

Appendix G

Summary of Measured and Corrected N-Values

Table G-1 – Summary of Average N-values (B-16)

	N_{meas}	N₆₀	N_{1,60}
Loose Silty Sand	9	12	16
Medium Dense Clayey Sand	24	31	33
Medium Dense Clayey Gravel	14	18	18
Very Loose Silty Sand	2	2	2
Medium Dense Silty Sand	6	8	7
Medium Dense Silty Sand	37	49	43
Very Dense Silty Sand	63	82	75

Table G-2 – Summary of Average N-values (B-32)

	N_{meas}	N₆₀	N_{1,60}
Medium Dense Silty Sand	16	21	27
Loose to Medium Dense Silty Sand	13	17	19
Medium Dense Clayey Sand	15	19	19
Medium Dense Silty Sand	27	36	35

Table G-3 – Summary of Average N-values (B-50)

	N_{meas}	N₆₀	N_{1,60}
Medium Dense Silty Sand	18	24	28
Soft Sandy Silt	6	8	9
Loose to Medium Dense Silty Sand	8	10	8

Table G-4 – Summary of Average N-values (B01-SPT-01)

	N_{meas}	N₆₀	N_{1,60}
Loose to Medium Dense Clayey Sand	8	11	12
Loose Silty Sand	9	12	10
Loose to Medium Dense Clayey Sand	11	14	10
PWR	100	132	127

Table G-5 – Summary of Average N-values (B01-SPT-06)

	N_{meas}	N₆₀	N_{1,60}
Loose to Medium Dense Silty Sand	9	11	11
Medium Dense Clayey Sand	19	25	18
Loose to Medium Dense Silty Sand	15	19	12

Table G-6 – Summary of Average N-values (B12-SPT-03)

	N_{meas}	N₆₀	N_{1,60}
Existing Fill (ML)	9	11	14
Loose to Medium Dense Silty Sand	6	8	7
Medium Stiff Plastic Silt	8	11	8
Loose Silty Sand	7	10	6
Medium Dense Silty Sand	24	31	19
Dense to Very Dense Silty Sand	43	56	39
PWR	100	132	129

Table G-7 – Summary of Average N-values (W1A-1R-01)

	N_{meas}	N₆₀	N_{1,60}
Soft Sandy Clay	3	3	5
Very Loose Silty Sand	3	3	5
Loose Clayey Sand	3	3	5
Very Loose to Loose Silty Sand	3	4	5
Medium Dense Silty Sand	12	16	17

Table G-8 – Summary of Average N-values (W1A-1R-05)

	N_{meas}	N₆₀	N_{1,60}
Loose Silty Sand	7	9	10
Medium Dense Silty Sand	20	26	21

Table G-9 – Summary of Average N-values (W1A-1R-08)

	N_{meas}	N₆₀	N_{1,60}
Loose Clayey Sand	9	8	10
Very Stiff Plastic Silt	17	23	30
Medium Dense Silty Sand	17	23	28
PWR	100	132	129

Table G-10 – Summary of Average N-values (W1A-1R-10)

	N_{meas}	N₆₀	N_{1,60}
Medium Dense Silty Sand	16	21	27
Very Stiff Plastic Silt	23	31	36
Loose to Medium Dense Silty Sand	12	16	14
PWR	100	133	126

Table G-11 – Summary of Average N-values (W1A-1R-11)

	N_{meas}	N₆₀	N_{1,60}
Loose Clayey Sand	10	13	17
Loose to Medium Dense Silty Sand	16	21	23
PWR	100	133	126

Table G-12 – Summary of Average N-values (W2A-1R-02)

	N_{meas}	N₆₀	N_{1,60}
Loose Clayey Sand	5	7	9
Medium Dense Clayey Sand	13	16	22
Loose to Medium Dense Silty Sand	11	15	13
Medium Dense Silty Sand	26	35	28

Table G-13 – Summary of Average N-values (W2A-1R-03)

	N_{meas}	N₆₀	N_{1,60}
Soft to Stiff Plastic Clay	6	8	11
Medium Dense Silty Sand	14	18	15

Table G-14 – Summary of Average N-values (W2A-1R-04)

	N_{meas}	N₆₀	N_{1,60}
Medium Stiff to Stiff Plastic Silt	8	11	14
Stiff Sandy Silt	8	11	12
Loose Silty Sand	5	7	5
Medium Dense Silty Sand	17	22	16

Table G-15 – Summary of Average N-values (W2A-1R-05)

	N_{meas}	N₆₀	N_{1,60}
Soft to Medium Stiff Plastic Clay	7	9	11
Loose to Medium Dense Silty Sand	9	11	10

Table G-16 – Summary of Average N-values (W2A-MB1-01)

	N_{meas}	N₆₀	N_{1,60}
Loose Silty Sand	5	7	9
Stiff to Very Stiff Plastic Silt	13	17	19
Medium Stiff Non-Plastic Silt	5	7	6
Loose to Medium Dense Silty Sand	9	12	9

Table G-17 – Summary of Average N-values (W2A-MB1-02)

	N_{meas}	N₆₀	N_{1,60}
Medium Stiff to Stiff Sandy Clay	8	11	10
Soft to Medium Stiff Sandy Silt	5	6	6
Very Loose to Medium Dense Silty Sand	9	11	9
Soft to Medium Stiff Non-Plastic Silt	6	8	6
Loose Silty Sand	10	13	9
PWR	100	132	129

Table G-18 – Summary of Average N-values (W2A-MB2-01)

	N_{meas}	N₆₀	N_{1,60}
Medium Dense Silty Sand	37	49	62
Loose to Medium Dense Clayey Sand	12	16	20
Stiff Plastic Clay	14	18	16
Loose Silty Sand	6	8	6
Loose Clayey Sand	7	9	8
Loose to Medium Dense Silty Sand	8	11	7

Table G-19 – Summary of Average N-values (W2B-1R-01)

	N_{meas}	N₆₀	N_{1,60}
Medium Dense Silty Sand	17	23	28
Loose Silty Sand	9	12	13
Medium Dense Silty Sand	17	22	23
Loose Silty Sand	6	8	7
Medium Dense Silty Sand	18	24	22

Table G-20 – Summary of Average N-values (W2B-1R-02)

	N_{meas}	N₆₀	N_{1,60}
Medium Dense Silty Sand	22	30	38
Loose Clayey Sand	7	9	12
Medium Dense Silty Sand	11	15	15
Dense Silty Sand	51	68	62
PWR	100	133	127

Table G-21 – Summary of Average N-values (W2B-1R-03)

	N_{meas}	N₆₀	N_{1,60}
Very Loose Silty Sand	4	5	7
Medium Dense Silty Sand	15	20	26
Medium Dense Clayey Sand	17	23	24
Very Loose Silty Sand	3	4	4
Medium Dense Silty Sand	20	26	21

Table G-22 – Summary of Average N-values (W2B-1R-04)

	N_{meas}	N₆₀	N_{1,60}
Medium Dense Silty Sand	21	28	34
Loose Silty Sand	5	7	9
Medium Dense to Dense Silty Sand	29	39	39
PWR	100	133	133

Table G-23 – Summary of Average N-values (W4-1R-04)

	N_{meas}	N₆₀	N_{1,60}
Loose to Medium Dense Clayey Sand	16	21	27
Medium Stiff to Stiff Sandy Clay	9	12	13
Medium Stiff Plastic Silt	5	7	5
Loose to Medium Dense Silty Sand	11	16	11
Medium Stiff Sandy Silt	9	12	8
Medium Dense Silty Sand	16	22	14
Medium Dense to Dense Silty Sand	40	52	38

Table G-24 – Summary of Average N-values (W4-1R-05)

	N_{meas}	N₆₀	N_{1,60}
Medium Dense Silty Sand	16	21	24
Medium Stiff to Stiff Fat Clay	14	18	17
Very Loose Silty Sand	3	5	3
Medium Stiff to Stiff Sandy Silt	8	10	7
Loose Silty Sand	8	10	6
Medium Dense Silty Sand	18	24	15
Dense to Very Dense Silty Sand	46	60	44

Table G-25 – Summary of Average N-values (W4-1R-06)

	N_{meas}	N₆₀	N_{1,60}
Medium Dense Silty Sand	20	26	33
Medium Stiff to Stiff Sandy Silt	8	11	13
Loose to Medium Dense Silty Sand	19	25	21
Loose Clayey Sand	2	3	2
Loose Silty Sand	7	9	5
Medium Dense Silty Sand	20	26	16
Medium Dense to Dense Silty Sand	42	55	39

Table G-26 – Summary of Average N-values (W4-1R-07)

	N_{meas}	N₆₀	N_{1,60}
Loose Silty Sand	6	8	10
Medium Dense Silty Sand	18	24	25
Loose Silty Sand	9	12	9
Medium Dense Silty Sand	16	21	15
Firm Sandy Silt	6	8	5
Loose Silty Sand	7	9	6
Medium Dense Silty Sand	14	19	12

