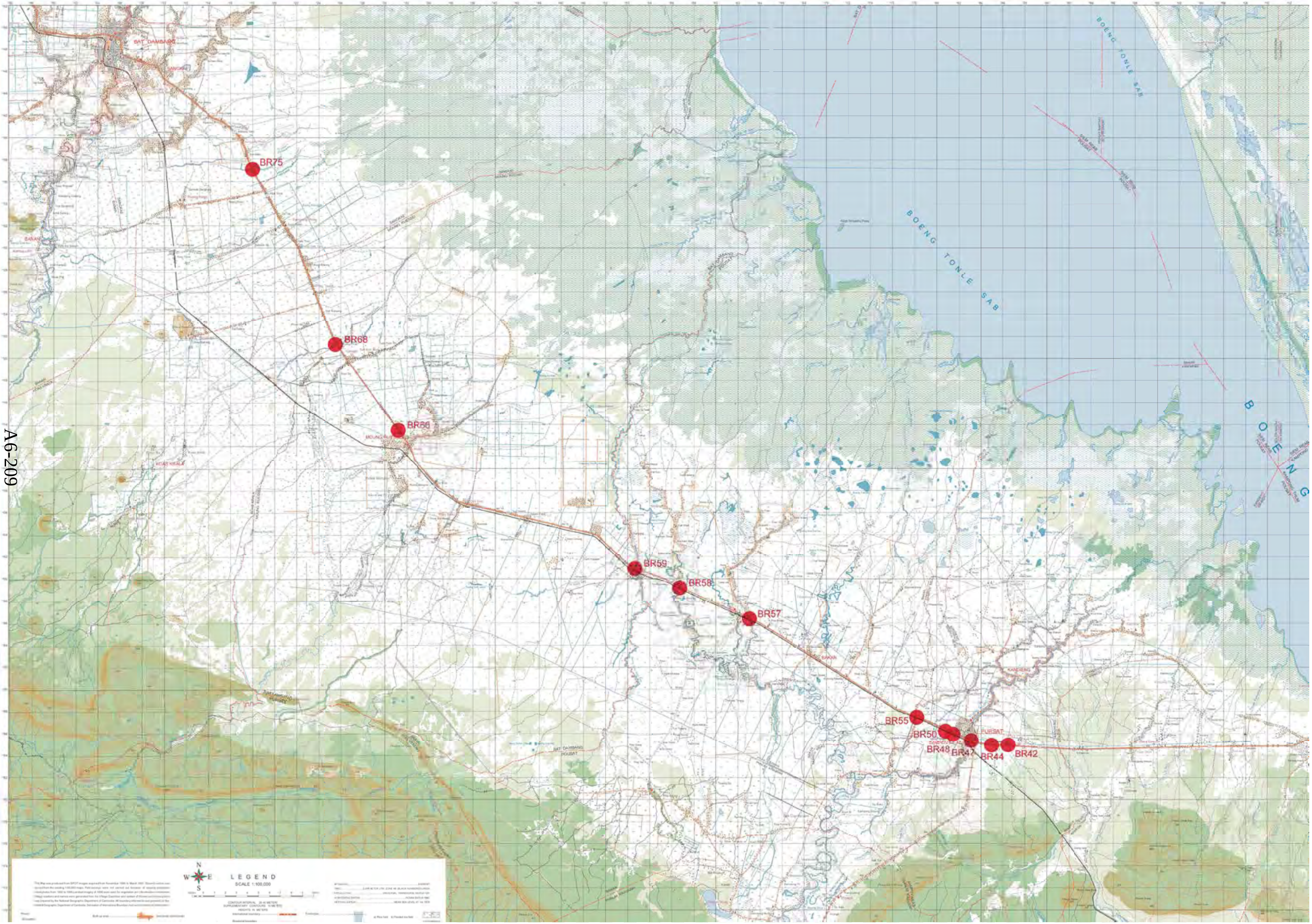
APPENDIX 6-9

LOCATION MAP OF BOREHOLES

IN THE MIDDLE SECTION



BAT DAMBANG
BR75
BR68
BR66
BR59
BR58
BR57
BR55
BR50
BR48
BR47
BR44
BR42
PURSAT
BOENG TONLE SAB
BOENG
LEGEND
SCALE 1:100,000

APPENDIX 6-10

BOREHOLE LOG

IN THE MIDDLE SECTION

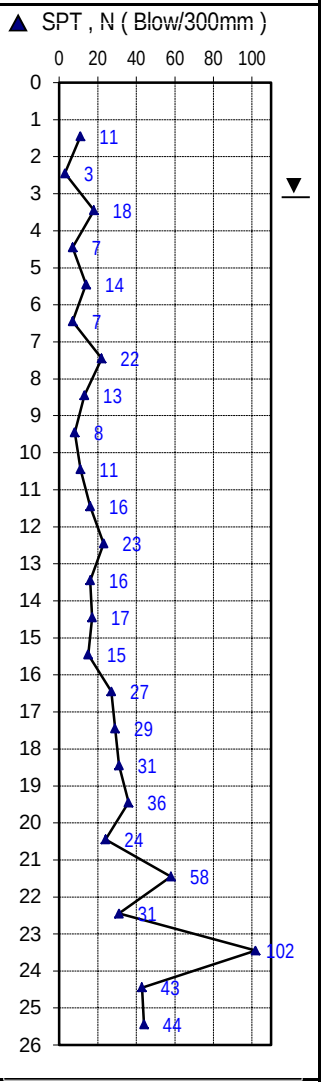
BORE HOLE LOG BH-1

Sub-Contractor: Partner of Construction and Development Services Inc. Owner : Katahira Engineers International	Method :Rotary Auger Casing Size : 180 mm Elevation: .....m E: 0386542, N: 1384891	Date started : 11/06/2013 Date finished : 12/06/2013 **PROJECT : Br 42 NR-5 Improvement** Location: PK 181+900 Pursat Province

Sampling Depth, m From	To	Type of Sampling U / SPT	Strata, (m)	Legend	Description of soil	SPT - N Value Blow/300mm N1=150mm	N2=300mm	N3=450mm	N=N2+N3
D1: 1.00 -	1.45	SPT	2.00		Very loose to medium dense yellowish Clayey Sand	4	5	6	11
D2: 2.00 -	2.45	SPT				1	1	2	3
D3: 3.00 -	3.45	SPT	1.00		Very stiff yellowish, light gray Sandy Clay	3	6	12	18
D4: 4.00 -	4.45	SPT	3.00		Firm to stiff yellowish, grayish Sandy Clay	4	3	4	7
D5: 5.00-	5.45	SPT				5	7	7	14
D6: 6.00 -	6.45	SPT				2	3	4	7
D7: 7.00 -	7.45	SPT	9.00		Stiff to very stiff yellowish, grayish, reddish-gray Sandy Clay	5	9	13	22
D8: 8.00 -	8.45	SPT				3	5	8	13
D9: 9.00 -	9.45	SPT				3	4	4	8
D10: 10.00 -	10.45	SPT				3	5	6	11
D11: 11.00 -	11.45	SPT				5	7	9	16
D12: 12.00 -	12.45	SPT				5	9	14	23
D13: 13.00 -	13.45	SPT				5	8	8	16
D14: 14.00 -	14.45	SPT				5	8	9	17
D15: 15.00 -	15.45	SPT				5	7	8	15
D16: 16.00-	16.45	SPT	3.00		Very stiff to hard yellowish, grayish, reddish-gray Clay with Sand	6	11	16	27
D17: 17.00 -	17.45	SPT				8	13	16	29
D18: 18.00 -	18.45	SPT				7	14	17	31
D19: 19.00 -	19.45	SPT	1.00		Dense reddish-gray Clayey Sand	7	13	23	36
D20: 20.00 -	20.45	SPT	2.00		Very stiff to hard yellowish, grayish, light gray Sandy Clay	4	11	13	24
D21: 21.00 -	21.45	SPT				13	21	37	58
D22: 22.00 -	22.45	SPT	4.00		Dense to very dense grayish, light gray Clayey Sand	9	12	19	31
D23: 23.00 -	23.45	SPT				10	52	50	102
D24: 24.00 -	24.45	SPT				7	21	22	43
D25: 25.00 -	25.45	SPT				7	17	27	44
					END of SPT Test 25.45m Depth				

Depth to water flow: 6.15m

Depth to water Level: 2.35m



Consistency	Very soft	Soft	Firm	Stiff	Very Stiff	Hard
Blows 30Cm, Clay	Less 2	2 - 4	4 - 8	8 - 15	15 - 30	> 30
Relate. Density, Blows/300mm		Very Loose	Loose	Med. Dense	Dense	Very Dense
Fine		1 - 2	3 - 6	7 - 15	16 - 30	?
medium		2 - 3	4 - 7	8 - 20	21 - 40	> 40
coarse		3 - 6	5 - 9	10 - 25	26 - 45	> 45
Unit weight of granular soil base, γ_{sat}, kN/m^3		11 - 16	14 - 18	17 - 20	17 - 22	20 - 23

LEGEND

- Stiff to hard sandy clay, lean Clay
- Firm to stiff silty clay/ lean Clay
- stiff to hard clay , fat Clay
- Clayey sand
- V. Soft to soft clay, organic clay
- Fill/topsoil
- Gravelly Sand, Clean Sand
- Clayey coarse sand with gravel
- Weather Rock
- Sandstone

Standard Penetration Test (SPT)
SPT
SPT - N Value

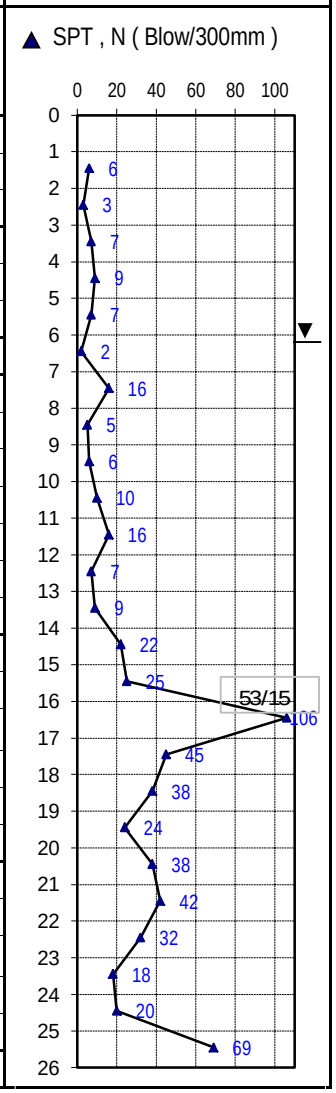
BORE HOLE LOG BH-2

Sub-Contractor: Partner of Construction and Development Services Inc.	Method :Rotary Auger	Date started : 16/06/2013
	Casing Size : 180 mm	Date finished : 16/06/2013
Owner : Katahira Engineers International	Elevation: 17.56 m	**PROJECT : Br 44 NR-5 Improvement**
	E: 0385166, N: 1384967	Location: PK 183+200

Sampling Depth, m From	To	Type of Sampling U / SPT	Strata, (m)	Legend	Description of soil	SPT - N Value Blow/300mm N1=150mm	N2=300mm	N3=450mm	N=N2+N3
D1: 1.00 -	1.45	SPT	3.00		Very loose to loose yellowish-red, yellowish Silty fine SAND with gravels at the bottom, loose Clayey SAND	3	3	3	6
D2: 2.00 -	2.45	SPT				3	2	1	3
D3: 3.00 -	3.45	SPT				3	4	3	7
D4: 4.00 -	4.45	SPT	3		Stiff to soft yellowish, grayish Sandy CLAY and Organic silt with gravel	1	3	6	9
D5: 5.00-	5.45	SPT				3	4	3	7
D6: 6.00 -	6.45	SPT				2	1	1	2
D7: 7.00 -	7.45	SPT	1.00		Medium dense yellowish, grayish Clayey coarse SAND	3	7	9	16
D8: 8.00 -	8.45	SPT	7.00		Firm to very stiff grayish, yellowish Sandy CLAY or CLAY with Sand	2	1	4	5
D9: 9.00 -	9.45	SPT				3	2	4	6
D10: 10.00 -	10.45	SPT				3	5	5	10
D11: 11.00 -	11.45	SPT				8	8	8	16
D12: 12.00 -	12.45	SPT				2	2	5	7
D13: 13.00 -	13.45	SPT				2	2	7	9
D14: 14.00 -	14.45	SPT				6	10	12	22
D15: 15.00 -	15.45	SPT	6.00		Medium dense to very dense yellowish, grayish, light gray Clayey coarse SAND with gravel	7	14	11	25
D16: 16.00-	16.45	SPT				53			106
D17: 17.00 -	17.45	SPT				15	20	25	45
D18: 18.00 -	18.45	SPT				12	17	21	38
D19: 19.00 -	19.45	SPT				8	10	14	24
D20: 20.00 -	20.45	SPT				5	16	22	38
D21: 21.00 -	21.45	SPT	5.00		Very stiff to hard reddish-gray, reddish-yellow, light gray Sandy CLAY with gravel	9	16	26	42
D22: 22.00 -	22.45	SPT				5	12	20	32
D23: 23.00 -	23.45	SPT				3	7	11	18
D24: 24.00 -	24.45	SPT				3	8	12	20
D25: 25.00 -	25.45	SPT				7	32	37	69
					END of SPT Test 25.45m Depth				

Depth to water flow: 6.40m

Depth to water Level: 6.00m



Consistency	Very soft	Soft	Firm	Stiff	Very Stiff	Hard
Blows 30Cm, Clay	Less 2	2 - 4	4 - 8	8 - 15	15 - 30	> 30
Relate. Density, Blows/300mm		Very Loose	Loose	Med. Dense	Dense	Very Dense
Fine		1 - 2	3 - 6	7 - 15	16 - 30	?
medium		2 - 3	4 - 7	8 - 20	21 - 40	> 40
coarse		3 - 6	5 - 9	10 - 25	26 - 45	> 45
Unit weight of granular soil base, γ_{sat}, kN/m^3		11 - 16	14 - 18	17 - 20	17 - 22	20 - 23

LEGEND

- Stiff to hard sandy clay, lean Clay
- Firm to stiff silty clay/ lean Clay
- stiff to hard clay , fat Clay
- Clayey sand,Silty Sand
- V. Soft to soft clay, organic clay
- Fill/topsoil
- Gravelly Sand, Clean Sand
- Silty coarse sand with gravel
- Weather Rock
- Sandstone

Standard Penetration Test (SPT)

SPT

SPT - N Value

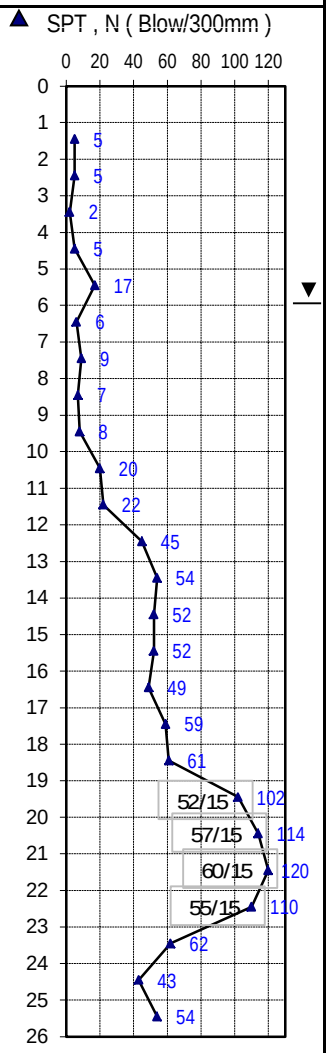
BORE HOLE LOG BH-3

Sub-Contractor: Partner of Construction and Development Services Inc. Owner : Katahira Engineers International	Method :Rotary Auger Casing Size : 180 mm Elevation: 16.75m E: 0382985, N: 1385405	Date started : 18/06/2013 Date finished : 18/06/2013 **PROJECT : Br 47 NR-5 Improvement** Location: PK 185+700

Sampling Depth, m From	To	Type of Sampling U / SPT	Strata, (m)	Legend	Description of soil	SPT - N Value Blow/300mm N1=150mm	N2=300mm	N3=450mm	N=N2+N3
D1: 1.00 -	1.45	SPT	3.00		Soft to firm yellowish, grayish sandy CLAY	1	2	3	5
D2: 2.00 -	2.45	SPT				1	2	3	5
D3: 3.00 -	3.45	SPT			At the top, Sandy CLAY with Gravel	1	1	1	2
D4: 4.00 -	4.45	SPT	5.00		Loose to medium dense yellowish, grayish, dark gray fine to medium SAND At the top, Clayey SAND	1	2	3	5
D5: 5.00-	5.45	SPT				4	9	8	17
D6: 6.00 -	6.45	SPT				2	3	3	6
D7: 7.00 -	7.45	SPT				6	5	4	9
D8: 8.00 -	8.45	SPT				3	3	4	7
D9: 9.00 -	9.45	SPT	6.00		Stiff to hard reddish-gray, light gray, yellowish Sandy CLAY	3	4	4	8
D10: 10.00	10.45	SPT				6	9	11	20
D11: 11.00	11.45	SPT				7	10	12	22
D12: 12.00	12.45	SPT				12	17	28	45
D13: 13.00	13.45	SPT				8	20	34	54
D14: 14.00	14.45	SPT				17	20	32	52
D15: 15.00	15.45	SPT	1.00		Very dense grayish Silty coarse SAND	18	23	29	52
D16: 16.00	16.45	SPT	3.00		Hard yellowish, light gray CLAY with Sand or Sandy CLAY	14	24	25	49
D17: 17.00	17.45	SPT				12	27	32	59
D18: 18.00	18.45	SPT				14	24	37	61
D19: 19.00	19.45	SPT	2.00		Very dense yellowish, light gray Clayey coarse SAND with gravels	52			102
D20: 20.00	20.45	SPT				14	57		114
D21: 21.00	21.45	SPT	5.00		Hard yellowish, reddish-gray, light gray Sandy CLAY with gravel	26	60		120
D22: 22.00	22.45	SPT				27	55		110
D23: 23.00	23.45	SPT				11	23	39	62
D24: 24.00	24.45	SPT				10	20	23	43
D25: 25.00	25.45	SPT				13	24	30	54
					END of SPT Test 25.45m Depth				

Depth to water flow: 5.00m

Depth to water Level: 5.10m



Consistency	Very soft	Soft	Firm	Stiff	Very Stiff	Hard
Blows 30Cm, Clay	Less 2	2 - 4	4 - 8	8 - 15	15 - 30	> 30
Relate. Density, Blows/300mm		Very Loose	Loose	Med. Dense	Dense	Very Dense
Fine		1 - 2	3 - 6	7 - 15	16 - 30	?
medium		2 - 3	4 - 7	8 - 20	21 - 40	> 40
coarse		3 - 6	5 - 9	10 - 25	26 - 45	> 45
Unit weight of granular soil base, γ_{sat}, kN/m^3		11 - 16	14 - 18	17 - 20	17 - 22	20 - 23

LEGEND

- Stiff to hard sandy clay, lean Clay
- Firm to stiff silty clay/ lean Clay
- stiff to hard clay , fat Clay
- Clayey sand,Silty Sand
- V. Soft to soft clay, organic clay
- Fill/topsoil
- Gravelly Sand, Clean Sand
- Silty coarse sand with gravel
- Weather Rock
- Sandstone

Standard Penetration Test (SPT)

SPT

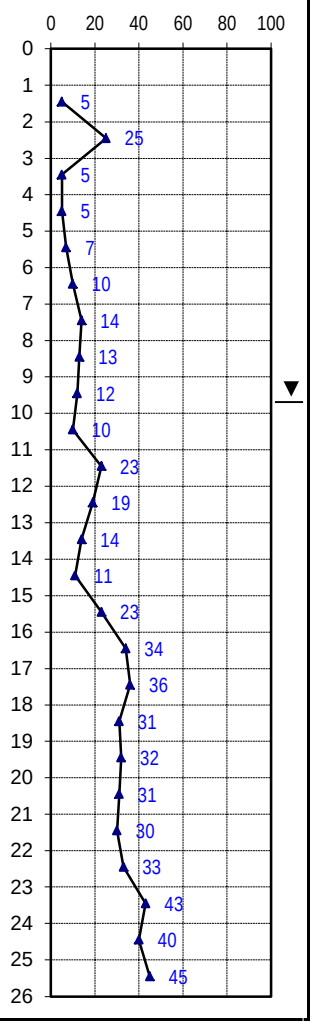
SPT - N Value

BORE HOLE LOG BH-4

Sub-Contractor: Partner of Construction and Development Services Inc. Owner : Katahira Engineers International	Method :Rotary Auger Casing Size : 180 mm Elevation: 17.55m E: 0385166, N: 1384967	Date started : 15/06/2013 Date finished : 15/06/2013 **PROJECT : Br 48 NR-5 Improvement** Location: PK 187+500 Pursat Province

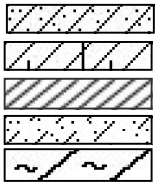
Sampling Depth, m From	To	Type of Sampling U / SPT	Strata, (m)	Legend	Description of soil	SPT - N Value Blow/300mm N1=150mm	N2=300mm	N3=450mm	N=N2+N3
D1: 1.00 -	1.45	SPT	2.00		Firm to very stiff yellowish, grayish Sandy CLAY with gravels	2	2	3	5
D2: 2.00 -	2.45	SPT				7	10	15	25
D3: 3.00 -	3.45	SPT	1.00		Loose grayish, yellowish Silty fine SAND	6	3	2	5
D4: 4.00 -	4.45	SPT	7.00		Firm to stiff yellowish, brownish, grayish Sandy CLAY or CLAY with Sand	3	3	2	5
D5: 5.00-	5.45	SPT				2	3	4	7
D6: 6.00 -	6.45	SPT				3	4	6	10
D7: 7.00 -	7.45	SPT				3	8	6	14
D8: 8.00 -	8.45	SPT				4	7	6	13
D9: 9.00 -	9.45	SPT				4	5	7	12
D10: 10.00 -	10.45	SPT				2	5	5	10
D11: 11.00 -	11.45	SPT	3.00		Medium dense yellowish, yellowish-gray Clayey medium to coarse SAND	6	13	10	23
D12: 12.00 -	12.45	SPT				5	9	10	19
D13: 13.00 -	13.45	SPT				6	7	7	14
D14: 14.00 -	14.45	SPT	12.00		Very stiff to hard light gray, yellowish, grayish-yellow Sandy CLAY	5	5	6	11
D15: 15.00 -	15.45	SPT				7	9	14	23
D16: 16.00-	16.45	SPT				10	14	20	34
D17: 17.00 -	17.45	SPT				6	14	22	36
D18: 18.00 -	18.45	SPT				10	15	16	31
D19: 19.00 -	19.45	SPT				10	14	18	32
D20: 20.00 -	20.45	SPT				11	14	17	31
D21: 21.00 -	21.45	SPT				9	13	17	30
D22: 22.00 -	22.45	SPT				10	14	19	33
D23: 23.00 -	23.45	SPT				11	18	25	43
D24: 24.00 -	24.45	SPT				12	16	24	40
D25: 25.00 -	25.45	SPT				10	22	23	45
					END of SPT Test 25.45m Depth				

