

## Appendix 12 Other Relevant Data

### A12-1 Traffic Survey Results

#### A12-1-1 Queue Length Survey Result

**Table12-1-1 Queue Length Survey Result**

| Period        | First Survey<br>28-Nov-2013 (Thu) |                                | Second Survey<br>3-Dec-2013 (Wed) |                                |
|---------------|-----------------------------------|--------------------------------|-----------------------------------|--------------------------------|
|               | East side from<br>city council    | West side from<br>city council | East side from<br>city council    | West side from<br>city council |
| 7:30 - 8:00   | 0 m                               | 0 m                            | 0 m                               | 0 m                            |
| 8:00 - 8:30   | 0 m                               | 0 m                            | 670 m                             | 0 m                            |
| 8:30 - 9:00   | 780 m                             | 120 m                          | 1,310 m                           | 250 m                          |
| 9:00 - 9:30   | 800 m                             | 280 m                          | 1,380 m                           | 290 m                          |
| 9:30 - 10:00  | 1,330 m                           | 590 m                          | 1,580 m                           | 590 m                          |
| 10:00 - 10:30 | 1,650 m                           | 500 m                          | 1,860 m                           | 520 m                          |
| 10:30 - 11:00 | 1,740 m                           | 480 m                          | 2,070 m                           | 580 m                          |
| 11:00 - 11:30 | 1,750 m                           | 500 m                          | 2,190 m                           | 480 m                          |
| 11:30 - 12:00 | 1,650 m                           | 500 m                          | 2,170 m                           | 520 m                          |
| 12:00 - 12:30 | 1,750 m                           | 290 m                          | 1,910 m                           | 300 m                          |
| 12:30 - 13:00 | 1,580 m                           | 0 m                            | 1,890 m                           | 0 m                            |
| 13:00 - 13:30 | 1,550 m                           | 0 m                            | 1,900 m                           | 580 m                          |
| 13:30 - 14:00 | 1,650 m                           | 260 m                          | 2,050 m                           | 0 m                            |
| 14:00 - 14:30 | 1,880 m                           | 0 m                            | 2,050 m                           | 0 m                            |
| 14:30 - 15:00 | 2,100 m                           | 840 m                          | 2,050 m                           | 500 m                          |
| 15:00 - 15:30 | 2,220 m                           | 900 m                          | 2,280 m                           | 840 m                          |
| 15:30 - 16:00 | 2,130 m                           | 500 m                          | 2,170 m                           | 1,100 m                        |
| 16:00 - 16:30 | 1,980 m                           | 480 m                          | 2,050 m                           | 900 m                          |
| 16:30 - 17:00 | 1,750 m                           | 740 m                          | 1,790 m                           | 1,100 m                        |
| 17:00 - 17:30 | 1,580 m                           | 830 m                          | 1,580 m                           | 830 m                          |
| 17:30 - 18:00 | 1,430 m                           | 560 m                          | 1,300 m                           | 480 m                          |
| 18:00 - 18:30 | 500 m                             | 0 m                            | 500 m                             | 0 m                            |
| 18:30 - 19:00 | 0                                 | 0 m                            | 0 m                               | 0 m                            |

## A12-1-2 Travel Speed Survey Result

### (1) The First Survey (26 Nov, 2013 (Tue))

**Table 12-1-2 Travel Time (First Survey, Direction to East)**

| Location                                  | Distance (m) | Time (minute) |       |        |        |        |        |
|---|--------------|---------------|-------|--------|--------|--------|--------|
|   |              | 8:00~         | 9:00~ | 10:00~ | 11:00~ | 15:00~ | 16:00~ |
| 1 Townground RA                           | 0.00         | 0.00          | 0.00  | 0.00   | 0.00   | 0.00   | 0.00   |
| 2 Central Bank Roundabout                 | 0.29         | 0.70          | 0.67  | 1.25   | 0.67   | 0.75   | 0.58   |
| 3 Commonwealth Street Intersection        | 0.76         | 1.53          | 1.55  | 2.28   | 1.83   | 1.75   | 1.30   |
| 4 Hotbread Roundabout                     | 0.96         | 2.30          | 2.10  | 2.87   | 2.87   | 2.45   | 1.87   |
| 5 Central Market Intersection             | 1.30         | 2.92          | 2.67  | 4.17   | 4.45   | 3.22   | 3.23   |
| 6 City Council Roundabout                 | 1.65         | 4.22          | 4.23  | 6.00   | 5.62   | 4.27   | 4.37   |
| 7 East Side of Mataniko Bridge            | 2.05         | 4.83          | 5.28  | 6.92   | 6.73   | 5.43   | 5.20   |
| 8 Lawsontama Intersection                 | 2.38         | 5.32          | 6.00  | 7.57   | 7.27   | 6.08   | 5.75   |
| 9 Kolaa Ridge Road Intersection           | 2.78         | 5.92          | 6.47  | 8.22   | 7.92   | 6.67   | 6.43   |
| 10 Kukum Police Station Intersection      | 3.56         | 7.02          | 7.43  | 9.27   | 8.92   | 7.77   | 7.83   |
| 11 Vura Road Intersection                 | 4.16         | 8.00          | 8.23  | 10.20  | 9.77   | 8.55   | 8.83   |
| 12 Panatina Plaza Intersection            | 5.12         | 9.08          | 9.38  | 11.58  | 11.00  | 9.75   | 10.10  |
| 13 Ranadi Roundabout                      | 6.24         | 10.67         | 10.92 | 13.08  | 12.42  | 11.52  | 11.50  |
| 14 King Gorge VI High School Intersection | 7.40         | 12.20         | 12.32 | 14.43  | 13.88  | 13.00  | 12.97  |
| 15 East Side of Luggo Bridge              | 9.00         | 14.42         | 15.00 | 16.38  | 16.75  | 15.22  | 15.15  |
| 16 Honiara International Airport          | 11.00        | 17.02         | 17.58 | 18.92  | 19.42  | 17.78  | 17.87  |

**Table 12-1-3 Travel Speed (First Survey, Direction to East)**

| Location                                  | Distance (m) | Speed (Km/h) |       |        |        |        |        |
|---|--------------|--------------|-------|--------|--------|--------|--------|
|   |              | 8:00~        | 9:00~ | 10:00~ | 11:00~ | 15:00~ | 16:00~ |
| 1 Townground RA                           | 0.00         | 0:00         | 0:00  | 0:00   | 0:00   | 0:00   | 0:00   |
| 2 Central Bank Roundabout                 | 0.29         | 24.86        | 26.10 | 13.92  | 26.10  | 23.20  | 29.83  |
| 3 Commonwealth Street Intersection        | 0.76         | 33.84        | 31.92 | 27.29  | 24.17  | 28.20  | 39.35  |
| 4 Hotbread Roundabout                     | 0.96         | 15.65        | 21.82 | 20.57  | 11.61  | 17.14  | 21.18  |
| 5 Central Market Intersection             | 1.30         | 33.08        | 36.00 | 15.69  | 12.88  | 26.61  | 14.93  |
| 6 City Council Roundabout                 | 1.65         | 16.15        | 13.40 | 11.45  | 18.00  | 20.00  | 18.53  |
| 7 East Side of Mataniko Bridge            | 2.05         | 38.92        | 22.86 | 26.18  | 21.49  | 20.57  | 28.80  |
| 8 Lawsontama Intersection                 | 2.38         | 40.97        | 27.63 | 30.46  | 37.13  | 30.46  | 36.00  |
| 9 Kolaa Ridge Road Intersection           | 2.78         | 40.00        | 51.43 | 36.92  | 36.92  | 41.14  | 35.12  |
| 10 Kukum Police Station Intersection      | 3.56         | 42.55        | 48.41 | 44.57  | 46.80  | 42.55  | 33.43  |
| 11 Vura Road Intersection                 | 4.16         | 36.61        | 45.00 | 38.57  | 42.35  | 45.96  | 36.00  |
| 12 Panatina Plaza Intersection            | 5.12         | 53.17        | 50.09 | 41.64  | 46.70  | 48.00  | 45.47  |
| 13 Ranadi Roundabout                      | 6.24         | 42.44        | 43.83 | 44.80  | 47.44  | 38.04  | 48.00  |
| 14 King Gorge VI High School Intersection | 7.40         | 45.39        | 49.71 | 51.56  | 47.45  | 46.92  | 47.45  |
| 15 East Side of Luggo Bridge              | 9.00         | 43.31        | 35.78 | 49.23  | 33.49  | 43.31  | 43.97  |
| 16 Honiara International Airport          | 11.00        | 46.15        | 46.45 | 47.37  | 45.00  | 46.75  | 44.17  |

**Table 12-1-4 Travel Time (First Survey, Direction to West)**

|    | Location                               | Distance<br>(m) | Time (minute) |       |        |        |        |        |
|----|--|-----------------|---------------|-------|--------|--------|--------|--------|
|    |  |                 | 8:30~         | 9:30~ | 10:30~ | 11:30~ | 15:30~ | 16:30~ |
| 1  | Honiara International Airport          | 0.00            | 0.00          | 0.00  | 0.00   | 0.00   | 0.00   | 0.00   |
| 2  | East Side of Luggo Bridge              | 2.00            | 3.22          | 2.97  | 2.75   | 3.67   | 3.05   | 3.05   |
| 3  | King Gorge VI High School Intersection | 3.60            | 5.40          | 5.58  | 5.07   | 6.02   | 5.72   | 5.33   |
| 4  | Ranadi Roundabout                      | 4.76            | 7.08          | 7.08  | 6.72   | 7.67   | 7.50   | 7.07   |
| 5  | Panatina Plaza Intersection            | 5.88            | 9.00          | 8.67  | 8.37   | 9.22   | 9.10   | 8.73   |
| 6  | Vura Road Intersection                 | 6.84            | 10.55         | 9.83  | 9.75   | 10.52  | 10.25  | 9.95   |
| 7  | Kukum Police Station Intersection      | 7.44            | 11.73         | 10.67 | 11.02  | 11.53  | 12.38  | 11.05  |
| 8  | Kolaa Ridge Road Intersection          | 8.22            | 14.00         | 14.00 | 16.68  | 16.00  | 22.83  | 13.63  |
| 9  | Lawsontama Intersection                | 8.62            | 16.38         | 19.00 | 20.40  | 20.50  | 28.55  | 16.80  |
| 10 | East Side of Mataniko Bridge           | 8.95            | 19.25         | 24.10 | 25.13  | 25.18  | 32.83  | 21.77  |
| 11 | City Council Roundabout                | 9.35            | 23.03         | 30.42 | 29.63  | 27.88  | 37.42  | 26.78  |
| 12 | Central Market Intersection            | 9.70            | 24.95         | 33.32 | 32.08  | 31.12  | 40.18  | 29.37  |
| 13 | Hotbread Roundabout                    | 10.04           | 25.73         | 34.37 | 33.33  | 32.02  | 40.83  | 30.23  |
| 14 | Commonwealth Street Intersection       | 10.24           | 26.33         | 34.77 | 34.07  | 32.43  | 41.25  | 30.72  |
| 15 | Central Bank Roundabout                | 10.71           | 27.38         | 35.50 | 34.80  | 33.87  | 41.93  | 31.55  |
| 16 | Townground RA                          | 11.00           | 28.03         | 36.05 | 35.33  | 34.75  | 42.50  | 32.12  |

**Table 12-1-5 Travel Speed (First Survey, Direction to West)**

|    | Location                               | Distance<br>(m) | Speed (Km/h) |       |        |        |        |        |
|----|--|-----------------|--------------|-------|--------|--------|--------|--------|
|    |  |                 | 8:30~        | 9:30~ | 10:30~ | 11:30~ | 15:30~ | 16:30~ |
| 1  | Honiara International Airport          | 0.00            | 0:00         | 0:00  | 0:00   | 0:00   | 0:00   | 0:00   |
| 2  | East Side of Luggo Bridge              | 2.00            | 37.31        | 40.45 | 43.64  | 32.73  | 39.34  | 39.34  |
| 3  | King Gorge VI High School Intersection | 3.60            | 43.97        | 36.69 | 41.44  | 40.85  | 36.00  | 42.04  |
| 4  | Ranadi Roundabout                      | 4.76            | 41.35        | 46.40 | 42.18  | 42.18  | 39.03  | 40.15  |
| 5  | Panatina Plaza Intersection            | 5.88            | 35.06        | 42.44 | 40.73  | 43.35  | 42.00  | 40.32  |
| 6  | Vura Road Intersection                 | 6.84            | 37.16        | 49.37 | 41.64  | 44.31  | 50.09  | 47.34  |
| 7  | Kukum Police Station Intersection      | 7.44            | 30.42        | 43.20 | 28.42  | 35.41  | 16.88  | 32.73  |
| 8  | Kolaa Ridge Road Intersection          | 8.22            | 20.65        | 14.04 | 8.26   | 10.48  | 4.48   | 18.12  |
| 9  | Lawsontama Intersection                | 8.62            | 10.07        | 4.80  | 6.46   | 5.33   | 4.20   | 7.58   |
| 10 | East Side of Mataniko Bridge           | 8.95            | 6.91         | 3.88  | 4.18   | 4.23   | 4.62   | 3.99   |
| 11 | City Council Roundabout                | 9.35            | 6.34         | 3.80  | 5.33   | 8.89   | 5.24   | 4.78   |
| 12 | Central Market Intersection            | 9.70            | 10.96        | 7.24  | 8.57   | 6.49   | 7.59   | 8.13   |
| 13 | Hotbread Roundabout                    | 10.04           | 26.04        | 19.43 | 16.32  | 22.67  | 31.38  | 23.54  |
| 14 | Commonwealth Street Intersection       | 10.24           | 20.00        | 30.00 | 16.36  | 28.80  | 28.80  | 24.83  |
| 15 | Central Bank Roundabout                | 10.71           | 26.86        | 38.45 | 38.45  | 19.67  | 41.27  | 33.84  |
| 16 | Townground RA                          | 11.00           | 26.77        | 31.64 | 32.62  | 19.70  | 30.71  | 30.71  |

**(2) The Second Survey (27 Nov, 2013 (Wed))**

**Table 12-1-6 Travel Time (Second Survey, Direction to East)**

|    | Location                               | Distance (m) | Time (minute) |       |        |        |        |        |
|----|--|--------------|---------------|-------|--------|--------|--------|--------|
|    |  |              | 8:00~         | 9:00~ | 10:00~ | 11:00~ | 15:00~ | 16:00~ |
| 1  | Townground RA                          | 0.00         | 0.00          | 0.00  | 0.00   | 0.00   | 0.00   | 0.00   |
| 2  | Central Bank Roundabout                | 0.29         | 0.58          | 0.60  | 0.68   | 0.60   | 0.63   | 0.67   |
| 3  | Commonwealth Street Intersection       | 0.76         | 1.48          | 1.40  | 1.33   | 1.37   | 1.50   | 3.50   |
| 4  | Hotbread Roundabout                    | 0.96         | 2.20          | 1.92  | 1.80   | 1.82   | 2.07   | 6.70   |
| 5  | Central Market Intersection            | 1.30         | 2.80          | 2.50  | 2.48   | 3.50   | 4.65   | 9.35   |
| 6  | City Council Roundabout                | 1.65         | 3.60          | 3.40  | 3.75   | 4.53   | 6.18   | 10.42  |
| 7  | East Side of Mataniko Bridge           | 2.05         | 4.13          | 3.98  | 4.37   | 5.50   | 7.17   | 11.25  |
| 8  | Lawsontama Intersection                | 2.38         | 4.55          | 4.40  | 4.83   | 6.05   | 7.70   | 11.75  |
| 9  | Kolaa Ridge Road Intersection          | 2.78         | 4.97          | 4.85  | 5.28   | 6.53   | 8.23   | 12.25  |
| 10 | Kukum Police Station Intersection      | 3.56         | 5.83          | 5.80  | 6.33   | 7.40   | 9.22   | 13.15  |
| 11 | Vura Road Intersection                 | 4.16         | 6.58          | 6.63  | 7.07   | 8.15   | 10.28  | 14.13  |
| 12 | Panatina Plaza Intersection            | 5.12         | 7.57          | 7.67  | 8.27   | 9.17   | 11.50  | 15.82  |
| 13 | Ranadi Roundabout                      | 6.24         | 8.78          | 9.12  | 9.63   | 10.53  | 13.08  | 17.33  |
| 14 | King Gorge VI High School Intersection | 7.40         | 10.10         | 10.47 | 11.12  | 11.93  | 14.42  | 18.77  |
| 15 | East Side of Luggo Bridge              | 9.00         | 12.37         | 12.67 | 13.45  | 14.35  | 16.23  | 21.12  |
| 16 | Honiara International Airport          | 11.00        | 14.57         | 14.83 | 15.62  | 16.83  | 18.68  | 23.22  |

**Table 12-1-7 Travel Speed (Second Survey, Direction to East)**

|    | Location                               | Distance (m) | Speed (Km/h) |       |        |        |        |        |
|----|--|--------------|--------------|-------|--------|--------|--------|--------|
|    |  |              | 8:00~        | 9:00~ | 10:00~ | 11:00~ | 15:00~ | 16:00~ |
| 1  | Townground RA                          | 0.00         | 0:00         | 0:00  | 0:00   | 0:00   | 0:00   | 0:00   |
| 2  | Central Bank Roundabout                | 0.29         | 29.83        | 29.00 | 25.46  | 29.00  | 27.47  | 26.10  |
| 3  | Commonwealth Street Intersection       | 0.76         | 31.33        | 35.25 | 43.38  | 36.78  | 32.54  | 9.95   |
| 4  | Hotbread Roundabout                    | 0.96         | 16.74        | 23.23 | 25.71  | 26.67  | 21.18  | 3.75   |
| 5  | Central Market Intersection            | 1.30         | 34.00        | 34.97 | 29.85  | 12.12  | 7.90   | 7.70   |
| 6  | City Council Roundabout                | 1.65         | 26.25        | 23.33 | 16.58  | 20.32  | 13.70  | 19.69  |
| 7  | East Side of Mataniko Bridge           | 2.05         | 45.00        | 41.14 | 38.92  | 24.83  | 24.41  | 28.80  |
| 8  | Lawsontama Intersection                | 2.38         | 47.52        | 47.52 | 42.43  | 36.00  | 37.13  | 39.60  |
| 9  | Kolaa Ridge Road Intersection          | 2.78         | 57.60        | 53.33 | 53.33  | 49.66  | 45.00  | 48.00  |
| 10 | Kukum Police Station Intersection      | 3.56         | 54.00        | 49.26 | 44.57  | 54.00  | 47.59  | 52.00  |
| 11 | Vura Road Intersection                 | 4.16         | 48.00        | 43.20 | 49.09  | 48.00  | 33.75  | 36.61  |
| 12 | Panatina Plaza Intersection            | 5.12         | 58.58        | 55.74 | 48.00  | 56.66  | 47.34  | 34.22  |
| 13 | Ranadi Roundabout                      | 6.24         | 55.23        | 46.34 | 49.17  | 49.17  | 42.44  | 44.31  |
| 14 | King Gorge VI High School Intersection | 7.40         | 52.86        | 51.56 | 46.92  | 49.71  | 52.20  | 48.56  |
| 15 | East Side of Luggo Bridge              | 9.00         | 42.35        | 43.64 | 41.14  | 39.72  | 52.84  | 40.85  |
| 16 | Honiara International Airport          | 11.00        | 54.55        | 55.38 | 55.38  | 48.32  | 48.98  | 57.14  |

**Table 12-1-8 Travel Time (Second Survey, Direction to West)**

|    | Location                               | Distance<br>(m) | Time (minute) |       |        |        |        |        |
|----|--|-----------------|---------------|-------|--------|--------|--------|--------|
|    |  |                 | 8:30~         | 9:30~ | 10:30~ | 11:30~ | 15:30~ | 16:30~ |
| 1  | Honiara International Airport          | 0.00            | 0.00          | 0.00  | 0.00   | 0.00   | 0.00   | 0.00   |
| 2  | East Side of Luggo Bridge              | 2.00            | 2.17          | 2.82  | 3.37   | 2.32   | 2.67   | 2.67   |
| 3  | King Gorge VI High School Intersection | 3.60            | 4.57          | 5.15  | 6.00   | 4.78   | 5.20   | 5.18   |
| 4  | Ranadi Roundabout                      | 4.76            | 6.02          | 6.58  | 7.42   | 6.07   | 6.62   | 6.62   |
| 5  | Panatina Plaza Intersection            | 5.88            | 7.63          | 8.38  | 8.88   | 7.58   | 8.18   | 8.12   |
| 6  | Vura Road Intersection                 | 6.84            | 8.70          | 9.37  | 9.87   | 8.58   | 9.43   | 9.20   |
| 7  | Kukum Police Station Intersection      | 7.44            | 9.62          | 10.17 | 10.83  | 9.23   | 10.35  | 10.02  |
| 8  | Kolaa Ridge Road Intersection          | 8.22            | 10.72         | 11.22 | 11.95  | 10.18  | 14.52  | 11.17  |
| 9  | Lawsontama Intersection                | 8.62            | 11.42         | 13.67 | 12.88  | 14.38  | 20.25  | 12.07  |
| 10 | East Side of Mataniko Bridge           | 8.95            | 14.33         | 17.83 | 16.08  | 19.42  | 23.30  | 13.75  |
| 11 | City Council Roundabout                | 9.35            | 16.85         | 21.42 | 19.60  | 23.33  | 27.27  | 17.33  |
| 12 | Central Market Intersection            | 9.70            | 17.77         | 22.87 | 22.28  | 25.78  | 29.57  | 19.98  |
| 13 | Hotbread Roundabout                    | 10.04           | 18.55         | 23.55 | 23.32  | 26.55  | 30.30  | 20.72  |
| 14 | Commonwealth Street Intersection       | 10.24           | 18.93         | 24.10 | 23.92  | 27.02  | 30.88  | 21.25  |
| 15 | Central Bank Roundabout                | 10.71           | 19.88         | 24.85 | 24.70  | 28.03  | 31.77  | 21.92  |
| 16 | Townground RA                          | 11.00           | 20.53         | 25.38 | 25.25  | 28.55  | 32.25  | 22.43  |

**Table 12-1-9 Travel Speed (Second Survey, Direction to West)**

|    | Location                               | Distance<br>(m) | Speed (Km/h) |       |        |        |        |        |
|----|--|-----------------|--------------|-------|--------|--------|--------|--------|
|    |  |                 | 8:30~        | 9:30~ | 10:30~ | 11:30~ | 15:30~ | 16:30~ |
| 1  | Honiara International Airport          | 0.00            | 0:00         | 0:00  | 0:00   | 0:00   | 0:00   | 0:00   |
| 2  | East Side of Luggo Bridge              | 2.00            | 55.38        | 42.60 | 35.64  | 51.80  | 45.00  | 45.00  |
| 3  | King Gorge VI High School Intersection | 3.60            | 40.00        | 41.14 | 36.46  | 38.92  | 37.89  | 38.15  |
| 4  | Ranadi Roundabout                      | 4.76            | 48.00        | 48.56 | 49.13  | 54.23  | 49.13  | 48.56  |
| 5  | Panatina Plaza Intersection            | 5.88            | 41.57        | 37.33 | 45.82  | 44.31  | 42.89  | 44.80  |
| 6  | Vura Road Intersection                 | 6.84            | 54.00        | 58.58 | 58.58  | 57.60  | 46.08  | 53.17  |
| 7  | Kukum Police Station Intersection      | 7.44            | 39.27        | 45.00 | 37.24  | 55.38  | 39.27  | 44.08  |
| 8  | Kolaa Ridge Road Intersection          | 8.22            | 42.55        | 44.57 | 41.91  | 49.26  | 11.23  | 40.70  |
| 9  | Lawsontama Intersection                | 8.62            | 34.29        | 9.80  | 25.71  | 5.71   | 4.19   | 26.67  |
| 10 | East Side of Mataniko Bridge           | 8.95            | 6.79         | 4.75  | 6.19   | 3.93   | 6.49   | 11.76  |
| 11 | City Council Roundabout                | 9.35            | 9.54         | 6.70  | 6.82   | 6.13   | 6.05   | 6.70   |
| 12 | Central Market Intersection            | 9.70            | 22.91        | 14.48 | 7.83   | 8.57   | 9.13   | 7.92   |
| 13 | Hotbread Roundabout                    | 10.04           | 26.04        | 29.85 | 19.74  | 26.61  | 27.82  | 27.82  |
| 14 | Commonwealth Street Intersection       | 10.24           | 31.30        | 21.82 | 20.00  | 25.71  | 20.57  | 22.50  |
| 15 | Central Bank Roundabout                | 10.71           | 29.68        | 37.60 | 36.00  | 27.74  | 31.92  | 42.30  |
| 16 | Townground RA                          | 11.00           | 26.77        | 32.62 | 31.64  | 33.68  | 36.00  | 33.68  |

## A12-1-3 Traffic Count Result

### (1) Station No. 1

i) The First Survey (3rd Dec, 2013 (Tue))

**Table 12-1-10 Station No. 1 (First Survey, Direction to East)**

| Time          | MV         |                    |         |             |                             |       |                |                  | NMV     |        | Total<br>(Vehicle) |
|---------------|------------|--------------------|---------|-------------|-----------------------------|-------|----------------|------------------|---------|--------|--------------------|
|               | Motorcycle | Sedan/<br>Van/jeep | Pick-up | Mini<br>Bus | Short &<br>Long Body<br>Bus | Truck | Heavy<br>Truck | Trailer<br>Truck | Bicycle | Walker |                    |
| 7:00 – 8:00   | 1          | 508                | 145     | 230         | 12                          | 48    | 1              | 0                | 3       | 45     | 945                |
| 8:00 – 9:00   | 1          | 587                | 137     | 218         | 13                          | 67    | 2              | 1                | 2       | 52     | 1,026              |
| 9:00 – 10:00  | 1          | 555                | 170     | 216         | 8                           | 92    | 10             | 7                | 1       | 76     | 1,059              |
| 10:00 – 11:00 | 1          | 476                | 141     | 199         | 7                           | 61    | 9              | 4                | 2       | 114    | 898                |
| 11:00 – 12:00 | 0          | 561                | 125     | 206         | 8                           | 61    | 2              | 5                | 1       | 90     | 968                |
| 12:00 – 13:00 | 0          | 542                | 116     | 202         | 8                           | 69    | 10             | 3                | 1       | 102    | 950                |
| 13:00 – 14:00 | 2          | 499                | 134     | 188         | 7                           | 65    | 2              | 4                | 3       | 96     | 901                |
| 14:00 – 15:00 | 1          | 566                | 151     | 202         | 10                          | 67    | 9              | 3                | 0       | 99     | 1,009              |
| 15:00 – 16:00 | 3          | 550                | 135     | 164         | 9                           | 84    | 2              | 7                | 0       | 128    | 954                |
| 16:00 – 17:00 | 0          | 565                | 136     | 209         | 14                          | 72    | 5              | 6                | 1       | 197    | 1,007              |
| 17:00 – 18:00 | 0          | 655                | 157     | 206         | 7                           | 75    | 3              | 5                | 0       | 240    | 1,108              |
| 18:00 – 19:00 | 0          | 666                | 132     | 211         | 11                          | 57    | 1              | 10               | 2       | 105    | 1,088              |
| Total         | 10         | 6,730              | 1,679   | 2,451       | 114                         | 818   | 56             | 55               | 16      | 1,344  | 11,913             |

**Table 12-1-11 Station No. 1 (First Survey, Direction to West)**

| Time          | MV         |                    |         |             |                             |       |                |                  | NMV     |        | Total<br>(Vehicle) |
|---------------|------------|--------------------|---------|-------------|-----------------------------|-------|----------------|------------------|---------|--------|--------------------|
|               | Motorcycle | Sedan/<br>Van/jeep | Pick-up | Mini<br>Bus | Short &<br>Long Body<br>Bus | Truck | Heavy<br>Truck | Trailer<br>Truck | Bicycle | Walker |                    |
| 7:00 – 8:00   | 0          | 476                | 126     | 233         | 8                           | 60    | 4              | 1                | 1       | 120    | 908                |
| 8:00 – 9:00   | 1          | 534                | 132     | 246         | 13                          | 73    | 5              | 0                | 1       | 89     | 1,004              |
| 9:00 – 10:00  | 1          | 436                | 159     | 199         | 9                           | 74    | 5              | 8                | 2       | 88     | 891                |
| 10:00 – 11:00 | 1          | 427                | 119     | 210         | 9                           | 81    | 6              | 3                | 2       | 84     | 856                |
| 11:00 – 12:00 | 0          | 444                | 133     | 142         | 13                          | 64    | 8              | 4                | 1       | 158    | 808                |
| 12:00 – 13:00 | 0          | 332                | 77      | 177         | 8                           | 55    | 7              | 5                | 1       | 115    | 661                |
| 13:00 – 14:00 | 0          | 427                | 131     | 167         | 7                           | 34    | 9              | 4                | 0       | 75     | 779                |
| 14:00 – 15:00 | 0          | 366                | 99      | 163         | 7                           | 51    | 6              | 4                | 0       | 110    | 696                |
| 15:00 – 16:00 | 0          | 397                | 102     | 177         | 11                          | 90    | 4              | 7                | 0       | 90     | 788                |
| 16:00 – 17:00 | 0          | 398                | 94      | 157         | 7                           | 44    | 6              | 6                | 0       | 207    | 712                |
| 17:00 – 18:00 | 0          | 398                | 124     | 188         | 10                          | 61    | 3              | 8                | 0       | 204    | 792                |
| 18:00 – 19:00 | 0          | 431                | 84      | 204         | 9                           | 30    | 3              | 5                | 5       | 155    | 766                |
| Total         | 3          | 5,066              | 1,380   | 2,263       | 111                         | 717   | 66             | 55               | 13      | 1,495  | 9,661              |

**Table 12-1-12 Station No. 1 (First Survey, Both Direction Total)**

| Time          | MV         |                    |         |             |                             |       |                |                  | NMV     |        | Total<br>(Vehicle) |
|---------------|------------|--------------------|---------|-------------|-----------------------------|-------|----------------|------------------|---------|--------|--------------------|
|               | Motorcycle | Sedan/<br>Van/jeep | Pick-up | Mini<br>Bus | Short &<br>Long Body<br>Bus | Truck | Heavy<br>Truck | Trailer<br>Truck | Bicycle | Walker |                    |
| 7:00 – 8:00   | 1          | 984                | 271     | 463         | 20                          | 108   | 5              | 1                | 4       | 165    | 1,853              |
| 8:00 – 9:00   | 2          | 1,121              | 269     | 464         | 26                          | 140   | 7              | 1                | 3       | 141    | 2,030              |
| 9:00 – 10:00  | 2          | 991                | 329     | 415         | 17                          | 166   | 15             | 15               | 3       | 164    | 1,950              |
| 10:00 – 11:00 | 2          | 903                | 260     | 409         | 16                          | 142   | 15             | 7                | 4       | 198    | 1,754              |
| 11:00 – 12:00 | 0          | 1,005              | 258     | 348         | 21                          | 125   | 10             | 9                | 2       | 248    | 1,776              |
| 12:00 – 13:00 | 0          | 874                | 193     | 379         | 16                          | 124   | 17             | 8                | 2       | 217    | 1,611              |
| 13:00 – 14:00 | 2          | 926                | 265     | 355         | 14                          | 99    | 11             | 8                | 3       | 171    | 1,680              |
| 14:00 – 15:00 | 1          | 932                | 250     | 365         | 17                          | 118   | 15             | 7                | 0       | 209    | 1,705              |
| 15:00 – 16:00 | 3          | 947                | 237     | 341         | 20                          | 174   | 6              | 14               | 0       | 218    | 1,742              |
| 16:00 – 17:00 | 0          | 963                | 230     | 366         | 21                          | 116   | 11             | 12               | 1       | 404    | 1,719              |
| 17:00 – 18:00 | 0          | 1,053              | 281     | 394         | 17                          | 136   | 6              | 13               | 0       | 444    | 1,900              |
| 18:00 – 19:00 | 0          | 1,097              | 216     | 415         | 20                          | 87    | 4              | 15               | 7       | 260    | 1,854              |
| Total         | 13         | 11,796             | 3,059   | 4,714       | 225                         | 1,535 | 122            | 110              | 29      | 2,839  | 21,574             |

ii) The Second Survey (4th Dec, 2013 (Wed))