Table G-27 – Summary of Average N-values (W4-1R-08)

	N_{meas}	N₆₀	N_{1,60}
Loose Silty Sand	5	7	8
Medium Stiff to Stiff Plastic Clay	9	11	14
Soft Sandy Silt	3	4	4
Loose to Medium Dense Silty Sand	9	12	9
Medium Dense to Dense Silty Sand	30	40	31
PWR	100	132	130

Table G-28 – Summary of Average N-values (W4-1R-09)

	N_{meas}	N₆₀	N_{1,60}
Loose to Medium Dense Silty Sand	12	16	21
PWR	100	132	113
Medium Dense Silty Sand	30	40	40

Table G-29 – Summary of Average N-values (W4-1R-11)

	N_{meas}	N₆₀	N_{1,60}
Loose Clayey Sand	10	13	17
Loose to Medium Dense Silty Sand	17	23	23
Loose Clayey Sand	6	8	6
Hard Rock	100	132	131

Table G-30 – Summary of Average N-values (W85-1L-02)

	N_{meas}	N₆₀	N_{1,60}
Loose Silty Sand	8	12	15
Poorly Graded Gravel	47	69	80

Table G-31 – Summary of Average N-values (W85-1L-03)

	N_{meas}	N₆₀	N_{1,60}
Medium Dense Silty Sand	22	32	41
Dense Silty Sand	76	111	102
PWR	100	147	112

Table G-32 – Summary of Average N-values (W85-1L-06)

	N_{meas}	N₆₀	N_{1,60}
Medium Stiff to Stiff Fat Clay	11	14	18
Stiff Sandy Silt	12	16	16
Medium Dense Silty Sand	14	19	17
PWR	100	132	124

Table G-33 – Summary of Average N-values (W385-4R-05A)

	N_{meas}	N₆₀	N_{1,60}
Dense Clayey Sand	34	45	57
Very Dense Silty Sand	53	70	77
Loose to Medium Dense Silty Sand	11	14	18
Very Dense Silty Sand	69	91	75
Medium Dense Silty Sand	13	17	14
PWR	100	132	124
Very Dense Silty Sand	57	75	65
PWR	100	132	131

Table G-34 – Summary of Average N-values (W385-RN-05)

	N_{meas}	N₆₀	N_{1,60}
Medium Dense Clayey Sand	16	21	27
Medium Dense Silty Sand	27	36	33
PWR	100	132	131

Table G-35 – Summary of Average N-values (W385-RN-06)

	N_{meas}	N₆₀	N_{1,60}
Loose Clayey Sand	8	10	13
Stiff Plastic Clay	14	18	24
Loose Silty Sand	8	11	12
Medium Dense to Dense Silty Sand	33	44	41
PWR	100	132	131
Medium Dense to Dense Silty Sand	41	54	48
PWR	100	132	131

Table G-36 – Summary of Average N-values (W385-2R-01)

	N_{meas}	N₆₀	N_{1,60}
Stiff to Very Stiff Non-Plastic Silt	14	19	24
Loose Silty Sand	7	9	8
Medium Dense Silty Sand	28	37	29
PWR	100	132	130

Table G-37 – Summary of Average N-values (W385-2R-02)

	N_{meas}	N₆₀	N_{1,60}
Loose to Medium Dense Silty Sand	9	12	15
Medium Dense to Dense Silty Sand	41	54	47
PWR	100	132	113

Table G-38 – Summary of Average N-values (W385-2R-04)

	N_{meas}	N₆₀	N_{1,60}
Loose to Medium Dense Clayey Sand	9	12	15
Medium Dense Silty Sand	13	17	22
PWR	100	132	100

Table G-39 – Summary of Average N-values (W385-2L-02)

	N_{meas}	N₆₀	N_{1,60}
Loose to Medium Dense Silty Sand	9	12	15
Very Stiff Non-Plastic Silt	23	30	37
PWR	100	132	100

Table G-40 – Summary of Average N-values (W385-2L-03)

	N_{meas}	N₆₀	N_{1,60}
Very Stiff Sandy Silt	19	25	32
Medium Dense Silty Sand	16	21	27
PWR	100	132	100
Medium Dense Silty Sand	36	47	41
PWR	100	132	112

Table G-41 – Summary of Average N-values (W385-RS-06)

	N_{meas}	N₆₀	N_{1,60}
Dense Silty Sand	39	51	65
Loose Silty Sand	5	7	8
Medium Dense to Dense Silty Sand	24	32	32
Very Dense Silty Sand	72	95	90
PWR	100	132	129

Table G-42 – Summary of Average N-values (R1-06)

	N_{meas}	N₆₀	N_{1,60}
Loose Silty Sand	9	13	14
Medium Dense Silty Sand	19	29	25
Very Dense Silty Sand	85	125	116
Loose to Medium Dense Silty Sand	11	17	13

Table G-43 – Summary of Average N-values (R1A-76)

	N_{meas}	N₆₀	N_{1,60}
Medium Dense Clayey Sand	20	29	37
Very Stiff Sandy Silt	18	26	33
Stiff Sandy Fat Clay	13	19	24
Loose Silty Sand	10	14	17
Medium Dense Silty Sand	14	21	20
Loose Silty Sand	10	14	12

Table G-44 – Summary of Average N-values (R1B-04)

	N_{meas}	N₆₀	N_{1,60}
Medium Dense Clayey Sand	18	26	34
Dense to Very Dense Silty Sand	40	59	73

Table G-45 – Summary of Average N-values (R2-39)

	N_{meas}	N₆₀	N_{1,60}
Stiff to Very Stiff Plastic Clay	9	13	17
Loose Clayey Sand	9	13	17
Stiff to Very Stiff Plastic Clay	14	20	20
Loose Clayey Sand	4	6	5
Loose to Medium Dense Silty Sand	10	15	12

Table G-46 – Summary of Average N-values (R2-70)

	N_{meas}	N₆₀	N_{1,60}
Medium Dense Silty Sand	14	21	26
Firm to Stiff Sandy Fat Clay	8	12	14
Very Stiff to Stiff Sandy Fat Clay	16	24	25
Very Loose to Loose Silty Sand	6	9	9
Medium Dense Silty Sand	14	21	19

Table G-47 – Summary of Average N-values (R2A-45)

	N_{meas}	N₆₀	N_{1,60}
Very Stiff Non-Plastic Clay	17	25	33
Loose to Medium Dense Silty Sand	8	12	14

Table G-48 – Summary of Average N-values (R3-38)

	N_{meas}	N₆₀	N_{1,60}
Loose Silty Sand	6	8	9
Loose to Medium Dense Silty Sand	14	21	18

Table G-49 – Summary of Average N-values (R8A-31)

	N_{meas}	N₆₀	N_{1,60}
Very Stiff Plastic Silt	24	35	45
Stiff Plastic Silt	9	13	17
Loose to Medium Dense Silty Sand	11	16	17
Loose to Medium Dense Silty Sand	14	21	16

Table G-50 – Summary of Average N-values (R85-13)

	N_{meas}	N₆₀	N_{1,60}
Very Loose Clayey Sand	10	15	19
Very Loose to Loose Silty Sand	7	10	12
Medium Dense Silty Sand	30	44	43

Table G-51 – Summary of Average N-values (R85-15)

	N_{meas}	N₆₀	N_{1,60}
Loose to Medium Dense Silty Sand	11	14	18
Dense to Very Dense Silty Sand	39	52	51
PWR	100	133	101

Table G-52 – Summary of Average N-values (R85-17)

	N_{meas}	N₆₀	N_{1,60}
Loose Silty Sand	6	8	10
Very Loose Clayey Sand	4	5	7
Very Dense Clayey Sand	51	68	64

Table G-53 – Summary of Average N-values (R85-18)

	N_{meas}	N₆₀	N_{1,60}
Medium Dense Silty Sand	21	28	35
Medium Stiff to Stiff Fat Clay	11	15	18
Medium Stiff Sandy Clay	5	7	7
Medium Dense Silty Sand	21	28	25

Table G-54 – Summary of Average N-values (R85-19)

	N_{meas}	N₆₀	N_{1,60}
Medium Dense Clayey Sand	14	19	24
Medium Dense to Dense Silty Sand	37	49	48

Table G-55 – Summary of Average N-values (R85-20)

	N_{meas}	N₆₀	N_{1,60}
Loose Silty Sand	7	9	12
Medium Dense Silty Sand	23	30	34

Table G-56 – Summary of Average N-values (R85-52)

	N_{meas}	N₆₀	N_{1,60}
Loose to Medium Dense Silty Sand	13	17	21
PWR	100	133	101

Table G-57 – Summary of Average N-values (R85-54)

	N_{meas}	N₆₀	N_{1,60}
Stiff Fat Clay	10	13	17
Loose Silty Sand	8	11	14

Table G-58 – Summary of Average N-values (R85-55)

