

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 $30.6 + (20 - 16) \div 2$ or 2 ft. added to 30.6 = 32.6 For slopes of 1 on 1½ see inside of back cover.
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CITY ENGINEER'S OFFICE

INDEXED
Completely

MICROFILMED

APR 12 1965

The paper stock of this book is made of a high grade 50% rag paper having a water resisting surface. This book is sewed with Bing Special Enamel Waterproof Thread.

Made in U. S. A.

65th St. Sewer Grader
 Hkins Ave to Broadway
 offset 6' Lt of 2

For Location "1664-68"

| | | | | | |
|---------|-------|--------|------|---------|--------------------------------------|
| | | | | | 9.99 2.81 c7.18 |
| | | | | 227.343 | 14.39 2.81 c7.58 |
| 3+76.13 | | | | 225.94 | 2.80 |
| | | | | 223.00 | 14.33 5.17 c9.19 |
| 3+0 | | | | 219.67 | 17.66 2.07 c9.59 |
| | | | | 215.57 | 2.17 1.31 c8.38 |
| TP | 12.55 | 237.33 | 0.26 | 224.78 | 13.57 6.05 c7.52 |
| 3+0 | | | | 211.97 | 17.67 8.12 c9.47 |
| 4+50 | | | | 207.37 | 21.77 19.52 c2.25 |
| 1+0 | | | | 203.27 | 23.41 2.17 c14.24 |
| 4+50 | | | | 201.63 | 25.05 2.76 c12.29 |
| 0+0 | | | | 199.99 | S.E. TOP F.H.V.D. Imperial 146546 |
| 8M | 1.40 | 225.04 | | 223.64 | |

INDEXED

WK.

NOV 9 1948

Sept 29-45
 515007
 811.5
 Osborne

2

| | | | | | | |
|--|--|--|--|--------|-------------------|------------------------|
| | | | | | | 11.45 2.85 c7.10 |
| | | | | 436.85 | 2 Brooklyn MH #37 | 239.89 c7.10 |
| | | | | 8+0 | | 12.71 5.58 c8.17 |
| | | | | 7+0 | | 15.99 8.29 c8.41 |
| | | | | TP | 10.45 | 271.34 |
| | | | | 7+0 | | 19.19 2.21 c8.28 |
| | | | | 4+50 | | 16.33 5.55 c7.68 |
| | | | | TP | 12.19 | 261.48 |
| | | | | 6+0 | | 16.18 9.37 c7.17 |
| | | | | 4+50 | | 8.49 14.32 c7.17 |
| | | | | 5+0 | | 12.31 5.32 c7.08 |
| | | | | 4+50 | | 16.39 9.41 c6.98 |
| | | | | TP | 12.21 | 249.54 |
| | | | | 4+0 | | 8.13 1.37 c6.76 |
| | | | | | | 237.33 |

65th St. S. to Grodor

| | | | | | |
|-----------------|-------|--------|------|--------|---------------------------------------|
| +50 | | | | 276.81 | 76.84 9.91 c6.73 |
| TP | 12.31 | 293.45 | 0.39 | 281.14 | 6.63 0.05 c6.58 |
| 12+0 | | | | 274.90 | 8.59 2.11 c6.73 |
| +50 | | | | 272.99 | 10.45 1.18 c6.27 |
| 11+0 | | | | 271.08 | 11.03 4.80 c6.23 |
| +85.00 = MH #38 | | | | 270.51 | 12.52 6.27 c6.25 |
| +50 | | | | 269.01 | 14.66 8.28 c6.28 |
| 10+0 | | | | 266.87 | 16.80 10.32 c6.48 |
| +50 | | | | 264.73 | 18.94 12.27 c6.57 |
| 9+0 | | | | 262.59 | 21.08 14.18 c6.90 |
| 8+50 | | | | 260.45 | NETOP FH 49. 8500 K 1404 654451 |
| BM | 11.29 | 281.53 | 1.10 | 270.24 | |
| | | 271.34 | | | |

Oct. 4-15

3

| | | | | | |
|-----------------------------|-------|--------|------|--------|------------------------|
| 16+20 | | | | 296.24 | 9.50 3.14 c6.44 |
| 15+80 = Δ 1° 03' Rt MH # 40 | | | | 293.99 | 11.83 5.87 c6.48 |
| +50 | | | | 292.29 | 13.53 7.10 c6.43 |
| 15+0 | | | | 289.46 | 16.36 9.96 c6.40 |
| TP | 12.76 | 305.82 | 0.39 | 293.06 | 6.83 0.25 c6.38 |
| +50 | | | | 286.62 | 9.66 6.15 c6.51 |
| 14+0 | | | | 283.79 | 12.50 5.80 c6.70 |
| +50 | | | | 280.95 | 13.27 8.52 c6.95 |
| +32.89 = 2 Hunderlin MH #39 | | | | 279.98 | 14.73 7.87 c6.86 |
| 13+0 | | | | 278.72 | |
| | | | | 293.45 | |

| | | | | |
|-----------------------------|-------|--------|--------|---|
| B.M. | | 6.57 | 312.23 | 8.P.S.L. Broodm 1' FW 11' Box on 65th St. 312.24 |
| 18+53.28 = M.H. #11 | | | 305.99 | 12.81 1.30 c 8.51 |
| R.P. 10 + 10.8 to cut 36575 | | | | |
| 18+15.52 | | | 304.99 | 13.81 5.05 c 8.76 |
| 17+77.76 | | | 304.00 | 14.80 7.26 c 7.54 |
| 3+27.76 | | | | |
| 17+40 = Brook | | | 302.00 | 15.80 9.41 c 6.39 |
| 17+0 | | | 300.75 | 18.05 11.52 c 6.46 |
| TP | 12.99 | 318.80 | 0.01 | 305.81 |
| 16+60 | | | 298.49 | 7.33 0.25 c 7.08 |
| | | | 305.82 | |

6415 St. Saver Grader
Hkins Ave to Munderlin

| | | | | |
|--|-------|--------|----------------------|-----------------|
| offset 6' Lt 0 to 3+0 | | | For location 1660-64 | |
| " 6' Rt. 3+0 North | | | | |
| TP | 12.05 | 232.79 | 0.36 | 220.74 |
| +40 | | | | 209.17 |
| TP | 11.96 | 231.10 | 1.56 | 209.11 |
| 3+0 | | | | 201.41 |
| INDEXED | | | | |
| WK. | | | | |
| NOV 9 1948 | | | | |
| +8750 - A 1° 44' 30" Rt MH #39 | | | | 11.71 |
| R.P. 6' x 6' + back 17 Garage on split Δ | | | | 2.71 |
| | | | | 9.06 |
| | | | | 12.26 |
| +50 | | | | 198.44 |
| | | | | 12.26 |
| | | | | 5.74 |
| | | | | 6.52 |
| 2+0 | | | | 12.99 |
| | | | | 6.22 |
| | | | | 6.27 |
| +50 | | | | 12.71 |
| | | | | 5.22 |
| | | | | 8.36 |
| 1+0 | | | | 14.25 |
| | | | | 3.74 |
| | | | | 10.71 on bridge |
| +50 | | | | 15.18 |
| | | | | 5.98 |
| | | | | 9.20 |
| 0+0 - Existing MH # Hkins | | | | 15.91 |
| | | | | 5.93 |
| | | | | 9.93 |
| BM | 3.69 | 210.70 | | 207.01 |
| | | | | M 07 56 Hkins |
| | | | | 2.64 + 2.58 |
| | | | | 7.60 - 64 |

Oct. 1-45
Sisson
B. J. W.
O. S. W.

| | | | | |
|---------------------------------|-------|--------|-------|--------|
| TP | 8.54 | 237.56 | 11.20 | 229.02 |
| 7+68.84 | | | | 226.09 |
| 7+34.42 | | | | 225.95 |
| TP | 1.33 | 240.22 | 6.37 | 238.89 |
| 7+0 - A 27° 50' 9" MH # 31 | | | | 225.81 |
| R.P. 10' x 23' Rt on split of Δ | | | | 19.39 |
| For check | | | 7.63 | 237.57 |
| +60 | | | | 225.65 |
| 6+20 | | | | 225.49 |
| +80 | | | | 225.33 |
| +40 | | | | 225.17 |
| 5+0 | | | | 225.01 |
| 4+60 | | | | 224.85 |
| R | 12.79 | 245.20 | 0.38 | 232.41 |
| 4+20 - MH # 31A | | | | 224.69 |
| 3+80 | | | | 216.93 |
| | | 232.79 | | |

| | | | | | |
|---|-------|--------|------|--------|-------------------------|
| TP | 11.10 | 247.67 | 0.99 | 236.57 | 4.30 0.99 c2.21 |
| 11+50 | | | | 233.36 | |
| 11+10 | | | | 232.48 | 5.08 1.26 c3.88 |
| 10+70 | | | | 231.60 | 5.96 + 0.36 c6.36 |
| 10+30 | | | | 230.72 | 6.84 4.86 c2.78 |
| 9+90 | | | | 229.84 | 7.72 4.92 c2.78 |
| 8+40 - 0.88 | | | | | |
| 7+50 | | | | 228.96 | 8.60 8.58 c2.22 |
| 1-43-46 | | | | | |
| 2 Brooklyn | | | | 228.00 | 9.56 7.32 c2.22 |
| 9+06.54 = A 14° 46' M.H. #30 R.P. 10' + 10' R + 0° split Δ | | | | 226.69 | 10.92 7.62 c3.58 |
| 8+72.11 | | | | 226.50 | 11.06 8.27 c2.79 |
| 8+37.69 | | | | 226.36 | 11.20 9.18 c2.07 |
| 8+03.27 | | | | 226.22 | 11.34 9.22 c2.66 |

23756

| | | | | | |
|---|--|--|--|--------|------------------------|
| 14+08.97 = M.H. #28. f. Vanderlyn Hic. R.P. 10' + 10' H 90° off Vanderlyn Hic. | | | | 240.00 | 7.67 2.06 c5.10 |
| 13+74.22 | | | | 239.00 | 8.57 2.50 c6.17 |
| 13+39.48 | | | | 238.00 | 9.52 2.12 c6.54 |
| 13+04.74 | | | | 237.00 | 10.67 5.12 c5.55 |
| 12+70 = A 21° 42' H. M.H. #19 R.P. 10' + 10' + 10' 0° split Δ | | | | 236.00 | 11.67 6.56 c5.14 |
| 12+30 | | | | 235.12 | 12.55 8.07 c4.48 |
| 11+90 | | | | 234.24 | 13.43 9.69 c3.74 |
| 247.67 | | | | | |

INDEXED
NOV 9 1948

Stork St. Sewer Grader
 #kins Hic to Brooklyn Ave

offset 6' 4" or 4' 6" For Location 166-65

INDEXED

| | | | | | |
|-----|---------------------|--------|-----|--------|---------------------------------|
| +80 | | | | 197.69 | 17.05 16.28 c659 |
| BM | 1257 | 214.69 | | 202.12 | on stub 340 |
| +40 | = M.H. #24 | | | 192.25 | 12.88 3.22 c982 |
| +0 | | | | 191.97 | 13.16 4.50 c8.13 |
| TP | 573 | 205.13 | 298 | 199.40 | |
| +50 | | | | 191.62 | 11.76 1.56 c720 |
| +0 | | | | 191.27 | 12.11 9.26 c2.95 |
| +50 | | | | 190.92 | 12.46 3.25 c9.51 |
| +0 | | | | 190.57 | 12.81 3.26 c7.79 |
| +50 | | | | 190.22 | 13.16 3.53 c9.63 |
| +0 | = Exist M.H. #4kins | | | 189.87 | 13.51 1.21 c11.60 on R.H. |
| TP | 191 | 203.38 | 996 | 201.47 | |
| BM | 142 | 211.43 | | 207.01 | Mon St. #kins #2 c4151 |

| | | | | | |
|--------|------------|--------|------|--------|-------------------------|
| 7+62.5 | | | | 245.92 | 17.50 11.86 c5.89 |
| TP | 12.15 | 263.42 | 0.18 | 251.27 | |
| 7+25 | | | | 241.95 | 9.51 3.69 |
| 6+87.5 | | | | 237.97 | 13.66 1.89 c5.97 |
| TP | 11.66 | 251.45 | 0.04 | 239.79 | |
| 6+50 | = M.H. #25 | | | 234.00 | 5.83 0.02 c5.79 |
| 6+20 | | | | 229.96 | 2.87 3.24 c6.63 |
| 5+80 | | | | 224.58 | 15.25 8.58 c6.67 |
| TP | 12.25 | 239.83 | 0.18 | 227.58 | |
| 5+40 | | | | 219.19 | 2.57 1.31 c6.26 |
| 5+0 | | | | 212.80 | 13.96 9.23 c4.74 |
| TP | 6.15 | 227.76 | 0.08 | 214.61 | |
| 4+60 | | | | 208.41 | 6.38 1.26 c3.62 |
| 4+20 | | | | 203.03 | 11.66 3.41 c4.25 |
| | | | | 214.69 | |

Stork St

BM 3.54 266.21 S.H. 7 Hub
Brooklyn

BM 2.46 267.29 7 Mon
Brooklyn +
Stork
267.19

9+55 - MH⁴ 26 = 2 Brooklyn 259.20 10.55

9+24 257.34 12.44
2.77

TP 678 269.75 0.45 262.97 7.94
+93 255.48 6.86
67.38

+62 253.62 9.80
12.28
67.1

+31 257.76 11.66
5.24
66.22

5.21
8+00 = Brook 249.90 13.52
2.07
65.45

263.42

INDEXED

63rd St. Sewer Grader

offset 6' Rt or East For Location 1660-66

TP 3.04 200.81 0.36 197.77
+50 191.80 ^{1.32} _{0.98} c5.28

INDEXED

WK

340 NOV 9 1948 190.60 ^{2.53} _{2.41} c5.12

+50 189.40 ^{8.73} _{5.58} c5.15

2+0 188.20 ^{9.93} _{1.28} c5.68

+50 187.00 ^{11.13} _{4.76} c6.73

1706.03 A 8° 26' 11" ^{12.19} _{4.46} c7.74
RP 649' Rt on Spix A

1+0 185.80 ^{12.33} _{4.23} c8.10

+50 184.60 ^{13.53} _{1.12} c12.41

+35.5 on Bk Hood ^{15.67} _{2.95} c12.72 184.25

0+0 = First MH 183.40 ^{19.534 top MH} _{183.40} c16.94

RM 4.58 198.13 193.55 ^{on stub} _{1706.03} c16.60-66

6.02 199.92 for 10+35.5 193.90 ^{on stub} ₁₊₀

8+57.61 12.63 ^{5.65} _{c6.98} 249.00

8+26.09 16.23 ^{8.76} _{c7.53} 245.40

+94.57 19.83 ^{12.30} _{c7.53} 241.80

TP 12.72 261.63 0.05 248.91

+62.04 14.36 ^{7.26} _{c7.16} 238.20

+21.52 17.96 ^{11.72} _{c6.22} 234.60

7+0 = MH #22 231.00

TP 12.85 248.96 0.41 9.74 236.11

+66.67 ^{6.25} _{c5.84} 226.78

+33.33 13.96 ^{3.26} _{c5.22} 222.56

TP 12.45 231.52 0.23 224.07

6+0 18.18 ^{4.78} _{c5.48} 218.34

+66.67 14.40 ^{7.26} _{c5.14} 214.12

+33.33 14.40 ^{7.26} _{c5.14} 209.90

TP 12.56 224.30 0.25 211.74

5+0 20.55 ^{1.12} _{c5.82} 205.67

+66.67 10.55 ^{8.74} _{c4.81} 201.44

+33.33 14.77 ^{16.21} _{c4.53} 197.22

TP 12.76 211.99 1.58 199.23

4+0 = MH #23 193.00 ^{on stub} ₄₊₀ c6.23

100.81

12 + 20.22 = Break

289.38

19.44
10.84
c9.40

TP 10.99 208.82 0.80 297.83

+79.22 284.91

13.77
3.58
c8.29

11438.22 280.43

18.30
10.28
c7.50

TP 12.57 298.63 0.21 286.06

+99.22 275.96

10.31
3.23
c7.08

+56.22 271.48

14.79
1.86
c6.97

TP 12.82 286.27 0.96 273.45

0.23
87.00
273.45

10 + 15.22 = Brooklyn - MK # 21 267.00

7.44
0.84
c6.57

+93.7 263.40

11.01
1.53
c6.73

+52.18 259.80

14.61
8.71
c5.90

9 + 20.65 256.20

18.21
12.27
c5.94

TP 13.00 274.91 0.22 261.91

9.03
2.75
c6.28

8 + 89.13 252.60

281.63

13 + 20.22 = DE

296.99

11.83
2.18
c8.68

+86.88

294.45

17.31
1.26
c10.91

12 + 53.55

291.91

16.91
8.26
c10.47

508.82

Ofay St. Sewer Grader
65th St to 430' N.W.

offset 6' 4" on S.W. of 1/2

Oct. 10 - 45
S. 5500
Bliss
as before

11

+50 252.15 ^{15.60} ^{7.85} ^{07.75}

TP 11.21 267.75 0.05 0.79 256.54

+40 INDEXED 248.20 ^{8.39} ^{0.74} ^{07.65}

NOV 9 1948

+80 = M.H. # 33 246.62 ^{9.97} ^{2.26} ^{07.57}

+50 244.25 ^{13.24} ^{4.22} ^{07.72}

+40 240.80 ^{16.29} ^{8.89} ^{07.16}

TP 11.89 256.59 0.22 244.70

+50 236.35 ^{8.57} ^{1.28} ^{07.09}

+40 232.40 ^{12.57} ^{3.66} ^{06.36}

+50 228.45 ^{16.47} ^{9.24} ^{07.53}

+40 = M.H. # 34 17.65' 224.50 ^{20.42} ^{12.43} ^{07.09}

BM 12.73 244.92 232.19 ^{07.46} ^{37.40.63} ^{65.76} ^{09.07}

For Check on Cul 8436.82 - 8.01 267.00 ^{257.89} ^{7.10} ^{266.99}
2 Brooklyn 65th Page 2

TP 7.80 275.01 0.04 267.71

+30 = DF 258.47 ^{9.28} ^{1.91} ^{07.37}

+40 256.10 ^{11.65} ^{4.22} ^{07.43}

267.75

6/0

6th St Sewer Grader

From H.C. to Brooklyn Ave

offset 6' to front

For Location #1660-18

10-58 3.35

3.77
3.96
c4.87 186.50

3+20 = MH # 12

10.36
3.20
6.36
c185.01

+80

INDEXED

11.76
6.83
c3.53 183.51

WK

NOV 9 1948

+40

13.26
8.24
c6.30 182.01

2+0

14.71
8.12
c8.54 180.51

+60 = Br-c94

15.31
4.29
11.97 184
c179.01

1+20

16.92
5.90
c11.62 178.35

+80

17.58
7.40
c10.89 177.69

+40

18.24
8.24
c9.57 177.03

0+0 = Existing MH # 12 from Ave.

