



NELLAIDHOO-EXISTING

| From                | To      | No. of Runs | Cable Size (sq.mm) | Length (M) | Cable Current Capacity (A) | Cable Current Capacity After Deration (0.6) (A) | Power (kW) | Current (A) | Cable Loading (%) | Voltage (%) at DB Main Bus | Total Voltage Drop (%) in Cable Section | % Voltage Drop upto Distribution Boards | % Voltage Drop Acceptable (Less Than | Remarks |
|---------------------|---------|-------------|--------------------|------------|----------------------------|---|------------|-------------|-------------------|----------------------------|---|---|--------------------------------------|---------|
| Nellaidhoo Feeder-1 | DB-A1   | 1           | 4C x 50            | 154        | 215                        | 129   | 31.42      | 55.64       | 43.10             | 98.41                      | 1.59                                    | 1.59                                    | YES                                  |         |
| DB-A1               | DB-A2   | 1           | 4C x 25            | 110        | 150                        | 90  | 25.78      | 48.54       | 51.70             | 96.72                      | 1.69                                    | 3.28                                    | YES                                  |         |
| DB-A2               | DB-A3   | 1           | 4C x 25            | 84         | 150                        | 90  | 20.21      | 37.33       | 41.50             | 95.68                      | 1.03                                    | 4.32                                    | YES                                  |         |
| DB-A3               | DB-A4   | 1           | 4C x 25            | 97.8       | 150                        | 90  | 14.98      | 28.06       | 31.20             | 94.78                      | 0.90                                    | 5.22                                    | NO                                   |         |
| DB-A4               | DB-A5   | 1           | 4C x 25            | 96.6       | 150                        | 90  | 9.88       | 18.74       | 20.80             | 94.19                      | 0.59                                    | 5.81                                    | NO                                   |         |
| DB-A5               | DB-A6   | 1           | 4C x 25            | 94.4       | 150                        | 90  | 4.90       | 9.38        | 10.40             | 93.89                      | 0.29                                    | 6.11                                    | NO                                   |         |
| Nellaidhoo Feeder-2 | DB-B1   | 1           | 4C x 50            | 225.1      | 215                        | 129   | 49.34      | 86.08       | 68.70             | 96.37                      | 3.63                                    | 3.63                                    | YES                                  |         |
| DB-B1               | DB-B2   | 1           | 4C x 50            | 91         | 215                        | 129   | 42.05      | 76.86       | 59.60             | 95.07                      | 1.30                                    | 4.93                                    | YES                                  |         |
| DB-B2               | DB-B3   | 1           | 4C x 50            | 150.8      | 215                        | 129   | 36.39      | 67.56       | 52.40             | 93.17                      | 1.90                                    | 6.83                                    | NO                                   |         |
| DB-B3               | DB-B4   | 1           | 4C x 35            | 118.6      | 180                        | 108   | 30.55      | 58.14       | 53.80             | 91.49                      | 1.68                                    | 8.51                                    | NO                                   |         |
| DB-B4               | DB-B5   | 1           | 4C x 35            | 118.3      | 180                        | 108   | 24.95      | 48.60       | 45.00             | 90.09                      | 1.40                                    | 9.91                                    | NO                                   |         |
| DB-B5               | DB-B6   | 1           | 4C x 35            | 143        | 180                        | 108   | 19.60      | 38.97       | 36.10             | 88.73                      | 1.35                                    | 11.27                                   | NO                                   |         |
| DB-B6               | DB-B6x1 | 1           | 4C x 35            | 90.5       | 180                        | 108   | 4.80       | 9.75        | 9.00              | 88.52                      | 0.21                                    | 11.48                                   | NO                                   |         |
| DB-B6               | DB-B6x2 | 1           | 4C x 35            | 110        | 180                        | 108   | 4.80       | 9.75        | 9.00              | 88.48                      | 0.26                                    | 11.52                                   | NO                                   |         |
| DB-B6               | DB-B8   | 1           | 4C x 35            | 62         | 180                        | 108   | 4.80       | 9.75        | 9.00              | 88.59                      | 0.15                                    | 11.41                                   | NO                                   |         |
| Nellaidhoo Feeder-3 | DB-C1   | 1           | 4C x 50            | 167        | 215                        | 129   | 37.17      | 65.55       | 50.80             | 97.96                      | 2.04                                    | 2.04                                    | YES                                  |         |
| DB-C1               | DB-C2   | 1           | 4C x 50            | 190.5      | 215                        | 129   | 31.20      | 56.42       | 43.70             | 95.97                      | 1.99                                    | 4.03                                    | YES                                  |         |
| DB-C2               | DB-C3   | 1           | 4C x 35            | 172        | 180                        | 108   | 25.42      | 47.18       | 43.70             | 93.99                      | 1.98                                    | 6.01                                    | NO                                   |         |
| DB-C3               | DB-C4   | 1           | 4C x 35            | 75.3       | 180                        | 108   | 19.81      | 37.81       | 35.00             | 93.30                      | 0.69                                    | 6.70                                    | NO                                   |         |
| DB-C4               | DB-C5   | 1           | 4C x 35            | 80         | 180                        | 108   | 14.73      | 28.39       | 26.30             | 92.75                      | 0.55                                    | 7.25                                    | NO                                   |         |
| DB-C5               | DB-C5x1 | 1           | 4C x 35            | 105        | 180                        | 108   | 4.87       | 9.47        | 8.80              | 92.51                      | 0.24                                    | 7.49                                    | NO                                   |         |
| DB-C5               | DB-C6   | 1           | 4C x 35            | 88.3       | 180                        | 108   | 4.87       | 9.47        | 8.80              | 92.55                      | 0.20                                    | 7.45                                    | NO                                   |         |

