.29
4.99	9.55	5.12
	±	
72.40	67.83	72.44
5.01	9.58	4.97
	±	
72.47	67.92	72.34
4.94	9.49	5.07
	±	
72.24	67.56	72.25
5.17	9.85	5.16
	±	
72.23	67.85	72.30
5.18	9.56	5.11
	±	
72.18	67.87	72.28
5.23	9.54	5.13
	±	
72.24	67.91	72.19
5.17	9.50	5.22
	±	
72.23	68.05	72.22
5.18	9.36	5.19
	±	
72.21	67.83	72.15
5.20	9.58	5.26
	±	

- 0.10 96 Grade

26	+	H.I.	-	Elev.	±
		1477.05			Grade
+50				1468.01	
+75				67.99	
423+00				67.96	
+25				67.94	
+50				67.91	
+75				67.89	
		4.96	5.08	1471.97	T.P.
424+00		1476.93		67.86	Grade
+25				67.84	0.10%
+50				67.81	1
+75				67.79	
425+00				1467.76	X
+25				67.74	0.08%
		5.48	4.92	1472.01	T.P.
		1477.49			

1477.05 H.I.		
72.17	67.75	72.06
7.88	2.30	7.99
72.24	67.70	72.19
7.81	2.35	7.86
72.22	67.72	72.18
7.83	2.32	7.87
72.12	67.60	72.09
7.93	2.45	7.96
72.22	67.67	72.09
7.83	2.38	7.96
72.04	67.71	72.15
5.01	2.37	4.90
1476.93 H.I.		
72.01	67.61	72.08
7.92	2.32	7.85
72.07	67.71	72.11
7.86	2.22	7.82
72.11	67.61	72.06
7.82	2.32	7.87
72.02	67.59	72.01
7.91	2.37	7.92
72.09	67.61	72.04
7.84	2.32	7.89
72.00	67.63	72.01
7.93	2.30	7.92

67.91
2.14
E

67.92
2.13
E

67.78
2.15
E

Grade
0.10%
1
-0.08%

27	+	H.I.	-	Elev.	±
		1477.49.			Grade
+50				1467.72	
+75				67.70	
426+00				67.68	
+25				67.66	
+50				67.64	
+75				67.62	
427+00				67.60	
+25				67.58	
+50				67.56	
+52					
E. End Tunnel under Private Road					
				9.67	1467.82 TP.
		4.48			1472.30
+64		End Conc. Walls			
+75				67.54	
Main Tunnel Not Lined					
428+00				67.52	

Jan. 3-'28
 Ward - Notes
 Duermit - Lev.
 Mc-Bain - Rod

1477.49 H.I.

71.93	67.55	72.00
5.56	9.94	5.49
	±	
71.98	67.62	71.98
5.51	9.87	5.51
	±	
71.96	67.61	71.94
5.53	9.88	5.55
	±	
71.91	67.53	71.88
5.58	9.96	5.61
	±	
71.85	67.49	71.97
5.64	10.00	5.52
	±	
71.87	67.39	71.90
5.62	10.10	5.59
	±	
71.84	67.22	71.80
5.65	10.27	5.69
	±	
71.83	67.19	71.83
5.66	10.00	5.66
	±	
71.83	67.39	71.84
5.66	10.10	5.65
	±	
71.83	67.46	71.84
5.66	10.03	5.65
	±	

67.71
 9.78
 ±

-0.08% Grade

28	+	H.I.	-	Elev.	±
		1472.30			<u>Grade</u>
+26					
Bog. Conc. Sides					
			4.67	1467.63	TP
	8.73	1476.36			
+38				1467.49	
W. End Tunnel					
+50				67.48	
+75				67.46	
429+00				67.44	
+25				67.42	
+50				67.40	
+75				67.38	
430+00				1467.36	
			4.46	1471.90	TP
	4.52	1476.42			
+25				67.34	
+50				67.32	
+75				67.30	

-0.08% Grade

1476.36 H.I.		
71.66	9.25	71.54
7.70	±	4.82
71.63	9.15	71.51
7.73	±	4.85
71.54	9.13	71.60
7.82	±	4.76
Buried	9.10	71.49
	±	4.87 (5' back)
71.49	9.06	71.47
7.87	±	4.89
71.53	9.04	71.54
7.83	±	4.82
71.41	9.06	Rock
7.75	±	No Wall
71.48	9.27	71.51
7.88	±	4.85
1476.42 H.I.		
71.45	9.16	71.47
7.97	±	4.95
71.38	9.32	71.42
5.04	±	5.00
71.42	9.24	71.49
5.00	±	4.93

+	H.I.	-	Elev.	±
	1476.42			Grade
		5.79	1470.63	T.P. on B.M.
			1470.67	B.M.

B.M. - Spk. in Hub 15' Lt. 430+75

5.53 1476.20

431+00 1467.28

+25 67.26

+50 67.24

+75 67.22

432+00 67.20

4.70 1471.50 T.P.

+10 Beg. Pavement, 5.08 1476.58

+25 67.18

+50 67.16

+58.9 E. End Flume #18 67.15

+75 67.14

+98.9 W. End Flume

433+00 67.12

-0.08% Grade

1476.20 H.I.

71.49	67.06	71.42
4.71	9.14	4.75

71.40	67.08	71.38
4.80	9.12	4.82

71.35	66.83	71.38
4.85	9.37	4.82

71.44	66.99	71.42
4.76	9.21	4.78

71.44	66.90	71.36
4.76	9.30	4.84

1476.58 H.I.

71.38	67.15	71.42
5.20	9.43	5.16

71.35	67.15	71.37
5.23	9.43	5.21

71.22	67.07	71.22
5.36	9.51	5.36

66.98		
9.60		

71.13	67.04	71.16
5.45	9.54	5.42

71.21	67.08	71.25
5.37	9.50	5.33

CONC.

30	+	H.I.	-	Elev.	± Grade
		1476.58			
+25					1467.10
End Pavement					
+50					67.08
+75					67.06
434+00					67.04
			5.21	1471.37	TP
	4.85	1476.22			
+25					67.02
+50					67.00
+75					66.98
435+00					1466.96
+25					66.94
+50					66.92
+75					66.90
436+00					66.88
+25					66.86

- 0.08% grade

1476.58 H.I.		
71.34	67.05	
5.24	9.53	5.29
	± Conc.	
71.22	66.83	71.29
5.36	9.75	5.29
	±	
71.22	66.76	71.32
5.36	9.82	5.26
	±	
71.18	66.78	71.46
5.40	9.80	5.12
	±	
1476.22 H.I.		
71.21	66.71	71.24
5.01	9.51	4.98
	±	
71.15	66.63	71.21
5.07	9.59	5.01
	±	
71.11	66.69	71.12
5.11	9.53	5.10
	±	
71.09	66.44	71.03
5.13	9.78	5.19
	±	
71.12	66.56	71.04
5.10	9.66	5.18
	±	
70.99	66.55	71.12
5.23	9.67	5.10
	±	
71.05	66.49	71.02
5.17	9.73	5.20
	±	
71.01	66.54	70.95
5.21	9.68	5.27
	±	
70.83	66.56	70.95
5.39	9.66	5.27
	±	

9.66.97
±

9.66.92
±

9.66.85
±

31	+	H.I.	-	Elev.	± Grade
		1476.22			
+50				1466.84	
+75				66.82	
437+00				66.80	
+25				66.78	
		5.45	1476.42	5.25	1470.97 TP
+50				66.76	
+75				66.74	
438+00				66.72	
+25				66.70	
+50				66.68	
+75				66.66	
439+00				66.64	
+25				66.62	
+50				66.60	

- 0.08% grade

1476.22 H.I.		
71.01	66.51	71.02
5.21	9.71	5.20
	±	
71.00	66.58	71.02
5.22	9.67	5.20
	±	
70.98	66.67	70.97
5.27	9.55	5.25
	±	
70.97	66.55	71.00
5.25	9.67	5.22
	±	
1476.42 H.I.		
70.97	66.50	70.96
5.75	9.92	5.96
	±	
70.92	66.67	70.92
5.50	9.75	5.50
	±	
70.93	66.44	70.87
5.79	9.98	5.55
	±	
70.74	66.28	70.85
5.68	10.14	5.57
	±	
70.82	66.22	70.82
5.60	10.20	5.60
	±	
70.92	66.46	70.87
5.50	9.96	5.55
	±	
70.79	66.30	70.77
5.63	10.12	5.65
	±	
70.70	66.36	70.77
5.72	10.06	5.65
	±	
70.72	66.30	70.76
5.70	10.12	5.66
	±	

