

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE



INITIAL OR UNADJUSTED FIGURES

LOCATION

GRID

R.L. DATUM

CLOSURE 1 in

SHEET N°

LOCATION

| LINE      |           |           | HORIZONTAL ANGLE |           |           | BEARING   |   |   | ZENITH ANGLE |        |    | E.D.M.I. Reading |    |    | BAROMETRIC PRESSURE |    |    | ATMOSPHERIC CORRECTION SETTING |    |    | TEMPERATURE |          |      | HORIZONTAL DISTANCE |             |             | H.I.      |             |             | H.T.    |       |       | STATION CO-ORDINATES |                                    |                             | INITIALS & DATE |                    |  | REMARKS |  |  |
|-----------|-----------|-----------|------------------|-----------|-----------|-----------|---|---|--------------|--------|----|------------------|----|----|---------------------|----|----|--------------------------------|----|----|-------------|----------|------|---------------------|-------------|-------------|-----------|-------------|-------------|---------|-------|-------|----------------------|------------------------------------|-----------------------------|-----------------|--------------------|--|---------|--|--|
| BS        | IS        | FS        | °                | '         | "         | °         | ' | " | °            | '      | "  | m                | mm | mm | mm                  | mm | mm | mm                             | mm | mm | m           | mm       | mm   | m                   | mm          | mm          | TITLE     | LATITUDE    | DEPARTURE   | R.L.    | FIELD | CALCS | CHECK                |                                    |                             |                 |                    |  |         |  |  |
|           |           | PAT       |                  |           |           |           |   |   |              |        |    |                  |    |    |                     |    |    |                                |    |    |             |          |      |                     |             |             | PAT       | 566 059.78  | 220 466.17  | 120.832 |       |       |                      |                                    |                             |                 |                    |  |         |  |  |
|           | PAT       | BOLD HEAD |                  |           |           | 353 05 32 |   |   |              |        |    |                  |    |    |                     |    |    |                                |    |    |             |          |      |                     |             |             | BOLD HEAD | 567 199.03  | 220 328.15  | 129.236 |       |       |                      |                                    |                             |                 | TELECOM 255°28'27" |  |         |  |  |
|           | BOLD HEAD | 3A/18     |                  |           |           |           |   |   |              |        |    |                  |    |    |                     |    |    |                                |    |    |             |          |      |                     |             |             | 3A/18     | 566 771.47  | 220 267.13  | 118.788 |       |       |                      |                                    |                             |                 |                    |  |         |  |  |
| BOLD HEAD | PAT       | DUNCAN I  | 353 05 32        | 218 51 47 | 208 23 45 | 218 51 47 |   |   | 571.765      |        |    |                  |    |    |                     |    |    |                                |    |    | 571.541     | 1.505    | 1.43 | DUNCAN I            | 565 614.751 | 220 107.550 | 104.90    |             |             |         |       |       |                      | HEADER 211°23'32"                  |                             |                 |                    |  |         |  |  |
|           |           | COMPLEX 1 | 353 04 45        | 218 51 00 |           |           |   |   |              |        |    |                  |    |    |                     |    |    |                                |    |    |             |          |      |                     |             |             | COMPLEX 1 | 565 729.75  | 220 424.07  | 105.860 |       |       |                      |                                    |                             |                 | TELECOM 279°20'20" |  |         |  |  |
|           |           | COMPLEX 2 |                  |           |           | 116 01 55 |   |   |              |        |    |                  |    |    |                     |    |    |                                |    |    |             |          |      |                     |             |             | COMPLEX 2 | 565 557.01  | 220 777.74  | 98.189  |       |       |                      |                                    |                             |                 | TELE               |  |         |  |  |
|           | HAUGHHEY  | HAUGHHEY  |                  |           |           |           |   |   |              |        |    |                  |    |    |                     |    |    |                                |    |    | 5           |          |      |                     |             |             | HAUGHHEY  | 564 977.120 | 221 524.086 | 44.007  | MGM   |       |                      |                                    |                             |                 | Survey Ledger      |  |         |  |  |
|           | HAUGHHEY  | LOLIN     |                  |           |           | 286 50 06 |   |   |              |        |    |                  |    |    |                     |    |    |                                |    |    |             |          |      |                     |             |             | LOLIN     | 565 202.796 | 220 778.304 | 69.993  |       |       |                      |                                    |                             |                 | Survey Ledger      |  |         |  |  |
|           | LOLIN     | MIKE      |                  |           |           | 206 25 52 |   |   |              |        |    |                  |    |    |                     |    |    |                                |    |    |             |          |      |                     |             |             | MIKE      | 564 549.965 | 220 453.782 | 31.032  |       |       |                      |                                    |                             |                 | Survey Ledger      |  |         |  |  |
|           | MIKE      | FLAT      |                  |           |           | 211 53 42 |   |   |              |        |    |                  |    |    |                     |    |    |                                |    |    |             |          |      |                     |             |             | FLAT      | 564 060.961 | 220 149.451 | 14.588  |       |       |                      |                                    |                             |                 |                    |  |         |  |  |
| PAT       | BOLD HEAD | HELLEMAN  | 173 05 32        | 106 37 47 | 270 31 15 | 106 37 47 |   |   | 1169.372     |        |    |                  |    |    |                     |    |    |                                |    |    | 1169.324    | 1.83     | 1.12 | HELLEMAN            | 566 864.387 | 221 448.566 | 140.58    |             |             |         |       |       |                      | TELECOM 261°44'27"                 |                             |                 |                    |  |         |  |  |
|           | BOLD HEAD | AIR       | 173 01 45        | 106 3 00  |           | 106 3 00  |   |   |              |        |    |                  |    |    |                     |    |    |                                |    |    |             |          |      |                     |             |             | AIR       |             |             |         |       |       |                      |                                    |                             |                 | HEADER 222°06'41"  |  |         |  |  |
|           | BOLD HEAD | RILEY     | 316 44 54        | 346 53 35 | 91 56 23  | 346 53 35 |   |   | 92.794       |        |    |                  |    |    |                     |    |    |                                |    |    | 92.741      | 1.82     | 1.55 | RILEY               | 567 289.355 | 220 307.119 | 126.37    |             |             |         |       |       |                      |                                    |                             |                 |                    |  |         |  |  |
|           | BOLD HEAD | TELECOM   |                  |           |           | 255 28 35 |   |   |              |        |    |                  |    |    |                     |    |    |                                |    |    |             |          |      |                     |             |             | TELECOM   | 566 068.029 | 215 962.317 |         |       |       |                      |                                    |                             |                 | Provisional coords |  |         |  |  |
| TELECOM   | BOLD HEAD | HELLEMAN  | 211 09 06        | 106 37 41 | 89 28 30  | 106 37 41 |   |   | 1169.377     |        |    |                  |    |    |                     |    |    |                                |    |    | 1169.304    | 1.80     | 1.12 | HELLEMAN            | 566 864.425 | 221,448.557 |           | MGM         | MGM         |         |       |       |                      | Cylindrical steel spike in paddock |                             |                 |                    |  |         |  |  |
|           |           |           |                  |           |           |           |   |   | (1169.377)   | 1002.5 | 08 | 23.0             |    |    |                     |    |    |                                |    |    |             | 1169.324 |      |                     |             |             |           |             |             |         |       |       |                      |                                    | No of Grahams Rd Stockyards |                 |                    |  |         |  |  |
| BOLD HEAD | HELLEMAN  | MUTE      | 217 53 36        | 144 31 17 | 91 16 36  | 144 31 17 |   |   | 576.854      |        |    |                  |    |    |                     |    |    |                                |    |    | 576.698     | 1.11     | 1.48 | MUTE                | 566 394.801 | 221,783.272 |           | MGM         | MGM         |         |       |       |                      | RL to top of spike                 |                             |                 |                    |  |         |  |  |
|           |           |           |                  |           |           |           |   |   | (576.854)    | 1003.5 | 08 | 10.4             |    |    |                     |    |    |                                |    |    |             | 576.711  |      |                     |             |             |           |             |             |         |       |       |                      |                                    |                             |                 |                    |  |         |  |  |
| HELLEMAN  | MUTE      | NUNN      | 81 10 30         | 45 41 47  | 89 31 24  | 45 41 47  |   |   | 206.907      |        |    |                  |    |    |                     |    |    |                                |    |    | 206.895     | 1.47     | 1.48 | NUNN                | 566,539.309 | 221,931.337 |           |             |             |         |       |       |                      | Steel spike                        |                             |                 |                    |  |         |  |  |
|           |           |           |                  |           |           |           |   |   | (206.907)    | 1005.4 | 08 | 11.0             |    |    |                     |    |    |                                |    |    |             | 206.908  |      |                     |             |             |           |             |             |         |       |       |                      |                                    |                             |                 |                    |  |         |  |  |
| MUTE      | NUNN      | PURVER    | 181 43 00        | 47 24 47  | 91 23 54  | 47 24 47  |   |   | 435.027      |        |    |                  |    |    |                     |    |    |                                |    |    | 434.889     | 1.46     | 1.46 | PURVER              | 566 893.602 | 222,251.524 |           | MGM         |             |         |       |       |                      |                                    |                             |                 |                    |  |         |  |  |
|           |           |           |                  |           |           |           |   |   | (435.027)    | 1005.5 | 08 | 9.0              |    |    |                     |    |    |                                |    |    |             | 434.896  |      |                     |             |             |           |             |             |         |       |       |                      |                                    |                             |                 |                    |  |         |  |  |

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

SHEET N° 3

LOCATION

LOCATION

GRID R.L. DATUM CLOSURE 1 in

| 7         | 8         | 9         | 11               |    |    | 12      |    |    | 13                               |    |    | 14        | 15     | 16                  | 17                             | 18               |          |      | 19       | 20          | 21-23               |             |         | 25-27                |          |  | 28            |
|-----------|-----------|-----------|------------------|----|----|---------|----|----|----------------------------------|----|----|-----------|--------|---------------------|--------------------------------|------------------|----------|------|----------|-------------|---------------------|-------------|---------|----------------------|----------|--|---------------|
|           |           |           | HORIZONTAL ANGLE |    |    | BEARING |    |    | ZENITH ANGLE<br>TARGET REFLECTOR |    |    |           |        |                     |                                | E.D.M.I. Reading |          |      |          |             | HORIZONTAL DISTANCE |             |         | STATION CO-ORDINATES |          |  |               |
| BS        | IS        | FS        | o                | i  | "  | o       | i  | "  | o                                | i  | "  | m         | m      | BAROMETRIC PRESSURE | ATMOSPHERIC CORRECTION SETTING | % TEMPERATURE    | m        | f    | p        | TITLE       | LATITUDE            | DEPARTURE   | R.L.    | FIELD                | CALCS    | CHECK  | REMARKS       |
| /         | MUTE      | NUNN      | /                | /  | /  | 45      | 41 | 47 | /                                | /  | /  | /         | /      | /                   | /                              | /                | 206.895  | /    | /        | NUNN        | 566,539.309         | 221,931.337 | 129.12  | /                    | MGM      | 1/6/83   |               |
| MUTE      | NUNN      | TELECOM   | 39               | 47 | 18 | 265     | 29 | 05 | 88                               | 56 | 09 | /         | /      | /                   | /                              | /                | /        | 1.46 | 0.0      | TELECOM     |                     |             |         | /                    | MGM      | 15/10/82   | lightning rod |
| /         | PAT       | BOLD HEAD | /                | /  | /  | 353     | 05 | 32 | /                                | /  | /  | /         | /      | /                   | /                              | /                | 1147.58  | /    | /        | BOLD HEAD   | 567,199.03          | 220,328.15  | 129.236 | /                    | "        |  |               |
| PAT       | BOLD HEAD | TELECOM   | 82               | 23 | 03 | 25      | 5  | 28 | 35                               | /  | /  | /         | /      | /                   | /                              | /                | /        | /    | TELECOM  |             |                     |             | /       | MGM                  | 5/10/82  | Marked heat haze   |               |
| /         | BOLD HEAD | 3502      | /                | /  | /  | 203     | 55 | 12 | /                                | /  | /  | /         | /      | /                   | /                              | /                | 1107.813 | /    | /        | 3502        | 566,186.364         | 219,878.975 | 99.07   | /                    | "        |  |               |
| BOLD HEAD | 3502      | TELECOM   | 244              | 20 | 42 | 268     | 15 | 54 | 87                               | 54 | 54 | /         | /      | /                   | /                              | /                | /        | /    | TELECOM  |             |                     |             | /       | MGM                  | 6/10/82  |  |               |
| /         | HELLEMAN  | MUTE      | /                | /  | /  | 144     | 31 | 17 | /                                | /  | /  | /         | /      | /                   | /                              | /                | 576.698  | /    | /        | MUTE        | 566,394.801         | 221,783.272 | 127.41  | /                    | "        |  |               |
| HELLEMAN  | MUTE      | HAUGHNEY  | 225              | 50 | 00 | 190     | 21 | 17 | 93                               | 19 | 24 | 1443.337  | 1005.0 | 08                  | 9.6                            | 1440.880         | 1.47     | 1.55 | HAUGHNEY | 564,977.387 | 221,524.286         | 127.66      | /       | MGM                  | 14/10/82 | cf 564,977.120, 221,524.086, 11.007 these coords from Guney Ledger |               |
| /         | BOLD HEAD | 3501      | /                | /  | /  | 141     | 12 | 22 | /                                | /  | /  | /         | /      | /                   | /                              | /                | 949.648  | /    | /        | 3501        | 566,458.870         | 220,923.124 | 127.76  | /                    | "        |  | 127.76        |
| BOLD HEAD | 3501      | TELECOM   | 304              | 17 | 03 | 265     | 29 | 25 | 88                               | 41 | 33 | /         | /      | /                   | /                              | /                | /        | 1.49 | TELECOM  |             |                     |             | /       | MGM                  | 14/10/82 |  |               |
| /         | NUNN      | PURVER    | /                | /  | /  | 47      | 24 | 47 | /                                | /  | /  | /         | /      | /                   | /                              | /                | 434.889  | /    | /        | PURVER      | 566,833.602         | 222,251.524 | 118.50  | /                    | "        |  | 118.50        |
| NUNN      | PURVER    | TEENEY    | 70               | 40 | 24 | 298     | 05 | 11 | 88                               | 57 | 06 | 619.246   | 1003.2 | 08                  | 11.8                           | 619.131          | 1.44     | 1.65 | TEENEY   | 567,125.090 | 221,705.303         | 129.62      | /       | MGM                  | 15/10/82 |  |               |
| /         | BOLD HEAD | OLD 2     | /                | /  | /  | 102     | 15 | 05 | /                                | /  | /  | /         | /      | /                   | /                              | /                | 707.254  | /    | /        | OLD 2       | 567,048.950         | 221,019.297 | 132.55  | /                    | MGM      | 7/6/83   | 132.55        |
| BOLD HEAD | OLD 2     | RILEY     | 06               | 23 | 57 | 288     | 39 | 02 | 90                               | 27 | 27 | 751.710   | 992.9  | 08                  | 9.0                            | 751.670          | 1.30     | 1.57 | RILEY    | 567,289.331 | 220,307.100         | 126.28      | /       | MGM                  | 19/10/82 |  |               |
| BOLD HEAD | OLD 2     | TELECOM   | 336              | 46 | 24 | 85      | 25 | 26 | 88                               | 47 | 27 | /         | /      | /                   | /                              | /                | /        | 1.30 | TELECOM  |             |                     |             | /       | "                    |          |  |               |
| /         | BOLD HEAD | 3502      | /                | /  | /  | 203     | 55 | 26 | /                                | /  | /  | /         | /      | /                   | /                              | /                | 1107.807 | /    | /        | 3502        | 566,186.400         | 219,878.909 | 99.26   | /                    | "        |  | 99.26         |
| BOLD HEAD | 3502      | DON       | 05               | 39 | 33 | 29      | 34 | 59 | 88                               | 36 | 00 | 561.215   | 1012.6 | 08                  | 12.0                           | 561.039          | 1.49     | 1.56 | DON      | 566,674.302 | 220,155.885         | 112.90      | /       | MGM                  | 25/10/82 |  |               |
| 3502      | DON       | TELECOM   | 52               | 11 | 06 | 261     | 46 | 05 | 88                               | 15 | 30 | (561.215) | /      | /                   | /                              | 561.047          | /        | /    | TELECOM  |             |                     |             | /       | "                    |          |  |               |

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M. I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

SHEET N° 5

LOCATION 6

LOCATION

GRID R.L. DATUM CLOSURE 1 in

| 7 LINE  |           |           | 11 HORIZONTAL ANGLE |    |    | 12 BEARING |    |    | 13 ZENITH ANGLE |    |    | 14 E. D. M. I. Reading | 15 BAROMETRIC PRESSURE | 16 ATMOSPHERIC CORRECTION SETTING | 17 TEMPERATURE | 18 HORIZONTAL DISTANCE |      | 19 H. I. | 20 H. T.  | 21-24 STATION CO-ORDINATES |             |         | 25-27 INITIALS & DATE |         |       | 28 REMARKS |  |
|---------|-----------|-----------|---------------------|----|----|------------|----|----|-----------------|----|----|------------------------|------------------------|-----------------------------------|----------------|------------------------|------|----------|-----------|----------------------------|-------------|---------|-----------------------|---------|-------|------------|--|
| BS      | IS        | FS        | o                   | '  | "  | o          | '  | "  | o               | '  | "  | m                      | mb                     |                                   | °              | m                      | m    | m        | TITLE     | LATITUDE                   | DEPARTURE   | R. L.   | FIELD                 | CALCS   | CHECK |            |  |
| RILEY   | BOLD HEAD | OLD 0     | 346                 | 53 | 35 | 78         | 47 | 37 | 91              | 38 | 35 | 79.322                 |                        |                                   |                | 79.289                 | 1.83 | 1.49     | OLD 0     | 567 214.439                | 220 405.928 | 127.30  |                       |         |       |            |  |
|         |           |           | 00                  | 00 | 05 | 91         | 54 | 02 |                 |    |    |                        |                        |                                   |                |                        |      |          |           |                            |             |         |                       |         |       |            |  |
| PAT     | BOLD HEAD | OLD 1     | 173                 | 05 | 32 | 104        | 23 | 52 | 268             | 30 | 15 | 415.459                |                        |                                   |                | 415.317                | 1.83 | 1.28     | OLD 1     | 567 095.780                | 220 730.429 | 118.94  | MGM                   |         |       |            |  |
|         |           |           | 173                 | 04 | 45 | 104        | 23 | 05 |                 |    |    |                        |                        |                                   |                |                        |      |          |           |                            |             |         | 21/1/81               | 14/3/82 |       |            |  |
| "       | "         | OLD 2     |                     |    |    | 102        | 14 | 37 | 270             | 13 | 35 | 707.272                |                        |                                   |                | 707.266                | 1.83 | 1.36     | OLD 2     | 567 049.041                | 221 019.330 | 132.50  | "                     | "       |       |            |  |
|         |           |           |                     |    |    | 102        | 13 | 50 |                 |    |    |                        |                        |                                   |                |                        |      |          |           |                            |             |         |                       |         |       |            |  |
| "       | "         | OLD 3     |                     |    |    | 188        | 50 | 22 | 268             | 58 | 10 | 1201.869               |                        |                                   |                | 1201.675               | 1.83 | 1.46     | OLD 3     | 566 011.628                | 220 143.493 | 107.99  | "                     | "       |       |            |  |
|         |           |           |                     |    |    | 188        | 49 | 35 |                 |    |    |                        |                        |                                   |                |                        |      |          |           |                            |             |         |                       |         |       |            |  |
| "       | TELECOM   | BOLD HEAD |                     |    |    | 75         | 28 | 35 |                 |    |    |                        |                        |                                   |                |                        |      |          | BOLD HEAD | 567 199.03                 | 220 328.15  | 129.236 | "                     |         |       |            |  |
|         |           |           |                     |    |    |            |    |    |                 |    |    |                        |                        |                                   |                |                        |      |          |           |                            |             |         |                       | MGM     |       |            |  |
|         |           |           |                     |    |    |            |    |    |                 |    |    |                        |                        |                                   |                |                        |      |          |           |                            |             |         |                       | 31/5/82 |       |            |  |
| TELECOM | BOLD HEAD | OLD 2     | 206                 | 46 | 30 | 102        | 15 | 05 | 89              | 46 | 33 | 707.274<br>(707.274)   | 1002.5                 | 08                                | 23.4           | 707.254<br>707.268     | 1.80 | 1.25     | OLD 2     | 567,048.950                | 221,019.297 | 132.55  | MGM                   |         |       |            |  |
|         |           |           |                     |    |    |            |    |    |                 |    |    |                        |                        |                                   |                |                        |      |          |           |                            |             |         |                       |         |       |            |  |

Old Major Survey Snn on Western face of Rise ca 100m N of Grahams Rd, NW of Stockyards on crest of hill. RL to



SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

LOCATION GRAVITY GRID CONTROL STATIONS

SHEET NO 5

LOCATION

GRID R.L. DATUM CLOSURE 1 in

Table with columns: LINE (BS, IS, FS), HORIZONTAL ANGLE, BEARING, ZENITH ANGLE, E.D.M.I. Reading, BAROMETRIC PRESSURE, ATMOSPHERIC CORRECTION SETTING, TEMPERATURE, HORIZONTAL DISTANCE, H.I., H.T., STATION CO-ORDINATES (TITLE, LATITUDE, DEPARTURE, R.L.), INITIALS & DATE (FIELD, CALCS, CHECK), REMARKS.

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

LOCATION

SHEET No

LOCATION

GRID

R.L. DATUM

CLOSURE 1 in

| 7          | 8         | 9    | 11               |    |    | 12      |    |    | 13           |    |    | 14      | 15 | 16                             | 17          | 18               |      |      | 19    | 20          | 21-23               |        |       | 25-27                |       |   | 28 |
|------------|-----------|------|------------------|----|----|---------|----|----|--------------|----|----|---------|----|--------------------------------|-------------|------------------|------|------|-------|-------------|---------------------|--------|-------|----------------------|-------|---|----|
|            |           |      | HORIZONTAL ANGLE |    |    | BEARING |    |    | ZENITH ANGLE |    |    |         |    |                                |             | E.D.M.I. Reading |      |      |       |             | HORIZONTAL DISTANCE |        |       | STATION CO-ORDINATES |       |   |    |
| BS         | IS        | FS   | o                | '  | "  | o       | '  | "  | o            | '  | "  | m       | MB | ATMOSPHERIC CORRECTION SETTING | TEMPERATURE | m                | m    | m    | TITLE | LATITUDE    | DEPARTURE           | R.L.   | FIELD | CALCS                | CHECK |   |    |
| TELECOM    | 3502      | 3518 | 268              | 15 | 32 | 26      | 43 | 55 | 268          | A1 | 10 | 269.806 |    |                                |             | 269.735          | 1.53 | 1.54 | 3518  | 566 427.270 | 220 000.306         | 92.87  | MGM   | MGM                  |       | Dumpy E galv cloud<br>S edge BH over dumpy<br>TELECOM 264° 54' 40"                                      |    |
| HAUGHNEY   | LOLIN     | 3519 | 106              | 50 | 06 | 121     | 20 | 25 | 265          | 52 | 00 | 553.720 |    |                                |             | 552.280          | 1.63 | 1.51 | 3519  | 564 915.544 | 221 250.003         | 30.20  | MGM   | MGM                  |       | #A Talk Dan   |    |
| HAUGHNEY   | LOLIN     | 3520 | 106              | 50 | 06 | 104     | 36 | 15 | 267          | 16 | 00 | 746.595 |    |                                |             | 745.746          | 1.63 | 1.52 | 3520  | 565 014.764 | 221 499.955         | 34.50  | "     | MGM                  |       | #A Talk Dan   |    |
| HEADER     | DUNCAN I  | 3521 | 211              | 23 | 32 | 188     | 35 | 10 | 269          | 29 | 36 | 722.726 |    |                                |             | 722.698          | 1.46 | 1.64 | 3521  | 564 900.153 | 219 999.654         | 98.31  | "     | MGM                  |       | E of Door House<br>Tosh Tiger post 77° 49' 00"  |    |
| DUNCAN I   | 3513      | 3522 | 346              | 34 | 47 | 136     | 52 | 55 | 262          | 57 | 45 | 138.892 |    |                                |             | 137.846          | 1.56 | 1.65 | 3522  | 565 312.078 | 220 249.979         | 73.97  | RJH   | MGM                  |       | Dumpy E galv cloud  |    |
| HEADER     | DUNCAN I  | 3523 | 211              | 23 | 32 | 209     | 53 | 00 | 270          | 50 | 40 | 717.978 |    |                                |             | 717.900          | 1.46 | 1.65 | 3523  | 564 992.302 | 219 749.867         | 115.29 | MGM   | MGM                  |       | Dumpy E galv cloud<br>N from Sessafest St<br>Tosh Tiger post 80° 31' 20" Telecom 285° 51' 15"           |    |
| BOLD HEAD  | 3501      | 3524 | 321              | 12 | 22 | 149     | 32 | 02 | 268          | 53 | 40 | 606.903 |    |                                |             | 606.790          | 1.50 | 1.51 | 3524  | 565 935.860 | 221 230.784         | 113.04 | MGM   | MGM                  |       | Steel spike SW from Lidstone farmhouse<br>TELECOM 271° 27' 12"<br>TOSH tiger post 106° 39' 02"          |    |
| COMPLEX I  | COMPLEX 2 | 3525 | 296              | 01 | 55 | 199     | 53 | 24 | 267          | 14 | 34 | 81.835  |    |                                |             | 81.740           | 1.55 | 1.48 | 3525  | 565 480.146 | 220 749.931         | 94.32  |       |                      |       |   |    |
| TELECOM    | 3524      | 3526 | 271              | 27 | 12 | 165     | 01 | 32 | 263          | 19 | 20 | 74.755  |    |                                |             | 74.248           | 1.55 | 1.57 | 3526  | 565 864.134 | 221 249.969         | 104.33 | MGM   | MGM                  |       | Dumpy E galv nail<br>Tosh tiger 104° 16' 59"  |    |
| TELECOM    | 3524      | 3527 | 271              | 27 | 12 | 281     | 47 | 52 | 271          | 10 | 10 | 91.717  |    |                                |             | 91.698           | 1.56 | 1.57 | 3527  | 565 954.608 | 221 141.023         | 114.90 | MGM   | MGM                  |       | Near 566 883.994 221 358.881 114.90<br>Tosh tiger 106 22 20<br>TELECOM 271° 15' 20" HEADER 234° 16' 05" |    |
| TELECOM    | 3527      | 3528 | 271              | 15 | 20 | 248     | 53 | 10 | 268          | 04 | 10 | 151.162 |    |                                |             | 151.076          | 1.55 | 1.55 | 3528  | 565 900.187 | 221 000.089         | 102.81 | MGM   | MGM                  |       | Coords were 566 828.969, 221 217947.199, 81<br>TELECOM 271° 54' 10"                                     |    |
| TELECOM    | HELLEMAN  | 3529 | 261              | 44 | 27 | 15      | 06 | 35 | 269          | 11 | 10 | 193.293 |    |                                |             | 193.273          | 1.10 | 1.49 | 3529  | 567 050.979 | 221 498.946         | 137.44 | "     |                      |       | TELECOM 259° 56' 20"  |    |
| TOSH Tiger | 3526      | 3530 | 104              | 16 | 59 | 179     | 58 | 39 | 261          | 56 | 20 | 165.787 |    |                                |             | 164.149          | 1.50 | 1.75 | 3530  | 565 699.985 | 221 250.034         | 89.83  | MGM   | MGM                  |       | Tosh tiger post 98° 10' 19"   |    |
| TELECOM    | 3500      | 3531 | 253              | 07 | 07 | 287     | 02 | 00 | 270          | 23 | 59 | 402.756 |    |                                |             | 402.746          | 1.47 | 1.60 | 3531  | 567 769.580 | 220 799.260         | 116.81 | MGM   | MGM                  |       | TELECOM 250° 36' 20"  |    |
| 3502       | 3517      | 3532 | 35               | 19 | 00 | 180     | 48 | 45 | 263          | 18 | 00 | 69.450  |    |                                |             | 68.976           | 1.67 | 1.59 | 3532  | 565 935.022 | 219 748.790         | 89.15  | MGM   | MGM                  |       |   |    |
| 3517       | 3532      | 3533 | 00               | 48 | 45 | 00      | 28 | 20 |              |    |    |         |    |                                |             |                  |      |      | 3533  |             |                     |        |       |                      |       |   |    |
| 3533       | 3532      | 3534 | 00               | 28 | 20 | 179     | 11 | 25 | 259          | 03 | 35 | 164.429 |    |                                |             | 161.441          | 1.57 | 1.54 | 3534  | 565 773.598 | 219 751.072         | 57.97  | MGM   | MGM                  |       |   |    |
| 3533       | 3532      | 3535 | 00               | 28 | 20 | 179     | 50 | 15 | 267          | 04 | 15 | 353.321 |    |                                |             | 352.859          | 1.57 | 1.44 | 3535  | 565 581.702 | 219 749.792         | 71.22  | MGM   | MGM                  |       |   |    |