Depth to water flow: 14.25m
Depth to water Level: 9.70m

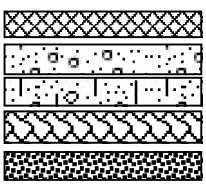


Consistency	Very soft	Soft	Firm	Stiff	Very Stiff	Hard
Blows 30Cm, Clay	Less 2	2 - 4	4 - 8	8 - 15	15 - 30	> 30
Relate. Density, Blows/300mm		Very Loose	Loose	Med. Dense	Dense	Very Dense
Fine		1 - 2	3 - 6	7 - 15	16 - 30	?
medium		2 - 3	4 - 7	8 - 20	21 - 40	> 40
coarse		3 - 6	5 - 9	10 - 25	26 - 45	> 45
Unit weight of granular soil base, $\gamma_{sat,}$ kN/m^3		11 - 16	14 - 18	17 - 20	17 - 22	20 - 23

LEGEND



Stiff to hard sandy clay, lean Clay
Firm to stiff silty clay/ lean Clay
stiff to hard clay , fat Clay
Clayey sand,Silty Sand
V. Soft to soft clay, organic clay



Fill/topsoil
Gravelly Sand, Clean Sand
Silty coarse sand with gravel
Weather Rock
Sandstone

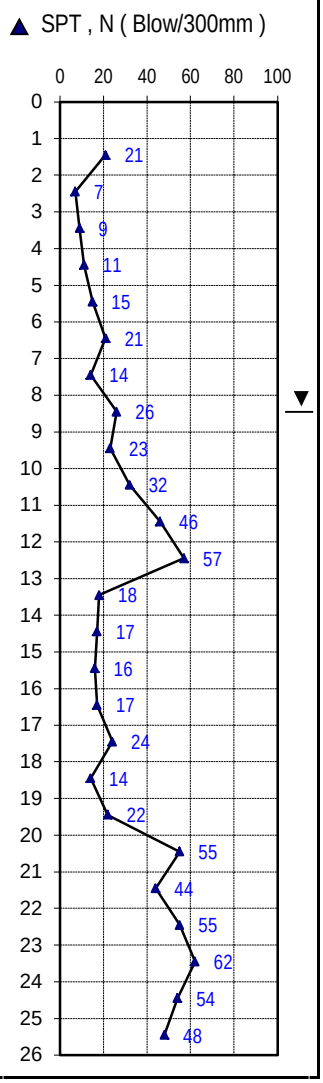
Standard Penetration Test (SPT)
SPT
▲ SPT - N Value

BORE HOLE LOG BH-5

Sub-Contractor: Partner of Construction and Development Services Inc. Owner : Katahira Engineers International	Method :Rotary Auger Casing Size : 180 mm Elevation: 16.06m E: 0380336, N: 1386358	Date started : 13/06/2013 Date finished : 14/06/2013 **PROJECT : Br 50 NR-5 Improvement** Location: PK 188+100

Sampling Depth, m From	To	Type of Sampling U / SPT	Strata, (m)	Legend	Description of soil	SPT - N Value Blow/300mm N1=150mm	N2=300mm	N3=450mm	N=N2+N3
D1: 1.00 -	1.45	SPT	2.00		Medium dense to loose reddish-brown Clayey SAND with Gravel	7	10	11	21
D2: 2.00 -	2.45	SPT				3	4	3	7
D3: 3.00 -	3.45	SPT	6.00		Stiff to very stiff brownish, dark brown, light gray CLAY (upper) or Sandy CLAY (middle to lower)	3	4	5	9
D4: 4.00 -	4.45	SPT				3	5	6	11
D5: 5.00-	5.45	SPT				3	7	8	15
D6: 6.00 -	6.45	SPT				7	8	13	21
D7: 7.00 -	7.45	SPT				5	6	8	14
D8: 8.00 -	8.45	SPT				7	12	14	26
D9: 9.00 -	9.45	SPT	3.00		Medium dense to dense grayish, light gray Clayey coarse SAND	7	9	14	23
D10: 10.00 -	10.45	SPT				12	15	17	32
D11: 11.00 -	11.45	SPT				10	14	32	46
D12: 12.00 -	12.45	SPT	1.00		Hard grayish Sandy CLAY	17	30	27	57
D13: 13.00 -	13.45	SPT	6.00		Stiff to very stiff grayish, yellowish, light gray Sandy CLAY or CLAY with Sand	7	8	10	18
D14: 14.00 -	14.45	SPT				6	8	9	17
D15: 15.00 -	15.45	SPT				6	7	9	16
D16: 16.00-	16.45	SPT				7	8	9	17
D17: 17.00 -	17.45	SPT				7	9	15	24
D18: 18.00 -	18.45	SPT				6	7	7	14
D19: 19.00 -	19.45	SPT	7.00		Very stiff to hard yellowish, light gray Sandy CLAY	5	10	12	22
D20: 20.00 -	20.45	SPT				8	21	34	55
D21: 21.00 -	21.45	SPT				17	20	24	44
D22: 22.00 -	22.45	SPT				15	26	29	55
D23: 23.00 -	23.45	SPT				16	24	38	62
D24: 24.00 -	24.45	SPT				8	22	32	54
D25: 25.00 -	25.45	SPT				9	19	29	48
					END of SPT Test 25.45m Depth				

Depth to water flow: 6.00m
Depth to water Level: 8.40m



Consistency	Very soft	Soft	Firm	Stiff	Very Stiff	Hard
Blows 30Cm, Clay	Less 2	2 - 4	4 - 8	8 - 15	15 - 30	> 30
Relate. Density, Blows/300mm		Very Loose	Loose	Med. Dense	Dense	Very Dense
Fine		1 - 2	3 - 6	7 - 15	16 - 30	?
medium		2 - 3	4 - 7	8 - 20	21 - 40	> 40
coarse		3 - 6	5 - 9	10 - 25	26 - 45	> 45
Unit weight of granular soil base, γ_{sat}, kN/m^3		11 - 16	14 - 18	17 - 20	17 - 22	20 - 23

LEGEND

- Stiff to hard sandy clay, lean Clay
- Firm to stiff silty clay/ lean Clay
- stiff to hard clay , fat Clay
- Clayey sand,Silty Sand
- V. Soft to soft clay, organic clay
- Fill/topsoil
- Gravelly Sand, Clean Sand
- Silty coarse sand with gravel
- Weather Rock
- Sandstone

Standard Penetration Test (SPT)
SPT
SPT - N Value

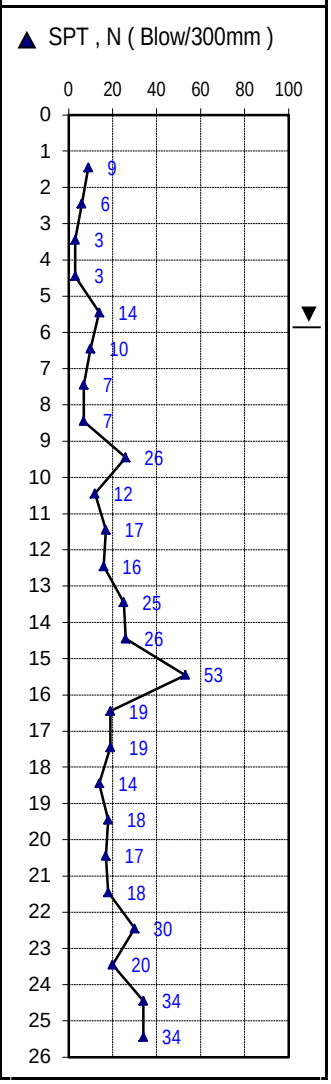
BORE HOLE LOG BH-6

Sub-Contractor: Partner of Construction and Development Services Inc. Owner : Katahira Engineers International	Method :Rotary Auger Casing Size : 180 mm Elevation: 18.40m E: 0378132, N: 1387549	Date started : 12/06/2013 Date finished : 13/06/2013 **PROJECT : Br 55 NR-5 Improvement** Location: PK 191+100 Pursat Province.

Depth to water flow: 6.00m

Depth to water Level: 5.85m

Sampling Depth, m From	To	Type of Sampling U / SPT	Strata, (m)	Legend	Description of soil	SPT - N Value Blow/300mm N1=150mm	N2=300mm	N3=450mm	N=N2+N3
D1: 1.00 -	1.45	SPT	4.00		Soft to stiff reddish-brown, yellowish-gray CLAY or CLAY with Sand	6	4	5	9
D2: 2.00 -	2.45	SPT				3	4	2	6
D3: 3.00 -	3.45	SPT				2	2	1	3
D4: 4.00 -	4.45	SPT				1	1	2	3
D5: 5.00-	5.45	SPT	3.00		Loose to medium dense yellowish fine to medium SAND with gravel	6	7	7	14
D6: 6.00 -	6.45	SPT				2	5	5	10
D7: 7.00 -	7.45	SPT				5	3	4	7
D8: 8.00 -	8.45	SPT	3.00		Firm to very stiff yellowish, grayish Sandy CLAY	3	4	3	7
D9: 9.00 -	9.45	SPT				4	9	17	26
D10: 10.00	10.45	SPT				4	5	7	12
D11: 11.00	11.45	SPT	4.00		Medium dense grayish, yellowish, light gray Clayey fine to coarse SAND	9	7	10	17
D12: 12.00	12.45	SPT				6	8	8	16
D13: 13.00	13.45	SPT				5	12	13	25
D14: 14.00	14.45	SPT				8	12	14	26
D15: 15.00	15.45	SPT	5.00		Hard to very stiff yellowish, reddish-gray, light gray Sandy CLAY or CLAY with Sand	8	19	34	53
D16: 16.00-	16.45	SPT				7	7	12	19
D17: 17.00	17.45	SPT				5	8	11	19
D18: 18.00	18.45	SPT				3	7	7	14
D19: 19.00	19.45	SPT				4	8	10	18
D20: 20.00	20.45	SPT	1.00		Medium dense grayish Clayey fine SAND	5	8	9	17
D21: 21.00	21.45	SPT	1.00		Very stiff yellowish, grayish CLAY with Sand	5	8	10	18
D22: 22.00	22.45	SPT	1.00		Dense yellowish-gray Clayey coarse SAND	6	12	18	30
D23: 23.00	23.45	SPT	1.00		Very stiff yellowish, grayish Sandy CLAY	8	10	10	20
D24: 24.00	24.45	SPT	1.00		Dense yellowish Clayey coarse SAND	11	17	17	34
D25: 25.00	25.45	SPT	1.00		Hard grayish, brownish CLAY	10	13	21	34
					END of SPT Test 25.45m Depth				



Consistency	Very soft	Soft	Firm	Stiff	Very Stiff	Hard
Blows 30Cm, Clay	Less 2	2 - 4	4 - 8	8 - 15	15 - 30	> 30
Relate. Density, Blows/300mm		Very Loose	Loose	Med. Dense	Dense	Very Dense
Fine		1 - 2	3 - 6	7 - 15	16 - 30	?
medium		2 - 3	4 - 7	8 - 20	21 - 40	> 40
coarse		3 - 6	5 - 9	10 - 25	26 - 45	> 45
Unit weight of granular soil base, γ_{sat}, kN/m^3		11 - 16	14 - 18	17 - 20	17 - 22	20 - 23

LEGEND

- Stiff to hard sandy clay, lean Clay
- Firm to stiff silty clay/ lean Clay
- stiff to hard clay , fat Clay
- Clayey sand,Silty Sand
- V. Soft to soft clay, organic clay
- Fill/topsoil
- Gravelly Sand, Clean Sand
- Silty coarse sand with gravel
- Weather Rock
- Sandstone

Standard Penetration Test (SPT)

SPT

SPT - N Value

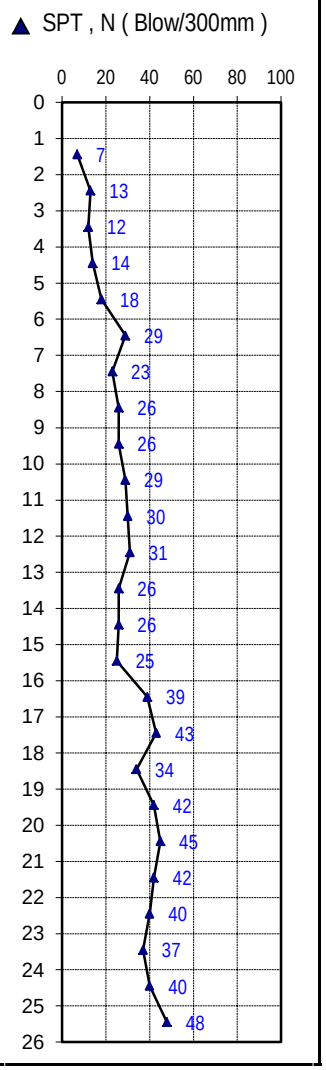
BORE HOLE LOG BH-7

Sub-Contractor: Partner of Construction and Development Services Inc. Owner : Katahira Engineers International	Method :Rotary Auger Casing Size : 180 mm Elevation: 13.36m E: 0362905, N: 1396533	Date started : 17/06/2013 Date finished : 17/06/2013 **PROJECT : Br 57 NR-5 Improvement** Location: PK 208+500

Sampling Depth, m From	To	Type of Sampling U / SPT	Strata, (m)	Legend	Description of soil	SPT - N Value Blow/300mm N1=150mm	N2=300mm	N3=450mm	N=N2+N3
D1: 1.00 -	1.45	SPT	4.00		Firm to stiff brownish, grayish CLAY with Sand (upper) or CLAY (lower)	6	3	4	7
D2: 2.00 -	2.45	SPT				6	7	6	13
D3: 3.00 -	3.45	SPT				5	6	6	12
D4: 4.00 -	4.45	SPT				4	7	7	14
D5: 5.00-	5.45	SPT	6.00		Very stiff grayish, brownish, yellowish-brown CLAY with Sand	8	8	10	18
D6: 6.00 -	6.45	SPT				9	12	17	29
D7: 7.00 -	7.45	SPT				9	10	13	23
D8: 8.00 -	8.45	SPT				8	10	16	26
D9: 9.00 -	9.45	SPT				10	13	13	26
D10: 10.00	10.45	SPT				12	13	16	29
D11: 11.00	11.45	SPT	7.00		Medium dense to dense dark gray, yellowish-gray, yellowish Clayey fine to coarse SAND	17	15	15	30
D12: 12.00	12.45	SPT				11	16	15	31
D13: 13.00	13.45	SPT				11	13	13	26
D14: 14.00	14.45	SPT				10	13	13	26
D15: 15.00	15.45	SPT				6	10	15	25
D16: 16.00	16.45	SPT				10	20	19	39
D17: 17.00	17.45	SPT				10	21	22	43
D18: 18.00	18.45	SPT	8.00		Hard grayish-brown, reddish-gray, CLAY with Sand	7	14	20	34
D19: 19.00	19.45	SPT				11	18	24	42
D20: 20.00	20.45	SPT				11	15	30	45
D21: 21.00	21.45	SPT				10	17	25	42
D22: 22.00	22.45	SPT				10	15	25	40
D23: 23.00	23.45	SPT				9	14	23	37
D24: 24.00	24.45	SPT				9	13	27	40
D25: 25.00	25.45	SPT				10	17	31	48
					END of SPT Test 25.45m Depth				

Depth to water flow: No

Depth to water Level: No



Consistency	Very soft	Soft	Firm	Stiff	Very Stiff	Hard
Blows 30Cm, Clay	Less 2	2 - 4	4 - 8	8 - 15	15 - 30	> 30
Relate. Density, Blows/300mm		Very Loose	Loose	Med. Dense	Dense	Very Dense
Fine		1 - 2	3 - 6	7 - 15	16 - 30	?
medium		2 - 3	4 - 7	8 - 20	21 - 40	> 40
coarse		3 - 6	5 - 9	10 - 25	26 - 45	> 45
Unit weight of granular soil base, $\gamma_{sat,}$ kN/m^3		11 - 16	14 - 18	17 - 20	17 - 22	20 - 23

LEGEND

- Stiff to hard sandy clay, lean Clay
- Firm to stiff silty clay/ lean Clay
- stiff to hard clay , fat Clay
- Clayey sand,Silty Sand
- V. Soft to soft clay, organic clay
- Fill/topsoil
- Gravelly Sand, Clean Sand
- Silty coarse sand with gravel
- Weather Rock
- Sandstone

Standard Penetration Test (SPT)

SPT

SPT - N Value

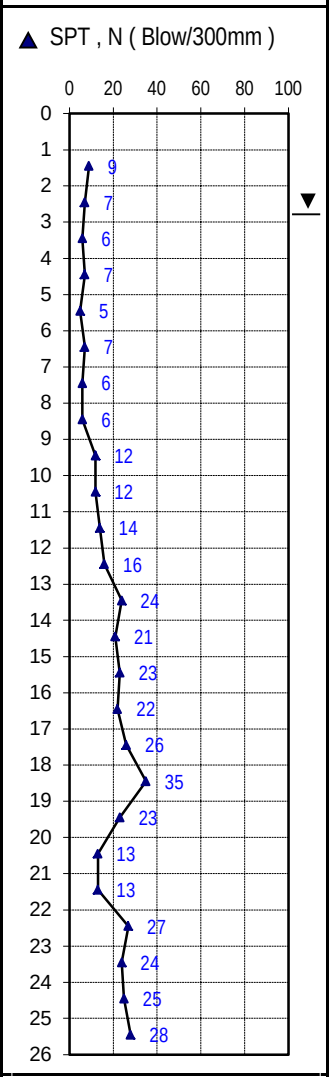
BORE HOLE LOG BH-8

Sub-Contractor: Partner of Construction and Development Services Inc. Owner : Katahira Engineers International	Method :Rotary Auger Casing Size : 180 mm Elevation: 12.17 m E: 0356344, N: 1399502	Date started : 19/06/2013 Date finished : 19/06/2013 **PROJECT : Br 58 NR-5 Improvement** Location: PK 215+800

Sampling Depth, m From	To	Type of Sampling U / SPT	Strata, (m)	Legend	Description of soil	SPT - N Value Blow/300mm N1=150mm	N2=300mm	N3=450mm	N=N2+N3
D1: 1.00 -	1.45	SPT	2.00		Firm to stiff brownish, grayish CLAY with Sand	2	5	4	9
D2: 2.00 -	2.45	SPT				5	3	4	7
D3: 3.00 -	3.45	SPT	4.00		Loose grayish Clayey fine SAND	2	3	3	6
D4: 4.00 -	4.45	SPT				2	2	5	7
D5: 5.00-	5.45	SPT				3	2	3	5
D6: 6.00 -	6.45	SPT				3	3	4	7
D7: 7.00 -	7.45	SPT	5.00		Firm to stiff brownish, yellowish CLAY with Sand	2	3	3	6
D8: 8.00 -	8.45	SPT				2	3	3	6
D9: 9.00 -	9.45	SPT				3	4	8	12
D10: 10.00	10.45	SPT				5	6	6	12
D11: 11.00	11.45	SPT				6	7	7	14
D12: 12.00	12.45	SPT	3.00		Stiff to very stiff yellowish, brownish CLAY with Sand	6	7	9	16
D13: 13.00	13.45	SPT				7	9	15	24
D14: 14.00	14.45	SPT				8	9	12	21
D15: 15.00	15.45	SPT	5.00		Very stiff to hard yellowish, grayish-brown, reddish-yellow CLAY with Sand	8	9	14	23
D16: 16.00-	16.45	SPT				5	8	14	22
D17: 17.00	17.45	SPT				6	11	15	26
D18: 18.00	18.45	SPT			18.00m~, Clayey SAND with Gravel	10	15	20	35
D19: 19.00	19.45	SPT			19.00m~, Sandy CLAY	6	10	13	23
D20: 20.00	20.45	SPT	6.00		Medium dense yellowish, light gray, yellowish-gray Clayey fine SAND	5	6	7	13
D21: 21.00	21.45	SPT				3	4	9	13
D22: 22.00	22.45	SPT				6	11	16	27
D23: 23.00	23.45	SPT				3	11	13	24
D24: 24.00	24.45	SPT				10	13	12	25
D25: 25.00	25.45	SPT				10	15	13	28
					END of SPT Test 25.45m Depth				

Depth to water flow: 4.40m

Depth to water Level: 2.60m



Consistency	Very soft	Soft	Firm	Stiff	Very Stiff	Hard
Blows 30Cm, Clay	Less 2	2 - 4	4 - 8	8 - 15	15 - 30	> 30
Relate. Density, Blows/300mm		Very Loose	Loose	Med. Dense	Dense	Very Dense
Fine		1 - 2	3 - 6	7 - 15	16 - 30	?
medium		2 - 3	4 - 7	8 - 20	21 - 40	> 40
coarse		3 - 6	5 - 9	10 - 25	26 - 45	> 45
Unit weight of granular soil base, γ_{sat}, kN/m^3		11 - 16	14 - 18	17 - 20	17 - 22	20 - 23

LEGEND

- Stiff to hard sandy clay, lean Clay
- Firm to stiff silty clay/ lean Clay
- stiff to hard clay , fat Clay
- Clayey sand,Silty Sand
- V. Soft to soft clay, organic clay
- Fill/topsoil
- Gravelly Sand, Clean Sand
- Silty coarse sand with gravel
- Weather Rock
- Sandstone

Standard Penetration Test (SPT)

SPT

SPT - N Value

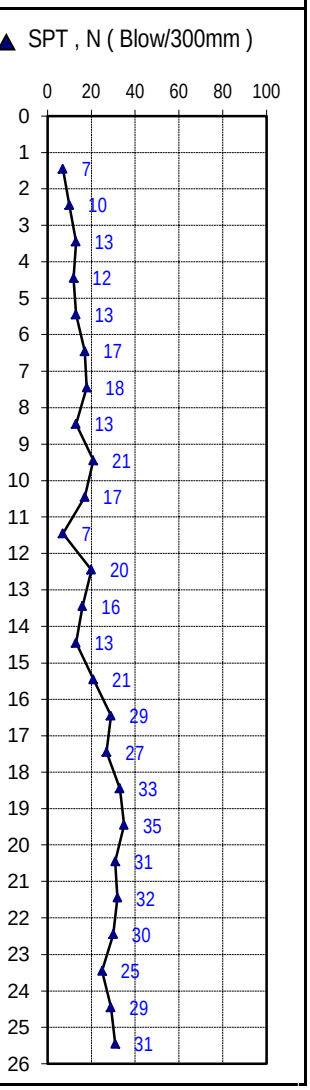
BORE HOLE LOG BH-9

Sub-Contractor: Partner of Construction and Development Services Inc. Owner : Katahira Engineers International	Method :Rotary Auger Casing Size : 180 mm Elevation: 8.32 m E: 0352844, N: 1400909	Date started : 20/06/2013 Date finished : 20/06/2013 **PROJECT : Br 59 NR-5 Improvement** Location: PK 219+700

