OFFICE OF
RAMSEY CO. ENGINEER

# CONSTRUCTION NOTES
# CENTERVILLE ROAD
# CO. PROJ. 23-03

FILE NO. 4

ENGINEERS
FIELD BOOK
No. 10403

Centerville Rd
"4" (23-03)

# EUGENE DIETZGEN CO.

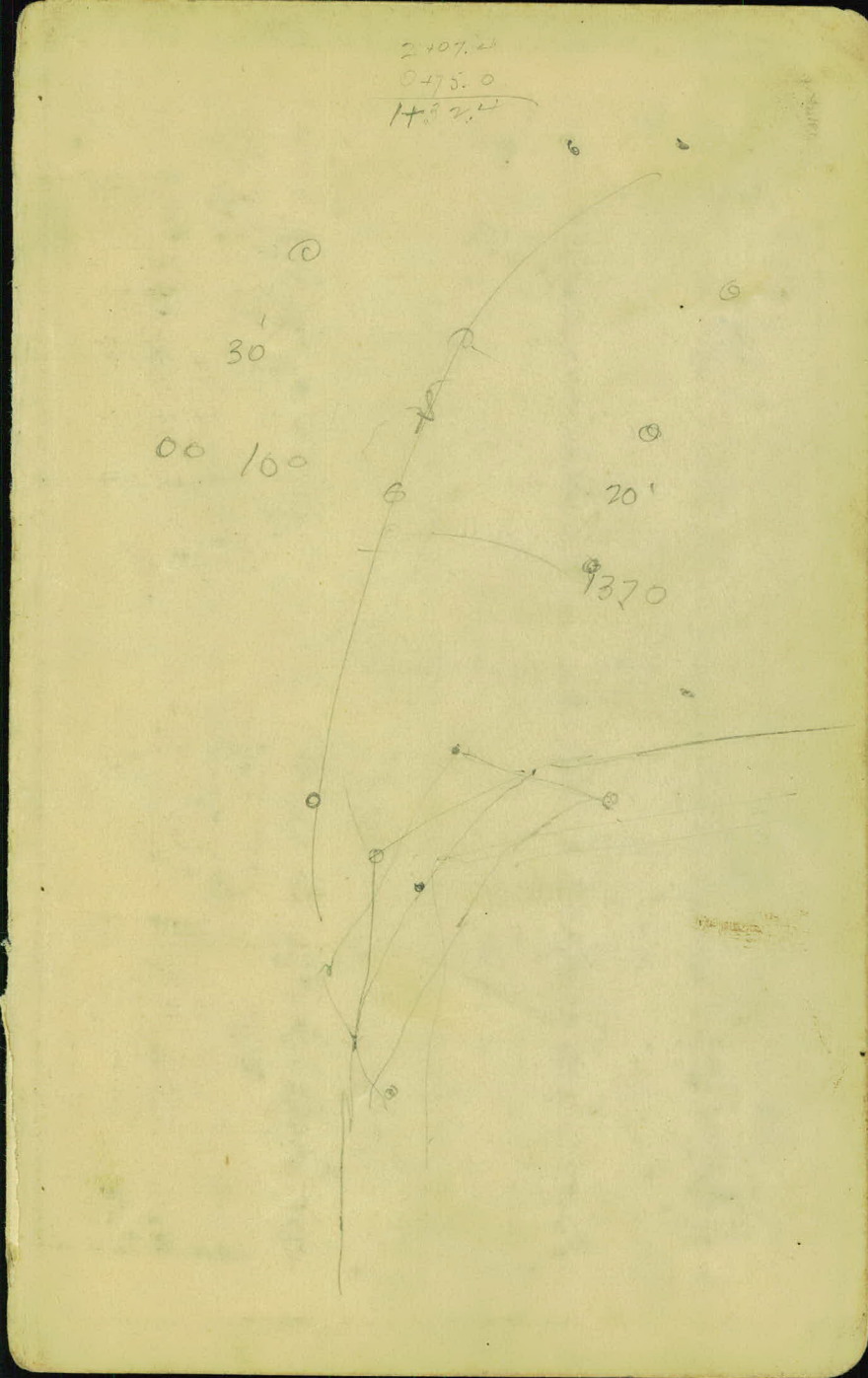
DRAWING MATERIALS, MATHEMATICAL and SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

Distances from Center of Roadway for Cross-Sectioning
Roadway 16 feet wide. Side Slopes 1 on 1.
For Single Track Embankment.

| H | 0 | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | H |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 8.0 | 8.1 | 8.2 | 8.3 | 8.4 | 8.5 | 8.6 | 8.7 | 8.8 | 8.9 | 0 |
| 1 | 9.0 | 9.1 | 9.2 | 9.3 | 9.4 | 9.5 | 9.6 | 9.7 | 9.8 | 9.9 | 1 |
| 2 | 10.0 | 10.1 | 10.2 | 10.3 | 10.4 | 10.5 | 10.6 | 10.7 | 10.8 | 10.9 | 2 |
| 3 | 11.0 | 11.1 | 11.2 | 11.3 | 11.4 | 11.5 | 11.6 | 11.7 | 11.8 | 11.9 | 3 |
| 4 | 12.0 | 12.1 | 12.2 | 12.3 | 12.4 | 12.5 | 12.6 | 12.7 | 12.8 | 12.9 | 4 |
| 5 | 13.0 | 13.1 | 13.2 | 13.3 | 13.4 | 13.5 | 13.6 | 13.7 | 13.8 | 13.9 | 5 |
| 6 | 14.0 | 14.1 | 14.2 | 14.3 | 14.4 | 14.5 | 14.6 | 14.7 | 14.8 | 14.9 | 6 |
| 7 | 15.0 | 15.1 | 15.2 | 15.3 | 15.4 | 15.5 | 15.6 | 15.7 | 15.8 | 15.9 | 7 |
| 8 | 16.0 | 16.1 | 16.2 | 16.3 | 16.4 | 16.5 | 16.6 | 16.7 | 16.8 | 16.9 | 8 |
| 9 | 17.0 | 17.1 | 17.2 | 17.3 | 17.4 | 17.5 | 17.6 | 17.7 | 17.8 | 17.9 | 9 |
| 10 | 18.0 | 18.1 | 18.2 | 18.3 | 18.4 | 18.5 | 18.6 | 18.7 | 18.8 | 18.9 | 10 |
| 11 | 19.0 | 19.1 | 19.2 | 19.3 | 19.4 | 19.5 | 19.6 | 19.7 | 19.8 | 19.9 | 11 |
| 12 | 20.0 | 20.1 | 20.2 | 20.3 | 20.4 | 20.5 | 20.6 | 20.7 | 20.8 | 20.9 | 12 |
| 13 | 21.0 | 21.1 | 21.2 | 21.3 | 21.4 | 21.5 | 21.6 | 21.7 | 21.8 | 21.9 | 13 |
| 14 | 22.0 | 22.1 | 22.2 | 22.3 | 22.4 | 22.5 | 22.6 | 22.7 | 22.8 | 22.9 | 14 |
| 15 | 23.0 | 23.1 | 23.2 | 23.3 | 23.4 | 23.5 | 23.6 | 23.7 | 23.8 | 23.9 | 15 |
| 16 | 24.0 | 24.1 | 24.2 | 24.3 | 24.4 | 24.5 | 24.6 | 24.7 | 24.8 | 24.9 | 16 |
| 17 | 25.0 | 25.1 | 25.2 | 25.3 | 25.4 | 25.5 | 25.6 | 25.7 | 25.8 | 25.9 | 17 |
| 18 | 26.0 | 26.1 | 26.2 | 26.3 | 26.4 | 26.5 | 26.6 | 26.7 | 26.8 | 26.9 | 18 |
| 19 | 27.0 | 27.1 | 27.2 | 27.3 | 27.4 | 27.5 | 27.6 | 27.7 | 27.8 | 27.9 | 19 |
| 20 | 28.0 | 28.1 | 28.2 | 28.3 | 28.4 | 28.5 | 28.6 | 28.7 | 28.8 | 28.9 | 20 |
| 21 | 29.0 | 29.1 | 29.2 | 29.3 | 29.4 | 29.5 | 29.6 | 29.7 | 29.8 | 29.9 | 21 |
| 22 | 30.0 | 30.1 | 30.2 | 30.3 | 30.4 | 30.5 | 30.6 | 30.7 | 30.8 | 30.9 | 22 |
| 23 | 31.0 | 31.1 | 31.2 | 31.3 | 31.4 | 31.5 | 31.6 | 31.7 | 31.8 | 31.9 | 23 |
| 24 | 32.0 | 32.1 | 32.2 | 32.3 | 32.4 | 32.5 | 32.6 | 32.7 | 32.8 | 32.9 | 24 |
| 25 | 33.0 | 33.1 | 33.2 | 33.3 | 33.4 | 33.5 | 33.6 | 33.7 | 33.8 | 33.9 | 25 |
| 26 | 34.0 | 34.1 | 34.2 | 34.3 | 34.4 | 34.5 | 34.6 | 34.7 | 34.8 | 34.9 | 26 |
| 27 | 35.0 | 35.1 | 35.2 | 35.3 | 35.4 | 35.5 | 35.6 | 35.7 | 35.8 | 35.9 | 27 |
| 28 | 36.0 | 36.1 | 36.2 | 36.3 | 36.4 | 36.5 | 36.6 | 36.7 | 36.8 | 36.9 | 28 |
| 29 | 37.0 | 37.1 | 37.2 | 37.3 | 37.4 | 37.5 | 37.6 | 37.7 | 37.8 | 37.9 | 29 |
| 30 | 38.0 | 38.1 | 38.2 | 38.3 | 38.4 | 38.5 | 38.6 | 38.7 | 38.8 | 38.9 | 30 |
| 31 | 39.0 | 39.1 | 39.2 | 39.3 | 39.4 | 39.5 | 39.6 | 39.7 | 39.8 | 39.9 | 31 |
| 32 | 40.0 | 40.1 | 40.2 | 40.3 | 40.4 | 40.5 | 40.6 | 40.7 | 40.8 | 40.9 | 32 |
| 33 | 41.0 | 41.1 | 41.2 | 41.3 | 41.4 | 41.5 | 41.6 | 41.7 | 41.8 | 41.9 | 33 |
| 34 | 42.0 | 42.1 | 42.2 | 42.3 | 42.4 | 42.5 | 42.6 | 42.7 | 42.8 | 42.9 | 34 |
| 35 | 43.0 | 43.1 | 43.2 | 43.3 | 43.4 | 43.5 | 43.6 | 43.7 | 43.8 | 43.9 | 35 |
| 36 | 44.0 | 44.1 | 44.2 | 44.3 | 44.4 | 44.5 | 44.6 | 44.7 | 44.8 | 44.9 | 36 |
| 37 | 45.0 | 45.1 | 45.2 | 45.3 | 45.4 | 45.5 | 45.6 | 45.7 | 45.8 | 45.9 | 37 |
| 38 | 46.0 | 46.1 | 46.2 | 46.3 | 46.4 | 46.5 | 46.6 | 46.7 | 46.8 | 46.9 | 38 |
| 39 | 47.0 | 47.1 | 47.2 | 47.3 | 47.4 | 47.5 | 47.6 | 47.7 | 47.8 | 47.9 | 39 |
| 40 | 48.0 | 48.1 | 48.2 | 48.3 | 48.4 | 48.5 | 48.6 | 48.7 | 48.8 | 48.9 | 40 |

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 30.6. For same slopes but other widths of roadbed, correct above figures by one-half difference in width of roadbed; thus in example above, for 20 ft. roadbed distance will be 30.6+(20—16)÷2 or 2 ft. added to 30.6 =32.6. For slopes of 1 on 1½ see inside of back cover.


30'
00 100
20'
9370

# INDEX TO NOTES

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| 6-8 incl | X-Sec. & Slope Stks | 157+23.5 273+00 | See 23-05 for add'l Sta. 274-275 |
| 9-10 | Blue Tops for Paving | 157+05.7 268 | 157+05.7 Intals. NW Edge Paving Proj. 23-03 & E. Curve Proj (23-04)(23-05) |
| 11 | " " " " | 268 - 274 | Proj 23-03 |
| 12 | Check Levels "K" Line | " | 23-03 |
| 13 | Slope Stakes - | 10 - 11 "L" | |
| 14 | Cross-Sec. for Culv. @ | 10+93.5 "L" | |
| 15 | check levels around | 10 to 13 "L" | |
| 16-18 incl | check Levels - | 45 to 258 - "L" | |
| 19 | Cross-Sec. | 11 to 16 "L" | |
| 20 | " " | -3+50 to 4+20 "L" | |
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| 23 | Cross-Sec. | 4+40 to 11 "L" | |
| 24 | " " | 0+00 to 4+75 "C.E." | |
| 25-26 | " " | 0+00 to 11 - "L" Extension | |
| 27 | " " | 0+00 to 2+94 "VL" | |
| 28 | Blue Tops | 2+50 to 4 "C.E." | |
| 29-30 | Cross-Sec. | 1+50 to 11+21 "V.L." | |
| 31 | Curve Data "L" & "SC" | | |
| 32-33 | Cross-Sec. | 46 to 61 "SC" | |
| 34 | Blue Tops. | -2+50 to 2+50 "L" | |
| 35 | " " | 1+50 to 7 "V.L" | |
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| 61-64 | Curve Data | | |
| 65 | Ties to P.I. | common to "L" & "V.L." | |
| 68-69 | Transit Notes | 86 to 256 | "SC" |
| 70-71 | " " | 0 to 5 | "CE" |
| 72 | " " | "L" Extension | |
| 73-77 | " " | -3+00 to 84 | "L" & "SC" |
| 78-79 | " " | 0+00 to 1+20 | "V.L" |
| 80 | " " | 157 to 275 | "EC." |

Levels To Refer Centerville Project
Bench Marks to those of Co. Rd. G. "

| 23-03 Sta. | +S | H.I. | -S | | |
|---|---|---|---|---|---|
| B.M. | 846 | 275.64 | | See P. 41. (23-02 23-55) Bk 2 267.18 | |
| B.M. | | | 8.27 | 267.37 | 267.46 |

EQUATION IN ELEV.

B.M. Sp. Tel. A. R Sta. 258+87 (Centerville Project Sta.)

| | | | | Corresponds to plan elev. | As previously determined |
|---|---|---|---|---|---|
| B.M. | 6.07 | 273.76 | | 267.69 | |
| B.M. | | | 6.45 | 267.31 | |

Party { Deutsche / Johnson / Mahoney / Franke

Warm Fair 9-27-23 5

L & R

Top Mont. Intsct Es Co Rd G & Centerville

Sp. Tel. Pl. & Sta. 258+87

Elev. shown on Centerville Profile.

= 267.37 Co. Rd. G Project & 267.46 Centerville Project

See following pages (Set 10-1-23) 10-28-23
Sp. 4" Pine 33' R Sta. 258+60 Coel. Gourdy

Top Mont. Inters. Es Co Rd G & Centerville

(23-03) X-Sec & Slope Stakes

| Sta. | +S | H.I. | -S | Profile Grade | Grade Rod |
|---|---|---|---|---|---|
| B.M. | 3.66 | 270.97 | | 267.31 See prec. page | |
| 157+23.5 | | From Page 60 | | | |
| +33.5 | | | | | |
| +40 | | | | | |
| 158+00 | | | | 266.75 | 4.2 |
| +16 | | | | | |
| 159+00 | | | | 66.75 | 4.2 |
| 160+00 | | | | 67.45 | 3.5 |
| EQ 160+13.2 = 251+57.8 | | Sta. 160-252 = Sta. 55.54 | | | |
| 252+00 | | | | 268.00 67.6 | 2.9 3.0 |
| 253+00 | | | | 68.2 68.8 | 2.7 2.8 |
| T.P. | 9.44 | 279.25 | 1.16 | 269.81 | |
| 254+00 | | | | 69.36 70.0 | 9.9 |
| +72 | | | | 69.35 70.1 | 9.9 |
| B.M. | | | 11.80 | 267.45 Plan Elev. 267.46 | |
| B.M. | 9.53 | 276.84 | | 267.31 | |
| B.M. | | | 9.39 | 267.45 | See prec. page 267.46 |
| 255+00 | | | | 67.24 71.0 | 7.5 |
| +65 | | | | 69.10 70.7 | 7.7 |
| 256+00 | | | | 69.04 70.4 | 7.8 |
| 257+00 | | | | 68.36 69.2 | 8.5 |
| +50 | | | | 67.8 68.4 | 9.00 |
| 258+00 | | | | 67.32 67.5 | 9.5 |
| +75 | | | | 66.25 66.5 | 10.6 |
| 259+00 | | | | 65.9 66.1 | 10.9 |
| 255+28 | Hd. Level obtain by | Referenced to E Elev before cutting interpolation between 255 & 256 | | | |

Party { Deutsche / Johnson - (Absent) / Maloney / Franke

4

9-28-23

Cool-Quds

6

L R

Proj ect

Tot. Mat'l Fr Co Rd G & Centerville Referenced to Centerville

E Co Rd. G. Lt

3.7 3.1 3.1 3.3 3.7 4.5 5.9 5.8 3.9 1.9
33 29 14 0 9 12 17 25 31 33

N. Edge " " Lt.

4.1 4.0 3.6 3.1 3.3
34 27 16 11 0

Same Sec. Rt as above.

Tot. Lt. Co Rd. G. Lt

2.5 2.6 6.1 4.8 3.7 3.4
40 33 23 18 10 0

Centerline Rt.

Co Riv. erth F4.5 8.8 8.0 8.3 8.9 7.6 7.0 4.2 4.1 3.6 3.8 4.6 4.6 4.6 (F 2.4 * (DC 1.6) * Not set
45-38 31 25 23 20 17.5 13 10 5 0 11 20 30 35 16.6 26.6 A/C Rd. G.

Rt.

Tot. St. Riv Earth Rt.

8.6 8.6 8.7 7.6 4.0 3.5 3.9 4.9 6.2 4.4 3.4
33 27.5 23 19.5 12 9 9 17 24 28.5 33-39 Lawn

(DC 0.7 / 26.5) (F 3.9 / 21.8) 6.3 7.0 8.2 7.6 3.6 (F 2.2 / 37) C 0.6 / 0 / 29.5 Rem. idor not taken A/c Co Rd G.
37 29.5 21 17 11 6 7.3 Dump rown for X-Sec. See Plan X-sects

Slope SK not set A/c Co Rd G. Project

13.4 13.0 4.5 3.5 (F 2.2 / 37) 8.1 14.7 10.8 (F 13.8 / 38.7)
33 27.5 14 9.5 0 11 24.5 33

These readings Set Stakeout set a/c Co Rd G Project skewed

EQUATION See Co Rd G. X-Sec SK for Sec @ 251+57

(F 1.4 / 33) (F 8.8 / 30.2) 12.4 11.7 11.5 4.6 3.6 F 2.4 7.5 8.7 12.6 15.7 17.1 (F 14.5 / 37.9) (F 1.4 / 33)
37 31 23 13.5 10 0 10 18.5 24 30 34

(DC 1.9 / 24.9) (F 0.4 / F 0.6) 1.9 1.4 2.8 2.8 2.1 2.4 3.6 5.2 5.9 7.1 (F 2.6 / 16.7)
35 30.5 24 19 14 9.5 0 12 19 25 29 33

Top rock 10' Sh. 253+78

(C 4.5 / 29.5) -0.2 2.0 5.2 7.1 7.8 9.3 10.9 9.4 C 4.6 9.4 10.1 9.3 6.4 3.2 2.0 1.5 (C 8.2 / 33.2)
60+27 36 29 26.5 20 16.5 13 10 7 15.5 19 23 30 32 33

(C 17.3 / 43.3) 6.4 4.7.3 + 5.5.5 1.0 1.3 7.3 9.2 8.9 C 1.4 8.6 9.0 7.3 4.3 0.9 + 7.0 + 4.8 (C 16.9 / 41.9)
57.5 37.5 37 24 25 18 10.5 6 16.5 14 16 22.5 30 40.5 42.5

Sp. Tel. Pl. Rt. Sh. 258+87

Top Mont. Fr Co Rd G to Centerville Rd

Elev. Sp Tel. pl. Rt. 259+87 6.6 C 1.7 6.2 4.6 3.6 1.0 + 4.4 + 4.5 + 4.0 (C 11.5 / 36.5)
(C 15.7 / 40.7) + 7.3 / 50 + 8.7 / 38 + 6.5 / 34 8.0 / 24.5 2.0 / 21 13.8 5 14.5 16 21 24 31 36 45

(C 4.1 / 29.1) 4.0 3.4 3.4 3.1 2.1 6.5 C 1.6 6.3 6.8 6.8 3.6 3.4 3.4 (C 4.2 / 29.2)
33 26 20 15 13 11 6 12 13 15 20 23 32 33

(R/W 33) (C 1.1 / 26.1) 7.7 6.5 6.9 5.5 7.3 6.7 C 1.4 6.7 5.2 4.7 5.0 5.4 (C 2.2 / 27.3) (R/W 33)
31.5 28.5 22.5 18 14 11 0 15 12-15 18 22 33

(0.0 / 25) 9.0 8.4 8.7 8.1 C 0.8 7.8 8.4 6.7 6.6 (C 3.3 / 27.3)
33 26 17.5 11 0 7.5 14 17.5 33

(C 2.3 / 27.3) 6.5 6.2 7.3 9.4 7.5 8.8 C 0.2 8.5 9.0 7.3 5.0 4.9 (C 3.9 / 28.9)
33 29.5 23 19.5 13.5 12 0 12 14 18 28 33

(C 0.1 / 25.1) 9.4 8.1 7.8 10.9 10.4 9.8 C 0.2 9.6 10.6 8.8 7.5 (C 1.9 / 26.9)
25 33 30 21.5 17.5 12 0 12 14-16 17.5 33

11.1 10.8 11.4 11.2 11.7 11.0 10.4 10.9 10.5 9.1 9.0
33 29 25 19 15 12 0 13 21 26 33

(DC 0.8 / 23.8) (F 1.4 / 18) 10.4 10.3 11.8 12.4 11.2 C 0.2 11.2 11.7 11.8 5.5 (C 5.4 / 30.4)
33 31 27 14 11 0 12 19 30-33

+ 7.5 + 10.5 + 11.5 + 11.9 + 5.5 + 4.2 + 5.5 + 5.8
47 37 35 34 25 17.5 33-9.4 49

| 23-03 | X-Sec + Slope Stakes | | | Profile Grade | Grade Rod. |
|---|---|---|---|---|---|
| Sta. | +S | H.I. | -S | | |
| B.M. | 0.40 | 267.86 | | 267.46 | |
| 259+50 | | | | 265.1 (64.1 64.0) | 2.8 |
| +64 | | | | 265.3 (64.2 63.8) | 2.6 |
| 260+00 | | | | 264.30 (63.8 63.7) | 3.6 |
| +76 | | | | 63.10 (62.7) | 4.8 |
| B.M. | | | .40 | 267.46 | Man Elev. 267.46 |
| New B.M. | | 267.86 | 917 | 267.69 | |
| 261+00 | | | | 62.96 (63.4 63.2) | 4.90 |
| 262+00 | | | | 62.15 (61.8 61.7) | 5.70 |
| T.P. | 9.27 | 270.86 | 6.27 | 261.59 | |
| +50 | | | | 262.00 (61.9) | 8.7 |
| +57 | | | | | |
| +72 | | | | | |
| 263+00 | | | | 61.86 (62.0) | 9.0 |
| +55 | | | | 61.90 (62.2 62.2) | 9.0 |
| 264+00 | | | | 62.1 (62.3 62.3) | 8.8 |
| +35 | | | | 62.28 (62.3 62.3) | 8.6 |
| T.P. | 5.24 | 267.95 | 8.15 | 262.71 | |
| 265+00 | | | | 62.6 (62.2 62.2) | 5.4 |
| 266+00 | | | | 63.1 (62.9 62.9) | 4.9 |
| T.P. | 0.95 | 265.32 | 3.58 | 64.37 | |
| B.M. | | | 7.21 | 258.11 | Man Elev 258.17 |
| T.P. | 5.24 | 266.83 | | 261.59 | |
| 265+45 | | | | | |
| 266+75 | | | | 263.48 (63.6) | 3.4 |

Party { Deutsche, Johnson, Maberley, Franke }

℄

10-1-23
Cool. Fair

I

L R

Sp. Tel. Pl. Rt. Sta. 258+87 (2.8)

S. Edge Riv Extr. ℄ (F5.4 / 29.1) 9.8/33 8.8/29.5 8.0/22 3.3/12 Fo 1/5 3.2/22 2.0/35 (90 2.0/25.0)

N. Edge " " " 11.8/33 11.2/30 10.5/23 3.6/12 Fo 7/11 8.1/33 (3.6)

(F11.1 / 34.8) 14.8/33 13.3/25.0 12.0/21 4.2/9 Fo 5/6 4.5/11 9.4/19 10.0/33 (F6.3 / 26.6) (R/W 33)

℄ 15.7 14.2 15.7 14.8 12.0 5.7 Fo 4 5.5 10.5 11.1 11.5 14.9 Top Pipe 8.4 Pipe 8.4 Pipe 15.8 Pipe 3.4
Existing 12" C.I.P. 27.8 27.5 Top ℄ Pipe 27 Bot ℄ Pipe 21 0 11 20 22 21 26 26 3.-32

Sp. Tel. pl. Rt. Sta. 258+87 (Likely To be moved)

Sp. 4" Fir. 258+60 - 33'R (9.1) Set 10-1-23

(F9.8 / 31.7) 5.3/44 14.9/32 13.8/24 12.0/20 5.6/11 Fo 6/11 5.8/11 12.0/23.5 12.9/25.5 13.7/37 13.3/29 (F8.4 / 29.6) Fence L

(R/W 33) (F3.4 / 24.1) 10.8/33 8.8/17 6.5/11 Fo 7/0 6.4/10 8.2/16 8.3/22 4.3/30 4.5/40 (F2.6 / 14.9) R/W 33

Top Stob 33'L Sta 262+50 (8.9)

So. Edge Riv Extr. L. (F9.8 / 17.2) 9.6/33 9.6/13 9.0/5 9.5/11 10.3/14 6.5/21 6.9/33 Fence Line (C2.9 / 27.9)

℄ Riv entr. Same Sec.

No. Edge " " (9.8)

(C0.3 / 25.8) 8.7/33 9.0/16 9.8/14 8.4/12 C0 1/1 9.1/15 9.8/16 9.1/16 5.7/26.5 5.7/33 (C3.3 / 28.3) (9.9)

(DC1.6 / 24.6) (F1.0 / 17.5) 7.2/33 9.8/18 10.3/14 8.9/11.5 C0 3/3 9.1/15 9.7/15.5 9.1/17 7.3/20 4.4/24 1.8/27 1.5/32.36 (C7.5 / 32.5) (9.6)

(R/W 33) (DC0.7 / 23.7) (F1.4 / 18.1) 9.8/33 10.3/15 9.0/11.5 C0 2/2 7.0/10 10.1/13 10.2/16.5 5.0/23.5 4.3/33 (C4.1 / 29.1) (R/W 33) (9.4)

(F3.2 / 28.8) 12.0/33 11.8/17.5 9.3/13 C0 0/0 9.1/10.5 12.0/15 13.1/17 14.0/25 14.3/29-33 (0.0 / 25 ℄ 264+14) (F1.7 / 24.1)

Top. Str. 10'R 264+65 (6.4)

(F6.4 / 24.7) 12.0/33 11.8/22.5 6.6/13 Fo 4/9 5.7/11 11.8/18 12.8/33 13.2/27.7 (F6.9 / 27.4)

(R/W 33) (F6.6 / 26.9) 11.5/33 10.6/20 5.7/10 Fo 2/5 5.7/10 11.5/21 12.6/33 (F7.4 / 28.1) (R/W 33)

Top Str. 14'L Sta. 269

Sp. Tel. R. 40'R Sta. 275+33

Top Fence post stob 33'L Sta. 262+50 (Start 10-2-23)

℄ existing 12" C.I.P. 11.75 / 35 8-12 / 17.1 / 28-35

(F3.9 / 21.8) 4.2/33 3.8/31 7.6/24.5 7.3/20 7.2/11.5 Fo 1/1 3.7/10 8.7/12 8.2/21 6.3/26 7.7/33 (F3.9 / 21.8)

(8.4)

(23-03) X-Sec & Slope Stakes

| Sta. | +S | H.I. | -S | Profile Grade | Grade - Rod |
|---|---|---|---|---|---|
| 267+00 | | Carry to next page 266.83 | | 263.6 | 3.2 |
| 268+00 | | | | 64.1 | 2.7 |
| T.P. | 7.56 | 271.92 | 2.47 | 264.36 | Next page (264.47) |
| 269+00 | | | | 64.27 | 7.65 |
| +80 | | | | | |
| 270+00 | | | | 63.8 | 8.1 |
| 271+00 | | | | 62.67 | 9.25 |
| +18 | Top bk for roadway | | | | |
| +22 | | | | 62.31 | 9.6 |
| +40 | | | | 62.04 | 9.9 |
| +55 | Top bk for roadway | | | 61.78 | 10.1 |
| 272+00 | | | | 60.9 | 11.00 |
| 272+18 | | | | 60.5 | 11.4 |
| T.P. | 3.10 | 263.75 | 11.27 | 260.65 | |
| 273+00 | | | | 59.20 | 4.6 |
| B.M. | | | 5.67 | 258.08 | 258.17 Plan Elev |
| B.M. | | | 6.20 | 257.55 | 257.70 Marked on pole |

Party { Deutsche
Johnson
Mahoney
Franke

10-2-23
Cool Fair

℄

L (3.2) R

$\left(F\frac{3.1}{20.6}\right)$ $\frac{3.9}{33}$ $\frac{6.8}{27}$ $\frac{6.2}{19}$ $\frac{3.8}{12.5}$ $F\frac{0.2}{0}$ (2.7) $\frac{4.1}{12}$ $\frac{6.9}{16}$ $\frac{4.9}{19}$ $\frac{5.8}{21}$ $\frac{8.3}{33}$ $\left(F\frac{3.0}{20.5}\right)$

$\frac{R/W}{33}$ $\left(DC\frac{1.4}{24.4}\right)$ $\frac{0.7}{33}$ $\frac{1.2}{29}$ $\frac{3.1}{26}$ $\frac{3.6}{13.5}$ $\frac{3.2}{12.5}$ $F\frac{0.4}{0}$ $\frac{3.5}{10.5}$ $\frac{9.7}{21}$ $\frac{10.8}{24}$ Pipeline $\frac{12.2}{33}$ $\frac{13.2}{45}$ $\left(F\frac{9.3}{31.0}\right)$ $\left(\frac{R/W}{33}\right)$

$\frac{0.0}{25}$ @ 268+08 $\frac{0.0}{25}$ @ 268+85

Top stk 14' L Sta. 269 (7.6)

$\left(C\frac{9.0}{34.0}\right)$ $\frac{+2.0}{48}$ $\frac{+1.3}{32.5}$ $\frac{0.0}{31}$ $\frac{-8.0}{21}$ $\frac{8.6}{14}$ $\frac{8.1}{12.5}$ $C\frac{0.2}{0}$ $\frac{8.0}{10}$ $\frac{8.4}{12}$ $\frac{8.4}{14.5}$ $\frac{5.5}{20}$ $\frac{6.6}{28.5}$ $\frac{7.7}{33}$ $\left(C\frac{1.2}{26.2}\right)$

$\frac{0.3}{41}$ $\frac{0.9}{34}$ $\frac{5.7}{25.5}$ $\frac{8.8}{20.5}$ $\frac{9.2}{14.5}$ $\frac{8.6}{13}$ $\frac{8.0}{0}$ (8.1) $\frac{8.2}{10.5}$ $\frac{8.8}{12-15.5}$ $\frac{3.4}{24}$ $\frac{3.6}{33}$

$\left(\frac{R/W}{33}\right)$ $\left(C\frac{5.7}{30.7}\right)$ $\frac{2.2}{45}$ $\frac{1.4}{33}$ $\frac{8.8}{24}$ $\frac{9.3}{14.5}$ $\frac{8.8}{15}$ $F\frac{0.2}{0}$ (9.2) $\frac{8.5}{10}$ $\frac{9.0}{12}$ $\frac{9.0}{15}$ $\frac{4.8}{25}$ $\frac{4.4}{33}$ $\left(\frac{C3.6}{28.6}\right)$ $\left(\frac{R/W}{33}\right)$

$\left(C\frac{0.4}{25.4}\right)$ $\frac{7.9}{33}$ $\frac{7.7}{30}$ $\frac{8.2}{29}$ $\frac{8.7}{23.5}$ $\frac{11.0}{18.5}$ $\frac{11.0}{15}$ $\frac{10.2}{14}$ $F\frac{0.4}{0}$ $\frac{10.0}{10}$ $\frac{10.1}{14}$ $\frac{5.6}{23}$ $\frac{5.2}{33}$ $\left(C\frac{4.0}{29.0}\right)$ $\left(\frac{R/W}{33}\right)$

Same Sec as above @ 271+18

$\frac{8.7}{33}$ $\frac{8.3}{28.5}$ $\frac{17.2}{19.5}$ $\frac{11.0}{15}$ $\frac{10.4}{13.5}$ $\frac{9.9}{0}$ F0.3 $\frac{10.0}{10}$ $\frac{8.1}{33}$

So. Edge. Prv entr Rt

$\frac{8.8}{33}$ $\frac{9.4}{23}$ $\frac{11.4}{18.5}$ $\frac{11.3}{15}$ $\frac{10.6}{13}$ $\frac{10.2}{0}$ F0.3 $\frac{10.1}{15}$ $\frac{7.7}{33}$

No " " " " (10.1)

$\frac{9.4}{33}$ $\frac{8.9}{29}$ $\frac{9.9}{24}$ $\frac{11.5}{19}$ $\frac{12.0}{15}$ $\frac{11.0}{12.5}$ $\frac{10.5}{0}$ F0.3 $\frac{10.9}{13.5}$ $\frac{5.4}{25.5}$ $\frac{5.2}{33}$

$\frac{0.0}{25}$ @ 271+70 (11.0)

$\left(\frac{R/W}{33}\right)$ $\left(\frac{F1.9}{18.9}\right)$ $\frac{13.7}{33}$ $\frac{13.0}{23.5}$ $\frac{13.0}{17}$ $\frac{11.7}{11.5}$ $F\frac{0.3}{0}$ $\frac{11.5}{10}$ $\frac{12.2}{13}$ $\frac{12.0}{15.5}$ $\frac{9.2}{22}$ $\frac{8.9}{33}$ $\left(\frac{C1.7}{26.7}\right)$ $\left(\frac{R/W}{33}\right)$

$\frac{17.0}{33}$ $\frac{14.5}{21}$ $\frac{12.5}{14}$ $\frac{11.6}{0}$ F0.3 $\frac{11.9}{10.5}$ $\frac{0.0}{25}$ @ 272+18 $\frac{12.9}{13-17}$ $\frac{11.6}{19.5}$ $\frac{11.4}{33}$

Top stk (4.6)

$\left(\frac{F7.4}{28.1}\right)$ $\frac{11.7}{33}$ $\frac{10.5}{20}$ $\frac{5.7}{13}$ $F\frac{0.7}{0}$ $\frac{5.5}{11}$ $\frac{8.7}{17}$ $\frac{8.8}{33}$ $\left(\frac{F4.0}{24.0}\right)$ 18' shldr a/c widening

Sp. Tel. Pl. 40' R Sta. 275+33

R.R. Sp. Ph. Pl. 27' R " 272+80

(23-03) Blue Tops for Paving

| Sta. | + S | H.I. | - S | Profile Grade | Grade Rod 12' L & R Except as noted |
|---|---|---|---|---|---|
| B.M. | 6.45 | 273.76 | | 267.31 | |
| 159+05 I | | | | 66.78 54 67.32 | 12' Ramp 6.44 |
| 159+65 | | | | 67.13 54 67.67 | 12' Ramp 6.09 ✓ |
| EQ 160+13.3 P.T. 251+57.8 E.W.T. 252+07.8 | | | | 67.58 54 68.12 | 13.8' Lt. 12' Rt. 5.64 ✓ |
| | | | | 68.08 54 68.62 | 5.14 ✓ |
| 252+50 | | | | 68.45 54 68.99 | 3.77 ✓ |
| 253+00 | | | | 68.82 54 69.36 | 4.40 ✓ |
| +50 | | | | 69.08 54 69.62 | 4.14 ✓ |
| 254+00 | | | | 69.26 54 69.80 | 3.96 ✓ |
| +50 | | | | 69.36 54 69.90 | 3.86 ✓ |
| 255+00 | | | | 69.34 54 69.88 | 3.88 ✓ |
| +50 | | | | 69.22 54 69.76 | 4.00 ✓ |
| 256+00 | | | | 69.04 54 69.58 | 4.18 ✓ |
| B.M. | 6.07 | | 6.07 | 267.69 | |
| 256+50 | | 273.76 | | 68.76 54 69.30 | 4.46 ✓ |
| 257+00 | | | | 68.36 54 68.90 | 4.86 ✓ |
| 257+50 | | | | 67.88 54 68.42 | 5.34 ✓ |
| 258+00 | | | | 67.32 54 67.86 | 5.90 ✓ |
| +50 | | | | 66.63 54 67.17 | 6.57 ✓ |
| 259+00 | | | | 65.90 54 66.44 | 7.32 ✓ |
| B.M. | | | 6.08 ✓ | 267.68 ✓ | Plan elev. 267.69 ✓ |
| BM | 3.21 | 270.90 | | 267.69 | |
| 259+50 | | | | 65.1 54 65.64 | 5.26 |
| 260+00 | | | | 64.3 54 64.84 | 6.06 |
| 260+50 | | | | 63.56 54 64.10 | 6.80 |

Party { Deutsche, Johnson, Mahoney, Franke

10-27-23
Cool Rain 9

Top Mont Inters. Es Cal&G & Centerville

Present end Cone. Inters. outside of curve & W. edge Centerville Rd.

" H. " " " " " " " " "

18' Extra Widening Lt & 2.0 Offset.

Sp. 4" Fir 33'R Sta 258+60

Sp. 4" Fir 33'R Sta. 258+60 To check out.

