

Canada Department of Mines

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GEOLOGICAL SURVEY
W. H. COLLINS, DIRECTOR.

FRASER RIVER INVESTIGATION

Issued 1921

CONTROL SHEET, B.

| Triangle | Observed Angles | Adjusted Angles | Side | Length in feet |
|---------------------|---|---|----------------------------------|-------------------------------|
| A Grey No Pt. | 80 31 13.3 38 35 35.0 60 53 14.2 180 00 02.6 | 80 31 12.4 38 35 34.2 60 53 13.4 180 00 00.0 | A-Grey Grey-No Pt. No Pt-A | 5174.75 5842.16 3694.69 |
| No Pt. A C | 57 47 11.7 45 11 58.3 77 00 48.0 179 59 58.0 | 57 47 12.4 45 11 58.9 77 00 48.7 180 00 00.0 | No Pt-A A-C C-No Pt. | 3694.69 3208.02 2690.44 |
| C No Pt. B | 38 54 16.0 84 04 14.5 57 01 40.0 180 00 10.6 | 38 54 12.5 84 04 11.0 57 01 36.5 180 00 00.0 | C-No Pt. No Pt-B B-C | 2690.44 2014.04 3189.85 |
| B C D | 53 30 17.8 64 05 12.9 62 24 21.7 179 59 52.4 | 53 30 20.3 64 05 15.6 62 24 24.2 180 00 00.0 | B-C C-D D-B | 3189.85 2893.48 3237.33 |
| D B F | 59 59 36.1 72 15 48.5 47 44 45.3 180 00 09.3 | 59 59 32.8 72 15 45.2 47 44 42.0 180 00 00.0 | D-B B-F F-D | 3237.33 3787.62 4165.97 |
| F D H | 47 25 54.6 57 37 20.3 74 56 40.0 179 59 54.9 | 47 25 56.3 57 37 22.0 74 56 41.7 180 00 00.0 | F-D D-H H-F | 4165.97 3177.22 3643.39 |
| H F G | 51 30 31.7 81 54 42.9 46 24 37.0 179 59 51.6 | 51 30 34.5 81 54 45.7 46 24 39.8 180 00 00.0 | H-F F-G G-H | 3643.39 3926.33 4966.43 |
| G H I | 52 19 53.1 50 37 11.7 77 02 50.0 179 59 54.8 | 52 19 54.8 50 37 13.4 77 02 51.8 180 00 00.0 | G-H H-I I-G | 4966.43 4033.86 3929.07 |

* Initial Measured Base Line (West)

| Triangle | Observed Angles | Adjusted Angles | Side | Length in feet |
|-------------|--|--|-------------------|---------------------------------|
| I G L | 51 50 05.0 77 30 47.9 50 39 07.7 180 00 00.6 | 51 50 04.8 77 30 47.7 50 39 07.5 180 00 00.0 | I-G G-L L-I | 3929.07 4004.88 4973.29 |
| L I K | 32 55 08.3 41 56 05.8 105 08 44.5 179 59 58.6 | 32 55 08.7 41 56 05.3 105 08 45.0 180 00 00.0 | L-I I-K K-L | 4973.29 2800.01 3443.19 |
| K L O | 67 00 54.4 57 46 14.2 55 12 52.3 180 00 00.9 | 67 00 54.1 57 46 13.9 55 12 52.0 180 00 00.0 | K-L L-O O-K | 3443.19 3859.56 3546.43 |
| O K M | 58 54 05.8 41 00 19.4 80 05 41.5 180 00 06.7 | 58 54 05.6 41 00 17.2 80 05 39.2 180 00 00.0 | O-K K-M M-O | 3546.43 3082.68 2362.11 |
| M O P | 55 57 49.2 74 18 10.0 49 43 54.4 179 59 55.6 | 55 57 51.3 74 18 12.2 49 43 56.6 180 00 00.0 | M-O O-P P-O | 2362.11 2980.23 2565.35 |
| P O Q | 90 46 31.8 31 25 05.8 57 48 12.5 179 59 50.1 | 90 46 35.1 31 25 09.1 57 48 15.8 180 00 00.0 | P-O O-Q Q-P | 2565.35 3031.22 1580.30 |
| Q P R | 75 15 25.8 44 23 01.2 60 21 32.5 179 59 59.5 | 75 15 26.0 44 23 01.3 60 21 32.7 180 00 00.0 | Q-P P-R R-Q | 1580.30 1758.37 1271.78 |
| R Q S | 70 56 15.8 73 43 40.4 35 20 23.7 180 00 19.9 | 70 56 09.2 73 43 33.7 35 20 17.1 180 00 00.0 | R-Q Q-S S-R | 1271.78 2078.20 * 2110.70 |