Sampling Depth, m From	To	Type of Sampling U / SPT	Strata, (m)	Legend	Description of soil	SPT - N Value Blow/300mm N1=150mm	N2=300mm	N3=450mm	N=N2+N3
D1: 1.00 -	1.45	SPT	2.00		Firm to stiff brownish, reddish-gray CLAY with Sand	3	3	4	7
D2: 2.00 -	2.45	SPT				5	5	5	10
D3: 3.00 -	3.45	SPT	3.00		Medium dense yellowish Clayey fine SAND	4	6	7	13
D4: 4.00 -	4.45	SPT				6	6	6	12
D5: 5.00-	5.45	SPT				6	6	7	13
D6: 6.00 -	6.45	SPT	9.00		Stiff to very stiff brownish, grayish, yellowish CLAY with Sand (upper and middle) or Sandy CLAY (lower)	6	7	10	17
D7: 7.00 -	7.45	SPT				7	8	10	18
D8: 8.00 -	8.45	SPT				8	6	7	13
D9: 9.00 -	9.45	SPT				6	9	12	21
D10: 10.00	10.45	SPT				6	7	10	17
D11: 11.00	11.45	SPT				6	2	5	7
D12: 12.00	12.45	SPT				5	9	11	20
D13: 13.00	13.45	SPT				6	6	10	16
D14: 14.00	14.45	SPT				4	6	7	13
D15: 15.00	15.45	SPT	3.00		Medium dense yellowish, grayish, light gray Clayey coarse SAND	7	13	8	21
D16: 16.00-	16.45	SPT				6	14	15	29
D17: 17.00	17.45	SPT				7	13	14	27
D18: 18.00	18.45	SPT	8.00		Very stiff to hard grayish, light gray, brownish Sandy CLAY	10	13	20	33
D19: 19.00	19.45	SPT				11	15	20	35
D20: 20.00	20.45	SPT				7	12	19	31
D21: 21.00	21.45	SPT				10	12	20	32
D22: 22.00	22.45	SPT				8	14	16	30
D23: 23.00	23.45	SPT				8	11	14	25
D24: 24.00	24.45	SPT				9	13	16	29
D25: 25.00	25.45	SPT				11	14	17	31
					END of SPT Test 25.45m Depth				

Depth to water flow: 15.15m

Depth to water Level: No



Consistency	Very soft	Soft	Firm	Stiff	Very Stiff	Hard
Blows 30Cm, Clay	Less 2	2 - 4	4 - 8	8 - 15	15 - 30	> 30
Relate. Density, Blows/300mm		Very Loose	Loose	Med. Dense	Dense	Very Dense
Fine		1 - 2	3 - 6	7 - 15	16 - 30	?
medium		2 - 3	4 - 7	8 - 20	21 - 40	> 40
coarse		3 - 6	5 - 9	10 - 25	26 - 45	> 45
Unit weight of granular soil base, γ_{sat}, kN/m^3		11 - 16	14 - 18	17 - 20	17 - 22	20 - 23

LEGEND

- Stiff to hard sandy clay, lean Clay
- Firm to stiff silty clay/ lean Clay
- stiff to hard clay , fat Clay
- Clayey sand,Silty Sand
- V. Soft to soft clay, organic clay
- Fill/topsoil
- Gravelly Sand, Clean Sand
- Silty coarse sand with gravel
- Weather Rock
- Sandstone

Standard Penetration Test (SPT)

SPT

SPT - N Value

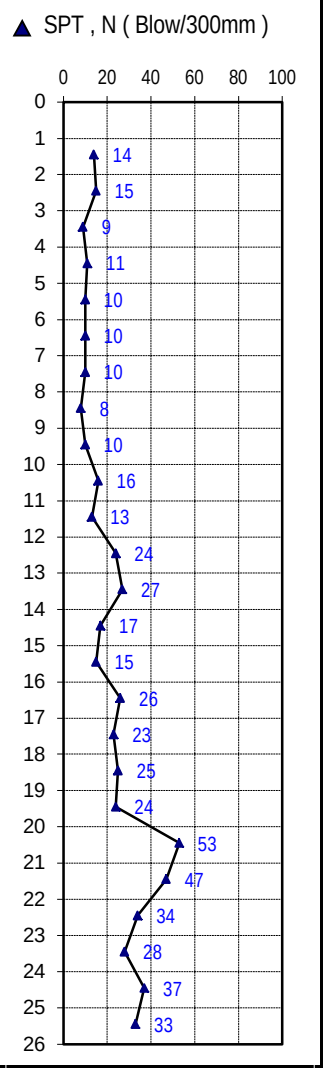
BORE HOLE LOG BH-10

Sub-Contractor: Partner of Construction and Development Services Inc. Owner : Katahira Engineers International	Method :Rotary Auger Casing Size : 180 mm Elevation: 15.96 m E: 0331290, N: 1413450	Date started : 21/06/2013 Date finished : 21/06/2013 **PROJECT : Br 66 NR-5 Improvement** Location: PK 245+900

Sampling Depth, m From	To	Type of Sampling U / SPT	Strata, (m)	Legend	Description of soil	SPT - N Value Blow/300mm N1=150mm	N2=300mm	N3=450mm	N=N2+N3
D1: 1.00 -	1.45	SPT	4.00		Stiff brownish, dark brown, yellowish CLAY with Sand or Sandy CLAY (2.00~3.00m)	3	7	7	14
D2: 2.00 -	2.45	SPT				5	7	8	15
D3: 3.00 -	3.45	SPT				4	4	5	9
D4: 4.00 -	4.45	SPT				4	5	6	11
D5: 5.00-	5.45	SPT	9.00		Stiff to very stiff brownish, yellowish CLAY or CLAY with Sand	3	4	6	10
D6: 6.00 -	6.45	SPT				3	4	6	10
D7: 7.00 -	7.45	SPT				3	5	5	10
D8: 8.00 -	8.45	SPT				5	4	4	8
D9: 9.00 -	9.45	SPT				4	5	5	10
D10: 10.00	10.45	SPT				4	6	10	16
D11: 11.00	11.45	SPT				4	6	7	13
D12: 12.00	12.45	SPT				5	9	15	24
D13: 13.00	13.45	SPT				8	11	16	27
D14: 14.00	14.45	SPT	4.00		Medium dense brownish, yellowish, light gray Clayey fine to medium SAND	6	8	9	17
D15: 15.00	15.45	SPT				6	7	8	15
D16: 16.00	16.45	SPT				8	12	14	26
D17: 17.00	17.45	SPT				6	10	13	23
D18: 18.00	18.45	SPT	2.00		Very stiff brownish, yellowish, grayish CLAY or CLAY with Sand	7	11	14	25
D19: 19.00	19.45	SPT				7	10	14	24
D20: 20.00	20.45	SPT	1.00		Very dense reddish-gray Clayey SAND with Gravel	19	23	30	53
D21: 21.00	21.45	SPT	5.00		Very stiff to hard brownish, yellowish, grayish CLAY with Sand or Sandy CLAY	11	17	30	47
D22: 22.00	22.45	SPT				10	15	19	34
D23: 23.00	23.45	SPT				4	11	17	28
D24: 24.00	24.45	SPT				8	15	22	37
D25: 25.00	25.45	SPT				11	14	19	33
					END of SPT Test 25.45m Depth				

Depth to water flow: No

Depth to water Level: No



Consistency	Very soft	Soft	Firm	Stiff	Very Stiff	Hard
Blows 30Cm, Clay	Less 2	2 - 4	4 - 8	8 - 15	15 - 30	> 30
Relate. Density, Blows/300mm		Very Loose	Loose	Med. Dense	Dense	Very Dense
Fine		1 - 2	3 - 6	7 - 15	16 - 30	?
medium		2 - 3	4 - 7	8 - 20	21 - 40	> 40
coarse		3 - 6	5 - 9	10 - 25	26 - 45	> 45
Unit weight of granular soil base, γ_{sat}, kN/m^3		11 - 16	14 - 18	17 - 20	17 - 22	20 - 23

LEGEND

- Stiff to hard sandy clay, lean Clay
- Firm to stiff silty clay/ lean Clay
- stiff to hard clay , fat Clay
- Clayey sand,Silty Sand
- V. Soft to soft clay, organic clay
- Fill/topsoil
- Gravelly Sand, Clean Sand
- Silty coarse sand with gravel
- Weather Rock
- Sandstone

Standard Penetration Test (SPT)

SPT

SPT - N Value

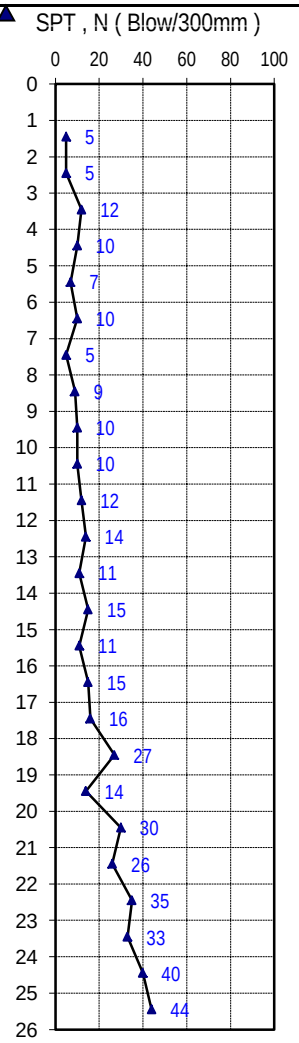
BORE HOLE LOG BH-11

Sub-Contractor: Partner of Construction and Development Services Inc. Owner : Katahira Engineers International	Method :Rotary Auger Casing Size : 180 mm Elevation: 13.29 m E: 0325642, N: 1421288	Date started : 22/06/2013 Date finished : 22/06/2013 **PROJECT : Br 68 NR-5 Improvement** Location: PK 255+500

Sampling Depth, m From	To	Type of Sampling U / SPT	Strata, (m)	Legend	Description of soil	SPT - N Value Blow/300mm N1=150mm	N2=300mm	N3=450mm	N=N2+N3
D1: 1.00 -	1.45	SPT	2.00		Firm reddish-gray, grayish Sandy CLAY	1	2	3	5
D2: 2.00 -	2.45	SPT				1	2	3	5
D3: 3.00 -	3.45	SPT	1.00		Medium dense grayish Clayey GRAVEL with Sand	3	4	8	12
D4: 4.00 -	4.45	SPT	3.00		Firm to stiff grayish, light brown CLAY with Sand or Sandy CLAY	3	5	5	10
D5: 5.00-	5.45	SPT				2	3	4	7
D6: 6.00 -	6.45	SPT				2	5	5	10
D7: 7.00 -	7.45	SPT	1.00		Loose grayish Clayey fine SAND	2	2	3	5
D8: 8.00 -	8.45	SPT	2.00		Stiff light brown, brownish CLAY (upper) or Sandy CLAY (lower)	3	4	5	9
D9: 9.00 -	9.45	SPT				3	4	6	10
D10: 10.00 -	10.45	SPT	10.00		Stiff to very stiff brownish, yellowish-brown, grayish CLAY or CLAY with Sand	3	3	7	10
D11: 11.00 -	11.45	SPT				5	5	7	12
D12: 12.00 -	12.45	SPT				4	5	9	14
D13: 13.00 -	13.45	SPT				3	5	6	11
D14: 14.00 -	14.45	SPT				4	6	9	15
D15: 15.00 -	15.45	SPT				4	5	6	11
D16: 16.00-	16.45	SPT				4	6	9	15
D17: 17.00 -	17.45	SPT				5	7	9	16
D18: 18.00 -	18.45	SPT				7	10	17	27
D19: 19.00 -	19.45	SPT				5	6	8	14
D20: 20.00 -	20.45	SPT	6.00		Very stiff to hard grayish, yellowish, brownish CLAY with Sand (upper and middle) or CLAY (lower)	7	15	15	30
D21: 21.00 -	21.45	SPT				6	11	15	26
D22: 22.00 -	22.45	SPT				11	15	20	35
D23: 23.00 -	23.45	SPT				10	12	21	33
D24: 24.00 -	24.45	SPT				12	17	23	40
D25: 25.00 -	25.45	SPT				14	19	25	44
					END of SPT Test 25.45m Depth				

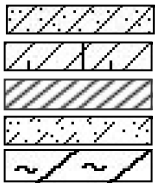
Depth to water flow: 5.10m

Depth to water Level: No



Consistency	Very soft	Soft	Firm	Stiff	Very Stiff	Hard
Blows 30Cm, Clay	Less 2	2 - 4	4 - 8	8 - 15	15 - 30	> 30
Relate. Density, Blows/300mm		Very Loose	Loose	Med. Dense	Dense	Very Dense
Fine		1 - 2	3 - 6	7 - 15	16 - 30	?
medium		2 - 3	4 - 7	8 - 20	21 - 40	> 40
coarse		3 - 6	5 - 9	10 - 25	26 - 45	> 45
Unit weight of granular soil base, γ_{sat}, kN/m^3		11 - 16	14 - 18	17 - 20	17 - 22	20 - 23

LEGEND



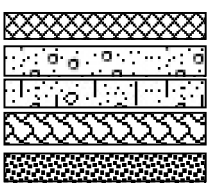
Stiff to hard sandy clay, lean Clay

Firm to stiff silty clay/ lean Clay

stiff to hard clay , fat Clay

Clayey sand,Silty Sand

V. Soft to soft clay, organic clay



Fill/topsoil

Gravelly Sand, Clean Sand

Silty coarse sand with gravel

Weather Rock

Sandstone

Standard Penetration Test (SPT)

SPT

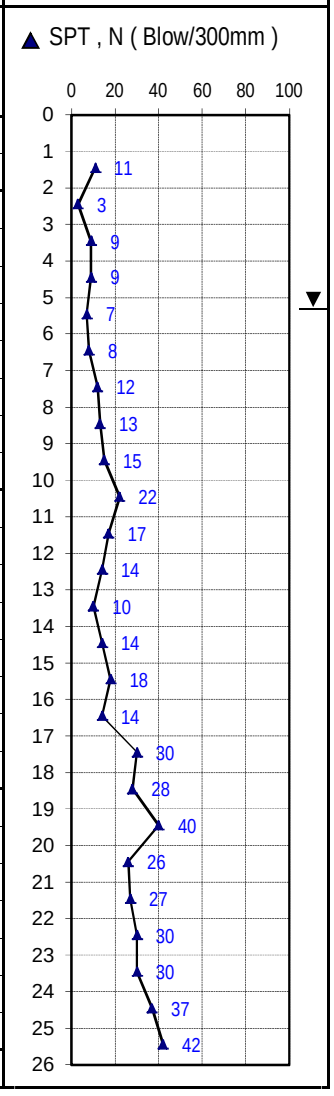
SPT - N Value

BORE HOLE LOG BH-12

Sub-Contractor: Partner of Construction and Development Services Inc. Owner : Katahira Engineers International	Method :Rotary Auger Casing Size : 180 mm Elevation: 11.99 m E: 0318011, N: 1437142	Date started : 23/06/2013 Date finished : 23/06/2013 **PROJECT : Br 75 NR-5 Improvement** Location: PK 273+300

Sampling Depth, m From	To	Type of Sampling U / SPT	Strata, (m)	Legend	Description of soil	SPT - N Value Blow/300mm N1=150mm	N2=300mm	N3=450mm	N=N2+N3
D1: 1.00 -	1.45	SPT	2.00		Stiff to soft dark gray Sandy organic SILT with gravels	3	4	7	11
D2: 2.00 -	2.45	SPT				2	2	1	3
D3: 3.00 -	3.45	SPT	8.00		Firm to stiff reddish-gray, yellowish-red, dark brown Sandy SILT	3	4	5	9
D4: 4.00 -	4.45	SPT				4	3	6	9
D5: 5.00-	5.45	SPT				2	3	4	7
D6: 6.00 -	6.45	SPT				2	3	5	8
D7: 7.00 -	7.45	SPT				3	5	7	12
D8: 8.00 -	8.45	SPT				3	6	7	13
D9: 9.00 -	9.45	SPT				4	6	9	15
D10: 10.00 -	10.45	SPT				4	9	13	22
D11: 11.00 -	11.45	SPT	8.00		Medium dense grayish, brownish-gray, light gray Silty fine to coarse SAND	5	7	10	17
D12: 12.00 -	12.45	SPT				4	6	8	14
D13: 13.00 -	13.45	SPT				4	5	5	10
D14: 14.00 -	14.45	SPT				5	6	8	14
D15: 15.00 -	15.45	SPT				5	10	8	18
D16: 16.00 -	16.45	SPT				9	8	6	14
D17: 17.00 -	17.45	SPT				6	19	11	30
D18: 18.00 -	18.45	SPT				8	12	16	28
D19: 19.00 -	19.45	SPT	7.00		Very stiff to hard grayish, brownish-gray Sandy SILT	8	12	28	40
D20: 20.00 -	20.45	SPT				8	12	14	26
D21: 21.00 -	21.45	SPT				8	12	15	27
D22: 22.00 -	22.45	SPT				8	13	17	30
D23: 23.00 -	23.45	SPT				10	15	15	30
D24: 24.00 -	24.45	SPT				9	17	20	37
D25: 25.00 -	25.45	SPT				13	18	24	42
					END of SPT Test 25.45m Depth				

Depth to water flow: 13.00m
Depth to water Level: 5.20m



Consistency	Very soft	Soft	Firm	Stiff	Very Stiff	Hard
Blows 30Cm, Clay	Less 2	2 - 4	4 - 8	8 - 15	15 - 30	> 30
Relate. Density, Blows/300mm		Very Loose	Loose	Med. Dense	Dense	Very Dense
Fine		1 - 2	3 - 6	7 - 15	16 - 30	?
medium		2 - 3	4 - 7	8 - 20	21 - 40	> 40
coarse		3 - 6	5 - 9	10 - 25	26 - 45	> 45
Unit weight of granular soil base, γ_{sat}, kN/m^3		11 - 16	14 - 18	17 - 20	17 - 22	20 - 23

LEGEND

- Stiff to hard sandy clay, lean Clay
- Firm to stiff silty clay/ lean Clay
- stiff to hard clay , fat Clay
- Clayey sand,Silty Sand
- V. Soft to soft clay, organic clay
- Fill/topsoil
- Gravelly Sand, Clean Sand
- Silty coarse sand with gravel
- Weather Rock
- Sandstone

Standard Penetration Test (SPT)
SPT
SPT - N Value

APPENDIX 6-11

SUMMARY OF

LABORATORY TEST OF BOREHOLE

IN THE MIDDLE SECTION

Partner of Construction and Development Services Inc.
Soil Quality Analysis Office.

Summary of Laboratory Test

PROJECT : Br 42 NR-5 Improvement
Location: PK 181+900 Pursat Province E: 0386542, N: 1384891

DATE : 28/06/2013
TESTED BY : Mr. Chea Sery Vuth

Table.2

Boring No	Sample	Depth(m)		SPT - N Value, Every 150Cm Blows / 300mm				Soil description	Unified Clasification	NMC W (%)	Bulk density γ_w (g/cm^3)	Dry density γ_d (g/cm^3)	Specific gravity γ_s (g/cm^3)	Atterberg limit			Grain size			Unconf. Strength q_u(kg/cm^2)	Shear Strength	
		From	To	N1	N2	N3	N							LL (%)	PL (%)	PI (%)	Clay and Silt %	Sand %	Gravel %		Cohesion Kpa	Friction Angle Degree (°)
BH.1	D1	1.00	1.45	4	5	6	11	Very loose to medium dense yellowish Clayey Sand	SC	14.89				30.60	11.74	18.86	29.48	70.52	0.00	-	-	
	D2	2.00	2.45	1	1	2	3			8.98				31.00	12.75	18.25	40.02	50.09	9.89	-	-	
	D3	3.00	3.45	3	6	12	18	Very stiff yellowish, light gray Sandy Clay	CL	13.62				44.00	15.23	28.77	54.31	45.69	0.00	-	-	
	D4	4.00	4.45	4	3	4	7	Firm to stiff yellowish, grayish Sandy Clay	CL	16.05				28.40	12.07	16.33	64.12	35.88	0.00	-	-	
	D5	5.00	5.45	5	7	7	14			13.04				28.40	12.66	15.74	59.06	40.94	0.00	-	-	
	D6	6.00	6.45	2	3	4	7			17.33				30.20	11.99	18.21	62.41	37.59	0.00	-	-	
	D7	7.00	7.45	5	9	13	22	Stiff to very stiff yellowish, grayish, reddish-gray Sandy Clay	CL	14.16				30.60	13.68	16.92	51.30	48.70	0.00	-	-	
	D8	8.00	8.45	3	5	8	13			13.21			2.640	24.40	13.01	11.39	50.87	49.13	0.00	-	-	
	D9	9.00	9.45	3	4	4	8			12.27				24.30	11.91	12.39	63.21	36.79	0.00	-	-	
	D10	10.00	10.45	3	5	6	11			13.92				24.10	12.74	11.36	56.93	43.07	0.00	-	-	
	D11	11.00	11.45	5	7	9	16			13.28	2.272			30.90	12.07	18.83	67.06	32.94	0.00	248.398	124.20	
	D12	12.00	12.45	5	9	14	23			15.05				33.10	16.43	16.67	62.55	37.45	0.00	-	-	
	D13	13.00	13.45	5	8	8	16			14.18			2.669	38.90	12.30	26.60	68.82	31.18	0.00	-	-	
	D14	14.00	14.45	5	8	9	17			15.09	2.246			40.40	13.20	27.20	67.41	32.59	0.00	188.646	94.32	
	D15	15.00	15.45	5	7	8	15			13.19				38.00	14.78	23.22	56.70	42.50	0.80	-	-	
	D16	16.00	16.45	6	11	16	27	Very stiff to hard yellowish, grayish, reddish-gray Clay with Sand	CL	14.22				32.00	14.04	17.96	70.46	28.49	1.05			
	D17	17.00	17.45	8	13	16	29			14.22	2.105			32.00	13.01	18.99	66.20	33.72	0.08	685.545	342.77	
	D18	18.00	18.45	7	14	17	31			14.12			2.584	30.80	11.89	18.91	70.20	29.80	0.00			
	D19	19.00	19.45	7	13	23	36	Dense reddish-gray Clayey Sand	SC	12.04				27.80	13.21	14.59	48.93	48.50	2.57			
	D20	20.00	20.45	4	11	13	24	Very stiff to hard yellowish, grayish, light gray Sandy Clay	CL	12.90				27.50	12.33	15.17	51.54	48.46	0.00	-	-	
	D21	21.00	21.45	13	21	37	58			10.80				26.00	11.12	14.88	51.92	48.08	0.00	-	-	
	D22	22.00	22.45	9	12	19	31	Dense to very dense grayish, light gray Clayey Sand	SC	15.39				28.00	12.46	15.54	38.83	55.70	5.47	-	-	
	D23	23.00	23.45	10	52	50	102			13.08				32.40	13.13	19.27	42.14	57.86	0.00	-	-	
	D24	24.00	24.45	7	21	22	43			15.52				32.40	12.06	20.34	47.04	52.56	0.40	-	-	
	D25	25.00	25.45	7	17	27	44			13.71				31.20	12.41	18.79	43.18	56.82	0.00			
								END OF SPT TEST 25.45m DEPTH														

Partner of Construction and Development Services Inc.
Soil Quality Analysis Office.