**Table 12-1-13 Station No. 1 (Second Survey, Direction to East)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 1          | 540            | 135     | 228      | 14                    | 54    | 1           | 0             | 2       | 35     | 973             |
| 8:00 – 9:00   | 0          | 677            | 136     | 205      | 8                     | 69    | 2           | 4             | 0       | 53     | 1,101           |
| 9:00 – 10:00  | 0          | 728            | 142     | 182      | 7                     | 69    | 7           | 3             | 2       | 65     | 1,138           |
| 10:00 – 11:00 | 0          | 588            | 130     | 181      | 7                     | 55    | 6           | 6             | 2       | 47     | 973             |
| 11:00 – 12:00 | 2          | 507            | 169     | 117      | 10                    | 59    | 4           | 6             | 0       | 55     | 874             |
| 12:00 – 13:00 | 1          | 601            | 163     | 179      | 9                     | 54    | 5           | 0             | 0       | 41     | 1,012           |
| 13:00 – 14:00 | 0          | 606            | 202     | 157      | 6                     | 95    | 7           | 4             | 1       | 29     | 1,077           |
| 14:00 – 15:00 | 1          | 602            | 192     | 205      | 20                    | 113   | 11          | 7             | 0       | 126    | 1,151           |
| 15:00 – 16:00 | 0          | 735            | 148     | 215      | 18                    | 72    | 5           | 4             | 0       | 202    | 1,197           |
| 16:00 – 17:00 | 1          | 796            | 117     | 175      | 16                    | 64    | 3           | 2             | 0       | 165    | 1,174           |
| 17:00 – 18:00 | 0          | 740            | 182     | 213      | 9                     | 68    | 5           | 3             | 6       | 178    | 1,220           |
| 18:00 – 19:00 | 0          | 648            | 112     | 219      | 15                    | 60    | 2           | 6             | 0       | 142    | 1,062           |
| Total         | 6          | 7,768          | 1,828   | 2,276    | 139                   | 832   | 58          | 45            | 13      | 1,138  | 12,952          |

**Table 12-1-14 Station No. 1 (Second Survey, Direction to West)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 1          | 529            | 152     | 233      | 15                    | 75    | 1           | 1             | 3       | 115    | 1,007           |
| 8:00 – 9:00   | 2          | 551            | 136     | 229      | 10                    | 58    | 3           | 3             | 0       | 135    | 992             |
| 9:00 – 10:00  | 2          | 464            | 124     | 188      | 9                     | 66    | 6           | 6             | 3       | 118    | 865             |
| 10:00 – 11:00 | 1          | 428            | 132     | 180      | 7                     | 63    | 6           | 6             | 7       | 150    | 823             |
| 11:00 – 12:00 | 2          | 457            | 137     | 193      | 6                     | 68    | 4           | 6             | 0       | 107    | 873             |
| 12:00 – 13:00 | 0          | 439            | 148     | 209      | 12                    | 81    | 9           | 2             | 0       | 105    | 900             |
| 13:00 – 14:00 | 0          | 495            | 112     | 152      | 7                     | 54    | 4           | 5             | 1       | 87     | 829             |
| 14:00 – 15:00 | 0          | 457            | 121     | 186      | 14                    | 45    | 3           | 5             | 1       | 106    | 831             |
| 15:00 – 16:00 | 2          | 496            | 114     | 184      | 10                    | 35    | 2           | 3             | 7       | 225    | 846             |
| 16:00 – 17:00 | 0          | 430            | 104     | 181      | 13                    | 98    | 3           | 7             | 5       | 243    | 836             |
| 17:00 – 18:00 | 0          | 472            | 111     | 190      | 12                    | 59    | 2           | 3             | 16      | 308    | 849             |
| 18:00 – 19:00 | 0          | 390            | 86      | 190      | 11                    | 32    | 3           | 3             | 3       | 257    | 715             |
| Total         | 10         | 5,608          | 1,477   | 2,315    | 126                   | 734   | 46          | 50            | 46      | 1,956  | 10,366          |

**Table 12-1-15 Station No. 1 (Second Survey, Both Direction Total)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 2          | 1,069          | 287     | 461      | 29                    | 129   | 2           | 1             | 5       | 150    | 1,980           |
| 8:00 – 9:00   | 2          | 1,228          | 272     | 434      | 18                    | 127   | 5           | 7             | 0       | 188    | 2,093           |
| 9:00 – 10:00  | 2          | 1,192          | 266     | 370      | 16                    | 135   | 13          | 9             | 5       | 183    | 2,003           |
| 10:00 – 11:00 | 1          | 1,016          | 262     | 361      | 14                    | 118   | 12          | 12            | 9       | 197    | 1,796           |
| 11:00 – 12:00 | 4          | 964            | 306     | 310      | 16                    | 127   | 8           | 12            | 0       | 162    | 1,747           |
| 12:00 – 13:00 | 1          | 1,040          | 311     | 388      | 21                    | 135   | 14          | 2             | 0       | 146    | 1,912           |
| 13:00 – 14:00 | 0          | 1,101          | 314     | 309      | 13                    | 149   | 11          | 9             | 2       | 116    | 1,906           |
| 14:00 – 15:00 | 1          | 1,059          | 313     | 391      | 34                    | 158   | 14          | 12            | 1       | 232    | 1,982           |
| 15:00 – 16:00 | 2          | 1,231          | 262     | 399      | 28                    | 107   | 7           | 7             | 7       | 427    | 2,043           |
| 16:00 – 17:00 | 1          | 1,226          | 221     | 356      | 29                    | 162   | 6           | 9             | 5       | 408    | 2,010           |
| 17:00 – 18:00 | 0          | 1,212          | 293     | 403      | 21                    | 127   | 7           | 6             | 22      | 486    | 2,069           |
| 18:00 – 19:00 | 0          | 1,038          | 198     | 409      | 26                    | 92    | 5           | 9             | 3       | 399    | 1,777           |
| Total         | 16         | 13,376         | 3,305   | 4,591    | 265                   | 1,566 | 104         | 95            | 59      | 3,094  | 23,318          |

**(2) Station No. 2**

i) The First Daytime Survey (27th Nov, 2013 (Wed))

**Table 12-1-16 Station No. 2 (First Daytime Survey, Direction to East)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 1          | 681            | 188     | 236      | 8                     | 63    | 0           | 0             | 2       | 65     | 1,177           |
| 8:00 – 9:00   | 0          | 720            | 165     | 210      | 14                    | 100   | 3           | 6             | 1       | 36     | 1,218           |
| 9:00 – 10:00  | 1          | 683            | 148     | 189      | 14                    | 96    | 7           | 5             | 0       | 50     | 1,143           |
| 10:00 – 11:00 | 3          | 568            | 161     | 162      | 9                     | 80    | 7           | 7             | 1       | 31     | 997             |
| 11:00 – 12:00 | 3          | 660            | 190     | 189      | 10                    | 81    | 12          | 5             | 1       | 30     | 1,150           |
| 12:00 – 13:00 | 0          | 703            | 175     | 204      | 9                     | 84    | 5           | 2             | 3       | 26     | 1,182           |
| 13:00 – 14:00 | 0          | 704            | 170     | 204      | 7                     | 103   | 12          | 5             | 2       | 45     | 1,205           |
| 14:00 – 15:00 | 2          | 742            | 210     | 232      | 9                     | 97    | 9           | 8             | 3       | 41     | 1,309           |
| 15:00 – 16:00 | 4          | 805            | 203     | 279      | 12                    | 119   | 10          | 10            | 3       | 47     | 1,442           |
| 16:00 – 17:00 | 3          | 846            | 156     | 272      | 13                    | 98    | 8           | 6             | 4       | 48     | 1,402           |
| 17:00 – 18:00 | 2          | 774            | 172     | 257      | 15                    | 98    | 4           | 3             | 8       | 87     | 1,325           |
| 18:00 – 19:00 | 0          | 750            | 151     | 236      | 9                     | 59    | 5           | 4             | 5       | 87     | 1,214           |
| Total         | 19         | 8,636          | 2,089   | 2,670    | 129                   | 1,078 | 82          | 61            | 33      | 593    | 14,764          |

**Table 12-1-17 Station No. 2 (First Daytime Survey, Direction to West)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 0          | 875            | 189     | 261      | 10                    | 79    | 1           | 0             | 3       | 112    | 1,415           |
| 8:00 – 9:00   | 1          | 931            | 217     | 210      | 13                    | 88    | 6           | 6             | 2       | 112    | 1,472           |
| 9:00 – 10:00  | 1          | 617            | 169     | 184      | 12                    | 107   | 10          | 8             | 0       | 77     | 1,108           |
| 10:00 – 11:00 | 4          | 703            | 189     | 169      | 11                    | 115   | 8           | 6             | 0       | 128    | 1,205           |
| 11:00 – 12:00 | 2          | 657            | 137     | 199      | 5                     | 77    | 14          | 5             | 1       | 130    | 1,096           |
| 12:00 – 13:00 | 0          | 699            | 155     | 196      | 17                    | 70    | 6           | 3             | 0       | 157    | 1,146           |
| 13:00 – 14:00 | 1          | 657            | 187     | 214      | 12                    | 90    | 10          | 5             | 0       | 192    | 1,176           |
| 14:00 – 15:00 | 0          | 664            | 151     | 192      | 3                     | 92    | 9           | 10            | 1       | 220    | 1,121           |
| 15:00 – 16:00 | 0          | 592            | 115     | 236      | 11                    | 49    | 9           | 1             | 0       | 52     | 1,013           |
| 16:00 – 17:00 | 0          | 683            | 136     | 243      | 14                    | 92    | 17          | 6             | 12      | 156    | 1,191           |
| 17:00 – 18:00 | 0          | 758            | 177     | 289      | 10                    | 92    | 2           | 6             | 9       | 160    | 1,334           |
| 18:00 – 19:00 | 0          | 684            | 135     | 195      | 9                     | 47    | 5           | 0             | 7       | 154    | 1,075           |
| Total         | 9          | 8,520          | 1,957   | 2,588    | 127                   | 998   | 97          | 56            | 35      | 1,650  | 14,352          |

**Table 12-1-18 Station No. 2 (First Daytime Survey, Both Direction Total)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 1          | 1,556          | 377     | 497      | 18                    | 142   | 1           | 0             | 5       | 177    | 2,592           |
| 8:00 – 9:00   | 1          | 1,651          | 382     | 420      | 27                    | 188   | 9           | 12            | 3       | 148    | 2,690           |
| 9:00 – 10:00  | 2          | 1,300          | 317     | 373      | 26                    | 203   | 17          | 13            | 0       | 127    | 2,251           |
| 10:00 – 11:00 | 7          | 1,271          | 350     | 331      | 20                    | 195   | 15          | 13            | 1       | 159    | 2,202           |
| 11:00 – 12:00 | 5          | 1,317          | 327     | 388      | 15                    | 158   | 26          | 10            | 2       | 160    | 2,246           |
| 12:00 – 13:00 | 0          | 1,402          | 330     | 400      | 26                    | 154   | 11          | 5             | 3       | 183    | 2,328           |
| 13:00 – 14:00 | 1          | 1,361          | 357     | 418      | 19                    | 193   | 22          | 10            | 2       | 237    | 2,381           |
| 14:00 – 15:00 | 2          | 1,406          | 361     | 424      | 12                    | 189   | 18          | 18            | 4       | 261    | 2,430           |
| 15:00 – 16:00 | 4          | 1,397          | 318     | 515      | 23                    | 168   | 19          | 11            | 3       | 99     | 2,455           |
| 16:00 – 17:00 | 3          | 1,529          | 292     | 515      | 27                    | 190   | 25          | 12            | 16      | 204    | 2,593           |
| 17:00 – 18:00 | 2          | 1,532          | 349     | 546      | 25                    | 190   | 6           | 9             | 17      | 247    | 2,659           |
| 18:00 – 19:00 | 0          | 1,434          | 286     | 431      | 18                    | 106   | 10          | 4             | 12      | 241    | 2,289           |
| Total         | 28         | 17,156         | 4,046   | 5,258    | 256                   | 2,076 | 179         | 117           | 68      | 2,243  | 29,116          |



ii) The Second Daytime Survey (28th Nov, 2013 (Thu))

**Table 12-1-19 Station No. 2 (Second Daytime Survey, Direction to East)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 0          | 582            | 175     | 218      | 10                    | 60    | 0           | 0             | 0       | 60     | 1,045           |
| 8:00 – 9:00   | 1          | 741            | 160     | 252      | 13                    | 105   | 7           | 4             | 4       | 40     | 1,283           |
| 9:00 – 10:00  | 0          | 661            | 156     | 197      | 8                     | 96    | 9           | 4             | 1       | 42     | 1,131           |
| 10:00 – 11:00 | 2          | 644            | 183     | 198      | 11                    | 112   | 5           | 5             | 0       | 32     | 1,160           |
| 11:00 – 12:00 | 1          | 691            | 153     | 183      | 10                    | 82    | 5           | 8             | 2       | 35     | 1,133           |
| 12:00 – 13:00 | 0          | 758            | 150     | 199      | 9                     | 63    | 7           | 0             | 0       | 41     | 1,186           |
| 13:00 – 14:00 | 1          | 555            | 179     | 184      | 14                    | 107   | 4           | 9             | 0       | 22     | 1,053           |
| 14:00 – 15:00 | 1          | 627            | 171     | 197      | 9                     | 107   | 7           | 5             | 2       | 43     | 1,124           |
| 15:00 – 16:00 | 1          | 594            | 154     | 186      | 6                     | 89    | 9           | 1             | 3       | 20     | 1,040           |
| 16:00 – 17:00 | 1          | 707            | 194     | 223      | 11                    | 104   | 6           | 6             | 2       | 56     | 1,252           |
| 17:00 – 18:00 | 3          | 850            | 173     | 225      | 12                    | 101   | 11          | 0             | 2       | 120    | 1,375           |
| 18:00 – 19:00 | 0          | 846            | 118     | 288      | 14                    | 73    | 1           | 2             | 2       | 98     | 1,342           |
| Total         | 11         | 8,256          | 1,966   | 2,550    | 127                   | 1,099 | 71          | 44            | 18      | 609    | 14,124          |

**Table 12-1-20 Station No. 2 (Second Daytime Survey, Direction to West)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 0          | 790            | 193     | 293      | 15                    | 79    | 3           | 2             | 3       | 94     | 1,375           |
| 8:00 – 9:00   | 1          | 850            | 178     | 262      | 13                    | 89    | 7           | 2             | 0       | 70     | 1,402           |
| 9:00 – 10:00  | 3          | 488            | 140     | 169      | 10                    | 89    | 5           | 5             | 2       | 54     | 909             |
| 10:00 – 11:00 | 0          | 525            | 174     | 161      | 11                    | 104   | 11          | 6             | 1       | 89     | 992             |
| 11:00 – 12:00 | 1          | 586            | 148     | 177      | 14                    | 87    | 8           | 3             | 2       | 96     | 1,024           |
| 12:00 – 13:00 | 0          | 585            | 192     | 202      | 9                     | 93    | 7           | 5             | 6       | 112    | 1,093           |
| 13:00 – 14:00 | 0          | 757            | 144     | 184      | 7                     | 81    | 0           | 6             | 0       | 94     | 1,179           |
| 14:00 – 15:00 | 1          | 614            | 175     | 154      | 10                    | 95    | 7           | 1             | 2       | 28     | 1,057           |
| 15:00 – 16:00 | 1          | 584            | 222     | 162      | 11                    | 95    | 4           | 6             | 7       | 45     | 1,085           |
| 16:00 – 17:00 | 0          | 699            | 188     | 200      | 11                    | 110   | 3           | 3             | 4       | 131    | 1,214           |
| 17:00 – 18:00 | 0          | 748            | 164     | 196      | 11                    | 89    | 2           | 5             | 0       | 60     | 1,215           |
| 18:00 – 19:00 | 0          | 724            | 94      | 206      | 11                    | 26    | 4           | 0             | 7       | 191    | 1,065           |
| Total         | 7          | 7,950          | 2,012   | 2,366    | 133                   | 1,037 | 61          | 44            | 34      | 1,064  | 13,610          |

**Table 12-1-21 Station No. 2 (Second Daytime Survey, Both Direction Total)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 0          | 1,372          | 368     | 511      | 25                    | 139   | 3           | 2             | 3       | 154    | 2,420           |
| 8:00 – 9:00   | 2          | 1,591          | 338     | 514      | 26                    | 194   | 14          | 6             | 4       | 110    | 2,685           |
| 9:00 – 10:00  | 3          | 1,149          | 296     | 366      | 18                    | 185   | 14          | 9             | 3       | 96     | 2,040           |
| 10:00 – 11:00 | 2          | 1,169          | 357     | 359      | 22                    | 216   | 16          | 11            | 1       | 121    | 2,152           |
| 11:00 – 12:00 | 2          | 1,277          | 301     | 360      | 24                    | 169   | 13          | 11            | 4       | 131    | 2,157           |
| 12:00 – 13:00 | 0          | 1,343          | 342     | 401      | 18                    | 156   | 14          | 5             | 6       | 153    | 2,279           |
| 13:00 – 14:00 | 1          | 1,312          | 323     | 368      | 21                    | 188   | 4           | 15            | 0       | 116    | 2,232           |
| 14:00 – 15:00 | 2          | 1,241          | 346     | 351      | 19                    | 202   | 14          | 6             | 4       | 71     | 2,181           |
| 15:00 – 16:00 | 2          | 1,178          | 376     | 348      | 17                    | 184   | 13          | 7             | 10      | 65     | 2,125           |
| 16:00 – 17:00 | 1          | 1,406          | 382     | 423      | 22                    | 214   | 9           | 9             | 6       | 187    | 2,466           |
| 17:00 – 18:00 | 3          | 1,598          | 337     | 421      | 23                    | 190   | 13          | 5             | 2       | 180    | 2,590           |
| 18:00 – 19:00 | 0          | 1,570          | 212     | 494      | 25                    | 99    | 5           | 2             | 9       | 289    | 2,407           |
| Total         | 18         | 16,206         | 3,978   | 4,916    | 260                   | 2,136 | 132         | 88            | 52      | 1,673  | 27,734          |

iii) The First Nighttime Survey (11th Dec, 2013 (Wed))

**Table 12-1-22 Station No. 2 (First Nighttime Survey, Direction to East)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 19:00 – 20:00 | 1          | 730            | 108     | 196      | 3                     | 45    | 0           | 3             | 1       | 32     | 1,086           |
| 20:00 – 21:00 | 1          | 523            | 74      | 99       | 3                     | 31    | 2           | 2             | 0       | 18     | 735             |
| 21:00 – 22:00 | 1          | 462            | 67      | 43       | 0                     | 30    | 0           | 1             | 0       | 17     | 604             |
| 22:00 – 23:00 | 0          | 381            | 54      | 20       | 0                     | 30    | 0           | 1             | 0       | 9      | 486             |
| 23:00 – 24:00 | 1          | 259            | 42      | 16       | 0                     | 12    | 1           | 0             | 0       | 4      | 331             |
| 24:00 – 1:00  | 0          | 239            | 31      | 12       | 0                     | 14    | 0           | 1             | 1       | 2      | 297             |
| 1:00 – 2:00   | 0          | 162            | 14      | 5        | 0                     | 10    | 0           | 0             | 0       | 2      | 191             |
| 2:00 – 3:00   | 0          | 109            | 10      | 9        | 0                     | 2     | 0           | 1             | 0       | 1      | 131             |
| 3:00 – 4:00   | 0          | 101            | 14      | 5        | 0                     | 13    | 0           | 0             | 0       | 1      | 133             |
| 4:00 – 5:00   | 0          | 83             | 15      | 12       | 0                     | 18    | 0           | 0             | 0       | 1      | 128             |
| 5:00 – 6:00   | 0          | 121            | 26      | 25       | 2                     | 16    | 2           | 0             | 2       | 10     | 192             |
| 6:00 – 7:00   | 0          | 209            | 43      | 81       | 0                     | 26    | 0           | 1             | 2       | 31     | 360             |
| Total         | 4          | 3,379          | 498     | 523      | 8                     | 247   | 5           | 10            | 6       | 128    | 4,674           |

**Table 12-1-23 Station No. 2 (First Nighttime Survey, Direction to West)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 19:00 – 20:00 | 1          | 708            | 110     | 181      | 4                     | 49    | 2           | 3             | 0       | 32     | 1,058           |
| 20:00 – 21:00 | 1          | 627            | 107     | 77       | 1                     | 39    | 1           | 4             | 0       | 14     | 857             |
| 21:00 – 22:00 | 0          | 377            | 55      | 35       | 0                     | 23    | 1           | 1             | 0       | 5      | 492             |
| 22:00 – 23:00 | 0          | 368            | 35      | 25       | 0                     | 19    | 2           | 0             | 0       | 8      | 449             |
| 23:00 – 24:00 | 0          | 236            | 39      | 14       | 0                     | 16    | 3           | 0             | 0       | 1      | 308             |
| 24:00 – 1:00  | 0          | 248            | 16      | 8        | 0                     | 17    | 0           | 0             | 0       | 7      | 289             |
| 1:00 – 2:00   | 0          | 141            | 16      | 9        | 0                     | 15    | 2           | 1             | 0       | 0      | 184             |
| 2:00 – 3:00   | 0          | 152            | 17      | 6        | 0                     | 4     | 0           | 0             | 0       | 0      | 179             |
| 3:00 – 4:00   | 0          | 97             | 15      | 9        | 0                     | 14    | 2           | 0             | 0       | 0      | 137             |
| 4:00 – 5:00   | 0          | 80             | 16      | 10       | 0                     | 11    | 1           | 1             | 0       | 2      | 119             |
| 5:00 – 6:00   | 0          | 80             | 26      | 20       | 0                     | 20    | 0           | 0             | 0       | 8      | 146             |
| 6:00 – 7:00   | 0          | 184            | 41      | 83       | 5                     | 25    | 0           | 1             | 4       | 28     | 339             |
| Total         | 2          | 3,298          | 493     | 477      | 10                    | 252   | 14          | 11            | 4       | 105    | 4,557           |

**Table 12-1-24 Station No. 2 (First Nighttime Survey, Both Direction Total)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 19:00 – 20:00 | 2          | 1,438          | 218     | 377      | 7                     | 94    | 2           | 6             | 1       | 64     | 2,144           |
| 20:00 – 21:00 | 2          | 1,150          | 181     | 176      | 4                     | 70    | 3           | 6             | 0       | 32     | 1,592           |
| 21:00 – 22:00 | 1          | 839            | 122     | 78       | 0                     | 53    | 1           | 2             | 0       | 22     | 1,096           |
| 22:00 – 23:00 | 0          | 749            | 89      | 45       | 0                     | 49    | 2           | 1             | 0       | 17     | 935             |
| 23:00 – 24:00 | 1          | 495            | 81      | 30       | 0                     | 28    | 4           | 0             | 0       | 5      | 639             |
| 24:00 – 1:00  | 0          | 487            | 47      | 20       | 0                     | 31    | 0           | 1             | 1       | 9      | 586             |
| 1:00 – 2:00   | 0          | 303            | 30      | 14       | 0                     | 25    | 2           | 1             | 0       | 2      | 375             |
| 2:00 – 3:00   | 0          | 261            | 27      | 15       | 0                     | 6     | 0           | 1             | 0       | 1      | 310             |
| 3:00 – 4:00   | 0          | 198            | 29      | 14       | 0                     | 27    | 2           | 0             | 0       | 1      | 270             |
| 4:00 – 5:00   | 0          | 163            | 31      | 22       | 0                     | 29    | 1           | 1             | 0       | 3      | 247             |
| 5:00 – 6:00   | 0          | 201            | 52      | 45       | 2                     | 36    | 2           | 0             | 2       | 18     | 338             |
| 6:00 – 7:00   | 0          | 393            | 84      | 164      | 5                     | 51    | 0           | 2             | 6       | 59     | 699             |
| Total         | 6          | 6,677          | 991     | 1,000    | 18                    | 499   | 19          | 21            | 10      | 233    | 9,231           |

iv) The Second Nighttime Survey (12th Dec, 2013 (Thu))

**Table 12-1-25 Station No. 2 (Second Nighttime Survey, Direction to East)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 19:00 – 20:00 | 0          | 773            | 113     | 204      | 7                     | 53    | 2           | 4             | 0       | 30     | 1,156           |
| 20:00 – 21:00 | 0          | 521            | 91      | 111      | 4                     | 32    | 0           | 0             | 0       | 18     | 759             |
| 21:00 – 22:00 | 0          | 581            | 74      | 69       | 1                     | 30    | 0           | 2             | 0       | 23     | 757             |
| 22:00 – 23:00 | 0          | 411            | 73      | 25       | 1                     | 23    | 0           | 0             | 0       | 6      | 533             |
| 23:00 – 24:00 | 1          | 369            | 50      | 29       | 0                     | 23    | 0           | 0             | 0       | 0      | 472             |
| 24:00 – 1:00  | 0          | 228            | 24      | 14       | 0                     | 20    | 0           | 0             | 0       | 2      | 286             |
| 1:00 – 2:00   | 0          | 137            | 20      | 6        | 0                     | 9     | 0           | 0             | 0       | 2      | 172             |
| 2:00 – 3:00   | 0          | 125            | 35      | 6        | 0                     | 17    | 1           | 0             | 0       | 17     | 184             |
| 3:00 – 4:00   | 0          | 89             | 7       | 5        | 0                     | 7     | 0           | 0             | 0       | 0      | 108             |
| 4:00 – 5:00   | 0          | 70             | 13      | 8        | 0                     | 5     | 0           | 0             | 0       | 2      | 96              |
| 5:00 – 6:00   | 0          | 134            | 18      | 17       | 0                     | 9     | 0           | 0             | 0       | 17     | 178             |
| 6:00 – 7:00   | 1          | 275            | 49      | 83       | 1                     | 23    | 1           | 0             | 0       | 3      | 433             |
| Total         | 2          | 3,713          | 567     | 577      | 14                    | 251   | 4           | 6             | 0       | 120    | 5,134           |

**Table 12-1-26 Station No. 2 (Second Nighttime Survey, Direction to West)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 19:00 – 20:00 | 0          | 664            | 131     | 166      | 6                     | 55    | 2           | 4             | 1       | 24     | 1,028           |
| 20:00 – 21:00 | 0          | 536            | 94      | 84       | 2                     | 25    | 1           | 2             | 2       | 24     | 744             |
| 21:00 – 22:00 | 1          | 480            | 68      | 35       | 0                     | 33    | 0           | 1             | 0       | 0      | 618             |
| 22:00 – 23:00 | 0          | 291            | 41      | 23       | 0                     | 28    | 0           | 0             | 0       | 7      | 383             |
| 23:00 – 24:00 | 0          | 292            | 32      | 21       | 1                     | 16    | 3           | 0             | 4       | 9      | 365             |
| 24:00 – 1:00  | 0          | 255            | 24      | 27       | 0                     | 10    | 0           | 0             | 0       | 0      | 316             |
| 1:00 – 2:00   | 0          | 258            | 48      | 11       | 0                     | 33    | 1           | 0             | 0       | 0      | 351             |
| 2:00 – 3:00   | 0          | 159            | 12      | 6        | 0                     | 10    | 0           | 0             | 0       | 0      | 187             |
| 3:00 – 4:00   | 0          | 103            | 7       | 8        | 0                     | 3     | 0           | 0             | 0       | 0      | 121             |
| 4:00 – 5:00   | 1          | 75             | 10      | 4        | 0                     | 6     | 0           | 0             | 0       | 0      | 96              |
| 5:00 – 6:00   | 0          | 118            | 29      | 22       | 0                     | 14    | 0           | 0             | 4       | 7      | 183             |
| 6:00 – 7:00   | 0          | 323            | 67      | 105      | 4                     | 32    | 0           | 0             | 2       | 24     | 531             |
| Total         | 2          | 3,554          | 563     | 512      | 13                    | 265   | 7           | 7             | 13      | 95     | 4,923           |

**Table 12-1-27 Station No. 2 (Second Nighttime Survey, Both Direction Total)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 19:00 – 20:00 | 0          | 1,437          | 244     | 370      | 13                    | 108   | 4           | 8             | 1       | 54     | 2,184           |
| 20:00 – 21:00 | 0          | 1,057          | 185     | 195      | 6                     | 57    | 1           | 2             | 2       | 42     | 1,503           |
| 21:00 – 22:00 | 1          | 1,061          | 142     | 104      | 1                     | 63    | 0           | 3             | 0       | 23     | 1,375           |
| 22:00 – 23:00 | 0          | 702            | 114     | 48       | 1                     | 51    | 0           | 0             | 0       | 13     | 916             |
| 23:00 – 24:00 | 1          | 661            | 82      | 50       | 1                     | 39    | 3           | 0             | 4       | 9      | 837             |
| 24:00 – 1:00  | 0          | 483            | 48      | 41       | 0                     | 30    | 0           | 0             | 0       | 2      | 602             |
| 1:00 – 2:00   | 0          | 395            | 68      | 17       | 0                     | 42    | 1           | 0             | 0       | 2      | 523             |
| 2:00 – 3:00   | 0          | 284            | 47      | 12       | 0                     | 27    | 1           | 0             | 0       | 17     | 371             |
| 3:00 – 4:00   | 0          | 192            | 14      | 13       | 0                     | 10    | 0           | 0             | 0       | 0      | 229             |
| 4:00 – 5:00   | 1          | 145            | 23      | 12       | 0                     | 11    | 0           | 0             | 0       | 2      | 192             |
| 5:00 – 6:00   | 0          | 252            | 47      | 39       | 0                     | 23    | 0           | 0             | 4       | 24     | 361             |
| 6:00 – 7:00   | 1          | 598            | 116     | 188      | 5                     | 55    | 1           | 0             | 2       | 27     | 964             |
| Total         | 4          | 7,267          | 1,130   | 1,089    | 27                    | 516   | 11          | 13            | 13      | 215    | 10,057          |

**(3) Station No. 3**

i) The First Survey (29th Nov, 2013 (Fri))

**Table 12-1-28 Station No. 3 (First Survey, Direction to East)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 1          | 315            | 145     | 147      | 4                     | 58    | 3           | 0             | 0       | 35     | 673             |
| 8:00 – 9:00   | 1          | 410            | 155     | 163      | 6                     | 95    | 3           | 3             | 0       | 41     | 836             |
| 9:00 – 10:00  | 1          | 453            | 159     | 126      | 2                     | 104   | 11          | 0             | 1       | 13     | 856             |
| 10:00 – 11:00 | 3          | 429            | 165     | 127      | 5                     | 92    | 13          | 4             | 0       | 19     | 838             |
| 11:00 – 12:00 | 3          | 493            | 167     | 122      | 9                     | 116   | 5           | 7             | 2       | 12     | 922             |
| 12:00 – 13:00 | 0          | 490            | 138     | 129      | 5                     | 79    | 8           | 2             | 1       | 14     | 851             |
| 13:00 – 14:00 | 2          | 563            | 157     | 133      | 4                     | 104   | 4           | 5             | 2       | 32     | 972             |
| 14:00 – 15:00 | 2          | 533            | 146     | 127      | 8                     | 95    | 11          | 5             | 0       | 20     | 927             |
| 15:00 – 16:00 | 4          | 520            | 123     | 139      | 8                     | 77    | 8           | 6             | 0       | 23     | 885             |
| 16:00 – 17:00 | 0          | 505            | 155     | 138      | 9                     | 91    | 5           | 4             | 2       | 41     | 907             |
| 17:00 – 18:00 | 0          | 446            | 133     | 122      | 2                     | 57    | 5           | 4             | 1       | 39     | 769             |
| 18:00 – 19:00 | 1          | 431            | 109     | 158      | 6                     | 69    | 3           | 3             | 2       | 35     | 780             |
| Total         | 18         | 5,588          | 1,752   | 1,631    | 68                    | 1,037 | 79          | 43            | 11      | 324    | 10,216          |