* Check side S-R calculated from West Base 2110.70

| Triangle | Observed Angles | Adjusted Angles | Side | Length in feet |
|---------------|---|---|-----------------------|---------------------------------|
| Z Al Y | 63 37 51.7 52 21 53.3 64 00 25.0 180 00 10.0 | 63 37 48.4 52 21 50.0 64 00 21.6 180 00 00.0 | Z-Al Al-Y Y-Z | 1164.65 1160.90 1026.09 |
| Y Z X | 71 22 18.5 56 52 55.0 51 38 57.5 180 00 11.0 | 71 22 14.8 56 58 51.3 51 38 53.9 180 00 00.0 | Y-Z Z-X X-Y | 1026.09 1239.87 1097.10 |
| X Y V | 76 36 41.6 56 28 56.7 46 54 15.0 179 59 53.3 | 76 36 43.9 56 28 58.9 46 54 17.2 180 00 00.0 | X-Y Y-V V-X | 1097.10 1461.60 1252.61 |
| V X W | 88 32 26.7 53 02 29.2 38 24 58.3 179 59 54.2 | 88 32 28.7 53 02 31.1 38 25 00.2 180 00 00.0 | V-X X-W W-V | 1252.61 2015.21 1610.83 |
| W V U | 76 21 32.5 58 27 32.5 45 10 59.2 180 00 04.2 | 76 21 31.1 58 27 31.1 45 10 57.8 180 00 00.0 | W-V V-U U-W | 1610.83 2206.77 1935.34 |
| U W T | 94 36 40.0 44 41 05.5 40 42 15.0 180 00 00.5 | 94 36 39.8 44 41 05.3 40 42 14.9 180 00 00.0 | U-W W-T T-U | 1935.34 2958.01 2086.84 |
| T U S2 | 66 20 26.7 46 27 11.7 67 12 19.4 179 59 56.7 | 66 20 27.8 46 27 12.8 67 12 19.4 180 00 00.0 | T-U U-S2 S2-T | 2086.84 2073.38 1640.72 |
| S2 T S1 | 54 09 53.3 65 54 01.6 59 56 09.2 180 00 04.1 | 54 09 52.0 65 54 00.2 59 56 07.8 180 00 00.0 | S2-T T-S1 S1-S2 | 1640.72 1536.90 1730.53 |
| S1 S2 S | 64 14 08.3 64 50 58.3 50 54 55.9 180 00 02.5 | 64 14 07.4 64 50 57.5 50 54 55.1 180 00 00.0 | S1-S2 S2-S S-S1 | 1730.53 2007.80 2018.00 |
| S S1 R | 72 09 08.3 55 40 39.2 52 10 04.2 179 59 51.7 | 72 09 11.1 55 40 42.0 52 10 06.9 180 00 00.0 | S-S1 S1-R S-R | 2018.00 2432.20 * 2110.28 |

* Check side S-R calculated from East Base 2110.28

| Triangle | Observed Angles | Adjusted Angles | Side | Length in feet |
|------------------|---|---|-----------------------------|-------------------------------|
| A10 A11 A9 | 53 04 26.9 75 17 42.5 51 37 59.1 180 00 08.5 | 53 04 24.1 75 17 39.6 51 37 56.3 180 00 00.0 | A10-A11 A11-A9 A9-A10 | 1185.23 1208.45 1462.16 |
| A9 A10 A8 | 47 02 11.5 55 06 11.7 77 51 28.4 179 59 51.6 | 47 02 14.3 55 06 14.5 77 51 31.2 180 00 00.0 | A9-A10 A10-A8 A8-A9 | 1462.16 1094.49 1226.69 |
| A8 A9 A7 | 71 26 10.4 48 37 42.5 59 56 22.5 180 00 15.4 | 71 26 05.2 48 37 37.4 59 56 17.4 180 00 00.0 | A8-A9 A9-A7 A7-A8 | 1226.69 1343.69 1063.61 |
| A7 A8 A6 | 51 40 30.8 61 46 27.1 66 33 07.5 180 00 05.4 | 51 40 29.0 61 46 25.3 66 33 05.7 180 00 00.0 | A7-A8 A8-A6 A6-A7 | 1063.61 909.52 1021.49 |
| A6 A7 A5 | 55 30 25.8 66 23 13.8 58 06 30.5 180 00 10.1 | 55 30 22.4 66 23 10.4 58 06 27.2 180 00 00.0 | A6-A7 A7-A5 A5-A6 | 1021.49 991.59 1102.37 |
| A5 A6 A4 | 63 47 23.3 74 34 41.7 41 37 58.3 180 00 02.3 | 63 47 22.2 74 34 40.6 41 37 57.2 180 00 00.0 | A5-A6 A6-A4 A4-A5 | 1102.37 1488.70 1599.57 |
| A4 A5 A3 | 92 20 23.3 47 09 07.5 40 20 22.5 179 59 53.2 | 92 20 25.6 47 09 09.7 40 20 24.7 180 00 00.0 | A4-A5 A5-A3 A3-A4 | 1599.57 2460.57 1605.52 |
| A3 A4 A2 | 56 41 49.2 41 10 54.2 82 07 14.2 179 59 57.6 | 56 41 50.0 41 10 55.0 82 07 15.0 180 00 00.0 | A3-A4 A4-A2 A2-A3 | 1605.52 1523.40 1200.18 |
| A2 A3 A1 | 34 14 37.7 72 36 54.2 73 08 33.9 180 00 08.6 | 34 14 34.7 72 36 51.4 73 08 33.9 180 00 00.0 | A2-A3 A3-A1 A1-A2 | 1200.18 705.67 1196.73 |
| A1 A2 Z | 42 22 58.3 66 47 52.5 70 49 00.8 179 59 51.6 | 42 23 01.1 66 47 55.3 70 49 03.6 180 00 00.0 | A1-A2 A2-Z Z-A1 | 1196.73 854.16 1164.65 |