Summary of Laboratory Test

PROJECT : Br 44 NR-5 Improvement
Location: PK 183+200
Elevation: 17.56 m
E: 0385166, N: 1384967
DATE : 12/06/2013
TESTED BY : Mr. Chea Sery Vuth

Table.2

Boring No	Sample	Depth(m)		SPT - N Value, Every 150Cm Blows / 300mm				Soil description	Unified Clasification	NMC W (%)	Bulk density γ_w (g/cm^3)	Dry density γ_d (g/cm^3)	Specific gravity γ_s (g/cm^3)	Atterberg limit			Grain size			Unconf. Strength q_u (kg/cm^2)	Shear Strength	
		From	To	N1	N2	N3	N							LL (%)	PL (%)	PI (%)	Clay and Silt %	Sand %	Gravel %		Cohesion Kpa	Friction Angle Degree (°)
BH.2	D1	1.00	1.45	3	3	3	6	Very loose to loose yellowish-red, yellowish Silty fine SAND with gravels at the bottom, loose Clayey SAND	ML-GW	9.31				19.00	12.80	6.20	26.69	50.11	23.20	-	-	
	D2	2.00	2.45	3	2	1	3			8.52				20.40	14.55	5.85	23.35	51.25	25.40	-	-	
	D3	3.00	3.45	3	4	3	7			10.16				33.70	14.06	19.64	39.95	56.59	3.46	-	-	
	D4	4.00	4.45	1	3	6	9	Stiff to soft yellowish, grayish Sandy CLAY and Organic silt with gravel	CL	14.19				32.80	17.72	15.08	58.07	41.36	0.57	-	-	
	D5	5.00	5.45	3	4	3	7			12.93				32.60	13.64	18.96	67.58	31.32	1.10	-	-	
	D6	6.00	6.45	2	1	1	2		ML	13.93				20.20	15.16	5.04	62.29	37.39	0.32	-	-	
	D7	7.00	7.45	3	7	9	16	Medium dense yellowish, grayish Clayey coarse SAND	SC	8.74				27.10	13.48	13.62	41.95	57.19	0.86	-	-	
	D8	8.00	8.45	2	1	4	5	Firm to very stiff grayish, yellowish Sandy CLAY or CLAY with Sand	CL	16.57				26.20	14.71	11.49	75.71	24.29	0.00	-	-	
	D9	9.00	9.45	3	2	4	6			16.30				27.20	13.91	13.29	79.06	20.94	0.00	-	-	
	D10	10.00	10.45	3	5	5	10			16.19			2.513	34.20	17.59	16.61	78.66	21.34	0.00	-	-	
	D11	11.00	11.45	8	8	8	16			11.47	2.276			27.20	12.34	14.86	57.20	42.50	0.30	169.750	84.88	
	D12	12.00	12.45	2	2	5	7			14.28				26.70	14.55	12.15	66.35	33.65	0.00	-	-	
	D13	13.00	13.45	2	2	7	9			17.21			2.650	29.20	15.05	14.15	69.42	30.00	0.58	-	-	
	D14	14.00	14.45	6	10	12	22			18.25	2.110			28.00	16.28	11.72	84.78	15.22	0.00	339.250	169.63	
	D15	15.00	15.45	7	14	11	25	Medium dense to very dense yellowish, grayish, light gray Clayey coarse SAND with gravel	SC-GW	20.28				22.90	14.41	8.49	33.63	63.03	3.34	-	-	
	D16	16.00	16.45	53	-	-	53/15			12.01				21.80	13.00	8.80	36.60	57.54	5.86	-	-	
	D17	17.00	17.45	15	20	25	45			8.61				25.00	13.25	11.75	34.92	62.46	2.62	-	-	
	D18	18.00	18.45	12	17	21	38			9.81				24.10	13.81	10.29	24.94	73.23	1.83	-	-	
	D19	19.00	19.45	8	10	14	24			12.79				34.40	13.73	20.67	27.63	71.97	0.40	-	-	
	D20	20.00	20.45	5	16	22	38			15.02				30.20	14.85	15.35	25.03	74.66	0.31	-	-	
	D21	21.00	21.45	9	16	26	42	Very stiff to hard reddish-gray, reddish-yellow, light gray Sandy CLAY with gravel	CL-GW	16.67			2.505	25.20	13.46	11.74	68.48	31.40	0.12	-	-	
	D22	22.00	22.45	5	12	20	32			11.96	2.268			27.70	14.34	13.36	64.36	35.64	0.00	827.165	413.58	
	D23	23.00	23.45	3	7	11	18			12.81				27.20	13.75	13.45	61.16	38.84	0.00	-	-	
	D24	24.00	24.45	3	8	12	20			15.86				27.10	13.09	14.01	57.78	40.02	2.20	-	-	
	D25	25.00	25.45	7	32	37	69			14.40				26.60	13.67	12.93	57.16	42.70	0.14	-	-	
								END OF SPT TEST 25.45m DEPTH														

Partner of Construction and Development Services Inc.
Soil Quality Analysis Office.

Summary of Laboratory Test

PROJECT : Br 47 NR-5 Improvement
Location: PK 185+700
Elevation: 16.75m
E: 0382985, N: 1385405
DATE : 28/06/2013
TESTED BY : Mr. Chea Sery Vuth
Table.2

Boring No	Sample	Depth(m)		SPT - N Value, Every 150Cm Blows / 300mm				Soil description	Unified Clasification	NMC W (%)	Bulk density γ_w (g/cm^3)	Dry density γ_d (g/cm^3)	Specific gravity γ_s (g/cm^3)	Atterberg limit			Grain size			Unconf. Strength q_u (kg/cm^2)	Shear Strength	
		From	To	N1	N2	N3	N							LL (%)	PL (%)	PI (%)	Clay and Silt %	Sand %	Gravel %		Cohesion, Kpa	Friction Angle Degree (°)
BH.3	D1	1.00	1.45	1	2	3	5		CL-GW	13.35				23.20	12.90	10.30	44.74	36.29	18.97	-	-	
	D2	2.00	2.45	1	2	3	5	Soft to firm yellowish, grayish sandy CLAY		17.28				22.80	12.98	9.82	66.13	31.28	2.59	-	-	
	D3	3.00	3.45	1	1	1	2	At the top, Sandy CLAY with Gravel		21.08				21.80	12.78	9.02	64.33	35.67	0.00	-	-	
	D4	4.00	4.45	1	2	3	5			17.82				21.50	12.43	9.07	43.97	56.03	0.00	-	-	
	D5	5.00	5.45	4	9	8	17	Loose to medium dense yellowish, grayish, dark gray	SP	19.76				-	-	-	8.66	91.34	0.00	-	-	
	D6	6.00	6.45	2	3	3	6	fine to medium SAND	~	22.38				-	-	-	21.11	78.89	0.00	-	-	
	D7	7.00	7.45	6	5	4	9	At the top, Clayey SAND	SC	17.77				-	-	-	1.53	98.47	0.00	-	-	
	D8	8.00	8.45	3	3	4	7			20.45				-	-	-	5.12	94.88	0.00	-	-	
	D9	9.00	9.45	3	4	4	8			17.46				29.20	15.44	13.76	71.54	27.45	1.01	-	-	
	D10	10.00	10.45	6	9	11	20			14.15				29.00	12.89	16.11	59.01	40.29	0.70	-	-	
	D11	11.00	11.45	7	10	12	22	Stiff to hard reddish-gray, light gray, yellowish Sandy	CL	14.17	2.206			32.70	14.99	17.71	56.18	42.40	1.42	186.78	93.39	
	D12	12.00	12.45	12	17	28	45	CLAY or CLAY with Sand		15.19			2.611	32.80	14.98	17.82	68.13	31.87	0.00	-	-	
	D13	13.00	13.45	8	20	34	54			15.86	2.234			38.80	18.92	19.88	79.57	20.43	0.00	510.21	255.11	
	D14	14.00	14.45	17	20	32	52			16.81				36.00	13.39	22.61	80.01	19.99	0.00	-	-	
	D15	15.00	15.45	18	23	29	52	Very dense grayish Silty coarse SAND	SM	16.71				-	-	-	27.05	72.95	0.00	-	-	
	D16	16.00	16.45	14	24	25	49			16.45			2.620	38.90	19.23	19.67	74.88	25.12	0.00	-	-	
	D17	17.00	17.45	12	27	32	59	Hard yellowish, light gray CLAY with Sand	CL	17.27	2.105			37.60	17.59	20.01	72.41	27.59	0.00	919.86	459.93	
	D18	18.00	18.45	14	24	37	61	or Sandy CLAY		14.46				36.60	18.66	17.94	64.53	35.47	0.00	-	-	
	D19	19.00	19.45	52	-	-	102	Very dense yellowish, light gray Clayey coarse SAND	CL-GW	11.21				37.80	18.70	19.10	42.81	45.08	12.11	-	-	
	D20	20.00	20.45	14	57	-	114	with gravels		10.56				34.00	17.49	16.51	42.20	38.64	19.16	-	-	
	D21	21.00	21.45	26	60	-	120			13.40				33.40	13.75	19.65	67.82	31.17	1.01	-	-	
	D22	22.00	22.45	27	55	-	110			13.00				33.00	14.93	18.07	61.40	37.42	1.18	-	-	
	D23	23.00	23.45	11	23	39	62	Hard yellowish, reddish-gray, light gray Sandy CLAY	CL-GW	13.05			2.701	32.60	15.49	17.11	61.63	34.72	3.65	-	-	
	D24	24.00	24.45	10	20	23	43	with gravel		11.58				34.20	17.34	16.86	60.36	39.15	0.49	-	-	
	D25	25.00	25.45	13	24	30	54			12.87				35.60	16.86	18.74	62.53	35.29	2.18	-	-	
								END OF SPT TEST 25.45m DEPTH														

Partner of Construction and Development Services Inc.
Soil Quality Analysis Office.

Summary of Laboratory Test

PROJECT : Br 48 NR-5 Improvement
DATE : 12/06/2013
Location: PK 187+500 Pursat Province
Elevation: 17.55m
TESTED BY : Mr. Chea Sery Vuth
Table.2
E: 0385166, N: 1384967

Boring No	Sample	Depth(m)		SPT - N Value, Every 150Cm Blows / 300mm				Soil description	Unified Clasification	NMC W (%)	Bulk density γ_w (g/cm^3)	Dry density γ_d (g/cm^3)	Specific gravity γ_s (g/cm^3)	Atterberg limit			Grain size			Unconf. Strength q_u (kg/cm^2)	Shear Strength	
		From	To	N1	N2	N3	N							LL (%)	PL (%)	PI (%)	Clay and Silt %	Sand %	Gravel %		Cohesion Kpa	Friction Angle Degree (°)
BH.4	D1	1.00	1.45	2	2	3	5	Firm to very stiff yellowish, grayish Sandy CLAY with gravels	CL-GW	14.89				23.40	11.56	11.84	59.76	36.31	3.93	-	-	
	D2	2.00	2.45	7	10	15	25			9.14				24.60	12.25	12.35	45.14	39.12	15.74	-	-	
	D3	3.00	3.45	6	3	2	5	Loose grayish, yellowish Silty fine SAND	SM	8.42				-	-	-	31.87	65.39	2.74	-	-	
	D4	4.00	4.45	3	3	2	5	Firm to stiff yellowish, brownish, grayish Sandy CLAY or Clay with Sand	CL	13.75				27.20	15.09	12.11	55.75	35.34	8.91	-	-	
	D5	5.00	5.45	2	3	4	7			31.92				47.00	18.52	28.48	87.72	12.28	0.00	-	-	
	D6	6.00	6.45	3	4	6	10			21.76				45.90	15.94	29.96	97.02	2.98	0.00	-	-	
	D7	7.00	7.45	3	8	6	14			10.46				27.80	12.82	14.98	65.02	34.98	0.00	-	-	
	D8	8.00	8.45	4	7	6	13			11.90				37.30	18.76	18.54	76.89	22.63	0.48	-	-	
	D9	9.00	9.45	4	5	7	12			13.38				37.30	18.39	18.91	84.47	15.53	0.00	-	-	
	D10	10.00	10.45	2	5	5	10			15.29	2.005			39.00	13.32	25.68	68.24	31.76	0.00	171.679	85.84	
	D11	11.00	11.45	6	13	10	23	Medium dense yellowish, yellowish-gray Clayey SAND with gravel	SC-GW	10.25				37.60	15.87	21.73	17.38	81.29	1.33	-	-	
	D12	12.00	12.45	5	9	10	19			15.25				30.20	15.48	14.72	17.89	81.84	0.27	-	-	
	D13	13.00	13.45	6	7	7	14			15.96				36.40	13.87	22.53	23.37	74.35	2.28	-	-	
	D14	14.00	14.45	5	5	6	11	Very stiff to hard light gray, yellowish, grayish-yellow Sandy CLAY	CL	11.16			2.571	36.40	16.14	20.26	51.92	48.08	0.00	-	-	
	D15	15.00	15.45	7	9	14	23			13.17	2.221			28.20	14.30	13.90	69.62	30.38	0.00	203.230	101.62	
	D16	16.00	16.45	10	14	20	34			15.83				27.80	13.07	14.73	72.85	27.15	0.00		-	
	D17	17.00	17.45	6	14	22	36			15.08			2.606	26.80	13.43	13.37	73.28	26.72	0.00	-	-	
	D18	18.00	18.45	10	15	16	31			13.34	2.173			30.20	15.68	14.52	61.55	38.45	0.00	406.430	203.22	
	D19	19.00	19.45	10	14	18	32			14.22				30.30	15.88	14.42	62.78	37.00	0.22	-	-	
	D20	20.00	20.45	11	14	17	31			14.91			2.607	31.80	16.25	15.55	66.29	33.71	0.00	-	-	
	D21	21.00	21.45	9	13	17	30			15.78				33.50	16.03	17.47	63.79	36.21	0.00	-	-	
	D22	22.00	22.45	10	14	19	33			15.13				32.90	18.53	14.37	59.16	40.84	0.00	-	-	
	D23	23.00	23.45	11	18	25	43			14.98				34.20	12.73	21.47	63.07	36.93	0.00	-	-	
	D24	24.00	24.45	12	16	24	40			15.16				37.40	15.77	21.63	67.69	32.31	0.00	-	-	
	D25	25.00	25.45	10	22	23	45			15.35				37.80	15.29	22.51	66.65	33.35	0.00			
								END OF SPT TEST 25.45m DEPTH														

Partner of Construction and Development Services Inc.
Soil Quality Analysis Office.

Summary of Laboratory Test

PROJECT : Br 50 NR-5 Improvement
Location: PK 188+100
Table.2

Elevation: 16.06 m
E: 0380336, N: 1386358

DATE : 12/06/2013
TESTED BY : Mr. Chea Sery Vuith

Boring No	Sample	Depth(m)		SPT - N Value, Every 150Cm Blows / 300mm				Soil description	Unified Clasification	NMC W (%)	Bulk density γ_w (g/cm^3)	Dry density γ_d (g/cm^3)	Specific gravity γ_s (g/cm^3)	Atterberg limit			Grain size			Unconf. Strength q_u(kg/cm^2)	Shear Strength	
		From	To	N1	N2	N3	N							LL (%)	PL (%)	PI (%)	Clay and Silt %	Sand %	Gravel %		Cohesion Kpa	Friction Angle Degree (°)
BH.5	D1	1.00	1.45	7	10	11	21	Medium dense to loose reddish-brown Clayey SAND with Gravel	SC-GW	9.25				23.60	12.62	10.98	41.20	36.86	21.94	-	-	
	D2	2.00	2.45	3	4	3	7			11.42				24.60	12.08	12.52	47.48	30.32	22.20	-	-	
	D3	3.00	3.45	3	4	5	9	Stiff to very stiff brownish, dark brown, light gray CLAY (upper) or Sandy CLAY (middle to lower)	CL	16.54				30.20	15.41	14.79	86.83	13.17	0.00	-	-	
	D4	4.00	4.45	3	5	6	11			21.37				36.50	11.80	24.70	89.50	10.50	0.00	-	-	
	D5	5.00	5.45	3	7	8	15			13.60				26.60	14.54	12.06	63.05	36.95	0.00	-	-	
	D6	6.00	6.45	7	8	13	21			9.24				26.60	12.78	13.82	55.55	37.62	6.83	-	-	
	D7	7.00	7.45	5	6	8	14			11.81				30.40	16.40	14.00	64.28	35.72	0.00	-	-	
	D8	8.00	8.45	7	12	14	26			13.29				39.30	12.62	26.68	62.15	37.85	0.00	-	-	
	D9	9.00	9.45	7	9	14	23	Medium dense to dense grayish, light gray Clayey coarse SAND	SC	5.99				22.50	12.12	10.38	25.51	74.49	0.00	-	-	
	D10	10.00	10.45	12	15	17	32			7.73				23.10	11.74	11.36	19.20	79.93	0.87	-	-	
	D11	11.00	11.45	10	14	32	46			8.98				35.60	13.59	22.01	21.83	75.98	2.19	-	-	
	D12	12.00	12.45	17	30	27	57	Hard grayish Sandy CLAY with gravel	CL-GW	34.25			2.525	47.00	18.72	28.28	58.10	29.47	12.43	-	-	
	D13	13.00	13.45	7	8	10	18	Stiff to very stiff grayish, yellowish, light gray Sandy CLAY or CLAY with Sand	CL	33.82				46.80	17.73	29.07	85.08	14.92	0.00	-	-	
	D14	14.00	14.45	6	8	9	17			35.47				42.10	16.05	26.05	94.22	5.78	0.00	-	-	
	D15	15.00	15.45	6	7	9	16			13.36	2.215		2.575	28.60	12.12	16.48	63.82	34.66	1.52	207.495	103.75	
	D16	16.00	16.45	7	8	9	17			14.20				28.20	12.02	16.18	68.62	29.85	1.53	-	-	
	D17	17.00	17.45	7	9	15	24			15.24	2.157			35.20	11.56	23.64	78.99	21.01	0.00	555.044	277.52	
	D18	18.00	18.45	6	7	7	14			16.87			2.620	30.70	11.28	19.42	45.90	40.04	14.06	-	-	
	D19	19.00	19.45	5	10	12	22	Very stiff to hard yellowish, light gray Sandy CLAY	CL	12.12	2.209			28.80	12.18	16.62	59.92	40.08	0.00	356.579	178.29	
	D20	20.00	20.45	8	21	34	55			14.01				29.10	12.46	16.64	67.45	32.55	0.00	-	-	
	D21	21.00	21.45	17	20	24	44			13.18				32.80	13.67	19.13	65.77	34.23	0.00	-	-	
	D22	22.00	22.45	15	26	29	55			12.96				34.80	15.64	19.16	65.83	34.17	0.00	-	-	
	D23	23.00	23.45	16	24	38	62			13.61				32.10	13.47	18.63	68.40	31.60	0.00	-	-	
	D24	24.00	24.45	8	22	32	54			13.82				34.10	15.86	18.24	65.09	32.25	2.66	-	-	
	D25	25.00	25.45	9	19	29	48			13.29				29.60	12.73	16.87	64.61	33.11	2.28			
								END OF SPT TEST 25.45m DEPTH														

Partner of Construction and Development Services Inc.
Soil Quality Analysis Office.