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

SHEET NO

LOCATION

LOCATION

GRID R.L. DATUM CLOSURE 1 in

| LINE    |         |           | HORIZONTAL ANGLE |    |    | BEARING |    |    | ZENITH ANGLE |    |    | E.D.M.I. Reading | BAROMETRIC PRESSURE | ATMOSPHERIC CORRECTION SETTING | TEMPERATURE | HORIZONTAL DISTANCE |      | H.I. | H.T.         | STATION CO-ORDINATES |             |       | INITIALS & DATE |       |       | REMARKS |  |  |  |
|---------|---------|-----------|------------------|----|----|---------|----|----|--------------|----|----|------------------|---------------------|--------------------------------|-------------|---------------------|------|------|--------------|----------------------|-------------|-------|-----------------|-------|-------|---------|--|--|--|
| BS      | IS      | FS        | °                | '  | "  | °       | '  | "  | °            | '  | "  | m                | Mb                  |                                | °           | m                   | m    |      | TITLE        | LATITUDE             | DEPARTURE   | R.L.  | FIELD           | CALCS | CHECK |         |  |  |  |
| 3516    | 3540    | 3536      | 306              | 54 | 40 | 179     | 49 | 45 | 267          | 12 | 30 | 46.677           |                     |                                |             | 46.622              | 1.46 | 1.48 | 3536         | 565 753.508          | 220 000.041 | 94.12 | MGM             | MGM   |       |         |  |  |  |
| 3516    | 3540    | 3537      | 306              | 54 | 40 | 179     | 45 | 45 | 267          | 03 | 00 | 120.098          |                     |                                |             | 119.939             | 1.46 | 1.51 | 3537         | 565 680.191          | 220 000.399 | 90.18 | "               | "     |       |         |  |  |  |
| 3540    | 3537    | 3538      | 359              | 45 | 45 | 180     | 22 | 20 | 278          | 29 | 35 | 39.537           |                     |                                |             | 39.103              | 1.50 | 1.60 | 3538         | 565 641.088          | 220 000.145 | 95.92 | MGM             | MGM   |       |         |  |  |  |
| 3537    | 3538    | 3539      | 00               | 22 | 20 | 180     | 32 | 05 | 272          | 45 | 25 | 45.149           |                     |                                |             | 45.097              | 1.49 | 1.59 | 3539         | 565 525.993          | 219 999.724 | 97.99 | "               | "     |       |         |  |  | CPR Dumpy  |
| TELECOM | 3516    | 3540      | 273              | 09 | 07 | 126     | 54 | 40 | 271          | 00 | 00 | 82.952           |                     |                                |             | 82.939              | 1.46 | 1.48 | 3540         | 565 800.129          | 219 999.902 | 96.41 | MGM             | MGM   |       |         |  |  | Dumpy (also is a good peg)<br>TELECOM 273°48'50" |
| 3516    | 3540    | 3541      | 306              | 54 | 40 | 359     | 58 | 05 | 271          | 06 | 00 | 54.127           |                     |                                |             | 54.117              | 1.46 | 1.48 | 3541         | 565 854.246          | 219 999.872 | 97.43 | "               | "     |       |         |  |  | Dumpy cloud<br>TELECOM 273°02'40"                |
| 3538    | 3539    | 3542      | 00               | 32 | 05 | 180     | 31 | 00 | 261          | 54 | 30 | 71.990           |                     |                                |             | 71.273              | 1.57 | 1.53 | 3542         | 565 524.723          | 219 999.081 | 87.90 | "               | "     |       |         |  |  | Dumpy  |
| 3539    | 3542    | 3543      | 00               | 31 | 00 | 179     | 48 | 40 | 266          | 39 | 05 | 26.153           |                     |                                |             | 26.108              | 1.51 | 1.50 | 3543         | 565 498.615          | 219 999.167 | 86.38 | "               | "     |       |         |  |  | Dumpy  |
| 3542    | 3543    | 3544      | 359              | 48 | 40 | 178     | 34 | 40 | 251          | 52 | 15 | 17.291           |                     |                                |             | 16.433              | 1.48 | 1.42 | 3544         | 565 482.187          | 219 999.575 | 81.06 | MGM             | MGM   |       |         |  |  |  |
| 3543    | 3544    | 3545      | 358              | 34 | 40 | 180     | 01 | 50 | 252          | 46 | 50 | 91.946           |                     |                                |             | 87.825              | 1.40 | 1.45 | 3545         | 565 394.362          | 219 999.528 | 53.79 | "               | "     |       |         |  |  | Dumpy<br>CPRS                                    |
| HEADER  | HAUGHEY | 3547      | 267              | 29 | 10 | 00      | 07 | 00 | 269          | 14 | 50 | 430.826          |                     |                                |             | 430.789             | 1.46 | 1.53 | 3547         | 565 407.908          | 221 524.963 | 38.28 | MGM             | MGM   |       |         |  |  |  |
| HEADER  | HAUGHEY | 3548      | 267              | 29 | 10 | 12      | 00 | 10 | 267          | 18 | 10 | 330.016          |                     |                                |             | 329.650             | 1.46 | 1.47 | 3548         | 565 299.563          | 221 592.640 | 28.47 | "               | "     |       |         |  |  |  |
| 3544    | 3545    | 3563 (48) | 00               | 01 | 50 | 179     | 33 | 00 | 267          | 03 | 20 | 56.308           |                     |                                |             | 56.234              | 1.43 | 1.45 | 3563<br>3548 | 565 338.130          | 219 999.970 | 50.88 | MGM             | MGM   |       |         |  |  | CPR  |
| LOLIN   | 3519    | 3548      | 301              | 20 | 25 | 00      | 03 | 09 | 271          | 03 | 46 | 414.810          |                     |                                |             | 414.739             | 1.59 | 1.47 | 3548         | 565 330.283          | 221 250.383 | 38.01 | "               | "     |       |         |  |  |  |
| 3519    | 3548    | 3549      | 180              | 03 | 09 | 00      | 42 | 20 | 275          | 52 | 40 | 131.579          |                     |                                |             | 130.887             | 1.45 | 1.38 | 3549         | 565 461.160          | 221 251.995 | 51.55 |                 |       |       |         |  |  |  |
| LOLIN   | 3510    | 3550      | 300              | 00 | 17 | 00      | 00 | 50 | 269          | 53 | 25 | 282.495          |                     |                                |             | 282.494             | 1.56 | 1.54 | 3550         | 565 077.915          | 221 013.556 | 27.54 |                 |       |       |         |  |  |  |
| 3510    | 3550    | 3551      | 180              | 00 | 50 | 359     | 59 | 20 | 275          | 32 | 30 | 207.885          |                     |                                |             | 206.913             | 1.56 | 1.43 | 3551         | 565 284.828          | 221 013.516 | 47.75 |                 |       |       |         |  |  |  |
| LOLIN   | 3508    | 3552      | 35               | 07 | 42 | 359     | 20 | 25 | 272          | 54 | 40 | 183.045          |                     |                                |             | 182.809             | 1.52 | 1.48 | 3552         | 565 009.250          | 220 511.422 | 34.29 |                 |       |       |         |  |  |  |

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M. I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

SHEET N°

LOCATION

LOCATION

GRID R.L. DATUM CLOSURE 1 in

Table with columns: LINE (BS, IS, FS), HORIZONTAL ANGLE, BEARING, ZENITH ANGLE, E.D.M. I. Reading, BAROMETRIC PRESSURE, ATMOSPHERIC CORRECTION SETTING, TEMPERATURE, HORIZONTAL DISTANCE, H.I., H.T., STATION CO-ORDINATES (TITLE, LATITUDE, DEPARTURE, R.L.), INITIALS & DATE (FIELD, CALCS, CHECK), REMARKS.



SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE (E.D.M.I. CHAINAGE)

NOTE

INITIAL OR UNADJUSTED FIGURES

SHEET N°

LOCATION

LOCATION

GRID R.L. DATUM CLOSURE 1 in OPEN!

| 7         | 8         |           | 11  |                  |    | 12  |         |    | 13 |              |    | 14       |                  |    | 15   |                     |      | 16   |                                |             | 17          |             |     | 18       |   |        | 19    |             |             | 20       |           |      | 21     |                      |       | 22 |                 |  | 23 |         |  | 24 |  |  | 25 |  |  | 26 |  |  | 27 |  |  | 28 |  |  |
|-----------|-----------|-----------|-----|------------------|----|-----|---------|----|----|--------------|----|----------|------------------|----|------|---------------------|------|------|--------------------------------|-------------|-------------|-------------|-----|----------|---|--------|-------|-------------|-------------|----------|-----------|------|--------|----------------------|-------|----|-----------------|--|----|---------|--|----|--|--|----|--|--|----|--|--|----|--|--|----|--|--|
|           | BS        | IS        | FS  | HORIZONTAL ANGLE |    |     | BEARING |    |    | ZENITH ANGLE |    |          | E.D.M.I. Reading |    |      | BAROMETRIC PRESSURE |      |      | ATMOSPHERIC CORRECTION SETTING |             |             | TEMPERATURE |     |          | HORIZONTAL DISTANCE   |        |       | H.I.        |             |          | H.T.      |      |        | STATION CO-ORDINATES |       |    | INITIALS & DATE |  |    | REMARKS |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |
|           |           |           | o   | '                | "  | o   | '       | "  | o  | '            | "  | m        | m                | m  | mb   | mm                  | °    | '    | "                              | m           | m           | m           | m   | m        | m   | m      | m     | m           | TITLE       | LATITUDE | DEPARTURE | R.L. | FIELD  | CALCS                | CHECK |    |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |
| /         | BOLD HEAD | OLD 2     | /   | /                | /  | 102 | 15      | 05 | /  | /            | /  | /        | /                | /  | /    | /                   | /    | /    | /                              | /           | /           | /           | /   | /        | /   | /      | OLD 2 | 567,048.950 | 221,019.297 | 132.55   | /         | MGM  | 3/5/83 |                      |       |    |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |
| BOLD HEAD | OLD 2     | 3586      | 247 | 58               | 06 | 170 | 13      | 11 | 90 | 46           | 30 | 1064.393 | 1001.0           | 08 | 15.3 | 1064.273            | 1.24 | 1.52 | 3586                           | 566,000.145 | 221,200.085 | 117.87      | MGM | 12/10/82 |   |        |       |             |             |          |           |      |        |                      |       |    |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |
| BOLD HEAD | OLD 2     | 3587      | 242 | 32               | 03 | 164 | 47      | 08 | 90 | 52           | 03 | 880.411  | 1001.0           | 08 | 14.5 | 880.294             | 1.24 | 1.51 | 3587                           | 566,199.513 | 221,250.314 | 118.95      | "   | "        | Don't use this until the results are verified (large RL discrepancy, 0 3/16/83) |        |       |             |             |          |           |      |        |                      |       |    |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |
| BOLD HEAD | OLD 2     | 3588      | 268 | 09               | 27 | 190 | 24      | 32 | 90 | 29           | 21 | 659.791  | 1001.2           | 08 | 12.6 | 659.753             | 1.24 | 1.58 | 3588                           | 566,400.054 | 220,900.098 | 126.58      | "   | "        |   |        |       |             |             |          |           |      |        |                      |       |    |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |
| BOLD HEAD | OLD 2     | 3589      | 300 | 47               | 06 | 223 | 02      | 11 | 90 | 51           | 27 | 614.337  | 1001.2           | 08 | 13.4 | 614.256             | 1.24 | 1.52 | 3589                           | 566,599.978 | 220,600.091 | 123.08      | MGM | 13/10/82 | MGM   | 1/6/83 |       |             |             |          |           |      |        |                      |       |    |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |
| BOLD HEAD | OLD 2     | 3590      | 45  | 46               | 00 | 328 | 01      | 05 | 91 | 40           | 57 | 414.073  | 1000.0           | 08 | 13.0 | 413.886             | 1.24 | 1.52 | 3590                           | 567,400.015 | 220,800.081 | 120.11      | "   | "        |   |        |       |             |             |          |           |      |        |                      |       |    |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |
| BOLD HEAD | OLD 2     | 3591      | 104 | 37               | 21 | 26  | 52      | 26 | 91 | 49           | 30 | 842.448  | 999.0            | 08 | 11.0 | 842.003             | 1.24 | 1.58 | 3591                           | 567,800.020 | 221,399.906 | 105.38      | "   | "        |   |        |       |             |             |          |           |      |        |                      |       |    |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |
| 1017      | BOLD HEAD | OLD 2     | 95  | 53               | 57 | 18  | 09      | 02 | 91 | 56           | 36 | 580.246  | 999.0            | 08 | 10.4 | 579.900             | 1.24 | 1.55 | 3592                           | 567,599.995 | 221,199.945 | 112.56      | "   | "        |   |        |       |             |             |          |           |      |        |                      |       |    |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |
| 1027      | BOLD HEAD | OLD 2     | 131 | 36               | 42 | 53  | 51      | 47 | 91 | 37           | 33 | 595.390  | 1004.1           | 08 | 10.6 | 595.138             | 1.24 | 1.52 | 3593                           | 567,399.913 | 221,499.936 | 115.38      | MGM | 14/10/82 |   |        |       |             |             |          |           |      |        |                      |       |    |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |
|           | HELLEMAN  | MUTE      | /   | /                | /  | 144 | 31      | 17 | /  | /            | /  | /        | /                | /  | /    | /                   | /    | /    | MUTE                           | 566,394.801 | 221,783.272 | 127.41      | /   | "        |   |        |       |             |             |          |           |      |        |                      |       |    |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |
|           | HELLEMAN  | MUTE      | 122 | 55               | 36 | 87  | 26      | 53 | 91 | 22           | 27 | 116.849  | 1005.0           | 08 | 10.4 | 116.813             | 1.47 | 1.58 | 3594                           | 566,400.002 | 221,899.969 | 124.50      | MGM | 14/10/82 |   |        |       |             |             |          |           |      |        |                      |       |    |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |
|           | HELLEMAN  | MUTE      | 238 | 37               | 30 | 203 | 08      | 47 | 94 | 18           | 21 | 212.458  | 1005.0           | 08 | 10.0 | 211.854             | 1.47 | 1.63 | 3595                           | 566,200.000 | 221,699.996 | 111.30      | "   | "        |   |        |       |             |             |          |           |      |        |                      |       |    |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |
|           | HELLEMAN  | MUTE      | 240 | 22               | 24 | 204 | 53      | 41 | 93 | 04           | 21 | 435.880  | 1004.7           | 08 | 9.4  | 435.245             | 1.47 | 1.56 | 3596                           | 565,999.998 | 221,600.055 | 103.95      | "   | "        |   |        |       |             |             |          |           |      |        |                      |       |    |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |
|           | MUTE      | NUNN      | /   | /                | /  | 45  | 41      | 47 | /  | /            | /  | /        | /                | /  | /    | /                   | /    | /    | NUNN                           | 566,539.309 | 221,931.337 | 129.12      | /   | "        |   |        |       |             |             |          |           |      |        |                      |       |    |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |
|           | MUTE      | NUNN      | 81  | 01               | 54 | 306 | 43      | 41 | 89 | 04           | 15 | 101.529  | 1005.5           | 08 | 12.0 | 101.514             | 1.46 | 1.58 | 3597                           | 566,600.016 | 221,849.975 | 130.65      | MGM | 15/10/82 |   |        |       |             |             |          |           |      |        |                      |       |    |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |
|           | TELECOM   | BOLD HEAD | /   | /                | /  | 75  | 28      | 35 | /  | /            | /  | /        | /                | /  | /    | /                   | /    | /    | BOLD HEAD                      | 567,199.03  | 220,328.15  | 129.236     | /   | "        |   |        |       |             |             |          |           |      |        |                      |       |    |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |
|           | TELECOM   | BOLD HEAD | 308 | 26               | 51 | 203 | 55      | 26 | 91 | 33           | 57 | 1108.244 | 1016.2           | 08 | 13.0 | 1107.807            | 1.82 | 1.51 | 3502                           | 566,186.400 | 219,878.909 | 99.26       | MGM | 9/10/82  |   |        |       |             |             |          |           |      |        |                      |       |    |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |







# SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

LOCATION .....

SHEET N° ..... 5

LOCATION ..... 6

GRID ..... R.L. DATUM ..... CLOSURE 1 in ..... 4

| 7 LINE |    |    | 11 HORIZONTAL ANGLE |   |    | 12 BEARING |   |   | 13 ZENITH ANGLE |   |   | 14 E. D. M. I. Reading |    |   | 15 BAROMETRIC PRESSURE |   |    | 16 ATMOSPHERIC CORRECTION SETTING |       |          | 17 TEMPERATURE |      |       | 18 HORIZONTAL DISTANCE |       |  | 19 H. I. |  |  | 20 H. T. |  |  | 21-24 STATION CO-ORDINATES |  |  | 25-27 INITIALS & DATE |  |  | 28 REMARKS |  |  |
|--------|----|----|---------------------|---|----|------------|---|---|-----------------|---|---|------------------------|----|---|------------------------|---|----|-----------------------------------|-------|----------|----------------|------|-------|------------------------|-------|--|----------|--|--|----------|--|--|----------------------------|--|--|-----------------------|--|--|------------|--|--|
| BS     | IS | FS | o                   | ' | "  | o          | ' | " | o               | ' | " | m                      | mb | % | °                      | m | ft | ft                                | TITLE | LATITUDE | DEPARTURE      | R.L. | FIELD | CALCS                  | CHECK |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   |    |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |    |    |                     |   | </ |            |   |   |                 |   |   |                        |    |   |                        |   |    |                                   |       |          |                |      |       |                        |       |  |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

LOCATION GRAVITY GRID, Line 219 750 E (North End)

SHEET No. LOCATION 219 750(E) (N)

GRID R.L. DATUM CLOSURE 1 in

Table with columns: LINE (BS, IS, FS), HORIZONTAL ANGLE, BEARING, ZENITH ANGLE, E.D.M.I. Reading, BAROMETRIC PRESSURE, ATMOSPHERIC CORRECTION SETTING, TEMPERATURE, HORIZONTAL DISTANCE, H.I., H.T., STATION CO-ORDINATES (TITLE, LATITUDE, DEPARTURE, R.L.), INITIALS & DATE (FIELD, CALCS, CHECK), REMARKS.

21 9750 E (N+)

219750

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

LOCATION ..... GRID ..... R.L. DATUM ..... CLOSURE 1 in .....

SHEET No 5 LOCATION 6

Table with columns: LINE (BS, IS, FS), HORIZONTAL ANGLE, BEARING, ZENITH ANGLE, E.D.M.I. Reading, BAROMETRIC PRESSURE, ATMOSPHERIC CORRECTION SETTING, TEMPERATURE, HORIZONTAL DISTANCE, H.I., H.T., STATION CO-ORDINATES (TITLE, LATITUDE, DEPARTURE, R.L.), INITIALS & DATE (FIELD, CALCS, CHECK), REMARKS.

219750E (Stn)

219750

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

LOCATION Gravity Grid Line 220 000 E (North End)

SHEET NO 5

LOCATION

GRID R.L. DATUM CLOSURE 1 in

| 7         | 8     |                  | 9   |                  |    | 11  |         |    | 12  |              |    | 13      |                  |   | 14 |                     |      | 15   | 16               | 17         | 18                   |          |           | 19   | 20    | 21              |        |    | 23      |                  |                   | 25 |  |  | 27 | 28 |
|-----------|-------|------------------|-----|------------------|----|-----|---------|----|-----|--------------|----|---------|------------------|---|----|---------------------|------|------|------------------|------------|----------------------|----------|-----------|------|-------|-----------------|--------|----|---------|------------------|-------------------|----|--|--|----|----|
|           | BS    | IS               | FS  | HORIZONTAL ANGLE |    |     | BEARING |    |     | ZENITH ANGLE |    |         | E.D.M.I. Reading |   |    | HORIZONTAL DISTANCE |      |      |                  |            | STATION CO-ORDINATES |          |           |      |       | INITIALS & DATE |        |    | REMARKS |                  |                   |    |  |  |    |    |
|           |       |                  | o   | '                | "  | o   | '       | "  | o   | '            | "  | o       | '                | " | m  | m                   | m    | m    | m                | m          | TITLE                | LATITUDE | DEPARTURE | R.L. | FIELD | CALCS           | CHECK  |    |         |                  |                   |    |  |  |    |    |
| BOLD HEAD | RILEY | 568000<br>220000 | 166 | 53               | 35 | 336 | 37      | 50 | 268 | 12           | 50 | 774.509 |                  |   |    | 774.133             | 1.55 | 3.23 | 568000<br>220000 | 567999.983 | 220000.053           | 100.55   |           |      |       | 14/3/82         | CP?    |    |         |                  |                   |    |  |  |    |    |
|           |       | 567900<br>220000 |     |                  |    |     |         |    |     |              |    |         |                  |   |    |                     |      |      |                  |            |                      |          |           |      |       |                 |        |    |         |                  | From JC fieldwork |    |  |  |    |    |
|           |       | 567800<br>220000 |     |                  |    |     |         |    |     |              |    |         |                  |   |    |                     |      |      |                  |            |                      |          |           |      |       |                 |        |    |         |                  |                   |    |  |  |    |    |
|           |       | 567700<br>220000 |     |                  |    |     |         |    |     |              |    |         |                  |   |    |                     |      |      |                  |            |                      |          |           |      |       |                 |        |    |         |                  |                   |    |  |  |    |    |
|           |       | 567600<br>220000 |     |                  |    |     |         |    |     |              |    |         |                  |   |    |                     |      |      |                  |            |                      |          |           |      |       |                 |        |    |         |                  |                   |    |  |  |    |    |
| RILEY     |       | 567500<br>220000 | 109 | 48               | 20 | 359 | 59      | 13 | 266 | 23           | 24 | 100.226 |                  |   |    | 100.027             | 1.51 | 1.75 | 567500<br>220000 | 567500.012 | 219999.904           | 95.14    |           |      |       | 14/3/82         |        |    |         |                  |                   |    |  |  |    |    |
| BOLD HEAD | RILEY | 567400<br>220000 | 166 | 53               | 35 | 289 | 48      | 20 | 265 | 58           | 15 | 327.315 |                  |   |    | 326.506             | 1.55 | 3.23 | 567400<br>220000 | 567399.985 | 219999.927           | 101.69   |           |      |       | 14/3/82         | CP OK  |    |         |                  |                   |    |  |  |    |    |
| 3A/18     | 3504  | 567300<br>220000 | 152 | 35               | 30 | 339 | 40      | 45 | 264 | 30           | 05 | 49.464  |                  |   |    | 49.236              | 1.22 | 3.25 | 567300<br>220000 | 567300.991 | 219999.916           | 102.86   |           |      |       | 30/11/81        | CP OK? |    |         |                  |                   |    |  |  |    |    |
|           |       | 567200<br>220000 |     |                  |    | 197 | 32      | 25 | 268 | 46           | 25 | 56.547  |                  |   |    | 56.534              | 1.22 | 3.25 | 567200<br>220000 | 567199.914 | 219999.977           | 106.39   |           |      |       |                 |        |    |         | CP OK            |                   |    |  |  |    |    |
|           |       | 567100<br>220000 |     |                  |    | 186 | 17      | 50 | 268 | 23           | 35 | 154.818 |                  |   |    | 154.757             | 1.22 | 3.25 | 567100<br>220000 | 567099.996 | 220000.040           | 103.26   |           |      |       |                 |        |    |         |                  | CP?               |    |  |  |    |    |
| 3504      | 3506  | 567000<br>220000 | 36  | 38               | 15 | 75  | 53      | 45 | 270 | 56           | 00 | 217.714 |                  |   |    | 217.685             | 1.49 | 1.78 | 567000<br>220000 | 566999.979 | 219999.911           | 101.39   |           |      |       | 13/1/81         | MG     | MG | 9/3/82  | Contours suspect |                   |    |  |  |    |    |
|           |       | 566900<br>220000 | 36  | 38               | 15 | 102 | 31      | 00 | 270 | 47           | 10 | 216.998 |                  |   |    | 216.978             | 1.49 | 2.75 | 566900<br>220000 | 566899.908 | 220000.609           | 99.82    |           |      |       |                 |        |    |         |                  | Cont OK           |    |  |  |    |    |
|           | 3503  | 566800<br>220000 |     |                  |    | 21  | 27      | 50 | 271 | 10           | 20 | 85.992  |                  |   |    | 85.974              | 1.51 | 3.25 | 566800<br>220000 | 566800.062 | 219999.883           | 104.10   |           |      |       | 14/3/82         |        |    |         |                  | CP OK             |    |  |  |    |    |
|           | 3503  | 566700<br>220000 | 32  | 42               |    | 122 | 24      | 55 | 273 | 28           | 40 | 37.285  |                  |   |    | 37.216              | 1.51 | 3.25 | 566700<br>220000 | 566700.100 | 219999.842           | 104.60   |           |      |       |                 |        |    |         |                  | CP OK             |    |  |  |    |    |
| TELECOM   | 3502  | 566600<br>220000 | 268 | 15               | 32 | 16  | 18      | 40 | 269 | 38           | 40 | 431.022 |                  |   |    | 431.014             | 1.6  | 2.25 | 566600<br>220000 | 566600.03  | 220000.03            | 95.75    |           |      |       | 4/12/81         | MG     | FD | 17/1/82 |                  |                   |    |  |  |    |    |
| TELECOM   | 3502  | 566500<br>220000 | 268 | 15               | 32 | 21  | 06      | 00 | 269 | 10           | 20 | 336.117 |                  |   |    | 336.082             | 1.6  | 2.25 | 566500<br>220000 | 566499.91  | 219999.96            | 93.56    |           |      |       | 4/12/81         | MG     | FD | 17/1/82 |                  |                   |    |  |  |    |    |
| 3502      | 3518  | 566400<br>220000 | 206 | 43               | 55 | 179 | 48      | 20 | 241 | 05           | 30 | 31.124  |                  |   |    | 27.246              | 1.58 | 2.75 | 566400<br>220000 | 566400.024 | 220000.399           | 76.65    |           |      |       |                 | MG     |    | 9/3/82  |                  | CP OK             |    |  |  |    |    |
| 3502      | 3518  | 566300<br>220000 | 206 | 43               | 55 | 179 | 59      | 35 | 263 | 55           | 20 | 127.930 |                  |   |    | 127.211             | 1.58 | 1.25 |                  | 566300.059 | 220000.321           | 79.65    |           |      |       |                 |        |    |         |                  | CP OK             |    |  |  |    |    |

220 000 E (N)

220 000

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [E.D.M.I. CHAINAGE]

NOTE



INITIAL OR UNADJUSTED FIGURES

LOCATION GRAVITY GRD, Line 220 000E (South End)