" " " " " " " "

23-03 Blue Tops for Paving

| Sta. | +S | H.I. | −S | Profile Grade +0.54 | Grade Rod R'L + R |
|---|---|---|---|---|---|
| | | Carried fr. prec. page. | | | |
| 261+00 | | 270.90 | | 62.96 54 63.50 | 7.40 |
| +50 | | | | 62.49 54 63.03 | 7.87 |
| 262+00 | | | | 62.15 54 62.69 | 8.21 |
| B.M. | | | 3.21 | 267.69 ✓ | Plan elev 267.49 ✓ |
| | | Reset Blue Tops Knocked Out. | | | |
| B.M. | 4.74 | 272.43 | | 267.69 | |
| 256+50 L | | | | 69.30 | 3.13 ✓ |
| 257+50 L | | | | 68 42 | 4.01 ✓ |
| 258+50 R | | | | 67.19 | 5.24 ✓ |
| 260+50 R | | | | 64.10 | 8.33 ✓ |
| 261+00 R | | | | 63.50 | 8.93 ✓ |
| 261+50 L&R | | | | 63.03 | 9.40 ✓ ✓ |
| B.M. | | | 4.74 | 267.69 | |
| B.M. | 1.27 | 268.96 | | 267.69 | |
| 262+50 | | | | 61.94 54 62.48 | 6.48 ✓ ✓ |
| 263 | | | | 61.86 54 62.40 | 6.56 ✓ ✓ |
| +50 | | | | 61.95 54 62.49 | 6.47 ✓ ✓ |
| TP 264 | 5.22 | 267.86 | 6.32 | 62.10 54 62.64 | 6.32 ✓ ✓ |
| +50 | | | | 62.35 54 62.89 | 4.97 ✓ ✓ |
| 265 | | | | 62.60 54 63.14 | 4.72 ✓ ✓ |
| +50 | | | | 62.85 54 63.39 | 4.47 ✓ ✓ |
| 266 | | | | 63.10 54 63.64 | 4.22 ✓ ✓ |
| +50 | | | | 63.35 54 63.89 | 3.97 ✓ ✓ |
| 267 | | | | 63.60 54 64.14 | 3.72 ✓ ✓ |
| +50 | | | | 63.85 54 64.39 | 3.47 ✓ ✓ |

Party { Deutsche, Johnson, Mahoney, Franke

10-30-23 Cold Windy 20° F above 0°

10-27-23 Cool. Fair
10-29-23 Cold! Fair

10

Sp. 4" Fir 33'R Sta. 258+60

Sp 4" Fir 33'R Sta. 258+60

Sp. 4" Fir 33'R Sta. 258+60 End 10-29-23
" " " " " " #4 Start 10-30-23

Top Stk 12'L

| 23-03 | Blue Tops for Paving | | | Profile Grade +0.54 | Grade Rod 12'L & R |
|---|---|---|---|---|---|
| Sta. | + S | H.I. | - S | | |
| 268 | | 267.86 | | 64.10 / 54 / 64.64 | 3.22 |
| +50 | | | | 64.27 / 54 / 64.81 | 3.05 |
| 269 | | | | 64.27 / 54 / 64.81 | 3.05 |
| +50 | | | | 64.12 / 54 / 64.66 | 3.20 |
| 270 | | | | 63.80 / 54 / 64.34 | 3.52 |
| +50 | | | | 63.32 / 54 / 63.86 | 4.00 |
| 271 | | | | 62.67 / 54 / 63.21 | 4.65 |
| T.P. +50 | 1.54 | 263.95 | 5.45 | 61.87 / 54 / 62.41 | 5.45 |
| 272 | | | | 60.90 / 54 / 61.44 | 2.51 |
| +50 | | | | 59.85 / 54 / 60.39 | 3.56 |
| 273 | | | | 59.23 | Lonly 4.72 |
| P.C. +07.53 | | | | 59.04 | L & R 4.91 |
| 273+31 | | | | 58.74 | L & R 5.21 |
| +75 | | | | 58.94 | Lonly 5.01 |
| 274+01.1 | | | | 59.06 | Lonly 4.89 |
| B.M. | | | 6.37 | See Note Below 257.58 | 257.70 Pan elev |
| B.M. | | | 7.71 | 256.24 | 256.36 Pan elev |
| B.M. | | | 5.85 | See Note Below 258.10 | 258.77 |

Note :- To check elevations as determined

Party { Deutsche, Johnson, Mahoney, Franke }

10-30-23
Cold ± 20°F
Windy

11

Top stk 1.5'R

Curve to Birch Lake Rd.

(L should be 4.9 instead of as shown)

Pis determined by Cadastral for Birch Lake Proj. & marked on pole

R.P. Sp. Tel. Pk. 336 - 2.5'R Sta. 272+75

Birch Lake Proj. Mon.

Top Mont. Mon. & Birch Lake & Centerline Rds

Sp. Pk. Pl 40'R Sta. 275+33

above by RED. See Levels for X-Sec. & Slakes Page 8.

(23-03) "L" Line — CHECK LEVELS

| Sta. | +S | H.I. | -S | Elev. | Profil Elev Need this s |
|---|---|---|---|---|---|
| B.M. | 5.89 | 225.55 | | 219.66 | Use this Av. Sa below = 220.69 |
| New B.M. | | | 4.84 | 220.71 | |
| T.P. | 4.70 | 228.30 | 1.95 | 223.60 | Av = 223.59 |
| New B.M. | Out. | | 3.61 | 224.69 | = 224.68 |
| T.P. | 4.89 | 231.01 | 2.18 | 226.12 | = 226.13 |
| New B.M. | | | 3.78 (5) | 227.22 | = 227.23 |
| T.P. | 7.00 | 235.80 | 2.21 | 228.80 | |
| T.P. 3. New B.M. | 2.51 | 237.99 | 0.32 | 235.48 | |
| T.P. | 0.90 | 236.29 | 2.60 | 235.39 | |
| B.M. | | | 5.39 | 230.90 | 230.93 |
| New B.M. | | | | | 230.84 |

Note: Profile Elev is OK

CHECKING BACK

236.29

| | | | | | |
|---|---|---|---|---|---|
| T.P. | 4.66 | 237.74 | 3.81 | 233.08 | |
| New B.M. | | | 2.26 | 235.48 | |
| T.P. | 1.89 | 230.69 | 8.94 | 228.80 | |
| New B.M. | | | 3.46 | 227.22 | |
| T.P. | 2.28 | 228.41 | 4.56 | 226.13 | |
| New B.M. | Out. | | 3.74 | 224.67 | |
| T.P. | 2.24 | 225.82 | 4.83 | 223.58 | |
| New B.M. | | | 5.15 | 220.67 | |
| B.M. | | | 6.21 | 219.61 | Number 219.66 |

Party. { Deutsche, Johnson, Mundey, Franke }

'71-8-23 Cold Rain 12

Sp. Tel. Pl. 15'R Sta. 14+70 "L" Line (On Profile as 13+25 SC Line)

Top. Stk 12'R Sta. 17+50 " " "

" Sp. Tel. Pl. 20'R " 21+35 " " "

" " 12" Box Elder Fence Post 6'L Sta 32+85 "L" Line at SC Line

" " F.P. 27'L Sta 26+80 "SC" Line

" " Tel. Pl. 20'R Sta. 30+27 (SC Line)

Top. Conc. Pavg 10'R on ℄ of Co. Rd "E"

Use this! " Lowest Conc. Step (S.E. Cor) School House about Sta 40+00 on "SC"

" F.P. L Sta. 44+50 "SC" Line

Use this! Sp. Tel. Pl. 20'R Sta. 45+00 (Likely to be moved)

" " " Root 24" Maple 33'R Sta. 44+00 "SC"

Top rock ℄ Rd.

Top low Step School Hse as above

" Conc. Pavg 10'R on ℄ Co. Rd "E"

Sp. Tel. Pl. 20'R Sta. 30+27 SC.

Note:-
RED Hp. 230.90 − 219.66 = 11.24

RED Stone 230.90 − 219.61 = 11.29

Av. = 11.27

219.66 + 11.27 = 230.93
To check Profile elev.

Sp. 12" Box Elder Fence Post 6'L Sta. 32+85 "L" Line.

" Tel. Pl. 20'R Sta. 21+35 "L"

Top. Stk 12'R Sta. 17+50

Sp. Tel. Pl. 15'R Sta. 14+70 "L" Line.

(22-03) "L" Line — Slope Stakes — (See Note below) — Profile Grade — Grad. Rod

| Sta. | +S | H.I. | -S | | |
|---|---|---|---|---|---|
| BM | 8.57 | 200.07 ① | | 191.50 | |
| 10+00 | | | | 203.5 | + 3.4 |
| 10+50 | | | | 205.5 | + 5.4 |
| 11+00 | | | | 207.5 | + 7.1 |
| Rod to outlet. | | | - 6.5 | | |
| " " Intake | | | - 6.1 | | |

Note:- These stakes were set only to indicate on the ground the approximate Toe of fill in order to determine whether or not a spring would be covered by the fill. [It was] See page 14.

CURVE DATA "CE" LINE

| | Toe Slope Ins | Toe Slope Out | Slder Width Ins | Slder Width Out | Ins | Out | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | -.008 | -.008 | -.12 | -.12 |
| 2+86 | 2.5 | 2.5 | 15 | 15 | -.008 | -.004 | -.12 | -.06 |
| 3+00 | 2.5 | 2.5 | 15 | " | -.013 | +.013 | -.19 | +.19 |
| 3+50 | " | " | " | " | -.026 | +.026 | -.39 | +.39 |
| 3+86 | " | " | " | " | -.031 | +.031 | -.47 | +.47 |
| 4+00 | 25.4 | " | 15.49 | " | -.044 | +.044 | -.77 | +.77 |
| 4+35.6 | 27.5 | " | 17.5 | " | | | | |
| +75 | 29.5 | " | 19.5 | " | | | | |
| 4+86 | 30 | " | 20 | " | -.062 | +.062 | -.124 | |
| 5+00 | 30 | " | 20 | " | -.062 | +.062 | -.124 | |
| 5+09 | 30 | " | 20 | " | -.062 | +.062 | -.124 | |
| "CE" 5+58.9 = "L" 1+39.5 | 27.5 | " | 17.5 | " | -.044 | | -.77 | |

Work with a/c CE & L intervals.

Party { Deutsche
Johnson
Mooney
Ford

11-17-23
to
Cold-Windy

13

Tee Rod to Grd 0+00 on ℄ of Cold-Windy p.14.

$\frac{F\ 11.8}{35.7}$ $\frac{8.4}{3.57}$ $\frac{4'}{18}$

$\left(\frac{F\ 10.7}{34.0}\right)$ $\frac{5.3}{3+43}$

$\left(\frac{F\ 6.5}{26.7}\right)$ $\frac{+0.5}{28}$

Note:
Hilltop Fillette
Morning Indigo
no allowance for shrinkage — or superelev.
See these on page 23
to supercede —

23-03

X-Sec. For Culv. Installation at 10+93 Along Proposed ℄ of Culv.

| Sta. | + S | H.I. | - S | |
|---|---|---|---|---|
| | | Using Hand Level | | |
| B.M. | +74 | 107.40 | | Assumed elev 100.00 = Co. Datum 191.50 (See following page) |
| 0+00 | | | | |
| 0+25 | | | | |
| 0+43 | | | | |
| 0+63 | | | | |
| T.P. | 5.8 | 108.9 | 4.3 | 103.1 |
| 0+90 | | | | |
| 1+10 | | | | |
| T.P. | 10.4 | 113.8 | 5.5 | 103.4 |
| 1+35 | | | | |
| 1+50 | | | | |
| 1+56 | | | | |
| 1+68 | | | | |
| T.P. | +5.5 | 119.3 | 0.0 | 113.8 |
| T.P. | +0.2 | 114.0 | 5.5 | 113.8 |
| 1+79 | | | | |
| T.P. | 3.9 | 117.9 | 0.0 | 114.0 |
| 1+96 | | | | |
| 2+09 | | | | |
| T.P. | 7.0 | 124.9 | 0.0 | 117.9 |
| 2+09 | | | | |
| 2+18 | | | | |
| 2+28 | | | | |
| T.P. | 5.5 | 117.9 | 12.5 | 112.9 |
| 2+18 2+28 | | | | |

Betty { Deutsche, Johnson, Maheney, Franke

11-5-23
Cool Fair

14

L R

Note:- See following page for determination of elev. of assumed B.M. with reference to County Datum

Top. Sta. 0+00

1"x2" Hub RP

Tack 1"x2" Spike

Hub to Grd.

Top 2"x4" 8 spring cribbing

Top Hub to Grd / Inters. Ls (Ed x Culv)

2d Sta. 10+93

Same T.P.

RP

To H.I. = 117.9

To H.I. = 119.3

RR R/W Pc

RR R/W Pc

(23-03) Tieing in Assumed B.M. to County Datum
See Preceding Page.

| Sta. | + S | H.I. | - S | |
|---|---|---|---|---|
| B.M. | 11.99 | 111.99 | | Assumed 100.00 |
| T.P. | 11.61 | 123.51 | 0.09 | 111.90 |
| Sta. 10+93.5 | | | 8.58 | 103.41 |
| T.P. | 6.92 | 129.89 | 0.54 | 122.97 ✓ |
| B.M. | | | 1.73 | 128.16 |
| T.P. | 6.65 | 135.86 | 0.28 | 129.21 |
| B.M. | | | 5.12 | 130.74 |

"A" OMIT. CONSIDERATION

CHECK LEVELS FROM CO.

| | | | | |
|---|---|---|---|---|
| B.M. | 8.84 | 224.67 | | 215.83 |
| T.P. | 3.02. | 222.61 | 5.08 | 219.59 |
| B.M. | | | 2.97 | 219.64 Plan elev 219.66 ✓ |

"B"

RUNNING BACK LEVELS TAKEN

"C"

| | | | | |
|---|---|---|---|---|
| B.M. | 2.97 | 131.13 | | 128.16 |
| T.P. | 0.21 | 123.18 | 8.16 | 122.97 ✓ |
| T.P. | 0.19 | 112.09 | 11.28 | 111.90 ✓ |
| B.M. | | | 12.09 | 100.00 ✓ |
| Sta. 10+93.5 | | | 8.68 | 103.41 ✓ |

Note:- This B.M. referred to County Datum = 191.50

128.16 - 100.00 = 28.16
219.66 ✓ - 28.16 = 191.50

CHECK LEVELS AS "B"

| | | | | |
|---|---|---|---|---|
| B.M. | 1.60 | 221.24 (221.26) | | 219.64 Plan elev 219.66 ✓ |
| New B.M. | | | 5.77 | 215.49 ✓ |
| T.P. | 5.09 | 224.69 | 1.64 | 219.60 |
| B.M. | | | 8.83 | 215.86 Plan elev 215.83 |
| New B.M. | 8.83 | 224.66 | 4.71 | 219.95 Based upon |

Party { Deutsche / Johnsen / Mahoney / Franke

11-5-23 Cool. Windy

11-6-23 Cool Windy

0+00 on ℄ of Culv. (Elev Referred to Co. Datum = 191.50 See below)

Top. stk no. 8. (#1)

" Hub.

Top stk (#2)

Sp. Tel. Pl. 15'R Sta. 14+70 "L" Line stk.

Top. stk 12'R " 14+70 "L" " 0 MM CONSIDERATION

Sp. Tel pl. 15'R " 20+00 "L" " (Has yellow around it)

DATUM.

High Con. Top Mont. by Centerville Rd. on Edgerton St.

Top stk 13'L - 150'S. of N.E Xing on Centerville Rd. (Call #3)

Sp. Tel. Pl. 15'R Sta. 14+70 "L" Line or 13+25 "SC Line"

AT TOP OF PAGE ("A")

Sp. Tel. Pl. 15'R Sta. 14+70 "L" Line

Top stk (#2) as above

" " (#1) " "

0+00 on ℄ of Culv

Top Hub.

Determined as below

22337
219.66
3.71

130.74
128.16
2.58

Note:- Elev - 219.66 for B.M. at 13+25 "SC" is O.K.

Sp. Tel. Pl. 15'R Sta. 14+70 "L" Line.

Top. N.W. Cor. of NE Conc. Wing Wall of Cattle Pass under Centerville Rd. Set 11-6-23 No. 13+68 "L"

#3 as in "B"

Top Mont Hi Cor. Centerville & Edgerton Sts.

Sp. in Elm Root. 29'R. 2+08 "L" Line Set 11-6-23

Plan elev of BM. Mont.

23-03 - "S" Line CHECK LEVELS

| Sta. | +S | H.I. | -S | Elev | Profile Elev |
|---|---|---|---|---|---|
| B.M. | 4.07 | 235.00 | | | 230.93 |
| T.P. | 1.73 | 230.55 | 6.18 | 228.82 | |
| T.P. | 2.51 | 222.69 | 10.37 | 220.18 | |
| New B.M. | | | 9.63 | 213.06 | |
| B.M. & T.P. | 5.16 | 223.34 | 4.51 | 218.18 | 218.21 |
| New B.M. | | | 4.59 | 218.75 | |
| T.P. | 6.13 | 225.02 | 4.45 | 218.89 | |
| B.M. | | | 4.75 | 220.27 | 220.26 |
| New B.M. | | | ~~6.71~~ [3] | ~~213.56~~ [3] | 220.30 |
| T.P. | 5.37 | 227.27 | 3.12 | 221.90 | |
| New B.M. | | | 6.02 | 221.25 | |
| T.P. & B.M. | 3.61 | 226.77 | 4.11 | 223.16 | 223.11 |
| New B.M. | | | 4.82 | 221.95 | |
| T.P. | 9.83 | 226.64 | 9.96 | 216.81 | |
| Note B.M. noted on Profile as Sp. F.R. 25'L Sta. 99+85 | | | | | |
| B.M. | | | 1.56 | 225.08 | 224.60 |
| T.P. | 11.54 | 237.78 | 0.40 | 226.24 | |
| T.P. | 6.71 | 243.78 | 0.71 | 237.07 | |
| B.M. | | | 3.05 | 240.73 | 240.67 |
| New. BM | | | Not set couldn't see- | | |
| " " | | | 3.55 | 240.23 | |
| T.P. | 9.23 | 250.83 | 2.18 | 241.60 | |
| BM | | | 4.61 | 246.22 | 246.18 |
| New BM | | | 3.45 | 247.38 | |
| T.P. | 8.99 | 259.15 | 0.67 | 250.16 | |

Cont'd on p. 16

Party { Deutsche, Johnson, Mahoney, Franke }

11-20-23
Cold Cloudy

16
Corrected Alt. Elev.

Nail Tel. Pl. R Sta. 45+60 (Ok to Use See P.12) 230.93

Top rock 105'L Sta. 53+75 N. Edge old road

" Stk 100'L " 58+00 " " " "

NE Cor. Conc. Ho Wall. Culv. 80'L Sta. 58+90 (N. of old Rd)

Nail Tel. Pl. Rt. Sta. 63+04 218.18

Sp.- White Bl. Waist Rst. (R.R. Sp.) 100'R Sta. 67+00.

Top. stk 10'L Sta. 70+35

Nail 10" Oak R Sta. 77+75 220.26

R.R. spike Tel. Pl. 100'R Sta. 77+50

Top. stk 12'R 81+55

Sp. Tel. Pl. 36'R. 86+06

" 10" Oak 25'L 90+45 223.16

Top. Tile on Pump spout under windmill 150'L. 95+00

" Fc. Post 30'L. Sta. 100+00

not found.

Top. Mont & Rd. Sta. 104+63 225.08

" Stk 14'L " 105+00

" " 14'L " 110+85

Sp. Tel. Pl. L " 115+05 240.73

R.R. " 12" Oak 37'L " 114+97

" Fc. Post 33'L " 114+97

Top stk 16'L " 119+00

Sp. Tel. Pl. L " 124+33 246.22

R.R. sp. 12" Maple 60'L " 123+92

Top stk 14'L " 128+00

23-03. SC Line CHECK LEVELS

| Sta. | + S | H.I. | - S | Elev. | Profile Elev. |
|---|---|---|---|---|---|
| | | Carried fr. p. 16 | | | |
| B.M. | | 259.15 | 5.30 | 253.85 | 253.82 |
| New B.M. | | | 2.54 | 256.61 | |
| T.P. | 11.46 | 266.76 | 3.85 | 255.30 | |
| B.M. | | | 5.41 | 261.35 | 261.32 |
| New B.M. | | | 1.88 | 264.88 | |
| T.P. | 11.57 | 275.32 | 2.99 | 263.75 | |
| New B.M. | | | 3.25 | 272.07 | |
| B.M. | | | 8.51 | 266.81 | |
| | | | | | |
| New B.M. | 3.64 | 275.71 | | 272.07 | |
| B.M. & T.P. | 5.25 | 272.06 | 8.90 | 266.81 | |
| New B.M. | | | 3.76 5 | 268.30 | |
| T.P. | 4.22 5 | 273.55 | 2.73 | 269.33 | |
| B.M. | | | 6.35 | 267.20 ✓ | Plan elev. 267.69 |
| | | CHECKING BACK | | | |
| B.M. | 7.01 | 274.21 | | 267.20 ✓ | 267.69 |
| T.P. | 8.26 | 275.35 | 7.12 | 267.09 | |
| B.M. | | | 8.56 | 266.79 ✓ | |
| New B.M. | | | 7.08 | 268.27 | |
| T.P. | 5.82 | 275.39 | 5.78 | 269.57 | |
| New B.M. | | | 3.34 | 272.05 ✓ | |
| T.P. | 4.35 | 268.19 | 11.55 | 263.84 | |
| T.P. (old one) | | | 4.42 | 263.77 | |
| New B.M. | | | 3.31 | 264.88 ✓ | |

Note:- B.M. shown on Profile at 143+07 (Ep Rel. Pl. 261.32

253.86

Top. Mont. Inters. Es. Centerville & S. Birch Lake Rds Sta. 130+93

R.R. Sp. 14" Maple 40'L Sta. 131+65

Top. Elm Stk 33'L Sta. 137+00

Sp. Tel. Pl. L " 140+07 261.35

R.R. Sp. 10" Elm 35'L 140+65

Top. stk 12'L 146+00

R.R. Sp. 12" Oak 70'R 150+45

Top. Mont Intersec Es Cold'G & Centerville Sta. 157+23

Same party

Cold Windy
Start 11-22-23

R.R. Sp. 12" Oak 70'R Sta. 150+45

Top. Mont. as 1st above

R.R. Sp. 14" Oak 35'R Sta 157+13

Top Roug. 10'R Sta. 254+10

See p. 7

Sp. 4" Pine 33'R " 258+60 267.20

Sp. 4" Pine 33'R " 258+60 Start 12-10-23 P.M. 267.20

Top Curb 27'L " 159+30

Top Mont. Intersec Es Co. Rd. Gs Centerville Sta. 157+23

R.R. Sp. 14" Oak 35'R 157+13

Top Elm Stk 33'L - 152

R.R. Sp 14" Oak 40'R Sta. 156+40

Top stump 25'R Sta. 146+35

" Stk 12'L " 146+00

R.R. Sp Elm 35'L " 140+65

Has been moved since 11-20-23 by Phone Co. 261.35

(23-03) ✓ LEVELS. Plan Elev.

| Sta. | +S | H.I. Contd fr. p. 17 268.19 | -S | Elev. | |
|---|---|---|---|---|---|
| T.P. | 1.59 | 260.25 | 7.53 | 258.66 | |
| New B.M. | | | 3.65 | 256.60 ✓ | |
| Old B.M. & T.P. | 0.60 | 254.47 | 6.38 | 253.87 ✓ | 253.82 |
| New B.M. & T.P. | 1.69 | 249.09 | 7.07 | 247.40 ✓ | |
| Old B.M. | | | 2.86 | 246.23 ✓ | 246.18 |
| T.P. (old) | | | 7.48 | 241.61 ✓ | |
| Old B.M. & T.P. | 2.73 | 243.45 | 8.37 | 240.72 ✓ | 240.67 |
| New B.M. set 12-10-13 | | | 3.16 | 240.29 | |
| T.P. | 1.05 | 235.23 | 9.27 | 234.18 | |
| Old B.M. & T.P. | 2.04 | 227.12 | 10.15 | 225.08 ✓ | 224.60 |
| New B.M. set 12-10-23 | | | 6.76 | 220.36 | |
| T.P. | 7.23 | 223.41 | 10.94 | 216.18 | |

Note:- Profile B.M. Shown as Sp. F.P. 25'L Sta 99+85 (Elev 214.92)

New B.M. Can't get a/c sun in hold glass!

| | | | | | |
|---|---|---|---|---|---|
| T.P. | 6.48 | 228.95 | 0.94 | 222.47 | |
| B.M. | | | 5.79 | 223.16 ✓ | 223.11 |
| T.P. | 2.65 | 225.47 | 6.13 | 222.82 | |
| Profile B.M. | | | 5.22 | 220.25 ✓ | 220.26 |
| New B.M. | | | 7.18? | 218.29? | |
| T.P. | 4.78 | 224.04 | 6.21 | 219.26 | |
| New B.M. & T.P. | 4.58 | 223.32 | 5.30 | 218.74 ✓ | |
| Profile B.M. | | | 5.15 | 218.17 ✓ | 218.21 |

Note: To ✓ difference in elev. between above B.M. and that

Diff = + 12.76 ∴ 218.17 + 12.76 = 230.93 for B.M.

Same party.

1270-23
Cold Windy V 18
Contd fr Elev

Top F Post 20'R Sta. 138+05

R.R. Sp 14" Maple 40'L 131+65

Top Mont. EB So Birch Lake Blvd & Centerville Rds 130+93 253.86

R.R. Sp 12" Maple 63'L Sta. 123+92

Sp Tel Pl. L Sta. 124+33 246.22

Top Stk 16'L " 119+00

Sp Tel. Pl. L " 115+05 240.73

R.R. Sp. 12" Oak 40'L Sta. 114+95

Top Stk 12'R Sta. 108+44

" Mont. E 104+64 225.08

R.R. Sp. Tel. Pl. 33'R Sta. 103

Top F Post 31'R Sta 100+00

has been removed

Top Tit on pump spout under wind mill 150'L Sta. 95+00

" Stk 14'L Sta 93+30

Sp 10" Tree 25'L Sta. 90+45 223.16

Top Stk 14'R Sta. 84+60 PI

Sp 10" Oak R " 77+75 220.26

R.R. Sp T. Pl. 100'R 77+50

Top R/W Stk 33'R 76+00

Sp Whistle Post R.R. R/W 100'R Sta. 67+00

" Tel. Pl. R Sta 63+04 218.18

at Sta. 45+60 (Sp Tel Pl. R) See X-Sec Notes Page -

at " 45+60 ( " ) To Cont. 230.93

2303 "L" Line X-Sec & Slope Stakes

From Page 23

| Sta. | +S | H.I. | -S | Profile Elev | Grade Rod | |
|---|---|---|---|---|---|---|
| Note Slope Stakes not set sta 11811450 on rt & lft Cut excav etc | | | | | | |
| BM. | 0.75 | 216.24 | | 215.49 | | |
| 11+50 | | | | 209.5 (W.) | 6.7 | |
| 11+72 | | | | 210.4 (87.2) | E = 5.8<br>I = 5.3<br>O = 5.7 | |
| 12+00 | | | | 211.5 (10.2) | E = 4.7<br>I = 4.9<br>O = 4.5 | |
| 12+06 | | | | | | |
| 12+20 | | | | | | |
| 12+36 | | | | | | |
| 12+38 | | | | 213.1 (14.3) | E = 3.1<br>I = 3.5<br>O = 2.7 | |
| BM x TP | 8.25 | 223.74 | 0.75 | 215.49 | | |
| 12+50 | | | | 213.4 (16.4) | E = 10.3<br>I = 10.7<br>O = 9.8 | |
| 12+89 PC | | | | 214.8 (18.9) | E = 8.9<br>I = 9.7<br>O = 8.2 | |
| 13+00 | | | | 215.1 (19.2) | E = 8.6<br>I = 9.5<br>O = 7.9 | |
| 13+14 | | | | | | |
| 13+50 | | | | 216.5 (17.9) | E = 7.2<br>I = 8.4<br>O = 6.3 | |
| BM. | | | 8.26 | 215.48 | Prev. Interm<br>215.49 | |
| BM. | 7.98 | 223.47 | | 215.49 | | |
| 13+73 | | | | 217.2 | E = 6.3<br>I = 7.5<br>O = 5.2 | |
| 14+00 | | | | 217.7 (17.7) | E = 5.8<br>I = 6.9<br>O = 4.7 | |
| BM. | | | 3.80 | 219.67 | Prev. Interm<br>219.66 | |
| 15+00 | | | | 219.5 (19.9) | E = 4.0<br>I = 4.4<br>O = 3.6 | |
| 16+00 | | | | 220.3 (20.0) | E = 3.2<br>I = 3.3<br>O = 3.2 | |
| BM. | | | 3.80 | 219.67 | 219.6 Est. | |

Contd Page 39.

To Page 39

Protective Johnson Mahoney Frantz } Party

12-6-23 Cold Air 12-7-23

19

(Note Tits and 5% shrinkage)

For X-Sec. See these along L of Calv as base line P 14

Top NW Cor of NE Conc Wing Wall - Cattle Passender Old Rd. near NP tracks.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (F6.4 / 26.1) | 13.1 / 33 | 12.4 / 12 | (F4.8 / 0) | (6.9) | | | | | | | | |
| (F5.1 / 24.3) | 11.1 / 33 | 7.7 / 5 | (F3.2 / 0) | (6.8) | 8.2 / 12 | 11.7 / 19 | 12.0 / 23 | 14.1 / 27 | 15.6 / 33 | (F7.5 / 30.6) | | |
| (F3.6 / 21.1) | 8.7 / 33 | 8.6 / 26 | (F1.3 / 0) | (4.7) | 4.2 / 13 | 5.0 / 16 | 7.9 / 21 | 11.4 / 30 | 15.5 / 33 | (F3.6 / 21.1) | | |

0.0 / 15 Cont Sd 0.0 / 25 e/c vertical bk

0.0 / 0

Curve Lt

0.0 / 25

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (C0.6 / 25.6) | 3.4 / 33 | 5.0 / 26 | (C1.2 / 0) | (3.1) | 0.3 / 8 | 1.0 / 22 | 4.2 / 29 | 5.8 / 33 | (C0.5 / 25.5) | | | |

As above

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (C1.7 / 26.7) | 9.5 / 33 | | (C3.0 / 0) | (10.3) | 7.1 / 21 | 8.1 / 25 | 11.0 / 33 | (C1.6 / 26.8) | | | | |
| (C2.9 / 27.9) | 6.3 / 33 | 7.0 / 29 | 7.1 / 23 | 5.3 / 18 | (C4.1 / 0) | (8.9) | 6.3 / 33 | (C2.5 / 27.5) | | | | |
| (C5.0 / 32.6) | 7.5 / 33 | 5.8 / 21 | 5.9 / 15 | 4.6 / 11 | (C4.1 / 0) | (8.9) | 5.4 / 21 | 6.5 / 25 | 7.1 / 29 | 10.4 / 33 | (C1.2 / 26.2) | |

0.0 / 25

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (C4.7 / 33.5) | 3.6 / 33 | 4.1 / 16 | (C1.7 / 0) | (7.2) | 6.2 / 11 | 7.4 / 13 | 7.1 / 14 | 6.9 / 29 | 7.0 / 33 | (F0.8 / 16.2) | (D.C. 1.3 / 24.3) | OFF 19' |

Top Wing Wall as above

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | OFF 7' East (C4.2 / 33.0) | (6.3) | 3.2 / 33 | 3.5 / 18 | (0.0 / 0) | 6.8 / 3 | 6.5 / 7 | 6.3 / 22 | 6.6 / 33 | (F1.5 / 17.1) OFF 17' | (DC 0.7 / 23.7) OFF 11' |
| (C3.9 / 33.6) | 2.9 / 33 | 3.4 / 22 | 4.1 / 15 | 5.2 / 12 | 5.4 / 8 | 6.7 / 5 | 6.0 / 3 | (F0.5 / 0) | (5.3) | 6.0 / 13 | 6.3 / 21 | 6.1 / 33 | (F1.5 / 17.1) OFF 27' | (DC 0.4 / 23.4) |

Sp Tel. Pl. 20' R Sta. 14+90 (4.9)

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (C0.2 / 25.2) | 3.3 / 33 | 4.6 / 21 | 5.6 / 14 | 5.0 / 9 | (F0.6 / 0) | (5.1) | 5.7 / 14 | 5.7 / 17 | 5.7 / 33 | (F2.1 / 19.0) | | |
| (DC 1.9 / 24.9) | (F0.9 / 16.3) | 2.5 / 33 | 4.3 / 17 | 4.0 / 7 | F0.3 / 0 | (3.9) | 4.0 / 13 | 5.4 / 33 | (F1.2 / 16.8) | (DC 0.6 / 23.6) | | |

(23-03) X-Sec & SI Stacks "L"

| Sta. | + S | H.I. | - S | Finish Grade | Cut |
|---|---|---|---|---|---|
| B.M. | 7.92 | 223.75 (8) | | 215.83 Planeler | |
| New B.M. | | | | | New Bottom 219.95 |
| -3+50 | | | | | |
| -3+00 | | | | 216.8 23.3 | 7.0 |
| -2+00 | | | | 217.4 23.3 | 6.4 |
| -1+00 | | | | 216.6 21.9 | 7.2 |
| +0-50 | | | | 215.1 20.0 | 8.7 |
| 0+00 | | | | 213.0 17.8 | 10.8 |
| 0+50 | | | | 210.5 19.1 | 13.3 |
| 0+90 | | | | 208.5 19.1 | 15.3 |
| 1+00 | | | | 208.0 18.9 | 15.8 |
| 1+17 | | | | 207.1 18.8 | 16.7 |
| 1+46 | | | | 205.7 17.5 | 18.1 |
| 1+56 | | | | 205.2 17.2 | 18.6 |
| 1+72 | | | | 204.4 16.5 | 19.4 |
| 2+00 | | | | 203.0 15.6 | 20.8 |
| B.M. | | | 7.92 | 215.83 | Planeler 215.83 |
| B.M. | 2.40 | 218.23 | | 215.83 | |
| 2+50 | | | | 200.5 14.2 | 17.7 |
| 3+00 | | | | 198.0 12.3 | 20.2 |
| 3+50 | | | | 195.5 10.1 | 22.7 |
| E.M. & T.P. | 0.62 ✓ | 216.45 (5) | -2.40 | 215.83 | |
| 3+75 | | | | 194.3 10.2 | 22.2 |
| 4+00 | P Farm Entr. Rt | | | 193.3 20.8 | 23.2 |
| 4+20 | | | | 192.05 20.95 | 23.9 |

To Page 23

11-28-28
Cold Windy 20

Deutsche Sport Aeronaut Berlin

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 8.6 | 8.5 | 9.6 | 9.4 | 7.1 | 6.8 | 6.7 | 6.7 | 7.1 | 10.1 | 9.8 | 8.7 | 8.8 |
| | 33 | 28 | 24 | 22 | 16 | 10 | 0 | 10 | 16 | 22 | 26 | 28 | 33 |
| (C 25.1 | 7.3 | 8.4 | 8.8 | 8.7 | 6.7 | 6.5 | 6.5 | 6.5 | 6.9 | 9.6 | 9.6 | 8.6 | 8.7 |
| 23.1) | 33 | 27 | 25 | 22 | 16 | 10 | 0 | 10 | 16 | 22 | 25 | 28 | 33 |
| C 26 | 5.1 | 5.9 | 6.3 | 6.8 | 6.3 | 6.0 | 5.8 | 6.0 | 6.3 | 7.9 | 7.9 | 7.0 | 7.3 |
| 25.0 | 33 | 26 | 22 | 18 | 16 | 10 | 0 | 10 | 19 | 22 | 26 | 29 | 33 |
| (C 25 | 5.1 | 5.9 | 6.3 | 5.5 | 5.3 | 5.2 | 5.3 | 5.3 | 5.7 | 5.9 | 5.8 | 4.9 | (C 24 |
| 24.5) | 33 | 24 | 22 | 17 | 10 | 0 | 10 | 16 | 19 | 22 | 26 | 33 | 27.4) |
| | 4.9 | 5.0 | 5.8 | 5.6 | 5.3 | 5.0 | 4.9 | 4.9 | 5.7 | 5.5 | 4.7 | 4.9 | |
| | 40-33 | 28 | 21 | 18 | 16 | 10 | 0 | 10 | 20 | 23 | 26 | 33-40 | |
| (C 6.8 | 4.8 | 4.6 | 4.6 | 5.1 | 5.5 | 5.0 | 4.9 | 4.7 | 5.0 | 5.3 | 4.1 | 4.4 | (C 6.6 |
| 3.8) | 40 | 32 | 24 | 23 | 26 | 12 | 10 | 0 | 13-12 | 20 | 25 | 30 | 31.6) |
| (C 8.7 | 4.2 | 5.0 | 4.6 | C 8.6 | 5.0 | 5.3 | 4.4 | 3.8 | (C 7.3 | | | | |
| 8.7) | 40 | 37 | 35 | 0 | 12 | 15-17 | 19 | 30 | 34.3) | | | | |
| | 5.7 | 5.7 | 5.9 | 10.6 | 4.9 | 5.1 | 4.0 | (C 10.7 | | | | | |
| | 40 | 20 | 13 | 0 | 9 | 33 | 30 | 34.1) | | | | | |
| | 7.6 | 7.7 | 6.3 | C 10.9 | 8.1 | 4.9 | | | | | | | |
| | 40 | 31 | 18 | 0 | 20 | 30 | | | | | | | |
| | 7.1 | | | 5.0 | 4.2 | 4.5 | 5.2 | | | | | | |
| | 40 | | | 0 | 28 | 42 | 50 | | | | | | |
| (C 10.2 | 7.9 | 7.5 | C 11.8 | 6.3 | 4.1 | (C 13.3 | | | | | | | |
| 5.5) | 40 | 23 | 0 | 9 | 30 | 35.6) | | | | | | | |
| 7.2 | 6.2 | 8.3 | 7.6 | 6.9 | 6.6 | 6.5 | 6.3 | 4.7 | 4.2 | | | | |
| 40 | 30 | 17 | 14 | 12 | 0 | 27 | 39 | 50 | | | | | |
| (C 12.0 | 8.2 | 7.5 | 9.0 | 9.2 | 7.9 | C 12.7 | 7.3 | 4.5 | 4.5 | 5.4 | 4.4 | (C 14.6 | |
| 33.5) | 40 | 39 | 27 | 14 | 10 | 0 | 9 | 25 | 34 | 44 | 50 | 36.2) | |
| (C 12.5 | 9.1 | 8.1 | 9.6 | 9.3 | 8.1 | C 12.8 | 8.6 | 8.1 | 5.1 | 4.1 | (C 16.4 | | |
| 33.3) | 40 | 31 | 29 | 16 | 12 | 0 | 16 | 23 | 28 | 36 | 37.2) | | |

Top High Cor Mont as above

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | C 8.3 | (11.1) | | | | | |
| | 9.2 | 5.5 | 5.2 | 6.1 | 6.0 | 4.8 | 4.4 | 4.0 | 4.4 | 4.9 | 4.0 | 0.7 | 0.4 | 0.1 | (C 17.4 |
| (C 12.2 | 6.2 | | | | | | | | | | | | | | |
| 3.4) | 40 | 34 | 30 | 27 | 19 | 13 | 9 | 0 | 12 | 15 | 24 | 29 | 35 | 50 | 36.2) |
| C 14.8 | 8.7 | 8.0 | 7.7 | 6.8 | 7.9 | 7.3 | 6.4 | 6.2 | C 15.3 | 6.0 | 6.3 | 6.1 | 1.5 | 0.7 | (C 18.7 |
| 3.4 | 40 | 32 | 24 | 21 | 19 | 16 | 12 | 9 | 0 | 7 | 14 | 21 | 36 | 50 | 36.7) |
| (C 19.3 | 10.7 | 9.8 | 9.4 | 8.3 | 9.6 | 8.2 | 7.8 | C 15.3 | 7.6 | 8.1 | 7.8 | 4.2 | 3.1 | 2.4 | (C 19.0 |
| 37.3) | 40 | 39 | 35 | 32 | 19 | 18 | 16 | 12 | 8 | 0 | 9 | 13 | 23 | 32 | 43 | 50 | 37.0) |

High Cor Mont again

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 12.0 | 11.9 | 11.7 | 10.2 | 9.8 | 6.7 | 6.5 | 6.3 | 6.5 | 6.4 | 4.9 | 2.7 | 3.0 | | |
| | 40 | 36 | 34 | 24 | 18 | 12 | 9 | 0 | 13 | 25 | 31 | 42 | 50 | | |
| (C 12.3 | 7.6 | 9.7 | 10.6 | 10.2 | 7.1 | 6.7 | C 15.7 | 6.8 | 7.4 | 7.1 | 6.6 | 6.3 | (C 14.2 | | |
| 3.2) | 40 | 38 | 33 | 19 | 13 | 7 | 0 | 8 | 13 | 31 | 39 | 50 | 34.2) | | |
| (C 16.0 | 8.4 | 8.1 | 8.4 | 7.1 | 7.0 | C 14.9 | 7.0 | 7.5 | 9.0 | 9.4 | 9.8 | 7.2 | 7.0 | 7.2 | (C 17.0 |
| 34.0) | 40 | 26 | 22 | 13 | 7 | 0 | 7 | 10 | 14 | 20 | 29 | 32 | 39 | 50 | 35.0) |

Calculations "L" Line

Slope Stake data

Curve Widening Starts at 5+35-6

" Super. " " 7+35-6

To obtain the slope distance at 5+85-6 P.C.