66.69
9.53
±

66.54
9.89
±

3132

+

H.I.
1476.42

-

Elev. $\frac{1}{2}$ Grade

+75

1466.58

4.76 1471.66

1471.67 B.M.

B.M. - Spt. in Hub 75' Lt. 440+00

4

3.74 1475.41

440+00

1466.56

+25

66.54

+50

66.52

+75

66.50

4 441+00

66.48

+25

66.46

+50

66.44

+75

66.42

4. 442+00

66.40

+25

66.38

+50

66.36

1476.42 H.I.

70.68	66.30	70.67
5.74	10.12	5.75
	$\frac{1}{2}$	

1475.41 H.I.

70.65	66.13	70.63
4.76	9.28	4.78
	$\frac{1}{2}$	

70.62	66.21	70.65
4.79	9.20	4.76
	$\frac{1}{2}$	

70.56	66.11	70.61
4.85	9.30	4.80
	$\frac{1}{2}$	

70.66	66.20	70.66
4.75	9.21	4.75
	$\frac{1}{2}$	

70.64	66.39	70.65
4.67	9.07	4.76
	$\frac{1}{2}$	

70.58	66.03	70.61
4.83	9.38	4.80
	$\frac{1}{2}$	

70.52	66.11	70.62
4.89	9.30	4.79
	$\frac{1}{2}$	

70.53	65.71	70.64
4.88	9.20	4.77
	$\frac{1}{2}$	

70.63	66.01	70.66
4.78	9.40	4.75
	$\frac{1}{2}$	

70.47	65.87	70.52
4.94	9.54	4.89
	$\frac{1}{2}$	

70.41	66.08	70.50
5.00	9.33	4.91
	$\frac{1}{2}$	

- 0.08 $\frac{1}{2}$ Grade

33	+	H.I.	-	Elev.	Grade
		1475.41			
+75				1466.34	
443+00				66.32	
			4.94	1470.47 TP	
+25	6.70	1477.17			
				66.30	
+50				66.28	
+75				66.26	
444+00				66.24	
+25				66.22	
+50				66.20	
+75				66.18	
445+00			Gr. Break →	1466.16	
+25				66.14	
+50				66.11	
+75				66.09	

1475.41 H.I.		
70.46	7.6603	70.51
4.95	7.38	4.90
	±	
70.45	7.6605	70.56
4.96	7.36	4.85
	±	
1477.17 H.I.		
70.46	7.6604	70.47
6.71	11.13	6.70
	±	
70.33	7.6613	70.39
6.84	11.04	6.78
	±	
70.48	7.6591	70.46
6.69	11.20	6.71
	±	
70.38	7.6590	70.38
6.79	11.27	6.79
	±	
70.37	7.6594	70.33
6.80	11.23	6.84
	±	
70.35	7.6597	70.45
6.82	11.20	6.72
	±	
70.43	7.6597	70.37
6.74	11.20	6.80
	±	
70.35	7.6584	70.41
6.82	11.33	6.76
	±	
70.29	7.6560	70.34
6.88	11.50	6.83
	±	
70.28	7.6580	70.30
6.89	11.37	6.87
	±	
70.21	7.6583	70.24
6.96	11.34	6.93
	±	

66.22
10.75
±

66.17
11.00
±

70.00
10.00
±

34	+	H. I. 1477.17	-	Elev.	± Grade
446+00					1466.06
+25					66.04
+50					66.01
+71.5					65.99
E. End Flume #19					
+75					65.99
447+00					65.96
+25					65.94
+50					65.91
+75					65.89
448+00					65.86
+25					65.84
+50					65.81
+75					65.79

-0.08% Grade

1477.17 H.I.		
70.10	65.75	70.14
7.07	11.72	7.03
	±	
70.14	65.67	70.20
7.03	11.50	6.97
	±	
70.21	65.70	70.27
6.96	11.77	6.90
	±	
70.12	66.00	70.14
7.05	11.17	7.03
	±	
	65.87	
	11.30	
	±	
	65.89	
	11.28	
	±	
	65.83	
	11.34	
	±	
	65.63	
	11.54	
	±	
	65.61	
	11.56	
	±	
	65.60	
	11.57	
	±	
	65.67	
	11.50	
	±	
	65.73	
	11.44	
	±	
	65.62	
	11.55	
	±	

65.97
11.20
±

36	+	H.I.	-	Elev.	Grade
		1474.72			
+75				1465.52	
452+00				65.50	
+25				65.48	
+50				65.46	
+75				65.44	
453+00				65.42	
+25				65.40	
+50				65.38	
			5.00	1469.72 TP.	
	4.49	1474.21			
+75				65.36	
454+00				65.34	
+25				65.32	
+50				65.30	
+75				65.28	

1474.72 H.I.

69.59	65.37	69.81
5.13	9.35	4.91
	±	
69.68	65.31	69.70
5.04	9.41	5.02
	±	
69.71	65.34	69.80
5.01	9.38	4.92
	±	
69.69	65.32	69.76
5.03	9.40	4.96
	±	
69.70	65.32	69.68
5.02	9.40	5.04
	±	
69.67	65.12	69.66
5.05	9.60	5.06
	±	
69.73	65.26	69.81
4.99	9.46	4.91
	±	
69.69	65.30	69.71
5.03	9.42	5.01
	±	

65.48
9.24
±

65.44
9.28
±

1474.21 H.I.

69.60	65.27	69.66
4.61	8.94	4.55
	±	
69.51	65.16	69.59
4.70	9.05	4.62
	±	
69.63	65.01	69.56
4.58	9.20	4.65
	±	
69.57	65.11	69.57
4.64	9.10	4.64
	±	
69.57	65.11	69.49
4.64	9.10	4.72
	±	

2' Back Under Bridge 2' Back

65.29
8.92
±

37	+	H.I.	-	Elev.	± Grade
		1474.21			
455+00				1465.26	
+25				65.24	
			4.41	1469.80	TP.
+50	4.56	1474.36		65.22	
+75				65.20	
456+00				65.18	
+25				65.16	
+50				65.14	
+75				65.12	
457+00				65.10	
+25				65.08	
+50				65.06	
+75				65.04	
458+00				65.02	

1474.21 H.I.		
69.46	65.00	69.40
7.75	9.21	4.81
	±	
69.49	64.83	69.49
7.72	9.38	4.72
	±	
1474.36 H.I.		
69.52	64.26	69.50
7.84	10.10	4.86
	±	
69.57	64.61	69.51
7.79	9.75	4.85
	±	
69.51	64.80	69.47
7.85	9.56	4.89
	±	
69.46	64.80	69.48
7.90	9.56	4.88
	±	
69.42	64.80	69.45
7.94	9.56	4.91
	±	
69.43	64.73	69.48
7.93	9.63	4.88
	±	
69.37	64.76	69.34
7.99	9.60	5.02
	±	
69.34	64.96	69.35
5.02	9.70	5.01
	±	
69.35	64.72	69.59
5.01	9.64	4.77
	±	
69.36	64.46	69.41
5.00	9.90	4.95
	±	
69.34	64.60	69.38
5.02	9.76	4.98
	±	

9.65.25
±

Very Low

9.65.18
±

Very Low

9.65.03
±

+	H.I.	-	Elev.	± Grade
	1474.36			
		5.04	1469.32	TP
5.55	1474.87			

Jan. 9-'28
Ward-Notes
Duermit-Lev.
McBain-rod

1474.87 H.I.

+ 25				1465.00
+ 50				64.98
+ 75				64.96
459 + 00				64.94
+ 25				64.92
+ 50				64.90
+ 75				64.88
460 + 00				1464.86
+ 25				64.84
+ 50				64.82

10
0.08

5.70 1469.17
1469.15 B.M.

B.M. - Spt. in Hub 16' Lt. 460 + 50
6.22 1475.37

+ 75				64.80
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69.36	65.0	69.37
5.51	9.9	5.50
69.27	64.8	69.28
5.60	10.1	5.59
69.30	65.0	69.30
5.57	9.9	5.57
69.29	65.0	69.27
5.58	9.9	5.60
69.23	64.8	69.20
5.64	10.1	5.67
69.17	64.8	69.12
5.70	10.1	5.75
69.10	64.8	69.02
5.77	10.1	5.85
69.15	64.7	69.02
5.72	10.2	5.85
69.06	64.8	69.16
5.81	10.1	5.71
69.01	64.8	69.17
5.86	10.1	5.70

64.91
9.96
5

1475.37 H.I.

69.02	64.7	69.06
6.35	10.7	6.31

39	+	H. I.	-	Elev.	± Grade
		1475.37			
461+00				1464.78	
+25				64.76	
+50				64.74	
+75				64.72	
462+00				64.70	
+25				64.68	
+50				64.66	
+75				64.64	
			5.81	1469.56	TP.
	4.87	1474.43			
463+00				64.62	
+25				64.60	
+50				64.58	
+75				64.56	
464+00				64.54	

1475.37 H.I.

68.98	64.7	69.05
6.39	10.7	6.32
	±	
69.03	64.5	69.06
6.34	10.9	6.31
	±	
69.14	64.5	69.07
6.23	10.9	6.30
	±	
69.07	64.6	69.05
6.30	10.8	6.32
	±	
68.86	64.6	68.92
6.51	10.8	6.45
	±	
69.01	64.6	68.89
6.36	10.8	6.48
	±	
68.93	64.7	68.83
6.74	10.7	6.54
	±	
68.95	64.5	68.95
6.72	10.9	6.72
	±	

64.77
10.60
±

1474.43 H.I.

68.93	64.4	68.92
5.50	10.0	5.51
	±	
68.91	64.5	68.83
5.52	9.9	5.60
	±	
68.91	64.4	68.82
5.52	10.0	5.61
	±	
68.84	64.4	68.72
5.59	10.0	5.71
	±	
68.65	64.3	68.69
5.78	10.1	5.74
	±	

64.50
9.93
±

40	+	H. 11	-	Elev.	± Grade
		1474.43			
+25				1464.52	
+50				64.50	
+75				64.48	
465+00				64.46	
+25				64.44	
			5.48	1468.95	T.P.
+50	4.46	1473.41		64.42	
+75				64.40	
466+00				64.38	
+25				64.36	
+50				64.34	
+65 ^e				64.33	
Beg. Flume No 20					
+75				64.32	
467+00				64.30	