SHEET No 5

LOCATION

GRID 2 R.L. DATUM 3 CLOSURE 1 in 4

| 7       | 8     | 9                  | 11               |    |    | 12      |    |    | 13                               |    |    | 14       | 15 | 16 | 17 | 18               |      | 19   | 20                | 21-24               |             |                      | 25-27 |       |                 | 28    |   |                                 |
|---------|-------|--------------------|------------------|----|----|---------|----|----|----------------------------------|----|----|----------|----|----|----|------------------|------|------|-------------------|---------------------|-------------|----------------------|-------|-------|-----------------|-------|---|---------------------------------|
|         |       |                    | HORIZONTAL ANGLE |    |    | BEARING |    |    | ZENITH ANGLE<br>TARGET REFLECTOR |    |    |          |    |    |    | E.D.M.I. Reading |      |      |                   | HORIZONTAL DISTANCE |             | STATION CO-ORDINATES |       |       | INITIALS & DATE |       |   |                                 |
| BS      | IS    | FS                 | o                | '  | "  | o       | '  | "  | o                                | '  | "  | m        | mm | mm | mm | m                | m    | m    | m                 | TITLE               | LATITUDE    | DEPARTURE            | R.L.  | FIELD | CALCS           | CHECK | REMARKS   |                                 |
|         |       | 566 200<br>220 000 |                  |    |    |         |    |    |                                  |    |    |          |    |    |    |                  |      |      |                   |                     |             |                      |       |       |                 |       |   |                                 |
| TELECOM | 3502  | 566 100<br>220 000 | 268              | 15 | 32 | 125     | 33 | 25 | 270                              | 17 | 20 | 148.250  |    |    |    | 148.248          | 1.54 | 2.28 | 566100            | 566 100.156         | 219 999.581 | 99.08                |       | MGM   |                 |       | Cont OK   |                                 |
| TELECOM | 3502  | 566 000<br>220 000 | 268              | 15 | 32 | 147     | 00 | 00 | 270                              | 41 | 10 | 222.243  |    |    |    | 222.22           | 1.54 | 2.28 | 566000            | 566 000.989         | 220 000.01  | 100.99               |       |       |                 |       | Cont OK   |                                 |
| 35A0    | 35A1  | 565 900<br>220 000 | 179              | 58 | 05 | 00      | 12 | 30 | 262                              | 34 | 20 | 46.325   |    |    |    | 45.936           | 1.46 | 3.75 | 565900            | 565 900.182         | 220 000.039 | 89.15                | MGM   | MGM   |                 |       | Cont OK   |                                 |
| 3514    | 3516  | 565 800<br>220 000 |                  |    |    | 126     | 54 | 47 | 271                              | 28 | 50 | 82.966   |    |    |    | 82.938           | 1.52 | 2.18 | 565800<br>220 000 | 565 800.13          | 219 999.90  | 96.47                | MGM   | MGM   |                 |       | Cont OK See Δ35A0<br>TELECOM 273° 49' 27"<br>line poles 60m to N & 20m to S |                                 |
| 35A0    | 3537  | 565 700<br>220 000 | 359              | 45 | 45 | 00      | 12 | 05 | 274                              | 23 | 10 | 20.214   |    |    |    | 20.155           | 1.50 | 2.75 | 565700            | 565 700.346         | 220 000.470 | 90.48                | MGM   | MGM   |                 |       | Cont OK   |                                 |
| 3539    | 3542  | 565 600<br>220 000 | 00               | 31 | 30 | 00      | 05 | 15 | 278                              | 27 | 00 | 76.565   |    |    |    | 75.734           | 1.51 | 2.75 | 565600            | 565 600.457         | 219 999.197 | 97.91                |       |       |                 |       | Cont OK   |                                 |
| "       | "     | 565 500<br>220 000 | 00               | 31 | 30 | 180     | 44 | 40 | 269                              | 56 | 40 | 24.754   |    |    |    | 24.754           | 1.51 | 2.75 | 565500            | 565 499.971         | 219 978.759 | 86.64                |       |       |                 |       |   |                                 |
| 35A4    | 35A5  | 565 400<br>220 000 | 00               | 01 | 50 | 359     | 21 | 35 | 286                              | 26 | 30 | 5.808    |    |    |    | 5.571            | 1.43 | 1.75 | 565400            | 565 399.932         | 219 999.466 | 55.11                | MGM   |       |                 |       | CPRS  |                                 |
| 35A5    | 35A8  | 565 300<br>220 000 | 359              | 33 | 00 | 181     | 19 | 00 | 251                              | 24 | 00 | 40.293   |    |    |    | 38.188           | 1.43 | 5.75 | 565300            | 565 299.952         | 219 999.093 | 33.71                |       |       |                 |       | CPRS  |                                 |
|         |       |                    |                  |    |    |         |    |    |                                  |    |    |          |    |    |    |                  |      |      |                   |                     |             |                      |       |       |                 |       |   | This point falls into Upper Dam |
| 3561    | 3562  | 565 100<br>220 000 | 180              | 08 | 35 | 01      | 00 | 10 | 245                              | 50 | 15 | 91.235   |    |    |    | 83.242           | 1.36 | 0.75 | 565100            | 565 099.953         | 220 001.202 | 40.12                |       |       |                 |       | CPRS  |                                 |
| TELECOM | 3561  | 565 000<br>220 000 | 79               | 34 | 05 | 00      | 27 | 45 | 246                              | 45 | 40 | 14.317   |    |    |    | 13.155           | 1.48 | 2.25 | 565000            | 565 000.048         | 219 999.777 | 79.45                |       |       |                 |       | CPRS  |                                 |
| 3514    | 3516  | 564 900<br>220 000 |                  |    |    |         |    |    |                                  |    |    |          |    |    |    |                  |      |      | 564900            | 564 900.153         | 219 999.654 | 98.31                |       |       |                 |       | See Δ3521   |                                 |
| HAUGHEY | LOLIN | 564 800<br>220 000 |                  |    |    | 126     | 54 | 47 | 271                              | 28 | 50 | 82.966   |    |    |    | 82.938           | 1.52 | 2.21 | 564800<br>220 000 | 564 800.13          | 219 999.90  | 96.44                | MGM   | MGM   |                 |       | TELECOM 273° 49' 27"<br>Seems strange - also<br>sawged from DUNCAN I        |                                 |
| HAUGHEY | LOLIN | 564 700<br>220 000 | 106              | 50 | 06 | 237     | 09 | 01 | 271                              | 35 | 45 | 926.950  |    |    |    | 926.590          | 1.60 | 2.25 | 564700<br>220 000 | 564 700.179         | 219 999.879 | 95.16                | MGM   | MGM   |                 |       | Cont OK   |                                 |
| HAUGHEY | LOLIN | 564 600<br>220 000 | 106              | 50 | 06 | 232     | 15 | 00 | 270                              | 48 | 05 | 984.531  |    |    |    | 984.435          | 1.60 | 3.75 | 564600<br>220 000 | 564 600.108         | 219 999.922 | 81.6                 |       |       |                 |       | Cont OK   |                                 |
| HAUGHEY | LOLIN | 564 500<br>220 000 | 106              | 50 | 06 | 227     | 55 | 00 | 270                              | 26 | 50 | 1048.681 |    |    |    | 1048.649         | 1.60 | 2.75 | 564500<br>220 000 | 564 499.980         | 220 000.027 | 77.03                |       |       |                 |       |   |                                 |

220 000E (SH)

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

LOCATION

SHEET No. 5

LOCATION

GRID

R.L. DATUM

CLOSURE 1 in

| 7         | 8         | 9                 | 11               |    |    | 12      |    |    | 13                               |    |    | 14      | 15 | 16 | 17 | 18               |      | 19   | 20     | 21-24               |             |                      | 25-27 |       |                 | 28                                       |   |      |
|-----------|-----------|-------------------|------------------|----|----|---------|----|----|----------------------------------|----|----|---------|----|----|----|------------------|------|------|--------|---------------------|-------------|----------------------|-------|-------|-----------------|--|---|------|
|           |           |                   | HORIZONTAL ANGLE |    |    | BEARING |    |    | ZENITH ANGLE<br>TARGET REFLECTOR |    |    |         |    |    |    | E.D.M.I. Reading |      |      |        | HORIZONTAL DISTANCE |             | STATION CO-ORDINATES |       |       | INITIALS & DATE |  |   |      |
| BS        | IS        | FS                | o                | '  | "  | o       | '  | "  | o                                | '  | "  | m       | mm | mm | %  | m                | ft   | ft   | TITLE  | LATITUDE            | DEPARTURE   | R.L.                 | FIELD | CALCS | CHECK           | REMARKS                                  |   |      |
| BOLD HEAD | RILEY     | 568000<br>220 250 | 166              | 53 | 35 | 355     | 24 | 45 | 268                              | 06 | 55 | 713.316 |    |    |    | 712.930          | 1.55 | 3.23 | 568000 | 568 000.001         | 220 250.098 | 101.23               |       |       |                 | CPOK                                     |   |      |
| BOLD HEAD | RILEY     | 567900<br>220 250 |                  |    |    | 354     | 39 | 10 | 267                              | 56 | 40 | 613.873 |    |    |    | 613.478          | 1.55 | 3.23 | 567900 | 567 900.163         | 220 249.948 | 102.67               |       |       |                 |  |   |      |
|           |           | 567800<br>220 250 |                  |    |    |         |    |    |                                  |    |    |         |    |    |    |                  |      |      |        |                     |             | 101.68               |       |       |                 | RL from JC field notes (where<br>lagged) |   |      |
| BOLD HEAD | RILEY     | 567700<br>220 250 |                  |    |    | 352     | 05 | 20 | 266                              | 39 | 00 | 415.199 |    |    |    | 414.490          | 1.55 | 3.23 | 567700 | 567 699.900         | 220 250.070 | 100.43               |       |       |                 | 14/3/82                                  | CP?   |      |
| "         | "         | 567600<br>220 250 |                  |    |    | 349     | 34 | 40 | 265                              | 32 | 15 | 316.830 |    |    |    | 315.870          | 1.55 | 3.23 | 567600 | 567 600.013         | 220 249.978 | 100.04               |       |       |                 | CPOK                                     |   |      |
| "         | "         | 567500<br>220 250 |                  |    |    | 344     | 50 | 20 | 264                              | 10 | 40 | 219.430 |    |    |    | 218.298          | 1.55 | 3.23 | 567500 | 567 500.055         | 220 250.027 | 102.43               |       |       |                 | CPOK                                     |   |      |
| "         | "         | 567400<br>220 250 |                  |    |    | 332     | 40 | 40 | 263                              | 45 | 30 | 125.466 |    |    |    | 124.722          | 1.55 | 3.23 | 567400 | 567 400.163         | 220 249.872 | 111.05               |       |       |                 | CPOK                                     |   |      |
| BOLD HEAD | RILEY     | 567300<br>220 250 |                  |    |    | 280     | 31 | 00 | 265                              | 29 | 15 | 58.343  |    |    |    | 58.162           | 1.55 | 3.23 | 567300 | 567 299.971         | 220 249.934 | 120.10               |       |       |                 | CPOK                                     |   |      |
| PAT       | BOLD HEAD | 567200<br>220 250 | 173              | 05 | 15 | 270     | 44 | 57 | 267                              | 52 | 40 | 78.259  |    |    |    | 78.205           | 1.80 | 2.35 | 567200 | 567 200.05          | 220 249.90  | 125.782              | MGM   | FD    | 30/1/81         | 12/1/82                                  | RL Bdd head 129.236<br>Cord. Bdd Head 567.199.03<br>CPOK 220 328.15 Dep |      |
| PAT       | BOLD HEAD | 567100<br>220 250 | 173              | 05 | 15 | 218     | 18 | 00 | 267                              | 11 | 10 | 126.296 |    |    |    | 126.144          | 1.80 | 2.35 | 567100 | 567 100.04          | 220 249.87  | 122.46               | MGM   | FD    | 30/1/81         | 12/1/82                                  |   |      |
| PAT       | BOLD HEAD | 567000<br>220 250 | 173              | 05 | 15 | 201     | 25 | 35 | 267                              | 51 | 40 | 214.158 |    |    |    | 214.009          | 1.80 | 2.35 | 567000 | 566 999.81          | 220 249.97  | 120.673              | MGM   | FD    | 30/1/81         | 12/1/82                                  |   |      |
|           | 3503      | 566900<br>220 250 |                  |    |    | 157     | 23 | 10 | 272                              | 23 | 50 | 334.442 |    |    |    | 334.149          | 1.54 | 3.25 | 566900 | 566 900.148         | 220 249.885 | 116.33               |       |       |                 | 24/3/82                                  | CPOK  |      |
| PAT       | BOLD HEAD | 566800<br>220 250 | 173              | 05 | 15 | 191     | 06 | 50 | 268                              | 33 | 45 | 406.617 |    |    |    | 406.489          | 1.80 | 2.35 | 566800 | 566 800.16          | 220 249.8   | 118.485              |       |       |                 |  |   |      |
| PAT       | BOLD HEAD | 566700<br>220 250 | 173              | 05 | 15 | 188     | 54 | 30 | 268                              | 46 | 25 | 505.253 |    |    |    | 505.137          | 1.80 | 2.35 | 566700 | 566 699.87          | 220 249.91  | 118.872              | MGM   | FD    | 30/1/81         | 12/1/82                                  |   |      |
| OLD D     |           | 566500<br>220 500 | 352              | 30 | 06 | 291     | 47 | 13 | 268                              | 59 | 10 | 269.260 |    |    |    | 269.218          | 1.46 | 4.75 | 566500 | 566 599.929         | 220 249.997 | 111.58               |       |       |                 | MGM                                      | 14/3/82   |      |
| 3502      |           | 566400<br>220 500 | 240              | 03 | 20 | 00      | 02 | 10 | 272                              | 52 | 25 | 100.106 |    |    |    | 99.980           | 1.44 | 3.75 | 566400 | 566 500.010         | 220 249.963 | 109.91               |       |       |                 | MGM                                      | 9/3/82  | CPOK |
| TELECOM   | 3502      | 566400<br>220 250 | 268              | 15 | 32 | 60      | 03 | 20 | 271                              | 01 | 40 | 428.132 |    |    |    | 428.063          | 1.60 | 1.78 | 566400 | 566 400.03          | 220 249.9   | 107.198              | MGM   | FD    | 4/12/81         | 18/1/82                                  | 566186.36 219 878.98<br>RL = 99.7                                       |      |
| 3502      |           | 566300<br>220 250 | 240              | 03 | 20 | 180     | 00 | 55 | 267                              | 34 | 20 | 100.068 |    |    |    | 99.978           | 1.44 | 1.75 |        | 566 300.052         | 220 249.873 | 102.65               |       |       |                 | MGM                                      | 9/1/82  | CP?  |

220 250 E (NTH)

220 250

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

SHEET NO. 5

LOCATION 6

LOCATION

GRID R.L. DATUM CLOSURE 1 in

| 7.        | 8.               | 9.               | 11.              |    |    | 12.     |    |    | 13.          |    |    | 14.     | 15. | 16. | 17. | 18.                 |   | 19.  | 20.  | 21-24.               |            |            | 25-27.          |       |       | 28.   |   |  |
|-----------|------------------|------------------|------------------|----|----|---------|----|----|--------------|----|----|---------|-----|-----|-----|---------------------|---|------|------|----------------------|------------|------------|-----------------|-------|-------|-------|---|--|
|           |                  |                  | HORIZONTAL ANGLE |    |    | BEARING |    |    | ZENITH ANGLE |    |    |         |     |     |     | HORIZONTAL DISTANCE |   |      |      | STATION CO-ORDINATES |            |            | INITIALS & DATE |       |       |       |   |  |
| BS        | IS               | FS               | o                | '  | "  | o       | '  | "  | o            | '  | "  | m       | mb  | %   | °   | m                   | m | m    | m    | TITLE                | LATITUDE   | DEPARTURE  | R.L.            | FIELD | CALCS | CHECK | REMARKS                                   |  |
| TELECOM   | 3502             | 566200<br>220250 | 268              | 15 | 32 | 87      | 53 | 10 | 272          | 10 | 00 | 371.403 |     |     |     |                     |   | 1.44 | 3.75 | 566200               | 566200.058 | 220249.968 | 107.56          | MGM   | MGM   |       | CP OK                                     |  |
| PAT       | 566000<br>220250 | 566100<br>220250 | 74               | 34 | 22 | 359     | 56 | 17 | 267          | 22 | 35 | 100.061 |     |     |     | 99.956              |   | 1.48 | 4.75 | 566100               | 566100.216 | 220250.432 | 105.76          |       | MGM   |       | CP OK                                     |  |
| BOLD HEAD | PAT              | 566000<br>220250 | 353              | 05 | 32 | 254     | 34 | 22 | 265          | 33 | 55 | 224.359 |     |     |     | 223.687             |   | 1.50 | 3.30 | 566000               | 566000.26  | 220250.54  | 113.61          |       |       |       | RL from Level house<br>RL from EDM 101.68 |  |
| PAT       | 566000<br>220250 | 565900<br>220250 | 74               | 34 | 22 | 179     | 52 | 47 | 265          | 43 | 25 | 100.30  |     |     |     | 100.021             |   | 1.48 | 1.75 | 565900               | 565900.240 | 220250.750 | 105.86          |       | MGM   |       |   |  |
| COMPLEX 2 | COMPLEX I        | 565800<br>220250 | 116              | 01 | 55 | 291     | 56 | 10 | 270          | 10 | 30 | 187.684 |     |     |     | 187.683             |   | 1.45 | 2.35 | 565800               | 565799.863 | 220249.975 | 105.53          |       | MGM   |       | CP OK?                                    |  |
|           | DUNCAN I         | 565700<br>220250 |                  |    |    | 59      | 03 | 37 | 269          | 24 | 40 | 166.948 |     |     |     | 166.939             |   | 1.50 | 2.18 | 565700               | 565700.580 | 220250.735 | 102.50          | MGM   |       |       | CP OK                                     |  |
| COMPLEX 2 | COMPLEX I        | 565600<br>220250 |                  |    |    | 283     | 18 | 05 | 267          | 58 | 00 | 217.245 |     |     |     | 217.108             |   | 1.45 | 2.35 | 565600               | 565600.005 | 220249.995 | 97.25           |       | MGM   |       |   |  |
| 3513      | 3522             | 565500<br>220250 | 316              | 52 | 55 | 359     | 59 | 25 | 272          | 32 | 10 | 188.140 |     |     |     | 187.956             |   | 1.52 | 2.23 | 565500               | 565500.034 | 220249.947 | 81.59           |       | MGM   |       |   |  |
| 3513      | 3522             | 565400<br>220250 | 316              | 52 | 55 | 359     | 57 | 40 | 269          | 54 | 30 | 87.998  |     |     |     | 87.998              |   | 1.52 | 2.23 | 565400               | 565400.076 | 220249.919 | 73.12           |       |       |       |   |  |
| 3513      | 3522             | 565300<br>220250 | 316              | 52 | 55 | 179     | 44 | 30 | 271          | 18 | 00 | 12.175  |     |     |     | 12.172              |   | 1.52 | 2.23 | 565300               | 565299.906 | 220250.039 | 73.54           |       |       |       |   |  |
| 3552      | 3553             | 565200<br>220250 | 00               | 01 | 30 | 178     | 14 | 40 | 237          | 07 | 10 | 16.047  |     |     |     | 13.476              |   | 1.44 | 1.73 | 565200               | 565199.801 | 220250.349 | 58.88           |       |       |       | CP OK                                     |  |
| "         | "                | 565100<br>220250 |                  |    |    | 181     | 31 | 10 | 246          | 09 | 10 | 123.828 |     |     |     | 113.256             |   | 1.44 | 0.0  | 565100               | 565100.054 | 220246.933 | 19.26           |       |       |       |   |  |
|           |                  | 565000           |                  |    |    |         |    |    |              |    |    |         |     |     |     |                     |   |      |      |                      |            |            |                 |       |       |       |   |  |
|           |                  | 564900<br>220250 |                  |    |    |         |    |    |              |    |    |         |     |     |     |                     |   |      |      |                      |            |            |                 |       |       |       |   |  |
|           |                  | 564500           |                  |    |    |         |    |    |              |    |    |         |     |     |     |                     |   |      |      |                      |            |            |                 |       |       |       |   |  |

# SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

SHEET No. 5

LOCATION 6

LOCATION .....

GRID ..... R.L. DATUM ..... CLOSURE 1 in. ....

| 7         | 8     | 9                  | 11               |    |    | 12      |    |    | 13                               |    |    | 14      | 15 | 16                             | 17            | 18               |     |      | 19                | 20          | 21-24               |        |                | 25-27                |       |                          | 28 |
|-----------|-------|--------------------|------------------|----|----|---------|----|----|----------------------------------|----|----|---------|----|--------------------------------|---------------|------------------|-----|------|-------------------|-------------|---------------------|--------|----------------|----------------------|-------|--------------------------|----|
|           |       |                    | HORIZONTAL ANGLE |    |    | BEARING |    |    | ZENITH ANGLE<br>TARGET REFLECTOR |    |    |         |    |                                |               | E.D.M.I. Reading |     |      |                   |             | HORIZONTAL DISTANCE |        |                | STATION CO-ORDINATES |       |                          |    |
| BS        | IS    | FS                 | o                | '  | "  | o       | '  | "  | o                                | '  | "  | m       | Mb | ATMOSPHERIC CORRECTION SETTING | % TEMPERATURE | m                | m   | m    | TITLE             | LATITUDE    | DEPARTURE           | R.L.   | FIELD          | CALCS                | CHECK | REMARKS                  |    |
| BOLD HEAD | RILEY | 568000<br>220 500  | 166              | 53 | 35 | 15      | 11 | 20 | 268                              | 31 | 10 | 736.591 |    |                                |               | 736.345          | 155 | 3.23 | 568000<br>220 500 | 567 999.978 | 220 500.043         | 105.66 |                |                      |       | CP OK                    |    |
| "         | "     | 567900<br>220 500  |                  |    |    | 17      | 31 | 50 | 268                              | 14 | 30 | 640.716 |    |                                |               | 640.414          | 155 | 3.23 | 567900            | 567 900.026 | 220 500.021         | 105.03 |                |                      |       | CP OK                    |    |
| u         | v     | 567 800<br>220 500 |                  |    |    | 20      | 41 | 35 | 268                              | 18 | 20 | 546.151 |    |                                |               | 545.912          | 155 | 3.23 | 567800            | 567 800.049 | 220 500.023         | 108.54 |                |                      |       | CP OK                    |    |
| BOLD HEAD | RILEY | 567 700<br>220 500 | 166              | 53 | 35 | 25      | 09 | 30 | 267                              | 35 | 35 | 454.083 |    |                                |               | 453.682          | 155 | 3.23 | 567700            | 567 700.080 | 220 499.989         | 105.62 |                |                      |       | CP OK                    |    |
| TELECOM   | 3531  | 567 600<br>220 500 | 250              | 36 | 20 | 240     | 26 | 14 | 268                              | 02 | 46 | 342.904 |    |                                |               | 342.705          | 154 | 3.75 | 567600            | 567 600.498 | 220 501.170         | 102.91 | MGM<br>1/12/81 | MGM<br>9/3/82        |       | Cont OK                  |    |
| "         | "     | 567 500<br>220 500 | 250              | 36 | 20 | 227     | 59 | 26 | 269                              | 03 | 51 | 402.813 |    |                                |               | 402.759          | 154 | 3.75 |                   | 567 500.032 | 220 499.996         | 108.02 | "              | "                    |       | Cont OK                  |    |
| "         | "     | 567 400<br>220 500 |                  |    |    | 218     | 59 | 51 | 270                              | 17 | 20 | 475.524 |    |                                |               | 475.518          | 154 | 3.75 | 567400            | 567 400.020 | 220 500.023         | 117.00 |                |                      |       | Cont OK                  |    |
| BOLD HEAD | OLD Ø | 567 300<br>220 500 | 258              | 47 | 37 | 147     | 43 | 00 | 269                              | 06 | 00 | 127.16  |    |                                |               | 127.144          | 133 | 3.25 | 567300            | 567 299.981 | 220 499.993         | 123.38 |                |                      |       | CP OK                    |    |
| "         | "     | 567 200<br>220 500 |                  |    |    | 98      | 38 | 30 | 268                              | 06 | 00 | 95.221  |    |                                |               | 95.169           | 133 | 3.25 | 567200            | 567 200.140 | 220 500.016         | 122.22 |                |                      |       | CP OK                    |    |
| BOLD HEAD | OLD Ø | 567 100<br>220 500 | 258              | 47 | 37 | 140     | 34 | 00 | 267                              | 04 | 40 | 148.446 |    |                                |               | 148.253          | 15  | 2.25 | 567100            | 567 099.934 | 220 500.095         | 118.98 |                |                      |       | HI is as shown<br>CP OK? |    |
| "         | "     | 567 000<br>220 500 | 258              | 47 | 37 | 156     | 18 | 40 | 268                              | 29 | 20 | 234.264 |    |                                |               | 234.183          | 15  | 2.25 | 567000            | 566 999.989 | 220 500.016         | 120.37 |                |                      |       | CP OK?                   |    |
| "         | "     | 566 900<br>220 500 | 258              | 47 | 37 | 163     | 21 | 20 | 269                              | 00 | 45 | 328.328 |    |                                |               | 328.279          | 15  | 2.25 | 566900            | 566 899.914 | 220 499.958         | 120.89 |                |                      |       | CP OK!                   |    |
| "         | "     | 566 800<br>220 500 |                  |    |    | 167     | 13 | 20 | 268                              | 59 | 45 | 425.175 |    |                                |               | 425.110          | 15  | 2.25 | 566800            | 566 799.857 | 220 499.950         | 119.10 |                |                      |       | CP OK                    |    |
| "         | "     | 566 700<br>220 500 |                  |    |    | 169     | 38 | 40 | 268                              | 55 | 40 | 523.060 |    |                                |               | 522.968          | 15  | 2.25 | 566700            | 566 699.989 | 220 499.935         | 116.76 |                |                      |       | CP OK                    |    |
| "         | "     | 566 600<br>220 500 |                  |    |    | 171     | 17 | 35 | 269                              | 12 | 15 | 621.681 |    |                                |               | 621.621          | 15  | 2.25 | 566600            | 566 599.982 | 220 500.029         | 117.92 |                |                      |       | CP OK?                   |    |
| "         | "     | 566 500<br>220 500 |                  |    |    | 172     | 30 | 00 | 269                              | 27 | 00 | 720.630 |    |                                |               | 720.597          | 15  | 2.25 | 566500            | 566 500.007 | 220 499.985         | 119.63 |                |                      |       | CP OK?                   |    |
| "         | "     | 566 400<br>220 500 |                  |    |    | 173     | 24 | 40 | 269                              | 35 | 40 | 819.881 |    |                                |               | 819.860          | 15  | 2.25 | 566400            | 566 399.994 | 220 500.003         | 120.75 |                |                      |       | CP OK?                   |    |
| "         | "     | 566 300<br>220 500 |                  |    |    | 174     | 09 | 10 | 269                              | 47 | 00 | 919.287 |    |                                |               | 919.280          | 15  | 2.25 | 566300            | 566 299.942 | 220 499.581         | 123.07 |                |                      |       | CP OK?                   |    |

220 500 E (NH)

220 500 N

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

SHEET NO. 5

LOCATION

LOCATION

GRID R.L. DATUM CLOSURE 1 in

| 7            | 8         | 9                | 11               |    |    | 12      |    |    | 13           |    |    | 14      | 15 | 16 | 17 | 18               |      |      | 20                  |            |            | 21-24     |       |       | 25-27                |   |  | 28 |
|--------------|-----------|------------------|------------------|----|----|---------|----|----|--------------|----|----|---------|----|----|----|------------------|------|------|---------------------|------------|------------|-----------|-------|-------|----------------------|---|--|----|
|              |           |                  | HORIZONTAL ANGLE |    |    | BEARING |    |    | ZENITH ANGLE |    |    |         |    |    |    | E.D.M.I. Reading |      |      | HORIZONTAL DISTANCE |            |            | H.I. H.T. |       |       | STATION CO-ORDINATES |   |  |    |
| BS           | IS        | FS               | o                | '  | "  | o       | '  | "  | o            | '  | "  | m       | m  | m  | m  | m                | m    | m    | TITLE               | LATITUDE   | DEPARTURE  | R.L.      | FIELD | CALCS | CHECK                | REMARKS                                   |  |    |
| BOLD HEAD    | PAT       | 566200<br>220500 | 353              | 05 | 32 | 13      | 29 | 58 | 271          | 33 | 10 | 144.404 |    |    |    | 144.359          | 1.50 | 3.30 | 566200<br>220500    | 566200.19  | 220499.88  | 122.95    |       |       |                      | from BH                                   |  |    |
| BOLD HEAD    | PAT       | 566100<br>220500 | 353              | 05 | 32 | 40      | 02 | 08 | 273          | 04 | 20 | 152.708 |    |    |    | 52.632           | 1.50 | 3.30 | 566100<br>220500    | 566100.11  | 220500.10  | 121.86    |       |       |                      |   |  |    |
| BOLD HEAD    | PAT       | 566000<br>220500 | 353              | 05 | 32 | 150     | 31 | 53 | 269          | 00 | 00 | 68.639  |    |    |    | 68.629           | 1.50 | 3.30 | 566000<br>220500    | 566000.02  | 220499.94  | 117.83    |       |       |                      | Lat Dep RL<br>566059.78 220466.17 120.837 |  |    |
| BOLD HEAD    | PAT       | 564900<br>220500 | 353              | 05 | 32 | 168     | 03 | 13 | 268          | 01 | 30 | 163.422 |    |    |    | 163.325          | 1.50 | 3.30 | 565900<br>220500    | 565899.99  | 220499.98  | 113.40    |       |       |                      |   |  |    |
| BOLD HEAD    | PAT       | 565800<br>220500 | 353              | 05 | 32 | 172     | 32 | 53 | 267          | 29 | 00 | 262.483 |    |    |    | 262.230          | 1.50 | 3.30 | 565800<br>220500    | 565799.76  | 220500.18  | 107.51    |       |       |                      | from COMPLEX2 like County at              |  |    |
| COMPLEX 1    | COMPLEX 2 | 565700<br>220500 | 296              | 01 | 55 | 293     | 52 | 40 | 270          | 55 | 45 | 303.837 |    |    |    | 303.797          | 1.53 | 2.21 | 565700<br>220500    | 565679.983 | 220499.945 | 102.44    |       |       |                      | CPOK                                      |  |    |
|              |           | 565600<br>220500 |                  |    |    | 274     | 44 | 40 | 270          | 03 | 10 | 278.550 |    |    |    | 278.550          | 1.53 | 2.21 | 565600<br>220500    | 565580.049 | 220500.145 | 97.77     |       |       |                      | CPOK                                      |  |    |
|              |           | 565500<br>220500 |                  |    |    | 254     | 29 | 40 | 269          | 24 | 45 | 288.329 |    |    |    | 288.314          | 1.53 | 2.21 | 565500<br>220500    | 565479.935 | 220499.920 | 94.55     |       |       |                      | CPOK                                      |  |    |
| COMPLEX 1    | COMPLEX 2 | 565400<br>220500 | 296              | 01 | 55 | 237     | 29 | 15 | 268          | 42 | 25 | 329.366 |    |    |    | 329.282          | 1.53 | 2.21 | 565400<br>220500    | 565380.026 | 220500.065 | 90.08     |       |       |                      | CP?                                       |  |    |
|              |           | 565300<br>220500 |                  |    |    |         |    |    |              |    |    |         |    |    |    |                  |      |      |                     |            |            |           |       |       |                      |   |  |    |
| TOSH T-5 PAT | 3508      | 565200<br>220500 | 73               | 19 | 20 | 359     | 57 | 00 | 277          | 22 | 15 | 376.684 |    |    |    | 373.571          | 1.50 | 5.73 | 565200<br>220500    | 565200.024 | 220513.201 | 69.08     |       |       |                      |   |  |    |
| TOSH T-5 PAT | 3508      | 565100<br>220500 | 73               | 19 | 20 | 00      | 00 | 35 | 276          | 00 | 35 | 275.083 |    |    |    | 273.571          | 1.50 | 2.75 | 565100<br>220500    | 565100.024 | 220513.573 | 52.50     |       |       |                      | CPOK                                      |  |    |
| 3508         | 3552      | 565000<br>220500 |                  |    |    | 174     | 05 | 50 | 246          | 02 | 20 | 10.806  |    |    |    | 9.875            | 1.46 | 2.23 | 565000<br>220500    | 564999.428 | 220512.438 | 29.13     |       |       |                      | MGM 11/3/82                               |  |    |
| LOLIN        | 3508      | 564900<br>220500 | 35               | 07 | 42 | 359     | 58 | 35 | 269          | 56 | 00 | 73.479  |    |    |    | 73.479           | 1.52 | 2.25 | 564900<br>220500    | 564899.932 | 220513.497 | 24.13     |       |       |                      | MGM 11/3/82                               |  |    |
| HAUGHEY      | LOLIN     | 564800<br>220500 | 106              | 50 | 06 | 214     | 38 | 00 | 264          | 40 | 20 | 491.657 |    |    |    | 489.533          | 1.60 | 2.75 | 564800<br>220500    | 564800.005 | 220500.097 | 23.19     |       |       |                      | MGM 7/12/81                               |  |    |
| HAUGHEY      | LOLIN     | 564700<br>220500 | 106              | 50 | 06 | 208     | 57 | 46 | 265          | 46 | 10 | 575.997 |    |    |    | 574.428          | 1.60 | 4.75 | 564700<br>220500    | 564700.210 | 220500.142 | 24.35     |       |       |                      | "   |  |    |
|              |           | 600              |                  |    |    |         |    |    |              |    |    |         |    |    |    |                  |      |      |                     |            |            |           |       |       |                      |   |  |    |
| MIKE         | FLAT      | 564500           | 31               | 53 | 42 | 38      | 37 | 55 | 269          | 17 | 55 | 561.843 |    |    |    | 561.801          | 1.54 | 4.25 | 564500              | 564499.824 | 220500.192 | 5.00      |       |       |                      | 19/12/81                                  |  |    |