10 Paving
+1.84 Widening
11.84
5' Shldr
16.84
8 To Ball on 3 to 1
24.84 Say 25' R.
2
49.68 Say 50' ft.

$\Delta = 20°$

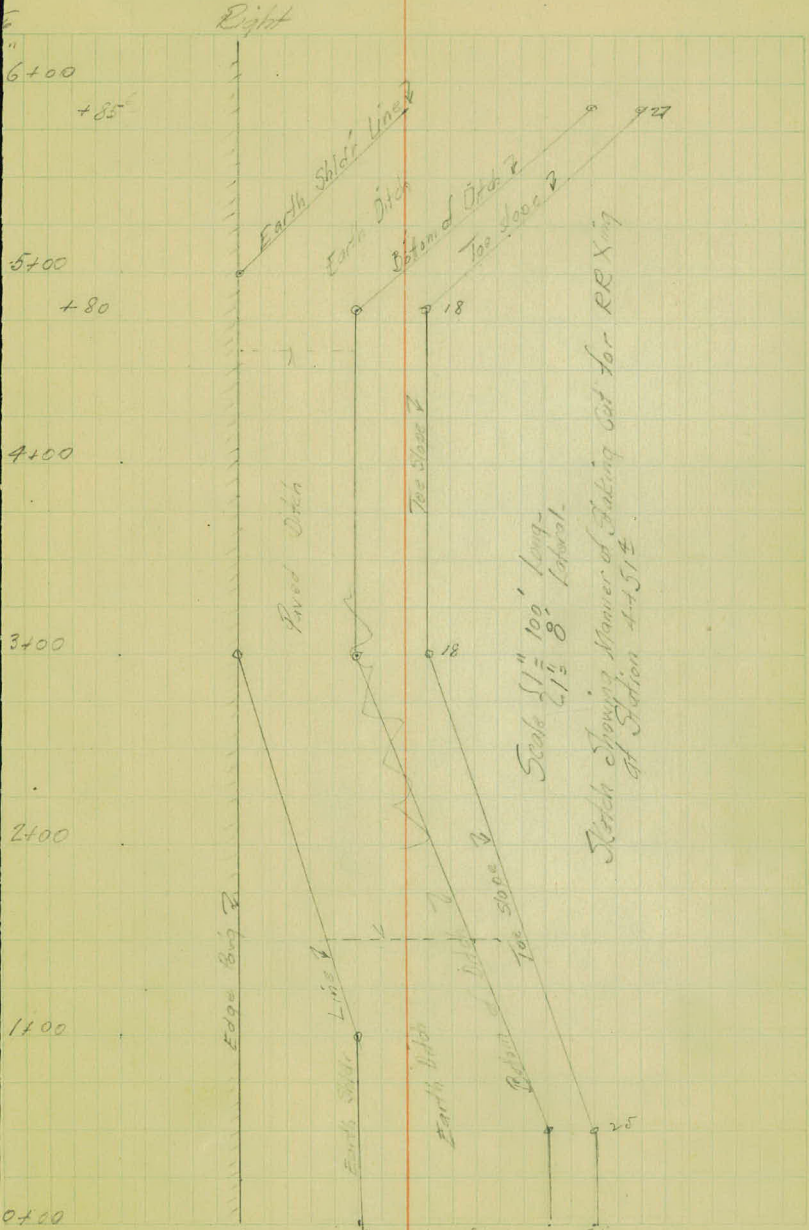
7+00 P.T.
50
8+20 E. of Max. Super & Widening

| | | Super (Grading) | (See Shift Line Below) |
|---|---|---|---|
| | | Cut Fill | Cut Fill |
| 4+00 | No Super | | |
| 4+20 | " " | 0 0 | +0 -0 |
| 4+40 | 5" " | 0.0 -.08 | +0 -.1 |
| 4+60 | 25 " | +.39 -.08 | +.1 -.1 |
| 4+80 | 45 " | +1.20 -.14 | +.2 -.1 |
| 5+00 | 65" " | +1.40 -.43 | +.4 -.4 |
| 5+50 | 115 " | +.75 -.89 | +.8 -.9 |
| 6+00 | | +.93 -1.16 | +.9 -1.2 |
| 6+50 | | +.93 -1.16 | +.9 -1.7 |
| 7+00 | | +.99 -1.16 | +1.0 -1.2 |
| 7+50 | | +.99 -1.22 | +1.0 -1.2 |
| 8+00 | | - -1.22 | -1.2 |
| 8+50 | | +.75 -.78 | +.8 -.8 |
| 9+00 | | +.26 -.26 | +.3 -.3 |
| 9+81 | | | |
| 10+00 | | +.14 -.14 | +.1 -.1 |
| 10+50 | | +0 -.0 | 0 0 |
| | | Ft. to 11+39 | |

{ Pedtsche Johnson  Maloney Franke } Party

11-28-23
Cold Windy

21



Calculations "VL" Line Slope Sta.

| Sta. | Slope Width L | R | Super/ft. L | R | Total Super L | R | | |
|---|---|---|---|---|---|---|---|---|
| | 0+45 } BST 4+58 } | | 1+53 EST 2+53 | | 6+55 } BWT 3+53 } | | 2+55 } EWT 1+56 | |
| | | | D = 29° R | | | | | |
| | Ins | Out | Ins | Out | Ins. | Out | | |
| 0+00 | 16 | 16 | -.008 | +.006 | -.13 | +.096 | | |
| 0+50 | 17 | 15.5 | -.024 | +.024 | -.41 | +.37 | | |
| 1+00 | 18 | 15 | -.042 | +.042 | -.75 | +.63 | | |
| 1+50 | 22 | 15 | -.06 | +.06 | -1.32 | +0.9 | | |
| 2+00 | 22 | 15 | -.062 | +.062 | -1.36 | +.93 | | |
| 2+45 | 21 | 15 | -.062 | +.062 | -1.30 | +.93 | | |
| 2+50 | 21 | 15 | -.062 | +.062 | -1.30 | +.93 | | |
| 2+60 | 21 | 15 | -.06 | +.06 | -1.26 | +.90 | | |
| 2+80 | 20.5 | 15 | -.053 | +.053 | -1.09 | +.79 | | |
| 2+90 | 20.5 | 15 | -.048 | +.048 | -.98 | +.72 | | |
| 3+00 | 20 | 15 | -.046 | +.046 | -.92 | +.69 | | |
| 3+50 | 17 | 15 | -.047 | +.047 | -.96 | +.40 | | |
| 4+00 | 17 | 15 | -.01 | +.01 | -.17 | +.15 | | |
| 7+55 | 17 | 15 | 0 | 0 | -0 | +0 | | |
| 7+6 to 7+00 | Std. data. | | No super. | | Note. Keep Bottom of Ditch @ 28' R.G. | | | |

Note. EQ - 6+52 = (6+57.85)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 7+08 "VL" 9+66 "L" | } BST | | 9+08 "VL" 9+67 VL | } EST | 8+08 VL) 10+87 VL | BWT | 9+08 VL 9+8 VL | EWT |

Note { EQ - 8+57.85 = (6+57.85) = P.C. D = 15° R
EQ 11+21.3 "VL" = 9+00 "L"

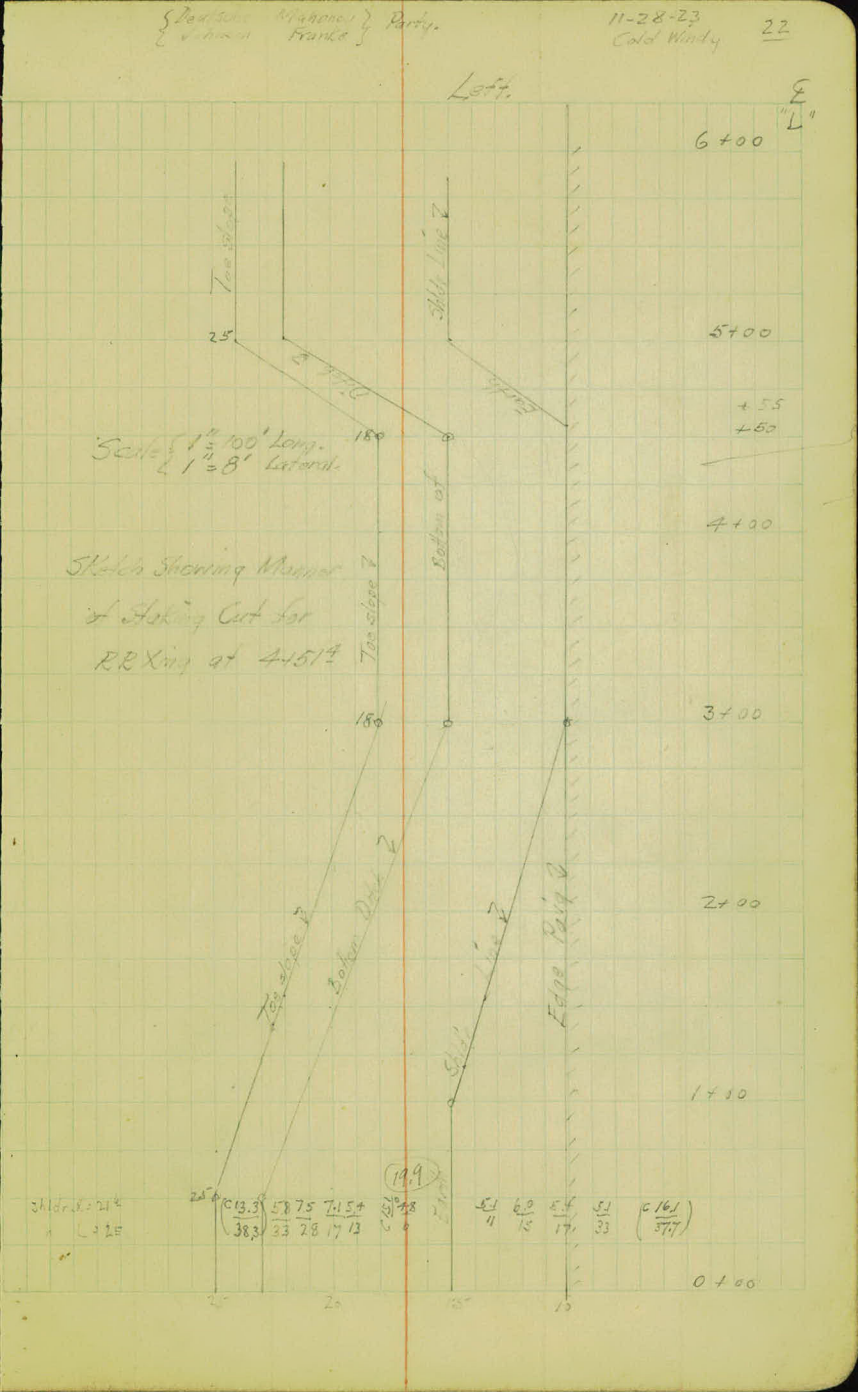
| | Out | Ins | Out | Ins | Out | Ins | | |
|---|---|---|---|---|---|---|---|---|
| 7+08 | 17 | 15 | -.008 | -.008 | -.14 | -.12 | | |
| 7+50 | 17 | 15 | +.006 | -.008 | +.10 | -.12 | | |
| 8+00 | 17 | 16 | +.023 | -.023 | +.39 | -.37 | | |
| 8+57.85 = 8+57.8 | 17 | 18 | +.044 | -.044 | +.75 | -.79 | | |
| 9+00 | 17 | 19 | +.059 | -.059 | +1.00 | -1.12 | | |
| +15 | 17 | 19 | +.062 | -.062 | +1.05 | -1.18 | | |
| +21 | 17 | 19 | +.062 | -.062 | +1.05 | -1.18 | | |
| +50 | 16 | 19 | +.062 | -.062 | +.99 | -1.18 | | |
| +55 | 16 | 19 | +.062 | -.062 | +.99 | -1.18 | | |
| +62 | 16 | 19 | +.062 | -.062 | +.99 | -1.18 | | |
| 10+00 | 17 | 18.7 | +.057 | -.057 | +.97 | -1.08 | | |
| +36.8 | 17 | 17.5 | +.042 | -.044 | +.75 | -.77 | Why use ofs from section "L" & "VL" Line | |
| 11+00.3 | 17 | 16 | +.021 | -.021 | +.36 | -.34 | | |
| 11+21.3 | 17 | 16 | +.014 | -.014 | +.24 | -.22 | Slope Construction ok 0.8 | |
| | | | | | | | Use of 9+66.2 on L Line | |

| | | | | | |
|---|---|---|---|---|---|
| T.P. | 8.89 | 210.10 | 201.21 | Top Hub "L" 5+85.6 | |
| | | | | Q = -19.9 | |
| 5+19 | | | 190.2 | I = -20.5 | |
| | | | | O = -19.3 | |

{Rodfish Johnson} {Rhinehart Franke} Party.

11-28-23
Cold Windy

22



(23-03) "L" Line X-Sec & Slope Stakes

From Page 20

| Sta. | +S | H.I. Contact = 20 216.45 | -S | Profile Elev | Grade Rod |
|---|---|---|---|---|---|
| 4+40 | | | | 191.9 209.4 | 24.6 |
| T.P. | 2.11 | 211.66 | 6.90 | 209.55 | |
| 4+60 | | | | 191.2 19.5 | |
| 4+80 | | | | 190.9 10.3 | |
| 5+00 | | | | 190.5 10.5 | |
| 5+19 See Page 22 for X-Sec & St. Stakes set here- | | | | | |
| 5+50 | | | | 190.0 10.6 | |
| 6+00 | | | | 190.0 10.0 | |
| T.P. | 0.67 | 201.88 | 10.45 | 201.21 | |
| 6+50 | | | | 190.6 9.6 | |
| 7+00 | | | | 191.8 9.4 | |
| T.P. | 1.52 | 202.73 | 0.67 | 201.21 ✓ Tie check out. | |
| 7+10 | | | | | |
| 7+16 | Note:- Fill stk markings & E. Fill as noted ( includes 5% shrinkage | | | | |
| 7+50 | | | | 193.5 9.2 | |
| 7+68 | G.B.C. to E.E.O. "Make 7' max shldr width on tangent fills." | | | | |
| 8+00 | | | | 195.5 9.0 | |
| 8+50 | | | | 197.5 9.1.3 | |
| 9+00 E.T. "L" = 11+21.3 "L" | | | | 199.5 9.3 | |
| 9+81 | | | | 202.74 9.7 | |
| 10+00 | | | | 203.5 9.5 | |
| Temp. B.M. | | | 1.52 | 201.21 ✓ | |
| E.N. | 11.38 | 202.88 | | 191.50 | |
| 10+15 | | | | 204.1 9.7 | |
| 10+30 | | | | 204.7 9.1 | |
| 10+45 | | | | 205.3 9.6 | |
| 10+50 ? 10+84 ? | See X-Sec taken from E Curv. Page 14 | | | | |
| 11+00 | | | | 207.5 9.6 | |
| B.M. | | | 11.38 | 191.50 | |

To Page 19

Deutsche Jahrbuch Bury Mansion Frankf

11-30-23 Cold Fair
12-1-23 Cold Fair
12-2-23

Top Hub - 18 Lark

Top Hub - S. end 6 L. 8 R. Sta. 4+ 4

Top Hub - 18 R 17 L

Top Hub - 21 R 37 L

Top Hub - 17 L

Top Hub - 17 L

Top Hub - 19 R

Top Hub - 19 L

Top Hub - 24 R

Top Hub - 25 R

Top Hub - 27 R

Top Hub - 25 R

Top Hub - 28 R

Top Hub - 25 R

Top Hub at E "L" Top RC. Sta. 3+85 see above

Note:- Fill stks include 5% shrinkage as does E Fill noted.

Stk = 16 R

Stk = 18 R

Note fill stk out set a/c VL Line Intersection

Stk = 16 L

Stk = 19 L

Stk = 17 L

Stk = 17.8 R

Stk = 17 L

Stk = 17 L

Stk = 17 L & R

Top Hub 9 - Sta. 5+85 RC.

Top Hub 0000 E Cult. See D-14

Start 12-3-23

Stk = 17 L & R

Fill not set a/c Mat'l pile

As 1st above.

(23-03) "CE"-Line & CE"X"tn. | X-Sec & Slope Stakes | | | Profile Elev | Grade Rod.

| Sta. | +S | H.I. | -S | | |
|---|---|---|---|---|---|
| B.M. | 9.11 | 224.94 | | 215.83 | |
| New B.M. | | | 3.11 | 221.83 | |
| 0-50 | | | | 220.5 | 4.4 |
| 0+00 | | | | 220.5 | 4.4 |
| 1+00 | | | | 220.5 | 4.4 |
| 1+78 | | | | | |
| 2+00 | | | | 220.1 | 4.8 |
| 3+00 | | | | 218.0 | ℄ = 6.9<br>Ins. = 7.0<br>Out. = 7.0 |
| 4+00 | | | | 214.0 | ℄ = 10.9<br>Ins = 11.4<br>Out = 10.4 |
| P.C. 4+35.6 | | | | 212.2 | ℄ = 12.7<br>Ins = 13.2<br>Out = 12.0 |
| 5+00 | | | | 209.0 | ℄ = 15.9<br>Ins = 17.1 |
| 5+50 | | | | 206.5 | ℄ = 18.4<br>Ins = 19.2 |
| B.M. | | | 9.11 ✓ | 215.83 ✓ | |
| 4+75 | | | | 210.2 | ℄ = 14.7<br>Ins = 15.7 |

"CE"-"X"tn (For Farmers Approach)

| | | | | | |
|---|---|---|---|---|---|
| B.M. | 8.44 | 224.27 | | 215.83 | |

0+75 "L" Line = 0+00 "CE" X tn = 5+00 "CE"

0+25 "CE" X = Same elev as 0+75 "L" = 209.25

Going up "CE" X tn @ 10% grade from here?

| | | | | | |
|---|---|---|---|---|---|
| "CE" 0+61 | | | | 212.85 | 11.4 |
| 0+86 | | | | 215.35 | 8.9 |
| 1+00 | | | | 216.75 | 7.5 |
| 1+30 | | | | 219.8 | 4.5 |
| B.M. | | | 8.44 | 215.83 | 4 to ∨ out |

Same party

12-3-23
Cold Fair

24

"CE"

4 Rt.

Top Hi Cor. Mark E Sta 2+07 "L" Line

Sp. 24" Elm 27" R Sta. 0-15 "CE" Line

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 4.4/33 | 4.8/22 | 4.4/17 | 4.2/6 | 4.3/0 | 4.7/6 | 5.4/11 | 5.5/16 | 4.9/18 | 4.5/30 | 5.0/33 |
| (OC 13/24.3) | 4.9/33 | 5.7/29 | 4.5/17 | 4.2/8 | 0.0/0 | 4.7/6 | 5.1/8 | 5.1/17 | 4.8/20 | 4.8/33 | (OC 15/24.5) |
| (OC 13/24.8) | 4.5/33 | 4.4/26 | 5.1/16 | 4.4/13 | 0.0/0 | 5.1/13 | 5.7/16 | 4.7/20 | 4.4/33 | (OC 19/24.9) | |
| (0.0/25) | 4.3/33 | 4.7/20 | 4.3/17 | 5.2/14 | 4.7/11 | C 0.3/0 | 5.1/13 | 5.1/20 | 4.4/24 | 5.0/33 | (C 0.4/25.4) |
| (C 2.6/27.6) | 4.1/33 | 4.7/24 | 5.7/19 | 4.4/15 | 5.5/12 | 5.0/10 | C 4.9/9 | 5.2/11 | 6.0/14 | 5.3/17 | 5.1/33 | (C 1.8/26.8) |
| (C 7.1/32.2) | 4.8/40 | 4.4/33 | 5.1/23 | 5.7/22 | 5.2/16 | 5.9/13 | 5.3/12 | C 5.8/0 | 5.5/13 | 6.1/17 | 5.0/33 | 6.9/33 | (C 4.6/29.6) |
| Wid-2.0' (C 8.5/36.0) | 4.9/40 | 4.2/33 | 4.8/25 | 5.6/22 | 5.4/17 | 6.1/15 | 5.6/13 | C 7.2/0 | | | | | |
| Wid. 3.0 (C 9.7/39.7) | 7.1/40 | 7.3/25 | 4.8/24 | 5.4/17 | 6.1/14 | 5.8/9 | 6.6/5 | C 9.8/0 | | | | | |
| Wid 2.5' (C 10.5/38.0) | 10.3/40 | | | | | 6.9/6 | C 11.7/0 | | | | | | |

X-Sec not taken als included in "L" Line

Top Hi Cor. Mark E Sta 2+07 "L" Line

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| (C 10.7/40.2) | 5.3/42 | 5.0/33 | 3.9/29 | 6.1/17 | 5.7/13 | 6.2/11 | 5.7/9 | C 8.8/0 |

E
"CE"
X

Top. Mark E "L" Sta. 2+07

12-8-23
Cold Fair

Section Used.

E
2' x 6' x 6' x 2'

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | (C 6.7/0) | 5.9/18 | (C 6.0/14.0) | | | |
| (C 3.9/11.9) | 5.4/18 | (C 4.3/0) | 5.1/9 | 6.3/17 | 5.3/26 | 5.3/83 | (C 3.5/11.5) | | | | |
| (C 2.7/10.7) | 5.0/16 | (C 2.9/0) | 5.2/11 | 6.1/17 | (C 2.4/10.4) | | | | | | |
| (0.0/8) | 4.8/17 | 4.7/13 | (0.0/0) | 4.8/7 | 4.9/16 | (0.0/8) | | | | | |

23-03) "L" Extrsn X-Sec. - See P.26 for Slope Stks

| Sta. | +S | H.I. | -S | Profile Elev. | |
|---|---|---|---|---|---|
| Temp B.M. | 0.59 | 201.80 ✓ | | 201.21 | |
| T.P. | 4.39 | 197.07 ✓ | 9.12 | 192.68 ✓ | |
| New B.M. | | | 5.39 | 191.68 ✓ | |
| 0+00 | | | | | 92.8 |
| 1+00 | | | | | 92.5 |
| 1+21 | Road Lt. 0+00 = 15' Lt. | | | | 91.0 |
| | 0+05 | | | | |
| | 0+18 | | | | |
| 2+00 | | | | | 92.6 |
| 3+00 | | | | | 93.2 |
| 4+00 | | | | | 93.7 |
| T.P. | 7.49 | 202.18 ✓ | 2.38 | 194.69 ✓ | |
| 5+00 | | | | | 94.9 |
| 6+00 | | | | | 97.9 |
| 6+75 | | | | | 300.9 |
| T.P. | 9.70 | 211.49 ✓ | 0.39 | 201.79 ✓ | |
| 7+00 | | | | | 02.1 |
| 7+55 | Road Lt | 0+00 = 15' Lt. | | | 04.6 |
| | | 0+05 | | | |
| | | 0+20 | | | |
| | | 0+40 | | | |
| New B.M. | | | 2.82 | 208.67 ✓ | |
| 8+00 | | | | | 06.0 |
| 9+00 | | | | | 09.2 |
| T.P. | 10.57 | 221.34 ✓ | 0.72 | 210.77 ✓ | |

Deetsche
Johnson
Mahoney
Franke } Party

"L" Extnsn

12-4-23
Cold Fair

Top Hub. "L" Sta. 5+85 - PC

" " "E" " 7+61.7 P.I. "L" Line Sta = 0400 "L" Extnsn.

Sp. 10" Oak 90'L Sta 0400 "L" Xn Blazed

| | | | | | | |
|---|---|---|---|---|---|---|
| 8.3 | 7.7 | 4.8 | 4.3 | 4.9 | 7.4 | 8.0 |
| 33 | 20 | 14 | 0 | 18 | 18 | 33 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 8.3 | 8.3 | 5.3 | 4.6 | 4.8 | 8.9 | 9.1 |
| 33 | 20 | 15 | 0 | 12 | 21 | 38 |

| | | |
|---|---|---|
| 5.2 | 6.1 | 5.6 |
| 12 | 0 | 12 |

| | | | | |
|---|---|---|---|---|
| 7.9 | 6.9 | 4.7 | 4.6 | 7.7 |
| 15 | 10 | 0 | 6 | 10 |

| | | | |
|---|---|---|---|
| 7.9 | 7.3 | | 8.6 |
| 13 | 0 | | 12 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 8.6 | 8.2 | 5.1 | 4.5 | 4.9 | 7.7 | 7.6 |
| 33 | 19 | 15 | 0 | 14 | 20 | 33 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 7.8 | 8.1 | 4.4 | 3.9 | 4.3 | 8.2 | 8.3 |
| 33 | 20 | 14 | 0 | 12 | 18 | 33 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 6.9 | 7.9 | 6.7 | 2.7 | 3.4 | 4.0 | 4.8 | 7.1 |
| 33 | 29 | 17 | 14 | 0 | 13 | 17 | 33 |

Top rock 8'R Sta. 4+80

| | | | | | | |
|---|---|---|---|---|---|---|
| 11.8 | 10.7 | 7.7 | 7.3 | 7.9 | 10.6 | 11.0 |
| 33 | 19 | 13 | 0 | 13.5 | 17 | 33 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 6.3 | 7.0 | 8.0 | 7.8 | 4.8 | 4.3 | 4.6 | 5.7 | 2.7 | 2.6 |
| 33 | 29 | 26 | 19 | 12 | 0 | 7.3 | 16 | 29 | 33 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| + 1.8 | +2.0 | 0.0 | 1.5 | 3.0 | 3.1 | 1.6 | 1.3 | 1.6 | 2.6 | 1.2 | 0.0 | +0.7 | +0.7 |
| 40 | 33 | 29 | 25 | 24 | 20 | 13 | 0 | 12 | 15 | 18 | 23 | 26 | 33 |

Top rock 3'R Sta 6+95

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6.6 | 6.5 | 10.0 | 11.6 | 11.5 | 9.7 | 9.4 | 9.8 | 10.9 | 10.1 | 8.4 | 8.3 |
| 38 | 35 | 33 | 25 | 23 | 19 | 13 | 0 | 11 | 14 | 17 | 24 | 33 |

| | | | |
|---|---|---|---|
| 8.0 | 6.9 | 6.7 | |
| 20 | 0 | 14 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 10.0 | 9.7 | 8.1 | 7.1 | 6.9 | 7.7 | 7.6 |
| 26 | 22 | 16 | 0 | 11 | 13 | 17 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 5.8 | 6.3 | 8.6 | 7.7 | 7.0 | 6.8 | 7.7 | 7.6 | 6.3 |
| 29 | 22 | 16 | 11 | 0 | 10 | 18 | 25 | 30 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 5.9 | 5.8 | 7.9 | 7.8 | 6.7 | 7.5 | 8.2 | 5.7 | 5.2 |
| 33 | 24 | 19 | 11 | 0 | 13 | 18 | 25 | 33 |

Top NW. F. Post. Brgs. 33'L Sta 7+78

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 7.1 | 7.7 | 7.8 | 5.8 | 5.5 | 6.1 | 7.1 | 5.6 | 6.1 |
| 33 | 25 | 17 | 12 | 0 | 11 | 14 | 17 | 33 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2.9 | 4.6 | 4.7 | 2.7 | 2.3 | 3.0 | 4.1 | 3.4 | 3.4 |
| 33 | 23 | 18 | 12 | 0 | 11 | 15 | 18 | 33 |

Top rock 6'L Sta. 9+50

(23-03.) "L" Extn  X-Sec. & St. Stake  Profile Elev.

| Sta. | +S | H.I. | -S | | |
|---|---|---|---|---|---|
| 10+00 | | Contd. fr. p. 25 221.34 ✓ | | | 12.9 |
| 11+00 | | | | | 17.6 |
| | | CHECKING BACK | | | |
| T.P. | | 221.34 | 10.58 | 210.76 | |
| | 0.67 | 211.43 | | 210.76 | |
| New BM | | | 2.77 | 208.66 | |
| T.P. | 0.06 | 201.84 | 9.65 | 201.78 | |
| T.P. | 2.74 | 197.43 | 7.15 | 194.69 | |
| New BM. | | | 5.75 | 191.68 | |
| T.P. | 9.86 | 202.54 | 4.75 | 192.68 | 200 ✓ |
| Temp BM | | | 1.33 | 201.21 | 201.21 |
| | | Setting Slope Stakes | | | |
| T.P. | 3.87 | 196.55 ② | | 192.68 | |
| Assumptions - (38' Top on Rdbd & 1½:1 slope - | | | | 196.27 = Elev. Sta. 9+41.5 ✓ 1.00 = Super on outs. ✓ 197.27 Assume 0. | |
| 0+00 | | | | 197.3 | +0.7 |
| 1+00 | | | | 197.3 | +0.7 |
| 2+00 | | | | 197.3 | +0.7 |
| 3+00 | | | | 197.3 | +0.7 |
| 4+00 | | | | 197.3 | +0.7 |
| New BM | 5.67 | 197.35 ③ | | 191.68 | |
| 5+00 | | | | 198.0 | +0.7 |
| T.P. | 8.57 | 204.55 | 1.37 | 195.98 | |
| 6+00 | | | | 200.0 | - 4.6 |
| 7+00 | | | | 202.7 | - 1.9 |
| 7+37 | | | | 203.7 | - 0.9 |
| T.P. | 6.76 | 210.88 | 1.43 | 203.12 | |
| B.M. | | | 1.22 | 208.66 ✓ | Prev. Determ. 208.66 ✓ |

"L" Xtn.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 9.2 / 33 | 9.1 / 25 | 8.8 / 21 | 9.5 / 15 | 8.9 / 11 | 8.7 / 0 | 9.1 / 10 | 10.9 / 16 | 10.4 / 19 | 10.6 / 33 |
| | | | | 3.8 / 33 | 3.7 / 19 | 4.1 / 13 | 3.7 / 0 | 9.5 / 11 | 5.4 / 33 |

Top rock 6'L Sta. 9+50

Top N W Cor. F.P as p. 25

" rock 3'R 6+95

" " 8'R 4+80

Sp. 10" Oak 90'L Sta. 0+00 "L" Xtn.

Top. Hub L Sta. 7+61.7 "L" Sta. = 0+00 "L" Xtn.

Top Hub E " 5+85.6 "L" " P.C.

Top Hub E Sta. 7+61.7 "L" Sta = 0+00 "L" Xtn.

Top. Hub. L Sta. 7+61.7 "L" Line = 0+00 "L" Xtn. = 9+49.1 "VL"
at E of Edgerton
Side H. on "h for approximately 400' from P.I. Sta. 7+61.7 "L" Line or 9+49.1 "VL" Line

| | | |
|---|---|---|
| (F 8.8 / 31.6) | (F 4.8 / 0) | (F 8.6 / 31.3) Note Fill stks include 5" dirty Topsoil afe intres. "VL" Line |
| (F 9.0 / 31.9) | (F 5.0 / 0) | (F 9.9 / 33.1) |
| (F 9.2 / 32.2) | (F 4.9 / 0) | (F 8.2 / 30.7) |
| (F 8.4 / 31.0) | (F 4.3 / 0) | (F 9.0 / 31.9) |
| (F 8.0 / 30.4) | (F 3.7 / 0) | (F 6.7 / 29.6) |

Use Cross Sections for Cost P. 25

Start 12-6-23 Same party } "Same assumptions as above (GR) Contrary to plan"

Sp. 10" Oak 90'L Sta. 0+00 as above

| | | |
|---|---|---|
| (F 8.3 / 30.9) | (F 3.4 / 0) | (F 7.4 / 29.7) |
| (F 5.5 / 26.9) | (F 2.2 / 0) | (F 2.7 / 22.1) |
| (F 2.8 / 23.0) | (F 0.6 / 0) | (F 0.6 / 19.4) |
| (0.0 / 19) | 0.0 / 0 | (0.0 / 19) |

Top rock 2'R Sta. 5+42

Top rock in road

Top N.W. Cor. F.P. as page 25

(23-03) "VL" Line X-Sec. & St. Stakes & Blue Tops for Calv

| Sta. | + S. | H.I. | - S | Profile Elev. | Grade Rod. |
|---|---|---|---|---|---|
| BM. | 0.98 | 216.81 | | 215.83 | |
| T.P. | 0.49 | 207.38 | 9.92 | 206.89 | |
| T.P. | | | 11.76 | 195.62 | |
| New BM. | | | 6.83 | 200.55 | |
| 0-50 | | | | | |
| New BM. | 3.74 | 204.29 | | 200.55 | |
| 0-50 | | | | | |
| | | Calv Stakes for Calv @ | | 8+30 "VL" | |
| BM. | 5.15 | 196.83 | | 191.68 ✓ | |
| | | | 9.83 | 187.00 | |
| | | | 9.93 | 186.90 | |
| | | | 10.03 | 186.80 | |
| BM. | | | 5.15 | 191.68 ✓ | |
| BM. | 3.73 | 204.28 | | 200.55 | |
| 0+00 | | | | 199.0 | E = 5.3 / I = 5.4 / O = 5.2 |
| 0+23 | | | | 199.4 | E = 4.9 / I = 5.1 / O = 4.6 |
| 0+50 | | | | 199.8 | E = 4.5 / I = 4.9 / O = 4.1 |
| 1+00 | | | | 200.6 | E = 3.7 / I = 4.5 / O = 3.7 |
| BM. | 6.10 | 206.65 | 3.73 | 200.55 ✓ | |
| 1+50 | | | | 201.3 | E = 5.4 / I = 6.7 / O = 4.5 |
| 2+00 | | | | 201.6 | E = 5.1 / I = 6.4 / O = 4.2 |
| 2+50 | | | | 201.7 | E = 5.2 / I = 6.3 / O = 4.1 |
| 2+60 | | | | 201.6 | E 5.1 |
| 2+80 | | | | 201.5 | E 5.2 |
| 2+94 | | | | 201.4 | E 5.3 |

Cont'd on Page 29

Deutsche, Johnson, Mahoney, Franke } Party. — "L" — 12-4-23 Cold Fair

Note:- {Fill stks include 5% shrinkage}

Top. Mont E. Sta. 2407 "L" Line Sta.

Sp. Xing Sign Vadnais Blvd & N.P. Trk near Ice Hse

Top. R/W Stk 33'L Sta. 2+00

Sp. NE Cor Ice Hse 22'R Sta 0+45

10.0 9.0 / 12 0 — 9.9 / 13 — 13.9 / 20 — 14.4 / 30 — 11.0 / 33

" " " " " " 22'R 0+45

17.5 / 33 — 15.4 / 26 — 12.1 / 25

Sp 10" Oak Po'L 0+00 "L" Xtn.