18.90
7.67
11.23 176.37

BM 7.51 195.27

1100 52' from
262 2nd St.
1680-22 187.76

Oct. 2, 45
Sutton
Bliss
Osborne
0+0 to 2+20

Oct. 26, 45

2+20 to 10+79.50

12

+76

15.02
7.32
c8.47 223.20

+38

17.41
6.76
c7.66 221.60

TP

12.10 239.02 1.80 226.92

7+0 = MH # 14 = Δ 0° 24' R
R.P. 10' + 10' 1st 90° Back to 70'

R.P. 405
20.64
7+0
8.72
2.88
c5.87 220.00

TP

3.46 228.72 0.17 225.26

6+62

8.78
3.44
c5.34 216.65

6+24

13.15
6.94
c6.19 213.30

+86

15.48
7.02
c8.43 209.95

TP

11.15 225.43 0.37 214.28

5+48

8.05
1.24
c6.81 206.60

5+10

11.45
4.71
c6.69 203.25

4+72

14.75
7.72
c7.03 199.90

4+34

18.10
10.52
c7.57 196.55

TP

11.80 214.65 0.34 202.85

2+96

9.99
8.18
c1.81 193.20

2+58

13.34
8.67
c4.67 189.85

BM

11.82 203.19

09.06
3+20 MH 191.37

| | | | | |
|------------------------------|--------|-----------------------|--------|--|
| 632257 | | | | |
| sexer under Bridge | | | | |
| | | | | 5.70 3.78 c1.92 |
| +75 = 1/4 Bridge | | | 179.57 | |
| +60 = B-4 | | 6.26 5.23 c1.03 | 179.01 | 6.59 3.51 c2.08 |
| 17.40 = 1/4 Bridge | | | 178.68 | |
| TP | 4.39 | 185.27 | 71.24 | 180.88 |
| BM | 2.97 | 192.12 | | 189.15 |
| BM | | 2.14 | 244.72 | 0.00 Stak 2+0 Sw Sph Pole Brookly 62.00 244.72 16.86 3.25 c7.57 |
| +79.50 = M.H. #15 of Brookly | | | 236.00 | |
| TP | 8.12 | 246.86 | 0.28 | 238.74 |
| +42 | | | 234.42 | 4.60 0.28 c4.32 |
| 10+04 | | | 232.81 | 6.31 3.25 c3.06 |
| 9+66 | | | 231.21 | 7.81 5.13 c2.68 |
| 9+28 | | | 229.61 | 9.41 6.67 c2.74 |
| 8+90 | | | 228.01 | 11.51 6.96 c4.55 |
| 8+52 | | | 226.40 | 12.69 6.80 c5.89 |
| 8+14 | | | 224.80 | 14.28 6.41 c7.87 |
| | 239.02 | | | |

| | | | | |
|-------------------------------------|-------|--------|--------|--|
| Block 8 Escanto Hts | | | | |
| Sewer Grader | | | | |
| Stakes off set 6' west | | | | |
| | | | | 12.42 3.54 c8.88 |
| +96.10 = M.H. #17 of 1/4 under line | | | 270.50 | 13.90 3.52 c10.38 |
| TP | 6.02 | 285.92 | 1.32 | 272.00 279.90 11.66 5.32 c6.34 |
| +50 | | | 269.56 | |
| 1+0 | | | 266.92 | 14.30 9.26 c5.04 |
| INDEXED | | | | |
| WIK | | | | |
| NOV - 9 1948 | | | | |
| +50 | | | 264.28 | 16.94 16.41 c0.53 |
| TP | 12.18 | 281.22 | 0.80 | 269.04 |
| 3+0 | | | 261.64 | 8.20 2.39 c5.81 |
| +50 = M.H. #16 | | | 259.00 | 10.84 5.27 c5.57 |
| 2+0 | | | 254.40 | 15.44 8.82 c6.62 |
| TP | 13.74 | 269.84 | 0.29 | 257.10 |
| +50 | | | 249.80 | 7.59 1.26 c6.33 |
| 1+0 | | | 245.20 | 12.19 2.42 c9.77 |
| +50 | | | 240.60 | 16.79 11.29 c5.50 |
| 0+0 = M.H. #15 of Brookly office | | | 236.00 | |
| BM | 12.77 | 257.39 | | 244.62 |
| | | | | Sw Sph Pole Brookly + 62.00 16.64-3 |

63rd St. Sewer Grades North of Wackerlin Rd.

offset 6' W of 1/2 St.

2+99.78 = D.F. 305.55 9.95
2.67
c7.28

2+64.78 301.85 13.45
7.06
c6.39

TP 8-22 315.30 1.01 307.08

2+24.78 297.85 10.24
5.31
c4.93

2-40-1-55

14.24
9.56
c4.68 293.85

+84.78 = M.H. #20 291.85 16.21
9.56
c6.65

1-36.78

1-08 291.48 16.61
11.35
c5.26

1+11 291.11 11.98
13.12
c4.87

TP 11-92 308.09 9.05 296.17

+74 290.74 14.48
9.42
c5.06

+37 290.37 14.85
2.00
c6.85

4-87

0+0 = M.H. #19 1/2 Wackerlin & 63rd 290.00

B.M. 0.74 305.22 304.48 SETOP F Hyd.
Wackerlin
& 63rd St.
Page

Nov. 5-45

S. J. JACO

B. J. JACO

8199

Fergus St Sewer Grader
 Atkins Ave to Brooklyn Ave.
 off set 6' R. or East

Location #1660-69

| | | | | | |
|---------------------------------|-------|--------|------|--------|----------------------------------|
| +50 | | | | 198.65 | 9.87 |
| +37.5 | | | | 193.04 | 4.02 c5.78 |
| 8-37.5 - 1.84- | | | | | |
| 3+0 = MH #12 | | | | 191.20 | 11.71 5.56 c6.15 |
| INDEXED | | | | | |
| WIC | | | | | |
| NOV 9 1948 | | | | | |
| +80 | | | | 188.60 | 14.31 6.52 c7.75 |
| 2+20 | | | | 186.00 | 16.91 8.42 c8.60 |
| TP | 11.88 | 202.91 | 0.52 | 191.03 | 8.15 0.88 c7.53 |
| +80 | | | | 183.40 | 3.15 0.88 c7.53 |
| 1+40 | | | | 180.80 | 10.75 3.27 c6.78 |
| 1+0 | | | | 178.20 | 13.35 7.95 c5.70 |
| +60 | | | | 175.60 | 15.95 10.62 c5.53 |
| 7-40 - 2.60 | | | | | |
| 0+20 = Brook | | | | 173.00 | 19.55 19.12 c7.39 |
| 0+0 = Existing MH at Atkins Ave | | | | 169.60 | 21.95 11.31 c10.64 on R.W. |
| BM | 11.37 | 191.55 | | 180.24 | on R.W. MH 0+0 #1660-69 |

| | | | | | | |
|--------------|-------|--------|------|--------|--------|-------------------------|
| +50 | | | | | 215.50 | 11.12 2.96 c8.47 |
| 7+12.5 | | | | | 213.10 | 13.83 6.28 c7.57 |
| +75 | | | | | 210.70 | 16.32 9.21 c7.01 |
| +37.5 | | | | | 208.30 | 18.63 11.99 c6.53 |
| TP | 13.01 | 226.92 | 0.28 | | 213.91 | 8.29 1.89 c6.65 |
| 6+0 = MH #11 | | | | | 205.90 | 8.29 1.89 c6.65 |
| 5+62.5 | | | | | 204.06 | 10.13 4.71 c5.22 |
| 5+25 | | | | | 202.23 | 11.91 7.48 c4.78 |
| 4+87.5 | | | | | 200.39 | 13.80 9.61 c4.19 |
| +50 | | | | | 198.55 | 15.64 12.34 c4.70 |
| TP | 12.06 | 214.19 | 0.78 | | 202.13 | 6.20 1.35 c4.65 |
| 4+12.5 | | | | | 196.71 | 6.20 1.35 c4.65 |
| 3+75 | | | | | 194.88 | 8.03 2.80 c5.23 |
| | | | | 208.91 | | |

| | | | | | |
|----------|----------|----------|------|--------|--|
| 11+46.30 | M.H. #9 | Brooklyn | | 237.92 | 11.55 4.96 c7.47 |
| BM | | 4.76 | | 244.71 | 0.77 2.80 Brooklyn Fergus 244.66 1.339 5.25 c7.82 |
| 11+4.11 | | | | 236.08 | |
| 10+75.92 | | | | 234.25 | 15.22 7.58 c7.66 |
| 10+40.74 | | | | 232.42 | 17.05 7.83 c7.22 |
| TP | 12.04 | 249.47 | 0.74 | 237.43 | |
| 10+05.55 | | | 0.52 | 230.59 | 7.58 0.74 c6.84 |
| 9+70.37 | | | | 228.76 | 9.41 3.02 c6.39 |
| 9+35.18 | | | | 226.93 | 11.24 4.98 c6.26 |
| 7-35.18 | -1.82 | | | | |
| 9+0 | M.H. #10 | | | 225.10 | 13.07 6.71 c6.36 |
| 8+62.5 | | | | 222.70 | 15.17 8.29 c6.88 |
| 8+25 | | | | 220.30 | 17.87 9.21 c7.96 |
| TP | 11.80 | 238.17 | 0.35 | 226.57 | |
| 7+87.5 | | | | 217.90 | 9.03 6.22 c2.86 |
| | | | | 226.92 | |

| | | | | | |
|------|-----------|----------|------|--------|-----------------------------------|
| 3+20 | = DE | | | 240.16 | 15.86 4.84 c11.22 |
| +80 | | | | 239.88 | 16.14 2.93 c13.21 |
| +40 | | | | 239.60 | 16.44 4.67 c12.35 |
| TP | 5.01 | 256.02 | 0.95 | 251.01 | |
| 2+0 | | | | 239.32 | 13.64 0.78 c11.86 |
| +60 | | | | 239.04 | 12.97 1.92 c11.05 |
| 1+20 | | | | 238.76 | 13.20 2.00 c10.20 |
| +80 | | | | 238.48 | 13.18 0.71 c9.57 |
| +40 | | | | 238.20 | 13.76 5.01 c8.75 |
| 0+0 | = M.H. #9 | Brooklyn | | 237.92 | |
| BM | 6.55 | 251.96 | | 245.41 | 0.25 114.036 Fergus |
| BM | new | | | 248.83 | 3.87 Top Brooklyn Fergus |
| BM | 0.97 | | | 244.56 | 2.10 Brooklyn Fergus |
| BM | 4.76 | 249.30 | | | |

| 61st St. Sewer Grades | | | | Location #1660-70 | |
|-----------------------------|------------|---------------|--------|---|--------------|
| H.Kins Ave. to Brooklyn Ave | | | | | |
| off set C.R. or East | | | | | |
| | 9.21 | 201.92 | 192.71 | 0.25 to 3+0 | |
| 3+0 | MH #1 | | 186.77 | 7.35 1.41 5.94 | |
| +65 | out. | | 182.57 | 11.55 2.58 8.97 | |
| INDEXED | | | | | |
| WK | | | | | |
| NOV 9 1948 | | | | | |
| 2+30 | | | 178.37 | 15.75 7.98 7.77 | |
| TP | 12.14 | 194.12 | 0.50 | 181.98 | |
| +95 | | | 174.17 | 8.31 4.59 3.78 | |
| +60 | Break | | 169.97 | 12.51 7.21 5.30 | |
| 1+20 | | | 168.49 | 13.99 8.07 5.92 | |
| +80 | | | 167.01 | 15.47 9.53 5.94 | |
| +40 | | | 165.53 | 16.98 13.57 3.41 | |
| 0+0 | = Existing | MH H.Kins Ave | 164.05 | 18.42 10.12 8.30 | 0.25 to 0.75 |
| B.M. | 10.13 | 182.48 | 172.35 | 0.25 R in MH H.Kins + 61 ft 1660-70 | |

| Oct 8-45 | | | | Oct 31-45 | |
|------------|-------|--------|------|-----------------|------------------------|
| 0+0 to 3+0 | | | | 3+0 to 12+07.68 | |
| +50 | | | | 18.72 17.83 | 17 |
| TP | 12.47 | 225.97 | 0.10 | 207.25 | C7.07 |
| 8+0 | | | | 213.50 | 9.00 4.29 4.71 |
| +50 | | | | 204.60 | 11.65 5.50 6.15 |
| 7+0 | | | | 199.30 | 14.30 8.25 6.05 |
| +50 | | | | 196.65 | 16.95 9.72 7.23 |
| 6+0 | MH #2 | | | 194.00 | 19.60 14.27 5.33 |
| TP | 11.83 | 213.60 | 0.15 | 201.77 | 9.13 7.50 1.63 |
| +50 | | | | 192.79 | 10.33 8.13 2.20 |
| 5+0 | | | | 191.59 | 11.54 5.27 6.27 |
| +50 | | | | 190.38 | 12.74 6.83 5.91 |
| 4+0 | | | | 189.18 | 13.95 8.21 5.74 |
| 3+50 | | | | 187.97 | |
| 201.92 | | | | | |

61st St.

| | | | | |
|---------|------------------------|--------|--------|-------------------------------------|
| BM | | 2.92 | 235.34 | 200 Mon Brooklyn + CMR 235.76 |
| | Set off Mon as 235.167 | | | |
| 12+0768 | MH #4 | | 225.05 | 14.91 14.53 1.64 c12.89 |
| | | | | |
| +71.78 | | | 222.34 | 15.12 4.23 c10.89 16.85 |
| | | | | |
| +35.89 | | | 221.62 | 16.14 6.52 c9.61 9.53 |
| | | | | |
| 11+0 | Break | | 220.90 | 16.86 9.40 c7.76 |
| TP | 12.05 | 237.76 | 0.26 | 225.71 |
| | | | | 7.82 1.02 c6.80 |
| 450 | | | 218.15 | |
| | | | | |
| 10+0 | | | 215.40 | 10.27 3.80 c6.77 |
| | | | | |
| +50 | | | 212.65 | 13.33 5.98 c7.34 |
| | | | | |
| 9+0 | MH #3 | | 209.90 | 16.07 2.57 c9.50 |

22597

Brooklyn Ave Sewer Grader
East of 62nd St
Stakes off set 45' South of 2

Oct. 29-45

| | | | | | |
|--------|-----------------------|--------|------|--------|------------------------------------|
| | | | | 261.70 | 7.59 2.31 c5.28 |
| 3+16 | = D.F | | | | 10.87 5.87 c5.00 |
| 2+80 | | | | 258.42 | |
| TP | 6.81 | 269.29 | 2.91 | 262.48 | 10.25 5.25 c5.00 |
| +44 | | | | 255.13 | |
| | | | | | 13.53 8.25 c5.08 |
| 2+08 | | | | 251.85 | |
| | | | | | 16.82 11.21 c5.71 |
| +72 | | | | 248.57 | |
| TP | 12.81 | 265.29 | 0.49 | 252.58 | 7.79 1.56 c6.23 |
| +36 | | | | 245.28 | |
| 6-36 | | | | | 11.07 4.24 c6.83 |
| 1+0 | = Break | | | 242.00 | |
| | | | | | 13.07 3.81 c5.06 |
| +66.67 | | | | 240.00 | |
| | | | | | 15.07 10.26 c4.77 |
| +33.33 | | | | 238.00 | |
| | | | | | |
| 0+0 | = M.H. #15 of 62nd St | | | 236.00 | |
| | | | | | 5.74 Spk. pole Brooklyn 62nd |
| BM | 8.45 | 253.07 | | 244.62 | |

Brooklyn Ave Sewer Grader
East West of Stark St
off set 6' N of 2

Oct. 8-45

20

Location 1660-72

| | | | | | |
|------|-----------------------|--------|--|--------|--|
| | | | | 259.62 | 13.50 5.82 c7.68 |
| 3+05 | | | | | |
| | | | | | 13.74 5.34 c8.37 |
| +75 | | | | 259.41 | |
| | | | | | 13.97 5.20 c8.72 |
| 2+45 | = M.H. #26 | | | 259.20 | |
| | | | | | 13.12 5.20 c7.92 |
| 2+00 | | | | 260.00 | |
| | | | | | 12.88 5.22 c7.66 |
| 2+10 | | | | 260.24 | |
| | | | | | 12.63 5.36 c7.27 |
| +75 | | | | 260.49 | |
| | | | | | 12.39 5.39 c6.96 |
| +40 | | | | 260.73 | |
| | | | | | 12.14 5.75 c6.39 |
| 1+05 | | | | 260.98 | |
| | | | | | 11.90 5.71 c6.19 |
| +70 | | | | 261.22 | |
| | | | | | 11.65 5.35 c6.30 |
| +35 | | | | 261.47 | |
| | | | | | 11.40 5.20 c6.20 |
| 0+0 | = D.F 245' W of Stark | | | 261.72 | |
| | | | | | 07 Mon of Brooklyn Stark Page 8 |
| RM | 5.83 | 273.12 | | 267.29 | |

Brooklyn Ave. East of Stark

| | | |
|-----------|--------|------------------------|
| 3795 = DI | 260.25 | 12.87 8.07 c7.80 |
| 765 | 260.04 | 13.03 7.98 c6.75 |
| 3785 | 259.83 | 13.20 6.14 c7.12 |
| 273.12 | | |

Brooklyn Ave Sewer Grader
West of 64th St.
offset 4.5 ft

Oct. 19-45
S. 5562
Bliss
Osborn
21
Location 1660-72

| | | | | | |
|--------------|-------|--------|------|--------|--|
| 2+68 = D.F. | | | | 248.62 | 9.78 2.51 c7.27 |
| TP | 5.66 | 258.96 | 0.21 | 252.74 | 7.83 0.92 c6.89 |
| 2+30 | | | | 245.12 | |
| 1+92 | | | | 241.62 | 11.53 3.85 c7.68 |
| 1+54 | | | | 238.13 | 14.87 6.12 c8.70 |
| 1+16 | | | | 234.63 | 18.37 2.32 c9.68 |
| TP | 12.68 | 252.95 | 0.99 | 240.27 | 9.90 2.40 c7.52 |
| +78 | | | | 231.14 | |
| 6.48 | 2.50 | | | | |
| 740 = Break | | | | 227.64 | 13.22 9.54 c3.88 |
| 070 = MH #30 | | | | 226.64 | 14.42 14.38 c0.04 |
| BM | | | 1.87 | 239.19 | Height of Brooklyn 2.64 BM 60 |
| BM | 3.43 | 241.06 | | 237.63 | BM 60 Brooklyn 16.46 |

Broadway Sewer Grades

780 East of 65th St.

offset 6' at South 409' Pav. Location 1660.79

| | | | |
|---------|----------|--------|---|
| 2+37.50 | | 311.57 | 9.09 3.50 5.59 |
| | +0.75 | | |
| 3+0 | = MH #44 | 310.82 | 9.84 4.12 5.72 |
| 2+62.84 | | 310.56 | 10.10 4.59 5.51 |
| 2+25.70 | | 310.30 | 10.36 4.75 5.61 |
| 1+88.51 | | 310.04 | 10.64 4.93 5.67 |
| 1+51.41 | | 309.78 | 10.88 5.17 5.71 |
| 1+14.28 | | 309.52 | 11.14 5.35 5.79 |
| +77.14 | | 309.26 | 11.40 5.53 5.85 |
| 7-37.14 | 0.26 | | |
| +40 | = Break | 309.00 | 11.66 5.79 5.95 |
| 0+0 | = MH #41 | 308.99 | |
| BM | 8.42 | 320.66 | 312.24 B.P.S.L. Broadway 15' of 11/12 Pav 65th St. |

| | | | |
|---------|----------|--------|-------------------------------|
| +72 | | 317.83 | 11.27 6.53 4.74 |
| +36 | | 317.52 | 12.30 6.88 5.42 6.46 |
| 6+0 | = MH #43 | 316.82 | 12.78 5.39 7.39 |
| 5+62.5 | | 316.07 | 13.53 6.43 6.79 |
| 5+25 | | 315.32 | 14.28 7.49 6.79 |
| 4+87.5 | | 314.57 | 15.03 8.51 6.52 |
| TP | 9.60 | 329.60 | 0.66 |
| 4+50 | | 313.82 | 6.84 0.81 6.23 |
| 4+12.50 | | 313.07 | 7.59 1.59 6.00 |
| 3+75 | | 312.32 | 8.34 2.81 5.73 |

320.66

7+80 = D.F

319.34

10.26
4.73
08.73

+44

318.84

10.76
3.52
07.22

7+08

318.33

11.27
3.57
07.70

32960

Lot 41 Encanto Setter Grades
From Brooklyn Hsc to Wunderlin Hsc.
offset 45 West Location #1664 2-75

