APPENDIX "B"

Table 2 – Summary of Laboratory Test Results
Table 3 – Summary of Environmental Classification Test Results
Moisture Content Test Results
Material Passing the No. 200 Sieve Test Results
Grain-Size Analysis Test Results and Curves
Organic Content Test Results
Atterberg Limits Test Results
Environmental Classification Test Results

TABLE 2 - SUMMARY OF LABORATORY TEST RESULTS
LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
MIAMI-DADE COUNTY, FLORIDA
GEOSOL Project No.: 218144

BORING NUMBER	SAMPLE NUMBER	STRATUM NUMBER	AASHTO Group	USCS SYMBOL	Sample Depth (FEET)	Sieve Analysis (Percent Passing)									Atterberg Limits (%)			Organic Content (%)	Natural Moisture Content (%)
						1"	3/4"	3/8"	#4	#10	#40	#60	#100	#200	Liquid Limit	Plastic Limit	Plasticity Index		
MI-2	1	1	A-8	OL	0.0 - 0.2	-	-	-	-	-	-	-	-	15	-	-	-	11	29
CB-2	1	2	A-1-a	SP-SM	0.2 - 2.0	100	93	71	56	42	28	22	17	11	-	-	-	-	3
CB-4	1	2	A-1-b	SP-SM	0.2 - 2.0	100	98	79	68	59	46	31	17	11	-	-	-	-	11
CB-5	1	2	A-1-b	SP-SM	0.2 - 2.0	89	84	72	62	55	43	29	13	7	-	-	-	-	7
MI-1	1	2	A-1-b	SM	0.2 - 2.0	100	95	74	60	49	35	29	23	18	-	-	-	-	8
MJ-12	1	2	A-1-b	SP-SM	0.2 - 2.0	100	88	67	58	49	37	27	16	10	-	-	-	-	4
MJ-14	1	2	A-1-b	SP-SM	0.2 - 2.0	100	93	73	65	60	49	31	15	11	-	-	-	-	7
MJ-10	3	2	A-1-b	SM	4.0 - 6.0	100	100	83	66	57	43	31	19	15	-	-	-	-	18
CC-2	4	2	A-1-b	SP-SM	6.0 - 8.0	100	95	78	68	61	41	24	13	9	-	-	-	-	7
MI-3	4	2	A-1-b	SP-SM	6.0 - 8.0	100	95	78	66	57	44	30	17	12	-	-	-	-	10
MI-4	2	3	A-2-4	SM	2.0 - 3.8	100	100	84	70	64	55	44	26	18	-	-	-	-	13
MJ-11	3	3	A-2-4	SM	5.0 - 6.0	100	100	92	80	71	59	43	27	22	-	-	-	-	11
MJ-7	3	3	A-2-4	SM	4.0 - 6.0	-	-	-	-	-	-	-	-	20	-	-	-	3	27
MJ-9	4	3	A-2-4	SM	6.0 - 8.0	100	94	89	77	69	55	32	17	14	-	-	-	-	19
CB-12	2	4	A-3	SP-SM	2.0 - 3.8	100	93	89	87	86	75	38	14	10	-	-	-	-	14
CC-1	2	4	A-3	SP-SM	2.0 - 4.0	100	100	92	86	82	55	30	13	7	-	-	-	-	8
MJ-13	2	4	A-3	SP	2.0 - 4.0	100	100	100	100	100	88	47	8	1	-	-	-	-	8
CB-7	2	5	A-4	ML	2.0 - 4.0	-	-	-	-	-	-	-	-	81	-	-	-	-	53
CB-9	2	5	A-4	ML	2.7 - 4.0	-	-	-	-	-	-	-	-	63	-	-	-	-	39
MJ-1	2	5	A-4	ML	2.0 - 4.0	-	-	-	-	-	-	-	-	89	44	59	N.P.	-	31
MJ-2	2	5	A-4	ML	2.0 - 4.0	-	-	-	-	-	-	-	-	84	-	-	-	-	29
CC-1	12	7	A-1-b	SP-SM	43.0 - 45.0	82	82	74	64	59	46	30	18	10	-	-	-	-	11
MI-6	3	8	A-3	SP-SM	4.0 - 6.0	100	88	72	70	70	60	36	11	7	-	-	-	-	14
CB-11	4	8	A-3	SP-SM	6.0 - 8.0	100	100	82	71	64	53	32	13	9	-	-	-	-	19
CC-4	5	8	A-3	SP	8.0 - 10.0	-	-	-	-	-	-	-	-	2	-	-	-	-	19
CC-4	10	8	A-3	SP	33.0 - 35.0	-	-	-	-	-	-	-	-	3	-	-	-	-	19
CC-4	12	8	A-3	SP	43.0 - 45.0	-	-	-	-	-	-	-	-	2	-	-	-	-	13
CC-3	10	9	A-2-4	SP-SM	33.0 - 35.0	100	83	73	68	63	58	54	27	11	-	-	-	-	15

TABLE 3 - SUMMARY OF ENVIRONMENTAL CLASSIFICATION TEST RESULTS
LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
MIAMI-DADE COUNTY, FLORIDA
GEOSOL Project No.: 218144

Sample Location	Sample Type	Depth (ft)	pH	Resistivity (ohm-cm)	Chloride (ppm)	Sulfate (ppm)	FDOT ENVIRONMENTAL CLASSIFICATION	
							Steel	Concrete
MJ-9	GW	6.5	7.3	1,820	29	18	MA	MA
CC-4	GW	4.9	7.6	2,060	28	6	MA	MA

NOTES: (1) The following FDOT laboratory test methods were utilized.

4500h+ (pH)

EPA 120.1 (Equivalent to FM5-551: Resistivity)

EPA-300 (Equivalent to FM5-552: Chlorides)

EPA-300 (Equivalent to FM5-553: Sulfates)

(2) SA: SLIGHTLY AGGRESSIVE

(3) MA: MODERATELY AGGRESSIVE

(4) EA: EXTREMELY AGGRESSIVE

FDOT Criteria for Substructure Environmental Classification (FDOT *Structures Design Guidelines* 2018)

Classification	Environmental Condition	Units	Steel		Concrete	
			Water	Soil	Water	Soil
Extremely Aggressive (If any of these conditions exist)	pH		< 6.0		< 5.0	
	Cl	ppm	> 2000		> 2000	
	SO_4	ppm	N.A.		> 1500	> 2000
	Resistivity	Ohm-cm	< 1000		< 500	
Slightly Aggressive (If all of these conditions exist)	pH		> 7.0		> 6.0	
	Cl	ppm	< 500		< 500	
	SO_4	ppm	N.A.		< 150	< 1000
	Resistivity	Ohm-cm	> 5000		> 3000	
Moderately Aggressive	This classification must be used at all sites not meeting requirements for either slightly aggressive or extremely aggressive environments.					

pH = acidity ($-\log_{10}H^+$; potential of Hydrogen), Cl = chloride content, SO_4 = Sulfate content.

MOISTURE CONTENT TEST RESULTS (ASTM D-2216)

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
LOCATION: MIAMI-DADE COUNTY, FLORIDA
PROJECT No.: 218144

Boring No.	MI-3	MI-4	MI-6	CC-2	MJ-9	CC-3
Sample No.	4	2	3	4	4	10
Sample Depth (Feet)	6-8	2-3.8	4-6	6-8	6-8	33-35
Tare No.	C-2	4M	4K	77	54	77
Tare plus wet soil (grams)	325.5	202.5	407.5	272.0	310.0	410.5
Tare plus dry soil (grams)	297.0	179.5	359.0	254.0	261.5	357.0
Water Ww (grams)	28.5	23.0	48.5	18.0	48.5	53.5
Tare (grams)	7.5	7.0	7.5	7.5	7.5	7.5
Dry soil Ws (grams)	289.5	172.5	351.5	246.5	254.0	349.5
Water Content w (%)	9.8	13.3	13.8	7.3	19.1	15.3

Boring No.	CB-9	MJ-11	MJ-12	CC-4	CC-1	MJ-14
Sample No.	2	3	1	10	2	1
Sample Depth (Feet)	2.7-4	5-6	0.2-2	33-35	2-4	0.2-2
Tare No.	B-2	4B	32	4M	10	863
Tare plus wet soil (grams)	158.5	174.5	267.5	288.5	383.0	387.5
Tare plus dry soil (grams)	116.5	157.5	257.5	243.5	355.0	361.5
Water Ww (grams)	42.0	17.0	10.0	45.0	28.0	26.0
Tare (grams)	7.5	7.5	7.5	7.5	7.5	7.5
Dry soil Ws (grams)	109.0	150.0	250.0	236.0	347.5	354.0
Water Content w (%)	38.5	11.3	4.0	19.1	8.1	7.3

Boring No.	CC-1	MJ-10	CC-4	MJ-7	CB-7	MI-2
Sample No.	12	3	12	3	2	1
Sample Depth (Feet)	43-45	4-6	43-45	4-6	2-4	0-0.2
Tare No.	863	B-5	C-1	4B	32	O99
Tare plus wet soil (grams)	438.5	210.0	454.0	414.0	325.0	150.5
Tare plus dry soil (grams)	397.5	179.0	403.0	327.5	215.0	118.5
Water Ww (grams)	41.0	31.0	51.0	86.5	110.0	32.0
Tare (grams)	7.5	7.5	7.5	7.5	7.5	7.5
Dry soil Ws (grams)	390.0	171.5	395.5	320.0	207.5	111.0
Water Content w (%)	10.5	18.1	12.9	27.0	53.0	28.8

Boring No.	MJ-1	MJ-2	CC-4	CB-5	CB-4
Sample No.	2	2	5	1	1
Sample Depth (Feet)	2-4	2-4	8-10	0.2-2	0.2-2
Tare No.	B-2	4K	4Y	4A	18
Tare plus wet soil (grams)	195.0	211.0	281.5	357.5	339.0
Tare plus dry soil (grams)	151.0	165.0	237.5	335.0	305.5
Water Ww (grams)	44.0	46.0	44.0	22.5	33.5
Tare (grams)	7.5	7.5	7.5	7.5	7.5
Dry soil Ws (grams)	143.5	157.5	230.0	327.5	298.0
Water Content w (%)	30.7	29.2	19.1	6.9	11.2

Boring No.	MI-1	CB-2	CB-12	CB-11	MJ-13
Sample No.	1	1	2	4	2
Sample Depth (Feet)	0.2-2	0.2-2	2-3.8	6-8	2-4
Tare No.	O99	30	17	54	101
Tare plus wet soil (grams)	404.0	230.5	202.5	281.5	202.0
Tare plus dry soil (grams)	375.5	223.5	179.0	237.5	187.0
Water Ww (grams)	28.5	7.0	23.5	44.0	15.0
Tare (grams)	7.5	7.5	7.5	7.5	7.5
Dry soil Ws (grams)	368.0	216.0	171.5	230.0	179.5
Water Content w (%)	7.7	3.2	13.7	19.1	8.4

MATERIAL PASSING THE # 200 SIEVE TEST RESULTS (AASHTO T-11)

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
LOCATION: MIAMI-DADE COUNTY, FLORIDA
PROJECT No.: 218144

Boring No.	MI-3	MI-4	MI-6	CC-2	MJ-9	CC-4
Sample No.	4	2	3	4	4	10
Sample Depth (Feet)	6-8	2-3.8	4-6	6-8	6-8	33-35
Original Dry Weight of Soil (grams)	289.5	172.5	351.5	246.5	254.0	236.0
Weight of Soil After Washing (grams)	255	142	325.5	223.5	218	229
Weight of Soil Passing 200 Sieve (grams)	34.5	30.5	26.0	23.0	36.0	7.0
Percent of Soil Passing 200 Sieve (%)	11.9	17.7	7.4	9.3	14.2	3.0

Boring No.	CB-9	MJ-11	MJ-12	CC-1	CC-1	CC-4
Sample No.	2	3	1	2	12	12
Sample Depth (Feet)	2.7-4	5-6	0.2-2	2-4	43-45	43-45
Original Dry Weight of Soil (grams)	109.0	150.0	250.0	347.5	390.0	395.5
Weight of Soil After Washing (grams)	40.5	117	224	322.5	351.5	388
Weight of Soil Passing 200 Sieve (grams)	68.5	33.0	26.0	25.0	38.5	7.5
Percent of Soil Passing 200 Sieve (%)	62.8	22.0	10.4	7.2	9.9	1.9

Boring No.	MJ-10	MJ-7	CB-7	MJ-1	MJ-2	MI-2
Sample No.	3	3	2	2	2	1
Sample Depth (Feet)	4-6	4-6	2-4	2-4	2-4	0-0.2
Original Dry Weight of Soil (grams)	171.5	285.5	208.5	143.5	157.5	82.5
Weight of Soil After Washing (grams)	146.5	229	39	16.5	25.5	70.0
Weight of Soil Passing 200 Sieve (grams)	25.0	56.5	169.5	127.0	132.0	12.5
Percent of Soil Passing 200 Sieve (%)	14.6	19.8	81.3	88.5	83.8	15.2

Boring No.	CB-5	CB-4	MI-1	CB-2	CB-12
Sample No.	1	1	1	1	2
Sample Depth (Feet)	0.2-2	0.2-2	0.2-2	0.2-2	2-3.8
Original Dry Weight of Soil (grams)	327.5	298.0	368.0	216.0	171.5
Weight of Soil After Washing (grams)	303	267	301.5	192	155
Weight of Soil Passing 200 Sieve (grams)	24.5	31.0	66.5	24.0	16.5
Percent of Soil Passing 200 Sieve (%)	7.5	10.4	18.1	11.1	9.6

Boring No.	CB-11	MJ-13	CC-3	MJ-14	CC-4
Sample No.	4	2	10	1	5
Sample Depth (Feet)	6-8	2-4	33-35	0.2-2	8-10
Original Dry Weight of Soil (grams)	230.0	179.5	349.5	354.0	230.0
Weight of Soil After Washing (grams)	210	178	310	316	225
Weight of Soil Passing 200 Sieve (grams)	20.0	1.5	39.5	38.0	5.0
Percent of Soil Passing 200 Sieve (%)	8.7	0.8	11.3	10.7	2.2

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA

Boring No. MI-3
Sample No. 4
Depth (feet) 6-8

SOIL DESCRIPTION: Brown Slightly Silty Fine to Medium SAND with Some Limerock Fragments (FILL; A-1-b)

Tare #	Dry Soil Wt.
C-2	289.5

Sieve Size	Sieve Sizes	Cumulative Wt. Retained	% RETAINED	% PASSING	% PASSING TOTAL SAMPLE	WEIGHT RETAINED (Grams)
75	75mm 3"	0.0	0.0	100	100	0.0
50	50mm 2"	0.0	0.0	100	100	0.0
37.5	37.5mm 1.5"	0.0	0.0	100.0	100.0	0.0
25	25mm 1"	0.0	0.0	100.0	100.0	0.0
19	19mm 3/4"	14.5	5.0	95.0	95.0	14.5
9.5	9.5mm 3/8"	65.0	22.5	77.5	77.5	50.5
4.75	4.75mm #4	97.5	33.7	66.3	66.3	32.5
2.36	2 mm #10	123.5	42.7	57.3	57.3	26.0
0.6	425um #40	163.0	56.3	43.7	43.7	39.5
0.3	250um #60	203.5	70.3	29.7	29.7	40.5
0.15	150um #100	241.5	83.4	16.6	16.6	38.0
0.075	75um #200	255.0	88.1	11.9	11.9	13.5
PAN	-	289.5	100.0	0.0	0.0	34.5

NOTES: Percent passing the #200 sieve was determined by the wash method.

ASTM D 2487 Classification of Soil for Engineering Purposes

Coarse Gravel	< 3" and > 3/4"
Fine Gravel	< 3/4" and > #4

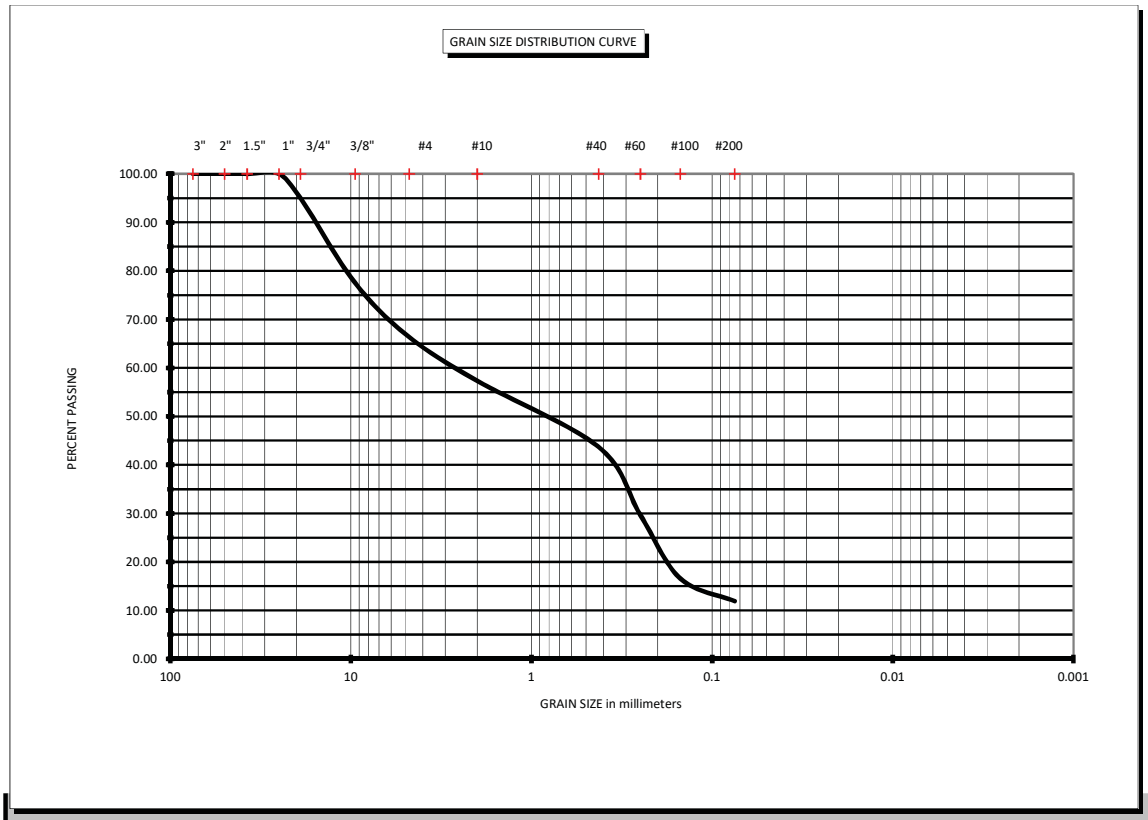
Coarse Sand	< #4 and > #10
Medium Sand	< #10 and > #40
Fine Sand	< #40 and > #200

Cu = D60 / D10
Cc = (D30)^2 / (D10 x D60)
1000 um = 1 mm

tested by: M. Khalid computed by: S. Zhang checked by: O. Riccobono

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA



ASTM D 2487 Classification of Soil for Engineering Purposes			Coarse Sand	< #4 and > #10	Cu = D60 / D10
Coarse Gravel	< 3" and > 3/4"		Medium Sand	< #10 and > #40	Cc = (D30)^2 / (D10 x D60)
Fine Gravel	< 3/4" and > #4		Fine Sand	< #40 and > #200	

BORING # MI-3 **SAMPLE #** 4 **Depth (feet)** 6-8

SOIL DESCRIPTION: Brown Slightly Silty Fine to Medium SAND with Some Limerock Fragments (FILL; A-1-b)

Natural Moisture Content: 9.8%

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA

Boring No. MI-4
Sample No. 2
Depth (feet) 2-3.8

SOIL DESCRIPTION: Brown Silty Fine to Medium SAND with Little to Some Limerock Fragments (FILL; A-2-4)

Tare #	Dry Soil Wt.
4M	172.5

Sieve Size	Sieve Sizes	Cumulative Wt. Retained	% RETAINED	% PASSING	% PASSING TOTAL SAMPLE	WEIGHT RETAINED (Grams)
75	75mm 3"	0.0	0.0	100	100	0.0
50	50mm 2"	0.0	0.0	100	100	0.0
37.5	37.5mm 1.5"	0.0	0.0	100.0	100.0	0.0
25	25mm 1"	0.0	0.0	100.0	100.0	0.0
19	19mm 3/4"	0.0	0.0	100.0	100.0	0.0
9.5	9.5mm 3/8"	28.0	16.2	83.8	83.8	28.0
4.75	4.75mm #4	51.0	29.6	70.4	70.4	23.0
2.36	2 mm #10	62.0	35.9	64.1	64.1	11.0
0.6	425um #40	77.0	44.6	55.4	55.4	15.0
0.3	250um #60	97.0	56.2	43.8	43.8	20.0
0.15	150um #100	128.5	74.5	25.5	25.5	31.5
0.075	75um #200	142.0	82.3	17.7	17.7	13.5
PAN	-	172.5	100.0	0.0	0.0	30.5

NOTES: Percent passing the #200 sieve was determined by the wash method.

ASTM D 2487 Classification of Soil for Engineering Purposes

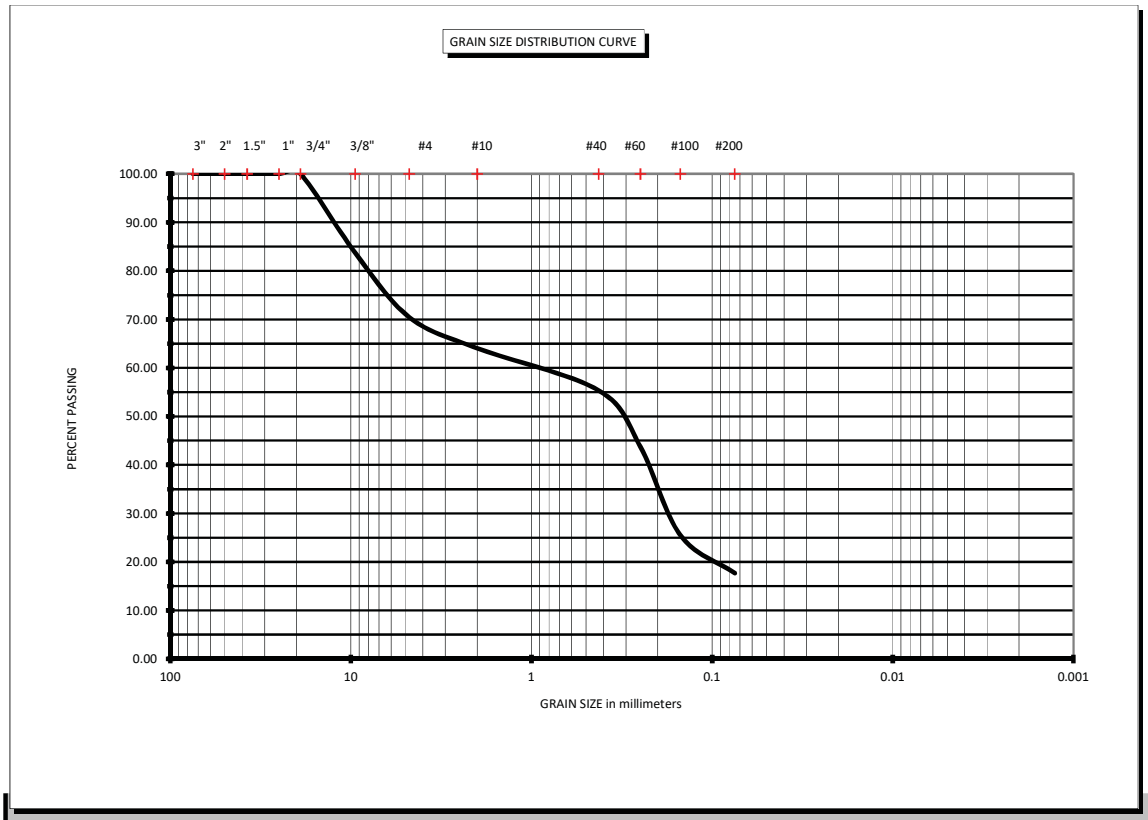
Coarse Gravel	< 3" and > 3/4"
Fine Gravel	< 3/4" and > #4
Coarse Sand	< #4 and > #10
Medium Sand	< #10 and > #40
Fine Sand	< #40 and > #200

Cu = D60 / D10
Cc = (D30)^2 / (D10 x D60)
1000 um = 1 mm

tested by: M. Khalid computed by: S. Zhang checked by: O. Riccobono

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA



ASTM D 2487 Classification of Soil for Engineering Purposes			Coarse Sand	< #4 and > #10	Cu = D60 / D10
Coarse Gravel	< 3" and > 3/4"		Medium Sand	< #10 and > #40	Cc = (D30)^2 / (D10 x D60)
Fine Gravel	< 3/4" and > #4		Fine Sand	< #40 and > #200	

BORING # MI-4 **SAMPLE #** 2 **Depth (feet)** 2-3.8

SOIL DESCRIPTION: Brown Silty Fine to Medium SAND with Little to Some Limerock Fragments (FILL; A-2-4)

Natural Moisture Content: 13.3%

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA

Boring No. MI-6
Sample No. 3
Depth (feet) 4-6

SOIL DESCRIPTION: Brown Slightly Silty Fine to Medium SAND with Little to Some Limestone Fragments (A-3)

Tare #	Dry Soil Wt.
4K	351.5

Sieve Size	Sieve Sizes	Cumulative Wt. Retained	% RETAINED	% PASSING	% PASSING TOTAL SAMPLE	WEIGHT RETAINED (Grams)
75	75mm 3"	0.0	0.0	100	100	0.0
50	50mm 2"	0.0	0.0	100	100	0.0
37.5	37.5mm 1.5"	0.0	0.0	100.0	100.0	0.0
25	25mm 1"	0.0	0.0	100.0	100.0	0.0
19	19mm 3/4"	41.5	11.8	88.2	88.2	41.5
9.5	9.5mm 3/8"	97.5	27.7	72.3	72.3	56.0
4.75	4.75mm #4	104.5	29.7	70.3	70.3	7.0
2.36	2 mm #10	106.5	30.3	69.7	69.7	2.0
0.6	425um #40	140.5	40.0	60.0	60.0	34.0
0.3	250um #60	226.0	64.3	35.7	35.7	85.5
0.15	150um #100	311.5	88.6	11.4	11.4	85.5
0.075	75um #200	325.5	92.6	7.4	7.4	14.0
PAN	-	351.5	100.0	0.0	0.0	26.0

NOTES: Percent passing the #200 sieve was determined by the wash method.

ASTM D 2487 Classification of Soil for Engineering Purposes

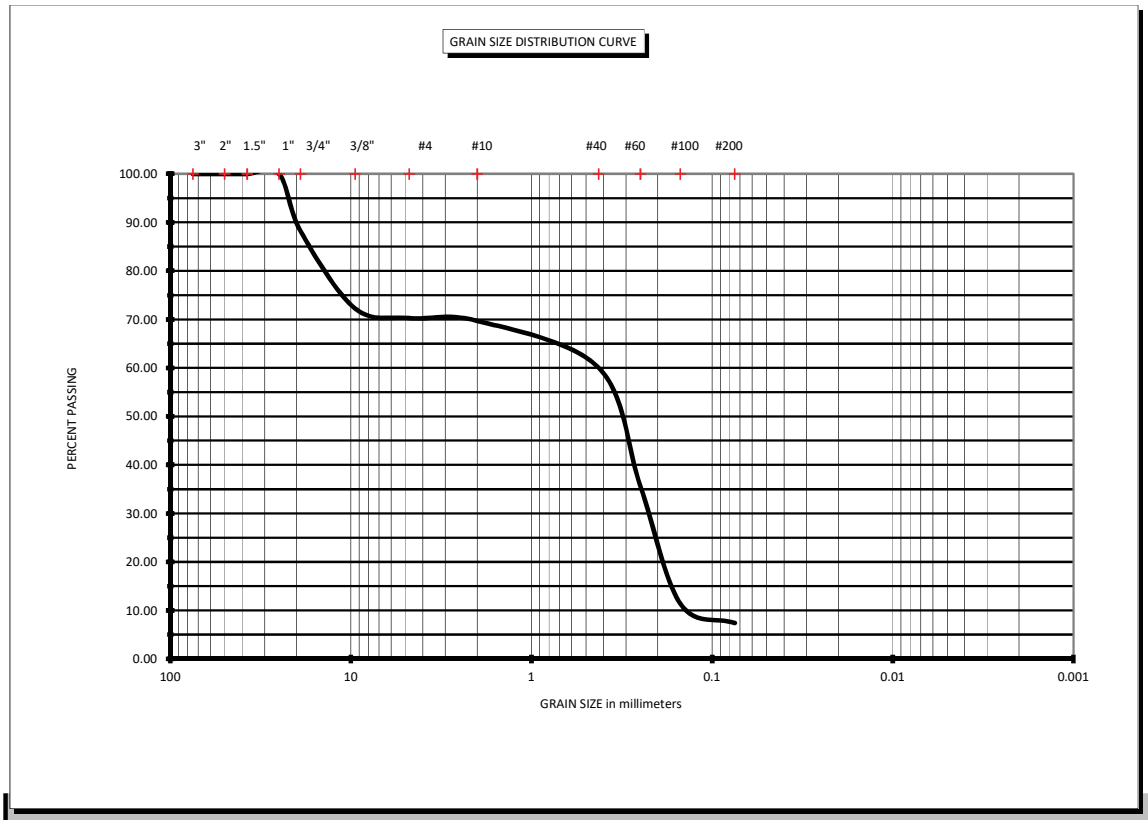
Coarse Gravel	< 3" and > 3/4"
Fine Gravel	< 3/4" and > #4
Coarse Sand	< #4 and > #10
Medium Sand	< #10 and > #40
Fine Sand	< #40 and > #200

Cu = D60 / D10
Cc = (D30)^2 / (D10 x D60)
1000 um = 1 mm

tested by: M. Khalid computed by: S. Zhang checked by: O. Riccobono

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA



ASTM D 2487 Classification of Soil for Engineering Purposes			Coarse Sand	< #4 and > #10	Cu = D60 / D10
Coarse Gravel	< 3" and > 3/4"		Medium Sand	< #10 and > #40	Cc = (D30)^2 / (D10 x D60)
Fine Gravel	< 3/4" and > #4		Fine Sand	< #40 and > #200	

BORING # MI-6 **SAMPLE #** 3 **Depth (feet)** 4-6

SOIL DESCRIPTION: Brown Slightly Silty Fine to Medium SAND with Little to Some Limestone Fragments (A-3)

Natural Moisture Content: 13.8%

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA

Boring No. CC-2
Sample No. 4
Depth (feet) 6-8

SOIL DESCRIPTION: Brown Slightly Silty Fine to Medium SAND with Some Limerock Fragments (FILL; SP-SM)

Tare #	Dry Soil Wt.
77	246.5

Sieve Size	Sieve Sizes	Cumulative Wt. Retained	% RETAINED	% PASSING	% PASSING TOTAL SAMPLE	WEIGHT RETAINED (Grams)
75	75mm 3"	0.0	0.0	100	100	0.0
50	50mm 2"	0.0	0.0	100	100	0.0
37.5	37.5mm 1.5"	0.0	0.0	100.0	100.0	0.0
25	25mm 1"	0.0	0.0	100.0	100.0	0.0
19	19mm 3/4"	13.0	5.3	94.7	94.7	13.0
9.5	9.5mm 3/8"	55.0	22.3	77.7	77.7	42.0
4.75	4.75mm #4	80.0	32.5	67.5	67.5	25.0
2.36	2 mm #10	95.0	38.5	61.5	61.5	15.0
0.6	425um #40	146.0	59.2	40.8	40.8	51.0
0.3	250um #60	188.0	76.3	23.7	23.7	42.0
0.15	150um #100	215.0	87.2	12.8	12.8	27.0
0.075	75um #200	223.5	90.7	9.3	9.3	8.5
PAN	-	246.5	100.0	0.0	0.0	23.0

NOTES: Percent passing the #200 sieve was determined by the wash method.