1474.43 H. 11.		
5.68, 7.6	64.3	68.83
5.67	10.1	5.60
	±	
5.68, 6.3	64.2	68.67
5.80	10.2	5.76
	±	
5.68, 6.9	64.1	68.71
5.74	10.3	5.72
	±	
5.68, 6.4	64.2	68.70
5.79	10.2	5.73
	±	
5.68, 6.6	64.3	68.81
5.77	10.1	5.62
	±	
1473.41 H. 11.		
68.67	64.2	68.65
7.74	9.2	4.76
	±	
68.64	64.1	68.62
7.77	9.3	4.79
	±	
68.64	64.3	68.53
7.77	9.1	4.88
	±	
68.62	64.1	68.54
7.79	9.3	4.87
	±	
68.60	64.0	68.51
7.81	9.4	4.90
	±	
68.45	64.35	68.36
7.96	9.05	5.05
	±	
	Conc.	
	64.2	
	9.2	
	±	
	64.1	
	9.3	
	±	

-0.08%

8.97
±

AI	+	H.I.	-	Elev.	± Grade
467+17.2		1473.41			
End Flume #20				1464.27	
+25				64.28	
+50				64.26	
+75				64.24	
468+00				64.22	
+25				64.20	
+50				64.18	
+75				64.16	
			4.60	1468.81	T.P.
	3.99	1472.80			
469+00				64.14	
+25				64.12	
+50				64.10	
+75				64.08	
			3.86	1468.94	
B.M. - Spt. in Hub 15' Lt. 469+85				1468.95	B.M.
	4.09	1473.04			

-0.00%

1473.41 H.I.

68.20	64.26	68.40
5.01	9.15	5.01
	± Conc.	
68.57	64.1	68.47
4.84	9.3	4.94
	±	
68.45	64.0	68.40
4.96	9.4	5.01
	±	
68.36	63.9	68.40
5.05	9.5	5.01
	±	
68.35	63.8	68.42
5.06	9.6	4.99
	±	
68.33	63.9	68.34
5.08	9.5	5.07
	±	
68.51	64.1	68.37
4.90	9.3	5.04
	±	
68.39	64.0	68.38
5.02	9.4	5.03
	±	

1472.80 H.I.

68.23	64.0	68.41
4.57	8.8	4.39
	±	
68.33	64.1	68.29
4.47	8.7	4.51
	±	
68.32	63.9	68.45
4.48	8.9	4.35
	±	
68.22	63.8	68.22
4.58	9.0	4.58
	±	

64.05
8.75
±

42	+	H.I.	-	Elev.	± Grade
		1473.04			
470+00				1464.06	
+25				64.04	
+50				64.02	
+75				64.00	
471+00				63.98	
+25				63.96	
+50				63.94	
+75				63.92	
472+00				63.90	
+25				63.88	
+50				63.86	
+75				63.84	
473+00				63.82	

-0.08%

1473.04 H.I.		
68.18	7.86	68.16
68.21	7.77	68.30
68.26	7.78	68.28
68.24	7.80	68.36
68.25	7.79	68.20
68.18	7.86	68.13
68.11	7.93	68.18
68.19	7.85	68.12
68.14	7.90	68.14
68.08	7.96	68.12
68.09	7.95	68.06
68.04	5.00	68.04
67.97	5.07	68.03

2.63.97
4.07

43	+	H.l.	-	Elev.	± Grade
		1473.04			
+25				1463.80	
			5.00	1468.04 T.P.	
	4.60	1472.64			
+50				63.78	
+75				63.76	
474+00				63.74	
+25				63.72	
+50				63.70	
+75				63.68	
475+00				63.66	
+25				63.64	
+50				63.62	
+75				63.60	
+92 ⁵				63.59	
Beg. Flume No 21					
476+00				63.58	

-0.08%

1473.04 H.l.		
68.00	9.4	68.00
5.04	±	5.04
63.6		
1472.64 H.l.		
67.97	9.0	68.00
4.67	±	4.64
67.97	9.1	68.00
4.67	±	4.64
68.00	9.0	67.94
4.64	±	4.70
67.86	9.0	67.98
4.78	±	4.66
67.80	9.3	67.86
4.80	±	4.79
67.83	9.5	67.83
4.81	±	4.81
67.84	9.2	67.95
4.80	±	4.69
67.86	9.2	67.87
4.78	±	4.77
67.75	9.2	67.73
4.89	±	4.91
67.69	9.2	67.93
4.95	±	4.71
67.59	9.09	67.69
5.05	±	4.95
	± conc.	
	9.1	
	±	

63.71
8.93
±

63.60
9.04
±

	+	H.I.	-	Elev. & Grade
444		1472.64		
476+19 ^B				1463.56
End Flume #21				
+25				63.56
+50				63.54
+75				63.52
4				
477+00				63.50
+25				63.48
+50				63.46
+75				63.44
4			5.08	1467.56 TP.
	4.74	1472.30		
478+00				63.42
+25				63.40
+50				63.38
+75				63.36
B				
4 479+00				63.34

-0.08

1472.64 H.I.		
67.64	63.50	67.62
5.00	9.10	5.02
67.72	≠ conc.	67.75
7.92	9.3	7.89
67.70	63.3	67.70
7.94	9.3	7.94
67.62	63.3	67.69
5.02	9.3	7.95
67.61	63.4	67.79
5.03	9.2	7.85
67.71	63.3	67.68
7.93	9.3	7.96
67.64	63.3	67.54
5.00	9.3	5.10
67.68	63.3	67.70
7.96	9.3	7.94
1472.30 H.I.		
67.57	63.2	67.67
7.73	9.1	4.63
67.60	63.2	67.60
7.70	9.1	4.70
67.60	63.3	67.59
7.70	9.0	4.71
67.59	63.3	67.60
7.71	9.0	4.70
67.46	63.1	67.47
7.84	9.2	4.83

63.28
9.02
≠

	+	H.I.	-	Elev.	± Grade
		1472.30			
	+ 25			1463.32	
	+ 50			63.30	
			4.01	1468.29	
	BM _i - Spt. in Hub 18' Lt. 479+65 = 1468.30 BM _i				
		6.48		1474.78	
	+ 75			63.28	
	480+00			1463.26	✓
	+ 25			63.24	
	+ 50			63.22	
	+ 75			63.20	
	481+00			63.18	
	+ 25			63.16	
	+ 50			63.14	
	+ 75			63.12	
	482+00			63.10	

1472.30 H.I.		
67.45	63.0	67.45
4.85	93	4.85
	±	
67.50	63.1	67.52
4.80	92	4.78
	±	
1474.78 H.I.		
67.44	63.2	67.49
7.34	116	7.29
	±	
67.40	63.2	67.49
7.38	116	7.29
	±	
67.36	63.1	67.38
7.42	117	7.40
	±	
67.32	63.0	67.37
7.46	118	7.41
	±	
67.20	63.0	67.42
7.58	118	7.36
	±	
67.26	62.9	67.42
7.52	119	7.36
	±	
67.33	62.9	67.28
7.75	119	7.50
	±	
67.31	63.0	67.25
7.77	118	7.53
	±	
67.27	63.0	67.35
7.51	118	7.43
	±	
67.23	63.0	67.18
7.55	118	7.60
	±	

11.69
63.09

46	+	H.I.	-	Elev.	± Grade
		1474.78			
+25				1463.08	
+50				63.06	
+75				63.04	
483+00				63.02	
			7.41	1467.37	TP
	4.55	1471.92			
+25				63.00	
+50				62.98	
+75				62.96	
484+00				62.94	
+25				62.92	
+50				62.90	
+75				62.88	
485+00				62.86	
+25				62.84	

1474.78 H.I.		
67.24	63.0	67.21
7.54	11.8	7.57
	±	
67.18	62.9	67.28
7.60	11.9	7.50
	±	
67.23	62.9	67.26
7.55	11.9	7.52
	±	
67.23	63.0	67.15
7.55	11.8	7.63
	±	
1471.92 H.I.		
67.10	62.9	67.21
4.82	9.0	4.71
	±	
67.11	62.8	67.17
4.81	9.1	4.75
	±	
67.20	62.8	67.08
4.72	9.1	4.84
	±	
67.24	62.9	67.06
4.68	9.0	4.86
	±	
67.09	62.8	67.19
4.83	9.1	4.73
	±	
67.03	62.6	67.04
4.89	9.3	4.88
	±	
67.05	62.8	67.26
4.87	9.1	4.66
	±	
67.08	62.8	67.02
4.84	9.1	4.90
	±	
67.11	62.7	67.04
4.81	9.2	4.88
	±	

47	+	H.I.	-	Elev.	± Grade
		1471.92			
+50				1462.82	
+75				62.80	
			4.06	1467.86	TP
	5.96	1473.82			
486+00				62.78	
+25				62.76	
+50				62.74	
+75				62.72	
487+00				62.70	
+25				62.68	
+50				62.66	
+75				62.64	
$\frac{487+88}{488+00}$ Equation				Equation \rightarrow 1462.63	
			5.12	1468.70	
B.M. - Spk. in Hub 12' Lt. 488+00 = 1468.71 B.M.					
	3.29	1472.00			

1471.92 H.I.		
67.19	62.7	67.14
7.73	7.2	7.78
	±	
67.02	62.7	66.99
7.90	7.2	7.93
	±	
1473.82 H.I.		
66.77	62.7	66.71
7.05	11.4	7.11
	±	
66.86	62.5	66.79
6.96	11.3	7.03
	±	
66.92	62.7	66.92
6.90	11.1	6.90
	±	
66.90	62.3	66.81
6.92	11.5	7.01
	±	
66.75	62.7	66.87
7.07	11.1	6.95
	±	
66.74	62.6	66.76
7.08	11.2	7.06
	±	
66.70	62.5	66.78
7.12	11.3	7.04
	±	
66.79	62.2	66.85
7.03	11.6	6.97
	±	
66.82	62.5	66.93
7.00	11.3	6.89
	±	