INDEXED

NOV WK 9 1910

| | | | | | |
|-------------------------|-------|--------|------|--------|---|
| +80.76 | | | | 234.93 | 15.37 8.04 c5.26 |
| 7-3576 | | | | | |
| +45 - MH #6 | | | | 221.93 | 16.37 10.16 c6.21 |
| | | | | | |
| 2+10 | | | | 230.92 | 17.38 12.17 c5.21 |
| TP | 12.55 | 248.30 | 0.24 | 235.75 | |
| +75 | | | | 229.90 | 6.19 2.09 c4.10 |
| | | | | | |
| +40 | | | | 228.89 | 7.20 3.24 c3.56 |
| | | | | | |
| 1+0.5 | | | | 227.87 | 8.22 4.32 c3.89 |
| | | | | | |
| +70 | | | | 226.86 | 9.23 4.14 c4.59 |
| | | | | | |
| +35 | | | | 225.84 | 10.25 5.21 c5.24 |
| TP | 4.57 | 236.09 | 9.80 | 231.52 | |
| 0+0 - MH #5 of Brooklyn | | | | 224.83 | 16.49 12.95 c3.54 CUS |
| | 2.58 | 233.66 | | 231.08 | 0.5403 0+35 |
| | | | | | |
| BM | | | 0.57 | 240.75 | Let 10, 20 ft to MH #28 Brooklyn 21/11/51 |
| | | | | | |
| BM | 6.16 | 241.22 | | 235.16 | 2 May Brooklyn 46 N 15th St 1660-71 |

Oct. 19-45
5.55m
81.55
Arboret

| | | | | | |
|------------------------------|-------|--------|------|--------|-------------------------------|
| For Check 4+95.2 | 0.17 | 260.87 | | | 072 stub 260.91 1664-75 |
| 4+95.30 - MH #7 of Wunderlin | | 252.96 | | | 8.00 2.23 c7.25 |
| RP 10/174 Cross 12/11/4 | | | | | |
| +59.56 | | 249.96 | | | 11.08 2.81 c6.27 |
| 4+22.80 | | 246.95 | | | 14.09 9.54 c4.58 |
| +88.04 | | 243.95 | | | 17.09 12.56 c4.47 |
| TP | 12.98 | 261.04 | 0.24 | 248.06 | |
| +52.28 | | 240.94 | | | 7.36 2.90 c4.37 |
| 2716.52 | | 237.94 | | | 10.86 5.76 c4.66 |
| | | | | | |
| | | | | 248.30 | |

Wunderlin Ave Sewer Grader
 East of 6th St to Lot 6 Block 8 Encanto
 offset 1' North of 2nd St Location 1660-76

| | | | | | |
|--------------|-------------------|--------|--------|---|--|
| 526 | | | | | |
| 3780 = Great | | | 262.86 | 10.27 4.85 c5.92 | |
| | INDEXED | | | | |
| | WK | | | | |
| | NOV 9 1948 | | | | |
| +44 | | | 260.88 | 12.25 7.60 c4.55 | |
| 3708 | | | 258.90 | 14.23 9.94 c4.29 | |
| | | | | | |
| +72 | | | 256.92 | 16.41 11.90 c4.78 | |
| | | | | | |
| +36 | | | 254.94 | 18.19 12.15 c6.04 | |
| | | | | | |
| 240 = MH #7 | | | 252.96 | 20.17 12.30 c7.87 | |
| | | | | | |
| +66.66 | | | 254.97 | 18.16 14.58 c6.60 | |
| TP | 10.31 | 273.13 | 12.68 | 262.82 | |
| | | | | | |
| +38.33 | | | 256.99 | 18.51 12.66 c5.85 | |
| | | | | | |
| 140 = DF | | | 259.00 | 16.50 10.20 c6.90 | |
| | | | | | |
| BM | 1.16 | 275.50 | 274.34 | LIT. # of Wunderlin North of 60th | |

Nov. 5. 45
 Simon
 81.55
 8.99

25

| | | | | | | |
|-------------|-------|--------|------|-------|--------|-------------------------|
| +52.5 | | | | | 288.80 | 9.08 6.27 c8.37 |
| | | | | | | |
| 7714 | | | | | 287.07 | 10.81 2.22 c8.58 |
| | | | | | | |
| +75.5 | | | | | 285.34 | 12.53 4.28 c8.35 |
| | | | | | | |
| 6737 | | | | | 283.60 | 14.27 6.15 c8.13 |
| | | | | | | |
| +98.5 | | | | | 281.87 | 16.01 8.02 c7.98 |
| | | | | | | |
| +60 = MH #8 | | | | | 280.14 | 17.74 10.18 c7.56 |
| TP | 12.53 | 297.88 | 0.11 | | 285.55 | |
| | | | | | | |
| 5724 | | | | | 276.68 | 5.98 2.17 c8.57 |
| | | | | | | |
| +88 | | | | | 273.23 | 12.23 3.68 c8.55 |
| | | | | | | |
| +52 | | | | | 269.77 | 15.60 7.90 c7.71 |
| | | | | | | |
| TP | 12.38 | 285.46 | 0.05 | | 270.08 | |
| | | | | | | |
| 4716 | | | | | 266.32 | 6.81 2.06 c6.75 |
| | | | | | | |
| | | | | 27313 | | |

870 50 298.5 ✓ Ground

8768.0 = DF 294.00 ^{9.46}_{3.18} 05.28

8729.5 292.27 ^{11.19}_{4.14} 07.05

7791 ^{0.45} 290.53 ^{12.93}_{5.20} 07.73

TP 568 302.46 0.10 297.78

297.88

Wunderling Fire Server Grader
 East West of Canyon Sewer. Between 63rd & 65th St
 offset 6' 11" of 2 St. Location 1660-77

| | | | | | |
|--------------------------|-------|--------|-------|--------|--|
| 2+6824 | | | | 255.82 | 15.23 8.28 c8.95 |
| TP | 12.36 | 270.53 | 0.07 | 258.19 | 10.60 3.16 c8.94 |
| 2+3647 | | | | 247.66 | 19.97 11.97 c8.20 |
| 3-31.77 | 7.66 | | | | |
| 2+04.70 = M.H. #28 | | | | 240.00 | 18.26 10.32 c7.94 |
| TP | 3.60 | 258.26 | 11.97 | 254.66 | 18.26 10.32 c7.94 |
| 1+76.60 | | | | 246.66 | 19.97 11.97 c8.20 |
| 1+36.48 | | | | 253.82 | 15.31 8.28 c8.90 |
| TP | 0.06 | 266.63 | 12.37 | 266.57 | 18.98 11.97 c7.86 |
| 1+02.36 | | | | 257.98 | 19.97 11.97 c8.20 |
| +68.24 | | | | 266.64 | 12.32 3.48 c8.84 |
| TP | 0.41 | 278.96 | 12.94 | 278.35 | 17.99 7.66 c10.67 |
| 739.12 | | | | 278.20 | 17.99 7.66 c10.67 |
| 6-34.12 | 6.66 | | | | |
| 0+0 = DE East of 65th St | | | | 279.96 | 14.32 4.76 c6.48 |
| 8M | 4.36 | 291.29 | | 286.93 | 07 Hail MH #39 Z Wunderling 65th St |

Oct 16-75
 5:00 AM
 8:00 AM
 8:00 PM

| | | | | | | |
|-----------------|-------|--------|------|--|--------|-------------------------|
| 4+28 | | | | | 294.00 | 10.77 3.31 c8.26 |
| 5+92 | | | | | 290.00 | 14.77 2.22 c8.35 |
| 5+56 | 4.00 | | | | 286.00 | 18.77 18.00 c7.97 |
| TP | 11.93 | 304.77 | 0.19 | | 292.84 | 16.03 2.28 c8.05 |
| 5+20 = M.H. #27 | | | | | 282.00 | 16.03 2.28 c8.05 |
| 4+83.34 | | | | | 278.82 | 14.31 7.00 c7.21 |
| TP | 12.64 | 293.03 | 1.26 | | 280.39 | 6.00 1.26 c4.74 |
| 4+46.67 | | | | | 275.65 | 6.00 1.26 c4.74 |
| 4+10 | | | | | 272.48 | 9.17 6.16 c4.01 |
| 3+73.34 | | | | | 269.31 | 12.34 4.34 c8.00 |
| 3+36.67 | 7.17 | | | | 266.14 | 15.51 5.84 c7.57 |
| TP | 11.85 | 281.65 | 0.75 | | 269.80 | 7.53 0.75 c6.83 |
| 3+0 = R14 | | | | | 262.97 | 7.53 0.75 c6.83 |
| | | | | | 270.55 | |

| | | | | | |
|----|--|--|------|--------|--|
| BM | | | 9.91 | 299.67 | $\begin{array}{r} 2.109 \\ 2.109 \\ 63.257 \\ \hline 299.59 \end{array}$ |
|----|--|--|------|--------|--|

| | | | | | |
|----|------|--------|-------|--------|--|
| TP | 0.81 | 309.58 | 12.96 | 308.77 | |
|----|------|--------|-------|--------|--|

| | | | | | |
|----|------|--------|------|--------|--|
| TP | 6.65 | 321.73 | 1.88 | 315.08 | |
|----|------|--------|------|--------|--|

| | | | | | |
|-----------|--|--|--|--------|---|
| 7+90 = DF | | | | 306.05 | $\begin{array}{r} 1.091 \\ 3.12 \\ \hline 2.77 \end{array}$ |
|-----------|--|--|--|--------|---|

| | | | | | |
|------|--|--|--|--------|---|
| 7+60 | | | | 304.70 | $\begin{array}{r} 12.26 \\ 3.55 \\ \hline 8.71 \end{array}$ |
|------|--|--|--|--------|---|

| | | | | | |
|------|--|--|------|--------|---|
| 7+30 | | | 0.45 | 302.55 | $\begin{array}{r} 13.61 \\ 4.53 \\ \hline 9.08 \end{array}$ |
|------|--|--|------|--------|---|

| | | | | | |
|---------------|--|--|--|--------|---|
| 3-20.0 - 1.25 | | | | 302.00 | $\begin{array}{r} 14.96 \\ 5.28 \\ \hline 9.68 \end{array}$ |
|---------------|--|--|--|--------|---|

| | | | | | |
|------|--|--|--|--------|--|
| 6+64 | | | | 298.00 | $\begin{array}{r} 18.96 \\ 2.73 \\ \hline 10.23 \end{array}$ |
|------|--|--|--|--------|--|

| | | | | | |
|----|-------|--------|------|--------|--|
| TP | 12.42 | 316.96 | 0.23 | 304.54 | |
| | | 304.77 | | | |

| Hunderlin H/c Barrier Grader #1660-76 | | | |
|---------------------------------------|-----------------|------------|--------|
| East + West of 63rd St | | offset 6'H | |
| BM | 11.98 | 294.42 | 282.44 |
| 8-3345 | | | 272.00 |
| 12+17.42 | MH #17 | | 273.50 |
| 11+86.54 | | | 275.97 |
| 11+55.67 | | | 278.44 |
| 11+24.80 | | | 280.91 |
| 10+93.92 | | | 283.38 |
| 10+63.04 | | | 285.85 |
| TP | 9.68 | 303.88 | 0.22 |
| 10+32.17 | | | 288.32 |
| 10+01.30 | | | 290.79 |
| 8-30875 | -2.47 | | |
| 9+70.42 | DF N of 63rd St | | 293.26 |

| Oct. 31.45 S. 51st 8/15 as bar nr. | | | |
|---|--------|--------|--------|
| 15+51.17 | | | 280.81 |
| 15+18.08 | | | 277.74 |
| 5-33.08 | -3.06 | | |
| 14+85 | MH #18 | | 274.68 |
| 14+51.57 | | | 274.34 |
| 14+18.12 | | | 274.01 |
| 13+84.67 | | | 273.67 |
| 13+51.22 | | | 273.34 |
| 13+17.77 | | | 273.00 |
| 12+84.32 | | | 272.67 |
| 12+50.87 | | | 272.33 |
| BM | 7.73 | 290.17 | 282.44 |

| | | | | | |
|----------|--------------|--------|------|--------|--|
| 18+32.92 | | | | 310.32 | 12.41 3.88 c8.59 |
| 4-32.5 | 0.325 | | | | |
| 18+00.42 | -Brt | | | 310.00 | 12.73 6.58 c6.15 |
| 17+70.72 | | | | 306.31 | 16.43 9.86 c6.76 |
| TP | 10.75 | 322.73 | 0.14 | 311.98 | |
| 17+40.42 | | | | 302.62 | 9.50 2.29 c7.27 |
| 17+10.42 | | | | 298.93 | 12.19 5.67 c7.52 |
| B.M. | | 7.64 | | 304.48 | S.E. Top FH 19 Wunderlich 4630 |
| 16+80.42 | 3.69 | | | 295.24 | 16.88 9.48 c7.40 |
| TP | 12.53 | 312.12 | 3.21 | 299.59 | 07 & 1107 Wunderlich 4630 299.59 |
| | | | | 291.55 | 11.25 3.22 c8.03 |
| 16+50.42 | MH 19 7 63rd | | | 290.00 | 12.80 3.22 9.58 |
| 16+17.34 | | | | 286.94 | 15.87 8.64 c9.33 |
| 15+84.25 | | | | 283.87 | 18.93 10.70 c8.23 |
| TP | 12.87 | 302.80 | 0.24 | 289.73 | |
| | | 290.17 | | | |

19+30.42 RT

311.36

11.43
4.50
c7.13

18+97.92

310.97

11.76
3.23
c8.51

18+65.42

310.65

12.08
3.06
c9.02

322.73

INDEXED
WK
NOV 9 1948

| | | | |
|--------------|---------------------|--------|-------------------------|
| 3+0518 | | 194.95 | 12.9 3.1 c3.8 |
| +75.86 BC Lt | | 195.67 | 12.2 8.1 c3.8 |
| +50 | | 196.31 | 11.5 1.9 c3.6 |
| 2+0 | | 197.54 | 10.3 6.8 c3.5 |
| +50 | | 198.77 | 9.1 5.3 c3.8 |
| 1+0 | Brk | 200.00 | 7.8 1.5 c3.5 |
| +50 | | 200.93 | 6.9 3.2 c3.7 |
| +24.4 | 89' 53" RT | 201.40 | 6.4 2.3 c4.2 |
| 0+0 | FX STA 16 TCC IN ST | 201.40 | 6.4 2.4 c4.4 |
| BM | 0.89 | 207.83 | NXBP FF + 28' 1/2 ST |

| | | | | | |
|---------|----------|--------|-------|--------|----------------------------------|
| 10+0 | Brk | | | 161.80 | 11.6 8.0 c3.6 |
| +50 | | | | 164.20 | 9.2 5.6 c3.7 |
| 9+0 | | | | 166.60 | 5.8 3.3 c2.5 |
| TP | 1.08 | 173.38 | 12.76 | 172.30 | 11.1 13.5 c2.2 |
| +50 | | | | 169.00 | NXBP C + 28' 1/2 ST 176.01 |
| BM | | | 9.09 | 175.97 | 14.5 10.7 c3.8 |
| 8+17.15 | 51' C ST | | | 170.58 | 14.5 10.7 c3.8 |
| TP | 0.23 | 185.06 | 12.72 | 184.83 | |
| TP | 0.91 | 197.55 | 11.24 | 196.59 | |
| 4+07.51 | Brk | | | 193.66 | 14.2 10.2 c3.8 |
| 4+02.74 | FC | | | 193.65 | 14.0 10.4 c3.6 |
| +73.42 | | | | 193.82 | 12.8 10.3 c2.5 |
| 3+11.10 | BC RT | | | 194.00 | 13.6 9.9 c3.7 |
| 3+34.50 | FC | | | 194.23 | |
| | | | | | 207.83 |

| | | | | | |
|--------|------------|---------------|-------|--------|--|
| BM | | | 5.76 | 157.86 | S.K.B.P. E+281451 157.88 |
| 15+0 | | | | 157.20 | 9.4 5.6 c3.8 |
| +50 | | | | 154.40 | 9.2 5.5 c3.7 |
| 14+0 | | | | 154.60 | 9.0 5.1 c3.9 |
| +50 | | | | 154.80 | 8.8 9.2 c4.1 |
| 13+0 | | | | 155.00 | 8.6 9.5 c4.1 |
| 12+50 | | | | 155.20 | 8.4 9.5 c3.9 |
| +97.62 | Gate Valve | Acadell | | 155.41 | 8.2 9.2 c4.0 |
| TP | 2.34 | 163.62 | 12.10 | 161.28 | 16.5 12.9 c3.6 |
| +17.16 | Brk | | | 156.92 | |
| BM | | N.W. Broadway | 12.10 | 161.28 | N.E. 2nd Broadway 281451 161.21 |
| 11+0 | | | | 157.55 | 15.8 12.3 c3.5 |
| 10+50 | Brk | | | 159.40 | 14.0 16.4 c3.6 |
| | | 170.88 | | | |

| | | | | | |
|--------|-------------------------|--------|-------|--------|----------------------|
| 20+0 | | | | 128.72 | 10.7 7.2 c3.5 |
| +51.16 | A 0° 01' 24" | | | 150.40 | 9.9 5.0 c4.9 |
| | = 57' 2" East to East | | | | |
| 19+0 | Brk | | | 132.18 | 7.9 5.6 c3.7 |
| +50 | Brk | | | 134.20 | 5.2 1.7 c3.5 |
| TP | 1.15 | 139.43 | 12.86 | 138.28 | 13.9 10.3 c3.6 |
| 18+0 | Brk | | | 137.20 | |
| +50 | | | | 140.65 | 10.5 6.8 c3.7 |
| 17+0 | | | | 144.10 | 7.0 5.6 c3.4 |
| TP | 0.36 | 151.14 | 12.84 | 150.78 | 16.1 12.5 c3.6 |
| +50 | | | | 147.55 | |
| 16+0 | Brk | | | 151.00 | 12.6 9.0 c3.6 |
| +61.72 | A 0° 04' 30" N | | | 152.69 | 10.9 6.7 c4.2 |
| | = S 15' 2" East to East | | | | |
| 15+50 | Brk | | | 153.20 | 10.4 6.3 c4.1 |
| | | 163.62 | | | |

| | | | | | |
|-----------------------------|--|--|-------|--------|-----------------------|
| 24+0 | | | 0.541 | 114.27 | 13.9 9.9 C 4.0 |
| +50 = Brk | | | | 117.00 | 11.2 7.7 C 3.8 |
| 23+37.99 EC 2'57"15 | | | | 117.39 | 10.8 7.0 C 3.8 |
| 23+17.34 1°28'37 | | | | 118.05 | 10.2 6.1 C 4.1 |
| 22+61 | | | | | |
| +96.70 BC Pt | | | 0.33 | 118.71 | 9.5 5.5 C 4.0 |
| +67.34 N.L.G. St. | | | | | |
| +50 | | | | 120.20 | 8.0 4.2 C 3.8 |
| 22+0 = Brk | | | | 121.80 | 6.4 2.7 C 3.7 |
| TP 1.25 128.21 12.47 126.96 | | | | | 13.9 12.4 C 3.7 |
| +50 | | | | 123.53 | |
| 21+0 | | | | 125.26 | 14.2 10.3 C 3.9 |
| 20+50 | | | 0.341 | 126.99 | 12.1 8.9 C 3.5 |