ASTM D 2487 Classification of Soil for Engineering Purposes

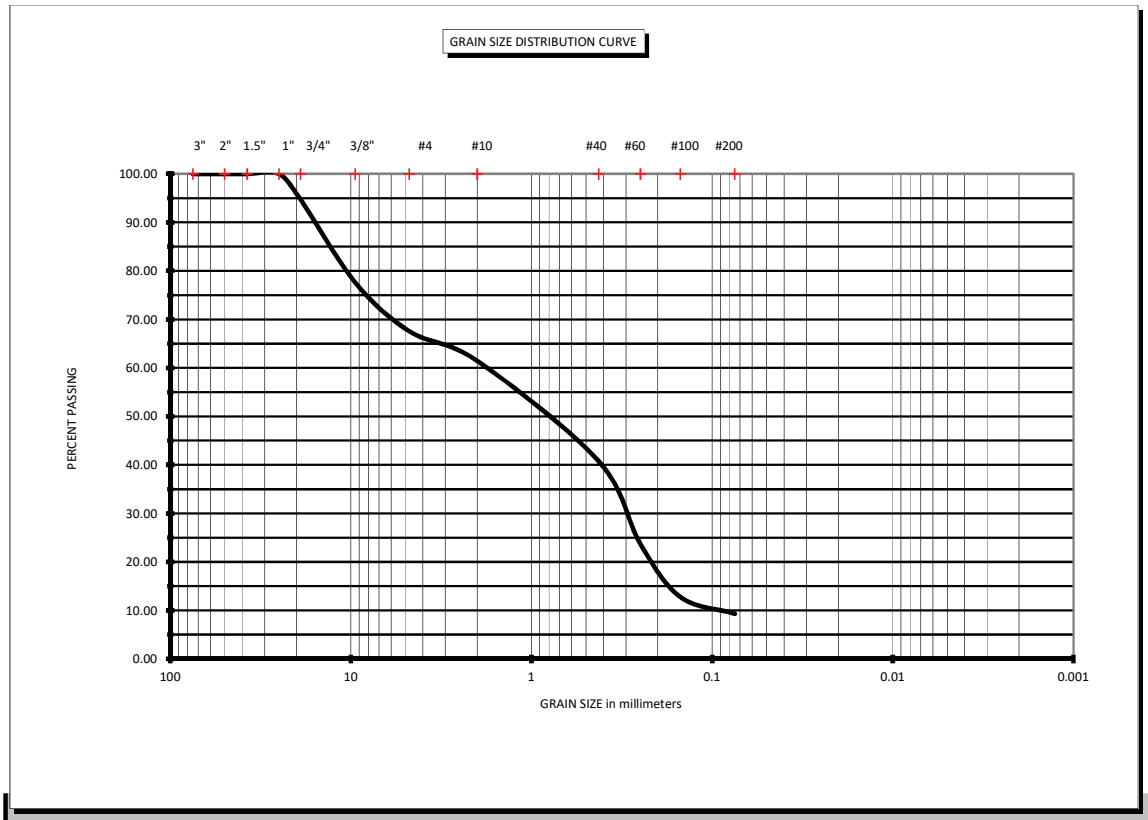
Coarse Gravel	< 3" and > 3/4"
Fine Gravel	< 3/4" and > #4
Coarse Sand	< #4 and > #10
Medium Sand	< #10 and > #40
Fine Sand	< #40 and > #200

Cu = D60 / D10
Cc = (D30)^2 / (D10 x D60)
1000 um = 1 mm

tested by: M. Khalid computed by: S. Zhang checked by: O. Riccobono

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA



ASTM D 2487 Classification of Soil for Engineering Purposes			Coarse Sand	< #4 and > #10	Cu = D60 / D10
Coarse Gravel	< 3" and > 3/4"		Medium Sand	< #10 and > #40	Cc = (D30)^2 / (D10 x D60)
Fine Gravel	< 3/4" and > #4		Fine Sand	< #40 and > #200	

BORING # CC-2 **SAMPLE #** 4 **Depth (feet)** 6-8

SOIL DESCRIPTION: Brown Slightly Silty Fine to Medium SAND with Some Limerock Fragments (FILL; SP-SM)

Natural Moisture Content: 7.3%

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA

Boring No. MJ-9
Sample No. 4
Depth (feet) 6-8

SOIL DESCRIPTION: Brown Silty Fine to Medium SAND with Little Limerock Fragments (FILL; A-2-4)

Tare #	Dry Soil Wt.
54	254.0

Sieve Size	Sieve Sizes	Cumulative Wt. Retained	% RETAINED	% PASSING	% PASSING TOTAL SAMPLE	WEIGHT RETAINED (Grams)
75	75mm 3"	0.0	0.0	100	100	0.0
50	50mm 2"	0.0	0.0	100	100	0.0
37.5	37.5mm 1.5"	0.0	0.0	100.0	100.0	0.0
25	25mm 1"	0.0	0.0	100.0	100.0	0.0
19	19mm 3/4"	14.0	5.5	94.5	94.5	14.0
9.5	9.5mm 3/8"	28.0	11.0	89.0	89.0	14.0
4.75	4.75mm #4	59.0	23.2	76.8	76.8	31.0
2.36	2 mm #10	80.0	31.5	68.5	68.5	21.0
0.6	425um #40	115.0	45.3	54.7	54.7	35.0
0.3	250um #60	173.0	68.1	31.9	31.9	58.0
0.15	150um #100	210.5	82.9	17.1	17.1	37.5
0.075	75um #200	218.0	85.8	14.2	14.2	7.5
PAN	-	254.0	100.0	0.0	0.0	36.0

NOTES: Percent passing the #200 sieve was determined by the wash method.

ASTM D 2487 Classification of Soil for Engineering Purposes

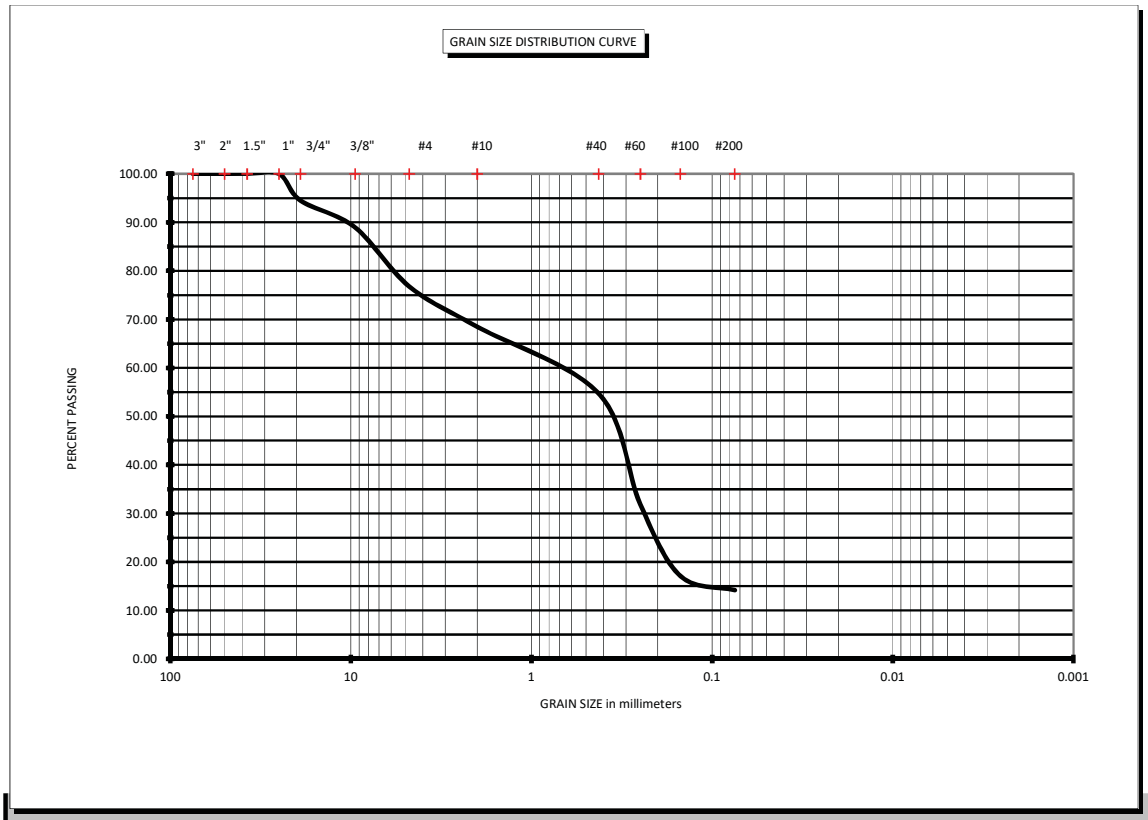
Coarse Gravel	< 3" and > 3/4"
Fine Gravel	< 3/4" and > #4
Coarse Sand	< #4 and > #10
Medium Sand	< #10 and > #40
Fine Sand	< #40 and > #200

Cu = D60 / D10
Cc = (D30)^2 / (D10 x D60)
1000 um = 1 mm

tested by: M. Khalid computed by: S. Zhang checked by: O. Riccobono

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA



ASTM D 2487 Classification of Soil for Engineering Purposes			Coarse Sand	< #4 and > #10	Cu = D60 / D10
Coarse Gravel	< 3" and > 3/4"		Medium Sand	< #10 and > #40	Cc = (D30)^2 / (D10 x D60)
Fine Gravel	< 3/4" and > #4		Fine Sand	< #40 and > #200	

BORING # MJ-9 **SAMPLE #** 4 **Depth (feet)** 6-8

SOIL DESCRIPTION: Brown Silty Fine to Medium SAND with Little Limerock Fragments (FILL; A-2-4)

Natural Moisture Content: 19.1%

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA

Boring No. MJ-11
Sample No. 3
Depth (feet) 5-6

SOIL DESCRIPTION: Brown Silty Fine to Medium SAND with Little Limerock Fragments (FILL; A-2-4)

Tare #	Dry Soil Wt.
4B	150.0

Sieve Size	Sieve Sizes	Cumulative Wt. Retained	% RETAINED	% PASSING	% PASSING TOTAL SAMPLE	WEIGHT RETAINED (Grams)
75	75mm 3"	0.0	0.0	100	100	0.0
50	50mm 2"	0.0	0.0	100	100	0.0
37.5	37.5mm 1.5"	0.0	0.0	100.0	100.0	0.0
25	25mm 1"	0.0	0.0	100.0	100.0	0.0
19	19mm 3/4"	0.0	0.0	100.0	100.0	0.0
9.5	9.5mm 3/8"	12.5	8.3	91.7	91.7	12.5
4.75	4.75mm #4	30.5	20.3	79.7	79.7	18.0
2.36	2 mm #10	43.5	29.0	71.0	71.0	13.0
0.6	425um #40	62.0	41.3	58.7	58.7	18.5
0.3	250um #60	86.0	57.3	42.7	42.7	24.0
0.15	150um #100	109.0	72.7	27.3	27.3	23.0
0.075	75um #200	117.0	78.0	22.0	22.0	8.0
PAN	-	150.0	100.0	0.0	0.0	33.0

NOTES: Percent passing the #200 sieve was determined by the wash method.

ASTM D 2487 Classification of Soil for Engineering Purposes

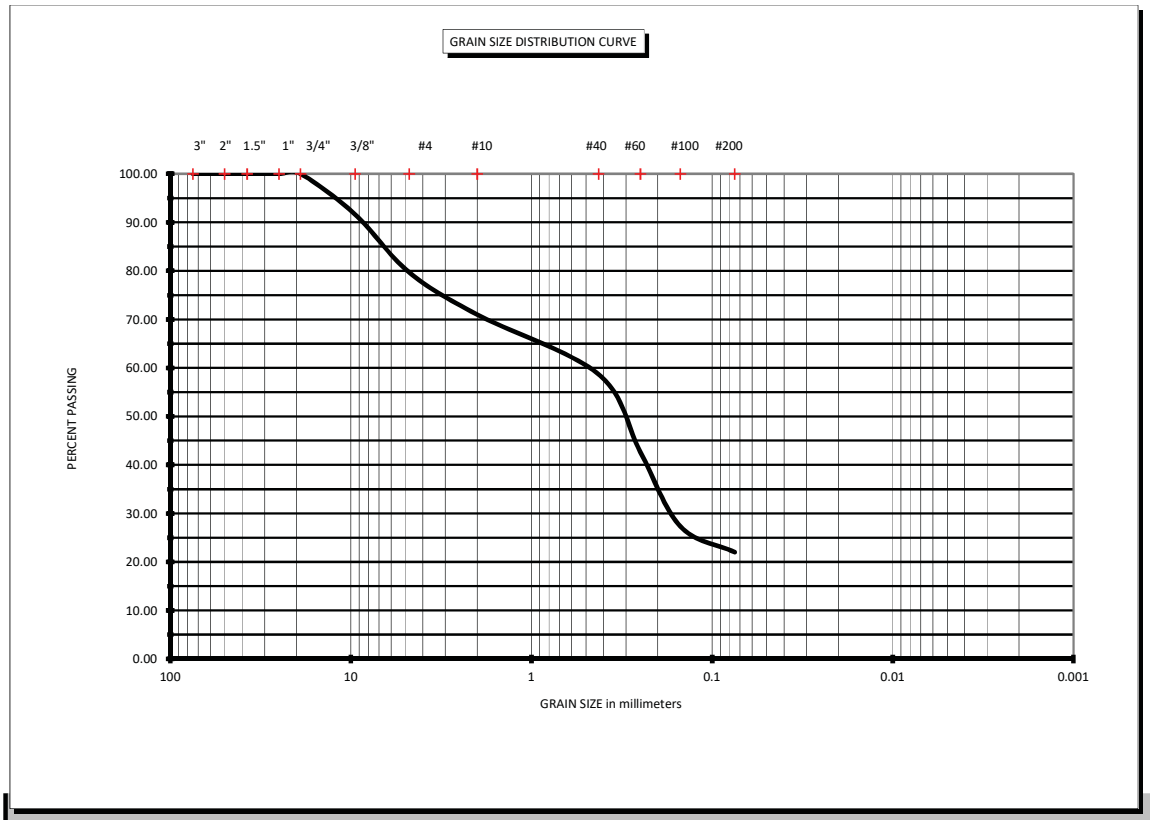
Coarse Gravel	< 3" and > 3/4"
Fine Gravel	< 3/4" and > #4
Coarse Sand	< #4 and > #10
Medium Sand	< #10 and > #40
Fine Sand	< #40 and > #200

Cu = D60 / D10
Cc = (D30)^2 / (D10 x D60)
1000 um = 1 mm

tested by: M. Khalid computed by: S. Zhang checked by: O. Riccobono

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA



ASTM D 2487 Classification of Soil for Engineering Purposes			Coarse Sand	< #4 and > #10	Cu = D60 / D10
Coarse Gravel	< 3" and > 3/4"		Medium Sand	< #10 and > #40	Cc = (D30)^2 / (D10 x D60)
Fine Gravel	< 3/4" and > #4		Fine Sand	< #40 and > #200	

BORING # MJ-11 **SAMPLE #** 3 **Depth (feet)** 5-6

SOIL DESCRIPTION: Brown Silty Fine to Medium SAND with Little Limerock Fragments (FILL; A-2-4)

Natural Moisture Content: 11.3%

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA

Boring No. MJ-12
Sample No. 1
Depth (feet) 0.2-2

SOIL DESCRIPTION: Brown Slightly Silty Fine to Medium SAND with Some Limerock Fragments (FILL; A-1-b)

Tare #	Dry Soil Wt.
32	250.0

Sieve Size	Sieve Sizes	Cumulative Wt. Retained	% RETAINED	% PASSING	% PASSING TOTAL SAMPLE	WEIGHT RETAINED (Grams)
75	75mm 3"	0.0	0.0	100	100	0.0
50	50mm 2"	0.0	0.0	100	100	0.0
37.5	37.5mm 1.5"	0.0	0.0	100.0	100.0	0.0
25	25mm 1"	0.0	0.0	100.0	100.0	0.0
19	19mm 3/4"	30.0	12.0	88.0	88.0	30.0
9.5	9.5mm 3/8"	82.5	33.0	67.0	67.0	52.5
4.75	4.75mm #4	105.5	42.2	57.8	57.8	23.0
2.36	2 mm #10	128.5	51.4	48.6	48.6	23.0
0.6	425um #40	158.0	63.2	36.8	36.8	29.5
0.3	250um #60	182.0	72.8	27.2	27.2	24.0
0.15	150um #100	209.5	83.8	16.2	16.2	27.5
0.075	75um #200	224.0	89.6	10.4	10.4	14.5
PAN	-	250.0	100.0	0.0	0.0	26.0

NOTES: Percent passing the #200 sieve was determined by the wash method.

ASTM D 2487 Classification of Soil for Engineering Purposes

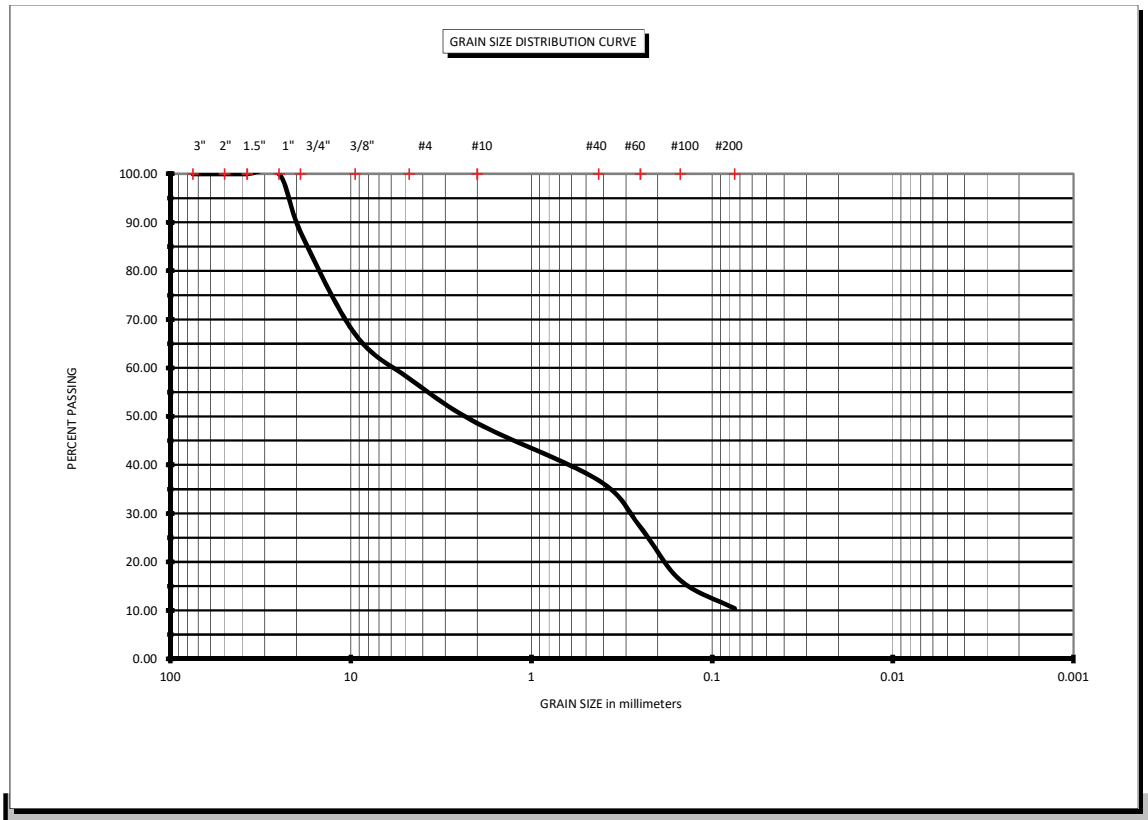
Coarse Gravel	< 3" and > 3/4"
Fine Gravel	< 3/4" and > #4
Coarse Sand	< #4 and > #10
Medium Sand	< #10 and > #40
Fine Sand	< #40 and > #200

Cu = D60 / D10
Cc = (D30)^2 / (D10 x D60)
1000 um = 1 mm

tested by: M. Khalid computed by: S. Zhang checked by: O. Riccobono

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA



ASTM D 2487 Classification of Soil for Engineering Purposes			Coarse Sand	< #4 and > #10	Cu = D60 / D10
Coarse Gravel	< 3" and > 3/4"		Medium Sand	< #10 and > #40	Cc = (D30)^2 / (D10 x D60)
Fine Gravel	< 3/4" and > #4		Fine Sand	< #40 and > #200	

BORING # MJ-12 **SAMPLE #** 1 **Depth (feet)** 0.2-2

SOIL DESCRIPTION: Brown Slightly Silty Fine to Medium SAND with Some Limerock Fragments (FILL; A-1-b)

Natural Moisture Content: 4.0%

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA

Boring No. CC-1
Sample No. 2
Depth (feet) 2-4

SOIL DESCRIPTION: Brown Slightly Silty Fine to Medium SAND with Few to Little Limerock Fragments (FILL; SP-SM)

Tare #	Dry Soil Wt.
10	347.5

Sieve Size	Sieve Sizes	Cumulative Wt. Retained	% RETAINED	% PASSING	% PASSING TOTAL SAMPLE	WEIGHT RETAINED (Grams)
75	75mm 3"	0.0	0.0	100	100	0.0
50	50mm 2"	0.0	0.0	100	100	0.0
37.5	37.5mm 1.5"	0.0	0.0	100.0	100.0	0.0
25	25mm 1"	0.0	0.0	100.0	100.0	0.0
19	19mm 3/4"	0.0	0.0	100.0	100.0	0.0
9.5	9.5mm 3/8"	27.5	7.9	92.1	92.1	27.5
4.75	4.75mm #4	49.0	14.1	85.9	85.9	21.5
2.36	2 mm #10	62.5	18.0	82.0	82.0	13.5
0.6	425um #40	158.0	45.5	54.5	54.5	95.5
0.3	250um #60	244.5	70.4	29.6	29.6	86.5
0.15	150um #100	304.0	87.5	12.5	12.5	59.5
0.075	75um #200	322.5	92.8	7.2	7.2	18.5
PAN	-	347.5	100.0	0.0	0.0	25.0

NOTES: Percent passing the #200 sieve was determined by the wash method.

ASTM D 2487 Classification of Soil for Engineering Purposes

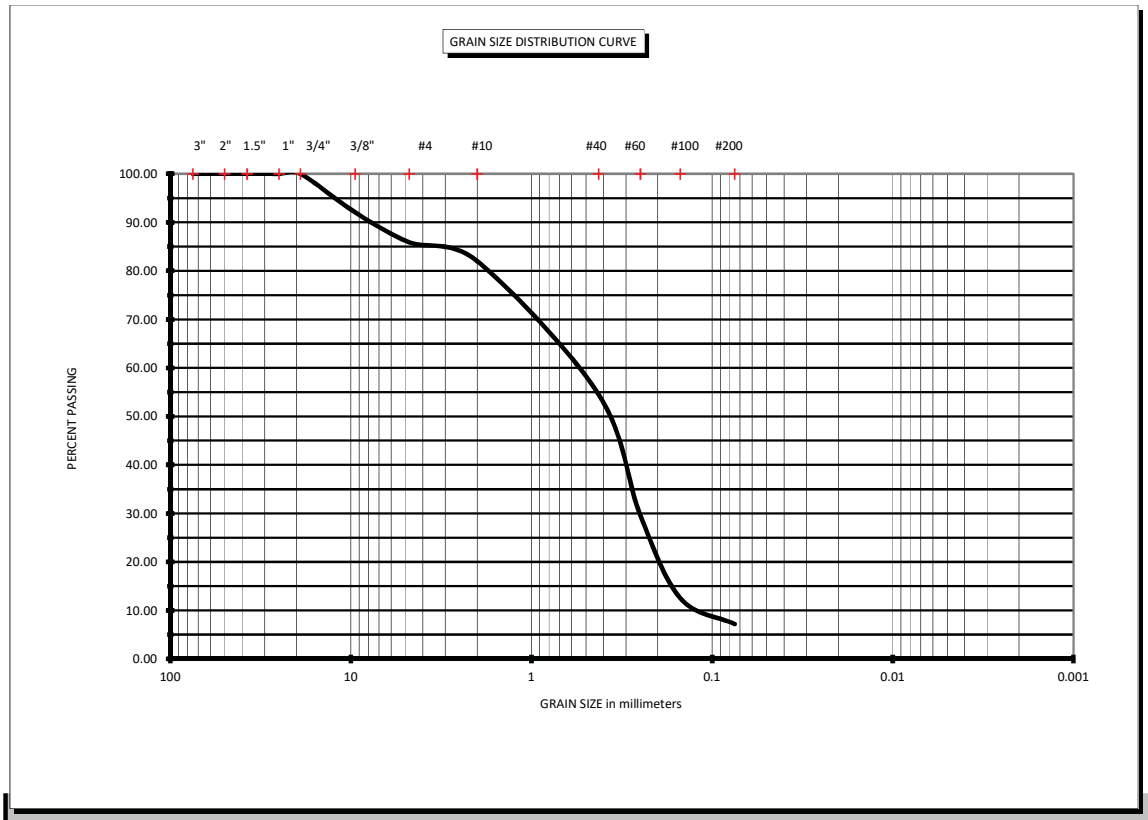
Coarse Gravel	< 3" and > 3/4"
Fine Gravel	< 3/4" and > #4
Coarse Sand	< #4 and > #10
Medium Sand	< #10 and > #40
Fine Sand	< #40 and > #200

Cu = D60 / D10
Cc = (D30)^2 / (D10 x D60)
1000 um = 1 mm

tested by: M. Khalid computed by: S. Zhang checked by: O. Riccobono

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA



ASTM D 2487 Classification of Soil for Engineering Purposes			Coarse Sand	< #4 and > #10	Cu = D60 / D10
Coarse Gravel	< 3" and > 3/4"		Medium Sand	< #10 and > #40	Cc = (D30)^2 / (D10 x D60)
Fine Gravel	< 3/4" and > #4		Fine Sand	< #40 and > #200	

BORING # CC-1 **SAMPLE #** 2 **Depth (feet)** 2-4

SOIL DESCRIPTION: Brown Slightly Silty Fine to Medium SAND with Few to Little Limerock Fragments (FILL; SP-SM)

Natural Moisture Content: 8.1%

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA

Boring No. CC-1
Sample No. 12
Depth (feet) 43-45

SOIL DESCRIPTION: Brown Slightly Silty Fine to Medium SAND with Some Limestone Fragments (SP-SM)

Tare #	Dry Soil Wt.
863	390.0

Sieve Size	Sieve Sizes	Cumulative Wt. Retained	% RETAINED	% PASSING	% PASSING TOTAL SAMPLE	WEIGHT RETAINED (Grams)
75	75mm 3"	0.0	0.0	100	100	0.0
50	50mm 2"	0.0	0.0	100	100	0.0
37.5	37.5mm 1.5"	0.0	0.0	100.0	100.0	0.0
25	25mm 1"	70.5	18.1	81.9	81.9	70.5
19	19mm 3/4"	70.5	18.1	81.9	81.9	0.0
9.5	9.5mm 3/8"	103.0	26.4	73.6	73.6	32.5
4.75	4.75mm #4	139.0	35.6	64.4	64.4	36.0
2.36	2 mm #10	160.5	41.2	58.8	58.8	21.5
0.6	425um #40	210.5	54.0	46.0	46.0	50.0
0.3	250um #60	274.5	70.4	29.6	29.6	64.0
0.15	150um #100	318.0	81.5	18.5	18.5	43.5
0.075	75um #200	351.5	90.1	9.9	9.9	33.5
PAN	-	390.0	100.0	0.0	0.0	38.5

NOTES: Percent passing the #200 sieve was determined by the wash method.

ASTM D 2487 Classification of Soil for Engineering Purposes

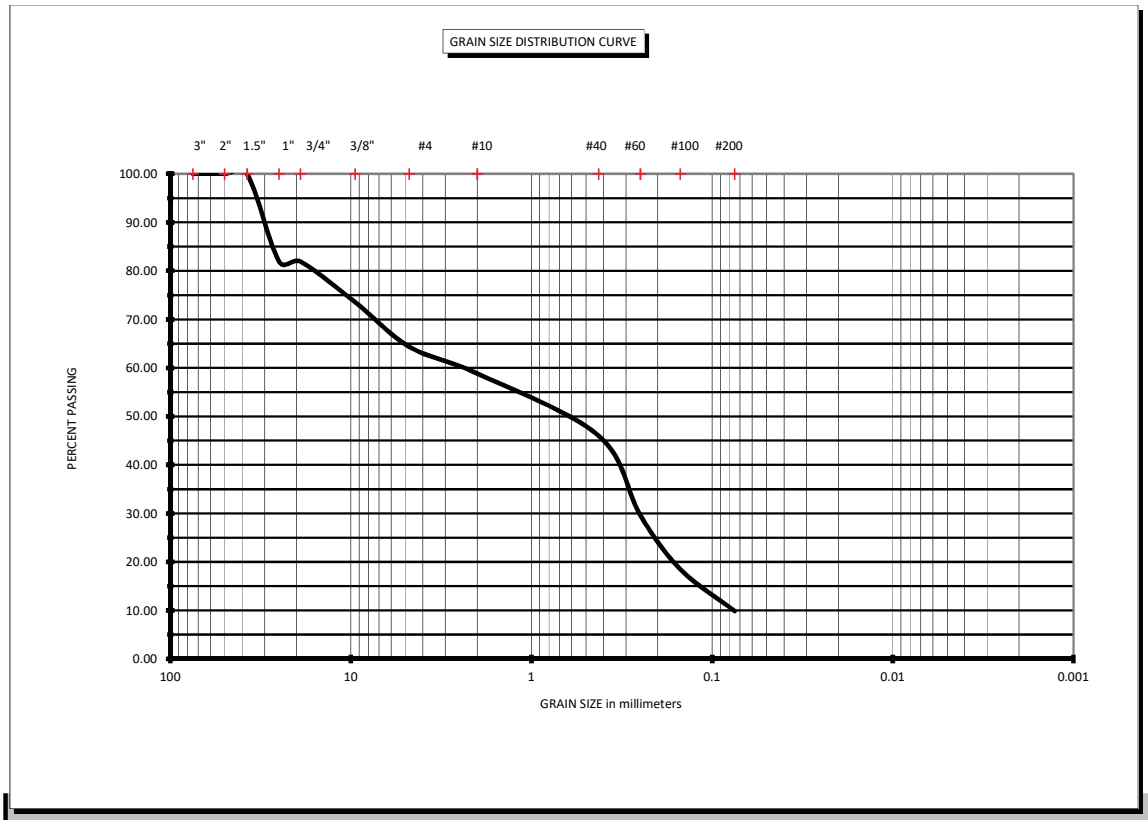
Coarse Gravel	< 3" and > 3/4"
Fine Gravel	< 3/4" and > #4
Coarse Sand	< #4 and > #10
Medium Sand	< #10 and > #40
Fine Sand	< #40 and > #200

Cu = D60 / D10
Cc = (D30)^2 / (D10 x D60)
1000 um = 1 mm

tested by: M. Khalid computed by: S. Zhang checked by: O. Riccobono

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA



ASTM D 2487 Classification of Soil for Engineering Purposes			Coarse Sand	< #4 and > #10	Cu = D60 / D10
Coarse Gravel	< 3" and > 3/4"		Medium Sand	< #10 and > #40	Cc = (D30)^2 / (D10 x D60)
Fine Gravel	< 3/4" and > #4		Fine Sand	< #40 and > #200	

BORING # CC-1 **SAMPLE #** 12 **Depth (feet)** 43-45

SOIL DESCRIPTION: Brown Slightly Silty Fine to Medium SAND with Some Limestone Fragments (SP-SM)

Natural Moisture Content: 10.5%

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA

Boring No. MJ-10
Sample No. 3
Depth (feet) 4-6

SOIL DESCRIPTION: Brown Silty Fine to Medium SAND with Some Limerock Fragments (FILL; A-1-b)

Tare #	Dry Soil Wt.
B-5	171.5

Sieve Size	Sieve Sizes	Cumulative Wt. Retained	% RETAINED	% PASSING	% PASSING TOTAL SAMPLE	WEIGHT RETAINED (Grams)
75	75mm 3"	0.0	0.0	100	100	0.0
50	50mm 2"	0.0	0.0	100	100	0.0
37.5	37.5mm 1.5"	0.0	0.0	100.0	100.0	0.0
25	25mm 1"	0.0	0.0	100.0	100.0	0.0
19	19mm 3/4"	0.0	0.0	100.0	100.0	0.0
9.5	9.5mm 3/8"	28.5	16.6	83.4	83.4	28.5
4.75	4.75mm #4	57.5	33.5	66.5	66.5	29.0
2.36	2 mm #10	74.5	43.4	56.6	56.6	17.0
0.6	425um #40	97.5	56.9	43.1	43.1	23.0
0.3	250um #60	119.0	69.4	30.6	30.6	21.5
0.15	150um #100	139.0	81.0	19.0	19.0	20.0
0.075	75um #200	146.5	85.4	14.6	14.6	7.5
PAN	-	171.5	100.0	0.0	0.0	25.0

NOTES: Percent passing the #200 sieve was determined by the wash method.

ASTM D 2487 Classification of Soil for Engineering Purposes

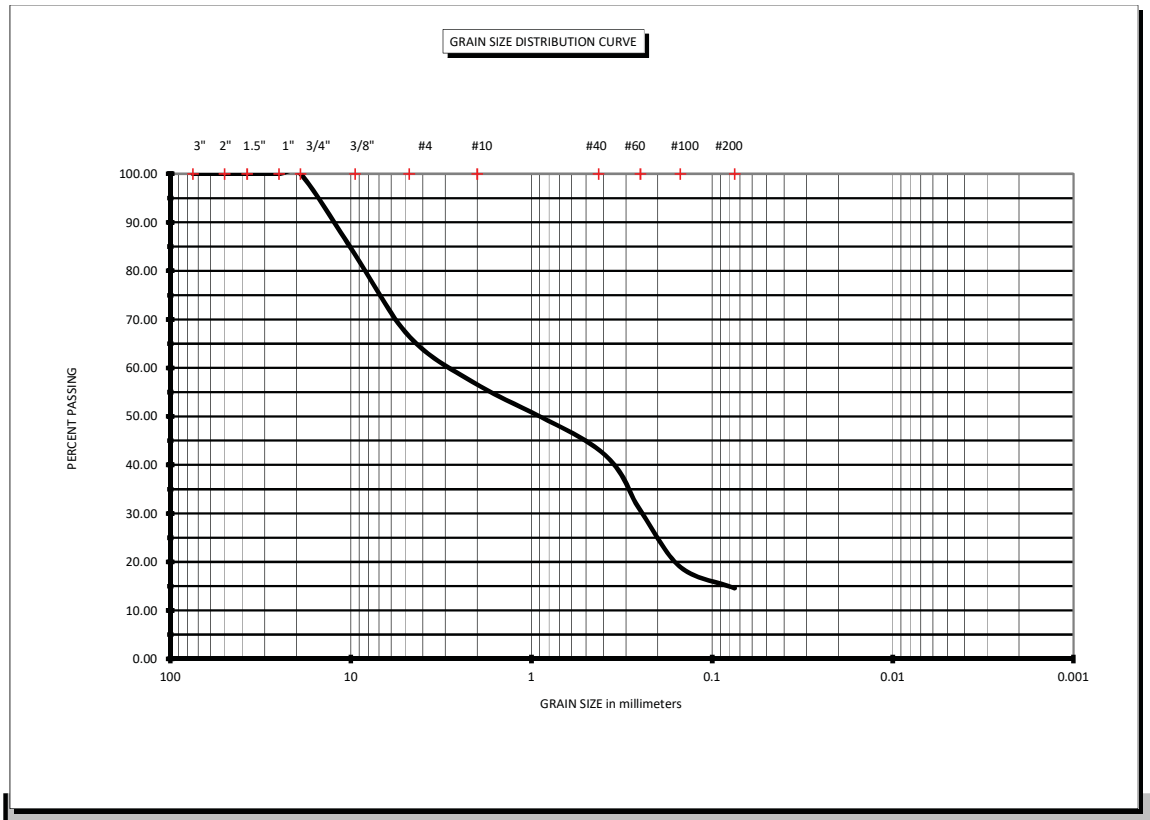
Coarse Gravel	< 3" and > 3/4"
Fine Gravel	< 3/4" and > #4
Coarse Sand	< #4 and > #10
Medium Sand	< #10 and > #40
Fine Sand	< #40 and > #200

Cu = D60 / D10
Cc = (D30)^2 / (D10 x D60)
1000 um = 1 mm

tested by: M. Khalid computed by: S. Zhang checked by: O. Riccobono

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA



ASTM D 2487 Classification of Soil for Engineering Purposes			Coarse Sand	< #4 and > #10	Cu = D60 / D10
Coarse Gravel	< 3" and > 3/4"		Medium Sand	< #10 and > #40	Cc = (D30)^2 / (D10 x D60)
Fine Gravel	< 3/4" and > #4		Fine Sand	< #40 and > #200	

BORING # MJ-10 **SAMPLE #** 3 **Depth (feet)** 4-6

SOIL DESCRIPTION: Brown Silty Fine to Medium SAND with Some Limerock Fragments (FILL; A-1-b)

Natural Moisture Content: 18.1%

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA

Boring No. CB-5
Sample No. 1
Depth (feet) 0.2-2

SOIL DESCRIPTION: Brown Slightly Silty Fine to Medium SAND with Some Limerock Fragments (FILL; A-1-b)

Tare #	Dry Soil Wt.
4A	327.5

Sieve Size	Sieve Sizes	Cumulative Wt. Retained	% RETAINED	% PASSING	% PASSING TOTAL SAMPLE	WEIGHT RETAINED (Grams)
75	75mm 3"	0.0	0.0	100	100	0.0
50	50mm 2"	0.0	0.0	100	100	0.0
37.5	37.5mm 1.5"	0.0	0.0	100.0	100.0	0.0
25	25mm 1"	37.0	11.3	88.7	88.7	37.0
19	19mm 3/4"	52.0	15.9	84.1	84.1	15.0
9.5	9.5mm 3/8"	92.0	28.1	71.9	71.9	40.0
4.75	4.75mm #4	124.0	37.9	62.1	62.1	32.0
2.36	2 mm #10	149.0	45.5	54.5	54.5	25.0
0.6	425um #40	186.0	56.8	43.2	43.2	37.0
0.3	250um #60	233.5	71.3	28.7	28.7	47.5
0.15	150um #100	285.0	87.0	13.0	13.0	51.5
0.075	75um #200	303.0	92.5	7.5	7.5	18.0
PAN	-	327.5	100.0	0.0	0.0	24.5

NOTES: Percent passing the #200 sieve was determined by the wash method.