220500E (5th)

220500 S

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M. I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

SHEET No. 5

LOCATION 6

LOCATION

GRID R.L. DATUM CLOSURE 1 in

| 7         | 8      | 9                 | 11               |    |    | 12      |    |    | 13                               |    |    | 14      | 15 | 16                             | 17            | 18                |      |      | 19                | 20          | 21-24               |        |       |                      | 25-27 |                                       |  | 28 |
|-----------|--------|-------------------|------------------|----|----|---------|----|----|----------------------------------|----|----|---------|----|--------------------------------|---------------|-------------------|------|------|-------------------|-------------|---------------------|--------|-------|----------------------|-------|---------------------------------------|--|----|
|           |        |                   | HORIZONTAL ANGLE |    |    | BEARING |    |    | ZENITH ANGLE<br>TARGET REFLECTOR |    |    |         |    |                                |               | E.D.M. I. Reading |      |      |                   |             | HORIZONTAL DISTANCE |        |       | STATION CO-ORDINATES |       |                                       |  |    |
| BS        | IS     | FS                | o                | i  | '' | o       | i  | '' | o                                | i  | '' | m       | Mb | ATMOSPHERIC CORRECTION SETTING | % TEMPERATURE | m                 | m    | m    | TITLE             | LATITUDE    | DEPARTURE           | R.L.   | FIELD | CALCS                | CHECK |                                       |  |    |
| BOLD HEAD | RILEY  | 568000<br>220 750 | 166              | 53 | 35 | 31      | 56 | 30 | 269                              | 14 | 40 | 837.43  |    |                                |               | 837.358           | 1.55 | 3.23 | 568000            | 567 999.926 | 220 750.128         | 113.65 |       | W/S/82               |       | CPOK                                  |  |    |
|           | "      | 567900<br>220 750 |                  |    |    | 35      | 57 | 10 |                                  |    |    |         |    |                                |               | 754.35            | 1.55 | 3.23 | 567900            | 567 900.002 | 220 750.012         | 120.69 |       |                      |       | RL needs checking should be about 113 |  |    |
|           |        | 567800<br>220 750 |                  |    |    | 40      | 56 | 20 | 269                              | 07 | 20 | 675.996 |    |                                |               | 675.917           | 1.55 | 3.23 | 567800            | 567 799.949 | 220 750.016         | 114.33 |       |                      |       | CPOK                                  |  |    |
|           |        | 567700<br>220 750 |                  |    |    | 47      | 10 | 00 | 269                              | 06 | 10 | 604.086 |    |                                |               | 604.012           | 1.55 | 3.23 | 567700            | 567 700.003 | 220 750.062         | 115.23 |       |                      |       | CPOK                                  |  |    |
|           |        | 567600<br>220 750 |                  |    |    | 54      | 57 | 10 | 268                              | 59 | 45 | 540.997 |    |                                |               | 540.914           | 1.55 | 3.23 | 567600            | 567 599.976 | 220 749.954         | 115.21 |       |                      |       | CPOK?                                 |  |    |
|           |        | 567500<br>220 750 |                  |    |    | 64      | 34 | 20 | 269                              | 20 | 40 | 490.450 |    |                                |               | 490.418           | 1.55 | 3.23 | 567500            | 567 499.927 | 220 750.029         | 119.08 |       |                      |       | CPOK                                  |  |    |
|           |        | 567400<br>220 750 |                  |    |    | 75      | 58 | 35 | 269                              | 16 | 00 | 456.516 |    |                                |               | 456.479           | 1.55 | 3.23 | 567400            | 567 399.970 | 220 749.993         | 118.85 |       |                      |       | CPOK                                  |  |    |
| BOLD HEAD | BOLD O | 567300<br>220 750 | 258              | 47 | 37 | 76      | 01 | 20 | 268                              | 49 | 30 | 354.572 |    |                                |               | 354.497           | 1.33 | 3.25 | 567300<br>220 750 | 567 300.066 | 220 749.929         | 118.11 |       | W/S/82               |       | CPOK?                                 |  |    |
|           |        | 567200<br>220 750 |                  |    |    | 92      | 24 | 00 | 268                              | 48 | 10 | 344.436 |    |                                |               | 344.361           | 1.33 | 3.25 | 567200            | 567 200.019 | 220 749.987         | 118.18 |       |                      |       |                                       |  |    |
|           |        | 567100<br>220 750 |                  |    |    | 108     | 23 | 20 | 269                              | 06 | 00 | 362.616 |    |                                |               | 362.571           | 1.33 | 3.25 | 567100            | 567 100.060 | 220 749.985         | 119.68 |       |                      |       | CPOK?                                 |  |    |
|           |        | 567000<br>220 750 |                  |    |    | 121     | 56 | 00 | 269                              | 31 | 10 | 405.539 |    |                                |               | 405.525           | 1.33 | 3.25 | 567000            | 566 999.944 | 220 750.082         | 121.98 |       |                      |       |                                       |  |    |
|           |        | 566900<br>220 750 |                  |    |    | 132     | 26 | 00 | 269                              | 26 | 40 | 466.137 |    |                                |               | 466.115           | 1.33 | 3.25 | 566900            | 566 899.936 | 220 749.950         | 120.86 |       |                      |       | CPE?                                  |  |    |
|           |        | 566800<br>220 750 |                  |    |    | 140     | 17 | 40 | 269                              | 31 | 30 | 538.607 |    |                                |               | 538.588           | 1.33 | 3.25 | 566800            | 566 800.083 | 220 750.001         | 120.91 |       |                      |       | CPOK?                                 |  |    |
|           |        | 566700<br>220 750 |                  |    |    | 146     | 13 | 10 | 269                              | 45 | 40 | 618.914 |    |                                |               | 618.909           | 1.33 | 3.25 | 566700            | 566 700.019 | 220 750.050         | 122.80 |       |                      |       | CPOK?                                 |  |    |
|           |        | 566600<br>220 750 |                  |    |    | 150     | 45 | 20 | 270                              | 08 | 20 | 704.237 |    |                                |               | 704.235           | 1.33 | 3.25 | 566600            | 566 599.964 | 220 749.973         | 127.09 |       |                      |       | CPE?                                  |  |    |
|           |        | 566500<br>220 750 |                  |    |    | 154     | 17 | 20 | 270                              | 10 | 25 | 792.966 |    |                                |               | 792.962           | 1.33 | 3.25 | 566500            | 566 499.986 | 220 749.942         | 127.78 |       |                      |       | CPE?                                  |  |    |
|           |        | 566400<br>220 750 |                  |    |    | 157     | 05 | 50 | 270                              | 05 | 00 | 884.095 |    |                                |               | 884.094           | 1.33 | 3.25 | 566400            | 566 400.041 | 220 749.990         | 126.67 |       |                      |       | CPOK                                  |  |    |
|           |        | 566300<br>220 750 |                  |    |    | 159     | 22 | 40 | 270                              | 01 | 50 | 977.055 |    |                                |               | 977.055           | 1.33 | 3.25 | 566300            | 566 299.991 | 220 750.051         | 125.90 |       |                      |       | CPE                                   |  |    |

220 750 E (Nth)

220 750 N

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [E.D.M.I. CHAINAGE]

NOTE

INITIAL OR UNADJUSTED FIGURES

SHEET No. 5 LOCATION 6

LOCATION GRID R.L. DATUM CLOSURE 1 in

Table with columns: LINE (BS, IS, FS), HORIZONTAL ANGLE, BEARING, ZENITH ANGLE, E.D.M.I. Reading, BAROMETRIC PRESSURE, ATMOSPHERIC CORRECTION, TEMPERATURE, HORIZONTAL DISTANCE, H.I., H.T., STATION CO-ORDINATES (TITLE, LATITUDE, DEPARTURE, R.L.), INITIALS & DATE, REMARKS.

220 750 E (5th)

220 750 S

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE, [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

SHEET N° 5

LOCATION

LOCATION

GRID R.L. DATUM CLOSURE 1 in

| 7         | 8     |                  | 11  |                  |    | 12  |         |    | 13  |              |    | 14      |                  | 15 | 16 | 17 | 18                  |  | 19   | 20   | 21-24            |            |            | 25-27    |           |      | 28 |             |
|-----------|-------|------------------|-----|------------------|----|-----|---------|----|-----|--------------|----|---------|------------------|----|----|----|---------------------|--|------|------|------------------|------------|------------|----------|-----------|------|----|-------------|
|           | BS    | IS               | FS  | HORIZONTAL ANGLE |    |     | BEARING |    |     | ZENITH ANGLE |    |         | E.D.M.I. Reading |    |    |    | HORIZONTAL DISTANCE |  |      |      | H.I.             | H.T.       | TITLE      | LATITUDE | DEPARTURE | R.L. |    | FIELD       |
| TELECOM   | 3500  | 568000<br>221000 | 253 | 07               | 07 | 332 | 07      | 36 | 269 | 29           | 49 | 394.201 |                  |    |    |    | 394.186             |  | 1.47 | 1.75 | 568000           | 568000.058 | 221000.050 | 110.39   | MGM       | MGM  |    |             |
| "         | "     | 567900<br>221000 | 253 | 07               | 07 | 323 | 25      | 30 | 269 | 19           | 12 | 309.329 |                  |    |    |    | 309.307             |  | 1.47 | 1.75 | 567900           | 567900.002 | 221000.031 | 110.18   | "         | "    |    |             |
| "         | "     | 567800<br>221000 | 253 | 07               | 07 | 308 | 51      | 10 | 269 | 28           | 05 | 236.622 |                  |    |    |    | 236.612             |  | 1.47 | 1.75 | 567800           | 567800.036 | 221000.075 | 111.65   | "         | "    |    |             |
| "         | "     | 567700<br>221000 | 253 | 07               | 07 | 284 | 43      | 13 | 269 | 18           | 53 | 190.584 |                  |    |    |    | 190.570             |  | 1.47 | 1.75 | 567700           | 567700.028 | 221000.024 | 111.57   | "         | "    |    |             |
| TELECOM   | 3500  | 567600<br>221000 | 253 | 07               | 07 | 254 | 22      | 10 | 269 | 49           | 38 | 191.400 |                  |    |    |    | 191.399             |  | 1.47 | 1.75 | 567600           | 567600.035 | 221000.18  | 113.27   | "         | "    |    |             |
| TELECOM   | 3500  | 567500<br>221000 | 253 | 07               | 07 | 230 | 33      | 17 | 270 | 04           | 20 | 238.681 |                  |    |    |    | 238.681             |  | 1.47 | 1.75 | 567500<br>221000 | 567499.960 | 221000.022 | 114.15   | MGM       | "    |    |             |
| TELECOM   | 3531  | 567400<br>221000 | 250 | 36               | 20 | 151 | 27      | 54 | 270 | 09           | 20 | 421.222 |                  |    |    |    | 421.220             |  | 1.54 | 5.75 | 567400<br>221000 | 567399.527 | 221000.475 | 113.74   | MGM       | "    |    | Contains RS |
| BOLD HEAD | OLD   | 567300<br>221000 | 258 | 47               | 37 | 81  | 48      | 10 | 269 | 17           | 20 | 600.360 |                  |    |    |    | 600.314             |  | 1.5  | 3.25 | 567300           | 567300.032 | 221000.108 | 118.18   | MGM       | "    |    | CP OK       |
| "         | "     | 567200<br>221000 | 258 | 47               | 37 | 91  | 22      | 10 | 269 | 37           | 20 | 594.249 |                  |    |    |    | 594.236             |  | 1.5  | 3.25 | 567200           | 567200.237 | 220999.994 | 121.63   | "         | "    |    | CP OK       |
| BOLD HEAD | RILEY | 567100<br>221000 | 166 | 53               | 35 | 105 | 16      | 40 | 270 | 10           | 00 | 718.118 |                  |    |    |    | 718.115             |  | 1.55 | 3.23 | 567100           | 567100.133 | 220999.856 | 126.78   | "         | "    |    | CP OK       |
| BOLD HEAD | RILEY | 567000<br>221000 |     |                  |    | 112 | 40      | 00 | 270 | 30           | 10 | 750.927 |                  |    |    |    | 750.898             |  | 1.55 | 3.23 | 567000           | 566999.982 | 221000.020 | 131.28   | "         | "    |    | CP OK       |
| BOLD HEAD | OLD   | 566900<br>221000 | 258 | 47               | 37 | 117 | 53      | 15 | 270 | 06           | 50 | 672.173 |                  |    |    |    | 672.172             |  | 1.5  | 3.25 | 566900           | 566900.039 | 221000.039 | 126.89   | "         | "    |    | CP OK       |
| "         | "     | 566800<br>221000 |     |                  |    | 124 | 54      | 15 | 269 | 56           | 30 | 724.306 |                  |    |    |    | 724.306             |  | 1.5  | 3.25 | 566800           | 566799.987 | 220999.939 | 124.81   | "         | "    |    | CP RS       |
| "         | "     | 566700<br>221000 |     |                  |    | 130 | 53      | 40 | 269 | 53           | 30 | 785.905 |                  |    |    |    | 785.904             |  | 1.5  | 3.25 | 566700           | 566699.933 | 221000.006 | 124.06   | "         | "    |    | CP RS       |
| "         | "     | 566600<br>221000 |     |                  |    | 135 | 57      | 35 | 270 | 07           | 20 | 854.672 |                  |    |    |    | 854.670             |  | 1.5  | 3.25 | 566600           | 566600.058 | 221000.061 | 127.37   | "         | "    |    | CP OK       |
| BOLD HEAD | OLD   | 566500<br>221000 |     |                  |    | 140 | 15      | 30 | 270 | 04           | 20 | 929.156 |                  |    |    |    | 929.155             |  | 1.5  | 3.25 | 566500           | 566499.979 | 220999.962 | 126.72   | "         | "    |    |             |
| BOLD HEAD | 3501  | 566400<br>221000 | 321 | 12               | 22 | 127 | 33      | 32 | 268 | 08           | 40 | 96.900  |                  |    |    |    | 96.849              |  | 1.55 | 3.75 | 566400           | 566399.828 | 220999.899 | 122.42   | MGM       | "    |    | CP?         |
| "         | "     | 566300<br>221000 | 321 | 12               | 22 | 154 | 15      | 17 | 268 | 06           | 05 | 176.600 |                  |    |    |    | 176.503             |  | 1.55 | 3.75 | 566300           | 566299.888 | 220999.792 | 119.71   | "         | "    |    | CP RS       |

221 000 E (N/A)

221 000 N

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

LOCATION ..... GRID ..... R.L. DATUM ..... CLOSURE 1 in .....

SHEET No. 5 LOCATION 6

Table with columns: LINE (BS, IS, FS), HORIZONTAL ANGLE, BEARING, ZENITH ANGLE, E.D.M.I. Reading, BAROMETRIC PRESSURE, ATMOSPHERIC CORRECTION SETTING, TEMPERATURE, HORIZONTAL DISTANCE, H.I., H.T., STATION CO-ORDINATES (TITLE, LATITUDE, DEPARTURE, R.L.), INITIALS & DATE (FIELD, CALCS, CHECK), REMARKS.

565300

221 000 E (SHA)

221 000 S

221 000

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

LOCATION

GRID

I. S. G.

R.L. DATUM TALLAROOK

CLOSURE 1 in 10

SHEET NO

LOCATION

| 7         | 8        | 9                 | 11  |    |    | 12               |    |    | 13      |    |    | 14      | 15 | 16 | 17 | 18                               |      | 19   | 20                | 21-24            |  |             | 25-27               |        |                 | 28            |      |            |
|-----------|----------|-------------------|-----|----|----|------------------|----|----|---------|----|----|---------|----|----|----|----------------------------------|------|------|-------------------|------------------|--|-------------|---------------------|--------|-----------------|---------------|------|------------|
|           |          |                   | BS  | IS | FS | HORIZONTAL ANGLE |    |    | BEARING |    |    |         |    |    |    | ZENITH ANGLE<br>TARGET REFLECTOR |      |      |                   | E.D.M.I. Reading |  |             | HORIZONTAL DISTANCE |        | H.I.            |               | H.T. | TITLE      |
| TELECOM   | 3500     | 568000<br>221 250 | 253 | 07 | 07 | 10               | 40 | 19 | 268     | 05 | 50 | 354.783 |    |    |    | 354.587                          | 1.47 | 1.75 |                   |                  |  | 568 000.058 | 221 250.003         | 102.07 | MGM<br>10/1/81  | MGM<br>9/1/82 |      | Contour ok |
|           |          | 567900<br>221 250 |     |    |    | 14               | 48 | 51 | 268     | 05 | 20 | 257.234 |    |    |    | 257.091                          | 1.47 | 3.75 | 567900            |                  |  | 567 900.149 | 221 250.073         | 103.27 |                 |               |      | Contour ok |
|           |          | 567800<br>221 250 |     |    |    | 23               | 53 | 09 | 268     | 09 | 23 | 162.371 |    |    |    | 162.287                          | 1.47 | 3.75 |                   |                  |  | 567 799.992 | 221 250.052         | 106.63 |                 |               |      | ✓          |
|           |          | 567700<br>221 250 |     |    |    | 53               | 37 | 12 | 267     | 50 | 47 | 81.656  |    |    |    | 81.598                           | 1.47 | 3.75 |                   |                  |  | 567 700.003 | 221 250.034         | 108.78 |                 |               |      | Contour ✓  |
|           |          | 567600<br>221 250 |     |    |    | 128              | 10 | 51 | 268     | 43 | 57 | 83.797  |    |    |    | 83.776                           | 1.47 | 3.75 | 567600            |                  |  | 567 599.817 | 221 250.192         | 110.00 |                 |               |      | Contour ok |
|           |          | 567500<br>221 250 |     |    |    | 156              | 35 | 18 | 268     | 10 | 55 | 165.307 |    |    |    | 165.224                          | 1.47 | 0.67 | 567500            |                  |  | 567 499.983 | 221 249.988         | 109.69 |                 |               |      |            |
| "         | "        | 567400<br>221 250 |     |    |    | 165              | 27 | 41 | 270     | 03 | 05 | 260.135 |    |    |    | 260.135                          | 1.47 | 3.75 | 567400            |                  |  | 567 399.799 | 221 249.641         | 112.08 |                 |               |      |            |
| "         | "        | 567300<br>221 250 | 253 | 07 | 07 | 169              | 26 | 08 | 270     | 44 | 50 | 357.683 |    |    |    | 357.653                          | 1.47 | 2.75 | 567300<br>221 500 |                  |  | 567 300.014 | 221 249.912         | 117.51 |                 |               |      |            |
| "         | "        | 567200<br>221 250 | 253 | 07 | 07 | 171              | 43 | 31 | 271     | 29 | 27 | 456.697 |    |    |    | 456.542                          | 1.47 | 2.75 | 567200<br>221 500 |                  |  | 567 199.815 | 221 250.044         | 124.73 |                 |               |      |            |
| "         | "        | 567100<br>221 250 | 253 | 07 | 07 | 173              | 13 | 06 | 272     | 00 | 22 | 555.757 |    |    |    | 555.416                          | 1.47 | 2.75 | 567100            |                  |  | 567 100.074 | 221 249.926         | 132.30 |                 | 12/1/82       |      | CP OK      |
| TELECOM   | HELLEMAN | 567000<br>221 250 | 261 | 44 | 27 | 304              | 16 | 00 | 269     | 25 | 15 | 240.344 |    |    |    | 240.332                          | 1.10 | 2.75 | 567000            |                  |  | 566 999.705 | 221 249.950         | 136.50 | 8/11/81         |               |      | CP OK      |
| TELECOM   | HELLEMAN | 566900<br>221 250 | 261 | 44 | 27 | 280              | 06 | 45 | 268     | 59 | 20 | 201.733 |    |    |    | 201.702                          | 1.10 | 2.75 | 566900            |                  |  | 566 899.802 | 221 249.998         | 135.37 |                 |               |      | CP OK      |
| BOLD HEAD | 3501     | 566800<br>221 250 | 321 | 12 | 22 | 43               | 46 | 35 | 271     | 02 | 30 | 472.484 |    |    |    | 472.406                          | 1.48 | 2.75 | 566800            |                  |  | 566 799.969 | 221 249.956         | 132.06 | MGM<br>13/12/81 | MGM<br>9/1/82 |      | Contour ok |
| "         | "        | 566700<br>221 250 |     |    |    | 53               | 35 | 10 | 271     | 04 | 20 | 406.202 |    |    |    | 406.131                          | 1.48 | 2.75 | 566700            |                  |  | 566 699.955 | 221 249.958         | 134.09 |                 |               |      | Contour ok |
| BOLD HEAD | 3501     | 566600<br>221 250 | 321 | 12 | 22 | 66               | 40 | 12 | 270     | 49 | 10 | 355.851 |    |    |    | 355.815                          | 1.55 | 3.75 | 566600            |                  |  | 566 599.78  | 221 249.85          | 127.15 |                 |               |      | CP OK?     |
| BOLD HEAD | 3501     | 566500<br>221 250 | 321 | 12 | 22 | 82               | 51 | 37 | 269     | 50 | 59 | 329.293 |    |    |    | 329.292                          | 1.55 | 3.75 | 566500            |                  |  | 566 499.798 | 221 249.86          | 124.70 |                 |               |      | CP OK      |
| BOLD HEAD | 3501     | 566400<br>221 250 | 321 | 12 | 22 | 100              | 15 | 12 | 269     | 22 | 25 | 332.030 |    |    |    | 332.01                           | 1.55 | 3.75 | 566400            |                  |  | 566 399.77  | 221 249.83          | 127.93 |                 |               |      | CP?        |
| BOLD HEAD | 3501     | 566300<br>221 250 | 321 | 12 | 22 | 115              | 57 | 57 | 269     | 14 | 30 | 363.319 |    |    |    | 363.287                          | 1.55 | 3.75 | 566300            |                  |  | 566 299.810 | 221 249.739         | 127.75 | MGM<br>14/1/82  |               |      | CP OK?     |

221 250 E (Nth)

221 250 W

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

SHEET NO 5

LOCATION 6

LOCATION

GRID R.L. DATUM CLOSURE 1 in

| 7         | 8    | 9                | 11               |    |    | 12      |    |    | 13           |    |    | 14       | 15 | 16                             | 17            | 18               |      |      | 19     | 20          | 21-24               |        |       | 25-27                |       |         | 28                     |                 |  |
|-----------|------|------------------|------------------|----|----|---------|----|----|--------------|----|----|----------|----|--------------------------------|---------------|------------------|------|------|--------|-------------|---------------------|--------|-------|----------------------|-------|---------|------------------------|-----------------|--|
|           |      |                  | HORIZONTAL ANGLE |    |    | BEARING |    |    | ZENITH ANGLE |    |    |          |    |                                |               | E.D.M.I. Reading |      |      |        |             | HORIZONTAL DISTANCE |        |       | STATION CO-ORDINATES |       |         |                        | INITIALS & DATE |  |
| BS        | IS   | FS               | o                | '  | "  | o       | '  | "  | o            | '  | "  | m        | mb | ATMOSPHERIC CORRECTION SETTING | % TEMPERATURE | m                | m    | m    | TITLE  | LATITUDE    | DEPARTURE           | R.L.   | FIELD | CALCS                | CHECK |         |                        |                 |  |
| BOLD HEAD | 3501 | 566200<br>221250 | 321              | 12 | 22 | 128     | 24 | 57 | 269          | 19 | 05 | 416.906  |    |                                |               | 416.876          | 1.55 | 3.75 | 566200 | 566 199.838 | 221 249.756         | 117.60 |       | MGM                  |       |         | CPRS                   |                 |  |
| BOLD HEAD | 3501 | 566100<br>221250 | 321              | 12 | 22 | 137     | 42 | 37 | 269          | 13 | 30 | 485.317  |    |                                |               | 485.273          | 1.55 | 3.75 | 566100 | 566 099.889 | 221 249.654         | 116.00 |       |                      |       |         | CPRS?                  |                 |  |
| TELECOM   | 3524 | 566000<br>221250 | 271              | 27 | 12 | 16      | 40 | 52 | 272          | 29 | 45 | 67.014   |    |                                |               | 66.950           | 1.6  | 2.75 | 566000 | 565 999.993 | 221 250.002         | 114.81 | MGM   | MGM                  |       |         | CP?                    |                 |  |
| "         | "    | 565900<br>221250 | 271              | 27 | 12 | 151     | 42 | 37 | 265          | 19 | 15 | 40.481   |    |                                |               | 40.346           | 1.6  | 2.75 | 565900 | 565 900.333 | 221 949.905         | 108.59 |       |                      |       |         | CPCK                   |                 |  |
| TOPT. JG  | 3526 | 565800<br>221250 | 104              | 16 | 59 | 179     | 59 | 59 | 262          | 31 | 30 | 64.697   |    |                                |               | 64.147           | 1.50 | 1.75 | 565800 | 565 799.987 | 221 249.969         | 95.66  | MGM   |                      |       | 9/3/82  | CPCK                   |                 |  |
|           |      | 565700<br>221250 |                  |    |    |         |    |    |              |    |    |          |    |                                |               |                  |      |      | 565700 | 565 699.985 | 221 250.033         | 88.08  | MGM   |                      |       |         | See Δ3530<br>CP?       |                 |  |
| 3526      | 3530 | 565600<br>221250 | 359              | 58 | 39 | 180     | 00 | 59 | 264          | 12 | 30 | 100.504  |    |                                |               | 99.991           | 1.48 | 1.75 | 565600 | 565 599.994 | 221 250.004         | 89.67  | MGM   |                      |       |         | CPRS                   |                 |  |
|           |      | 565500<br>221250 |                  |    |    | 179     | 31 | 20 | 262          | 27 | 10 | 101.026  |    |                                |               | 100.151          | 1.54 | 3.17 | 565500 | 565 499.847 | 221 250.840         | 57.77  |       |                      |       |         | Misclose - RLs<br>CPRS |                 |  |
| 3519      | 3548 | 565400<br>221250 | 180              | 03 | 09 | 359     | 53 | 00 | 275          | 42 | 00 | 70.01    |    |                                |               | 69.664           | 1.45 | 2.23 | 565400 | 565 399.947 | 221 250.241         | 44.18  | MGM   | MGM                  |       | 7/1/81  | 11/3/82                | CPRS            |  |
| LOLIN     | 3519 | 565300<br>221250 | 301              | 20 | 25 | 359     | 58 | 54 | 270          | 59 | 15 | 384.489  |    |                                |               | 384.432          | 1.59 | 2.23 | 565300 | 565 299.976 | 221 249.880         | 36.19  |       |                      |       |         | CPCK                   |                 |  |
| LOLIN     | 3519 | 565200           | 301              | 20 | 25 | 00      | 00 | 34 | 270          | 03 | 07 | 284.542  |    |                                |               | 284.542          | 1.59 | 2.23 | 565200 | 565 200.086 | 221 250.057         | 29.82  |       |                      |       |         | CP?                    |                 |  |
| LOLIN     | 3519 | 565100           | 301              | 20 | 25 | 00      | 00 | 38 | 270          | 23 | 30 | 184.690  |    |                                |               | 184.686          | 1.59 | 2.23 | 565100 | 565 100.236 | 221 250.037         | 30.82  |       |                      |       |         |                        |                 |  |
| "         | "    | 565000           | 301              | 20 | 25 | 00      | 02 | 48 | 270          | 20 | 28 | 84.485   |    |                                |               | 84.484           | 1.59 | 2.23 | 565000 | 565 000.028 | 221 250.072         | 30.06  |       |                      |       |         |                        |                 |  |
| "         | "    | 564900           | 301              | 20 | 25 | 180     | 17 | 10 | 273          | 21 | 54 | 15.654   |    |                                |               | 15.627           | 1.59 | 2.23 | 564900 | 564 899.917 | 221 249.925         | 30.48  |       |                      |       |         |                        |                 |  |
| MIKE      | FLAT | 564800           | 31               | 53 | 42 | 56      | 06 | 35 | 270          | 33 | 55 | 1325.791 |    |                                |               | 1325.726         | 1.52 | 3.75 | 564800 | 564 800.192 | 221 249.946         | 25.44  |       |                      |       | 10/2/81 | 11/3/82                |                 |  |
| MIKE      | FLAT | 564700           | 31               | 53 | 42 | 59      | 51 | 37 | 269          | 28 | 46 | 1272.601 |    |                                |               | 1272.548         | 1.54 | 2.23 | 564700 | 564 699.921 | 221 249.955         | 2.34   |       |                      |       | 10/2/81 | 11/3/82                |                 |  |
|           |      | 564500           |                  |    |    |         |    |    |              |    |    |          |    |                                |               |                  |      |      |        |             |                     |        |       |                      |       |         |                        |                 |  |