**Table 12-1-29 Station No. 3 (First Survey, Direction to West)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 1          | 372            | 102     | 198      | 8                     | 66    | 1           | 1             | 1       | 61     | 749             |
| 8:00 – 9:00   | 1          | 503            | 155     | 137      | 3                     | 91    | 10          | 2             | 1       | 50     | 902             |
| 9:00 – 10:00  | 2          | 488            | 203     | 115      | 3                     | 139   | 14          | 5             | 1       | 47     | 969             |
| 10:00 – 11:00 | 3          | 490            | 167     | 114      | 7                     | 83    | 11          | 7             | 0       | 76     | 882             |
| 11:00 – 12:00 | 3          | 526            | 163     | 125      | 5                     | 102   | 5           | 1             | 1       | 91     | 930             |
| 12:00 – 13:00 | 1          | 425            | 126     | 118      | 5                     | 56    | 17          | 3             | 4       | 40     | 751             |
| 13:00 – 14:00 | 3          | 447            | 132     | 108      | 11                    | 72    | 7           | 6             | 0       | 69     | 786             |
| 14:00 – 15:00 | 1          | 495            | 170     | 102      | 5                     | 96    | 15          | 4             | 0       | 68     | 888             |
| 15:00 – 16:00 | 0          | 408            | 168     | 91       | 11                    | 101   | 7           | 1             | 0       | 76     | 787             |
| 16:00 – 17:00 | 1          | 404            | 182     | 112      | 3                     | 80    | 1           | 4             | 1       | 92     | 787             |
| 17:00 – 18:00 | 0          | 492            | 99      | 123      | 6                     | 65    | 0           | 3             | 3       | 95     | 788             |
| 18:00 – 19:00 | 0          | 442            | 87      | 133      | 10                    | 46    | 3           | 2             | 3       | 79     | 723             |
| Total         | 16         | 5,492          | 1,754   | 1,476    | 77                    | 997   | 91          | 39            | 15      | 844    | 9,942           |

**Table 12-1-30 Station No. 3 (First Survey, Both Direction Total)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 2          | 687            | 247     | 345      | 12                    | 124   | 4           | 1             | 1       | 96     | 1,422           |
| 8:00 – 9:00   | 2          | 913            | 310     | 300      | 9                     | 186   | 13          | 5             | 1       | 91     | 1,738           |
| 9:00 – 10:00  | 3          | 941            | 362     | 241      | 5                     | 243   | 25          | 5             | 2       | 60     | 1,825           |
| 10:00 – 11:00 | 6          | 919            | 332     | 241      | 12                    | 175   | 24          | 11            | 0       | 95     | 1,720           |
| 11:00 – 12:00 | 6          | 1,019          | 330     | 247      | 14                    | 218   | 10          | 8             | 3       | 103    | 1,852           |
| 12:00 – 13:00 | 1          | 915            | 264     | 247      | 10                    | 135   | 25          | 5             | 5       | 54     | 1,602           |
| 13:00 – 14:00 | 5          | 1,010          | 289     | 241      | 15                    | 176   | 11          | 11            | 2       | 101    | 1,758           |
| 14:00 – 15:00 | 3          | 1,028          | 316     | 229      | 13                    | 191   | 26          | 9             | 0       | 88     | 1,815           |
| 15:00 – 16:00 | 4          | 928            | 291     | 230      | 19                    | 178   | 15          | 7             | 0       | 99     | 1,672           |
| 16:00 – 17:00 | 1          | 909            | 337     | 250      | 12                    | 171   | 6           | 8             | 3       | 133    | 1,694           |
| 17:00 – 18:00 | 0          | 938            | 232     | 245      | 8                     | 122   | 5           | 7             | 4       | 134    | 1,557           |
| 18:00 – 19:00 | 1          | 873            | 196     | 291      | 16                    | 115   | 6           | 5             | 5       | 114    | 1,503           |
| Total         | 34         | 11,080         | 3,506   | 3,107    | 145                   | 2,034 | 170         | 82            | 26      | 1,168  | 20,158          |

ii) The Second Survey (2nd Dec, 2013 (Mon))

**Table 12-1-31 Station No. 3 (Second Survey, Direction to East)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 0          | 301            | 127     | 110      | 1                     | 41    | 0           | 0             | 2       | 25     | 580             |
| 8:00 – 9:00   | 0          | 466            | 148     | 133      | 3                     | 84    | 8           | 1             | 1       | 26     | 843             |
| 9:00 – 10:00  | 2          | 488            | 127     | 147      | 8                     | 90    | 10          | 7             | 1       | 30     | 879             |
| 10:00 – 11:00 | 0          | 450            | 150     | 149      | 5                     | 102   | 11          | 4             | 3       | 37     | 871             |
| 11:00 – 12:00 | 3          | 448            | 147     | 121      | 7                     | 80    | 5           | 4             | 0       | 21     | 815             |
| 12:00 – 13:00 | 0          | 493            | 143     | 111      | 4                     | 67    | 5           | 1             | 0       | 19     | 824             |
| 13:00 – 14:00 | 4          | 506            | 176     | 113      | 5                     | 94    | 11          | 4             | 3       | 20     | 913             |
| 14:00 – 15:00 | 2          | 489            | 161     | 137      | 9                     | 117   | 13          | 5             | 0       | 42     | 933             |
| 15:00 – 16:00 | 0          | 463            | 183     | 114      | 5                     | 96    | 11          | 6             | 1       | 16     | 878             |
| 16:00 – 17:00 | 3          | 489            | 140     | 139      | 13                    | 95    | 9           | 5             | 3       | 32     | 893             |
| 17:00 – 18:00 | 0          | 458            | 128     | 122      | 2                     | 77    | 6           | 4             | 5       | 105    | 797             |
| 18:00 – 19:00 | 0          | 348            | 91      | 116      | 8                     | 57    | 2           | 3             | 1       | 34     | 625             |
| Total         | 14         | 5,399          | 1,721   | 1,512    | 70                    | 1,000 | 91          | 44            | 20      | 407    | 9,851           |

**Table 12-1-32 Station No. 3 (Second Survey, Direction to West)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 1          | 275            | 94      | 132      | 7                     | 54    | 1           | 0             | 0       | 65     | 564             |
| 8:00 – 9:00   | 0          | 474            | 144     | 157      | 2                     | 83    | 9           | 4             | 1       | 76     | 873             |
| 9:00 – 10:00  | 2          | 465            | 144     | 119      | 5                     | 84    | 7           | 5             | 0       | 78     | 831             |
| 10:00 – 11:00 | 1          | 429            | 144     | 122      | 4                     | 73    | 10          | 4             | 4       | 87     | 787             |
| 11:00 – 12:00 | 1          | 499            | 149     | 128      | 6                     | 84    | 10          | 6             | 5       | 180    | 883             |
| 12:00 – 13:00 | 1          | 487            | 163     | 125      | 14                    | 85    | 10          | 6             | 1       | 87     | 891             |
| 13:00 – 14:00 | 1          | 445            | 143     | 113      | 6                     | 78    | 11          | 7             | 0       | 59     | 804             |
| 14:00 – 15:00 | 0          | 537            | 152     | 125      | 6                     | 96    | 7           | 3             | 1       | 58     | 926             |
| 15:00 – 16:00 | 2          | 533            | 165     | 126      | 4                     | 109   | 9           | 2             | 3       | 71     | 950             |
| 16:00 – 17:00 | 0          | 432            | 128     | 109      | 8                     | 73    | 6           | 2             | 7       | 62     | 758             |
| 17:00 – 18:00 | 0          | 444            | 116     | 109      | 6                     | 82    | 3           | 3             | 3       | 67     | 763             |
| 18:00 – 19:00 | 0          | 413            | 126     | 102      | 3                     | 64    | 5           | 1             | 0       | 85     | 714             |
| Total         | 9          | 5,433          | 1,668   | 1,467    | 71                    | 965   | 88          | 43            | 25      | 975    | 9,744           |

**Table 12-1-33 Station No. 3 (Second Survey, Both Direction Total)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 1          | 576            | 221     | 242      | 8                     | 95    | 1           | 0             | 2       | 90     | 1,144           |
| 8:00 – 9:00   | 0          | 940            | 292     | 290      | 5                     | 167   | 17          | 5             | 2       | 102    | 1,716           |
| 9:00 – 10:00  | 4          | 953            | 271     | 266      | 13                    | 174   | 17          | 12            | 1       | 108    | 1,710           |
| 10:00 – 11:00 | 1          | 879            | 294     | 271      | 9                     | 175   | 21          | 8             | 7       | 124    | 1,658           |
| 11:00 – 12:00 | 4          | 947            | 296     | 249      | 13                    | 164   | 15          | 10            | 5       | 201    | 1,698           |
| 12:00 – 13:00 | 1          | 980            | 306     | 236      | 18                    | 152   | 15          | 7             | 1       | 106    | 1,715           |
| 13:00 – 14:00 | 5          | 951            | 319     | 226      | 11                    | 172   | 22          | 11            | 3       | 79     | 1,717           |
| 14:00 – 15:00 | 2          | 1,026          | 313     | 262      | 15                    | 213   | 20          | 8             | 1       | 100    | 1,859           |
| 15:00 – 16:00 | 2          | 996            | 348     | 240      | 9                     | 205   | 20          | 8             | 4       | 87     | 1,828           |
| 16:00 – 17:00 | 3          | 921            | 268     | 248      | 21                    | 168   | 15          | 7             | 10      | 94     | 1,651           |
| 17:00 – 18:00 | 0          | 902            | 244     | 231      | 8                     | 159   | 9           | 7             | 8       | 172    | 1,560           |
| 18:00 – 19:00 | 0          | 761            | 217     | 218      | 11                    | 121   | 7           | 4             | 1       | 119    | 1,339           |
| Total         | 23         | 10,832         | 3,389   | 2,979    | 141                   | 1,965 | 179         | 87            | 45      | 1,382  | 19,595          |

**(4) Station No. 4**

i) The First Survey (25th Nov, 2013 (Mon))

**Table 12-1-34 Station No. 4 (First Survey, Direction to East)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 1          | 185            | 66      | 91       | 3                     | 34    | 1           | 0             | 2       | 33     | 381             |
| 8:00 – 9:00   | 1          | 302            | 100     | 117      | 8                     | 46    | 5           | 0             | 0       | 66     | 579             |
| 9:00 – 10:00  | 0          | 268            | 104     | 123      | 3                     | 66    | 7           | 2             | 0       | 26     | 573             |
| 10:00 – 11:00 | 1          | 250            | 126     | 94       | 5                     | 57    | 8           | 3             | 5       | 27     | 544             |
| 11:00 – 12:00 | 1          | 251            | 101     | 107      | 4                     | 61    | 12          | 4             | 4       | 26     | 541             |
| 12:00 – 13:00 | 0          | 302            | 125     | 102      | 7                     | 57    | 9           | 0             | 2       | 30     | 602             |
| 13:00 – 14:00 | 0          | 319            | 111     | 106      | 4                     | 57    | 7           | 2             | 2       | 31     | 606             |
| 14:00 – 15:00 | 1          | 289            | 98      | 118      | 6                     | 96    | 9           | 2             | 0       | 17     | 619             |
| 15:00 – 16:00 | 5          | 272            | 108     | 104      | 4                     | 31    | 6           | 4             | 2       | 20     | 534             |
| 16:00 – 17:00 | 0          | 265            | 110     | 123      | 2                     | 51    | 11          | 6             | 3       | 73     | 568             |
| 17:00 – 18:00 | 1          | 301            | 109     | 125      | 3                     | 58    | 9           | 2             | 7       | 134    | 608             |
| 18:00 – 19:00 | 0          | 243            | 75      | 140      | 5                     | 46    | 4           | 1             | 1       | 61     | 514             |
| Total         | 11         | 3,247          | 1,233   | 1,350    | 54                    | 660   | 88          | 26            | 28      | 544    | 6,669           |

**Table 12-1-35 Station No. 4 (First Survey, Direction to West)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 0          | 261            | 74      | 119      | 5                     | 45    | 0           | 0             | 0       | 129    | 504             |
| 8:00 – 9:00   | 0          | 357            | 117     | 128      | 3                     | 53    | 9           | 0             | 0       | 37     | 667             |
| 9:00 – 10:00  | 2          | 252            | 121     | 117      | 3                     | 64    | 10          | 2             | 0       | 16     | 571             |
| 10:00 – 11:00 | 1          | 256            | 102     | 116      | 4                     | 64    | 9           | 3             | 1       | 27     | 555             |
| 11:00 – 12:00 | 1          | 273            | 130     | 93       | 7                     | 73    | 20          | 4             | 3       | 38     | 601             |
| 12:00 – 13:00 | 0          | 288            | 87      | 88       | 5                     | 69    | 9           | 0             | 0       | 33     | 546             |
| 13:00 – 14:00 | 0          | 266            | 117     | 87       | 5                     | 53    | 16          | 2             | 2       | 36     | 546             |
| 14:00 – 15:00 | 1          | 355            | 128     | 114      | 6                     | 57    | 13          | 2             | 1       | 14     | 676             |
| 15:00 – 16:00 | 5          | 246            | 95      | 91       | 1                     | 64    | 11          | 4             | 1       | 19     | 517             |
| 16:00 – 17:00 | 1          | 232            | 80      | 103      | 6                     | 73    | 18          | 6             | 2       | 26     | 519             |
| 17:00 – 18:00 | 1          | 275            | 92      | 120      | 1                     | 44    | 7           | 2             | 10      | 40     | 542             |
| 18:00 – 19:00 | 1          | 228            | 72      | 100      | 3                     | 43    | 5           | 0             | 3       | 47     | 452             |
| Total         | 13         | 3,289          | 1,215   | 1,276    | 49                    | 702   | 127         | 25            | 23      | 462    | 6,696           |

**Table 12-1-36 Station No. 4 (First Survey, Both Direction Total)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 1          | 446            | 140     | 210      | 8                     | 79    | 1           | 0             | 2       | 162    | 885             |
| 8:00 – 9:00   | 1          | 659            | 217     | 245      | 11                    | 99    | 14          | 0             | 0       | 103    | 1,246           |
| 9:00 – 10:00  | 2          | 520            | 225     | 240      | 6                     | 130   | 17          | 4             | 0       | 42     | 1,144           |
| 10:00 – 11:00 | 2          | 506            | 228     | 210      | 9                     | 121   | 17          | 6             | 6       | 54     | 1,099           |
| 11:00 – 12:00 | 2          | 524            | 231     | 200      | 11                    | 134   | 32          | 8             | 7       | 64     | 1,142           |
| 12:00 – 13:00 | 0          | 590            | 212     | 190      | 12                    | 126   | 18          | 0             | 2       | 63     | 1,148           |
| 13:00 – 14:00 | 0          | 585            | 228     | 193      | 9                     | 110   | 23          | 4             | 4       | 67     | 1,152           |
| 14:00 – 15:00 | 2          | 644            | 226     | 232      | 12                    | 153   | 22          | 4             | 1       | 31     | 1,295           |
| 15:00 – 16:00 | 10         | 518            | 203     | 195      | 5                     | 95    | 17          | 8             | 3       | 39     | 1,051           |
| 16:00 – 17:00 | 1          | 497            | 190     | 226      | 8                     | 124   | 29          | 12            | 5       | 99     | 1,087           |
| 17:00 – 18:00 | 2          | 576            | 201     | 245      | 4                     | 102   | 16          | 4             | 17      | 174    | 1,150           |
| 18:00 – 19:00 | 1          | 471            | 147     | 240      | 8                     | 89    | 9           | 1             | 4       | 108    | 966             |
| Total         | 24         | 6,536          | 2,448   | 2,626    | 103                   | 1,362 | 215         | 51            | 51      | 1,006  | 13,365          |

ii) The Second Survey (26th Nov, 2013 (Tue))

**Table 12-1-37 Station No. 4 (Second Survey, Direction to East)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 1          | 278            | 99      | 117      | 7                     | 44    | 2           | 0             | 1       | 49     | 548             |
| 8:00 – 9:00   | 1          | 382            | 105     | 137      | 4                     | 57    | 2           | 0             | 0       | 24     | 688             |
| 9:00 – 10:00  | 0          | 207            | 111     | 81       | 5                     | 58    | 13          | 1             | 0       | 47     | 476             |
| 10:00 – 11:00 | 2          | 289            | 108     | 99       | 3                     | 53    | 8           | 2             | 2       | 44     | 564             |
| 11:00 – 12:00 | 2          | 298            | 101     | 94       | 5                     | 57    | 10          | 3             | 2       | 41     | 570             |
| 12:00 – 13:00 | 1          | 306            | 86      | 93       | 3                     | 46    | 6           | 1             | 3       | 59     | 542             |
| 13:00 – 14:00 | 0          | 338            | 119     | 97       | 5                     | 71    | 4           | 3             | 1       | 34     | 637             |
| 14:00 – 15:00 | 1          | 357            | 134     | 117      | 4                     | 64    | 1           | 2             | 8       | 46     | 680             |
| 15:00 – 16:00 | 2          | 321            | 114     | 94       | 4                     | 58    | 1           | 2             | 0       | 31     | 596             |
| 16:00 – 17:00 | 1          | 318            | 116     | 147      | 5                     | 73    | 2           | 2             | 3       | 75     | 664             |
| 17:00 – 18:00 | 1          | 295            | 99      | 97       | 2                     | 70    | 3           | 3             | 11      | 117    | 570             |
| 18:00 – 19:00 | 0          | 243            | 75      | 140      | 5                     | 46    | 4           | 1             | 1       | 61     | 514             |
| Total         | 12         | 3,632          | 1,267   | 1,313    | 52                    | 697   | 56          | 20            | 32      | 628    | 7,049           |

**Table 12-1-38 Station No. 4 (Second Survey, Direction to West)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 2          | 359            | 113     | 155      | 4                     | 64    | 1           | 0             | 0       | 91     | 698             |
| 8:00 – 9:00   | 2          | 385            | 144     | 130      | 6                     | 55    | 16          | 3             | 1       | 20     | 741             |
| 9:00 – 10:00  | 2          | 256            | 104     | 99       | 2                     | 60    | 12          | 2             | 1       | 47     | 537             |
| 10:00 – 11:00 | 2          | 251            | 104     | 99       | 8                     | 48    | 7           | 2             | 1       | 32     | 521             |
| 11:00 – 12:00 | 0          | 299            | 78      | 91       | 4                     | 43    | 8           | 1             | 0       | 33     | 524             |
| 12:00 – 13:00 | 2          | 288            | 94      | 77       | 4                     | 34    | 4           | 0             | 4       | 21     | 503             |
| 13:00 – 14:00 | 0          | 283            | 85      | 115      | 20                    | 47    | 7           | 3             | 1       | 23     | 560             |
| 14:00 – 15:00 | 3          | 283            | 91      | 97       | 6                     | 58    | 7           | 3             | 5       | 17     | 548             |
| 15:00 – 16:00 | 1          | 361            | 93      | 95       | 2                     | 50    | 2           | 1             | 1       | 30     | 605             |
| 16:00 – 17:00 | 0          | 316            | 91      | 102      | 5                     | 56    | 7           | 2             | 10      | 55     | 579             |
| 17:00 – 18:00 | 1          | 282            | 119     | 113      | 4                     | 49    | 2           | 0             | 2       | 87     | 570             |
| 18:00 – 19:00 | 1          | 228            | 72      | 100      | 3                     | 43    | 5           | 0             | 3       | 47     | 452             |
| Total         | 16         | 3,591          | 1,188   | 1,273    | 68                    | 607   | 78          | 17            | 29      | 503    | 6,838           |

**Table 12-1-39 Station No. 4 (Second Survey, Both Direction Total)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 3          | 637            | 212     | 272      | 11                    | 108   | 3           | 0             | 1       | 140    | 1,246           |
| 8:00 – 9:00   | 3          | 767            | 249     | 267      | 10                    | 112   | 18          | 3             | 1       | 44     | 1,429           |
| 9:00 – 10:00  | 2          | 463            | 215     | 180      | 7                     | 118   | 25          | 3             | 1       | 94     | 1,013           |
| 10:00 – 11:00 | 4          | 540            | 212     | 198      | 11                    | 101   | 15          | 4             | 3       | 76     | 1,085           |
| 11:00 – 12:00 | 2          | 597            | 179     | 185      | 9                     | 100   | 18          | 4             | 2       | 74     | 1,094           |
| 12:00 – 13:00 | 3          | 594            | 180     | 170      | 7                     | 80    | 10          | 1             | 7       | 80     | 1,045           |
| 13:00 – 14:00 | 0          | 621            | 204     | 212      | 25                    | 118   | 11          | 6             | 2       | 57     | 1,197           |
| 14:00 – 15:00 | 4          | 640            | 225     | 214      | 10                    | 122   | 8           | 5             | 13      | 63     | 1,228           |
| 15:00 – 16:00 | 3          | 682            | 207     | 189      | 6                     | 108   | 3           | 3             | 1       | 61     | 1,201           |
| 16:00 – 17:00 | 1          | 634            | 207     | 249      | 10                    | 129   | 9           | 4             | 13      | 130    | 1,243           |
| 17:00 – 18:00 | 2          | 577            | 218     | 210      | 6                     | 119   | 5           | 3             | 13      | 204    | 1,140           |
| 18:00 – 19:00 | 1          | 471            | 147     | 240      | 8                     | 89    | 9           | 1             | 4       | 108    | 966             |
| Total         | 28         | 7,223          | 2,455   | 2,586    | 120                   | 1,304 | 134         | 37            | 61      | 1,131  | 13,887          |

**(5) Station No. 5**

i) The First Survey (9th Dec, 2013 (Mon))

**Table 12-1-40 Station No. 5 (First Survey, Direction to East)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 0          | 110            | 21      | 21       | 1                     | 8     | 0           | 0             | 0       | 122    | 161             |
| 8:00 – 9:00   | 0          | 197            | 31      | 34       | 2                     | 22    | 0           | 0             | 0       | 211    | 286             |
| 9:00 – 10:00  | 0          | 195            | 35      | 22       | 2                     | 22    | 0           | 0             | 0       | 202    | 276             |
| 10:00 – 11:00 | 0          | 182            | 25      | 23       | 0                     | 16    | 0           | 0             | 2       | 217    | 246             |
| 11:00 – 12:00 | 1          | 289            | 37      | 24       | 11                    | 29    | 0           | 0             | 4       | 358    | 391             |
| 12:00 – 13:00 | 0          | 196            | 23      | 18       | 2                     | 16    | 0           | 0             | 3       | 312    | 255             |
| 13:00 – 14:00 | 1          | 164            | 26      | 21       | 0                     | 14    | 0           | 0             | 2       | 301    | 226             |
| 14:00 – 15:00 | 0          | 213            | 26      | 21       | 5                     | 11    | 0           | 0             | 0       | 283    | 276             |
| 15:00 – 16:00 | 0          | 202            | 17      | 17       | 0                     | 16    | 0           | 0             | 0       | 235    | 252             |
| 16:00 – 17:00 | 0          | 195            | 36      | 20       | 0                     | 28    | 0           | 0             | 3       | 222    | 279             |
| 17:00 – 18:00 | 1          | 223            | 25      | 17       | 6                     | 25    | 0           | 0             | 5       | 271    | 297             |
| 18:00 – 19:00 | 0          | 211            | 27      | 24       | 2                     | 26    | 0           | 0             | 9       | 294    | 290             |
| Total         | 3          | 2,377          | 329     | 262      | 31                    | 233   | 0           | 0             | 28      | 3,028  | 3,235           |

**Table 12-1-41 Station No. 5 (First Survey, Direction to West)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 0          | 117            | 23      | 29       | 0                     | 13    | 0           | 0             | 2       | 298    | 182             |
| 8:00 – 9:00   | 0          | 236            | 44      | 19       | 3                     | 16    | 0           | 0             | 2       | 404    | 318             |
| 9:00 – 10:00  | 0          | 333            | 66      | 49       | 0                     | 28    | 0           | 0             | 1       | 231    | 476             |
| 10:00 – 11:00 | 1          | 415            | 78      | 33       | 2                     | 28    | 0           | 0             | 0       | 286    | 557             |
| 11:00 – 12:00 | 0          | 239            | 65      | 65       | 10                    | 23    | 0           | 0             | 0       | 232    | 402             |
| 12:00 – 13:00 | 0          | 256            | 66      | 15       | 1                     | 20    | 0           | 0             | 0       | 349    | 358             |
| 13:00 – 14:00 | 0          | 376            | 76      | 21       | 1                     | 18    | 0           | 0             | 0       | 513    | 492             |
| 14:00 – 15:00 | 0          | 347            | 117     | 22       | 1                     | 51    | 0           | 0             | 1       | 554    | 538             |
| 15:00 – 16:00 | 0          | 311            | 45      | 22       | 1                     | 31    | 0           | 0             | 0       | 386    | 410             |
| 16:00 – 17:00 | 0          | 231            | 134     | 26       | 0                     | 39    | 0           | 0             | 0       | 285    | 430             |
| 17:00 – 18:00 | 0          | 325            | 106     | 13       | 0                     | 81    | 0           | 0             | 1       | 563    | 525             |
| 18:00 – 19:00 | 1          | 250            | 215     | 10       | 0                     | 85    | 0           | 0             | 0       | 688    | 561             |
| Total         | 2          | 3,436          | 1,035   | 324      | 19                    | 433   | 0           | 0             | 7       | 4,789  | 5,249           |

**Table 12-1-42 Station No. 5 (First Survey, Both Direction Total)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 0          | 227            | 44      | 50       | 1                     | 21    | 0           | 0             | 2       | 420    | 343             |
| 8:00 – 9:00   | 0          | 433            | 75      | 53       | 5                     | 38    | 0           | 0             | 2       | 615    | 604             |
| 9:00 – 10:00  | 0          | 528            | 101     | 71       | 2                     | 50    | 0           | 0             | 1       | 433    | 752             |
| 10:00 – 11:00 | 1          | 597            | 103     | 56       | 2                     | 44    | 0           | 0             | 2       | 503    | 803             |
| 11:00 – 12:00 | 1          | 528            | 102     | 89       | 21                    | 52    | 0           | 0             | 4       | 590    | 793             |
| 12:00 – 13:00 | 0          | 452            | 89      | 33       | 3                     | 36    | 0           | 0             | 3       | 661    | 613             |
| 13:00 – 14:00 | 1          | 540            | 102     | 42       | 1                     | 32    | 0           | 0             | 2       | 814    | 718             |
| 14:00 – 15:00 | 0          | 560            | 143     | 43       | 6                     | 62    | 0           | 0             | 1       | 837    | 814             |
| 15:00 – 16:00 | 0          | 513            | 62      | 39       | 1                     | 47    | 0           | 0             | 0       | 621    | 662             |
| 16:00 – 17:00 | 0          | 426            | 170     | 46       | 0                     | 67    | 0           | 0             | 3       | 507    | 709             |
| 17:00 – 18:00 | 1          | 548            | 131     | 30       | 6                     | 106   | 0           | 0             | 6       | 834    | 822             |
| 18:00 – 19:00 | 1          | 461            | 242     | 34       | 2                     | 111   | 0           | 0             | 9       | 982    | 851             |
| Total         | 5          | 5,813          | 1,364   | 586      | 50                    | 666   | 0           | 0             | 35      | 7,817  | 8,484           |



ii) The Second Survey (10th Dec, 2013 (Tue))

**Table 12-1-43 Station No. 5 (Second Survey, Direction to East)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 0          | 87             | 28      | 18       | 1                     | 7     | 0           | 0             | 1       | 172    | 141             |
| 8:00 – 9:00   | 0          | 157            | 41      | 18       | 1                     | 15    | 0           | 0             | 1       | 151    | 232             |
| 9:00 – 10:00  | 0          | 181            | 52      | 18       | 2                     | 23    | 0           | 0             | 0       | 132    | 276             |
| 10:00 – 11:00 | 0          | 232            | 38      | 21       | 1                     | 14    | 0           | 0             | 0       | 168    | 306             |
| 11:00 – 12:00 | 0          | 256            | 35      | 29       | 0                     | 22    | 0           | 0             | 1       | 228    | 342             |
| 12:00 – 13:00 | 0          | 293            | 30      | 22       | 0                     | 7     | 0           | 0             | 2       | 220    | 352             |
| 13:00 – 14:00 | 0          | 166            | 26      | 29       | 1                     | 20    | 0           | 0             | 0       | 146    | 242             |
| 14:00 – 15:00 | 0          | 210            | 40      | 21       | 0                     | 13    | 0           | 0             | 0       | 180    | 284             |
| 15:00 – 16:00 | 0          | 318            | 32      | 33       | 4                     | 13    | 0           | 0             | 0       | 119    | 400             |
| 16:00 – 17:00 | 0          | 245            | 36      | 18       | 0                     | 31    | 0           | 0             | 3       | 175    | 330             |
| 17:00 – 18:00 | 0          | 320            | 30      | 31       | 1                     | 33    | 0           | 0             | 8       | 347    | 415             |
| 18:00 – 19:00 | 0          | 202            | 40      | 45       | 0                     | 11    | 0           | 0             | 4       | 198    | 298             |
| Total         | 0          | 2,667          | 428     | 303      | 11                    | 209   | 0           | 0             | 20      | 2,236  | 3,618           |

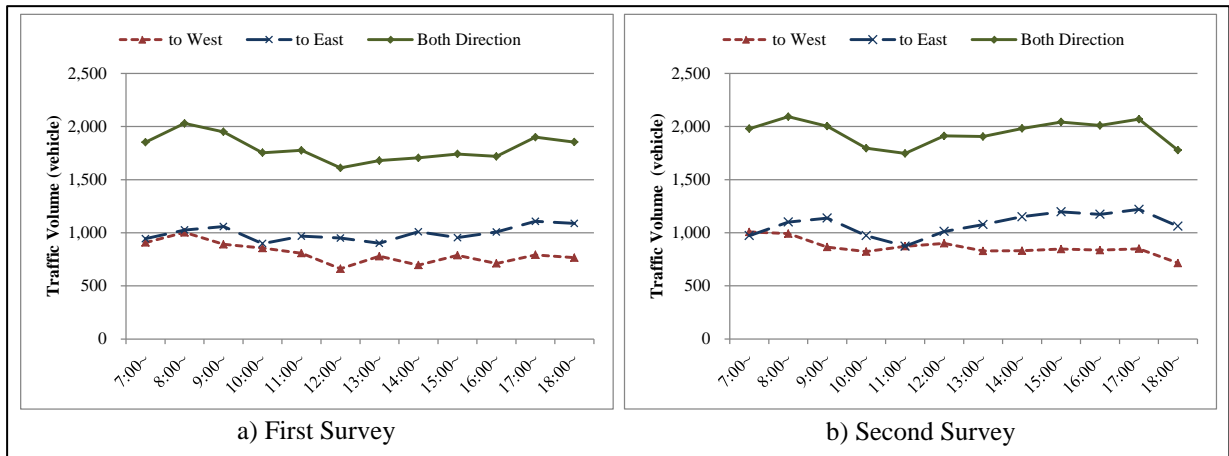
**Table 12-1-44 Station No. 5 (Second Survey, Direction to West)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 1          | 150            | 37      | 25       | 1                     | 11    | 0           | 0             | 3       | 429    | 225             |
| 8:00 – 9:00   | 0          | 277            | 64      | 26       | 3                     | 16    | 0           | 0             | 1       | 487    | 386             |
| 9:00 – 10:00  | 0          | 293            | 90      | 33       | 2                     | 27    | 0           | 0             | 0       | 275    | 445             |
| 10:00 – 11:00 | 0          | 339            | 83      | 27       | 0                     | 46    | 0           | 0             | 2       | 596    | 495             |
| 11:00 – 12:00 | 0          | 337            | 73      | 30       | 0                     | 46    | 0           | 0             | 4       | 521    | 486             |
| 12:00 – 13:00 | 0          | 317            | 70      | 29       | 1                     | 40    | 0           | 0             | 3       | 498    | 457             |
| 13:00 – 14:00 | 0          | 284            | 91      | 22       | 0                     | 40    | 0           | 0             | 0       | 642    | 437             |
| 14:00 – 15:00 | 0          | 325            | 82      | 36       | 0                     | 45    | 0           | 0             | 0       | 499    | 488             |
| 15:00 – 16:00 | 1          | 268            | 60      | 21       | 0                     | 46    | 0           | 0             | 2       | 423    | 396             |
| 16:00 – 17:00 | 0          | 303            | 54      | 38       | 0                     | 40    | 0           | 0             | 4       | 525    | 435             |
| 17:00 – 18:00 | 0          | 293            | 60      | 31       | 3                     | 23    | 0           | 0             | 0       | 619    | 410             |
| 18:00 – 19:00 | 0          | 231            | 46      | 22       | 1                     | 18    | 0           | 0             | 2       | 257    | 318             |
| Total         | 2          | 3,417          | 810     | 340      | 11                    | 398   | 0           | 0             | 21      | 5,771  | 4,978           |