ASTM D 2487 Classification of Soil for Engineering Purposes

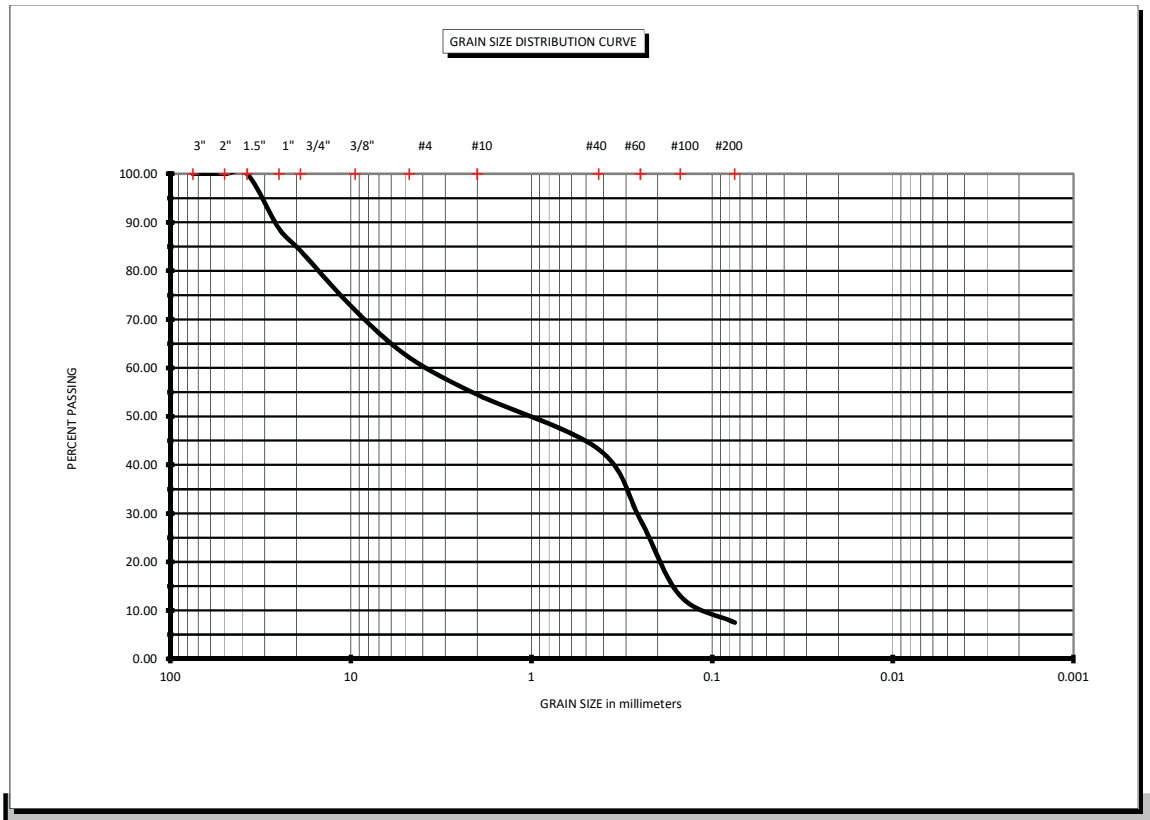
Coarse Gravel	< 3" and > 3/4"
Fine Gravel	< 3/4" and > #4
Coarse Sand	< #4 and > #10
Medium Sand	< #10 and > #40
Fine Sand	< #40 and > #200

Cu = D60 / D10
Cc = (D30)^2 / (D10 x D60)
1000 um = 1 mm

tested by: M. Khalid computed by: S. Zhang checked by: O. Riccobono

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA



ASTM D 2487 Classification of Soil for Engineering Purposes			Coarse Sand	< #4 and > #10	Cu = D60 / D10
Coarse Gravel	< 3" and > 3/4"		Medium Sand	< #10 and > #40	Cc = (D30)^2 / (D10 x D60)
Fine Gravel	< 3/4" and > #4		Fine Sand	< #40 and > #200	

BORING # CB-5 **SAMPLE #** 1 **Depth (feet)** 0.2-2

SOIL DESCRIPTION: Brown Slightly Silty Fine to Medium SAND with Some Limerock Fragments (FILL; A-1-b)

Natural Moisture Content: 6.9%

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA

Boring No. CB-4
Sample No. 1
Depth (feet) 0.2-2

SOIL DESCRIPTION: Brown Slightly Silty Fine to Medium SAND with Some Limerock Fragments (FILL; A-1-b)

Tare #	Dry Soil Wt.
18	298.0

Sieve Size	Sieve Sizes	Cumulative Wt. Retained	% RETAINED	% PASSING	% PASSING TOTAL SAMPLE	WEIGHT RETAINED (Grams)
75	75mm 3"	0.0	0.0	100	100	0.0
50	50mm 2"	0.0	0.0	100	100	0.0
37.5	37.5mm 1.5"	0.0	0.0	100.0	100.0	0.0
25	25mm 1"	0.0	0.0	100.0	100.0	0.0
19	19mm 3/4"	6.5	2.2	97.8	97.8	6.5
9.5	9.5mm 3/8"	63.0	21.1	78.9	78.9	56.5
4.75	4.75mm #4	96.0	32.2	67.8	67.8	33.0
2.36	2 mm #10	121.5	40.8	59.2	59.2	25.5
0.6	425um #40	159.5	53.5	46.5	46.5	38.0
0.3	250um #60	205.0	68.8	31.2	31.2	45.5
0.15	150um #100	247.0	82.9	17.1	17.1	42.0
0.075	75um #200	264.5	88.8	11.2	11.2	17.5
PAN	-	298.0	100.0	0.0	0.0	33.5

NOTES: Percent passing the #200 sieve was determined by the wash method.

ASTM D 2487 Classification of Soil for Engineering Purposes

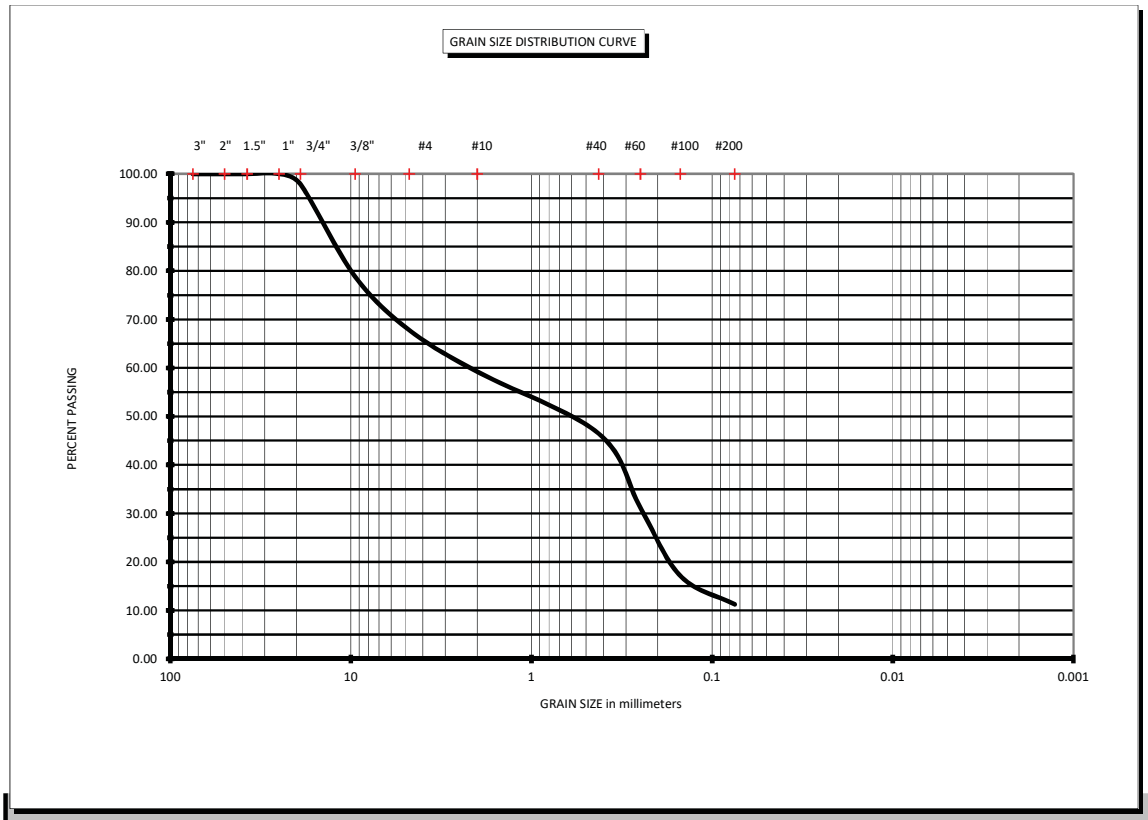
Coarse Gravel	< 3" and > 3/4"
Fine Gravel	< 3/4" and > #4
Coarse Sand	< #4 and > #10
Medium Sand	< #10 and > #40
Fine Sand	< #40 and > #200

Cu = D60 / D10
Cc = (D30)^2 / (D10 x D60)
1000 um = 1 mm

tested by: M. Khalid computed by: S. Zhang checked by: O. Riccobono

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA



ASTM D 2487 Classification of Soil for Engineering Purposes			Coarse Sand	< #4 and > #10	Cu = D60 / D10
Coarse Gravel	< 3" and > 3/4"		Medium Sand	< #10 and > #40	Cc = (D30)^2 / (D10 x D60)
Fine Gravel	< 3/4" and > #4		Fine Sand	< #40 and > #200	

BORING # CB-4 **SAMPLE #** 1 **Depth (feet)** 0.2-2

SOIL DESCRIPTION: Brown Slightly Silty Fine to Medium SAND with Some Limerock Fragments (FILL; A-1-b)

Natural Moisture Content: 11.2%

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA

Boring No. MI-1
Sample No. 1
Depth (feet) 0.2-2

SOIL DESCRIPTION: Brown Silty Fine to Coarse SAND with Some Limerock Fragments (FILL; A-1-b)

Tare #	Dry Soil Wt.
O99	368.0

Sieve Size	Sieve Sizes	Cumulative Wt. Retained	% RETAINED	% PASSING	% PASSING TOTAL SAMPLE	WEIGHT RETAINED (Grams)
75	75mm 3"	0.0	0.0	100	100	0.0
50	50mm 2"	0.0	0.0	100	100	0.0
37.5	37.5mm 1.5"	0.0	0.0	100.0	100.0	0.0
25	25mm 1"	0.0	0.0	100.0	100.0	0.0
19	19mm 3/4"	19.0	5.2	94.8	94.8	19.0
9.5	9.5mm 3/8"	95.5	26.0	74.0	74.0	76.5
4.75	4.75mm #4	146.0	39.7	60.3	60.3	50.5
2.36	2 mm #10	188.0	51.1	48.9	48.9	42.0
0.6	425um #40	240.5	65.4	34.6	34.6	52.5
0.3	250um #60	263.0	71.5	28.5	28.5	22.5
0.15	150um #100	284.0	77.2	22.8	22.8	21.0
0.075	75um #200	301.5	81.9	18.1	18.1	17.5
PAN	-	368.0	100.0	0.0	0.0	66.5

NOTES: Percent passing the #200 sieve was determined by the wash method.

ASTM D 2487 Classification of Soil for Engineering Purposes

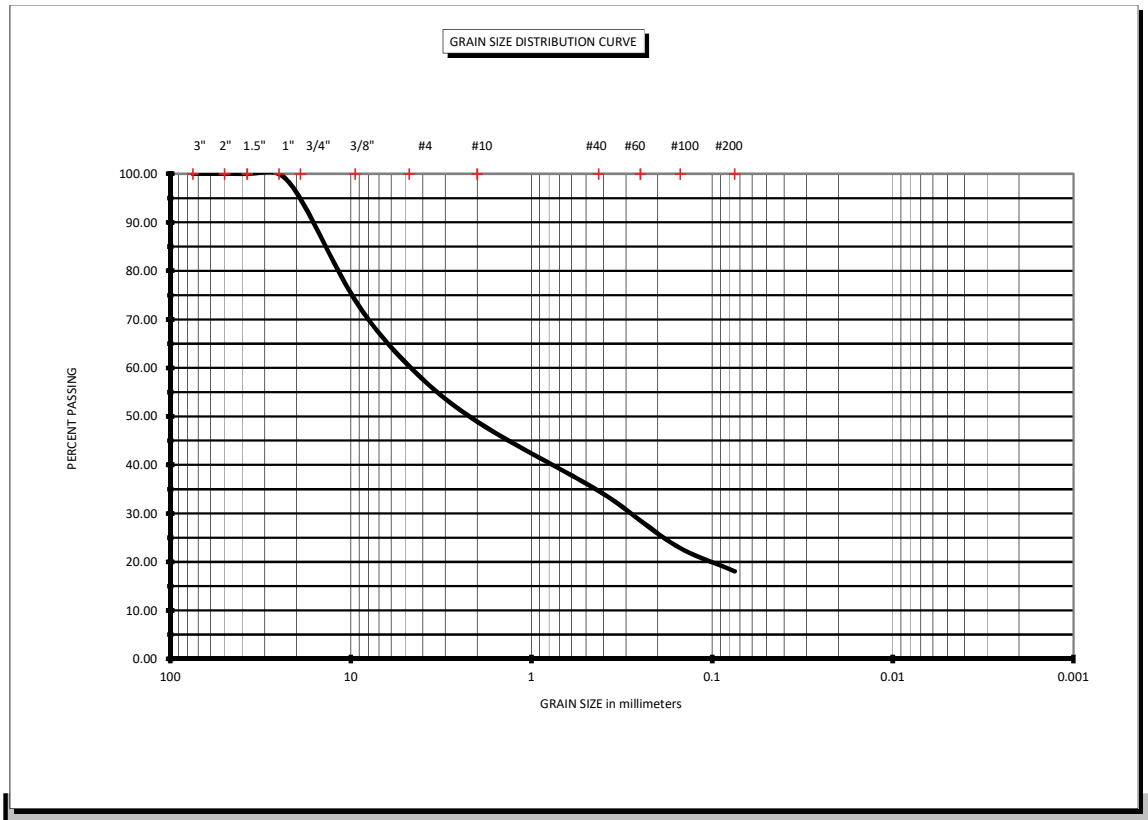
Coarse Gravel	< 3" and > 3/4"
Fine Gravel	< 3/4" and > #4
Coarse Sand	< #4 and > #10
Medium Sand	< #10 and > #40
Fine Sand	< #40 and > #200

Cu = D60 / D10
Cc = (D30)^2 / (D10 x D60)
1000 um = 1 mm

tested by: M. Khalid computed by: S. Zhang checked by: O. Riccobono

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA



ASTM D 2487 Classification of Soil for Engineering Purposes			Coarse Sand	< #4 and > #10	Cu = D60 / D10
Coarse Gravel	< 3" and > 3/4"		Medium Sand	< #10 and > #40	Cc = (D30)^2 / (D10 x D60)
Fine Gravel	< 3/4" and > #4		Fine Sand	< #40 and > #200	

BORING # MI-1 **SAMPLE #** 1 **Depth (feet)** 0.2-2

SOIL DESCRIPTION: Brown Silty Fine to Coarse SAND with Some Limerock Fragments (FILL; A-1-b)

Natural Moisture Content: 7.7%

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA

Boring No. CB-2
Sample No. 1
Depth (feet) 0.2-2

SOIL DESCRIPTION: Brown Slightly Silty Fine to Coarse SAND with Some Limerock Fragments (FILL; A-1-a)

Tare #	Dry Soil Wt.
30	216.0

Sieve Size	Sieve Sizes	Cumulative Wt. Retained	% RETAINED	% PASSING	% PASSING TOTAL SAMPLE	WEIGHT RETAINED (Grams)
75	75mm 3"	0.0	0.0	100	100	0.0
50	50mm 2"	0.0	0.0	100	100	0.0
37.5	37.5mm 1.5"	0.0	0.0	100.0	100.0	0.0
25	25mm 1"	0.0	0.0	100.0	100.0	0.0
19	19mm 3/4"	16.0	7.4	92.6	92.6	16.0
9.5	9.5mm 3/8"	63.0	29.2	70.8	70.8	47.0
4.75	4.75mm #4	95.0	44.0	56.0	56.0	32.0
2.36	2 mm #10	125.5	58.1	41.9	41.9	30.5
0.6	425um #40	156.5	72.5	27.5	27.5	31.0
0.3	250um #60	167.5	77.5	22.5	22.5	11.0
0.15	150um #100	179.5	83.1	16.9	16.9	12.0
0.075	75um #200	192.0	88.9	11.1	11.1	12.5
PAN	-	216.0	100.0	0.0	0.0	24.0

NOTES: Percent passing the #200 sieve was determined by the wash method.

ASTM D 2487 Classification of Soil for Engineering Purposes

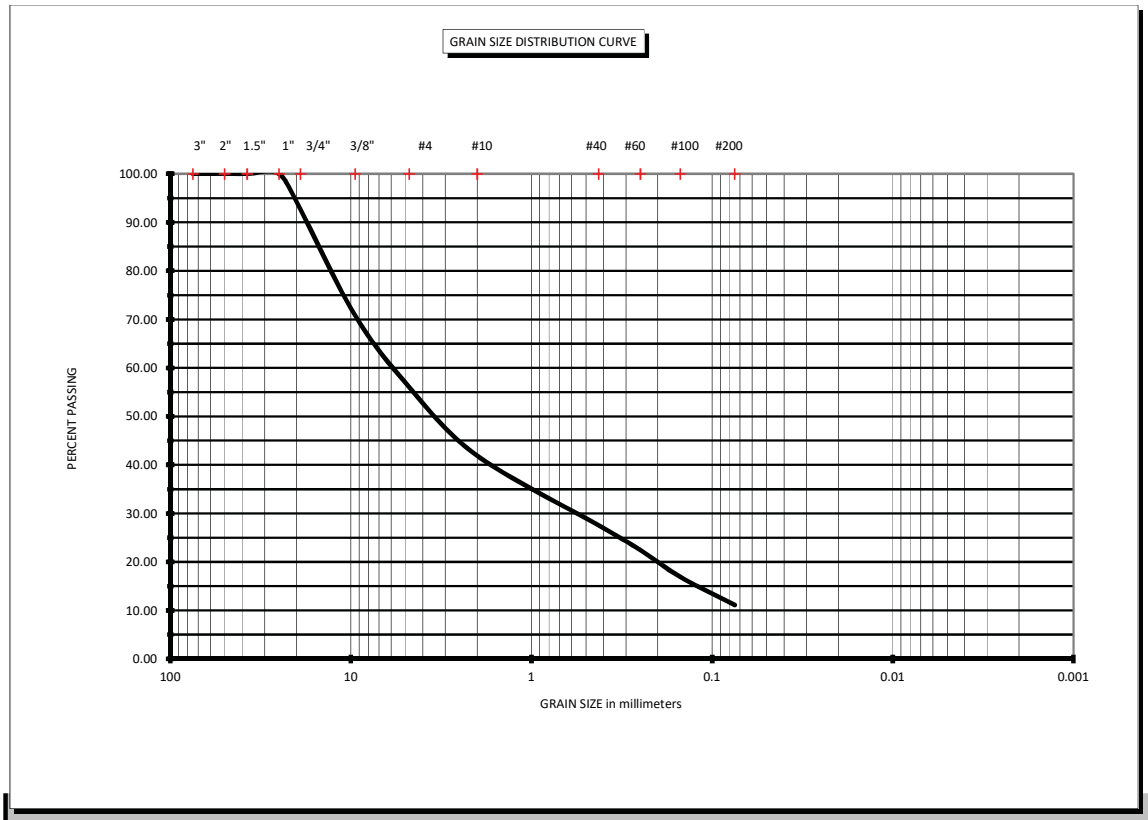
Coarse Gravel	< 3" and > 3/4"
Fine Gravel	< 3/4" and > #4
Coarse Sand	< #4 and > #10
Medium Sand	< #10 and > #40
Fine Sand	< #40 and > #200

Cu = D60 / D10
Cc = (D30)^2 / (D10 x D60)
1000 um = 1 mm

tested by: M. Khalid computed by: S. Zhang checked by: O. Riccobono

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA



ASTM D 2487 Classification of Soil for Engineering Purposes			Coarse Sand	< #4 and > #10	Cu = D60 / D10
Coarse Gravel	< 3" and > 3/4"		Medium Sand	< #10 and > #40	Cc = (D30)^2 / (D10 x D60)
Fine Gravel	< 3/4" and > #4		Fine Sand	< #40 and > #200	

BORING # CB-2 **SAMPLE #** 1 **Depth (feet)** 0.2-2

SOIL DESCRIPTION: Brown Slightly Silty Fine to Coarse SAND with Some Limerock Fragments (FILL; A-1-a)

Natural Moisture Content: 3.2%

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA

Boring No. CB-12
Sample No. 2
Depth (feet) 2-3.8

SOIL DESCRIPTION: Brown Slightly Silty Fine to Medium SAND with Few to Little Limerock Fragments (FILL; A-3)

Tare #	Dry Soil Wt.
17	171.5

Sieve Size	Sieve Sizes	Cumulative Wt. Retained	% RETAINED	% PASSING	% PASSING TOTAL SAMPLE	WEIGHT RETAINED (Grams)
75	75mm 3"	0.0	0.0	100	100	0.0
50	50mm 2"	0.0	0.0	100	100	0.0
37.5	37.5mm 1.5"	0.0	0.0	100.0	100.0	0.0
25	25mm 1"	0.0	0.0	100.0	100.0	0.0
19	19mm 3/4"	11.5	6.7	93.3	93.3	11.5
9.5	9.5mm 3/8"	18.5	10.8	89.2	89.2	7.0
4.75	4.75mm #4	22.0	12.8	87.2	87.2	3.5
2.36	2 mm #10	24.5	14.3	85.7	85.7	2.5
0.6	425um #40	43.0	25.1	74.9	74.9	18.5
0.3	250um #60	105.5	61.5	38.5	38.5	62.5
0.15	150um #100	147.5	86.0	14.0	14.0	42.0
0.075	75um #200	155.0	90.4	9.6	9.6	7.5
PAN	-	171.5	100.0	0.0	0.0	16.5

NOTES: Percent passing the #200 sieve was determined by the wash method.

ASTM D 2487 Classification of Soil for Engineering Purposes

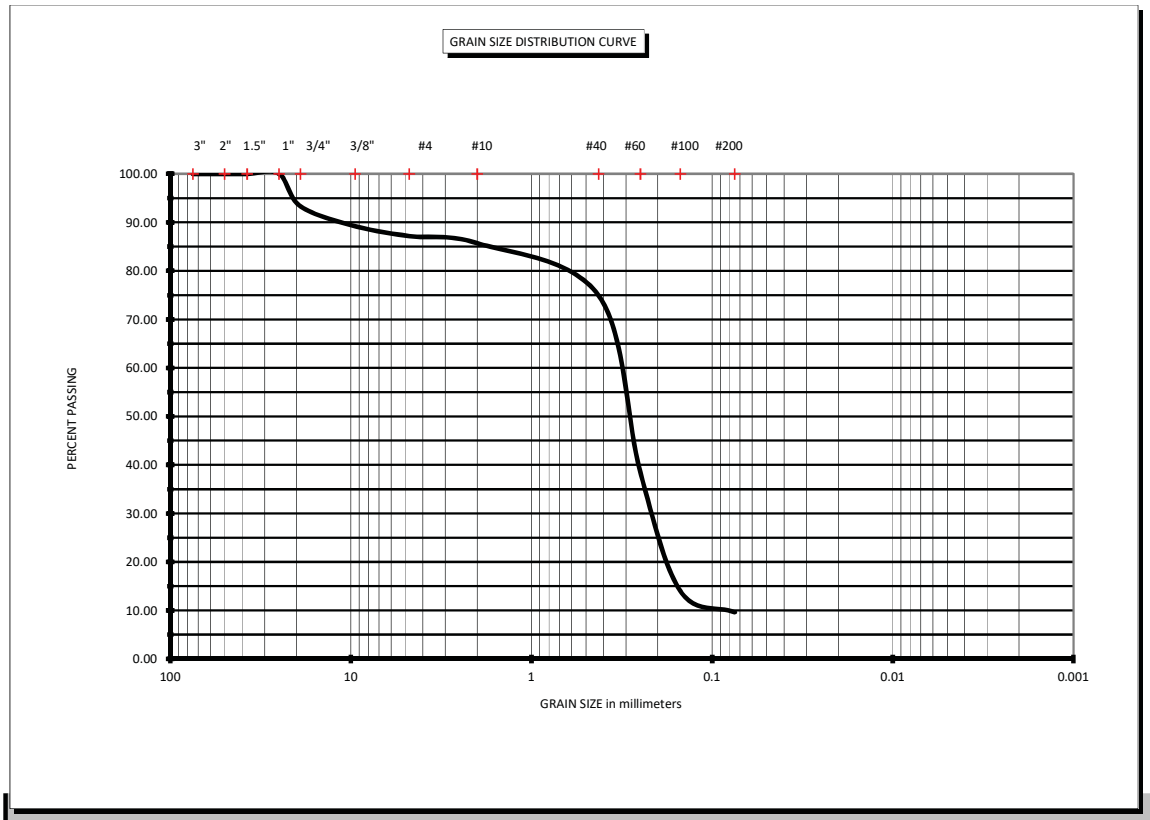
Coarse Gravel	< 3" and > 3/4"
Fine Gravel	< 3/4" and > #4
Coarse Sand	< #4 and > #10
Medium Sand	< #10 and > #40
Fine Sand	< #40 and > #200

Cu = D60 / D10
Cc = (D30)^2 / (D10 x D60)
1000 um = 1 mm

tested by: M. Khalid computed by: S. Zhang checked by: O. Riccobono

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA



ASTM D 2487 Classification of Soil for Engineering Purposes			Coarse Sand	< #4 and > #10	Cu = D60 / D10
Coarse Gravel	< 3" and > 3/4"		Medium Sand	< #10 and > #40	Cc = (D30)^2 / (D10 x D60)
Fine Gravel	< 3/4" and > #4		Fine Sand	< #40 and > #200	

BORING # CB-12 **SAMPLE #** 2 **Depth (feet)** 2-3.8

SOIL DESCRIPTION: Brown Slightly Silty Fine to Medium SAND with Few to Little Limerock Fragments (FILL; A-3)

Natural Moisture Content: 13.7%

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA

Boring No. CB-11
Sample No. 4
Depth (feet) 6-8

SOIL DESCRIPTION: Brown Slightly Silty Fine to Medium SAND with Little to Some Limestone Fragments (A-3)

Tare #	Dry Soil Wt.
54	230.0

Sieve Size	Sieve Sizes	Cumulative Wt. Retained	% RETAINED	% PASSING	% PASSING TOTAL SAMPLE	WEIGHT RETAINED (Grams)
75	75mm 3"	0.0	0.0	100	100	0.0
50	50mm 2"	0.0	0.0	100	100	0.0
37.5	37.5mm 1.5"	0.0	0.0	100.0	100.0	0.0
25	25mm 1"	0.0	0.0	100.0	100.0	0.0
19	19mm 3/4"	0.0	0.0	100.0	100.0	0.0
9.5	9.5mm 3/8"	41.5	18.0	82.0	82.0	41.5
4.75	4.75mm #4	66.0	28.7	71.3	71.3	24.5
2.36	2 mm #10	83.0	36.1	63.9	63.9	17.0
0.6	425um #40	107.0	46.5	53.5	53.5	24.0
0.3	250um #60	156.0	67.8	32.2	32.2	49.0
0.15	150um #100	201.0	87.4	12.6	12.6	45.0
0.075	75um #200	210.0	91.3	8.7	8.7	9.0
PAN	-	230.0	100.0	0.0	0.0	20.0

NOTES: Percent passing the #200 sieve was determined by the wash method.

ASTM D 2487 Classification of Soil for Engineering Purposes

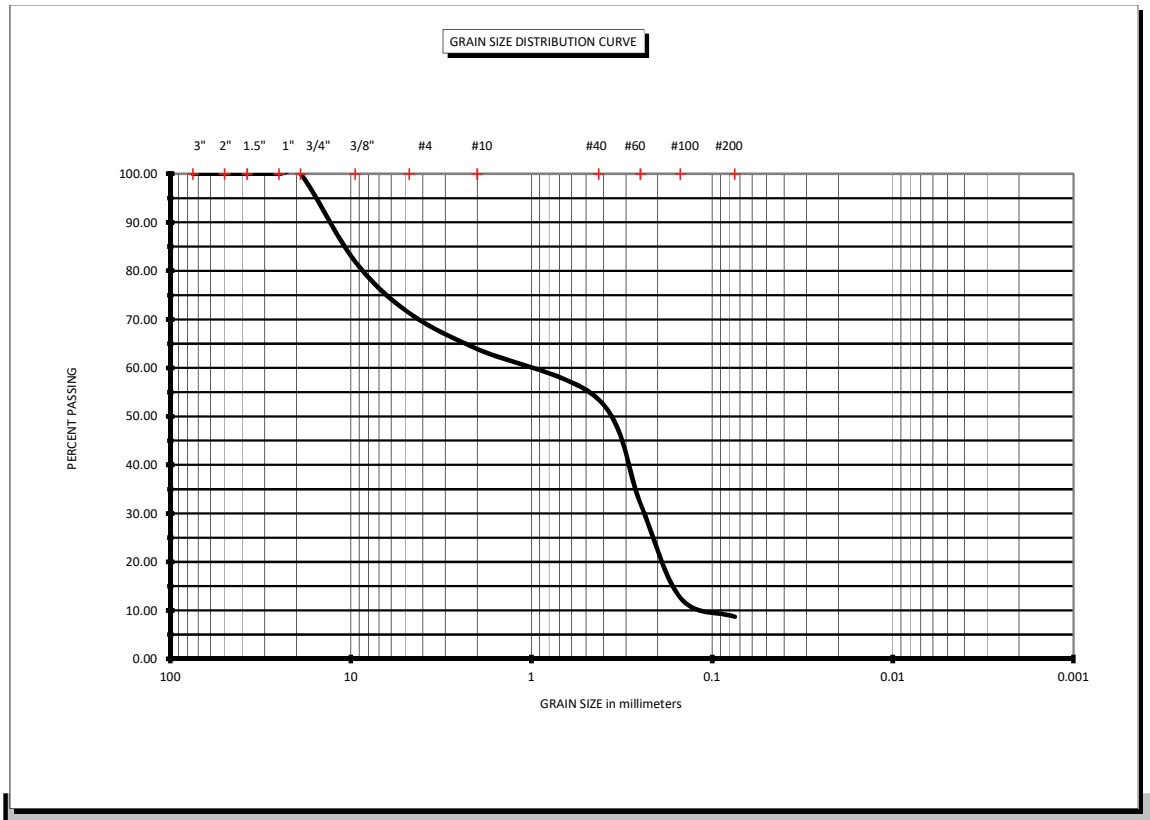
Coarse Gravel	< 3" and > 3/4"
Fine Gravel	< 3/4" and > #4
Coarse Sand	< #4 and > #10
Medium Sand	< #10 and > #40
Fine Sand	< #40 and > #200

Cu = D60 / D10
Cc = (D30)^2 / (D10 x D60)
1000 um = 1 mm

tested by: M. Khalid computed by: S. Zhang checked by: O. Riccobono

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA



ASTM D 2487 Classification of Soil for Engineering Purposes			Coarse Sand	< #4 and > #10	Cu = D60 / D10
Coarse Gravel	< 3" and > 3/4"		Medium Sand	< #10 and > #40	Cc = (D30)^2 / (D10 x D60)
Fine Gravel	< 3/4" and > #4		Fine Sand	< #40 and > #200	

BORING # CB-11 **SAMPLE #** 4 **Depth (feet)** 6-8

SOIL DESCRIPTION: Brown Slightly Silty Fine to Medium SAND with Little to Some Limestone Fragments (A-3)

Natural Moisture Content: 19.1%

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA

Boring No. MJ-13
Sample No. 2
Depth (feet) 2-4

SOIL DESCRIPTION: Brown Fine to Medium SAND (FILL; A-3)

Tare #	Dry Soil Wt.
101	179.5

Sieve Size	Sieve Sizes	Cumulative Wt. Retained	% RETAINED	% PASSING	% PASSING TOTAL SAMPLE	WEIGHT RETAINED (Grams)
75	75mm 3"	0.0	0.0	100	100	0.0
50	50mm 2"	0.0	0.0	100	100	0.0
37.5	37.5mm 1.5"	0.0	0.0	100.0	100.0	0.0
25	25mm 1"	0.0	0.0	100.0	100.0	0.0
19	19mm 3/4"	0.0	0.0	100.0	100.0	0.0
9.5	9.5mm 3/8"	0.0	0.0	100.0	100.0	0.0
4.75	4.75mm #4	0.0	0.0	100.0	100.0	0.0
2.36	2 mm #10	0.0	0.0	100.0	100.0	0.0
0.6	425um #40	22.0	12.3	87.7	87.7	22.0
0.3	250um #60	96.0	53.5	46.5	46.5	74.0
0.15	150um #100	166.0	92.5	7.5	7.5	70.0
0.075	75um #200	178.0	99.2	0.8	0.8	12.0
PAN	-	179.5	100.0	0.0	0.0	1.5

NOTES: Percent passing the #200 sieve was determined by the wash method.