13943

| | | | | | |
|----------------------------------|--|--|--|--------|-----------------------|
| +25.44 1°38' | | | | 99.68 | 16.7 12.8 C 3.9 |
| 23.80 | | | | | |
| 28+02.64 BC | | | | 100.32 | 15.0 12.1 C 3.9 |
| 14.12 | | | | | |
| 27+88.52 E.C. 3°30' | | | | 100.72 | 15.7 14.2 C 4.0 |
| +64.08 1°45' | | | | 101.40 | 15.0 14.2 C 3.8 |
| 27+39.65 BC Lt | | | | 102.08 | 14.3 10.7 C 3.6 |
| 26+40.05 EC 2°21'40" = Excut 10" | | | | 103.20 | 13.2 9.6 C 3.6 |
| 16.50 | | | | | |
| +23.55 1°10'52" | | | | 103.79 | 12.6 9.1 C 3.5 |
| 16.50 | | | | | |
| 26+07.05 BC Lt | | | | 104.38 | 12.0 8.5 C 3.5 |
| +50 = Brk | | | | 106.40 | 10.0 6.2 C 3.7 |
| 25+0 = Brk | | | | 108.80 | 7.1 3.9 C 3.7 |
| TP 0.98 116.37 12.82 115.39 | | | | | |
| 24+50 | | | | 111.53 | 16.7 12.7 C 4.0 |

12821

| | | | | | |
|------------|--|--------|-------|--------|-----------------------------------|
| TP | 0.42 | 92.48 | 12.74 | 92.06 | 16.8 18.2 C3.5 |
| 33+0 | =Brk | | | 88.00 | 15.2 11.8 C3.6 |
| +50 | | | | 89.63 | 13.6 9.9 C3.7 |
| 32+0 | | | | 91.25 | 11.0 8.2 C3.7 |
| +50 | | | | 92.88 | 5 WBP Island + 28 1/4 98.13 |
| BM | | 6.70 | | 98.10 | 10.3 8.6 C3.7 |
| 31+0 | =Brk | | | 94.50 | 9.4 5.8 C3.6 |
| +46.96 | $\Delta 0^{\circ} 01' 30''$ Pt. -117' 6" Island | | | 95.44 | 8.5 5.0 C3.5 |
| 30+0 | | | | 96.28 | 7.6 5.2 C2.9 |
| +50 | | | | 97.17 | 6.7 3.2 C3.5 |
| 29+0 | | | | 98.07 | 5.8 1.9 C3.9 |
| 28 + 48.35 | | | | 99.00 | 5.8 1.9 C3.9 |
| 28 + 48.25 | =Brk 3' 16" | | | 99.00 | |
| TP | 1.22 | 104.80 | 12.79 | 103.58 | |
| | | 116.37 | | | |

| | | | | | |
|-----------|-------------|--|--|-------|---------------------|
| +99.76 | = 1/4 15 ST | | | | 11.0 6.2 C4.5 |
| +50 | | | | | 11.0 5.1 C4.9 |
| 37+0 | | | | | 11.0 5.8 C5.2 |
| +50 | | | | | 11.0 5.8 C5.2 |
| 36+0 | | | | | 11.0 5.2 C5.8 |
| +50 | | | | | 11.0 4.9 C6.1 |
| 35 + 12.5 | =Brk | | | 81.50 | 10.1 4.7 C5.4 |
| +75 | | | | 82.44 | 8.3 4.2 C4.0 |
| +37.5 | | | | 84.32 | 7.9 3.9 C4.0 |
| 34+0 | =Brk | | | 85.32 | 5.7 2.9 C2.8 |
| 33+50 | | | | 86.66 | 5.7 2.9 C2.8 |

92.48

| | | | |
|--------------------------------|-------|-------|---------------------------|
| | 87.59 | | |
| 42+0 | | 73.97 | 136 2.2 c 7.7 |
| +50 | | 75.10 | 125 8.8 c 3.7 |
| 41+0 | | 76.04 | 116 8.0 2.6 |
| +50 | | 76.97 | 106 5.9 3.7 |
| 40+0 | | 77.91 | 97 6.0 c 3.7 |
| +50 = Brk | | 78.84 | 88 5.1 c 3.7 |
| 39+0 | | 80.05 | 75 4.0 c 3.5 |
| +52.76 +72.76 = S 7' L K St | | 80.95 | 66 2.0 c 3.8 |
| TP | 2.59 | 85.00 | 527.247 K+284 84.99 |
| +50 = Brk | | 81.50 | 110 7.2 c 3.7 |
| | 7.53 | 84.95 | 527.247 K+284 |
| 38+0 | | | 110 7.0 c 3.0 |
| | | 0.0 | |

92.48

| | | | |
|-------------------------|-------|-------|-----------------------|
| 46+0 | | 68.38 | 95 4.5 c 4.9 |
| +75 = Brk | | 68.55 | 93 4.6 c 4.9 |
| +58.54 = 17' L Imperial | | 69.30 | 85 4.5 c 4.0 |
| +87.5 | | | |
| 45+0 = Brk | | 70.05 | 78 4.0 c 3.8 |
| +50 | | | 38 3.2 c 4.9 |
| 44+0 | | | 78 2.8 c 3.5 |
| +87.5 = Brk | | 70.05 | 28 2.9 c 3.7 |
| +50 | | 71.10 | 67 2.4 c 4.4 |
| 43+0 = Brk | | 72.50 | 53 1.9 c 3.6 |
| TP | 10.59 | 87.59 | 0.84 |
| +50 | | 73.18 | 14.5 10.6 c 3.9 |
| 42+25 = Brk | | 73.40 | 14.2 9.0 c 4.3 |

| | | | | | |
|---------------------------|------|-------|------|-------|----------------------|
| +50 | | | | 12.98 | 9.3 5.7 c 3.6 |
| +25 = Brk | | | | 12.80 | 9.5 5.5 3.7 |
| 50+0425 = 57th Commercial | | | | 12.80 | 9.5 6.2 c 3.9 |
| +50 | | | | 63.55 | 8.7 7.8 c 3.9 |
| 49+0 | | | | 64.30 | 8.0 7.5 c 0.5 |
| +50 | | | | 65.05 | 7.3 6.8 c 0.5 |
| 48+0 | | | | 65.80 | 6.5 6.0 c 0.6 |
| TP | 8.23 | 77.84 | 2.69 | 69.61 | 11.2 7.5 c 3.7 |
| +50 | | | | 66.55 | 10.5 6.9 c 0.7 |
| 47+0 | | | | 67.30 | 9.8 6.1 c 3.7 |
| 46+50 = Brk | | | | 68.05 | 9.0 5.3 c 3.7 |

77.84

Levels Backed in From
28 to 53 +

| | | | | | |
|--------------------------|------|-------|------|-------|---|
| BM | 5.43 | 72.30 | | 66.87 | 57' 2" + Commercial + 28 189.4 |
| " | | | 6.27 | 76.03 | on East Flanking 7.1 |
| +61.09 = End | | | | 65.22 | |
| +11.49 = H.L. Webster | | | | | |
| 53+0 = Brk | | | | 64.50 | 7.8 7.7 c 3.4 |
| +50 | | | | 64.28 | 8.0 4.5 c 3.5 |
| 52+0 = Brk | | | | 64.06 | 8.3 4.7 c 3.5 |
| +50 | | | | 63.70 | 8.6 5.0 c 3.6 |
| +32.28 = H.L. Valley Pl. | | | | | |
| 51+0 | | | | 63.34 | 9.0 5.3 c 3.7 |

72.30

Server Grades Alley Block 251 Bergin's Hdd
 Between Main St & Dalbergia St & 5th St & 19th St
 Location & Levels 1624-79

Dec 645
 Siroos
 81.55
 Osborne
 8099

37

| | | | |
|------------------|-----------------------------|-------|---------------------------|
| +70 = OE | INDEXED WK NOV 9 1918 | +1.00 | 11.26 5.30 c5.96 |
| +50 | | +0.85 | 11.41 5.52 c5.87 |
| 3+0 | | +0.50 | 11.76 5.86 c5.96 |
| +50 | | +0.15 | 12.11 5.39 c6.72 |
| 2+0 = MH | | -0.20 | 12.46 5.05 c7.41 |
| +50 | | -0.55 | 12.81 4.89 c7.92 |
| 1+0 | | -0.90 | 13.16 5.48 c7.71 |
| +50 | | -1.25 | 13.51 5.23 c8.28 |
| 0+0 = Fx Int. MH | | -1.60 | 13.86 4.01 c9.85 |
| BM 550 1226 | | 676 | 07 Stub 0+0 1624-79 |

INDEXED
NOV 9 1918

Boundary St. Water Main Grades

Polk Ave to Madison Ave.

Location & Levels # 1167

Plan 6417-18-19

| | | | | | |
|---------|-------------------------------|--------|-------|--------|---|
| TP | 10.77 | 363.90 | 0.10 | 353.13 | 5.6 0.5 0.46 |
| +20 | | | | 348.16 | 5.6 0.5 0.46 |
| TP | | | | 347.60 | 5.6 0.5 0.46 |
| 2+11.13 | = A 22' 30" RT. | | | 346.90 | 7.5 1.9 0.56 |
| 2+70 | | | out | 346.90 | 7.5 1.9 0.56 |
| +85 | = A 22' 30" RT. | | | 345.70 | 7.5 1.9 0.56 |
| +60 | | | | 343.90 | 9.5 2.9 0.66 |
| +40 | | | | 342.50 | 10.4 2.7 0.70 |
| +20 | | | | 341.70 | 11.5 4.8 0.67 |
| 1+0 | | | | 341.30 | 11.9 5.6 0.63 |
| +50 | | | | 341.30 | 11.9 5.8 0.57 |
| 0+0 | = 30' Main Polk Ave Trench | | | 341.30 | 11.9 7.0 0.76 |
| | | | | | Trench Grade |
| TP | 3.74 | 353.23 | 11.95 | 349.49 | NW 8.P Orange Bancroft 1667-84 |
| BM | 8.20 | 361.44 | | 358.24 | |

INDEXED
WK
NOV 9 1948

Dec. 11-48
Singer
Bliss
Osborne
8099

offset 6' East of 2' Ditch
Trench Grade

| | | | | | |
|------|-------|--------|------|--------|----------------------|
| +50 | | | | 362.08 | 11.3 9.8 0.45 |
| +40 | | | | 360.45 | 15.9 11.5 0.44 |
| TP | 12.75 | 376.37 | 0.28 | 363.62 | |
| +50 | | | | 358.85 | 5.1 0.4 0.47 |
| +40 | | | | 357.20 | 6.7 2.0 0.47 |
| +30 | | | | 355.58 | 8.3 0.4 0.52 |
| +25 | | | | 354.82 | 9.1 4.0 0.51 |
| +15 | | | | 354.05 | 9.9 5.2 0.47 |
| +7.5 | | | | 352.62 | 10.3 6.6 0.47 |
| +0 | | | | 351.30 | 12.7 8.1 0.46 |
| 2+50 | | | | 349.30 | 14.6 10.0 0.46 |
| | | | | 363.90 | |

| | | | | | |
|------|------|--------|--------|---------------------|--------|
| | | | | 0 | |
| +50 | | | 372.70 | 11.0 6.5 c4.5 | |
| 11+0 | | | 371.90 | 11.7 6.9 c4.8 | |
| +50 | | | 370.77 | 12.9 7.9 c5.0 | |
| TP | 7.73 | 383.65 | 0.45 | | 375.92 |
| 10+0 | | | 369.65 | 6.7 4.2 c5.0 | |
| +50 | | | 368.52 | 7.8 2.9 c4.9 | |
| 9+0 | | | 367.40 | 9.0 4.0 c5.0 | |
| +50 | | | 366.30 | 10.1 5.1 c5.0 | |
| 8+0 | | | 365.20 | 11.2 6.3 c4.9 | |
| +50 | | | 364.45 | 11.9 7.4 c4.5 | |
| 7+0 | | | 363.70 | 12.7 8.0 c4.4 | |
| | | 376.87 | | | |

| | | | | | |
|----------|---|---------------------------|--------|---------------------|--|
| 16+0 | | | 374.90 | 8.7 5.2 c5.5 | |
| +50 | | | 374.35 | 9.3 5.5 c5.8 | |
| 15+0 | | | 373.80 | 9.8 4.0 c5.8 | |
| +50 | | | 373.25 | 10.4 4.2 c6.0 | |
| 14+25 | = | A 22° 30' R | 372.97 | 10.7 4.6 c6.1 | |
| 14+0 | | out | 372.70 | | |
| 13+98.87 | = | A 22° 30' L | | 11.0 4.7 c6.3 | |
| | | | 149.93 | 11.9 5.1 c5.9 | |
| 13+0 | | | | 11.0 5.4 c5.6 | |
| 12+63.71 | = | A 0° 02' L | | 11.0 5.7 c5.3 | |
| | | N 7° 25' E / Cajon to Hcd | | | |
| +50 | | | | 11.0 5.8 c5.2 | |
| 12+0 | | | | 11.0 5.8 c5.2 | |
| | | 383.65 | | | |

| | | | | | |
|---------|---|--------|------|--------|--------------------------------|
| 21+0 | | | | 379.50 | 8.1 2.8 c4.6 |
| +50 | | | | 379.05 | 8.7 3.9 c4.8 |
| 20+0 | | | | 378.80 | 8.9 2.2 c4.7 |
| BM | | 490 | | 382.81 | NM 8P Meadow loco 382.82 |
| + 55.32 | - Δ 0° of 41 = N 7 Line Meadow Hvc. to East. | | | 378.58 | 9.2 4.2 c4.8 |
| 19+0 | | | | 378.30 | 9.4 4.8 c4.6 |
| TP | 532 | 387.71 | 1.26 | 382.59 | 5.6 1.6 c4.5 |
| +50 | | | | 378.05 | c4.5 |
| 18+0 | | | | 377.80 | 5.9 4.6 c4.3 |
| +50 | | | | 376.90 | 6.8 1.8 c5.0 |
| 17+0 | | | | 376.00 | 2.7 7.3 c5.4 |
| 16+50 | | | | 375.45 | 8.2 2.8 c5.4 |

382.65

| | | | | | |
|-------|------|--------|------|--------|--|
| +50 | | | | 381.10 | 10.2 5.9 c4.7 |
| BM | | | 5.93 | 385.52 | S.E. 8P. Meadow Boundary 385.55 |
| 26+0 | | | | 381.00 | 18.4 3.9 c4.3 |
| +50 | | | | 380.90 | 18.5 5.9 c4.6 |
| 25+0 | | | | 380.80 | 10.6 5.6 c4.6 |
| TP | 6.07 | 391.45 | 2.33 | 385.58 | 2.6 c4.8 |
| +50 | | | | 380.63 | c4.8 |
| 24+0 | | | | 380.47 | 2.2 2.2 c4.8 |
| +50 | | | | 380.30 | 2.4 2.6 c4.8 |
| 23+0 | | | | 380.13 | 2.6 2.7 c4.9 |
| +50 | | | | 379.97 | 2.7 2.1 c4.6 |
| 22+0 | | | | 379.80 | 2.9 5.2 c4.7 |
| 21+50 | | | | 379.55 | 8.2 3.5 c4.7 |

387.71

31+0 383.69 $\frac{78}{3.3}$
04.5

+50 383.38 $\frac{8.1}{3.6}$
04.5

30+0 383.07 $\frac{8.1}{3.9}$
04.5

+50 382.75 $\frac{8.7}{4.1}$
04.6

29+0 382.14 $\frac{9.0}{4.5}$
04.5

+50 382.13 $\frac{9.3}{4.8}$
04.5

28+0 381.82 $\frac{9.6}{5.3}$
04.3

+50 381.51 $\frac{9.9}{5.5}$
04.7

27+0 381.20 $\frac{10.2}{5.9}$
04.5

26+70.72 = 17' Maroc-East 381.14 $\frac{10.3}{5.9}$
04.4

391.45

+43.41 = 12' Maroc Madison Kvc 0385.20 $\frac{6.25}{2.0}$
04.2

33+0 384.93 $\frac{6.5}{2.2}$
04.3

+50 384.62 $\frac{6.8}{2.6}$
04.2

32+0 384.31 $\frac{7.1}{2.9}$
04.4

31+50 384.00 $\frac{7.5}{3.0}$
04.5

391.45

Boundary St. Water University Ave to
 Polk Ave. to East
 Location & Levels 1687' offset 6' East of 2

| | | | | |
|-----------------|--|--|--------|-------------------------------------|
| 4+0 | | | 332.70 | 7.1 5.0 c 2.1 |
| +55.5 | | | 331.95 | 7.8 5.9 c 1.9 |
| 3+0 | | | 331.27 | 8.5 4.6 c 3.9 |
| +50 | | | 330.60 | 9.2 5.3 c 3.9 |
| 2+0 | | | 329.69 | 10.1 5.7 c 4.4 |
| 1+62.03 EC | | | 328.80 | 11.0 5.0 c 6.0 |
| 1+24.99 | | | 328.20 | 11.6 6.2 c 5.4 |
| 1+0 | | | 328.20 | 11.6 7.0 c 4.6 |
| 787.95 | | | 333.44 | N.W. BP University & Boundary |
| 0+50.91 B.C. H. | | | 339.81 | |
| BM 637 | | | 339.81 | |

Dec. 26. 45
 S. No. 7
 81. N
 Orbarer

42

| | | | | |
|-------|------|--------|--------|----------------------|
| 4+0 | | | 336.60 | 9.9 5.3 c 4.6 |
| +71.6 | | | 335.80 | 10.7 5.2 c 5.5 |
| +40 | | | 333.90 | 12.6 5.4 c 7.2 |
| +20 | | | 333.10 | 13.4 5.1 c 8.3 |
| 7+0 | | | 332.70 | 13.8 5.1 c 8.7 |
| +50 | | | | 13.8 6.7 c 7.1 |
| 6+0 | | | | 13.8 6.7 c 7.1 |
| TP | 7.44 | 346.51 | 0.74 | 339.07 |
| +50 | | | | 7.1 0.7 c 6.4 |
| 5+0 | | | | 7.1 1.5 c 5.6 |
| 4+50 | | | 333.70 | 7.1 2.1 c 5.0 |
| | | 339.81 | | |

58

| | | | |
|----------|---------------------|--------|--------------------|
| +240.5 | 2° 00 | 332.00 | 9.5 2.5 c7.0 |
| 23.96 | Stake Card 23.54 | | |
| 11+00.09 | P.R.C. | | 9.5 2.8 c5.7 |
| +76.12 | 1° 00 | | 9.5 2.5 c7.1 |
| +52.16 | 2° 00 | | 9.5 3.9 c5.6 |
| 23.91 | Stake Card 24.28 | | |
| +38.2 | B.C.L. | | 9.5 2.7 c5.4 |
| 1040 | | | 9.5 2.5 c5.2 |
| +56 | | 00 | 9.5 2.5 c5.0 |
| 910 | | | 9.5 4.7 c4.8 |
| 8+55.8 | | | 9.5 5.0 c4.5 |
| 44.2 | | | 9.5 5.2 c4.3 |
| 8+116 | | 337.00 | 9.5 5.2 c4.3 |
| | 346.51 | | |

43

Boundary at Polk to West Feb. 26-46
Sister
Osborne
Bopp
Wadner

| | | | |
|----------|--------------------------|--------|----------------------------------|
| 1.40 | Grades for Valve Chamber | | |
| 5.07 | Rad. | | |
| 5.00 | 5.08 | 4.81 | East Side Box 0.27 Below Top Cb. |
| 4.43 | 4.48 | 4.48 | W Side Box 0.19 Below Top Cb. |
| 4.39 | Rad. | | |
| 5.06 | North Edge of Box | | |
| 4.41 | (Edge Pav.) | | |
| 5.09 | Crown 0.80 | | |
| 11+82 | | | 0387.00 |
| 11+71.98 | F.C. | 6° 00 | 3 ft of 2 9.5 2.5 c7.1 |
| 11+48.01 | | 4° 00 | 9.5 2.3 c7.2 |
| | | 346.51 | |

59th St Jayer Grader
 Kenwood to 630' North
 Staker offset 6' East of L

5-49

+85 = MH

INDEXED
 WK
 NOV 9 1948

+50

TP 12.35 238.85 0.13 226.50

3+0 218.75

+50 215.62

2+0 212.50

TP 12.95 226.63 0.30 213.65

+50 209.37

1+0 206.25

+50 203.12

0+0 = EXIST. M.H. Kenwood 200.00

B.M. 11.41 213.95 202.54

19.28
 8.50
 224.07 c6.28

16.95
 11.38
 221.87 c5.60

2.88
 2.87
 218.75 c5.27

11.07
 6.05
 215.62 c4.96

14.13
 9.23
 212.50 c4.91

4.58
 0.30
 209.37 c4.28

7.70
 3.85
 206.25 c3.85

16.83
 4.20
 203.12 c4.23

13.95
 9.00
 200.00 c4.95

Kenwood
 Kenwood
 + 10.20
 16.59-12

Jan 3-46
 5.880
 8.111
 05601
 8099

Brooklyn

+2570 Fd Pipe
 Dead End

5975

3301

As Staked

Kenwood

EXIST. M.H.