221250E (5th)

221250S

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

SHEET NO. 5

LOCATION

LOCATION

GRID R.L. DATUM CLOSURE 1 in

| 7       | 8         |                  | 11  |                  |    | 12  |         |    | 13  |              |    | 14       | 15               | 16                  | 17                             | 18          |                     | 19   | 20               | 21-24      |            |          | 25-27     |      |       | 28 |       |       |         |       |
|---------|-----------|------------------|-----|------------------|----|-----|---------|----|-----|--------------|----|----------|------------------|---------------------|--------------------------------|-------------|---------------------|------|------------------|------------|------------|----------|-----------|------|-------|----|-------|-------|---------|-------|
|         | BS        | IS               | FS  | HORIZONTAL ANGLE |    |     | BEARING |    |     | ZENITH ANGLE |    |          | E.D.M.I. Reading | BAROMETRIC PRESSURE | ATMOSPHERIC CORRECTION SETTING | TEMPERATURE | HORIZONTAL DISTANCE |      | H.I.             | H.T.       | TITLE      | LATITUDE | DEPARTURE | R.L. | FIELD |    | CALCS | CHECK | REMARKS |       |
| TELECOM | H.B.L.MAN | 566200           | 261 | 14               | 27 | 175 | 36      | 20 | 268 | 19           | 40 | 666.966  |                  |                     |                                | 666.682     | 1.10                | 4.75 | 566200           | 566199.665 | 221499.649 | 117.47   |           |      |       |    |       |       |         |       |
| HEADER  | HAUGHEY   | 566100<br>221500 | 267 | 29               | 10 | 358 | 46      | 20 | 273 | 36           | 20 | 1125.240 |                  |                     |                                | 1123.013    | 1.46                | 3.25 | 566100           | 566099.875 | 221500.023 | 112.98   |           |      |       |    |       |       |         |       |
| HEADER  | HAUGHEY   | 566000<br>221500 | 267 | 29               | 10 | 358 | 39      | 05 | 273 | 33           | 45 | 1025.170 |                  |                     |                                | 1023.189    | 1.46                | 3.25 | 566000           | 566000.026 | 221500.005 | 105.92   |           |      |       |    |       |       | CP OK   |       |
| TELECOM | 3524      | 565900<br>221500 | 271 | 27               | 12 | 97  | 35      | 32 | 265 | 20           | 45 | 272.619  |                  |                     |                                | 271.720     | 1.60                | 2.75 | 565900           | 565899.960 | 221500.122 | 82.77    | MGM       | MGM  |       |    |       |       | CP?     |       |
| TELECOM | 3524      | 565800<br>221500 | 271 | 27               | 12 | 116 | 47      | 22 | 264 | 13           | 35 | 303.052  |                  |                     |                                | 301.515     | 1.60                | 3.25 | 565800           | 565799.963 | 221499.937 | 80.90    |           |      |       |    |       |       | CP?     |       |
| "       | "         | 565700<br>221500 | 271 | 27               | 12 | 131 | 14      | 22 | 263 | 47           | 45 | 360.025  |                  |                     |                                | 357.916     | 1.60                | 2.75 | 565700           | 565699.919 | 221499.923 | 72.98    |           |      |       |    |       |       | CP?     |       |
| HEADER  | HAUGHEY   | 565600           | 267 | 29               | 10 | 357 | 47      | 05 | 271 | 43           | 20 | 623.637  |                  |                     |                                | 623.355     | 1.46                | 3.25 | 565600           | 565600.009 | 221499.991 | 60.96    |           |      |       |    |       |       |         |       |
| HEADER  | HAUGHEY   | 565500           | 267 | 29               | 10 | 357 | 21      | 35 | 271 | 04           | 45 | 523.523  |                  |                     |                                | 523.430     | 1.46                | 3.25 | 565500           | 565499.995 | 221499.974 | 52.08    |           |      |       |    |       |       |         |       |
| HAUGHEY | 3546      | 565400           | 180 | 07               | 00 | 252 | 29      | 00 | 267 | 22           | 00 | 26.185   |                  |                     |                                | 26.157      | 1.40                | 1.20 | 565400           | 565400.035 | 221500.019 | 37.28    |           |      |       |    |       |       |         | CP OK |
| HAUGHEY | 3547      | 565300           | 192 | 00               | 10 | 270 | 17      | 30 | 271 | 40           | 50 | 92.688   |                  |                     |                                | 92.648      | 1.51                | 2.75 | 565300           | 565300.035 | 221499.993 | 30.45    |           |      |       |    |       |       |         |       |
| HEADER  | HAUGHEY   | 565200           | 267 | 29               | 10 | 353 | 49      | 40 | 267 | 52           | 10 | 224.348  |                  |                     |                                | 224.193     | 1.46                | 3.25 | 565200           | 565200.013 | 221499.981 | 33.88    |           |      |       |    |       |       |         |       |
| HEADER  | HAUGHEY   | 565100           | 267 | 29               | 10 | 348 | 53      | 00 | 267 | 16           | 40 | 125.379  |                  |                     |                                | 125.238     | 1.46                | 3.25 | 565100           | 565100.008 | 221499.939 | 36.26    |           |      |       |    |       |       |         |       |
| HEADER  | HAUGHEY   | 565000<br>221500 | 267 | 29               | 10 | 313 | 25      | 35 | 258 | 12           | 25 | 33.895   |                  |                     |                                | 33.180      | 1.46                | 3.25 | 565000<br>221500 | 564999.928 | 221499.989 | 35.29    | MGM       | MGM  |       |    |       |       |         |       |
| MIKE    | FLAT      | 564900           | 31  | 53               | 42 | 58  | 08      | 40 | 270 | 46           | 35 | 1590.151 |                  |                     |                                | 1590.005    | 1.52                | 2.75 | 564900           | 564900.133 | 221499.972 | 34.90    | MGM       | MGM  |       |    |       |       |         |       |
| "       | "         | 564800           | 31  | 53               | 42 | 66  | 18      | 10 | 269 | 53           | 35 | 1540.036 |                  |                     |                                | 1540.033    | 1.52                | 3.75 | 564800           | 564800.456 | 221500.321 | 9.48     |           |      |       |    |       |       |         |       |

565200

221500E (5th)

221500S

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

SHEET NO. 5

LOCATION 6

LOCATION

GRID R.L. DATUM CLOSURE 1 in

| 7       | 8       | 9                | 11               |    |    | 12      |    |    | 13                               |    |    | 14      | 15 | 16                             | 17          | 18               |      |      | 19               | 20          | 21-24               |        |                | 25-27                |       |         | 28 |
|---------|---------|------------------|------------------|----|----|---------|----|----|----------------------------------|----|----|---------|----|--------------------------------|-------------|------------------|------|------|------------------|-------------|---------------------|--------|----------------|----------------------|-------|---------|----|
|         |         |                  | HORIZONTAL ANGLE |    |    | BEARING |    |    | ZENITH ANGLE<br>TARGET REFLECTOR |    |    |         |    |                                |             | E.D.M.I. Reading |      |      |                  |             | HORIZONTAL DISTANCE |        |                | STATION CO-ORDINATES |       |         |    |
| BS      | IS      | FS               | o                | '  | "  | o       | '  | "  | o                                | '  | "  | m       | MB | ATMOSPHERIC CORRECTION SETTING | TEMPERATURE | m                | m    | m    | TITLE            | LATITUDE    | DEPARTURE           | R.L.   | FIELD          | CALCS                | CHECK | REMARKS |    |
| TELECOM | 3500    | 568000<br>221500 | 253              | 07 | 07 | 42      | 10 | 48 | 268                              | 24 | 17 | 470.333 |    |                                |             | 470.151          | 1.47 | 1.75 | 568000<br>221500 | 568 000.004 | 221 500.027         | 100.76 | MGM<br>10/2/82 | MGM<br>9/3/82        |       |         |    |
| "       | "       | 567900           | 253              | 07 | 07 | 51      | 17 | 54 | 268                              | 33 | 50 | 401.858 |    |                                |             | 401.732          | 1.47 | 1.75 | 567900           | 567 900.048 | 221 500.036         | 103.78 | "              | "                    |       |         |    |
| "       | "       | 567800           | 253              | 07 | 07 | 64      | 49 | 10 | 268                              | 33 | 03 | 349.017 |    |                                |             | 348.905          | 1.47 | 4.75 | 567800           | 567 800.054 | 221 500.088         | 102.02 | "              | "                    |       |         |    |
| "       | "       | 567700           | 253              | 07 | 07 | 81      | 20 | 34 | 268                              | 19 | 17 | 319.801 |    |                                |             | 319.664          | 1.47 | 1.75 | 567700           | 567 699.721 | 221 500.361         | 104.48 | "              | "                    |       |         |    |
| TELECOM | 3500    | 567600           | 253              | 07 | 07 | 99      | 17 | 04 | 269                              | 49 | 20 | 319.930 |    |                                |             | 319.928          | 1.47 | 1.75 | 567600<br>221500 | 567 599.988 | 221 500.076         | 112.86 | MGM<br>10/2/82 | MGM<br>9/3/82        |       |         |    |
| TELECOM | 3500    | 567500<br>221500 | 253              | 07 | 07 | 115     | 38 | 33 | 269                              | 35 | 02 | 350.240 |    |                                |             | 350.231          | 1.47 | 1.75 | 567500           | 567 500.040 | 221 500.076         | 111.31 | MGM<br>10/2/82 | MGM<br>9/3/82        |       |         |    |
| "       | "       | 567400           | 253              | 07 | 07 | 128     | 33 | 30 | 270                              | 28 | 06 | 403.759 |    |                                |             | 403.746          | 1.47 | 3.75 | 567400           | 567 399.945 | 221 500.058         | 115.15 | "              | "                    |       |         |    |
| "       | "       | 567300<br>221500 | 253              | 07 | 07 | 138     | 05 | 14 | 270                              | 53 | 48 | 472.521 |    |                                |             | 472.463          | 1.47 | 3.75 | 567300           | 567 300.015 | 221 499.944         | 119.24 | "              | "                    |       |         |    |
| "       | "       | 567200<br>221500 | 253              | 07 | 07 | 145     | 02 | 53 | 271                              | 24 | 35 | 551.284 |    |                                |             | 551.117          | 1.47 | 3.75 | 567200<br>221500 | 567 199.890 | 221 500.068         | 125.41 | "              | "                    |       |         |    |
| TELECOM | 3529    | 567100<br>221500 | 259              | 56 | 20 | 00      | 25 | 47 | 265                              | 44 | 45 | 48.835  |    |                                |             | 48.780           | 1.40 | 1.75 | 567100           | 567 099.678 | 221 499.311         | 133.47 | 11/12/82       | 10/3/82              |       |         |    |
| TELECOM | HELEMAN | 567000           | 261              | 44 | 27 | 20      | 43 | 45 | 270                              | 08 | 46 | 144.865 |    |                                |             | 144.865          | 1.10 | 2.75 | 567000           | 566 999.874 | 221 499.841         | 139.30 | 8/12/82        | 10/3/82              |       | CP OK   |    |
| "       | "       | 566900           |                  |    |    | 55      | 24 | 00 | 270                              | 39 | 05 | 62.273  |    |                                |             | 62.269           | 1.10 | 2.75 | 566900           | 566 899.746 | 221 499.822         | 139.64 | "              | "                    |       | CP OK   |    |
| "       | "       | 566800           |                  |    |    | 141     | 31 | 05 | 269                              | 25 | 30 | 82.571  |    |                                |             | 82.567           | 1.10 | 2.75 | 566800           | 566 799.753 | 221 499.945         | 138.10 | "              | "                    |       | CP OK   |    |
| "       | "       | 566700           |                  |    |    | 162     | 39 | 10 | 268                              | 33 | 52 | 172.519 |    |                                |             | 172.465          | 1.10 | 2.75 | 566700           | 566 699.767 | 221 499.988         | 134.61 | "              | "                    |       | CP RS   |    |
| "       | "       | 566600           |                  |    |    | 168     | 45 | 30 | 269                              | 19 | 15 | 269.923 |    |                                |             | 269.904          | 1.10 | 2.75 | 566600           | 566 599.661 | 221 500.183         | 135.73 | "              | "                    |       | CP?     |    |
| "       | "       | 566500           |                  |    |    | 171     | 49 | 00 | 268                              | 14 | 20 | 368.291 |    |                                |             | 368.117          | 1.10 | 2.75 | 566500           | 566 500.018 | 221 500.964         | 127.61 | "              | "                    |       | CP OK   |    |
| "       | "       | 566400           |                  |    |    | 173     | 36 | 00 | 268                              | 28 | 00 | 467.52  |    |                                |             | 467.353          | 1.10 | 2.75 | 566400           | 566 399.947 | 221 500.661         | 126.42 | "              | "                    |       |         |    |
| TELECOM | HELEMAN | 566300           |                  |    |    | 174     | 43 | 00 | 268                              | 23 | 10 | 567.246 |    |                                |             | 567.021          | 1.10 | 2.75 | 566300           | 566 299.775 | 221 500.778         | 122.95 | "              | "                    |       | CP OK?  |    |

221 500 E (NH)

221 500 N

# SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

SHEET NO. LOCATION

LOCATION GRID R.L. DATUM CLOSURE 1 in

| LINE |    |                    | HORIZONTAL ANGLE | BEARING | ZENITH ANGLE | E.D.M. I Reading | BAROMETRIC PRESSURE | ATMOSPHERIC CORRECTION SETTING | TEMPERATURE | HORIZONTAL DISTANCE | H.I. | H.T. | STATION CO-ORDINATES |             |           | INITIALS & DATE |       |         | REMARKS |                         |
|------|----|--------------------|------------------|---------|--------------|------------------|---------------------|--------------------------------|-------------|---------------------|------|------|----------------------|-------------|-----------|-----------------|-------|---------|---------|-------------------------|
| BS   | IS | FS                 |                  |         |              |                  |                     |                                |             |                     |      |      | TITLE                | LATITUDE    | DEPARTURE | R.L.            | FIELD | CALCS   |         | CHECK                   |
|      |    | 566000N<br>219750E |                  |         |              |                  |                     |                                |             |                     |      |      |                      |             |           |                 |       |         |         |                         |
|      |    | 219800E            |                  |         |              |                  |                     |                                |             |                     |      |      | 565 999.922          | 219 800.024 | 97.12     |                 |       |         |         | L & D $\Delta$ 3565     |
|      |    |                    |                  |         |              |                  |                     |                                |             |                     |      |      |                      |             | 90.04     |                 |       |         |         |                         |
|      |    |                    |                  |         |              |                  |                     |                                |             |                     |      |      |                      |             | 90.03     |                 |       |         |         |                         |
|      |    |                    |                  |         |              |                  |                     |                                |             |                     |      |      |                      |             | 95.38     |                 |       |         |         |                         |
|      |    |                    |                  |         |              |                  |                     |                                |             |                     |      |      |                      |             | 101.25    |                 |       |         |         |                         |
|      |    |                    |                  |         |              |                  |                     |                                |             |                     |      |      |                      |             | 102.227   |                 | BHL   | 17/5/83 |         |                         |
|      |    |                    |                  |         |              |                  |                     |                                |             |                     |      |      |                      |             | 104.923   |                 |       |         |         |                         |
|      |    |                    |                  |         |              |                  |                     |                                |             |                     |      |      |                      |             | 108.053   |                 |       |         |         |                         |
|      |    |                    |                  |         |              |                  |                     |                                |             |                     |      |      |                      |             | 110.299   |                 |       |         |         |                         |
|      |    |                    |                  |         |              |                  |                     |                                |             |                     |      |      |                      |             | 113.625   |                 |       |         |         |                         |
|      |    |                    |                  |         |              |                  |                     |                                |             |                     |      |      |                      |             | 112.248   |                 |       |         |         | $\Delta$ 3567 RL 113.66 |
|      |    |                    |                  |         |              |                  |                     |                                |             |                     |      |      |                      |             | 113.123   |                 |       |         |         |                         |
|      |    |                    |                  |         |              |                  |                     |                                |             |                     |      |      |                      |             | 118.317   |                 |       |         |         |                         |
|      |    |                    |                  |         |              |                  |                     |                                |             |                     |      |      |                      |             | 119.085   |                 |       |         |         |                         |
|      |    |                    |                  |         |              |                  |                     |                                |             |                     |      |      |                      |             | 118.007   |                 |       |         |         |                         |
|      |    |                    |                  |         |              |                  |                     |                                |             |                     |      |      |                      |             | 118.790   |                 |       |         |         |                         |
|      |    | 566 000<br>220 600 |                  |         |              |                  |                     |                                |             |                     |      |      |                      |             | 120.300   |                 |       |         |         |                         |

# SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

SHEET N°

LOCATION

LOCATION

GRID

R.L. DATUM

CLOSURE 1 in

| LINE |    |                    | HORIZONTAL ANGLE |   | BEARING |   | ZENITH ANGLE |   | E.D.M.I. Reading |   | BAROMETRIC PRESSURE |    | ATMOSPHERIC CORRECTION SETTING |   | TEMPERATURE |   | HORIZONTAL DISTANCE |   | H.I. |   | H.T. |   | STATION CO-ORDINATES |          |           |         | INITIALS & DATE |       |       | REMARKS |                  |                  |
|------|----|--------------------|------------------|---|---------|---|--------------|---|------------------|---|---------------------|----|--------------------------------|---|-------------|---|---------------------|---|------|---|------|---|----------------------|----------|-----------|---------|-----------------|-------|-------|---------|------------------|------------------|
| BS   | IS | FS                 | 0                | 1 | 2       | 0 | 1            | 2 | 0                | 1 | 2                   | Mb | 0                              | 1 | 2           | 0 | 1                   | 2 | 3    | 4 | 5    | 6 | TITLE                | LATITUDE | DEPARTURE | R.L.    | FIELD           | CALCS | CHECK |         |                  |                  |
|      |    | 566 000<br>220 650 |                  |   |         |   |              |   |                  |   |                     |    |                                |   |             |   |                     |   |      |   |      |   | 566 000              |          |           | 122.141 | BHL             |       |       |         |                  |                  |
|      |    |                    |                  |   |         |   |              |   |                  |   |                     |    |                                |   |             |   |                     |   |      |   |      |   | 220 650              |          |           | 122.108 |                 |       |       |         | 17/5/83          |                  |
|      |    |                    |                  |   |         |   |              |   |                  |   |                     |    |                                |   |             |   |                     |   |      |   |      |   | 700                  |          |           | 120.451 |                 |       |       |         | Δ 3598 RL 122.04 |                  |
|      |    |                    |                  |   |         |   |              |   |                  |   |                     |    |                                |   |             |   |                     |   |      |   |      |   | 750                  |          |           | 118.030 |                 |       |       |         |                  |                  |
|      |    |                    |                  |   |         |   |              |   |                  |   |                     |    |                                |   |             |   |                     |   |      |   |      |   | 800                  |          |           | 113.797 |                 |       |       |         |                  |                  |
|      |    |                    |                  |   |         |   |              |   |                  |   |                     |    |                                |   |             |   |                     |   |      |   |      |   | 850                  |          |           |         |                 |       |       |         |                  |                  |
|      |    |                    |                  |   |         |   |              |   |                  |   |                     |    |                                |   |             |   |                     |   |      |   |      |   | 900                  |          |           |         |                 |       |       |         |                  |                  |
|      |    |                    |                  |   |         |   |              |   |                  |   |                     |    |                                |   |             |   |                     |   |      |   |      |   | 950                  |          |           | 113.123 | BHL             |       |       |         | 17/5/83          |                  |
|      |    |                    |                  |   |         |   |              |   |                  |   |                     |    |                                |   |             |   |                     |   |      |   |      |   | 221 000              |          |           | 114.314 |                 |       |       |         |                  |                  |
|      |    |                    |                  |   |         |   |              |   |                  |   |                     |    |                                |   |             |   |                     |   |      |   |      |   | 050                  |          |           | 116.226 |                 |       |       |         |                  |                  |
|      |    |                    |                  |   |         |   |              |   |                  |   |                     |    |                                |   |             |   |                     |   |      |   |      |   | 100                  |          |           | 117.510 |                 |       |       |         |                  |                  |
|      |    |                    |                  |   |         |   |              |   |                  |   |                     |    |                                |   |             |   |                     |   |      |   |      |   | 150                  |          |           | 118.390 |                 |       |       |         |                  |                  |
|      |    |                    |                  |   |         |   |              |   |                  |   |                     |    |                                |   |             |   |                     |   |      |   |      |   | 200                  |          |           | 118.129 |                 |       |       |         |                  | Δ 3586 RL 117.87 |
|      |    |                    |                  |   |         |   |              |   |                  |   |                     |    |                                |   |             |   |                     |   |      |   |      |   | 250                  |          |           | 117.83  |                 |       |       |         |                  |                  |
|      |    |                    |                  |   |         |   |              |   |                  |   |                     |    |                                |   |             |   |                     |   |      |   |      |   | 300                  |          |           | 114.724 |                 |       |       |         |                  |                  |
|      |    |                    |                  |   |         |   |              |   |                  |   |                     |    |                                |   |             |   |                     |   |      |   |      |   | 350                  |          |           | 113.235 |                 |       |       |         |                  |                  |
|      |    |                    |                  |   |         |   |              |   |                  |   |                     |    |                                |   |             |   |                     |   |      |   |      |   | 400                  |          |           | 110.086 |                 |       |       |         |                  |                  |
|      |    |                    |                  |   |         |   |              |   |                  |   |                     |    |                                |   |             |   |                     |   |      |   |      |   | 450                  |          |           | 106.410 |                 |       |       |         |                  |                  |
|      |    | 566 000<br>221 500 |                  |   |         |   |              |   |                  |   |                     |    |                                |   |             |   |                     |   |      |   |      |   | 566 000              |          |           | 106.279 |                 |       |       |         |                  |                  |
|      |    |                    |                  |   |         |   |              |   |                  |   |                     |    |                                |   |             |   |                     |   |      |   |      |   | 221 500              |          |           |         |                 |       |       |         |                  |                  |



SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

SHEET N° 5

LOCATION 6

LOCATION

GRID R.L. DATUM CLOSURE 1 in

| LINE |    |         | HORIZONTAL ANGLE | BEARING | ZENITH ANGLE<br>TARGET REFLECTOR | E.D.M.I. Reading | BAROMETRIC PRESSURE | ATMOSPHERIC CORRECTION SETTING | TEMPERATURE | HORIZONTAL DISTANCE | H.I. | H.T. | STATION CO-ORDINATES |          |           |       | INITIALS & DATE |       |       | REMARKS |                  |
|------|----|---------|------------------|---------|----------------------------------|------------------|---------------------|--------------------------------|-------------|---------------------|------|------|----------------------|----------|-----------|-------|-----------------|-------|-------|---------|------------------|
| BS   | IS | FS      |                  |         |                                  |                  |                     |                                |             |                     |      |      | TITLE                | LATITUDE | DEPARTURE | R.L.  | FIELD           | CALCS | CHECK |         |                  |
|      |    | 566 200 |                  |         |                                  |                  |                     |                                |             |                     |      |      | 566 200              |          |           | 99.05 |                 |       |       |         |                  |
|      |    | 219 750 |                  |         |                                  |                  |                     |                                |             |                     |      |      | 219 750              |          |           |       |                 |       |       |         |                  |
|      |    |         |                  |         |                                  |                  |                     |                                |             |                     |      |      | 800                  |          |           |       | 97.138          | BHL   |       |         |                  |
|      |    |         |                  |         |                                  |                  |                     |                                |             |                     |      |      | 850                  |          |           |       | 98.405          | "     |       |         |                  |
|      |    |         |                  |         |                                  |                  |                     |                                |             |                     |      |      | 900                  |          |           |       | 98.215          | "     |       |         | △ 3566           |
|      |    |         |                  |         |                                  |                  |                     |                                |             |                     |      |      | 950                  |          |           |       | 95.014          | "     |       |         |                  |
|      |    |         |                  |         |                                  |                  |                     |                                |             |                     |      |      | 220 000              |          |           |       | 83.568          | "     |       |         |                  |
|      |    |         |                  |         |                                  |                  |                     |                                |             |                     |      |      | 220 050              |          |           |       | 92.576          | "     |       |         |                  |
|      |    |         |                  |         |                                  |                  |                     |                                |             |                     |      |      | 100                  |          |           |       | 100.079         | "     |       |         |                  |
|      |    |         |                  |         |                                  |                  |                     |                                |             |                     |      |      | 150                  |          |           |       | 102.854         | "     |       |         |                  |
|      |    |         |                  |         |                                  |                  |                     |                                |             |                     |      |      | 200                  |          |           |       | 106.062         | "     |       |         |                  |
|      |    |         |                  |         |                                  |                  |                     |                                |             |                     |      |      | 250                  |          |           |       | 107.893         | "     |       |         |                  |
|      |    |         |                  |         |                                  |                  |                     |                                |             |                     |      |      | 300                  |          |           |       | 110.263         | "     |       |         |                  |
|      |    |         |                  |         |                                  |                  |                     |                                |             |                     |      |      | 350                  |          |           |       | 113.297         | "     |       |         |                  |
|      |    |         |                  |         |                                  |                  |                     |                                |             |                     |      |      | 400                  |          |           |       | 113.091         | BHL   |       |         | △ 3568 RL 113.09 |
|      |    |         |                  |         |                                  |                  |                     |                                |             |                     |      |      | 450                  |          |           |       | 116.753         | "     |       |         |                  |
|      |    |         |                  |         |                                  |                  |                     |                                |             |                     |      |      | 500                  |          |           |       | 120.268         | "     |       |         |                  |
|      |    |         |                  |         |                                  |                  |                     |                                |             |                     |      |      | 550                  |          |           |       | 122.887         | "     |       |         |                  |
|      |    |         |                  |         |                                  |                  |                     |                                |             |                     |      |      | 220 600              |          |           |       | 124.742         | "     |       |         |                  |
|      |    | 566 200 |                  |         |                                  |                  |                     |                                |             |                     |      |      |                      |          |           |       | 125.592         | "     |       |         |                  |
|      |    | 220 600 |                  |         |                                  |                  |                     |                                |             |                     |      |      |                      |          |           |       |                 |       |       |         |                  |

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M. I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

SHEET N° 5

LOCATION 6

LOCATION .....