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|--|-----------------------|--|-----|---------------|----------|---|--|-----------------|--|--|--|
|  | PURPOSE OF SUBMISSION |  | REV | AUTHORISED BY | DATE     | DRAWING TITLE<br>NETWORK DIAGRAM FOR B08–NELLAIDHOO           |  | DESIGN : ESM    |  | SCALE : N.T.S                            |  |
|  | INITIAL DOCUMENTS     |  | A   | GKH           | 28/03/16 |   |  | DRAWN : DAI     |  | DRW NO. : J431–G0PA–021–GR–E–D–0001–RevB |  |
|  | FIRST REVISION        |  | B   | GKH           | 17/04/16 | PROJECT<br>PREPARING OUTER ISLANDS<br>SUSTAINABLE DEVELOPMENT | CLIENT:<br>GOVERNMENT OF THE<br>REPUBLIC OF MALDIVES | LICENCE NO:     |  | ISLAND NAME : NELLAIDHOO                 |  |
|  |                       |  |     |               |          |   |  | DATE: : 17APR16 |  | PAGE : 2/4                               |  |

NELLAIDHOO-PROPOSED

| From                | To      | No. of Runs | Cable Size (sq.mm) | Length (M) | Cable Current Capacity (A) | Cable Current Capacity After Deration (0.6) (A) | Power (kW) | Current (A) | Cable Loading (%) | Voltage (%) at DB Main Bus | Total Voltage Drop (%) in Cable Section | % Voltage Drop upto Distribution Boards | % Voltage Drop Acceptable (Less Than | Remarks  |
|---------------------|---------|-------------|--------------------|------------|----------------------------|---|------------|-------------|-------------------|----------------------------|---|---|--------------------------------------|--|
| Nellaidhoo Feeder-1 | DB-A1   | 1           | 4C x 70            | 154        | 265                        | 159   | 31.01      | 55.23       | 34.70             | 98.87                      | 1.13                                    | 1.13                                    | YES                                  | Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 70 sq.mm LVCable  |
| DB-A1               | DB-A2   | 1           | 4C x 50            | 110        | 215                        | 129   | 25.58      | 46.15       | 35.80             | 97.93                      | 0.94                                    | 2.07                                    | YES                                  | Existing 4C x 25 sq.mm LV Cable Replaced with New 4C x 50 sq.mm LVCable  |
| DB-A2               | DB-A3   | 1           | 4C x 25            | 84         | 150                        | 90  | 20.29      | 37.02       | 41.10             | 96.90                      | 1.02                                    | 3.10                                    | YES                                  |  |
| DB-A3               | DB-A4   | 1           | 4C x 25            | 97.8       | 150                        | 90  | 15.05      | 27.83       | 30.90             | 96.01                      | 0.89                                    | 3.99                                    | YES                                  |  |
| DB-A4               | DB-A5   | 1           | 4C x 25            | 96.6       | 150                        | 90  | 9.93       | 18.59       | 20.70             | 95.42                      | 0.59                                    | 4.58                                    | YES                                  |  |
| DB-A5               | DB-A6   | 1           | 4C x 25            | 94.4       | 150                        | 90  | 4.93       | 9.31        | 10.30             | 95.13                      | 0.29                                    | 4.87                                    | YES                                  |  |
| Nellaidhoo Feeder-2 | DB-B1   | 1           | 4C x 120           | 225.1      | 215                        | 129   | 46.20      | 82.68       | 64.10             | 98.44                      | 1.56                                    | 1.56                                    | YES                                  | Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 120 sq.mm LVCable |
| DB-B1               | DB-B2   | 1           | 4C x 120           | 91         | 215                        | 129   | 40.41      | 73.64       | 57.10             | 97.88                      | 0.56                                    | 2.12                                    | YES                                  | Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 120 sq.mm LVCable |
| DB-B2               | DB-B3   | 1           | 4C x 120           | 150.8      | 215                        | 129   | 35.20      | 64.54       | 50.00             | 97.06                      | 0.82                                    | 2.94                                    | YES                                  | Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 120 sq.mm LVCable |