ASTM D 2487 Classification of Soil for Engineering Purposes

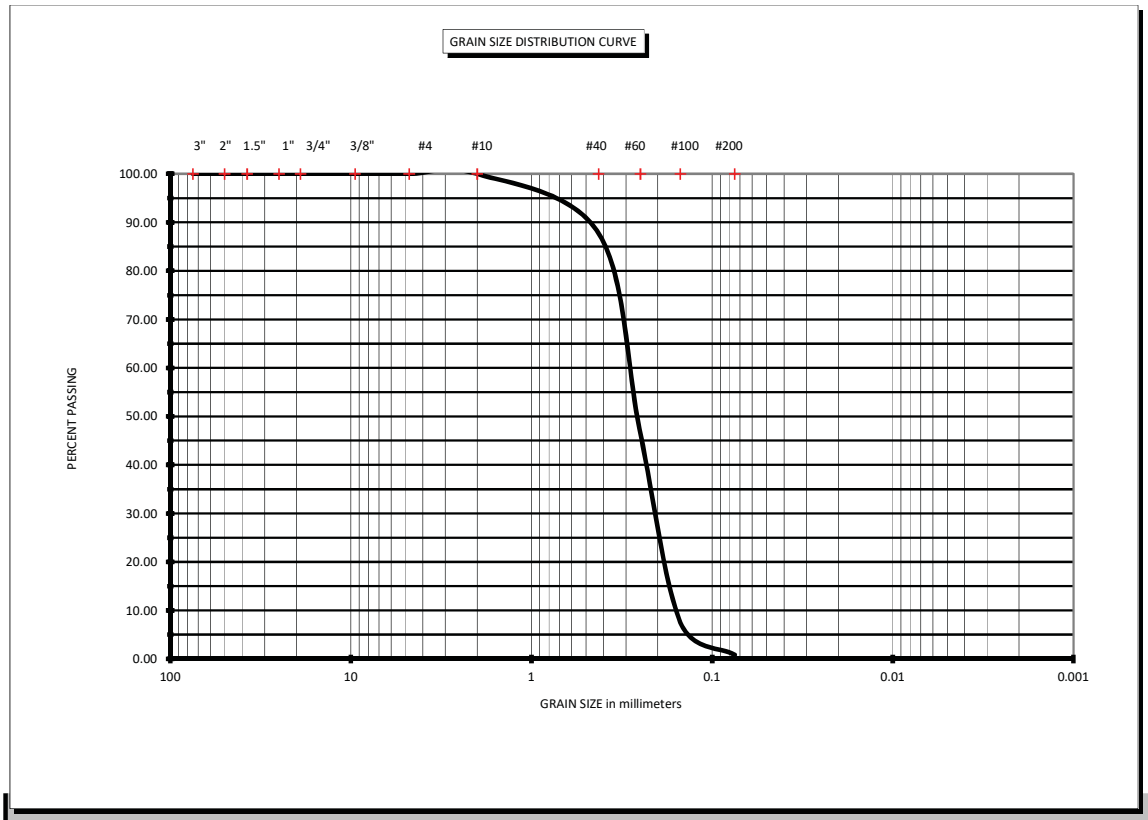
Coarse Gravel	< 3" and > 3/4"
Fine Gravel	< 3/4" and > #4
Coarse Sand	< #4 and > #10
Medium Sand	< #10 and > #40
Fine Sand	< #40 and > #200

Cu = D60 / D10
Cc = (D30)^2 / (D10 x D60)
1000 um = 1 mm

tested by: M. Khalid computed by: S. Zhang checked by: O. Riccobono

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA



ASTM D 2487 Classification of Soil for Engineering Purposes			Coarse Sand	< #4 and > #10	Cu = D60 / D10
Coarse Gravel	< 3" and > 3/4"		Medium Sand	< #10 and > #40	Cc = (D30)^2 / (D10 x D60)
Fine Gravel	< 3/4" and > #4		Fine Sand	< #40 and > #200	

BORING # MJ-13 **SAMPLE #** 2 **Depth (feet)** 2-4

SOIL DESCRIPTION: Brown Fine to Medium SAND (FILL; A-3)

Natural Moisture Content: 8.4%

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA

Boring No. CC-3
Sample No. 10
Depth (feet) 33-35

SOIL DESCRIPTION: Brown Slightly Silty Fine to Medium SAND with Some Limestone Fragments (SP-SM)

Tare #	Dry Soil Wt.
77	349.5

Sieve Size	Sieve Sizes	Cumulative Wt. Retained	% RETAINED	% PASSING	% PASSING TOTAL SAMPLE	WEIGHT RETAINED (Grams)
75	75mm 3"	0.0	0.0	100	100	0.0
50	50mm 2"	0.0	0.0	100	100	0.0
37.5	37.5mm 1.5"	0.0	0.0	100.0	100.0	0.0
25	25mm 1"	0.0	0.0	100.0	100.0	0.0
19	19mm 3/4"	60.5	17.3	82.7	82.7	60.5
9.5	9.5mm 3/8"	93.0	26.6	73.4	73.4	32.5
4.75	4.75mm #4	112.5	32.2	67.8	67.8	19.5
2.36	2 mm #10	128.5	36.8	63.2	63.2	16.0
0.6	425um #40	147.0	42.1	57.9	57.9	18.5
0.3	250um #60	162.0	46.4	53.6	53.6	15.0
0.15	150um #100	254.0	72.7	27.3	27.3	92.0
0.075	75um #200	310.5	88.8	11.2	11.2	56.5
PAN	-	349.5	100.0	0.0	0.0	39.0

NOTES: Percent passing the #200 sieve was determined by the wash method.

ASTM D 2487 Classification of Soil for Engineering Purposes

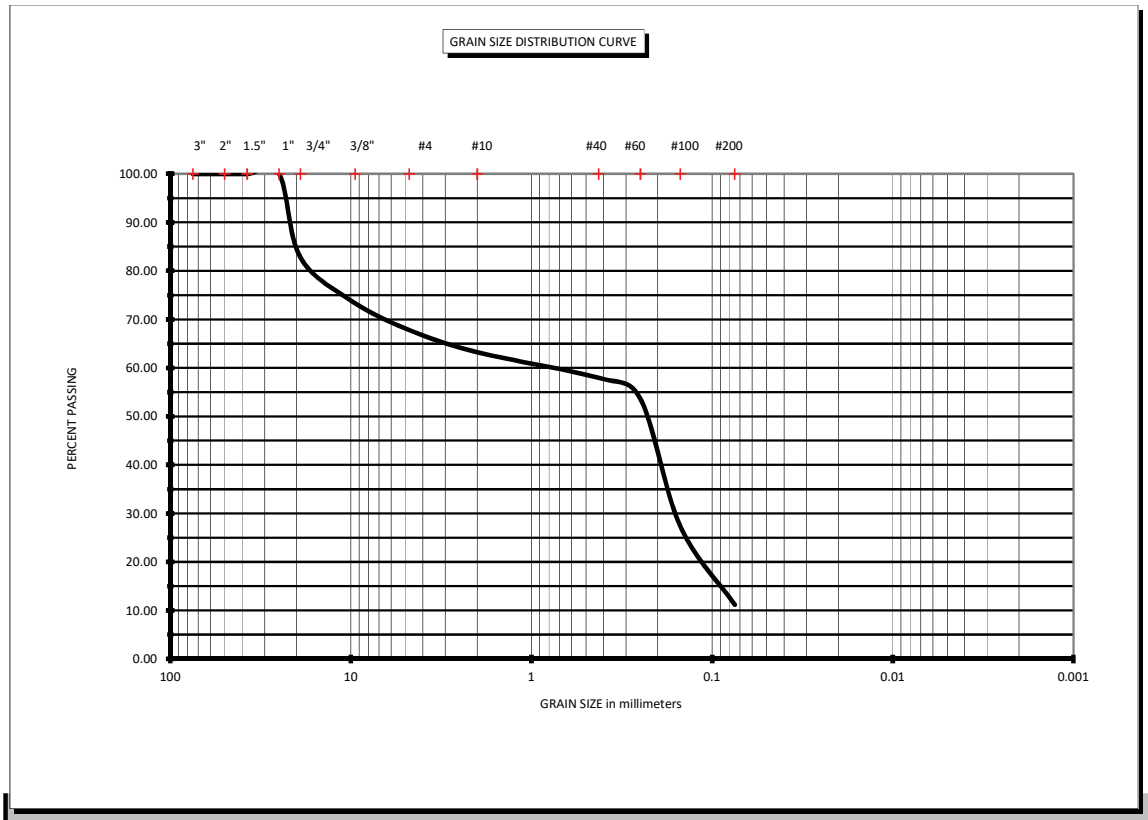
Coarse Gravel	< 3" and > 3/4"
Fine Gravel	< 3/4" and > #4
Coarse Sand	< #4 and > #10
Medium Sand	< #10 and > #40
Fine Sand	< #40 and > #200

Cu = D60 / D10
Cc = (D30)^2 / (D10 x D60)
1000 um = 1 mm

tested by: M. Khalid computed by: S. Zhang checked by: O. Riccobono

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA



ASTM D 2487 Classification of Soil for Engineering Purposes			Coarse Sand	< #4 and > #10	Cu = D60 / D10
Coarse Gravel	< 3" and > 3/4"		Medium Sand	< #10 and > #40	Cc = (D30)^2 / (D10 x D60)
Fine Gravel	< 3/4" and > #4		Fine Sand	< #40 and > #200	

BORING # CC-3 **SAMPLE #** 10 **Depth (feet)** 33-35

SOIL DESCRIPTION: Brown Slightly Silty Fine to Medium SAND with Some Limestone Fragments (SP-SM)

Natural Moisture Content: 15.3%

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA

Boring No. MJ-14
Sample No. 1
Depth (feet) 0.2-2

SOIL DESCRIPTION: Brown Slightly Silty Fine to Medium SAND with Some Limerock Fragments (FILL; A-1-b)

Tare #	Dry Soil Wt.
863	354.0

Sieve Size	Sieve Sizes	Cumulative Wt. Retained	% RETAINED	% PASSING	% PASSING TOTAL SAMPLE	WEIGHT RETAINED (Grams)
75	75mm 3"	0.0	0.0	100	100	0.0
50	50mm 2"	0.0	0.0	100	100	0.0
37.5	37.5mm 1.5"	0.0	0.0	100.0	100.0	0.0
25	25mm 1"	0.0	0.0	100.0	100.0	0.0
19	19mm 3/4"	25.0	7.1	92.9	92.9	25.0
9.5	9.5mm 3/8"	94.5	26.7	73.3	73.3	69.5
4.75	4.75mm #4	122.5	34.6	65.4	65.4	28.0
2.36	2 mm #10	142.0	40.1	59.9	59.9	19.5
0.6	425um #40	179.0	50.6	49.4	49.4	37.0
0.3	250um #60	244.0	68.9	31.1	31.1	65.0
0.15	150um #100	300.0	84.7	15.3	15.3	56.0
0.075	75um #200	316.0	89.3	10.7	10.7	16.0
PAN	-	354.0	100.0	0.0	0.0	38.0

NOTES: Percent passing the #200 sieve was determined by the wash method.

ASTM D 2487 Classification of Soil for Engineering Purposes

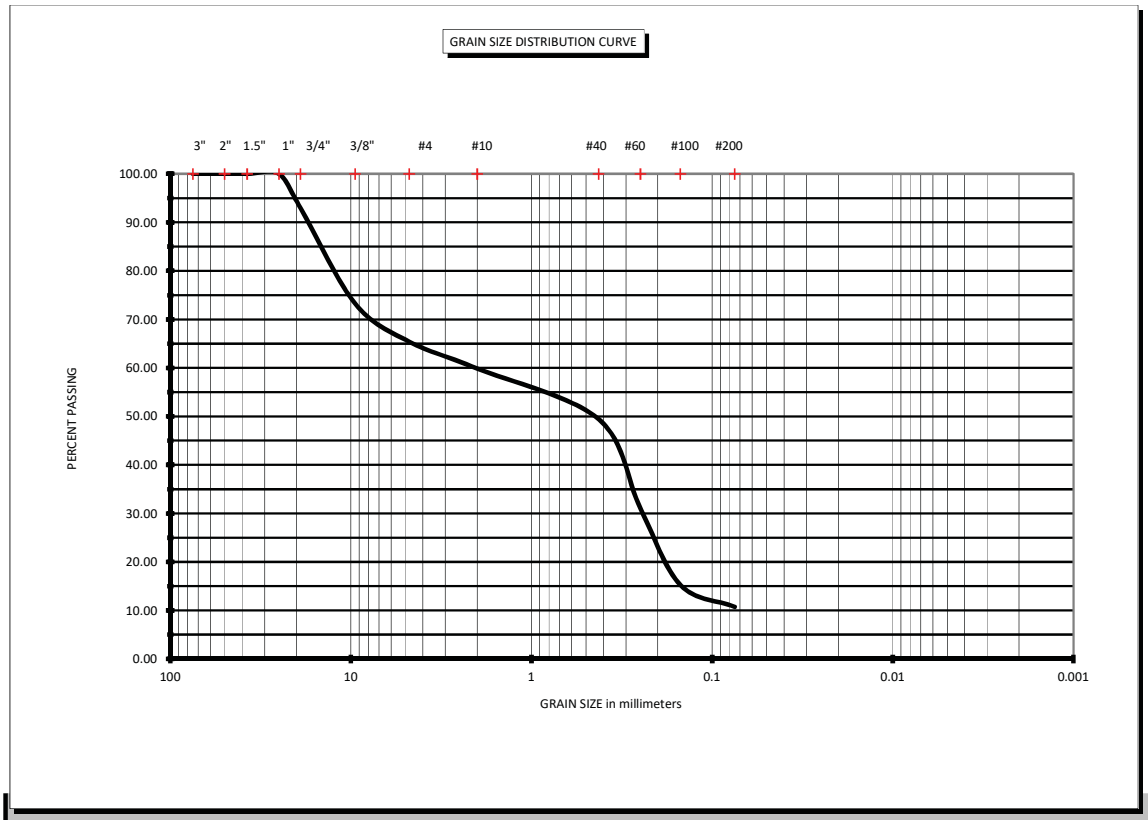
Coarse Gravel	< 3" and > 3/4"
Fine Gravel	< 3/4" and > #4
Coarse Sand	< #4 and > #10
Medium Sand	< #10 and > #40
Fine Sand	< #40 and > #200

Cu = D60 / D10
Cc = (D30)^2 / (D10 x D60)
1000 um = 1 mm

tested by: M. Khalid computed by: S. Zhang checked by: O. Riccobono

GRAIN SIZE DATA SHEET

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
GEOSOL PROJECT No. 218144
GENERAL LOCATION: MIAMI-DADE COUNTY, FLORIDA



ASTM D 2487 Classification of Soil for Engineering Purposes			Coarse Sand	< #4 and > #10	Cu = D60 / D10
Coarse Gravel	< 3" and > 3/4"		Medium Sand	< #10 and > #40	Cc = (D30)^2 / (D10 x D60)
Fine Gravel	< 3/4" and > #4		Fine Sand	< #40 and > #200	

BORING # MJ-14 **SAMPLE #** 1 **Depth (feet)** 0.2-2

SOIL DESCRIPTION: Brown Slightly Silty Fine to Medium SAND with Some Limerock Fragments (FILL; A-1-b)

Natural Moisture Content: 7.3%

ORGANIC CONTENT TEST RESULTS (ASTM D-2974)

PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
LOCATION: MIAMI-DADE COUNTY, FLORIDA
PROJECT No.: 218144

Boring No.	MJ-7	MI-2
Sample No.	3	1
Sample Depth (Feet)	4-6	0-0.2
Crucible No.	C5	A5
Weight of Crucible and Oven-Dried Sample (grams)	70.0	57.5
Weight of Crucible and Sample after Ignition (grams)	69.0	54.5
Weight of Crucible (grams)	35.5	29.0
Weight of Oven-Dried Soil (grams)	34.5	28.5
Weight Loss due to Ignition (grams)	1.0	3.0
Percent Organics (%)	2.9	10.5

ATTERBERG LIMITS TEST RESULTS

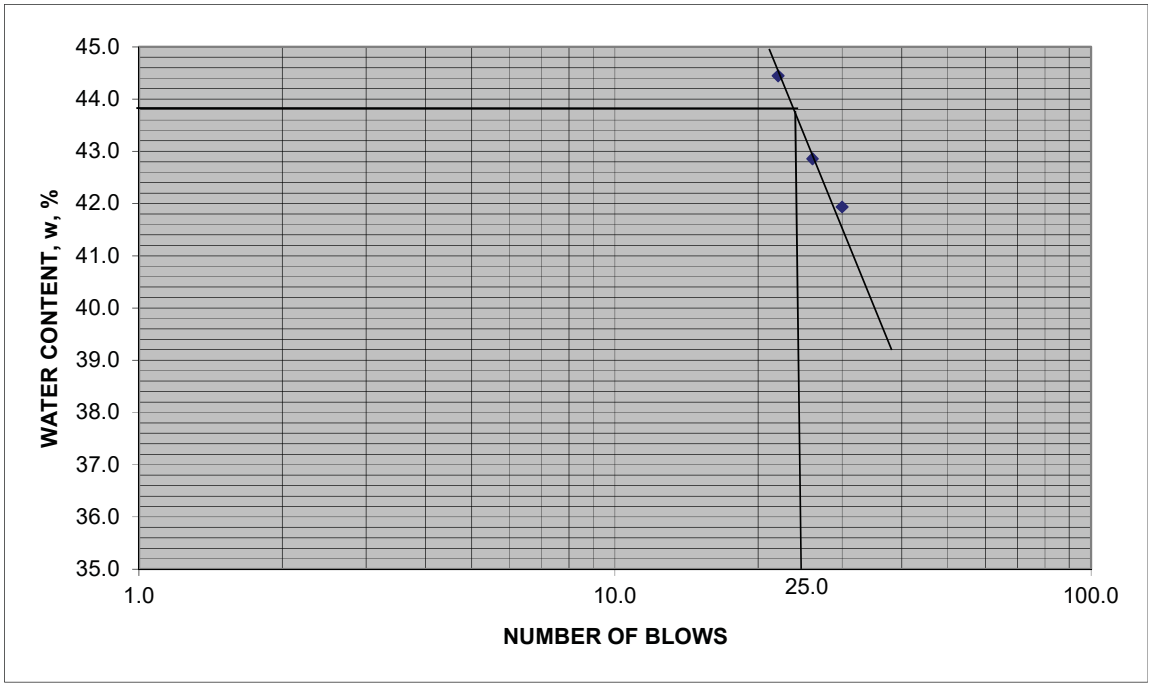
PROJECT NAME: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS AND PLANNING
LOCATION: MIAMI-DADE COUNTY, FLORIDA
PROJECT No.: 218144

Boring No.	MJ-1
Sample No.	2
Sample Depth (Feet)	2-4

LIQUID LIMIT DETERMENATION

Run No.	1	2	3
Tare No.	A	B	C
Tare plus wet soil (grams)	42.0	33.5	35.5
Tare plus dry soil (grams)	35.5	29.5	31.0
Water W_w (grams)	6.5	4.0	4.5
Tare (grams)	20.0	20.5	20.5
Dry soil W_s (grams)	15.5	9.0	10.5
Water Content w (%)	41.9	44.4	42.9
Number of Blows	30.0	22.0	26.0

LL = 43.8%



PLASTIC LIMIT DETERMINATION

Tare No.	G
Tare plus wet soil (grams)	23
Tare plus dry soil (grams)	18
Water W_w (grams)	5
Tare (grams)	9.5
Dry soil W_s (grams)	8.5
Water Content w (%)	58.8
PL	59

SUMMARY OF TEST RESULTS

LL = 44%
PL = 59%
Plasticity Index (LL-PL) = N.P.

AASHTO Classification: A-4
USCS Classification: ML

Pace Analytical Services, LLC
3610 Park Central Blvd N
Pompano Beach, FL 33064
954-582-4300

ANALYTICAL RESULTS

Project: Ludian Greenway
Pace Project No.: 35418285

Sample: CC-4 **Lab ID: 35418285001** Collected: 09/17/18 06:00 Received: 09/18/18 17:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.6**	Std. Units	0.10	0.10	1		09/20/18 12:20		Q
Resistivity	Analytical Method: EPA 120.1 Resistivity								
Resistivity	**2060**	ohms-cm	0.50	0.50	1		09/20/18 19:09		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**27.9**	mg/L	5.0	2.5	1		09/21/18 22:36	16887-00-6	
Sulfate	**5.5**	mg/L	5.0	2.5	1		09/21/18 22:36	14808-79-8	

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Pace Analytical Services, LLC
3610 Park Central Blvd N
Pompano Beach, FL 33064
954-582-4300

ANALYTICAL RESULTS

Project: LUDLAM GREENWAY
Pace Project No.: 35416956

Sample: MJ-9 **Lab ID: 35416956001** Collected: 09/11/18 07:00 Received: 09/12/18 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.3**	Std. Units	0.10	0.10	1		09/14/18 13:04		Q
Resistivity	Analytical Method: EPA 120.1 Resistivity								
Resistivity	**1820**	ohms-cm	0.50	0.50	1		09/14/18 14:07		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**29.4**	mg/L	5.0	2.5	1		09/14/18 19:06	16887-00-6	
Sulfate	**17.7**	mg/L	5.0	2.5	1		09/14/18 19:06	14808-79-8	

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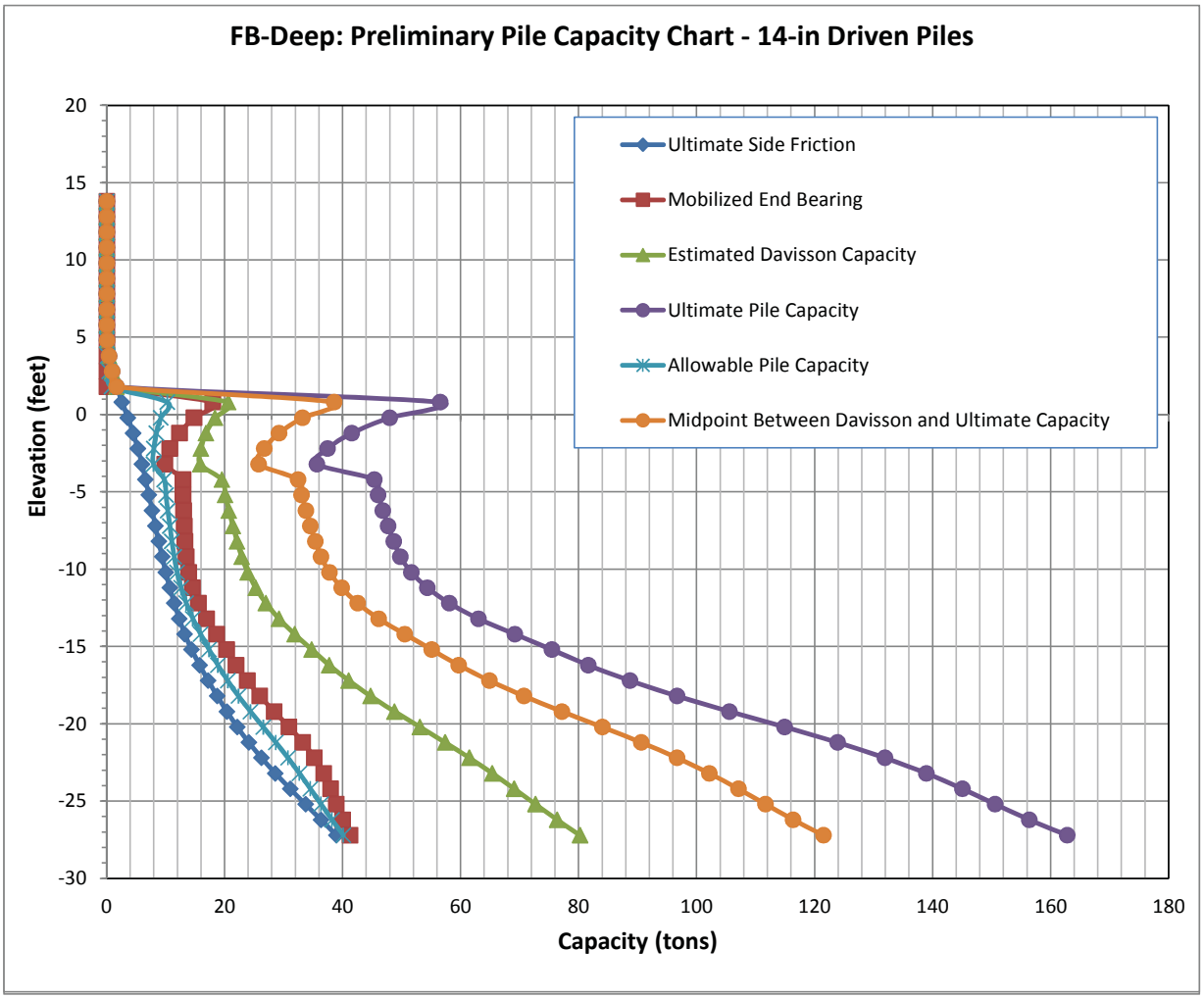
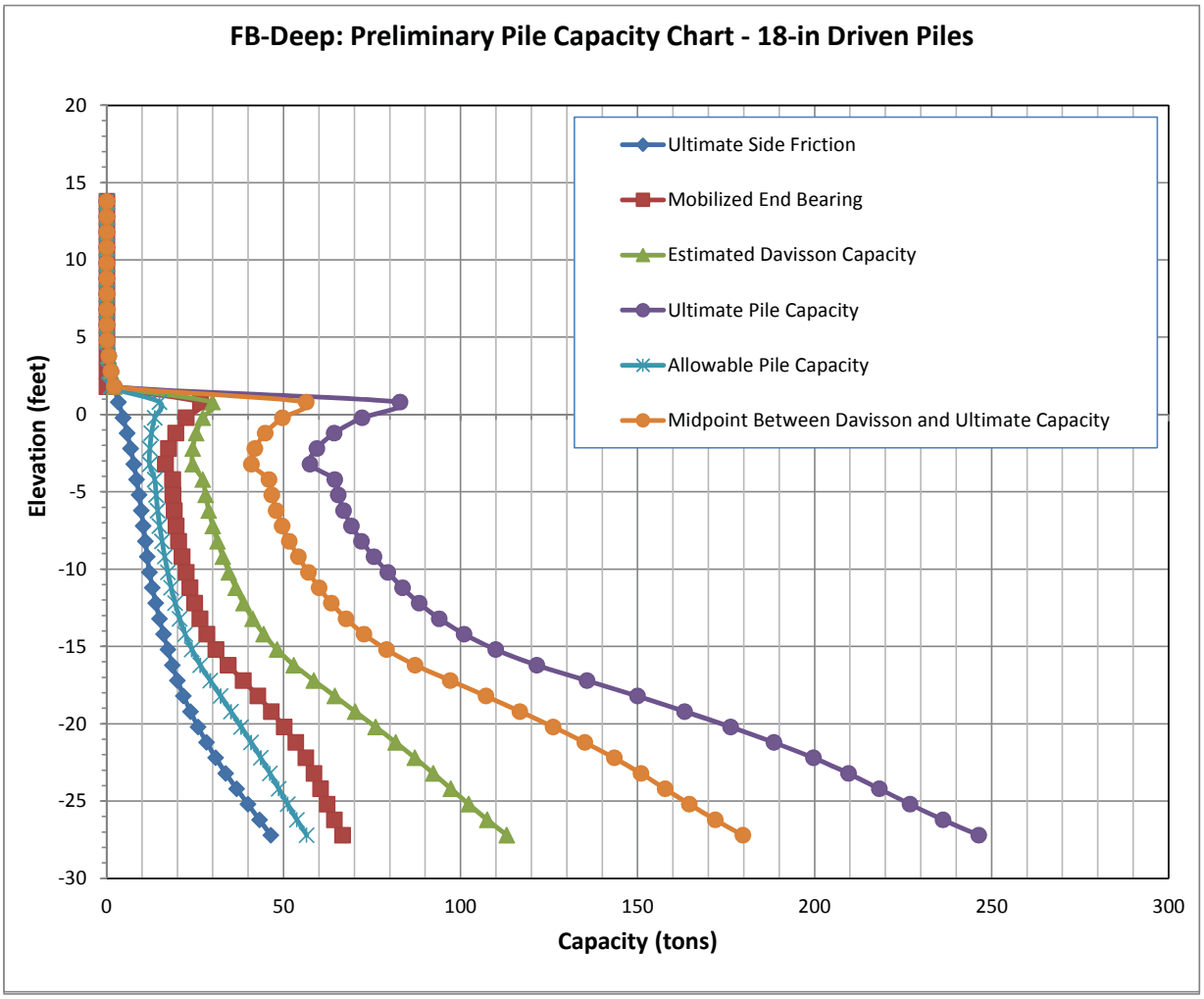
APPENDIX "C"

Driven Piles: "FB-Deep" Axial Compression Pile Capacity Graphs & Output Printouts
Drilled Shafts: Axial Compression Capacity Evaluations
Derivation of Geotechnical Design Parameters
USGS Groundwater Watch Readings for Wells G-3606, G-3570, and G-3329
SFWMD Readings at Single Stage Monitoring Site at Ludlam Rd and C2 Canal (C2SW2)
Conversion Factor Between Vertical Datum NGVD 1929 and NAVD 1988