62.71
7.21
±

-0.08

48	+	H.I.	-	Elev.	± Grade
		1472.00			
488+25				1462.61	
+50				62.59	
+75				62.57	
489+00				62.55	
+25				62.53	
+50				62.51	
+75				62.49	
490+00				1462.47	
+25				62.45	
+50				62.43	
+75				62.41	
491+00				62.39	
+25				62.37	

0.00

1472.00 H.I.		
66.73	62.5	66.70
5.27	9.5	5.30
66.68	62.4	66.71
5.32	9.6	5.29
66.77	62.4	66.86
5.23	9.6	5.14
66.74	62.2	66.90
5.26	9.8	5.20
66.81	62.4	66.77
5.19	9.6	5.23
66.63	62.2	66.54
5.37	9.8	5.43
66.57	62.3	66.64
5.43	9.7	5.36
66.71	62.2	66.57
5.29	9.8	5.43
66.35	62.3	66.63
5.65	9.7	5.37
66.54	62.1	66.47
5.46	9.9	5.53
66.53	62.1	66.47
5.47	9.9	5.53
66.63	62.3	66.58
5.37	9.7	5.42
66.40	62.2	66.66
5.60	9.8	5.34

2.52.70
1860

49	+	H.I.	-	Elev.	To Grade
		1472.00			
+50.				1462.35	
+75				62.33	
492+00				62.31	
+25				62.29	
			5.48	1466.52 TP.	
	4.71	1471.23			
+50				62.27	
+75				62.25	
493+00				62.23	
+25				62.21	
+50				62.19	
+75				62.17	
494+00				62.15	
+25				62.13	
+50				62.11	

1472.00 H.I.		
66.54	9.7	66.99
5.46	±	5.51
66.47	9.8	66.52
5.33	±	5.48
66.54	9.9	66.93
5.46	±	5.57
66.58	9.8	66.99
5.42	±	5.51
1471.23 H.I.		
66.53	9.2	66.53
4.70	±	4.70
66.49	9.1	66.62
4.74	±	4.61
66.52	9.5	66.65
4.71	±	4.58
66.43	9.5	66.99
4.80	±	4.74
66.43	9.4	66.51
4.80	±	4.72
66.39	9.2	66.99
4.84	±	4.74
66.40	9.2	66.92
4.83	±	4.81
66.41	9.3	66.33
4.82	±	4.90
66.42	9.3	66.33
4.81	±	4.90

62.30
±

62.12
±

50	+	H.I.	-	Elev.	Grade
		1471.23			
+75				1462.09	
495+00				62.07	
+25				62.05	
			4.99	1466.24	TP
	7.54	1473.78			
+50				62.03	
+75				62.01	
496+00				61.99	
+25				61.97	
+50				61.95	
+75				61.93	
497+00				61.91	
+25				61.89	
+50				61.87	
+75				61.85	

- 0.08 %

1471.23 H.I.		
66.31	61.9	66.38
4.92	7.3	4.85
	±	
66.29	61.8	66.30
4.94	7.4	4.93
	±	
66.30	61.7	66.34
4.93	7.5	4.89
	±	
1473.78 H.I.		
66.23	61.7	66.18
7.55	12.1	7.60
	±	
66.27	61.8	66.27
7.51	12.0	7.51
	±	
66.28	61.8	66.29
7.50	12.0	7.49
	±	
66.27	61.7	66.26
7.51	12.1	7.52
	±	
66.20	61.5	66.26
7.58	12.3	7.52
	±	
66.07	61.5	66.24
7.71	12.3	7.54
	±	
65.94	61.6	66.05
7.84	12.2	7.73
	±	
66.00	61.5	66.09
7.78	12.3	7.69
	±	
66.10	61.5	66.05
7.68	12.3	7.73
	±	
65.92	61.7	66.05
7.86	12.1	7.73
	±	

61.93
11.95
±

51	+	H.I.	-	Elev.	L. Grade
		1473.78			
498+00				1461.83	
+25				61.81	
+50				61.79	
+75				61.77	
499+00				61.75	
+25				61.73	

6.85 1466.93

B.M. - Spt. in Hub 15' Lt. 499+35 = 1466.92 B.M.

3.77 1470.70

+50				61.71	
+75				61.69	
500+00				1461.67	
+25				61.65	
		4.01		1466.69	T.P. - Nail on Pt Side of Ditch
		4.00		1470.69	
+50				61.63	
+75				61.61	

1473.78 H.I.

65.87	61.7	66.16
7.91	12.1	7.62
65.86	61.7	66.02
7.92	12.1	7.76
65.82	61.8	66.06
7.96	12.0	7.72
65.88	61.7	65.96
7.90	12.1	7.82
65.95	61.6	66.04
7.83	12.2	7.74
65.92	61.5	65.96
7.86	12.3	7.82

1470.70 H.I.

65.98	61.1	65.99
4.72	9.6	4.71
66.01	61.5	65.88
4.69	9.2	4.82
65.86	61.5	65.81
4.84	9.2	4.89
65.95	61.4	66.09
4.75	9.3	4.61

1470.69 H.I.

65.65	61.4	65.69
5.04	9.3	5.00
65.71	61.4	65.71
4.98	9.3	4.98

Feb-2-28
Ward - notes
Diversity - 14th
McBain - 14th

52	+	H.I.	-	Elev.	± Grade
		1470.69			
501+00				1461.59	
+25				61.57	
+50				61.55	
+75				61.53	
502+00				61.51	
+25				61.49	
			5.04	1465.65	TP
	6.15	1471.80			
+50				61.47	
+75				61.45	
503+00				61.43	
+25				61.41	
+50				61.39	
+75				61.37	

-0.08%

1470.69 H.I.

65.72	61.3	65.68
7.97	7.7	5.01
	±	
65.64	61.5	65.64
5.05	7.2	5.05
	±	
65.73	61.4	65.87
7.96	7.3	7.82
	±	
65.62	61.5	65.57
5.07	7.2	5.12
	±	
65.61	61.3	65.59
5.08	7.7	5.10
	±	
65.67	61.4	65.62
5.02	7.3	5.07
	±	

1471.80 H.I.

65.65	61.3	65.69
6.15	10.5	6.11
	±	
65.66	61.2	65.62
6.14	10.6	6.18
	±	
65.61	61.2	65.68
6.19	10.6	6.12
	±	
65.66	61.1	65.68
6.14	10.7	6.12
	±	
65.57	61.2	65.69
6.23	10.6	6.11
	±	
65.47	61.2	65.61
6.33	10.6	6.19
	±	

53 + H.I. 1471.80 - E./lev. 1461.35

504+00 1461.35
 +25 61.33
 +50 61.31

6.26 1465.59 TP

6.03 1471.57
 +75 61.29
 505+00 61.27
 +25 61.25
 +50 61.23
 +75 61.21
 506+00 61.19
 +25 61.17
 +50 61.15
 +75 61.13

-0.08%

1471.80 H.I.

6.35 61.2 6.30 6.5.45
 6.36 61.2 6.37 6.5.44
 6.37 61.1 6.37 6.5.43

1471.57 H.I.

6.14 61.2 6.14 6.5.43
 6.17 61.2 6.18 6.5.40
 6.26 61.1 6.16 6.5.31
 6.22 61.2 6.23 6.5.35
 6.30 61.1 6.22 6.5.27
 6.30 61.0 6.26 6.5.27
 6.29 61.1 6.24 6.5.28
 6.18 61.1 6.22 6.5.39
 6.20 61.0 6.20 6.5.37

Sta	+	H.I.	-	Elev.	± Grade
		1471.57			
507+00				1461.11	
+25				61.09	
+50				61.07	
		6.27		1465.30	TP
	7.36	1469.66			
+75				61.05	
508+00				61.03	
+25				61.01	
+50				1460.99	
+75				60.97	
509+00				60.95	
+25				60.93	
+50				60.91	
		4.26		1465.40	

B.M. - Spl. in Hub 15' Lt. 509+50

1471.57 H.I.

65.34	61.0	65.37
6.23	10.6	6.20
	±	
65.28	61.0	65.31
6.29	10.6	6.26
	±	
65.26	60.9	65.24
6.31	10.7	6.33
	±	

1469.66 H.I.

65.19	60.9	65.12
7.47	8.8	7.54
	±	
65.12	60.9	65.16
7.54	8.8	7.50
	±	
65.15	60.8	65.20
7.51	8.9	7.96
	±	
65.06	60.9	65.11
7.60	8.8	7.55
	±	
65.06	60.8	65.12
7.60	8.9	7.54
	±	
65.05	60.9	65.06
7.61	8.8	7.60
	±	
65.01	60.9	65.01
7.65	8.8	7.65
	±	
64.96	60.8	64.99
7.70	8.9	7.67
	±	

60.93
8.73
±

60.87
8.79
±

-0.08%

55

+

H.I.