080

32
 Fd Pipe

46

6+30 = DE 244.90

5+81 240.73

5+32 236.56

TP 12.65 251.01 0.49 238.36

4+83 232.40

4+34 228.23

228.85

251.01 X
 0.03

250.98
 7.35

258.33
 2.06

BM 256.27

5.89
 Brooklyn

+5917
 251.30
 +1.59-12

6.11
 0.03
 244.90 c6.08

10.28
 2.25
 240.73 c8.03

14.45
 8.32
 236.56 c6.08

7.05
 0.37
 238.36 c5.91

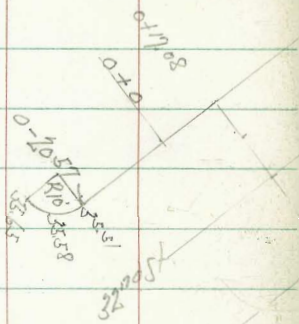
10.62
 2.35
 228.23 c8.13

Main St & 32nd St.
 Re-Design of Intersection

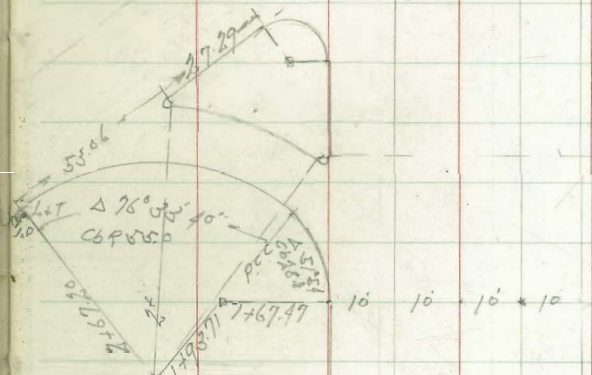
Cross Sections # 1240-39-55

Jan 9-46
 Sisson
 Bliss
 Osborn
 Bepp

INDEXED
 WK
 NOV 9 1948



0+323.58



$\Delta 15^{\circ}00'$
 CBR 93.50
 T 12.31

0+52.31 P.C.
 $\Delta 15^{\circ}00'$
 SBR 147.28
 T 19.39

0+0 85.11

#1 #2 #3 #4

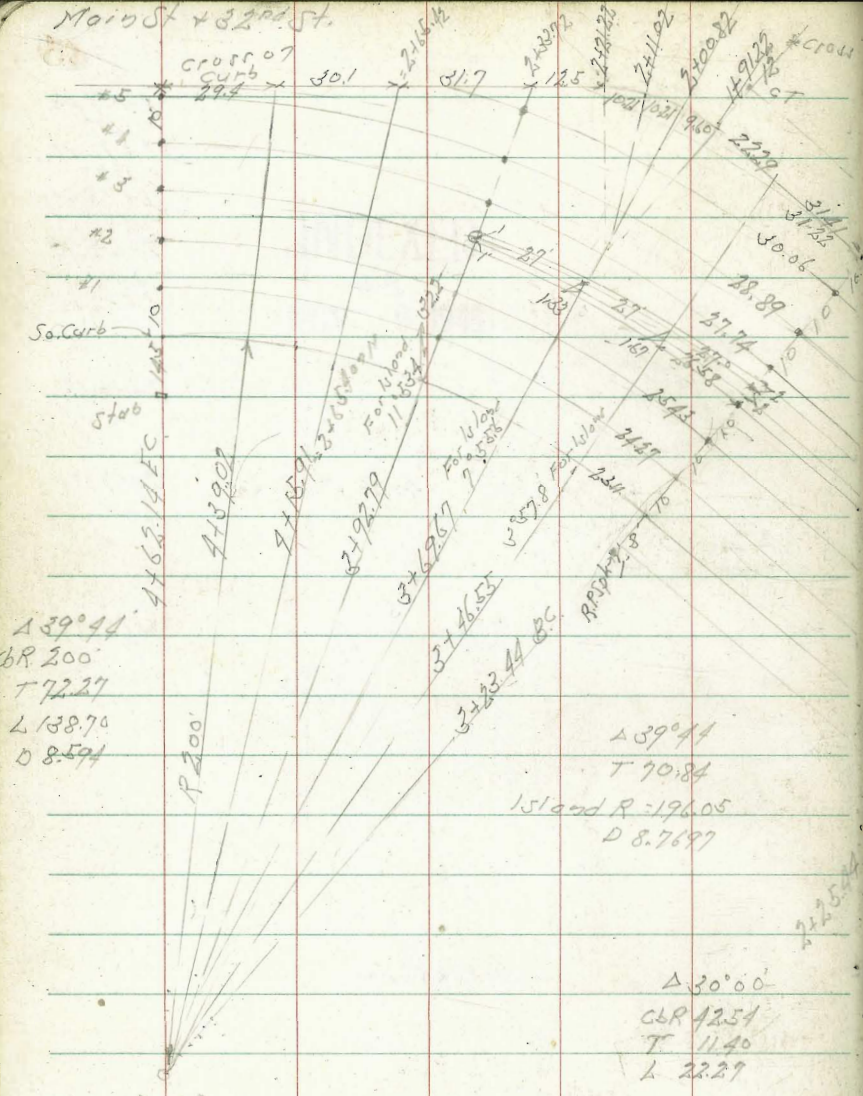
2+16.84
 12.77
 3+04.08
 12.77
 2+91.31
 12.77
 2+78.54
 12.77
 2+65.77
 12.41
 2+52.36

2+31.32

2+07.58
 2+0

1+66.71

Main St + 32nd St.

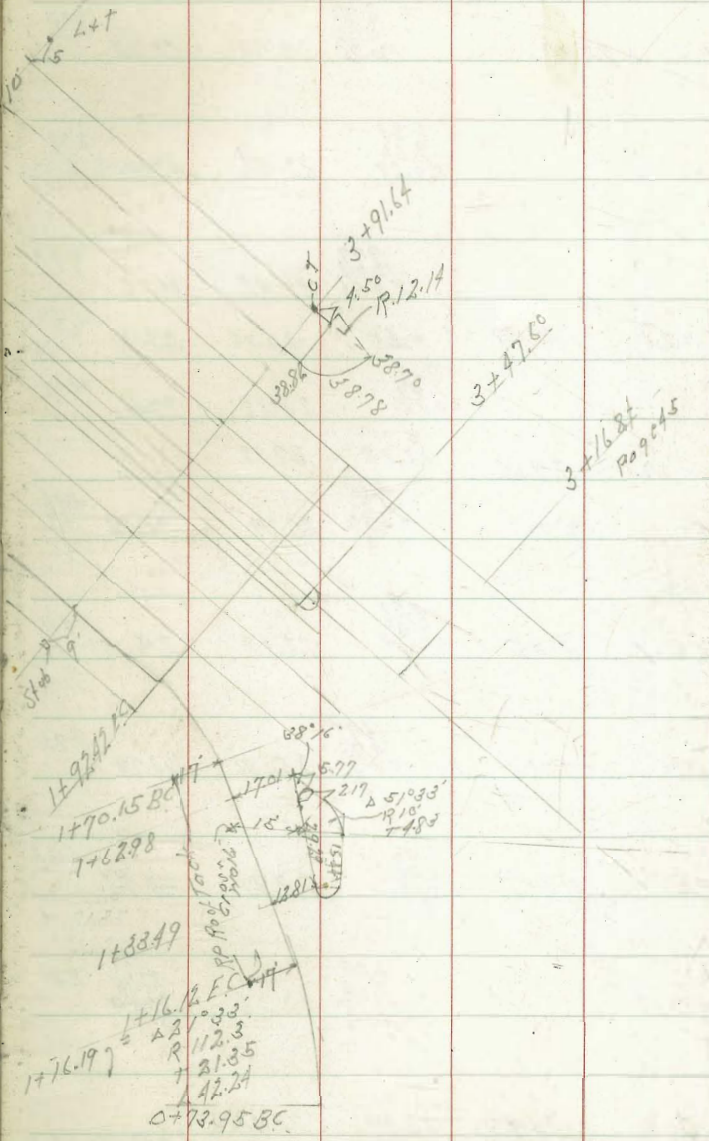


$\Delta 39^{\circ}44'$
 CBP 200
 T 72.27
 L 138.70
 D 8.574

$\Delta 39^{\circ}44'$
 T 70.84
 Island R = 196.05
 D 8.7697

$\Delta 30^{\circ}00'$
 CBP 42.54
 T 11.40
 L 22.27

BM 2865 NEBP Main + 32nd



3291.64
 3247.60
 3216.84
 3216.84
 3216.84

1776.19
 $\Delta 21^{\circ}33'$
 R 112.3
 T 21.35
 L 42.24
 D 73.95 BC

W. L. E. Morgan

Main St Curb Grader
East of 32nd St

| | | | 10.65 For Gut | Curb Grader 580175 | Gutter | |
|------------------|-------|-----------|---------------|------------------------|--------|-------|
| 56570 | | | | | | 793 |
| +80.59 | 1/2 C | 1 25° 57' | | 8.00 8.26 Fo.26 | 33.39 | 32.72 |
| +67.47 | BC Lt | | | 8.83 9.12 Fo.29 | 32.56 | 31.89 |
| +50.88 | | | | 9.97 10.68 Fo.06 | 31.42 | 30.75 |
| TP +25.88 | 11.23 | 41.39 | | 0.25 | 30.16 | 29.18 |
| 1400.88 | | | | 2.13 1.97 Co.76 | 28.28 | 27.61 |
| TP Gutter Grader | 175 | 29.62 | | 12.78 | 27.87 | |
| +76.84 | 1/2 C | 7° 30' | | 3.50 3.28 Co.33 | 26.91 | 26.24 |
| c=12.23 | | | | | | |
| +64.60 | 1/2 C | 3° 45' | | 4.33 4.08 Co.32 | 26.18 | 25.51 |
| c=12.23 | | | | | | |
| +52.36 | PRC | 7° 30' | | 4.95 4.93 Co.02 | 25.46 | 24.79 |
| c=26.16 | | | | | | |
| +26.18 | 1/2 C | 3° 45' | | 6.50 6.50 Fo.04 | 23.91 | 23.24 |
| c=26.16 | | | | | | |
| 040 | BC Lt | | | 8.05 8.13 Fo.08 | 22.36 | 21.59 |
| TP | 4.00 | 30.41 | | 12.29 | 26.41 | |
| BM | 0.11 | 38.70 | | | 38.59 | |

Jan 9-48
5,800
81,500
056000
8099

1/2 Gutter

= +66.71 072

INDEXED
SAV. P. VOL.

5X 500
Main +2300

Main St. Curb Grader
East of 32nd St

Cb Gutter

Gut Cb

"INDEXED"
WK
NOV 9 1948

BM For Gutter 2.00 16.65 28.65 N.E.B.P.
Backed 17 7012 + 9501

2+67.20 FCA 76° 33.67 5.55 5.55 542
5.53 5.49 50.06 35.84 35.17
6"

2+47.96 A 51° 18.4 5.28 5.10 521
ca. 7.8 36.11 35.44

2+23.97 A 31° 31.5' PRC ca. 81 5.46 5.36 533
ca. 2.4 35.79 35.12

2+17.16 A 24° 25.8' 5.96 5.68 583
ca. 2.2 35.49 34.82

2+10.35 A 17° 20.1' 6.20 6.71 6.13
ca. 0.09 35.19 34.52

1+96.74 A 3° 09.4' PRC ca. 81 7.00 7.23 6.93
Fo. 23 34.39 33.72

1+93.71 PCC Δ 51.54 7.16 7.46 7.09
Fo. 20 34.23 33.56

19.20
24.0
6.81
6.81
13.61
36.2
13.12

41.39

40.94

41.39

4.334
4.72
Fo. 44

5.61 4.97
4.97
35.92 ca. 6.7
4.55 E
4.77
Fo. 25-4.97
4.50
36.42 ca. 47
x

4.88 5.27
5.88 4.36
ca. 2.2 36.72 ca. 9.7

5.13 5.57
4.57
ca. 2.5 35.83 ca. 6.5

5.781
6.32
Fo. 44

5.78 ca. 2.5
6.32 6.37
Fo. 44 6.27
36.02 ca. 10

Main St Curb Grades
 West of 32nd St.

| | | | Curb | Gutter | |
|---------|------------|-----------------------|-------|--------|-----------|
| +58 | | 5.13 4.99 00.37 | 38.27 | 37.60 | 4.78 |
| +34 | 540 | 5.10 5.07 00.42 | 37.91 | 37.24 | 5.14 |
| 1416.17 | EC | 5.25 5.23 00.47 | 37.65 | 36.98 | 5.40 |
| 2112 | | 5.90 5.74 00.76 | 37.50 | 36.83 | 5.53 |
| +95.07 | F 2.00 | 6.04 6.05 0.0 | 37.36 | 36.69 | 5.69 |
| 2112 | | 6.33 6.30 00.03 | 37.07 | 36.40 | 5.98 |
| +73.95 | BC 11 | 6.74 6.72 00.01 | 36.66 | 35.99 | 6.39 |
| +50 | | 6.95 6.91 00.04 | 36.45 | 35.78 | 6.60 |
| +170.8 | BC 02 R1 | 7.10 7.8 F0.08 | 36.30 | 35.50 | 6.88 |
| 0+0 | | | | | |
| 0-20.54 | F.C. 10 R. | | | | |
| BM | 4.81 | 43.40 | 38.59 | 38.59 | 5.22 104 |
| BM | For Gutter | 3.73 | 42.38 | 38.65 | Main 32nd |

Gutter Cb
 East Side 32nd

4.2
3.80
4.26
F0.33
3.97
37.05
00.37
2
2
4.2
3.85
4.94
4.81
2.95
2.95
1.30
0.05
1.00
0.28
37.09
00.00
85.28
4.81
4.81
2
2
4.2
4.30
4.30
1.78
4.62
0.34
4.53
2.9
36.11
00.18
36.6
00.32
x
x

41.39

42.03

40.94

Curb Gutter

| | | | | | |
|---------|-----------|---|----------------|-------|------|
| 4+62.14 | FC 19°52' | 3.94 4.76 -0.22 0.70c | 43.03 42.25 | 42.58 | 3.20 |
| 4+39.02 | 16°35.3' | 4.17 4.14 C0.06 3 3 Hole | 42.97 43.02 | 42.35 | 3.43 |
| 23.11 | | | | | |
| 4+15.91 | 13°14.6' | 4.64 4.56 C0.25 6 | 42.68 42.57 | 41.90 | 3.88 |
| 23.12 | | | | | |
| 3+92.79 | 9°56' | 5.07 4.45 C0.62 3 00.53 | 42.21 42.12 | 41.45 | 4.33 |
| | | 16.69 45.78 For Gut 17.19 | | | |

Gut cb

| #1 | #2 | #3 | #4 | #5 | #6 |
|---------------------------------------|--|---|---|---|---------|
| 3.50 3.50 1.00 13.15 | 3.24 3.78 +0.06 0.0 43.45 43.57 | 3.08 3.04 +0.04 43.61 43.69 | 2.68 2.76 -0.08 43.71 43.75 | 3.23 3.27 -0.04 43.36 | 43.31 |
| 3.27 0.0 4.02 42.93 | 3.16 3.35 +0.11 43.73 43.25 | 3.21 3.20 +0.01 43.18 43.52 | 3.20 3.27 -0.07 43.49 43.51 | 3.41 3.44 -0.02 43.25 | 43.15 ✓ |
| 4.38 4.38 -0.04 43.35 | 4.04 3.89 +0.06 43.65 42.73 | 3.77 3.75 +0.02 43.02 43.03 | 3.71 3.72 -0.01 43.75 43.00 | 3.81 3.83 -0.02 42.25 | 42.72 |
| 5.90 -0.22 5.29 4.99 4.82 | 4.50 4.45 +0.05 42.46 42.17 | 4.37 4.41 -0.04 42.32 42.48 | 4.22 4.32 -0.10 42.96 42.46 | 4.21 4.21 -0.05 42.40 42.43 | 42.02 |
| | | | 46.69 45.54 | | 41.85 |
| | | | | | 42.52 |

Main St. Grader
East & West of 3rd St.

Curb Gutters

| | | | | |
|---------|---|---|-------|-------|
| 2+31.32 | $\begin{array}{r} 4.14 \\ 4.17 \\ \hline F0.05 \end{array}$ | $\begin{array}{r} 4.59 \\ 4.64 \\ \hline F0.05 \end{array}$ | 36.80 | 36.30 |
|---------|---|---|-------|-------|

| | | | | |
|------|--|-----|-------|-------|
| 2+20 | | out | 35.90 | 35.40 |
|------|--|-----|-------|-------|

| | | | | |
|----------------|---|--|-------|-------|
| 2+09.58 - C&FC | $\begin{array}{r} 5.78 \\ 6.23 \\ 6.27 \\ \hline F0.04 \end{array}$ | | 35.16 | 34.66 |
|----------------|---|--|-------|-------|

2+0

1+66.71

40.94

41.39

Main St Carb Grader West of 2nd St.
 North Side of Main Grade Change
 Near Station Taken of Yellow Perch
 5/11/02

Feb. 5-46
 S. 5507
 056044
 8096

Island "A" S.W. Cor. Main + 2nd St.