GRID ..... R.L. DATUM ..... CLOSURE 1 in .....

| LINE |    |                    | HORIZONTAL ANGLE<br>o ' " | BEARING<br>o ' " | ZENITH ANGLE<br>TARGET REFLECTOR<br>o ' " | E. D. M. I.<br>Reading<br>m | BAROMETRIC PRESSURE<br>mb | ATMOSPHERIC CORRECTION SETTING<br>% | TEMPERATURE<br>° | HORIZONTAL DISTANCE<br>m | H.I.<br>m | H.T.<br>m | STATION CO-ORDINATES |          |           |         | INITIALS & DATE |       |       | REMARKS             |
|------|----|--------------------|---------------------------|------------------|---|-----------------------------|---------------------------|-------------------------------------|------------------|--------------------------|-----------|-----------|----------------------|----------|-----------|---------|-----------------|-------|-------|---------------------|
| BS   | IS | FS                 |                           |                  |   |                             |                           |                                     |                  |                          |           |           | TITLE                | LATITUDE | DEPARTURE | R.L.    | FIELD           | CALCS | CHECK |                     |
|      |    | 566 200<br>220 650 |                           |                  |   |                             |                           |                                     |                  |                          |           |           | 566 200<br>220 650   |          |           | 126.329 | BHL<br>2/6/83   |       |       | Δ3585 RL 126.46     |
|      |    |                    |                           |                  |   |                             |                           |                                     |                  |                          |           |           | 700                  |          |           | 125.284 |                 |       |       |                     |
|      |    |                    |                           |                  |   |                             |                           |                                     |                  |                          |           |           | 750                  |          |           | 124.753 |                 |       |       |                     |
|      |    |                    |                           |                  |   |                             |                           |                                     |                  |                          |           |           | 800                  |          |           | 124.024 |                 |       |       |                     |
|      |    |                    |                           |                  |   |                             |                           |                                     |                  |                          |           |           | 850                  |          |           | 121.469 |                 |       |       |                     |
|      |    |                    |                           |                  |   |                             |                           |                                     |                  |                          |           |           | 900                  |          |           | 119.474 |                 |       |       |                     |
|      |    |                    |                           |                  |   |                             |                           |                                     |                  |                          |           |           | 950                  |          |           | 117.582 |                 |       |       |                     |
|      |    |                    |                           |                  |   |                             |                           |                                     |                  |                          |           |           | 221 000              |          |           | 117.685 |                 |       |       |                     |
|      |    |                    |                           |                  |   |                             |                           |                                     |                  |                          |           |           | 050                  |          |           | 116.657 |                 |       |       |                     |
|      |    |                    |                           |                  |   |                             |                           |                                     |                  |                          |           |           | 100                  |          |           | 117.241 |                 |       |       |                     |
|      |    |                    |                           |                  |   |                             |                           |                                     |                  |                          |           |           | 150                  |          |           | 119.203 |                 |       |       |                     |
|      |    |                    |                           |                  |   |                             |                           |                                     |                  |                          |           |           | 200                  |          |           | 120.29  |                 |       |       |                     |
|      |    |                    |                           |                  |   |                             |                           |                                     |                  |                          |           |           | 250                  |          |           | 121.455 |                 |       |       | of 118.95 for Δ3587 |
|      |    |                    |                           |                  |   |                             |                           |                                     |                  |                          |           |           | 300                  |          |           | 121.343 |                 |       |       |                     |
|      |    |                    |                           |                  |   |                             |                           |                                     |                  |                          |           |           | 350                  |          |           | 121.546 |                 |       |       |                     |
|      |    |                    |                           |                  |   |                             |                           |                                     |                  |                          |           |           | 400                  |          |           | 120.907 |                 |       |       |                     |
|      |    |                    |                           |                  |   |                             |                           |                                     |                  |                          |           |           | 450                  |          |           | 119.478 |                 |       |       |                     |
|      |    | 566 200<br>221 500 |                           |                  |   |                             |                           |                                     |                  |                          |           |           | 221 500              |          |           | 117.499 |                 |       |       |                     |

# SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

SHEET N° ..... 5 .....

LOCATION ..... 6 .....

LOCATION .....

GRID ..... R.L. DATUM ..... CLOSURE 1 in ..... 4

| 7 LINE |    |                    | 11 HORIZONTAL ANGLE |   |   | 12 BEARING |   |   | 13 ZENITH ANGLE |   |   | 14 E. D. M. I. Reading |    |   | 15 BAROMETRIC PRESSURE |   |   | 16 ATMOSPHERIC CORRECTION SETTING |         |          | 17 TEMPERATURE |         |       | 18 HORIZONTAL DISTANCE |       |        | 19 H. I. |  |  | 20 H. T. |  |  | 21 STATION CO-ORDINATES |  |  |  | 25 INITIALS & DATE |  |  | 28 REMARKS |  |  |
|--------|----|--------------------|---------------------|---|---|------------|---|---|-----------------|---|---|------------------------|----|---|------------------------|---|---|-----------------------------------|---------|----------|----------------|---------|-------|------------------------|-------|--------|----------|--|--|----------|--|--|-------------------------|--|--|--|--------------------|--|--|------------|--|--|
| BS     | IS | FS                 | 0                   | 1 | 2 | 0          | 1 | 2 | 0               | 1 | 2 | m                      | Mb | % | °                      | m | m | m                                 | TITLE   | LATITUDE | DEPARTURE      | R.L.    | FIELD | CALCS                  | CHECK |        |          |  |  |          |  |  |                         |  |  |  |                    |  |  |            |  |  |
|        |    | 566 200<br>221 550 |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   | 566200  |          |                | 116.025 |       |                        |       |        |          |  |  |          |  |  |                         |  |  |  |                    |  |  |            |  |  |
|        |    |                    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   | 221 550 |          |                | 115.941 |       |                        |       |        |          |  |  |          |  |  |                         |  |  |  |                    |  |  |            |  |  |
|        |    |                    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   | 600     |          |                | 115.128 |       |                        |       |        |          |  |  |          |  |  |                         |  |  |  |                    |  |  |            |  |  |
|        |    |                    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   | 650     |          |                | 111.30  |       |                        |       |        |          |  |  |          |  |  |                         |  |  |  |                    |  |  |            |  |  |
|        |    |                    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   | 700     |          |                | 110.239 |       |                        |       | Δ 3595 |          |  |  |          |  |  |                         |  |  |  |                    |  |  |            |  |  |
|        |    |                    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   | 750     |          |                | 111.141 |       |                        |       |        |          |  |  |          |  |  |                         |  |  |  |                    |  |  |            |  |  |
|        |    |                    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   | 800     |          |                | 112.202 |       |                        |       |        |          |  |  |          |  |  |                         |  |  |  |                    |  |  |            |  |  |
|        |    |                    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   | 850     |          |                | 110.935 |       |                        |       |        |          |  |  |          |  |  |                         |  |  |  |                    |  |  |            |  |  |
|        |    |                    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   | 900     |          |                | 111.714 |       |                        |       |        |          |  |  |          |  |  |                         |  |  |  |                    |  |  |            |  |  |
|        |    |                    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   | 950     |          |                | 115.72  |       |                        |       |        |          |  |  |          |  |  |                         |  |  |  |                    |  |  |            |  |  |
|        |    |                    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   | 222 000 |          |                |         |       |                        |       |        |          |  |  |          |  |  |                         |  |  |  |                    |  |  |            |  |  |

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

LOCATION 566400 N

SHEET N° 5

LOCATION 6

GRID R.L. DATUM CLOSURE 1 in

| 7 LINE |      |                      | 11 HORIZONTAL ANGLE |    |   | 12 BEARING |    |    | 13 ZENITH ANGLE |    |    | 14 E. D. M. I. |   |   | 15 BAROMETRIC PRESSURE |    |   | 16 ATMOSPHERIC CORRECTION SETTING |   |   | 17 TEMPERATURE |            |          | 18 HORIZONTAL DISTANCE |         |               | 19 H. I.   |        |                           | 20 H. T. |  |  | 21 STATION CO-ORDINATES |  |  |  | 25 INITIALS & DATE |  |  | 28 REMARKS |
|--------|------|----------------------|---------------------|----|---|------------|----|----|-----------------|----|----|----------------|---|---|------------------------|----|---|-----------------------------------|---|---|----------------|------------|----------|------------------------|---------|---------------|------------|--------|---------------------------|----------|--|--|-------------------------|--|--|--|--------------------|--|--|------------|
| BS     | IS   | FS                   | o                   | '  | " | o          | '  | "  | o               | '  | "  | o              | ' | " | m                      | Mb | % | °                                 | m | f | f              | TITLE      | LATITUDE | DEPARTURE              | R.L.    | FIELD         | CALCS      | CHECK  |                           |          |  |  |                         |  |  |  |                    |  |  |            |
|        |      | 566400 N<br>219750 E |                     |    |   |            |    |    |                 |    |    |                |   |   |                        |    |   |                                   |   |   |                | 219<br>750 |          |                        | 67.27   |               |            |        | RL from previous gridling |          |  |  |                         |  |  |  |                    |  |  |            |
|        |      | 219800 E             |                     |    |   |            |    |    |                 |    |    |                |   |   |                        |    |   |                                   |   |   |                | 219<br>800 |          |                        | 70.898  | BHL<br>9/5/83 |            |        |                           |          |  |  |                         |  |  |  |                    |  |  |            |
|        |      | 219850 E             |                     |    |   |            |    |    |                 |    |    |                |   |   |                        |    |   |                                   |   |   |                | 219<br>850 |          |                        | 71.942  | "             |            |        | Δ 3577 RL 71.79           |          |  |  |                         |  |  |  |                    |  |  |            |
|        |      | 219900 E             |                     |    |   |            |    |    |                 |    |    |                |   |   |                        |    |   |                                   |   |   |                | 219<br>900 |          |                        | 67.375  | "             |            |        |                           |          |  |  |                         |  |  |  |                    |  |  |            |
|        |      | 219950 E             |                     |    |   |            |    |    |                 |    |    |                |   |   |                        |    |   |                                   |   |   |                | 219<br>950 |          |                        | 71.240  | "             |            |        |                           |          |  |  |                         |  |  |  |                    |  |  |            |
|        |      | 220000 E             |                     |    |   |            |    |    |                 |    |    |                |   |   |                        |    |   |                                   |   |   |                | 220<br>000 |          |                        | 76.831  | "             |            |        |                           |          |  |  |                         |  |  |  |                    |  |  |            |
|        |      | 220050 E             |                     |    |   |            |    |    |                 |    |    |                |   |   |                        |    |   |                                   |   |   |                |            |          |                        | 82.032  | "             |            |        |                           |          |  |  |                         |  |  |  |                    |  |  |            |
|        |      | 220100 E             |                     |    |   |            |    |    |                 |    |    |                |   |   |                        |    |   |                                   |   |   |                | 220<br>100 |          |                        | 86.047  | "             |            |        |                           |          |  |  |                         |  |  |  |                    |  |  |            |
|        |      | 220150 E             |                     |    |   |            |    |    |                 |    |    |                |   |   |                        |    |   |                                   |   |   |                | 220<br>150 |          |                        | 98.646  | "             |            |        |                           |          |  |  |                         |  |  |  |                    |  |  |            |
|        |      | 220200 E             |                     |    |   |            |    |    |                 |    |    |                |   |   |                        |    |   |                                   |   |   |                | 220<br>200 |          |                        | 102.922 | "             |            |        |                           |          |  |  |                         |  |  |  |                    |  |  |            |
|        |      | 220250 E             |                     |    |   |            |    |    |                 |    |    |                |   |   |                        |    |   |                                   |   |   |                |            |          |                        | 108.113 |               |            |        |                           |          |  |  |                         |  |  |  |                    |  |  |            |
|        |      | 220300 E             |                     |    |   |            |    |    |                 |    |    |                |   |   |                        |    |   |                                   |   |   |                | 220<br>250 |          |                        | 106.28  |               |            |        | Δ 3569                    |          |  |  |                         |  |  |  |                    |  |  |            |
|        |      | 220350 E             |                     |    |   |            |    |    |                 |    |    |                |   |   |                        |    |   |                                   |   |   |                |            |          |                        | 107.740 |               |            |        |                           |          |  |  |                         |  |  |  |                    |  |  |            |
|        |      | 220400 E             |                     |    |   |            |    |    |                 |    |    |                |   |   |                        |    |   |                                   |   |   |                | 300        |          |                        | 113.868 |               |            |        |                           |          |  |  |                         |  |  |  |                    |  |  |            |
|        |      | 220450 E             |                     |    |   |            |    |    |                 |    |    |                |   |   |                        |    |   |                                   |   |   |                |            |          |                        | 116.351 |               |            |        |                           |          |  |  |                         |  |  |  |                    |  |  |            |
|        |      | 220500 E             |                     |    |   |            |    |    |                 |    |    |                |   |   |                        |    |   |                                   |   |   |                | 400        |          |                        | 118.825 |               |            |        | Δ 3584 RL 116.30          |          |  |  |                         |  |  |  |                    |  |  |            |
|        |      | 220550 E             |                     |    |   |            |    |    |                 |    |    |                |   |   |                        |    |   |                                   |   |   |                |            |          |                        | 120.575 |               |            |        |                           |          |  |  |                         |  |  |  |                    |  |  |            |
|        |      | 220600 E             |                     |    |   |            |    |    |                 |    |    |                |   |   |                        |    |   |                                   |   |   |                | 500        |          |                        | 125.25  |               |            |        |                           |          |  |  |                         |  |  |  |                    |  |  |            |
| 712014 | 3582 | 220600 E             | 348                 | 39 |   | 252        | 54 | 27 | 269             | 27 | 12 | 679.832        |   |   |                        |    |   |                                   |   |   |                | 679.801    | 1.48     | 2.18                   | 566400  | 566399.937    | 220599.976 | 124.37 |                           |          |  |  |                         |  |  |  |                    |  |  |            |
|        |      |                      |                     |    |   |            |    |    |                 |    |    |                |   |   |                        |    |   |                                   |   |   |                | 220600     |          |                        | 124.496 |               |            |        |                           |          |  |  |                         |  |  |  |                    |  |  |            |

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

LOCATION ..... 566400N

SHEET NO. .... 5

LOCATION ..... 6

GRID ..... R.L. DATUM ..... CLOSURE 1 in .....

| 7       | 8       |                    | 9   |                  | 11  |         | 12 |     |              | 13 |      |                  | 14 |                     | 15 | 16 | 17 | 18                   |       | 19       | 20        | 21-24           |            |        | 25-27   |  |  | 28 |
|---------|---------|--------------------|-----|------------------|-----|---------|----|-----|--------------|----|------|------------------|----|---------------------|----|----|----|----------------------|-------|----------|-----------|-----------------|------------|--------|---------|--|--|----|
|         | BS      | IS                 | FS  | HORIZONTAL ANGLE |     | BEARING |    |     | ZENITH ANGLE |    |      | E.D.M.I. Reading |    | HORIZONTAL DISTANCE |    |    |    | STATION CO-ORDINATES |       |          |           | INITIALS & DATE |            |        | REMARKS |  |  |    |
|         |         |                    | o   | "                | o   | '       | "  | o   | '            | "  | o    | '                | "  | m                   | m  | m  | m  | m                    | TITLE | LATITUDE | DEPARTURE | R.L.            | FIELD      | CALCS  | CHECK   |  |  |    |
| TELECOM | 3582    | 566400N<br>220650E | 347 | 19               | 251 | 34      | 27 | 269 | 31           | 12 | 632  | 139              |    |                     |    |    |    | 632.117              | 1.48  | 2.18     |           | 566399.944      | 220650.041 | 125.56 |         |  |  |    |
|         |         | 220700E            | 345 | 46               | 250 | 01      | 27 | 269 | 33           | 12 | 584  | 827              |    |                     |    |    |    | 584.869              |       |          |           | 566399.936      | 220700.069 | 126.30 |         |  |  |    |
| TELECOM | RODWARD | 220750E            | 256 | 42               | 152 | 10      | 35 | 269 | 54           | 12 | 903  | 465              |    |                     |    |    |    | 903.464              |       |          |           | 566400.017      | 220749.843 | 126.43 |         |  |  |    |
|         |         | 220800E            | 253 | 57               | 149 | 25      | 35 | 269 | 55           | 54 | 927  | 970              |    |                     |    |    |    | 927.969              |       |          |           | 566400.070      | 220800.157 | 126.85 |         |  |  |    |
|         |         | 220850E            | 251 | 22               | 146 | 50      | 35 | 269 | 55           | 30 | 954  | 300              |    |                     |    |    |    | 954.299              |       |          |           | 566400.114      | 220850.089 | 126.71 |         |  |  |    |
|         |         | 220900E            | 248 | 55               | 144 | 23      | 35 | 269 | 55           | 00 | 982  | 608              |    |                     |    |    |    | 982.607              |       |          |           | 566400.141      | 220900.245 | 126.53 |         |  |  |    |
|         |         | 220950E            | 246 | 37               | 142 | 05      | 35 | 269 | 51           | 54 | 1012 | 571              |    |                     |    |    |    | 1012.568             |       |          |           | 566400.104      | 220950.253 | 125.57 |         |  |  |    |
| TELECOM | 3582    | 221000E            | 327 | 05               | 231 | 20      | 27 | 269 | 40           | 06 | 320  | 216              |    |                     |    |    |    | 320.211              | 1.48  | 2.18     |           | 566399.710      | 220999.706 | 129.01 |         |  |  |    |
|         |         | 221050E            | 320 | 44               | 224 | 59      | 27 | 268 | 20           | 12 | 282  | 621              |    |                     |    |    |    | 282.502              |       |          |           | 566399.250      | 221050.024 | 122.66 |         |  |  |    |
|         |         | 221100E            | 312 | 35               | 216 | 50      | 27 | 267 | 59           | 54 | 249  | 802              |    |                     |    |    |    | 249.650              |       |          |           | 566399.945      | 221100.063 | 122.13 |         |  |  |    |
|         |         | 221150E            | 302 | 06               | 206 | 21      | 27 | 267 | 48           | 24 | 223  | 459              |    |                     |    |    |    | 223.295              |       |          |           | 566399.659      | 221150.614 | 122.31 |         |  |  |    |
|         |         | 221200E            | 289 | 41               | 193 | 56      | 57 | 267 | 48           | 36 | 205  | 852              |    |                     |    |    |    | 205.852              |       |          |           | 566399.960      | 221200.128 | 122.99 |         |  |  |    |
|         |         | 221250E            | 275 | 44               | 179 | 59      | 27 | 267 | 44           | 12 | 200  | 179              |    |                     |    |    |    | 200.023              |       |          |           | 566399.718      | 221249.783 | 122.95 |         |  |  |    |
|         |         | 221300E            | 261 | 36               | 165 | 51      | 27 | 268 | 09           | 00 | 206  | 135              |    |                     |    |    |    | 206.028              |       |          |           | 566399.958      | 221300.091 | 124.21 |         |  |  |    |
|         |         | 221350E            | 248 | 51               | 153 | 06      | 27 | 268 | 20           | 12 | 224  | 090              |    |                     |    |    |    | 223.996              |       |          |           | 566399.969      | 221351.068 | 124.36 |         |  |  |    |
|         |         | 221400E            | 238 | 42               | 143 | 03      | 27 | 268 | 46           | 00 | 250  | 019              |    |                     |    |    |    | 249.961              |       |          |           | 566399.962      | 221399.981 | 125.42 |         |  |  |    |
|         |         | 221450E            | 230 | 41               | 134 | 56      | 27 | 268 | 52           | 12 | 284  | 928              |    |                     |    |    |    | 282.822              |       |          |           | 566399.920      | 221449.985 | 125.77 |         |  |  |    |
|         |         | 221500E            | 224 | 15               | 128 | 30      | 27 | 269 | 13           | 54 | 320  | 879              |    |                     |    |    |    | 320.850              |       |          |           | 566399.974      | 221500.825 | 126.56 |         |  |  |    |

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

LOCATION ..... 566400 N

SHEET NO. .... 5

LOCATION ..... 6

GRID ..... R.L. DATUM ..... CLOSURE 1 in ..... 4

| 7 LINE  |         |                      | 11 HORIZONTAL ANGLE |    |    | 12 BEARING |    |    | 13 ZENITH ANGLE |    |    | 14 E. D. M. I. | 15 BAROMETRIC PRESSURE | 16 ATMOSPHERIC CORRECTION SETTING | 17 TEMPERATURE | 18 HORIZONTAL DISTANCE |      | 19 H. I. | 20 H. T. | 21-24 STATION CO-ORDINATES |            |         |       | 25-27 INITIALS & DATE |       |                  | 28 REMARKS |
|---------|---------|----------------------|---------------------|----|----|------------|----|----|-----------------|----|----|----------------|------------------------|-----------------------------------|----------------|------------------------|------|----------|----------|----------------------------|------------|---------|-------|-----------------------|-------|------------------|------------|
| BS      | IS      | FS                   | o                   | '  | "  | o          | '  | "  | o               | '  | "  | m              | Mb                     |                                   | °              | m                      | f    | f        | TITLE    | LATITUDE                   | DEPARTURE  | R.L.    | FIELD | CALCS                 | CHECK |                  |            |
| TELECOM | 358 1/2 | 566400 N<br>221550 E | 219                 | 23 | 42 | 123        | 39 | 09 | 269             | 22 | 12 | 360.713        |                        |                                   |                | 360.691                | 1.48 | 2.12     | 566400   | 566399.862                 | 221549.995 | 126.89  | BHL   |                       |       |                  |            |
|         |         | 221600 E             |                     |    |    |            |    |    |                 |    |    |                |                        |                                   |                |                        |      |          | 221550   |                            |            |         |       |                       |       |                  |            |
|         |         | 221650 E             |                     |    |    |            |    |    |                 |    |    |                |                        |                                   |                |                        |      |          | 600      |                            |            | 124.664 |       |                       |       |                  |            |
|         |         | 221700 E             |                     |    |    |            |    |    |                 |    |    |                |                        |                                   |                |                        |      |          | 650      |                            |            | 123.993 |       |                       |       |                  |            |
|         |         | 221750 E             |                     |    |    |            |    |    |                 |    |    |                |                        |                                   |                |                        |      |          | 700      |                            |            | 126.156 |       |                       |       |                  |            |
|         |         | 221800 E             |                     |    |    |            |    |    |                 |    |    |                |                        |                                   |                |                        |      |          | 750      |                            |            | 127.803 |       |                       |       |                  |            |
|         |         | 221850 E             |                     |    |    |            |    |    |                 |    |    |                |                        |                                   |                |                        |      |          | 800      |                            |            | 127.451 |       |                       |       |                  |            |
|         |         | 221900 E             |                     |    |    |            |    |    |                 |    |    |                |                        |                                   |                |                        |      |          | 850      |                            |            | 125.764 |       |                       |       |                  |            |
|         |         | 221950 E             |                     |    |    |            |    |    |                 |    |    |                |                        |                                   |                |                        |      |          | 900      |                            |            | 124.590 |       |                       |       |                  |            |
|         |         | 222000 E             |                     |    |    |            |    |    |                 |    |    |                |                        |                                   |                |                        |      |          | 950      |                            |            | 124.569 |       |                       |       | Δ 3594 RL 124.50 |            |
|         |         |                      |                     |    |    |            |    |    |                 |    |    |                |                        |                                   |                |                        |      |          | 566400   |                            |            | 122.706 |       |                       |       |                  |            |
|         |         |                      |                     |    |    |            |    |    |                 |    |    |                |                        |                                   |                |                        |      |          | 222000   |                            |            |         |       |                       |       |                  |            |





SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

LOCATION 566600N

SHEET NO 5

LOCATION

GRID R.L. DATUM CLOSURE 1 in

| 7       | 8    | 9                  | 11               |    |   | 12      |    |    | 13                               |    |    | 14      | 15 | 16                             | 17            | 18                     |         |      | 19    | 20         | 21-24               |            |        | 25-27                |       |         | 28 |
|---------|------|--------------------|------------------|----|---|---------|----|----|----------------------------------|----|----|---------|----|--------------------------------|---------------|------------------------|---------|------|-------|------------|---------------------|------------|--------|----------------------|-------|---------|----|
|         |      |                    | HORIZONTAL ANGLE |    |   | BEARING |    |    | ZENITH ANGLE<br>TARGET REFLECTOR |    |    |         |    |                                |               | E. D. M. I.<br>Reading |         |      |       |            | HORIZONTAL DISTANCE |            |        | STATION CO-ORDINATES |       |         |    |
| BS      | IS   | FS                 | °                | '  | " | °       | '  | "  | °                                | '  | "  | m       | mb | ATMOSPHERIC CORRECTION SETTING | % TEMPERATURE | m                      | m       | m    | TITLE | LATITUDE   | DEPARTURE           | R.L.       | FIELD  | CALCS                | CHECK | REMARKS |    |
| TELECOM | 3597 | 566600N<br>221550E | 05               | 08 |   | 269     | 58 | 13 | 270                              | 17 | 30 | 300.074 |    |                                |               |                        | 300.070 | 1.57 | 2.18  |            | 566599.856          | 221549.919 | 131.47 |                      |       |         |    |
|         |      | 221600E            | 05               | 09 |   | 269     | 59 | 13 | 270                              | 12 | 12 | 250.032 |    |                                |               |                        | 250.030 |      |       |            | 566599.955          | 221599.959 | 130.83 |                      |       |         |    |
|         |      | 221650E            | 05               | 08 |   | 269     | 58 | 13 | 270                              | 22 | 00 | 199.956 |    |                                |               |                        | 199.952 |      |       |            | 566599.908          | 221650.037 | 130.22 |                      |       |         |    |
|         |      | 221700E            | 05               | 07 |   | 269     | 59 | 13 | 270                              | 30 | 00 | 149.991 |    |                                |               |                        | 149.985 |      |       |            | 566599.891          | 221700.004 | 131.25 |                      |       |         |    |
|         |      | 221750E            | 05               | 07 |   | 269     | 59 | 13 | 270                              | 57 | 00 | 100.041 |    |                                |               |                        | 100.027 |      |       |            | 566599.931          | 221749.962 | 131.60 |                      |       |         |    |
|         |      | 221800E            | 05               | 09 |   | 269     | 59 | 13 | 271                              | 39 | 00 | 49.978  |    |                                |               |                        | 49.957  |      |       |            | 566600.001          | 221800.032 | 131.38 |                      |       |         |    |
|         |      | 221850E            |                  |    |   |         |    |    |                                  |    |    | 49.976  |    |                                |               |                        |         |      | 3597  | 566600.012 | 221849.989          | 130.55     |        |                      |       |         |    |
| TELECOM | 3597 | 221900E            | 185              | 09 |   | 89      | 59 | 13 | 269                              | 02 | 12 | 49.976  |    |                                |               |                        | 49.969  |      |       |            | 566600.023          | 221899.958 | 129.10 |                      |       |         |    |
|         |      | 221950E            | 185              | 09 |   | 89      | 59 | 13 | 269                              | 26 | 36 | 100.026 |    |                                |               |                        | 100.021 |      |       |            | 566600.035          | 221950.010 | 128.97 |                      |       |         |    |
|         |      | 222000E            | 185              | 09 |   | 89      | 59 | 13 | 268                              | 44 | 12 | 150.920 |    |                                |               |                        | 150.888 |      |       |            | 566600.046          | 222000.872 | 126.61 |                      |       |         |    |

# SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

LOCATION 566800 N.