| DB-B3               | DB-B4   | 1           | 4C x 95            | 118.6      | 180                        | 108   | 29.95      | 55.43       | 51.30             | 96.40                      | 0.66                                    | 3.60                                    | YES                                  | Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 95 sq.mm LVCable  |
| DB-B4               | DB-B5   | 1           | 4C x 95            | 118.3      | 180                        | 108   | 24.81      | 46.30       | 42.90             | 95.85                      | 0.55                                    | 4.15                                    | YES                                  | Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 95 sq.mm LVCable  |
| DB-B5               | DB-B6   | 1           | 4C x 95            | 143        | 180                        | 108   | 19.75      | 37.11       | 34.40             | 95.31                      | 0.53                                    | 4.69                                    | YES                                  | Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 95 sq.mm LVCable  |
| DB-B6               | DB-B6x1 | 1           | 4C x 35            | 90.5       | 180                        | 108   | 4.94       | 9.34        | 8.70              | 95.11                      | 0.2                                     | 4.89                                    | YES                                  |  |
| DB-B6               | DB-B6x2 | 1           | 4C x 35            | 110        | 180                        | 108   | 4.94       | 9.34        | 8.60              | 95.06                      | 0.25                                    | 4.94                                    | YES                                  |  |
| DB-B6               | DB-B8   | 1           | 4C x 35            | 62         | 180                        | 108   | 4.95       | 9.36        | 8.70              | 95.17                      | 0.14                                    | 4.83                                    | YES                                  |  |
| Nellaidhoo Feeder-3 | DB-C1   | 1           | 4C x 120           | 167        | 360                        | 216   | 36.11      | 64.44       | 29.80             | 99.10                      | 0.9                                     | 0.90                                    | YES                                  | Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 120 sq.mm LVCable |
| DB-C1               | DB-C2   | 1           | 4C x 70            | 190.5      | 265                        | 159   | 30.75      | 55.37       | 34.80             | 97.69                      | 1.4                                     | 2.31                                    | YES                                  | Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 70 sq.mm LVCable  |
| DB-C2               | DB-C3   | 1           | 4C x 70            | 172        | 265                        | 159   | 25.23      | 46.25       | 29.10             | 96.63                      | 1.06                                    | 3.37                                    | YES                                  | Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 70 sq.mm LVCable  |
| DB-C3               | DB-C4   | 1           | 4C x 35            | 75.3       | 180                        | 108   | 19.96      | 37.07       | 34.30             | 95.96                      | 0.68                                    | 4.04                                    | YES                                  |  |
| DB-C4               | DB-C5   | 1           | 4C x 35            | 80         | 180                        | 108   | 14.86      | 27.85       | 25.80             | 95.42                      | 0.54                                    | 4.58                                    | YES                                  |  |
| DB-C5               | DB-C5x1 | 1           | 4C x 35            | 105        | 180                        | 108   | 4.93       | 9.32        | 8.60              | 95.18                      | 0.24                                    | 4.82                                    | YES                                  |  |
| DB-C5               | DB-C6   | 1           | 4C x 35            | 88.3       | 180                        | 108   | 4.93       | 9.32        | 8.60              | 95.22                      | 0.2                                     | 4.78                                    | YES                                  |  |