53

2+65.42 = 4+15.96 Radial on Sady 42.67 43.55 ^{3.71} _{3.62} 0.90

2+33.72 42.18 ^{4.78} _{4.28} 42.72 ^{4.21} _{out} 0.00

2+21.22 = C6 B.C. 41.98 42.51 ^{1.45} _{1.23} 0.02

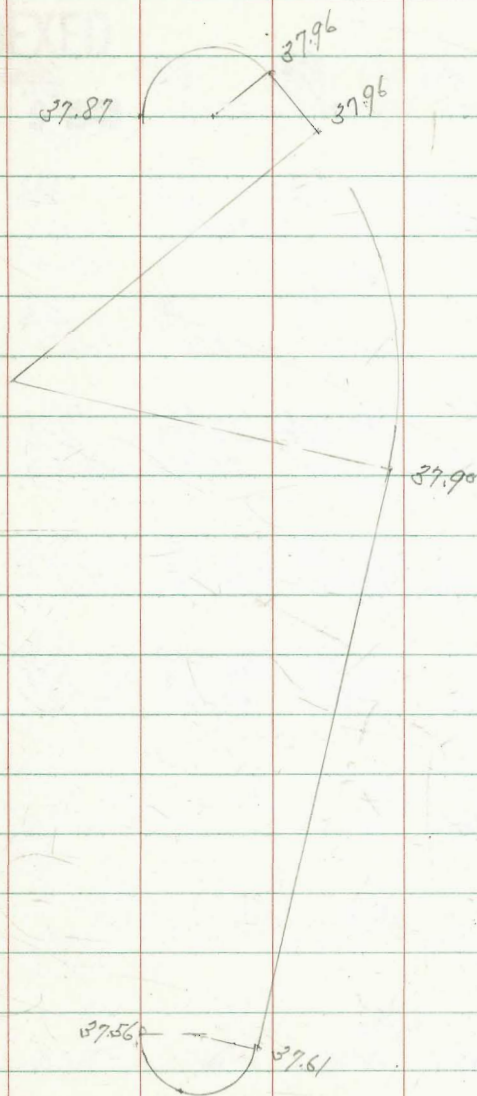
2+11.02 41.83 42.24 ^{4.62} _{4.73} 0.11

2+00.82 41.67 42.17 ^{4.79} _{4.88} 0.09

1+91.22 = C6 B.C. P4331 41.52 42.01 ^{4.95} _{4.94} 0.01

1+68.92 = 3+46.55 Rad on South B 41.14 41.64 ^{2.90} _{2.80} 0.10

B.M. 8.31 46.96 44.51 38.65 ^{K.E. 8P} _{Main + 2nd St}



Main St. Paving Grader #1 + 32nd St
 Roadway

| | #1 | #2 | #3 | #4 |
|---------|-----------------------|-----------------------|-----------------------|-----------------------|
| 12.77 | 4.03 4.00 -0.03 | 3.99 4.10 -0.11 | 3.98 4.07 -0.09 | 3.91 4.09 -0.18 |
| +65.77 | 37.51 | 37.55 | 37.56 | 37.58 |
| 13.41 | 4.10 4.05 -0.05 | 4.10 4.17 -0.07 | 4.15 4.22 -0.07 | 4.16 4.23 -0.07 |
| +52.36 | 37.05 | 37.06 | 37.09 | 37.07 |
| 22.36 | 6.14 6.12 -0.02 | 6.13 6.21 -0.08 | 6.10 6.18 -0.08 | 6.02 6.10 -0.08 |
| +20 | 35.4 | 35.41 | 35.44 | 35.54 |
| BM | 2.89 | 11.54 | | 38.65 |
| 2+0 | | 34.20 | 34.26 | 34.34 |
| 1+66.91 | out | 3.55 3.27 -0.28 | 3.41 3.09 -0.32 | 3.39 3.01 -0.38 |
| +50 | | 30.86 | 31.00 | 31.13 |
| 1+0 | | 27.80 | 28.00 | 28.14 |
| +50 | | 24.75 | 25.00 | 25.16 |
| 1+2 | Begin | | | |
| 0+0 | | | | |
| TP | 5.87 | 34.41 | 11.94 | 28.54 |
| BM | 1.83 | 10.48 | | 38.65 |

March 4. 46
 3 4 54

INDEXED
 WIK
 NOV 9 1948

| | #1 | #2 | #3 | #4 |
|-------|-----------------------|-----------------------|-----------------------|-----------------------|
| 12.77 | 3.97 4.08 -0.11 | 3.91 4.08 -0.17 | 3.91 4.07 -0.16 | 3.91 4.08 -0.17 |
| 13.41 | 4.17 4.10 -0.07 | 4.17 4.24 -0.07 | 4.16 4.23 -0.07 | 4.17 4.24 -0.07 |
| 22.36 | 5.91 5.96 -0.05 | 5.91 5.98 -0.07 | 5.91 5.98 -0.07 | 5.91 5.98 -0.07 |
| 38.65 | | | | |
| 34.39 | | | | |
| 31.20 | | | | |
| 28.20 | | | | |
| 25.20 | | | | |
| 38.16 | | | | |
| 27.87 | | | | |
| 38.05 | | | | |
| 38.15 | | | | |
| 38.27 | | | | |
| 38.33 | | | | |
| 27.85 | | | | |
| 38.01 | | | | |
| 38.02 | | | | |
| 38.13 | | | | |
| 38.16 | | | | |
| 27.95 | | | | |
| 27.98 | | | | |
| 38.00 | | | | |
| 38.01 | | | | |
| 38.01 | | | | |
| 27.91 | | | | |
| 27.94 | | | | |
| 27.93 | | | | |
| 27.81 | | | | |
| 27.85 | | | | |
| 41.54 | | | | |

INDEXED

NOV 1 1918

INDEXED

NOV 1 1918

7

Juniper St. Water Main Grader

stubs offset 6' South

INDEXED

WK
NOV 9 1948

| | | | | | |
|-------|------|--------|-------|--------|--------------------------------|
| +45 | | | | 227.10 | 4.6 0.1 c 4.5 |
| +20 | | | | 227.35 | 8.4 0.8 c 4.6 |
| 670 | | | | 219.35 | 12.3 7.7 c 4.9 |
| BM | 0.50 | 231.66 | | 231.16 | 0.7 10.9 10.6 6+32.13 |
| +62.5 | | | | 209.97 | 9.8 4.4 5.4 |
| TP | 0.84 | 219.75 | 12.25 | 218.91 | 6.4 1.8 c 4.1 |
| +25 | | | | 200.60 | |
| 540 | | | | 193.00 | 14.0 8.4 5.6 |
| TP | 0.20 | 266.99 | 12.96 | 266.79 | |
| +70 | | | | 183.80 | 11.7 1.6 c 5.1 |
| TP | 1.64 | 195.55 | 13.06 | 193.93 | |

+55.5 - Fly Pic

+27.5 - Fly Pic

+15

840

TP

+62.5

+27.5

+25

7+12.5 P.O.T.

+70

6+57.5

BM

402

235.18

Jan 15-46
5.500
811.57
0.000
8.000

56

10.88
12.42
F1.54

10.88
12.02
F1.15

10.88
7.6
c 3.3

7.7
4.0
c 3.7

222.38

223.35

227.10

228.35

228.97

228.97

228.35

231.16

11.8
2.7
c 4.1

8.1
3.8
c 4.3

6.8
2.7
c 4.1

6.8
1.8
c 4.4

6.8
2.6
c 4.2

6.8
2.2
c 4.2

0.7
10.9
10.6
6+32.13

| | | | | | |
|---------|-------|--------|------|--------|-----------------------|
| 12+12.5 | | | | 243.00 | 4.7 c 3.6 |
| +87.5 | | | | 242.56 | 5.3 1.7 c 3.5 |
| +50 | | | | 240.42 | 7.3 1.3 c 3.8 |
| 11+0 | | | | 237.85 | 9.8 5.7 c 4.1 |
| +50 | | | | 235.27 | 12.4 8.2 c 7.2 |
| 10+0 | | | | 232.70 | 15.0 11.1 c 3.9 |
| TP | 11.75 | 247.67 | 0.48 | 235.92 | |
| +62.5 | | | | 228.95 | 7.5 2.8 c 4.7 |
| 9+27.5 | | | | 225.20 | 11.2 6.5 c 5.2 |
| TP | 12.85 | 231.40 | 0.03 | 223.55 | |
| 9+0 | | | | 217.70 | 5.9 1.4 c 7.5 |
| 8+7.5 | | | | 212.70 | 10.9 8.3 c 2.6 |
| | | | | 223.58 | |

| | | | | | |
|---------|--------|--------|-------|--------|-----------------------------|
| +62.5 | | | | 231.05 | 13.1 9.9 7.7 c 2.3 |
| +50 | - Pier | | | 230.80 | 12.4 10.8 c 1.33 |
| +32 | - Pier | | | 230.80 | 12.4 10.8 c 1.76 |
| TP | 7.67 | 242.21 | 12.13 | 235.51 | |
| +12.5 | | | | 231.19 | 16.5 13.6 c 2.9 |
| 12+0 | | | | 232.07 | 15.6 12.1 c 3.5 |
| +62.5 | | | | 236.57 | 11.1 7.5 c 3.6 |
| +27.5 | | | | 239.13 | 8.5 4.8 c 3.7 |
| 13+0 | | | | 241.00 | 5.7 3.6 c 2.7 |
| +70 | | | | 241.96 | 5.7 2.7 c 4.0 |
| 13+37.5 | | | | 243.01 | 4.7 1.2 c 3.5 |
| | | | | 247.67 | |

| | | | | | |
|--------|-------|--------|-------|--------|---------------------------|
| TP | 0.94 | 242.46 | 12.73 | 241.52 | 15.5 11.2 c 4.3 |
| +82.5 | | | | 238.73 | |
| +87.5 | | | | 243.06 | 11.2 2.1 c 4.1 |
| +85 | | | | 244.93 | 9.3 5.3 c 4.0 |
| +12.5 | | | | 246.18 | 8.6 3.6 c 4.5 |
| BM | | | 1.02 | 253.22 | 0.7 11.0 10.2 16+75.65 |
| 17+0 | | | | 246.80 | 7.5 3.0 c 4.5 |
| +50 | | | | 246.80 | 7.5 2.8 c 4.7 |
| 16+0 | | | | 244.30 | 12.0 6.2 c 3.7 |
| +30 | | | | 239.30 | 15.0 10.5 c 4.5 |
| TP | 11.15 | 254.25 | 0.11 | 243.10 | 8.9 5.2 c 3.7 |
| 15+0 | | | | 234.30 | 8.9 5.2 c 3.7 |
| 14+7.5 | | | | 231.80 | 11.4 8.8 c 2.6 |
| | | 243.21 | | | |

| | | | | | |
|---------|--------|--------|-------|--------|-------------------------|
| +81.4 | | | | 238.64 | 9.5 2.2 c 3.1 |
| TP | 12.98 | 248.15 | 0.91 | 235.17 | 6.0 3.0 c 4.0 |
| +50 | | | | 229.60 | |
| TP | 12.51 | 235.58 | 0.12 | 223.07 | 8.0 3.7 c 4.3 |
| 20+0 | | | | 215.20 | 2.88 |
| TP | 12.98 | 223.19 | 0.16 | 210.21 | 9.6 5.9 c 3.7 |
| +50 | | | | 200.80 | |
| +25 | Pier | | | 199.04 | 11.33 9.69 c 1.64 |
| +07 | - Pier | | | 197.78 | 13.40 8.80 c 4.6 |
| 19+0.5 | | | | 197.64 | 12.7 8.6 c 4.1 |
| TP | 3.66 | 210.57 | 11.18 | 206.71 | |
| TP | 0.83 | 217.89 | 12.83 | 217.06 | 14.0 10.3 c 3.7 |
| 18+50 | | | | 215.90 | |
| TP | 0.24 | 229.89 | 12.81 | 229.65 | 15.5 11.7 c 4.3 |
| 18+12.5 | | | | 227.00 | |
| 17+87.5 | | | | 233.38 | 9.1 4.6 c 4.5 |
| | | 242.46 | | | |

Sumper St Water Main

| | | | | | |
|---------|------|--------|-------|--------|---------------------|
| TP | 0.76 | 242.51 | 12.25 | 242.75 | 10.8 6.8 0.40 |
| +50 | | | | 241.25 | |
| +27.5 | | | | 246.12 | 8.9 4.2 0.42 |
| +25 | | | | 247.37 | 7.6 2.8 0.48 |
| 22+12.5 | | | | 248.00 | 7.0 1.6 0.54 |
| +75 | | | | | 7.0 1.0 0.60 |
| +43.9 | | | | 248.00 | 7.0 3.1 0.39 |
| +31.4 | | | | 247.38 | 7.6 4.1 0.29 |
| 21+18.9 | | | | 246.13 | 8.9 6.5 0.24 |
| TP | 7.23 | 255.00 | 0.38 | 247.77 | 3.9 1.5 0.24 |
| 21+06.4 | | | | 244.26 | 0.24 |
| 20+98.9 | | | | 241.76 | 3.4 0.15 0.9 |
| | | 248.15 | | | |

| | | | | | |
|---------|------|--------|-------|--------|---------------------|
| +90 | | | | 172.40 | 13.0 8.2 0.42 |
| +78 | | | | 175.40 | 10.9 6.5 0.44 |
| TP | 4.19 | 185.43 | 12.81 | 181.24 | 15.0 1.0 0.50 |
| +66 | | | | 179.00 | |
| +54 | | | | 183.20 | 10.9 8.1 0.28 |
| TP | 0.58 | 199.05 | 12.87 | 193.47 | 6.5 2.0 0.39 |
| +12.5 | | | | 199.80 | |
| TP | 0.16 | 206.34 | 12.55 | 206.18 | 14.4 1.3 0.41 |
| 24+0 | | | | 204.30 | |
| +87.5 | | | | 208.80 | 9.9 7.0 0.39 |
| TP | 0.33 | 218.73 | 12.31 | 218.40 | 9.9 5.2 0.37 |
| +50 | | | | 220.80 | |
| TP | 0.11 | 230.71 | 12.91 | 230.60 | 12.5 3.7 0.38 |
| 23+12.5 | | | | 231.00 | |
| 22+87.5 | | | | 236.75 | 6.8 2.0 0.38 |
| | | 243.51 | | | |

| | | | | | |
|---------|-------|--------|------|--------|-----------------------------|
| +62.5 | | | | 252.05 | 1.0 9.6 c7.1 |
| +50 | | | | 249.90 | 16.3 12.0 c4.2 |
| BM | 12.80 | 216.08 | 2.56 | 252.28 | 0.0 17.0 + 10.2 27+46.13 |
| TP | 8.20 | 255.85 | 0.50 | 217.55 | 9.3 5.1 c4.2 |
| 27+0 | | | | 238.70 | |
| TP | 12.12 | 248.05 | 0.24 | 234.93 | |
| +62.5 | | | | 228.52 | 6.7 2.1 c4.6 |
| +50 | | | | 225.00 | 10.2 8.0 c4.6 |
| +87.5 | | | | 220.88 | 14.2 9.5 c4.8 |
| TP | 12.82 | 225.17 | 0.26 | 222.35 | 11.1 6.5 c4.6 |
| 26+12.5 | | | | 211.62 | |
| TP | 12.49 | 222.71 | 0.32 | 210.22 | 9.3 4.2 c5.1 |
| +87.5 | | | | 201.50 | |
| TP | 12.66 | 210.54 | 0.09 | 197.88 | |
| +50 | | | | 184.20 | 13.8 8.6 c5.8 |
| TP | 12.70 | 197.97 | 0.16 | 185.27 | |
| +15.37 | | | | 170.00 | 15.4 9.5 c5.9 |
| 25+0.2 | | | | 170.00 | 15.4 10.1 c5.3 |
| | | 185.43 | | | |

| | | | | | |
|--------|--|--|--------|--------|---------------------|
| +50 | | | | 256.55 | 9.5 4.9 4.6 |
| 31+0 | | | | 258.05 | 9.0 2.9 c5.6 |
| +50 | | | | 257.55 | 8.5 4.0 c4.5 |
| 30+0 | | | | 257.05 | 9.0 8.2 c3.8 |
| +50 | | | | 256.55 | 9.6 4.8 c4.7 |
| 29+0 | | | | 256.05 | 10.0 6.1 c3.9 |
| +50 | | | | 255.55 | 10.5 8.7 c3.9 |
| 28+0 | | | | 255.05 | 11.0 6.7 c4.6 |
| +87.5 | | | | 254.57 | 11.9 6.8 c4.6 |
| 27+7.5 | | | | 253.67 | 12.1 7.9 c4.6 |
| | | | 266.08 | | |

| | | | | | |
|-------|------|-------|-------|--------|----------------------------|
| +625 | | | | 252.62 | $\frac{6.3}{1.0}$ c5.1 |
| +50 | | | | 254.26 | $\frac{5.6}{1.0}$ c4.6 |
| +37.5 | | | | 254.26 | $\frac{5.6}{1.3}$ c4.3 |
| +25 | | | | 254.10 | $\frac{5.7}{1.8}$ c3.9 |
| 3440 | | | | 252.60 | $\frac{7.2}{1.8}$ c3.9 |
| +50 | | | | 249.60 | $\frac{10.2}{5.6}$ c3.6 |
| 3340 | | | | 247.50 | $\frac{12.2}{9.6}$ c3.8 |
| +76.7 | | | | 247.60 | $\frac{12.2}{8.2}$ c3.8 |
| +50 | | | | 248.80 | $\frac{11.0}{7.3}$ c3.7 |
| TP | 6.47 | 25982 | 12.73 | 253.35 | $\frac{13.0}{9.6}$ c3.4 |
| 3210 | | | | 252.05 | $\frac{13.0}{9.6}$ c3.4 |

266.08

| | | | | | |
|--------------|------|--------|-------|--------|--|
| TP | 1.80 | 174.85 | 12.50 | 173.05 | $\frac{2.15}{13.50}$ F10.35 |
| +60 | Pier | | | 183.40 | $\frac{2.15}{2.15}$ F3.00 |
| +42 | Pier | | | 183.40 | $\frac{2.15}{2.15}$ F3.00 |
| TP | 0.26 | 185.55 | 12.84 | 185.29 | $\frac{14.7}{10.2}$ c4.5 |
| +15.85 | | | | 183.40 | $\frac{17.02-8}{18.606}$ $\frac{8.6}{10.2}$ c3.3 |
| 0704cc/Grass | | | 12.00 | 186.18 | $\frac{8.6}{10.2}$ c3.3 |
| 3740 | | | | 189.50 | $\frac{11.2}{6.7}$ c4.5 |
| TP | 0.21 | 198.13 | 12.72 | 197.92 | |
| TP | 0.21 | 210.64 | 12.59 | 210.40 | |
| +50 | | | | 211.80 | $\frac{11.2}{6.7}$ c4.5 |
| TP | 0.56 | | 12.91 | 222.46 | $\frac{10.0}{6.1}$ c3.9 |
| 3640 | | | | 225.40 | $\frac{10.0}{6.1}$ c3.9 |
| TP | 0.32 | 235.37 | 12.79 | 235.05 | $\frac{9.8}{6.3}$ c4.5 |
| +50 | | | | 238.00 | $\frac{9.8}{6.3}$ c4.5 |
| TP | 0.95 | 247.84 | 12.93 | 246.89 | $\frac{16.8}{10.2}$ c5.9 |
| 35425 | | | | 243.00 | $\frac{16.8}{10.2}$ c5.9 |
| +87.5 | | | | 250.50 | $\frac{9.3}{6.4}$ c6.4 |
| 34475 | | | | 252.38 | $\frac{7.4}{1.8}$ 5.8 |

259.82

INDEXED

1915

38+32 - Exist. Pipe

18340 Bottom Pipe

38+14

- 8.55
2.66
F 11.21

37+96.0

- 8.55
2.02
F 73.62

0.0

37+78.32 out

37+78 = Pipe

18340
- 8.55
5.42
F 18.97

174.85

Broadway West of 65th St
Slope Stakes for Fill to Replace Bridge

| | Lf. Hk. | S' Back | Toe Slope |
|------|---------|-------------------------------|-------------------------------|
| 1+50 | 300.37 | -15.7 5.5 -21.2 85.1 | -15.7 5.7 -21.4 82.1 |

INDEXED

WK
NOV 9 1948

| | | | |
|---------|--------|-------------------------------|-------------------------------|
| 1+0 | 301.57 | -16.9 2.8 -19.7 82.3 | -16.9 2.6 -19.5 89.3 |
| TP 0.27 | 284.66 | 12.93 | 284.59 |
| TP 0.71 | 297.32 | 12.83 | 296.61 |

| | | | |
|------|--------|----------------------------|----------------------------|
| 0+50 | 303.73 | 5.7 7.0 -1.3 34.1 | 5.7 6.4 -0.7 31.1 |
|------|--------|----------------------------|----------------------------|

| | | | |
|-----|--------|-------------------------|-------------------------|
| 0+0 | 306.84 | 2.6 2.4 0.2 33 | 2.6 2.6 0.0 30 |
|-----|--------|-------------------------|-------------------------|

0-50 310.87

0-60 RP Nail on 2

BM 465 309.44

070706
50' N of 2
Broadway
#1573.22

Grades Taken off Yellow -
Sheet of Scratch
Cross Sections #1572-21

| | | Rt. S.L. |
|--------|-----------------------|----------|
| 300.00 | -15.5 8.7 -24.0 | 300.37 |

Jan 24-46
S. S. Roy
Osborne

63

| | | |
|--------|-----------------------|--------|
| 301.20 | -16.5 3.8 -20.3 | 301.57 |
|--------|-----------------------|--------|

| | | |
|--------|------------------------------------|--------|
| 302.36 | 6.1 1.8 12.2 -1.2 31.8 | 302.73 |
|--------|------------------------------------|--------|

| | | |
|--------|----------------------------|--------|
| 306.47 | 3.0 3.5 -0.5 30.5 | 306.84 |
|--------|----------------------------|--------|