-

Elev. ± Grade

1465.39 B.M.

3.62 1469.01

+75

1460.89

510+00

1460.87

+25

60.85

+50

60.83

+75

60.81

511+00

60.79

+25

60.77

+50

60.75

+75

60.73

512+00

60.71

+25

60.69

+50

60.67

3.80 1465.21 TP

4.19 1469.40

1469.01 H.I.

64.88	60.7	65.02
4.13	8.3	3.99
64.86	60.7	64.99
4.15	8.3	4.02
64.97	60.7	64.95
4.04	8.3	4.06
64.91	60.7	64.91
4.10	8.3	4.10
64.85	60.6	64.85
4.16	8.4	4.16
64.80	60.6	64.81
4.21	8.4	4.20
64.86	60.5	64.82
4.15	8.5	4.19
64.84	60.5	64.78
4.17	8.5	4.23
64.82	60.4	64.74
4.19	8.6	4.27
64.80	60.4	64.73
4.21	8.6	4.28
64.82	60.5	64.71
4.19	8.5	4.24
64.91	60.4	64.92
4.10	8.6	4.09

- 0.08%

56 + H.I. 1469.40 - Elev. ± Grade

+75		1460.65
513+00		60.63
+25		60.61
+50		60.59
+75		60.57
514+00		60.55
+25		60.53
+50		60.51
+75		60.49
515+00		1460.47

4.58 1464.82 TP
5.07 1469.89

+25		60.445
+50		60.42

1469.40 H.I.

64.87 7.53	60.4 9.0	64.91 7.79
64.90 7.50	60.5 8.9	64.85 7.55
64.77 7.63	60.3 9.1	64.77 7.63
64.76 7.64	60.4 9.0	64.84 7.56
64.82 7.58	60.4 9.0	64.81 7.59
64.82 7.58	60.3 9.1	64.82 7.58
64.82 7.58	60.4 9.0	64.79 7.61
64.78 7.62	60.3 9.1	64.77 7.63
64.79 7.61	60.3 9.1	64.79 7.61
64.68 7.72	60.0 9.4	64.64 7.76

60.63
8.77

1469.89 H.I.

64.62 5.27	60.2 9.7	64.71 5.18
64.64 5.25	60.2 9.7	64.64 5.25

57	+	H.I. 1469.89	-	Elev.	% Grade
+75				1460.395	
516				60.37	
+25				60.345	0%
+50				60.32	0.1
+75				60.295	0.1
517+00				60.27	0.1

		5.51	1464.38	TP	
	6.03	1470.41		517-Lt. Curb	
+25				60.245	
+50				60.22	
+75				60.195	
518+00				60.17	
+25				60.145	
+50				60.12	

1469.89 H.I.

64.49	60.1	64.62
5.70	9.8	5.27
	±	
64.41	60.3	64.52
5.78	9.6	5.37
	±	
64.44	60.1	64.46
5.75	9.8	5.73
	±	
64.43	60.1	64.45
5.76	9.8	5.74
	±	
64.39	59.9	64.44
5.50	10.0	5.75
	±	
64.41	60.1	64.43
5.78	9.8	5.46
	±	

1470.41 H.I.

64.48	60.1	64.41
5.93	10.3	6.00
	±	
64.36	59.8	64.33
6.05	10.6	6.08
	±	
64.30	59.7	64.33
6.11	10.7	6.08
	±	
64.27	59.8	64.24
6.14	10.6	6.17
	±	
64.28	59.9	64.42
6.13	10.5	5.99
	±	
64.47	60.0	64.45
5.94	10.4	5.96
	±	

Feb-6-28
Ward - Notes
Duermit - Lev
Mc Bain - Rod

Station	+	H.I.	-	Elev.	± Grade
		1470.41			
+75				1460.095	
519+00				60.07	
+25				60.045	
+50				60.02	
+75				59.995	
520+00				1459.97	

6.29 1464.12

BM - Sprk. in Hub 17' Lt. 520+00 = 1464.12 B.M.
5.20 1469.32

+25				59.945	
+50				59.92	
+75				59.895	
521+00				59.87	
+25				59.845	
+50				59.82	

1470.41 H.I.

64.40	60.0	64.34
6.01	10.4	6.07
	±	
64.43	60.0	64.36
5.98	10.4	6.05
	±	
64.31	59.8	64.35
6.10	10.6	6.06
	±	
64.45	59.8	64.36
5.96	10.6	6.05
	±	
64.30	59.8	64.23
6.11	10.6	6.18
	±	
64.32	59.8	64.18
6.09	10.6	6.23
	±	

1469.32 H.I.

64.30	59.9	64.27
5.02	9.4	5.05
	±	
64.07	59.9	63.97
5.25	9.4	5.35
	±	
64.06	59.8	64.06
5.26	9.5	5.26
	±	
64.05	59.7	63.99
5.27	9.6	5.33
	±	
64.07	59.6	63.98
5.25	9.7	5.34
	±	
63.89	59.7	63.95
5.43	9.7	5.37
	±	

Station	+	H.I.	-	Elev.	± Grade
521+53 ⁰ Beg. Flume #22		1469.32		1459.82	
+75	↑			59.795	
522+00				59.77	
+25				59.745	0.010
+50				59.72	0.010
+73 ⁵ End Flume 22.	↓			59.70	0.010
+75				59.695	
523+00				59.67	

5.54 1463.78 TP.

+25	4.72	1468.50		59.64	
+50				59.62	
+75				59.595	
524+00				59.57	

1469.32 H.I.

63.88	59.85	63.91
5.44	9.47	5.41
	± Beg Flume	
	59.7	
	9.6	
	±	
	59.7	
	9.6	
	±	
	59.6	
	9.7	
	±	
	59.5	
	9.8	
	±	
	59.57	
	9.75	
	± End Flume	
63.75	59.5	63.78
5.57	9.80	5.54
	±	
63.75	59.4	63.74
5.57	9.9	5.58
	±	

1468.50 H.I.

63.74	59.4	63.70
4.76	9.1	4.80
	±	
63.70	59.4	63.66
4.80	9.1	4.84
	±	
63.71	59.4	63.79
4.79	9.1	4.71
	±	
63.67	59.4	63.73
4.83	9.1	4.77
	±	

	+	H.I.	-	Elev.	Grade
60		1468.50			
+25				1454.545	10.10
+50				59.52	
+75				59.495	
525+00				1459.47	
+25				59.45	
+50				59.43	
+75				59.41	0.08
526+00				59.39	
+25				59.37	
+50				59.35	

4.94 1463.56 TP

6.41 1469.97

+75				59.33	
527+00				59.31	

1468.50 H.I.		
63.65	59.4	63.70
4.85	9.1	4.80
	±	
63.62	59.4	63.68
4.88	9.1	4.82
	±	
63.49	59.45	63.64
5.01	9.05	4.86
	±	
	Conc. over Cvlr.	
63.52	59.2	63.53
4.98	9.3	4.97
	±	
63.53	59.3	63.62
4.97	9.2	4.88
	±	
63.72	59.2	63.71
4.78	9.3	4.79
	±	
63.64	59.3	63.64
4.86	9.2	4.86
	±	
63.51	59.2	63.61
4.99	9.3	4.89
	±	
63.63	59.2	63.61
4.87	9.3	4.89
	±	
63.66	59.3	63.60
4.84	9.2	4.90
	±	

1469.97 H.I.

63.62	59.3	63.59
6.35	10.7	6.38
	±	
63.74	59.2	63.72
6.23	10.8	6.25
	±	

61

+

H.I.

-

Elev.

1469.97

+25

1459.29

+50

59.27

+75

59.25

528+00

59.23

+25

59.21

+50

59.19

+75

59.17

529+00

59.15

+25

59.13

+50

59.11

+75

59.09

530+00

1459.07

5.59 1464.38

B.M. - Spt. in Hub - 15' Lt 530+00 = 1464.38 B.M.

3.85 1468.23

1469.97 H.I.

63.62
6.35

59.1
10.9
£

63.67
6.30

63.53
6.44

59.1
10.9
£

63.65
6.32

63.55
6.42

59.1
10.9
£

63.53
6.44

63.57
6.40

59.1
10.9
£

63.60
6.37

63.44
6.53

59.1
10.9
£

63.59
6.38

63.50
6.47

59.0
11.0
£

63.54
6.43

63.42
6.55

59.0
11.0
£

63.40
6.57

63.32
6.65

59.0
11.0
£

63.43
6.54

63.32
6.65

59.0
11.0
£

63.36
6.61

63.34
6.63

59.0
11.0
£

63.36
6.61

63.33
6.64

59.0
11.0
£

63.37
6.60

63.29
6.68

59.0
11.0
£

63.32
6.65

59.06
10.91
£

62	+	H.I.	-	Elev.
		1468.23		
+ 25				1459.05
+ 50				59.03
+ 75				59.01
531+00				58.99
+ 25				58.97
+ 50				58.95
+ 75				58.93
532+00				58.91
+ 25				58.89
		5.24	4.89	1463.34 TP
		1468.58		

+ 50				58.87
+ 75				58.85
533+00				58.83

1468.23 H.I.

63.30	58.9	63.25
4.93	9.3	4.98
	±	
63.28	58.9	63.22
4.95	9.3	5.01
	±	
63.20	58.8	63.21
5.03	9.4	5.02
	±	
63.46	58.9	63.35
4.77	9.3	4.88
	±	
63.70	58.8	63.28
4.53	9.4	4.95
	±	
63.64	58.7	63.29
4.59	9.5	4.97
	±	
63.59	58.8	63.18
4.64	9.4	5.05
	±	
63.50	58.8	63.53
4.73	9.4	4.70
	±	
63.49	58.57	62.98
4.74	9.66	5.25
	±	
	Conc. Culv. Top	

1468.58 H.I.

63.49	58.8	62.9A
5.09	9.8	5.64
	±	
63.58	58.7	63.02
5.00	9.9	5.56
	±	
63.51	58.6	63.09
5.07	10.0	5.49
	±	

63	+	H.I.	-	Elev.
		1468.58		
+25				1458.81
+50				58.79
+75				58.77

5.25 1463.33 TP.