Rod to Intake cond

" " Stk on E culv @ ctr of culv. Sta. 8+30 VL

" " Outlet culv.

as 1st above

Sp. NE Cor. Ice Hse 22'R 0+45

Tbldr Po'L&R (F2.1/19) 17.5/35 — 13.3/27 — 10.0/25 — 7.0/18 — (C0.2/0) 6.0/12 — 9.0/21 — 9.3/30 — 6.3/35 — (F4.0/21.7)

" Po L&R (F15/18.1) 16.5/35 — 12.5/28 — 8.1/25 — 6.8/20 — (C0.1/0) 5.2/12 — 6.2/16 — 5.1/20 — 5.1/33 — (F1.4/18)

" 17'L & 15'R 15.9/48 — 15.4/40 — 8.9/33 — 6.2/24 — 5.7/14 — 5.0/12 — (C0.3/0) 4.8/13 — 5.6/15 — 4.6/17 — 4.4/26 Ice Hse

(F10.4/32.8) 14.4/33 — 8.5/22 — 3.9/11 — (C0.7/0) 3.3/10 — 3.7/33 — (F0.3/16.5)

St. 12-5-23

Cor Ice Hse

Tbldr { 15'R / 22'L 6.9/16 — 5.8/6 — (0.0/0) — 5.0/6 — 5.3/17 — 5.8/21 — 5.2/24 — 5.2/33 — (DC 1.2/24.2)

(F4.7/28.9) 11.6/33 — 5.5/12 — (C0.3/0) 4.6/16 — 5.0/14 — 4.4/25 — 4.4/33 — (DC 1.9/24.9)

(F2.1/24.0) 10.8/33 — 6.4/18 — 5.7/6 — (F2.0/0) 5.3/10 — 5.0/16 — 5.3/22 — 4.4/23 — (F0.8/16.2) (DC 0.9/23.9)

11.5/33 — 8.5/23 — 7.7/14 — 8.8/11 — 8.0/5 — 5.8/0 — 5.4/11 — 6.0/4 — 5.0/24 — 4.1/28 — 4.4/35

12.6/33 — 10.1/22 — 11.2/20 — 10.5/14 — 7.6/10 — 6.3/0 — 7.2/4 — 6.8/8 — 5.5/11 — 4.7/33

12.3/33 — 11.5/25 — 12.1/23 — 11.7/19 — 9.0/15 — 7.0/5 — 8.4/3 — 7.8/0 — 7.9/3 — 5.9/6 — 4.7/33

Cont'd on Page 29

(23-03) "CE" Line Blue Tops for Grading-

| Sta. | +S | H.I. | -S | Profile Elev E. | Grade Rods 15' L & R |
|---|---|---|---|---|---|
| BM. | 2.64 | 224.47 | | 221.83 | |
| 2+50 | | | | 219.42 | E only 5.05 |
| | | | | | E = 6.47 ✓ |
| 3+00 | | | | 218.00 | I = 6.59 ✓ |
| | | | | | O = 6.53 ✓ |
| | | | | | E = 8.21 |
| 3+50 | | | | 216.26 | I = 8.40 |
| T.P. | 0.69 | 215.36 | 9.80 | 214.67 | O = 8.02 |
| 4+00 | | | | 214.00 | E = 1.36 |
| | | | | | I = 1.83 |
| | | | | | O = 0.90 ✓ |

See P 13 for super data-

Deutsche
Johnson
Mahoney
Franke
} Partly

Lt.

Rt.

12-18-23
Cool Fair

28

Sp. 24" Elm 27'R Sd. 0-15 CE Line See P 24.

-.12 Used 9.59 2 mkd ch. Grade Up 3'
-.06

-.19 Used 10.40 " " " " 2'
+.19

Top & ch. Std. 4+00
-.47 Used 2.83 mkd ch. Grade 1% Up.
+.46

23-03 "VL" Line Contd  X-Sec & Slope Stakes Cont'd fr. p. 27

| Sta. | +S | H.I. | -S | Profile Elev. | | Grade Rod. |
|---|---|---|---|---|---|---|
| | | 206.65 Cont'd fr. p. 27 | | | | |
| 3+00 | | | | 201.4 | 99.2 | E = 5.3<br>I = 6.2<br>O = 7.2 |
| T.P. | | | 9.51 | 197.14 | | |
| T.P. | 1.33 | 196.95 | | 195.62 | | |
| 1+50 | | | | 201.3 | | E = +4.9<br>I = +3.1 |
| T.P. | | | - 1.33 | 195.62 | | To out. |
| T.P. | 4.08 | 201.22 | | | | |
| 3+50 | | | | 201.0 | 96.1 | E = -.2<br>I = -1.7<br>O = +.2 |
| 4+00 | | | | 200.6 | 91.6 | E = -.6<br>I = -1.8<br>O = -.5 |
| 4+50 | | | | 200.2 | 91.6 | E only = -.6 |
| 5+00 | | | | 197.8 | 92.4 | - 1.7 |
| 5+50 | | | | 199.4 | 91.1 | 1.8 |
| T.P. | 12.02 | 202.11 | 11.13 | 190.09 | | |
| 6+00 | | | | 199.0 | 91.6 | 3.1 |
| 6+50 | | | | 198.6 | 92.4 | 3.5 |
| EQUATION - $6+52^{3} = (6+57^{85}$ Profile) | | | | | | |
| 7+00 | | | | 198.2 | 93.5 | 3.9 |
| T.P. | 7.84 | 198.42 | 11.53 | 190.58 | | |
| B.M. | | | 6.75 | 191.67 | | Prev. determined 191.68 |
| 7+50 | | | | 197.8 | 93.2 | E = -0.6<br>I = -0.7<br>O = - 0.5 |
| 8+00 | | | | 197.4 | 92.5 | E = 1.0<br>I = 1.4<br>O = 1.6 |
| 8+50 | | | | 197.0 | 91.3 | E = 1.4<br>I = 2.2<br>O = 0.7 |
| EQUAT. - $8+57^{25} = (8+57^{5}$ Profile) | | | | | | |
| 9+00 | | | | 196.6 | 94 | E = 1.8<br>I = 2.9<br>O = 0.8 |
| 9+18 | | | | 196.5 | | 1.9 |
| B.M. | | | 6.75 | 191.67 | | Prev. determined 191.68 |

Deutsche
Johnson
Mooney
Franke } Party

"VL"

12-5-23

(F6.5 / 29.3) 12.0/33 12.3/28 12.7/24 12.2/21 9.7/18 7.7/9 9.0/7 (F2.2/0) 6.4/1 4.4/33 (F0.7/16) (DC 1.5/24.5)

Top E stk Sta. 3+50

" R/W " " 2+00.33'L (Rev. set for elev)

22' shldr L (F2.1 / 39.2) 8.9/45 8.5/40 7.9/33

Top R/W stk 33'L 2+00

Top-E stk 3+50

(F10.2 / 31.5) 10.6/33 9.3/22 9.5/20 9.4/14 7.1/11 (F2.9/0) 0.6/15 0.0/23 +0.8/33 (0.0/2.5)

(F10.8 / 32.4) 11.1/33 10.0/3 (F7.0/0) 6.0/6 4.7/12 -0.8/26 +0.4/35 (DC 1.5/24.5) (F 2.4/18.5)

(F11.0 / 32.7) 11.5/33 10.5/5 (F8.6/0) 9.2/ 0.0/32 (F 2.4/17.5) (DC 1.3/22.8)

15' shldr (F10.7 / 32.3) 11.6/33 (F9.4/0) (10.4/0) 11/33 (F 3.7/20.2) (DC 3.0/26.2)

(F10.5 / 32-1) 11.9/33 (F8.3/0) 8.2/10 8.2/33 (F 3.9/20.5) (DC 1.0/24.5)

Top stk 50'L Sta. 6+00

(F10.1 / 31.4) 12.7/33 11.7/5 (F7.4/0) 1.2/33 (F 2.2/18.1) (0.0/2.5)

(F9.3 / 30.3) 12.4/33 10.7/8 (F5.2/0) 4.5/17 0.0/27 +1.0/30 +2.1/40 (C 4.5/29.5)

(F9.2 / 30.2) 12.7/33 11.4/18 (F4.7/0) 5.1/12 3.7/16 -0.6/21 +0.7/26 +1.4/33-40 (C 4.9/29.9)

Top stk 50'L 7+50

Sp 10" Oak 90'L - 9+49'-VL = 0+00 "LX" = 7+61.77'L"

(F7.7 / 27.9) 8.3/33 7.9/23 6.3/14 (F4.6/0) 1.7/17 0.0/27 +4.3/41 +9.7/45 (0.0/2.5)

(F7.3/27.5) 8.1/33 (F4.9/0) 4.7/9 1.8/33 (F2.1/19.3) (DC 0.4/23.4)

(F8.3 / 28.9) 8.2/27 8.7/33 (F5.7/0) 4.4/33 (F 3.3/22-8)

(F7.9 / 28.2) 8.3/33 (F6.2/0) 7.0/13 5.1/19 4.5/33 (F1.9/21.7)

9.2/33 8.4/8 5.7/0 5.1/5 5.6/7 5.0/33 Note Fill stks for R not set
a/c inters VL, L, & LX Lines

Sp 10" Oak 90'L sta. 9+49'-sta as above

(23-03) "VL" Line (Contd) X-Sec. & Slope Stakes — From p. 29 &

| Sta. | + S | H.I. | - S | Mobile Grade | Grade Rod |
|---|---|---|---|---|---|
| B.M. | 5.81 | 197.49 | | 191.68 | |
| 9+34 | | | | 196.3 | 2 = -1.2<br>1 = -2.4<br>0 = -0.2 |
| 9+50 | | | | 196.3 | 2 = -1.2<br>1 = -2.4<br>0 = -0.2 |

Note:- (X) = Took out o/c intersection various Lines

| | | | | | |
|---|---|---|---|---|---|
| 9+62 | | | | | -1.3 |
| 10+00 | | | | 196.2 | 2 = -1.3<br>1 = -2.4<br>0 = -0.3 |
| 10+50 | | | | 196.8 | 2 = -0.7<br>1 = 0 = +0.1<br>2 = +0.5<br>1 = 0 = +1.3 |
| 11+00 | | | | 198.0 | |
| B.M. | | | 5.81 | 191.68 | |

EQUATION "VL" 11+21.3 = 9+00.2 "L"

Same party - ℄ VL 12-6-23 30

Sp. 10" Oak 90'L 9+49' VL etc. as before -

88/33 8.1/25 5.5/18 4.6/0 4.8/25 6.9/30 6.7/33 (F 2.4/22.5)

8.7/39 5.5/33 5.0/29 4.6/7 5.1/0 5.1/7 7.7/14 7.2/29 6.1/33 (F 5.0/25.6)

No further a/c "LX" notes include

4.9/23 4.6/19 5.0/8 7.9/0 8.5/9 7.9/18 No further a/c "L" Line notes include

(F 9.3/30.4) 9.3/33 (F 7.6/0) X-Sec not taken 4 4 4 4 4

(F 9.3/30.3) 8.8/33 8.5/11 (F 8.9/0) 4 4 4 4 4 4 4 4 4

(F 7.9/31.1) 8.1/33 7.2/20 5.2/9 4.9/0 4 4 4 4 4 4 4 4 4

Sp. 10" Oak 90'L 9+49' etc.

## Curve Data — "L" Line

PC = 12+89.9 D = 20° L PT = 14+42.5

12+89.9 / 5D / 11+39 / 2+00 / 13+39 EST.

12+89 / 5D / 12+39 EWT / 1+00 / 13+39 EWT

14+42.5 / 1 SD / 15+92.5 BST. / 2+00 / 13+92.5 EST

14+42.5 / 5D / 14+92.5 BST. / 1+00 / 13+92.5 EWT

| Sta. | Width L | Width R | Slide L | Slide R | Total L | Total R |
|---|---|---|---|---|---|---|
| 11+39 | 17 | 17 | -.008 | -.008 | .13 | -.13 |
| 12+00 | 16 | 16 | -.012 | +.012 | -.19 | +.19 |
| 12+50 | 15 | 15 | -.03 | +.03 | .45 | +.45 |
| 12+89 | 17 | 15 | -.044 | +.044 | -.75 | +.75 |
| 13+00 | 17 6/12 | 15 | -.048 | +.048 | -.85 | +.72 |
| 13+50 | 18 8/12 | 15 | -.062 | +.062 | .117 | +.93 |
| 13+73 | 18 8/12 | 15 | -.062 | +.062 | -.117 | +.93 |
| 14+00 | 18 7/12 | 15 | -.059 | +.059 | -.110 | +.89 |
| 15+00 | 15 | 16 | -.023 | +.023 | -.35 | +.37 |
| 15+92.5 | 15 | 16 | -.008 | -.008 | -.12 | -.12 |
| 16+00 | 15 | 16 | -0 | -0 | 0 | 0 |

## Curve Data — "SC" Line

PC = 48+10.7 = 48+10 7/12 D = 6°00 R PT = 52+77.1

No extra widening

48+10.7 / 1 31.25 / 46+79.45 BST / 1 75 / 48+54.15 EST.

52+77.1 / 1 31.25 / 51+08.35 BST. / 1 75 / 52+33.35 EST.

| | L | R | L | R | L | R |
|---|---|---|---|---|---|---|
| 46+79 | 15 | 15 | -.008 | -.008 | -.12 | +.12 |
| 47 | " | " | -.008 | -.002 | -.12 | +.03 |
| 48 | " | " | -.033 | +.033 | -.50 | +.50 |
| 49 | " | " | -.054 | +.054 | -.81 | +.81 |
| 50 | " | " | -.054 | +.054 | " | " |
| 51 | " | " | " | " | " | " |
| 52 | " | " | " | " | " | " |
| 53 | " | " | -.029 | +.029 | -.43 | +.43 |
| 54 | " | " | -.008 | +.005 | -.12 | +.08 |
| 55 | " | " | 0 | 0 | 0 | 0 |

23-03 "SC" Line X-Sections & Slope Stakes

| Sta. | +S | H.I. | -S | Profile Elev | | Grade Rod- |
|---|---|---|---|---|---|---|
| B.M. | 4.10 | 235.03 | | 230.93 | | |
| 46+50 | | From Page 43 | | 231.0 | 30.5 | 4.0 |
| 47+00 | | | | 30.7 | 30.3 | E 4.3<br>I 4.4<br>O 4.3 |
| 47+65 | | | | | | |
| 48+00 | | | | 29.9 | 30.2 | E 5.1<br>I 5.0<br>O 4.6 |
| 48+65 | | | | | | |
| 48+75 | | | | | | |
| 49+00 | | | | 229.0 | 30.4 | E 6.0<br>I 5.8<br>O 5.2 |
| 50+00 | | | | 228.0 | 29.4 | E 7.0<br>I 7.8<br>O 6.2 |
| 50+50 | | | | 227.4 | 28.8 | E 7.6<br>I 8.4<br>O 6.6 |
| 51 | | | | 26.8 | 29.3 | E 8.2<br>I 8.0<br>O 7.4 |
| T.P. | 4.72 | 234.68 | 5.07 | 229.96 | | |
| 52 | | | | 25.6 | 29.7 | E 9.1<br>I 9.4<br>O 8.3 |
| 53 | | | | 24.2 | 29.6 | E 10.5<br>I 10.9<br>O 10.1 |
| 54 | | | | 22.6 | 28.5 | E 12.1<br>I 12.2<br>O 12.0 |
| 54+50 | | | | 21.8 | 26.1 | E 12.9<br>I 13.6<br>O 12.8 |
| T.P. | 0.53 | 227.21 | 8.00 | 226.68 | | |
| 54+91 | | | | | | |
| 55 | | | | 22.1.0 | 21.6 | 6.2 |
| 55+07 | | | | | | |
| +31 | | | | | | |
| +37 | | | | 20.45 | 18.9 | 6.8 |
| 53+50 | | | | 20.25 | 15.9 | 7.0 |
| T.P. | 0.58 | 227.26 | 0.53 | 226.68 | | |
| T.P. | 0.48 | 217.20 | 10.54 | 216.72 | | |

Same party "C" 12-7-23 Cold Fair 32

X-sections contd from p 43) Note – (Fill stks include 5% shrinkage)

Sp. Tot. R 20'R Sta. 45+60 (Moved)

(C 4.2 / 26.2) 3.1/33 2.6/28 3.3/22 4.9/18 5.2/13 4.7/10 (F 0.0 / 0) 4.3 4.5/4 5.0/15 5.8/18 5.2/22 5.2/33 (F 1.5 / 17.2) (DC 0.8 / 23.8)

(C 3.0 / 27.0) 2.8/33 2.3/27 4.1/22 5.8/18 6.4/13 5.1/10 (F 0.4 / 0) 4.7/4 5.3/16 5.7/18 5.8/33 (F 1.0 / 16.5) (DC 0.5 / 23.5)

0.0/0

(per page 42 for 0 [illegible] see) (C 0.3 / 0) 4.7/5 5.3/15 5.9/33 C 0.5/15 (DC 0.5/15)

6.1/33 5.3/17 4.7/0 5.3/19 5.9/33

0.0/25

(C 0.7 / 25.7) 4.1/33 4.4/26 6.5/21 6.5/17 4.9/14 (C 1.4 / 0) 5.1/10 4.8/12 6.0/25 6.0/33 (C 0.9 / 25.9) ✓

(C 1.6 / 26.6) 4.3/47 4.3/42 7.2/35 6.9/33 4.7/27 4.6/17 (C 1.0 / 0) 5.8/7 6.0/33 (C 1.8 / 26.8) ✓

OFF-16' (C 2.0 / 27.0) 4.7/33 4.5/23 5.4/8 (C 2.1 / 0) 6.1/33 (C 2.4 / 27.4) ✓

✓ OFF-18' (C 2.7 / 27.7) 4.6/33 5.1/19 5.5/9 (C 2.5 / 0) 6.6/33 (C 2.7 / 27.7) ✓

Top E Stk – 51+00

(C 3.4 / 28.4) 4.5/33 5.0/27 (C 4.1 / 0) 5.3/33 (C 4.5 / 29.5) ✓

✓ (C 5.3 / 30.3) 4.6/33 (C 5.4 / 0) 5.7/33 (C 5.8 / 30.8) ✓

✓ (C 7.0 / 32.0) 5.0/33 (C 5.9 / 0) 6.5/33 (C 5.7 / 30.7) ✓

✓ (C 6.2 / 31.2) 6.5/33 (C 4.3 / 0) 9.9/33 (C 3.2 / 28.2) ✓

Top Stk E 54+50

(C 3.0 / 28.0) 2.8/33 C 0.6 / 0 7.1/25 7.3/33 (F 0.4 / 15.6) (DC 1.1 / 24.1) ✓

(0.0/0)

(0.0/25)

(DC 1.3 / 24.3) (F 1.4 / 18) 6.7/33 8.7/11 (F 1.6 / 0) 8.3/0 10.6/10 12.5/33 (F 5.2 / 23.5)

(DC 0.2 / 23.2) (F 1.9 / 18.7) 6.1/33 8.6/26 8.7/14 10.8/5 (F 4.4 / 0) 12.4/10 13.4/33 (F 6.6 / 26.4)

Top Stk E 57+50

" " 53+50

23-03. "SC" Line X-Sec & St. Stakes Contd.

| Sta. | +S | H.I. | -S | Profile Grade | | Grade Rod. |
|---|---|---|---|---|---|---|
| | | Contd fr. p 32 | | | | |
| 56+00 | | 217.20 ✓ | | 219.60 | 13.1 | +2.4 ✓ |
| 57+00 | | | | 218.65 | 12.3 | +1.5 ✓ |
| 58 | | | | 218.1 | 12.1 | +0.9 ✓ |
| 58+73 | | | | 218.0 | 11.7 | +0.8 ✓ |
| 59 | | | | 218.0 ✓ | | +0.8 ✓ |
| T.P. | 7.20 | 219.99 ✓ | 4.41 | 212.79 | | |
| 59+62 | | | | 218.1 | 13.0 | -1.9 ✓ |
| +81 | | | | 218.1 | 15.4 | -1.9 ✓ |
| 60 | | | | 218.1 | 15.1 | -1.9 ✓ |
| Temp BM. | 6.86 | 222.87 ✓ | 3.98 | 216.01 ✓ | | |
| 60+40 | | | | 218.14 | 15.8 | 4.7 |
| +56 | | | | 218.16 | 17.2 | 4.7 |
| 60+76 ℄ R.R. | | | | 218.18 | 17.9 | -4.7 ✓ |
| 61 | | | | 218.20 | 17.9 | -4.7 ✓ |
| 61+50 | | | | 218.25 | 18.5 | -4.6 ✓ |
| B.M. | | | 4.70 | 218.17 ✓ | | Profile & Proceed 218.21 +2.1 |

(Cont'd on page 42)

To Page 43

Same party

12-8-23
Cold Fair

33

5' ditch Left.

(DC 0.6 / 30.7) (F5.7 / 25.1) 2.5/33 F6.5/0 4.0/33 (F6.7 / 26.6)

(F6.2 / 25.8) 4.3/33 (F6.4 / 0) 4.8/33 (F6.5 / 26.3)

(F6.1 / 25.7) 4.6/33 (F6.0 / 0) 4.9/33 (F6.1 / 25.7)

Slope stk n of Sta 0+ Cold Rd. w/l. 7.6/27 7.1/16 F8.1/0 5.9/73 3.9/19 4.1/22 4.7/28 5.3/33 (F5.7 / 25.4) 5.1/38 4.8/43

(DC 0.8 / 27.7) (F3.1 / 20.4) 1.6/33 2.2/24 2.7/17 3.6/15 4.3/11 F4.3/0 5.3/6 4.7/13 4.0/17 4.6/21 6.1/24 6.1/31 6.1/33 (F 7.3 / 27.4) 4.3/39 4.8/50.5

Top Stk. E. -59+00

OFF-2.5 (DC 1.9 / 24.9) (F2.0 / 17.8) 1.6/33 2.1/23 4.2/18 4.9/12 4.9/7 (F3.1/0) 7.6/5 7.7/33 (F6.1 / 25.7)

1.7/33 1.6/31 2.3/18 4.1/13 4.9/6 4.2/4 (F2.7/0) 7.3/8 7.5/33

OFF-14' (0.0 / 25.0) 2.2/33 1.8/26 2.3/13 4.2/9 (F3.0/0) 5.0/3 7.0/8 7.5/33 (F6.0 / 25.5)

Pulled OFF for storm 12-10-23

Sp Tel. Pl 10'R Sta. 60+76

8.3/39 5.2/32 4.6/18 5.1/5 7.0/0 7.8/3 7.7/10 10.2/16 10.2/33

42-39 7.8/36 8.3/29 4.7/16 5.0/3 5.7/0 6.8/3 8.1/8 7.6/10 10.1/18 10.4/33

(DC 0.0 / 27.7) OFF 11' (F0.2 / 16.3) 7.4/34 7.1/31 5.3/26 4.7/12 (F8.3/0) 3.7/6 8.0/10 7.1/12 10.0/22 10.4/33 (F5.6 / 25.1)

(DC 0.0 / 28.3) OFF 6' (F0.4 / 16.6) 7.9/33 7.1/26 5.4/22 4.7/10 (F8.3/0) 5.1/4 6.9/7 7.7/10 6.6/14 10.0/23 10.4/33 (F 5.7 / 25.2)

RC 0.0 / 19.8 OFF 3' (F0.4 / 16.6) 9.1/33 7.7/30 6.6/22 5.0/18 4.9/4 (F8.7/0) 5.3/10 7.0/13 7.1/20 9.9/28 10.6/33 (F 2.3 / 19.3)

Sp. Tel. Pl. R Sta. 63+04

| (23-03) Sta. | "L" Line +5 | Blue Tops for H.I. | Grading -5 | Profile Elev | Grade Rod |
|---|---|---|---|---|---|
| B.M. | 4.90 | 224.85 | | 219.95 | |
| -2+00 | | | | 217.40 | 7.45 |
| -1+50 | | | | 217.35 | 7.50 |
| -1+00 | | | | 216.60 | 8.25 |
| -0+50 | | | | 215.15 | 9.70 |
| 0+00 | | | | 213.00 | 11.85 |
| T.P. | 0.83 | 213.83 | 11.85 | 213.00 | |
| 0+50 | | | | 210.50 | 3.33 |
| 1+00 | | | | 208.00 | 5.83 |
| 1+50 | | | | 205.50 | 8.33 |
| 2+00 | | | | 203.00 | 10.83 |
| 2+50 | | | | 200.50 | 13.33 |
| T.P. | | | 0.83 | 213.00 | To Vert. |

Deutsche
Mahoney
Franke
Johnson absent.

12-28-23
Cold Windy



Sp Elm Root 29'R Sta 2+08 "L" Line. Set 11-6-23. Sweep. 15

Top stk 15'L 0+00

Top stk 15'L 0+00

23-03 "VL-" Line — Blue Tops for Grading —

| Sta. | +S | H.I. | -S | Profile Elev | Grade Rod |
|---|---|---|---|---|---|
| BM. | 5.17 | 205.72 | | 200.55 | |
| 1+50 | | | | 201.30 | E = 4.42<br>I = 5.72 |
| 2+00 | | | | 201.60 | E = 4.12<br>I = 5.48 |
| 2+50 | | | | 201.70 | E = 4.02<br>I = 5.32<br>O = 3.09 |
| 3+00 | | | | 201.40 | E = 4.32<br>I = 5.24<br>O = 3.62 |
| 3+50 | | | | 201.00 | E = 4.72<br>I = 5.18<br>O = 4.32 |
| 4+00 | | | | 200.60 | E = 5.12<br>I = 5.29<br>O = 4.97 |
| 4+50 | | | | 200.20 | E = 5.52<br>I = 5.60<br>O = 5.45 |
| 5+00 | | | | 199.80 | 5.92 |
| 5+50 | | | | 199.40 | 6.32 |
| 6+00 | | | | 199.00 | 6.72 |
| BM. | | | 5.17 | | |
| 7+00 | | | | 198.2 | |

Deutsche
Mahoney & Party
Franke ?
Johnson Absent.

12-29-23 35
Cold Windy

Sp. N.E. Cor. Ice Hse - 20'R 0745 "VL"

As above, to Vort -

Staking Culverts.

24" R.3x40' @ Sta 1514+45 - Ext. 20' Rt. x 20' Lt.

EM. 3.44 275.51 272.07

TR 0.17 268.84 6.84 268.67

145+38 - 24" R3 X 48' - Extends 24' Rt. & 24' Lt. Drains Lt.

5.07 263.75 ✓

165+36 24" R.3X48' Ext. 24' Rt. & 24' Lt. Drains Rt.

4.17 273.04 268.27

137+86 24" R.3x40' Ext 20' Rt. x 20' Lt. Drains Lt.

EM. 1.00 262.3 261.32 ✓

L. ℄ R W.H.C.T. G.M.C. Bro. C.E.J. M.S.A. T.F. 7/24

Stake Lg. 24'

RR Spike 12' Cor. 70' R 1504 4/5

Rd. 10.3

Stake Set @ 20' El. = 65.4' Lg. = 20' El. = 65.2 Lg. = 20' Stake Set @ 20'

Sta. 1 in Tar Stump.

Stake Set @ 24' El. = 258.7 Lg. = 24' El. = 259.0 Lg. = 24' Stake Set @ 24'

Stake Set 24' El. 261.6 Lg. 24' El. 261.4 Lg. 24' Stake Set. 24

140 to 7

Sta. 53.3 / 70 53.6 / 70

Stakes Set 8' Sq.

| 58+76 | + | H. I | − | Elev |
|---|---|---|---|---|
| ℄ Culv. | 1.53 | 217.54 | | 216.01 |
| Rod to Intake | | | 8.35 | |
| " " Outlet. | | | 8.52 | |

Copied from Book of Book. Orig by P.E.D.
& by W.T.H.

| | | | | |
|---|---|---|---|---|
| 0+95 | "L" Extn | 30" R.C.P. x 64' Ext. 32' Rt. & 32' L. Drains Lt. | | |
| B.M.0 | 7.60 | 199.78 | | 191.68 |

"C" "E" Line.

| | | | | |
|---|---|---|---|---|
| 4+34 | P.I. - 18" x 50' Ext. 29' Rt. & 21' L. | | | |
| B.M.1 | 0.70 | 220.15 | | 219.95 |
| 4+21 | Rt. End | | 9.7 | 210.5 |
| +34 | ℄ | | | |
| 4+42 | Lt. End | | 10.3 | 209.9 |

M.T.C.
Bro. A.
C.E.V. } 4/24
M.S.A.
T.F.

Pt. in Oak.

El. 87.1
Lg. 32'

El. = 87.5
Lg = 32

4-17-24

El. 209.9
Lg 21'

El. 210.5
Lg. 29'

Contd from Page 19. From Page 19

| "L"-Line Sta. | X-Sections + | Slope Stakes HI | - | Elev. Profile Gr. | Road bed L & R. |
|---|---|---|---|---|---|
| B.M. | 4.10 | 223.59 | | 215.49 | |
| B.M. to check. | | | | | |
| 15+00 | | | | 219.50 | |
| 16+00 | | | | 220.30 | |
| +50 | | | | 220.50 | 3.1 15-15 |
| 17+00 | | | | 220.70 | 2.9 15-15 |
| 18+00 | | | | 221.10 | 2.5 15-15 |
| T.P. | 5.87 | 226.82 | 2.64 | 220.95 + 6.8% Grade | 15-15 |
| +50 | | | | 221.30 | 5.5 15-15 |
| 19 | | | | 221.50 | 5.3 15-15 |
| +50 | | | | 221.70 | 5.1 15-15 |
| 20 | | | | 221.90 | 4.9 15-15 |
| +50 | | | | 222.10 | 4.7 15-15 |
| 21 | | | | 222.30 | 4.5 15-15 |

Lt. ℄ Rt.

Windy 4-8-24

Top of NW. Cor. NE. Wing Wall.

Sp. in T.P. 20' Rt. Sta. 12+90

W.H.C. - ⊼
C.E.J. - Rod
M.J.R. - Ch.
T.F. - "

3.1

$\left(\frac{+0.8}{25.8}\right)$ $\left(\frac{-0.1}{16.1}\right)$ $\frac{1.8}{33}$ $\frac{3.6}{12}$ $\left(-0.2\right)$ $\frac{3.5}{12}$ $\left(\frac{-0.7}{16.1}\right)$ $\left(\text{O.C. }\frac{0.6}{23.6}\right)$ $\frac{4.9}{33}$

2.9

$\left(\frac{+0.8}{25.8}\right)$ $\left(\frac{-0.4}{15.6}\right)$ $\frac{1.8}{33}$ $\frac{2.3}{21}$ $\frac{3.5}{16}$ $\frac{3.0}{11}$ $\frac{0.0}{-}$ $\frac{3.3}{9}$ $\frac{3.1}{13}$ $\frac{4.5}{25}$ $\frac{4.8}{33}$ $\left(\frac{-0.2}{15.2}\right)$ $\left(\text{O.C. }\frac{0.6}{23.6}\right)$

2.5

$\left(\frac{+0.7}{25.7}\right)$ $\left(\frac{-0.2}{15.2}\right)$ $\frac{1.6}{33}$ $\frac{2.4}{20}$ $\frac{2.6}{12}$ $\frac{+0.1}{-}$ $\frac{2.8}{12}$ $\frac{3.4}{14}$ $\frac{4.4}{23}$ $\left(\frac{-1.0}{16.0}\right)$ $\left(\text{O.C. }\frac{0.8}{23.8}\right)$

5.5

$\left(\text{O.C. }\frac{3.0}{26.0}\right)$ $\left(\frac{-0.2}{15.3}\right)$ $\frac{4.5}{33}$ $\frac{4.7}{22}$ $\frac{5.9}{16}$ $\frac{-0.1}{-}$ $\frac{6.0}{12}$ $\frac{6.9}{14}$ $\frac{7.9}{33}$ $\left(\frac{-1.4}{17.1}\right)$ $\left(\text{O.C. }\frac{0.0}{23}\right)$ ✓

5.3

$\left(\frac{+1.1}{26.1}\right)$ $\left(\frac{-0.2}{15.3}\right)$ $\frac{4.3}{33}$ $\frac{4.7}{24}$ $\frac{5.6}{15}$ $\frac{+0.1}{-}$ $\frac{5.7}{11}$ $\frac{6.2}{13}$ $\frac{6.2}{15}$ $\frac{7.4}{33}$ $\left(\frac{-1.2}{16.8}\right)$ $\left(\text{O.C. }\frac{0.4}{23.4}\right)$ ✓

5.1

$\left(\frac{+0.7}{25.7}\right)$ $\left(\frac{-0.4}{15.6}\right)$ $\frac{4.6}{33}$ $\frac{4.6}{22}$ $\frac{5.6}{15}$ $\frac{5.2}{12}$ $\frac{+0.2}{-}$ $\frac{5.7}{11}$ $\frac{6.2}{13}$ $\frac{5.7}{15}$ $\frac{6.9}{33}$ $\left(\frac{-0.6}{15.9}\right)$ $\left(\text{O.C. }\frac{0.6}{23.6}\right)$ ✓

4.9

$\left(\frac{+1.0}{26.0}\right)$ $\left(\frac{-0.4}{15.6}\right)$ $\frac{3.8}{33}$ $\frac{3.9}{24}$ $\frac{5.3}{16}$ $\frac{4.9}{12}$ $\frac{+0.2}{-}$ $\frac{5.1}{12}$ $\frac{5.2}{14}$ $\frac{6.6}{33}$ $\left(\frac{-0.3}{15.5}\right)$ $\left(\text{O.C. }\frac{0.8}{25.8}\right)$ ✓
23.9

4.7

$\left(\frac{+1.1}{26.1}\right)$ $\left(\frac{-0.6}{15.9}\right)$ $\frac{4.2}{33}$ $\frac{3.4}{23}$ $\frac{5.2}{16}$ $\frac{4.4}{12}$ $\frac{+0.2}{-}$ $\frac{5.5}{13}$ $\frac{5.0}{16}$ $\frac{5.8}{33}$ $\left(\frac{-0.3}{15.5}\right)$ $\left(\text{O.C. }\frac{1.1}{24.1}\right)$ ✓

4.5

$\left(\frac{+0.7}{25.7}\right)$ $\left(\frac{0.0}{15}\right)$ $\frac{4.0}{33}$ $\frac{3.5}{21}$ $\frac{4.7}{13}$ $\frac{4.1}{11}$ $\frac{+0.4}{-}$ $\frac{5.3}{15}$ $\frac{4.5}{17}$ $\frac{5.8}{33}$ $\left(\frac{-0.5}{15.8}\right)$ $\left(\text{O.C. }\frac{1.3}{24.3}\right)$

| Sta. | + | H.I. | − | Elev. Finish Grade | Roadbed C & K. |
|---|---|---|---|---|---|
| | | 226.82 | | | |
| 217+50 | | | | 222.5 | 4.3 |
| 22 | | | | 222.78 | 4.1 |
| +50 | | | | 222.90 | 3.9 |
| (Equation) 22742.5 = 21+45 | | | | 223.04 | 3.7 |
| T.P. | 4.57 | 228.25 | 3.14 | 223.11 | |
| 22+00 "5°C" Line | | | | 223.30 | 5.0 |
| 23+00 | | | | 223.70 | 4.6 |
| 24+00 | | | | 224.10 | 4.2 |
| B.M. | | | 2.64 | 226.28 | (226.12) |
| | | | 4.66 | 223.65 | (223.59) |
| | 9.05 | 224.54 | | 215.49 | |
| | | | 4.86 | 219.68 | |
| | 6.46 | 228.71 | 2.29 | 222.35 | |
| | | | 5.06 | 223.65 | |
| B.M. | 3.79 | 230.00 | 2.50 | 226.21 | |
| 25+00 | | | | 224.50 | 5.5 |
| 26+00 | | | | 224.90 | 5.1 |

Change in G.

4.3

(+0.8 / 25.8) 3.4 / 3.3 | 3.5 / 3.2 | 3.4 / 17 | 4.6 / 13 | 4.8 / 10 | +0.3 | 5.0 / 16 | 4.1 / 19 | 5.3 / 3.2 | (-0.7 / 16.1) | (P.C. 1.7 / 24.7)

4.1

(+0.6 / 25.6) 3.9 / 3.3 | 3.5 / 21 | 3.7 / 17 | 4.5 / 12 | 3.8 / 9 | +0.3 | 4.4 / 14 | 5.0 / 16 | 4.6 / 18 | 5.0 / 3.3 | (-1.0 / 16.5) | (P.C. 1.2 / 24.2)

3.9

(+0.3 / 25.3) 3.5 / 3.3 | 3.3 / 16 | 4.6 / 12 | 3.6 / 9 | +0.3 | 4.1 / 14 | 4.9 / 16 | 4.1 / 20 | 4.7 / 3.3 | (-1.0 / 16.5) | (P.C. 1.6 / 24.6)

3.7

(+0.2 / 25.2) 3.9 / 3.3 | 3.4 / 16 | 3.4 / 14 | 4.4 / 11 | 3.6 / 8 | +0.2 | 4.0 / 12 | 4.8 / 16 | 3.7 / 20 | 4.8 / 3.3 | (-1.0 / 16.5) | (P.C. 1.8 / 24.4)

5.0

(+0.4 / 25.4) 4.6 / 3.3 | 4.5 / 14 | 5.2 / 11 | 4.7 / 9 | +0.4 | 5.1 / 15 | 5.7 / 18 | 5.1 / 23 | 5.3 / 3.3 | (-0.1 / 15.2) | (P.C. 0.3 / 24.5)

4.6

(+0.6 / 25.6) (P.C. 0.0 / 15) 4.4 / 3.3 | 3.6 / 29 | 4.9 / 10 | +0.1 | 5.0 / 17 | 4.4 / 33 | (-0.4 / 15.6) | (P.C. 0.0 / 24.5)

4.2

(+0.4 / 25.4) (P.C. 0.2 / 15.3) -3.9 / 3.3 | 3.9 / 25 | 4.5 / 21 | -0.1 | 4.3 / 6 | 4.5 / 13 | 4.4 / 33 | (-0.2 / 15.2) | (P.C. 1.4 / 24.8)

F.P. Lt. 76+80 "C" "E" L 11.6

T.P. 76+80 "C" "E" L 11.5

April 10, 24
(Cold & Windy)

T.P. Lt. 76+80

5.5

(P.C. 1.9 / 24.9) (P.C. 0.0 / 15) 5.3 / 3.3 | 5.5 / 16 | 6.3 / 10 | -0.2 | 5.5 / 6 | 6.0 / 17 | 5.9 / 33 | (-0.6 / 15.9) | (P.C. 1.6 / 24.6)

5.1

(P.C. 1.8 / 24.8) (+0.2 / 25.5) 5.2 / 3.3 | 5.1 / 9 | -0.3 | 5.7 / 11 | 5.9 / 19 | 5.6 / 33 | (-0.6 / 15.9) | (P.C. 1.5 / 24.5)

| Sta | + | HI | − | Elev Floor Grade | Road Bed 4:1 R. |
|---|---|---|---|---|---|
| | | 230.00 | | | |
| 27+00 | | | | 225.30 25.1 | 4.7 |
| 28+00 | | | | 225.70 25.3 | 4.3 |
| 29 | | | | 226.10 25.9 | 3.9 |
| 30 | | | | 226.50 26.4 | 3.5 |
| 31 | | | | 226.90 26.9 | 3.1 |
| 32 | | | | 227.30 27.3 | 2.7 |
| T.P. | 5.94 | 233.53 | 2.41 | 227.59 | |
| 33 | | | | 227.70 27.5 | 5.8 |
| +45 | | | | 227.59 28.3 | 5.7 |
| T.P | 5.79 | 233.38 | 5.94 | 227.59 | |
| 34 | | | | 228.10 28.8 | 5.3 |
| +50 | | | | 228.30 29.0 | 5.1 |
| +66 | | | | 228.4 28.9 | 5.0 |
| 35 | | | | 228.56 29.1 | 4.8 |

Lt. ℄ Rt.