Summary of Laboratory Test

PROJECT : Br 55 NR-5 Improvement
Location: PK 191+100 Pursat Province.
Elevation: 18.40 m
E: 0378132, N: 1387549
DATE : 28/06/2013
TESTED BY : Mr. Chea Sery Vuth
Table.2

Boring No	Sample	Depth(m)		SPT - N Value, Every 150Cm Blows / 300mm				Soil description	Unified Clasification	NMC W (%)	Bulk density γ_w (g/cm^3)	Dry density γ_d (g/cm^3)	Specific gravity γ_s (g/cm^3)	Atterberg limit			Grain size			Unconf. Strength q_u ,kg/cm^2)	Shear Strength	
		From	To	N1	N2	N3	N							LL (%)	PL (%)	PI (%)	Clay and Silt %	Sand %	Gravel %		Cohesion Kpa	Friction Angle Degree (°)
BH.6	D1	1.00	1.45	6	4	5	9	Soft to stiff reddish-brown, yellowish-gray CLAY or CLAY with Sand	CL	13.05				48.40	16.11	32.29	76.61	20.92	2.47	-	-	
	D2	2.00	2.45	3	4	2	6			16.22				45.00	16.08	28.92	89.75	9.38	0.87	-	-	
	D3	3.00	3.45	2	2	1	3			17.92				46.00	15.35	30.65	73.44	24.50	2.06	-	-	
	D4	4.00	4.45	1	1	2	3			17.47				25.20	11.85	13.35	80.28	19.72	0.00	-	-	
	D5	5.00	5.45	6	7	7	14	Loose to medium dense yellowish fine to medium SAND with gravel	SP	4.35				-	-	-	4.83	94.99	0.18	-	-	
	D6	6.00	6.45	2	5	5	10			19.78				-	-	-	5.05	94.33	0.62	-	-	
	D7	7.00	7.45	5	3	4	7			16.65				-	-	-	2.89	90.33	6.78	-	-	
	D8	8.00	8.45	3	4	3	7	Firm to very stiff yellowish, grayish Sandy CLAY with gravel	CL-GW	14.34			2.578	24.60	11.46	13.14	58.83	40.95	0.22	-	-	
	D9	9.00	9.45	4	9	17	26			11.48				19.20	11.52	7.68	51.57	43.95	4.48	-	-	
	D10	10.00	10.45	4	5	7	12			14.34	2.106			19.30	11.28	8.02	63.07	36.93	0.00	84.346	42.17	
	D11	11.00	11.45	9	7	10	17	Medium dense grayish, yellowish, light gray Clayey fine to coarse SAND	SC	10.78				20.50	10.81	9.69	28.60	70.20	1.20	-	-	
	D12	12.00	12.45	6	8	8	16			13.49				18.90	11.07	7.83	23.42	76.58	0.00	-	-	
	D13	13.00	13.45	5	12	13	25			14.66				18.80	12.93	5.87	20.36	79.64	0.00	-	-	
	D14	14.00	14.45	8	12	14	26			15.14				23.30	15.88	7.42	21.26	78.35	0.39	-	-	
	D15	15.00	15.45	8	19	34	53	Hard to very stiff yellowish, reddish-gray, light gray Sandy CLAY or CLAY with Sand	CL	40.11				39.40	22.60	16.80	62.54	31.83	5.63	-	-	
	D16	16.00	16.45	7	7	12	19			15.16	2.125			35.10	14.27	20.83	78.77	20.06	1.17	314.433	157.22	
	D17	17.00	17.45	5	8	11	19			16.28				35.40	11.73	23.67	84.26	14.11	1.63	-	-	
	D18	18.00	18.45	3	7	7	14			14.07			2.577	29.30	12.19	17.11	64.06	35.94	0.00	-	-	
	D19	19.00	19.45	4	8	10	18			16.40	2.297			26.60	11.14	15.46	50.10	49.90	0.00	252.697	126.35	
	D20	20.00	20.45	5	8	9	17	Medium dense grayish Clayey fine SAND	SC	21.01				20.80	11.90	8.90	23.94	76.06	0.00	-	-	
	D21	21.00	21.45	5	8	10	18	Very stiff yellowish, grayish CLAY with Sand	CL	21.23			2.551	33.40	16.39	17.01	80.03	19.97	0.00	-	-	
	D22	22.00	22.45	6	12	18	30	Dense yellowish-gray Clayey coarse SAND	SC	15.44				21.60	11.38	10.22	15.06	82.30	2.64	-	-	
	D23	23.00	23.45	8	10	10	20	Very stiff yellowish, grayish Sandy CLAY	CL	16.34				37.20	15.63	21.57	60.47	39.07	0.46	-	-	
	D24	24.00	24.45	11	17	17	34	Dense yellowish Clayey coarse SAND	SC	14.01				49.20	15.95	33.25	23.86	73.36	2.78	-	-	
	D25	25.00	25.45	10	13	21	34	Hard grayish, brownish CLAY	CL	14.69				42.20	24.15	18.05	88.57	11.43	0.00	-	-	
								END OF SPT TEST 25.45m DEPTH														

Partner of Construction and Development Services Inc.
Soil Quality Analysis Office.

Summary of Laboratory Test

PROJECT : Br 57 NR-5 Improvement
Location: PK 208+500
Elevation: 13.36 m
E: 0362905, N: 1396533
DATE : 28/06/2013
TESTED BY : Mr. Chea Sery Vuth

Table.2

Boring No	Sample	Depth(m)		SPT - N Value, Every 150Cm Blows / 300mm				Soil description	Unified Clasification	NMC W (%)	Bulk density γ_w (g/cm^3)	Dry density γ_d (g/cm^3)	Specific gravity γ_s (g/cm^3)	Atterberg limit			Grain size			Unconf. Strength q_u (kg/cm^2)	Shear Strength	
		From	To	N1	N2	N3	N							LL (%)	PL (%)	PI (%)	Clay and Silt %	Sand %	Gravel %		Cohesion Kpa	Friction Angle Degree (°)
BH.7	D1	1.00	1.45	6	3	4	7	Firm to stiff brownish, grayish CLAY with Sand (upper) or CLAY (lower)	CL	11.62				35.30	18.70	16.60	71.84	27.72	0.44	-	-	
	D2	2.00	2.45	6	7	6	13			14.28				35.30	17.41	17.89	81.45	18.25	0.30	-	-	
	D3	3.00	3.45	5	6	6	12			18.15				48.40	16.74	31.66	91.88	8.12	0.00	-	-	
	D4	4.00	4.45	4	7	7	14			16.96				49.20	14.85	34.35	87.86	12.14	0.00	-	-	
	D5	5.00	5.45	8	8	10	18	Very stiff grayish, brownish, yellowish-brown CLAY with Sand	CL	12.46				36.60	15.68	20.92	79.66	20.34	0.00	-	-	
	D6	6.00	6.45	9	12	17	29			11.45				36.00	16.72	19.28	79.76	20.24	0.00	-	-	
	D7	7.00	7.45	9	10	13	23			11.93				29.40	12.51	16.89	83.55	16.45	0.00	-	-	
	D8	8.00	8.45	8	10	16	26			11.42				30.40	17.55	12.85	71.01	28.20	0.79	-	-	
	D9	9.00	9.45	10	13	13	26			11.37				32.00	15.12	16.88	71.37	24.96	3.67	-	-	
	D10	10.00	10.45	12	13	16	29			10.66	2.212			22.50	12.00	10.50	75.55	24.45	0.00	1250.488	625.24	
	D11	11.00	11.45	17	15	15	30	Medium dense to dense dark gray, yellowish-gray, yellowish Clayey fine to coarse SAND	SC	7.36				22.30	13.96	8.34	45.84	54.16	0.00	-	-	
	D12	12.00	12.45	11	16	15	31			5.13			2.565	21.20	12.12	9.08	30.25	69.75	0.00	-	-	
	D13	13.00	13.45	11	13	13	26			9.80				22.20	12.55	9.65	19.07	80.93	0.00	-	-	
	D14	14.00	14.45	10	13	13	26			15.99				21.30	11.70	9.60	20.98	79.02	0.00	-	-	
	D15	15.00	15.45	6	10	15	25			12.62				28.40	11.98	16.42	19.51	80.49	0.00	-	-	
	D16	16.00	16.45	10	20	19	39			12.09				28.10	14.64	13.46	22.50	77.00	0.50	-	-	
	D17	17.00	17.45	10	21	22	43			9.84				26.10	15.08	11.02	21.94	78.06	0.00	-	-	
	D18	18.00	18.45	7	14	20	34	Hard grayish-brown, reddish-gray, CLAY with Sand	CL	12.88	2.209			36.60	17.02	19.58	77.82	22.18	0.00	905.915	452.96	
	D19	19.00	19.45	11	18	24	42			12.85			2.548	37.20	16.22	20.98	77.10	22.90	0.00	-	-	
	D20	20.00	20.45	11	15	30	45			15.89	2.181			35.80	15.43	20.37	79.65	18.73	1.62	948.428	474.21	
	D21	21.00	21.45	10	17	25	42			14.14				36.00	14.71	21.29	81.42	17.75	0.83	-	-	
	D22	22.00	22.45	10	15	25	40			12.87			2.572	36.40	17.07	19.33	85.11	14.89	0.00	-	-	
	D23	23.00	23.45	9	14	23	37			13.13				36.70	16.01	20.69	70.27	21.42	8.31	-	-	
	D24	24.00	24.45	9	13	27	40			13.56				33.80	16.81	16.99	78.65	21.35	0.00	-	-	
	D25	25.00	25.45	10	17	31	48			13.77				33.80	16.41	17.39	83.05	16.95	0.00	-	-	
								END OF SPT TEST 25.45m DEPTH														

Partner of Construction and Development Services Inc.
Soil Quality Analysis Office.

Summary of Laboratory Test

PROJECT : Br 58 NR-5 Improvement
Location: PK 215+800
Elevation: 12.17 m
E: 0356344, N: 1399502
DATE : 28/06/2013
TESTED BY : Mr. Chea Sery Vuith

Table.2

Boring No	Sample	Depth(m)		SPT - N Value, Every 150Cm Blows / 300mm				Soil description	Unified Clasification	NMC W (%)	Bulk density γ_w (g/cm^3)	Dry density γ_d (g/cm^3)	Specific gravity γ_s (g/cm^3)	Atterberg limit			Grain size			Unconf. Strength q_u (kg/cm^2)	Shear Strength	
		From	To	N1	N2	N3	N							LL (%)	PL (%)	PI (%)	Clay and Silt %	Sand %	Gravel %		Cohesion Kpa	Friction Angle Degree (°)
BH.8	D1	1.00	1.45	2	5	4	9	Firm to stiff brownish, grayish CLAY with Sand	CL	13.57				29.40	12.83	16.57	76.34	21.44	2.22	-	-	
	D2	2.00	2.45	5	3	4	7			11.32				28.40	15.16	13.24	77.05	22.95	0.00	-	-	
	D3	3.00	3.45	2	3	3	6	Loose grayish Clayey fine SAND	SC	19.19				23.00	12.16	10.84	46.41	53.59	0.00	-	-	
	D4	4.00	4.45	2	2	5	7			22.09				23.30	13.37	9.93	10.21	89.79	0.00	-	-	
	D5	5.00	5.45	3	2	3	5			25.54				35.70	18.52	17.18	40.93	59.07	0.00	-	-	
	D6	6.00	6.45	3	3	4	7			25.29				-	-	-	4.90	95.10	0.00	-	-	
	D7	7.00	7.45	2	3	3	6	Firm to stiff brownish, yellowish CLAY with Sand	CL	20.93				38.40	14.23	24.17	76.42	23.58	0.00	-	-	
	D8	8.00	8.45	2	3	3	6			19.61				34.00	13.77	20.23	68.77	31.23	0.00	-	-	
	D9	9.00	9.45	3	4	8	12			19.40				35.40	13.32	22.08	82.47	17.53	0.00	-	-	
	D10	10.00	10.45	5	6	6	12			16.47	2.161			31.60	13.06	18.54	75.15	24.85	0.00	209.829	104.91	
	D11	11.00	11.45	6	7	7	14			16.54			2.664	30.80	15.36	15.44	83.17	16.83	0.00	-	-	
	D12	12.00	12.45	6	7	9	16	Stiff to very stiff yellowish, brownish CLAY with Sand	CL	15.76				37.90	18.66	19.24	83.99	16.01	0.00	-	-	
	D13	13.00	13.45	7	9	15	24			14.92	2.144			26.20	13.08	13.12	76.42	22.50	1.08	406.691	203.35	
	D14	14.00	14.45	8	9	12	21			16.05				29.20	13.92	15.28	80.75	19.25	0.00	-	-	
	D15	15.00	15.45	8	9	14	23	Very stiff to hard yellowish, grayish-brown, reddish-yellow CLAY with Sand 18.00m~, Clayey SAND with Gravel 19.00m~, Sandy CLAY	CL	16.63				41.20	17.33	23.87	74.17	21.82	4.01	-	-	
	D16	16.00	16.45	5	8	14	22			16.77			2.664	36.10	14.63	21.47	77.00	20.04	2.96		-	
	D17	17.00	17.45	6	11	15	26			14.16	2.182			29.20	13.87	15.33	80.15	19.85	0.00	568.298	284.15	
	D18	18.00	18.45	10	15	20	35			13.28				27.20	12.51	14.69	49.05	26.72	24.23		-	
	D19	19.00	19.45	6	10	13	23			14.41			2.681	28.40	13.63	14.77	59.53	36.19	4.28		-	
	D20	20.00	20.45	5	6	7	13	Medium dense yellowish, light gray, yellowish-gray Clayey fine SAND	SC	16.18				23.40	15.84	7.56	45.16	54.84	0.00	-	-	
	D21	21.00	21.45	3	4	9	13			13.28				26.50	13.73	12.77	29.28	70.72	0.00	-	-	
	D22	22.00	22.45	6	11	16	27			13.70				26.20	13.61	12.59	26.64	73.36	0.00	-	-	
	D23	23.00	23.45	3	11	13	24			13.83				-	-	-	15.57	84.43	0.00	-	-	
	D24	24.00	24.45	10	13	12	25			18.82				-	-	-	18.95	81.05	0.00	-	-	
	D25	25.00	25.45	10	15	13	28			19.47				-	-	-	18.65	81.35	0.00			
								END OF SPT TEST 25.45m DEPTH														

Partner of Construction and Development Services Inc.
Soil Quality Analysis Office.

Summary of Laboratory Test

PROJECT : Br 59 NR-5 Improvement
Location: PK 219+700
Table.2

Elevation: 8.32 m
E: 0352844, N: 1400909

DATE : 28/06/2013
TESTED BY : Mr. Chea Sery Vuth

Boring No	Sample	Depth(m)		SPT - N Value, Every 150Cm Blows / 300mm				Soil description	Unified Clasification	NMC W (%)	Bulk density γ_w (g/cm^3)	Dry density γ_d (g/cm^3)	Specific gravity γ_s (g/cm^3)	Atterberg limit			Grain size			Unconf. Strength q_u (kg/cm^2)	Shear Strength	
		From	To	N1	N2	N3	N							LL (%)	PL (%)	PI (%)	Clay and Silt %	Sand %	Gravel %		Cohesion Kpa	Friction Angle Degree (°)
BH.9	D1	1.00	1.45	3	3	4	7	Firm to stiff brownish, reddish-gray CLAY with Sand	CL	16.20				46.20	17.49	28.71	78.83	21.17	0.00	-	-	
	D2	2.00	2.45	5	5	5	10			16.18				42.10	18.88	23.22	70.32	29.68	0.00	-	-	
	D3	3.00	3.45	4	6	7	13	Medium dense yellowish Clayey fine SAND	SC	10.63				25.20	14.14	11.06	41.86	58.14	0.00	-	-	
	D4	4.00	4.45	6	6	6	12			9.51				25.10	14.00	11.10	32.21	67.79	0.00	-	-	
	D5	5.00	5.45	6	6	7	13			10.92				23.60	13.21	10.39	41.78	58.22	0.00	-	-	
	D6	6.00	6.45	6	7	10	17	Stiff to very stiff brownish, grayish, yellowish CLAY with Sand (upper and middle) or Sandy CLAY (lower)	CL	16.02				47.00	17.13	29.87	95.71	4.29	0.00	-	-	
	D7	7.00	7.45	7	8	10	18			13.97				37.60	16.66	20.94	71.64	28.36	0.00	-	-	
	D8	8.00	8.45	8	6	7	13			16.29				43.10	18.48	24.62	83.56	16.44	0.00	-	-	
	D9	9.00	9.45	6	9	12	21			15.38				37.10	13.40	23.70	80.57	19.22	0.21	-	-	
	D10	10.00	10.45	6	7	10	17			15.08	2.272			37.70	17.23	20.47	83.05	16.95	0.00	563.991	282.00	
	D11	11.00	11.45	6	2	5	7			14.62				35.20	17.08	18.12	79.89	20.11	0.00	-	-	
	D12	12.00	12.45	5	9	11	20			14.27			2.625	34.90	17.04	17.86	73.96	26.04	0.00	-	-	
	D13	13.00	13.45	6	6	10	16			15.12				30.10	14.99	15.11	67.32	32.68	0.00	-	-	
	D14	14.00	14.45	4	6	7	13			17.77				23.60	12.79	10.81	56.64	43.36	0.00	-	-	
	D15	15.00	15.45	7	13	8	21	Medium dense yellowish, grayish, light gray Clayey coarse SAND		13.54				-	-	-	20.77	79.23	0.00	-	-	
	D16	16.00	16.45	6	14	15	29		SC	15.06				25.30	11.91	13.39	26.60	71.96	1.44	-	-	
	D17	17.00	17.45	7	13	14	27			17.39				23.40	13.21	10.19	28.10	71.69	0.21	-	-	
	D18	18.00	18.45	10	13	20	33	Very stiff to hard grayish, light gray, brownish Sandy CLAY	CL	14.34			2.652	30.60	17.45	13.15	80.57	19.43	0.00	-	-	
	D19	19.00	19.45	11	15	20	35			14.43				33.70	14.71	18.99	80.70	19.30	0.00	-	-	
	D20	20.00	20.45	7	12	19	31			15.47	2.136			38.60	13.57	25.03	81.01	18.99	0.00	295.559	147.78	
	D21	21.00	21.45	10	12	20	32			14.88				33.20	14.92	18.28	83.16	16.84	0.00	-	-	
	D22	22.00	22.45	8	14	16	30			15.26	2.142			30.40	17.97	12.43	83.58	16.42	0.00	295.340	147.67	
	D23	23.00	23.45	8	11	14	25			16.19			2.618	31.20	13.91	17.29	84.80	14.29	0.91	-	-	
	D24	24.00	24.45	9	13	16	29			15.67				32.50	14.18	18.32	83.00	13.19	3.81	-	-	
	D25	25.00	25.45	11	14	17	31			15.90				32.20	13.27	18.93	88.39	10.93	0.68	-	-	
								END OF SPT TEST 25.45m DEPTH														

Partner of Construction and Development Services Inc.
Soil Quality Analysis Office.

Summary of Laboratory Test

PROJECT : Br 66 NR-5 Improvement
Location: PK 245+900
Table.2

Elevation: 15.96 m
E: 0331290, N: 1413450

DATE : 28/06/2013
TESTED BY : Mr. Chea Sery Vuith

Boring No	Sample	Depth(m)		SPT - N Value, Every 150Cm Blows / 300mm				Soil description	Unified Clasification	NMC W (%)	Bulk density γ_w (g/cm^3)	Dry density γ_d (g/cm^3)	Specific gravity γ_s (g/cm^3)	Atterberg limit			Grain size			Unconf. Strength q_u (kg/cm^2)	Shear Strength	
		From	To	N1	N2	N3	N							LL (%)	PL (%)	PI (%)	Clay and Silt %	Sand %	Gravel %		Cohesion Kpa	Friction Angle Degree (°)
BH.10	D1	1.00	1.45	3	7	7	14	Stiff brownish, dark brown, yellowish CLAY with Sand or Sandy CLAY (2.00~3.00m)	CL	11.80				46.20	15.85	30.35	63.40	29.40	7.20	-	-	
	D2	2.00	2.45	5	7	8	15			11.56				41.00	15.82	25.18	65.58	31.03	3.39	-	-	
	D3	3.00	3.45	4	4	5	9			14.23				32.20	15.19	17.01	70.70	17.86	11.44	-	-	
	D4	4.00	4.45	4	5	6	11			14.86				29.10	16.33	12.77	75.31	21.88	2.81	-	-	
	D5	5.00	5.45	3	4	6	10	Stiff to very stiff brownish, yellowish CLAY or CLAY with Sand	CL	15.85				36.70	18.19	18.51	86.58	13.42	0.00	-	-	
	D6	6.00	6.45	3	4	6	10			17.44				35.90	14.18	21.72	86.59	13.41	0.00	-	-	
	D7	7.00	7.45	3	5	5	10			17.31				35.60	16.28	19.32	73.76	24.98	1.26	-	-	
	D8	8.00	8.45	5	4	4	8			15.32				33.60	15.49	18.11	77.60	21.67	0.73	-	-	
	D9	9.00	9.45	4	5	5	10			14.02				35.00	15.10	19.90	74.16	21.85	3.99	-	-	
	D10	10.00	10.45	4	6	10	16			16.58	2.217			46.60	17.51	29.09	87.60	12.40	0.00	587.823	293.91	
	D11	11.00	11.45	4	6	7	13			16.36			2.597	42.60	16.75	25.85	84.90	14.18	0.92	-	-	
	D12	12.00	12.45	5	9	15	24			16.01				35.90	12.01	23.89	83.12	16.41	0.47	-	-	
	D13	13.00	13.45	8	11	16	27			14.97				32.90	15.80	17.10	84.95	15.05	0.00	-	-	
	D14	14.00	14.45	6	8	9	17	Medium dense brownish, yellowish, light gray Clayey fine to medium SAND	CL	14.49				26.70	12.33	14.37	43.48	56.52	0.00	-	-	
	D15	15.00	15.45	6	7	8	15			15.52			2.644	27.20	12.44	14.76	42.35	57.55	0.10	-	-	
	D16	16.00	16.45	8	12	14	26			14.02				26.50	13.22	13.28	38.93	61.07	0.00	-	-	
	D17	17.00	17.45	6	10	13	23			13.97				25.60	11.54	14.06	30.18	68.43	1.39	-	-	
	D18	18.00	18.45	7	11	14	25	Very stiff brownish, yellowish, grayish CLAY or CLAY with Sand	CL	18.23	2.024			32.10	15.80	16.30	88.78	11.22	0.00	708.072	354.04	
	D19	19.00	19.45	7	10	14	24			14.50			2.639	37.00	15.66	21.34	78.10	21.90	0.00	-	-	
	D20	20.00	20.45	19	23	30	53	Very dense reddish-gray Clayey SAND with Gravel	SC	9.84				24.60	11.54	13.06	24.26	55.59	20.15	-	-	
	D21	21.00	21.45	11	17	30	47	Very stiff to hard brownish, yellowish, grayish CLAY with Sand or Sandy CLAY	CL	14.68	2.129			34.20	16.66	17.54	76.39	23.61	0.00	296.338	148.17	
	D22	22.00	22.45	10	15	19	34			13.94				31.60	15.92	15.68	67.30	31.77	0.93	-	-	
	D23	23.00	23.45	4	11	17	28			15.82				37.10	16.15	20.95	84.57	15.43	0.00	-	-	
	D24	24.00	24.45	8	15	22	37			14.23				30.40	17.60	12.80	57.99	31.71	10.30	-	-	
	D25	25.00	25.45	11	14	19	33			16.41				34.60	18.98	15.62	86.65	12.62	0.73	-	-	
								END of SPT Test 25.45m Depth														

Partner of Construction and Development Services Inc.
Soil Quality Analysis Office.