	N_{meas}	N₆₀	N_{1,60}
Loose Clayey/Silty Sand	12	16	20
Medium Dense Silty Sand	23	30	31
Loose Silty Sand	9	12	11

Table G-59 – Summary of Average N-values (R85-57)

	N_{meas}	N₆₀	N_{1,60}
Medium Dense Silty Sand	12	16	21
Loose Silty sand	8	10	13
Medium Dense Silty Sand	13	17	22

Table G-60 – Summary of Average N-values (R85-78)

	N_{meas}	N₆₀	N_{1,60}
Medium Dense Silty Sand	11	15	19
Medium Dense Clayey Sand	13	17	22
Loose Clayey Sand	6	8	11
Medium Dense	17	23	27

Table G-61 – Summary of Average N-values (R85-79)

	N_{meas}	N₆₀	N_{1,60}
Medium Dense Clayey Sand	13	17	22
Medium Dense Silty Sand	19	25	32
Very Dense to Dense Silty Sand	54	72	73

Table G-62 – Summary of Average N-values (R85-81)

	N_{meas}	N₆₀	N_{1,60}
Medium Dense to Very Dense Clayey Sand	45	60	65
Very Dense Clayey Sand	59	79	66

Table G-63 – Summary of Average N-values (R385-82)

	N_{meas}	N₆₀	N_{1,60}
Medium Dense Silty Sand	18	23	30
Medium Dense Clayey Sand	15	20	24
Very Stiff Sandy Fat Clay	19	25	23
Very Loose Clayey Sand	4	5	4
Stiff Sandy Silt	9	11	9
Medium Dense Silty Sand	22	29	21

Table G-64 – Summary of Average N-values (R385-24A)

	N_{meas}	N₆₀	N_{1,60}
Medium Dense Silty Sand	21	28	35
Very Stiff Non-Plastic Clay	20	26	34
PWR	100	132	100

Table G-65 – Summary of Average N-values (R385-25A)

	N_{meas}	N₆₀	N_{1,60}
Loose Silty Sand	10	13	17
Medium Dense Clayey Sand	22	29	37
Very Dense Silty Sand	66	87	79
Medium Dense Silty Sand	31	41	42
PWR	100	132	100
Dense to Very Dense Silty Sand	50	66	56
PWR	100	132	112

Table G-66 – Summary of Average N-values (R385-27A)

	N_{meas}	N₆₀	N_{1,60}
Stiff Plastic Clay	11	14	18
Loose Clayey Sand	3	4	5
Loose Silty Sand	3	5	4
Medium Dense Silty Sand	36	47	42

Table G-67 – Summary of Average N-values (R385-36)

	N_{meas}	N₆₀	N_{1,60}
Medium Dense Silty Sand	26	34	44
Loose Silty Sand	9	12	15
Medium Dense Silty Sand	24	31	32

Table G-68 – Summary of Average N-values (R385-82)

	N_{meas}	N₆₀	N_{1,60}
Medium Dense Silty Sand	18	23	30
Medium Dense Clayey Sand	15	20	24
Very Stiff Sandy Fat Clay	19	25	23
Very Loose Clayey Sand	4	5	4
Stiff Sandy Silt	9	11	9
Medium Dense Silty Sand	22	29	21

Table G-69 – Summary of Average N-values (BX-1-01)

	N_{meas}	N₆₀	N_{1,60}
Stiff to Very Stiff Sandy Silt	16	22	28
Loose Silty Sand	8	11	16

Table G-70 – Summary of Average N-values (BX-1-02)

	N_{meas}	N₆₀	N_{1,60}
Soft to Very Soft Sandy Silt	2	4	5
Medium Stiff Sandy Silt	5	7	9
Very Loose Silty Sand	4	6	7
Medium Dense Silty Sand	12	17	18
Very Stiff to Stiff Sandy Silt	13	19	19

Table G-71 – Summary of Average N-values (BX-1B-01)

	N_{meas}	N₆₀	N_{1,60}
Stiff to Very Stiff Plastic Silt	16	23	30
Stiff to Medium Stiff Sandy Silt	8	11	15
Soft Sandy Silt	3	4	5
Stiff Sandy Silt	14	19	26

Table G-72 – Summary of Average N-values (BX-2B-01)

	N_{meas}	N₆₀	N_{1,60}
Stiff to Very Stiff Sandy Silt	17	24	30
Loose Clayey Sand	6	9	11
Medium Dense to Loose Silty Sand	11	16	15
PWR	100	138	131

Table G-73 – Summary of Average N-values (BX-3-01)

	N_{meas}	N₆₀	N_{1,60}
Medium Dense Silty Sand	15	21	27
PWR	100	138	107

Table G-74 – Summary of Average N-values (BX-4-01)			
	N_{meas}	N₆₀	N_{1,60}
Very Stiff to Hard Silty Clay	33	46	59
Very Stiff Plastic Silt	20	28	35
Medium Stiff Sandy Silt	8	11	14
PWR	100	138	119

Table G-75 – Summary of Average N-values (BX-8-01)			
	N_{meas}	N₆₀	N_{1,60}
Very Stiff Silty Clay	17	24	30
Medium Dense to Dense Silty Sand	28	39	49
Medium Dense Silty Sand	20	28	35

Table G-76 – Summary of Average N-values (BX-10-01)			
	N_{meas}	N₆₀	N_{1,60}
PWR	100	138	109

Table G-77 – Summary of Average N-values (BX-385-01)			
	N_{meas}	N₆₀	N_{1,60}
Medium Stiff Sandy Silt	7	10	13
Very Soft to Soft Silty Clay	3	4	5
Very Soft to Soft Sandy Silt	3	4	4
Very Stiff Sandy Silt	19	26	22
PWR	100	138	131
Stiff Sandy Silt	14	19	16

Table G-78 – Summary of Average N-values (BX-385NBCD-01)			
	N_{meas}	N₆₀	N_{1,60}
Stiff to Very Stiff Sandy Silt	22	29	38
Hard to Very Hard Sandy Silt	32	44	52
Very Dense Silty Sand	65	90	86
PWR	100	138	132

Table G-79 – Summary of Average N-values (BX-385NBCD-02)			
	N_{meas}	N₆₀	N_{1,60}
Soft Plastic Silt	4	6	7
Stiff to Very Stiff Sandy Clay	18	26	33
Stiff Sandy Silt	10	14	18
Medium Dense Silty Sand	20	28	36

Table G-80 – Summary of Average N-values (BX-385SBCD-01)			
	N_{meas}	N₆₀	N_{1,60}
Medium Dense Silty Sand	27	37	47
Very Dense Silty Sand	57	79	76
PWR	100	138	105
Very Stiff to Stiff Sandy Silt	16	22	22

Table G-81 – Summary of Average N-values (BX-385SBCD-02)			
	N_{meas}	N₆₀	N_{1,60}
Very Stiff Plastic Silt	27	38	48
PWR	100	138	107

Table G-82 – Summary of Average N-values (I85-100)			
	N_{meas}	N₆₀	N_{1,60}
Dense Silty Sand	44	61	78
PWR	100	138	117

Table G-83 – Summary of Average N-values (I85-101)			
	N_{meas}	N₆₀	N_{1,60}
Medium Stiff to Stiff Sandy Silt	8	11	14
Loose Clayey Sand	9	12	11
PWR	100	138	127

Table G-84 – Summary of Average N-values (I85-102)			
	N_{meas}	N₆₀	N_{1,60}
Medium Stiff to Stiff Plastic Silt	10	14	17
Loose to Medium Dense Clayey Sand	28	39	35
Medium Stiff to Stiff Sandy Silt	10	15	10

Table G-85 – Summary of Average N-values (I85-103)			
	N_{meas}	N₆₀	N_{1,60}
Medium Stiff Sandy Clay	5	7	9
Very Stiff Plastic Silt	18	25	31
Stiff to Very Stiff Sandy Silt	14	19	22

Table G-86 – Summary of Average N-values (I85-105)			
	N_{meas}	N₆₀	N_{1,60}
PWR	100	138	106

Table G-87 – Summary of Average N-values (I85-106)			
	N_{meas}	N₆₀	N_{1,60}
Stiff to Very Stiff Sandy Silt	11	16	20
Medium Dense Silty Sand	18	25	32
Very Stiff Sandy Silt	19	26	32
Dense Silty Sand	35	47	51
Very Stiff to Stiff Sandy Silt	16	22	21

Table G-88 – Summary of Average N-values (R2A-104)			
	N_{meas}	N₆₀	N_{1,60}
Stiff to Medium Stiff Plastic Silt	14	19	25
Very Loose Silty Sand	3	4	5
Soft Sandy Silt	4	6	7
Stiff Sandy Silt	14	19	19
PWR	100	138	117

Table G-89 – Summary of Average N-values (R385-107)			
	N_{meas}	N₆₀	N_{1,60}
Loose Silty Sand	10	14	18
Dense Silty Sand	50	69	78
PWR	100	138	110