Project: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-1



Project: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-1



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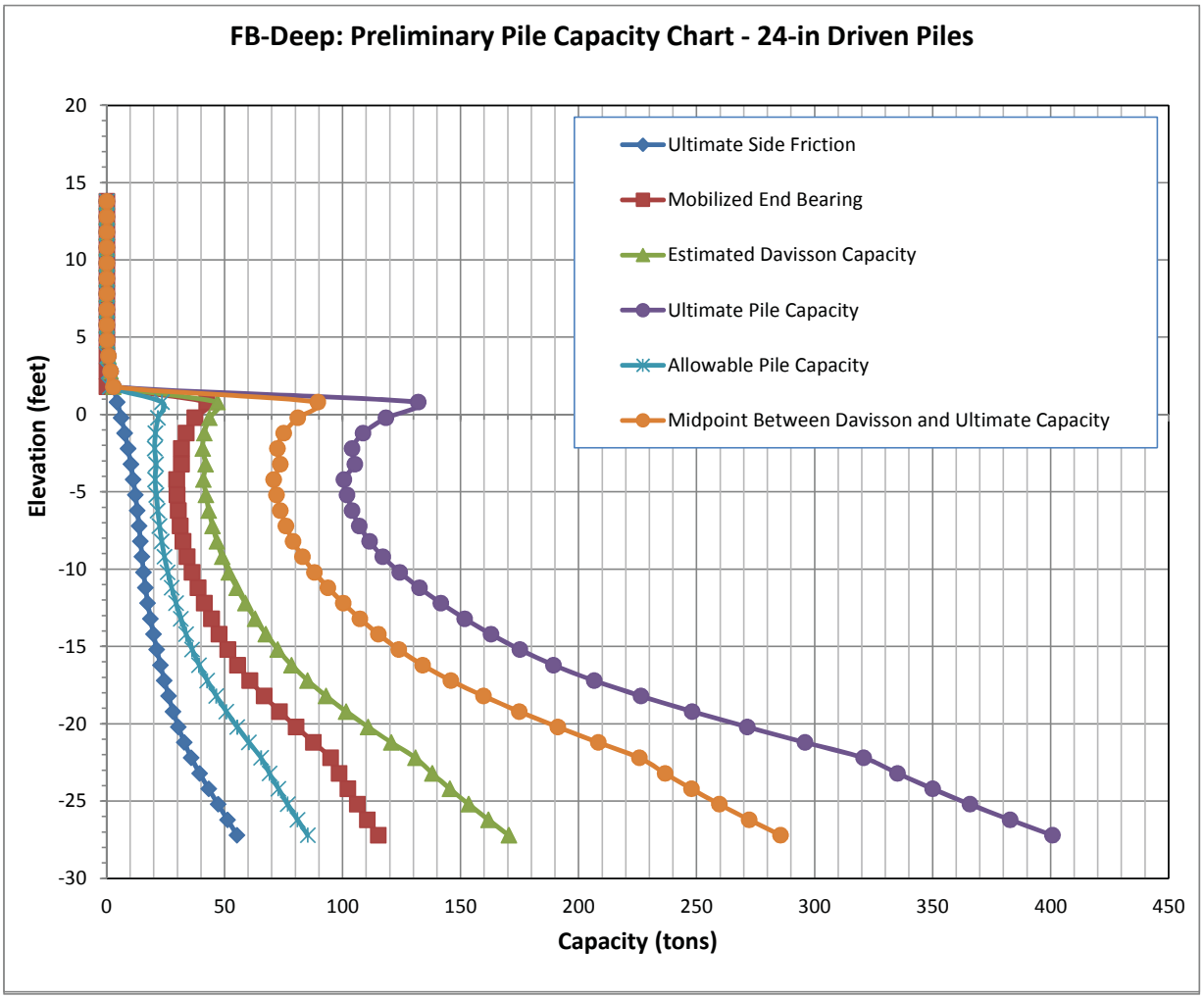
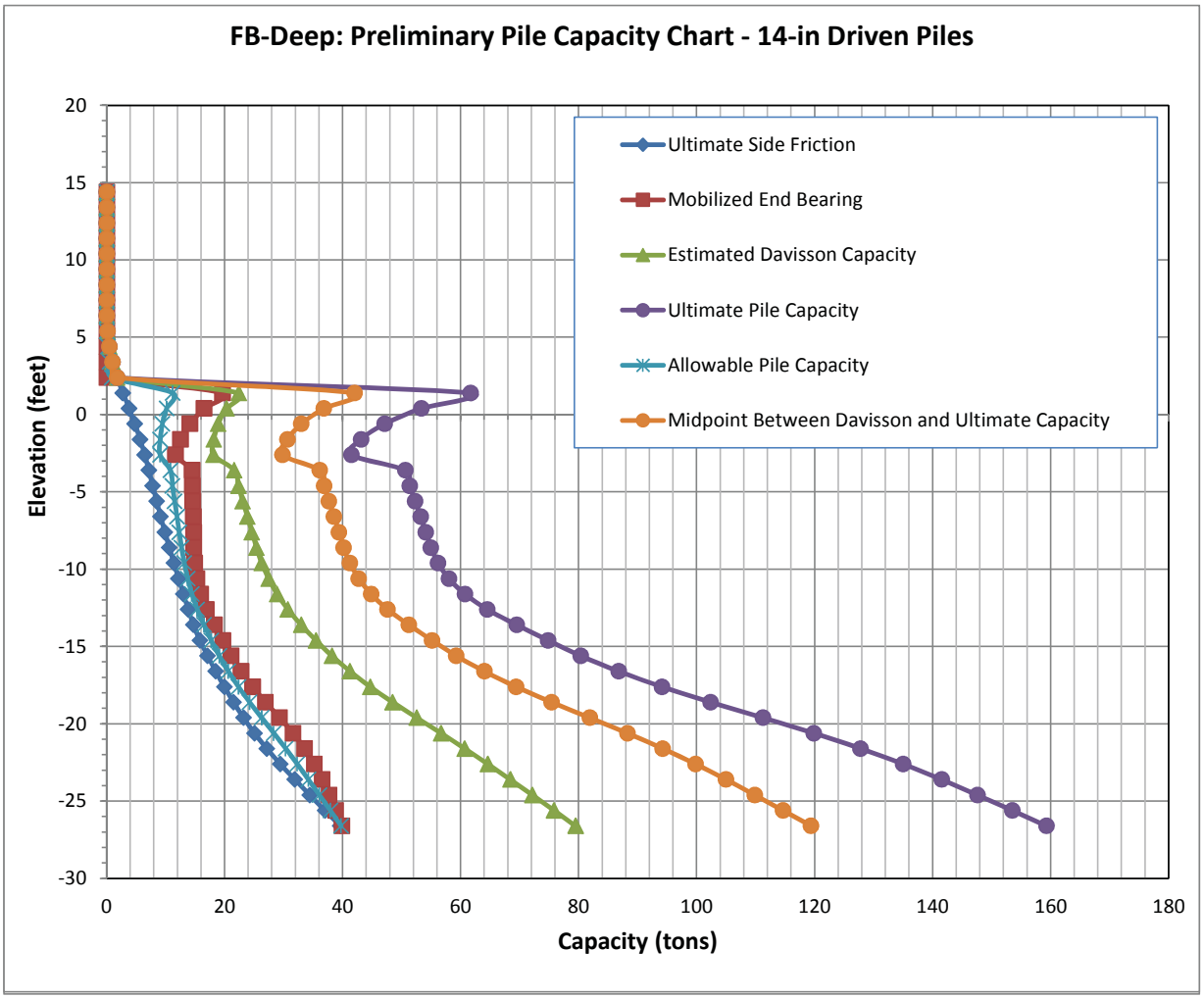
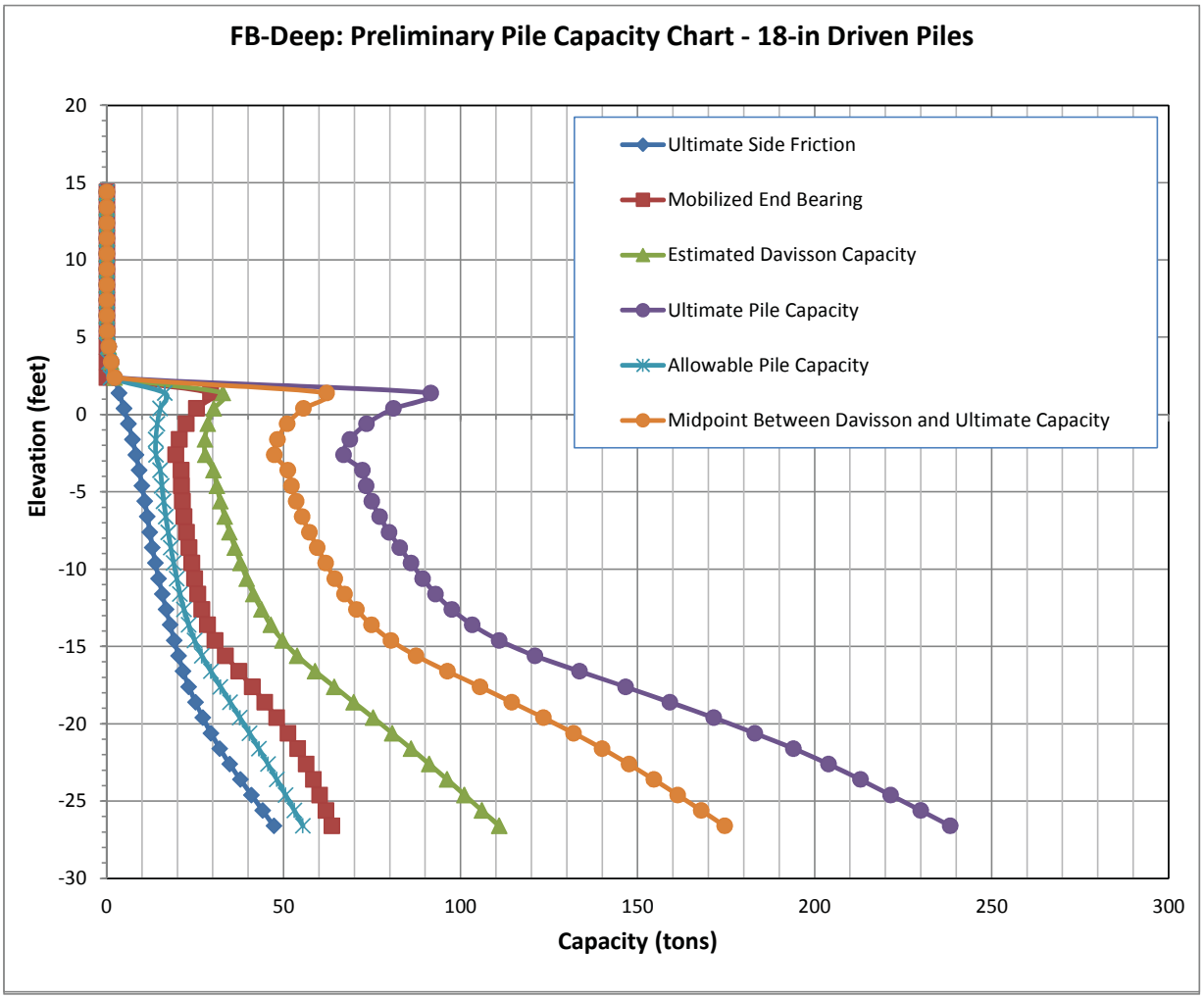
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-1



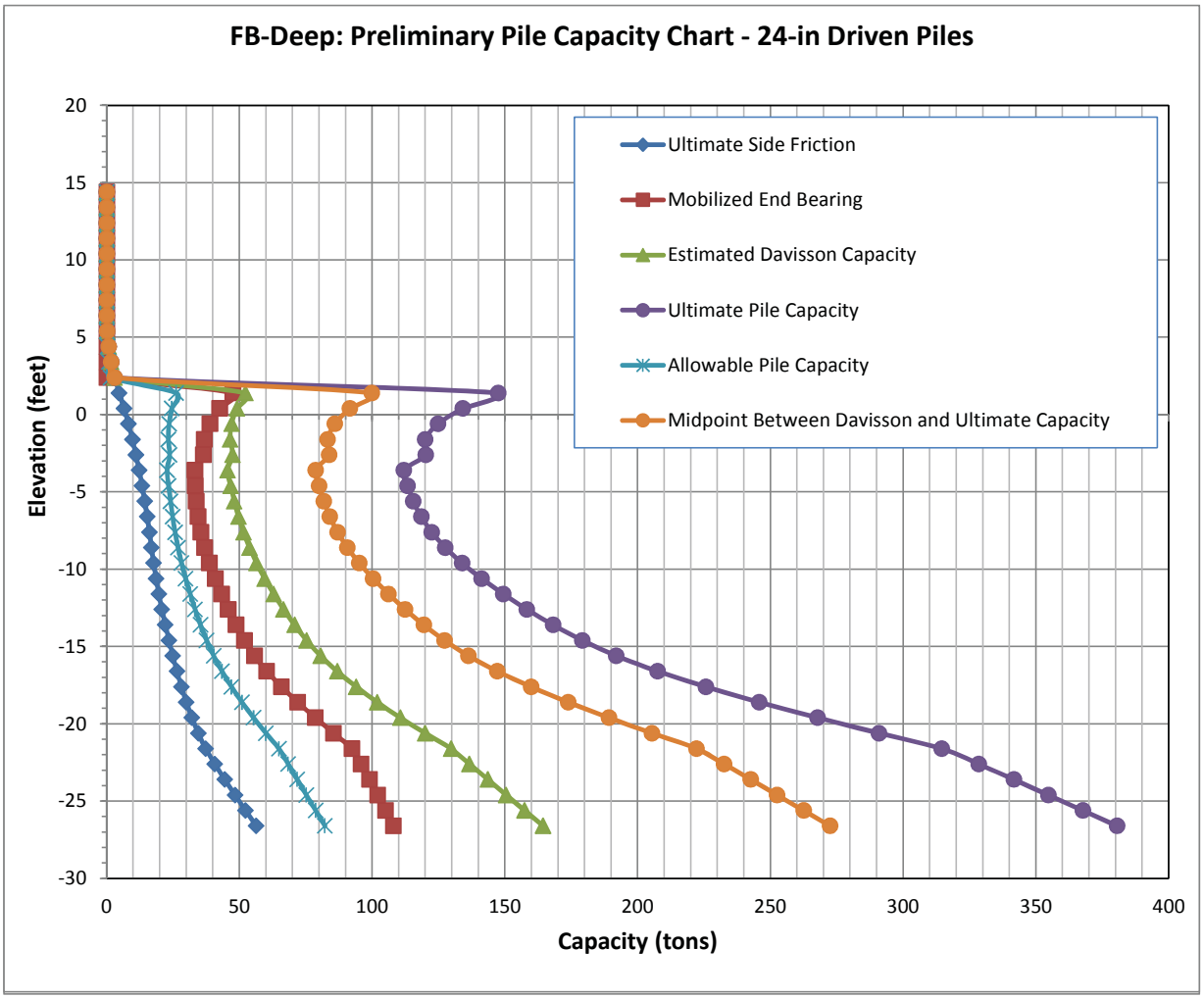
Project: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-2



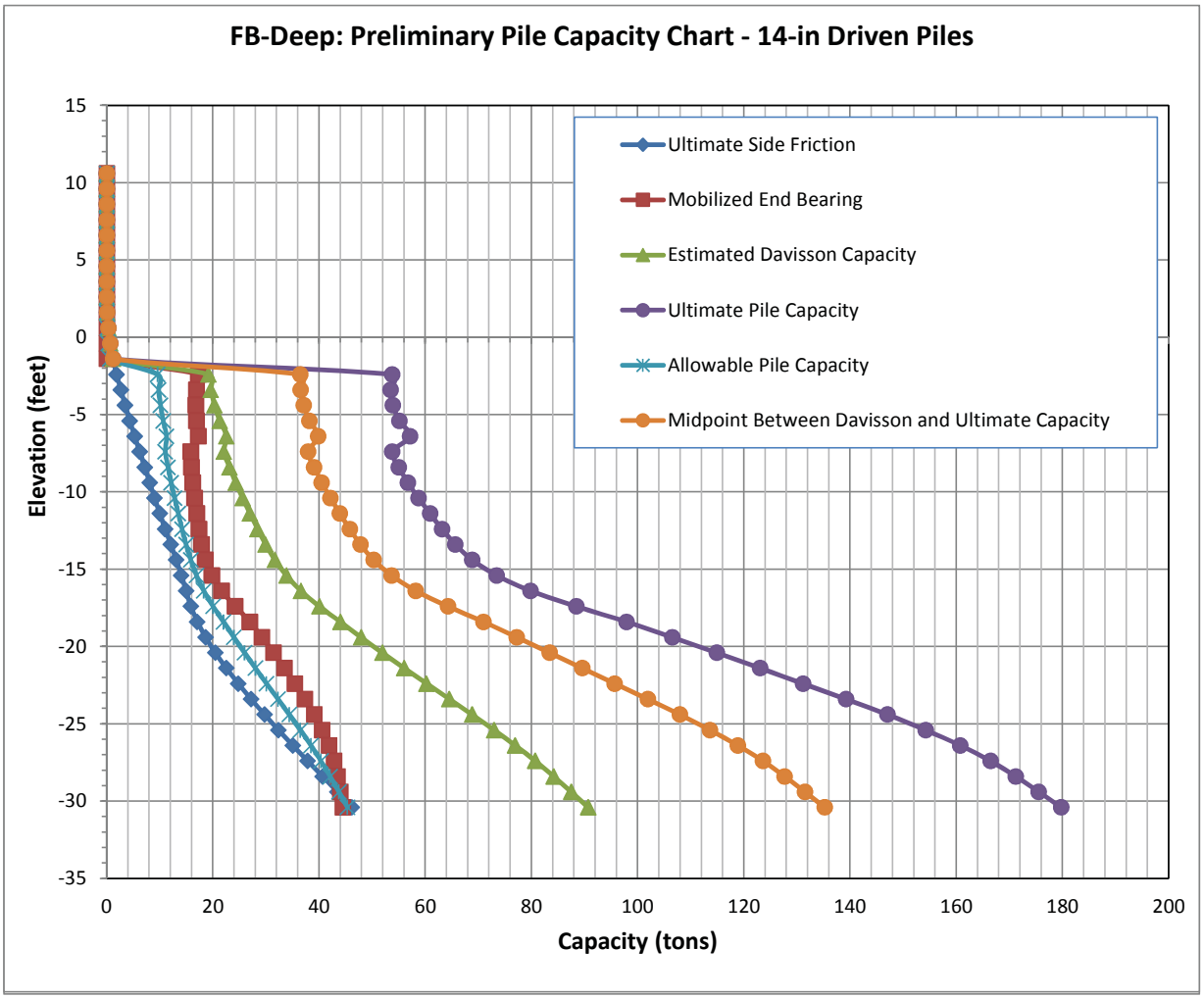
Project: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-2



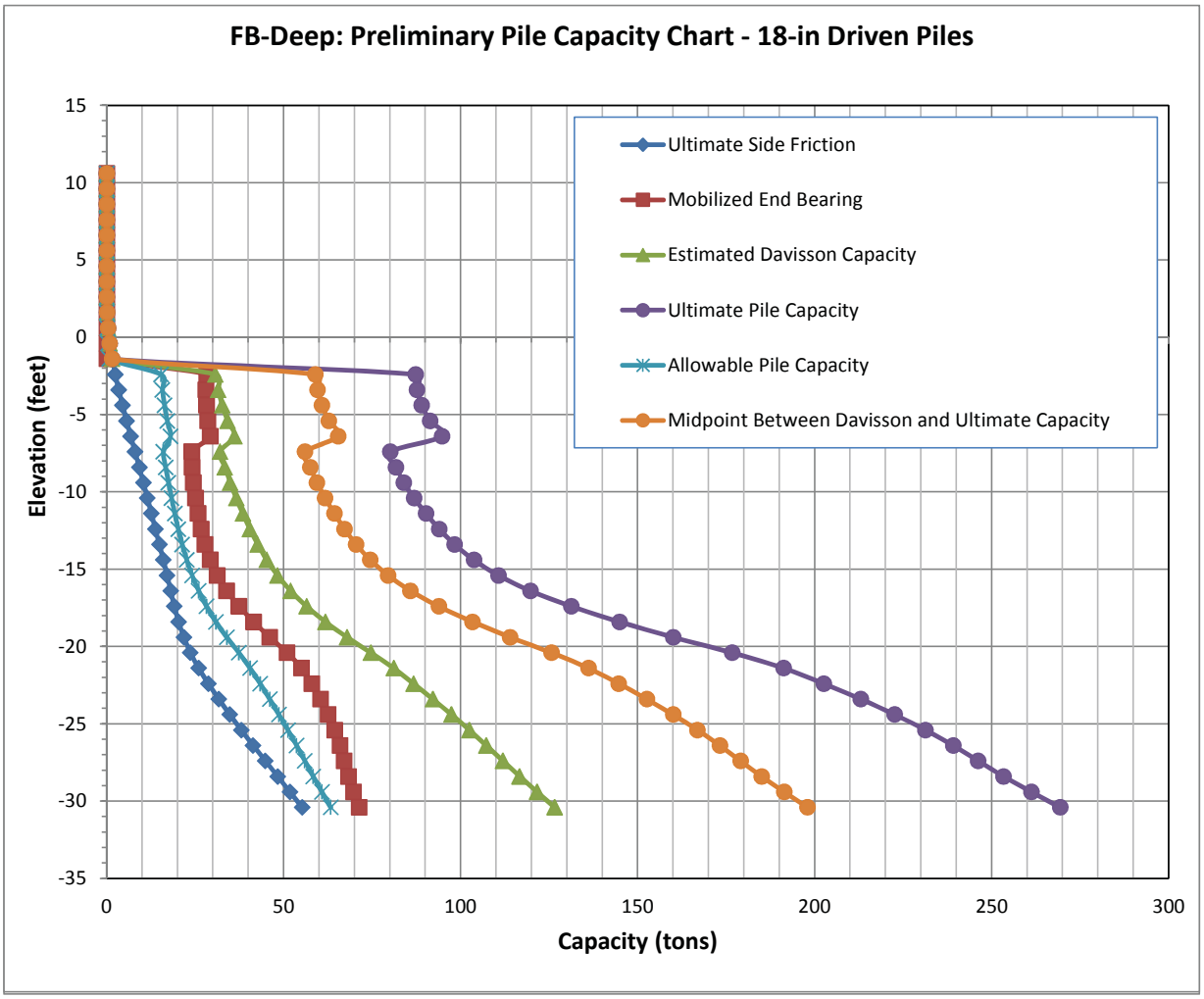
Project: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-2



Project: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-3



Project: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-3



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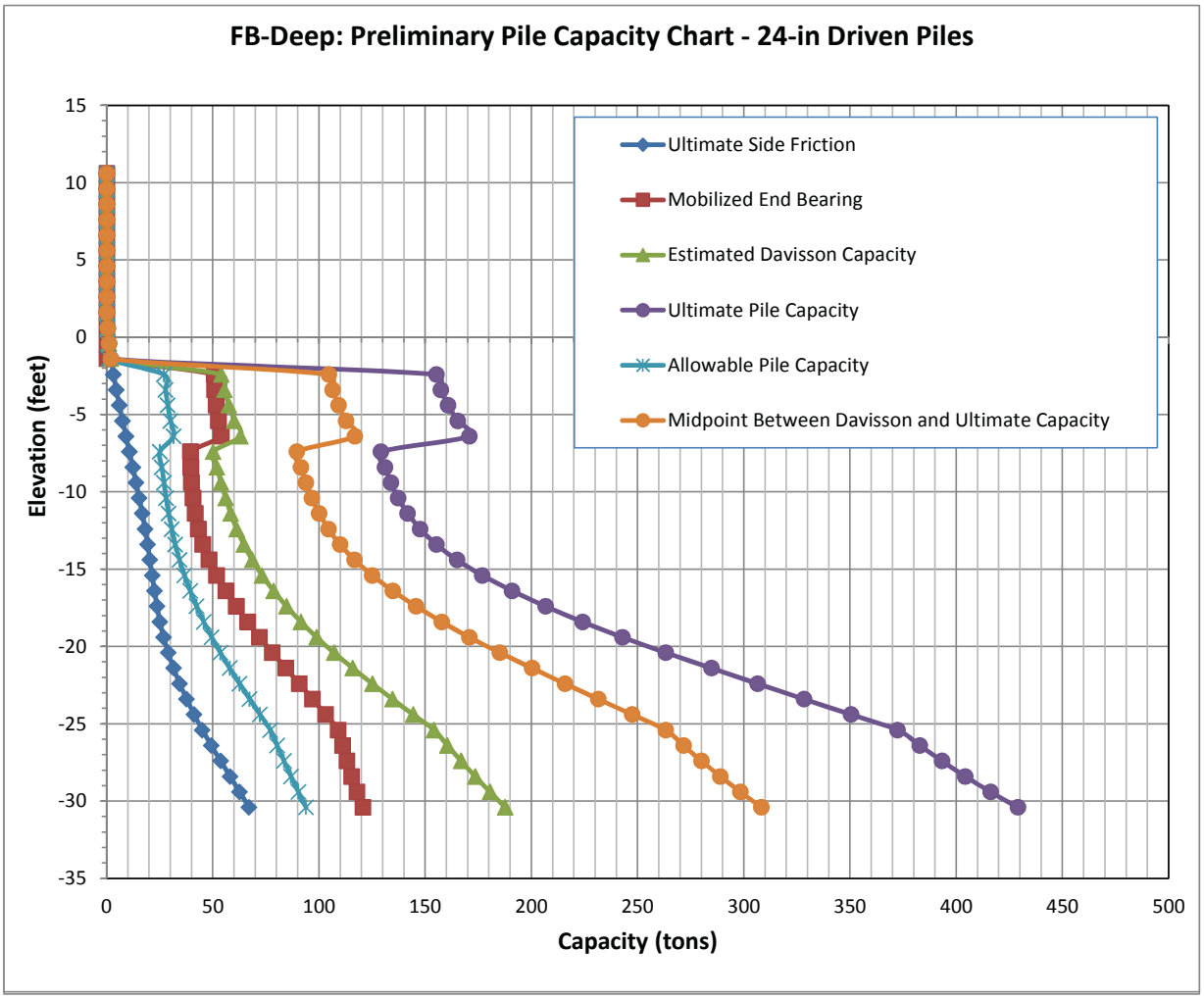
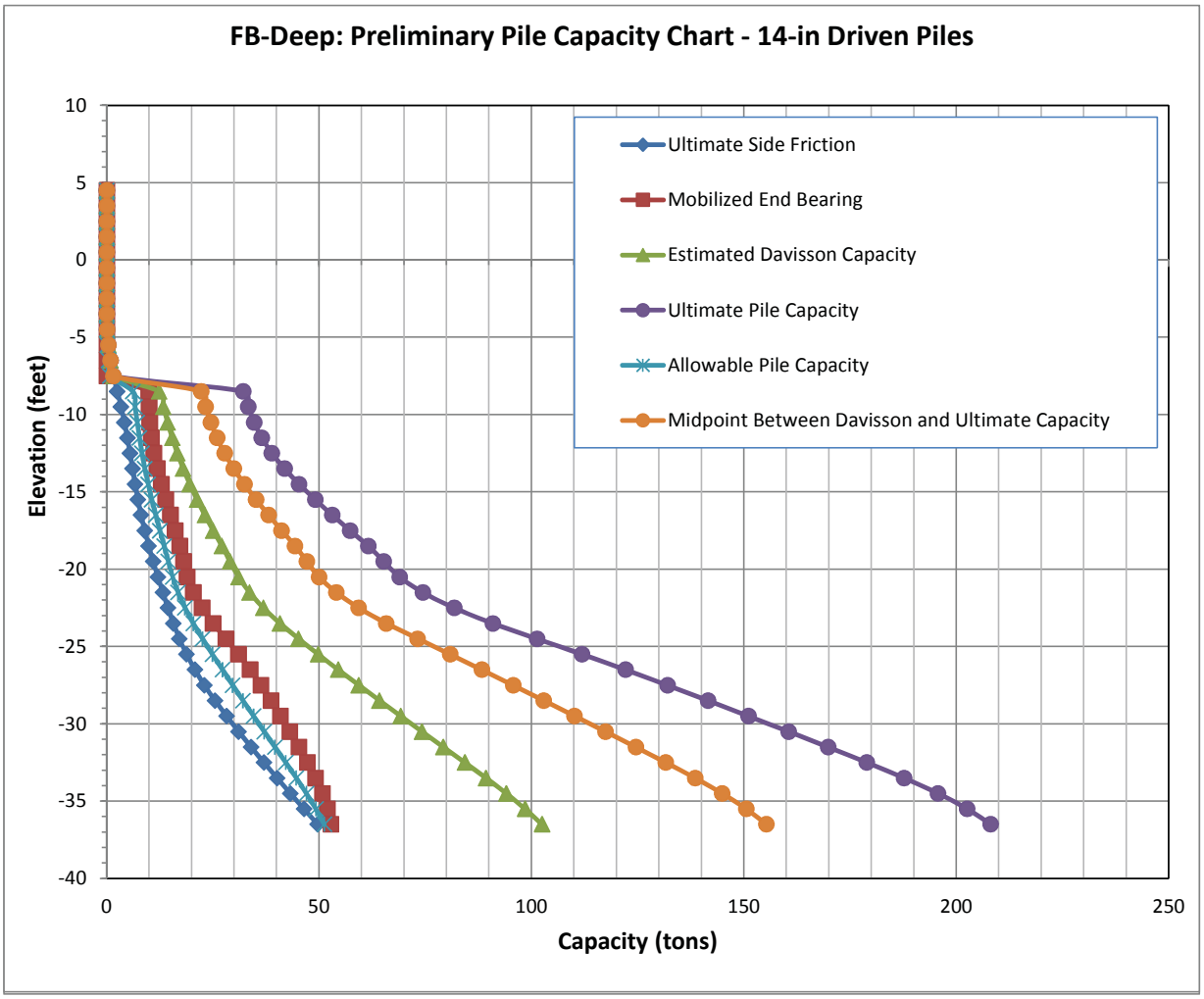
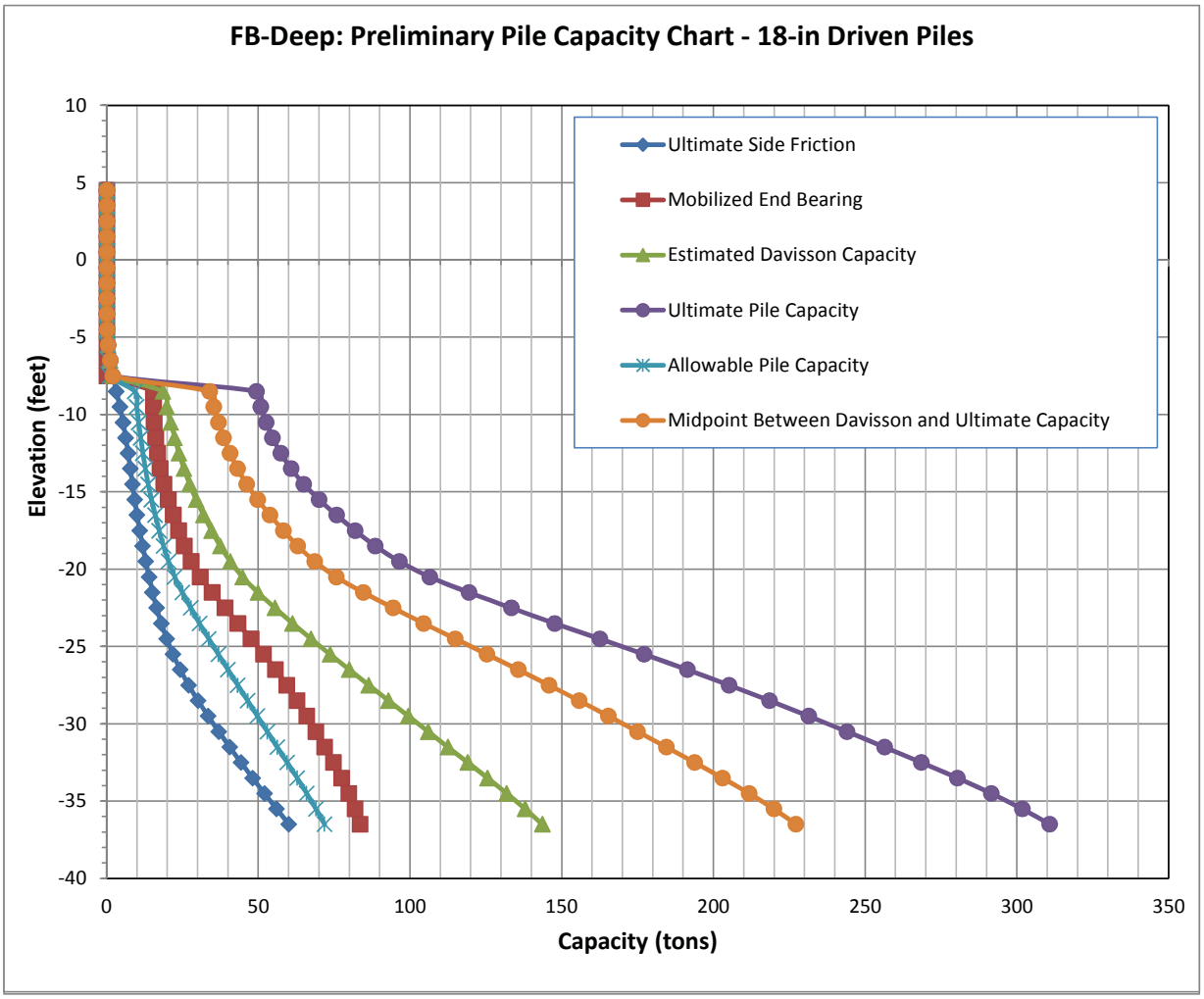
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-3



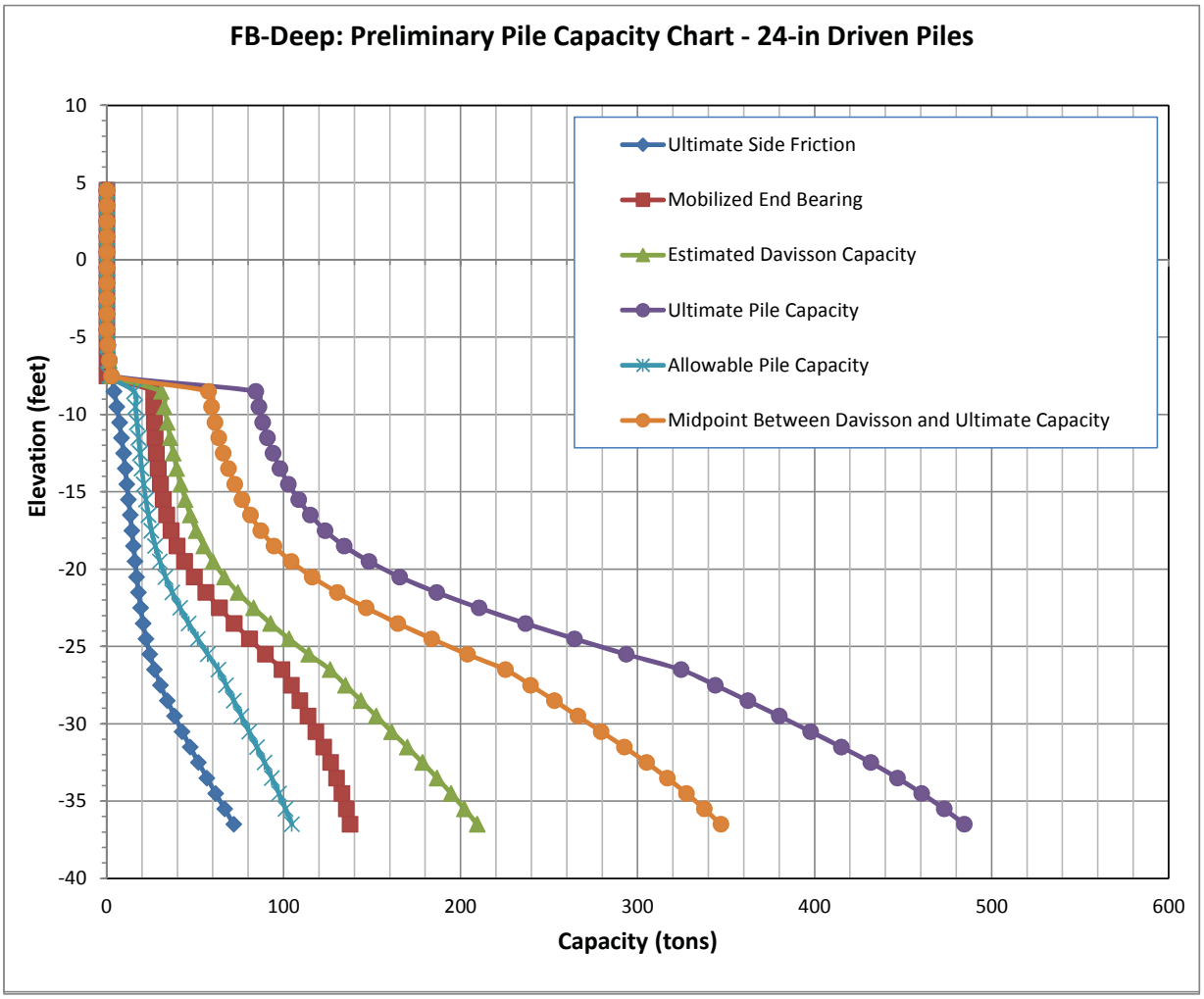
Project: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-4



Project: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-4



Project: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-4



General Information:
==========
Input file: .....reet - AECOM\FB-Deep Runs\Driven Piles\Driven Piles - CC-1.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, P.E.
Units: English

Analysis Information:
==========
Analysis Type: SPT

Soil Information:
==========
Boring date: 9/10/2018, Boring Number: CC-1
Station number: Offset:

Ground Elevation: 14.800(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	0.00	5- Cavity layer
2	1.00	14.00	5- Cavity layer
3	3.00	15.00	5- Cavity layer
4	5.00	17.00	5- Cavity layer
5	7.00	13.00	5- Cavity layer
6	9.00	14.00	5- Cavity layer
7	14.00	18.00	4- Lime Stone/Very shelly sand
8	19.00	5.00	3- Clean sand
9	24.00	6.00	3- Clean sand
10	29.00	12.00	3- Clean sand
11	34.00	16.00	3- Clean sand
12	39.00	25.00	3- Clean sand
13	44.00	24.00	3- Clean sand
14	49.00	30.00	3- Clean sand

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	14.80	0.80	14.00	13.43	5-Void
2	0.80	-4.20	5.00	18.00	4-Limestone, Very Shelly Sand
3	-4.20	-34.20	30.00	14.67	3-Clean Sand