Summary of Laboratory Test

PROJECT : Br 68 NR-5 Improvement
Location: PK 255+500
Table.2

Elevation: 13.29 m
E: 0325642, N: 1421288

DATE : 28/06/2013
TESTED BY : Mr. Chea Sery Vuth

Boring No	Sample	Depth(m)		SPT - N Value, Every 150Cm Blows / 300mm				Soil description	Unified Clasification	NMC W (%)	Bulk density γ_w (g/cm^3)	Dry density γ_d (g/cm^3)	Specific gravity γ_s (g/cm^3)	Atterberg limit			Grain size			Unconf. Strength q_u (kg/cm^2)	Shear Strength	
		From	To	N1	N2	N3	N							LL (%)	PL (%)	PI (%)	Clay and Silt %	Sand %	Gravel %		Cohesion Kpa	Friction Angle Degree (°)
BH.11	D1	1.00	1.45	1	2	3	5	Firm reddish-gray, grayish Sandy CLAY	CL	21.82				40.20	17.09	23.11	57.61	40.83	1.56	-	-	
	D2	2.00	2.45	1	2	3	5			22.70				36.40	17.92	18.48	64.91	35.09	0.00	-	-	
	D3	3.00	3.45	3	4	8	12	Medium dense grayish Clayey GRAVEL with Sand	GC	12.68				27.60	14.54	13.06	36.88	30.95	32.17	-	-	
	D4	4.00	4.45	3	5	5	10	Firm to stiff grayish, light brown CLAY with Sand or Sandy CLAY	CL	20.50				37.60	17.95	19.65	87.56	12.30	0.14	-	-	
	D5	5.00	5.45	2	3	4	7			22.20				37.60	17.83	19.77	63.10	36.90	0.00	-	-	
	D6	6.00	6.45	2	5	5	10			23.52				39.50	17.41	22.09	70.48	29.52	0.00	-	-	
	D7	7.00	7.45	2	2	3	5	Loose grayish Clayey fine SAND	SC	22.68				22.80	11.56	11.24	36.94	62.83	0.23	-	-	
	D8	8.00	8.45	3	4	5	9	Stiff light brown, brownish CLAY (upper) or Sandy CLAY (lower)	CH	26.55				51.40	19.96	31.44	91.72	8.28	0.00	-	-	
	D9	9.00	9.45	3	4	6	10			25.35	1.930			53.40	20.82	32.58	68.57	31.43	0.00	212.187	106.09	
	D10	10.00	10.45	3	3	7	10	Stiff to very stiff brownish, yellowish-brown, grayish CLAY or CLAY wirh Sand	CL	23.53			2.648	36.40	19.89	16.51	96.71	3.29	0.00	-	-	
	D11	11.00	11.45	5	5	7	12			21.91				41.60	15.88	25.72	94.88	5.12	0.00	-	-	
	D12	12.00	12.45	4	5	9	14			21.35	2.014			35.70	13.88	21.82	96.74	3.26	0.00	318.503	159.25	
	D13	13.00	13.45	3	5	6	11			19.63				32.00	14.38	17.62	93.17	6.83	0.00	-	-	
	D14	14.00	14.45	4	6	9	15			18.68			2.657	32.20	11.94	20.26	77.36	22.64	0.00	-	-	
	D15	15.00	15.45	4	5	6	11			21.80				31.60	13.43	18.17	88.08	11.92	0.00	-	-	
	D16	16.00	16.45	4	6	9	15			20.69				33.70	14.21	19.49	76.43	22.74	0.83	-	-	
	D17	17.00	17.45	5	7	9	16			19.47				32.30	14.91	17.39	82.48	16.66	0.86	-	-	
	D18	18.00	18.45	7	10	17	27			20.47	2.088			40.80	17.58	23.22	96.20	3.80	0.00	417.485	208.74	
	D19	19.00	19.45	5	6	8	14			22.18			2.625	38.00	15.76	22.24	89.02	10.98	0.00	-	-	
	D20	20.00	20.45	7	15	15	30	Very stiff to hard grayish, yellowish, brownish CLAY with Sand (upper and middle) or CLAY (lower)	CL	19.80				36.80	18.86	17.94	75.44	24.56	0.00	-	-	
	D21	21.00	21.45	6	11	15	26			19.22				34.40	16.45	17.95	73.89	24.94	1.17	-	-	
	D22	22.00	22.45	11	15	20	35			18.53				38.20	14.37	23.83	73.72	26.28	0.00	-	-	
	D23	23.00	23.45	10	12	21	33			18.99				38.00	18.08	19.92	81.76	16.27	1.97	-	-	
	D24	24.00	24.45	12	17	23	40			20.32				39.00	16.44	22.56	90.34	9.66	0.00	-	-	
	D25	25.00	25.45	14	19	25	44			19.76				45.80	19.29	26.51	84.91	14.20	0.89	-	-	
								END OF SPT TEST 25.45m DEPTH														

Partner of Construction and Development Services Inc.
Soil Quality Analysis Office.

Summary of Laboratory Test

PROJECT : Br 75 NR-5 Improvement
Location: PK 273+300
Elevation: 11.99 m
E: 0318011, N: 1437142
DATE : 28/06/2013
TESTED BY : Mr. Chea Sery Vuth

Table.2

Boring No	Sample	Depth(m)		SPT - N Value, Every 150Cm Blows / 300mm				Soil description	Unified Clasification	NMC W (%)	Bulk density γ_w (g/cm^3)	Dry density γ_d (g/cm^3)	Specific gravity γ_s (g/cm^3)	Atterberg limit			Grain size			Unconf. Strength q_u (kg/cm^2)	Shear Strength	
		From	To	N1	N2	N3	N							LL (%)	PL (%)	PI (%)	Clay and Silt %	Sand %	Gravel %		Cohesion Kpa	Friction Angle Degree (°)
BH.12	D1	1.00	1.45	3	4	7	11	Stiff to soft dark gray organic CLAY with Sand or Sandy CLAY	CL	22.00				40.80	16.58	24.22	73.17	22.37	4.46	-	-	
	D2	2.00	2.45	2	2	1	3			18.70				31.50	15.98	15.52	52.54	45.07	2.39	-	-	
	D3	3.00	3.45	3	4	5	9	Firm to very stiff reddish-gray, yellowish-red, dark brown CLAY with Sand or CLAY	CH	24.57				57.80	15.74	42.06	84.13	15.87	0.00	-	-	
	D4	4.00	4.45	4	3	6	9			21.47				39.20	16.88	22.32	69.57	30.43	0.00	-	-	
	D5	5.00	5.45	2	3	4	7			22.10				36.60	16.79	19.81	83.53	15.88	0.59	-	-	
	D6	6.00	6.45	2	3	5	8			23.81				43.60	17.82	25.78	94.96	4.96	0.08	-	-	
	D7	7.00	7.45	3	5	7	12		CL	20.48				41.50	17.50	24.00	86.62	9.39	3.99	-	-	
	D8	8.00	8.45	3	6	7	13			19.79				41.50	15.31	26.19	83.61	15.50	0.89	-	-	
	D9	9.00	9.45	4	6	9	15			20.36				39.60	16.26	23.34	90.75	9.25	0.00	-	-	
	D10	10.00	10.45	4	9	13	22			16.72	2.147			38.00	18.16	19.84	70.06	26.16	3.78	215.803	107.90	
	D11	11.00	11.45	5	7	10	17	Medium dense grayish, brownish-gray, light gray Clayey fine to coarse SAND 16.00~17.00m, Sandy CLAY	SC	17.66				28.30	11.88	16.42	39.17	60.83	0.00	-	-	
	D12	12.00	12.45	4	6	8	14			17.36			2.643	28.10	12.50	15.60	38.59	61.32	0.09	-	-	
	D13	13.00	13.45	4	5	5	10			21.58				26.60	12.87	13.73	23.19	76.81	0.00	-	-	
	D14	14.00	14.45	5	6	8	14			20.24				22.80	11.75	11.05	26.67	73.33	0.00	-	-	
	D15	15.00	15.45	5	10	8	18			20.56				-	-	-	15.36	84.64	0.00	-	-	
	D16	16.00	16.45	9	8	6	14			16.89				27.70	13.53	14.17	50.41	49.59	0.00	-	-	
	D17	17.00	17.45	6	19	11	30			18.02			2.668	27.70	14.29	13.41	35.09	61.77	3.14	-	-	
	D18	18.00	18.45	8	12	16	28			20.43				23.30	11.26	12.04	34.03	65.97	0.00	-	-	
	D19	19.00	19.45	8	12	28	40	Very stiff to hard grayish, brownish-gray CLAY with Sand or CLAY 21.00~22.00m, Snady CLAY	CL	21.13				39.50	15.92	23.58	89.53	10.47	0.00	-	-	
	D20	20.00	20.45	8	12	14	26			20.24			2.647	41.80	16.43	25.37	83.71	16.29	0.00	-	-	
	D21	21.00	21.45	8	12	15	27			18.80				43.00	16.66	26.34	57.17	42.61	0.22	-	-	
	D22	22.00	22.45	8	13	17	30			19.31	2.096			41.50	16.01	25.49	73.31	26.69	0.00	110.297	55.15	
	D23	23.00	23.45	10	15	15	30			17.41				36.30	17.19	19.11	86.46	13.54	0.00	-	-	
	D24	24.00	24.45	9	17	20	37			18.99	2.239			40.80	15.87	24.93	90.54	9.46	0.00	338.381	169.19	
	D25	25.00	25.45	13	18	24	42			17.59				38.30	16.28	22.02	80.71	19.29	0.00	-	-	
								END of SPT Test 25.45m Depth														

APPENDIX 6-12

CALCULATED SOIL PARAMETER

IN THE MIDDLE SECTION

Soil Parameters for Br. 42

Depth (m)	Soil Type	USCS	LL(%)	PI	γt (t/m3)	δv (t/m2)	C (kPa)	φ (°)
~ 1.00	Clayey Sand	SC			1.7	0.51		32
2.00	Clayey Sand	SC	30.60	18.86	1.7	2.21		34
3.00	Clayey Sand	SC	31.00	18.25	1.7	3.91		< 31
4.00	Sandy Clay	CL	44.00	28.77	1.8	4.69	130	
5.00	Sandy Clay	CL	28.40	16.33	1.7	5.46	50	
6.00	Sandy Clay	CL	28.40	15.74	1.8	6.19	100	
7.00	Sandy Clay	CL	30.20	18.21	1.7	6.96	50	
8.00	Sandy Clay	CL	30.60	16.92	1.8	7.69	150	
9.00	Sandy Clay	CL	24.40	11.39	1.8	8.49	90	
10.00	Sandy Clay	CL	24.30	12.39	1.8	9.29	55	
11.00	Sandy Clay	CL	24.10	11.36	1.8	10.09	80	
12.00	Sandy Clay	CL	30.90	18.83	1.8	10.89	110	
13.00	Sandy Clay	CL	33.10	16.67	1.8	11.69	160	
14.00	Sandy Clay	CL	38.90	26.60	1.8	12.49	110	
15.00	Sandy Clay	CL	40.40	27.20	1.8	13.29	120	
16.00	Sandy Clay	CL	38.00	23.22	1.8	14.09	110	
17.00	Clay with Sand	CL	32.00	17.96	1.8	14.89	190	
18.00	Clay with Sand	CL	32.00	18.99	1.8	15.69	200<	
19.00	Clay with Sand	CL	30.80	18.91	1.8	16.49	200<	
20.00	Clayey Sand	SC	27.80	14.59	1.9	17.32		35
21.00	Sandy Clay	CL	27.50	15.17	1.8	18.19	170	
22.00	Sandy Clay	CL	26.00	14.88	1.8	18.99	200<	
23.00	Clayey Sand	SC	28.00	15.54	1.9	19.82		34
24.00	Clayey Sand	SC	32.40	19.27	1.9	20.72		38
25.00	Clayey Sand	SC	32.40	20.34	1.9	21.62		35
25.45	Clayey Sand	SC	31.20	18.79	1.9	22.52		36

Soil Parameters for Br. 44

Depth (m)	Soil Type	USCS	LL(%)	PI	γt (t/m3)	δv (t/m2)	C (kPa)	φ (°)
~ 2.00	Silty Sand	SM	19.00	6.20	1.7	2.21		33
3.00	Silty Sand	SM	20.40	5.85	1.7	3.91		< 31
4.00	Sandy Clay	CL	33.70	19.64	1.7	5.61	50	
5.00	Sandy Clay	CL	32.80	15.08	1.8	7.34	60	
6.00	Sandy Clay	CL	32.60	18.96	1.7	9.11	50	
7.00	Sandy Clay	CL	20.20	5.04	1.6	10.48	10	
8.00	Clayey Sand	SC	27.10	13.62	1.7	11.11		34
9.00	Sandy Clay	CL	26.20	11.49	1.7	11.81	35	
10.00	Sandy Clay	CL	27.20	13.29	1.7	12.51	40	
11.00	Sandy Clay	CL	34.20	16.61	1.8	13.24	70	
12.00	Sandy Clay	CL	27.20	14.86	1.8	14.04	110	
13.00	Sandy Clay	CL	26.70	12.15	1.7	14.81	50	
14.00	Sandy Clay	CL	29.20	14.15	1.8	15.54	60	
15.00	Sandy Clay	CL	28.00	11.72	1.8	16.34	150	
16.00	Clayey Sand	SC	22.90	8.49	1.7	17.11		34
17.00	Clayey Sand	SC	21.80	8.80	1.9	17.87		38<
18.00	Clayey Sand	SC	25.00	11.75	1.9	18.77		36
19.00	Clayey Sand	SC	24.10	10.29	1.9	19.67		35
20.00	Clayey Sand	SC	34.40	20.67	1.7	20.51		35
21.00	Clayey Sand	SC	30.20	15.35	1.9	21.27		35
22.00	Sandy Clay	CL	25.20	11.74	1.8	22.14	200<	
23.00	Sandy Clay	CL	27.70	13.36	1.8	22.94	200<	
24.00	Sandy Clay	CL	27.20	13.45	1.8	23.74	130	
25.00	Sandy Clay	CL	27.10	14.01	1.8	24.54	140	
25.45	Sandy Clay	CL	26.60	12.93	1.8	25.34	200<	

Soil Parameters for Br. 47

Depth (m)	Soil Type	USCS	LL(%)	PI	γt (t/m3)	δv (t/m2)	C (kPa)	φ (°)
~ 2.00	Sandy Clay	CL	23.20	10.30	1.7	2.21	35	
3.00	Sandy Clay	CL	22.80	9.82	1.7	3.91	35	
4.00	Sandy Clay	CL	21.80	9.02	1.6	5.58	10	
5.00	Sand	SP~SC	21.50	9.07	1.7	7.21		31
6.00	Sand	SP~SC	-	-	1.7	8.71		34
7.00	Sand	SP~SC	-	-	1.7	9.41		31
8.00	Sand	SP~SC	-	-	1.7	10.11		32
9.00	Sand	SP~SC	-	-	1.7	10.81		31
10.00	Sandy Clay	CL	29.20	13.76	1.8	11.54	55	
11.00	Sandy Clay	CL	29.00	16.11	1.8	12.34	140	
12.00	Sandy Clay	CL	32.70	17.71	1.8	13.14	150	
13.00	Clay with Sand	CL	32.80	17.82	1.8	13.94	200<	
14.00	Clay with Sand	CL	38.80	19.88	1.8	14.74	200<	
15.00	Clay with Sand	CL	36.00	22.61	1.8	15.54	200<	
16.00	Silty Sand	SM	-	-	1.9	16.37		37
17.00	Clay with Sand	CL	38.90	19.67	1.8	17.24	200<	
18.00	Clay with Sand	CL	37.60	20.01	1.8	18.04	200<	
19.00	Clay with Sand	CL	36.60	17.94	1.8	18.84	200<	
20.00	Clayey Sand	SC	37.80	19.10	1.9	19.67		38<
21.00	Clayey Sand	SC	34.00	16.51	1.9	20.57		38<
22.00	Sandy Clay	CL	33.40	19.65	1.8	21.44	200<	
23.00	Sandy Clay	CL	33.00	18.07	1.8	22.24	200<	
24.00	Sandy Clay	CL	32.60	17.11	1.8	23.04	200<	
25.00	Sandy Clay	CL	34.20	16.86	1.8	23.84	200<	
25.45	Sandy Clay	CL	35.60	18.74	1.8	24.64	200<	

Soil Parameters for Br. 48

Depth (m)	Soil Type	USCS	LL(%)	PI	γt (t/m3)	δv (t/m2)	C (kPa)	φ (°)
~ 2.00	Sandy Clay	CL	23.40	11.84	1.7	2.21	35	
3.00	Sandy Clay	CL	24.60	12.35	1.8	3.94	180	
4.00	Silty Sand	SC	-	-	1.7	5.71		31
5.00	Sandy Clay	CL	27.20	12.11	1.7	7.41	35	
6.00	Sandy Clay	CL	47.00	28.48	1.7	9.11	50	
7.00	Sandy Clay	CL	45.90	29.96	1.8	10.84	70	
8.00	Sandy Clay	CL	27.80	14.98	1.8	12.64	100	
9.00	Sandy Clay	CL	37.30	18.54	1.8	14.44	90	
10.00	Sandy Clay	CL	37.30	18.91	1.8	16.24	85	
11.00	Sandy Clay	CL	39.00	25.68	1.8	17.44	70	
12.00	Clayey Sand	SC	37.30	21.43	1.7	18.21		34
13.00	Clayey Sand	SC	30.20	14.72	1.7	18.91		33
14.00	Clayey Sand	SC	36.40	22.53	1.7	19.61		32
15.00	Sandy Clay	CL	36.40	20.26	1.8	20.34	80	
16.00	Sandy Clay	CL	28.20	13.90	1.8	21.14	160	
17.00	Sandy Clay	CL	27.80	14.73	1.8	21.94	200<	
18.00	Sandy Clay	CL	26.80	13.37	1.8	22.74	200<	
19.00	Sandy Clay	CL	30.20	14.52	1.8	23.54	200<	
20.00	Sandy Clay	CL	30.30	14.42	1.8	24.34	200<	
21.00	Sandy Clay	CL	31.80	15.55	1.8	25.14	200<	
22.00	Sandy Clay	CL	33.50	17.47	1.8	25.94	200<	
23.00	Sandy Clay	CL	32.90	14.37	1.8	26.74	200<	
24.00	Sandy Clay	CL	34.20	21.47	1.8	27.54	200<	
25.00	Sandy Clay	CL	37.40	21.63	1.8	28.34	200<	
25.45	Sandy Clay	CL	37.80	22.51	1.8	29.14	200<	

Soil Parameters for Br. 50

Depth (m)	Soil Type	USCS	LL(%)	PI	γt (t/m3)	δv (t/m2)	C (kPa)	φ (°)
~ 2.00	Clayey Sand	SC	23.60	10.98	1.7	2.21		37
~ 3.00	Sandy Clay	CL	24.60	12.52	1.7	3.91	50	
~ 4.00	Sandy Clay	CL	30.20	14.79	1.8	5.94	60	
~ 5.00	Sandy Clay	CL	36.50	24.70	1.8	7.74	80	
~ 6.00	Sandy Clay	CL	26.60	12.06	1.8	9.54	110	
~ 7.00	Sandy Clay	CL	26.60	13.82	1.8	11.34	150	
~ 8.00	Sandy Clay	CL	30.40	14.00	1.8	13.14	100	
~ 9.00	Sandy Clay	CL	39.30	26.68	1.8	14.94	185	
~ 10.00	Clayey Sand	SC	22.50	10.38	1.7	15.81		34
~ 11.00	Clayey Sand	SC	23.10	11.36	1.9	16.57		35
~ 12.00	Clayey Sand	SC	35.60	22.01	1.9	17.47		36
~ 13.00	Sandy Clay	CL	47.00	28.28	1.8	18.34	200<	
~ 14.00	Clay with Sand	CL	46.80	29.07	1.8	19.14	130	
~ 15.00	Clay with Sand	CL	42.10	26.05	1.8	19.94	120	
~ 16.00	Clay with Sand	CL	28.60	16.48	1.8	20.74	110	
~ 17.00	Clay with Sand	CL	28.20	16.18	1.8	21.54	120	
~ 18.00	Clay with Sand	CL	35.20	23.64	1.8	22.34	170	
~ 19.00	Clayey Sand	SC	30.70	19.42	1.7	23.11		32
~ 20.00	Sandy Clay	CL	28.80	16.62	1.8	23.84	150	
~ 21.00	Sandy Clay	CL	29.10	14.64	1.8	24.64	200<	
~ 22.00	Sandy Clay	CL	32.80	19.13	1.8	25.44	200<	
~ 23.00	Sandy Clay	CL	34.80	19.16	1.8	26.24	200<	
~ 24.00	Sandy Clay	CL	32.10	18.63	1.8	27.04	200<	
~ 25.00	Sandy Clay	CL	34.10	18.24	1.8	27.84	200<	
~ 25.45	Sandy Clay	CL	29.60	16.87	1.8	28.64	200<	

Soil Parameters for Br. 55

Depth (m)	Soil Type	USCS	LL(%)	PI	γt (t/m3)	δv (t/m2)	C (kPa)	φ (°)
~ 2.00	Clay	CL	48.40	32.29	1.8	2.34	60	
3.00	Clay	CL	45.00	28.92	1.7	4.11	40	
4.00	Clay	CL	46.00	30.65	1.6	5.78	20	
5.00	Clay	CL	25.20	13.35	1.6	7.38	20	
6.00	Sand	SP	-	-	1.8	9.04		35
7.00	Sand	SP	-	-	1.8	10.39		33
8.00	Sand	SP	-	-	1.8	11.19		33
9.00	Sandy Clay	CL	24.60	13.14	1.7	11.96	50	
10.00	Sandy Clay	CL	19.20	7.68	1.8	12.69	185	
11.00	Sandy Clay	CL	19.30	8.02	1.8	13.49	85	
12.00	Clayey Sand	SC	20.50	9.69	1.7	14.26		33
13.00	Clayey Sand	SC	18.90	7.83	1.7	14.96		33
14.00	Clayey Sand	SC	18.80	5.87	1.7	15.66		34
15.00	Clayey Sand	SC	23.30	7.42	1.7	16.36		34
16.00	Clay with Sand	CL	39.40	16.80	1.8	17.09	200<	
17.00	Clay with Sand	CL	35.10	20.83	1.8	17.89	135	
18.00	Clay with Sand	CL	35.40	23.67	1.8	18.69	135	
19.00	Clay with Sand	CL	29.30	17.11	1.8	19.49	100	
20.00	Clay with Sand	CL	26.60	15.46	1.8	20.29	130	
21.00	Clayey Sand	SC	20.80	8.90	1.7	21.06		33
22.00	Clay with Sand	CL	33.40	17.01	1.8	21.79	130	
23.00	Clayey Sand	SC	21.60	10.22	1.9	22.62		34
24.00	Sandy Clay	CL	37.20	21.57	1.8	23.49	140	
25.00	Clayey Sand	SC	49.20	33.25	1.9	24.32		33
25.45	Clay	CL	42.20	18.05	1.8	25.19	200<	