Table G-90 – Summary of Average N-values (R385-108)			
	N_{meas}	N₆₀	N_{1,60}
Very Stiff to Hard Plastic Silt	26	36	45
Loose to Medium Dense Silty Sand	16	23	28
Medium Dense to Dense Silty Sand	23	32	30
PWR	100	138	117
Medium Dense Silty Sand	15	21	17
PWR	100	138	132

Appendix H

Summary of Shear Strength Parameters

Table H-1 – Summary of Shear Strength Parameters (I-85 Sta. 231+00/R85-57)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Loose to Medium Dense Silty Sand	30	50	30	50

Table H-2 – Summary of Shear Strength Parameters (I-85 Sta. 373+00 / R85-81)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Medium Dense to Very Dense Clayey Sand	30	50	30	50

Table H-3 – Summary of Shear Strength Parameters (I-85 Sta. 376+00/ R85-18)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Medium Dense Silty Sand	30	50	30	50
Medium Stiff to Stiff Fat Clay	26	50	0	1500
Medium Stiff Silty Clay	26	50	0	750
Medium Dense Silty Sand	30	50	30	50

Table H-4 – Summary of Shear Strength Parameters (I-85 Sta. 389+00/R85-19)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Medium Dense Clayey Sand	30	50	30	50
Medium Dense to Dense Silty Sand	36	50	36	50

Table H-5 – Summary of Shear Strength Parameters (I-385 Sta. 334+50/R385-82)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Medium Dense Silty Sand	32	50	32	50
Medium Dense Clayey Sand	30	50	30	50
Stiff to Very Stiff Plastic Clay	26	50	0	1500
Loose Clayey Sand	27	50	27	50
Stiff Sandy Silt	30	50	30	50
Medium Dense Silty Sand	32	50	32	50

Table H-6 – Summary of Shear Strength Parameters (I-385 Sta. 342+00/ R385-27A)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Stiff Plastic Clay	26	50	0	1500
Loose Clayey Sand	27	50	27	50
Loose Silty Sand	28	50	28	50
Medium Dense Silty Sand	32	50	32	50

Table H-7 – Summary of Shear Strength Parameters (I-385 Sta. 439+00/W385-4R-05A)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Dense Clayey Sand	30	50	30	50
Very Dense Silty Sand	36	50	36	50
Loose to Medium Dense Silty Sand	30	50	30	50
Very Dense Silty Sand	36	50	36	50
Medium Dense Silty Sand	32	50	32	50
PWR	40	400	40	400
Very Dense Silty Sand	36	50	36	50
PWR	40	400	40	400

Table H-8 – Summary of Shear Strength Parameters (I-385 NBCD Sta. 360+00/W385-RN-06)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Loose Clayey Sand	27	50	27	50
Stiff Plastic Clay	26	50	0	1500
Loose Silty Sand	28	50	28	50
Medium Dense to Dense Silty Sand	36	50	36	50
PWR	40	400	40	400
Medium Dense to Dense Silty Sand	36	50	36	50
PWR	40	400	40	400

Table H-9 – Summary of Shear Strength Parameters (I-385 NBCD Sta. 374+00/B01-SPT-06)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Medium Dense Clayey Sand	30	50	30	50
Loose to Medium Dense Silty Sand	30	50	30	50

Table H-10 – Summary of Shear Strength Parameters (I-385 SBCD Sta. 102+50/R385-36)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Loose to Medium Dense Silty Sand	30	50	30	50

Table H-11 – Summary of Shear Strength Parameters (I-385 SBCD Sta. 118+00/W385-RS-06)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Dense Silty Sand	32	50	32	50
Loose Silty Sand	30	50	30	50
Medium Dense to Dense Silty Sand	32	50	32	50
Very Dense Silty Sand	36	50	36	50
PWR	40	400	40	400

Table H-12 – Summary of Shear Strength Parameters (Ramp 1 Sta. 63+00/R85-15)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Medium Dense Silty Sand	32	50	32	50
Dense to Very Dense Silty Sand	36	50	36	50

Table H-13 – Summary of Shear Strength Parameters (Ramp 1A Sta. 53+00/W1A-1R-05)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Loose Silty Sand	28	50	28	50
Medium Dense Silty Sand	32	50	32	50

Table H-14 – Summary of Shear Strength Parameters (Ramp 1A Sta. 70+50/W1A-1R-10)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Medium Dense Silty Sand	32	50	32	50
Very Stiff Plastic Silt	30	50	30	50
Loose to Medium Dense Silty Sand	30	50	30	50
PWR	40	400	40	400

Table H-15 – Summary of Shear Strength Parameters (Ramp 1B 72+00/R85-79)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Medium Dense to Dense Silty Sand	36	50	36	50

Table H-16 – Summary of Shear Strength Parameters (Ramp 1B Sta. 76+00/W85-1L-03)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Medium Dense Silty Sand	32	50	32	50
Dense Silty Sand	36	50	36	50
PWR	40	400	40	400

Table H-17 – Summary of Shear Strength Parameters (Ramp 1B Sta. 77+00/W85-1L-02)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Loose Silty Sand	28	50	28	50
Poorly Graded Gravel	36	0	36	0

Table H-18 – Summary of Shear Strength Parameters (Ramp 2 Sta. 62+50/R2-39)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Stiff to Very Stiff Plastic Clay	26	50	0	1500
Loose Clayey Sand	27	50	27	50
Medium Stiff to Very Stiff Plastic Clay	26	50	0	1500
Loose Clayey Sand	27	50	27	50
Loose to Medium Dense Silty Sand	32	50	32	50

Table H-19 – Summary of Shear Strength Parameters (Ramp 2 Sta. 67+50 W85-1L-06)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Medium Stiff to Stiff Fat Clay	26	50	0	1500
Stiff Sandy Silt	30	50	30	50
Medium Dense Silty Sand	32	50	32	50
PWR	40	400	40	400

Table H-20 – Summary of Shear Strength Parameters (Ramp 2A Sta. 71+00/B12-SPT-03)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Existing Fill (ML)	30	50	30	50
Loose to Medium Dense Silty Sand	30	50	30	50
Medium Stiff Plastic Silt	30	50	30	50
Loose Silty Sand	28	50	28	50
Medium Dense Silty Sand	32	50	32	50
Dense to Very Dense Silty Sand	36	50	36	50
PWR	40	400	40	400

Table H-21 – Summary of Shear Strength Parameters (Ramp 2A Sta. 107+50/W2A-1R-03)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Soft to Stiff Plastic Clay	26	50	0	1000
Medium Dense Silty Sand	32	50	32	50

Table H-22 – Summary of Shear Strength Parameters (Ramp 2A Sta. 113+00/W2A-1R-04)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Stiff Sandy Silt	28	50	28	50
Loose Silty Sand	30	50	30	50
Medium Dense Silty Sand	32	50	32	50

Table H-23 – Summary of Shear Strength Parameters (Ramp 2B Sta. 40+50/W2B-1R-03)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Loose to Medium Dense Silty Sand	30	50	30	50
Medium Dense Clayey Sand	30	50	30	50
Loose to Medium Dense Silty Sand	30	50	30	50
PWR	40	400	40	400

Table H-24 – Summary of Shear Strength Parameters (Ramp 2B Sta. 44+00/W2B-1R-04)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Medium Dense Silty Sand	32	50	32	50
Loose Silty Sand	30	50	30	50
Medium Dense to Dense Silty Sand	33	50	33	50
PWR	40	400	40	400

Table H-25 – Summary of Shear Strength Parameters (Ramp 3 Sta. 40+50/R3-38)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Loose Silty Sand	28	50	28	50
Loose to Medium Dense Silty Sand	30	50	30	50

Table H-26 – Summary of Shear Strength Parameters (Ramp 3A Sta. 296+00/W2A-MB1-02)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Medium Stiff to Stiff Sandy Clay	26	50	0	1250
Soft to Medium Stiff Sandy Silt	30	50	30	50
Very Loose to Medium Dense Silty Sand	30	50	30	50
Soft to Stiff Sandy Silt	30	50	30	50
Loose Silty Sand	32	50	32	50
PWR	40	400	40	400

Table H-27 – Summary of Shear Strength Parameters (Ramp 4 Sta. 40+00/W4-1R-09)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Loose to Medium Dense Silty Sand	30	50	30	50
PWR	40	400	40	400
Medium Dense Silty Sand	32	50	32	50

Table H-28 – Summary of Shear Strength Parameters (Ramp 4 Sta. 43+50/W4-1R-11)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Loose Clayey Sand	27	50	27	50
Loose to Medium Dense Silty Sand	30	50	30	50
Loose Clayey Sand	27	50	27	50
Hard Rock	40	400	40	400