Driven Pile Data:
==========
Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
14.00	1.00	13.80
14.00	2.00	12.80
14.00	3.00	11.80
14.00	4.00	10.80
14.00	5.00	9.80
14.00	6.00	8.80
14.00	7.00	7.80
14.00	8.00	6.80
14.00	9.00	5.80
14.00	10.00	4.80
14.00	11.00	3.80
14.00	12.00	2.80
14.00	13.00	1.80
14.00	14.00	0.80
14.00	15.00	-0.20
14.00	16.00	-1.20
14.00	17.00	-2.20
14.00	18.00	-3.20
14.00	19.00	-4.20
14.00	20.00	-5.20
14.00	21.00	-6.20
14.00	22.00	-7.20
14.00	23.00	-8.20
14.00	24.00	-9.20
14.00	25.00	-10.20
14.00	26.00	-11.20
14.00	27.00	-12.20
14.00	28.00	-13.20
14.00	29.00	-14.20
14.00	30.00	-15.20
14.00	31.00	-16.20
14.00	32.00	-17.20
14.00	33.00	-18.20
14.00	34.00	-19.20
14.00	35.00	-20.20
14.00	36.00	-21.20
14.00	37.00	-22.20

14.00	38.00	-23.20
14.00	39.00	-24.20
14.00	40.00	-25.20
14.00	41.00	-26.20
14.00	42.00	-27.20

Driven Pile Capacity:
==========

Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
1.00	14.0	0.00	0.00	0.00	0.00	0.00
2.00	14.0	0.00	0.00	0.00	0.00	0.00
3.00	14.0	0.00	0.00	0.00	0.00	0.00
4.00	14.0	0.00	0.00	0.00	0.00	0.00
5.00	14.0	0.00	0.00	0.00	0.00	0.00
6.00	14.0	0.00	0.00	0.00	0.00	0.00
7.00	14.0	0.00	0.00	0.00	0.00	0.00
8.00	14.0	0.00	0.00	0.00	0.00	0.00
9.00	14.0	0.00	0.00	0.00	0.00	0.00
10.00	14.0	0.10	0.00	0.10	0.05	0.10
11.00	14.0	0.42	0.00	0.42	0.21	0.42
12.00	14.0	0.94	0.00	0.94	0.47	0.94
13.00	14.0	1.67	0.00	1.67	0.83	1.67
14.00	14.0	2.60	17.98	20.58	10.29	56.54
15.00	14.0	3.60	14.79	18.39	9.19	47.96
16.00	14.0	4.49	12.35	16.85	8.42	41.55
17.00	14.0	5.29	10.72	16.00	8.00	37.44
18.00	14.0	5.98	9.88	15.86	7.93	35.63
19.00	14.0	6.58	12.93	19.51	9.76	45.38
20.00	14.0	7.13	12.97	20.09	10.05	46.02
21.00	14.0	7.68	13.04	20.72	10.36	46.80
22.00	14.0	8.25	13.15	21.39	10.70	47.69
23.00	14.0	8.83	13.27	22.11	11.05	48.65
24.00	14.0	9.42	13.46	22.88	11.44	49.80
25.00	14.0	10.03	13.88	23.90	11.95	51.66
26.00	14.0	10.70	14.56	25.26	12.63	54.38
27.00	14.0	11.45	15.55	27.00	13.50	58.10
28.00	14.0	12.29	16.91	29.20	14.60	63.01
29.00	14.0	13.23	18.65	31.88	15.94	69.19
30.00	14.0	14.40	20.35	34.75	17.37	75.45
31.00	14.0	15.76	21.95	37.71	18.85	81.60
32.00	14.0	17.21	23.82	41.03	20.52	88.68
33.00	14.0	18.75	25.98	44.73	22.36	96.68
34.00	14.0	20.38	28.39	48.77	24.38	105.55
35.00	14.0	22.14	30.92	53.07	26.53	114.92
36.00	14.0	24.10	33.26	57.36	28.68	123.89
37.00	14.0	26.24	35.22	61.46	30.73	131.89
38.00	14.0	28.58	36.79	65.37	32.68	138.94
39.00	14.0	31.10	37.98	69.09	34.54	145.06
40.00	14.0	33.72	38.96	72.68	36.34	150.60
41.00	14.0	36.33	40.02	76.35	38.18	156.38
42.00	14.0	38.93	41.29	80.22	40.11	162.79

NOTES
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1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

General Information:
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Input file: .....reet - AECOM\FB-Deep Runs\Driven Piles\Driven Piles - CC-1.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, P.E.
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 9/10/2018, Boring Number: CC-1
Station number: Offset:

Ground Elevation: 14.800(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	0.00	5- Cavity layer
2	1.00	14.00	5- Cavity layer
3	3.00	15.00	5- Cavity layer
4	5.00	17.00	5- Cavity layer
5	7.00	13.00	5- Cavity layer
6	9.00	14.00	5- Cavity layer
7	14.00	18.00	4- Lime Stone/Very shelly sand
8	19.00	5.00	3- Clean sand
9	24.00	6.00	3- Clean sand
10	29.00	12.00	3- Clean sand
11	34.00	16.00	3- Clean sand
12	39.00	25.00	3- Clean sand
13	44.00	24.00	3- Clean sand
14	49.00	30.00	3- Clean sand

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	14.80	0.80	14.00	13.43	5-Void
2	0.80	-4.20	5.00	18.00	4-Limestone, Very Shelly Sand
3	-4.20	-34.20	30.00	14.67	3-Clean Sand

Driven Pile Data:
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Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
18.00	1.00	13.80
18.00	2.00	12.80
18.00	3.00	11.80
18.00	4.00	10.80
18.00	5.00	9.80
18.00	6.00	8.80
18.00	7.00	7.80
18.00	8.00	6.80
18.00	9.00	5.80
18.00	10.00	4.80
18.00	11.00	3.80
18.00	12.00	2.80
18.00	13.00	1.80
18.00	14.00	0.80
18.00	15.00	-0.20
18.00	16.00	-1.20
18.00	17.00	-2.20
18.00	18.00	-3.20
18.00	19.00	-4.20
18.00	20.00	-5.20
18.00	21.00	-6.20
18.00	22.00	-7.20
18.00	23.00	-8.20
18.00	24.00	-9.20
18.00	25.00	-10.20
18.00	26.00	-11.20
18.00	27.00	-12.20
18.00	28.00	-13.20
18.00	29.00	-14.20
18.00	30.00	-15.20
18.00	31.00	-16.20
18.00	32.00	-17.20
18.00	33.00	-18.20
18.00	34.00	-19.20
18.00	35.00	-20.20
18.00	36.00	-21.20
18.00	37.00	-22.20

18.00	38.00	-23.20
18.00	39.00	-24.20
18.00	40.00	-25.20
18.00	41.00	-26.20
18.00	42.00	-27.20

Driven Pile Capacity:
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Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
1.00	18.0	0.00	0.00	0.00	0.00	0.00
2.00	18.0	0.00	0.00	0.00	0.00	0.00
3.00	18.0	0.00	0.00	0.00	0.00	0.00
4.00	18.0	0.00	0.00	0.00	0.00	0.00
5.00	18.0	0.00	0.00	0.00	0.00	0.00
6.00	18.0	0.00	0.00	0.00	0.00	0.00
7.00	18.0	0.00	0.00	0.00	0.00	0.00
8.00	18.0	0.00	0.00	0.00	0.00	0.00
9.00	18.0	0.00	0.00	0.00	0.00	0.00
10.00	18.0	0.13	0.00	0.13	0.07	0.13
11.00	18.0	0.54	0.00	0.54	0.27	0.54
12.00	18.0	1.21	0.00	1.21	0.60	1.21
13.00	18.0	2.14	0.00	2.14	1.07	2.14
14.00	18.0	3.35	26.52	29.87	14.94	82.92
15.00	18.0	4.62	22.50	27.12	13.56	72.12
16.00	18.0	5.77	19.50	25.27	12.64	64.27
17.00	18.0	6.80	17.53	24.32	12.16	59.38
18.00	18.0	7.69	16.58	24.28	12.14	57.44
19.00	18.0	8.46	18.68	27.14	13.57	64.49
20.00	18.0	9.14	18.76	27.91	13.95	65.43
21.00	18.0	9.77	19.06	28.83	14.41	66.95
22.00	18.0	10.35	19.60	29.95	14.97	69.16
23.00	18.0	10.91	20.37	31.28	15.64	72.01
24.00	18.0	11.47	21.34	32.81	16.40	75.49
25.00	18.0	12.11	22.44	34.55	17.28	79.43
26.00	18.0	12.92	23.56	36.47	18.24	83.59
27.00	18.0	13.85	24.81	38.66	19.33	88.27
28.00	18.0	14.90	26.37	41.27	20.63	94.00
29.00	18.0	16.06	28.31	44.37	22.19	101.00
30.00	18.0	17.30	30.88	48.18	24.09	109.95
31.00	18.0	18.60	34.29	52.89	26.44	121.47
32.00	18.0	20.00	38.55	58.55	29.27	135.65
33.00	18.0	21.69	42.75	64.44	32.22	149.94
34.00	18.0	23.67	46.52	70.19	35.10	163.23
35.00	18.0	25.82	50.16	75.98	37.99	176.31
36.00	18.0	28.20	53.44	81.63	40.82	188.50
37.00	18.0	30.81	56.28	87.08	43.54	199.64
38.00	18.0	33.65	58.63	92.28	46.14	209.54
39.00	18.0	36.73	60.50	97.23	48.62	218.23
40.00	18.0	39.94	62.32	102.26	51.13	226.91
41.00	18.0	43.15	64.37	107.52	53.76	236.26
42.00	18.0	46.36	66.66	113.03	56.51	246.35

NOTES
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1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

General Information:
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Input file: .....reet - AECOM\FB-Deep Runs\Driven Piles\Driven Piles - CC-1.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, P.E.
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 9/10/2018, Boring Number: CC-1
Station number: Offset:

Ground Elevation: 14.800(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	0.00	5- Cavity layer
2	1.00	14.00	5- Cavity layer
3	3.00	15.00	5- Cavity layer
4	5.00	17.00	5- Cavity layer
5	7.00	13.00	5- Cavity layer
6	9.00	14.00	5- Cavity layer
7	14.00	18.00	4- Lime Stone/Very shelly sand
8	19.00	5.00	3- Clean sand
9	24.00	6.00	3- Clean sand
10	29.00	12.00	3- Clean sand
11	34.00	16.00	3- Clean sand
12	39.00	25.00	3- Clean sand
13	44.00	24.00	3- Clean sand
14	49.00	30.00	3- Clean sand

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	14.80	0.80	14.00	13.43	5-Void
2	0.80	-4.20	5.00	18.00	4-Limestone, Very Shelly Sand
3	-4.20	-34.20	30.00	14.67	3-Clean Sand

Driven Pile Data:
==========
Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
24.00	1.00	13.80
24.00	2.00	12.80
24.00	3.00	11.80
24.00	4.00	10.80
24.00	5.00	9.80
24.00	6.00	8.80
24.00	7.00	7.80
24.00	8.00	6.80
24.00	9.00	5.80
24.00	10.00	4.80
24.00	11.00	3.80
24.00	12.00	2.80
24.00	13.00	1.80
24.00	14.00	0.80
24.00	15.00	-0.20
24.00	16.00	-1.20
24.00	17.00	-2.20
24.00	18.00	-3.20
24.00	19.00	-4.20
24.00	20.00	-5.20
24.00	21.00	-6.20
24.00	22.00	-7.20
24.00	23.00	-8.20
24.00	24.00	-9.20
24.00	25.00	-10.20
24.00	26.00	-11.20
24.00	27.00	-12.20
24.00	28.00	-13.20
24.00	29.00	-14.20
24.00	30.00	-15.20
24.00	31.00	-16.20
24.00	32.00	-17.20
24.00	33.00	-18.20
24.00	34.00	-19.20
24.00	35.00	-20.20
24.00	36.00	-21.20
24.00	37.00	-22.20

24.00	38.00	-23.20
24.00	39.00	-24.20
24.00	40.00	-25.20
24.00	41.00	-26.20
24.00	42.00	-27.20

Driven Pile Capacity:
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Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
1.00	24.0	0.00	0.00	0.00	0.00	0.00
2.00	24.0	0.00	0.00	0.00	0.00	0.00
3.00	24.0	0.00	0.00	0.00	0.00	0.00
4.00	24.0	0.00	0.00	0.00	0.00	0.00
5.00	24.0	0.00	0.00	0.00	0.00	0.00
6.00	24.0	0.00	0.00	0.00	0.00	0.00
7.00	24.0	0.00	0.00	0.00	0.00	0.00
8.00	24.0	0.00	0.00	0.00	0.00	0.00
9.00	24.0	0.00	0.00	0.00	0.00	0.00
10.00	24.0	0.18	0.00	0.18	0.09	0.18
11.00	24.0	0.71	0.00	0.71	0.36	0.71
12.00	24.0	1.61	0.00	1.61	0.80	1.61
13.00	24.0	2.86	0.00	2.86	1.43	2.86
14.00	24.0	4.46	42.51	46.97	23.48	131.98
15.00	24.0	6.17	37.40	43.57	21.78	118.38
16.00	24.0	7.70	33.67	41.37	20.68	108.71
17.00	24.0	9.06	31.64	40.70	20.35	103.98
18.00	24.0	10.26	31.63	41.89	20.95	105.16
19.00	24.0	11.28	29.76	41.05	20.52	100.57
20.00	24.0	12.18	29.89	42.07	21.03	101.85
21.00	24.0	12.98	30.32	43.30	21.65	103.95
22.00	24.0	13.69	31.13	44.82	22.41	107.07
23.00	24.0	14.34	32.35	46.69	23.35	111.40
24.00	24.0	14.95	34.04	48.98	24.49	117.06
25.00	24.0	15.61	36.19	51.80	25.90	124.17
26.00	24.0	16.41	38.70	55.11	27.55	132.51
27.00	24.0	17.38	41.43	58.81	29.40	141.67
28.00	24.0	18.52	44.40	62.92	31.46	151.73
29.00	24.0	19.82	47.69	67.50	33.75	162.88
30.00	24.0	21.26	51.30	72.56	36.28	175.16
31.00	24.0	22.81	55.52	78.34	39.17	189.38
32.00	24.0	24.45	60.72	85.17	42.58	206.61
33.00	24.0	26.21	66.73	92.94	46.47	226.41
34.00	24.0	28.16	73.31	101.47	50.74	248.09
35.00	24.0	30.37	80.38	110.74	55.37	271.50
36.00	24.0	32.93	87.66	120.59	60.30	295.92
37.00	24.0	35.87	94.94	130.81	65.41	320.70
38.00	24.0	39.38	98.59	137.97	68.99	335.15
39.00	24.0	43.20	102.28	145.47	72.74	350.02
40.00	24.0	47.19	106.21	153.40	76.70	365.82
41.00	24.0	51.22	110.53	161.74	80.87	382.79
42.00	24.0	55.27	115.14	170.41	85.20	400.69

NOTES
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1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

General Information:
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Input file: .....reet - AECOM\FB-Deep Runs\Driven Piles\Driven Piles - CC-2.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, P.E.
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
==========
Boring date: 9/9/2018, Boring Number: CC-2
Station number: Offset:

Ground Elevation: 15.400(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	0.00	5- Cavity layer
2	1.00	23.00	5- Cavity layer
3	3.00	16.00	5- Cavity layer
4	5.00	15.00	5- Cavity layer
5	7.00	12.00	5- Cavity layer
6	9.00	11.00	5- Cavity layer
7	14.00	19.00	4- Lime Stone/Very shelly sand
8	19.00	6.00	3- Clean sand
9	24.00	7.00	3- Clean sand
10	29.00	11.00	3- Clean sand
11	34.00	15.00	3- Clean sand
12	39.00	24.00	3- Clean sand
13	44.00	24.00	3- Clean sand
14	49.00	25.00	3- Clean sand

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	15.40	1.40	14.00	13.36	5-Void
2	1.40	-3.60	5.00	19.00	4-Limestone, Very Shelly Sand
3	-3.60	-33.60	30.00	14.50	3-Clean Sand

Driven Pile Data:
==========
Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
14.00	1.00	14.40
14.00	2.00	13.40
14.00	3.00	12.40
14.00	4.00	11.40
14.00	5.00	10.40
14.00	6.00	9.40
14.00	7.00	8.40
14.00	8.00	7.40
14.00	9.00	6.40
14.00	10.00	5.40
14.00	11.00	4.40
14.00	12.00	3.40
14.00	13.00	2.40
14.00	14.00	1.40
14.00	15.00	0.40
14.00	16.00	-0.60
14.00	17.00	-1.60
14.00	18.00	-2.60
14.00	19.00	-3.60
14.00	20.00	-4.60
14.00	21.00	-5.60
14.00	22.00	-6.60
14.00	23.00	-7.60
14.00	24.00	-8.60
14.00	25.00	-9.60
14.00	26.00	-10.60
14.00	27.00	-11.60
14.00	28.00	-12.60
14.00	29.00	-13.60
14.00	30.00	-14.60
14.00	31.00	-15.60
14.00	32.00	-16.60
14.00	33.00	-17.60
14.00	34.00	-18.60
14.00	35.00	-19.60
14.00	36.00	-20.60
14.00	37.00	-21.60

14.00	38.00	-22.60
14.00	39.00	-23.60
14.00	40.00	-24.60
14.00	41.00	-25.60
14.00	42.00	-26.60

Driven Pile Capacity:
==========

Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
1.00	14.0	0.00	0.00	0.00	0.00	0.00
2.00	14.0	0.00	0.00	0.00	0.00	0.00
3.00	14.0	0.00	0.00	0.00	0.00	0.00
4.00	14.0	0.00	0.00	0.00	0.00	0.00
5.00	14.0	0.00	0.00	0.00	0.00	0.00
6.00	14.0	0.00	0.00	0.00	0.00	0.00
7.00	14.0	0.00	0.00	0.00	0.00	0.00
8.00	14.0	0.00	0.00	0.00	0.00	0.00
9.00	14.0	0.00	0.00	0.00	0.00	0.00
10.00	14.0	0.11	0.00	0.11	0.05	0.11
11.00	14.0	0.44	0.00	0.44	0.22	0.44
12.00	14.0	0.99	0.00	0.99	0.49	0.99
13.00	14.0	1.76	0.00	1.76	0.88	1.76
14.00	14.0	2.75	19.65	22.40	11.20	61.69
15.00	14.0	3.80	16.51	20.31	10.16	53.32
16.00	14.0	4.77	14.11	18.88	9.44	47.10
17.00	14.0	5.65	12.50	18.15	9.07	43.14
18.00	14.0	6.44	11.68	18.12	9.06	41.47
19.00	14.0	7.15	14.49	21.63	10.82	50.61
20.00	14.0	7.80	14.53	22.33	11.16	51.38
21.00	14.0	8.46	14.61	23.07	11.53	52.29
22.00	14.0	9.14	14.70	23.84	11.92	53.23
23.00	14.0	9.86	14.75	24.61	12.30	54.10
24.00	14.0	10.61	14.77	25.38	12.69	54.92
25.00	14.0	11.38	14.93	26.30	13.15	56.15
26.00	14.0	12.17	15.29	27.45	13.73	58.02
27.00	14.0	12.98	15.92	28.90	14.45	60.74
28.00	14.0	13.82	16.90	30.72	15.36	64.53
29.00	14.0	14.71	18.27	32.97	16.49	69.51
30.00	14.0	15.80	19.68	35.48	17.74	74.83
31.00	14.0	17.10	21.08	38.18	19.09	80.34
32.00	14.0	18.48	22.76	41.24	20.62	86.77
33.00	14.0	19.94	24.72	44.67	22.33	94.12
34.00	14.0	21.50	26.95	48.45	24.23	102.35
35.00	14.0	23.19	29.34	52.53	26.27	111.21
36.00	14.0	25.07	31.59	56.67	28.33	119.85
37.00	14.0	27.15	33.55	60.69	30.35	127.79
38.00	14.0	29.41	35.20	64.61	32.31	135.01
39.00	14.0	31.87	36.55	68.42	34.21	141.53
40.00	14.0	34.43	37.72	72.15	36.07	147.58
41.00	14.0	37.00	38.83	75.83	37.91	153.48
42.00	14.0	39.57	39.91	79.48	39.74	159.29

NOTES
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1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

General Information:
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Input file: .....reet - AECOM\FB-Deep Runs\Driven Piles\Driven Piles - CC-2.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, P.E.
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 9/9/2018, Boring Number: CC-2
Station number: Offset:

Ground Elevation: 15.400(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	0.00	5- Cavity layer
2	1.00	23.00	5- Cavity layer
3	3.00	16.00	5- Cavity layer
4	5.00	15.00	5- Cavity layer
5	7.00	12.00	5- Cavity layer
6	9.00	11.00	5- Cavity layer
7	14.00	19.00	4- Lime Stone/Very shelly sand
8	19.00	6.00	3- Clean sand
9	24.00	7.00	3- Clean sand
10	29.00	11.00	3- Clean sand
11	34.00	15.00	3- Clean sand
12	39.00	24.00	3- Clean sand
13	44.00	24.00	3- Clean sand
14	49.00	25.00	3- Clean sand

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	15.40	1.40	14.00	13.36	5-Void
2	1.40	-3.60	5.00	19.00	4-Limestone, Very Shelly Sand
3	-3.60	-33.60	30.00	14.50	3-Clean Sand

Driven Pile Data:
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Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
18.00	1.00	14.40
18.00	2.00	13.40
18.00	3.00	12.40
18.00	4.00	11.40
18.00	5.00	10.40
18.00	6.00	9.40
18.00	7.00	8.40
18.00	8.00	7.40
18.00	9.00	6.40
18.00	10.00	5.40
18.00	11.00	4.40
18.00	12.00	3.40
18.00	13.00	2.40
18.00	14.00	1.40
18.00	15.00	0.40
18.00	16.00	-0.60
18.00	17.00	-1.60
18.00	18.00	-2.60
18.00	19.00	-3.60
18.00	20.00	-4.60
18.00	21.00	-5.60
18.00	22.00	-6.60
18.00	23.00	-7.60
18.00	24.00	-8.60
18.00	25.00	-9.60
18.00	26.00	-10.60
18.00	27.00	-11.60
18.00	28.00	-12.60
18.00	29.00	-13.60
18.00	30.00	-14.60
18.00	31.00	-15.60
18.00	32.00	-16.60
18.00	33.00	-17.60
18.00	34.00	-18.60
18.00	35.00	-19.60
18.00	36.00	-20.60
18.00	37.00	-21.60

18.00	38.00	-22.60
18.00	39.00	-23.60
18.00	40.00	-24.60
18.00	41.00	-25.60
18.00	42.00	-26.60

Driven Pile Capacity:
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Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
1.00	18.0	0.00	0.00	0.00	0.00	0.00
2.00	18.0	0.00	0.00	0.00	0.00	0.00
3.00	18.0	0.00	0.00	0.00	0.00	0.00
4.00	18.0	0.00	0.00	0.00	0.00	0.00
5.00	18.0	0.00	0.00	0.00	0.00	0.00
6.00	18.0	0.00	0.00	0.00	0.00	0.00
7.00	18.0	0.00	0.00	0.00	0.00	0.00
8.00	18.0	0.00	0.00	0.00	0.00	0.00
9.00	18.0	0.00	0.00	0.00	0.00	0.00
10.00	18.0	0.14	0.00	0.14	0.07	0.14
11.00	18.0	0.57	0.00	0.57	0.28	0.57
12.00	18.0	1.27	0.00	1.27	0.64	1.27
13.00	18.0	2.26	0.00	2.26	1.13	2.26
14.00	18.0	3.53	29.33	32.86	16.43	91.53
15.00	18.0	4.89	25.37	30.26	15.13	80.99
16.00	18.0	6.14	22.42	28.55	14.28	73.38
17.00	18.0	7.27	20.48	27.74	13.87	68.70
18.00	18.0	8.28	19.55	27.84	13.92	66.94
19.00	18.0	9.19	21.01	30.20	15.10	72.21
20.00	18.0	10.01	21.09	31.10	15.55	73.29
21.00	18.0	10.77	21.39	32.15	16.08	74.92
22.00	18.0	11.48	21.88	33.37	16.68	77.13
23.00	18.0	12.20	22.53	34.73	17.37	79.79
24.00	18.0	12.93	23.29	36.22	18.11	82.80
25.00	18.0	13.74	24.09	37.83	18.92	86.02
26.00	18.0	14.67	24.87	39.54	19.77	89.29
27.00	18.0	15.70	25.74	41.44	20.72	92.92
28.00	18.0	16.78	26.91	43.68	21.84	97.50
29.00	18.0	17.91	28.45	46.36	23.18	103.27
30.00	18.0	19.08	30.61	49.68	24.84	110.90
31.00	18.0	20.29	33.56	53.85	26.92	120.96
32.00	18.0	21.58	37.33	58.91	29.45	133.56
33.00	18.0	23.19	41.14	64.32	32.16	146.60
34.00	18.0	25.09	44.66	69.75	34.87	159.07
35.00	18.0	27.16	48.10	75.26	37.63	171.45
36.00	18.0	29.45	51.22	80.68	40.34	183.12
37.00	18.0	31.98	54.00	85.98	42.99	193.98
38.00	18.0	34.75	56.39	91.14	45.57	203.91
39.00	18.0	37.75	58.39	96.15	48.07	212.93
40.00	18.0	40.89	60.20	101.09	50.54	221.48
41.00	18.0	44.05	61.96	106.01	53.00	229.92
42.00	18.0	47.23	63.68	110.91	55.45	238.26

NOTES
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1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

General Information:
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Input file: .....reet - AECOM\FB-Deep Runs\Driven Piles\Driven Piles - CC-2.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, P.E.
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 9/9/2018, Boring Number: CC-2
Station number: Offset:

Ground Elevation: 15.400(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	0.00	5- Cavity layer
2	1.00	23.00	5- Cavity layer
3	3.00	16.00	5- Cavity layer
4	5.00	15.00	5- Cavity layer
5	7.00	12.00	5- Cavity layer
6	9.00	11.00	5- Cavity layer
7	14.00	19.00	4- Lime Stone/Very shelly sand
8	19.00	6.00	3- Clean sand
9	24.00	7.00	3- Clean sand
10	29.00	11.00	3- Clean sand
11	34.00	15.00	3- Clean sand
12	39.00	24.00	3- Clean sand
13	44.00	24.00	3- Clean sand
14	49.00	25.00	3- Clean sand

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	15.40	1.40	14.00	13.36	5-Void
2	1.40	-3.60	5.00	19.00	4-Limestone, Very Shelly Sand
3	-3.60	-33.60	30.00	14.50	3-Clean Sand

Driven Pile Data:
==========
Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
24.00	1.00	14.40
24.00	2.00	13.40
24.00	3.00	12.40
24.00	4.00	11.40
24.00	5.00	10.40
24.00	6.00	9.40
24.00	7.00	8.40
24.00	8.00	7.40
24.00	9.00	6.40
24.00	10.00	5.40
24.00	11.00	4.40
24.00	12.00	3.40
24.00	13.00	2.40
24.00	14.00	1.40
24.00	15.00	0.40
24.00	16.00	-0.60
24.00	17.00	-1.60
24.00	18.00	-2.60
24.00	19.00	-3.60
24.00	20.00	-4.60
24.00	21.00	-5.60
24.00	22.00	-6.60
24.00	23.00	-7.60
24.00	24.00	-8.60
24.00	25.00	-9.60
24.00	26.00	-10.60
24.00	27.00	-11.60
24.00	28.00	-12.60
24.00	29.00	-13.60
24.00	30.00	-14.60
24.00	31.00	-15.60
24.00	32.00	-16.60
24.00	33.00	-17.60
24.00	34.00	-18.60
24.00	35.00	-19.60
24.00	36.00	-20.60
24.00	37.00	-21.60

24.00	38.00	-22.60
24.00	39.00	-23.60
24.00	40.00	-24.60
24.00	41.00	-25.60
24.00	42.00	-26.60

Driven Pile Capacity:
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Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
1.00	24.0	0.00	0.00	0.00	0.00	0.00
2.00	24.0	0.00	0.00	0.00	0.00	0.00
3.00	24.0	0.00	0.00	0.00	0.00	0.00
4.00	24.0	0.00	0.00	0.00	0.00	0.00
5.00	24.0	0.00	0.00	0.00	0.00	0.00
6.00	24.0	0.00	0.00	0.00	0.00	0.00
7.00	24.0	0.00	0.00	0.00	0.00	0.00
8.00	24.0	0.00	0.00	0.00	0.00	0.00
9.00	24.0	0.00	0.00	0.00	0.00	0.00
10.00	24.0	0.19	0.00	0.19	0.09	0.19
11.00	24.0	0.75	0.00	0.75	0.38	0.75
12.00	24.0	1.70	0.00	1.70	0.85	1.70
13.00	24.0	3.02	0.00	3.02	1.51	3.02
14.00	24.0	4.71	47.57	52.28	26.14	147.43
15.00	24.0	6.52	42.55	49.07	24.54	134.18
16.00	24.0	8.18	38.88	47.06	23.53	124.82
17.00	24.0	9.69	36.76	46.45	23.22	119.97
18.00	24.0	11.04	36.39	47.43	23.72	120.21
19.00	24.0	12.25	33.23	45.49	22.74	111.95
20.00	24.0	13.33	33.35	46.69	23.34	113.39
21.00	24.0	14.33	33.73	48.06	24.03	115.52
22.00	24.0	15.24	34.42	49.66	24.83	118.49
23.00	24.0	16.09	35.45	51.54	25.77	122.44
24.00	24.0	16.88	36.88	53.76	26.88	127.52
25.00	24.0	17.70	38.72	56.42	28.21	133.86
26.00	24.0	18.60	40.89	59.49	29.74	141.26
27.00	24.0	19.63	43.25	62.88	31.44	149.37
28.00	24.0	20.78	45.83	66.62	33.31	158.28
29.00	24.0	22.05	48.72	70.77	35.38	168.20
30.00	24.0	23.43	51.91	75.34	37.67	179.15
31.00	24.0	24.92	55.67	80.58	40.29	191.91
32.00	24.0	26.47	60.36	86.83	43.41	207.54
33.00	24.0	28.14	65.85	93.99	47.00	225.70
34.00	24.0	29.98	71.95	101.92	50.96	245.82
35.00	24.0	32.06	78.57	110.63	55.32	267.77
36.00	24.0	34.50	85.46	119.96	59.98	290.88
37.00	24.0	37.31	92.42	129.73	64.86	314.56
38.00	24.0	40.73	95.92	136.65	68.33	328.50
39.00	24.0	44.45	99.09	143.54	71.77	341.71
40.00	24.0	48.35	102.10	150.46	75.23	354.66
41.00	24.0	52.31	105.11	157.42	78.71	367.65
42.00	24.0	56.32	108.06	164.39	82.19	380.51

NOTES
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1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

General Information:
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Input file: .....reet - AECOM\FB-Deep Runs\Driven Piles\Driven Piles - CC-3.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, P.E.
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 9/16/2018, Boring Number: CC-3
Station number: Offset:

Ground Elevation: 11.600(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	0.00	5- Cavity layer
2	1.00	23.00	5- Cavity layer
3	3.00	11.00	5- Cavity layer
4	5.00	8.00	5- Cavity layer
5	7.00	13.00	5- Cavity layer
6	9.00	15.00	5- Cavity layer
7	14.00	13.00	4- Lime Stone/Very shelly sand
8	19.00	9.00	3- Clean sand
9	24.00	11.00	3- Clean sand
10	29.00	12.00	3- Clean sand
11	34.00	23.00	3- Clean sand
12	39.00	27.00	3- Clean sand
13	44.00	24.00	3- Clean sand
14	49.00	27.00	3- Clean sand

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	11.60	-2.40	14.00	13.21	5-Void
2	-2.40	-7.40	5.00	13.00	4-Limestone, Very Shelly Sand
3	-7.40	-37.40	30.00	17.67	3-Clean Sand

Driven Pile Data:
==========
Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
14.00	1.00	10.60
14.00	2.00	9.60
14.00	3.00	8.60
14.00	4.00	7.60
14.00	5.00	6.60
14.00	6.00	5.60
14.00	7.00	4.60
14.00	8.00	3.60
14.00	9.00	2.60
14.00	10.00	1.60
14.00	11.00	0.60
14.00	12.00	-0.40
14.00	13.00	-1.40
14.00	14.00	-2.40
14.00	15.00	-3.40
14.00	16.00	-4.40
14.00	17.00	-5.40
14.00	18.00	-6.40
14.00	19.00	-7.40
14.00	20.00	-8.40
14.00	21.00	-9.40
14.00	22.00	-10.40
14.00	23.00	-11.40
14.00	24.00	-12.40
14.00	25.00	-13.40
14.00	26.00	-14.40
14.00	27.00	-15.40
14.00	28.00	-16.40
14.00	29.00	-17.40
14.00	30.00	-18.40
14.00	31.00	-19.40
14.00	32.00	-20.40
14.00	33.00	-21.40
14.00	34.00	-22.40
14.00	35.00	-23.40
14.00	36.00	-24.40
14.00	37.00	-25.40

14.00	38.00	-26.40
14.00	39.00	-27.40
14.00	40.00	-28.40
14.00	41.00	-29.40
14.00	42.00	-30.40

Driven Pile Capacity:
==========

Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
1.00	14.0	0.00	0.00	0.00	0.00	0.00
2.00	14.0	0.00	0.00	0.00	0.00	0.00
3.00	14.0	0.00	0.00	0.00	0.00	0.00
4.00	14.0	0.00	0.00	0.00	0.00	0.00
5.00	14.0	0.00	0.00	0.00	0.00	0.00
6.00	14.0	0.00	0.00	0.00	0.00	0.00
7.00	14.0	0.00	0.00	0.00	0.00	0.00
8.00	14.0	0.00	0.00	0.00	0.00	0.00
9.00	14.0	0.00	0.00	0.00	0.00	0.00
10.00	14.0	0.08	0.00	0.08	0.04	0.08
11.00	14.0	0.30	0.00	0.30	0.15	0.30
12.00	14.0	0.68	0.00	0.68	0.34	0.68
13.00	14.0	1.20	0.00	1.20	0.60	1.20
14.00	14.0	1.88	17.30	19.18	9.59	53.77
15.00	14.0	2.66	16.94	19.60	9.80	53.47
16.00	14.0	3.48	16.81	20.29	10.15	53.92
17.00	14.0	4.35	16.93	21.28	10.64	55.13
18.00	14.0	5.27	17.28	22.55	11.28	57.12
19.00	14.0	6.24	15.85	22.09	11.04	53.79
20.00	14.0	7.19	15.95	23.14	11.57	55.03
21.00	14.0	8.11	16.21	24.31	12.16	56.72
22.00	14.0	9.03	16.56	25.60	12.80	58.72
23.00	14.0	10.00	16.97	26.97	13.48	60.90
24.00	14.0	11.03	17.38	28.41	14.20	63.16
25.00	14.0	12.08	17.86	29.94	14.97	65.65
26.00	14.0	13.10	18.59	31.69	15.85	68.87
27.00	14.0	14.05	19.80	33.85	16.93	73.45
28.00	14.0	14.95	21.63	36.59	18.29	79.85
29.00	14.0	15.85	24.21	40.06	20.03	88.47
30.00	14.0	17.06	26.96	44.01	22.01	97.92
31.00	14.0	18.66	29.28	47.94	23.97	106.50
32.00	14.0	20.48	31.47	51.95	25.97	114.89
33.00	14.0	22.52	33.52	56.04	28.02	123.09
34.00	14.0	24.79	35.45	60.23	30.12	131.13
35.00	14.0	27.22	37.34	64.55	32.28	139.23
36.00	14.0	29.74	39.11	68.85	34.42	147.07
37.00	14.0	32.35	40.63	72.99	36.49	154.25
38.00	14.0	35.06	41.90	76.96	38.48	160.77
39.00	14.0	37.86	42.88	80.74	40.37	166.49
40.00	14.0	40.69	43.51	84.19	42.10	171.21
41.00	14.0	43.46	44.02	87.48	43.74	175.53
42.00	14.0	46.18	44.53	90.71	45.36	179.77