4.7

(D.C. 1.8 / 24.8) (-0.3 / 15.5) 4.8/33 5.2/9 -0.2 4.9/5 5.5/18 5.8/27 5.7/33 (-0.5 / 15.2) (D.C. 1.1 / 24.1)

4.3

(D.C. 1.9 / 24.9) (-0.5 / 15.2) 4.4/33 4.6/12 5.1/9 -0.4 4.5/6 4.7/15 5.7/18 4.6/24 5.0/33 (-0.4 / 15.6) (D.C. 1.7 / 24.7)

3.9

(D.C. 2.0 / 25.0) (-0.5 / 15.8) 3.9/33 4.6/13 5.2/10 4.3/7 -0.2 4.0/5 4.3/16 5.0/18 4.1/23 4.5/33 (-0.4 / 15.6) (D.C. 1.6 / 24.6)

3.5

(D.C. 2.0 / 25.0) (-0.4 / 15.6) 3.8/33 4.0/14 4.5/10 3.9/7 -0.1 3.5/5 4.0/14 4.6/19 4.0/23 (-0.3 / 15.5) (D.C. 1.0 / 24.0)

3.1

(D.C. 1.9 / 24.8) (-0.6 / 15.6) 3.3/33 3.5/15 4.4/12 3.4/7 -0.0 3.0/4 3.4/14 4.1/19 3.4/21 3.8/33 (-0.8 / 15.5) (D.C. 1.3 / 24.3)

2.7

(D.C. 1.7 / 24.7) (-0.3 / 15.5) 3.4/33 3.0/15 3.5/11 3.1/9 -0.1 2.8/5 3.2/16 4.5/21 4.6/24 3.2/26 3.9/33 (-0.5 / 15.8) (D.C. 0.0 / 23.0)

Slope Stake Lt. 82

5.8

(D.C. 0.9 / 23.9) (-0.7 / 15.2) 6.2/33 -0.2 6.1/15 8.4/21 3.5/25 6.4/28 5.9/33 (-0.7 / 16.1)

5.7

Pavement

(-0.9 / 16.5) 6.5/33 6.5/29 7.6/25 9.6/22 6.6/18 6.7/13 5.4/7 +0.4 5.10 5.66 5.8 8.7 7.8 6.9 6.0 / 9.95 17 20 25 29 32 33

5.3

(-0.7 / 16.1) 6.2/33 6.2/29 9.2/25 9.2/22 6.1/18 6.8/12 4.9/7 +0.7 4.63 6.21 / 9.9 27

Pave

5.1

(-0.9 / 16.4) 6.5/32 6.4/30 9.3/27 9.2/23 6.0/19 6.2/14 4.6/11 +0.7 4.37 4.80 / 9.9 32

Pave

5.0

(-1.4 / 17.1) 6.7/33 6.6/30 10.0/26 10.0/23 6.6/18 6.2/14 4.9/10 +0.5 4.38 4.49 4.8 8.6 7.6 / 9.8 15 23 29 33

Pave

4.9

(-2.3 / 18.5) 7.0/33 7.0/29 9.9/26 9.9/24 7.3/20 7.0/17 5.5/13 -0.5 5.5/12 6.1/22 5.7/33 (-0.9 / 16.4) (D.C. 0.7 / 23.8)

| Station | + | H.I. | — | ℄ Elev. Profile Grade. | |
|---|---|---|---|---|---|
| | | 233.38 | | | |
| 36+00 | | | | 229.46 29.1 | 3.9 |
| +50 | | | | 230.10 29.4 | 3.3 |
| 37+00 | | | | 230.76 30.7 | 2.6 |
| 38+00 | | | | 231.88 32.1 | 1.5 |
| T.P. | 7.39 | 239.55 | 1.22 | 232.16 | |
| 39+00 | | | | 232.11 32.9 | 6.8 |
| +50 | | | | 233.00 33.3 | 6.6 |
| B.M. (for check) | | | 4.01 | 735.54 =235.48 | |
| 40+00 | | | | 233.25 32.1 | 6.3 |
| +75 | | | | 233.47 33.9 | 6.1 |
| 41 | | | | 233.51 33.6 | 6.0 |
| 42 | | | | 233.48 33.3 | 6.1 |
| 43 | | | | 233.16 32.8 | 6.4 |
| +50 | | | | 232.90 32.6 | 6.7 |
| T.P. | 4.15 | 235.91 | 7.79 | 231.76 | |

Lt. S Rt.

(3.9)

15' (+1.4 / 17.1) 6.4 / 5.2 -0.4 4.7 / 4 5.8 / 5.9 / 5.3 (-2.0 / 19.) ✓ 16'

(3.3)

16' (-3.0 / 20.5) 6.1 / 3.2 7.3 / 3.1 7.1 / 2.5 6.4 / 2.2 4.5 / 1.4 4.3 / 1.2 -0.2 4.2 / 1.4 5.2 / 1.7 5.7 / 3.3 (-2.0 / 19.8) ✓ 16'

(2.6)

16' ✓ (-2.1 / 19.2) 4.1 / 3.3 4.9 / 2.5 4.3 / 1.4 2.1 / 1.0 -0.1 3.4 / 1.4 4.2 / 1.7 5.3 / 3.3 (-2.0 / 19.0) ✓ 16'

(1.5)

15' ✓ (-0.6 / 24.8) (-0.8 / 18.2) 1.4 / 3.3 1.9 / 1.9 2.5 / 1.6 1.9 / 1.2 +0.2 1.8 / 1.3 2.1 / 3.3 (+0.2 / 15.2) (0.6. 1.8 / 24.6) ✓ 15'

(6.8)

Top of prog.

15' ✓ (+0.8 / 24.8) 5.8 / 3.3 6.2 / 2.2 7.4 / 1.6 7.2 / 1.1 +0.7 7.3 / 1.1 7.7 / 1.6 4.3 / 3.3 4.1 / 3.3 (+2.5 / 27.5) ✓ 15'

(6.6)

15' ✓ (+1.6 / 26.6) 4.7 / 3.3 4.8 / 2.8 6.7 / 1.9 6.9 / 1.7 +0.3 6.8 / 1.2 5.8 / 1.9 2.9 / 2.5 4.9 / 3.3 (+3.0 / 28.0) ✓ 15'

Lowest Conc. Stop: 3.E for Sect. (6.3) - Resp. 12

15 (+1.0 / 26.0) 5.0 / 3.2 5.9 / 1.8 6.5 / 1.1 +0.3 6.7 / 1.1 6.7 / 1.5 4.1 / 2.1 3.8 / 2.8 4.6 / 3.3 (+3.4 / 27.4) 15'

(6.1)

15' (+1.2 / 26.2) 4.6 / 3.3 5.4 / 1.8 6.4 / 1.4 6.3 / 1.0 +0.4 6.4 / 1.1 6.5 / 1.6 4.5 / 2.0 3.1 / 2.7 4.3 / 3.3 (+2.8 / 27.8) ✓ 15'

(6.0)

15' (+1.4 / 26.4) 4.6 / 3.3 4.6 / 2.8 5.2 / 1.8 6.3 / 1.6 6.4 / 1.0 +0.4 6.4 / 1.1 6.3 / 1.5 5.1 / 2.2 5.2 / 3.3 (+1.0 / 26.0) ✓ 15'

(6.1)

15' ✓ (+2.1 / 29.1) 4.3 / 3.3 4.5 / 2.8 4.5 / 2.0 7.0 / 1.2 -0.2 6.7 / 1.3 5.9 / 1.5 5.2 / 2.5 5.9 / 3.3 (+0.7 / 25.7) ✓ 15'

(6.4)

15' ✓ (+2.7 / 27.7) 4.0 / 3.3 3.7 / 2.7 4.0 / 1.9 7.3 / 1.2 -0.4 7.2 / 1.3 7.8 / 3.3 (-0.7 / 16.4) (0.6. 0.8 / 23.8) ✓ 15'

(6.7)

15' ✓ (+2.1 / 27.1) 5.0 / 3.3 4.7 / 2.8 4.4 / 2.2 8.1 / 1.3 -0.4 8.0 / 1.7 9.0 / 3.3 (-1.3 / 17.0) (D.C. a2 / 23.7) ✓ 15'

| Station | + | H.I. | − | Elev. Profile Grade. | |
|---|---|---|---|---|---|
| | | 225.91 | | | |
| 44+00 | | | | 232.60 | 3.3 |
| 45 | | | | 232.00 | 3.9 |
| B.M. | 3.34 | 234.29 | 4.96 | 230.95 | |
| 46 | | | | 231.40 | 2.9 |
| 46+50 | | | | 229.90 | 4.4 |
| 48+00 | Zone for figure missing in Sketch Notes | | | | |

From Page 33

| | | | | | |
|---|---|---|---|---|---|
| 61+50 | | | | | |
| T.P. | 3.38 | 233.86 | 3.31 | 230.48 | |
| T.P. | 8.40 | 225.86 | 8.40 | 225.46 | |
| T.P. | 4.25 | 222.69 | 7.42 | 218.44 | |
| 62+00 | | | | 218.8 | 4.4 |
| 63+00 | | | | 218.4 | 4.3 |
| B.M. | 7.42 | 225.60 | 4.51 | 218.18 | |
| 64 | | | | 212.5 | 7.1 |
| | | | Inside | | Outside |
| +50 | | | 218.46 | 218.54 | 218.64 |
| 65 | | | 218.42 | 218.60 | 218.78 |

Lt. ℄ Rt.

3.3

3.9

2.9

4.4

For X-Sections see pages 32 & 33 To Page 32

4.4

4.3

7.1

7.1

7.0

| Station | + | H.I. | − | Elev Proj'd Grade | | Cut/Fill |
|---|---|---|---|---|---|---|
| | | 225.60 | 210.10 | | | |
| EQ = 65+41.9 = 65+52.3 | | | 218.15 | 218.65 | 18.7 | 219.12 7.0 |
| 66 | | | 218.00 | 218.70 | 18.9 | 219.36 6.9 |
| +50 | | | 218.05 | 218.75 | 19.1 | 219.41 6.9 |
| 67 | | | 218.10 | 218.80 | 19.0 | 219.46 6.8 |
| +50 | | | 218.15 | 218.85 | 18.2 | 219.51 6.8 |
| 68 | | | 218.20 | 218.90 | 18.7 | 219.58 6.7 |
| T.P.1 | 3.79 | 223.80 | 7.59 | 218.01 | | |
| +50 | | | 218.25 | 218.95 | 19.0 | 219.81 4.9 |
| 69 | | | 218.30 | 219.00 | 19.1 | 219.66 4.8 |
| +50 | | | 218.43 | 219.05 | 19.4 | 219.64 4.8 |
| 70 | | | 218.78 | 219.10 | 18.7 | 219.40 4.7 |
| 70+50 | | | 218.99 | 219.15 | 18.9 | 219.30 4.7 |
| 71 | | | 219.20 | 219.20 | 18.8 | 219.20 4.6 |

7.0

16'– ✓ (-0.4 / 16.6) 9.9 / 33 8.4 / 19 7.4 / 14 0.0 / — 7.5 / 13 7.5 / 25 9.8 / 30 (+1.2 / 16.8) (D.C. 11 / 24.1) 15'

6.9

16'– ✓ (-0.3 / 16.5) 7.9 / 23 7.9 / 15 7.3 / 13 +0.2 / — 7.6 / 14 7.4 / 33 (-1.4 / 17.1) (D.C. 9.6 / 23.6) ✓ 15'

6.9

16'– (-0.7 / 17.1) 10.2 / 33 8.1 / 23 7.1 / 11 +0.3 / — 7.4 / 14 8.1 / 19 6.8 / 23 6.7 / 33 (-2.1 / 15.7) (D.C. 14 / 24.1) ✓ 15'

6.8

16'– (-0.9 / 17.2) 10.5 / 33 8.5 / 23 8.5 / 17 7.0 / 12 7.2 / 9 -0.2 / — 7.1 / 14 8.7 / 20 6.8 / 27 6.8 / 33 (-1.7 / 17.5) ✓ (D.C. 10 / 24.0) ✓ 15'

6.8

16'– (-0.7 / 16.3) 10.1 / 33 9.5 / 26 7.7 / 17 7.2 / 8 -0.1 / — 6.6 / 5 7.3 / 16 8.1 / 20 7.10 / 26 6.6 / 33 (-1.3 / 17.0) (D.C. 0.9 / 23.9) 15'

6.7

16'– (-0.7 / 16.2) 10.4 / 33 7.7 / 17 7.1 / 10 7.5 / 8 -0.2 / — 7.1 / 12 8.1 / 18 8.7 / 23 6.7 / 33 (-1.9 / 17.9) (D.C. 5.9 / 23 ) 15'

4.9

16'– (-0.0 / 16.0) 8.9 / 33 8.5 / 27 7.0 / 24 5.1 / 17 5.5 / 10 0.0 / — 5.4 / 12 6.1 / 16 6.2 / 20 5.4 / 20 4.2 / 33 (-2.1 / 18.2) (D.C. 1.0 / 24.0) 15'

4.8

16'– (0.0 / 16.0) 7.0 / 33 8.5 / 29 6.3 / 23 4.8 / 13 5.2 / 12 +0.1 / — 5.4 / 10 6.6 / 14 6.6 / 19 5.3 / 21 4.9 / 33 (-2.3 / 17.5) (D.C. 1.2 / 24.2) 15'

4.8

16'– (-0.1 / 16.7) 10.1 / 33 8.1 / 22 5.1 / 13 5.4 / 11 +0.3 / — 5.4 / 11 7.2 / 13 7.2 / 18 6.2 / 20 4.5 / 33 (-2.5 / 18.8) (D.C. 1.1 / 24.1) 15'

4.7

16'– (-3.3 / 21.0) 10.0 / 33 8.3 / 20 5.7 / 13 -0.2 / — 5.6 / 12 7.5 / 12 4.3 / 18 5.0 / 33 (-2.6 / 18.9) (D.C. 0.1 / 23.1) 15'

4.7

16 (-5.2 / 22.8) 10.7 / 33 9.6 / 18 5.1 / 8 -0.3 / — 4.8 / 5 5.4 / 13 7.5 / 19 8.0 / 25 5.9 / 19 5.0 / 33 (-3.2 / 20.8) 16'

4.6

16 (-6.0 / 25 ) 10.8 / 33 9.3 / 16 5.2 / 7 -0.2 / — 4.7 / 7 5.1 / 18 7.4 / 33 7.6 / 28 6.3 / 30 5.4 / 32 (-0.4 / 16.6) 16

| Station | + | H.I. | − | ℄ | |
|---|---|---|---|---|---|
| | | 223.80 | inside | ℄ | outside |
| 72+00 | | | 219.30 | 219.30 19.4 | 219.30 4.5 |
| T.P. | 3.18 | 223.42 | 2.56 | 220.24 | — |
| 73 | | | 219.05 | 219.40 19.9 | 219.75 4.0 |
| +62 | | | 218.76 | 219.46 20.3 | 220.16 4.0 |
| 74 | | | 218.63 | 219.50 20.4 | 220.37 3.9 |
| +50 | | | 218.62 | 219.55 20.5 | 220.48 3.9 |
| 75 | | | | 219.60 20.7 | 220.53 3.8 |
| P.I. +16 | 6.05 | 224.39 | 5.08 | 218.34 | |
| +50 | | | 218.62 | 219.65 20.9 | 220.48 4.7 |
| 76 | | | 218.77 | 219.70 20.9 | 220.63 4.7 |
| +50 | | | 218.82 | 219.70 20.3 | 220.68 4.6 |
| 77 | | | 218.87 | 219.80 20.1 | 220.73 4.6 |
| +50 | | | 218.94 | 219.87 19.8 | 220.80 4.5 |
| 78 | | | 219.05 | 219.98 19.1 | 220.91 4.4 |

4.5

4.0

4.0

3.9

3.9

3.8

4.7

4.7

4.6

4.6

4.5

4.4

| Station. | + | H.I | — | Elev. Prof. & Grade | | |
|---|---|---|---|---|---|---|
| | | 224.39 | | | | |
| 78+50 | | | 219.19 | 220.12 | 221.05 | 4.3 |
| 79+00 | | | 219.37 | 220.30 | 221.29 | 4.1 |
| +50 | | | 219.57 | 220.50 | 221.43 | 3.9 |
| B.M. | | | Hog | 220.30 | +0.1 | |
| check log. | | | | | | |
| B.M. | 5.36 | 223.54 | | 218.18 | | |
| T.P. | 4.50 | 224.78 | 3.26 | 220.28 | | |
| T.P. | | | 4.57 | 220.21 | | |
| B.M. (as above) | 7.83 | 228.09 | 4.52 | 220.26 | | |
| 80 | | | 20.05 | 220.70 | 21.35 | 7.4 |
| +25 | | | | 220.80 | | 7.3 |
| +50 | | | 20.52 | 220.90 | 21.18 | 7.2 |
| 81 | | | 20.98 | 221.10 | 21.22 | 7.0 |
| +26 | | | 21.20 | 221.20 | 21.20 | 6.9 |
| 82+00 | | | 21.24 | 221.50 | 21.76 | 6.6 |
| +50 | | | 21.26 | 221.70 | 22.24 | 6.4 |

Lt. Rt

N-17-24

(cardiology)

4.3

4.1

3.9

Spike in 10 Oak R. 77475

Spike in 7 R. Ste 80404

7.8 RA 2nd 77484

N-30-24

Spine surgery

N-22-24

7.1

7.2

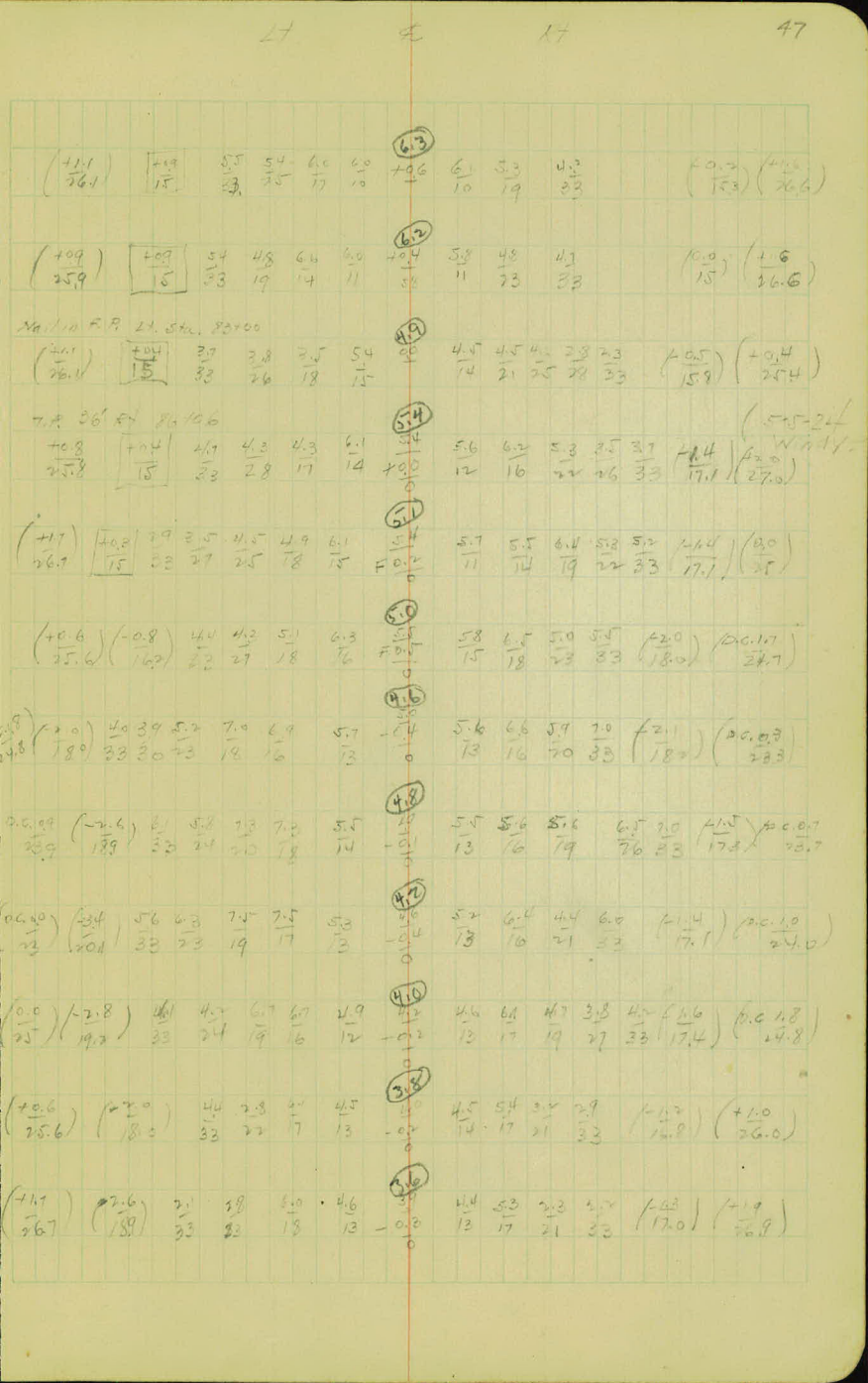
7.0

6.9

6.6

6.4

| station | + | H I | − | Elev. Profile Grade | |
|---|---|---|---|---|---|
| | | 228.09 | | | |
| 82+74 | | | 21.12 | 221.80 | 22.48 |
| 83+00 | | | 21.09 | 221.90 | 22.71 |
| T.P. | 2.85 | 227.04 | 3.90 | 224.19 | |
| +50 | | | 21.17 | 222.10 | 23.03 |
| B.M. | 6.43 | 227.68 | 5.81 | 221.23 | 21.75 |
| 84 | | | 21.68 | 222.30 | 22.92 |
| +60 | | | 21.92 | 222.52 | 23.16 |
| 85 | | | 22.22 | 222.70 | 23.18 |
| 86 | | | 23.00 | 223.10 | 23.20 |
| +50 | | | 23.90 | 222.90 | 23.70 |
| Eq. 86+95.8 = 86+96.7 | | | | | |
| 87+00 | | | 23.83 | 223.10 | 23.17 |
| +50 | | | 24.03 | 223.70 | 23.37 |
| 88 | | | 24.23 | 223.90 | 23.57 |
| +50 | | | 24.40 | 224.07 | 23.74 |
| B.M. as above. | 7.83 | 229.08 | | 221.25 | |



| Station | + | H.I. ✓ 229.08 | − | Elev. Profile Grade | | |
|---|---|---|---|---|---|---|
| 89+00 | | | 24.50 | 224.17 | 24.0 23.84 | 4.9 |
| +50 | | | 24.52 | 224.19 | 24.1 23.82 | 4.9 |
| 90+00 | | | 24.37 | 224.16 | 24.3 24.00 | 4.9 |
| +50 | 5.0 | | | 224.05 | 24.3 | 5.0 |
| 91+00 | 5.2 | | | 223.90 | 24.0 | 5.2 |
| +50 | 5.4 | | | 223.67 | 23.6 | 5.4 |
| 92+00 | 5.7 | | | 223.37 | 23.4 | 5.7 |
| B.M. | 4.62 | 229.26 ✓ | 4.00 | 224.64 ✓ | | |
| 92+50 | 6.3 | | | 223.00 | 23.3 | 6.3 |
| 93 | 6.7 | | | 222.57 | 23.0 | 6.7 |
| +50 | 7.2 ✓ | | 22.06 | 222.06 | 23.8 21.97 | |
| 94 | 7.8 ✓ | | 21.73 | 221.50 | 22.0 21.27 | |
| +55 | (7.5) 8.4 | | 21.35 | 220.84 | 21.8 20.81 | |

L. ℄ Rt. W+C N.E.E. A.L.B. T.E. } 5-5-24

4.9

(+3.0 / 30.0) (−2.9 / 18.9) 2.2 / 33 4.0 / 22 7.2 / 20 7.2 / 18 5.4 / 12 −0.2 / 0 5.6 / 12 6.4 / 16 7.8 / 22 8.9 / 28 (−1.0 / 16.5) (+1.8 / 26.8)

4.9

(+2.7 / 27.2) (−1.8 / 17.7) 3.0 / 33 3.5 / 24 6.5 / 18 5.2 / 12 −0.1 / 0 5.5 / 12 5.6 / 19 4.4 / 33 (−0.6 / 15.9) (0.0 / 25)

4.9

(+1.5 / 16.5) (−2.0 / 18.0) 3.7 / 33 3.6 / 25 6.6 / 19 5.2 / 12 4.8 / +0.1 0 5.2 / 12 6.5 / 17 4.4 / 21 5.2 / 28 5.7 / 33 (−1.5 / 17.3) (+0.4 / 25.4)

5.0

(0.4-0.0 / 23) (−1.7 / 17.6) 7.1 / 33 7.4 / 26 6.7 / 17 5.3 / 12 4.1 / +0.2 0 5.4 / 12 6.1 / 19 4.0 / 24 3.7 / 30 3.2 / 33 (−1.1 / 16.7) (+0.4 / 25.9)

5.2

(−3.8 / 21.7) 9.7 / 33 8.5 / 27 8.4 / 18 6.8 / 12 +0.1 0 5.7 / 12 6.4 / 17 5.0 / 21 4.3 / 30 5.0 / 33 (−1.4 / 17.1) (+0.6 / 25.6)

5.4

(−4.0 / 22.0) 9.6 / 33 8.9 / 27 6.3 / 18 5.0 / −0.1 0 5.9 / 12 7.1 / 17 4.8 / 27 4.7 / 33 (−1.3 / 17.0) (+0.3 / 25.3)

5.7

(2.4-0.0 / 23) (−1.8 / 17.7) 6.8 / 33 7.8 / 28 7.5 / 18 6.2 / 13 5.1 / −0.0 0 6.0 / 12 7.0 / 19 6.5 / 27 5.7 / 33 (−1.0 / 17.8) (0.0-0.7 / 23.7)

Valve 10" sch 40 std. 92+8 6.3

+1.8 / 26.8 (2.2-0.0 / 12.2) 3.5 / 33 3.7 / 31 5.6 / 23 8.0 / 19 5.0 / 16 6.6 / 12 +0.2 0 6.3 / 12 6.6 / 15 6.6 / 19 4.7 / 22 4.5 / 33 (−0.4 / 15.6) (+1.9 / 26.8)

6.7

(+4.2 / 29.2) (−0.8 / 16.2) 1.5 / 33 3.7 / 24 7.5 / 16 6.9 / 13 +0.1 0 6.7 / 13 7.7 / 13 7.7 / 21 4.9 / 26 4.0 / 33 (−1.0 / 16.5) (+2.0 / 27.0)

7.2

(+4.8 / 29.8) (−0.7 / 16.1) 3.0 / 33 7.5 / 24 4.8 / 21 7.6 / 18 7.4 / 13 6.7 / +0.1 0 6.4 / 13 7.9 / 28 7.9 / 22 5.4 / 25 5.2 / 33 [+0.3 / 15] (+2.0 / 27.0)

7.8

(+5.5 / 30.5) (−0.7 / 16.1) 2.4 / 33 4.5 / 24 4.6 / 22 8.3 / 16 7.8 / 12 +0.5 0 7.7 / 14 8.2 / 20 5.0 / 26 5.1 / 33 [0.0 / 15] (+2.8 / 27.8) 15'

8.4

(0.0 / 25) (−1.7 / 16.7) 7.5 / 33 7.6 / 27 9.7 / 20 8.6 / 12 +0.3 0 8.7 / 12 8.9 / 21 5.6 / 27 5.9 / 33 [0.0 / 15] (+3.0 / 28.5) 15.5'

| Sta | + | H.I. | − | Elev. Profile Grade | |
|---|---|---|---|---|---|
| | | 229.26 | | | |
| 95+00 | 9.0 | | 21.43 | 220.30 24.4 | 19.06 |
| B.M. | | | 7.31 | 221.95 | |
| +50 | 9.6 | | 20.8 | 219.70 23.5 | 18.40 |
| T.P. | 1.75 | 220.84 | 10.17 | 219.09 | |
| 96+00 | 1.7 | | 20.2 | 219.10 22.8 | 17.80 |
| +50 | 2.3 | | 19.6 | 218.50 22.8 | 17.20 |
| 97+00 | 2.9 | | 19.0 | 217.90 22.1 | 16.60 |
| +50 | 3.5 | | 18.4 | 217.30 21.5 | 16.00 |
| 98+00 | 4.1 | | 17.8 | 216.70 21.0 | 15.4 |
| +50 | 4.7 | | 16.9 | 216.10 20.5 | 15.2 |
| 99+00 | 5.3 | | 16.12 | 215.52 20.6 | 14.94 |
| T.P. | 9.31 | 222.62 | 7.53 | 213.31 | |
| 99+50 | 7.5 | | 15.59 | 215.17 20.7 | 14.75 |
| 100+00 | 7.5 | | 15.22 | 215.09 21.0 | 14.86 |
| 100+50 | 7.74 | | | 215.26 20.5 | |

9.0

15' (B.G. 9.9 / 23.9) (-2.4 / 18.6) 10.2 10.4 8.9 11 -1.3 0 9.3 15 9.1 26 8.5 33 +0.7 17.7 (0.8 / 26.7) 16.7'

Top Tilt on pump spout 150' Lt. Sta. 95+00

(0.0 Rb.) (+3.8 / 19.2) 18.7 11.0 10.1 10 9.8 -0.2 0 10.4 14 10.6 32 +0.5 17.2 (+4.1 / 26.3) ✓ 17.2

1.7

(0.0 Rb.) (-2.6 / 18.9) 2.7 3.7 3.6 3.0 12 -0.9 0 2.9 12 2.8 32 3.1 32 +0.2 17.2 (B.G. 0.7 / 25.9) ✓ 17.2

2.3

(0.0 Rb.) (-2.6 / 18.9) 2.6 3.3 4.2 4.2 3.4 12 -0.7 0 3.4 11 3.0 12 3.6 19 3.1 33 3.6 33 (0.0 / 17.2) D.C. 0.9 / 26.1 ✓ 17.2

2.9

B.G. 4.8 / 24.8 (+2.8 / 19.2) 11.0 / 33 3.5 / 12 4.8 / 15 4.1 / 12 -0.8 0 4.2 / 11 3.8 / 12 5.6 / 19 5.8 / 33 (-0.4 / 17.8) B.G. 4.0 / 25 17.2

3.5

(B.G. 1.7 / 24.7) -2.4 / 18.6 3.4 / 33 3.9 / 24 5.4 / 16 4.6 / 11 -0.8 0 5.0 / 12 6.1 / 21 6.5 / 33 (-1.2 / 19.9) 18.2

4.1

16' R.B. (-3.2 / 20.8) 6.1 / 33 6.1 / 15 11.9 / 11 -0.7 0 5.4 / 13 6.4 / 16 6.9 / 33 (-1.3 / 20.2) 18.2

4.7

16' (-3.0 / 20.5) 7.0 / 33 6.9 / 14 5.6 / 10 -0.6 0 5.8 / 13 7.0 / 17 7.2 / 33 (-1.5 / 20.5) 5.2 / 1.1 / 18.2 18.2

5.3

16 +2.7 / 20.1 7.4 / 33 7.4 / 28 7.2 / 15 5.8 / 12 +0.1 0 6.0 / 11 7.6 / 15 7.7 / 33 (-1.6 / 19.4) 17

Top. S.W. Cor. conc. culv. Lt. 10+00 S.S. 3-7-24

6.5

(-2.8 / 20.2) 9.5 / 33 9.8 / 19 8.0 / 12 -2.1 0 8.3 / 11 10.5 / 15 9.9 / 33 (-2.4 / 18.6) 16'

7.5

16' (-4.0 / 22.0) 10.4 / 33 10.7 / 25 11.1 / 18 9.2 / 12 -1.1 0 9.1 / 10 11.9 / 15 11.6 / 20 10.9 / 33 (-3.4 / 21.1) 16'

7.4

16 (-4.7 / 23.1) 11.0 / 33 13.2 / 23 12.2 / 17 9.4 / 12 -1.8 0 9.4 / 12 12.4 / 16 11.6 / 25 11.3 / 33 (-4.8 / 23.2) 16'

| Sta | + | H.I ✓ 212.62 | − | Elev Profile Grade | |
|---|---|---|---|---|---|
| 101+00 | (6.9) 7.0 | | 15.51 | 215.67 13.7 | 15.83 |
| +70 | 5.9 | | 16.42 | 216.71 15.2 | 17.00 |
| +86 | 5.7 ✓ | | 16.54 | 216.90 15.6 | 17.14 |
| 102 | 5.3 ✓ | | 16.84 | 217.32 16.9 | 17.80 |
| +43 | 4.2 ✓ | | 17.61 | 218.38 18.8 | 19.08 |
| 103 | 2.6 ✓ | | 18.88 | 220.00 20.7 | 20.99 |
| T.P. | 10.47 | 231.77 ✓ | 1.32 | 221.30 ✓ | |
| +50 | 10.3 ✓ | | 20.40 | 221.50 22.2 | 22.42 |
| +71 | (7.7) 9.6 | | 21.00 | 222.13 23.8 | 23.12 |
| 104 | 2.8 ✓ | | 21.89 | 223.00 23.5 | 23.99 |
| +54 | 7.2 ✓ | | 23.85 | 224.58 24.6 | 25.74 |
| T.P. | 10.72 | 235.79 ✓ | 6.70 | 225.07 ✓ | |
| +64 | 11.1 ✓ | | 28.9 | 24.6 25.1 | 25.2 |
| 105 | 9.9 ✓ | | 25.33 | 225.86 24.4 | 26.30 |

7.0

16' | 12.0 11.8 12.3 9.6 | 12.3 11.8 11.3 | 24.6
33 32 17 11 | -2.0 13 17 25 33 | 27.9

5.9

17' | 14.0 9.- 14.6 7.9 | 7.5 7.8 10.7 12.1 | 28.7
33 28 20 11 | 0 13 18 32

5.7

17' | 12.8 12.8 12.1 9.6 | 7.5 9.8 12.8 12.8 | 17
27.1 33 26 18 10 | -1.3 12 19 25 33

5.3

16' | 12.0 8.5 8.2 6.4 | 5.7 -0.4 6.0 9.6 9.8 | 17'
20.2 33 27 17 11 | 0 13 20 33 | 24.5

4.2

17' | 1.5 wind | 8.2 7.7 4.5 | 3.8 -0.4 7.5 8.0 | 16'
22.2 33 23 15 | 11 30 33 | 19.9

2.6

18' | 8.0 W-H | 11.4 21.5 2.0 | 4.7 7.4 4.4 2.4 | 17'
26.5 18 33 21 18 | 9 27 33 | 20.3

10.3

18' | 11.0 12.1 10.3 | 9.6 9.8 10.4 9.8 9.6 | 16
27.1 33 24 17 | +0.7 9 15 21 33 | 26.1

9.6

18 | 13.5 10.4 9.8 | 8.0 9.1 9.7 9.6 9.5 9.0 | 15'
33 22 15 | 10 20 25 30 33 | 27.0

10.2

8.8

18 | 11.0 8.4 7.8 7.0 | 8.0 8.4 10.2 11.9 | 16'
29.1 18 33 19 12 | 10.5 11 18 33 | 20.1

7.2

16.5 | 11.6 7.9 7.5 | 7.5 7.2 7.8 5.9 4.6 | 15'
29.1 16.5 33 22 14 | 9.0 11 20 30 33 | 16.9 25

11.4

Top Nom.