	4.92	1468.25		
534+00				58.75
+25				58.73
+50				58.71
+75				58.69
535+00				1458.67
+25				58.65
+50				58.63
+75				58.61
536+00				58.59

- 0.08%

1468.58 H.I.

63.52	58.6	63.00
5.06	10.0	5.58
	±	
63.45	58.7	62.96
5.13	9.9	5.62
	±	
63.39	58.5	62.72
5.19	10.1	5.86
	±	

1468.25 H.I.

63.40	58.7	62.90
7.85	9.6	5.35
	±	
63.49	58.7	62.96
7.76	9.6	5.29
	±	
63.38	58.6	62.94
7.87	9.7	5.31
	±	
63.42	58.5	62.96
7.83	9.8	5.29
	±	
63.35	58.5	62.92
7.90	9.8	5.33
	±	
63.43	58.5	62.84
7.82	9.8	5.71
	±	
63.36	58.6	62.90
7.89	9.7	5.35
	±	
63.29	58.4	62.84
7.96	9.9	5.71
	±	
63.17	58.4	62.67
5.08	9.9	5.58
	±	

64	+	H.I.	-	Elev.
		1468.25	5.03	1463.22 TP.
	7.13	1470.35		
+25				1458.57
+50				58.55
+75				58.53
537+00				58.51
+25				58.49
+50				58.47
+75				58.45
538+00				58.43
+25				58.41
+50				58.39
			7.32	1463.03 TP.
	7.70	1467.73		
+75				58.37
539+00				58.35

-0.08%

1470.35 H.I.		
63.12	58.3	62.80
7.23	12.1	7.55
	±	
63.1A	58.5	62.58
7.21	11.9	7.77
	±	
63.18	58.5	62.75
7.17	11.9	7.60
	±	
63.23	58.4	62.72
7.12	12.0	7.63
	±	
63.1A	58.4	62.69
7.21	12.0	7.66
	±	
63.17	58.3	62.65
7.18	12.1	7.70
	±	
63.15	58.5	62.63
7.20	11.9	7.72
	±	
63.20	58.3	62.67
7.15	12.1	7.68
	±	
63.1A	58.3	62.59
7.21	12.1	7.76
	±	
63.05	58.4	62.64
7.30	12.0	7.71
	±	
1467.73 H.I.		
63.09	58.3	62.57
7.64	9.4	5.16
	±	
62.85	58.1	62.43
7.88	9.6	5.30
	±	

65 + H.I. - Elev.

1467.73

+25 1458.33

+50 58.31

+75 58.29

540+100 Equation 1458.27
540+12

+25 58.26

4.85 1462.88

BM - Spt. in Hub 15' H. 540+35 = 1462.88 B.M.

6.82 1469.70

+50 58.24

+75 58.22

541+00 58.20

+25 58.18

+50 58.16

+75 58.14

542+00 58.12

- 0.08 %

1467.73 H.I.

62.83 58.2 62.53
4.90 9.5 5.20
±

62.82 58.2 62.50
4.91 9.5 5.23
±

62.81 58.1 62.54
4.92 9.6 5.19
±

63.06 58.0 62.51
4.67 9.7 5.22
±

63.25 58.1 62.52
4.48 9.6 5.21
±

1469.70 H.I.

62.94 58.3 62.41
6.76 11.4 7.29
±

62.96 58.2 62.57
6.74 11.5 7.13
±

62.73 58.3 62.27
6.97 11.4 7.43
±

62.70 58.2 62.32
7.00 11.5 7.38
±

62.70 58.0 62.61
7.00 11.7 7.09
±

62.69 58.0 62.73
7.01 11.7 6.97
±

62.62 58.1 62.67
7.08 11.6 7.03
±

66 + H.I. - Elev. 1469.70

+25		1458.10
+50		58.08
+75		58.06
543+00		58.04
+25		58.02
+50		1458.00
+75		57.98
544+00		57.96
+25		57.94
+50		57.92

- 0.08 90

7.29 1462.41 T.P.

5.89 1468.30

+75		57.90
545+00		1457.88

1469.70 H.I.

6.95	62.75	58.0	7.10	62.60
7.07	62.63	58.0	7.00	62.70
7.00	62.70	58.0	6.99	62.71
7.10	62.60	58.1	7.15	62.55
7.13	62.54	58.2	7.31	62.39
7.30	62.40	57.9	7.35	62.35
7.31	62.39	58.0	7.42	62.28
7.35	62.35	58.2	7.40	62.30
7.25	62.45	57.7	7.20	62.50
7.18	62.52	57.8	7.31	62.39

1468.30 H.I.

5.95	62.35	57.7	5.83	62.47
5.91	62.39	57.6	5.96	62.34

67	+	H.I.	-	Elev.
		1468.30		
+25				1457.86
			4.47	1463.83 B.M.
		B.M. - Spt. in Hub - 20' Lt. 544 + 90		
		3.25		1467.08
+50				57.84
+75				57.82
546 + 00				57.80
+25				57.78
+50				57.76
			5.13	1461.95 TP.
		0.85		1462.80
+75				57.74
547 + 00				57.72
+25				57.70
+50				57.68

-0.08% Grade

1468.30 H.I.		
62.36	57.6	62.43
5.94	10.7	5.87
	±	
1467.08 H.I.		
62.05	57.8	
5.03	9.3	5.07
	±	
5.08	57.8	5.23
	9.3	±
5.00	57.8	4.72
	9.3	±
	57.7	
	9.4	
	±	
5.10	57.6	5.21
	9.5	±
	±	
1462.80 H.I.		
	57.5	
1.00	5.3	0.97
	±	
	57.5	
1.31	5.3	1.14
	±	
	57.5	
1.03	5.3	0.96
	±	
	57.5	
0.83	5.3	1.19
	±	

68

+

H.I.

-

Elev.

1462.80

547+69

Portal Last Tunnel

1457.665

+75

548+00

+25

TUNNEL NO 6.

In Tunnel

557+50

Outlet End Tunnel

1456.88

1462.80 H.I.57.4
5.4
Z57.5
5.3
Z57.4
5.4
Z57.4
5.7
Z1456.7
Z

Elev. at Lower Portal Tunnel = 1456.7

" Approx 300' Below Portal = 1456.5

69 + H.I. - Elev.
 Levels from End Conduit to Weir at Ditch End,

B.M. - Spk. in Hub 20' Lt, 544+90
 Elev. 1463.83 B.M.

6.97 1470.80

0.63 1470.17 TP

6.89 1477.06

0.63 1476.43 TP

6.84 1483.27

0.60 1482.67 TP

6.53 1489.20

0.60 1488.60 TP

6.71 1495.31

2.20 1493.11 TP

7.01 1500.12

0.91 1499.21 TP

4.28 1503.49

6.30 1497.19 TP

1.39 1498.58

6.84 1491.74 TP

0.80 1492.54

6.86 1485.68 TP

0.67 1486.35

6.32 1480.03 TP

1.63 1481.66

5.07 1476.59 B.M.

B.M. - Spk. in Hub 30' Lt. & 250' Below Outlet of Tunnel #6.

+ H.I. - Elev.

1476.59 B.M.

0.64 1477.23

6.96 1470.27 TP

1.28 1471.55

6.79 1464.76 TP

2.04 1466.80

6.94 1459.86 TP

1.68 1461.54

5.78 1455.76 TP

1.68 1457.44

5.27 1452.17 B.M.

B.M. - Nail in Oak Tree - 20' Lt of Weir
 14' south of Gauge House,

70

Dulzura Conduit

Traverse within Secs 11, 14 T18SR2E

Superseding notes of location given
in Application for Easement thru Cleveland
Forest 3-1-08 to Nov 1909. **FB 38, Pg. 1**

Sta	Dist	Lt	Rt	CalCo	MagCo
	49.77	27-05		N24-07W	
	56.90		35-45	N2-58E	N1-45E
	55.36	52-43		N32-47W	
	61.65		30-23	N19-56E	
	26.37		24-43	N10-27W	N11-45W
	50.40		35-08	N35-10W	
	75.28		4-40	N70-18W	N71-55W
	92.55		0-58	N74-58W	
	106.29		11-28	N75-56W	
	622		92.36	N87-24W	
Sec Cor	668			South	S1-25E

7/3/31

R.G. Wueste
Harold Soper
Joe Salgado

(Points scratched in concrete conduit floor)

Near upper end F18

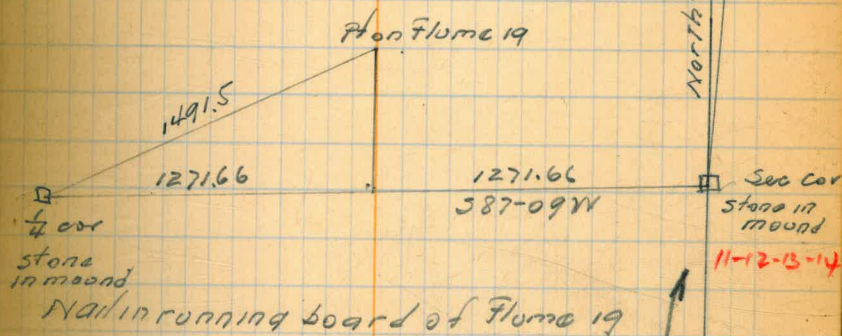
Nail in roof Tunnel 5½

11, 12, 13, 14 T18SR2E Stone 66⁸/₈ N of Conduit
and East of road across Tunnel 5½