310.50

Broadway part of 65th St
Slope Stakes for Fill to Replace Bridge

| | HL | S' Back | Toe Slope |
|------|--------|-------------------------------|--|
| 3+25 | 303.49 | 4.9 +0.5 34.0 | 4.9 5.2 +1.0 31.0 |
| 3+0 | 302.34 | 6.1 8.5 -2.4 39.1 | 6.1 8.2 -2.7 34.1 |
| TP | 11.56 | 308.40 | 0.70 |
| TP | 12.95 | 297.54 | 0.07 |
| 2+75 | 301.42 | -16.8 2.0 -18.8 80.8 | -16.8 1.5 -18.4 59.6 |
| 2+50 | 300.79 | -16.1 5.1 -21.2 84.5 | -16.1 4.9 -21.0 81.5 |
| 2+0 | 300.07 | -15.4 8.1 -23.5 88.7 | -15.4 8.2 -23.6 85.4 |
| 1+97 | 300.09 | inlet 276.6 8" of Pipe | 8.06 8.20 -0.14 262.5' North of inlet |
| | 284.66 | | |

| S' Back | Toe Slope | S' Back |
|----------------------------|--------------------------|---|
| 4.9 4.1 +1.2 on Per. | 4.9 4.2 0.2 3.0 | 4.9 |
| 303.12 | 303.49 | |
| 301.97 | 302.84 | 6.1 12.2 -5.6 39.9 |
| 301.05 | 301.42 | -16.8 3.6 -20.4 80.6 |
| 300.42 | 300.79 | -16.1 9.5 -25.6 88.4 |
| 299.70 | 300.07 | -15.4 17.9 -33.3 80.0 |
| 1+97 | 300.09 | outlet 18.55 18.22 0.33 90.0 55' South of End of |

510

775

+50

+25

BM

5.53

312.22

B.P. 52 Broadway
1' Pol. of 1897
of Pav on 6.5.45
312.24
#1872-25

TP

11.48

317.75

2.13

306.27

410

307.87

3.5

3.5

3150

304.87

308.107

2

52

12.60

11.50

10.32

9.00

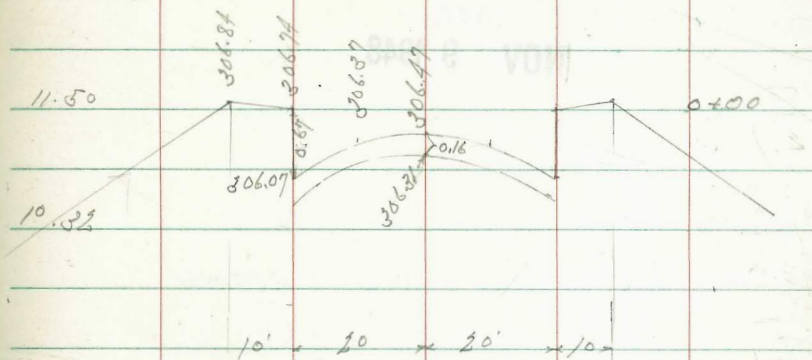
307.50

304.50

0400

307.94

304.87



10' 20' 20' 10'

3.5

3.5

Broadway West of 65th St.

Sewer Grader Across Broadway Under Bridge Fill

For Location # 1672-49

19+91.97 = A

INDEXED

273.00

11.66
6.00
65.66 offset
8' North

WK

NOV 9 1948

19+17.85 = 2 Broadway

268.05

299.66

18+26.97 = S/Sy Sewer

262.00

22.66
18.16
64.56 offset
8' South

Sewer Grades Encanto Park Add.
 And Ritchey St.
 Location + Levels = 1570-71 Stakes offset 4' Right

Feb 2-46
 5-5507
 56001
 8000
 10000

67

| | | | | |
|---------|--|--------|--------|---|
| 1420 | INDEXED | | 219.76 | 11.79 4.72 c7.06 |
| | WK | | | |
| | NOV 9 1948 | | | |
| +80 | | | 218.49 | 13.06 9.25 c5.31 |
| +40 | | | 217.22 | 14.33 9.25 c4.85 |
| 0 ± 0 | Δ 14° 13' Lt. | | | 15.60 9.60 c6.00 09 Conc. Pipe |
| 1778.35 | = MH Not Built at this time | | 215.95 | |
| TP | 11.42 | 231.55 | 392 | 220.13 |
| +40 | | | 215.78 | 8.27 3.86 c5.21 |
| 170 | | | 215.60 | 8.45 3.23 c4.72 |
| +69 | = Conn. Hall No. 1 R.R. Bridge | | 215.46 | 8.59 5.12 c3.47 27" Pipe Wall |
| +40 | | | 215.33 | 8.77 5.60 c3.03 |
| 0 ± 0 | = First Sewer in Hillside - 100' Hole | | 215.15 | 8.90 2.62 c6.28 |
| SM | 3.92 | 224.05 | 220.13 | 075' x 06 040 H' 1570-71 |

| | | | | |
|-----------|---------------------|--------|------|--|
| For Check | 6.28 | 270.14 | | 075' x 06 4720.088 270.14 1570-74 |
| 4720.08 | = DE - Ritchey | 265.00 | | 11.42 5.62 c5.80 |
| TP | 8.34 | 276.42 | 0.88 | 268.08 |
| TP | 12.91 | 268.96 | 0.44 | 256.05 |
| 3475 | | | | 8.40 3.51 c5.15 |
| TP | 12.85 | 256.49 | 0.17 | 243.64 |
| 2730 | = B.H. | | | 12.81 3.61 c7.20 |
| TP | 12.58 | | 0.22 | 231.23 |
| 2785 | = M.H. Δ 12° 16' Rt | a.k. | | 6.55 0.23 c6.23 7.01 |
| +40 | | | | 7.98 3.20 c4.78 |
| 270 | | | | 9.25 2.00 c6.21 |
| 1760 | | | | 10.52 3.66 c6.84 |
| | | 231.55 | | |

0045 Grade Change by Olton

Changed Pipe 74

08228

Broadway West of 65th St.
Final Grades of New Fill

N 66

Sub Grade
1/8 below

S 66

N 66

2

Feb. 8-16
S. 1007
of 6001
3009
Waddell
S 66

68

2+0 299.97 ^{4.86} 1.86
0.0 299.54 ^{6.36} 6.36
0.0 299.97 ^{4.86} 4.86
0.0

5+0 312.60

+75 31.50

+50 310.32

+25 309.00

+97
Down Drains 299.56

4+0 307.77 307.50 307.77

150 300.27 ^{4.56} 4.56
0.0 299.84 ^{6.06} 6.06
0.0 300.27 ^{4.56} 4.56
0.0

Final Gr.

TP 1.86 305.90 12.34 301.04

+55 = 305.07
= 1/4 Pav.

304.80

1+0 301.47 ^{3.36} 3.36
0.0 301.04 ^{12.34} 12.34
0.0 301.47 ^{3.36} 3.36
0.0

Sub Grade

+50 304.77 304.34 304.77

+50 303.63 ^{1.20} 1.20
0.0 303.20 ^{10.18} 10.18
0.0 303.63 ^{1.20} 1.20
0.0

3+0 302.24 ^{2.59} 2.59
0.0 301.81 ^{4.09} 4.09
1.00 302.24 ^{2.59} 2.59
0.0

BM Fort N 66 1.63 304.83 303.20

0+0 306.74 306.31 ^{7.07} 7.07
0.0 306.74 ^{7.07} 7.07
0.0

2+50 300.69 ^{4.14} 4.14
0.0 300.26 ^{5.64} 5.64
0.0 300.69 ^{4.14} 4.14
0.0

304.83 N 66

305.90 2

BM Fort 1.14 312.38

312.24
8 P.S. 2 Brandy
1 1/2" Top Edge
Paving

Sewer Grades 33rd St + Blk 126 Choates Add Feb. 11-46
 Between Fst + Lemon Grove Blvd Sisson
 State offset 4' South of Alley + Westonsrd Osborn
 Model

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 WK
 NOV 9 1948

| | | | | | |
|---------------|-----------------------------------|-------|------|-------|-------------------------|
| 1+75 | DE | | X | 84.34 | 10.30 8.80 c 3.71 |
| 1+35 | | | | 84.06 | 10.58 5.83 c 4.75 |
| +95 | | | 0 | 83.78 | 10.86 5.20 c 6.57 |
| +55 + +57) | MH + 33rd St | | X | 83.50 | 11.14 4.14 c 7.00 |
| +29.5 | | | 8850 | 83.16 | 11.28 4.53 c 6.95 |
| 0+0 | EX 1st D.F. 55' N of B 33rd St | | X | 82.80 | 11.84 1.84 c 2.71 |
| TP | 9.33 | 94.64 | 9.19 | 85.31 | SM 1107 FX 3300 |
| BM | 0.34 | 94.50 | | 94.16 | |

Sewer Grades Alley North of National Ave
 And West of 43rd St. To serve Lot 31 Caruthers Add. 39

INDEXED
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| | | | | | |
|--------|-----------------------------------|-------|-------|----------------|---|
| 1+0 | 700' E of M.H. DE | | | 49.50 | 7.88 1.26 c 6.62 |
| +66.37 | | | | 46.16 | 11.21 3.33 c 7.87 |
| +32.33 | | | | 42.83 | 14.55 5.83 c 8.87 |
| 0+0 | EX 1st M.H. #19 Focus to Trunk | 17.75 | | 39.50 39.63 | F.L. Riser 105 |
| TP | 1.26 | 57.28 | 11.84 | 56.12 | |
| BM | 2.93 | 67.96 | | 65.03 | 1st E 1077 1196 E 45 1324 Pav. 1116 |

Sequoia St Grades 6" Water Main
 Crown Point Drive to Pacific Beach Drive
 Location 10 Foot St. Stakes offset 4' E of 1/2" trench

| | | | | |
|------|------------------------------|-------|-------|----------------------|
| 3+90 | | | 19.40 | 86 36 0.51 51 |
| | INDEXED | | | |
| | WK | | | |
| | NOV 9 1948 | | | |
| 3+40 | | | 19.00 | 90 33 0.57 60 |
| 2+90 | | | 18.60 | 94 49 0.45 48 |
| 2+40 | | | 18.20 | 98 58 0.40 45 |
| 1+90 | | | 17.80 | 102 67 0.35 38 |
| 1+40 | | | 17.40 | 106 72 0.34 37 |
| +90 | = N/4 Crown Pt. Dr. offset | | 17.00 | 110 79 0.31 34 |
| +45 | | | | 110 78 0.32 35 |
| 0+0 | = N/4 Pavilion Crown Pt. Dr. | | 17.00 | 110 79 0.31 34 |
| B.M. | 7.26 | 28.03 | 8.25 | 20.77 |
| TP | 4.87 | 29.02 | 3.89 | 24.15 |
| B.M. | 6.56 | 28.04 | 21.48 | 21.71 |

Hotel - Cuts changed
 to check beginning B.M.

Feb 21-46
 8000
 8560
 4779
 4000

70

| | | | | | |
|--------|------------------|-------|------|-------|---------------------|
| +50 | | | | 22.07 | 69 20 0.02 |
| 8+0 | | | | 21.82 | 72 25 0.00 |
| +50 | | | | 21.57 | 74 26 0.01 |
| 7+0 | | | | 21.32 | 77 29 0.08 11 |
| +50 | | | | 21.07 | 79 31 0.23 26 |
| TP | 5.69 | 28.99 | 4.73 | 23.30 | |
| 6+0 | | | | 20.82 | 75 29 0.43 46 |
| 5+55 | = N.L. Roosevelt | | | 20.60 | 74 28 0.60 53 |
| 5+17.5 | = 2 " | | | 20.35 | 77 31 0.62 56 |
| 4+80 | = S.L. Roosevelt | | | 20.10 | 78 32 0.58 59 |
| 4+40 | | | | 19.80 | 82 36 0.63 65 |

38.03

| | | | | | |
|-------|--------------|-------|------|-------|-------------------------------------|
| 12+30 | | | | 26.10 | ^{11.5} 2.9 3.6 3.9 |
| 12+80 | | | | 25.35 | ^{12.3} 8.6 0.3 6.3 9 |
| 12+30 | H.L. Fortune | | | 24.60 | ^{13.0} 9.1 0.3 9 4.2 |
| TP | 8.68 | 32.57 | 0.10 | 28.89 | |
| +92.5 | " | | | 24.10 | ^{4.9} 1.1 0.3 2 4.1 |
| +55 | S.L. Fortune | | | 23.60 | ^{5.4} 1.7 0.3 9 4.0 |
| 11+0 | | | | 23.32 | ^{5.7} 2.7 0.3 0 3.3 |
| +50 | | | | 23.07 | ^{5.9} 3.8 0.3 7 2.4 |
| 10+0 | | | | 22.82 | ^{6.3} 4.6 0.4 6 1.9 |
| +50 | | | | 22.57 | ^{6.4} 5.5 0.3 9 1.2 |
| 9+0 | | | | 22.32 | ^{6.7} 6.3 0.4 4 0.7 |

2899

| | | | | | | | |
|-------|------------------------|-------|------|--|------|-------|--|
| 8+0 | | | | | 7.45 | 35.03 | ^{15.7} 12.1 1.2 0.1 2.0 3.5 2.8 |
| +31.8 | S.L. Pacific Beach Dr. | | | | | 36.30 | ^{6.3} 3.3 0.3 0.3 2.4 |
| +10 | Bk | out | | | | 36.10 | ^{6.6} 4.2 0.3 2.1 2.1 |
| 18+0 | | | | | | 35.86 | ^{6.6} 4.2 0.3 2.1 2.1 |
| +50 | | | | | | 34.90 | ^{7.8} 3.2 0.3 8 2.9 |
| TP | 5.51 | 42.48 | 0.60 | | | 36.99 | |
| 17+0 | | | | | | 33.54 | ^{4.8} 1.3 0.2 9 3.0 |
| +50 | | | | | | 32.38 | ^{5.3} 2.2 0.2 8 3.1 |
| 16+0 | | | | | | 31.22 | ^{6.4} 3.8 0.2 8 2.9 |
| +50 | | | | | | 30.06 | ^{7.5} 4.8 0.2 9 3.0 |
| 15+0 | H.L. Chico | | | | | 28.90 | ^{8.7} 5.2 0.3 8 3.3 |
| +65 | " | | | | | 28.25 | ^{9.3} 6.9 0.3 9 3.2 |
| 14+30 | S.L. Chico | | | | | 27.60 | ^{10.0} 6.8 0.3 8 3.5 |
| 12+80 | | | | | | 26.85 | ^{10.7} 7.5 0.3 8 3.5 |

37.57

Scott St Water Grades

Talbot to Dipshur

Sketch Page 73 offset 4' East of 1/2 Main

+25 = Main to West

7.20

7.5
3.3
0.42

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WK

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2+0 = S.L. Dipshur

7.10

7.6
3.8
0.38

+50

6.85

7.9
3.6
0.44

1+0

6.60

8.1
4.4
0.40

S.P.O.

+50

6.35

8.4
4.5
0.29

0+0 = H.L. Talbot

6.10

8.6
5.2
0.29

0-45

5.90

8.8
5.9
0.29

1472 From Page 73

Talbot Water Grades

F.L. Scott to 250' East

offset 4' South of 1/2 Main

March 3-46

S.P.O.
S.P.O.
S.P.O.
S.P.O.

72

+50

-2.40

1.21
1.20
0.5.1

2+0

-0.80

1.55
1.55
0.70

+50

0.80

1.39
1.08
0.31

1+0

2.40

1.23
1.04
0.29

+50

4.00

1.07
86
0.27

0+0 = F.L. Scott

5.60

9.1
8.4
0.5

1472 From Page 73

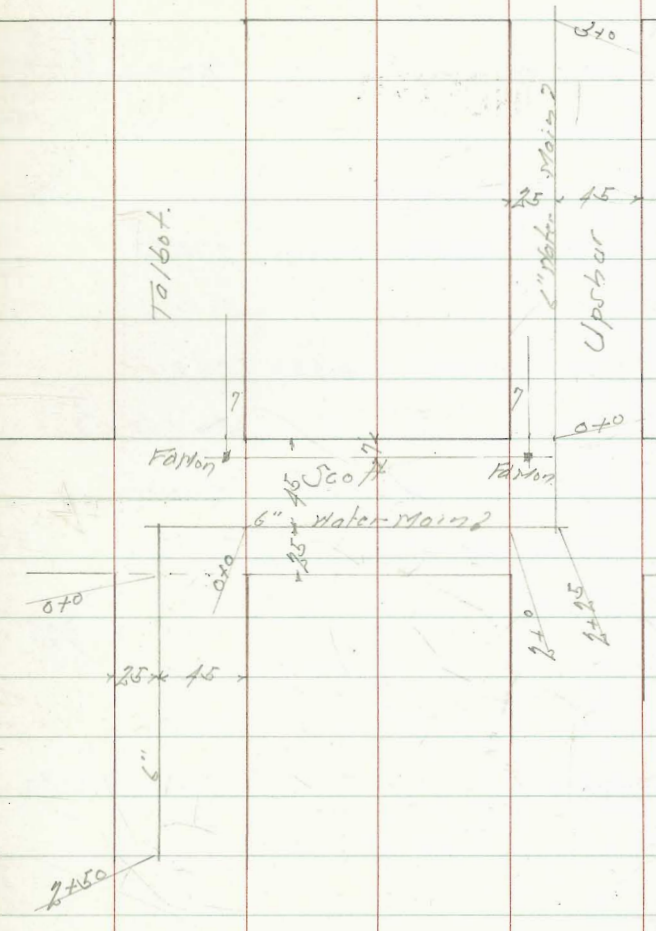
Uprbur St. Water Grades
 Scott to Rosecrans offset 4.50 of Main

| | | | | |
|-----|----------------|-------|-------|-------------------------------------|
| BM | 0.75 | 21.36 | 30.91 | N.W. 8 P Cap on Road 4.20 cut |
| TP | 2.28 | 22.01 | 11.93 | 19.73 |
| 3+0 | F.L. Rosecrans | | 15.10 | 6.9 4.6 1/2" offset |

INDEXED
 WIK
 NOV 9 1948

| | | | | |
|-----|-----------------|-------|-------|----------------------|
| +50 | | | 13.85 | 8.4 3.5 c 2.9 |
| 2+0 | | | 12.60 | 9.4 6.4 c 3.0 |
| +50 | Level Booked in | | 11.35 | 10.7 2.7 c 3.0 |
| 1+0 | | | 10.10 | 11.0 8.6 c 3.3 |
| +50 | | | 8.85 | 13.2 3.2 c 3.8 |
| 0+0 | N.L. Scott | | 7.60 | 11.1 1.0 c 2.9 |
| TP | 3.27 | 14.72 | 10.56 | 11.45 |