16.0 | 8.2 8.7 12.1 | 10.7 10.9 11.6 7.7 11.0 4.4 | 15
33 21 14 | 10.5 12 17 26 29 33 | 34.0

9.9

15' | 13.6 | 10.5 | 6.2 7.0 9.9 | 9.6 9.8 9.2 11.1 4.0 | 15'
28.6 10 33 23 17 | 10.3 12 21 28 33 | 30.8 35.9

| Sta. | + | H.I | − | Elev. Profile Grade | Σ | |
|---|---|---|---|---|---|---|
| | | 235.79 | | | | |
| 105+50 | 8.6 | | 27.05 | 227.19 | 21.7 | 27.33 |
| 106+00 | | | | 228.46 | 29.2 | 7.3 |
| +50 | | | | 229.64 | 30.4 | 6.2 |
| 107 | | | | 230.78 | 32.1 | 5.0 |
| +50 | | | | 231.84 | 33.0 | 4.0 |
| 108 | | | | 232.84 | 33.3 | 3.0 |
| +50 | | | | 233.76 | 33.8 | 2.0 |
| T.P. | 11.40 | 245.44 | 1.75 | 234.04 | | |
| 109 | | | | 234.62 | 34.3 | 10.8 |
| 110 | | | | 236.14 | 35.5 | 9.3 |
| 111 | | | | 237.38 | 37.2 | 8.0 7.1 |
| +40 | | | | 237.81 | 37.6 | 7.6 |
| 112 | | | | 238.36 | 38.4 | 7.0 7.1 |

(8.6)

15 ✓ (+3.0 / 28.0) 5.4/33 3.8/25 8.4/15 7.8/+0.5 8.6/15 7.5/21 3.2/28 3.2/33 (+5.4/20.4) (0.0/15) ✓ ✓

(7.8)

15 ✓ (+5.7 / 30.7) 1.4/33 2.1/22 2.1/15 6.4/+1.7 7.3/15 5.3/21 3.3/22 2.4/33 (+4.6/29.6) (0.0/15) ✓

(6.2)

✓ (+4.2 / 29.2) 2.1/33 3.0/19 5.1/15 5.1/+0.8 6.0/15 5.0/20 3.8/22 3.3/33 (+3.2/28.2) ✓

(5.0)

✓ 28.0 2.9/33 1.7/16 2.6/17 4.2/14 3.7/+1.3 4.0/10 4.6/17 2.0/21 0.7/28 2.4/33 (+3.6/28.6) ✓

(4.0)

✓ (+1.2 / 26.8) 2.3/33 2.5/24 3.0/13 2.8/+1.2 3.2/14 2.1/22 2.9/33 (+1.6/26.6) ✓

(3.0)

(0.0/25) 5.1/33 3.4/20 2.7/14 2.5/+0.5 2.7/12 2.3/18 2.9/33 (+0.2/25.2)

(2.0)

(2.c.1.4 / 25.2) (-0.2/15.2) 3.0/33 2.6/22 2.2/13 2.0/0 2.3/11 1.9/14 2.3/21 2.5/33 (-0.4/15.6) (2.c.1.5/24.5)

Nairin 7.0 24 54u 10 8 4 6 √ (10.8)

0.c.0.8 / 23.8 (-1.0 / 16.5) 12.5/33 12.2/24 11.3/14 11.1/-0.3 11.3/17 11.9/18 11.9/33 (-0.8/16.2) (0.c.0.9/23.9)

(9.3)

(0.c.0.5 / 28.2) (+1.6 / 17.4) 10.7/33 10.8/20 10.2/14 9.7/-0.6 10.0/11 10.9/22 10.5/33 (-1.0/16.5) (2.c.0.8/23.6) ✓

(8.1)

(2.c.1.0 / 24.0) (-0.7 / 16.1) 10.3/33 8.8/25 9.0/15 8.7/-0.1 8.7/14 7.8/16 8.5/33 (+0/15) (0.0/25)

(7.6)

(+0.7 / 25.7) 8.6/33 6.6/20 7.3/16 7.8/-0.2 8.2/13 14.9/19 5.4/29 6.1/33 (+2.4/27.4)

(7.1)

(+0.4 / 23.4) (0.0/15) 6.5/33 5.9/18 7.5/14 7.0/0.0 7.6/14 4.5/19 4.9/33 (-0.2/15.3) (+2.3/27.3)

| Sta | + | H.I. 245.44 | − | Elev. | |
|---|---|---|---|---|---|
| 113 | | | | 239.06 | 6.4 |
| 114 | | | | 239.50 | 5.9 |
| B.M. | 4.59 | 244.81 | 5.22 | 240.22 | |
| 115 | | | | 239.80 | 5.0 |
| B.M. | | | 4.53 | 240.28 | |
| 125 | | | | 239.87 | 4.9 |
| 116 | | | | 240.10 | 4.7 |
| 175 | | | | 240.33 | 4.5 |
| 117 | | | | 240.40 | 4.4 |
| 150 | | | | 240.43 | 4.4 |
| 118 | | | | 240.88 | 3.9 |
| 150 | | | | 241.14 | 3.6 |
| 119 | | | | 241.70 | 3.1 |
| 134 | | | | 242.04 | 2.8 |

6.4

6.9

5.0

4.9

4.7

4.5

4.4

4.4

3.9

3.6

3.1

2.8

| Station | + | H.I | − | Elev. | Rod |
|---|---|---|---|---|---|
| | | 244.81 | | | |
| 120 | | | | 242.7 | 2.1 |
| 121 | | | | 243.7 | 1.1 |
| T.P. | 7.20 | 251.33 | 0.68 | 244.13 | |
| +65 | | | | 244.35 | 7.0 |
| 122 | | | | 244.70 | 3.6 |
| 123 | | | | 245.70 | 5.6 |
| +42 | | | | 246.12 | 5.2 |
| 124 | | | | 246.7 | 4.6 |
| B.M. | | | 3.94 | 247.39 | 47.09 |
| +30 | | | | 247.00 | 4.3 |
| 125 | | | | 247.70 | 3.6 |
| 126 | | | | 248.70 | 2.6 |
| 127 | | | | 249.90 | 1.6 |
| T.P. | 8.63 | 258.51 | 1.45 | 249.88 | |
| +75 | | | | 250.45 | 8.1 |

LT. S RT.

3.1

4.8 / 25.3 | -0.4 / 15.6 | 2.1 / 33 | 1.8 / 22 | 2.5 / 19 | 2.3 / 14 | 2.1 / 0.0 | 5.3 / 12 | 2.8 / 24 | 2.7 / 23 | -0.3 / 15.5 | Dec 1.6 / 24.6

1.1

4.6 / 25.6 | 2.0 / 15 | 1.1 / 32 | 0.7 / 27 | 1.2 / 21 | .5 / 14 | +0.3 | 1.0 / 13 | 1.7 / 24 | 1.7 / 33 | 0.0 / 15 | 8.8 / 27.4

7.0

0.0 / 25 | 7.0 / 32 | 7.0 / 25 | 7.5 / 19 | 7.0 / 14 | 6.7 / +0.2 | 7.10 / 13 | 7.4 / 22 | 7.8 / 33

6.6

4.8 / 25.8 | -0.3 / 15.1 | 5.6 / 33 | 6.0 / 22 | 7.4 / 20 | 6.7 / 14 | 6.2 / +0.4 | 6.5 / 12 | 7.3 / 22 | 7.9 / 32 | 0.0 / 15 | Dec 1.2 / 24.2

5.6

4.8 / 25.8 | -2.1 / 17.7 | 4.5 / 23 | 4.5 / 23 | 7.5 / 19 | 2.5 / 17 | 6.0 / 13 | 5.7 / -0.1 | 6.10 / 12 | 7.4 / 19 | 6.8 / 33 | 4.8 / 17.7 | Dec 0.6 / 23.6

5.2

0.0 / 25 | -1.6 / 17.0 | 1.1 / 23 | 5.4 / 22 | 6.9 / 19 | 6.9 / 17 | 5.5 / 15 | 5.2 / -0.1 | 5.7 / 12 | 6.2 / 19 | 6.9 / 33

4.6

4.0 / 25.0 | -1.3 / 17.0 | 6.7 / 23 | 6.0 / 22 | 5.6 / 17 | 5.0 / +0.4 | 5.3 / 12 | 6.4 / 19 | 6.4 / 33 | -1.9 / 17.6 | Dec 0.4 / 23.4

5.8 Sp 12" Mod 60' L 1234 92

4.3

0.0 / 23.0 | -2.0 / 18 | 6.0 / 33 | 6.3 / 17 | 5.7 / 13 | 4.7 / +0.4 | 5.7 / 11 | 5.7 / 17 | 6.4 / 33

3.6

0.0 / 23 | -2.0 / 17.0 | 5.9 / 33 | 5.6 / 17 | 4.7 / 13 | 1.2 / -0.7 | 4.3 / 12 | 5.5 / 15 | 6.0 / 33 | -2.0 / 18.0 | Dec 0.8 / 23.8

2.6

2.7 / 20.8 | 5.7 / 33 | 5.8 / 17 | 4.2 / 13 | 3.7 / -1.1 | 4.0 / 12 | 4.8 / 15 | 1.6 / 33 | -2.2 / 18.3 | Dec 0.0 / 22.4

1.6

-2.0 / 19.9 | 4.8 / 33 | 4.0 / 17 | 2.6 / 12 | 2.2 / -0.6 | 2.4 / 12 | 2.7 / 22 | 2.9 / 33 | -1.7 / 16.8 | Dec 0.9 / 22.9

8.1

-4.3 / 23.2 | 8.9 / 33 | 9.1 / 21 | 9.1 / 11 | 8.6 / -0.1 | 9.0 / 17 | 10.4 / 18 | 10.0 / 33

| Station | + | H.I | - | Elev. | Rod. |
|---|---|---|---|---|---|
| | | 258.51 | | | |
| 128 | | | | 250.70 | 7.8 |
| +40 | | | | 51.10 | 7.4 |
| 129 | | | | 251.70 | 6.8 |
| 130 | | | | 252.70 | 5.8 |
| +50 | | | | 253.18 | 5.3 |
| +65 | | | | 253.8 | 4.7 |
| B.M. | 1.55 | 259.17 | 1.89 | 256.62 | |
| Eq. 130+90.3 = 131+93.3 | | | | | |
| 131+00 | | | | 253.6 | 5.6 |
| 50 | | | | 253.98 | 5.2 |
| 32 | | | | 254.30 | 4.9 |
| +50 | | | | 254.60 | 4.6 |
| 133 | | | | 254.90 | 4.3 |

7.8

7.4

6.8

5.8

2-13

5.2

R.R. spike 14" Maple 40' Lt. 131+65

5-14-54

5.6

5.2

4.9

4.6

4.3

| Station | + | H.I. | − | Elev. | Rod |
|---|---|---|---|---|---|
| | | 259.17 | | | |
| 133+57 | | | | 255.24 | (4.0) 3.9 |
| 134 | | | | 255.5 | 3.7 |
| +40 | | | | 255.74 | (3.5) 3.4 |
| 135 | | | | 256.10 | 3.1 |
| +40 | | | | 256.34 | (2.9) 2.8 |
| T.P. | 5.15 | 261.36 | 3.06 | 256.11 | |
| 136 | | | | 256.70 | 4.6 |
| +67 | | | | 257.10 | 4.2 |
| 137 | | | | 257.80 | 4.0 |
| +30 | | | | 257.50 | 4.8 |
| +60 | | | | 257.70 | 3.6 |
| 138 | | | | 258.00 | 3.3 |
| +50 | | | | 258.42 | (2.9) 2.8 |

3.4

16' 2.8 7.0 3.4 4.8 4.8 5.0 7.5 8.0 6' 2.8
3.3 7.8 7.3 -.4 1.2 1.8 3.3

3.7

16' (+2.6 19.9) 7.0 6.8 4.6 4.2 4.4 5.5 5.6 (-1.8 17.7) (P.C. 0.0 7.3) 15'
3.3 2.2 1.3 -.6 1.1 1.5 8.3

(+20 .00 DIFF 4.3)

3.4

15' (P.C. 0.6 23.6) (-1.6 13.4) 4.8 5.1 3.9 3.9 4.0 4.5 4.3 (+0.9 16.4) (P.C. 1.1 24.1) 14'
3.3 1.7 1.2 -.1 1.0 1.8 3.3

3.1

15' (P.C. 2.2 23.8) (-1.4 17.1) 5.0 5.1 4.5 3.5 3.4 3.5 1.9 1.9 (5.0 15) (+1.2 26.2) 13'
3.8 3.4 1.7 1.3 -.3 .9 2.5 3.3

2.8

(P.C. 3.5 23.5) (-3.5 13.8) 4.7 4.6 3.3 2.9 3.1 3.5 0.7 0.6 (3.0 15) (+2.5 27.5)
3.3 2.1 1.5 .0 1.1 1.4 1.9 3.3

4.6

(P.C. 4.2 23.3) (-4.1 14.7) 6.6 6.3 5.0 4.2 4.2 4.2 2.2 1.2 (+1.8 26.8)
3.3 2.1 1.4 -.0 1.0 1.7 2.0 3.3

4.2

4.3 6.4 4.- 4.4 4.5 3.1 2.1 1.5 (2.0 15) (+2.5 27.5)
3.3 2.6 1.4 -.0 1.3 1.8 2.4 3.3

4.0

(P.C. 3.0 23.0) (-1.3 17.0) 6.7 6.7 4.8 3.6 4.8 5.3 3.8 3.3 (-1.0 16.5) (+0.4 27.4)
4.3 2.7 1.4 -.0 1.1 1.4 2.3 3.3

3.8

16' -4.4 14.1 6.8 4.5 4.9 3.5 4.8 5.8 5.1 (-4.8 17.7 (P.C. 1.0 23.5) 15'
3.3 2.4 1.5 -.5 1.0 1.3 3.3

3.6

16' (+2.5 19.5) 7.5 4.9 4.5 4.7 6.5 7.3 (-2.7 20.1) 16'
2.3 1.7 +.4 .9 1.2 2.0

3.3

16 (-3.7 21.6) 8.3 5.6 4.5 3.4 4.6 6.9 7.5 8.0 (-4.1 23.1) 16'
3.5 1.9 1.4 -1.1 1.0 1.4 1.8 2.4

2.8

16' (-2.0 19.6) 5.5 6.1 5.0 3.8 3.5 3.7 5.6 5.9 -7.6 19.9 .00 DIFF 16
3.3 2.3 1.9 1.4 -.6 1.1 1.6 3.3

| Station | + | H.I | − | Elev | Rod |
|---|---|---|---|---|---|
| | | 261.26 | | | |
| 139 | | | | 258.90 | 2.4 |
| T.P | 4.94 | 265.94 | 0.26 | 261.00 | |
| +50 | | | | 259.40 | 6.5 |
| 140 | | | | 259.90 | 6.0 |
| +50 | | | | 260.40 | 5.5 |
| 141 | | | | 260.9 | 5.0 |
| +66 | | | | 261.50 | 4.4 |
| T.P | 5.48 | 266.44 | 2.98 | 262.96 | |
| 142 | | | | 261.90 | 6.5 |
| +60 | | | | 262.50 | 5.9 |
| 143 | | | | 262.90 | 5.5 |
| +34 | | | | 263.26 | 5.2 |
| 144 | | | | 263.90 | 4.5 |
| +60 | | | | 64.50 | 3.9 |

24

65

60

55

50

44

45

39

35

32

45

39

| Station | + | H I | − | Elev. | Rod |
|---|---|---|---|---|---|
| | | 268.44 ✓ | | | |
| 145 | | | | 264.9 63.7 | 3.5 ✓ |
| +60 | | | | 265.5 63.5 | 2.9 ✓ |
| 146 | | | | 265.90 63.7 | 3.5 ✓ |
| T.P. | 7.22 | 270.73 ✓ | 4.93 | 263.51 ✓ | |
| +20 | | | | 266.10 63.0 | 4.6 ✓ |
| +50 | | | | 266.40 64.5 | 4.3 ✓ |
| 147 | | | | 266.90 66.0 | 3.8 ✓ |
| +30 | | | | 267.20 66.4 | 3.5 ✓ |
| +50 | | | | 267.40 66.8 | 3.3 ✓ |
| +70 | | | | 267.60 67.2 | 3.1 ✓ |
| 148 | | | | 267.90 61.7 | 2.8 ✓ |
| T.P. | 6.00 | 276.53 ✓ | 0.20 | 270.53 ✓ | |
| +50 | | | | 268.40 69.2 | 1.1 ✓ |
| +78 | | | | 268.67 67.7 | (7.8) 7.1 |

(3.5)

16' (+2.8 / 19.5) 5.5 / 3.8 5.1 / 2.1 5.9 / 1.9 5.1 / 1.5 4.8 / 1.0 4.7 / -1.2 4.9 / 2 5.9 / 1.4 5.2 / 1.7 5.4 / 3.3 (+1.7 / 17.6) (no. 3.5 / 23.5)

(2.9)

16' (+4.6 / 27.6) 7.3 / 1.3 2.5 / 1.8 5.5 / 1.3 -2.0 5.1 / 9 6.3 / 1.4 5.7 / 2.6 6.8 / 3.3 (+3.0 / 20.5) (.08 / bit. cut)

(2.5)

16' (+2.0 / 26.5) 10.1 / 3.8 8.8 / 2.1 5.0 / 1.3 -2.2 5.2 / 1.0 7.7 / 1.6 7.9 / 3.3 (-5.4 / 24.1) 16'

X6; Top of 14" oak Stump (4.6) 5.2 4.6 4.0

16' (-5.8 / 24.7) 12.8 / 3.3 10.8 / 2.5 8.3 / 1.3 -2.2 6.3 / 1.0 9.2 / 1.5 9.5 / 3.3 (-5.0 / 23.5) 16'

(4.3)

16' -3.4 / 21.1 7.2 / 3.3 2.8 / 2.3 6.6 / 1.2 6.2 / -1.9 6.6 / 1.0 6.9 / 1.8 6.0 / 2.7 6.6 / 3.3 (+3.2 / 24.5) 16'

(3.8)

15' (Acc. -2.6 / 23.6) (-1.5 / 17.3) 4.3 / 3.3 5.0 / 2.3 5.5 / 2.0 5.1 / 1.2 - / -0.5 5.2 / 1.0 4.7 / 2.2 2.5 / 2.9 23 (+2.0 / 18.0) 16'

(3.5)

15' 4.9 / 3.3 5.3 / 1.8 4.6 / 1.5 4.1 / -0.6 4.6 / 1.0 5.7 / 1.6 5.6 / 2.1 2.2 / 2.6 1.5 / 3.3 (0.0 / 25) 15'

(3.3)

(D.C. 0.05 / 23.5) (-1.7 / 17.6) 6.2 / 3.3 4.9 / 2.2 5.1 / 1.8 4.4 / 1.5 3.4 / -0.6 4.3 / 9 5.2 / 1.1 2.8 / 3.0 3.7 / 3.2 (+1.3 / 17) (+0.2 / 25.2)

(3.1)

1.7 / 2.3 5.2 / 3.3 4.7 / 2.2 3.9 / 1.2 3.2 / -0.4 4.0 / 1.0 5.5 / 1.8 4.1 / 3.0 4.1 / 3.3 (-2.5 / 18.9) (D.C. 0.0 / 23)

(2.8)

4.09 / 25.9 (0.0 / 15') 2.8 / 2.2 3.2 / 1.4 2.8 / -0.9 3.3 / 1.1 5.8 / 2.2 6.0 / 3.3 (-2.0 / 18.0)

(4.1)

+3.5 / 28.5 2.4 / 3.5 5.9 / 2.4 7.9 / 1.5 7.1 / 4.1.9 7.6 / 1.2 4.4 / 1.7 6.3 / 3.3 (+7.2 / 29.3)

(7.9)

+2.6 / 27.6 3.6 / 2.4 5.5 / 2.7 7.3 / 1.6 6.8 / 4.1.0 7.3 / 1.2 5.7 / 1.8 1.4 / 2.4 2.1 / 3.3 (+5.8 / 30.8)

| Station | + | H.I | − | Elev. | |
|---|---|---|---|---|---|
| | | 276.53 ✓ | | | |
| 149 | | | | 268.87 | (7.6) 7.7 |
| | | | | 69.9 | |
| +40 | | | | 269.19 | 7.3 ✓ |
| | | | | 70.2 | |
| +75 | | | | 269.45 | (7.0) 7.1 |
| | | | | 70.2 | |
| 150 | 1.31 2.5 / V.C. | | | 269.61 | 6.9 ✓ |
| | | | | 70.4 | |
| +40 | | | | 269.83 | 6.7 ✓ |
| | | | | 70.3 | |
| +65 | | | | 69.94 | 6.6 ✓ |
| | | | | 70.1 | |
| 151 | | | | 270.08 | (6.0) 6.5 |
| | | | | 70.0 | |
| +50 | | | | 270.22 | 6.3 ✓ |
| B.M. | | | 4.47 | 272.06 ✓ | = 270.05 |

L.T. & R.T.

(7.7)

+2.6 / 27.6 | 4.9 / 34 | 4.9 / 33 | 6.9 / 16 | 6.6 / +4.0 | 7.0 / 12 | 6.0 / 21 | 7.9 / 30 | 0.8 / 33 | (+4.8 / 29.8)

(7.33)

(+2.3 / 27.3) | 5.2 / 33 | 5.4 / 20 | 6.8 / 15 | 6.5 / +1.0 | 6.7 / 10 | 7.2 / 14 | 6.0 / 22 | 3.6 / 30 | 1.9 / 32 | (+2.6 / 27.6)

(7.1)

(+2.0 / 27.0) | 4.9 / 33 | 5.3 / 20 | 6.7 / 13 | 6.5 / +0.7 | 6.8 / 11 | 6.0 / 18 | 1.4 / 32 | 1.9 / 33 | (+3.3 / 30.3)

(6.9)

(+1.7 / 26.7) | 4.9 / 33 | 5.6 / 21 | 7.0 / 19 | 0 / +0.8 | 6.5 / 10 | 6.7 / 14 | 4.0 / 18 | 2.7 / 21 | 2.1 / 33 | (+4.3 / 29.3)

(6.7)

(0.0 / 25.) | (0.0 / 15.) | 6.9 / 33 | 7.4 / 18 | 6.7 / 12 | 6.2 / +0.5 | 6.8 / 13 | 4.0 / 19 | 4.0 / 33 | (0.0 / 15) | (+2.8 / 27.8)

(6.6)

(0 / 0.9 / 23.9) | (-0.5 / 15.8) | 7.1 / 33 | 8.0 / 20 | 6.7 / 12 | 6.2 / +0.3 | 7.0 / 12 | 7.8 / 16 | 6.5 / 22 | 6.2 / 33 | (-1.1 / 16.7) | (+2.8 / 25.8) | 15'

(6.5)

(2.8 / 23.8 @ +1.0)

8' 2c Ditch. | (-3.5 / 21.3) | 7.6 / 33 | 10.0 / 22 | 7.2 / 14 | 6.7 / -0.8 | 7.0 / 10 | 9.7 / 16 | 9.6 / 33 | (-3.5 / 21.3) | 16'

(6.3)

16' | (-4.0 / 22.0) | 11.4 / 33 | 10.8 / 22 | 6.8 / 12 | 6.5 / -0.2 | 6.8 / 10 | 10.5 / 18 | 10.8 / 33 | (-4.5 / 22.5) | 16'

R.P. Stake 12" Oak 4.0' R. Sta. 150+40

Continued on following Page.

"C" Line.

| Station | + | H.I | — | Elev. Floor Grade | |
|---|---|---|---|---|---|
| | 5.75 | 277.30 | | 272.05 | |
| 152+00 | | | | 270.30 | 7.0 |
| +75 | | | | 270.29 | 7.0 |
| 153 | | | | 270.25 | 7.0 |
| T.P. | 7.63 | 282.79 | 2.14 | 275.16 | |
| +65 | | | | 270.05 | 12.7 |
| 154 | | | | 269.93 | 12.9 |
| +50 | | | | 269.67 | 13.1 |
| +70 | | | | 269.55 | 13.7 |
| 155 | | | | 269.38 | 13.4 |
| T.P. | 2.51 | 273.89 | 11.91 | 270.38 | |
| +25 | | | | 269.17 | 4.2 |
| 156 | | | | 268.52 | 4.9 |
| +75 | | | | 267.69 | 5.7 |
| 157 | | | | 267.45 | 5.9 |

27 S K7

K7 W+C C.E.T. N.S.E.A. } 4-16-24 T.E.

R. R. Spike 14" Oak 40 ft. +1. 1/2 0 +2.0 R.S.

16 (+1.2 / 17.8) 5.5 / 23 2.4 / 20 3.3 / 13 +1.9 — 2.7 / 12 1.6 / 18 1.5 / 23 (-4.7 / 32.1) 16'

7.0

9.0

15 (+2.8 / 21) 4.4 / 23 5.0 / 23 6.5 / 14 +1.1 — 6.9 / 13 7.1 / 15 7.2 / 33 (0.0 / 28) 0.9 / 21 15'

7.0

15 (+4.5 / 31.0) 3.6 / 33 3.0 / 15 6.2 / 18 6.4 / 14 +1.1 — 6.8 / 12 7.0 / 24 2.7 / 32 3.7 / 32 (+8.3 / 31.0) 15'

12.7

Hollow pith

(+5.5 / 31) 2.2 / 33 2.2 / 28 11.9 / 21 11.7 / 13 +1.6 — 11.7 / 13 9.7 / 27 5.1 / 33 (+7.6 / 37.6) 15'

12.9

5.1 / 40 12.7 / 32.7 5.1 / 33 5.2 / 30 10.4 / 32 11.7 / 14 +1.8 — 11.4 / 13 10.6 / 15 7.4 / 24 2.9 / 32 2.9 / 33 (+10.0 / 25) 2.7 / 40 15'

13.1

Hollow pith at 31'

3.1 / 40 (+9.8 / 34.8) 3.2 / 33 4.1 / 29 10.5 / 20 11.5 / 16 12.0 / 13 +1.7 — 11.9 / 12 11.2 / 17 7.6 / 24 2.6 / 32 2.1 / 33 (+11.1 / 36.1) 2.3 / 40 15'

13.2

(+6.7 / 31.7) 6.6 / 33 6.5 / 27 10.8 / 20 11.7 / 15 12.3 / 14 11.9 / 10 +1.7 — 13.0 / 12 13.0 / 17 10.6 / 22 3.1 / 33 (+10.2 / 35.2) 3.1 / 40 15'

13.4

Hollow pith at 31' Sound to top

15' (9.0 / 25) 13.8 / 32 12.0 / 19 12.9 / 15 12.5 / 11 +1.4 — 12.4 / 10 12.4 / 16 11.3 / 20 1.9 / 32 8.9 / 33 (+4.7 / 31.) 15'

4.2

16' (-2.0 / 17.0) 8.9 / 33 8.2 / 26 6.0 / 17 4.9 / 12 +1.0 — 3.6 / 13 4.1 / 22 3.9 / 33 (2.0 / 25)

4.9

17' (-7.1 / 27.7) 12.0 / 33 11.4 / 20 6.6 / 10 0.6 — 5.5 / 13 10.2 / 20 10.7 / 33 (-5.8 / 25.7) 17'

5.7

17' (-5.2 / 24.8) 11.0 / 33 10.3 / 26 6.8 / 11 -0.7 — 6.8 / 13 9.7 / 18 12.0 / 33 (-4.4 / 32.6) 16'

5.9

17' (-3.7 / 27.4) 10.1 / 33 9.5 / 20 4.9 / 15 -0.5 — 7.0 / 14 7.1 / 18 9.3 / 25 7.1 / 28 7.5 / 33 (-3.4 / 27.1) 16'

| Station | + | H.I | − | Elev Profile Grade | Revised Grade |
|---|---|---|---|---|---|
| | | 273.39 ✓ | | | |
| 157+25 | | | | 267.41 | 6.2 67.17 |
| +50 | | | | 267.02 | 6.5 66.94 |
| 158 | | | | 266.75 | 6.9 66.50 |
| +35 | | | | 266.68 | 7.1 66.34 |
| 159 | | | | 266.75 | 7.0 66.35 |
| +06 | End of Pavement | | | 266.35 | 7.0 66.35 |
| +50 | | | | 267.12 | 6.3 |
| 160 | | | | 267.49 | 5.9 |
| | | | | 267.6 | |
| 161 | | | | 268.39 | 5.0 |
| P.M. | | | 5.18 | 268.21 | 268.17 |
| | 6.09 | 272.54 | | 272.05 | |
| | 6.10 | 273.81 | 10.83 | 267.71 | |
| | | | 5.55 | 268.26 | |
| | | | 2.82 | 270.93 | |

to meet old Pavement

6.7

6.5

6.8

7.1

To Page 6

| | | | | | Grad. Rd. |
|---|---|---|---|---|---|
| B.M | 0.61 | 230.56 | | 219.95 | |
| T.P | 3.15 | 232.28 | 11.43 | 209.13 | |
| 4+00 | | | | 193.3 | 19.0 |
| +20 | | | | 192.55 | 19.73 |
| 4+40 | | | | 191.90 | 20.4 |
| 4+60 | | | | 191.36 | 20.92 |

Nail in 24" Elm Pt. Sta 2+08

(62-A)

Curve Data "5°C" Line.

P.C. 65+52.3 P.T. 69+74 5°C. 4.

No Extra Widening.

| Sub Grade | | Lt. | Z | Rt. |
|---|---|---|---|---|
| | | | Elevations. | |
| 71+00 | 0.00 per ft. | | 219.20 | |
| 70+00 | .020 " " | 218.78 | 219.10 | 219.40 |
| 69+74 P.T. | .031 " " | 218.57 | 219.07 | 219.54 |
| +50 | .039 " " | 218.43 | 219.05 | 219.64 |
| 69 | .044 " " | 218.30 | 219.00 | 219.66 |
| +50 | .044 " " | 218.25 | 218.95 | 219.61 |
| 68 | .044 " " | 218.20 | 218.90 | 219.56 |
| +50 | .044 " " | 218.15 | 218.85 | 219.51 |
| 67 | .044 " " | 218.10 | 218.80 | 219.46 |
| +50 | .044 " " | 218.05 | 218.75 | 219.41 |
| 66 | .044 " " | 218.04 | 218.70 | 219.36 |
| +52.3 P.C. | .031 " " | 218.15 | 218.65 | 219.12 |
| 65 | .017 " " | 218.42 | 218.60 | 218.78 |
| +50 | .006 " " | 218.46 | 218.55 | 218.64 |
| 64 | .000 " " | | 218.50 | |

16' Road Bed.

15' Road Bed.

# Curve Data "S" "C" Line.

P.C. 73+62.3 P.T. 79+98 7° 30' C.L.

(No Extra Widening.)

| | | | | |
|---|---|---|---|---|
| 81+21.1 | .000 per ft. | 220.50 | 221.50 | 221.50 |
| 81+00 | .008 " " | 20.98 | 221.10 | 21.22 |
| .50 | .025 " " | 20.52 | 20.90 | 21.28 |
| 80+00 | .043 " " | 20.05 | 220.70 | 21.35 |
| 79+98 P.T. | .044 " " | | | |
| +50 | .062 " " | 19.57 | 220.50 | 21.43 |
| 79 | .062 " " | 19.37 | 220.30 | 21.29 |
| +50 | .062 " " | 19.19 | 220.17 | 21.05 |
| 78 | .062 " " | 19.05 | 219.98 | 20.91 |
| +50 | .062 " " | 18.94 | 219.87 | 20.80 |
| 77 | .062 " " | 18.97 | 219.80 | 20.73 |
| +50 | .062 " " | 18.82 | 219.75 | 20.68 |
| 76 | .062 " " | 18.77 | 219.70 | 20.63 |
| +50 | .062 " " | 18.72 | 219.65 | 20.58 |
| 75 | .062 " " | 18.67 | 219.60 | 20.53 |
| +50 | .062 " " | 18.62 | 219.55 | 220.48 |
| 74 | .058 " " | 218.63 | 219.50 | 220.37 |
| +62.3 P.C. | .044 " " | 218.76 | 219.46 | 220.16 |
| 73+00 | .022 " " | 219.05 | 219.40 | 219.73 |
| 72+00 | .000 " " | 219.30 | 219.30 | 219.20 |

Curve Data "S" "C" Line.

P.C. 82+74.± P.T. 84+60.± 6°-40' C.L.

No Extra Widening.

| | | Elevations | | |
|---|---|---|---|---|
| | | L. | ℄ | R. |
| Use no curve | | | | |
| 86+60 | | | | |
| 86+10 | .009 " " | | | |
| 86 | .012 " " | | 223.10 | |
| +50 | .031 " " | | 222.90 | |
| 85+ | .048 " " | | 222.70 | |
| 84+60 | .062 " " | | 222.54 | |
| 84+10 | .062 part. | | | |
| 84+00 | .062 | | 222.30 | |
| +24 | .062 | | | |
| 83+00 | .054 | | 221.90 | |
| +74 | .045 | | 221.80 | |
| +50 | .036 | | 221.70 | |
| 82 | .017 | | 221.50 | |
| +50 | .008 OUT. .008-IND. | 221.18 | 221.30 | 221.30 |
| 81+24.± | 0.00 Part | | | |

Curve Data "S" "C" Line

P.C. 86+96.7 – P.T. 94+80.7 – 2°30' C.R.

No. Extra Widening.

| | | |
|---|---|---|
| 90+53 | -.008 per Ft. | 24.05 |
| 90+00 | -.008 | 24.16 |
| P.T. 89+87.9 | -.011 | |
| +50 | -.022 | 24.19 |
| 89 | | 24.17 |
| +50 | | 24.07 |
| 88+00 | | 23.90 |
| +50 | | 23.70 |
| 87+00 | | 23.50 |
| P.C. 86+97 | .022 per Ft. | 23.49 |
| 86+50 | +.004 " " | 23.30 |
| 86+17 | -.002 " " | 23.17 |

90° C. R

| | | | |
|---|---|---|---|
| | | Lt. | Rt. |
| ~~E.W.T~~ 100+50 | -.008 part ft | | |
| 100+00 | +.008<br>-.008 | | |
| B.W.T. 99+50 | .076 | 10.00 | 10.00 |
| P.T. 99+01 | .040 | 10.00 | 11.00 |
| E.W.T. +50 | .049 | 10.00 | 12.20 |
| 98 | .075 | 10.00 | 12.20 |
| +50 | .075 | 10.00 | 12.20 |
| 97 | .075 | 10.00 | 12.20 |
| +50 | .075 | 10.00 | 12.20 |
| 96 | .075 | 10.00 | 12.20 |
| +50 | .075 | 10.00 | 12.20 |
| E.W.T. 95+31 | | | 12.20 |
| 95+00 | .075 | 10.00 | 11.70 |
| P.C. 94+81 | .0[illegible] | 10.00 | 11.00 |
| 94+50 | .034 | 10.00 | 10.50 |
| B.W.T. 101 | | | |
| 94+00 | .015 | 10.00 | 10.00 |
| 1 | +.000 | | |
| +50 | -.008 | | |
| ~~P.T. 93+91~~ | -.008 | | |

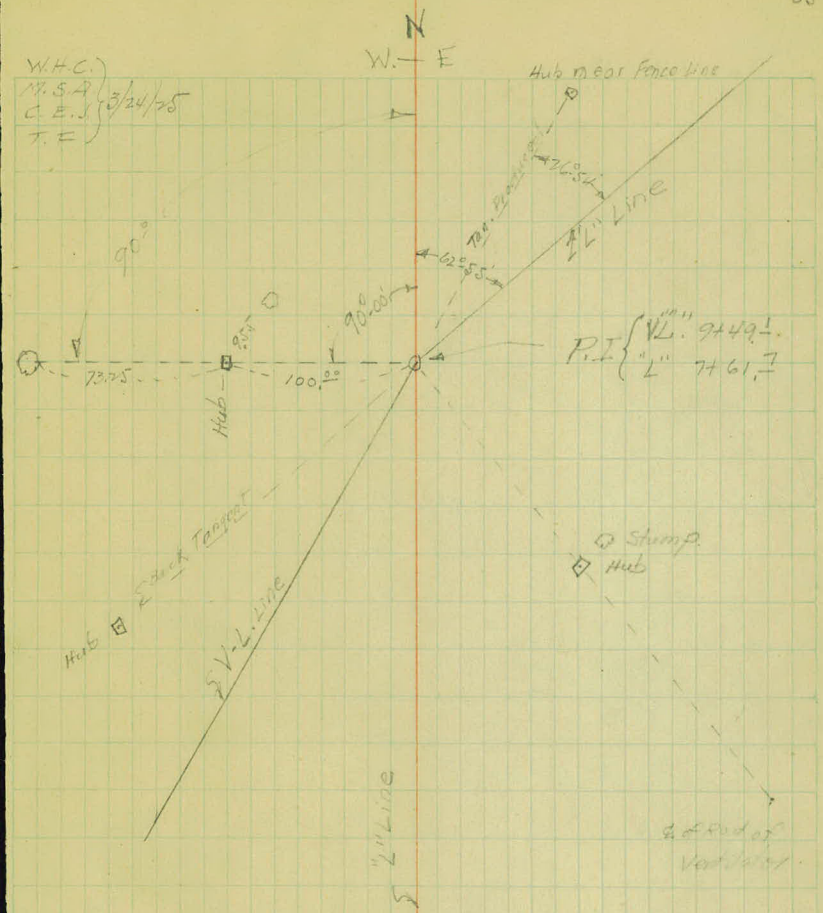
P.C. 102+43.1 P.T. 104+54 15° C. L.

| | | | | |
|---|---|---|---|---|
| 106+00 | .000 | | | |
| 105+50 | .009 | 47. | | 47 |
| 105+00 | .028 | 10 | | 10 |
| P.T. 104+54 | .044 | 11.50 | | 10 |
| 104 | .062 | 13.00 | | 10 |
| 103+50 | .062 | 13.00 | | 10 |
| 103+06 | .062 | 13.00 | | 10 |
| P.C. 102+43.1 | .044 | 11.50 | | 10 |
| 102+00 | .030 | 10 | | 10 |
| +93 | .026 | 10 | | 10 |
| +16 | .018 | | | |
| 101+50 | .010 | | | |
| 101+00 | .001 | | | |
| 100+93 | .000 | | | |

Ties to P.I.

"V" "L" Line Sta. 9+49.4 =

"L" Line " 7+61.7


N
W. — E
W.H.C.
W.S.A.
C.E.J. 3/24/75
T.E.
Hub near Fence line
76° 55'
78° 30'
62° 55'
90° 00'
"L" Line
P.I. {"VL" 9+49.1
"L" 7+61.7
73.75
100.00
Hub
Hub
Stump
Hub
Back Tangent
Hub
"VL" Line
"L" Line
℄ of Road of Vert. Curve

Transit Notes
Defl. Angle

| Sta. | Desc. | Lt | Rt. |
|---|---|---|---|
| 50+77.9 | Mont intersec. E Co. Rd "F" & Rice St. | | |
| 30+60.75 | P.O.T. & E ML Sabine Ry. | | |
| 26+40 | Found no mont.! | | |
| 24+45 | P.O.T. | | |
| 20+60 | E Water Wks Culv. | | |
| 16+00 | P.O.T. | | |
| 4+64.9 | P.O.T. | | |
| 0+00 | Mont. intersec E's Co. Rd "F" & Mt. Memeny Rd. | | |

NOTE
This data transferred to another book - Irrelevant to 23-03-11-14-23. R.E.D.

VOID

Party { Deutsche, Johnson, Mahoney, Franke }

℄ Cold". F"

11-13-23 Cold Rainy 66

N 1 S

So. Line Sec. 19

Sq. Stk. Mon.

Section Pt. 7

Red Rag on nail.

℄ Sec 19. (T. 30 N. R. 22)

Red Rag on nail

VOID

Stk 12' R

Red Rag on nail

Stk 6' R

Red Rag on nail in road

Stk 15' Rt.