Soil Parameters for Br. 57

Depth (m)	Soil Type	USCS	LL(%)	PI	γt (t/m3)	δv (t/m2)	C (kPa)	φ (°)
~ 2.00	Clay with Sand	CL	35.30	16.60	1.7	2.21	50	
3.00	Clay with Sand	CL	35.30	17.89	1.8	3.94	90	
4.00	Clay with Sand	CL	48.40	31.66	1.8	5.74	85	
5.00	Clay with Sand	CL	49.20	34.35	1.8	7.54	100	
6.00	Clay with Sand	CL	36.60	20.92	1.8	9.34	130	
7.00	Clay with Sand	CL	36.00	19.28	1.8	11.14	200<	
8.00	Clay with Sand	CL	29.40	16.89	1.8	12.94	160	
9.00	Clay with Sand	CL	30.40	12.85	1.8	14.74	185	
10.00	Clay with Sand	CL	32.00	16.88	1.8	16.54	185	
11.00	Clay with Sand	CL	22.50	10.50	1.8	18.34	200<	
12.00	Clayey Sand	SC	22.30	8.34	1.9	20.17		34
13.00	Clayey Sand	SC	21.20	9.08	1.9	22.07		34
14.00	Clayey Sand	SC	22.20	9.65	1.7	21.31		34
15.00	Clayey Sand	SC	21.30	9.60	1.7	23.01		34
16.00	Clayey Sand	SC	28.40	16.42	1.7	24.71		33
17.00	Clayey Sand	SC	28.10	13.46	1.9	29.67		34
18.00	Clayey Sand	SC	26.10	11.02	1.9	31.57		34
19.00	Clay with Sand	CL	36.60	19.58	1.8	33.44	200<	
20.00	Clay with Sand	CL	37.20	20.98	1.8	35.24	200<	
21.00	Clay with Sand	CL	35.80	20.37	1.8	37.04	200<	
22.00	Clay with Sand	CL	36.00	21.29	1.8	38.84	200<	
23.00	Clay with Sand	CL	36.40	19.33	1.8	40.64	200<	
24.00	Clay with Sand	CL	36.70	20.69	1.8	42.44	200<	
25.00	Clay with Sand	CL	33.80	16.99	1.8	44.24	200<	
25.45	Clay with Sand	CL	33.80	17.39	1.8	46.04	200<	

Soil Parameters for Br. 58

Depth (m)	Soil Type	USCS	LL(%)	PI	γt (t/m3)	δv' (t/m2)	C (kPa)	φ (°)
~ 2.00	Clay with Sand	CL	29.40	16.57	1.8	2.34	60	
3.00	Clay with Sand	CL	28.40	13.24	1.7	4.11	50	
4.00	Clayey Sand	SC	23.00	10.84	1.7	5.11		32
5.00	Clayey Sand	SC	23.30	9.93	1.7	5.81		32
6.00	Clayey Sand	SC	35.70	17.18	1.7	6.51		31
7.00	Clayey Sand	SC	-	-	1.7	7.21		32
8.00	Clay with Sand	CL	38.40	24.17	1.7	7.91	40	
9.00	Clay with Sand	CL	34.00	20.23	1.7	8.61	40	
10.00	Clay with Sand	CL	35.40	22.08	1.8	9.34	85	
11.00	Clay with Sand	CL	31.60	18.54	1.8	10.14	85	
12.00	Clay with Sand	CL	30.80	15.44	1.8	10.94	100	
13.00	Clay with Sand	CL	37.90	19.24	1.8	11.74	110	
14.00	Clay with Sand	CL	26.20	13.12	1.8	12.54	170	
15.00	Clay with Sand	CL	29.20	15.28	1.8	13.34	150	
16.00	Clay with Sand	CL	41.20	23.87	1.8	14.14	160	
17.00	Clay with Sand	CL	36.10	21.47	1.8	14.94	150	
18.00	Clay with Sand	CL	29.20	15.33	1.8	15.74	185	
19.00	Clayey Sand	SC	27.20	14.69	1.9	16.57		35
20.00	Sandy Clay	CL	28.40	14.77	1.8	17.44	160	
21.00	Clayey Sand	SC	23.40	7.56	1.7	18.21		32
22.00	Clayey Sand	SC	26.50	12.77	1.7	18.91		32
23.00	Clayey Sand	SC	26.20	12.59	1.7	19.61		34
24.00	Clayey Sand	SC	-	-	1.7	20.31		34
25.00	Clayey Sand	SC	-	-	1.7	21.01		34
25.45	Clayey Sand	SC	-	-	1.7	21.71		34

Soil Parameters for Br. 59

Depth (m)	Soil Type	USCS	LL(%)	PI	γt (t/m3)	δv (t/m2)	C (kPa)	φ (°)
~ 2.00	Clay with Sand	CL	46.20	28.71	1.7	2.21	50	
3.00	Clay with Sand	CL	42.10	23.22	1.8	3.94	70	
4.00	Clayey Sand	SC	25.20	11.06	1.7	5.71		34
5.00	Clayey Sand	SC	25.10	11.10	1.7	7.41		33
6.00	Clayey Sand	SC	23.60	10.39	1.7	9.11		33
7.00	Clay with Sand	CL	47.00	29.87	1.8	10.84	120	
8.00	Clay with Sand	CL	37.60	20.94	1.8	12.64	130	
9.00	Clay with Sand	CL	43.10	24.62	1.8	14.44	90	
10.00	Clay with Sand	CL	37.10	23.70	1.8	16.24	150	
11.00	Clay with Sand	CL	37.70	20.47	1.8	18.04	120	
12.00	Clay with Sand	CL	35.20	18.12	1.7	19.81	50	
13.00	Clay with Sand	CL	34.90	17.86	1.8	21.54	140	
14.00	Clay with Sand	CL	30.10	15.11	1.8	23.34	110	
15.00	Clay with Sand	CL	23.60	10.81	1.8	25.14	90	
16.00	Clayey Sand	SC	-	-	1.7	26.76		33
17.00	Clayey Sand	SC	25.30	13.39	1.7	27.46		34
18.00	Clayey Sand	SC	23.40	10.19	1.7	28.16		34
19.00	Sandy Clay	CL	30.60	13.15	1.8	28.89	200<	
20.00	Sandy Clay	CL	33.70	18.99	1.8	29.69	200<	
21.00	Sandy Clay	CL	38.60	25.03	1.8	30.49	200<	
22.00	Sandy Clay	CL	33.20	18.28	1.8	31.29	200<	
23.00	Sandy Clay	CL	30.40	12.43	1.8	32.09	200<	
24.00	Sandy Clay	CL	31.20	17.29	1.8	32.89	180	
25.00	Sandy Clay	CL	32.50	18.32	1.8	33.69	200<	
25.45	Sandy Clay	CL	32.20	18.93	1.8	34.49	200<	

Soil Parameters for Br. 66

Depth (m)	Soil Type	USCS	LL(%)	PI	γt (t/m3)	δv (t/m2)	C (kPa)	φ (°)
~ 2.00	Clay with Sand	CL	46.2	30.35	1.8	2.34	100	
3.00	Clay with Sand	CL	41	25.18	1.8	4.14	110	
4.00	Clay with Sand	CL	32.2	17.01	1.8	5.94	60	
5.00	Clay	CL	29.1	12.77	1.8	7.74	80	
6.00	Clay	CL	36.7	18.51	1.8	9.54	70	
7.00	Clay	CL	35.9	21.72	1.8	11.34	70	
8.00	Clay	CL	35.6	19.32	1.8	13.14	70	
9.00	Clay	CL	33.6	18.11	1.8	14.94	55	
10.00	Clay	CL	35	19.9	1.8	16.74	70	
11.00	Clay	CL	46.6	29.09	1.8	18.54	110	
12.00	Clay	CL	42.6	25.85	1.8	20.34	90	
13.00	Clay	CL	35.9	23.89	1.8	22.14	170	
14.00	Clay	CL	32.9	17.1	1.8	23.94	190	
15.00	Clayey Sand	SC	26.7	14.37	1.7	25.71		32
16.00	Clayey Sand	SC	27.2	14.76	1.7	27.41		32
17.00	Clayey Sand	SC	26.5	13.28	1.7	29.11		32
18.00	Clayey Sand	SC	25.6	14.06	1.7	30.81		33
19.00	Clay	CL	32.1	16.3	1.8	32.54	180	
20.00	Clay	CL	37	21.34	1.8	34.34	170	
21.00	Clayey Sand	SC	24.6	13.06	1.9	36.17		35
22.00	Sandy Clay	CL	34.2	17.54	1.8	38.04	200<	
23.00	Sandy Clay	CL	31.6	15.68	1.8	39.84	200<	
24.00	Sandy Clay	CL	37.1	20.95	1.8	41.64	200	
25.00	Sandy Clay	CL	30.4	12.8	1.8	43.44	200<	
25.45	Sandy Clay	CL	34.6	15.62	1.8	45.24	200<	

Soil Parameters for Br. 68

Depth (m)	Soil Type	USCS	LL(%)	PI	γt (t/m3)	δv' (t/m2)	C (kPa)	φ (°)
~ 2.00	Sandy Clay	CL	40.20	23.11	1.7	1.7	35	
3.00	Sandy Clay	CL	36.40	18.48	1.7	3.4	35	
4.00	layey Gravel with Sar	GC	27.60	13.06	1.7	5.1		37
5.00	Clay with Sand	CL	37.60	19.65	1.8	7.23	70	
6.00	Clay with Sand	CL	37.60	19.77	1.7	9	50	
7.00	Clay with Sand	CL	39.50	22.09	1.8	11.33	70	
8.00	Clayey Sand	SC	22.80	11.24	1.7	13.1		31
9.00	Clay	CH	51.40	31.44	1.8	14.83	60	
10.00	Sandy Clay	CH	53.40	32.58	1.8	16.63	70	
11.00	Clay	CL	36.40	16.51	1.8	18.43	70	
12.00	Clay	CL	41.60	25.72	1.8	20.23	85	
13.00	Clay	CL	35.70	21.82	1.8	22.03	100	
14.00	Clay	CL	32.00	17.62	1.8	23.83	80	
15.00	Clay with Sand	CL	32.20	20.26	1.8	25.63	110	
16.00	Clay with Sand	CL	31.60	18.17	1.8	27.43	80	
17.00	Clay with Sand	CL	33.70	19.49	1.8	29.23	110	
18.00	Clay with Sand	CL	32.30	17.39	1.8	31.03	110	
19.00	Clay	CL	40.80	23.22	1.8	32.83	190	
20.00	Clay	CL	38.00	22.24	1.8	34.63	100	
21.00	Clay with Sand	CL	36.80	17.94	1.8	36.43	200<	
22.00	Clay with Sand	CL	34.40	17.95	1.8	38.23	185	
23.00	Clay with Sand	CL	38.20	23.83	1.8	40.03	200<	
24.00	Clay with Sand	CL	38.00	19.92	1.8	41.83	200<	
25.00	Clay	CL	39.00	22.56	1.8	43.63	200<	
26.00	Clay	CL	45.80	26.51	1.8	45.43	200<	

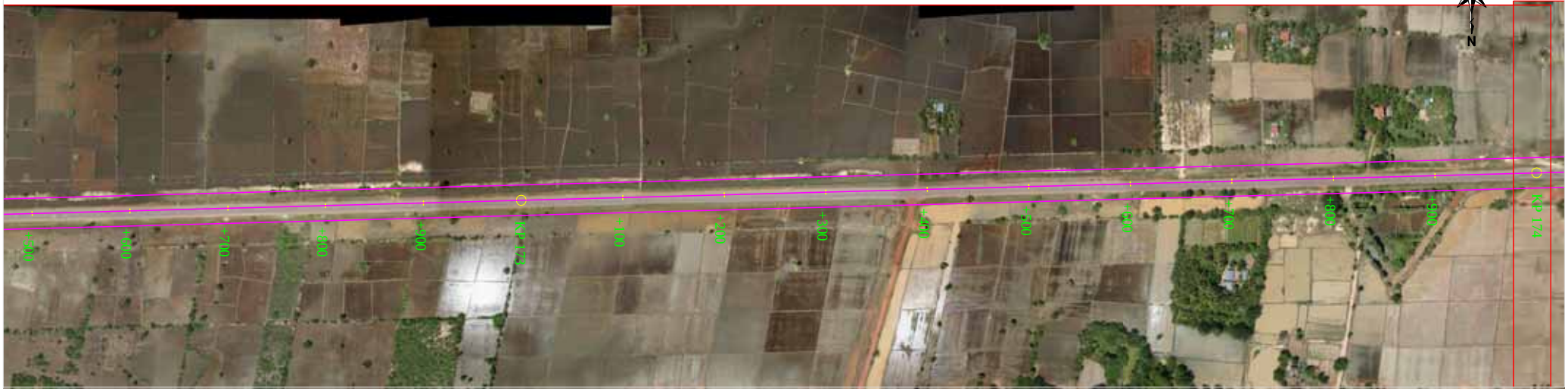
Soil Parameters for Br. 75

Depth (m)	Soil Type	USCS	LL(%)	PI	γt (t/m3)	δv (t/m2)	C (kPa)	φ (°)
~ 2.00	Clay with Sand	CL	40.80	24.22	1.8	2.34	80	
3.00	Sandy Clay	CL	31.50	15.52	1.6	4.08	20	
4.00	Clay	CH	57.80	42.06	1.8	5.74	60	
5.00	Clay	CL	39.20	22.32	1.8	7.54	60	
6.00	Clay	CL	36.60	19.81	1.7	9.21	50	
7.00	Clay	CL	43.60	25.78	1.8	9.94	55	
8.00	Clay	CL	41.50	24.00	1.8	10.74	85	
9.00	Clay	CL	41.50	26.19	1.8	11.54	90	
10.00	Clay	CL	39.60	23.34	1.8	12.34	110	
11.00	Clay	CL	38.00	19.84	1.8	13.14	150	
12.00	Clayey Sand	SC	28.30	16.42	1.7	13.91		33
13.00	Clayey Sand	SC	28.10	15.60	1.7	14.61		32
14.00	Clayey Sand	SC	26.60	13.73	1.7	15.31		31
15.00	Clayey Sand	SC	22.80	11.05	1.7	16.01		32
16.00	Clayey Sand	SC	-	-	1.7	16.71		33
17.00	Sandy Clay	CL	27.70	14.17	1.8	17.44	100	
18.00	Clayey Sand	SC	27.70	13.41	1.9	18.27		35
19.00	Clayey Sand	SC	23.30	12.04	1.7	19.11		34
20.00	Clay	CL	39.50	23.58	1.8	19.84	200<	
21.00	Clay with Sand	CL	41.80	25.37	1.8	20.64	185	
22.00	Sandy Clay	CL	43.00	26.34	1.8	21.44	190	
23.00	Clay with Sand	CL	41.50	25.49	1.8	22.24	200<	
24.00	Clay with Sand	CL	36.30	19.11	1.8	23.04	200<	
25.00	Clay	CL	40.80	24.93	1.8	23.84	200<	
26.00	Lean Clay	CL	38.30	22.02	1.8	24.64	200<	

APPENDIX 8-1

KEY PLAN OF NATIONAL ROAD NO.5

IN THE MIDDLE SECTION



MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP171+000~KP174+000)	Drawing No. KP - 1 Scale : A1: 1/2,000 A3: 1/4,000 Date :

A8-1

A8-2

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP174+000~KP177+000)	Drawing No. KP - 2 Scale : A1: 1/2,000 A3: 1/4,000 Date :

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP177+000~KP179+900)	Drawing No.	KP - 3
				Scale :	A1: 1/2,000 A3: 1/4,000
				Date :	

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP179+900~KP183+000)	Drawing No. KP - 4 Scale : A1: 1/2,000 A3: 1/4,000 Date :

A8-4

A8-5

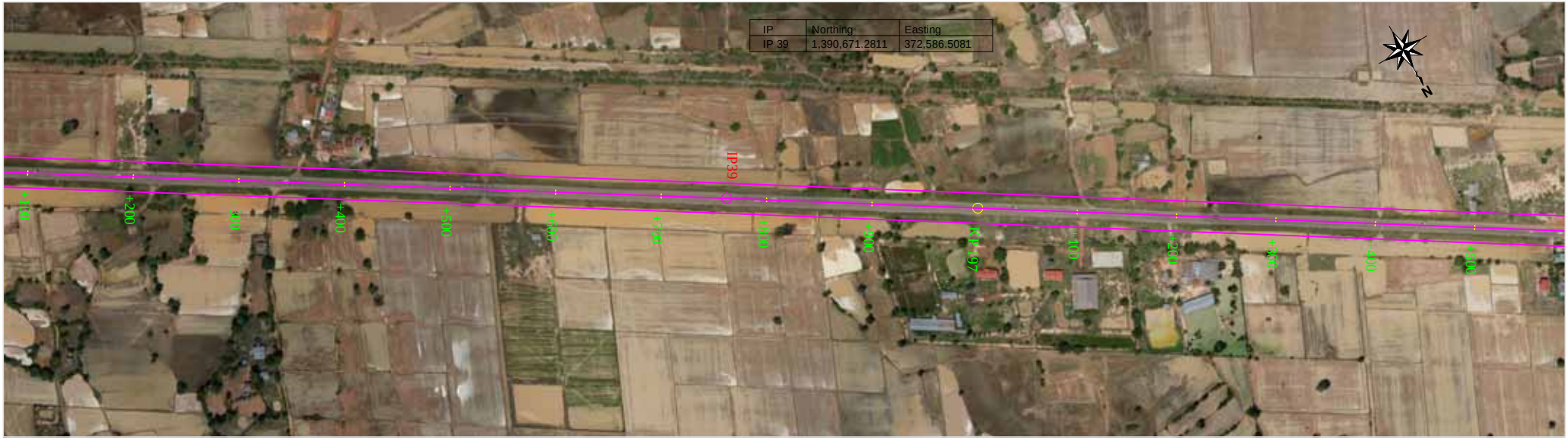
MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP183+000~KP186+200)	Drawing No. KP - 5 Scale : A1: 1/2,000 A3: 1/4,000 Date :

IP	Northing	Easting
IP 31	1,386,507.7897	380,799.2000
IP 32	1,386,956.8508	379,810.2581

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP186+200~KP189+100)	Drawing No. KP - 6 Scale : A1: 1/2,000 A3: 1/4,000 Date :

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP189+100~KP192+000)	Drawing No. KP - 7 Scale : A1: 1/2,000 A3: 1/4,000 Date :

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP192+000~KP194+800)	Drawing No.	KP - 8
				Scale :	A1: 1/2,000 A3: 1/4,000
				Date :	



IP	Northing	Easting
IP 39	1,390,671.2811	372,586.5081

A8-9

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP194+800~KP197+500)	Drawing No. KP -9 Scale : A1: 1/2,000 A3: 1/4,000 Date :

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP197+500~KP200+400)	Drawing No.	KP -10
				Scale :	A1: 1/2,000 A3: 1/4,000
				Date :	

A8-11

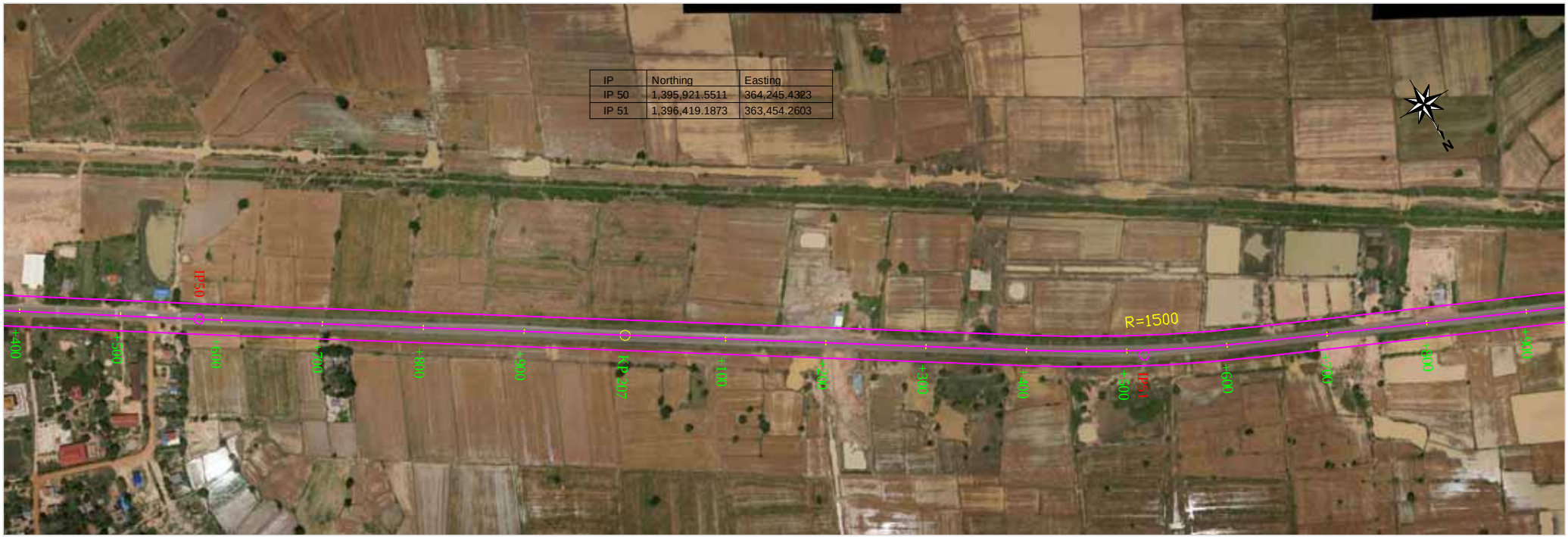
MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP200+400~KP203+400)	Drawing No. KP -11 Scale : A1: 1/2,000 A3: 1/4,000 Date :

A8-12

IP	Northing	Easting
IP 46	1,394,947.0369	365,792.5051

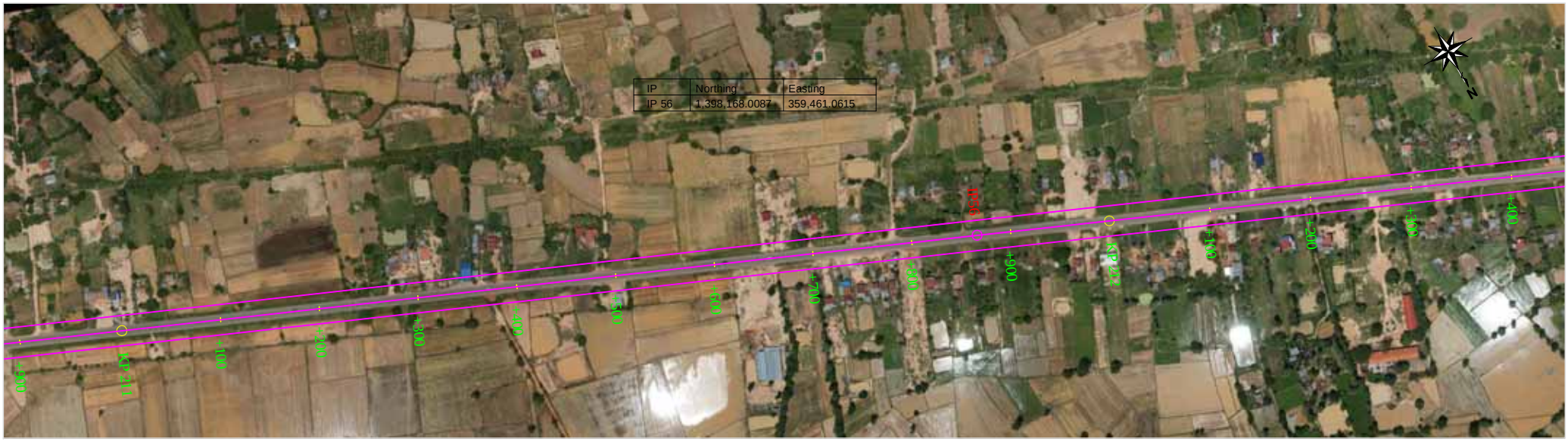
IP	Northing	Easting
IP 47	1,395,275.0853	365,273.3591
IP 48	1,395,803.8723	364,430.2859