* Initial Measured Base Line (East)

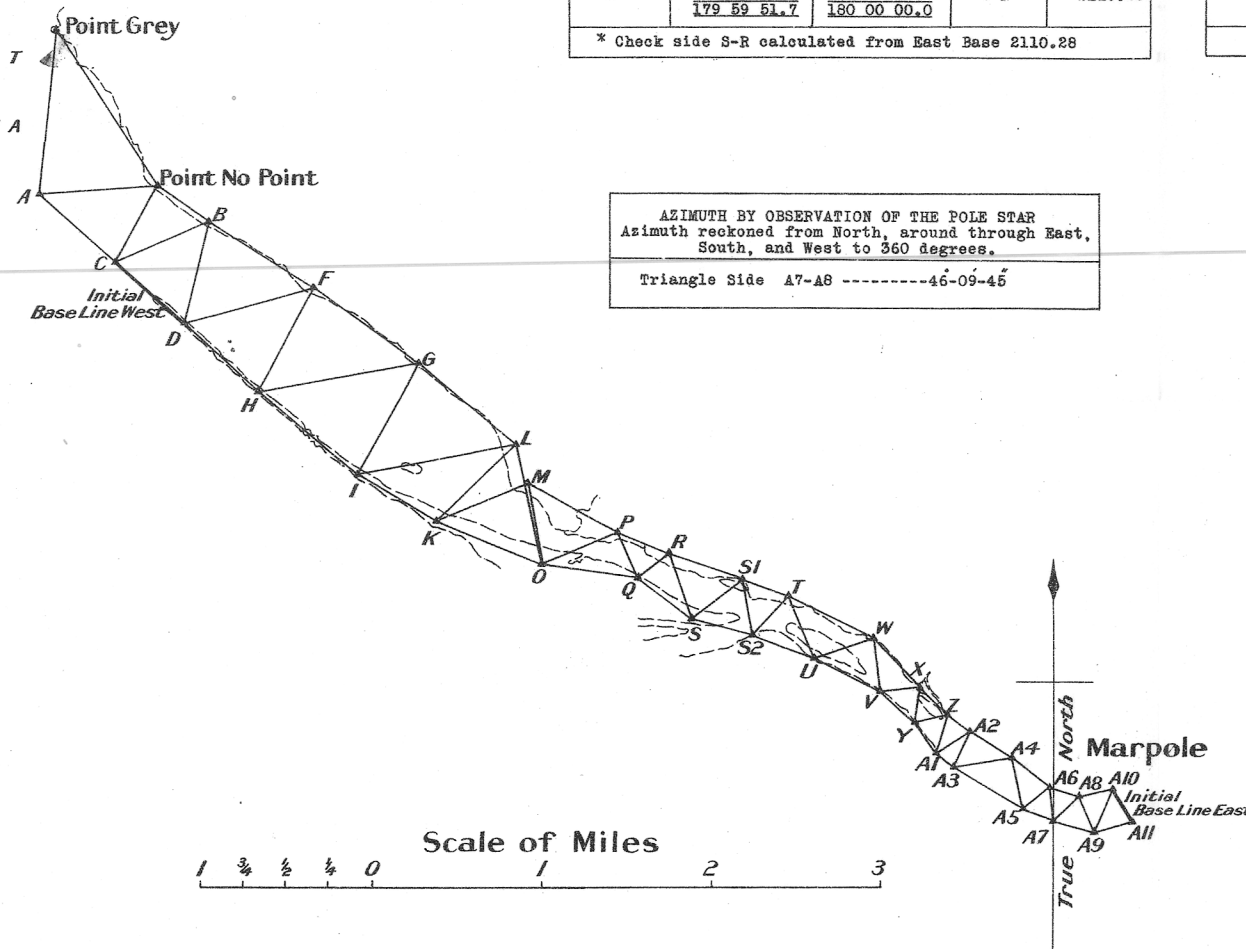
RECTANGULAR COORDINATES IN FEET
Referred to Meridian through Station A7