Table H-29 – Summary of Shear Strength Parameters (Ramp 4B Sta. 388+00/W4-1R-05)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Medium Dense Silty Sand	34	50	34	50
Medium Stiff to Stiff Fat Clay	26	50	0	1250
Very Loose Silty Sand	27	50	27	50
Medium Stiff to Stiff Sandy Silt	30	50	0	1000
Loose to Medium Dense Silty Sand	30	50	30	50
Medium Dense to Dense Silty Sand	36	50	36	50

Table H-30 – Summary of Shear Strength Parameters (Ramp 5 Sta. 139+00/B-50)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Medium Dense Silty Sand	32	50	32	50
Loose Silty Sand	28	50	28	50

Table H-31 – Summary of Shear Strength Parameters (Ramp 8A Sta. 12+50/R8A-31)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Very Stiff Plastic Silt	30	50	30	50
Stiff Plastic Silt	30	50	30	50
Loose to Medium Dense Silty Sand	30	50	30	50
Loose to Medium Dense Silty Sand	30	50	30	50

Table H-32 – Summary of Shear Strength Parameters (Ramp 8/8A Sta. 21+00/W385-2R-04)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Loose to Medium Dense Clayey Sand	30	50	30	50
Medium Dense Silty Sand	32	50	32	50
PWR	40	400	40	400

Table H-33 – Summary of Shear Strength Parameters (Ramp 9 Sta. 52+50/B01-SPT-01)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Loose to Medium Dense Clayey Sand	30	50	30	50
Loose Silty Sand	28	50	28	50
Loose to Medium Dense Clayey Sand	30	50	30	50
PWR	40	400	40	400

Table H-34 – Summary of Shear Strength Parameters (BX-1-01)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Stiff to Very Stiff Sandy Silt	30	50	30	50
Loose Silty Sand	8	50	28	50

Table H-35 – Summary of Shear Strength Parameters (BX-1-02)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Soft to Very Soft Sandy Silt	28	50	28	50
Medium Stiff Sandy Silt	30	50	30	50
Very Loose Silty Sand	28	50	28	50
Medium Dense Silty Sand	32	50	32	50
Very Stiff to Stiff Sandy Silt	30	50	30	50

Table H-36 – Summary of Shear Strength Parameters (BX-1B-01)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Stiff to Very Stiff Plastic Silt	30	50	30	50
Stiff to Medium Stiff Sandy Silt	30	50	30	50
Soft Sandy Silt	28	50	28	50
Stiff Sandy Silt	30	50	30	50

Table H-37 – Summary of Shear Strength Parameters (BX-2B-01)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Stiff to Very Stiff Sandy Silt	30	50	30	50
Loose Clayey Sand	28	50	28	50
Medium Dense to Loose Silty Sand	30	50	30	50
PWR	40	400	40	400

Table H-38 – Summary of Shear Strength Parameters (BX-3-01)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Medium Dense Silty Sand	32	50	32	50
PWR	40	400	40	400

Table H-39 – Summary of Shear Strength Parameters (BX-4-01)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Very Stiff to Hard Silty Clay	26	50	0	1500
Very Stiff Plastic Silt	30	50	30	50
Medium Stiff Sandy Silt	30	50	30	50
PWR	40	400	40	400

Table H-40 – Summary of Shear Strength Parameters (BX-8-01)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Very Stiff Silty Clay	26	50	0	1500
Medium Dense to Dense Silty Sand	32	50	32	50
Medium Dense Silty Sand	32	50	32	50

Table H-41 – Summary of Shear Strength Parameters (BX-10-01)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
PWR	40	400	40	400

Table H-42 – Summary of Shear Strength Parameters (BX-385-01)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Medium Stiff Sandy Silt	30	50	30	50
Very Soft to Soft Silty Clay	26	50	0	1000
Very Soft to Soft Sandy Silt	28	50	28	50
Very Stiff Sandy Silt	30	50	30	50
PWR	40	400	40	400
Stiff Sandy Silt	30	50	30	50

Table H-43 – Summary of Shear Strength Parameters (BX-I385NBCD-01)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Stiff to Very Stiff Sandy Silt	30	50	30	50
Hard to Very Hard Sandy Silt	32	50	32	50
Very Dense Silty Sand	36	50	36	50
PWR	40	400	40	400

Table H-44 – Summary of Shear Strength Parameters (BX-I385NBCD-02)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Soft Plastic Silt	28	50	28	50
Stiff to Very Stiff Sandy Clay	26	50	0	1500
Stiff Sandy Silt	30	50	30	50
Medium Dense Silty Sand	32	50	32	50

Table H-45 – Summary of Shear Strength Parameters (BX-I385SBCD-01)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Medium Dense Silty Sand	32	50	32	50
Very Dense Silty Sand	36	50	36	50
PWR	40	400	40	400
Very Stiff to Stiff Sandy Silt	30	50	30	50

Table H-46 – Summary of Shear Strength Parameters (BX-I385SBCD-02)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Very Stiff Plastic Silt	30	50	30	50
PWR	40	400	40	400

Table H-47 – Summary of Shear Strength Parameters (I85-100)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Dense Silty Sand	36	50	36	50
PWR	40	400	40	400

Table H-48 – Summary of Shear Strength Parameters (I85-101)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Medium Stiff to Stiff Sandy Silt	30	50	30	50
Loose Clayey Sand	28	50	28	50
PWR	40	400	40	400

Table H-49 – Summary of Shear Strength Parameters (I85-102)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Medium Stiff to Stiff Plastic Silt	30	50	30	50
Loose to Medium Dense Clayey Sand	28	50	28	50
Medium Stiff to Stiff Sandy Silt	30	50	30	50

Table H-50 – Summary of Shear Strength Parameters (I85-103)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Medium Stiff Sandy Clay	26	50	0	600
Very Stiff Plastic Silt	30	50	30	50
Stiff to Very Stiff Sandy Silt	30	50	30	50

Table H-51 – Summary of Shear Strength Parameters (I85-105)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
PWR	40	400	40	400

Table H-52 – Summary of Shear Strength Parameters (I85-106)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Stiff to Very Stiff Sandy Silt	30	50	30	50
Medium Dense Silty Sand	32	50	32	50
Very Stiff Sandy Silt	30	50	30	50
Dense Silty Sand	36	50	36	50
Very Stiff to Stiff Sandy Silt	30	50	30	50

Table H-53 – Summary of Shear Strength Parameters (R2A-104)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Stiff to Medium Stiff Plastic Silt	30	50	30	50
Very Loose Silty Sand	27	50	27	50
Soft Sandy Silt	28	50	28	50
Stiff Sandy Silt	30	50	30	50
PWR	40	400	40	400

Table H-54 – Summary of Shear Strength Parameters (R385-107)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Loose Silty Sand	28	50	28	50
Dense Silty Sand	32	50	32	50
PWR	40	400	40	400

Table H-55 – Summary of Shear Strength Parameters (R385-108)

Material Description	Effective Stress		Total Stress	
	Friction Angle (ϕ') degrees	Cohesion (c') psf	Friction Angle (ϕ) degrees	Cohesion (c) psf
Very Stiff to Hard Plastic Silt	30	50	30	50
Loose to Medium Dense Silty Sand	30	50	30	50
Medium Dense to Dense Silty Sand	32	50	32	50
PWR	40	400	40	400
Medium Dense Silty Sand	32	50	32	50
PWR	40	400	40	400

Appendix I

Summary of Settlement Parameters

Table I-1 – Summary of Settlement Analysis Parameters (I-85 223+25/ R85-55)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Loose Clayey/Silty Sand	963.0	105	N/A	N/A	N/A	N/A	N/A	195
Medium Dense Silty Sand	955.0	110	N/A	N/A	N/A	N/A	N/A	436
Loose Silty Sand	953.0	105	N/A	N/A	N/A	N/A	N/A	167
Summary of Settlement Analysis Parameters (R85-54)								
Stiff Fat Clay	951.0	110	0.1	0.01	0.22	O.C.	3	137
Loose Silty Sand	944.0	105	N/A	N/A	N/A	N/A	N/A	190

Table I-2 – Summary of Settlement Analysis Parameters (I-85 234+00/ R85-57)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Medium Dense Silty Sand	972.3	110	N/A	N/A	N/A	N/A	N/A	297
Loose Silty sand	963.0	105	N/A	N/A	N/A	N/A	N/A	190
Medium Dense Silty Sand	959.0	110	N/A	N/A	N/A	N/A	N/A	301

Table I-3 – Summary of Settlement Analysis Parameters (I-85 362+00/ R85-79)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Medium Dense Clayey Sand	922.0	110	N/A	N/A	N/A	N/A	N/A	178
Medium Dense Silty Sand	915.0	110	N/A	N/A	N/A	N/A	N/A	451
Very Dense to Dense Silty Sand	913.0	120	N/A	N/A	N/A	N/A	N/A	1029

Table I-4 – Summary of Settlement Analysis Parameters (I-85 329+00/ R85-13)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Very Loose Clayey Sand	906.0	100	N/A	N/A	N/A	N/A	N/A	158
Very Loose to Loose Silty Sand	896.0	100	N/A	N/A	N/A	N/A	N/A	181
Medium Dense Silty Sand	881.0	110	N/A	N/A	N/A	N/A	N/A	610