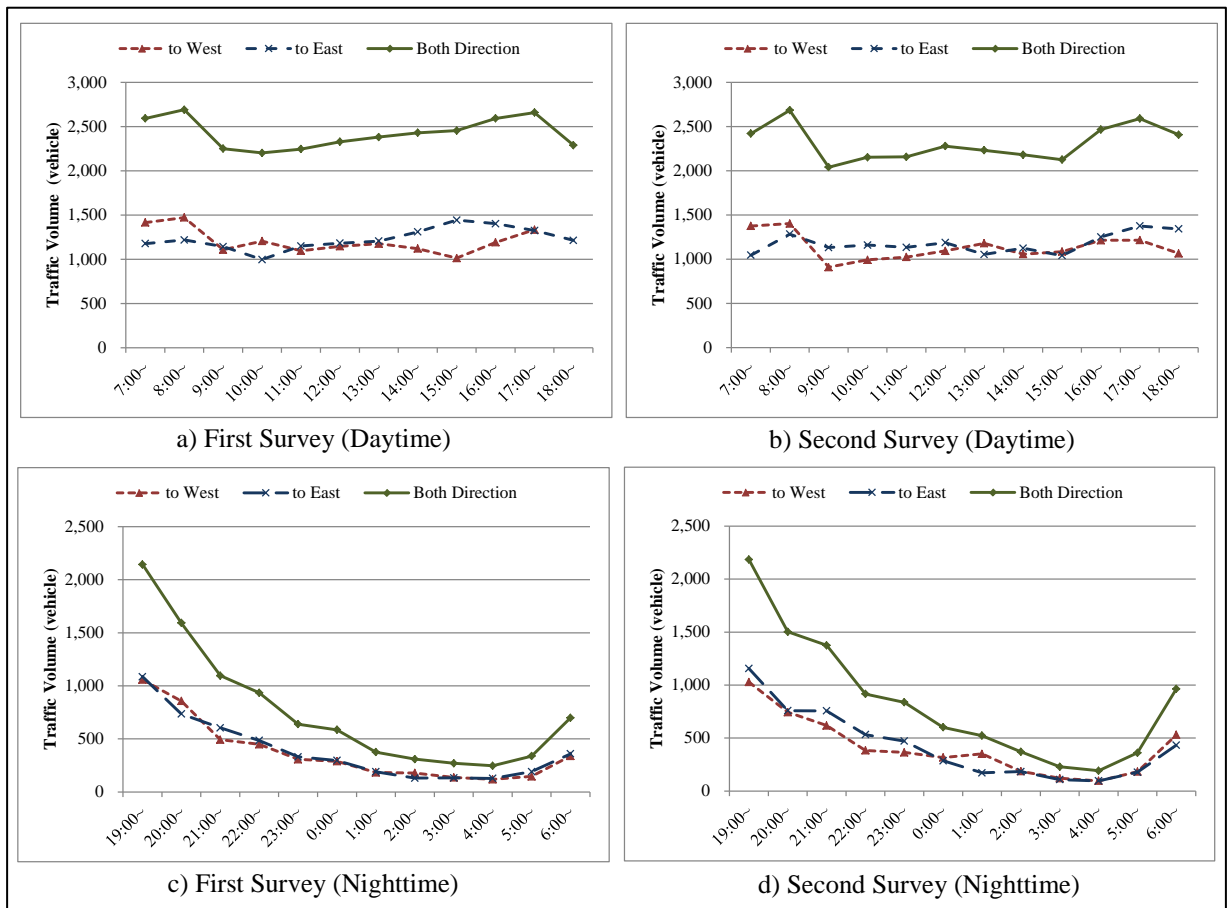
**Table 12-1-45 Station No. 5 (Second Survey, Both Direction Total)**

| Time          | MV         |                |         |          |                       |       |             |               | NMV     |        | Total (Vehicle) |
|---------------|------------|----------------|---------|----------|-----------------------|-------|-------------|---------------|---------|--------|-----------------|
|               | Motorcycle | Sedan/Van/jeep | Pick-up | Mini Bus | Short & Long Body Bus | Truck | Heavy Truck | Trailer Truck | Bicycle | Walker |                 |
| 7:00 – 8:00   | 1          | 237            | 65      | 43       | 2                     | 18    | 0           | 0             | 4       | 601    | 366             |
| 8:00 – 9:00   | 0          | 434            | 105     | 44       | 4                     | 31    | 0           | 0             | 2       | 638    | 618             |
| 9:00 – 10:00  | 0          | 474            | 142     | 51       | 4                     | 50    | 0           | 0             | 0       | 407    | 721             |
| 10:00 – 11:00 | 0          | 571            | 121     | 48       | 1                     | 60    | 0           | 0             | 2       | 764    | 801             |
| 11:00 – 12:00 | 0          | 593            | 108     | 59       | 0                     | 68    | 0           | 0             | 5       | 749    | 828             |
| 12:00 – 13:00 | 0          | 610            | 100     | 51       | 1                     | 47    | 0           | 0             | 5       | 718    | 809             |
| 13:00 – 14:00 | 0          | 450            | 117     | 51       | 1                     | 60    | 0           | 0             | 0       | 788    | 679             |
| 14:00 – 15:00 | 0          | 535            | 122     | 57       | 0                     | 58    | 0           | 0             | 0       | 679    | 772             |
| 15:00 – 16:00 | 1          | 586            | 92      | 54       | 4                     | 59    | 0           | 0             | 2       | 542    | 796             |
| 16:00 – 17:00 | 0          | 548            | 90      | 56       | 0                     | 71    | 0           | 0             | 7       | 700    | 765             |
| 17:00 – 18:00 | 0          | 613            | 90      | 62       | 4                     | 56    | 0           | 0             | 8       | 966    | 825             |
| 18:00 – 19:00 | 0          | 433            | 86      | 67       | 1                     | 29    | 0           | 0             | 6       | 455    | 616             |
| Total         | 2          | 6,084          | 1,238   | 643      | 22                    | 607   | 0           | 0             | 41      | 8,007  | 8,596           |

**(6) Graphs of Traffic Counts Result**



**Figure 12-1-1 Station No. 1**



**Figure 12-1-2 Station No. 2**

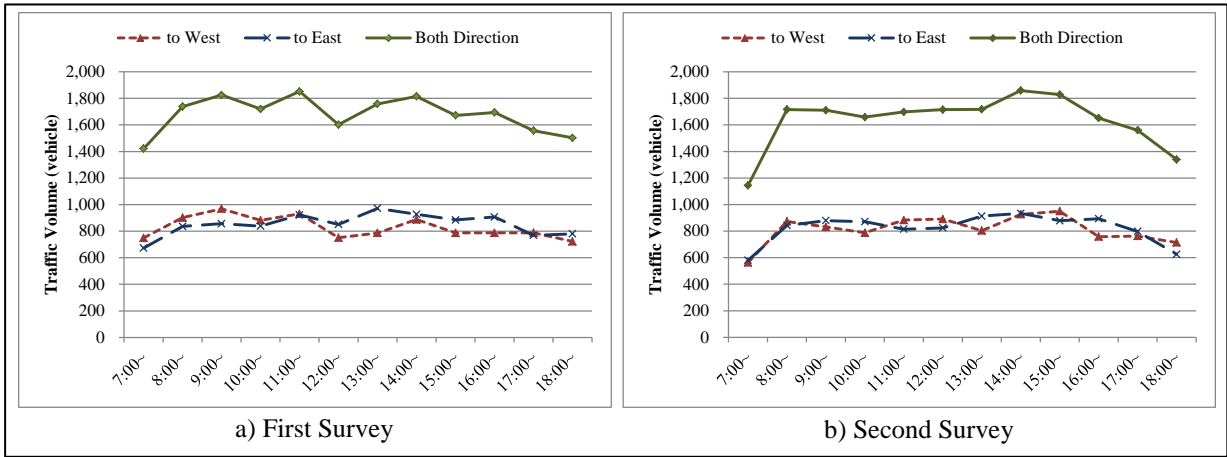


Figure 12-1-3 Station No. 3

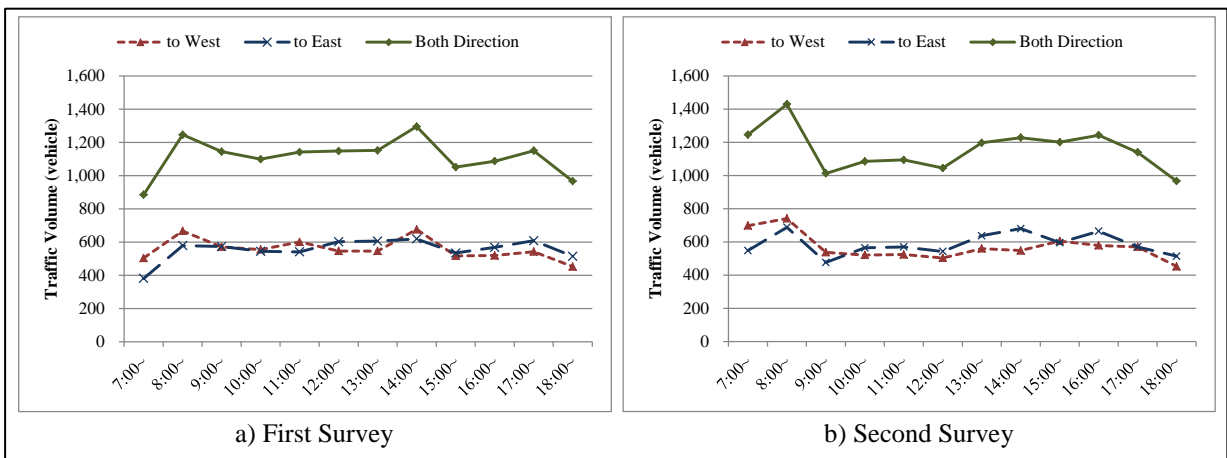


Figure 12-1-4 Station No. 4

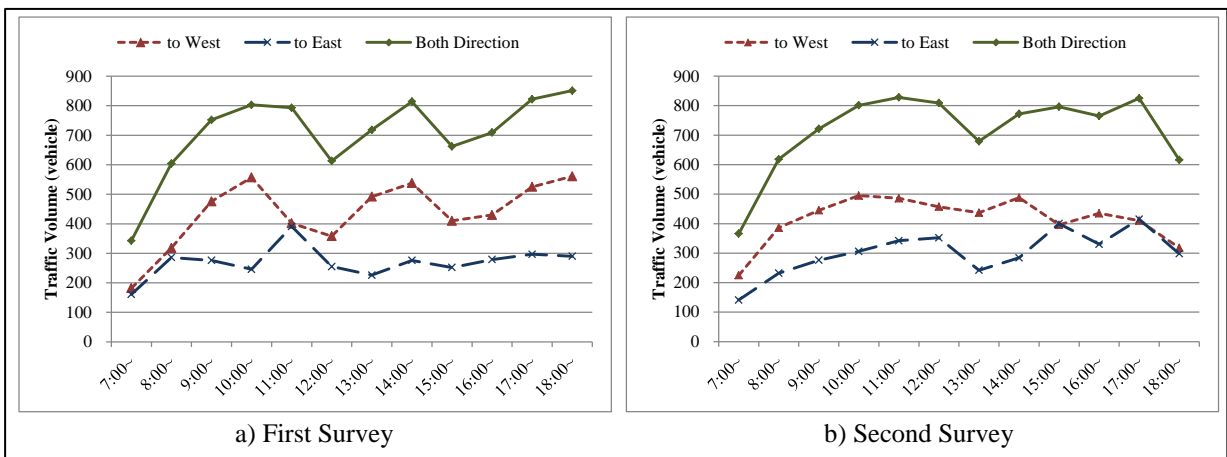


Figure 12-1-5 Station No. 5

## A12-1-4 Easy OD Interview

### (1) Type of Vehicle

**Table 12-1-46 Sample Number**

| Type of Vehicle  | Direction to West<br>(to City Council) | Direction to East<br>(to China Town) |
|------------------|--|--------------------------------------|
| Sedan/Wagon/Jeep | 129                                    | 141                                  |
| Mini Bus         | 9                                      | 14                                   |
| Long Body Bus    | 0                                      | 3                                    |
| Pick-up          | 13                                     | 20                                   |
| Truck            | 18                                     | 17                                   |
| Total            | 169                                    | 195                                  |

### (2) Trip Purpose

**Table 12-1-47 Trip Purpose**

| Type of Vehicle | Direction to West<br>(to City Council) | Direction to East<br>(to China Town) |
|-----------------|--|--------------------------------------|
| To Home         | 23                                     | 59                                   |
| To Work/School  | 7                                      | 18                                   |
| Business        | 105                                    | 61                                   |
| Shopping        | 20                                     | 34                                   |
| Social          | 14                                     | 17                                   |
| Others          | 0                                      | 6                                    |
| Total           | 169                                    | 195                                  |

**A12-1-5 Roundabout Traffic Count Result**

**(1) 12-hrs In Coming Traffic Volume**

- i) The First Survey (3rd Dec, 2013 (Tue))

**Table 12-1-48 In Coming Traffic Volume at Leg A**

| Time          | Car    | Truck | Total  |
|---------------|--------|-------|--------|
| 7:00 – 8:00   | 909    | 60    | 969    |
| 8:00 – 9:00   | 1,222  | 131   | 1,353  |
| 9:00 – 10:00  | 1,319  | 118   | 1,437  |
| 10:00 – 11:00 | 1,327  | 92    | 1,419  |
| 11:00 – 12:00 | 1,199  | 98    | 1,297  |
| 12:00 – 13:00 | 1,371  | 113   | 1,484  |
| 13:00 – 14:00 | 1,152  | 108   | 1,260  |
| 14:00 – 15:00 | 1,275  | 118   | 1,393  |
| 15:00 – 16:00 | 1,335  | 106   | 1,441  |
| 16:00 – 17:00 | 1,238  | 98    | 1,336  |
| 17:00 – 18:00 | 1,222  | 89    | 1,311  |
| 18:00 – 19:00 | 950    | 85    | 1,035  |
| Total         | 14,519 | 1,216 | 15,735 |

**Table 12-1-49 In Coming Traffic Volume at Leg B**

| Time          | Car | Truck | Total |
|---------------|-----|-------|-------|
| 7:00 – 8:00   | 10  | 6     | 16    |
| 8:00 – 9:00   | 8   | 1     | 9     |
| 9:00 – 10:00  | 6   | 0     | 6     |
| 10:00 – 11:00 | 9   | 1     | 10    |
| 11:00 – 12:00 | 7   | 0     | 7     |
| 12:00 – 13:00 | 7   | 0     | 7     |
| 13:00 – 14:00 | 4   | 1     | 5     |
| 14:00 – 15:00 | 9   | 0     | 9     |
| 15:00 – 16:00 | 5   | 0     | 5     |
| 16:00 – 17:00 | 0   | 0     | 0     |
| 17:00 – 18:00 | 0   | 0     | 0     |
| 18:00 – 19:00 | 0   | 0     | 0     |
| Total         | 65  | 9     | 74    |

**Table 12-1-50 In Coming Traffic Volume at Leg C**

| Time          | Car   | Truck | Total |
|---------------|-------|-------|-------|
| 7:00 – 8:00   | 835   | 73    | 908   |
| 8:00 – 9:00   | 912   | 91    | 1,003 |
| 9:00 – 10:00  | 794   | 96    | 890   |
| 10:00 – 11:00 | 756   | 99    | 855   |
| 11:00 – 12:00 | 719   | 89    | 808   |
| 12:00 – 13:00 | 586   | 75    | 661   |
| 13:00 – 14:00 | 725   | 54    | 779   |
| 14:00 – 15:00 | 628   | 68    | 696   |
| 15:00 – 16:00 | 676   | 112   | 788   |
| 16:00 – 17:00 | 649   | 63    | 712   |
| 17:00 – 18:00 | 710   | 82    | 792   |
| 18:00 – 19:00 | 719   | 47    | 766   |
| Total         | 8,709 | 949   | 9,658 |

**Table 12-1-51 In Coming Traffic Volume at Leg D**

| Time          | Car   | Truck | Total |
|---------------|-------|-------|-------|
| 7:00 – 8:00   | 216   | 14    | 230   |
| 8:00 – 9:00   | 424   | 17    | 441   |
| 9:00 – 10:00  | 541   | 33    | 574   |
| 10:00 – 11:00 | 500   | 34    | 534   |
| 11:00 – 12:00 | 490   | 25    | 515   |
| 12:00 – 13:00 | 437   | 30    | 467   |
| 13:00 – 14:00 | 503   | 18    | 521   |
| 14:00 – 15:00 | 532   | 39    | 571   |
| 15:00 – 16:00 | 522   | 24    | 546   |
| 16:00 – 17:00 | 410   | 25    | 435   |
| 17:00 – 18:00 | 336   | 14    | 350   |
| 18:00 – 19:00 | 252   | 11    | 263   |
| Total         | 5,163 | 284   | 5,447 |

**Table 12-1-52 In Coming Traffic Volume at Leg E**

| Time          | Car   | Truck | Total |
|---------------|-------|-------|-------|
| 7:00 – 8:00   | 232   | 9     | 241   |
| 8:00 – 9:00   | 287   | 24    | 311   |
| 9:00 – 10:00  | 260   | 19    | 279   |
| 10:00 – 11:00 | 209   | 10    | 219   |
| 11:00 – 12:00 | 222   | 12    | 234   |
| 12:00 – 13:00 | 198   | 11    | 209   |
| 13:00 – 14:00 | 189   | 9     | 198   |
| 14:00 – 15:00 | 182   | 10    | 192   |
| 15:00 – 16:00 | 184   | 10    | 194   |
| 16:00 – 17:00 | 241   | 12    | 253   |
| 17:00 – 18:00 | 227   | 8     | 235   |
| 18:00 – 19:00 | 188   | 10    | 198   |
| Total         | 2,619 | 144   | 2,763 |

ii) The Second Survey (4th Dec, 2013 (Wed))

**Table 12-1-53 In Coming Traffic Volume at Leg A**

| Time          | Car    | Truck | Total  |
|---------------|--------|-------|--------|
| 7:00 – 8:00   | 973    | 67    | 1,040  |
| 8:00 – 9:00   | 1,250  | 109   | 1,359  |
| 9:00 – 10:00  | 1,340  | 129   | 1,469  |
| 10:00 – 11:00 | 1,066  | 93    | 1,159  |
| 11:00 – 12:00 | 1,032  | 110   | 1,142  |
| 12:00 – 13:00 | 1,200  | 95    | 1,295  |
| 13:00 – 14:00 | 1,149  | 90    | 1,239  |
| 14:00 – 15:00 | 1,378  | 121   | 1,499  |
| 15:00 – 16:00 | 1,410  | 94    | 1,504  |
| 16:00 – 17:00 | 1,322  | 108   | 1,430  |
| 17:00 – 18:00 | 1,069  | 121   | 1,190  |
| 18:00 – 19:00 | 1,273  | 90    | 1,363  |
| Total         | 14,462 | 1,227 | 15,689 |

**Table 12-1-54 In Coming Traffic Volume at Leg B**

| Time          | Car | Truck | Total |
|---------------|-----|-------|-------|
| 7:00 – 8:00   | 7   | 11    | 18    |
| 8:00 – 9:00   | 5   | 2     | 7     |
| 9:00 – 10:00  | 1   | 0     | 1     |
| 10:00 – 11:00 | 7   | 1     | 8     |
| 11:00 – 12:00 | 12  | 0     | 12    |
| 12:00 – 13:00 | 9   | 0     | 9     |
| 13:00 – 14:00 | 1   | 0     | 1     |
| 14:00 – 15:00 | 1   | 0     | 1     |
| 15:00 – 16:00 | 2   | 0     | 2     |
| 16:00 – 17:00 | 0   | 0     | 0     |
| 17:00 – 18:00 | 3   | 0     | 3     |
| 18:00 – 19:00 | 0   | 0     | 0     |
| Total         | 48  | 14    | 62    |

**Table 12-1-55 In Coming Traffic Volume at Leg C**

| Time          | Car   | Truck | Total  |
|---------------|-------|-------|--------|
| 7:00 – 8:00   | 914   | 92    | 1,006  |
| 8:00 – 9:00   | 916   | 74    | 990    |
| 9:00 – 10:00  | 776   | 87    | 863    |
| 10:00 – 11:00 | 740   | 82    | 822    |
| 11:00 – 12:00 | 787   | 84    | 871    |
| 12:00 – 13:00 | 796   | 104   | 900    |
| 13:00 – 14:00 | 759   | 70    | 829    |
| 14:00 – 15:00 | 764   | 67    | 831    |
| 15:00 – 16:00 | 794   | 50    | 844    |
| 16:00 – 17:00 | 715   | 121   | 836    |
| 17:00 – 18:00 | 773   | 76    | 849    |
| 18:00 – 19:00 | 666   | 49    | 715    |
| Total         | 9,400 | 956   | 10,356 |

**Table 12-1-56 In Coming Traffic Volume at Leg D**

| Time          | Car   | Truck | Total |
|---------------|-------|-------|-------|
| 7:00 – 8:00   | 98    | 8     | 106   |
| 8:00 – 9:00   | 323   | 23    | 346   |
| 9:00 – 10:00  | 669   | 41    | 710   |
| 10:00 – 11:00 | 482   | 38    | 520   |
| 11:00 – 12:00 | 547   | 45    | 592   |
| 12:00 – 13:00 | 394   | 32    | 426   |
| 13:00 – 14:00 | 338   | 36    | 374   |
| 14:00 – 15:00 | 550   | 36    | 586   |
| 15:00 – 16:00 | 502   | 24    | 526   |
| 16:00 – 17:00 | 419   | 22    | 441   |
| 17:00 – 18:00 | 280   | 17    | 297   |
| 18:00 – 19:00 | 295   | 11    | 306   |
| Total         | 4,897 | 333   | 5,230 |

**Table 12-1-57 In Coming Traffic Volume at Leg E**

| Time          | Car   | Truck | Total |
|---------------|-------|-------|-------|
| 7:00 – 8:00   | 335   | 17    | 352   |
| 8:00 – 9:00   | 249   | 18    | 267   |
| 9:00 – 10:00  | 331   | 15    | 346   |
| 10:00 – 11:00 | 178   | 10    | 188   |
| 11:00 – 12:00 | 226   | 14    | 240   |
| 12:00 – 13:00 | 307   | 13    | 320   |
| 13:00 – 14:00 | 152   | 10    | 162   |
| 14:00 – 15:00 | 251   | 15    | 266   |
| 15:00 – 16:00 | 253   | 36    | 289   |
| 16:00 – 17:00 | 230   | 11    | 241   |
| 17:00 – 18:00 | 272   | 12    | 284   |
| 18:00 – 19:00 | 341   | 16    | 357   |
| Total         | 3,125 | 187   | 3,312 |

**(2) Directional Traffic Share**

i) The First Survey

|           |   | Out Going |       |        |        |        |       |
|-----------|---|-----------|-------|--------|--------|--------|-------|
|           |   | A         | B     | C      | D      | E      | Total |
| In Coming | A | 8.4 %     | 0.6 % | 72.8 % | 13.4 % | 4.7 %  | 100 % |
|           | B | 31.3 %    | 0.0 % | 62.5 % | 6.3 %  | 0.0 %  | 100 % |
|           | C | 90.6 %    | 0.2 % | 0.6 %  | 1.3 %  | 7.4 %  | 100 % |
|           | D | 73.9 %    | 0.0 % | 13.7 % | 0.0 %  | 12.4 % | 100 % |
|           | E | 49.2 %    | 0.8 % | 36.1 % | 13.9 % | 0.0 %  | 100 % |

ii) The Second Survey

|           |   | Out Going |       |        |        |        |       |
|-----------|---|-----------|-------|--------|--------|--------|-------|
|           |   | A         | B     | C      | D      | E      | Total |
| In Coming | A | 10.8 %    | 0.8 % | 69.7 % | 12.6 % | 6.1 %  | 100 % |
|           | B | 14.3 %    | 0.0 % | 78.6 % | 7.1 %  | 0.0 %  | 100 % |
|           | C | 92.1 %    | 0.1 % | 0.0 %  | 1.4 %  | 6.4 %  | 100 % |
|           | D | 76.5 %    | 0.4 % | 8.5 %  | 0.0 %  | 14.6 % | 100 % |
|           | E | 46.8 %    | 0.4 % | 41.3 % | 11.5 % | 0.0 %  | 100 % |



**A12-1-6 Bus Stop Duration Survey**

**(1) The First Survey (26 Feb, 2014 (Wed))**

**Table 12-1-58 Number of Arrival and Departure Bus (First Survey)**

| Time          | No.1<br>(to White River) |           | No.2<br>(to KG VI, Kolaridge,) |           | No.3<br>(to Henderson) |           | No.4<br>(to Gppol) |           |
|---------------|--------------------------|-----------|--------------------------------|-----------|------------------------|-----------|--------------------|-----------|
|               | Arrival                  | Departure | Arrival                        | Departure | Arrival                | Departure | Arrival            | Departure |
| 8:00 - 9:00   | 136                      | 137       | 110                            | 110       | 16                     | 13        | 5                  | 0         |
| 9:00 - 10:00  | 152                      | 152       | 180                            | 179       | 16                     | 17        | 9                  | 8         |
| 10:00 - 11:00 | 134                      | 133       | 144                            | 145       | 18                     | 19        | 12                 | 9         |
| 11:00 - 12:00 | 133                      | 134       | 146                            | 146       | 21                     | 20        | 8                  | 8         |
| 12:00 - 13:00 | 142                      | 142       | 180                            | 180       | 23                     | 22        | 8                  | 7         |
| 13:00 - 14:00 | 131                      | 132       | 139                            | 139       | 28                     | 29        | 3                  | 8         |
| 14:00 - 15:00 | 136                      | 136       | 136                            | 135       | 21                     | 21        | 8                  | 10        |
| 15:00 - 16:00 | 133                      | 133       | 145                            | 143       | 15                     | 16        | 14                 | 12        |
| 16:00 - 17:00 | 102                      | 101       | 160                            | 162       | 24                     | 25        | 16                 | 16        |
| 17:00 - 18:00 | 131                      | 132       | 161                            | 162       | 19                     | 19        | 12                 | 13        |
| Total         | 1330                     | 1332      | 1501                           | 1501      | 201                    | 201       | 95                 | 91        |

**(2) The First Survey (27 Feb, 2014 (Thu))**

**Table 12-1-59 Number of Arrival and Departure Bus (Second Survey)**

| Time          | No.1<br>(to White River) |           | No.2<br>(to KG VI, Kolaridge,) |           | No.3<br>(to Henderson) |           | No.4<br>(to Gppol) |           |
|---------------|--------------------------|-----------|--------------------------------|-----------|------------------------|-----------|--------------------|-----------|
|               | Arrival                  | Departure | Arrival                        | Departure | Arrival                | Departure | Arrival            | Departure |
| 8:00 - 9:00   | 151                      | 151       | 191                            | 191       | 13                     | 12        | 7                  | 3         |
| 9:00 - 10:00  | 166                      | 167       | 204                            | 203       | 22                     | 23        | 10                 | 9         |
| 10:00 - 11:00 | 180                      | 179       | 171                            | 171       | 32                     | 29        | 4                  | 3         |
| 11:00 - 12:00 | 148                      | 149       | 160                            | 161       | 22                     | 24        | 5                  | 5         |
| 12:00 - 13:00 | 153                      | 153       | 190                            | 190       | 15                     | 18        | 13                 | 11        |
| 13:00 - 14:00 | 165                      | 165       | 94                             | 93        | 20                     | 21        | 8                  | 11        |
| 14:00 - 15:00 | 137                      | 137       | 85                             | 85        | 23                     | 22        | 5                  | 7         |
| 15:00 - 16:00 | 154                      | 154       | 139                            | 138       | 18                     | 19        | 8                  | 10        |
| 16:00 - 17:00 | 167                      | 167       | 134                            | 136       | 16                     | 16        | 9                  | 8         |
| 17:00 - 18:00 | 122                      | 122       | 107                            | 106       | 13                     | 13        | 11                 | 10        |
| Total         | 1543                     | 1544      | 1475                           | 1474      | 194                    | 197       | 80                 | 77        |

**A12-1-7 Bus Waiting Passenger Count****(1) The First Survey (6 Mar, 2014 (Thu))****Table 12-1-60 Number of Bus Waiting Passenger (First Survey)**

| Time          | No.1<br>(to White River) | No.2<br>(to KG VI, Kolaridge) | No.3<br>(to Henderson) |
|---------------|--------------------------|-------------------------------|------------------------|
| 9:00 - 10:00  | 0                        | 39                            | 12                     |
| 10:00 - 11:00 | 8                        | 36                            | 11                     |
| 11:00 - 12:00 | 10                       | 29                            | 18                     |
| 12:00 - 13:00 | 8                        | 69                            | 22                     |
| 13:00 - 14:00 | 6                        | 106                           | 20                     |
| 14:00 - 15:00 | 8                        | 149                           | 21                     |
| 15:00 - 16:00 | 43                       | 178                           | 12                     |
| 16:00 - 17:00 | 42                       | 238                           | 22                     |
| 17:00 - 18:00 | 19                       | 332                           | 22                     |
| 19:00 - 20:00 | 70                       | 347                           | 26                     |

**(2) The Second Survey (7 Mar, 2014 (Fri))****Table 12-1-61 Number of Bus Waiting Passenger (Second Survey)**

| Time          | No.1<br>(to White River) | No.2<br>(to KG VI, Kolaridge) | No.3<br>(to Henderson) |
|---------------|--------------------------|-------------------------------|------------------------|
| 9:00 - 10:00  | 9                        | 10                            | 13                     |
| 10:00 - 11:00 | 8                        | 18                            | 18                     |
| 11:00 - 12:00 | 12                       | 26                            | 26                     |
| 12:00 - 13:00 | 8                        | 44                            | 39                     |
| 13:00 - 14:00 | 12                       | 62                            | 17                     |
| 14:00 - 15:00 | 15                       | 96                            | 17                     |
| 15:00 - 16:00 | 37                       | 210                           | 47                     |
| 16:00 - 17:00 | 45                       | 247                           | 65                     |
| 17:00 - 18:00 | 25                       | 312                           | 112                    |
| 19:00 - 20:00 | 57                       | 309                           | 100                    |

## A12-1-8 Road Crossing Pedestrian Count

### (1) The First Survey (4 Mar, 2014 (Mon))

**Table 12-1-62 Number of Road Crossing Pedestrian (First Survey)**

| Time          | North to South | South to North | Total  |
|---------------|----------------|----------------|--------|
| 9:00 - 10:00  | 811            | 797            | 1,608  |
| 10:00 - 11:00 | 655            | 749            | 1,404  |
| 11:00 - 12:00 | 678            | 939            | 1,617  |
| 12:00 - 13:00 | 1,116          | 1,023          | 2,139  |
| 13:00 - 14:00 | 1,090          | 1,348          | 2,438  |
| 14:00 - 15:00 | 1,941          | 2,066          | 4,007  |
| 15:00 - 16:00 | 782            | 2,198          | 2,980  |
| 16:00 - 17:00 | 966            | 1,161          | 2,127  |
| 17:00 - 18:00 | 949            | 1,631          | 2,580  |
| Total         | 8,988          | 11,912         | 20,900 |

### (2) The First Survey (5 Mar, 2014 (Tue))

**Table 12-1-63 Number of Road Crossing Pedestrian (Second Survey)**

| Time          | North to South | South to North | Total  |
|---------------|----------------|----------------|--------|
| 9:00 - 10:00  | 735            | 835            | 1,570  |
| 10:00 - 11:00 | 938            | 1,071          | 2,009  |
| 11:00 - 12:00 | 1,172          | 1,149          | 2,321  |
| 12:00 - 13:00 | 672            | 1,147          | 1,819  |
| 13:00 - 14:00 | 1,381          | 1,217          | 2,598  |
| 14:00 - 15:00 | 2,054          | 2,199          | 4,253  |
| 15:00 - 16:00 | 1,233          | 1,243          | 2,476  |
| 16:00 - 17:00 | 1,287          | 1,637          | 2,924  |
| 17:00 - 18:00 | 1,249          | 1,162          | 2,411  |
| Total         | 10,721         | 11,660         | 22,381 |

## A12-2 Roadbed Soil Investigation

Result of roadbed soil investigation is shown in Table 12-2-1.