| Station | Latitude | | Departure | |
|---------|----------|-------|-----------|------|
| | North | South | East | West |
| A7 | 0.00 | 0.00 | 0.00 | 0.00 |
| A6 | 1016.77 | | 92.12 | |
| A5 | 308.09 | | 942.61 | |
| A4 | 1861.52 | | 1323.94 | |
| A3 | 2616.93 | | 2646.85 | |
| A2 | 1602.95 | | 3092.49 | |
| Z | 3080.75 | | 3354.10 | |
| A1 | 1949.27 | | 3640.08 | |
| X | 3946.98 | | 4251.19 | |
| Y | 2856.82 | | 4355.23 | |
| V | 3789.19 | | 5493.51 | |
| W | 5387.30 | | 5660.55 | |
| U | 4737.95 | | 7482.80 | |
| T | 5641.19 | | 8339.75 | |
| S2 | 5424.21 | | 9440.28 | |
| S1 | 7116.78 | | 9801.21 | |
| S | 5879.73 | | 11395.73 | |
| R | 7863.50 | | 12116.05 | |
| Q | 7062.76 | | 13104.15 | |
| P | 8503.25 | | 13752.92 | |
| O | 7480.34 | | 16106.55 | |
| M | 9820.63 | | 16427.32 | |
| L | 11262.63 | | 16875.45 | |
| K | 8882.83 | | 19363.99 | |
| G | 13828.94 | | 19950.08 | |
| I | 10330.61 | | 21760.63 | |
| F | 16151.89 | | 23115.50 | |
| H | 12940.54 | | 24855.41 | |
| B | 16234.89 | | 25278.92 | |
| D | 15117.15 | | 27150.93 | |
| No Pt. | 19423.20 | | 27904.97 | |
| C | 17098.55 | | 29259.52 | |
| Grey | 24425.75 | | 30922.46 | |
| A | 19295.22 | | 31597.44 | |

RECTANGULAR COORDINATES IN FEET
Referred to Meridian through Station A7.

| Station | Latitude | | Departure | |
|---------|----------|--------|-----------|------|
| | North | South | East | West |
| A7 | 0.00 | 0.00 | 0.00 | 0.00 |
| A8 | 736.67 | | 767.19 | |
| A9 | | 372.52 | 1290.89 | |
| A10 | 985.31 | | 1833.06 | |
| A11 | | 27.33 | 2448.95 | |

STRAIT OF GEORGIA



AZIMUTH BY OBSERVATION OF THE POLE STAR
Azimuth reckoned from North, around through East,
South, and West to 360 degrees.
Triangle Side A7-A8 -----46-09-45

TRIANGULATION STATION ELEVATIONS
Based on the elevation of the
Geodetic Survey Bench Mark
No. 189J-elevation 15.555 feet

| Station | Elevation in feet referred to Mean Sea Level |
|---------|--|
| A11 | 20.49 |
| A10 | 21.78 |
| A9 | No elev. |
| A8 | No elev. |
| A7 | 13.70 |
| A6 | No elev. |
| A5 | 6.26 |
| A4 | No elev. |
| A3 | 7.27 |
| Z | 11.28 |
| Y | 9.36 |
| X | 10.12 |
| V | 4.96 |
| U | 12.70 |
| T | 10.39 |
| S2 | 5.72 |
| S1 | 11.49 |
| S | 8.57 |
| R | 10.56 |
| Q | 8.62 |
| P | 8.76 |
| O | 7.95 |
| M | 7.53 |
| L | 9.10 |
| K | 7.91 |
| G | No elev. |
| I | 7.67 |
| F | 7.24 |
| H | 3.31 |
| B | 8.07 |
| D | 4.39 |
| No Pt. | 5.92 |
| C | No elev. |
| Grey | 5.38 |
| A | No elev. |
| | 5.73 |
| | No elev. |
| | 5.59 |

NORTH ARM OF FRASER RIVER -Triangulation Control- BRITISH COLUMBIA

TOPOGRAPHY
W.H. Boyd, Chief Topographer.
Triangulation by J.R. Cox, 1899.

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