Table I-5 – Summary of Settlement Analysis Parameters (I-85 357+00/ R85-78)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Medium Dense Silty Sand	932.0	110	N/A	N/A	N/A	N/A	N/A	261
Medium Dense Clayey Sand	921.0	110	N/A	N/A	N/A	N/A	N/A	178
Loose Clayey Sand	919.0	105	N/A	N/A	N/A	N/A	N/A	89
Medium Dense	915.0	110	0.1	0.01	0.22	O.C.	3	214
PWR	850.0	137	N/A	N/A	N/A	N/A	N/A	2040

Table I-6 – Summary of Settlement Analysis Parameters (I-85 367+00/ R85-17)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Loose Silty Sand	912.0	105	N/A	N/A	N/A	N/A	N/A	84
Very Loose Clayey Sand	898.0	100	N/A	N/A	N/A	N/A	N/A	55
Very Dense Clayey Sand	896.0	120	N/A	N/A	N/A	N/A	N/A	515

Table I-7 – Summary of Settlement Analysis Parameters (I-85 371+00/ R85-81)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Medium Dense to Dense Clayey Sand	914.0	110	N/A	N/A	N/A	N/A	N/A	475
Very Dense Clayey Sand	898.0	120	N/A	N/A	N/A	N/A	N/A	594

Table I-8 – Summary of Settlement Analysis Parameters (I-85 376+00/ R85-18)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Medium Dense Silty Sand	899.5	110	N/A	N/A	N/A	N/A	N/A	499
Medium Stiff to Stiff Fat Clay	889.0	105	N/A	N/A	N/A	N/A	N/A	142
Medium Stiff Sandy Clay	885.0	105	N/A	N/A	N/A	N/A	N/A	59
Medium Dense Silty Sand	881.0	110	N/A	N/A	N/A	N/A	N/A	356

Table I-9 – Summary of Settlement Analysis Parameters (I-85 389+00/ R85-19)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Medium Dense Clayey Sand	879.5	105	N/A	N/A	N/A	N/A	N/A	192
Medium Dense to Dense Silty Sand	871.0	110	N/A	N/A	N/A	N/A	N/A	677

Table I-10 – Summary of Settlement Analysis Parameters (I-385 334+50/ R385-82)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Medium Dense Silty Sand	930.0	110	N/A	N/A	N/A	N/A	N/A	422
Medium Dense Clayey Sand	928.5	105	N/A	N/A	N/A	N/A	N/A	202
Stiff to Very Stiff Plastic Clay	922.0	105	N/A	N/A	N/A	N/A	N/A	187
Loose Clayey Sand	915.0	100	N/A	N/A	N/A	N/A	N/A	35
Stiff Sandy Silt	910.0	105	N/A	N/A	N/A	N/A	N/A	77
Medium Dense Silty Sand	905.0	110	N/A	N/A	N/A	N/A	N/A	302

Table I-11 – Summary of Settlement Analysis Parameters (I-385 335+00/ R385-82)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Loose Silty Sand	932.0	100	N/A	N/A	N/A	N/A	N/A	422
Medium Dense Clayey Sand	928.0	110	N/A	N/A	N/A	N/A	N/A	20
Very Stiff Sandy Fat Clay	922.0	120	N/A	N/A	N/A	N/A	N/A	187
Very Loose Clayey Sand	915.0	100	N/A	N/A	N/A	N/A	N/A	35
Stiff Sandy Silt	910.0	115	0.1	0.01	0.22	O.C.	3	77
Medium Dense to Dense Silty Sand	905.0	110	N/A	N/A	N/A	N/A	N/A	302

Table I-12 – Summary of Settlement Analysis Parameters (I-385 368+00/ W385-2L-03)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Sandy Silt	977.0	105	N/A	N/A	N/A	N/A	N/A	257
Medium Dense Silty Sand	965.0	105	N/A	N/A	N/A	N/A	N/A	375

Table I-13 – Summary of Settlement Analysis Parameters (I-385 381+00/ R385-36)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Medium Dense Silty Sand	1009.0	110	N/A	N/A	N/A	N/A	N/A	610
Loose Silty Sand	1007.0	105	N/A	N/A	N/A	N/A	N/A	211
Medium Dense Silty Sand	1006.0	110	N/A	N/A	N/A	N/A	N/A	457

Table I-14 – Summary of Settlement Analysis Parameters (I-385 NBCD 374+00/ B01-SPT-06)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Loose Silty Sand	1005.0	105	N/A	N/A	N/A	N/A	N/A	161
Medium Dense Clayey Sand	973.0	105	N/A	N/A	N/A	N/A	N/A	147
Loose to Medium Dense Silty Sand	970.0	110	N/A	N/A	N/A	N/A	N/A	175

Table I-15 – Summary of Settlement Analysis Parameters (I-385 SBCD 102+50/ R385-36)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Medium Dense Silty Sand	1007.5	110	N/A	N/A	N/A	N/A	N/A	439

Table I-16 – Summary of Settlement Analysis Parameters (Ramp 1 63+00/ R85-15)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			C _c / (1+e ₀)	C _r / (1+e ₀)	C _v	State of Consolidating Layer	OCR	
Medium Dense Silty Sand	933.0	110	N/A	N/A	N/A	N/A	N/A	309
Dense to Very Dense Silty Sand	918.0	120	N/A	N/A	N/A	N/A	N/A	438

Table I-17 – Summary of Settlement Analysis Parameters (Ramp 1 77+25/ W1A-1R-01)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			C _c / (1+e ₀)	C _r / (1+e ₀)	C _v	State of Consolidating Layer	OCR	
Soft Sandy Clay	921.0	110	N/A	N/A	N/A	N/A	N/A	41
Very Loose Silty Sand	907.0	100	N/A	N/A	N/A	N/A	N/A	70
Loose Clayey Sand	905.0	100	N/A	N/A	N/A	N/A	N/A	41
Very Loose to Loose Silty Sand	902.0	100	N/A	N/A	N/A	N/A	N/A	79
Medium Dense Silty Sand	899.0	110	N/A	N/A	N/A	N/A	N/A	244

Table I-18 – Summary of Settlement Analysis Parameters (Ramp 1 115+50/ R1-06)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			C _c / (1+e ₀)	C _r / (1+e ₀)	C _v	State of Consolidating Layer	OCR	
Loose Silty Sand	1009.0	105	N/A	N/A	N/A	N/A	N/A	213
Medium Dense Silty Sand	975.0	110	N/A	N/A	N/A	N/A	N/A	881
Loose to Medium Dense Silty Sand	960.0	110	N/A	N/A	N/A	N/A	N/A	186

Table I-19 – Summary of Settlement Analysis Parameters (Ramp 1A 64+00/ R1A-76)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Medium Dense Clayey Sand	979.0	110	N/A	N/A	N/A	N/A	N/A	286
Very Stiff Sandy Silt	973.0	120	N/A	N/A	N/A	N/A	N/A	196
Stiff Sandy Fat Clay	971.0	115	N/A	N/A	N/A	N/A	N/A	142
Loose Silty Sand	969.0	105	N/A	N/A	N/A	N/A	N/A	330
Medium Dense Silty Sand	967.0	110	N/A	N/A	N/A	N/A	N/A	267
Loose Silty Sand	960.0	105	N/A	N/A	N/A	N/A	N/A	174

Table I-20 – Summary of Settlement Analysis Parameters (Ramp 1A 70+50/ W1A-1R-10)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Medium Dense Silty Sand	987.0	110	N/A	N/A	N/A	N/A	N/A	380
Very Stiff Plastic Silt	984.0	110	N/A	N/A	N/A	N/A	N/A	293
Loose to Medium Dense Silty Sand	974.0	105	N/A	N/A	N/A	N/A	N/A	201

Table I-21 – Summary of Settlement Analysis Parameters (Ramp 1A 90+00/ W2B-1R-01)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Medium Dense Silty Sand	1005.0	110	N/A	N/A	N/A	N/A	N/A	396
Loose Silty Sand	986.0	105	N/A	N/A	N/A	N/A	N/A	183
Medium Dense Silty Sand	977.0	110	N/A	N/A	N/A	N/A	N/A	321
Loose Silty Sand	967.0	105	N/A	N/A	N/A	N/A	N/A	100
Medium Dense Silty Sand	962.0	110	N/A	N/A	N/A	N/A	N/A	304

Table I-22 – Summary of Settlement Analysis Parameters (Ramp 1A 91+00/ W2B-1R-03)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Very Loose Silty Sand	1007.0	100	N/A	N/A	N/A	N/A	N/A	95
Medium Dense Silty Sand	975.0	110	N/A	N/A	N/A	N/A	N/A	356
Medium Dense Clayey Sand	971.0	110	N/A	N/A	N/A	N/A	N/A	200
Very Loose Silty Sand	965.0	100	N/A	N/A	N/A	N/A	N/A	51
Medium Dense Silty Sand	960.0	110	N/A	N/A	N/A	N/A	N/A	307