**Table 12-2-1 Result of Roadbed Soil Investigation**

|               | Layer       | P1    | P2       | P3       | P4    | P5       | P6       | P7    | P8    |
|---------------|-------------|-------|----------|----------|-------|----------|----------|-------|-------|
| Station       |             | 0+050 | 0+200    | 0+700    | 1+400 | 1+800    | 2+400    | 2+600 | 3+000 |
| Side          |             | Sea   | Mountain | Mountain | Sea   | Mountain | Mountain | Sea   | Sea   |
| Pavement      | AC          | -     | -        | 60       | 50    | 60       | 60       | 60    | 70    |
| Thickness(cm) | Base course | -     | -        | 340      | 280   | 150      | 380      | 370   | 380   |
| DCP Test      | Base course | -     | -        | 54.4     | 151   | 34.7     | 36.5     | 39.8  | 37.2  |
|               | Subgrade    | 13    | 21       | 9        | 22    | 22       | 31       | 46    | 24    |
| CBR Test      | Subgrade    | 10    | 15       | 13       | 8     | 80       | 50       | 16    | 23    |

**Table 12-2-2 Outline of CBR Test Result**

**Table 3 Summary of Laboratory Test Results**

| Pit No. | Moisture content-%<br>AS 1289.2.1.2 | STD Compaction Test<br>AS 1289.5.1.2 |       | PSD<br>AS 1289.3.6.1                  | Atterberg Limits<br>AS 1289.3.1.1,3.2.1,3.3.1 |    |    |     | <sup>1</sup> CBR soaked | Specific Gravity | Swell % | Remarks |
|---------|-------------------------------------|--------------------------------------|-------|---------------------------------------|---|----|----|-----|-------------------------|------------------|---------|---------|
|         |                                     | MDD t/m <sup>3</sup>                 | OMC % |                                       | LL  | PL | PI | LS  |                         |                  |         |         |
|         |                                     |                                      |       |                                       |   |    |    |     |                         |                  |         |         |
| P1      | 12.6                                | 1.895                                | 13.7  | Type 2, Grade B material              | 22  | 17 | 5  | 4.0 | 10                      | 2.627            |         |         |
| P2      | 19.8                                | 1.707                                | 16.2  | <sup>2</sup> Type 2, Grade B material | 36  | 22 | 14 | 8.8 | 15                      | 2.601            |         |         |
| P3      | 24.1                                | 2.102                                | 13.4  | <sup>3</sup> _____                    | 20  | 11 | 9  | 1.6 | 13                      | 3.154            |         |         |
| P4      | 19.2                                | 1.828                                | 15.8  | <sup>4</sup> _____                    | 28  | 20 | 8  | 5.3 | 8                       | 2.763            |         |         |
| P5      | 21.4                                | 1.759                                | 17.2  | <sup>5</sup> Type 2, Grade B material | 30  | 27 | 3  | 1.5 | 80                      | 2.684            |         |         |
| P6      | 15.6                                | 1.700                                | 15.9  | <sup>6</sup> _____                    | NP  | NP | NP | 0.8 | 50                      | 2.652            | 0.85    |         |
| P7      | 13.7                                | 1.514                                | 22    | <sup>7</sup> Type 2, Grade B material | 39  | 24 | 15 | 8.4 | 16                      | 2.548            | 7.7     |         |
| P8      | 17                                  | 1.690                                | 18.8  | <sup>8</sup> Type 2, Grade C material | 36  | 22 | 14 | 7.0 | 23                      | 2.591            | 17.1    |         |

<sup>1</sup>California Bearing Ratio % (remoulded specimen) done according to AS 1289.6.1.1.

<sup>2</sup>The grading was near to a Type 2, Grade B material with less amount of fines. However with Coronus material, there is more fines present than indicated in a standard test.

<sup>3</sup>According to the United Soils Classification System (USCS)-Silty, clayey sand with gravel.

<sup>4</sup>The grading was near to a Type 2, Grade B material with less amount of fines. However with coronus material (finger coral), there are more fines present than indicated in a standard test. According to USCS –Well graded gravel with silt and sand.

<sup>5</sup>According to the United Soils Classification System (USCS)-Clayey sand with gravel

<sup>6</sup>According to the United Soils Classification System (USCS)-Poorly graded sand with gravel

<sup>7</sup>The grading was near to a Type 2, Grade B material with less amount of fines. According to USCS –Well- graded sand with silty clay and gravel.

<sup>8</sup>The grading was near to a Type 2, Grade C material with less amount of fines. According to the USCS: Poorly graded sand with silty clay and gravel.

Ministry of Infrastructure Development

Client: Siam Tone Co., Ltd.

California Bearing Ratio

Job No: 14-012

AS 1289.6.1.1  
Soaked / Unsoaked

Date Tested/By: SS/CB Checked By: MI

Sample Number: P1

Project: Kukum Highway Upgrading

Sample Location: MID Workshop

Date Sampled: 28/2/2014

Sample Description: Coronus

Mould Number: \_\_\_\_\_

Balance Number: \_\_\_\_\_

Oven Number: \_\_\_\_\_

Spacer Number: \_\_\_\_\_

Hammer Number: MOD STD

|                        |       |
|------------------------|-------|
| Mass Of Total Sample:  | 7000g |
| Mass Retained 19.0 mm: |       |
| Percent Retained       | %     |

|             |       |
|-------------|-------|
| O.M.C. %    | 13.7  |
| M.D.D. t/m3 | 1.895 |

Specified Laboratory Density Ratio %

Required Laboratory Dry Density, t/m3

# #

| Moisture Contents:    | In Situ | At Comp | Top 30mm | Full Depth |
|-----------------------|---------|---------|----------|------------|
| Container Number:     |         | T1      |          | L1         |
| Wet Mass Soil & Cont: |         | 1050    |          | 2511       |
| Dry Mass Soil & Cont: |         | 928     |          | 2351       |
| Check Mass:           |         | 122/    |          | 160/1185   |
| Mass Of Container:    |         |         |          | 1166       |
| Moisture Content %    |         | 13.2    |          |            |

# Moisture Samples (Soaked)  
Top 30mm- Sample to depth of 30mm (penetration end)  
Full Depth- Sample from the remaining specimen

| Cure Data                             |                      |
|---------------------------------------|----------------------|
| Specified Laboratory Moisture Ratio % | <input type="text"/> |
| Target Laboratory Moisture Content    | %                    |
| Mass Of Soil & Hygro:                 | <input type="text"/> |
| In Situ Moisture Content:             | %                    |
| ~ Mass of Dry Soil:                   | <input type="text"/> |
| Mass Soil & Hygro @ Target Moist. :   | <input type="text"/> |
| Mass Of Water Required:(g)            | <input type="text"/> |

Proving Ring   
Load Cell

| Compaction Data           | STD / MOD |
|---------------------------|-----------|
| Volume Of Mould: (cm3)    |           |
| Mass Of Mould: (g)        | 6427      |
| Mass Mould & Material:(g) | 11394     |

|                      |  |
|----------------------|--|
| Required Wet Density |  |
| Mass Soil + Hygro    |  |
| Required in Mould    |  |
| Required Mass/Layer  |  |

| Penetration Data |               |              |
|------------------|---------------|--------------|
| Penetration mm   | Prov. Ring mm | Load Cell kn |
| Seat             | Top           | Bottom       |
| 0.5              | 4             | 3            |
| 1                | 8             | 8            |
| 1.5              | 11            | 14           |
| 2                | 15            | 21           |
| 2.5              | 18            | 30           |
| 3                | 22            | 38           |
| 3.5              | 25            |              |
| 4                | 30            | 58           |
| 4.5              | 35            | 68           |
| 5                | 40            | 78           |
| 5.5              | 45            | 85           |
| 6                | 51            | 96           |
| 6.5              | 57            | 105          |
| 7                | 63            | 114          |
| 7.5              | 69            | 122          |
| 8                | 73            | 129          |
| 8.5              | 79            | 136          |
| 9                | 85            | 143          |
| 9.5              | 91            | 150          |
| 10               | 97            | 158          |
| 10.5             | 102           | 164          |

| Swell Data                |       |
|---------------------------|-------|
| Initial Reading(mm)       | 0     |
| Date & Time Of Immersion: | 4days |
| Final Reading (mm)        | 0     |
| Mass Mould & Material (g) | 11439 |

Compaction Date/By: 7.03.14

Penetration Date/By: 11.03.14

CBR-10

Figure 12-2-1 CBR Test Result (P1)

Ministry of Infrastructure Development

Client: Siam Tone Co., Ltd.

California Bearing Ratio

Job No: 14-012

AS 1289.6.1.1

Date Tested/By: CB

Checked By: MI

Soaked / Unsoaked

Sample Number: P 2

Project: Kukum Highway Upgrading

Sample Location: SIWA

Date Sampled: 3.03.14

Sample Description: Coronus

Mould Number: \_\_\_\_\_

Balance Number: \_\_\_\_\_

Oven Number: \_\_\_\_\_

Spacer Number: \_\_\_\_\_

Hammer Number: MOD **STD**

|                        |   |
|------------------------|---|
| Mass Of Total Sample:  |   |
| Mass Retained 19.0 mm: |   |
| Percent Retained       | % |

|                         |       |
|-------------------------|-------|
| O.M.C. %                | 16.2  |
| M.D.D. t/m <sup>3</sup> | 1.707 |

Specified Laboratory Density Ratio %

Required Laboratory Dry Density. t/m<sup>3</sup>

| Moisture Contents:    | In Situ | At Comp | Top 30mm | Full Depth |
|-----------------------|---------|---------|----------|------------|
| Container Number:     |         | T4      |          | L2         |
| Wet Mass Soil & Cont: |         | 979     |          | 2251       |
| Dry Mass Soil & Cont: |         | 837     |          | 2082       |
| Check Mass:           |         | 142     |          | 169        |
| Mass Of Container:    |         |         |          | 1204       |
| Moisture Content %    |         | 16.9    |          | 19.2       |

# Moisture Samples (Soaked)  
Top 30mm- Sample to depth of 30mm (penetration end)  
Full Depth- Sample from the remaining specimen

| Cure Data                             |   |
|---------------------------------------|---|
| Specified Laboratory Moisture Ratio % |   |
| Target Laboratory Moisture Content    | % |
| Mass Of Soil & Hygro:                 |   |
| In Situ Moisture Content:             | % |
| ~ Mass of Dry Soil:                   |   |
| Mass Soil & Hygro @ Target Moist :    |   |
| Mass Of Water Required:(g)            |   |

Proving Ring **28kN**  
Load Cell

| Penetration Data |               |              |
|------------------|---------------|--------------|
| Penetration mm   | Prov. Ring mm | Load Cell kn |
| Seat             | Top           | Bottom       |
| 0.5              | 4             | 12           |
| 1                | 11            | 38           |
| 1.5              | 19            | 55           |
| 2                | 27            | 68           |
| 2.5              | 33            | 77           |
| 3                | 38            | 86           |
| 3.5              |               |              |
| 4                | 47            | 98           |
| 4.5              | 51            | 104          |
| 5                | 54            | 109          |
| 5.5              | 57            | 112          |
| 6                | 60            | 115          |
| 6.5              | 62            | 119          |
| 7                | 65            | 121          |
| 7.5              | 68            | 124          |
| 8                | 70            | 126          |
| 8.5              | 72            | 128          |
| 9                | 75            | 130          |
| 9.5              | 77            | 132          |
| 10               | 79            | 134          |
| 10.5             | 81            | 136          |

| Compaction Data                     |       | STD / MOD |
|-------------------------------------|-------|-----------|
| Volume Of Mould: (cm <sup>3</sup> ) |       |           |
| Mass Of Mould: (g)                  | 6406  |           |
| Mass Mould & Material:(g)           | 11080 |           |

|                      |  |
|----------------------|--|
| Required Wet Density |  |
| Mass Soil + Hygro    |  |
| Required in Mould    |  |
| Required Mass/Layer  |  |

| Swell Data                |        |
|---------------------------|--------|
| Initial Reading(mm)       | 0      |
| Date & Time Of Immersion: | 4 days |
| Final Reading (mm)        | 1      |
| Mass Mould & Material (g) | 11199  |

Swell%- 0.85

Compaction Date/By: 7.03.14

Penetration Date/By: 11.03.14

CBR-14

Figure 12-2-2 CBR Test Result (P2)

Ministry of Infrastructure Development

Client: Siam Tone Co., Ltd.

California Bearing Ratio

Job No: 14-012

AS 1289.6.1.1  
Soaked / Unsoaked

Date Tested/By: CB

Checked By: MI

Sample Number: P3

Project: Kukum Highway Upgrading

Sample Location: Junction Curve

Date Sampled: 3.3.2014

Sample Description: Silty clayey sand with gravel

Mould Number: \_\_\_\_\_

Balance Number: \_\_\_\_\_

Oven Number: \_\_\_\_\_

Spacer Number: \_\_\_\_\_

Hammer Number: MOD STD

|                        |   |
|------------------------|---|
| Mass Of Total Sample:  |   |
| Mass Retained 19.0 mm: |   |
| Percent Retained       | % |

|                         |  |
|-------------------------|--|
| O.M.C. %                |  |
| M.D.D. t/m <sup>3</sup> |  |

Specified Laboratory Density Ratio %

Required Laboratory Dry Density, t/m<sup>3</sup>

# #

| Moisture Contents:    | In Situ | At Comp | Top 30mm | Full Depth |
|-----------------------|---------|---------|----------|------------|
| Container Number:     |         | 2       |          | 2          |
| Wet Mass Soil & Cont: |         | 1717    |          | 1986       |
| Dry Mass Soil & Cont: |         | 1599    |          | 1853       |
| Check Mass:           |         | 118/908 |          | 133/998    |
| Mass Of Container:    |         | 691     |          | 855        |
| Moisture Content %    |         | 12.9    |          | 13.3       |

# Moisture Samples (Soaked)  
Top 30mm- Sample to depth of 30mm (penetration end)  
Full Depth- Sample from the remaining specimen

| Cure Data                             |   |
|---------------------------------------|---|
| Specified Laboratory Moisture Ratio % |   |
| Target Laboratory Moisture Content    | % |
| Mass Of Soil & Hygro:                 |   |
| In Situ Moisture Content:             | % |
| ~ Mass of Dry Soil:                   |   |
| Mass Soil & Hygro @ Target Moist. :   |   |
| Mass Of Water Required:(g)            |   |

Proving Ring 28kN  
Load Cell

| Penetration Data |               |              |
|------------------|---------------|--------------|
| Penetration mm   | Prov. Ring mm | Load Cell kn |
| Seat             | Top           | Bottom       |
| 0.5              | 3             | 5            |
| 1                | 5             | 16           |
| 1.5              | 8             | 26           |
| 2                | 10            | 36           |
| 2.5              | 13            | 46           |
| 3                | 18            | 58           |
| 3.5              |               | 68           |
| 4                | 26            | 80           |
| 4.5              | 32            | 91           |
| 5                | 40            | 102          |
| 5.5              | 46            | 115          |
| 6                | 54            | 126          |
| 6.5              | 62            | 140          |
| 7                | 70            | 151          |
| 7.5              | 78            | 164          |
| 8                | 86            | 175          |
| 8.5              | 95            | 185          |
| 9                | 104           | 197          |
| 9.5              | 113           | 209          |
| 10               | 122           | 220          |
| 10.5             | 131           | 231          |

| Compaction Data                     |       | STD / MOD |
|-------------------------------------|-------|-----------|
| Volume Of Mould: (cm <sup>3</sup> ) |       |           |
| Mass Of Mould: (g)                  | 6425  |           |
| Mass Mould & Material:(g)           | 11929 |           |

|                                     |  |
|-------------------------------------|--|
| Required Wet Density                |  |
| Mass Soil + Hygro Required in Mould |  |
| Required Mass/Layer                 |  |

| Swell Data                |        |
|---------------------------|--------|
| Initial Reading(mm)       | 0      |
| Date & Time Of Immersion: | 4 days |
| Final Reading (mm)        | 0      |
| Mass Mould & Material (g) | 11999  |

Compaction Date/By: 13.03.2014

Penetration Date/By: 17.03.2014

Figure 12-2-3 CBR Test Result (P3)

Ministry of Infrastructure Development

Client: Siam Tone Co., Ltd.

California Bearing Ratio

Job No: 14-015

AS 1289.6.1.1  
Soaked / Unsoaked

Date Tested/By: CB

Checked By: MI

Sample Number: P4

Project: Kukum Highway Upgrading

Sample Location: Opposite New Look

Date Sampled: 3.3.2014

Sample Description: Clayey sand with gravel

Mould Number: \_\_\_\_\_

Balance Number: \_\_\_\_\_

Oven Number: \_\_\_\_\_

Spacer Number: \_\_\_\_\_

Hammer Number: MOD STD

|                        |   |
|------------------------|---|
| Mass Of Total Sample:  |   |
| Mass Retained 19.0 mm: |   |
| Percent Retained       | % |

|                         |       |
|-------------------------|-------|
| O.M.C. %                | 15.8  |
| M.D.D. t/m <sup>3</sup> | 1.828 |

Specified Laboratory Density Ratio %

Required Laboratory Dry Density, t/m<sup>3</sup>

# #

| Moisture Contents:    | In Situ | At Comp | Top 30mm | Full Depth |
|-----------------------|---------|---------|----------|------------|
| Container Number:     |         | T2      |          | L3         |
| Wet Mass Soil & Cont: |         | 750     |          | 2087       |
| Dry Mass Soil & Cont: |         | 645     |          | 1904       |
| Check Mass:           |         | 105     |          | 183        |
| Mass Of Container:    |         |         |          | 783        |
| Moisture Content %    |         | 16.3    |          | 16.3       |

# Moisture Samples (Soaked)  
Top 30mm- Sample to depth of 30mm (penetration end)  
Full Depth- Sample from the remaining specimen

| Cure Data                             |   |
|---------------------------------------|---|
| Specified Laboratory Moisture Ratio % |   |
| Target Laboratory Moisture Content    | % |
| Mass Of Soil & Hygro:                 |   |
| In Situ Moisture Content:             | % |
| ~ Mass of Dry Soil:                   |   |
| Mass Soil & Hygro @ Target Moist. :   |   |
| Mass Of Water Required:(g)            |   |

Proving Ring 28kN  
Load Cell

| Penetration Data |               |              |
|------------------|---------------|--------------|
| Penetration mm   | Prov. Ring mm | Load Cell kn |
| Seat             | Top           | Bottom       |
| 0.5              | 2             | 3            |
| 1                | 5             | 10           |
| 1.5              | 7             | 17           |
| 2                | 11            | 25           |
| 2.5              | 14            | 33           |
| 3                | 17            | 39           |
| 3.5              |               | 45           |
| 4                | 25            | 51           |
| 4.5              | 30            | 57           |
| 5                | 35            | 63           |
| 5.5              | 39            | 68           |
| 6                | 43            | 75           |
| 6.5              | 48            | 80           |
| 7                | 54            | 85           |
| 7.5              | 60            | 91           |
| 8                | 65            | 96           |
| 8.5              | 71            | 101          |
| 9                | 76            | 107          |
| 9.5              | 81            | 111          |
| 10               | 88            | 116          |
| 10.5             | 93            | 121          |

| Compaction Data                     |       | STD / MOD |
|-------------------------------------|-------|-----------|
| Volume Of Mould: (cm <sup>3</sup> ) |       |           |
| Mass Of Mould: (g)                  | 6441  |           |
| Mass Mould & Material:(g)           | 11404 |           |

|                                     |  |
|-------------------------------------|--|
| Required Wet Density                |  |
| Mass Soil + Hygro Required in Mould |  |
| Required Mass/Layer                 |  |

| Swell Data                |        |
|---------------------------|--------|
| Initial Reading(mm)       | 0      |
| Date & Time Of Immersion: | 4 days |
| Final Reading (mm)        | 0      |
| Mass Mould & Material (g) | 11467  |

Compaction Date/By: 7.03.14

Penetration Date/By: 11.03.14

CBR- 8

Figure 12-2-4 CBR Test Result (P4)



Ministry of Infrastructure Development

Client: Siam Tone Co., Ltd.

California Bearing Ratio

Job No: 14-012

AS 1289.6.1.1  
Soaked / Unsoaked

Date Tested/By: CB

Checked By: MI

Sample Number: P 5

Project: Kukum Highway Upgrading

Sample Location: Betel Nut Store near Police Sta.

Date Sampled: 4.03.2014

Sample Description: Well graded gravel with silt & sand

Mould Number: \_\_\_\_\_

Balance Number: \_\_\_\_\_

Oven Number: \_\_\_\_\_

Spacer Number: \_\_\_\_\_

Hammer Number: MOD STD

|                        |  |
|------------------------|--|
| Mass Of Total Sample:  |  |
| Mass Retained 19.0 mm: |  |
| Percent Retained %     |  |

|                         |  |
|-------------------------|--|
| O.M.C. %                |  |
| M.D.D. t/m <sup>3</sup> |  |

Specified Laboratory Density Ratio %

Required Laboratory Dry Density, t/m<sup>3</sup>

# #

| Moisture Contents:    | In Situ  | At Comp | Top 30mm | Full Depth |
|-----------------------|----------|---------|----------|------------|
| Container Number:     | 4        |         |          | 4          |
| Wet Mass Soil & Cont: | 2159     |         |          | 2001       |
| Dry Mass Soil & Cont: | 1964     |         |          | 1838       |
| Check Mass:           | 195/1113 |         |          | 163/987    |
| Mass Of Container:    | 851      |         |          | 851        |
| Moisture Content %    | 17.5     |         |          | 16.5       |

# Moisture Samples (Soaked)  
Top 30mm- Sample to depth of 30mm (penetration end)  
Full Depth- Sample from the remaining specimen

| Cure Data                             |                        |
|---------------------------------------|------------------------|
| Specified Laboratory Moisture Ratio % | <input type="text"/>   |
| Target Laboratory Moisture Content    | % <input type="text"/> |
| Mass Of Soil & Hygro:                 | <input type="text"/>   |
| In Situ Moisture Content:             | % <input type="text"/> |
| ~ Mass of Dry Soil:                   | <input type="text"/>   |
| Mass Soil & Hygro @ Target Moist. :   | <input type="text"/>   |
| Mass Of Water Required:(g)            | <input type="text"/>   |

Proving Ring 28kN  
Load Cell

| Penetration Data |               |              |
|------------------|---------------|--------------|
| Penetration mm   | Prov. Ring mm | Load Cell kn |
| Seat             | Top           | Bottom       |
| 0.5              | 2             | 15           |
| 1                | 7             | 70           |
| 1.5              | 12            | 141          |
| 2                | 24            | 220          |
| 2.5              | 37            | 291          |
| 3                | 57            | 371          |
| 3.5              | 80            | 440          |
| 4                | 110           | 505          |
| 4.5              | 141           | 568          |
| 5                | 175           | 626          |
| 5.5              | 210           | 675          |
| 6                | 245           | 730          |
| 6.5              | 280           | 784          |
| 7                | 315           | 832          |
| 7.5              | 350           | 875          |
| 8                | 385           | 918          |
| 8.5              | 420           | 963          |
| 9                | 455           | 1006         |
| 9.5              | 492           | 1036         |
| 10               | 524           | 1073         |
| 10.5             | 557           | 1103         |

| Compaction Data                     | STD / MOD |
|-------------------------------------|-----------|
| Volume Of Mould: (cm <sup>3</sup> ) |           |
| Mass Of Mould: (g)                  | 6439      |
| Mass Mould & Material:(g)           | 11256     |

|                      |  |
|----------------------|--|
| Required Wet Density |  |
| Mass Soil + Hygro    |  |
| Required in Mould    |  |
| Required Mass/Layer  |  |

| Swell Data                |        |
|---------------------------|--------|
| Initial Reading(mm)       | 0      |
| Date & Time Of Immersion: | 4 days |
| Final Reading (mm)        | 0      |
| Mass Mould & Material (g) | 11289  |

Compaction Date/By: 13.03.2014

Penetration Date/By: 17.03.2014

Figure 12-2-5 CBR Test Result (P5)

Ministry of Infrastructure Development

Client: Siam Tone Co., Ltd.

California Bearing Ratio

Job No: 14-017

AS 1289.6.1.1  
Soaked / Unsoaked

Date Tested/By: SS/CB 21.03.14 Checked By: MI

Sample Number: P 6

Project: Kukum Highway Upgrading

Sample Location: Container Yard

Date Sampled: 04.03.2014

Sample Description: Poorly graded sand with gravel

Mould Number: 3

Balance Number:

Oven Number:

Spacer Number:

Hammer Number: MOD STD

|                        |       |
|------------------------|-------|
| Mass Of Total Sample:  | 7000g |
| Mass Retained 19.0 mm: |       |
| Percent Retained %     |       |

|             |       |
|-------------|-------|
| O.M.C. %    | 15.9  |
| M.D.D. t/m3 | 1.700 |

Specified Laboratory Density Ratio %

Required Laboratory Dry Density. t/m3

| Moisture Contents:    | In Situ | At Comp | Top 30mm | Full Depth |
|-----------------------|---------|---------|----------|------------|
| Container Number:     |         | T1      |          |            |
| Wet Mass Soil & Cont: |         | 1383    |          |            |
| Dry Mass Soil & Cont: |         | 1225    |          |            |
| Check Mass:           |         |         |          |            |
| Mass Of Container:    |         | 288     |          |            |
| Moisture Content %    |         | 16.9    |          |            |

# Moisture Samples (Soaked)  
Top 30mm- Sample to depth of 30mm (penetration end)  
Full Depth- Sample from the remaining specimen

| Cure Data                             |                        |
|---------------------------------------|------------------------|
| Specified Laboratory Moisture Ratio % | <input type="text"/>   |
| Target Laboratory Moisture Content    | % <input type="text"/> |
| Mass Of Soil & Hygro:                 | <input type="text"/>   |
| In Situ Moisture Content:             | % <input type="text"/> |
| ~ Mass of Dry Soil:                   | <input type="text"/>   |
| Mass Soil & Hygro @ Target Moist :    | <input type="text"/>   |
| Mass Of Water Required:(g)            | <input type="text"/>   |

Proving Ring   
Load Cell

| Compaction Data           | STD / MOD |
|---------------------------|-----------|
| Volume Of Mould: (cm3)    |           |
| Mass Of Mould: (g)        | 6406      |
| Mass Mould & Material:(g) | 11053     |

| Penetration Data |               |              |
|------------------|---------------|--------------|
| Penetration mm   | Prov. Ring mm | Load Cell kn |
| Seat             | Top           | Bottom       |
| 0.5              | 1             | 1            |
| 1                | 2             | 20           |
| 1.5              | 5             | 42           |
| 2                | 13            | 85           |
| 2.5              | 25            | 142          |
| 3                | 43            | 201          |
| 3.5              | 70            |              |
| 4                | 105           | 302          |
| 4.5              | 142           | 350          |
| 5                | 187           | 392          |
| 5.5              | 225           | 330          |
| 6                | 260           | 370          |
| 6.5              | 295           | 405          |
| 7                | 335           | 440          |
| 7.5              | 365           | 470          |
| 8                | 400           | 500          |
| 8.5              | 430           | 526          |
| 9                | 451           | 552          |
| 9.5              | 475           | 580          |
| 10               | 500           | 608          |
| 10.5             | 516           | 635          |

| Swell Data                |       |
|---------------------------|-------|
| Initial Reading(mm)       | 0     |
| Date & Time Of Immersion: | 4days |
| Final Reading (mm)        | 1     |
| Mass Mould & Material (g) | 11130 |

Swell %-0.85

Compaction Date/By: 17.03.14

Penetration Date/By: 21.03.14

CBR- 50

Figure 12-2-6 CBR Test Result (P6)

Ministry of Infrastructure Development

Client: Siam Tone Co., Ltd.

California Bearing Ratio

Job No: 14-018

AS 1289.6.1.1

Date Tested/By: CB

Checked By: MI

Soaked / Unsoaked

Sample Number: P 7

Project: Kukum Highway Upgrading

Sample Location: Fish Market

Date Sampled: 4.03.2014

Sample Description: Well-graded sand with silty clay and gravel

Mould Number: \_\_\_\_\_

Balance Number: \_\_\_\_\_

Oven Number: \_\_\_\_\_

Spacer Number: \_\_\_\_\_

Hammer Number: MOD STD

|                        |  |
|------------------------|--|
| Mass Of Total Sample:  |  |
| Mass Retained 19.0 mm: |  |
| Percent Retained %     |  |

|             |       |
|-------------|-------|
| O.M.C. %    | 22.0  |
| M.D.D. t/m3 | 1.514 |

Specified Laboratory Density Ratio % \_\_\_\_\_

Required Laboratory Dry Density. t/m3 \_\_\_\_\_

| Moisture Contents:    | In Situ | At Comp | Top 30mm | Full Depth |
|-----------------------|---------|---------|----------|------------|
| Container Number:     |         | M3      |          | T1         |
| Wet Mass Soil & Cont: |         | 1427    |          | 1999       |
| Dry Mass Soil & Cont: |         | 1307    |          | 1758       |
| Check Mass:           |         |         |          |            |
| Mass Of Container:    |         | 694     |          | 857        |
| Moisture Content %    |         | 19.6    |          | 26.7       |

# Moisture Samples (Soaked)  
Top 30mm- Sample to depth of 30mm (penetration end)  
Full Depth- Sample from the remaining specimen

| Cure Data                             |         |
|---------------------------------------|---------|
| Specified Laboratory Moisture Ratio % | _____   |
| Target Laboratory Moisture Content    | _____ % |
| Mass Of Soil & Hygro:                 | _____   |
| In Situ Moisture Content:             | _____ % |
| ~ Mass of Dry Soil:                   | _____   |
| Mass Soil & Hygro @ Target Moist :    | _____   |
| Mass Of Water Required:(g)            | _____   |

Proving Ring 28kN  
Load Cell \_\_\_\_\_

| Penetration Data |               |              |
|------------------|---------------|--------------|
| Penetration mm   | Prov. Ring mm | Load Cell kn |
| Seat             | Top           | Bottom       |
| 0.5              | 6             | 25           |
| 1                | 12            | 50           |
| 1.5              | 20            | 65           |
| 2                | 27            | 82           |
| 2.5              | 36            | 91           |
| 3                | 43            | 100          |
| 3.5              | 51            | 109          |
| 4                | 55            | 117          |
| 4.5              | 60            | 125          |
| 5                | 65            | 130          |
| 5.5              | 68            | 136          |
| 6                | 70            | 141          |
| 6.5              | 74            | 147          |
| 7                | 77            | 152          |
| 7.5              | 79            | 156          |
| 8                | 83            | 161          |
| 8.5              | 85            | 166          |
| 9                | 88            | 171          |
| 9.5              | 91            | 177          |
| 10               | 94            | 180          |
| 10.5             | 96            | 185          |

| Compaction Data           |       | STD / MOD |
|---------------------------|-------|-----------|
| Volume Of Mould: (cm3)    |       |           |
| Mass Of Mould: (g)        | 6413  |           |
| Mass Mould & Material:(g) | 10514 |           |

|                      |  |
|----------------------|--|
| Required Wet Density |  |
| Mass Soil + Hygro    |  |
| Required in Mould    |  |
| Required Mass/Layer  |  |

| Swell Data                |        |
|---------------------------|--------|
| Initial Reading(mm)       | 0      |
| Date & Time Of Immersion: | 4 days |
| Final Reading (mm)        | 9      |
| Mass Mould & Material (g) | 10719  |

Swell%-7.7

Compaction Date/By: 14.03.14

Penetration Date/By: 18.03.14

CBR- **16**

Figure 12-2-7 CBR Test Result (P7)

**Ministry of Infrastructure Development**

Client: Siam Tone Co., Ltd.