SHEET NO. 5

LOCATION 6

GRID 2 R.L. DATUM 3 CLOSURE 1 in 4

| LINE    |           |                    | HORIZONTAL ANGLE |    | BEARING |    | ZENITH ANGLE |     | E. D. M. I. Reading |    | BAROMETRIC PRESSURE |   |   | ATMOSPHERIC CORRECTION SETTING |   |   | TEMPERATURE |   |   | HORIZONTAL DISTANCE |          |           | H. I. H. T. |       |       | STATION CO-ORDINATES |  |  |  | INITIALS & DATE |  |  | REMARKS |  |  |  |  |
|---------|-----------|--------------------|------------------|----|---------|----|--------------|-----|---------------------|----|---------------------|---|---|--------------------------------|---|---|-------------|---|---|---------------------|----------|-----------|-------------|-------|-------|----------------------|--|--|--|-----------------|--|--|---------|--|--|--|--|
| BS      | IS        | FS                 | o                | "  | o       | "  | o            | "   | m                   | Mb | %                   | ° | ° | m                              | m | m | m           | m | m | TITLE               | LATITUDE | DEPARTURE | R.L.        | FIELD | CALCS | CHECK                |  |  |  |                 |  |  |         |  |  |  |  |
|         |           | 566800N<br>219750E |                  |    |         |    |              |     |                     |    |                     |   |   |                                |   |   |             |   |   |                     |          |           |             |       |       |                      |  |  |  |                 |  |  |         |  |  |  |  |
|         |           | 219800E            |                  |    |         |    |              |     |                     |    |                     |   |   |                                |   |   |             |   |   |                     |          |           |             |       |       |                      |  |  |  |                 |  |  |         |  |  |  |  |
|         |           | 219850E            |                  |    |         |    |              |     |                     |    |                     |   |   |                                |   |   |             |   |   |                     |          |           |             |       |       |                      |  |  |  |                 |  |  |         |  |  |  |  |
|         |           | 219900E            |                  |    |         |    |              |     |                     |    |                     |   |   |                                |   |   |             |   |   |                     |          |           |             |       |       |                      |  |  |  |                 |  |  |         |  |  |  |  |
|         |           | 219950E            |                  |    |         |    |              |     |                     |    |                     |   |   |                                |   |   |             |   |   |                     |          |           |             |       |       |                      |  |  |  |                 |  |  |         |  |  |  |  |
|         |           | 220000E            |                  |    |         |    |              |     |                     |    |                     |   |   |                                |   |   |             |   |   |                     |          |           |             |       |       |                      |  |  |  |                 |  |  |         |  |  |  |  |
|         |           | 220050E            |                  |    |         |    |              |     |                     |    |                     |   |   |                                |   |   |             |   |   |                     |          |           |             |       |       |                      |  |  |  |                 |  |  |         |  |  |  |  |
|         |           | 220100E            |                  |    |         |    |              |     |                     |    |                     |   |   |                                |   |   |             |   |   |                     |          |           |             |       |       |                      |  |  |  |                 |  |  |         |  |  |  |  |
|         |           | 220150E            |                  |    |         |    |              |     |                     |    |                     |   |   |                                |   |   |             |   |   |                     |          |           |             |       |       |                      |  |  |  |                 |  |  |         |  |  |  |  |
|         |           | 220200E            |                  |    |         |    |              |     |                     |    |                     |   |   |                                |   |   |             |   |   |                     |          |           |             |       |       |                      |  |  |  |                 |  |  |         |  |  |  |  |
|         |           | 220250E            |                  |    |         |    |              |     |                     |    |                     |   |   |                                |   |   |             |   |   |                     |          |           |             |       |       |                      |  |  |  |                 |  |  |         |  |  |  |  |
|         |           | 220300E            |                  |    |         |    |              |     |                     |    |                     |   |   |                                |   |   |             |   |   |                     |          |           |             |       |       |                      |  |  |  |                 |  |  |         |  |  |  |  |
| TELECOM | ROAD HEAD | 220300E            | 288              | 86 | 184     | 04 | 35           | 268 | 45                  | 00 | 399.913             |   |   |                                |   |   |             |   |   |                     |          |           |             |       |       |                      |  |  |  |                 |  |  |         |  |  |  |  |
|         |           | 220350E            | 281              | 25 | 176     | 53 | 35           | 268 | 51                  | 54 | 399.236             |   |   |                                |   |   |             |   |   |                     |          |           |             |       |       |                      |  |  |  |                 |  |  |         |  |  |  |  |
|         |           | 220400E            | 274              | 18 | 169     | 46 | 35           | 268 | 59                  | 06 | 405.434             |   |   |                                |   |   |             |   |   |                     |          |           |             |       |       |                      |  |  |  |                 |  |  |         |  |  |  |  |
|         |           | 220450E            | 267              | 32 | 163     | 00 | 35           | 268 | 59                  | 54 | 417.261             |   |   |                                |   |   |             |   |   |                     |          |           |             |       |       |                      |  |  |  |                 |  |  |         |  |  |  |  |
|         |           | 220500E            |                  |    |         |    |              |     |                     |    |                     |   |   |                                |   |   |             |   |   |                     |          |           |             |       |       |                      |  |  |  |                 |  |  |         |  |  |  |  |
|         |           | 220550E            |                  |    |         |    |              |     |                     |    |                     |   |   |                                |   |   |             |   |   |                     |          |           |             |       |       |                      |  |  |  |                 |  |  |         |  |  |  |  |
| TELECOM | ROAD HEAD | 566800N<br>220600E | 250              | 15 | 145     | 43 | 35           | 268 | 53                  | 00 | 482.986             |   |   |                                |   |   |             |   |   |                     |          |           |             |       |       |                      |  |  |  |                 |  |  |         |  |  |  |  |
|         |           |                    |                  |    |         |    |              |     |                     |    |                     |   |   |                                |   |   |             |   |   |                     |          |           |             |       |       |                      |  |  |  |                 |  |  |         |  |  |  |  |

566800 N

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

LOCATION 566800 N

SHEET NO 5

LOCATION 6

GRID R.L. DATUM CLOSURE 1 in

| 7        | 8        |                      |     | 11               |  |     | 12      |    |     | 13                               |    |          | 14                     | 15                  | 16                             | 17          | 18                  |      | 19   | 20   | 21         |            |             | 22     |       |       | 23    |                 |  | 24 |         |  | 25 |  |  | 26 |  |  | 27 |  |  | 28 |
|----------|----------|----------------------|-----|------------------|--|-----|---------|----|-----|----------------------------------|----|----------|------------------------|---------------------|--------------------------------|-------------|---------------------|------|------|------|------------|------------|-------------|--------|-------|-------|-------|-----------------|--|----|---------|--|----|--|--|----|--|--|----|--|--|----|
|          | BS       | IS                   | FS  | HORIZONTAL ANGLE |  |     | BEARING |    |     | ZENITH ANGLE<br>TARGET REFLECTOR |    |          | E. D. M. I.<br>Reading | BAROMETRIC PRESSURE | ATMOSPHERIC CORRECTION SETTING | TEMPERATURE | HORIZONTAL DISTANCE |      | H.I. | H.T. | TITLE      | LATITUDE   | DEPARTURE   | R.L.   | FIELD | CALCS | CHECK | INITIALS & DATE |  |    | REMARKS |  |    |  |  |    |  |  |    |  |  |    |
| TELECOM  | BOLDHEAD | 566800 N<br>220650 E | 245 | 38               |  | 141 | 06      | 35 | 269 | 03                               | 36 | 512.888  |                        |                     |                                |             | 512.819             | 1.90 | 3.12 |      | 566799.878 | 220650.114 | 119.54      |        |       |       |       |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |
|          |          | 220700 E             | 241 | 32               |  | 137 | 00      | 35 | 269 | 10                               | 48 | 545.575  |                        |                     |                                |             | 545.519             |      |      |      | 566799.999 | 220700.125 | 120.15      |        |       |       |       |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |
|          |          | 220750 E             | 237 | 56               |  | 133 | 24      | 35 | 269 | 18                               | 00 | 580.625  |                        |                     |                                |             | 580.592             |      |      |      | 566800.041 | 220749.926 | 120.86      |        |       |       |       |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |
|          |          | 220800 E             | 234 | 44               |  | 130 | 12      | 35 | 269 | 24                               | 00 | 618.208  |                        |                     |                                |             | 618.168             |      |      |      | 566799.949 | 220800.237 | 121.48      |        |       |       |       |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |
|          |          | 220850 E             | 231 | 53               |  | 127 | 23      | 55 | 269 | 28                               | 06 | 1657.015 |                        |                     |                                |             | 656.987             |      |      |      | 566800.055 | 220850.118 | 121.86      |        |       |       |       |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |
|          |          | 220900 E             | 229 | 25               |  | 124 | 53      | 35 | 269 | 32                               | 00 | 697.456  |                        |                     |                                |             | 697.433             |      |      |      | 566800.066 | 220900.199 | 122.28      |        |       |       |       |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |
|          |          | 220950 E             |     |                  |  |     |         |    | 269 |                                  |    |          |                        |                     |                                |             |                     |      |      |      |            |            |             |        |       |       |       |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |
|          |          | 221000 E             | 225 | 12               |  | 120 | 41      | 35 | 269 | 45                               | 00 | 781.229  |                        |                     |                                |             | 781.222             |      |      |      | 566800.234 | 220999.985 | 124.55      |        |       |       |       |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |
|          |          | 221050 E             | 223 | 28               |  | 118 | 56      | 35 | 269 | 51                               | 00 | 824.826  |                        |                     |                                |             | 824.823             |      |      |      | 566799.836 | 221050.006 | 125.80      |        |       |       |       |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |
|          |          | 221100 E             | 221 | 51               |  | 117 | 19      | 35 | 269 | 56                               | 42 | 868.928  |                        |                     |                                |             | 868.928             |      |      |      | 566800.441 | 221100.110 | 127.15      |        |       |       |       |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |
|          |          | 221150 E             | 220 | 25               |  | 115 | 53      | 35 | 270 | 04                               | 00 | 913.699  |                        |                     |                                |             | 913.698             |      |      |      | 566800.025 | 221150.123 | 129.02      |        |       |       |       |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |
|          |          | 221200 E             | 219 | 07               |  | 114 | 35      | 35 | 270 | 12                               | 36 | 958.760  |                        |                     |                                |             | 958.754             |      |      |      | 566800.025 | 221199.932 | 131.47      |        |       |       |       |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |
|          |          | 221250 E             | 217 | 56               |  | 113 | 24      | 35 | 270 | 24                               | 00 | 1004.414 |                        |                     |                                |             | 1004.390            |      |      |      | 566799.982 | 221249.865 | 134.97      |        |       |       |       |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |
|          |          | 221300 E             | 216 | 51               |  | 112 | 19      | 35 | 270 | 34                               | 00 | 1050.569 |                        |                     |                                |             | 1050.578            |      |      |      | 566799.957 | 221299.915 | 138.35      |        |       |       |       |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |
| HELLEMAN | 3599     | 221350 E             |     |                  |  |     |         |    |     |                                  |    |          |                        |                     |                                |             |                     |      |      |      | 566799.273 | 221349.969 | 139.92      |        |       |       |       |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |
|          |          | 221400 E             |     |                  |  |     |         |    |     |                                  |    |          |                        |                     |                                |             |                     |      |      |      | 799.906    | 400.057    | 140.30      |        |       |       |       |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |
|          |          | 221450 E             |     |                  |  |     |         |    |     |                                  |    |          |                        |                     |                                |             |                     |      |      |      | 799.823    | 449.990    | 138.40      |        |       |       |       |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |
|          |          | 221500 E             |     |                  |  |     |         |    |     |                                  |    |          |                        |                     |                                |             |                     |      |      |      | 566800     | 799.886    | 221,199.987 | 138.99 |       |       |       |                 |  |    |         |  |    |  |  |    |  |  |    |  |  |    |

566800 N

cf 138.10 expect gridding

# SURFACE CONTROL CALCULATION SHEET

## CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

LOCATION 566800 N

SHEET NO. 5

LOCATION 6

GRID 2 R.L. DATUM 3 CLOSURE 1 in 4

| 7 LINE   |      |                     | 11 HORIZONTAL ANGLE |   |   | 12 BEARING |   |   | 13 ZENITH ANGLE |   |   | 14 E.D.M.I. Reading |    |   | 15 BAROMETRIC PRESSURE |   |   | 16 ATMOSPHERIC CORRECTION SETTING |         |             | 17 TEMPERATURE |             |         | 18 HORIZONTAL DISTANCE |       |        | 19 H.I. |  |  | 20 H.T. |  |  | 21-24 STATION CO-ORDINATES |  |  |  | 25-27 INITIALS & DATE |  |  | 28 REMARKS |
|----------|------|---------------------|---------------------|---|---|------------|---|---|-----------------|---|---|---------------------|----|---|------------------------|---|---|-----------------------------------|---------|-------------|----------------|-------------|---------|------------------------|-------|--------|---------|--|--|---------|--|--|----------------------------|--|--|--|-----------------------|--|--|------------|
| BS       | IS   | FS                  | o                   | ' | " | o          | ' | " | o               | ' | " | m                   | mb | % | °                      | m | m | m                                 | TITLE   | LATITUDE    | DEPARTURE      | R.L.        | FIELD   | CALCS                  | CHECK |        |         |  |  |         |  |  |                            |  |  |  |                       |  |  |            |
| HELLEMAN | 3599 | 566800 N<br>221550E |                     |   |   |            |   |   |                 |   |   |                     |    |   |                        |   |   |                                   | 566 800 | 566,799.861 | 221,550.044    | 136.68      | BHL     | MGM                    |       |        |         |  |  |         |  |  |                            |  |  |  |                       |  |  |            |
|          |      |                     |                     |   |   |            |   |   |                 |   |   |                     |    |   |                        |   |   |                                   | 221 550 |             |                |             | 2/10/83 | 10/1/83                |       |        |         |  |  |         |  |  |                            |  |  |  |                       |  |  |            |
| "        | "    | 221600E             |                     |   |   |            |   |   |                 |   |   |                     |    |   |                        |   |   |                                   | 566 800 | 799.967     | 599.986        | 136.58      | "       | "                      |       |        |         |  |  |         |  |  |                            |  |  |  |                       |  |  |            |
|          |      |                     |                     |   |   |            |   |   |                 |   |   |                     |    |   |                        |   |   |                                   | 221 600 |             |                |             |         |                        |       |        |         |  |  |         |  |  |                            |  |  |  |                       |  |  |            |
|          |      | 221650E             |                     |   |   |            |   |   |                 |   |   |                     |    |   |                        |   |   |                                   |         | 566 800.073 | 221,649.986    | 134.66      |         |                        |       | Δ 3599 |         |  |  |         |  |  |                            |  |  |  |                       |  |  |            |
|          |      |                     |                     |   |   |            |   |   |                 |   |   |                     |    |   |                        |   |   |                                   |         |             |                |             |         |                        |       |        |         |  |  |         |  |  |                            |  |  |  |                       |  |  |            |
| HELLEMAN | 3599 | 221700E             |                     |   |   |            |   |   |                 |   |   |                     |    |   |                        |   |   |                                   | 566 800 | 566,800.106 | 221,700.080    | 133.15      | BHL     | MGM                    |       |        |         |  |  |         |  |  |                            |  |  |  |                       |  |  |            |
|          |      |                     |                     |   |   |            |   |   |                 |   |   |                     |    |   |                        |   |   |                                   | 221 700 |             |                |             | 2/14/83 | 10/1/83                |       |        |         |  |  |         |  |  |                            |  |  |  |                       |  |  |            |
| "        | "    | 221750E             |                     |   |   |            |   |   |                 |   |   |                     |    |   |                        |   |   |                                   |         | 800.111     | 749.898        | 131.25      | "       | "                      |       |        |         |  |  |         |  |  |                            |  |  |  |                       |  |  |            |
|          |      |                     |                     |   |   |            |   |   |                 |   |   |                     |    |   |                        |   |   |                                   | 750     |             |                |             |         |                        |       |        |         |  |  |         |  |  |                            |  |  |  |                       |  |  |            |
| "        | "    | 221800E             |                     |   |   |            |   |   |                 |   |   |                     |    |   |                        |   |   |                                   |         | 800.173     | 799.903        | 127.69      | "       | "                      |       |        |         |  |  |         |  |  |                            |  |  |  |                       |  |  |            |
|          |      |                     |                     |   |   |            |   |   |                 |   |   |                     |    |   |                        |   |   |                                   | 800     |             |                |             |         |                        |       |        |         |  |  |         |  |  |                            |  |  |  |                       |  |  |            |
| "        | "    | 221850E             | 95                  |   |   |            |   |   |                 |   |   |                     |    |   |                        |   |   |                                   |         | 566 800.148 | 221,850.026    | 125.59      | "       | "                      |       |        |         |  |  |         |  |  |                            |  |  |  |                       |  |  |            |
|          |      |                     |                     |   |   |            |   |   |                 |   |   |                     |    |   |                        |   |   |                                   | 850     |             |                |             |         |                        |       |        |         |  |  |         |  |  |                            |  |  |  |                       |  |  |            |
| "        | "    | 221900E             |                     |   |   |            |   |   |                 |   |   |                     |    |   |                        |   |   |                                   |         | 800.167     | 221,899.947    | 124.12      | "       | "                      |       |        |         |  |  |         |  |  |                            |  |  |  |                       |  |  |            |
|          |      |                     |                     |   |   |            |   |   |                 |   |   |                     |    |   |                        |   |   |                                   | 900     |             |                |             |         |                        |       |        |         |  |  |         |  |  |                            |  |  |  |                       |  |  |            |
| "        | "    | 221950E             |                     |   |   |            |   |   |                 |   |   |                     |    |   |                        |   |   |                                   |         | 566 800.186 | 221,944.961    | 123.41      | "       | "                      |       |        |         |  |  |         |  |  |                            |  |  |  |                       |  |  |            |
|          |      |                     |                     |   |   |            |   |   |                 |   |   |                     |    |   |                        |   |   |                                   | 950     |             |                |             |         |                        |       |        |         |  |  |         |  |  |                            |  |  |  |                       |  |  |            |
| "        | "    | 222000E             |                     |   |   |            |   |   |                 |   |   |                     |    |   |                        |   |   |                                   |         | 566 800     | 566,800.103    | 221,999.890 | 122.51  | "                      | "     |        |         |  |  |         |  |  |                            |  |  |  |                       |  |  |            |
|          |      |                     |                     |   |   |            |   |   |                 |   |   |                     |    |   |                        |   |   |                                   | 222 000 |             |                |             |         |                        |       |        |         |  |  |         |  |  |                            |  |  |  |                       |  |  |            |

566800N



SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

SHEET No. 5

LOCATION

LOCATION 567000 N

GRID R.L. DATUM CLOSURE 1 in

| 7       | 8        |                    | 11  |                  |   | 12  |         |    | 13  |              |    | 14       | 15 | 16 | 17 | 18                  |      |      | 19    | 20         | 21-24               |        |       | 25-27                |       |         | 28 |
|---------|----------|--------------------|-----|------------------|---|-----|---------|----|-----|--------------|----|----------|----|----|----|---------------------|------|------|-------|------------|---------------------|--------|-------|----------------------|-------|---------|----|
|         | BS       | IS                 | FS  | HORIZONTAL ANGLE |   |     | BEARING |    |     | ZENITH ANGLE |    |          |    |    |    | E. D. M. I. Reading |      |      |       |            | HORIZONTAL DISTANCE |        |       | STATION CO-ORDINATES |       |         |    |
|         |          |                    | o   | '                | " | o   | '       | "  | o   | '            | "  | m        | mb |    | %  | m                   | m    | m    | TITLE | LATITUDE   | DEPARTURE           | R.L.   | FIELD | CALCS                | CHECK | REMARKS |    |
| TELECOM | BAR HEAD | 567000N<br>220650E | 226 | 13               |   | 121 | 41      | 35 | 266 | 43           | 54 | 378.589  |    |    |    | 378.496             | 1.75 | 3.18 |       | 567000.180 | 220650.203          | 119.43 | BL    | BL                   |       |         |    |
|         | "        | 220700E            | 222 | 39               |   | 118 | 07      | 35 | 269 | 12           | 00 | 421.851  |    |    |    | 421.810             |      |      |       | 567000.181 | 220700.148          | 121.92 |       |                      |       |         |    |
|         |          | 220750E            | 219 | 46               |   | 115 | 14      | 35 | 269 | 16           | 00 | 466.606  |    |    |    | 466.568             |      |      |       | 567000.058 | 220750.164          | 121.83 |       |                      |       |         |    |
|         |          | 220800E            | 217 | 22               |   | 112 | 50      | 35 | 269 | 27           | 06 | 572.170  |    |    |    | 572.147             |      |      |       | 567000.211 | 220800.130          | 122.90 |       |                      |       |         |    |
|         |          | 220850E            | 215 | 23               |   | 110 | 51      | 35 | 269 | 50           | 30 | 538.608  |    |    |    | 538.606             |      |      |       | 567000.121 | 220850.142          | 126.26 |       |                      |       |         |    |
|         |          | 220900E            | 213 | 41               |   | 109 | 09      | 35 | 269 | 59           | 00 | 605.571  |    |    |    | 605.571             |      |      |       | 567000.280 | 220900.177          | 127.63 |       |                      |       |         |    |
|         |          | 220950E            | 212 | 15               |   | 107 | 43      | 35 | 270 | 07           | 00 | 653.040  |    |    |    | 653.039             |      |      |       | 567000.198 | 220950.183          | 129.14 |       |                      |       |         |    |
|         |          | 221000E            | 211 | 00               |   | 106 | 28      | 35 | 270 | 16           | 06 | 700.778  |    |    |    | 700.758             | 1.75 | 3.18 |       | 567000.281 | 221000.132          | 133.13 |       |                      |       |         |    |
|         |          | 221050E            | 209 | 55               |   | 105 | 23      | 35 | 270 | 19           | 30 | 748.797  |    |    |    | 748.785             |      |      |       | 567000.273 | 221050.074          | 132.05 |       |                      |       |         |    |
|         |          | 221100E            | 208 | 58               |   | 104 | 26      | 35 | 270 | 33           | 12 | 797.245  |    |    |    | 797.208             |      |      |       | 567000.192 | 221100.162          | 135.57 |       |                      |       |         |    |
|         |          | 221150E            | 208 | 08               |   | 103 | 36      | 35 | 270 | 28           | 24 | 845.651  |    |    |    | 845.622             |      |      |       | 567000.049 | 221150.028          | 134.79 |       |                      |       |         |    |
|         |          | 221200E            | 207 | 23               |   | 102 | 51      | 35 | 270 | 29           | 30 | 894.349  |    |    |    | 894.316             |      |      |       | 566999.987 | 221200.035          | 135.48 |       |                      |       |         |    |
|         |          | 221250E            | 206 | 44               |   | 102 | 12      | 35 | 270 | 31           | 42 | 943.137  |    |    |    | 943.097             |      |      |       | 566999.574 | 221249.914          | 136.50 |       |                      |       |         |    |
|         |          | 221300E            | 206 | 05               |   | 101 | 33      | 35 | 270 | 32           | 30 | 992.095  |    |    |    | 992.051             |      |      |       | 567000.234 | 221300.078          | 137.18 |       |                      |       |         |    |
|         |          | 221350E            | 205 | 32               |   | 101 | 00      | 35 | 270 | 30           | 42 | 1041.115 |    |    |    | 1041.073            |      |      |       | 567000.210 | 221350.062          | 137.10 |       |                      |       |         |    |
|         |          | 221400E            | 205 | 02               |   | 100 | 30      | 35 | 270 | 29           | 00 | 1090.233 |    |    |    | 1090.194            |      |      |       | 567000.176 | 221400.045          | 137.00 |       |                      |       |         |    |
|         |          | 221450E            | 204 | 35               |   | 100 | 03      | 35 | 270 | 29           | 42 | 1139.419 |    |    |    | 1139.376            |      |      |       | 567000.010 | 221450.010          | 137.65 |       |                      |       |         |    |
|         |          | 221500E            | 204 | 10               |   | 99  | 38      | 35 | 270 | 33           | 00 | 1188.543 |    |    |    | 1188.488            |      |      |       | 566999.947 | 221499.845          | 139.22 |       |                      |       |         |    |

567000 N



SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

LOCATION ..... 567200 N

SHEET No. .... 5

LOCATION ..... 6

GRID ..... R.L. DATUM ..... CLOSURE 1 in ..... 4

| LINE     |          |                    | HORIZONTAL ANGLE |    |   | BEARING |    |    | ZENITH ANGLE |    |    | E. D. M. I. |   |         | BAROMETRIC PRESSURE |    |   | ATMOSPHERIC CORRECTION SETTING |   |   | TEMPERATURE |   |       | HORIZONTAL DISTANCE |           |        | H. I. |       |       | H. T. |  |  | STATION CO-ORDINATES |  |  | INITIALS & DATE |  |  | REMARKS |  |  |
|----------|----------|--------------------|------------------|----|---|---------|----|----|--------------|----|----|-------------|---|---------|---------------------|----|---|--------------------------------|---|---|-------------|---|-------|---------------------|-----------|--------|-------|-------|-------|-------|--|--|----------------------|--|--|-----------------|--|--|---------|--|--|
| BS       | IS       | FS                 | o                | '  | " | o       | '  | "  | o            | '  | "  | o           | ' | "       | m                   | mb | % | %                              | ° | m | m           | m | TITLE | LATITUDE            | DEPARTURE | R. L.  | FIELD | CALCS | CHECK |       |  |  |                      |  |  |                 |  |  |         |  |  |
|          |          | 567200N<br>219750E |                  |    |   |         |    |    |              |    |    |             |   |         |                     |    |   |                                |   |   |             |   |       |                     | 88.629    | AJC    |       |       |       |       |  |  |                      |  |  |                 |  |  |         |  |  |
|          |          | 219800E            |                  |    |   |         |    |    |              |    |    |             |   |         |                     |    |   |                                |   |   |             |   |       |                     | 88.53     | 6/6/83 |       |       |       |       |  |  |                      |  |  |                 |  |  |         |  |  |
|          |          | 219850E            |                  |    |   |         |    |    |              |    |    |             |   |         |                     |    |   |                                |   |   |             |   |       |                     | 91.228    | "      |       |       |       |       |  |  |                      |  |  |                 |  |  |         |  |  |
|          |          | 219900E            |                  |    |   |         |    |    |              |    |    |             |   |         |                     |    |   |                                |   |   |             |   |       |                     | 93.959    | "      |       |       |       |       |  |  |                      |  |  |                 |  |  |         |  |  |
|          |          | 219950E            |                  |    |   |         |    |    |              |    |    |             |   |         |                     |    |   |                                |   |   |             |   |       |                     | 98.090    | "      |       |       |       |       |  |  |                      |  |  |                 |  |  |         |  |  |
|          |          | 220000E            |                  |    |   |         |    |    |              |    |    |             |   |         |                     |    |   |                                |   |   |             |   |       |                     | 101.499   | "      |       |       |       |       |  |  |                      |  |  |                 |  |  |         |  |  |
|          |          | 220050E            |                  |    |   |         |    |    |              |    |    |             |   |         |                     |    |   |                                |   |   |             |   |       |                     | 106.471   | "      |       |       |       |       |  |  |                      |  |  |                 |  |  |         |  |  |
|          |          | 220100E            |                  |    |   |         |    |    |              |    |    |             |   |         |                     |    |   |                                |   |   |             |   |       |                     | 106.39    | "      |       |       |       |       |  |  |                      |  |  |                 |  |  |         |  |  |
|          |          | 220150E            |                  |    |   |         |    |    |              |    |    |             |   |         |                     |    |   |                                |   |   |             |   |       |                     | 110.039   | "      |       |       |       |       |  |  |                      |  |  |                 |  |  |         |  |  |
|          |          | 220200E            |                  |    |   |         |    |    |              |    |    |             |   |         |                     |    |   |                                |   |   |             |   |       |                     | 112.424   | "      |       |       |       |       |  |  |                      |  |  |                 |  |  |         |  |  |
|          |          | 220250E            |                  |    |   |         |    |    |              |    |    |             |   |         |                     |    |   |                                |   |   |             |   |       |                     | 115.785   | "      |       |       |       |       |  |  |                      |  |  |                 |  |  |         |  |  |
|          |          | 220300E            |                  |    |   |         |    |    |              |    |    |             |   |         |                     |    |   |                                |   |   |             |   |       |                     | 116.929   | "      |       |       |       |       |  |  |                      |  |  |                 |  |  |         |  |  |
|          |          | 220350E            |                  |    |   |         |    |    |              |    |    |             |   |         |                     |    |   |                                |   |   |             |   |       |                     | 118.129   | "      |       |       |       |       |  |  |                      |  |  |                 |  |  |         |  |  |
|          |          | 220400E            |                  |    |   |         |    |    |              |    |    |             |   |         |                     |    |   |                                |   |   |             |   |       |                     | 125.79    | "      |       |       |       |       |  |  |                      |  |  |                 |  |  |         |  |  |
|          |          | 220450E            |                  |    |   |         |    |    |              |    |    |             |   |         |                     |    |   |                                |   |   |             |   |       |                     | 129.39    | "      |       |       |       |       |  |  |                      |  |  |                 |  |  |         |  |  |
| TELECOM. | ROADHEAD | 567200N<br>220350E | 192              | 11 |   | 87      | 39 | 35 | 274          | 07 | 30 |             |   | 21.960  |                     |    |   |                                |   |   |             |   |       |                     | 129.39    | BL     | BL    |       |       |       |  |  |                      |  |  |                 |  |  |         |  |  |
|          |          | 220400E            | 193              | 42 |   | 89      | 10 | 35 | 269          | 20 | 00 |             |   | 72.028  |                     |    |   |                                |   |   |             |   |       |                     | 126.97    |        |       |       |       |       |  |  |                      |  |  |                 |  |  |         |  |  |
|          |          | 220450E            | 194              | 03 |   | 89      | 31 | 35 | 268          | 27 | 00 |             |   | 121.907 |                     |    |   |                                |   |   |             |   |       |                     | 124.51    |        |       |       |       |       |  |  |                      |  |  |                 |  |  |         |  |  |
|          |          | 220500E            | 194              | 09 |   | 89      | 37 | 35 | 268          | 07 | 00 |             |   | 171.988 |                     |    |   |                                |   |   |             |   |       |                     | 122.15    |        |       |       |       |       |  |  |                      |  |  |                 |  |  |         |  |  |
|          |          | 220550E            | 194              | 17 |   | 89      | 45 | 35 | 267          | 22 | 30 |             |   | 222.111 |                     |    |   |                                |   |   |             |   |       |                     | 117.63    |        |       |       |       |       |  |  |                      |  |  |                 |  |  |         |  |  |
|          |          | 220600E            | 194              | 19 |   | 89      | 47 | 35 | 267          | 15 | 00 |             |   | 272.116 |                     |    |   |                                |   |   |             |   |       |                     | 114.30    |        |       |       |       |       |  |  |                      |  |  |                 |  |  |         |  |  |

567200N

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES.