Table I-23 – Summary of Settlement Analysis Parameters (Ramp 1B 76+00/ R1B-04)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Medium Dense Clayey Sand	1015.0	110	N/A	N/A	N/A	N/A	N/A	271
Dense to Very Dense Silty Sand	1007.0	120	N/A	N/A	N/A	N/A	N/A	1025

Table I-24 – Summary of Settlement Analysis Parameters (Ramp 1B 76+00/ W85-1L-03)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Medium Dense Silty Sand	1009.0	110	N/A	N/A	N/A	N/A	N/A	575
Dense Silty Sand	1000.0	115	N/A	N/A	N/A	N/A	N/A	1421

Table I-25 – Summary of Settlement Analysis Parameters (Ramp 1B 77+00/ W85-1L-02)

Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Loose Silty Sand	1013.0	105	N/A	N/A	N/A	N/A	N/A	209
Poorly Graded Gravel	1000.0	120	N/A	N/A	N/A	N/A	N/A	1933

Table I-26 – Summary of Settlement Analysis Parameters (Ramp 2B 40+50/ W2B-1R-03)

Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			C_c	C_r	e_0	Preconsolidation Pressure	OCR	
Loose to Medium Dense Silty Sand	1003.0	105	N/A	N/A	N/A	N/A	N/A	269
Medium Dense Clayey Sand	971.0	110	N/A	N/A	N/A	N/A	N/A	200
Loose to Medium Dense Silty Sand	960.0	105	N/A	N/A	N/A	N/A	N/A	256

Table I-27 – Summary of Settlement Analysis Parameters (Ramp 2B 44+00/ W2B-1R-04)

Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Medium Dense Silty Sand	1008.0	110	N/A	N/A	N/A	N/A	N/A	478
Loose Silty Sand	969.0	105	N/A	N/A	N/A	N/A	N/A	199
Medium Dense to Dense Silty Sand	960.0	110	N/A	N/A	N/A	N/A	N/A	610

Table I-28 – Summary of Settlement Analysis Parameters (Ramp 2 59+00/ R2-70)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Medium Dense Silty Sand	1007.0	110	N/A	N/A	N/A	N/A	N/A	374
Firm to Stiff Sandy Fat Clay	998.0	115	0.1	0.01	0.22	O.C.	3	115
Very Stiff to Stiff Sandy Fat Clay	992.0	120	0.1	0.01	0.22	O.C.	3	208
Very Loose to Loose Silty Sand	987.0	100	N/A	N/A	N/A	N/A	N/A	137
Medium Dense Silty Sand	979.0	110	N/A	N/A	N/A	N/A	N/A	271

Table I-29 – Summary of Settlement Analysis Parameters (Ramp 2 62+50/ R2-39)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Stiff to Very Stiff Plastic Clay	1009.0	105	N/A	N/A	N/A	N/A	N/A	136
Loose Clayey Sand	1000.0	100	N/A	N/A	N/A	N/A	N/A	136
Stiff to Very Stiff Plastic Clay	998.0	105	N/A	N/A	N/A	N/A	N/A	172
Loose Clayey Sand	986.0	110	N/A	N/A	N/A	N/A	N/A	44
Loose to Medium Dense Silty Sand	980.0	110	N/A	N/A	N/A	N/A	N/A	192

Table I-30 – Summary of Settlement Analysis Parameters (Ramp 2A 71+00/ B12-SPT-03)

Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Existing Fill (ML)	1016.0	105	N/A	N/A	N/A	N/A	N/A	120
Loose to Medium Dense Silty Sand	982.0	110	N/A	N/A	N/A	N/A	N/A	109
Medium Stiff Plastic Silt	963.0	105	N/A	N/A	N/A	N/A	N/A	61
Loose Silty Sand	958.0	105	N/A	N/A	N/A	N/A	N/A	88
Medium Dense Silty Sand	942.0	110	N/A	N/A	N/A	N/A	N/A	402
Dense to Very Dense Silty Sand	915.0	120	N/A	N/A	N/A	N/A	N/A	547

Table I-31 – Summary of Settlement Analysis Parameters (Ramp 2B 33+50/ B-16)

Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Loose Silty Sand	1007.0	105	N/A	N/A	N/A	N/A	N/A	227
Medium Dense Clayey Sand	992.0	110	N/A	N/A	N/A	N/A	N/A	272
Medium Dense Clayey Gravel	989.0	110	N/A	N/A	N/A	N/A	N/A	451
Very Loose Silty Sand	985.0	100	N/A	N/A	N/A	N/A	N/A	60
Medium Dense Silty Sand	969.0	110	N/A	N/A	N/A	N/A	N/A	75
Medium Dense Silty Sand	959.0	110	N/A	N/A	N/A	N/A	N/A	610
Very Dense Silty Sand	935.0	120	N/A	N/A	N/A	N/A	N/A	1051

Table I-32 – Summary of Settlement Analysis Parameters (Ramp 2B 44+25/ B-32)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Medium Dense Silty Sand	1006.0	110	N/A	N/A	N/A	N/A	N/A	381
Loose to Medium Dense Silty Sand	980.0	105	N/A	N/A	N/A	N/A	N/A	267
Medium Dense Clayey Sand	970.0	110	N/A	N/A	N/A	N/A	N/A	156
Medium Dense Silty Sand	965.0	110	N/A	N/A	N/A	N/A	N/A	469

Table I-33 – Summary of Settlement Analysis Parameters (Ramp 3 40+50/ R3-38)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Loose Silty Sand	1022.5	105	N/A	N/A	N/A	N/A	N/A	142
Medium Dense Silty Sand	987.0	110	N/A	N/A	N/A	N/A	N/A	265

Table I-34 – Summary of Settlement Analysis Parameters (Ramp 3A 296+00/ W2A-MB1-02)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Existing Fill (SC)	1016.0	100	N/A	N/A	N/A	N/A	N/A	126
Medium Stiff to Stiff Sandy Clay	984.0	105	N/A	N/A	N/A	N/A	N/A	155
Soft to Medium Stiff Sandy Silt	976.0	105	N/A	N/A	N/A	N/A	N/A	51
Very Loose to Medium Dense Silty Sand	968.0	105	N/A	N/A	N/A	N/A	N/A	130
Soft to Stiff Sandy Silt	953.0	105	N/A	N/A	N/A	N/A	N/A	48
Loose Silty Sand	946.5	110	N/A	N/A	N/A	N/A	N/A	126

Table I-35 – Summary of Settlement Analysis Parameters (Ramp 4 40+00/ W4-1R-09)

Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Existing Fill (SM)	1010.0	105	N/A	N/A	N/A	N/A	N/A	293
Loose to Medium Dense Silty Sand	954.0	105	N/A	N/A	N/A	N/A	N/A	293
PWR	945.0	137	N/A	N/A	N/A	N/A	N/A	1575
Medium Dense Silty Sand	943.0	110	N/A	N/A	N/A	N/A	N/A	560

Table I-36 – Summary of Settlement Analysis Parameters (Ramp 4 43+50/W4-1R-11)

Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Loose Clayey Sand	1004.0	105	N/A	N/A	N/A	N/A	N/A	135
Loose to Medium Dense Silty Sand	1002.0	105	N/A	N/A	N/A	N/A	N/A	326
Loose Clayey Sand	959.0	105	N/A	N/A	N/A	N/A	N/A	48

Table I-37 – Summary of Settlement Analysis Parameters (Ramp 4 47+25/ W4-1R-07)

Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters					Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer	OCR	
Loose Silty Sand	1013.0	105	N/A	N/A	N/A	N/A	N/A	141
Medium Dense Silty Sand	1003.0	110	N/A	N/A	N/A	N/A	N/A	356
Loose Silty Sand	977.0	105	N/A	N/A	N/A	N/A	N/A	1119
Medium Dense silty Sand	972.0	110	N/A	N/A	N/A	N/A	N/A	210
Firm Sandy Silt	969.0	110	N/A	N/A	N/A	N/A	N/A	44
Loose Silty Sand	959.0	105	N/A	N/A	N/A	N/A	N/A	80
Medium Dense Silty Sand	952.0	110	N/A	N/A	N/A	N/A	N/A	18

Table I-38 – Summary of Settlement Analysis Parameters (Ramp 4B 388+00/ W4-1R-05)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters				OCR	Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer		
Medium Dense Silty Sand	1015.0	110	N/A	N/A	N/A	N/A	N/A	339
Medium Stiff to Stiff Fat Clay	981.0	105	N/A	N/A	N/A	N/A	N/A	134
Very Loose Silty Sand	967.0	100	N/A	N/A	N/A	N/A	N/A	73
Medium Stiff Sandy Silt	957.0	105	N/A	N/A	N/A	N/A	N/A	55
Loose to Medium Dense Silty Sand	951.5	105	N/A	N/A	N/A	N/A	N/A	89
Medium Dense to Dense Silty Sand	931.0	110	N/A	N/A	N/A	N/A	N/A	348