**California Bearing Ratio**

Job No: **14-019**

**AS 1289.6.1.1**  
**Soaked / Unsoaked**

Date Tested/By: CB

Checked By: MI

Sample Number: P 8

Project: Kukum Highway Upgrading

Sample Location: Ministry of Fishery

Date Sampled: 4.03.2014

Sample Description: Brown clay sandy soil

Mould Number: \_\_\_\_\_

Balance Number: \_\_\_\_\_

Oven Number: \_\_\_\_\_

Spacer Number: \_\_\_\_\_

Hammer Number: MOD **STD**

|                        |  |
|------------------------|--|
| Mass Of Total Sample:  |  |
| Mass Retained 19.0 mm: |  |
| Percent Retained %     |  |

|                    |       |
|--------------------|-------|
| <b>O.M.C. %</b>    | 18.8  |
| <b>M.D.D. t/m3</b> | 1.690 |

Specified Laboratory Density Ratio %

**Required Laboratory Dry Density. t/m3**

| <b>Moisture Contents:</b> | In Situ | At Comp | Top 30mm | Full Depth |
|---------------------------|---------|---------|----------|------------|
| Container Number:         |         | 2       |          | 4          |
| Wet Mass Soil & Cont:     |         | 1778    |          | 1762       |
| Dry Mass Soil & Cont:     |         | 1633    |          | 1612       |
| Check Mass:               |         |         |          |            |
| Mass Of Container:        |         | 855     |          | 851        |
| Moisture Content %        |         | 18.6    |          | 19.7       |

# Moisture Samples (Soaked)  
Top 30mm- Sample to depth of 30mm (penetration end)  
Full Depth- Sample from the remaining specimen

| <b>Cure Data</b>                      |                        |
|---------------------------------------|------------------------|
| Specified Laboratory Moisture Ratio % | <input type="text"/>   |
| Target Laboratory Moisture Content    | % <input type="text"/> |
| Mass Of Soil & Hygro:                 | <input type="text"/>   |
| In Situ Moisture Content:             | % <input type="text"/> |
| ~ Mass of Dry Soil:                   | <input type="text"/>   |
| Mass Soil & Hygro @ Target Moist :    | <input type="text"/>   |
| Mass Of Water Required:(g)            | <input type="text"/>   |

Proving Ring **28kN**  
Load Cell

| <b>Penetration Data</b> |               |              |
|-------------------------|---------------|--------------|
| Penetration mm          | Prov. Ring mm | Load Cell kn |
| Seat                    | Top           | Bottom       |
| 0.5                     | 10            | 15           |
| 1                       | 26            | 40           |
| 1.5                     | 44            | 66           |
| 2                       | 63            | 90           |
| 2.5                     | 83            | 108          |
| 3                       | 103           | 126          |
| 3.5                     |               | 141          |
| 4                       | 132           | 155          |
| 4.5                     | 143           | 168          |
| 5                       | 153           | 178          |
| 5.5                     | 161           | 190          |
| 6                       | 168           | 201          |
| 6.5                     | 174           | 211          |
| 7                       | 180           | 221          |
| 7.5                     | 185           | 231          |
| 8                       | 190           | 240          |
| 8.5                     | 195           | 248          |
| 9                       | 200           | 256          |
| 9.5                     | 205           | 264          |
| 10                      | 210           | 271          |
| 10.5                    | 214           | 278          |

| <b>Compaction Data</b>    | STD / MOD |
|---------------------------|-----------|
| Volume Of Mould: (cm3)    |           |
| Mass Of Mould: (g)        | 6538      |
| Mass Mould & Material:(g) | 11193     |

|                      |  |
|----------------------|--|
| Required Wet Density |  |
| Mass Soil + Hygro    |  |
| Required in Mould    |  |
| Required Mass/Layer  |  |

| <b>Swell Data</b>         |        |
|---------------------------|--------|
| Initial Reading(mm)       | 0      |
| Date & Time Of Immersion: | 4 days |
| Final Reading (mm)        | 20     |
| Mass Mould & Material (g) | 11284  |

Swell%- **17.1**

Compaction Date/By: 14.03.14

Penetration Date/By: 18.03.14

**CBR- 23**

**Figure 12-2-8 CBR Test Result (P8)**

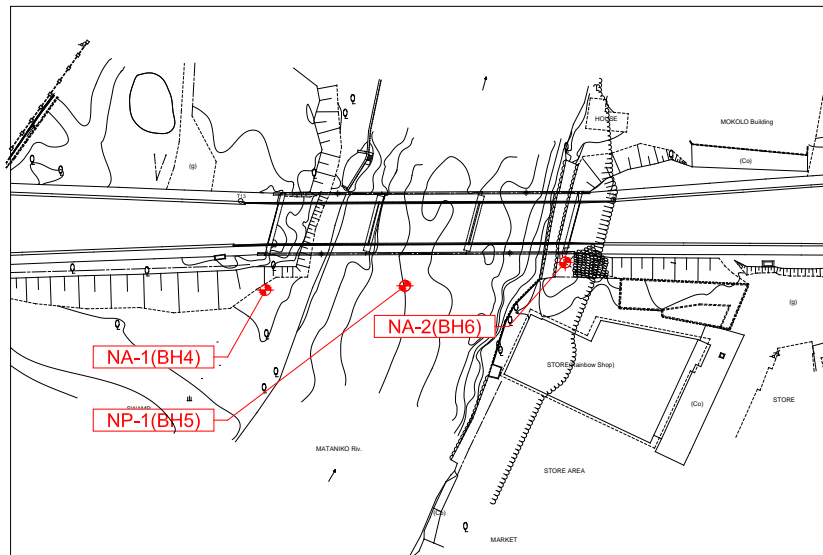
### A12-3 Boring Survey

Boring survey was conducted to obtain necessary data for the design of the project bridge foundations. The boring was conducted at the 6 spots at the bridges. Bearing layer was observed around between 40 m depth and 60 m. Result of the boring survey is shown in

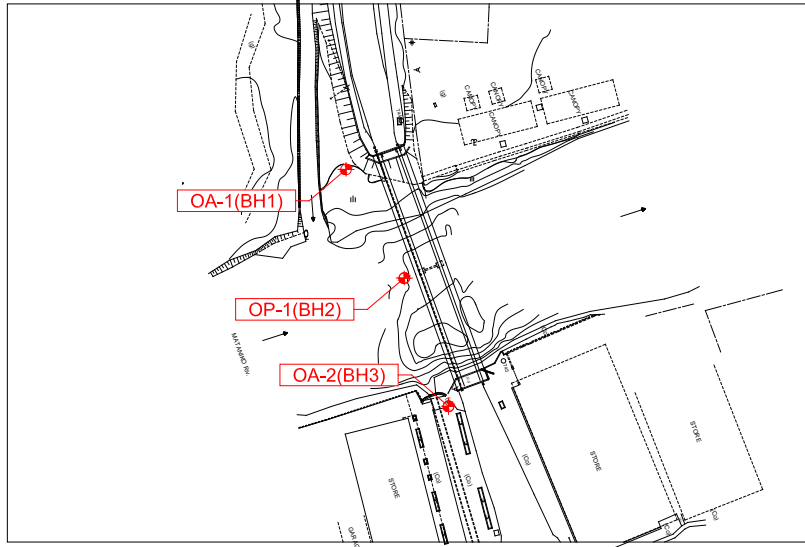
Table 12-3-1.

**Table 12-3-1 Result of Boring Survey**

|        | Contents   |
|--------|--|
| Method | Wash boring method using rotary drilling machine   |
| Item   | Standard Penetration Test (every 2 m), Sampling, Sieve analysis  |
| Amount | New Mataniko Bridge: 3 spots (Abutments: 2 spots, Pier; 1 spot)<br>Old Mataniko Bridge: 3 spots (Abutments: 2 spots, Pier; 1 spot) |
| Result | Soil / rock columnar section accompanied by the N-value, Photographs of collected core samples, Laboratory test results            |



**Figure 12-3-1 Location of Boring Spots at New Mataniko Bridge**



**Figure 12-3-2 Location of Boring Spots at Old Mataniko Bridge**

Result of the boring survey is shown in followings.

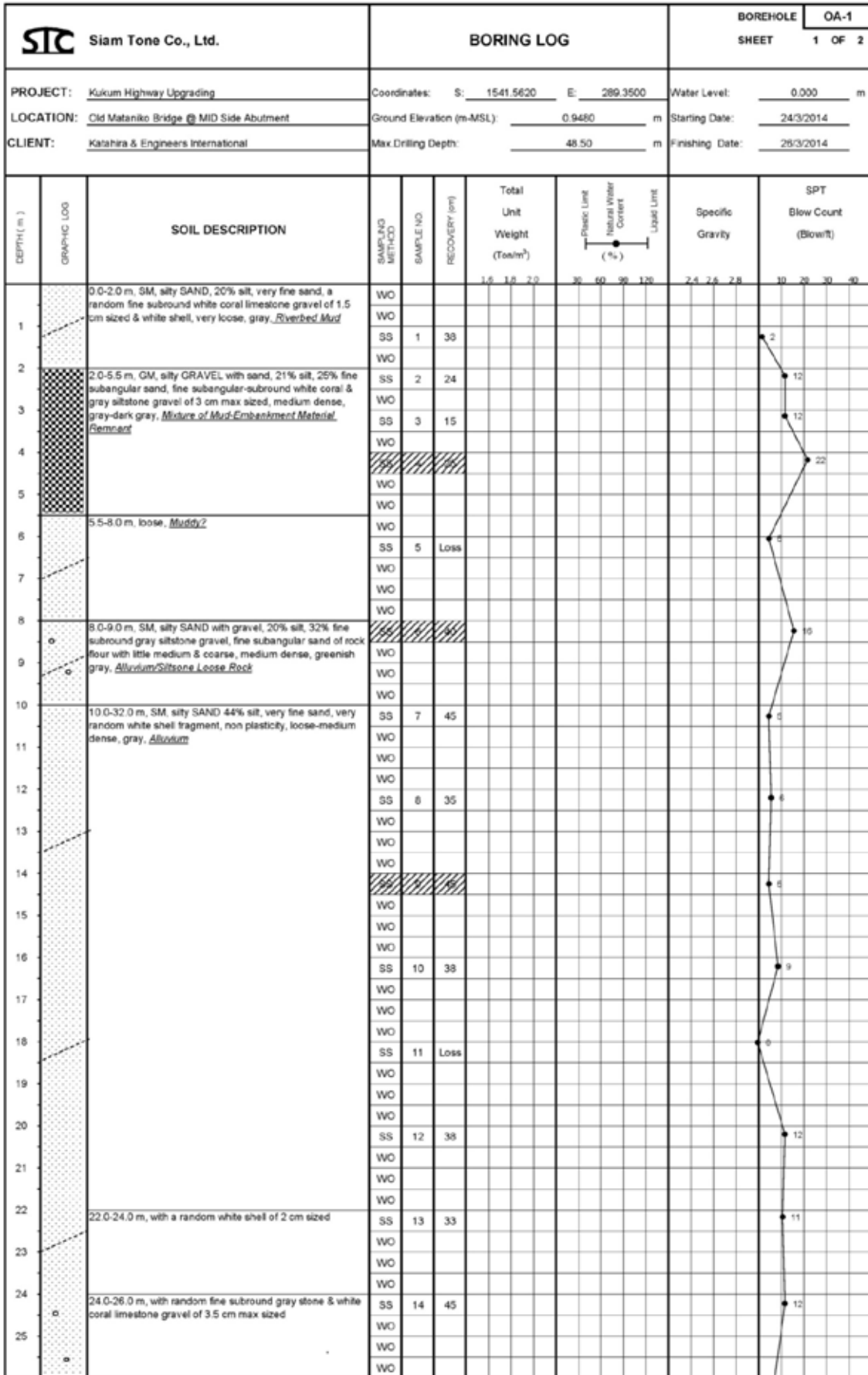


Figure 12-3-3 (1) Boring Core Histogram (Old Mataniko Bridge, OA-1(BH-1))

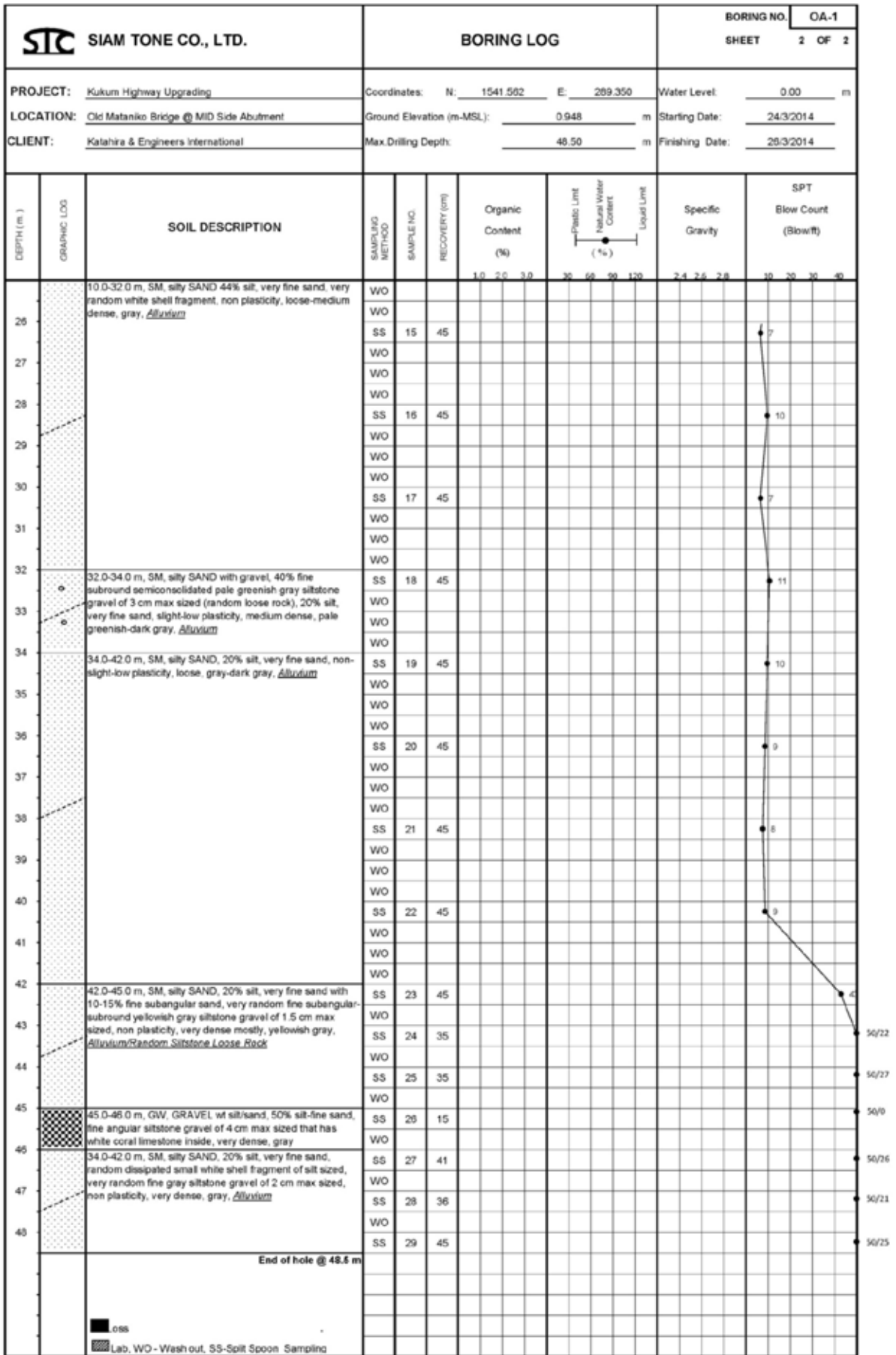


Figure 12-3-3 (2) Boring Core Histogram (Old Mataniko Bridge, OA-1(BH-1))



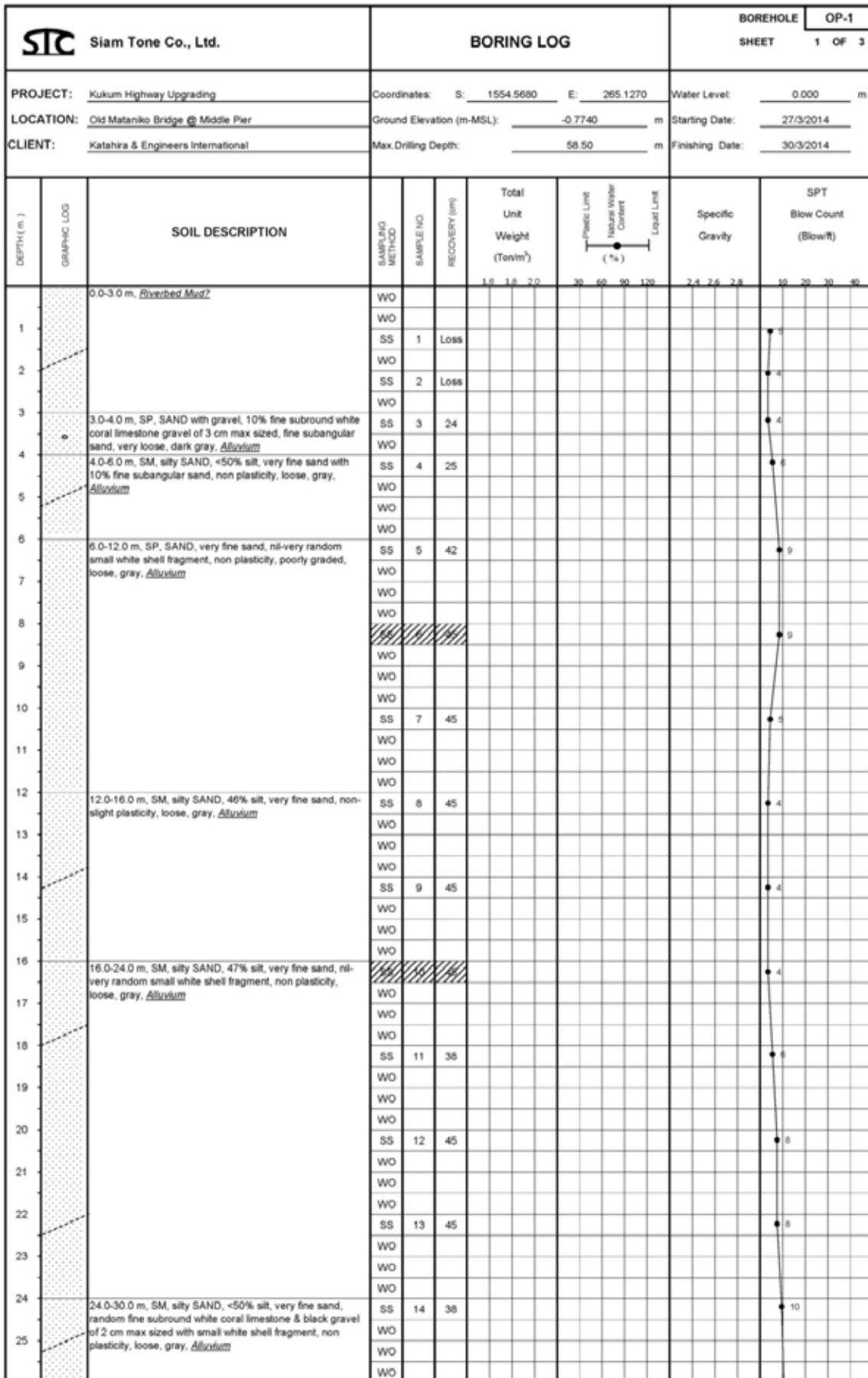


Figure 12-3-4 (1) Boring Core Histogram (Old Mataniko Bridge, OP-1(BH-2))

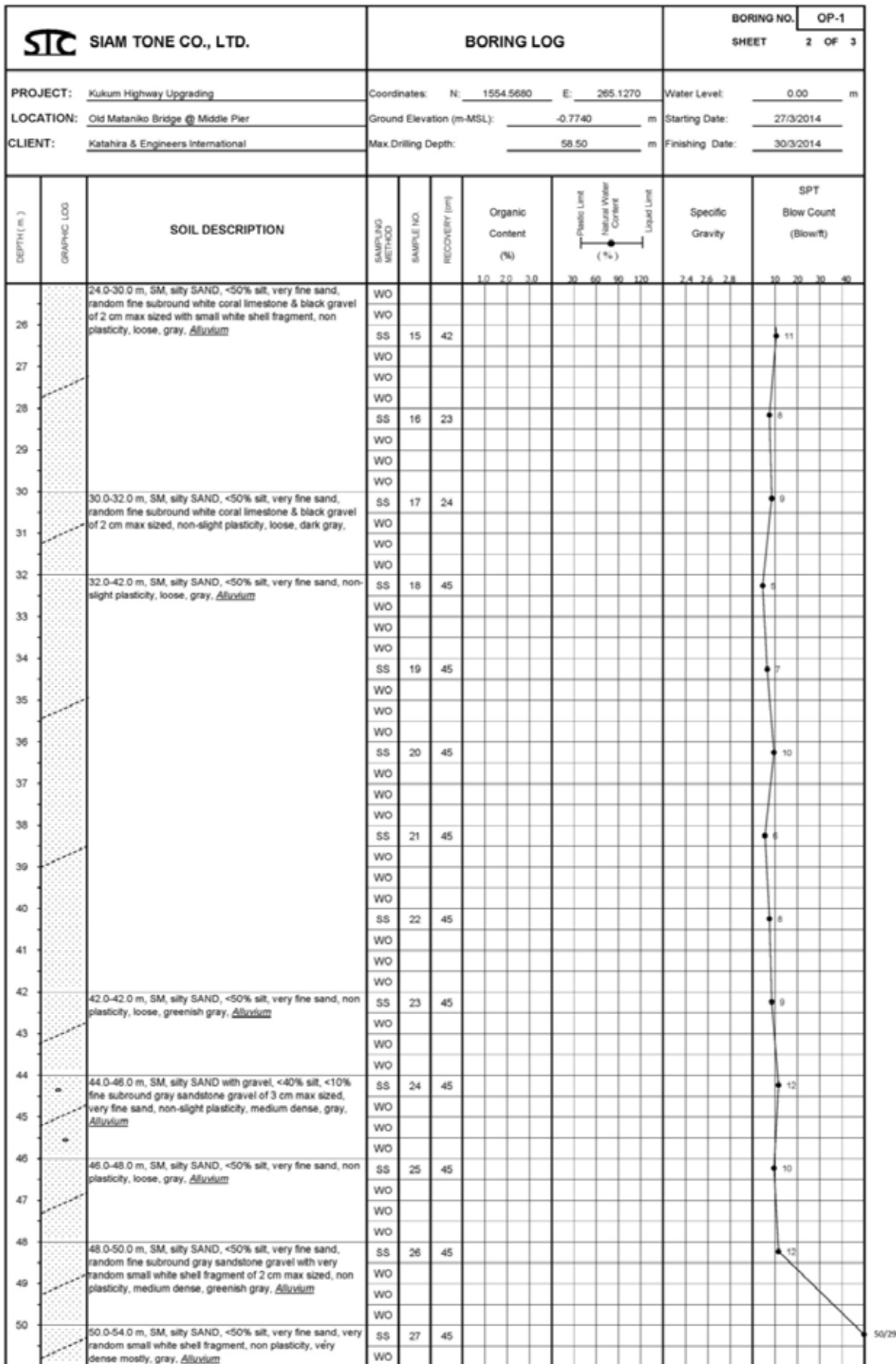


Figure 12-3-4 (2) Boring Core Histogram (Old Mataniko Bridge, OP-1(BH-2))

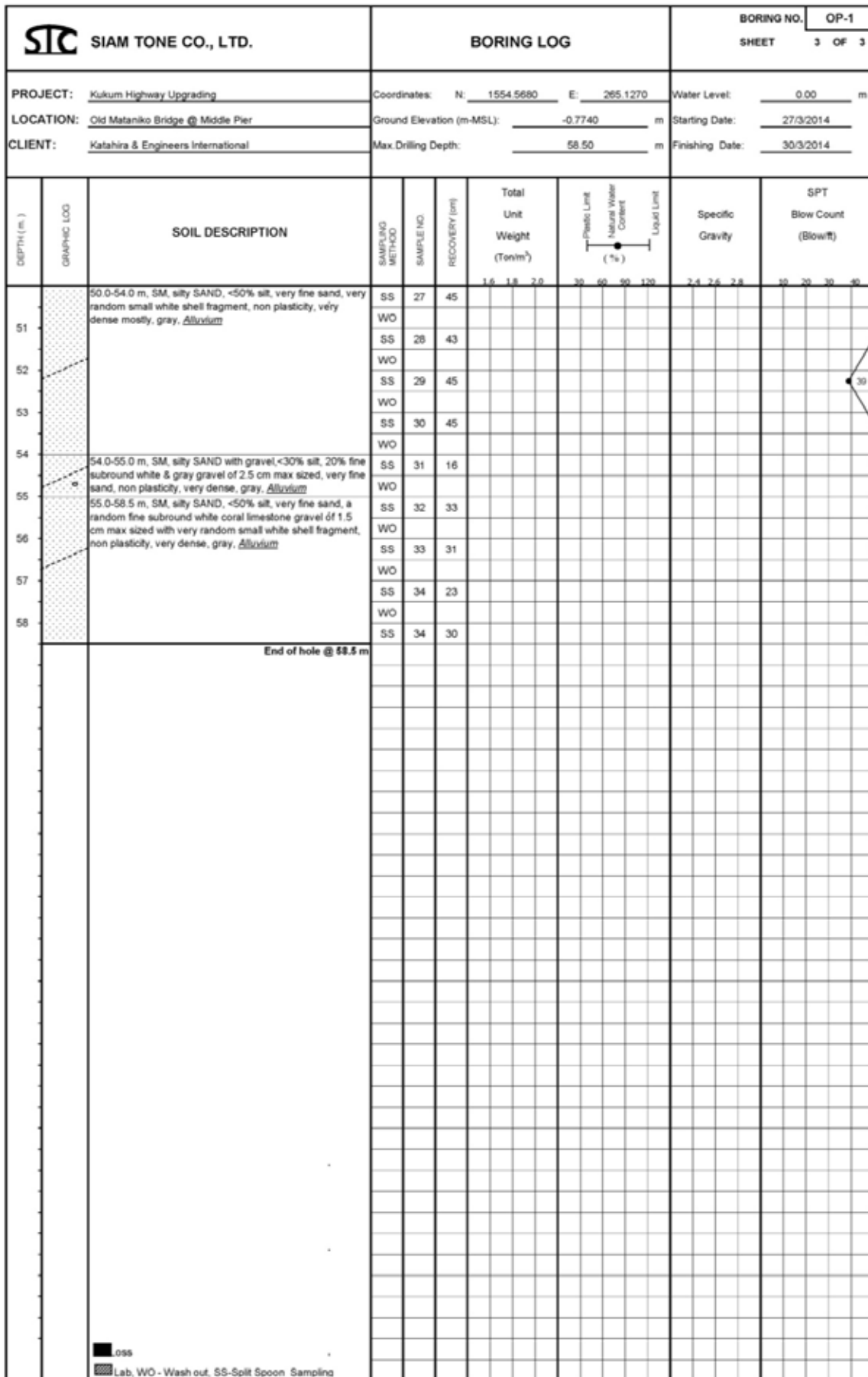


Figure 12-3-4 (3) Boring Core Histogram (Old Mataniko Bridge, OP-1(BH-2))

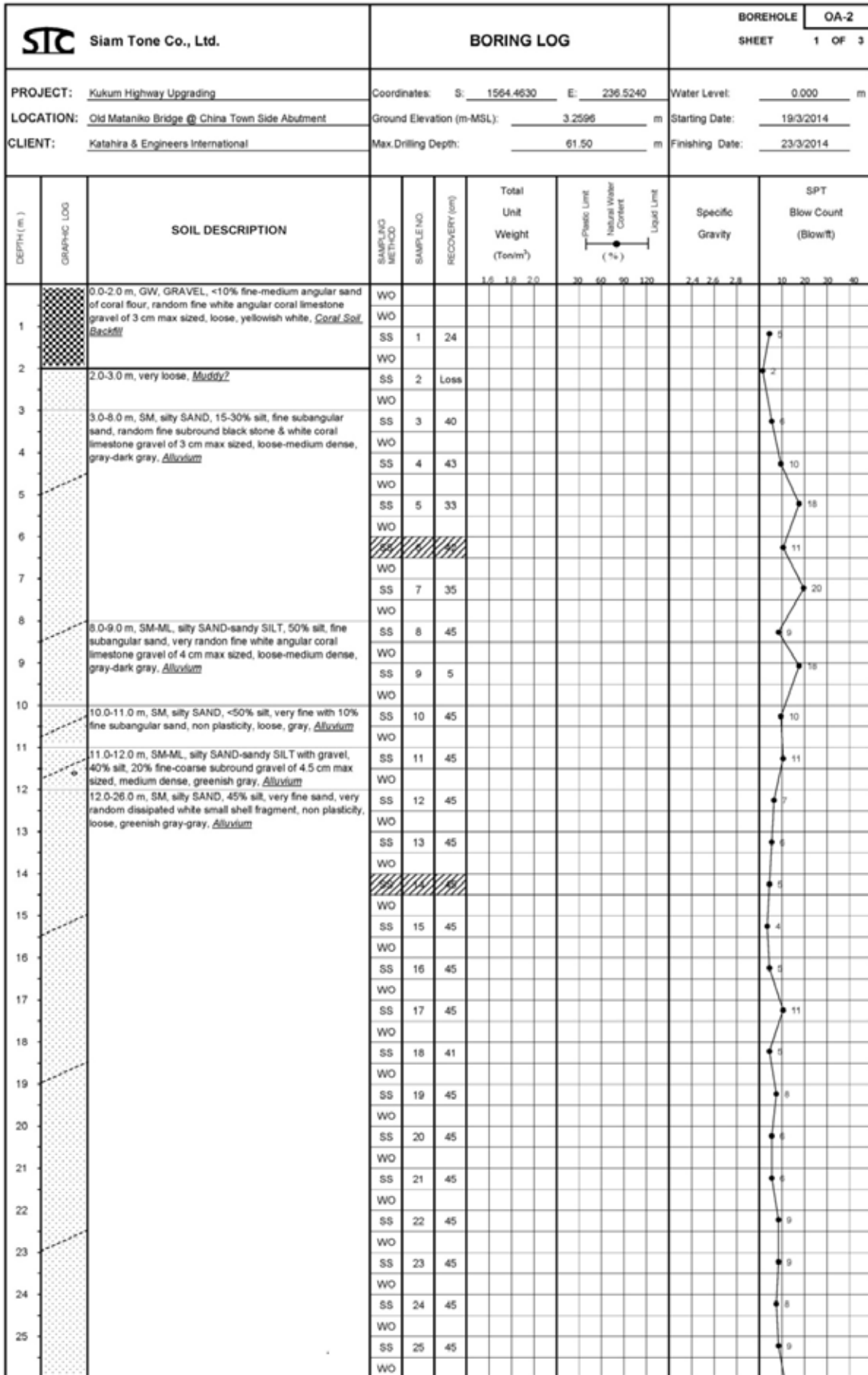


Figure 12-3-5 (1) Boring Core Histogram (Old Mataniko Bridge, OA-2(BH-3))