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP203+400~KP206+400)	Drawing No.	KP -12
				Scale :	A1: 1/2,000 A3: 1/4,000
				Date :	



MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP206+400~KP209+400)	Drawing No. KP -13 Scale : A1: 1/2,000 A3: 1/4,000 Date :

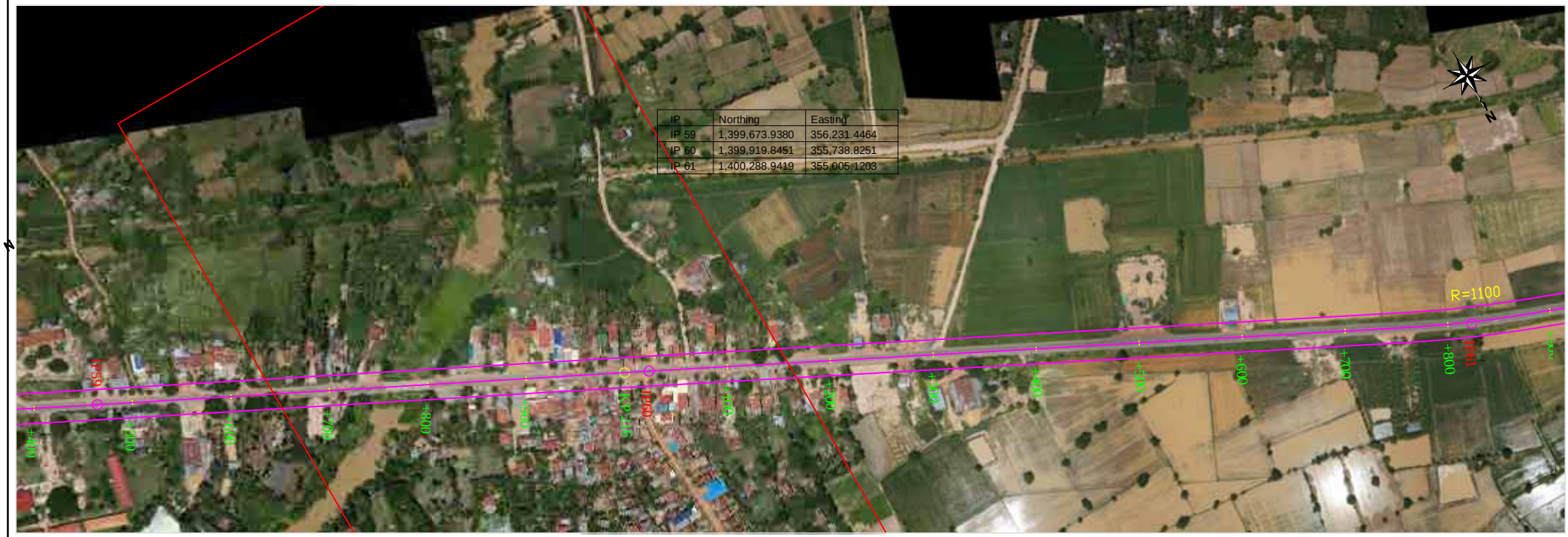
A8-13



MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP209+400~KP212+400)	Drawing No.	KP -14
				Scale :	A1: 1/2,000 A3: 1/4,000
				Date :	

IP	Northing	Easting
IP 57	1,398,458.9939	358,800.6295
IP 58	1,398,982.1210	357,608.8625

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP212+400~KP215+400)	Drawing No.	KP -15
				Scale :	A1: 1/2,000 A3: 1/4,000
				Date :	



IP	Northing	Easting
IP 59	1,399,673.9380	356,231.4464
IP 60	1,399,919.8451	355,738.8251
IP 61	1,400,288.9419	355,005.1203

IP	Northing	Easting
IP 62	1,400,531.7158	354,350.1475

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP215+400~KP218+400)	Drawing No.	KP -16
				Scale :	A1: 1/2,000 A3: 1/4,000
				Date :	

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP218+400~KP221+400)	Drawing No. KP -17 Scale : A1: 1/2,000 A3: 1/4,000 Date :

A8-18

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP221+400~KP224+400)	Drawing No. KP -18 Scale : A1: 1/2,000 A3: 1/4,000 Date :

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP224+400~KP227+200)	Drawing No. KP -19 Scale : A1: 1/2,000 A3: 1/4,000 Date :

IP	Northing	Easting
IP 81	1,405,071.8160	345,641.8116
IP 82	1,405,226.7565	344,989.2638

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP227+200~KP230+200)	Drawing No.	KP -20
				Scale :	A1: 1/2,000 A3: 1/4,000
				Date :	

A8-20

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP230+200~KP233+200)	Drawing No. KP -21 Scale : A1: 1/2,000 A3: 1/4,000 Date :

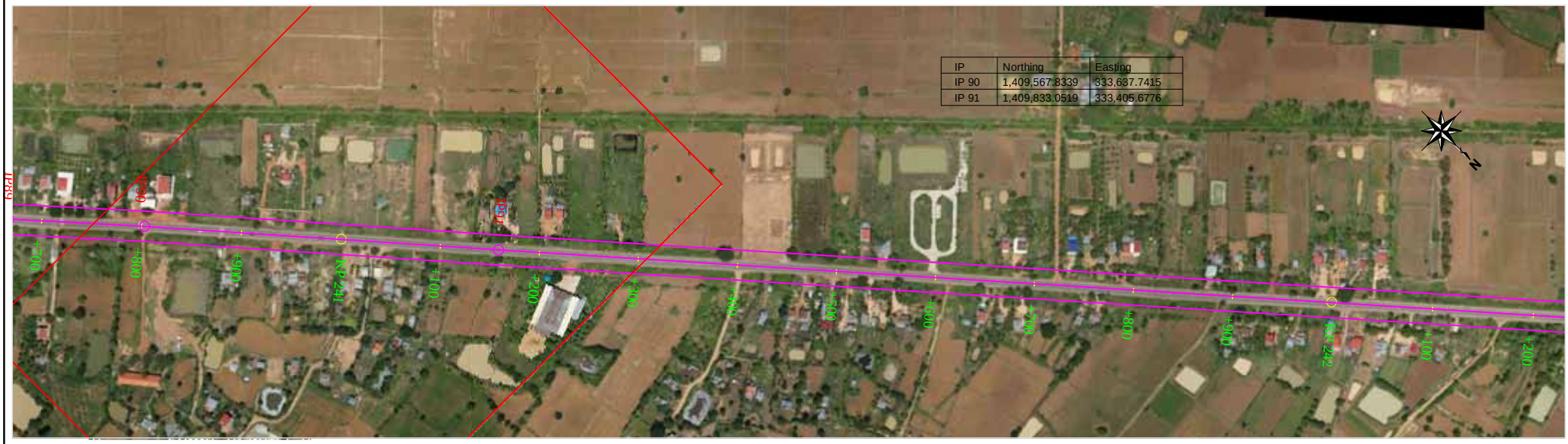
MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP233+200~KP236+200)	Drawing No.	KP -22
				Scale :	A1: 1/2,000 A3: 1/4,000
				Date :	

IP	Northing	Easting
IP 84	1,407,065.0663	337,268.6570
IP 85	1,407,305.2578	336,269.9954

IP	Northing	Easting
IP 86	1,408,394.3681	334,799.5453

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP236+200~KP239+200)	Drawing No.	KP -23
				Scale :	A1: 1/2,000 A3: 1/4,000
				Date :	

IP	Northing	Easting
IP 87	1,408,666.9170	334,434.3131
IP 88	1,409,134.1876	334,020.4314
IP 89	1,409,514.6993	333,686.3507



IP	Northing	Easting
IP 90	1,409,567.8339	333,637.7415
IP 91	1,409,833.0519	333,405.6776

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP239+200~KP242+200)	Drawing No.	KP -24
				Scale :	A1: 1/2,000 A3: 1/4,000
				Date :	

IP	Northing	Easting
IP 92	1,410,968.2352	332,405.3604
IP 93	1,411,200.5448	332,269.4220

IP	Northing	Easting
IP 94	1,412,281.4114	331,868.5347
IP 95	1,412,440.6020	331,811.1154
IP 96	1,412,597.6019	331,700.3898
IP 98	1,412,795.1317	331,551.3518
IP 99	1,413,162.5591	331,290.2760

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : **KEY PLAN** (KP242+200~KP245+200)	Drawing No. Scale : Date :	KP -25 A1: 1/2,000 A3: 1/4,000

IP	Northing	Easting
IP 100	1,413,393.2474	331,123.3678
IP 101	1,413,632.1446	330,955.7396
IP 102	1,413,986.7122	330,698.5915

IP	Northing	Easting
IP 103	1,414,543.6329	330,299.4493
IP 104	1,414,666.6006	330,209.7927

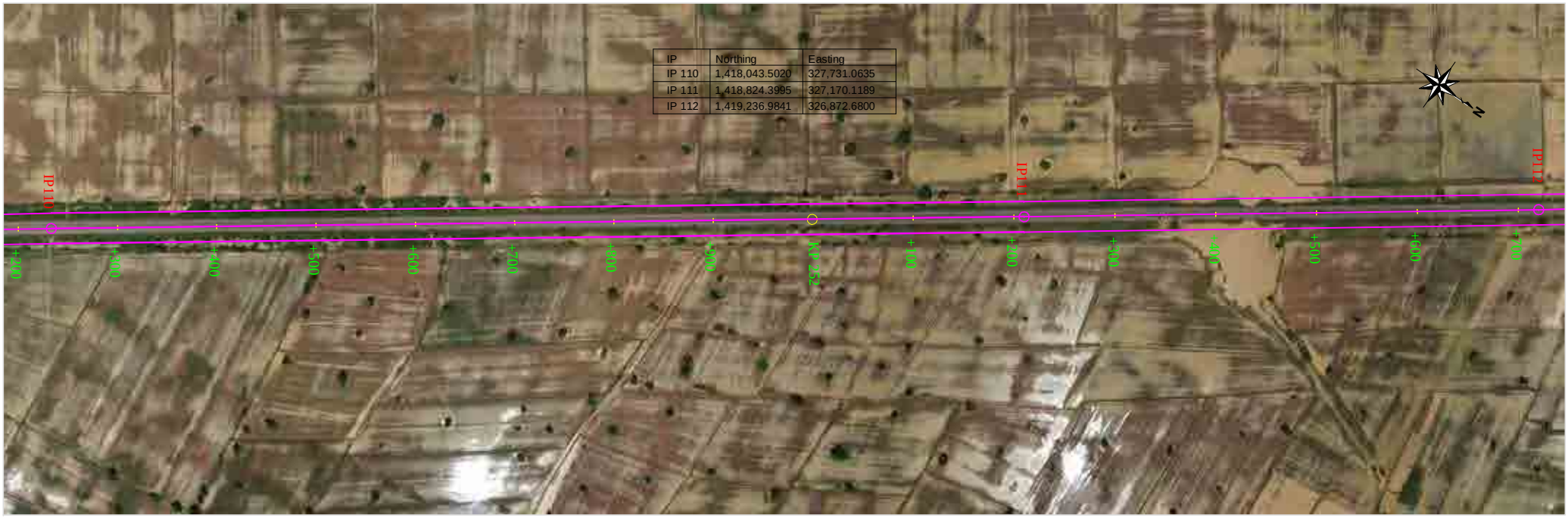
MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP245+200~KP248+200)	Drawing No.	KP -26
				Scale :	A1: 1/2,000 A3: 1/4,000
				Date :	

A8-26

IP	Northing	Easting
IP 105	1,415,946.6870	329,269.8378
IP 106	1,416,333.6207	328,983.4803
IP 107	1,416,518.5939	328,848.9440

IP	Northing	Easting
IP 108	1,416,888.6576	328,578.0080
IP 109	1,417,840.9556	327,878.2732

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP248+200~KP251+200)	Drawing No.	KP -27
				Scale :	A1: 1/2,000 A3: 1/4,000
				Date :	



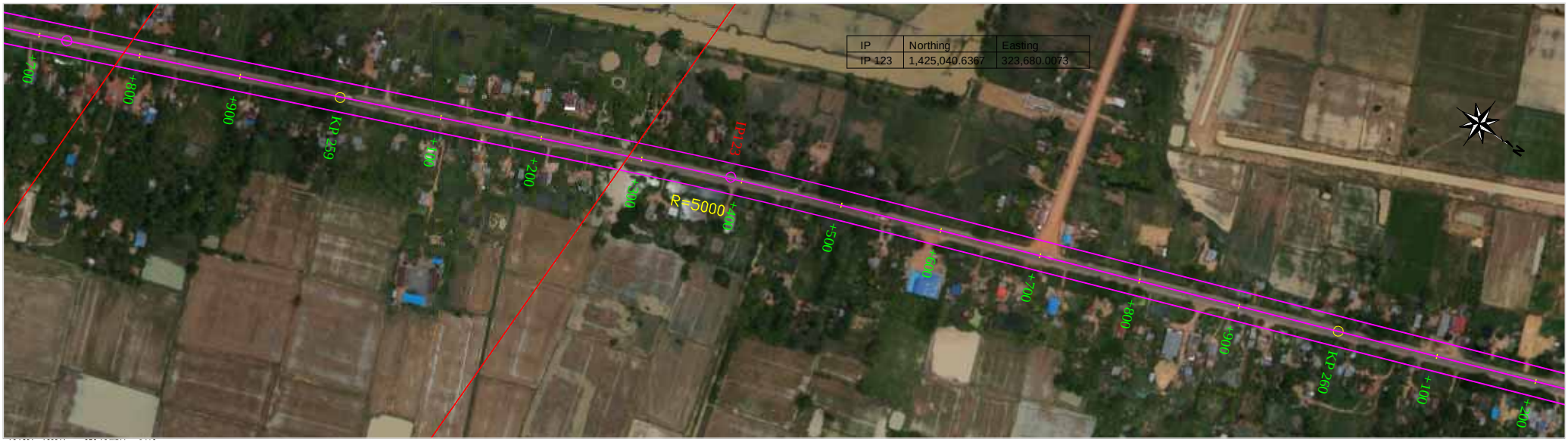
A8-28

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP251+200~KP254+200)	Drawing No.	KP -28
				Scale :	A1: 1/2,000 A3: 1/4,000
				Date :	

IP	Northing	Easting
IP 117	1,420,864.4375	325,733.0106
IP 118	1,421,628.8866	325,214.1144

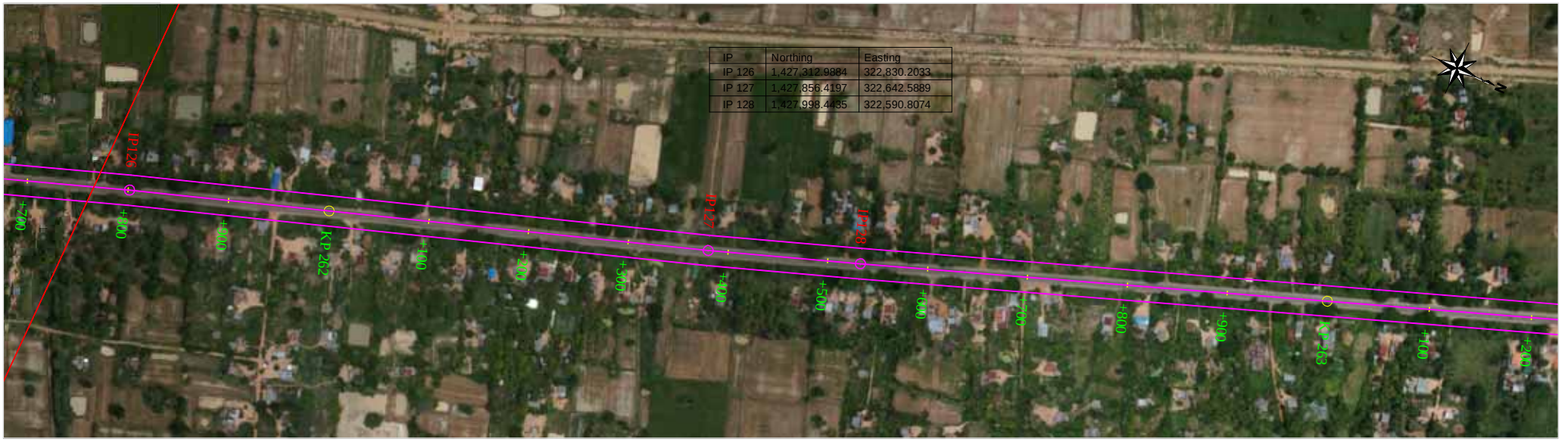
IP	Northing	Easting
IP 119	1,422,140.7190	324,948.2012

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP254+200~KP257+200)	Drawing No.	KP -29
				Scale :	A1: 1/2,000 A3: 1/4,000
				Date :	



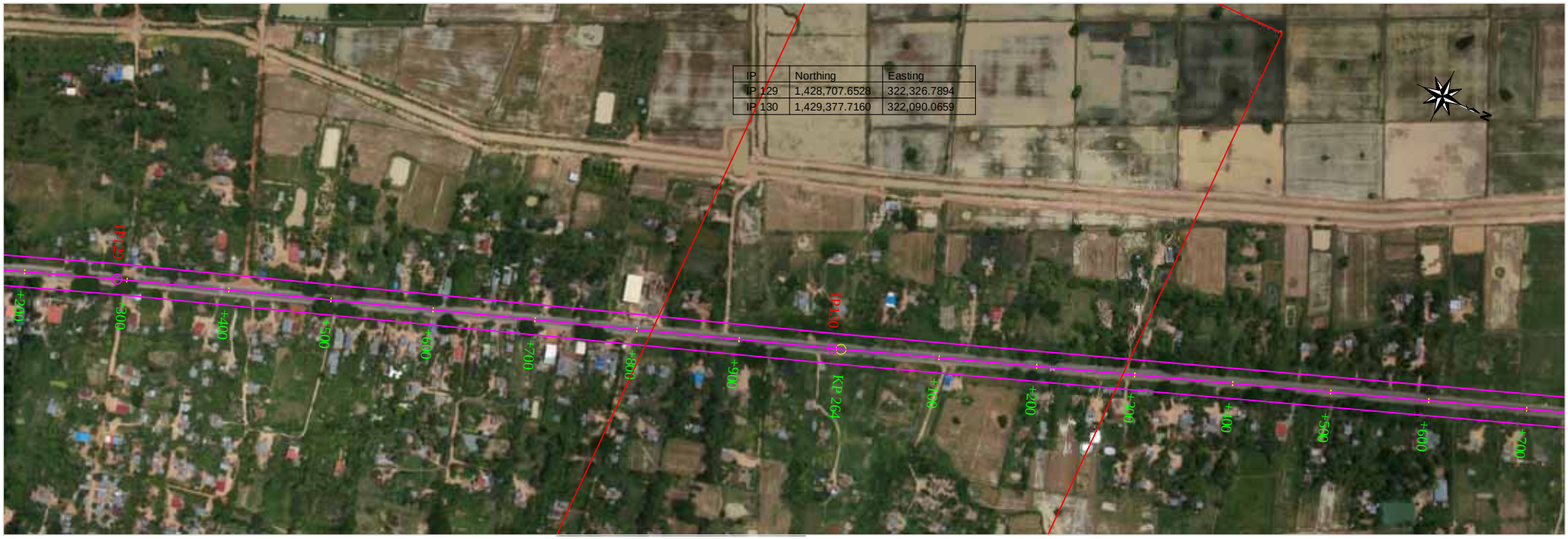
MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP257+200~KP260+200)	Drawing No.	KP -30
				Scale :	A1: 1/2,000 A3: 1/4,000
				Date :	

IP	Northing	Easting
IP 124	1,426,429.6680	323,153.3480
IP 125	1,426,802.9015	323,015.1956



IP	Northing	Easting
IP 126	1,427,312.9884	322,830.2033
IP 127	1,427,856.4197	322,642.5889
IP 128	1,427,998.4435	322,590.8074

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP260+200~KP263+200)	Drawing No.	KP -31
				Scale :	A1: 1/2,000 A3: 1/4,000
				Date :	



IP	Northing	Easting
IP 129	1,428,707.6528	322,326.7894
IP 130	1,429,377.7160	322,090.0659

IP	Northing	Easting
IP 131	1,430,492.8101	321,683.8513
IP 132	1,430,944.3645	321,383.6289

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP263+200~KP266+200)	Drawing No.	KP -32
				Scale :	A1: 1/2,000 A3: 1/4,000
				Date :	

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP266+200~KP269+200)	Drawing No. KP -33 Scale : A1: 1/2,000 A3: 1/4,000 Date :

A8-33

IP	Northing	Easting
IP 139	1,435,337.5801	318,758.3412
IP 140	1,436,094.6912	318,343.8144

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP269+200~KP272+200)	Drawing No. KP -34 Scale : A1: 1/2,000 A3: 1/4,000 Date :

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP272+200~KP275+200)	Drawing No.	KP -35
				Scale :	A1: 1/2,000 A3: 1/4,000
				Date :	

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP275+200~KP278+200)	Drawing No.	KP -36
				Scale :	A1: 1/2,000 A3: 1/4,000
				Date :	

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP278+200~KP281+300)	Drawing No. KP -37 Scale : A1: 1/2,000 A3: 1/4,000 Date :

MINISTRY OF PUBLIC WORKS & TRANSPORT KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	PREPARATORY SURVEY FOR NATIONAL ROAD NO.5 IMPROVEMENT PROJECT (MIDDLE SECTION)	TITLE : KEY PLAN (KP281+300~KP282+200)	Drawing No.	KP -38
				Scale :	A1: 1/2,000 A3: 1/4,000
				Date :	