Table I-39 – Summary of Settlement Analysis Parameters (Ramp 8 21+00/ W385-2R-04)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters				OCR	Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer		
Loose to Medium Dense Clayey Sand	992.0	110	N/A	N/A	N/A	N/A	N/A	129
Dense Silty Sand	964.0	120	N/A	N/A	N/A	N/A	N/A	305

Table I-40 – Summary of Settlement Analysis Parameters (Ramp 9 52+50/ B01-SPT-01)								
Material Description	Top of Layer Elevation (ft)	Soil Unit Weight (pcf)	Consolidation Parameters				OCR	Elastic Modulus (ksf)
			$C_c/(1+e_0)$	$C_r/(1+e_0)$	C_v	State of Consolidating Layer		
Loose to Medium Dense Clayey Sand	999.0	105	N/A	N/A	N/A	N/A	N/A	104
Loose Silty Sand	983.0	105	N/A	N/A	N/A	N/A	N/A	141
Loose to Medium Dense Clayey Sand	980.0	105	N/A	N/A	N/A	N/A	N/A	93

Appendix J

Summary of Cut Wall Design Parameters

Table J-1 – I-385 Sta 423+00 to 446+73

	Elevation, ft	Cohesion, c (psf)	Friction Angle, Φ (deg)	Unit Weight, γ (pcf)	Active Earth Pressure Coefficient, K_a	At Rest Pressure Coefficient, K_0	Passive Earth Pressure Coefficient, K_p (Embedment less than 12 feet)	Passive Earth Pressure Coefficient, K_p (Embedment greater than 12 ft)
Dense Clayey Sand	Above 1067 ft	-	30	120	0.33	0.50	3.00	4.08
Very Dense Silty Sand	1065 ft to 1067 ft	-	36	120	0.26	0.41	3.85	6.20
Loose to Medium Dense Silty Sand	1061 ft to 1065 ft	-	30	120	0.33	0.50	3.00	4.08
Very Dense Silty Sand	1059 ft to 1031 ft	-	36	120	0.26	0.41	3.85	6.20
Medium Dense Silty Sand	1054 ft to 1059 ft	-	32	120	0.31	0.47	3.25	4.67
PWR	1043 ft to 1054 ft	-	40	137	0.22	0.36	4.60	8.34
Very Dense Silty Sand	1037 ft to 1043 ft	-	36	120	0.26	0.41	3.85	6.20
PWR	1031 ft to 1037 ft	-	40	137	0.22	0.36	4.60	8.34

Table J-2 – I-385 NBCD Sta 337+10 to 446+40

	Elevation, ft	Cohesion, c (psf)	Friction Angle, Φ (deg)	Unit Weight, γ (pcf)	Active Earth Pressure Coefficient, Ka	At Rest Pressure Coefficient, K0	Passive Earth Pressure Coefficient, Kp (Embedment less than 12 feet)	Passive Earth Pressure Coefficient, Kp (Embedment greater than 12 ft)
Stiff Plastic Clay	Above 927 ft	-	26	120	0.39	0.56	2.56	3.33
Loose Clayey Sand	925 ft to 927 ft	-	27	120	0.38	0.55	2.66	3.45
Loose Silty Sand	917 ft to 925 ft	-	28	120	0.36	0.53	2.77	3.63
Medium Dense Silty Sand	901 ft to 917 ft	-	32	120	0.31	0.47	3.25	4.67

Table J-3 – I-385 SBCD Sta 116+99 to 122+10

	Elevation, ft	Cohesion, c (psf)	Friction Angle, Φ (deg)	Unit Weight, γ (pcf)	Active Earth Pressure Coefficient, Ka	At Rest Pressure Coefficient, K0	Passive Earth Pressure Coefficient, Kp (Embedment less than 12 feet)	Passive Earth Pressure Coefficient, Kp (Embedment greater than 12 ft)
Dense Silty Sand	Above 970 ft	-	32	120	0.31	0.47	3.25	4.67
Loose Silty Sand	968 ft to 970 ft	-	28	120	0.36	0.53	2.77	3.63
Medium Dense to Dense Silty Sand	951 ft to 968 ft	-	32	120	0.31	0.47	3.25	4.67
Very Dense Silty Sand	949 ft to 951 ft	-	36	120	0.26	0.41	3.85	6.20
PWR	947 ft to 949 ft	-	40	137	0.22	0.36	4.60	8.34

Table J-4 – Ramp 1A Sta 48+15 to 73+18

	Elevation, ft	Cohesion, c (psf)	Friction Angle, Φ (deg)	Unit Weight, γ (pcf)	Active Earth Pressure Coefficient, K_a	At Rest Pressure Coefficient, K_0	Passive Earth Pressure Coefficient, K_p (Embedment less than 12 feet)	Passive Earth Pressure Coefficient, K_p (Embedment greater than 12 ft)
Loose Silty Sand	Above 913 ft	-	28	120	0.36	0.53	2.77	3.63
Medium Dense Silty Sand	Below 913 ft	-	32	120	0.31		3.25	4.67

Table J-5 – Ramp 2A 105+71 to 109+70

	Elevation, ft	Cohesion, c (psf)	Friction Angle, Φ (deg)	Unit Weight, γ (pcf)	Active Earth Pressure Coefficient, K_a	At Rest Pressure Coefficient, K_0	Passive Earth Pressure Coefficient, K_p (Embedment less than 12 feet)	Passive Earth Pressure Coefficient, K_p (Embedment greater than 12 ft)
Soft to Medium Stiff Plastic Clay	Above 925 ft	-	26	120	0.39	0.56	2.56	3.33
Medium Dense Silty Sand	889 ft to 925 ft	-	32	120	0.31	0.47	3.25	4.67

Table J-6 – Ramp 2A Sta 110+32 to 114+72

	Elevation, ft	Cohesion, c (psf)	Friction Angle, Φ (deg)	Unit Weight, γ (pcf)	Active Earth Pressure Coefficient, K_a	At Rest Pressure Coefficient, K_0	Passive Earth Pressure Coefficient, K_p (Embedment less than 12 feet)	Passive Earth Pressure Coefficient, K_p (Embedment greater than 12 ft)
Medium Stiff to Stiff Plastic Silt	Above 931 ft	-	28	120	0.36	0.53	2.77	3.63
Stiff Sandy Silt	922 ft to 931 ft	-	28	120	0.36	0.53	2.77	3.63
Loose Silty Sand	895 ft to 922 ft	-	28	120	0.36	0.53	2.77	3.63
Medium Dense Silty Sand	890 ft to 895 ft	-	32	120	0.31	0.47	3.25	4.67

Table J-7 – I-385 NBCD Sta 358+95 to 361+07

	Elevation, ft	Cohesion, c (psf)	Friction Angle, Φ (deg)	Unit Weight, γ (pcf)	Active Earth Pressure Coefficient, K_a	At Rest Pressure Coefficient, K_0	Passive Earth Pressure Coefficient, K_p (Embedment less than 12 feet)	Passive Earth Pressure Coefficient, K_p (Embedment greater than 12 ft)
Loose Clayey Sand	Above 967 ft	-	27	120	0.38	0.55	2.66	3.45
Stiff Plastic Clay	965 ft to 967 ft	-	26	120	0.39	0.56	2.56	3.33
Loose Silty Sand	954 ft to 965 ft	-	28	120	0.36	0.53	2.77	3.63
Medium Dense to Dense Silty Sand	947 ft to 954 ft	-	36	120	0.26	0.41	3.85	6.20
PWR	945 ft to 947 ft	-	40	137	0.22	0.36	4.60	8.34
Medium Dense to Dense Silty Sand	929 ft to 945 ft	-	36	120	0.26	0.41	3.85	6.20
PWR	927 ft to 929 ft	-	40	137	0.22	0.36	4.60	8.34

Table J-8 – I-385 SBCD Sta 116+99 to 122+10

	Elevation , ft	Cohesion, c (psf)	Friction Angle, Φ (deg)	Unit Weight, γ (pcf)	Active Earth Pressure Coefficient, K_a	At Rest Pressure Coefficient, K_0	Passive Earth Pressure Coefficient, K_p (Embedment less than 12 feet)	Passive Earth Pressure Coefficient, K_p (Embedment greater than 12 ft)
Dense Silty Sand	Above 970 ft	-	32	120	0.31	0.47	3.25	4.67
Loose Silty Sand	968 ft to 970 ft	-	28	120	0.36	0.53	2.77	3.63
Medium Dense to Dense Silty Sand	949 ft to 968 ft	-	32	120	0.31	0.47	3.25	4.67
Very Dense Silty Sand	947 ft to 949 ft	-	36	120	0.26	0.41	3.85	6.20
PWR	945 ft to 947 ft	-	40	137	0.22	0.36	4.60	8.34