NOTES
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1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

General Information:
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Input file: .....reet - AECOM\FB-Deep Runs\Driven Piles\Driven Piles - CC-3.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, P.E.
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 9/16/2018, Boring Number: CC-3
Station number: Offset:

Ground Elevation: 11.600(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	0.00	5- Cavity layer
2	1.00	23.00	5- Cavity layer
3	3.00	11.00	5- Cavity layer
4	5.00	8.00	5- Cavity layer
5	7.00	13.00	5- Cavity layer
6	9.00	15.00	5- Cavity layer
7	14.00	13.00	4- Lime Stone/Very shelly sand
8	19.00	9.00	3- Clean sand
9	24.00	11.00	3- Clean sand
10	29.00	12.00	3- Clean sand
11	34.00	23.00	3- Clean sand
12	39.00	27.00	3- Clean sand
13	44.00	24.00	3- Clean sand
14	49.00	27.00	3- Clean sand

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	11.60	-2.40	14.00	13.21	5-Void
2	-2.40	-7.40	5.00	13.00	4-Limestone, Very Shelly Sand
3	-7.40	-37.40	30.00	17.67	3-Clean Sand

Driven Pile Data:
==========
Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
18.00	1.00	10.60
18.00	2.00	9.60
18.00	3.00	8.60
18.00	4.00	7.60
18.00	5.00	6.60
18.00	6.00	5.60
18.00	7.00	4.60
18.00	8.00	3.60
18.00	9.00	2.60
18.00	10.00	1.60
18.00	11.00	0.60
18.00	12.00	-0.40
18.00	13.00	-1.40
18.00	14.00	-2.40
18.00	15.00	-3.40
18.00	16.00	-4.40
18.00	17.00	-5.40
18.00	18.00	-6.40
18.00	19.00	-7.40
18.00	20.00	-8.40
18.00	21.00	-9.40
18.00	22.00	-10.40
18.00	23.00	-11.40
18.00	24.00	-12.40
18.00	25.00	-13.40
18.00	26.00	-14.40
18.00	27.00	-15.40
18.00	28.00	-16.40
18.00	29.00	-17.40
18.00	30.00	-18.40
18.00	31.00	-19.40
18.00	32.00	-20.40
18.00	33.00	-21.40
18.00	34.00	-22.40
18.00	35.00	-23.40
18.00	36.00	-24.40
18.00	37.00	-25.40

18.00	38.00	-26.40
18.00	39.00	-27.40
18.00	40.00	-28.40
18.00	41.00	-29.40
18.00	42.00	-30.40

Driven Pile Capacity:
==========

Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
1.00	18.0	0.00	0.00	0.00	0.00	0.00
2.00	18.0	0.00	0.00	0.00	0.00	0.00
3.00	18.0	0.00	0.00	0.00	0.00	0.00
4.00	18.0	0.00	0.00	0.00	0.00	0.00
5.00	18.0	0.00	0.00	0.00	0.00	0.00
6.00	18.0	0.00	0.00	0.00	0.00	0.00
7.00	18.0	0.00	0.00	0.00	0.00	0.00
8.00	18.0	0.00	0.00	0.00	0.00	0.00
9.00	18.0	0.00	0.00	0.00	0.00	0.00
10.00	18.0	0.10	0.00	0.10	0.05	0.10
11.00	18.0	0.39	0.00	0.39	0.19	0.39
12.00	18.0	0.87	0.00	0.87	0.44	0.87
13.00	18.0	1.55	0.00	1.55	0.77	1.55
14.00	18.0	2.42	28.29	30.71	15.36	87.30
15.00	18.0	3.42	28.08	31.50	15.75	87.67
16.00	18.0	4.47	28.18	32.66	16.33	89.03
17.00	18.0	5.59	28.60	34.19	17.10	91.38
18.00	18.0	6.77	29.32	36.10	18.05	94.74
19.00	18.0	8.02	24.03	32.04	16.02	80.10
20.00	18.0	9.23	24.15	33.39	16.69	81.69
21.00	18.0	10.37	24.53	34.90	17.45	83.96
22.00	18.0	11.47	25.12	36.60	18.30	86.84
23.00	18.0	12.59	25.87	38.46	19.23	90.21
24.00	18.0	13.75	26.73	40.47	20.24	93.92
25.00	18.0	14.90	27.81	42.70	21.35	98.32
26.00	18.0	16.01	29.25	45.26	22.63	103.75
27.00	18.0	17.08	31.20	48.28	24.14	110.68
28.00	18.0	18.10	33.87	51.97	25.99	119.71
29.00	18.0	19.11	37.38	56.49	28.25	131.26
30.00	18.0	20.30	41.52	61.82	30.91	144.86
31.00	18.0	21.81	46.09	67.89	33.95	160.06
32.00	18.0	23.65	51.02	74.66	37.33	176.70
33.00	18.0	25.98	55.09	81.07	40.54	191.26
34.00	18.0	28.74	57.95	86.68	43.34	202.57
35.00	18.0	31.70	60.45	92.15	46.08	213.05
36.00	18.0	34.80	62.61	97.41	48.70	222.62
37.00	18.0	38.02	64.43	102.45	51.22	231.31
38.00	18.0	41.36	65.93	107.29	53.65	239.16
39.00	18.0	44.83	67.12	111.95	55.97	246.19
40.00	18.0	48.34	68.34	116.68	58.34	253.36
41.00	18.0	51.80	69.80	121.60	60.80	261.21
42.00	18.0	55.20	71.39	126.59	63.29	269.36

NOTES
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1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

General Information:
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Input file: .....reet - AECOM\FB-Deep Runs\Driven Piles\Driven Piles - CC-3.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, P.E.
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 9/16/2018, Boring Number: CC-3
Station number: Offset:

Ground Elevation: 11.600(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	0.00	5- Cavity layer
2	1.00	23.00	5- Cavity layer
3	3.00	11.00	5- Cavity layer
4	5.00	8.00	5- Cavity layer
5	7.00	13.00	5- Cavity layer
6	9.00	15.00	5- Cavity layer
7	14.00	13.00	4- Lime Stone/Very shelly sand
8	19.00	9.00	3- Clean sand
9	24.00	11.00	3- Clean sand
10	29.00	12.00	3- Clean sand
11	34.00	23.00	3- Clean sand
12	39.00	27.00	3- Clean sand
13	44.00	24.00	3- Clean sand
14	49.00	27.00	3- Clean sand

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	11.60	-2.40	14.00	13.21	5-Void
2	-2.40	-7.40	5.00	13.00	4-Limestone, Very Shelly Sand
3	-7.40	-37.40	30.00	17.67	3-Clean Sand

Driven Pile Data:
==========
Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
24.00	1.00	10.60
24.00	2.00	9.60
24.00	3.00	8.60
24.00	4.00	7.60
24.00	5.00	6.60
24.00	6.00	5.60
24.00	7.00	4.60
24.00	8.00	3.60
24.00	9.00	2.60
24.00	10.00	1.60
24.00	11.00	0.60
24.00	12.00	-0.40
24.00	13.00	-1.40
24.00	14.00	-2.40
24.00	15.00	-3.40
24.00	16.00	-4.40
24.00	17.00	-5.40
24.00	18.00	-6.40
24.00	19.00	-7.40
24.00	20.00	-8.40
24.00	21.00	-9.40
24.00	22.00	-10.40
24.00	23.00	-11.40
24.00	24.00	-12.40
24.00	25.00	-13.40
24.00	26.00	-14.40
24.00	27.00	-15.40
24.00	28.00	-16.40
24.00	29.00	-17.40
24.00	30.00	-18.40
24.00	31.00	-19.40
24.00	32.00	-20.40
24.00	33.00	-21.40
24.00	34.00	-22.40
24.00	35.00	-23.40
24.00	36.00	-24.40
24.00	37.00	-25.40

24.00	38.00	-26.40
24.00	39.00	-27.40
24.00	40.00	-28.40
24.00	41.00	-29.40
24.00	42.00	-30.40

Driven Pile Capacity:
==========

Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
1.00	24.0	0.00	0.00	0.00	0.00	0.00
2.00	24.0	0.00	0.00	0.00	0.00	0.00
3.00	24.0	0.00	0.00	0.00	0.00	0.00
4.00	24.0	0.00	0.00	0.00	0.00	0.00
5.00	24.0	0.00	0.00	0.00	0.00	0.00
6.00	24.0	0.00	0.00	0.00	0.00	0.00
7.00	24.0	0.00	0.00	0.00	0.00	0.00
8.00	24.0	0.00	0.00	0.00	0.00	0.00
9.00	24.0	0.00	0.00	0.00	0.00	0.00
10.00	24.0	0.13	0.00	0.13	0.06	0.13
11.00	24.0	0.52	0.00	0.52	0.26	0.52
12.00	24.0	1.16	0.00	1.16	0.58	1.16
13.00	24.0	2.06	0.00	2.06	1.03	2.06
14.00	24.0	3.22	50.69	53.91	26.96	155.29
15.00	24.0	4.55	50.94	55.49	27.75	157.36
16.00	24.0	5.97	51.60	57.57	28.78	160.77
17.00	24.0	7.46	52.61	60.07	30.04	165.30
18.00	24.0	9.03	53.91	62.94	31.47	170.76
19.00	24.0	10.69	39.46	50.15	25.07	129.07
20.00	24.0	12.33	39.59	51.92	25.96	131.11
21.00	24.0	13.87	39.99	53.86	26.93	133.84
22.00	24.0	15.35	40.65	56.01	28.00	137.31
23.00	24.0	16.76	41.66	58.42	29.21	141.73
24.00	24.0	18.06	43.17	61.23	30.62	147.58
25.00	24.0	19.24	45.33	64.58	32.29	155.25
26.00	24.0	20.34	48.21	68.55	34.28	164.97
27.00	24.0	21.42	51.83	73.24	36.62	176.90
28.00	24.0	22.52	56.13	78.65	39.33	190.92
29.00	24.0	23.70	61.01	84.71	42.35	206.72
30.00	24.0	25.10	66.31	91.42	45.71	224.04
31.00	24.0	26.86	71.98	98.84	49.42	242.81
32.00	24.0	28.97	78.10	107.07	53.53	263.26
33.00	24.0	31.46	84.43	115.89	57.95	284.75
34.00	24.0	34.38	90.69	125.08	62.54	306.46
35.00	24.0	37.65	96.91	134.57	67.28	328.39
36.00	24.0	41.19	103.10	144.29	72.14	350.48
37.00	24.0	45.03	109.12	154.15	77.07	372.39
38.00	24.0	49.27	111.17	160.43	80.22	382.76
39.00	24.0	53.68	113.20	166.88	83.44	393.28
40.00	24.0	58.16	115.38	173.53	86.77	404.29
41.00	24.0	62.60	117.86	180.46	90.23	416.17
42.00	24.0	67.01	120.66	187.67	93.83	428.98

NOTES
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1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

General Information:
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Input file: .....reet - AECOM\FB-Deep Runs\Driven Piles\Driven Piles - CC-4.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, P.E.
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 9/17/2018, Boring Number: CC-4
Station number: Offset:

Ground Elevation: 5.500(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	0.00	5- Cavity layer
2	1.00	15.00	5- Cavity layer
3	3.00	8.00	5- Cavity layer
4	5.00	14.00	5- Cavity layer
5	7.00	9.00	5- Cavity layer
6	9.00	10.00	5- Cavity layer
7	14.00	9.00	3- Clean sand
8	19.00	8.00	3- Clean sand
9	24.00	10.00	3- Clean sand
10	29.00	12.00	3- Clean sand
11	34.00	26.00	3- Clean sand
12	39.00	30.00	3- Clean sand
13	44.00	31.00	3- Clean sand
14	49.00	27.00	3- Clean sand

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	5.50	-8.50	14.00	10.14	5-Void
2	-8.50	-43.50	35.00	18.00	3-Clean Sand

Driven Pile Data:
==========
Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
14.00	1.00	4.50
14.00	2.00	3.50
14.00	3.00	2.50
14.00	4.00	1.50
14.00	5.00	0.50
14.00	6.00	-0.50
14.00	7.00	-1.50
14.00	8.00	-2.50
14.00	9.00	-3.50
14.00	10.00	-4.50
14.00	11.00	-5.50
14.00	12.00	-6.50
14.00	13.00	-7.50
14.00	14.00	-8.50
14.00	15.00	-9.50
14.00	16.00	-10.50
14.00	17.00	-11.50
14.00	18.00	-12.50
14.00	19.00	-13.50
14.00	20.00	-14.50
14.00	21.00	-15.50
14.00	22.00	-16.50
14.00	23.00	-17.50
14.00	24.00	-18.50
14.00	25.00	-19.50
14.00	26.00	-20.50
14.00	27.00	-21.50
14.00	28.00	-22.50
14.00	29.00	-23.50
14.00	30.00	-24.50
14.00	31.00	-25.50
14.00	32.00	-26.50
14.00	33.00	-27.50
14.00	34.00	-28.50
14.00	35.00	-29.50
14.00	36.00	-30.50
14.00	37.00	-31.50
14.00	38.00	-32.50

14.00	39.00	-33.50
14.00	40.00	-34.50
14.00	41.00	-35.50
14.00	42.00	-36.50

Driven Pile Capacity:
==========

Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
1.00	14.0	0.00	0.00	0.00	0.00	0.00
2.00	14.0	0.00	0.00	0.00	0.00	0.00
3.00	14.0	0.00	0.00	0.00	0.00	0.00
4.00	14.0	0.00	0.00	0.00	0.00	0.00
5.00	14.0	0.00	0.00	0.00	0.00	0.00
6.00	14.0	0.00	0.00	0.00	0.00	0.00
7.00	14.0	0.00	0.00	0.00	0.00	0.00
8.00	14.0	0.00	0.00	0.00	0.00	0.00
9.00	14.0	0.00	0.00	0.00	0.00	0.00
10.00	14.0	0.10	0.00	0.10	0.05	0.10
11.00	14.0	0.40	0.00	0.40	0.20	0.40
12.00	14.0	0.89	0.00	0.89	0.45	0.89
13.00	14.0	1.58	0.00	1.58	0.79	1.58
14.00	14.0	2.47	9.90	12.38	6.19	32.19
15.00	14.0	3.39	9.97	13.36	6.68	33.30
16.00	14.0	4.19	10.17	14.36	7.18	34.71
17.00	14.0	4.89	10.55	15.44	7.72	36.54
18.00	14.0	5.50	11.13	16.64	8.32	38.90
19.00	14.0	6.08	11.93	18.01	9.00	41.88
20.00	14.0	6.68	12.88	19.56	9.78	45.32
21.00	14.0	7.35	13.92	21.27	10.63	49.11
22.00	14.0	8.11	15.01	23.12	11.56	53.14
23.00	14.0	8.95	16.11	25.07	12.53	57.30
24.00	14.0	9.89	17.23	27.12	13.56	61.59
25.00	14.0	10.93	18.10	29.04	14.52	65.24
26.00	14.0	12.06	18.97	31.03	15.51	68.96
27.00	14.0	13.23	20.42	33.65	16.83	74.49
28.00	14.0	14.45	22.46	36.90	18.45	81.82
29.00	14.0	15.70	25.07	40.77	20.39	90.91
30.00	14.0	17.11	28.06	45.18	22.59	101.30
31.00	14.0	18.80	31.03	49.83	24.91	111.90
32.00	14.0	20.76	33.80	54.55	27.28	122.14
33.00	14.0	23.00	36.35	59.35	29.68	132.04
34.00	14.0	25.54	38.69	64.23	32.11	141.60
35.00	14.0	28.26	40.95	69.21	34.60	151.10
36.00	14.0	31.08	43.16	74.24	37.12	160.57
37.00	14.0	33.99	45.29	79.28	39.64	169.86
38.00	14.0	37.00	47.32	84.32	42.16	178.96
39.00	14.0	40.10	49.20	89.31	44.65	187.72
40.00	14.0	43.26	50.81	94.08	47.04	195.71
41.00	14.0	46.45	52.05	98.50	49.25	202.59
42.00	14.0	49.68	52.81	102.48	51.24	208.09

NOTES
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1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

General Information:
==========
Input file: .....reet - AECOM\FB-Deep Runs\Driven Piles\Driven Piles - CC-4.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, P.E.
Units: English

Analysis Information:
==========
Analysis Type: SPT

Soil Information:
==========
Boring date: 9/17/2018, Boring Number: CC-4
Station number: Offset:

Ground Elevation: 5.500(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	0.00	5- Cavity layer
2	1.00	15.00	5- Cavity layer
3	3.00	8.00	5- Cavity layer
4	5.00	14.00	5- Cavity layer
5	7.00	9.00	5- Cavity layer
6	9.00	10.00	5- Cavity layer
7	14.00	9.00	3- Clean sand
8	19.00	8.00	3- Clean sand
9	24.00	10.00	3- Clean sand
10	29.00	12.00	3- Clean sand
11	34.00	26.00	3- Clean sand
12	39.00	30.00	3- Clean sand
13	44.00	31.00	3- Clean sand
14	49.00	27.00	3- Clean sand

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	5.50	-8.50	14.00	10.14	5-Void
2	-8.50	-43.50	35.00	18.00	3-Clean Sand

Driven Pile Data:
==========
Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
18.00	1.00	4.50
18.00	2.00	3.50
18.00	3.00	2.50
18.00	4.00	1.50
18.00	5.00	0.50
18.00	6.00	-0.50
18.00	7.00	-1.50
18.00	8.00	-2.50
18.00	9.00	-3.50
18.00	10.00	-4.50
18.00	11.00	-5.50
18.00	12.00	-6.50
18.00	13.00	-7.50
18.00	14.00	-8.50
18.00	15.00	-9.50
18.00	16.00	-10.50
18.00	17.00	-11.50
18.00	18.00	-12.50
18.00	19.00	-13.50
18.00	20.00	-14.50
18.00	21.00	-15.50
18.00	22.00	-16.50
18.00	23.00	-17.50
18.00	24.00	-18.50
18.00	25.00	-19.50
18.00	26.00	-20.50
18.00	27.00	-21.50
18.00	28.00	-22.50
18.00	29.00	-23.50
18.00	30.00	-24.50
18.00	31.00	-25.50
18.00	32.00	-26.50
18.00	33.00	-27.50
18.00	34.00	-28.50
18.00	35.00	-29.50
18.00	36.00	-30.50
18.00	37.00	-31.50
18.00	38.00	-32.50

18.00	39.00	-33.50
18.00	40.00	-34.50
18.00	41.00	-35.50
18.00	42.00	-36.50

Driven Pile Capacity:
==========

Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
1.00	18.0	0.00	0.00	0.00	0.00	0.00
2.00	18.0	0.00	0.00	0.00	0.00	0.00
3.00	18.0	0.00	0.00	0.00	0.00	0.00
4.00	18.0	0.00	0.00	0.00	0.00	0.00
5.00	18.0	0.00	0.00	0.00	0.00	0.00
6.00	18.0	0.00	0.00	0.00	0.00	0.00
7.00	18.0	0.00	0.00	0.00	0.00	0.00
8.00	18.0	0.00	0.00	0.00	0.00	0.00
9.00	18.0	0.00	0.00	0.00	0.00	0.00
10.00	18.0	0.13	0.00	0.13	0.06	0.13
11.00	18.0	0.51	0.00	0.51	0.25	0.51
12.00	18.0	1.15	0.00	1.15	0.57	1.15
13.00	18.0	2.04	0.00	2.04	1.02	2.04
14.00	18.0	3.18	15.41	18.59	9.29	49.40
15.00	18.0	4.37	15.48	19.84	9.92	50.80
16.00	18.0	5.40	15.70	21.11	10.55	52.52
17.00	18.0	6.30	16.13	22.43	11.21	54.68
18.00	18.0	7.09	16.77	23.86	11.93	57.40
19.00	18.0	7.80	17.67	25.47	12.73	60.82
20.00	18.0	8.48	18.84	27.33	13.66	65.01
21.00	18.0	9.21	20.28	29.49	14.74	70.04
22.00	18.0	10.01	21.92	31.93	15.96	75.77
23.00	18.0	10.90	23.69	34.58	17.29	81.95
24.00	18.0	11.88	25.55	37.43	18.72	88.53
25.00	18.0	12.92	27.86	40.77	20.39	96.49
26.00	18.0	13.98	30.85	44.83	22.42	106.54
27.00	18.0	15.09	34.77	49.86	24.93	119.39
28.00	18.0	16.44	38.99	55.43	27.72	133.41
29.00	18.0	18.02	43.21	61.23	30.61	147.64
30.00	18.0	19.78	47.58	67.36	33.68	162.52
31.00	18.0	21.85	51.76	73.62	36.81	177.14
32.00	18.0	24.26	55.71	79.97	39.99	191.39
33.00	18.0	27.02	59.39	86.40	43.20	205.17
34.00	18.0	30.12	62.79	92.91	46.45	218.49
35.00	18.0	33.47	65.96	99.43	49.71	231.34
36.00	18.0	36.94	69.01	105.95	52.97	243.97
37.00	18.0	40.54	71.94	112.48	56.24	256.36
38.00	18.0	44.26	74.75	119.01	59.51	268.51
39.00	18.0	48.11	77.43	125.54	62.77	280.40
40.00	18.0	52.04	79.83	131.88	65.94	291.54
41.00	18.0	56.02	81.93	137.95	68.98	301.81
42.00	18.0	60.05	83.57	143.62	71.81	310.75

NOTES
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1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

General Information:
==========
Input file: .....reet - AECOM\FB-Deep Runs\Driven Piles\Driven Piles - CC-4.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, P.E.
Units: English

Analysis Information:
==========
Analysis Type: SPT

Soil Information:
==========
Boring date: 9/17/2018, Boring Number: CC-4
Station number: Offset:

Ground Elevation: 5.500(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	0.00	5- Cavity layer
2	1.00	15.00	5- Cavity layer
3	3.00	8.00	5- Cavity layer
4	5.00	14.00	5- Cavity layer
5	7.00	9.00	5- Cavity layer
6	9.00	10.00	5- Cavity layer
7	14.00	9.00	3- Clean sand
8	19.00	8.00	3- Clean sand
9	24.00	10.00	3- Clean sand
10	29.00	12.00	3- Clean sand
11	34.00	26.00	3- Clean sand
12	39.00	30.00	3- Clean sand
13	44.00	31.00	3- Clean sand
14	49.00	27.00	3- Clean sand

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	5.50	-8.50	14.00	10.14	5-Void
2	-8.50	-43.50	35.00	18.00	3-Clean Sand

Driven Pile Data:
==========
Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
24.00	1.00	4.50
24.00	2.00	3.50
24.00	3.00	2.50
24.00	4.00	1.50
24.00	5.00	0.50
24.00	6.00	-0.50
24.00	7.00	-1.50
24.00	8.00	-2.50
24.00	9.00	-3.50
24.00	10.00	-4.50
24.00	11.00	-5.50
24.00	12.00	-6.50
24.00	13.00	-7.50
24.00	14.00	-8.50
24.00	15.00	-9.50
24.00	16.00	-10.50
24.00	17.00	-11.50
24.00	18.00	-12.50
24.00	19.00	-13.50
24.00	20.00	-14.50
24.00	21.00	-15.50
24.00	22.00	-16.50
24.00	23.00	-17.50
24.00	24.00	-18.50
24.00	25.00	-19.50
24.00	26.00	-20.50
24.00	27.00	-21.50
24.00	28.00	-22.50
24.00	29.00	-23.50
24.00	30.00	-24.50
24.00	31.00	-25.50
24.00	32.00	-26.50
24.00	33.00	-27.50
24.00	34.00	-28.50
24.00	35.00	-29.50
24.00	36.00	-30.50
24.00	37.00	-31.50
24.00	38.00	-32.50

24.00	39.00	-33.50
24.00	40.00	-34.50
24.00	41.00	-35.50
24.00	42.00	-36.50

Driven Pile Capacity:
==========

Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
1.00	24.0	0.00	0.00	0.00	0.00	0.00
2.00	24.0	0.00	0.00	0.00	0.00	0.00
3.00	24.0	0.00	0.00	0.00	0.00	0.00
4.00	24.0	0.00	0.00	0.00	0.00	0.00
5.00	24.0	0.00	0.00	0.00	0.00	0.00
6.00	24.0	0.00	0.00	0.00	0.00	0.00
7.00	24.0	0.00	0.00	0.00	0.00	0.00
8.00	24.0	0.00	0.00	0.00	0.00	0.00
9.00	24.0	0.00	0.00	0.00	0.00	0.00
10.00	24.0	0.17	0.00	0.17	0.08	0.17
11.00	24.0	0.68	0.00	0.68	0.34	0.68
12.00	24.0	1.53	0.00	1.53	0.76	1.53
13.00	24.0	2.71	0.00	2.71	1.36	2.71
14.00	24.0	4.24	26.66	30.90	15.45	84.22
15.00	24.0	5.84	26.73	32.58	16.29	86.05
16.00	24.0	7.27	26.96	34.23	17.12	88.15
17.00	24.0	8.50	27.42	35.92	17.96	90.77
18.00	24.0	9.57	28.14	37.71	18.86	94.00
19.00	24.0	10.52	29.15	39.67	19.83	97.96
20.00	24.0	11.42	30.45	41.87	20.93	102.77
21.00	24.0	12.34	32.05	44.39	22.19	108.48
22.00	24.0	13.30	33.95	47.25	23.62	115.14
23.00	24.0	14.25	36.39	50.64	25.32	123.42
24.00	24.0	15.15	39.71	54.87	27.43	134.30
25.00	24.0	16.05	44.08	60.13	30.07	148.30
26.00	24.0	16.99	49.56	66.55	33.27	165.66
27.00	24.0	18.03	56.17	74.20	37.10	186.54
28.00	24.0	19.22	63.73	82.96	41.48	210.42
29.00	24.0	20.59	71.99	92.58	46.29	236.56
30.00	24.0	22.28	80.70	102.97	51.49	264.36
31.00	24.0	24.44	89.71	114.15	57.08	293.57
32.00	24.0	27.09	99.13	126.22	63.11	324.47
33.00	24.0	30.47	104.46	134.94	67.47	343.86
34.00	24.0	34.28	109.31	143.59	71.80	362.21
35.00	24.0	38.40	113.89	152.28	76.14	380.06
36.00	24.0	42.70	118.35	161.05	80.52	397.75
37.00	24.0	47.18	122.65	169.83	84.92	415.14
38.00	24.0	51.84	126.61	178.44	89.22	431.66
39.00	24.0	56.67	130.02	186.69	93.34	446.74
40.00	24.0	61.62	132.96	194.59	97.29	460.51
41.00	24.0	66.66	135.49	202.16	101.08	473.14
42.00	24.0	71.78	137.61	209.39	104.70	484.62

NOTES
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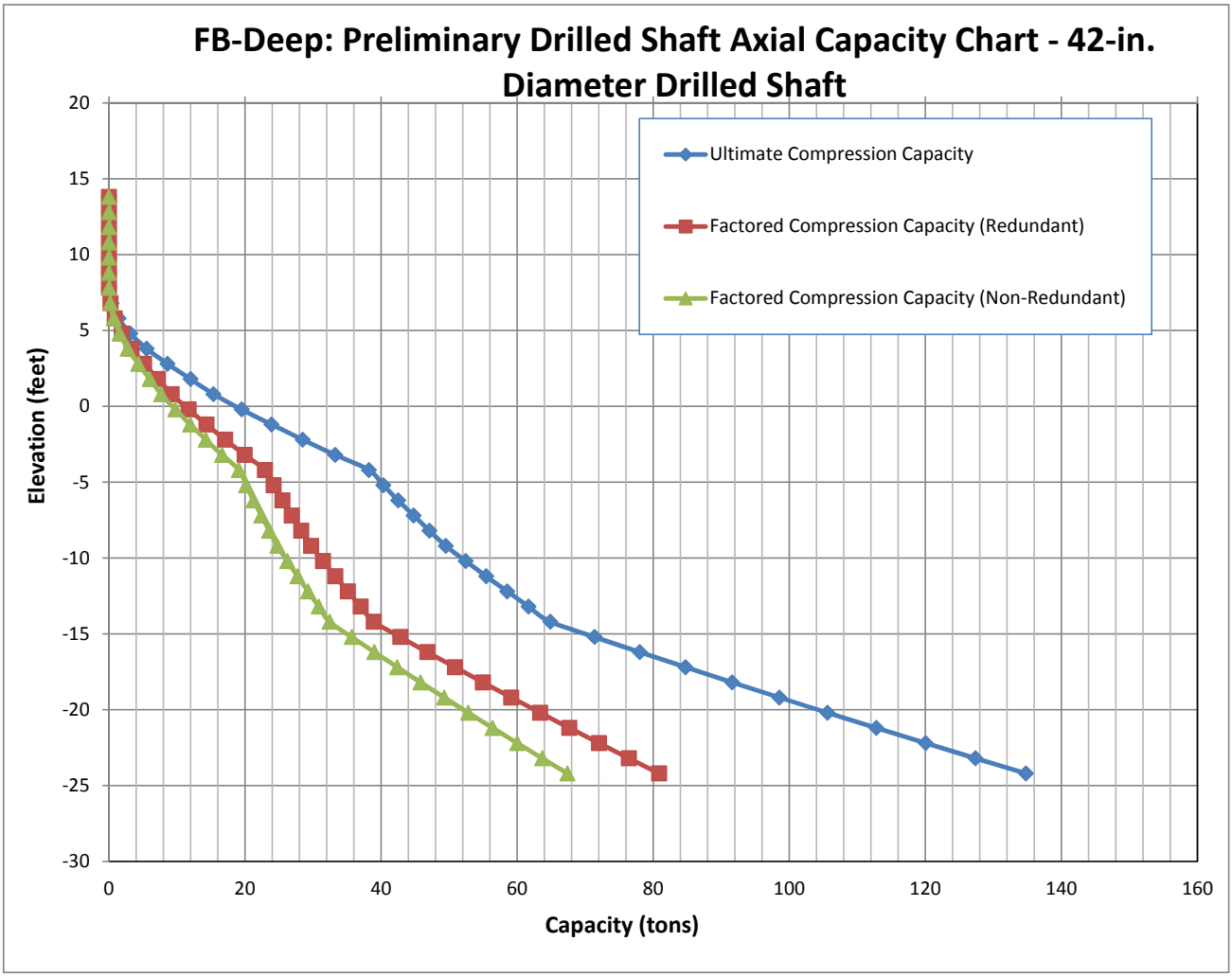
1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

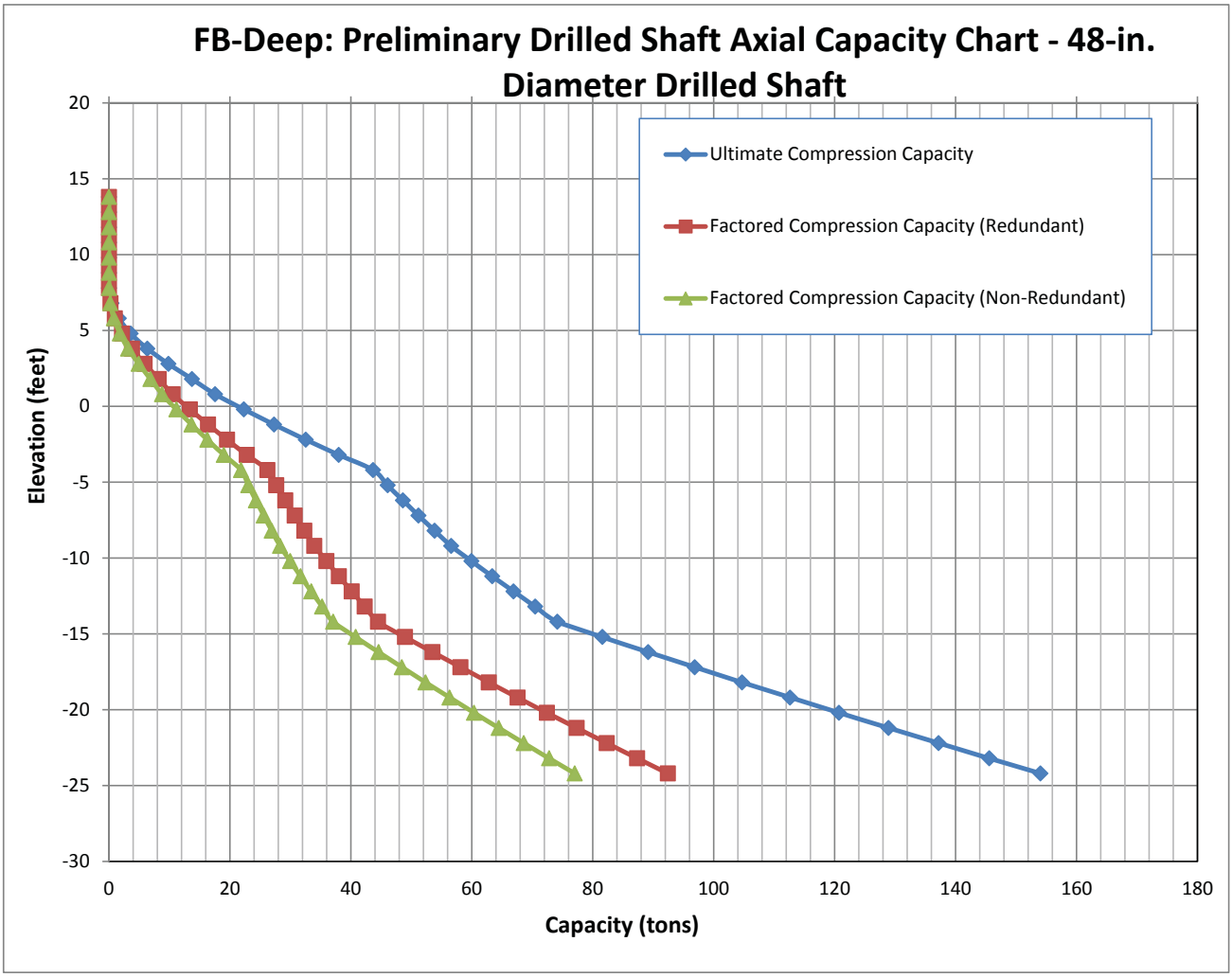
3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

