

The Wairarapa base-net has been adjusted to the two measured lines, Woodside-Kaiwaewae and Woodside-Bidwill, and the results are given in detail hereunder.

*Observed Angles.*

| No. | °  | '  | "           | No. | °  | '  | "            |
|-----|----|----|-------------|-----|----|----|--------------|
| 1   | .. | .. | 18 27 58.96 | 9   | .. | .. | 10 42 09.62  |
| 2   | .. | .. | 21 38 11.15 | 10  | .. | .. | 53 04 10.00  |
| 3   | .. | .. | 19 42 20.73 | 11  | .. | .. | 00 00 05.97  |
| 4   | .. | .. | 73 15 14.44 | 12  | .. | .. | 56 56 13.75  |
| 5   | .. | .. | 00 00 01.18 | 13  | .. | .. | 114 35 38.54 |
| 6   | .. | .. | 62 19 42.71 | 14  | .. | .. | 116 13 40.28 |
| 7   | .. | .. | 24 42 42.80 | 15  | .. | .. | 63 46 28.44  |
| 8   | .. | .. | 29 11 09.24 | 16  | .. | .. | 65 24 10.70  |

NOTES.—Trig. station Kaiwaewae slightly to east of base-line. Angle No. 5 observed from Woodside, between Kaiwaewae and Bidwill. Angle No. 11 observed from Bidwill, between Woodside and Kaiwaewae (see Fig. 2).

*Seconds of Observed Angles.*

|                    |                    |                   |                      |
|--------------------|--------------------|-------------------|----------------------|
| 1 + 2 + 3 = 30.84" | 7 + 8 + 9 = 01.66" | 3 = 20.73"        | 1 + 2 = 10.11"       |
| 4 = 14.44          | 5 + 6 = 43.89      | 4 + 5 + 6 = 58.33 | 8 + 9 = 18.86        |
| 12 = 13.75         | 10 + 11 = 15.97    | 7 = 42.80         | 10 + 11 + 12 = 29.72 |
|                    |                    |                   |                      |
|                    |                    |                   |                      |
| Sph. Ex.           | 59.03              | 1.52              | 58.69                |
|                    | 0.45               | 0.34              | 0.50                 |
|                    |                    |                   |                      |
| Errors             | — 1.42             | + 1.18            | + 1.57               |
|                    |                    |                   | — 1.81               |

|                 |               |                |                 |
|-----------------|---------------|----------------|-----------------|
| 2 = 11.15"      | 6 = 42.71"    | 2 + 3 = 31.88" | 1 = 58.96"      |
| 8 = 09.24       | 7 + 8 = 52.04 | 4 + 5 = 15.62  | 11 + 12 = 19.72 |
| 15 + 16 = 39.14 | 15 = 28.44    | 16 = 10.70     | 13 = 38.54      |
|                 |               |                |                 |
| Sph. Ex.        |               |                |                 |
| 59.53           | 3.19          | 58.20          | 57.22           |
| 0.34            | 0.27          | 0.36           | 0.09            |
|                 |               |                |                 |
| Errors          |               |                |                 |
| — 0.81          | + 2.92        | — 2.16         | — 2.87          |

|          |        |           |         |
|----------|--------|-----------|---------|
| 9 =      | 9.62"  | 5 =       | 01.18"  |
| 10 =     | 10.00  | 11 =      | 05.97   |
| 14 =     | 40.28  | 13 + 16 = | 49.24   |
|          | <hr/>  |           | <hr/>   |
|          | 59.90  |           | = 56.39 |
| Sph. Ex. | 10.07  |           | 0.00    |
|          | <hr/>  |           | <hr/>   |
| Errors   | — 0.17 |           | — 3.61  |

Measured base lines : Woodside-Kaiwaewae = 51628-5012 links ; Woodside-Bidwill = 64776-6668 links.

### Equations.

The angle equations are—

|                                                 |            |         |
|-------------------------------------------------|------------|---------|
| $x_6 + x_7 + x_8 + x_{15}$                      | $= + 2.92$ | .... A. |
| $x_5 + x_6 + x_7 + x_8 + x_9 + x_{10} + x_{11}$ | $= + 1.18$ | .... B. |
| $x_2 + x_3 + x_4 + x_5 + x_{16}$                | $= - 2.16$ | .... C. |
| $x_1 + x_2 + x_3 + x_4 + x_{12}$                | $= - 1.42$ | .... D. |
| $x_1 + x_{13} + x_{11} + x_{12}$                | $= - 2.87$ | .... E. |
| $x_3 + x_4 + x_5 + x_6 + x_7$                   | $= + 1.57$ | .... F. |
| $x_{13} + x_{14} + x_{15} + x_{16}$             | $= - 2.04$ | .... G. |

The side equations are—

$$\begin{array}{ll}
 6\cdot718x_1 - 1\cdot137(x_2 + x_3) + \cdot301(x_4 + x_5) - \cdot524x_6 + \cdot729(x_7 + x_8) - 5\cdot291x_9 + \cdot751x_{10} - \cdot651 \\
 (x_{11} + x_{12}) = + 11\cdot167 & \dots\dots\dots H. \\
 1\cdot725(x_1 + x_2) - 2\cdot792x_3 + \cdot301x_4 - \cdot524(x_5 + x_6) + 2\cdot173x_7 - 1\cdot196(x_8 + x_9) + \cdot752(x_{10} + x_{11}) \\
 - \cdot651x_{12} = + 9\cdot121 & \dots\dots\dots I. \\
 2\cdot521x_2 - 2\cdot792x_3 + \cdot301(x_4 + x_5) - \cdot524x_6 + 2\cdot173x_7 - 1\cdot790x_8 + \cdot493x_{10} - \cdot428x_{12} = \\
 + 6\cdot713 & \dots\dots\dots J. \\
 \cdot651x_{12} - \cdot845(x_1 + x_2 + x_3) + 1\cdot137(x_2 + x_3) - \cdot458x_{12} = + \cdot078 & \dots\dots\dots K.
 \end{array}$$