| SIAM TONE CO., LTD.                                      |             | BORING LOG  |                 |                           |              |                     | BORING NO. OA-2   |                           |                  |                  |                          |
|--|-------------|---|-----------------|---------------------------|--------------|---------------------|-------------------|---------------------------|------------------|------------------|--------------------------|
|  |             |   |                 |                           |              |                     | SHEET 2 OF 3      |                           |                  |                  |                          |
| PROJECT: Kukum Highway Upgrading                         |             | Coordinates: N: 1564.4630 E: 236.5240   |                 | Water Level: 0.00 m       |              |                     |                   |                           |                  |                  |                          |
| LOCATION: Old Mataniko Bridge @ China Town Side Abutment |             | Ground Elevation (m-MSL): 3.2596 m  |                 | Starting Date: 19/3/2014  |              |                     |                   |                           |                  |                  |                          |
| CLIENT: Katahira & Engineers International               |             | Max. Drilling Depth: 61.50 m  |                 | Finishing Date: 23/3/2014 |              |                     |                   |                           |                  |                  |                          |
| DEPTH (m.)   | GRAPHIC LOG | SOIL DESCRIPTION  | SAMPLING METHOD | SAMPLE NO.                | RECOVERY (%) | Organic Content (%) | Plastic Limit (%) | Natural Water Content (%) | Liquid Limit (%) | Specific Gravity | SPT Blow Count (Blow/ft) |
|  |             |   |                 |                           |              | 1.0 2.0 3.0         | 30 60 90 120      |                           |                  | 2.4 2.6 2.8      | 10 20 30 40              |
| 26   |             | 12.0-26.0 m, SM, silty SAND, 45% silt, very fine sand, very random dissipated white small shell fragment, non plasticity, loose, greenish gray-gray, <i>Alluvium</i>      | SS              | 25                        | 45           |                     |                   |                           |                  |                  |                          |
|  |             |   | WO              |                           |              |                     |                   |                           |                  |                  | 12                       |
| 27   |             | 26.0-27.0 m, SM, silty SAND with gravel, <35% silt, 15% fine subround gravel of 2.5 cm max sized, very fine sand, non plasticity, medium dense, gray, <i>Alluvium</i>     | SS              | 26                        | 32           |                     |                   |                           |                  |                  |                          |
|  |             |   | WO              |                           |              |                     |                   |                           |                  |                  |                          |
| 28   |             | 27.0-28.0 m, SM, silty SAND, <50% silt, very fine sand, very random dissipated white small shell fragment, non plasticity, medium dense, gray, <i>Alluvium</i>            | SS              | 27                        | 26           |                     |                   |                           |                  |                  |                          |
|  |             |   | WO              |                           |              |                     |                   |                           |                  |                  |                          |
| 29   |             | 28.0-29.0 m, SM, silty SAND wt gravel, <35% silt, very fine sand wt 15% fine subang sand, 15% fine gravel, non plasticity, med dense, gray-dark gray, <i>Alluvium</i>     | SS              | 28                        | 34           |                     |                   |                           |                  |                  |                          |
|  |             |   | WO              |                           |              |                     |                   |                           |                  |                  | 21                       |
| 30   |             | 29.0-36.0 m, SM, silty SAND, <50% silt, very fine sand, very random fine gravel & small white shell fragment, non plasticity, medium dense, gray, <i>Alluvium</i>         | SS              | 29                        | 45           |                     |                   |                           |                  |                  |                          |
|  |             |   | WO              |                           |              |                     |                   |                           |                  |                  | 17                       |
| 31   |             |   | SS              | 30                        | 45           |                     |                   |                           |                  |                  |                          |
|  |             |   | WO              |                           |              |                     |                   |                           |                  |                  | 13                       |
| 32   |             |   | SS              | 31                        | 45           |                     |                   |                           |                  |                  |                          |
|  |             |   | WO              |                           |              |                     |                   |                           |                  |                  | 11                       |
| 33   |             |   | SS              | 32                        | 27           |                     |                   |                           |                  |                  |                          |
|  |             |   | WO              |                           |              |                     |                   |                           |                  |                  | 10                       |
| 34   |             |   | SS              | 33                        | 45           |                     |                   |                           |                  |                  |                          |
|  |             |   | WO              |                           |              |                     |                   |                           |                  |                  | 8                        |
| 35   |             |   | SS              | 34                        | 45           |                     |                   |                           |                  |                  |                          |
|  |             |   | WO              |                           |              |                     |                   |                           |                  |                  | 10                       |
| 36   |             | 36.0-41.0 m, SM, silty SAND, <50% silt, very fine sand, slight plasticity, loose-medium dense, gray, <i>Alluvium</i>  | SS              | 35                        | 45           |                     |                   |                           |                  |                  |                          |
|  |             |   | WO              |                           |              |                     |                   |                           |                  |                  | 11                       |
| 37   |             |   | SS              | 36                        | 45           |                     |                   |                           |                  |                  |                          |
|  |             |   | WO              |                           |              |                     |                   |                           |                  |                  | 8                        |
| 38   |             |   | SS              | 37                        | 45           |                     |                   |                           |                  |                  |                          |
|  |             |   | WO              |                           |              |                     |                   |                           |                  |                  | 9                        |
| 39   |             |   | SS              | 38                        | 45           |                     |                   |                           |                  |                  |                          |
|  |             |   | WO              |                           |              |                     |                   |                           |                  |                  | 11                       |
| 40   |             |   | SS              | 39                        | 45           |                     |                   |                           |                  |                  |                          |
|  |             |   | WO              |                           |              |                     |                   |                           |                  |                  | 12                       |
| 41   |             | 41.0-47.0 m, SM, silty SAND, <50% silt, very fine sand, non-slight plasticity, loose-medium dense, gray, <i>Alluvium</i>  | SS              | 40                        | 25           |                     |                   |                           |                  |                  |                          |
|  |             |   | WO              |                           |              |                     |                   |                           |                  |                  | 11                       |
| 42   |             |   | SS              | 41                        | 45           |                     |                   |                           |                  |                  |                          |
|  |             |   | WO              |                           |              |                     |                   |                           |                  |                  | 12                       |
| 43   |             |   | SS              | 42                        | 45           |                     |                   |                           |                  |                  |                          |
|  |             |   | WO              |                           |              |                     |                   |                           |                  |                  | 11                       |
| 44   |             |   | SS              | 43                        | 45           |                     |                   |                           |                  |                  |                          |
|  |             |   | WO              |                           |              |                     |                   |                           |                  |                  | 8                        |
| 45   |             |   | WO              |                           |              |                     |                   |                           |                  |                  |                          |
| 46   |             |   | WO              |                           |              |                     |                   |                           |                  |                  |                          |
| 47   |             | 47.0-48.0 m, SM, silty SAND, <50% silt, very fine sand with 10% fine subangular sand, random fine white coral gravel, non plasticity, medium dense, gray, <i>Alluvium</i> | SS              | 44                        | 45           |                     |                   |                           |                  |                  |                          |
|  |             |   | WO              |                           |              |                     |                   |                           |                  |                  | 10                       |
| 48   |             | 48.0-57.0 m, SM, silty SAND, <50% silt, very fine sand, very random dissipated white small shell fragment, non-slight plasticity, loose, gray, <i>Alluvium</i>            | SS              | 45                        | 45           |                     |                   |                           |                  |                  |                          |
|  |             |   | WO              |                           |              |                     |                   |                           |                  |                  | 12                       |
| 49   |             |   | WO              |                           |              |                     |                   |                           |                  |                  |                          |
| 50   |             |   | SS              | 46                        | 45           |                     |                   |                           |                  |                  |                          |
|  |             |   | WO              |                           |              |                     |                   |                           |                  |                  | 9                        |
|  |             |   | WO              |                           |              |                     |                   |                           |                  |                  |                          |
|  |             |   | WO              |                           |              |                     |                   |                           |                  |                  |                          |

Figure 12-3-5 (2) Boring Core Histogram (Old Mataniko Bridge, OA-2(BH-3))

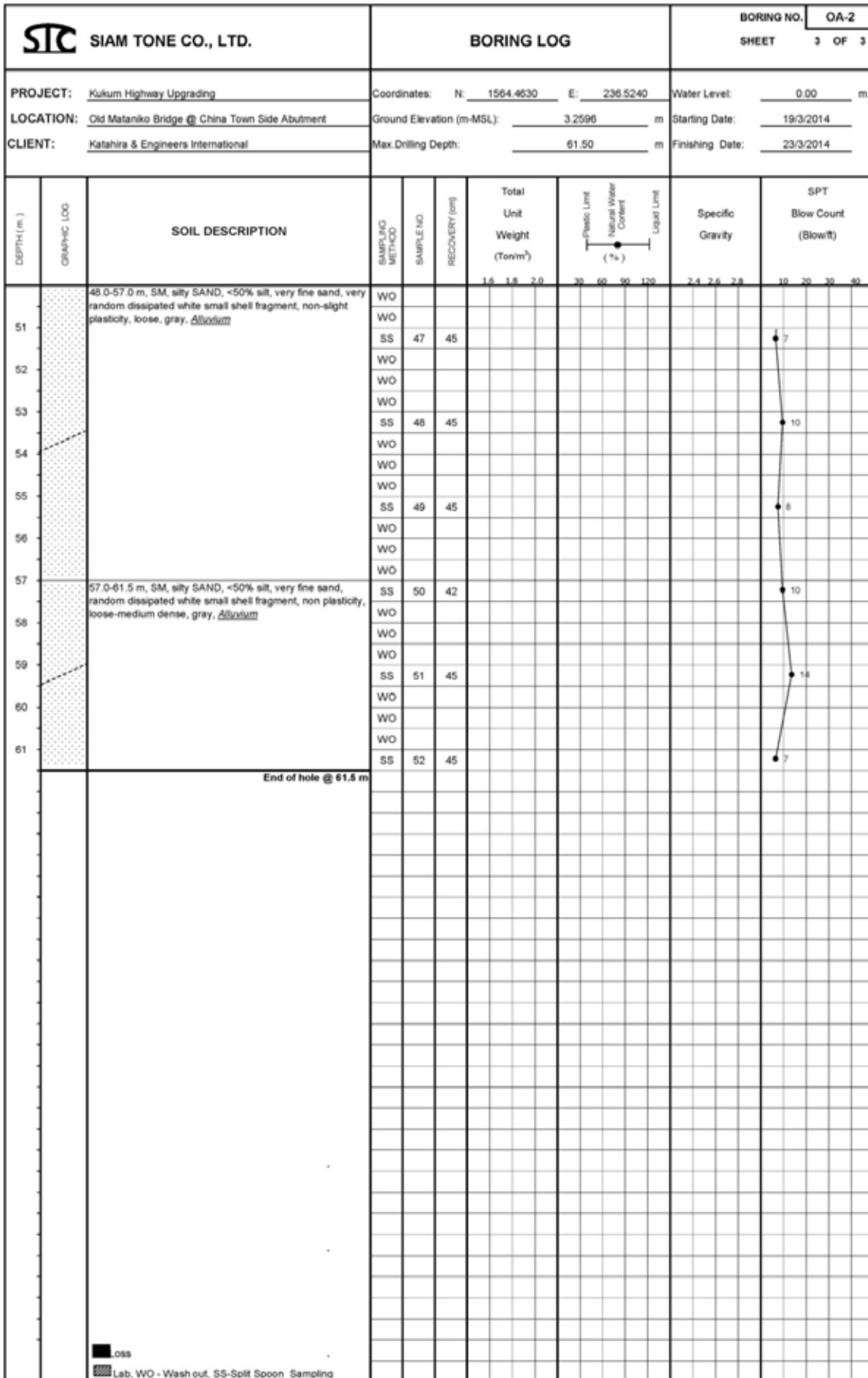


Figure 12-3-5 (3) Boring Core Histogram (Old Mataniko Bridge, OA-2(BH-3))

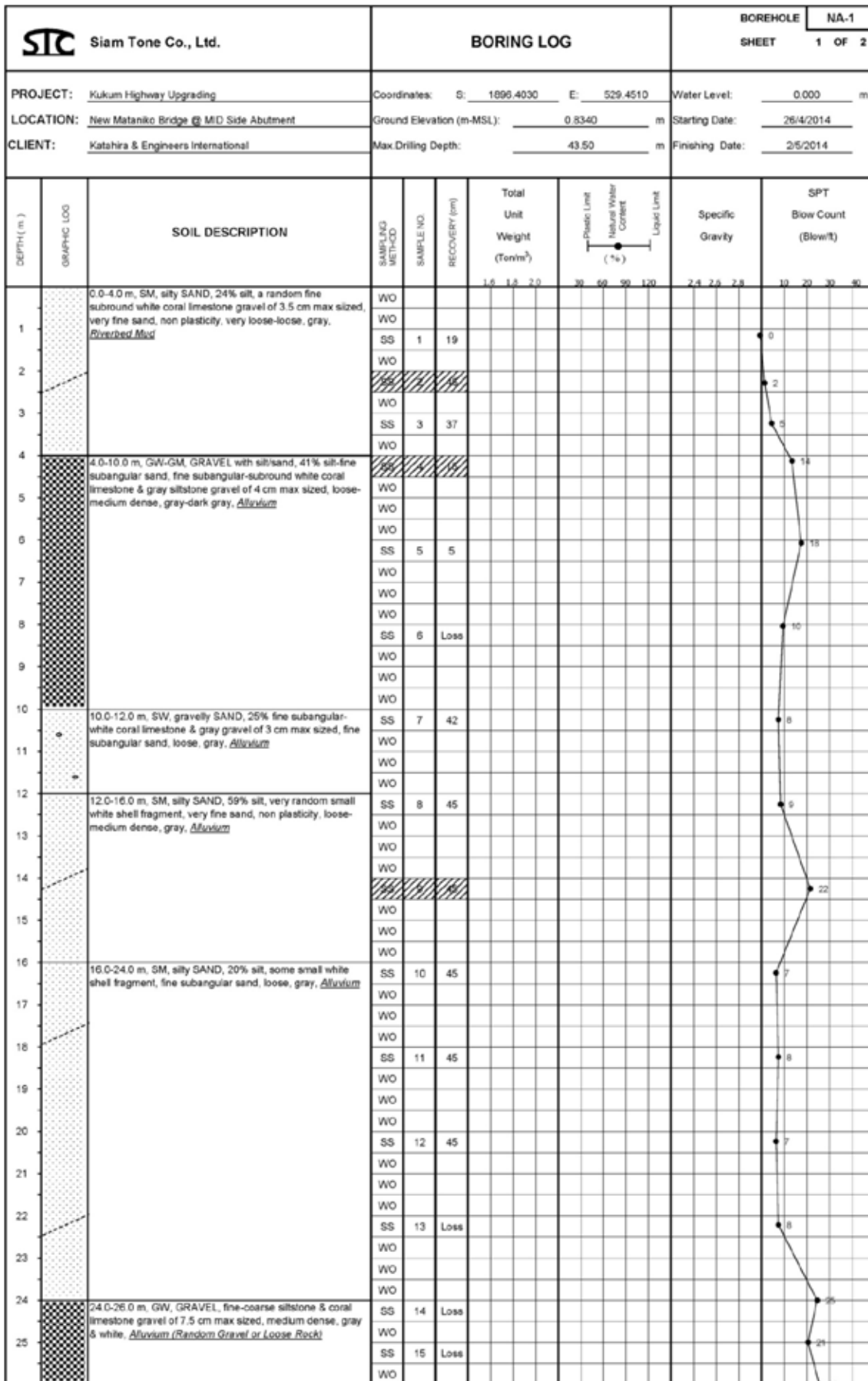


Figure 12-3-6 (1) Boring Core Histogram (New Mataniko Bridge, NA-1(BH-4))

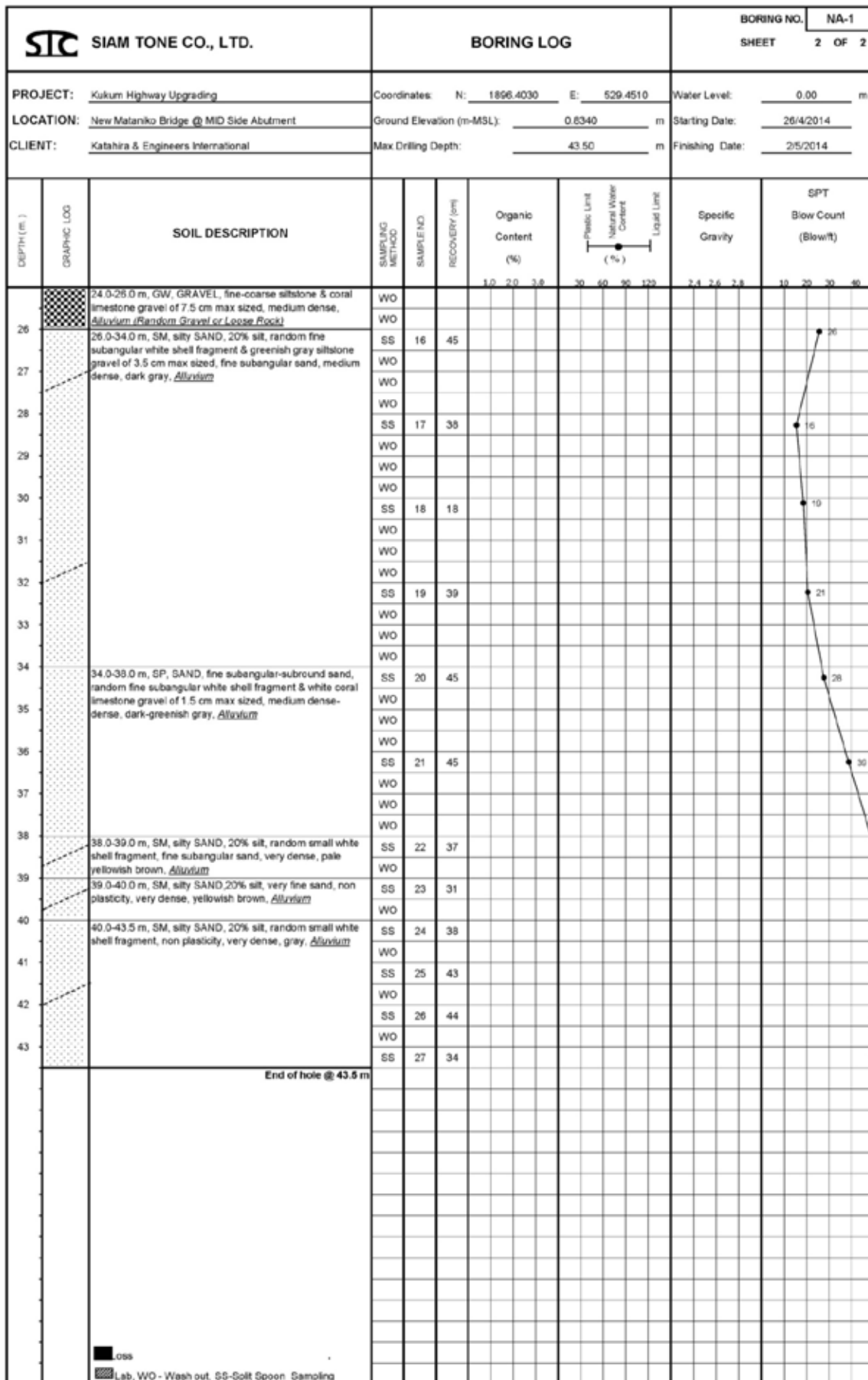


Figure 12-3-6 (2) Boring Core Histogram (New Mataniko Bridge, NA-1(BH-4))



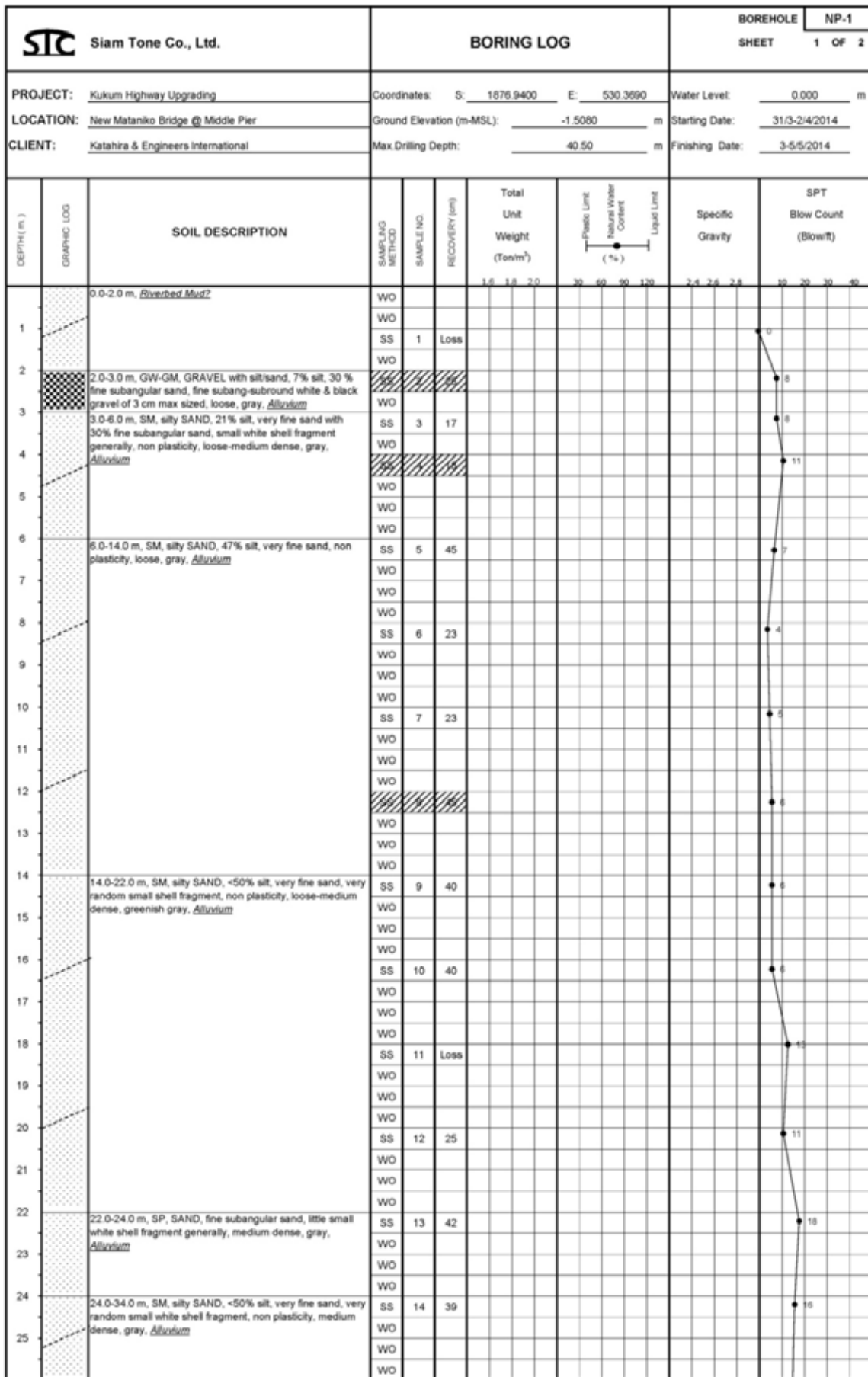


Figure 12-3-7 (1) Boring Core Histogram (New Mataniko Bridge, NP-1(BH-5))

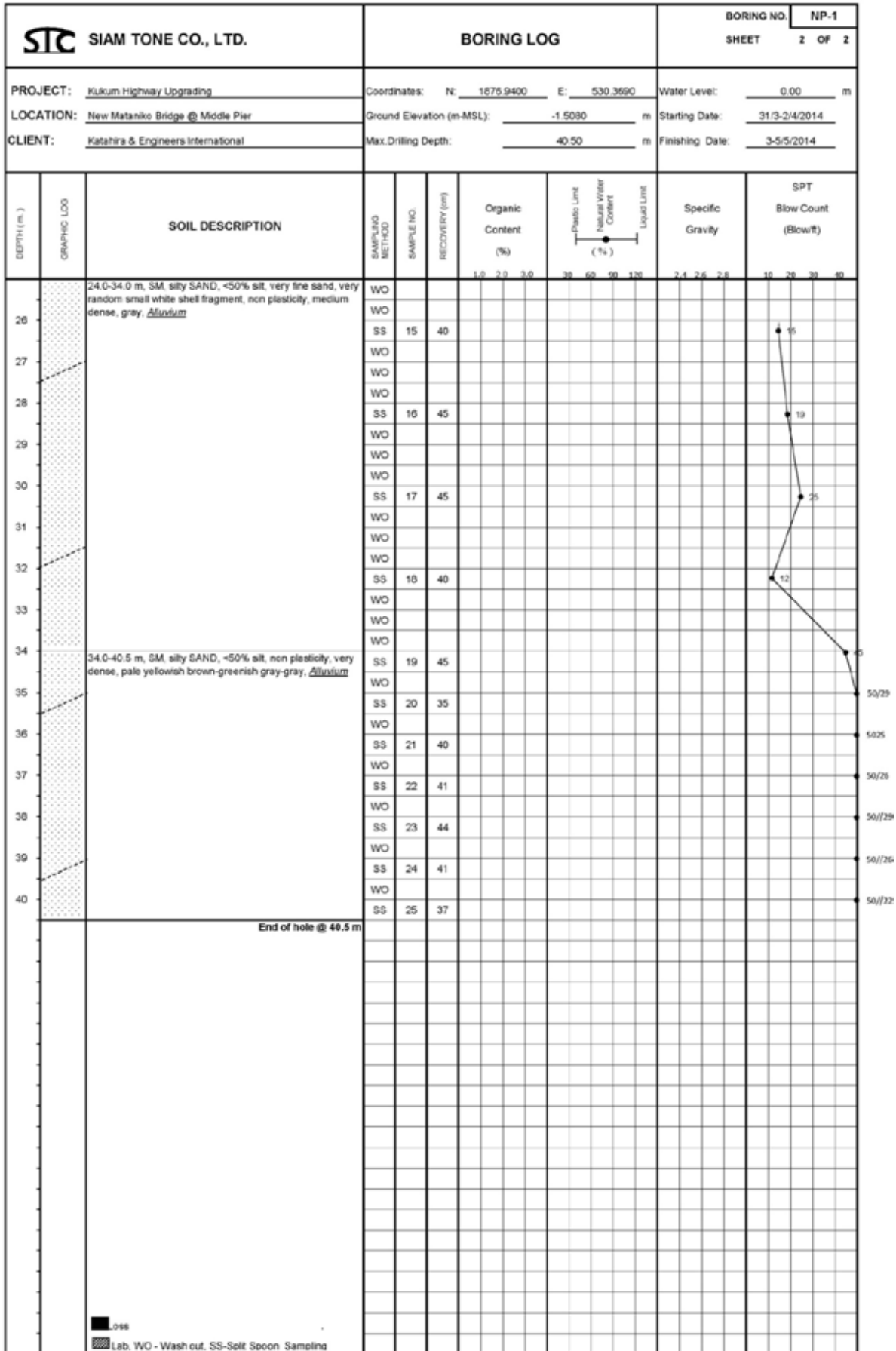


Figure 12-3-7 (2) Boring Core Histogram (New Mataniko Bridge, NP-1(BH-5))

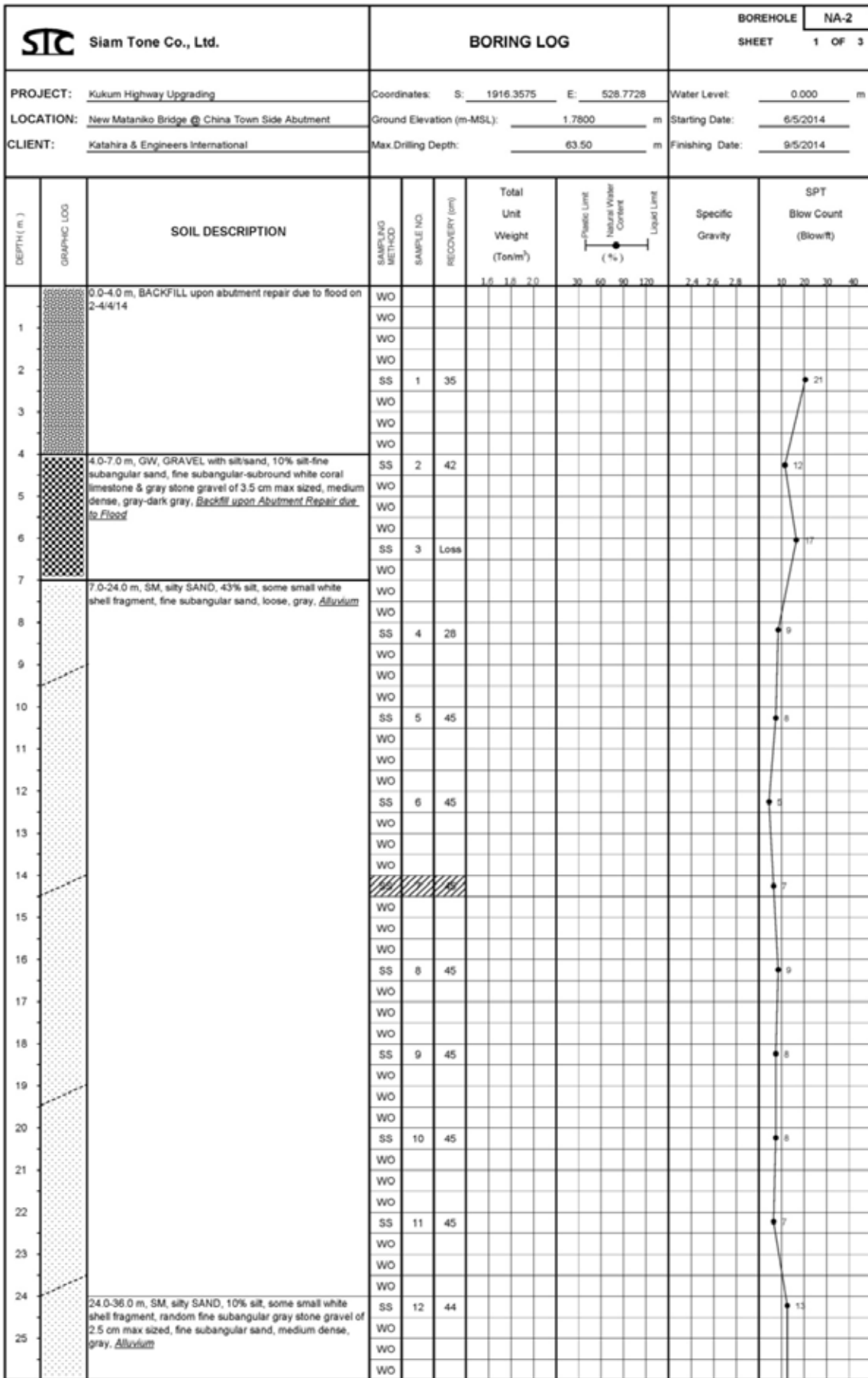


Figure 12-3-8 (1) Boring Core Histogram (New Mataniko Bridge, NA-2(BH-6))

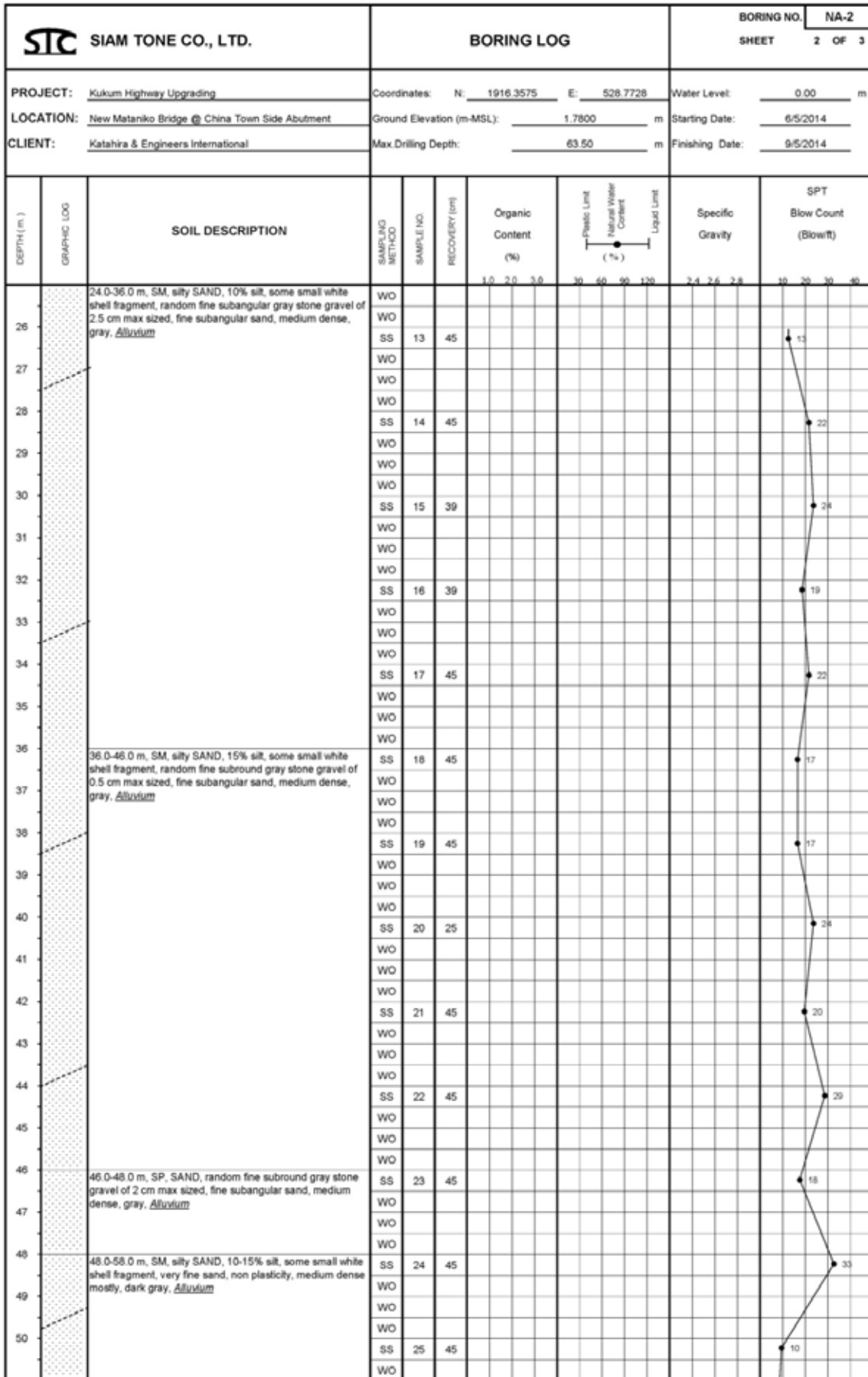


Figure 12-3-8 (2) Boring Core Histogram (New Mataniko Bridge, NA-2(BH-6))