Sta	Dist	Lt	Rt	CalCo	MagCo
	67.93		48-47	N1-21W	N2-40W
	93.90	12-21		N50-08W	
	76.20		30-34	N37-47W	
	41.61		33-20	N68-21W	
	67.00	24-04		S78-19W	
	118.61		22-10	N77-37W	N78-40W
	32.02		55-52	S80-13W	
	125.51		3-59	S24-21W	S23-15W
	108.92	24-16		S20-22W	
	84.42	22-35		S44-38W	S43-40W
	42.37	36-57		S67-13W	
	61.10	51-43		N75-50W	

sta	Dist	Lt	Rt	Col Co	Mag Co
-----	------	----	----	--------	--------

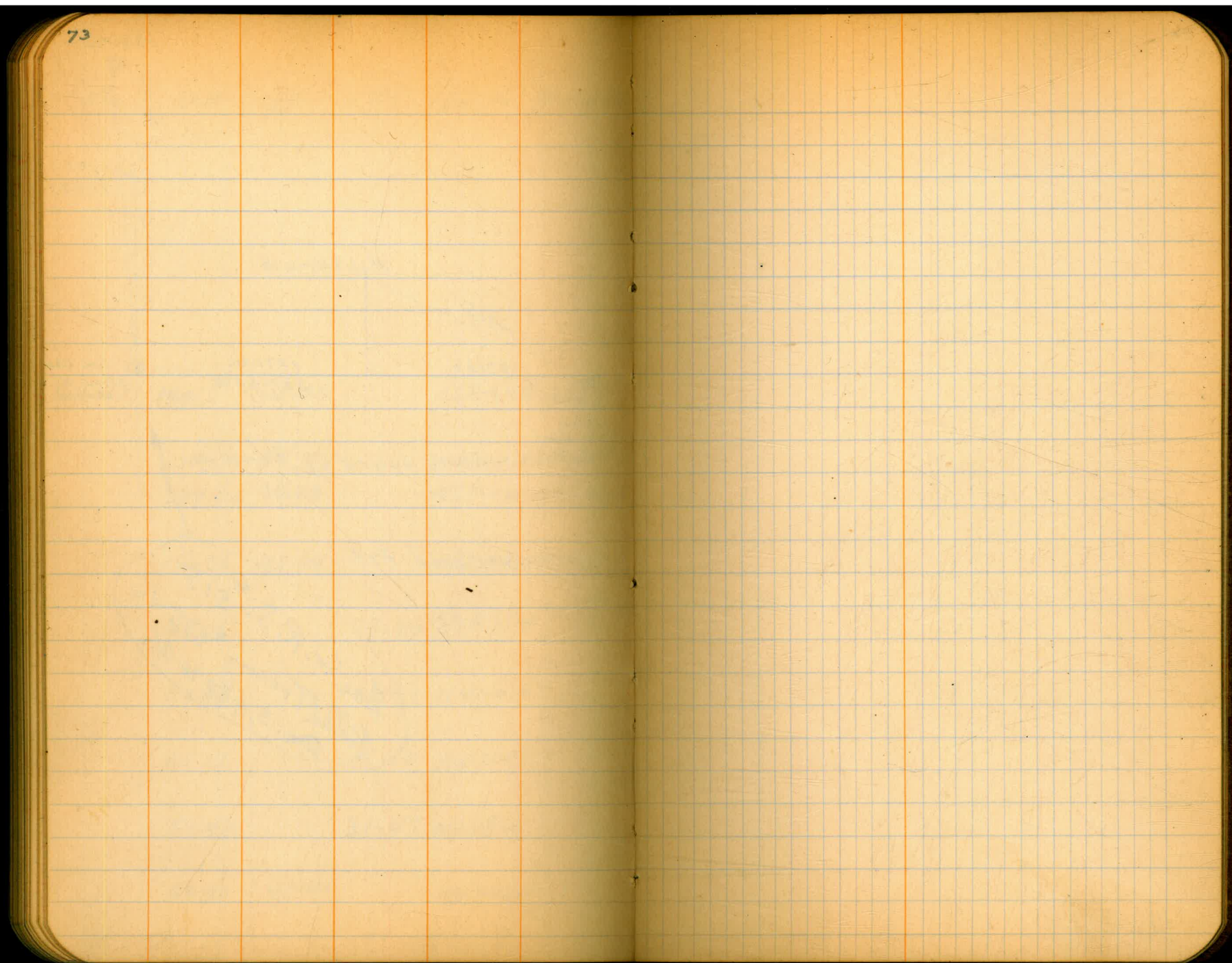
To 1/4 cor	1491.5	54-03		558-46W	558 N
	224.27	34.23		N67-11W	N68-35W
	339.50	34.23		N67-11W	N68-35W
	150.36	97-09		N32-48W	N34-00W
	44.05	23-20		N64-21E	
	52.43	36-27		N41-01E	
	65.27	15-52		N4-34E	
	57.97	31-47		N11-18W	
	60.90	41-44		N43-05W	

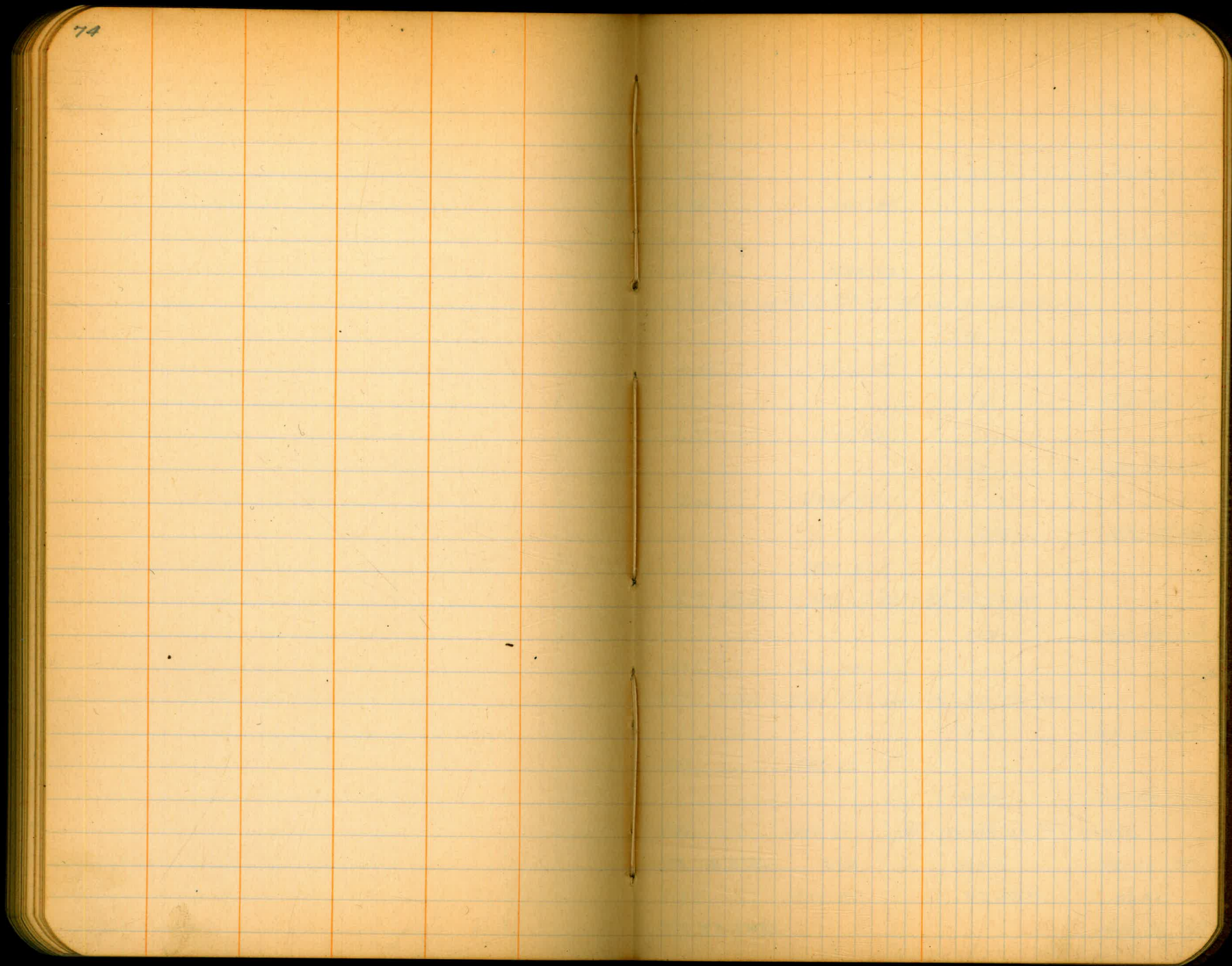


Near upper end F19

2553.32

See Co. R.S. # 515
 Rolled Tracing # 375-16
 Dec. 5, 1949 W.H.





			0.69	1547.54 TP
12.99	1548.23			
			0.65	1535.24 TP
12.86	1535.89			
			0.70	1523.03 TP
12.26	1523.73			
B.M. - Point on Rock - Jct. of Upper & Lower Trails.				
			1.98	1511.47 B.M.
12.46	1513.45			
			0.57	1500.99 TP
12.77	1501.56			
			0.68	1488.79 TP
13.00	1489.47			
			11.15	1476.47 TP
5.72	1487.60			
B.M. - Spike in Hub - 7' Lt. Sta. 303+40				
			5.05	1481.88 B.M.
5.02	1486.93			
B.M. - Spike in Hub - Left concrete Cap - Sta. 310+75				
			5.70	1481.91 B.M.
5.62	1487.61			
			4.08	1481.99 TP
4.87	1486.07			
			4.67	1481.20 TP
7.65	1485.87			
				1478.22 B.M.