(23+03) "SC" Line  Transit Notes
Defl. Angle

| Sta. | Desc. | L | Rt. |
|---|---|---|---|
| (104+63.2) | | | |
| 104+63.2 | P.O.T. Mont ¼ Cor. | | (Continued p. 68) |
| (104+54.2) | | | |
| 104+54.2 | P.T. | | |
| (103+51.6) | | | |
| 103+51.6 | P.I. | 31°38' | |

Δ = 31°38
D = 15°00 L
T = 108.5 v
L = 210.9 v

| Sta. | Defl. | Chord |
|---|---|---|
| 103+00 | 4°16' | 56.9 ± .11 = 57.0 |
| +50 | 8°01' | 50.0 ± .11 = 50.1 |
| 104+00 | 11°46' | 50.0 ± .11 = 50.1 |
| 104+54 | 15°49' | 54.0 ± .11 = 54.1 |

EQ
AT
(102+43.4)
102+43.4 P.C.

(99+01.1)
99+01.1 P.T.

Note: 2 1/2" SKS at each Sta. Set at Lot Cor.

(96+99.1)
96+99.1 P.I. 37°50'

EQ
AT
(94+80.2)
94+81.0 P.C.

(89+87.4)
89+87.4 P.T.

Δ = 7°16'
D = 2°30'
T = 145.8
L = 290.7

(88+42.3)
88+42.3 P.I. 7°16'

EQ
AT
(86+76.2)
86+95.8 P.C.

Card from following page 77.

Party: Bartsch, Johnson, Mahoney, Franke

"SC"

℄ Ed.

Nail 14" Oak ℄ Nail F.P.

Cont'd on p. 68.

Nail 10" Oak ℄ Nail F.P.

R.R. So. in Rd.

Nail 8" Oak

Track 1"x2" Hub to Grd

Nail Tel. M.

Note:- Found Orig. F.P. - RR sp. bad. it was in loose sand - replaced as shown. One profile tie removed other checks O.K.

Red Rag on nail in rd.

Δ = 37°50'
D = 9°00' R
T = 218.39
L = 420.37

| Sta. | Defl. | Chord |
|---|---|---|
| 95+00 | 0°-52'-00" | 19 ± .02 |
| +50 | 3°-07'-00" | 50° ± .04 |
| 96+00 | 5°-22' | " |
| +50 | 7°-37' | " |
| 97+00 | 9°-52' | " |
| +50 | 12°-07' | " |
| 98+00 | 14°-22' | " |
| +50 | 16°-37' | " |
| 99+01.2 | 18°-55' | 51.2 ± .04 |

Red Rag on nail in rd.

Track 1"x2" Hub to Grd

Track 1"x2" Hub to Grd

Track 1"x2" Hub to Grd

Note:- Found orig pr. O.K. Replaced with 1"x2" Hub & Tack. Profile ties did not ✓

| Sta. | Defl. | Chord |
|---|---|---|
| 87+00 | 0°-01'-28" | 33 |
| +50 | 0°-40'-00" | 50 |
| 88+00 | 1°-17'-30" | 50 |
| +50 | 1°-53'-00" | 50 |
| 89+00 | 2°-31'-28" | 50 |
| +50 | 3°-10'-00" | 50 |
| 89+87.2 | 3°-38'-00" | 37.2 |

Red Rag on nail.

Nail F.P.

R.R. sp. rd. down 1/2"

Nail F.P.

Profile ties ✓ OK but small tacks - 1/2" exposed

23-03 - SC Line

Transit Notes

Defl. Angle

| Sta. | Desc. | Lt | Rt. |
|---|---|---|---|

Note: R/w stakes set out Lt at every station.

256+00.00 P.O.T. See page 80 for ties etc.

EQ 2.51+57.82 R.C.

AT 160+13.35 S.C.

159+05.75 P.O.T. & present end concrete paving -

EQ (157+23.55)

AT 157+24.55 P.I. 0° 24'

EQ (151+53.33)

AT 151+55.00 (P.O.T.) (Using Profile ties - Point does not ✓ for alignment

151+54.88 P.O.T.

EQ (130+93.02)

AT 130+90.33 P.O.T. Mont. Intersec. Sr. Centerville & So. Birch Lake Blvd. Center. Sec. 21. T-30 N - R-22 W

108+44.66 P.O.T.

Note:- Betw. 104+63.92 & 130+90.33 the red ring on nails in road are not on the stations but are 0.8 north of station as indicated - by marking on R/w. stks. This fact is caused by having measured 36.9 from 104+63.92 to 105+00 instead of only 36'. The error was caught when ✓ing

Distance betw Monts on baseline = 2626.4 Ft.

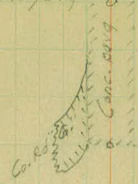
" " " Profile = 2629.1 Ft.

Party { Davidson, Johnson, Mahaffey, Francis

"SC"

11-19-23
Cold. Cloudy

Point on ℄ present conc. pvig. See page 80 for ties




3 Nails 10" Catalpa

60 SE
NE

Mont. Intersec. ℄s Centerville & Co. Rd 6 extended.

37 SE

12" Oak Hd. of RR spike

Old point not found)

Nail 10" Oak

15
NE 74
(Wiggled in)

RR. Sp in road.

45 SE 75 E

Nail 10" Oak

Nail 18" Maple

Nail 15" Maple

NW 43 SE
59.5 NW

2 So Birch Lake Blvd.

Nail & Post.

Tel. 9
# 278

NW 34 SE

RR Spike in Hd

SK 12 R (Wiggled in)

59 SW

Nail & Post

this distance between monuments the 2nd time.

Cont'd fr. p. 67

9-22-24

## Under Pass. Sta. 4+51.4

| Station | Point. | Def | Super Per ft | Profile Grade | Extra Width |
|---|---|---|---|---|---|
| 4+00 | | | | 193.28 | |
| | | | -.008 | | |
| +35 | B.S.T. | | -.008 | 192.04 | |
| | | | -.003 | | |
| +50 | | | -.008 | 191.62 | |
| | | | +.005 | | |
| +75 | | | -.008 | 191.01 | |
| | | | +.013 | | |
| 5+00 | | | -.013 | 190.53 | |
| | | | +.022 | | |
| +25 | | | -.022 | 190.20 | |
| | | | +.026 | | |
| +35 | B.W.T | | -.026 | 190.10 | 0.0 |
| | | | +.035 | | |
| +60 | | | -.035 | 189.95 | 0.4 |
| | | | +.044 | | |
| +85 | P.C. | 0°00' | -.044 | 189.96 | 1.84 |
| | | | +.050 | | |
| 6+00 | D.I | 1°26' | -.050 | 190.03 | 2.85 |
| | | | +.057 | | |
| +20 | | 3°26' | -.057 | 190.20 | 3.58 |
| | | | +.060 | | |
| +31 | D.I. | 4°52' | -.060 | 190.33 | 3.66 |
| | E.S.T. | | +.062 | | |
| +35 | E.W.T | 5°00' | -.062 | 190.39 | 3.72 |
| +50 | | 6°26' | " | 190.67 | " |
| +75 | | 8°26' | " | 191.13 | " |
| +100 | | 10°26' | | | |
| 7+00 | | 11°26' | " | 191.78 | " |
| +50 | | 16°26' | " | 193.50 | " |
| 8+00 | | 21°26' | | | |
| +50 | | 26°26' | | | |
| 9+00 | | 31°27½' | | | |

Left & Right.

| Top. Pavement. | | Elevation. |
|---|---|---|
| 193.82 | 193.90 | 193.82 |
| 192.58 | 192.66 | 192.58 |
| 192.21 | 192.24 | 192.16 |
| 191.68 | 191.63 | 191.55 |
| 191.28 | 191.15 | 191.02 |
| 191.04 | 190.82 | 190.60 |
| 190.98 | 190.72 | 190.46 |
| 190.92 | 190.57 | 190.21 |
| 191.02 | 190.58 | 190.06 |
| 191.15 | 190.65 | 190.01 |
| 191.39 | 190.82 | 190.05 |
| 191.55 | 190.95 | 190.13 |
| 191.63 | 191.01 | 190.16 |
| 191.86 | 191.24 | 190.39 |
| 192.37 | 191.75 | 190.90 |
| 193.02 | 192.40 | 191.65 |
| 194.74 | 194.12 | 193.27 |

(23-03) "CE" Xtn – Transit Notes

Defl Angle
Lt Rt.

1+30
1+00
0+86
0+61
} P.O.T.'s.

5+00 "CE" P.O.T. = 0+00 CE "Xtn" = 0+75 ± "L" Line

4+35 ± P.C. "CE" Line. 0°00'

0+00 CE Line P.O.T.

Same Party — ℄ CE Xtn. — 12-8-23 Cold Fair

F.S.

F.S.

F.S.

F.S.

F.S. — See other notes for ties

Road

Back Sight — See CE Line for ties

(23-03) "CE"-Line Transit Notes
Dell Angle

| Sta. | Desc. | Lt | Rt. |
|---|---|---|---|

Note:- R/W Stakes set out at each Sta. Lt & Rt

EQUATION

5+58.9 "CE"-P.I.- = 1+39.5 - "L" Line -

| Sta. | Dell. | Chord |
|---|---|---|
| 4+50 | 2°-05'- | 14.53 |
| 5+00 | 9°-20'- | 50 - 4 = 50.40 |
| 5+50 | 16°-35'- | 50 - 4 = 50.40 |
| 5+58.9 | 17°-52'-30" | 8.9 - 10 = 9.0 |

(5+00)
5+00 P.I. 35°-45'

(4+35.6)
4+35.6 P.C.

0+00

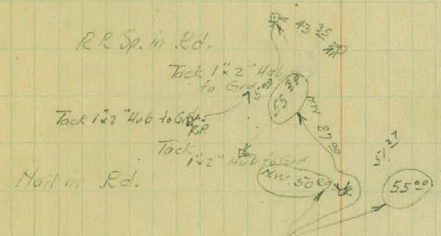
Note:- Refile Sta. in ( )

Deutsche
Johnson
Mahoney
Franke

11-7-23
Cold Fair

Tack 1½" Hub in slope bank Ties set 12-19-23
P.I. 54+00 RP West 44 23 → Tack 2½" Hub ⊙ I.P.

I.P. ⊙ Tack 1½" RP
Top bk Hub in slope bank




R.R. Sp. in Rd.

R.R. Sp. in road.

(23-03) "L" Line Extension Transt Notes For Waste Mat'l on Edgerton St.

| Sta. | Desc. | Defl Angle<br>Lt. | Rt. |
|---|---|---|---|
| F.S. | P.O.T. | | |
| ? | P.O.T. | | |
| 0+00 | P.O.T. | | |
| B.S. | P.O.T. | | |

12-3-23
Cold Fair.

Party { Deutsche, Johnson, Mahoney, Franke

"L" Extension

Lt. | Rt.

Mont. E Edgerton

Track 1¼ x 2" Hub to Grd.

Outhouse

Green & White Farm House

Windmill

491.0'

39°58' Rt.

Nail & Post.

Wiggled In.

S 32° E 2.. Nail & Post

Edgerton St.

H

S

See P. 73 for ties.

0+00 = 9+49.1' "VL" Line = 180°33' 7+61.3 "L" Line

"L" Line sta. = 4+51.2

H.P. By M.L. Trk 7

See P. 73 for ties etc.

Transit Notes

(53-03) "L" Line — Instr. at Sta. — Deflection Angles: Lt. / Rt.

Note:- R/W Stakes set out at every station

(7+61.7) 7+61.7 P.I. — 62°55' — Note: This P.I. is common to "L" & "VL" Lines

Δ = 62°55' ✓
T = 176 ✓
L = 314.6 ✓
D = 20°-R ✓

(5+85.9) 5+85.6 P.C.

4+51.4 P.O.T. Intersection of H.P.N. & Proposed Rd.

4+51.4 = New Intersection of N.Y.P.R.R., Estbd. [illegible]

E&S (2+67.4) 2+07.8 P.O.T.

2+07.4
15.1
1922.3
66.3
66.0

0+75 P.O.T. also P.I. for "CE" Line.

44.18' N 66°-15' E

0+00 Present End Conc. Edgerton St.

Note: Inside Sta. for C [illegible]

-3+00 P.O.T. & Present Conc. Rdwy. Edgerton St.

Barkdale
Johnson
Mahoney
Frantz

"Z"-Line

11-2-23
Cold Windy

Tack 1½" Hub to Grd
R.P.
30 lb to "Oaks"
Nail 2¾" Hub to Grd in Rd
(Profile Tie Down check)

| Sta. | Defl. | Chord |
|---|---|---|
| 6+00 | 1° 26' 24" | 144 x .17 = 24.48 |
| 6+50 | 6° 26' 24" | 50 x .17 = 8.50 |
| 7+00 | 11° 26' 24" | 50 x .17 = " |
| 7+50 | 16° 26' 24" | 50 x .17 = " |
| 8+00 | 21° 26' 24" | 50 x .17 = " |
| 8+50 | 26° 26' 24" | 50 x .17 = " |
| 9+00 | 31° 27' 30" | 50 x .17 = 8.39 |

Nail 2¾" Hub in Rd.
Nail in Tie
Tack in Tie
Pk #3 Sp. Rl. Frog
April 9, 1924
By V.H.C. & R.R. Engrs
Station 1188
Hub within 1mm of Rail
Tie Rail line
Mont. E Road
W 48 55
Nail 24" Poplar
Knocked out Rec'd 12-19-23
Set Cut Line Nails for addit'l ties set 12-19-23
Nail in Road
Nail Tel #1
Tack in "Hub to Grd"
Nail Tel 9.
Nail in road
Tack in "Hub to Grd"
Tel. 8. Nail
Tel. #1 Nail

(23-03) "L" Line Cont. Transit Notes

| Sta. | Desc. | Def. Angle Lt | Def. Angle Rt. |
|---|---|---|---|

Note:- R/W Stakes set out L&R at each station.

EQ {22+12 "L" Line} {22+92.3 "L" Line} P.T. (End of "L" Line = Start of "SC" Line - Sta. 21+4

20+34.0 P.I. 5°09'

EQ {17+77.3 / 17+77.3} P.C.

| Sta. | Def. | Chord | |
|---|---|---|---|
| 18+00 | 0° 06' 45" | 22.8 + 0 | = 22 |
| +50 | 0° 21' 45" | 50 | 50 |
| 19+00 | 0° 36' 45" | 50 | |
| +50 | 0° 51' 45" | 50 | |
| 20+00 | 1° 06' 45" | 50 | |
| +50 | 1° 21' 45" | 50 | |
| 21+00 | 1° 36' 45" | 50 | |
| +50 | 1° 51' 45" | " | |
| 22+00 | 2° 06' 45" | " | |
| +50 | 2° 21' 45" | " | |
| 22+72.3 | 2° 34' 30" | 42.3 | 42 |

(14+42.5)
14+42.5 P.T.

Δ = 30°42'
T = 797'
L = 153.5
D = 20°00' L

(13+68.8)
13+68.8 P.I. 30°42'

(12+89.0)
12+89.0 P.C.

(9+00.0)
9+00.0 P.T. = {EQUAT Sec "L" Line = 11+21.3 V.L. Line

Party { Deutsche, Solingen, Mahoney, Franke

"L" Line.

11-7-23
Cold Fair

74

Nail 2 FF

Nail in road (Red Cdn)

Nail in Box Elder

Tack 1"x2" Hub to Cut in Grade Patch

Profile ties OK, but will be moved during construction

K.R. Sp. in Rd

Tack 1"x2" Hub to Cut in Grade Patch

Δ = 5°09'
T. 257.7
L. 515.00
D = 12°00'

Nail in Rd. (Edge of Rd.)

Nail in road -

| Sta. | Deflection | Chord |
|---|---|---|
| 13+00 | 1°06' | 11° + 05 = 11°23' |
| +57 | 6°06' | 50° + 14 = 50°20' |
| 14+00 | 11°06' | 50° + 19 = 50°19' |
| +42.8 | 15°21' | 42° + 18 = 42°38' |

Nail Cor. F.9

Nail T.P.

Tack 1"x2" Hub in Rd.

Nail 8" E. of Tack

Tack 1"x2" Hub

Tack 1"x2" Hub to Cut.

(23-03) - "SC" Line Transit Notes

Deft Angle -

| Sta. | Desc. | Lt | Rt |
|---|---|---|---|
| (42+15.9) 42+15.9 | P.T. | | |
| (41+00) 41+00 | P.I. | | 2° 19' ✓ |
| (39+84.3) 39+84.3 | P.C. | | |
| EQ (39+00.0) 39+00 | P.O.T. | | |
| 34+65.8 ✓ | Present No. End of Conc Kerb Co. Rd "E" | | |
| 34+18 | | | |
| 33+44.8 ✓ | Present South end of Conc. Co. Rd "E" | | |
| 30+27.4 | P.O.T. | | |
| EQ (21+45.0 "SC" Line = Start "SC" Line) (22+92.3 "L" Line = End "L" Line) | | | |

Δ = 2° 19' ✓
T = 115.85 ✓
L = 70 × 2.3467 = 231.7 ✓
D = 1° 00'

| Sta - | Defl | Chord. | |
|---|---|---|---|
| 40+00 | 0° 04' 45" | 15.80 | ✓ |
| +50 | 0° 19' 45" | 50' | ✓ |
| 41+00 | 0° 34' 45" | 50' | ✓ |
| +50 | 0° 49' 45" | 50' | ✓ |
| 42+00 | 1° 04' 45" | 50' | ✓ |
| +15.9 | 1° 09' 30" | 15.9 | ✓ |

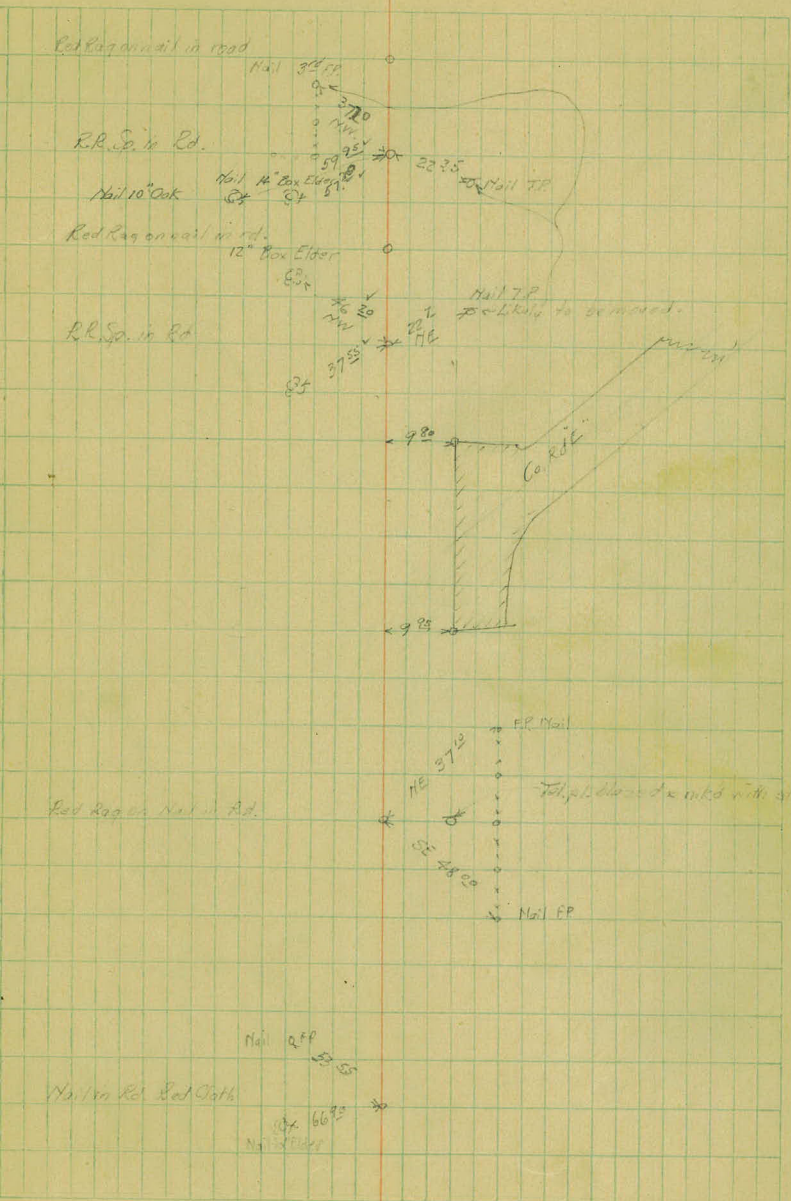
Note - Plot data section at each station

Party { Deutsch, Johnson, Kenney, Franks

℄ "SC" Line

11-7-23 Cold Fair
11-8-23 Cold Fair

75



(23-03) "SC" - Transit Notes

Defl Angle

| Sta. | Desc. | Lt | Rt |
|---|---|---|---|
| | Hob:- R/W Stakes set out at each sta. L&R | | |
| (69+74°) 69+74° | P.T. | | |
| (67+65⁴) 67+65⁶ | P.I. | 21°05' | |
| EQ (65+52⁸) 4 65+54⁶ | P.C. | | |
| 60+76⁸ | P.O.T. | | |
| 54+00 | P.O.T. | | |
| (52+77⁴) 52+77⁴ | P.C. P.T. | | |
| (50+48⁶) 50+48⁶ | P.I. | 28-00' | |
| EQ (48+10⁷) 4 48+10⁷ = | P.C. | | |

| Sta. | Defl. | Chord |
|---|---|---|
| 66+50 | 1°11'30" | 47.7 +.02 |
| +50 | 2°26'30" | 50 +.02 |
| 67+00 | 3°41'30" | " " |
| +50 | 4°56'30" | " " |
| 68+00 | 6°11'30" | " " |
| +50 | 7°26'30" | " " |
| 69+00 | 8°41'30" | " " |
| +50 | 9°56'30" | " " |
| 69+74° | 10°32'30" | 24° .01 |

| Sta. | Defl. | Chord |
|---|---|---|
| 48+50 | 1°11'17" | 50° +.02 |
| 49+00 | 2°41'17" | 50° +.02 |
| +50 | 4°11'17" | 50° +.02 |
| 50+00 | 5°41'17" | 50° +.02 |
| +50 | 7°11'17" | 50° +.02 |
| 51+00 | 8°41'17" | 50° +.02 |
| +50 | 10°11'17" | 50° +.02 |
| 52+00 | 11°41'17" | 50° +.02 |
| +50 | 13°11'17" | 50° +.02 |
| 52+77⁴ | 014°00'00" | 27° +.01 |

Party { Deutsche, Johnson, Mahoney, Franke

"SC"

11-9-23
Coöl Fair

Red Rag on nail in road.

Stake 14 F.P.

Tack 1"x2" Hub to Grd.

5° C.L.
Δ 21°-05'
T 278.8
L 421.7

Nail in F.P.

Red Rag on nail.

Stake 14'R

Nail F.P.

Tack 1"x2" Hub to Grd
West side of Rd.

Nail F.P.

Tack 1"x2" Hub to Grd

No ties necessary.

Tack 1"x2" Hub to Grd.

Δ = 28°-00'
T = 238.26
L = 466.7
D = 6°-00 R

Tack 1"x2" Hub to Grd

Nail F.P.

R.R. Sp. in road

Nail F.P.

Red Rag nail in road

(23-03) "SC" - Line  Transit  Notes

| Sta. | Desc. | Δ | Dist. | Angle | Δ |
|---|---|---|---|---|---|
| | | | | | |

Note: R/W Stakes set out at ea. sta. L & R.

Contd on Page 67

(84+60-)
84+60 — P.T.

Δ = 12°24' L
D = 6°40' L
T = 93.8
L = 186.0
See page 4 to rd. below.

(83+67.5)
83+67.5 — P.I. — 12°24'

EQ
A
T
82+74
82+73.75 — P.C.

(79+98°)
79+98.0 — P.T.

Δ = 47°41'
T = 337.8
L = 635.8
D = 7°30'

(77+00°)
77+00 — P.I. — 47°41'

| Sta. | Dist. | Check |
|---|---|---|
| 74+00 | 1°25'00" | 37.8 + 02 = 37.8 |
| +50 | 3°17'30" | 50 - 1.03 = 50.0 |
| 75+00 | 5°10'00" | " |
| +50 | 7°02'30" | " |
| 76+00 | 8°55'00" | " |
| +50 | 10°47'30" | " |
| 77+00 | 12°40'00" | " |
| +50 | 14°32'30" | " |
| 78+00 | 16°25'00" | " |
| +50 | 18°17'30" | " |
| 79+00 | 20°10'00" | " |
| +50 | 22°02'30" | " |
| 79+98° | 23°50'30" | 48.0 + .03 = 48.0 |

EQ
A
T
73+62.3
73+62.3 — P.C.

Party { Seyfarth, Johnson, Mahoney, Franke

11-9-23 Cool, fair
11-12-23 Cool Cloudy

℄

LT RT

Red tag on nail

Hub RP
Centerline ✓ OK but will be moved

RR sp. in road.

Red Tag on nail in rd.

| Sta. | Def. | Chord |
|---|---|---|
| 83+00 | 0°51'48" | 25.91 |
| +50 | 1°43'36" | 51.82 |
| 84+00 | 2°35'24" | 51.82 |
| +50 | 3°27'12" | 51.82 |
| 84+00 | 4°19'00" | 51.82 |
| 84+00 | 6°12'00" | 10.00 |

Red Tag on nail in road

Nail 10" Oak ⊙ N 17E

Tack 2"x2" Hub to grd.

Tack 1½" RP ⊙ SW 22 35 Hub to Cut

Note
Orig. P.I. found ok as per
Refset x's on ⊙ sides
→ RR Sp. replaced by 2"x2" Hub
with tack for centerline

Red Tag on nail in rd. Sta. 14+R

(23-03 "VL" Line)

Transit Notes
Deflection Angle

| Sta. | Desc. | Lt | Rt. | |
|---|---|---|---|---|
| (9+49 Lt) 9+49 Lt | P.I. | | 26°-54' | Note:- This P.I. is common to "VL" & "L" Line |
| (8+57.5) EQ 8+57.95 | P.C. | | | |
| (16+57.55) EQ 16+52.00 | P.O.T. | | | |
| 3+05 Lt 3+05 Lt | P.T. | | | |
| (2+16) 2+16.0 | P.I. | 58°-07' | | |
| (1+05 Lt) 1+05.04 | P.C. | | | |
| (0+00) 0+00 | | | | |

Note:- Stations in ( ) are not shown on profile

Note:- Rt. & Lt. stakes set at 0' each sta. Lt. & Rt.

Party { Deutscher, Jonnson, Mahoney, Franks }

10-21-22
Cold Windy

"VL" - Line

Tack 1"x2" Hub ℄ R.P.

Nail 2"x2" Hub to Grd

Tack 1"x2" Hub to Grd

Tack 1"x2" Hub to Grd

Tack 1"x2" Hub to Grd

Nail 8" Oak

Tack 1"x2" Hub to Grd

Nail 8" Oak

Tack 1"x2" Hub to Grd

Nail 8" Oak

Note:- Profile tins do not ✓ will also be removed by construction.

| Sta. | Defl. | Chord. |
|---|---|---|
| 9+00 | 3°11'-15" | 42.5 + .10 |
| 9+50 | 6°56'-15" | 50 + .11 |
| 10+00 | 10°41'-15" | 50 + .11 |
| 10+36 | 13°26'-55" | 36.8 + .08 |

T = 91.9
L = 179.3
Δ = 26°-54'
D = 15°-00' R

T = 110.76
L = 216.4
Δ = 58°-07
D = 29°-00' L

| Sta. | Defl. | Ch. |
|---|---|---|
| 1+50 | 6°31' | 49.34 |
| 2+00 | 13°46' | 50.41 |
| 2+50 | 21°01' | 50.4 |
| 3+00 | 28°16' | 50.1 |
| 3+05.44 | 29°03'-30" | 5.58 |

Tool Hse
Nail in Car.

Nail in Car
Shed

ICE HSE
Nail Car. HSE

Nail in road

Nail Car.
ICE HSE

Nail in road

Nail 18" Oak
Nail 45°

(23-03) "VL" Line

Transit Notes

| Sta. | Desc. | Defl Angle Lt. | Rt. |
|---|---|---|---|

Note:- R/W stakes set out ea. Sta. L & R

Note:- EQUATION- $11+21\frac{3}{}$ "VL" = $9+00\frac{2}{}$ "L" Line

$(11+21\frac{3}{})$
$11+21\frac{2}{}$ P.O.T. = End "VL" Line

$(10+36\frac{3}{})$
$10+36\frac{2}{}$ P.T.

Party { Deutsche, Johnson, Mahoney, Franke

"VL"

11-2-23 Cold Windy

79

℄

Lft. Rft.

Tack 1"x2" Hub to Grd

Nail 2"x2" Hub to Grd.

(23-03) Transit Notes - Profile Stakings
"RC" Line

| Sta. | Desc. | Lt. | Rt. |
|---|---|---|---|

EQ { 275+08.0 (Profile Stationing)
{ 275+07.95 = P.I. for Birch Lake Project (23-56)
Our chainage

Note:- This sta. doesn't = Profile sta. at error in measuring Δ of 29°00 deg

EQ 273+07.55 Centerville Project } = P.C. 29°-00' degree curve Rt)
= 0+00 Birch Lake " } = P.O.T.

269+13.65 P.O.T.

256+00 P.O.T.

EQ { 251+57.3 R.C. P.T. - 20°D Curve from Co R/G. Proj. (23-2) (23-55)
{ 160+13.3 S.C. P.O.T. Proj. 23-03

157+23.5 S.C. P.I.

Party { Deutsche, Johnson, Mahoney, Franke }

"RC"

10-24-23
Cool. Fair

80

See Notes for additional ties

Mont Waters. Fs — 12° — 16° — Centerville Bird Lake Rd Extended

90° 90°

curve. (87°48' instead of 90°-12') and a consequent change in T = 200± instead of 199± as shown on prelim. RAD.

RR Sp.

Farm Hse.

Nail Cor. FPost

RR. Spike

73.6

12° 12°

28.95

14" Tel. pl.

Tack 1"x2" Hub.

Nail Tel. pl.

Tack 1"x2" Hub in road

12° 12°

35.8

33.0'

R/W Stk (to center of stk)

Tack Hub

82.3

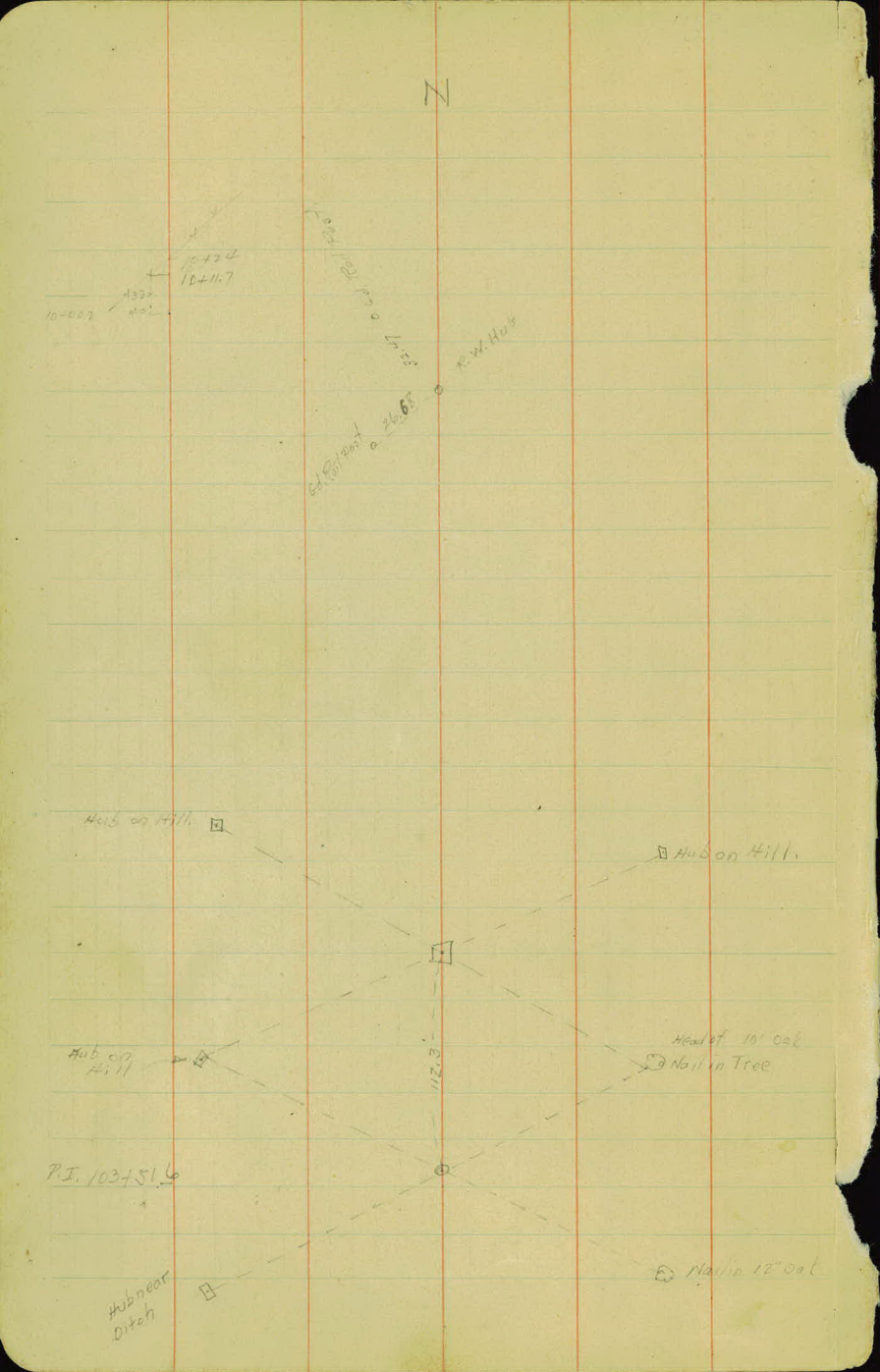
{RR. Sp in road. See Notes for ties}

Carpet Tack 3" Apple Tree

Mont Waters Fs Co. Rd. 67 ±

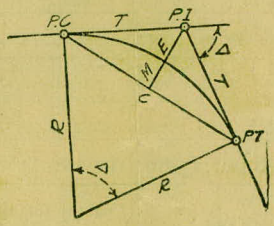
Centerville Rd

See P. 68 for ties


N
10+42.4
10+11.7
433.2 Hor.
10+00.7
12" Oak
Line
R.W. Hub
Hub on Hill.
Hub on Hill.
Hub on Hill
112.3'
Head of 10" Oak
Nail in Tree
P.I. 103+51.6
Nail in 12" Oak
Hub near Ditch

# DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES






## CURVE FORMULAS

Radius=R=$\frac{50}{\text{sin. } D/2}$ (1) Degree of Curve=D and sin. $\frac{D}{2}=\frac{50}{R}$ (2)

Tangent=T=Rtan$\frac{\Delta}{2}$ (3) Length of Curve=L=100$\frac{\Delta}{D}$ (4)

Middle ordinate=M= R(1—cos. $\frac{\Delta}{2}$) (5) =Rvers $\frac{\Delta}{2}$ (6)

External=E=Ttan$\frac{\Delta}{4}$- (7) =R÷cos.$\frac{\Delta}{2}$—R(8)=Rexsec$\frac{\Delta}{2}$(9)

Long Chord=C=2 R sin.$\frac{\Delta}{2}$ (10) Δ=Central Angle

## EXPLANATION AND USE OF TABLES

**Stations.**—Given P. I.=Sta. 161+60.35 to find Sta. of P. C. and P. T. Δ=62° 10′ D=8° 20′. From Table IV for 1° curve T=3454.1 and÷8⅓=414.49 ft. From Table V correction=.36 or T=414.85 ft. P. C.=Sta. P.I.—T=157+45.50. Also from (4) L=746.00 and P. T.=Sta. P. C. +L=164+91.50.

**Offsets.**—Tangent offsets vary (approximately) directly with D and with square of the distance. Thus tangent offset for Sta. 158 on above curve is 2.16 ft. found as follows. From Table III tangent offset for 100 ft.=7.27 ft. Distance=158—Sta. P. C.=54.50, hence offset=7.27 (54.50÷100)²=2.16 ft. Also square of any distance divided by twice the radius equals (approximately) the distance from tangent to curve. Thus (54.50)²÷(2 x 688.26)=2.16 ft.

**Deflections.**—Deflection angle=½ D for 100 ft., ¼ D for 50 ft., etc. For c ft.=(in minutes) .3 x C x D° or=defl. for 1 ft. from Table III x C. For Sta. 158 of above curve=.3 x 54.5 x 8⅓=136.2′ or 2° 16.2′, or=2.50 x 54.5=136.2′ from Table III. For Sta. 159 deflection angle=2° 16.2′ +8° 20′÷2=6° 26.2′, etc.

**Externals.**—May be found in similar manner to tangents. Thus E for curve above is 91.37. For from Table IV for 1° curve E=960.6 for 8° 20′=960.6÷8⅓=91.27 and from Table V correction=.10 or E=91.37 ft. Or suppose Δ=32° and E is measured and found to be 42 ft. What is D? From Table IV E=230.9 and÷42=5.5 or D=5° 30′.