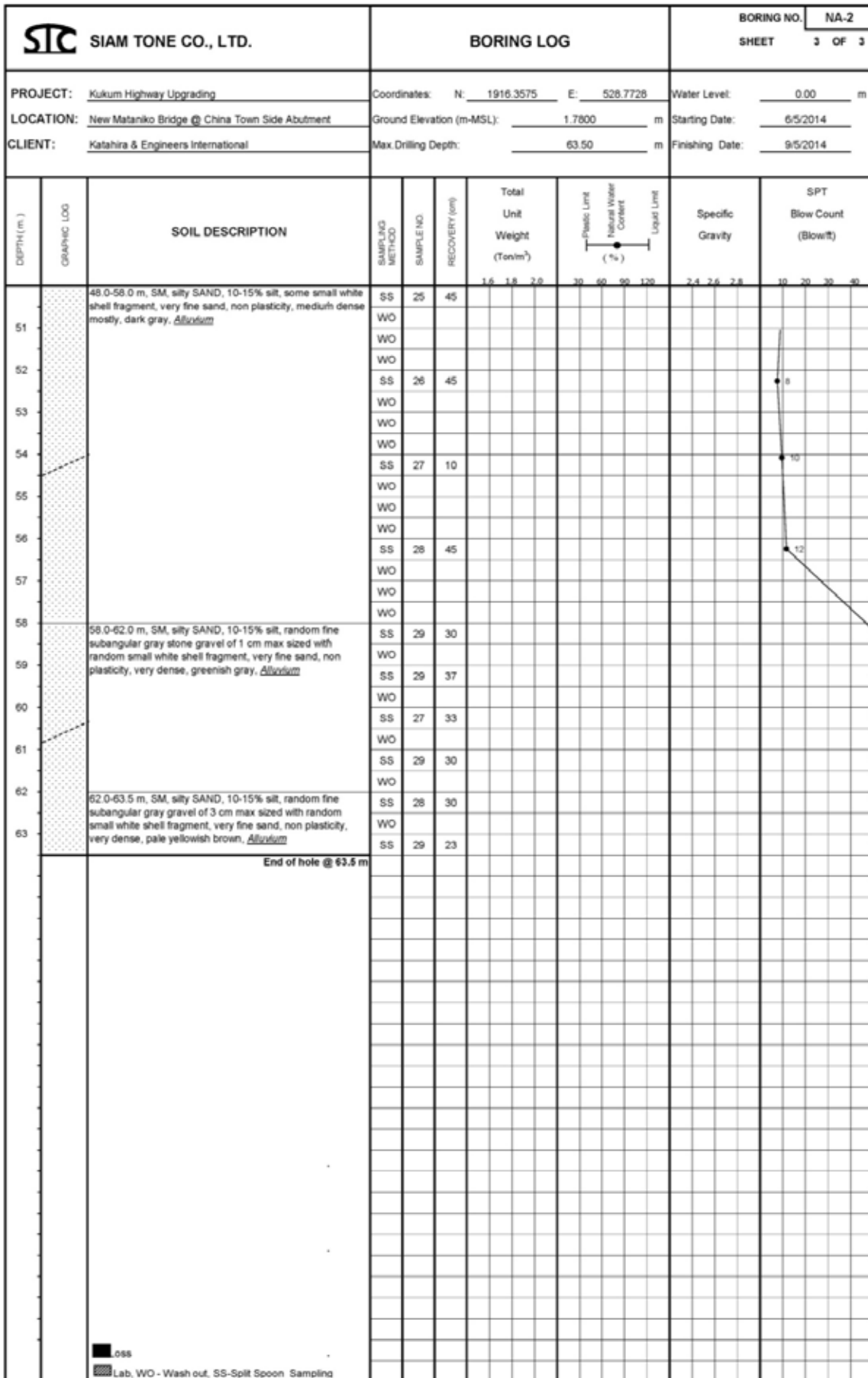


Figure 12-3-8 (3) Boring Core Histogram (New Mataniko Bridge, NA-2(BH-6))

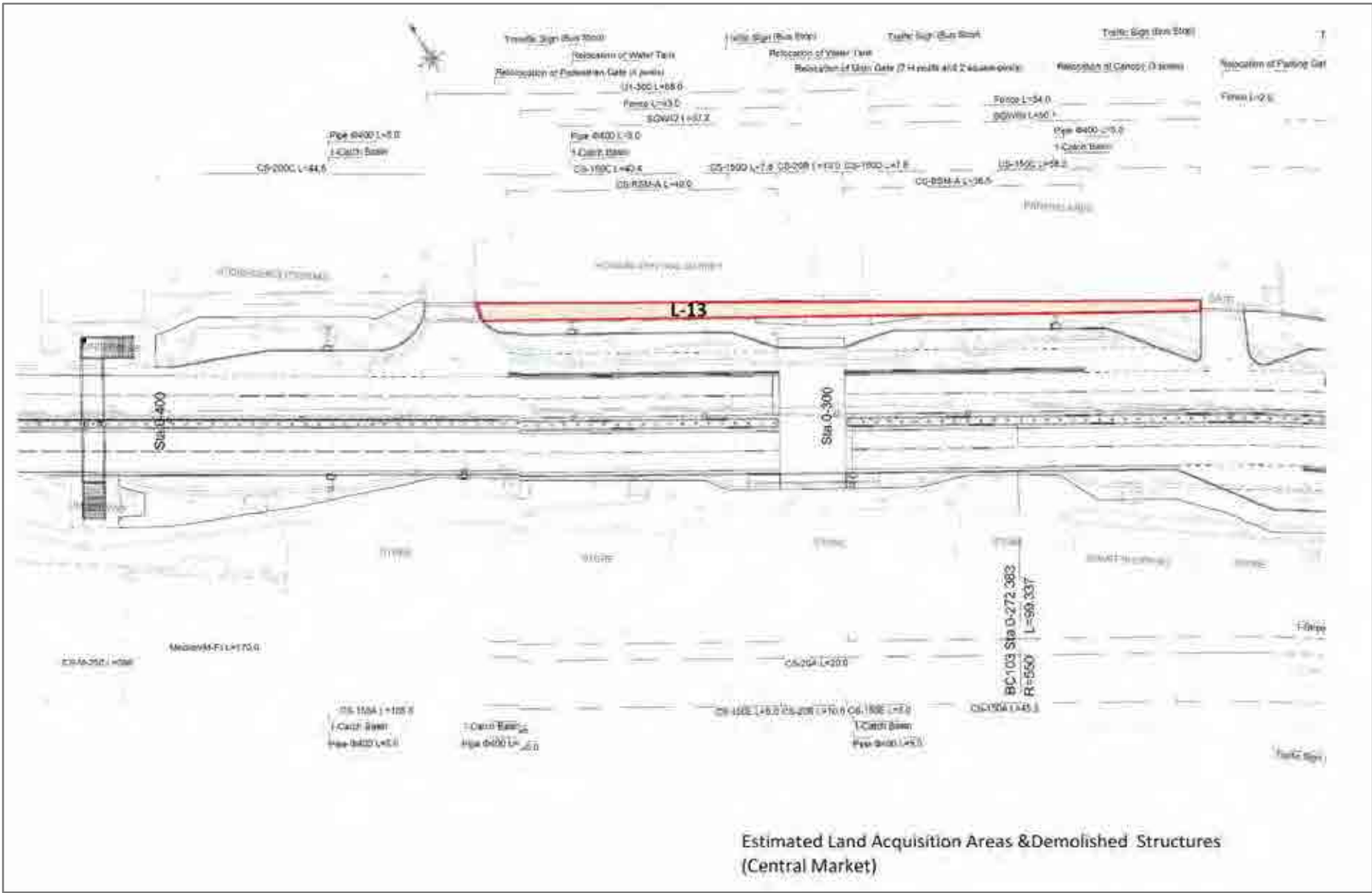
#### A12-4 List of Land Acquisition and Structures to be Compensated and Location Map

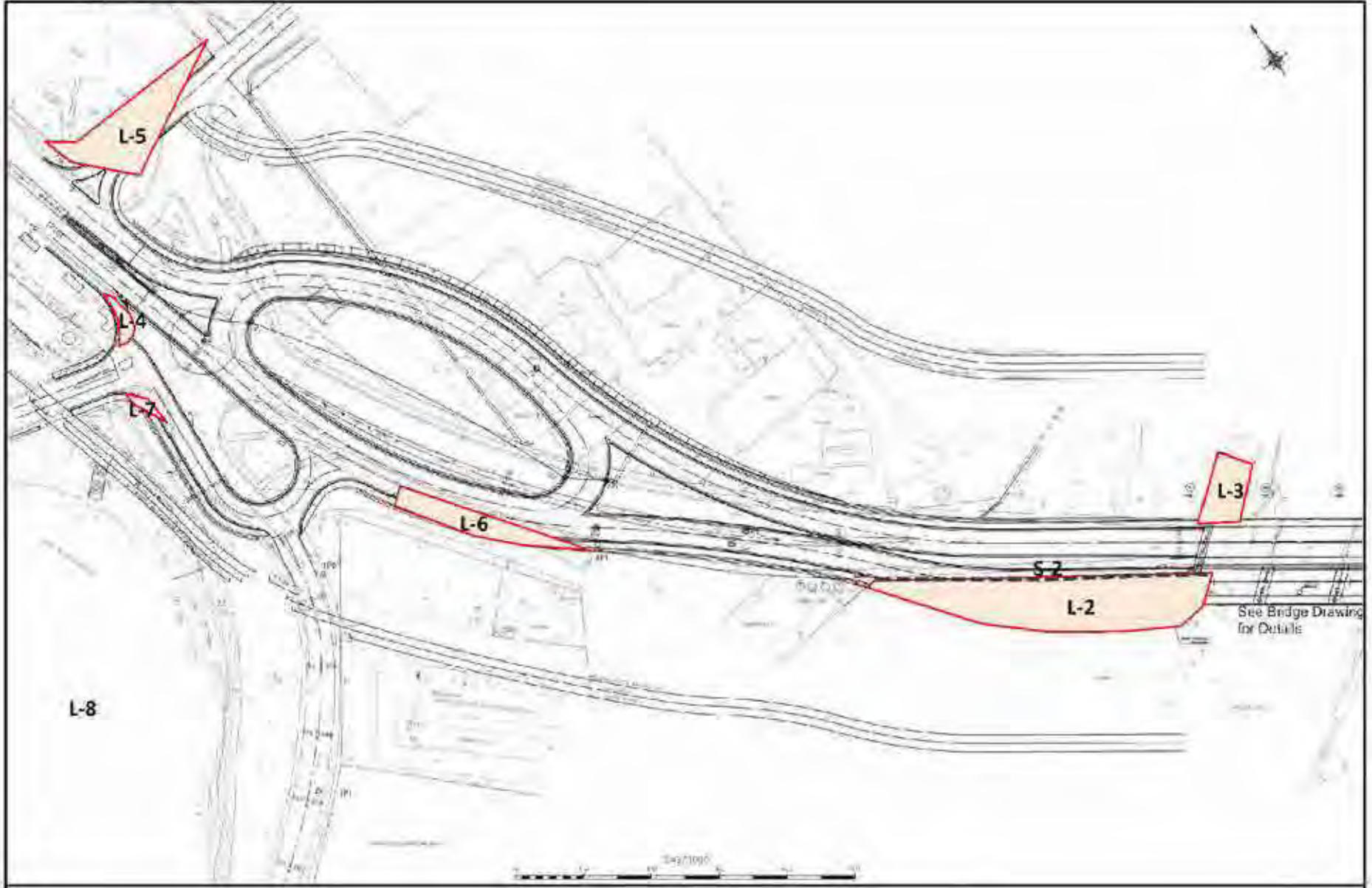
**Table 12-4-1 List of Land Acquisition Area**

| No.  | Estimated area of Land Acquired (s.m.) | Location                | Parcel Number | Note                            |
|------|--|-------------------------|---------------|---------------------------------|
| L-1  | 230                                    | New Mataniko Bridge     | 025-118       |                                 |
| L-2  | 860                                    |                         | 023-119       |                                 |
| L-3  | 160                                    |                         | 023-141       |                                 |
| L-4  | 20                                     | City Council Roundabout | 023-050       | Honiara Town Council            |
| L-5  | 440                                    |                         | 023-154/155   |                                 |
| L-6  | 210                                    |                         | 023-137       | Solomon Islands Water Authority |
| L-7  | 30                                     |                         | 024-090       |                                 |
| L-8  | 60                                     | Old Mataniko Bridge     | 023-119       |                                 |
| L-9  | 15                                     |                         | 023-119       |                                 |
| L-10 | 60                                     | Kukum                   | 041-259       |                                 |
| L-11 | 70                                     | Vura Intersection       | 037-015       |                                 |
| L-12 | 100                                    |                         | 038-033       |                                 |
| L-13 | 270                                    | Central Market          | 023-071       | Central Market                  |

**Table 12-4-2 List of Structures to be Compensated**

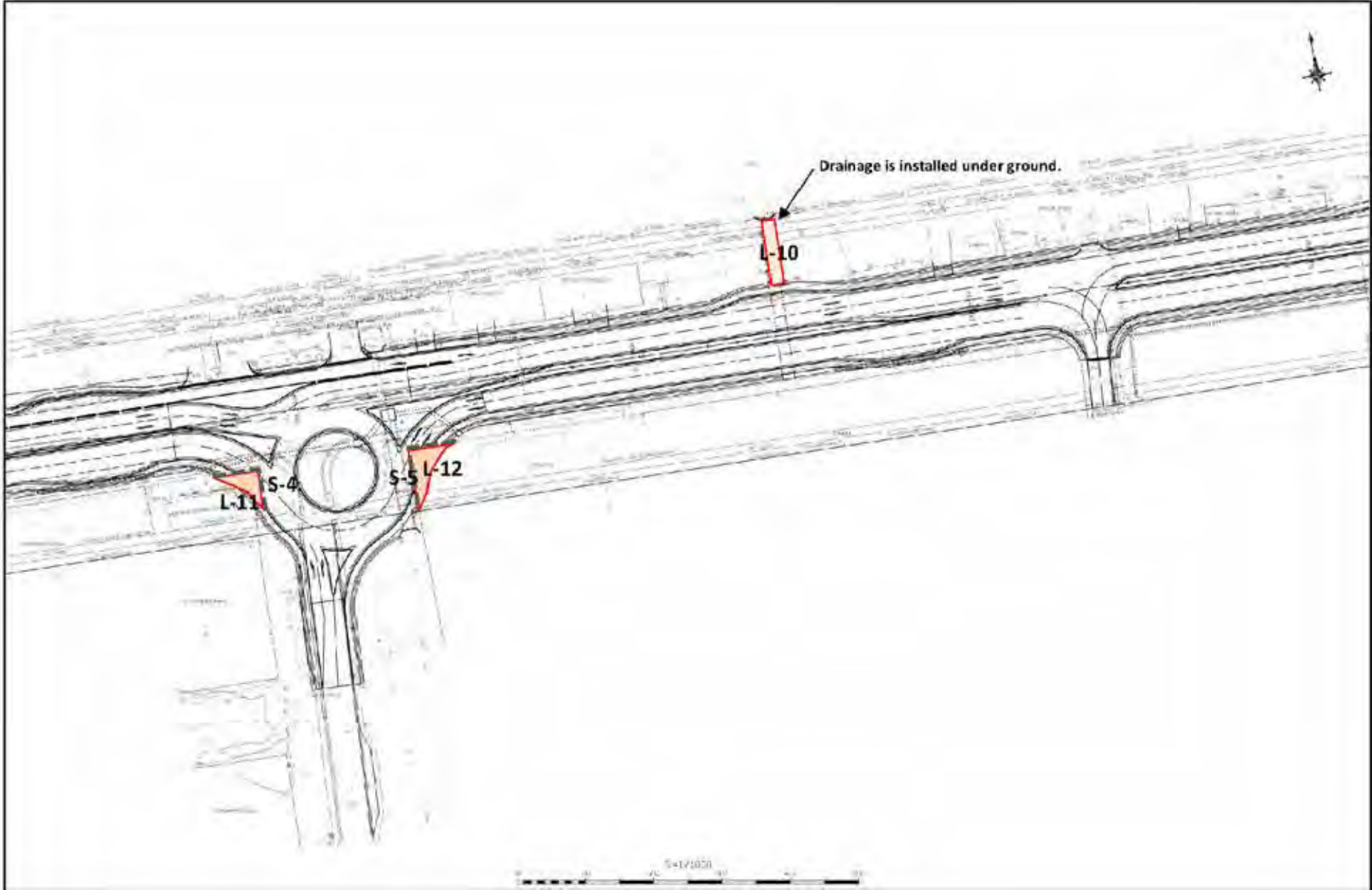
| No. | Estimated Losses of Properties | Location            | Parcel Number | Note |
|-----|--------------------------------|---------------------|---------------|------|
| S-1 | Block Wall<br>H2.0m L=110m     | New Mataniko Bridge | 025-118       |      |
| S-2 | Steel Fence<br>H2.0m L=120m    |                     | 023-119       |      |
| S-3 | Steel Fence<br>H2.0m L=25m     | Old Mataniko Bridge | 023-119       |      |
| S-4 | Steel Fence<br>H2.0m L=20m     | Vura Intersection   | 037-015       |      |
| S-5 | Block Wall<br>H2.0m L=27m      |                     | 038-033       |      |

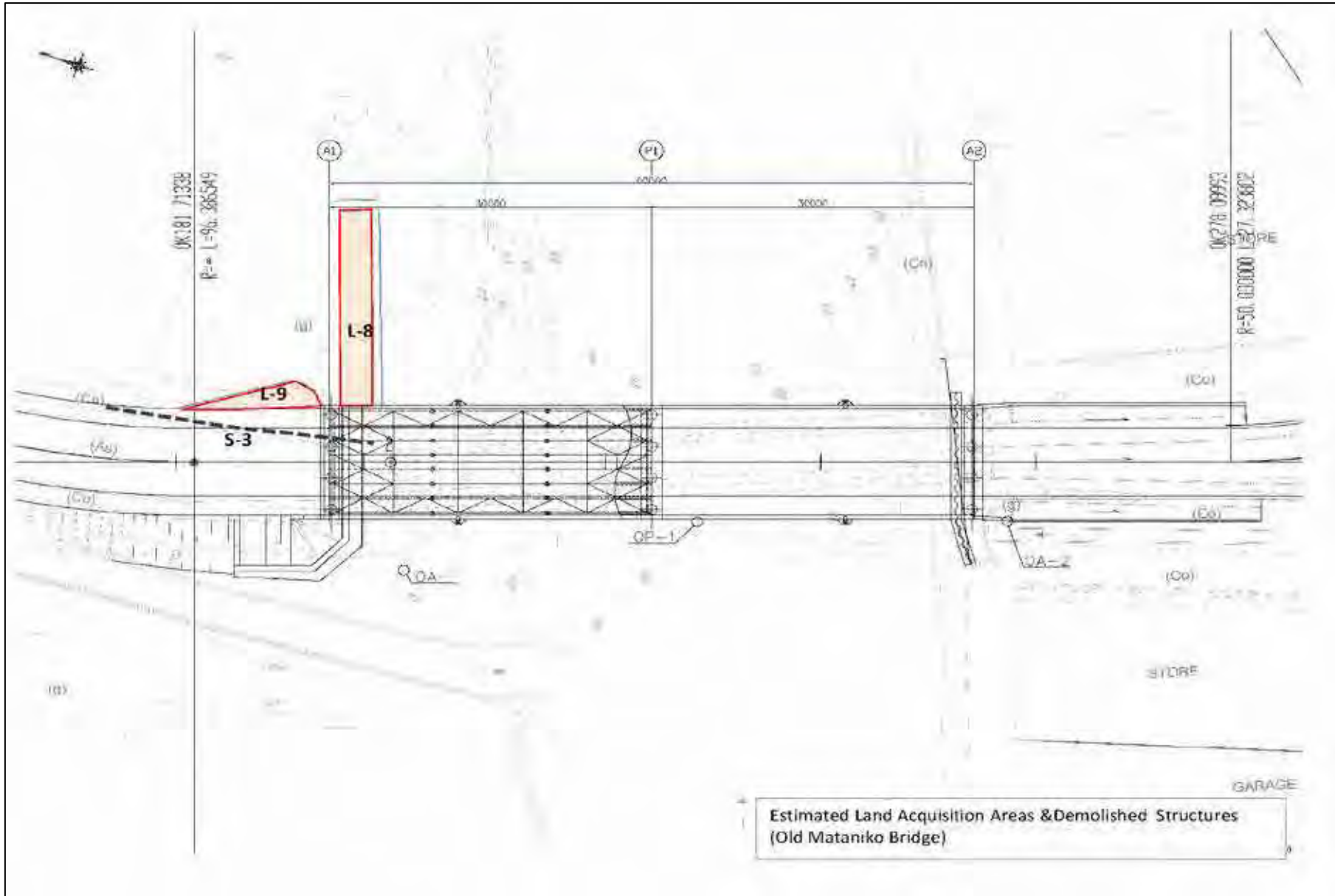






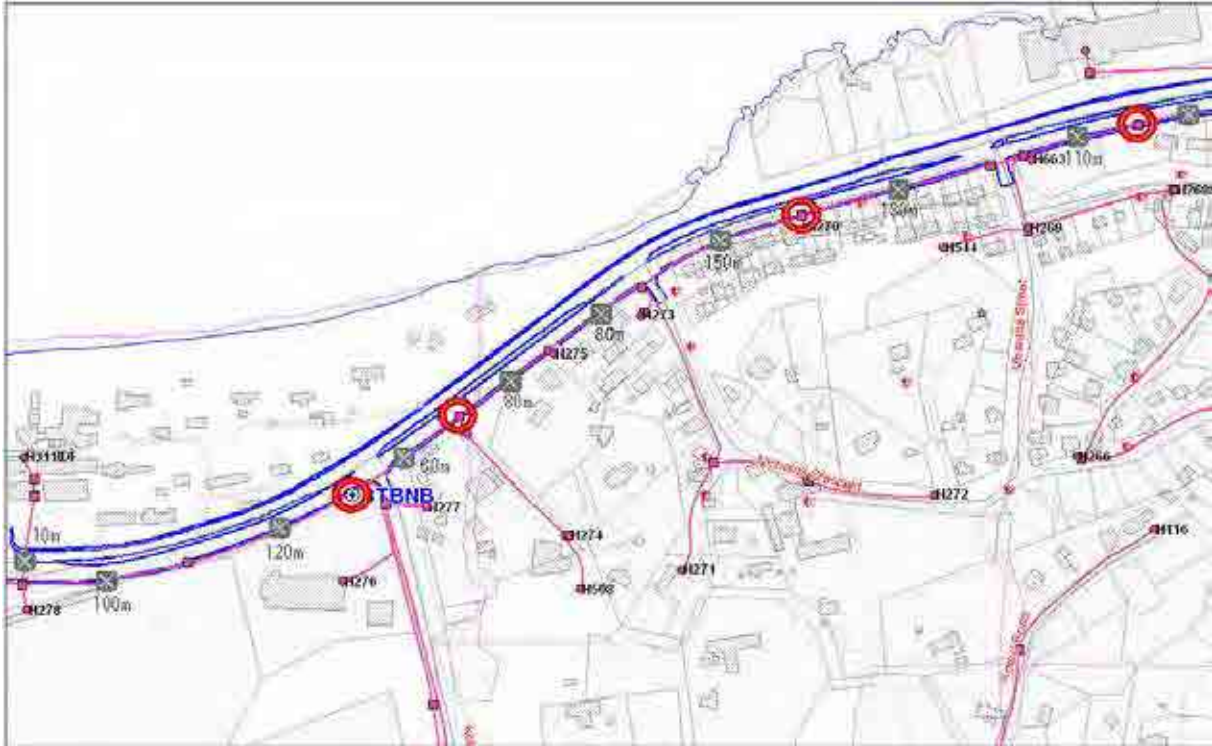
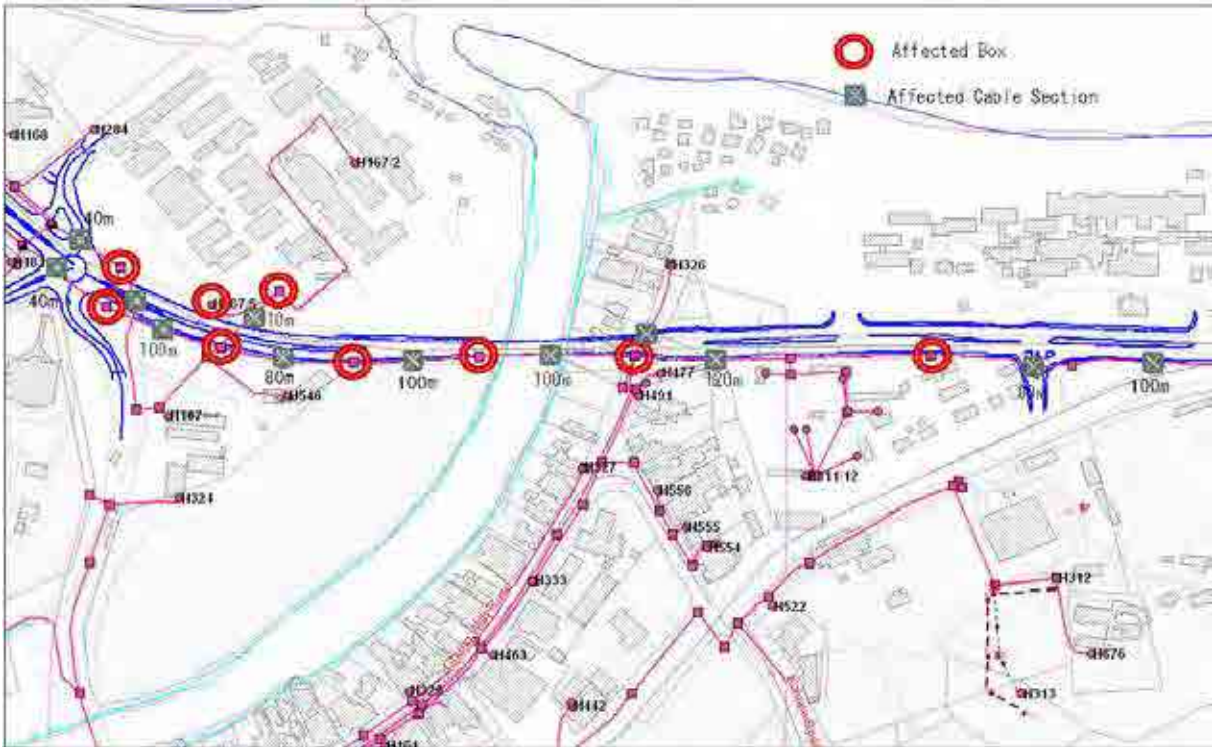


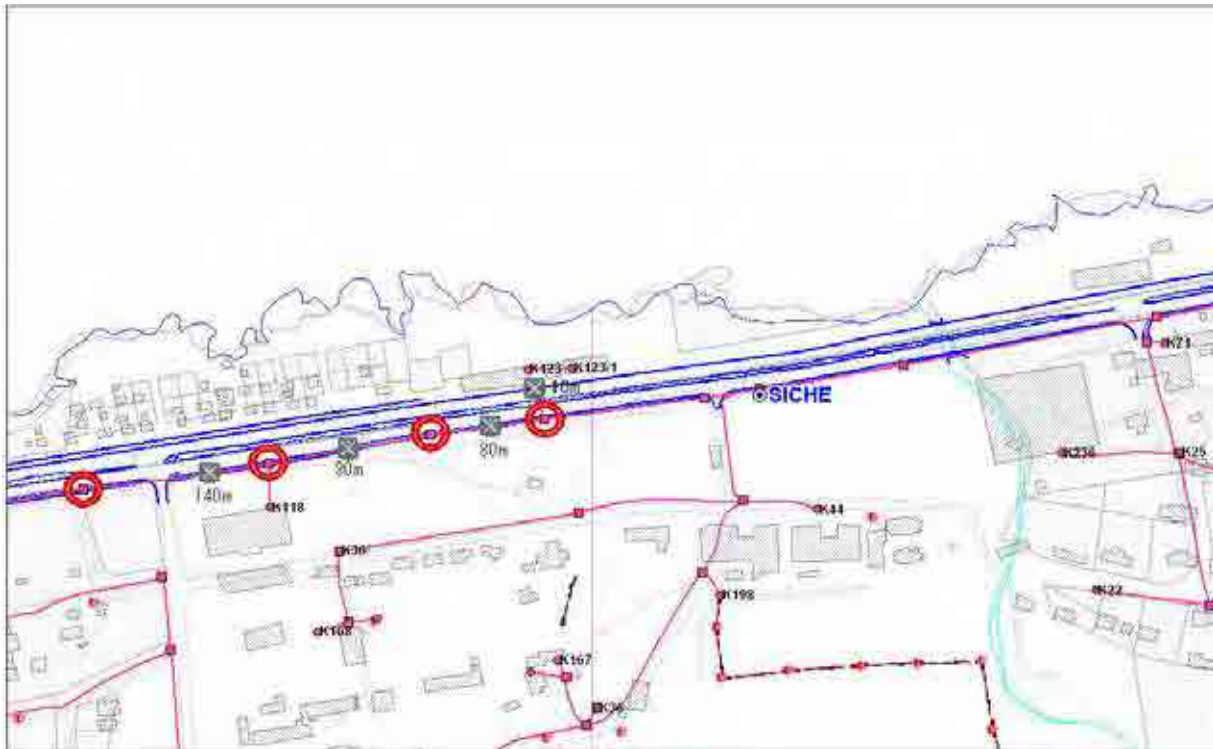




A12-5 Map of Utilities to be Relocated from the Construction Area

(1) Underground Telephone Lines



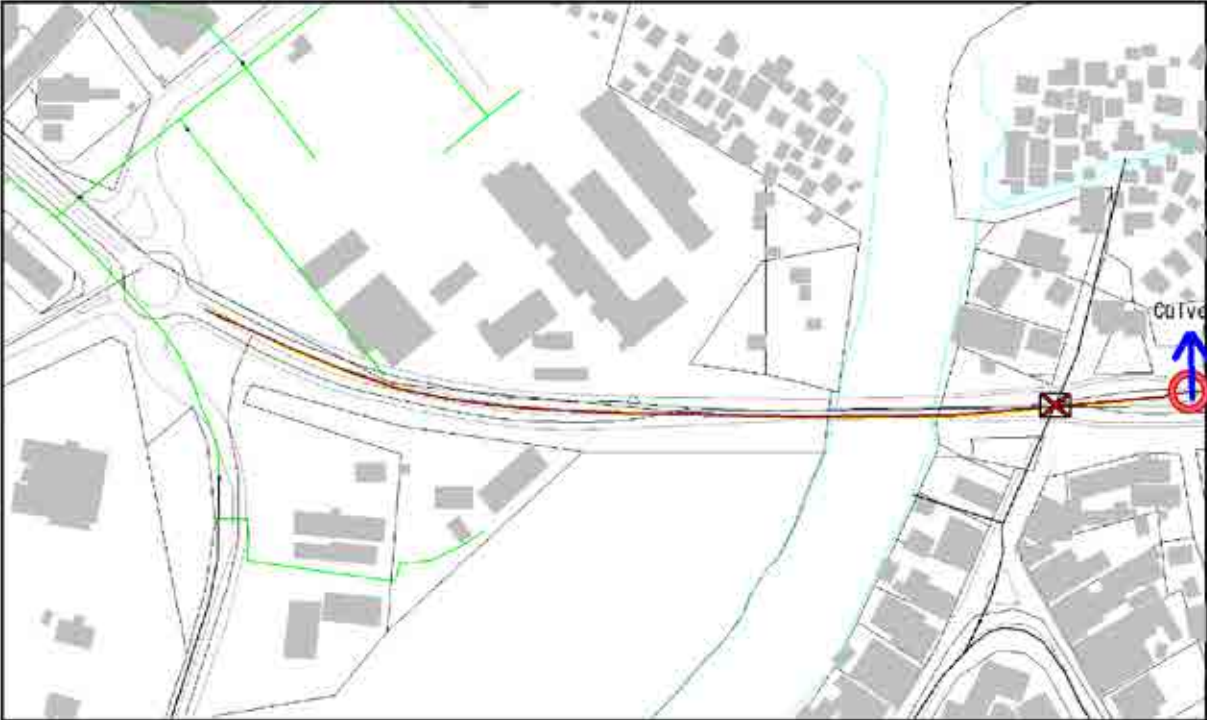


(2) Underground Power Lines





(3) Water Supply Pipelines



Pipe lines colour



- Cross Point with Pipe
- ⊠ Affected Pipeline