Stake TP on Upper Trail.

13.00	1560.54	0.73	1559.81 TP
			1547.54 TP

Bench Levels

B.M. - Spike in Hub - 10' Lt. Sta. 320+30

7.21 1478.22 B.M.

4.73 1485.43

4.69 1480.70 TP

4.86 1485.34

4.54 1480.48 TP

4.80 1485.02

B.M. - Spike in Hub - 6' Lt. - Sta. 330+00

4.57 1480.22 B.M.

4.76 1484.79

4.38 1480.03 TP

5.03 1489.41

4.72 1479.38 TP

4.64 1484.10

B.M. - Iron Rod 8' Lt. 342+30 - Foot of big boulder
at N.W. Cor. of old Blacksmith Shop.

4.38 1479.46 B.M.

4.63 1483.84

4.37 1479.16 TP

4.93 1483.53

B.M. - Spt. in Hub 12' Lt. 350+20

4.57 1478.60 B.M.

4.72 1483.17

5.21 1478.45 TP

5.22 1483.66

1478.44 B.M.

Bench Levels.

B.M. - Spt. in Hub 12' Lt. 359+70

8.85 1486.35 7.91 1478.44 B.M.

6.63 1477.50 TP

6.33 1484.13

B.M. - Spt. in Hub 12' Lt. 367+75

3.75 1477.80 B.M.

4.41 1487.55

4.96 1477.14 TP

2.60 1482.10

B.M. on Boulder 8' Lt. 373+50

1.29 1479.50 B.M.

4.50 1480.79

2.58 1476.29 TP

7.63 1478.87

4.85 1471.24 TP

4.67 1476.09

B.M. - On Top of Ledge 12' Lt. 382+00 W. End Flume #15

8.87 1471.42 B.M.

4.71 1480.29

4.54 1475.58 TP

4.47 1480.12

B.M. - Spt. in Hub 12' Lt 390+00

3.94 1475.65 B.M.

4.70 1479.59

4.50 1474.89 TP

4.50 1479.39

1474.89 TP

Bench Levels

	4.60	1474.89 TP
5.80	1479.49	
B.M. - Spt. in Hub 15' Lt 400+00		
	5.18	1473.69 B.M.
4.94	1478.87	
	4.22	1473.93 TP
3.46	1478.15	
B.M. - On Concrete at S.W. Cor. of W. end of Conduit Top Slab at County Road Crossing.		
	4.19	1474.69 B.M.
4.55	1478.88	
B.M. - Spt. in Hub 20' Lt. 410+00		
	3.55	1474.33 B.M.
4.80	1477.88	
	5.88	1473.08 TP
5.49	1478.96	
	4.10	1473.47 TP
4.74	1477.57	
	4.31	1472.83 TP
4.72	1477.14	
B.M. - Spt. in Hub 12' Lt 420+00		
	10.23	1472.42 B.M.
1.53	1482.65	
	12.71	1481.12 TP
5.64	1493.83	
	12.83	1488.19 TP
7.83	1501.02	
		1493.19 TP

Bench Levels

	0.59	Top Tunnel, 1493.19 TP
11.20	1493.78	
	0.69	1482.58 TP
12.60	1483.27	
B.M. - Spt. in Hub 15' Lt, 430+75		
	7.16	1470.67 B.M.
6.16	1477.83	
B.M. - Spt. in Hub 15' Lt 440+00		
	3.12	1471.67 B.M.
4.29	1474.79	
	4.28	1470.50 TP
9.08	1474.78	
B.M. - Spt. in Hub 25' Lt, 450+00		
	9.50	1465.70 B.M.
5.38	1475.20	
	4.19	1469.82 TP
3.67	1474.01	
	4.76	1470.34 TP
5.95	1475.10	
B.M. - Spt. in Hub 16' Lt. 460+50		
	6.91	1469.15 B.M.
6.57	1476.06	
	3.88	1469.49 TP
4.42	1473.37	
B.M. - Spt. in Hub 15' Lt. 469+85		
	4.75	1468.95 B.M.
5.12	1473.70	
		1468.58 TP

Bench Levels

4.78 1468.58 TP.
 4.76 1473.06
 B.M. - Spt. in Hub 18' Lt. 479+65
 5.12 1468.30 B.M.
 5.52 1473.42
 5.33 1467.90 TP.
 B.M. - Spt. in Hub - 12' Lt. 488+00
 4.52 1468.71 B.M.
 5.78 1473.23
 3.93 1467.45 TP.
 4.87 1471.38
 4.34 1466.51 TP.
 3.93 1470.85
 B.M. - Spt. in Hub 15' Lt. 499+35
 4.43 1466.92 B.M.
 5.57 1471.35
 4.64 1465.78 TP.
 5.03 1470.42
 B.M. - Spt. in Hub 15' Lt 509+50
 4.50 1465.39 B.M.
 6.19 1469.89
 5.65 1463.70 TP.
 4.69 1469.35
 4.39 1464.66 TP.
 4.93 1469.05
 1464.12 B.M.

Bench Levels

B.M. - Spt. in Hub 17' Lt 520+00
 5.20 1464.12 B.M.
 4.88 1469.32
 5.39 1464.44 TP
 5.45 1469.83
 B.M. - Spt. in Hub - 15' Lt. 530+00
 3.89 1464.38 B.M.
 4.18 1468.27
 5.51 1464.09 TP
 6.61 1469.60
 4.74 1462.99 TP
 4.85 1467.73
 (End of Conduit Approx. 548 Entrance of Tunnel)
 B.M. - Spt. in Hub 15' Lt 540+35
 4.59 1462.88 B.M.
 1.68 1467.47
 12.85 1465.79 TP.
 0.84 1478.64
 12.19 1477.80 TP.
 1.51 1489.99
 12.64 1488.48 TP
 0.71 1501.12
 12.82 1500.41 TP
 6.63 1513.23
 0.71 1506.60 TP
 12.67 1513.31
 1500.64 TP

Bench Levels

		0.65	1500.64 TP
11.26	1501.29		
		0.84	1490.03 TP
7.31	1490.87		
		1.55	1483.56 TP
8.64	1485.11		
		7.19	1476.47 TP
9.65	1483.66		
		0.72	1474.01 TP
12.90	1474.73		
		1.66	1461.83 TP
9.96	1463.49		
		0.65	1453.53 TP
12.06	1454.18		
		0.90	1442.12 TP
10.69	1443.02		
		0.60	1432.33 TP
12.90	1432.93		
		0.72	1420.03 TP
12.79	1420.75		
		0.60	1407.96 TP
12.90	1408.56		
		0.59	1395.66 TP
11.75	1396.25		
		0.76	1384.50 TP
12.01	1385.26		

1373.25 TP

Dec.-22-'27

Ward - Notes
Duermitt - Lev.
McBain - RodBench Levels

		0.65	1373.25 TP
12.65	1373.90		
		0.68	1361.25 TP
12.83	1361.93		
		0.65	1349.10 TP
12.82	1349.75		
		0.60	1336.93 TP
12.11	1337.53		
		0.60	1325.42 TP
12.00	1326.02		
		0.66	1314.02 TP
12.90	1314.68		
		0.62	1301.78 TP
12.43	1302.40		
		0.63	1289.97 TP
13.01	1290.60		
		0.86	1277.59 TP
12.64	1278.45		
		0.79	1265.81 TP
11.95	1266.60		
		0.77	1254.65 TP
11.74	1255.42		

{Stamped 1243-S.D.} Elev. = 1243.68 BM.
U.S.G.S. BM. - Bronze Tablet on Boulder.

120' S. Dulzura School House & N. Creek on
West side of old Road Bridge approach.

Dulzura School House.

Bronze Tablet on Granite Boulder

120' S of School - 6' N of creek

ford - 6' N of road.

Stamped "1243 S.D." Elev. = 1243.68

Eisenecke; Sec. 8 - Twp. 185 - R 3 E.

Bronze Tablet on Boulder.

81' W of house - 36' N of barn

27' N of road.

Stamped "875 S.D." Elev. = 875.54

<Cottonwood>

548± End Conduit - Portal Tunnel <last>



NW $\frac{1}{4}$ of the SE $\frac{1}{4}$ and N $\frac{1}{2}$ of the SW $\frac{1}{4}$
and SW $\frac{1}{4}$ of the SW $\frac{1}{4}$ - Sec. 12 - Twp. 185 - R 2 E

DIRECTIONS FOR USE OF TABLES

TABLE No. 1.

Distance of slope stake from side or shoulder
stake for any width roadway, slope 1% to 1%.
If ground is nearly level, the cut or fill at side
stake is located by the double entry method in
left column and top row. The number in body

of table in bottom row and column gives distance
from side stake to slope stake. If ground is not

IMPROVED TABLES

level, the slope stake is located by the amount
to cut or fill and in table. Set up
rod at this point, and line of sight should cut

AND
INFORMATION

To find Tangent and External for curve of
any other degree, divide by degree of curve and
add correction found in column of corrections.

Degree of curve with a given I may be found
by dividing tangent, (or external), opposite I by
given tangent, (or external).

The distance from a point on the tangent to
the curve is very nearly the square of the tangent
length divided by twice the radius.