LOCATION 567200N

SHEET N° 5

LOCATION 6

GRID R.L. DATUM CLOSURE 1 in

| 7       | 8         |                   |     | 11               |   |    | 12      |    |     | 13                               |    |          | 14                     |   |   | 15       | 16   | 17   | 18                  |   |   | 19         | 20         | 21-24                |               |               | 25-27           |       |  | 28 |         |  |
|---------|-----------|-------------------|-----|------------------|---|----|---------|----|-----|----------------------------------|----|----------|------------------------|---|---|----------|------|------|---------------------|---|---|------------|------------|----------------------|---------------|---------------|-----------------|-------|--|----|---------|--|
|         | BS        | IS                | FS  | HORIZONTAL ANGLE |   |    | BEARING |    |     | ZENITH ANGLE<br>TARGET REFLECTOR |    |          | E. D. M. I.<br>Reading |   |   |          |      |      | HORIZONTAL DISTANCE |   |   |            |            | STATION CO-ORDINATES |               |               | INITIALS & DATE |       |  |    | REMARKS |  |
|         |           |                   | o   | '                | " | o  | '       | "  | o   | '                                | "  | m        | m                      | m | m | m        | m    | m    | m                   | m | m | TITLE      | LATITUDE   | DEPARTURE            | R.L.          | FIELD         | CALCS           | CHECK |  |    |         |  |
| TELECOM | BOLD HEAD | 57200N<br>220650E | 194 | 20               |   | 89 | 48      | 35 | 267 | 33                               | 00 | 322.143  |                        |   |   | 321.849  | 1.75 | 3.18 |                     |   |   | 567200.099 | 220649.997 | 114.04               | BV<br>20/1/83 | BV<br>10/5/83 |                 |       |  |    |         |  |
|         |           | 220700E           | 194 | 22               |   | 89 | 50      | 35 | 268 | 16                               | 30 | 372.008  |                        |   |   | 371.839  |      |      |                     |   |   | 567200.049 | 220699.988 | 116.61               |               |               |                 |       |  |    |         |  |
|         |           | 220750E           | 194 | 23               |   | 89 | 51      | 35 | 268 | 41                               | 00 | 421.905  |                        |   |   | 421.820  |      |      |                     |   |   | 567200.063 | 220749.989 | 119.34               |               |               |                 |       |  |    |         |  |
|         |           | 220800E           | 194 | 26               |   | 89 | 54      | 35 | 268 | 56                               | 00 | 471.944  |                        |   |   | 471.862  |      |      |                     |   |   | 567199.774 | 220800.012 | 119.02               |               |               |                 |       |  |    |         |  |
|         |           | 220850E           | 194 | 26               |   | 89 | 54      | 35 | 269 | 07                               | 06 | 521.861  |                        |   |   | 521.799  |      |      |                     |   |   | 567199.852 | 220849.949 | 119.78               |               |               |                 |       |  |    |         |  |
|         |           | 220900E           | 194 | 26               |   | 89 | 54      | 35 | 269 | 15                               | 18 | 572.054  |                        |   |   | 572.006  |      |      |                     |   |   | 567199.931 | 220900.155 | 120.37               |               |               |                 |       |  |    |         |  |
|         |           | 220950E           | 194 | 26               |   | 89 | 54      | 35 | 269 | 23                               | 00 | 621.846  |                        |   |   | 621.810  |      |      |                     |   |   | 567200.010 | 220949.959 | 121.11               |               |               |                 |       |  |    |         |  |
|         |           | 221000E           | 194 | 25               |   | 89 | 53      | 35 | 269 | 26                               | 54 | 671.811  |                        |   |   | 671.780  |      |      |                     |   |   | 567200.284 | 220999.929 | 121.34               |               |               |                 |       |  |    |         |  |
|         |           | 221050E           | 194 | 26               |   | 89 | 54      | 35 | 269 | 34                               | 48 | 721.826  |                        |   |   | 721.867  |      |      |                     |   |   | 567200.167 | 221049.956 | 122.51               |               |               |                 |       |  |    |         |  |
|         |           | 221100E           | 194 | 27               |   | 89 | 55      | 35 | 269 | 38                               | 00 | 771.853  |                        |   |   | 771.837  |      |      |                     |   |   | 567200.022 | 221099.987 | 122.87               |               |               |                 |       |  |    |         |  |
|         |           | 221150E           | 194 | 27               |   | 89 | 55      | 35 | 269 | 40                               | 00 | 821.855  |                        |   |   | 821.841  |      |      |                     |   |   | 567200.086 | 221149.990 | 123.02               |               |               |                 |       |  |    |         |  |
|         |           | 221200E           | 194 | 27               |   | 89 | 55      | 25 | 269 | 44                               | 06 | 871.862  |                        |   |   | 871.853  |      |      |                     |   |   | 567200.150 | 221200.002 | 123.77               |               |               |                 |       |  |    |         |  |
|         |           | 221250E           | 194 | 28               |   | 89 | 56      | 35 | 269 | 48                               | 54 | 921.894  |                        |   |   | 921.889  |      |      |                     |   |   | 567199.946 | 221250.039 | 124.83               |               |               |                 |       |  |    |         |  |
|         |           | 221300E           | 194 | 28               |   | 89 | 56      | 35 | 269 | 55                               | 06 | 971.827  |                        |   |   | 971.826  |      |      |                     |   |   | 567199.996 | 221299.976 | 126.42               |               |               |                 |       |  |    |         |  |
|         |           | 221350E           | 194 | 28               |   | 89 | 56      | 35 | 269 | 53                               | 48 | 1021.854 |                        |   |   | 1021.852 |      |      |                     |   |   | 567200.046 | 221350.002 | 125.96               |               |               |                 |       |  |    |         |  |
|         |           | 221400E           | 194 | 28               |   | 89 | 56      | 35 | 269 | 48                               | 00 | 1071.890 |                        |   |   | 1071.883 |      |      |                     |   |   | 567200.005 | 221400.033 | 124.06               |               |               |                 |       |  |    |         |  |
|         |           | 221450E           | 194 | 28               |   | 89 | 56      | 35 | 269 | 49                               | 48 | 1121.821 |                        |   |   | 1121.816 |      |      |                     |   |   | 567200.145 | 221449.966 | 124.48               |               |               |                 |       |  |    |         |  |
|         |           | 221500E           | 194 | 29               |   | 89 | 57      | 35 | 269 | 53                               | 24 | 1171.952 |                        |   |   | 1171.950 |      |      |                     |   |   | 567199.854 | 221500.100 | 125.56               |               |               |                 |       |  |    |         |  |

567200N

# SURFACE CONTROL CALCULATION SHEET

## CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

LOCATION 567 200 N

SHEET No. 3

LOCATION 6

GRID 2 R.L. DATUM 3 CLOSURE 1 in 4

| LINE    |          |                        | HORIZONTAL ANGLE |    |   | BEARING |    |    | ZENITH ANGLE |    |    | E.D.M.I. Reading |   |   | BAROMETRIC PRESSURE |   |   | ATMOSPHERIC CORRECTION SETTING |   |          | TEMPERATURE |             |             | HORIZONTAL DISTANCE |       |       | H.I.  |  |  | H.T. |  |  | STATION CO-ORDINATES |  |  |  | INITIALS & DATE |  |  | REMARKS |
|---------|----------|------------------------|------------------|----|---|---------|----|----|--------------|----|----|------------------|---|---|---------------------|---|---|--------------------------------|---|----------|-------------|-------------|-------------|---------------------|-------|-------|-------|--|--|------|--|--|----------------------|--|--|--|-----------------|--|--|---------|
| BS      | IS       | FS                     | o                | '  | " | o       | '  | "  | o            | '  | "  | m                | m | m | m                   | m | m | m                              | m | m        | TITLE       | LATITUDE    | DEPARTURE   | R.L.                | FIELD | CALCS | CHECK |  |  |      |  |  |                      |  |  |  |                 |  |  |         |
| TELECOM | BOARHEAD | 567 200 N<br>221 550 E | 194              | 29 |   | 89      | 57 | 35 | 289          | 55 | 42 | 1221.781         |   |   |                     |   |   |                                |   | 1221.720 | 567 200     | 567199.889  | 221549.870  | 126.28              | BU    | BU    |       |  |  |      |  |  |                      |  |  |  |                 |  |  |         |
|         |          | 221 600 E              | 194              | 28 |   | 89      | 56 | 35 | 269          | 54 | 36 | 1271.782         |   |   |                     |   |   |                                |   | 1271.780 | 600         | 567200.294  | 221599.930  | 125.81              |       |       |       |  |  |      |  |  |                      |  |  |  |                 |  |  |         |
|         |          | 221 650 E              | 194              | 28 |   | 89      | 56 | 35 | 269          | 56 | 42 | 1321.841         |   |   |                     |   |   |                                |   | 1321.840 |             | 567200.344  | 221649.990  | 126.54              |       |       |       |  |  |      |  |  |                      |  |  |  |                 |  |  |         |
|         |          | 221 700 E              |                  |    |   |         |    |    |              |    |    |                  |   |   |                     |   |   |                                |   |          | 700         | 567,200.002 | 221,700.014 | 125.62              | MGM   | MGM   |       |  |  |      |  |  |                      |  |  |  |                 |  |  |         |
|         |          |                        |                  |    |   |         |    |    |              |    |    |                  |   |   |                     |   |   |                                |   |          | 750         | 200.134     | 749.920     | 123.98              | "     | "     |       |  |  |      |  |  |                      |  |  |  |                 |  |  |         |
|         |          |                        |                  |    |   |         |    |    |              |    |    |                  |   |   |                     |   |   |                                |   |          | 800         | 199.971     | 799.836     | 122.85              | "     | "     |       |  |  |      |  |  |                      |  |  |  |                 |  |  |         |
|         |          |                        |                  |    |   |         |    |    |              |    |    |                  |   |   |                     |   |   |                                |   |          | 850         | 567,200.051 | 221,850.021 | 122.27              | "     | "     |       |  |  |      |  |  |                      |  |  |  |                 |  |  |         |

567200N

SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

LOCATION 567400 N

SHEET NO 5

LOCATION 6

GRID R.L. DATUM CLOSURE 1 in

| 7  | 8         | 9                    | 11               | 12      | 13                               | 14                     | 15                  | 16                             | 17          | 18                  | 19   | 20   | 21-24                |             |             | 25-27           |                |                | 28    |         |                       |
|----|-----------|----------------------|------------------|---------|----------------------------------|------------------------|---------------------|--------------------------------|-------------|---------------------|------|------|----------------------|-------------|-------------|-----------------|----------------|----------------|-------|---------|-----------------------|
|    |           |                      |                  |         |                                  |                        |                     |                                |             |                     |      |      | STATION CO-ORDINATES |             |             | INITIALS & DATE |                |                |       |         |                       |
| BS | IS        | FS                   | HORIZONTAL ANGLE | BEARING | ZENITH ANGLE<br>TARGET REFLECTOR | E. D. M. I.<br>Reading | BAROMETRIC PRESSURE | ATMOSPHERIC CORRECTION SETTING | TEMPERATURE | HORIZONTAL DISTANCE | H.I. | H.T. | TITLE                | LATITUDE    | DEPARTURE   | R.L.            | FIELD          | CALCS          | CHECK | REMARKS |                       |
|    |           | 567400 N<br>219750 E |                  |         |                                  |                        |                     |                                |             |                     |      |      | 567400               | 567 400.000 | 0.00        |                 |                |                |       |         |                       |
|    |           | 219800 E             |                  |         |                                  |                        |                     |                                |             |                     |      |      | 219750               |             |             |                 |                |                |       |         |                       |
|    | RILEY     | 219850 E             |                  |         |                                  |                        |                     |                                |             |                     |      |      | 800                  |             |             |                 |                |                |       |         |                       |
|    | "         | 219900 E             |                  |         |                                  |                        |                     |                                |             |                     |      |      | 850                  | 399.985     | 850.270     | 94.51           | MGM<br>19/4/83 | MGM<br>19/4/83 |       |         |                       |
|    | "         | 219950 E             |                  |         |                                  |                        |                     |                                |             |                     |      |      | 900                  | 399.940     | 900.080     | 98.36           | "              | "              |       |         |                       |
|    | "         | 220000 E             |                  |         |                                  |                        |                     |                                |             |                     |      |      | 950                  | 399.949     | 950.054     | 100.30          | "              | "              |       |         |                       |
|    | "         | 220050 E             |                  |         |                                  |                        |                     |                                |             |                     |      |      | 220000               | 567 399.906 | 219 999.983 | 101.25          | "              | "              |       |         | cf 101.69 on previous |
|    | "         | 220100 E             |                  |         |                                  |                        |                     |                                |             |                     |      |      | 050                  | 567 399.941 | 220,049.880 | 101.70          | "              | "              |       |         |                       |
|    | "         | 220150 E             |                  |         |                                  |                        |                     |                                |             |                     |      |      | 100                  | 399.803     | 100.797     | 105.34          | "              | "              |       |         |                       |
|    | "         | 220200 E             |                  |         |                                  |                        |                     |                                |             |                     |      |      | 150                  | 400.162     | 150.035     | 107.15          | "              | "              |       |         |                       |
|    | "         | 220250 E             |                  |         |                                  |                        |                     |                                |             |                     |      |      | 200                  | 399.572     | 200.495     | 109.57          | "              | "              |       |         |                       |
|    | "         | 220300 E             |                  |         |                                  |                        |                     |                                |             |                     |      |      | 250                  | 400.093     | 250.912     | 110.97          | "              | "              |       |         | cf 11.05 on previous  |
|    | "         | 220350 E             |                  |         |                                  |                        |                     |                                |             |                     |      |      | 300                  | 405.064     | 299.493     | 112.47          | "              | "              |       |         |                       |
|    | BOLD HEAD | 220400 E             |                  |         |                                  |                        |                     |                                |             |                     |      |      | 350                  | 567 401.244 | 220 349.674 | 114.93          | MGM<br>8/10/82 | MGM<br>10/1/83 |       |         |                       |
|    | "         | 220450 E             |                  |         |                                  |                        |                     |                                |             |                     |      |      | 400                  | 567 401.313 | 220 399.731 | 116.19          | "              | "              |       |         | 116.57                |
|    | "         | 220500 E             |                  |         |                                  |                        |                     |                                |             |                     |      |      | 450                  | 567 401.226 | 449.487     | 117.11          | "              | "              |       |         |                       |
|    | "         | 220550 E             |                  |         |                                  |                        |                     |                                |             |                     |      |      | 500                  | 567 400.162 | 500.095     | 117.32          | "              | "              |       |         |                       |
|    | "         | 220600 E             |                  |         |                                  |                        |                     |                                |             |                     |      |      | 550                  | 567 400.031 | 549.966     | 116.44          | "              | "              |       |         |                       |
|    | "         | 220 back             |                  |         |                                  |                        |                     |                                |             |                     |      |      | 567400               | 567 400.001 | 220 600.038 | 110.56          | "              | "              |       |         |                       |
|    |           |                      |                  |         |                                  |                        |                     |                                |             |                     |      |      | 220600               |             |             |                 |                |                |       |         |                       |

567400 N





SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M.I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

LOCATION ..... 567 600 (1) .....

SHEET N° ..... 5 .....

LOCATION ..... 6 .....

GRID ..... R.L. DATUM ..... CLOSURE 1 in ..... 4 .....

| 7 LINE |       |    | 11 HORIZONTAL ANGLE |   |   | 12 BEARING |   |   | 13 ZENITH ANGLE |   |   | 14 E. D. M. I. Reading |    |   | 15 BAROMETRIC PRESSURE |   |   | 16 ATMOSPHERIC CORRECTION SETTING |   |         | 17 TEMPERATURE |              |             | 18 HORIZONTAL DISTANCE |         |         | 19 H. I. |  |  | 20 H. T. |  |  | 21 STATION CO-ORDINATES |  |  | 25 INITIALS & DATE |  |  | 28 REMARKS |  |  |
|--------|-------|----|---------------------|---|---|------------|---|---|-----------------|---|---|------------------------|----|---|------------------------|---|---|-----------------------------------|---|---------|----------------|--------------|-------------|------------------------|---------|---------|----------|--|--|----------|--|--|-------------------------|--|--|--------------------|--|--|------------|--|--|
| BS     | IS    | FS | o                   | ' | " | o          | ' | " | o               | ' | " | m                      | Mb | ° | '                      | " | m | m                                 | m | TITLE   | LATITUDE       | DEPARTURE    | R.L.        | FIELD                  | CALCS   | CHECK   |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   | 567 600 | 567 599.931    | 219 749.795  | 96.61       |                        |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   | 219 750 |                |              |             |                        |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   | 800     | 600.116        | 799.791      | 99.66       |                        |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        | RILEY |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   | 850     | 567, 599.917   | 219, 849.786 | 99.58       |                        |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        | "     |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   |         | 600.097        | 899.890      | 98.24       |                        |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        | RILEY |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   |         | 567, 601.324   | 219, 952.378 | 98.40       | MGM                    | MGM     |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   | 219 950 |                |              |             | 19/4/83                | 14/6/83 |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   |         | 567 599.822    | 219 999.879  | 95.54       |                        |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   |         | 220 000        |              |             |                        |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   |         |                |              |             |                        |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   |         | 567, 599.963   | 220, 100.068 | 97.24       | MGM                    | MGM     |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   |         | 100            |              |             |                        | 19/4/83 | 14/6/83 |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   |         | 599.940        | 150.011      | 98.77       |                        |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   |         | 600.578        | 201.752      | 98.04       |                        |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   |         | 200            |              |             |                        |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   |         | 599.934        | 250.03       | 99.90       |                        |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   |         |                |              |             |                        |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   |         | 300            |              |             |                        |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   |         |                |              |             |                        |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   |         | 599.462        | 350.017      | 94.67       |                        |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   |         |                |              |             |                        |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   |         | 400            |              |             |                        |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   |         |                |              |             |                        |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   |         |                |              |             |                        |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   |         | 567 600.033    | 220 500.067  | 102.99      |                        |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   |         | 500            |              |             |                        |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   |         |                |              |             |                        |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   |         | 567 600.022    | 220 549.981  | 105.04      |                        |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   |         |                |              |             |                        |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   |         | 567 600        | 567 600.054  | 220 599.990 | 107.14                 |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |
|        |       |    |                     |   |   |            |   |   |                 |   |   |                        |    |   |                        |   |   |                                   |   |         | 220 600        |              |             |                        |         |         |          |  |  |          |  |  |                         |  |  |                    |  |  |            |  |  |

# SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M. I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

LOCATION ..... 567 600 (2)

SHEET N° ..... 3

LOCATION ..... 6

GRID ..... R.L. DATUM ..... CLOSURE 1 in ..... 4

| 7 LINE |      |    | 11 HORIZONTAL ANGLE |   |   | 12 BEARING |   |   | 13 ZENITH ANGLE |   |   | 14 E. D. M. I. Reading |    |                                | 15 BAROMETRIC PRESSURE |   |   | 16 ATMOSPHERIC CORRECTION SETTING |         |             | 17 % TEMPERATURE |         |       | 18 HORIZONTAL DISTANCE |       |                           | 19 H. I. |  |  | 20 H. T. |  |  | 21-24 STATION CO-ORDINATES |  |  | 25-27 INITIALS & DATE |  |  | 28 REMARKS |  |  |
|--------|------|----|---------------------|---|---|------------|---|---|-----------------|---|---|------------------------|----|--------------------------------|------------------------|---|---|-----------------------------------|---------|-------------|------------------|---------|-------|------------------------|-------|---------------------------|----------|--|--|----------|--|--|----------------------------|--|--|-----------------------|--|--|------------|--|--|
| BS     | IS   | FS | 0                   | 1 | 2 | 0          | 1 | 2 | 0               | 1 | 2 | m                      | Mb | ATMOSPHERIC CORRECTION SETTING | % TEMPERATURE          | m | m | m                                 | TITLE   | LATITUDE    | DEPARTURE        | R.L.    | FIELD | CALCS                  | CHECK |                           |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |      |    |                     |   |   |            |   |   |                 |   |   |                        |    |                                |                        |   |   |                                   | 567600  | 567,599.999 | 220 649.947      | 109.02  |       |                        |       |                           |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |      |    |                     |   |   |            |   |   |                 |   |   |                        |    |                                |                        |   |   |                                   | 220650  |             |                  |         |       |                        |       |                           |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |      |    |                     |   |   |            |   |   |                 |   |   |                        |    |                                |                        |   |   |                                   | 700     | 567 599.958 | 220,700.030      | 112.25  |       |                        |       |                           |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |      |    |                     |   |   |            |   |   |                 |   |   |                        |    |                                |                        |   |   |                                   | 750     | 567 599.941 | 220 749.855      | 115.15  |       |                        |       |                           |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |      |    |                     |   |   |            |   |   |                 |   |   |                        |    |                                |                        |   |   |                                   | 800     | 567 599.994 | 220 799.956      | 116.22  | MGM   | MGM                    |       | Good X check from Δ RILEY |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        | 3592 |    |                     |   |   |            |   |   |                 |   |   |                        |    |                                |                        |   |   |                                   | 567600  | 567 600.074 | 220 850.317      | 116.02  | BHL   |                        |       |                           |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |      |    |                     |   |   |            |   |   |                 |   |   |                        |    |                                |                        |   |   |                                   | 220 850 |             |                  |         |       |                        |       |                           |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |      |    |                     |   |   |            |   |   |                 |   |   |                        |    |                                |                        |   |   |                                   | 900     | 599.888     | 900.043          | 113.85  | "     |                        |       |                           |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |      |    |                     |   |   |            |   |   |                 |   |   |                        |    |                                |                        |   |   |                                   | 950     | 600.051     | 220,950.240      | 112.85  | "     |                        |       |                           |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |      |    |                     |   |   |            |   |   |                 |   |   |                        |    |                                |                        |   |   |                                   | 221 000 | 600.040     | 221,000.097      | 112.54  | BHL   |                        |       | 113.27 ex prev grid       |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |      |    |                     |   |   |            |   |   |                 |   |   |                        |    |                                |                        |   |   |                                   | 050     | 600.029     | 050.186          | 112.42  | "     |                        |       | 112.00 ex prev grid       |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |      |    |                     |   |   |            |   |   |                 |   |   |                        |    |                                |                        |   |   |                                   | 100     | 599.988     | 100.194          | 112.81  | "     |                        |       |                           |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |      |    |                     |   |   |            |   |   |                 |   |   |                        |    |                                |                        |   |   |                                   | 150     | 600.050     | 149.918          | 113.88  | "     |                        |       |                           |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |      |    |                     |   |   |            |   |   |                 |   |   |                        |    |                                |                        |   |   |                                   | 200     |             |                  | 112.86  |       |                        |       | Δ 3592                    |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |      |    |                     |   |   |            |   |   |                 |   |   |                        |    |                                |                        |   |   |                                   | 250     | 599.955     | 249.883          | 110.35  | BHL   |                        |       | 110.00 ex prev grid       |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |      |    |                     |   |   |            |   |   |                 |   |   |                        |    |                                |                        |   |   |                                   | 300     | 599.973     | 300.062          | 106.60  | "     |                        |       |                           |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |      |    |                     |   |   |            |   |   |                 |   |   |                        |    |                                |                        |   |   |                                   | 350     | 600.005     | 350.023          | 108.02  | "     |                        |       |                           |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |      |    |                     |   |   |            |   |   |                 |   |   |                        |    |                                |                        |   |   |                                   | 400     | 599.950     | 400.141          | 107.25  | "     |                        |       |                           |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |      |    |                     |   |   |            |   |   |                 |   |   |                        |    |                                |                        |   |   |                                   | 450     | 600.084     | 450.230          | 105.14  | "     |                        |       |                           |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |      |    |                     |   |   |            |   |   |                 |   |   |                        |    |                                |                        |   |   |                                   | 567 600 |             |                  | 107.537 | BHL   |                        |       |                           |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |
|        |      |    |                     |   |   |            |   |   |                 |   |   |                        |    |                                |                        |   |   |                                   | 221 500 |             |                  |         |       |                        |       | 112.86 ex prev grid       |          |  |  |          |  |  |                            |  |  |                       |  |  |            |  |  |







# SURFACE CONTROL CALCULATION SHEET

CLOSED TRAVERSE [ E.D.M. I. CHAINAGE ]

NOTE

INITIAL OR UNADJUSTED FIGURES

LOCATION ..... 567 800 (3)

SHEET N° ..... 5

LOCATION ..... 6

GRID ..... R.L. DATUM ..... CLOSURE 1 in ..... 4

| 7<br>LINE |    |    | 11<br>HORIZONTAL ANGLE |   |   | 12<br>BEARING |   |   | 13<br>ZENITH ANGLE |   |   | 14<br>E. D. M. I. Reading |   |   | 15<br>BAROMETRIC PRESSURE |    |   | 16<br>ATMOSPHERIC CORRECTION SETTING |   |   | 17<br>TEMPERATURE |         |          | 18<br>HORIZONTAL DISTANCE |         |        | 19<br>H. I. |       |  | 20<br>H. T. |  |  | 21-24<br>STATION CO-ORDINATES |  |  |  | 25-27<br>INITIALS & DATE |  |  | 28<br>REMARKS |
|-----------|----|----|------------------------|---|---|---------------|---|---|--------------------|---|---|---------------------------|---|---|---------------------------|----|---|--------------------------------------|---|---|-------------------|---------|----------|---------------------------|---------|--------|-------------|-------|--|-------------|--|--|-------------------------------|--|--|--|--------------------------|--|--|---------------|
| BS        | IS | FS | 0                      | 1 | 2 | 0             | 1 | 2 | 0                  | 1 | 2 | 0                         | 1 | 2 | m                         | mb | % | °                                    | m | m | m                 | TITLE   | LATITUDE | DEPARTURE                 | R.L.    | FIELD  | CALCS       | CHECK |  |             |  |  |                               |  |  |  |                          |  |  |               |
|           |    |    |                        |   |   |               |   |   |                    |   |   |                           |   |   |                           |    |   |                                      |   |   |                   | 567 800 |          |                           | 102.530 | BHL    |             |       |  |             |  |  |                               |  |  |  |                          |  |  |               |
|           |    |    |                        |   |   |               |   |   |                    |   |   |                           |   |   |                           |    |   |                                      |   |   |                   | 221 550 |          |                           |         | 9/5/23 |             |       |  |             |  |  |                               |  |  |  |                          |  |  |               |
|           |    |    |                        |   |   |               |   |   |                    |   |   |                           |   |   |                           |    |   |                                      |   |   |                   |         |          |                           | 102.651 |        |             |       |  |             |  |  |                               |  |  |  |                          |  |  |               |
|           |    |    |                        |   |   |               |   |   |                    |   |   |                           |   |   |                           |    |   |                                      |   |   |                   | 600     |          |                           |         | "      |             |       |  |             |  |  |                               |  |  |  |                          |  |  |               |
|           |    |    |                        |   |   |               |   |   |                    |   |   |                           |   |   |                           |    |   |                                      |   |   |                   |         |          |                           | 102.712 |        |             |       |  |             |  |  |                               |  |  |  |                          |  |  |               |
|           |    |    |                        |   |   |               |   |   |                    |   |   |                           |   |   |                           |    |   |                                      |   |   |                   | 650     |          |                           |         | "      |             |       |  |             |  |  |                               |  |  |  |                          |  |  |               |
|           |    |    |                        |   |   |               |   |   |                    |   |   |                           |   |   |                           |    |   |                                      |   |   |                   |         |          |                           | 101.852 |        |             |       |  |             |  |  |                               |  |  |  |                          |  |  |               |
|           |    |    |                        |   |   |               |   |   |                    |   |   |                           |   |   |                           |    |   |                                      |   |   |                   | 700     |          |                           |         | "      |             |       |  |             |  |  |                               |  |  |  |                          |  |  |               |
|           |    |    |                        |   |   |               |   |   |                    |   |   |                           |   |   |                           |    |   |                                      |   |   |                   |         |          |                           | 99.887  |        |             |       |  |             |  |  |                               |  |  |  |                          |  |  |               |
|           |    |    |                        |   |   |               |   |   |                    |   |   |                           |   |   |                           |    |   |                                      |   |   |                   | 750     |          |                           |         | "      |             |       |  |             |  |  |                               |  |  |  |                          |  |  |               |
|           |    |    |                        |   |   |               |   |   |                    |   |   |                           |   |   |                           |    |   |                                      |   |   |                   |         |          |                           | 98.677  |        |             |       |  |             |  |  |                               |  |  |  |                          |  |  |               |
|           |    |    |                        |   |   |               |   |   |                    |   |   |                           |   |   |                           |    |   |                                      |   |   |                   | 800     |          |                           |         | "      |             |       |  |             |  |  |                               |  |  |  |                          |  |  |               |
|           |    |    |                        |   |   |               |   |   |                    |   |   |                           |   |   |                           |    |   |                                      |   |   |                   |         |          |                           |         |        |             |       |  |             |  |  |                               |  |  |  |                          |  |  |               |
|           |    |    |                        |   |   |               |   |   |                    |   |   |                           |   |   |                           |    |   |                                      |   |   |                   | 850     |          |                           |         |        |             |       |  |             |  |  |                               |  |  |  |                          |  |  |               |
|           |    |    |                        |   |   |               |   |   |                    |   |   |                           |   |   |                           |    |   |                                      |   |   |                   |         |          |                           |         |        |             |       |  |             |  |  |                               |  |  |  |                          |  |  |               |
|           |    |    |                        |   |   |               |   |   |                    |   |   |                           |   |   |                           |    |   |                                      |   |   |                   | 900     |          |                           |         |        |             |       |  |             |  |  |                               |  |  |  |                          |  |  |               |
|           |    |    |                        |   |   |               |   |   |                    |   |   |                           |   |   |                           |    |   |                                      |   |   |                   |         |          |                           |         |        |             |       |  |             |  |  |                               |  |  |  |                          |  |  |               |
|           |    |    |                        |   |   |               |   |   |                    |   |   |                           |   |   |                           |    |   |                                      |   |   |                   | 221 950 |          |                           |         |        |             |       |  |             |  |  |                               |  |  |  |                          |  |  |               |