Rosecrans St



| Sewer Grades Euanto Park Add | | | | Note Plan changed | |
|--------------------------------|-------|--------|--------|--------------------------------|--------|
| And Ritchey St. | | | | 5+67.15 to 8+423.6' on 10' 10' | |
| off set 4' pt of 2 | | | | off set 6' W of 2 Bites = 2.5' | |
| cont Next Page | | | | | |
| 8+0 | | | 283.48 | 18.47 | 265.01 |
| 5+67.15 = NCHMHA | | | 280.11 | 17.04 | 263.07 |
| BM | 12.61 | 297.15 | 284.54 | 16.47 | 268.07 |
| 5+53.85 = P.H.A. | | | 277.00 | 9.29 | 267.71 |
| | | | | 1.25 | 266.46 |
| | | | | 0.76 | 265.70 |
| TP | 10.22 | 286.29 | 276.07 | | |
| 5+14.23 | | | 267.74 | 14.77 | 252.97 |
| TP | 13.04 | 282.51 | 269.44 | 10.97 | 258.47 |
| 4+74.61 | | | 258.47 | 2.96 | 255.51 |
| TP | 12.97 | 269.44 | 256.47 | | |
| 4+35 = lateral offset 4' 6" | | | 249.20 | 7.45 | 241.75 |
| | | | | 2.87 | 238.88 |
| | | | | 2.78 | 236.10 |
| 4+02.5 | | | 241.60 | 15.05 | 226.55 |
| TP | 13.26 | 256.65 | 243.39 | 8.52 | 234.87 |
| 3+70 = B.H. | | | 234.00 | 9.45 | 224.55 |
| | | | | 1.62 | 222.93 |
| | | | | 0.99 | 221.94 |
| 3+27.5 | | | 229.50 | 13.25 | 216.25 |
| | | | | 8.78 | 207.47 |
| | | | | 0.57 | 206.90 |
| 2+85 = 17H Δ 17° 25' 8" | | | 225.00 | 18.45 | 206.55 |
| | | | | 2.27 | 204.28 |
| | | | | 0.78 | 203.50 |
| BM | 12.86 | 242.45 | 230.59 | 24.85 | 205.74 |
| | | | | 1.57 | 204.17 |

| Lateral Across Ritchey St | | | | April 9-46 | |
|----------------------------|-------|--------|------|------------|-------|
| offset 4' pt of 2 | | | | S. Gray | |
| 8M 2.70 on Modern | | | | Waddell | |
| + Ritchey | | | | 11-19-61 | |
| TP | 9.00 | 327.26 | 2.07 | 318.20 | 14.37 |
| 4+836 = DI | | | | 309.00 | 12.24 |
| 8+0 | | | | 304.02 | 16.25 |
| | | | | | 9.95 |
| | | | | | 26.20 |
| TP | 12.25 | 320.27 | 0.75 | 308.02 | |
| +50 | | | | 298.88 | 9.89 |
| | | | | | 5.24 |
| | | | | | 27.05 |
| 7+0 | | | | 293.75 | 15.02 |
| | | | | | 9.92 |
| | | | | | 5.03 |
| TP | 12.25 | 308.77 | 0.63 | 296.52 | |
| 6+50 | | | | 288.61 | 8.54 |
| | | | | | 2.26 |
| | | | | | 5.97 |
| | | 297.15 | | | |
| 0+79.06 = W.L. Ritchey St. | | | | 275.00 | 7.51 |
| | | | | | 0.27 |
| | | | | | 5.04 |
| 0+52.70 | | | | 266.40 | 16.11 |
| | | | | | 7.14 |
| | | | | | 0.97 |
| | | 282.51 | | | |
| 0+26.35 | | | | 257.80 | 11.64 |
| | | | | | 8.70 |
| | | | | | 3.54 |
| | | 269.44 | | | |
| 0+0 = 4+35' | | | | 249.20 | |

Sewer Grades Alley Block 127
 Choates Bld. Bet F + G St West of 3rd
 Stakes 4' South of 1/2

901-61

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| | | | | |
|--------|------|-------|-------|----------------------------------|
| 3+62.8 | | 5.67 | 78.06 | 075 Stub "901-62 78.05 |
| 3+20 | DE | x | 73.72 | 10.01 6.35 c 3.66 |
| 2+75 | | | 73.10 | 10.33 6.17 c 4.16 |
| 2+25 | | | 73.05 | 10.68 5.09 c 5.59 |
| 1+75 | | | 72.70 | 11.03 5.03 c 6.00 |
| 1+25 | | | 72.35 | 11.88 4.40 c 6.98 |
| 0+75 | M.H. | x | 72.00 | 11.73 4.22 c 7.51 |
| BM | 1.73 | 82.73 | 79.00 | 075 Stub 8' N 0+78 #901-61 |

Apr. 12 1946
 Sisson
 Wright
 Wood
 Hill

75

Sewer Grades

45th St Extend DE 276' South of MH 5 H

Between Imperia Ave + Ocean View Blvd

Cut Set on East Edge Paving

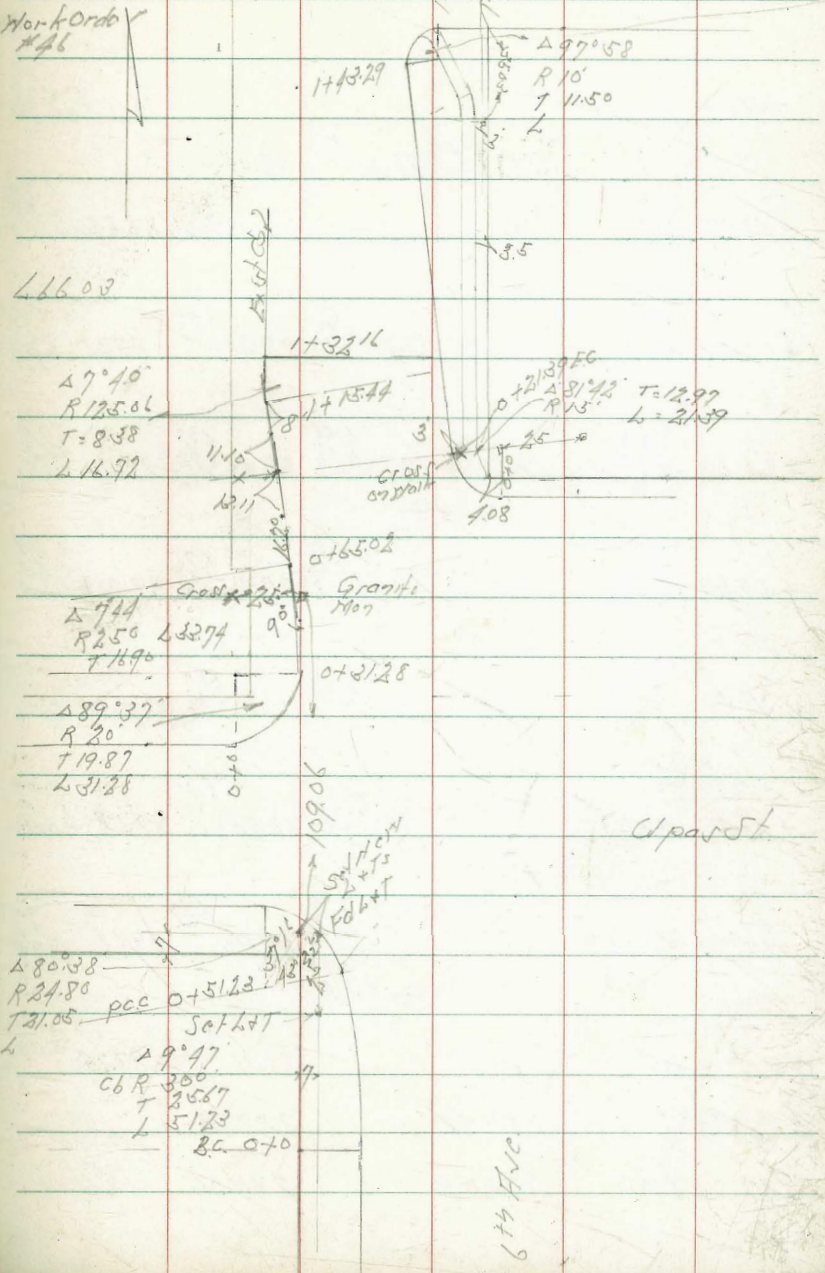
| | | | | |
|-------|------|-------|-------|---|
| 5+50 | DE | | 66.70 | 11.38 6.72 c 4.66 |
| Exist | DE | | 65.20 | 12.88 7.57 c 5.01 |
| TP | 3.22 | 78.08 | 10.86 | 74.86 |
| BM | 0.28 | 85.72 | | 85.44 1.47 to 475 + Ocean View to 770 ft |

Improvement of 6th Ave at Cpar
 South West Corner
 Grades H. H. Cor 2 & 1 Page 80

| | | | | |
|---------------|-----------------|--------|--------|--|
| B.M. | 495 | 294.02 | 289.07 | 5.46 BP Cpar + 6th Ave |
| New B.M. | | | | 50.66 Cpar 20' W of W L 6th Ave to South |
| | | | | 5.185 288.835 |
| | | | | 5.41 5.42 5.0 |
| 0+86.23 | EC - Exist Curb | 88.42 | 88.95 | 5.53 5.54 5.03 |
| 0+70. | | 88.48 | 89.07 | 5.41 5.42 5.0 |
| 0+51.23 | = P.C.C. | 88.55 | 89.22 | 5.27 5.27 5.0 |
| 0+50 | out | | 89.23 | |
| 0+25 | | 88.48 | 88.98 | 5.51 5.51 5.0 |
| 0+0 = B.C. L1 | | 88.39 | 88.85 | 5.64 5.62 5.0 |
| B.M. 5.46 | 294.29 | 288.83 | | |
| B.M. 5.66 | 294.47 | 288.83 | | |

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 WK
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Nov 17 46
 S. J. J. J.
 7665 - Page 43-60
 6608-04 L



6th Ave

North East Upas + 816 Ave
Grades

Stakes offset 3' from C&F face

Gutter Curb

+51.84 = 1/2 Curve

6.16
5.27
88.93 c 0.39

SL. H/W
PI 88.21 ^{7.05}_{7.03} 88.12

+43.29 BC

7.18
5.83
88.18 ^{6.24}_{5.83} 88.85 c 0.71

+19.69

6.80
6.80
0.00
88.46 6.98 88.38 6.14
5.17
88.95 c 0.99

+84.69

6.56
6.67
-0.11
88.70 6.82 88.44 ^{6.82}_{6.70} 89.11 c 1.36

+59.69

6.38
6.60
88.88 -0.22 88.55 ^{6.71}_{6.69} 89.22 c 1.23

+34.69

6.28
6.33
-0.33
89.06 6.60 88.66 ^{6.59}_{6.57} 89.33 c 1.15

+21.39 FC

6.11
6.45
-0.34
89.15 6.41 88.85 89.52 c 0.90

+10.7 = 1/2 Curve

6.02
6.35
-0.28
89.24 6.25 88.98 89.63 c 0.20

0+0 = BC

11.75
11.62
89.33 ^{5.93}_{6.01} -0.08
6.15
6.15
89.11 89.74 ^{5.35}_{5.33} 0.10

BM gutter 6.43 295.26

288.89

BM 6.02 295.09

289.07
S.W. 80
UPAS +
6.43
6.43

May 17-46
Sisson
Opferstein
Allen

77

Side Walk Grades East Edge
Stakes offset 3' E of E Edge walk

+3.87 = +60.39 C&F

89.02 6.48

+15.7

89.26 6.24
5.11
c 1.23

+10.82 = S.W. BC

89.30 6.20
4.92
c 1.23

0+0

89.47 6.03
5.17
c 0.86

Opp 0+21.39 FC

89.60 5.96
5.15
c 0.85

BM 6.67 295.30

288.89
S.W. 80
UPAS +
6.15

+79.22

Gutter Curb
6.43
5.95
89.27 c 1.27

+60.39 = FC

6.09
5.16
89.02 c 0.91

295.09

Hilly Block 48 Tract # 1338 Raving Grades
Trojan + El Cajon Euclid + 4873

| | West | East | |
|---------|--------------------------------------|--------------------------------------|--|
| 3+47.18 | 1.8L S.L. El Cajon 34784 | 4.97 4.96 opp Pav | 348.07 4.79 48' on Pav. |
| 730 | 4.39 348.26 | 4.55 4.83 Fo. 28 2' | 348.56 4.30 4.30 40.00 on 8149 |
| 3+10 | 4.04 348.61 | 4.20 5.00 Fo. 20 2' | 348.91 3.95 3.95 0.00 on 8149 |
| 790 | 3.91 348.74 | 4.07 4.44 Fo. 27 2' | 349.04 3.82 3.82 0.00 on 8149 |
| 770 | 348.65 | 4.16 4.46 Fo. 30 40' on 2nd | 348.95 3.91 3.91 0.00 on 8149 |
| 750 | 4.31 348.24 | 4.47 4.84 Fo. 17 2' | 348.64 4.22 4.22 0.00 on 8149 352.86 |
| 730 | 347.81 | 5.00 4.79 0.21 2' | 348.11 4.70 4.70 2.00 2' Nail Fence |
| 2+25 | 347.62 | 5.19 4.87 0.32 2' | 347.92 4.89 4.89 0.00 2' Nail Fence |
| 2+10 | 347.06 | out | 347.36 |
| TP | 4.60 | 352.86 4.55 | 348.26 |
| 049 | N.L. Trojan + El Cajon Euclid + 4873 | | |
| TP | 7.44 | 352.81 2.55 | 345.37 |
| BM | 3.64 | 347.92 | 344.28 |

May 21-46
S. Woot
Olinstein
Maddal
Hilton

INDEXED
WIK
NOV 9 1948

348.05 on 8149
4.30
352.65

Grades Mission Valley Trunk Sewer #3

#1 615 St. Extension

Stakes offset 10' North of 1/2

#1703-26 Location

62+15

INDEXED
WK

NOV 9 1948

17.44
9.06
c8.74

62+90

14.48
17.49
9.38
c8.91

62+64 = Fly Pavmg

14.42
17.55
4.67
c12.88

62+42 = Fly Pavmg

14.38
17.50
4.89
c12.70

62+10

14.32
17.65
7.70
c9.95

61+85

14.27
17.70
9.29
c8.41

61+60

14.22
17.75
9.47
c8.28

61+30

17.81

61+26.48

14.16
9.77
c8.04
5N

61+08.48

14.12
17.85
9.71
c8.14
5N

TP

3.72

31.97

4.21

26.25

BM

5.78

30.46

29.68

L+T F side
N End D. Gully
Cannon D. R. 10
7 615 St. Ext

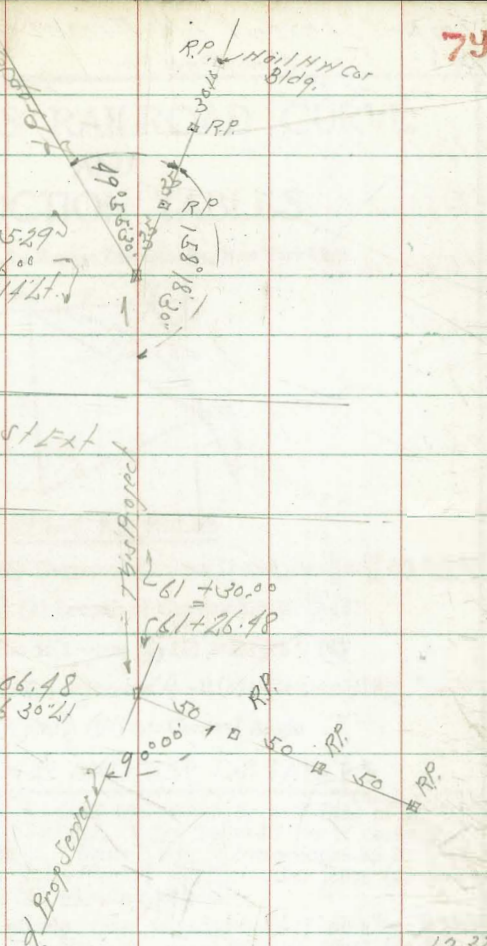
May 27 46

Sisson
ofenstein
Waddel
Hilch

79

63+75.29
63+76.00
63+77.12

61+66.48
20°06'30" W



63+74

14.65
17.32
9.17
c8.15

63+65

14.63
17.34
9.38
c7.95

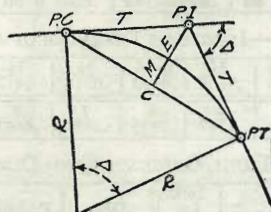
63+40

14.58
17.39
9.19
c8.26

| 8° improvement 6 1/4 Ave at Upper | | Aug 23-46 | |
|-----------------------------------|--------|------------------|----------|
| Stakes offset 2' in Roadway | | Sisson | |
| N. W. Co. | | Model | |
| Sketch Page 76 | | File 107 | |
| 1+32.16 = Ext of Curve | 288.11 | 6.70 | 6.53 |
| +88.80 = 2 Curve | 288.24 | 6.27 | 6.54 |
| | 88.27 | 6.27 | -0.32 |
| | 88.42 | 6.27 | |
| 1+15.44 = B.C. P.I. | 88.43 | 6.27 | |
| | 88.60 | 6.27 | -0.32 |
| | 88.58 | 6.06 | |
| 1+07.94 | 88.70 | 6.27 | 6.55 |
| | | 6.27 | -0.35 |
| | | 5.82 | |
| +94.33 | 88.82 | 6.17 | 6.35 |
| | | 6.17 | -0.35 |
| | | 5.75 | |
| +81.22 | 88.92 | 6.06 | 6.32 |
| | | 6.06 | -0.32 |
| | | 5.58 | |
| +65.02 = E.C. | 89.06 | 6.09 | 6.39 |
| | | 6.09 | -0.39 |
| | | 5.50 | |
| +48.15 = 2 Curve | 89.14 | 5.21 | 6.41 |
| | | 5.21 | -0.41 |
| | | 5.41 | |
| +31.88 P.C. | 89.23 | 5.82 | 6.41 |
| | | 5.82 | -0.41 |
| | | 5.67 | |
| +15.64 | 88.97 | 6.07 | 6.40 |
| | | 6.07 | -0.40 |
| | | 5.93 | |
| 0+0 = B.C. | 88.71 | 5.93 | 6.40 |
| | | 5.93 | -0.40 |
| | | 5.06 | |
| B.M. 5.77 94.64 | 288.83 | 20.110 of 111.64 | to South |

DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES

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CURVE FORMULAS

- Radius = $R = \frac{50}{\sin \frac{D}{2}}$ (1) Degree of Curve = D and $\sin \frac{D}{2} = \frac{50}{R}$ (2)
- Tangent = $T = R \tan \frac{\Delta}{2}$ (3) Length of Curve = $L = 100 \frac{\Delta}{D}$ (4)
- Middle ordinate = $M = R(1 - \cos \frac{\Delta}{2})$ (5) = $R \text{vers} \frac{\Delta}{2}$ (6)
- External = $E = T \tan \frac{\Delta}{4}$ (7) = $R \div \cos \frac{\Delta}{2} - R$ (8) = $R \text{exsec} \frac{\Delta}{2}$ (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. $\Delta = 62^\circ 10'$ $D = 8^\circ 20'$. From Table IV for 1° curve $T = 3454.1$ and $\div 8 \frac{1}{2} = 414.49$ 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 = $7.27 (54.50 \div 100)^2 = 2.16$ ft. Also square of any distance divided by twice the radius equals (approximately) the distance from tangent to curve. Thus $(54.50)^2 \div (2 \times 688.26) = 2.16$ ft.

Deflections.—Deflection angle = $\frac{1}{2} D$ for 100 ft., $\frac{1}{4} D$ for 50 ft., etc. For c ft. = (in minutes) $.3 \times C \times D^\circ$ or = defl. for 1 ft. from Table III $\times C$. For Sta. 158 of above curve = $.3 \times 54.5 \times 8 \frac{1}{2} = 136.2'$ or $2^\circ 16.2'$, or $= 2.50 \times 54.5 = 136.2'$ from Table III. For Sta. 159 deflection angle = $2^\circ 16.2' + 8^\circ 20' \div 2 = 6^\circ 26.2'$, 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 $8^\circ 20' = 960.6 \div 8 \frac{1}{2} = 91.27$ and from Table V correction = .10 or $E = 91.37$ ft. Or suppose $\Delta = 32^\circ$ and E is measured and found to be 42 ft. What is D ? From Table IV $E = 230.9$ and $\div 42 = 5.5$ or $D = 5^\circ 30'$.

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 | 26.2 | 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 $41.9 + (20 - 16) \div 2$ or 2 ft. added to 41.9 = 43.9. For slopes of 1 on 1 see inside of front cover.

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