|  |                       |  |     |               |          |   |  |                 |  |  |  |
|--|-----------------------|--|-----|---------------|----------|---|--|-----------------|--|--|--|
|  | PURPOSE OF SUBMISSION |  | REV | AUTHORISED BY | DATE     | DRAWING TITLE<br>NETWORK DIAGRAM FOR B08–NELLAIDHOO           |  | DESIGN : ESM    |  | SCALE : N.T.S                            |  |
|  | INITIAL DOCUMENTS     |  | A   | GKH           | 28/03/16 |   |  | DRAWN : DAI     |  | DRW NO. : J431–G0PA–021–GR–E–D–0001–RevB |  |
|  | FIRST REVISION        |  | B   | GKH           | 17/04/16 | PROJECT<br>PREPARING OUTER ISLANDS<br>SUSTAINABLE DEVELOPMENT | CLIENT:<br>GOVERNMENT OF THE<br>REPUBLIC OF MALDIVES | LICENCE NO:     |  | ISLAND NAME : NELLAIDHOO                 |  |
|  |                       |  |     |               |          |   |  | DATE: : 17APR16 |  | PAGE : 3/4                               |  |



# NELLAIDHOO-PROPOSED PV FEEDER

| From        | To               | No. of Runs | Cable size (Sq mm) | Length (M) | Losses (%) |
|-------------|------------------|-------------|--------------------|------------|------------|
| POWER HOUSE | DB-A1            | 1           | 4C X 70            | 154        | 2.50%      |
| DB-A1       | DB-A2            | 1           | 4C X 50            | 110        |            |
| DB-A2       | DB-A3            | 1           | 4C X 50            | 84         |            |
| DB-A3       | DB-A4            | 1           | 4C X 50            | 98         |            |
| DB-A4       | DB-A5            | 1           | 4C X 50            | 97         |            |
| DB-A5       | DB-A6            | 1           | 4C X 50            | 94         |            |
| DB-A6       | HEALTH CENTRE-PV | 1           | 4C X 70            | 140        |            |
| POWER HOUSE | DB-B1            | 1           | 4C X 150           | 225        | 1.84%      |
| DB-B1       | DB-B2            | 1           | 4C X 120           | 91         |            |
| DB-B1       | SCHOOL-PV        | 1           | 4C X 120           | 50         |            |
| DB-B2       | COUNCIL-PV       | 1           | 4C X 70            | 70         |            |
| DB-B2       | DB-B3            | 1           | 4C X 120           | 151        |            |
| DB-B3       | DB-B4            | 1           | 4C X 95            | 119        |            |
| DB-B4       | DB-B5            | 1           | 4C X 95            | 118        |            |
| DB-B5       | DB-B6            | 1           | 4C X 95            | 143        |            |
| DB-B6       | DB-B6x1          | 1           | 4C X 35            | 91         |            |
| DB-B6       | DB-B6x2          | 1           | 4C X 35            | 110        |            |
| DB-B6       | DB-B8            | 1           | 4C X 35            | 62         |            |

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|  | PURPOSE OF SUBMISSION | REV | AUTHORISED BY | DATE     | DRAWING TITLE<br>NETWORK DIAGRAM FOR B08–NELLAIDHOO           |  | DESIGN : ESM    | SCALE : N.T.S                            |
|  | INITIAL DOCUMENTS     | A   | GKH           | 28/03/16 |   |  | DRAWN : DAI     | DRW NO. : J431–G0PA–021–GR–E–D–0001–RevB |
|  | FIRST REVISION        | B   | GKH           | 17/04/16 | PROJECT<br>PREPARING OUTER ISLANDS<br>SUSTAINABLE DEVELOPMENT | CLIENT:<br>GOVERNMENT OF THE<br>REPUBLIC OF MALDIVES | LICENCE NO:     | ISLAND NAME : NELLAIDHOO                 |
|  |                       |     |               |          |   |  | DATE: : 17APR16 | PAGE : 4/4                               |