## TABLE I.—MINUTES IN DECIMALS OF A DEGREE.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1′ | .0167 | 11′ | .1833 | 21′ | .3500 | 31′ | .5167 | 41′ | .6833 | 51′ | .8500 |
| 2 | .0333 | 12 | .2000 | 22 | .3667 | 32 | .5333 | 42 | .7000 | 52 | .8667 |
| 3 | .0500 | 13 | .2167 | 23 | .3833 | 33 | .5500 | 43 | .7167 | 53 | .8833 |
| 4 | .0667 | 14 | .2333 | 24 | .4000 | 34 | .5667 | 44 | .7333 | 54 | .9000 |
| 5 | .0833 | 15 | .2500 | 25 | .4167 | 35 | .5833 | 45 | .7500 | 55 | .9167 |
| 6 | .1000 | 16 | .2667 | 26 | .4333 | 36 | .6000 | 46 | .7667 | 56 | .9333 |
| 7 | .1167 | 17 | .2833 | 27 | .4500 | 37 | .6167 | 47 | .7833 | 57 | .9500 |
| 8 | .1333 | 18 | .3000 | 28 | .4667 | 38 | .6333 | 48 | .8000 | 58 | .9667 |
| 9 | .1500 | 19 | .3167 | 29 | .4833 | 39 | .6500 | 49 | .8167 | 59 | .9833 |
| 10 | .1667 | 20 | .3333 | 30 | .5000 | 40 | .6667 | 50 | .8333 | 60 | 1.0000 |

## TABLE II.—INCHES IN DECIMALS OF A FOOT.

| 1–16 | 3–32 | 1/8 | 3–16 | 1/4 | 5–16 | 3/8 | 1/2 | 5/8 | 3/4 | 7/8 |
|---|---|---|---|---|---|---|---|---|---|---|
| .0052 | .0078 | .0104 | .0156 | .0208 | .0260 | .0313 | .0417 | .0521 | .0625 | .0729 |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|
| .0833 | .1667 | .2500 | .3333 | .4167 | .5000 | .5833 | .6667 | .7500 | .8333 | .9167 |

## TABLE III.—RADII, ORDINATES AND DEFLECTIONS.

| Deg. | Radius | Mid. Ord. | Tan. Offset | Def. for 1 Foot | Deg. | Radius | Mid. Ord. | Tan Offset | Def. for 1 Foot |
|---|---|---|---|---|---|---|---|---|---|
| 0° 10′ | 34377.5 | .036 | .145 | 0.05′ | 7° | 819.02 | 1.528 | 6.105 | 2.10′ |
| 20 | 17188.8 | .073 | .291 | 0.10 | 20′ | 781.84 | 1.600 | 6.395 | 2.20 |
| 30 | 11459.2 | .109 | .436 | 0.15 | 30 | 764.49 | 1.637 | 6.540 | 2.25 |
| 40 | 8594.42 | .145 | .582 | 0.20 | 40 | 747.89 | 1.673 | 6.685 | 2.30 |
| 50 | 6875.55 | .182 | .727 | 0.25 | 8 | 716.78 | 1.746 | 6.976 | 2.40 |
| 1 | 5729.65 | .218 | .873 | 0.30 | 20 | 688.16 | 1.819 | 7.266 | 2.50 |
| 10 | 4911.15 | .255 | 1.018 | 0.35 | 30 | 674.69 | 1.855 | 7.411 | 2.55 |
| 20 | 4297.28 | .291 | 1.164 | 0.40 | 40 | 661.74 | 1.892 | 7.556 | 2.60 |
| 30 | 3819.83 | .327 | 1.309 | 0.45 | | | | | |
| 40 | 3437.87 | .364 | 1.454 | 0.50 | 9 | 637.28 | 1.965 | 7.846 | 2.70 |
| 50 | 3125.36 | .400 | 1.600 | 0.55 | 20 | 614.56 | 2.037 | 8.136 | 2.80 |
| | | | | | 30 | 603.80 | 2.074 | 8.281 | 2.85 |
| 2 | 2864.93 | .436 | 1.745 | 0.60 | 40 | 593.42 | 2.110 | 8.426 | 2.90 |
| 10 | 2644.58 | .473 | 1.891 | 0.65 | | | | | |
| 20 | 2455.70 | .509 | 2.036 | 0.70 | 10 | 573.69 | 2.183 | 8.716 | 3.00 |
| 30 | 2292.01 | .545 | 2.181 | 0.75 | 30 | 546.44 | 2.292 | 9.150 | 3.15 |
| 40 | 2148.79 | .582 | 2.327 | 0.80 | 11 | 521.67 | 2.402 | 9.585 | 3.30 |
| 50 | 2022.41 | .618 | 2.472 | 0.85 | 30 | 499.06 | 2.511 | 10.02 | 3.45 |
| | | | | | 12 | 478.34 | 2.620 | 10.45 | 3.60 |
| 3 | 1910.08 | .655 | 2.618 | 0.90 | 30 | 459.28 | 2.730 | 10.89 | 3.75 |
| 10 | 1809.57 | .691 | 2.763 | 0.95 | 13 | 441.68 | 2.839 | 11.32 | 3.90 |
| 20 | 1719.12 | .727 | 2.908 | 1.00 | 30 | 425.40 | 2.949 | 11.75 | 4.05 |
| 30 | 1637.28 | .764 | 3.054 | 1.05 | 14 | 410.28 | 3.058 | 12.18 | 4.20 |
| 40 | 1562.88 | .800 | 3.199 | 1.10 | 30 | 396.20 | 3.168 | 12.62 | 4.35 |
| 50 | 1494.95 | .836 | 3.345 | 1.15 | | | | | |
| | | | | | 15 | 383.07 | 3.277 | 13.05 | 4.50 |
| 4 | 1432.69 | .873 | 3.490 | 1.20 | 30 | 370.78 | 3.387 | 13.49 | 4.65 |
| 10 | 1375.40 | .909 | 3.635 | 1.25 | 16 | 359.27 | 3.496 | 13.92 | 4.80 |
| 20 | 1322.53 | .945 | 3.718 | 1.30 | 30 | 348.45 | 3.606 | 14.35 | 4.95 |
| 30 | 1273.57 | .982 | 3.926 | 1.35 | 17 | 338.27 | 3.716 | 14.78 | 5.10 |
| 40 | 1228.11 | 1.018 | 4.071 | 1.40 | 18 | 319.62 | 3.935 | 15.64 | 5.40 |
| 50 | 1185.78 | 1.055 | 4.217 | 1.45 | 19 | 302.94 | 4.155 | 16.51 | 5.70 |
| | | | | | | | | | |
| 5 | 1146.28 | 1.091 | 4.362 | 1.50 | 20 | 287.94 | 4.374 | 17.37 | 6.00 |
| 10 | 1109.33 | 1.127 | 4.507 | 1.55 | 21 | 274.37 | 4.594 | 18.22 | 6.30 |
| 20 | 1074.68 | 1.164 | 4.653 | 1.60 | 22 | 262.04 | 4.814 | 19.08 | 6.60 |
| 30 | 1042.14 | 1.200 | 4.798 | 1.65 | 23 | 250.79 | 5.035 | 19.94 | 6.90 |
| 40 | 1011.51 | 1.237 | 4.943 | 1.70 | 24 | 240.49 | 5.255 | 20.79 | 7.20 |
| 50 | 982.64 | 1.273 | 5.088 | 1.75 | | | | | |
| | | | | | 25 | 231.01 | 5.476 | 21.64 | 7.50 |
| 6 | 955.37 | 1.309 | 5.234 | 1.80 | 26 | 222.27 | 5.697 | 22.50 | 7.80 |
| 10 | 929.57 | 1.346 | 5.379 | 1.85 | 27 | 214.18 | 5.918 | 23.35 | 8.10 |
| 20 | 905.13 | 1.382 | 5.524 | 1.90 | 28 | 206.68 | 6.139 | 24.19 | 8.40 |
| 30 | 881.95 | 1.418 | 5.669 | 1.95 | 29 | 199.70 | 6.360 | 25.04 | 8.70 |
| 40 | 859.92 | 1.455 | 5.814 | 2.00 | 30 | 193.18 | 6.583 | 25.88 | 9.00 |

Note. Chord Deflection=2 times tangent deflection.

## TABLE V.—CORRECTIONS FOR TANGENTS AND EXTERNALS.

These corrections are to be added to the approximate values, found by dividing the tangent, or external, for a 1° curve (Table IV) by the degree of curve, in order to obtain the true tangents, or externals. Intermediate values may be obtained by interpolation.

### FOR TANGENTS ADD

| Central Angle | DEGREE OF CURVE | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° | 55° | 60° | 65° | 70° |
| 10° | .03 | .06 | .09 | .13 | .16 | .19 | 22 | .25 | .28 | .31 | .34 | .38 | .42 | .46 |
| 15° | .04 | .10 | .14 | .19 | .24 | .29 | 34 | .39 | .45 | .51 | .53 | .58 | .63 | .68 |
| 20° | .06 | .13 | .19 | .26 | .32 | .39 | 45 | .51 | .58 | .65 | .72 | .79 | .84 | .90 |
| 25° | .08 | .16 | .24 | .33 | .40 | .49 | 58 | .67 | .75 | .83 | .90 | .99 | 1.06 | 1.14 |
| 30° | .10 | .19 | .29 | .39 | .49 | .59 | 69 | .79 | .89 | .99 | 1.09 | 1.20 | 1.29 | 1.39 |
| 35° | .11 | .22 | .34 | .47 | .58 | .69 | 70 | .81 | .92 | 1.04 | 1.29 | 1.42 | 1.54 | 1.66 |
| 40° | .13 | .26 | .40 | .53 | .67 | .80 | 93 | 1.06 | 1.20 | 1.34 | 1.49 | 1.64 | 1.79 | 1.94 |
| 45° | .15 | .30 | .44 | .60 | .76 | .91 | 106 | 1.21 | 1.37 | 1.52 | 1.70 | 1.87 | 2.04 | 2.21 |
| 50° | .17 | .34 | .51 | .68 | .85 | 1.02 | 119 | 1.36 | 1.54 | 1.72 | 1.91 | 2.10 | 2.29 | 2.48 |
| 55° | .19 | .38 | .57 | .76 | .95 | 1.14 | 132 | 1.52 | 1.72 | 1.92 | 2.14 | 2.35 | 2.56 | 2.77 |
| 60° | .21 | .42 | .63 | .84 | 1.05 | 1.27 | 149 | 1.71 | 1.94 | 2.17 | 2.38 | 2.60 | 2.83 | 3.07 |
| 65° | .23 | .46 | .69 | .93 | 1.16 | 1.40 | 164 | 1.88 | 2.13 | 2.38 | 2.63 | 2.88 | 3.13 | 3.39 |
| 70° | .25 | .51 | .76 | 1.02 | 1.28 | 1.54 | 180 | 2.06 | 2.33 | 2.60 | 2.88 | 3.16 | 3.44 | 3.72 |
| 75° | .27 | .56 | .83 | 1.12 | 1.40 | 1.69 | 198 | 2.27 | 2.57 | 2.87 | 3.16 | 3.47 | 3.78 | 4.09 |
| 80° | .30 | .61 | .91 | 1.22 | 1.53 | 1.84 | 215 | 2.46 | 2.78 | 3.10 | 3.44 | 3.78 | 4.12 | 4.46 |
| 85° | .33 | .66 | 1.00 | 1.33 | 1.68 | 2.02 | 236 | 2.70 | 3.05 | 3.40 | 3.77 | 4.14 | 4.55 | 4.89 |
| 90° | .36 | .72 | 1.09 | 1.45 | 1.83 | 2.20 | 257 | 2.94 | 3.32 | 3.70 | 4.10 | 4.50 | 4.91 | 5.32 |
| 95° | .39 | .79 | 1.19 | 1.55 | 2.00 | 2.40 | 280 | 3.20 | 3.61 | 4.02 | 4.40 | 4.98 | 5.38 | 5.83 |
| 100° | .43 | .86 | 1.30 | 1.74 | 2.18 | 2.62 | 306 | 3.50 | 3.95 | 4.40 | 4.88 | 5.37 | 5.85 | 6.34 |
| 110° | .51 | 1.03 | 1.56 | 2.08 | 2.61 | 3.14 | 367 | 4.21 | 4.76 | 5.31 | 5.86 | 6.43 | 7.01 | 7.60 |
| 120° | .62 | 1.25 | 1.93 | 2.52 | 3.16 | 3.81 | 445 | 5.11 | 5.77 | 6.44 | 7.12 | 7.80 | 8.50 | 9.22 |

### FOR EXTERNALS ADD

| Central Angle. | DEGREE OF CURVE | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° | 55° | 60° | 65° | 70° |
| 10° | .001 | .003 | .004 | .006 | .007 | .008 | 9 | .011 | .012 | .014 | .015 | .017 | .018 | .020 |
| 15° | .003 | .007 | .010 | .014 | .018 | .023 | 7 | .029 | .032 | .035 | .039 | .043 | .047 | .051 |
| 20° | .006 | .011 | .017 | .022 | .028 | .034 | 8 | .045 | .051 | .057 | .063 | .070 | .076 | .083 |
| 25° | .009 | .018 | .027 | .036 | .046 | .056 | 5 | .074 | .083 | .093 | .106 | .120 | .127 | .135 |
| 30° | .013 | .025 | .038 | .051 | .065 | .078 | 0 | .103 | .116 | .129 | .149 | .170 | .179 | .188 |
| 35° | .018 | .035 | .054 | .072 | .086 | .109 | 1 | .153 | .175 | .197 | .213 | .230 | .247 | .264 |
| 40° | .023 | .046 | .070 | .093 | .117 | .141 | 2 | .203 | .234 | .265 | .277 | .290 | .315 | .341 |
| 45° | .030 | .060 | .093 | .119 | .153 | .184 | 6 | .254 | .289 | .325 | .351 | .378 | .411 | .445 |
| 50° | .037 | .075 | .116 | .151 | .189 | .227 | 6 | .305 | .345 | .384 | .425 | .467 | .508 | .550 |
| 55° | .046 | .093 | .142 | .188 | .236 | .283 | 2 | .381 | .420 | .479 | .530 | .582 | .641 | .700 |
| 60° | .056 | .112 | .168 | .225 | .283 | .340 | 8 | .457 | .516 | .575 | .636 | .697 | .774 | .851 |
| 65° | .067 | .135 | .204 | .273 | .343 | .412 | 3 | .554 | .625 | .697 | .711 | .845 | .922 | 1.01 |
| 70° | .080 | .159 | .240 | .321 | .403 | .485 | 8 | .652 | .735 | .819 | .906 | .994 | 1.08 | 1.17 |
| 75° | .095 | .182 | .286 | .383 | .480 | .578 | 8 | .777 | .877 | .977 | 1.07 | 1.18 | 1.29 | 1.39 |
| 80° | .110 | .220 | .332 | .445 | .558 | .671 | 7 | .903 | 1.02 | 1.13 | 1.25 | 1.38 | 1.50 | 1.62 |
| 85° | .128 | .259 | .391 | .524 | .657 | .790 | 6 | 1.06 | 1.20 | 1.34 | 1.47 | 1.62 | 1.76 | 1.91 |
| 90° | .149 | .299 | .450 | .603 | .756 | .910 | 7 | 1.22 | 1.38 | 1.54 | 1.70 | 1.87 | 2.03 | 2.20 |
| 95° | .174 | .350 | .522 | .706 | .985 | 1.06 | 5 | 1.43 | 1.62 | 1.80 | 1.99 | 2.18 | 2.38 | 2.58 |
| 100° | .200 | .401 | .604 | .809 | 1.01 | 1.22 | 3 | 1.64 | 1.85 | 2.06 | 2.28 | 2.50 | 2.73 | 2.96 |
| 110° | .268 | .536 | .806 | 1.08 | 1.35 | 1.63 | 1 | 2.20 | 2.48 | 2.76 | 3.05 | 3.35 | 3.66 | 3.96 |
| 120° | .360 | .721 | 1.08 | 1.45 | 1.82 | 2.19 | 7 | 2.95 | 3.33 | 3.72 | 4.11 | 4.50 | 4.91 | 5.32 |

## TABLE VI.—CORRECTIONS FOR SUB-CHORDS AND LONG CHORDS.

| FOR SUB-CHORDS ADD | | | | | | | | | | Excess of arc per 100 ft. | LONG CHORDS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | | D | 200 | 300 | 400 | 500 |
| 4° | .00 | .00 | .01 | .01 | .01 | .01 | .01 | 01 | .00 | .02 | 1 | 199.99 | 299.97 | 399.92 | 499.85 |
| 6 | .00 | .01 | .01 | .02 | .02 | .02 | .02 | 01 | 01 | .05 | 2 | 199.97 | 299.88 | 399.70 | 499.39 |
| 8 | .01 | .02 | .02 | .03 | .03 | .03 | .03 | 02 | .01 | .08 | 3 | 199.93 | 299.73 | 399.32 | 498.63 |
| 10 | .01 | .02 | .03 | .04 | .05 | .05 | .05 | 04 | .02 | .13 | 4 | 199.88 | 299.51 | 398.78 | 497.57 |
| 12 | .02 | .04 | .05 | .06 | .07 | .07 | .07 | 05 | .03 | .18 | 5 | 199.81 | 299.24 | 398.10 | 496.20 |
| 14 | .02 | .05 | .07 | .08 | .09 | .10 | .09 | 07 | .04 | .25 | 6 | 199.73 | 298.90 | 397.26 | 494.53 |
| 16 | .03 | .06 | .09 | .11 | .12 | .12 | .12 | 09 | .05 | .33 | 7 | 199.63 | 298.51 | 396.28 | 492.57 |
| 18 | .04 | .08 | .11 | .14 | .15 | .16 | .15 | 12 | .07 | .41 | 8 | 199.51 | 298.05 | 395.14 | 490.31 |
| 20 | .05 | .10 | .14 | .17 | .19 | .20 | .18 | 15 | .09 | .51 | 9 | 199.38 | 297.54 | 393.86 | 487.75 |
| 22 | .06 | .12 | .17 | .21 | .23 | .24 | .22 | 18 | .10 | .62 | 10 | 199.24 | 296.96 | 392.42 | 484.90 |
| 24 | .07 | .14 | .20 | .25 | .28 | .28 | .26 | 21 | .12 | .74 | 12 | 198.90 | 295.63 | 389.12 | 478.34 |
| 26 | .09 | .17 | .24 | .29 | .32 | .33 | .31 | 25 | .15 | .86 | 14 | 198.51 | 294.06 | 385.22 | 470.65 |
| 28 | .10 | .19 | .27 | .34 | .37 | .38 | .36 | 29 | .17 | 1.00 | 16 | 198.05 | 292.25 | 380.76 | 461.86 |
| 30 | .11 | .22 | .31 | .39 | .43 | .44 | .41 | 33 | .19 | 1.15 | 18 | 197.54 | 290.21 | 375.74 | 452.02 |
| 32 | .13 | .25 | .36 | .44 | .49 | .50 | .47 | 38 | .22 | 1.31 | 20 | 196.96 | 287.94 | 370.17 | 441.15 |
| 34 | .15 | .28 | .40 | .50 | .55 | .57 | .53 | 43 | .25 | 1.48 | 22 | 196.32 | 285.44 | 364.06 | 429.30 |
| 36 | .17 | .32 | .45 | .56 | .62 | .64 | .59 | 48 | .28 | 1.66 | 24 | 195.63 | 282.71 | 357.43 | 416.53 |
| 38 | .18 | .36 | .51 | .62 | .70 | .71 | .66 | 53 | .31 | 1.86 | 26 | 194.87 | 279.76 | 350.30 | 402.89 |
| 40 | .21 | .40 | .56 | .69 | .77 | .79 | .73 | 59 | .35 | 2.06 | 28 | 194.06 | 276.59 | 342.69 | 388.43 |
| 42 | .23 | .44 | .62 | .76 | .85 | .87 | .81 | 65 | .38 | 2.28 | 30 | 193.18 | 273.20 | 334.61 | 373.20 |
| 44 | .25 | .48 | .68 | .84 | .94 | .96 | .89 | 72 | .42 | 2.50 | 32 | 192.25 | 269.61 | 326.08 | 357.28 |
| 46 | .27 | .52 | .75 | .92 | 1.02 | 1.05 | .98 | 78 | .46 | 2.74 | 34 | 191.26 | 265.81 | 317.12 | 340.73 |
| 48 | .30 | .57 | .81 | 1.00 | 1.12 | 1.14 | 1.06 | 86 | .50 | 2.99 | 36 | 190.21 | 261.80 | 307.77 | 323.61 |
| 50 | .32 | .62 | .89 | 1.09 | 1.21 | 1.24 | 1.15 | 93 | .55 | 3.24 | 38 | 189.10 | 257.60 | 298.03 | 305.99 |
| 52 | .35 | .67 | .96 | 1.18 | 1.31 | 1.35 | 1.25 | 101 | .59 | 3.52 | 40 | 187.94 | 253.21 | 287.94 | 287.94 |
| 54 | .38 | .73 | 1.04 | 1.28 | 1.42 | 1.46 | 1.35 | 109 | .64 | 3.80 | 42 | 186.72 | 248.63 | 277.51 | 269.54 |
| 56 | .41 | .78 | 1.12 | 1.38 | 1.53 | 1.57 | 1.46 | 117 | .69 | 4.09 | 44 | 185.44 | 243.87 | 266.78 | 250.85 |
| 58 | .44 | .84 | 1.20 | 1.48 | 1.65 | 1.69 | 1.57 | 126 | .74 | 4.40 | 46 | 184.10 | 239.93 | 255.78 | 231.95 |
| 60 | .47 | .91 | 1.29 | 1.59 | 1.76 | 1.81 | 1.68 | 135 | .80 | 4.72 | 48 | 182.71 | 233.83 | 244.51 | 212.92 |

NOTE.—When a chord of less than 100 ft. is used the corrections given in the above table should be added to the nominal length of chord to get the length which should be used in order that the 100 ft. points will check with those obtained by using the standard 100 ft. chord. Thus in locating a 14° curve by 25 ft. chords measure 25'.06 for each chord. Long chords are useful in passing obstacles.

## TABLE VII.—MIDDLE ORDINATES FOR RAILS IN FEET.

| Deg. of Curve | LENGTH OF RAILS | | | | | | Deg. of Curve | LENGTH OF RAILS. | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 32 | 30 | 28 | 26 | 24 | 22 | | 32 | 30 | 28 | 26 | 24 | 22 | 20 |
| 1° | .022 | .020 | .016 | .013 | .011 | .009 | 16° | .356 | .313 | .273 | .236 | .200 | .170 | .139 |
| 2 | .045 | .038 | .034 | .029 | .025 | .021 | 17 | .378 | .333 | .290 | .252 | .213 | .180 | .148 |
| 3 | .037 | .058 | .051 | .044 | .037 | .031 | 18 | .400 | .351 | .306 | .265 | .225 | .190 | .156 |
| 4 | .089 | .079 | .069 | .060 | .050 | .042 | 19 | .423 | .371 | .324 | .280 | .238 | .201 | .165 |
| 5 | .112 | .099 | .086 | .074 | .063 | .053 | 20 | .445 | .392 | .341 | .296 | .250 | .212 | .174 |
| 6 | .134 | .117 | .102 | .088 | .076 | .064 | 21 | .466 | .410 | .357 | .309 | .262 | .222 | .182 |
| 7 | .156 | .137 | .120 | .104 | .088 | .074 | 22 | .487 | .430 | .375 | .325 | .275 | .233 | .191 |
| 8 | .179 | .158 | .137 | .119 | .100 | .085 | 23 | .509 | .450 | .390 | .338 | .287 | .243 | .199 |
| 9 | .201 | .175 | .153 | .133 | .112 | .095 | 24 | .531 | .469 | .408 | .354 | .299 | .253 | .208 |
| 10 | .223 | .196 | .171 | .148 | .125 | .106 | 25 | .552 | .486 | .424 | .367 | .311 | .263 | .216 |
| 11 | .245 | .216 | .188 | .163 | .139 | .117 | 26 | .573 | .506 | .441 | .382 | .323 | .274 | .225 |
| 12 | .268 | .236 | .206 | .179 | .151 | .128 | 27 | .594 | .524 | .457 | .396 | .335 | .284 | .233 |
| 13 | .290 | .254 | .222 | .192 | .163 | .138 | 28 | .618 | .545 | .475 | .411 | .348 | .294 | .242 |
| 14 | .312 | .275 | .239 | .207 | .175 | .148 | 29 | .638 | .564 | .491 | .424 | .361 | .303 | .250 |
| 15 | .334 | .295 | .257 | .223 | .188 | .159 | 30 | .660 | .583 | .508 | .438 | .374 | .313 | .259 |

# For Sub Cords Add.

| D | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 | 42 | 44 | 46 | 48 | 50 | 52 | 54 | 56 | 58 | 60 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | | | | .00 | | | | | .00 | | | | | .01 | | | | | .01 | | | | | .01 | | | | | .01 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | .01 | | | | | .01 | .01 | .01 | .01 | .01 | .02 | .02 | .02 | .02 | .02 | .02 | .02 | .02 | .02 | .02 | .02 |
| 7 | .00 | | | .01 | | | | | .01 | | | | | .02 | | | | | .02 | .02 | .02 | .03 | .03 | .03 | | | | | .03 |
| 8 | | | | .01 | | | | | .02 | | | | | .02 | | | | | .03 | | | | | .03 | | | | | .03 |
| 9 | | | | .01 | | | | | .02 | | | | | .02 | | | | | .03 | | | | | .04 | | | | | .04 |
| 10 | | | | .01 | | | | | .02 | | | | | .03 | | | | | .04 | | | | | .05 | | | | | .05 |
| 11 | | | | .02 | | | | | .03 | | | | | .04 | | | | | .05 | | | | | .06 | | | | | .06 |
| 12 | .00 | .00 | .01 | .02 | | | | | .04 | | | | | .05 | | | | | .06 | | | | | .07 | | | | | .07 |
| 13 | | | .01 | .02 | | | | | .05 | | | | | .06 | | | | | .07 | | | | | .08 | | | | | .08 |
| 14 | | | .01 | .02 | | | | | .05 | | | | | .07 | | | | | .08 | | | | | .09 | | | | | .10 |
| 15 | | .01 | .02 | .03 | | | | | .06 | | | | | .08 | | | | | .09 | | | | | .10 | | | | | .11 |
| 16 | | .01 | .02 | .03 | | | | | .06 | | | | | .09 | | | | | .11 | | | | | .12 | | | | | .12 |
| 17 | | .01 | .03 | .04 | | | | | .07 | .07 | .08 | .09 | .09 | .10 | | | | | .12 | | | | | .13 | | | | | .14 |
| 18 | | .01 | .03 | .04 | | | | | .08 | | | | | .11 | | | | | .14 | | | | | .15 | | | | | .16 |
| 19 | | .01 | .03 | .05 | | | | | .09 | | | | | .12 | | | | | .16 | | | | | .17 | | | | | .18 |
| 20 | | .01 | .03 | .05 | .06 | .07 | .08 | .09 | .10 | | | | | .14 | | | | | .17 | | | | | .19 | | | | | .20 |
| 21 | .01 | .02 | .04 | .06 | | | | | .11 | | | | | .15 | | | | | .19 | | | | | .21 | | | | | .22 |
| 22 | .01 | .02 | .05 | .06 | | | | | .12 | | | | | .17 | | | | | .21 | | | | | .23 | | | | | .24 |
| 23 | .01 | | | .07 | | | | | .13 | | | | | .19 | | | | | .23 | | | | | .25 | | | | | .26 |
| 24 | .01 | | | .07 | | | | | .14 | | | | | .20 | | | | | .25 | | | | | .28 | | | | | .28 |
| 25 | .01 | | | .08 | | | | | .15 | | | | | .22 | | | | | .27 | | | | | .30 | | | | | .30 |
| 26 | .01 | .0 | | .09 | | | | | .17 | | | | | .24 | | | | | .29 | | | | | .32 | | | | | .33 |
| 27 | .02 | | | .10 | | | | | .18 | | | | | .26 | | | | | .31 | | | | | .34 | | | | | .36 |
| 28 | .02 | | | .10 | | | | | .19 | | | | | .27 | | | | | .34 | | | | | .37 | | | | | .38 |
| 29 | .02 | | | .11 | | | | | .20 | | | | | .29 | | | | | .36 | | | | | .40 | | | | | .41 |
| 30 | .02 | | | .11 | 13 | 15 | 17 | 20 | .22 | .24 | 26 | .28 | .30 | .31 | .33 | .35 | .36 | .37 | .39 | 39 | 40 | .41 | .42 | .43 | .43 | .43 | .44 | .44 | .44 |

PC 86+96.72
PT 89+87.44

PI 88+42.22
A = 7°16' R
D = 2°30'
D = 2292.0

88+42.2
86+96.7
1+45.5

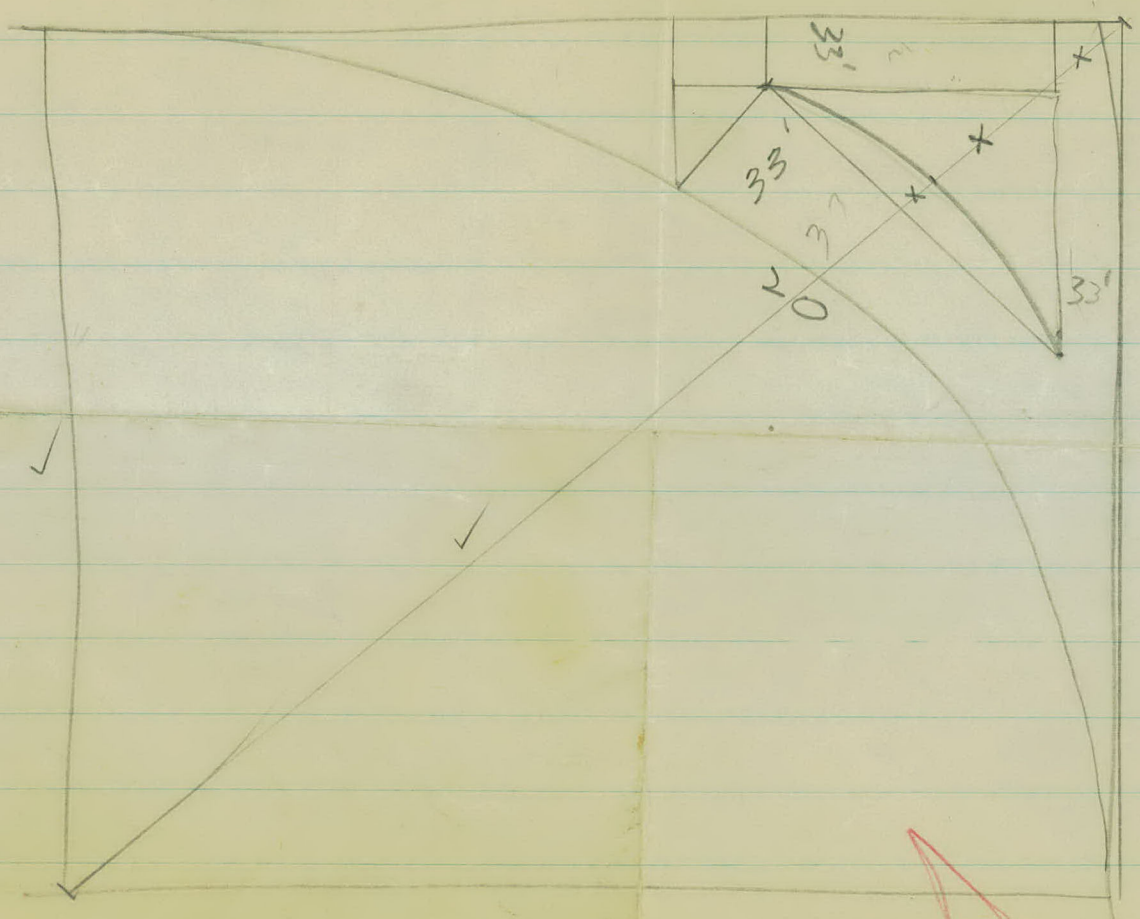
PC 94+80.72
PT 99+01.24

PI = 96+99.14
A = 37°50' R
D = 9°
R = 637.33

PC 102+43.14
PT 104+54.02

¼ Cor = 104+63.22

Center Sec 21-30-22 = 130+93.0




C Rd B'

to

Snelling

## DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1½.

For Single Track Embankment.

| H | 0 | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | H |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 8.0 | 8.2 | 8.3 | 8.5 | 8.6 | 8.8 | 8.9 | 9.1 | 9.2 | 9.4 | 0 |
| 1 | 9.5 | 9.7 | 9.8 | 10.0 | 10.1 | 10.3 | 10.4 | 10.6 | 10.7 | 10.9 | 1 |
| 2 | 11.0 | 11.2 | 11.3 | 11.5 | 11.6 | 11.8 | 11.9 | 12.1 | 12.2 | 12.4 | 2 |
| 3 | 12.5 | 12.7 | 12.8 | 13.0 | 13.1 | 13.3 | 13.4 | 13.6 | 13.7 | 13.9 | 3 |
| 4 | 14.0 | 14.2 | 14.3 | 14.5 | 14.6 | 14.8 | 14.9 | 15.1 | 15.2 | 15.4 | 4 |
| 5 | 15.5 | 15.7 | 15.8 | 16.0 | 16.1 | 16.3 | 16.4 | 16.6 | 16.7 | 16.9 | 5 |
| 6 | 17.0 | 17.2 | 17.3 | 17.5 | 17.6 | 17.8 | 17.9 | 18.1 | 18.2 | 18.4 | 6 |
| 7 | 18.5 | 18.7 | 18.8 | 19.0 | 19.1 | 19.3 | 19.4 | 19.6 | 19.7 | 19.9 | 7 |
| 8 | 20.0 | 20.2 | 20.3 | 20.5 | 20.6 | 20.8 | 20.9 | 21.1 | 21.2 | 21.4 | 8 |
| 9 | 21.5 | 21.7 | 21.8 | 22.0 | 22.1 | 22.3 | 22.4 | 22.6 | 22.7 | 22.9 | 9 |
| 10 | 23.0 | 23.2 | 23.3 | 23.5 | 23.6 | 23.8 | 23.9 | 24.1 | 24.2 | 24.4 | 10 |
| 11 | 24.5 | 24.7 | 24.8 | 25.0 | 25.1 | 25.3 | 25.4 | 25.6 | 25.7 | 25.9 | 11 |
| 12 | 26.0 | 25.2 | 26.3 | 26.5 | 26.6 | 26.8 | 26.9 | 27.1 | 27.2 | 27.4 | 12 |
| 13 | 27.5 | 27.7 | 27.8 | 28.0 | 28.1 | 28.3 | 28.4 | 28.6 | 28.7 | 28.9 | 13 |
| 14 | 29.0 | 29.2 | 29.3 | 29.5 | 29.6 | 29.8 | 29.9 | 30.1 | 30.2 | 30.4 | 14 |
| 15 | 30.5 | 30.7 | 30.8 | 31.0 | 31.1 | 31.3 | 31.4 | 31.6 | 31.7 | 31.9 | 15 |
| 16 | 32.0 | 32.2 | 32.3 | 32.5 | 32.6 | 32.8 | 32.9 | 33.1 | 33.2 | 33.4 | 16 |
| 17 | 33.5 | 33.7 | 33.8 | 34.0 | 34.1 | 34.3 | 34.4 | 34.6 | 34.7 | 34.9 | 17 |
| 18 | 35.0 | 35.2 | 35.3 | 35.5 | 35.6 | 35.8 | 35.9 | 36.1 | 36.2 | 36.4 | 18 |
| 19 | 36.5 | 36.7 | 36.8 | 37.0 | 37.1 | 37.3 | 37.4 | 37.6 | 37.7 | 37.9 | 19 |
| 20 | 38.0 | 38.2 | 38.3 | 38.5 | 38.6 | 38.8 | 38.9 | 39.1 | 39.2 | 39.4 | 20 |
| 21 | 39.5 | 39.7 | 39.8 | 40.0 | 40.1 | 40.3 | 40.4 | 40.6 | 40.7 | 40.9 | 21 |
| 22 | 41.0 | 41.2 | 41.3 | 41.5 | 41.6 | 41.8 | 41.9 | 42.1 | 42.2 | 42.4 | 22 |
| 23 | 42.5 | 42.7 | 42.8 | 43.0 | 43.1 | 43.3 | 43.4 | 43.6 | 43.7 | 43.9 | 23 |
| 24 | 44.0 | 44.2 | 44.3 | 44.5 | 44.6 | 44.8 | 44.9 | 45.1 | 45.2 | 45.4 | 24 |
| 25 | 45.5 | 45.7 | 45.8 | 46.0 | 46.1 | 46.3 | 46.4 | 46.6 | 46.7 | 46.9 | 25 |
| 26 | 47.0 | 47.2 | 47.3 | 47.5 | 47.6 | 47.8 | 47.9 | 48.1 | 48.2 | 48.4 | 26 |
| 27 | 48.5 | 48.7 | 48.8 | 49.0 | 49.1 | 49.3 | 49.4 | 49.6 | 49.7 | 49.9 | 27 |
| 28 | 50.0 | 50.2 | 50.3 | 50.5 | 50.6 | 50.8 | 50.9 | 51.1 | 51.2 | 51.4 | 28 |
| 29 | 51.5 | 51.7 | 51.8 | 52.0 | 52.1 | 52.3 | 52.4 | 52.6 | 52.7 | 52.9 | 29 |
| 30 | 53.0 | 53.2 | 53.3 | 53.5 | 53.6 | 53.8 | 53.9 | 54.1 | 54.2 | 54.4 | 30 |
| 31 | 54.5 | 54.7 | 54.8 | 55.0 | 55.1 | 55.3 | 55.4 | 55.6 | 55.7 | 55.9 | 31 |
| 32 | 56.0 | 56.2 | 56.3 | 56.5 | 56.6 | 56.8 | 56.9 | 57.1 | 57.2 | 57.4 | 32 |
| 33 | 57.5 | 57.7 | 57.8 | 58.0 | 58.1 | 58.3 | 58.4 | 58.6 | 58.7 | 58.9 | 33 |
| 34 | 59.0 | 59.2 | 59.3 | 59.5 | 59.6 | 59.8 | 59.9 | 60.1 | 60.2 | 60.4 | 34 |
| 35 | 60.5 | 60.7 | 60.8 | 61.0 | 61.1 | 61.3 | 61.4 | 61.6 | 61.7 | 61.9 | 35 |
| 36 | 62.0 | 62.2 | 62.3 | 62.5 | 62.6 | 62.8 | 62.9 | 63.1 | 63.2 | 63.4 | 36 |
| 37 | 63.5 | 63.7 | 63.8 | 64.0 | 64.1 | 64.3 | 64.4 | 64.6 | 64.7 | 64.9 | 37 |
| 38 | 65.0 | 65.2 | 65.3 | 65.5 | 65.6 | 65.8 | 65.9 | 66.1 | 66.2 | 66.4 | 38 |
| 39 | 66.5 | 66.7 | 66.8 | 67.0 | 67.1 | 67.3 | 67.4 | 67.6 | 67.7 | 67.9 | 39 |
| 40 | 68.0 | 68.2 | 68.3 | 68.5 | 68.6 | 68.8 | 68.9 | 69.1 | 69.2 | 69.4 | 40 |

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 41.9. For same slopes but other widths of roadbed correct above figures by one-half difference in width of roadbed; thus in example above for 20 ft. roadbed distance will be 41.9 + (20—16) ÷ 2 or 2 ft. added to 41.9 = 43.9. For slopes of 1 on 1 see inside of front cover.

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