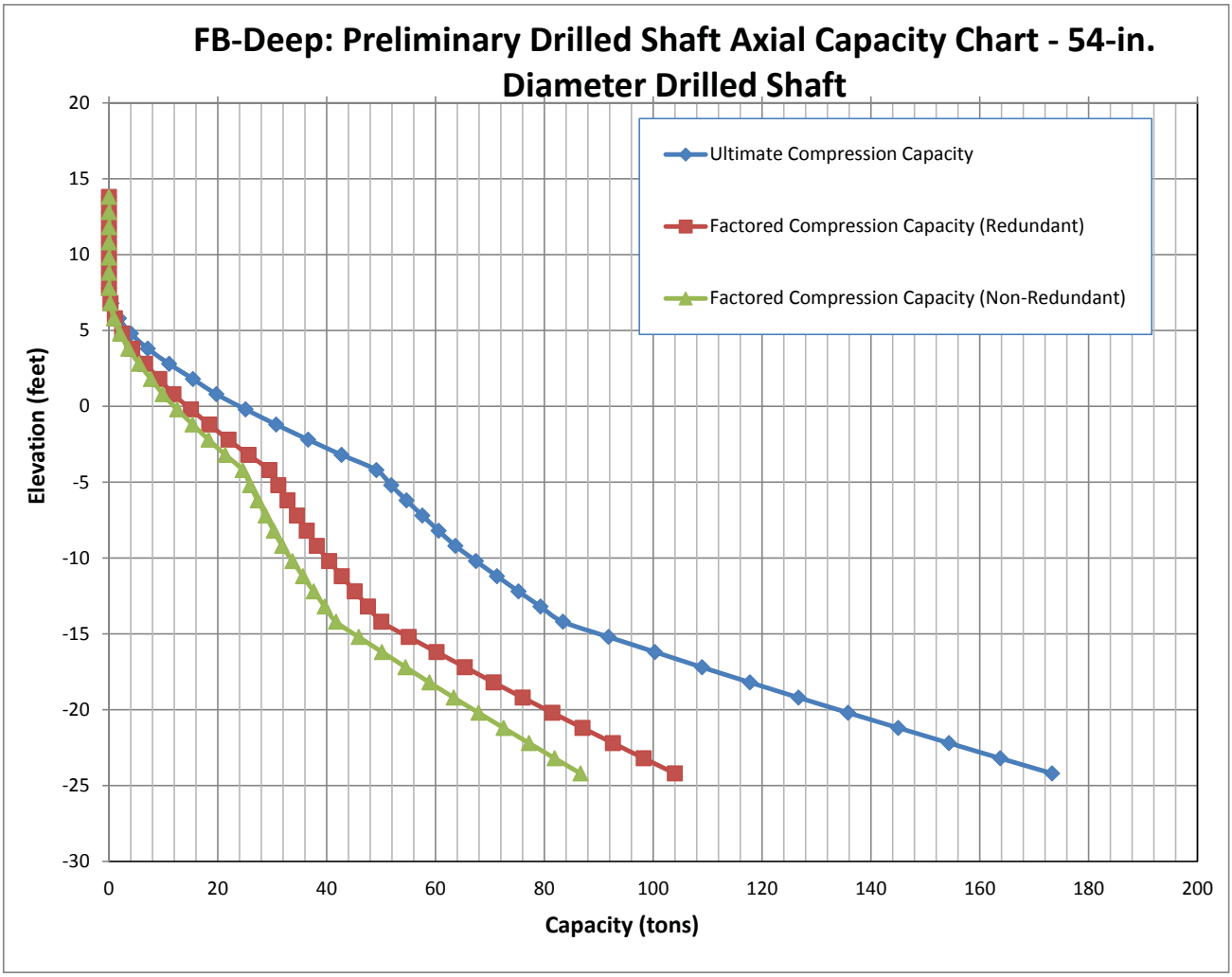
Project: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-1



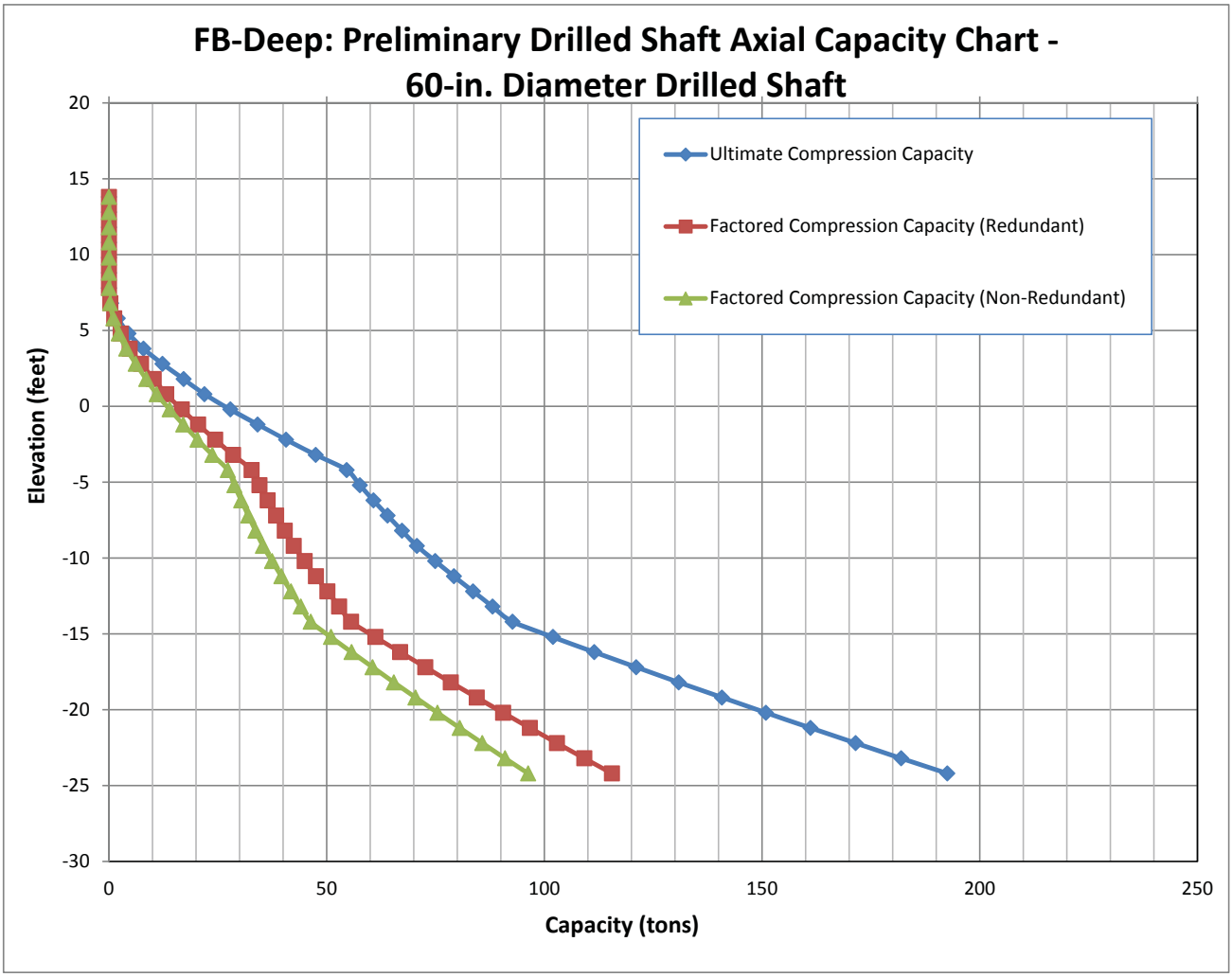
Project: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-1



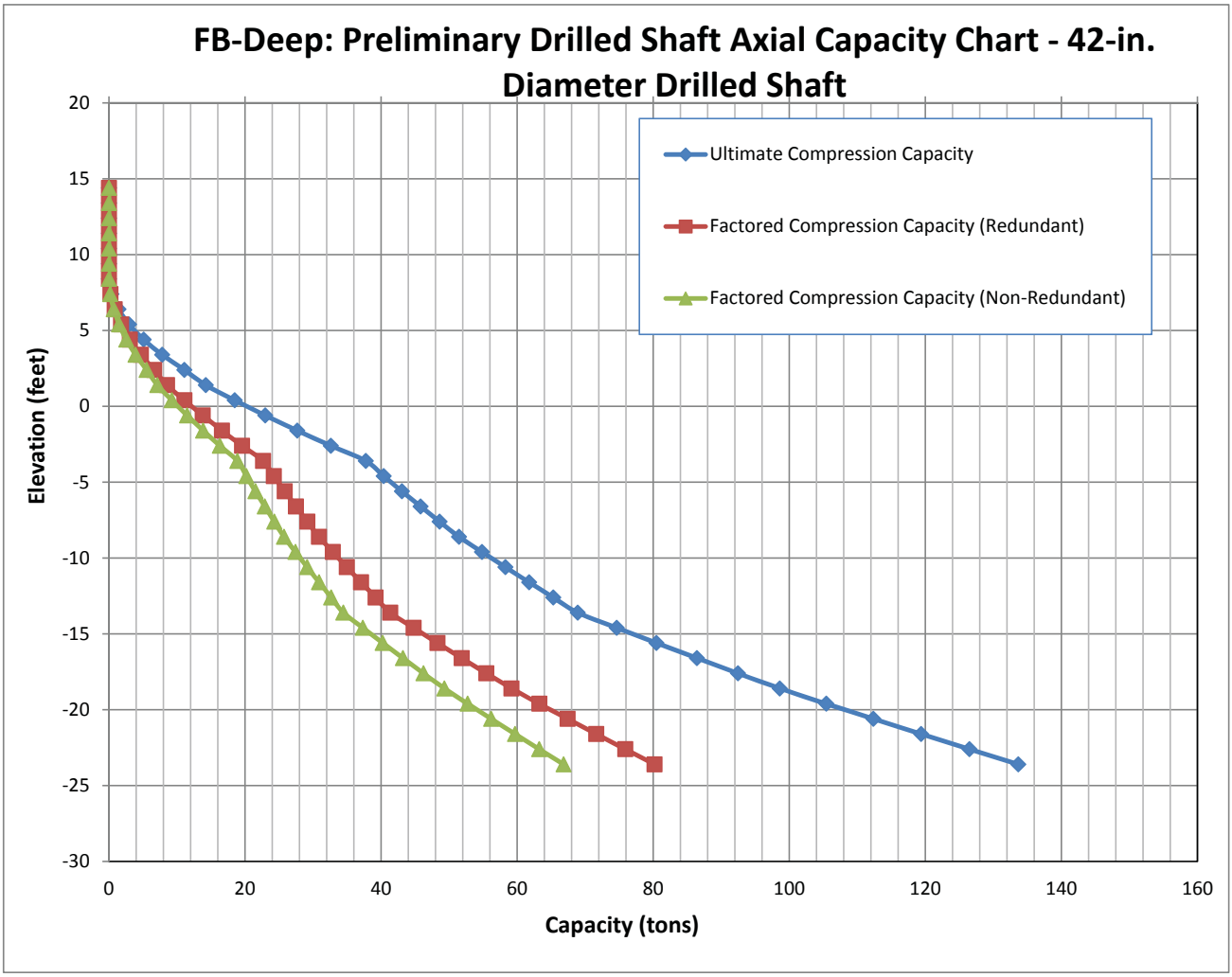
Project: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-1



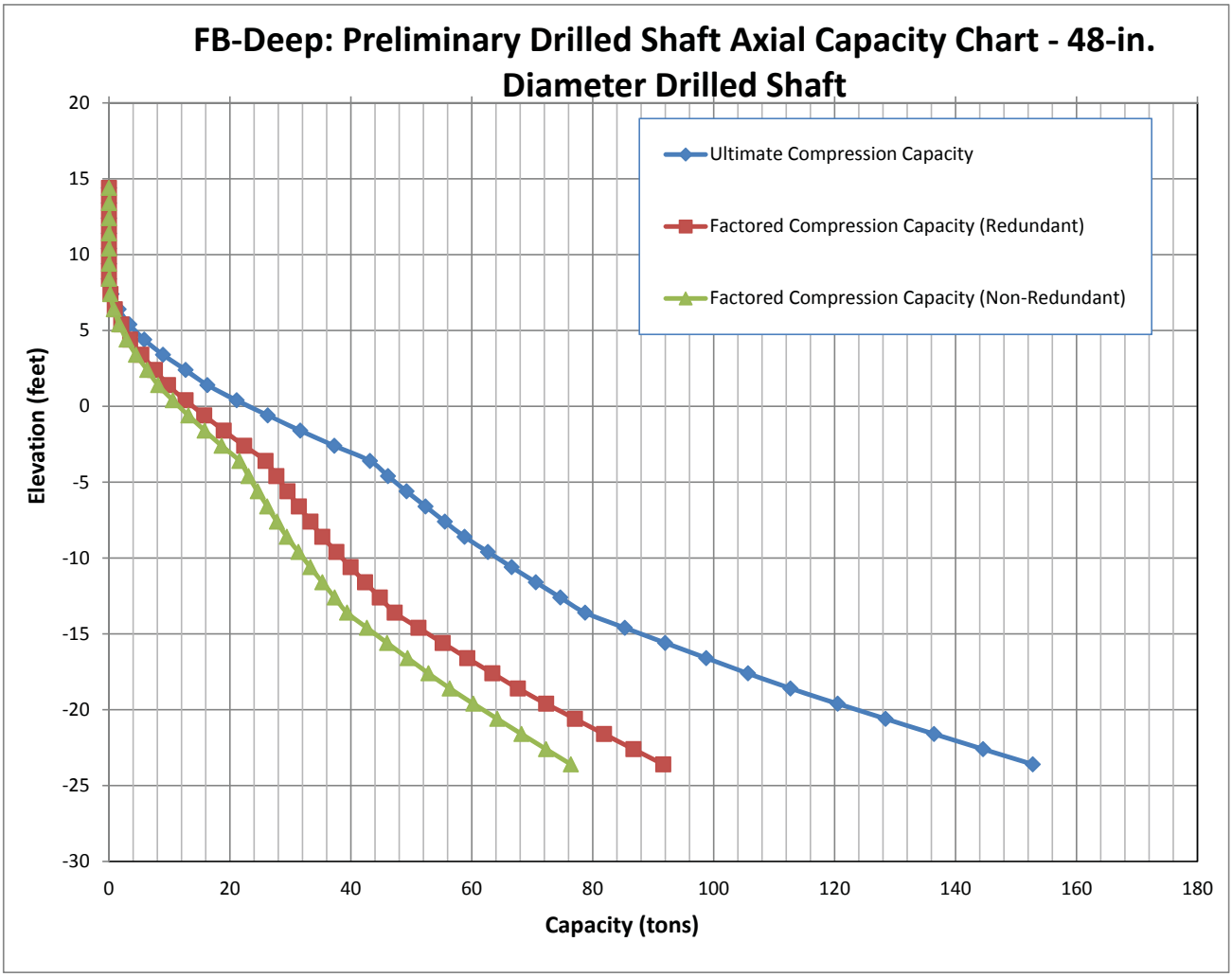
Project: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-1



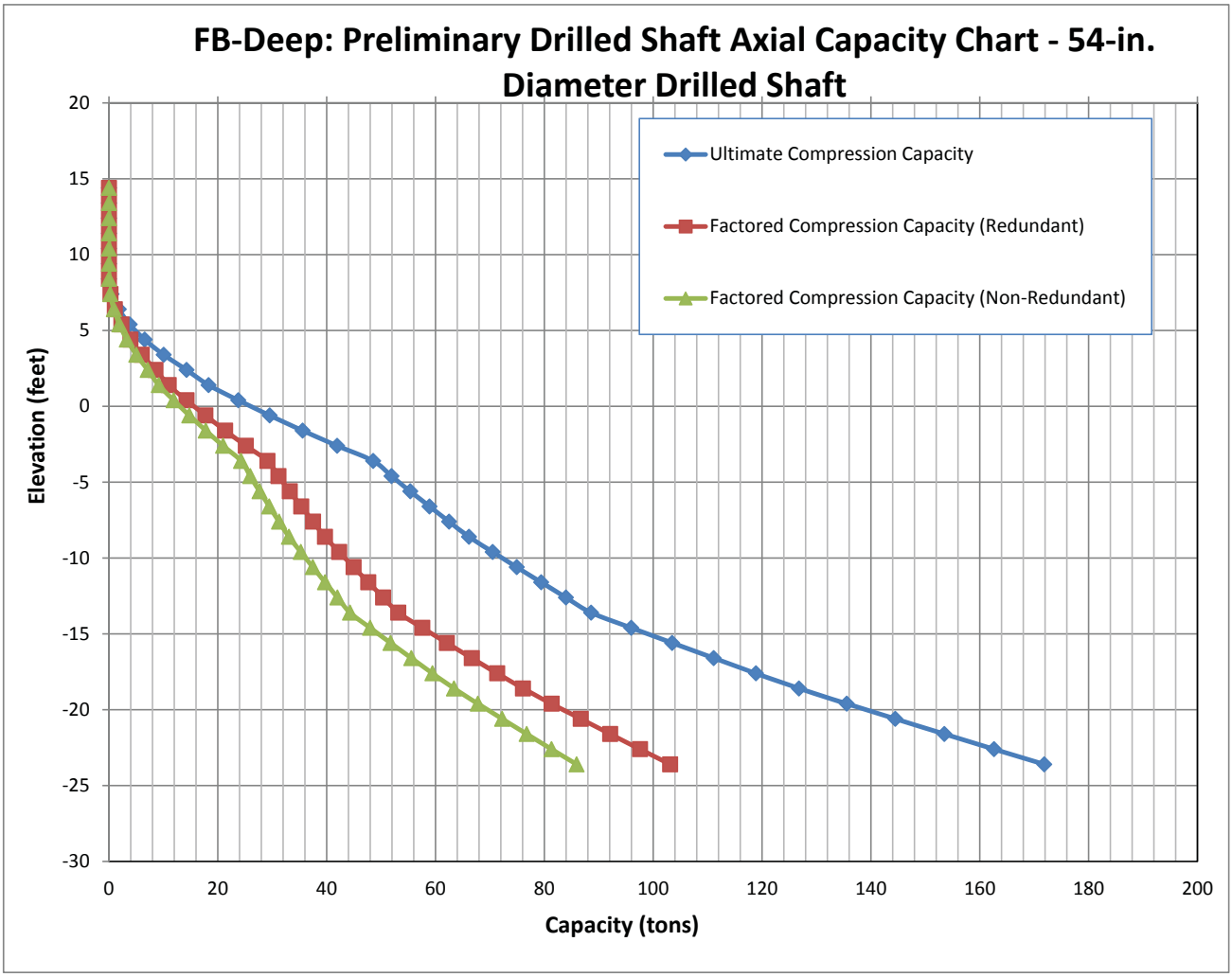
Project: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-2



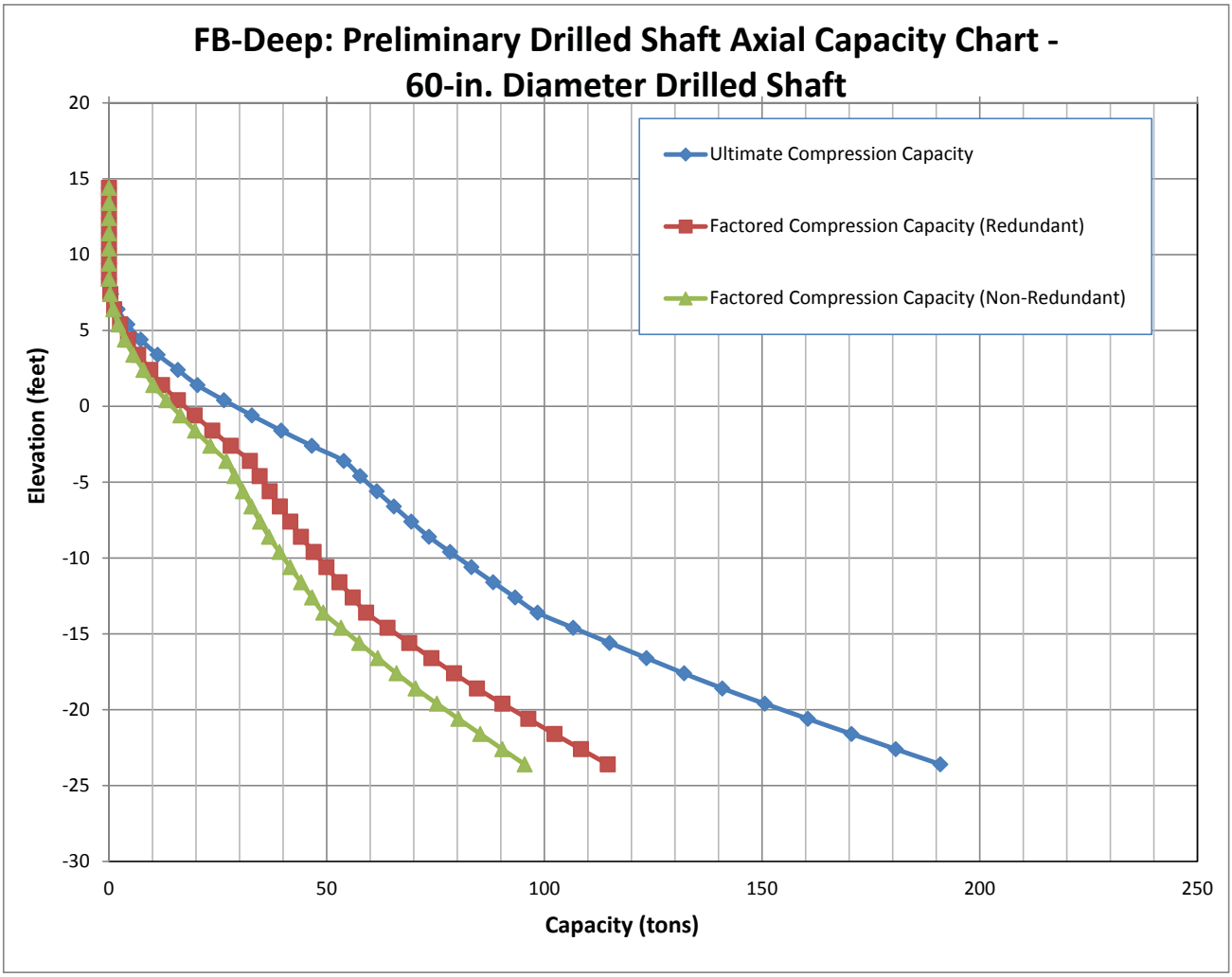
Project: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-2



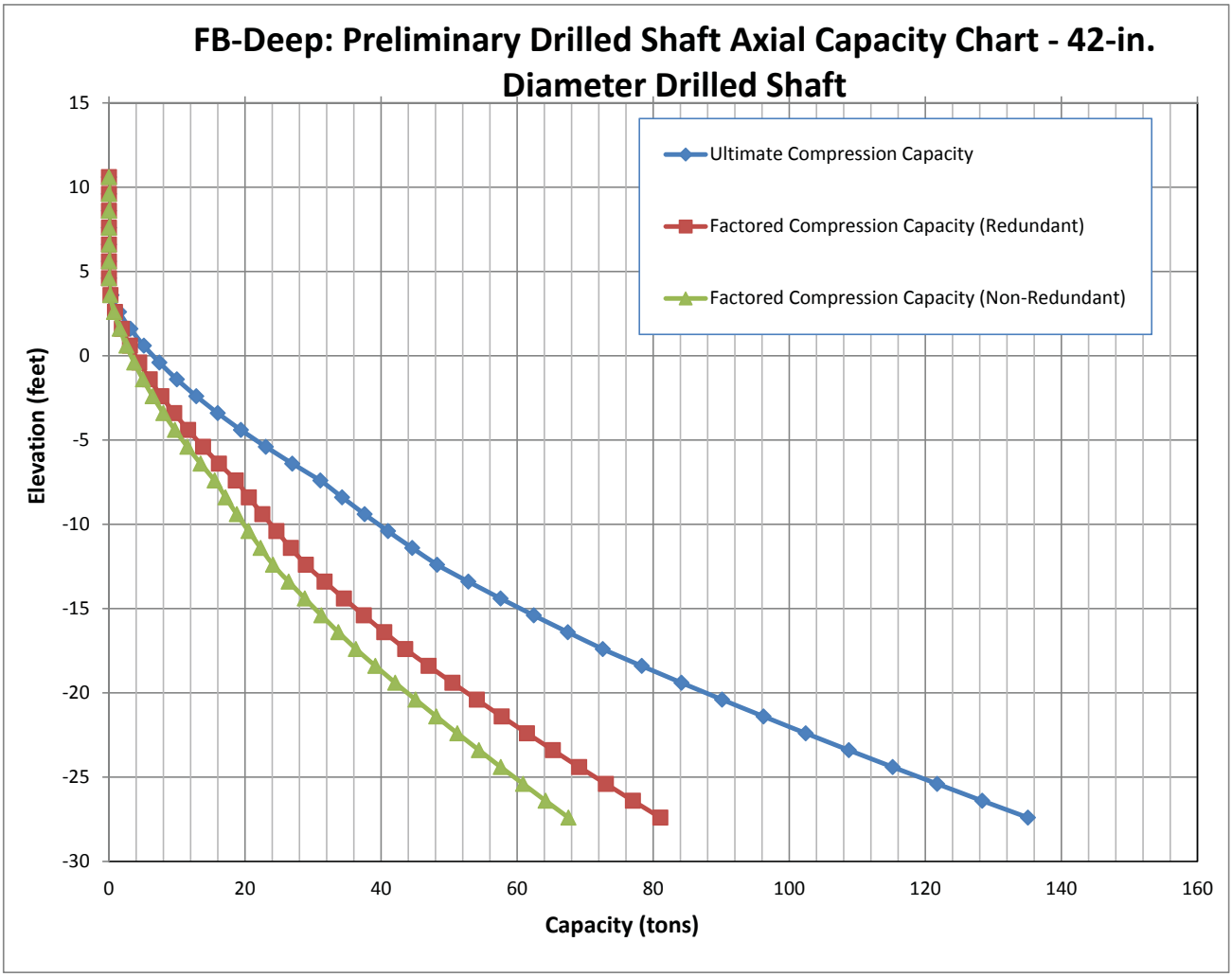
Project: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-2



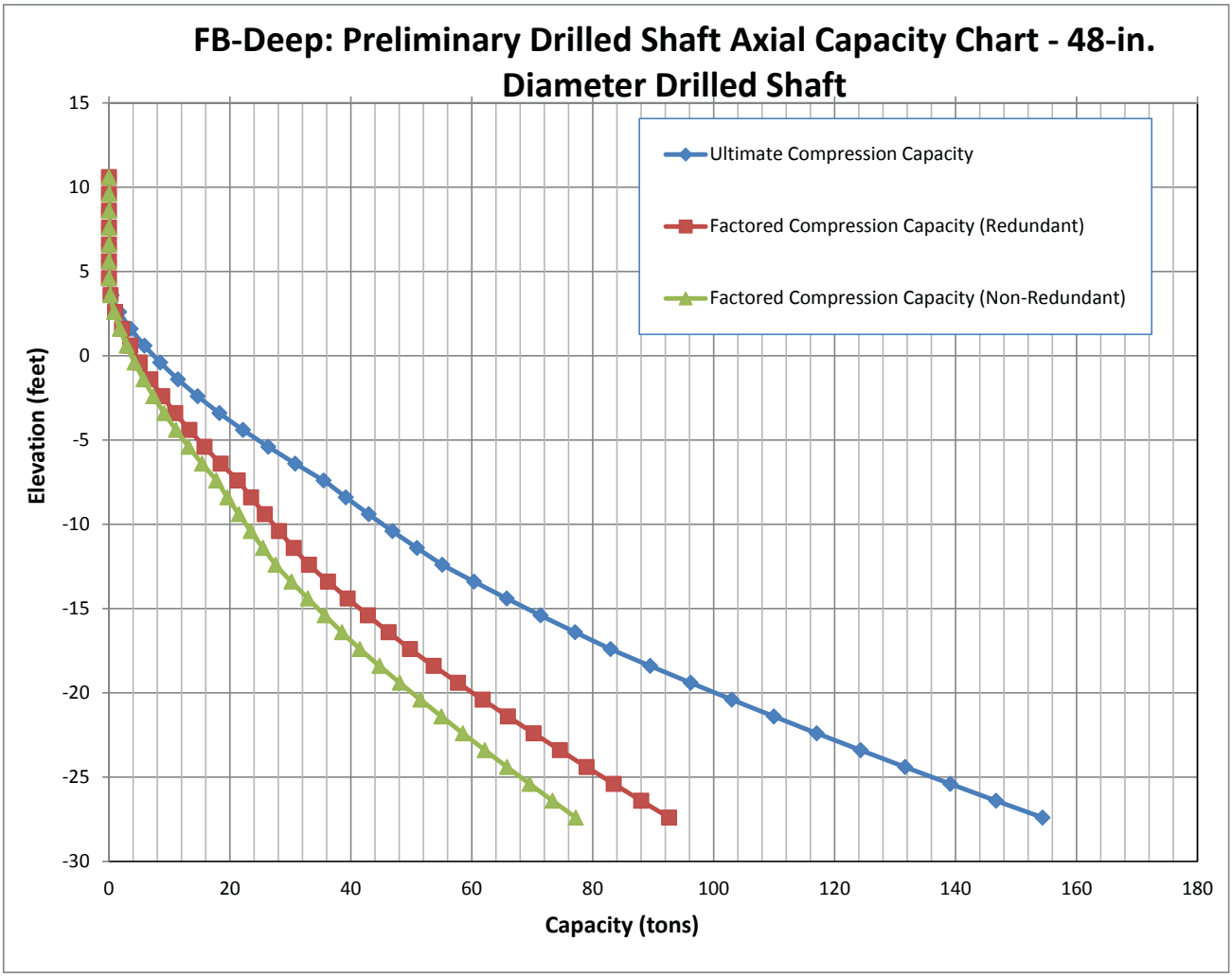
Project: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-2



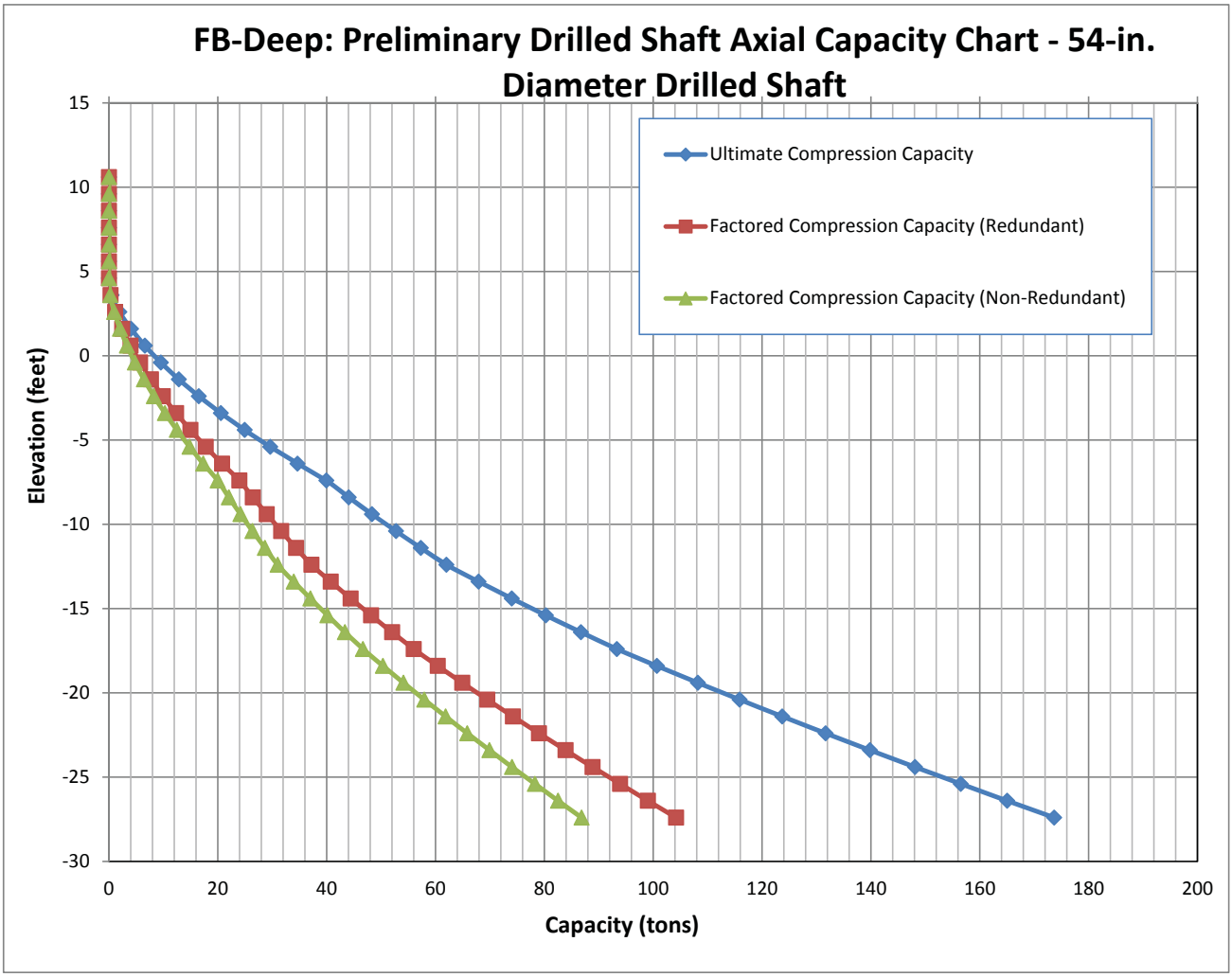
Project: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-3



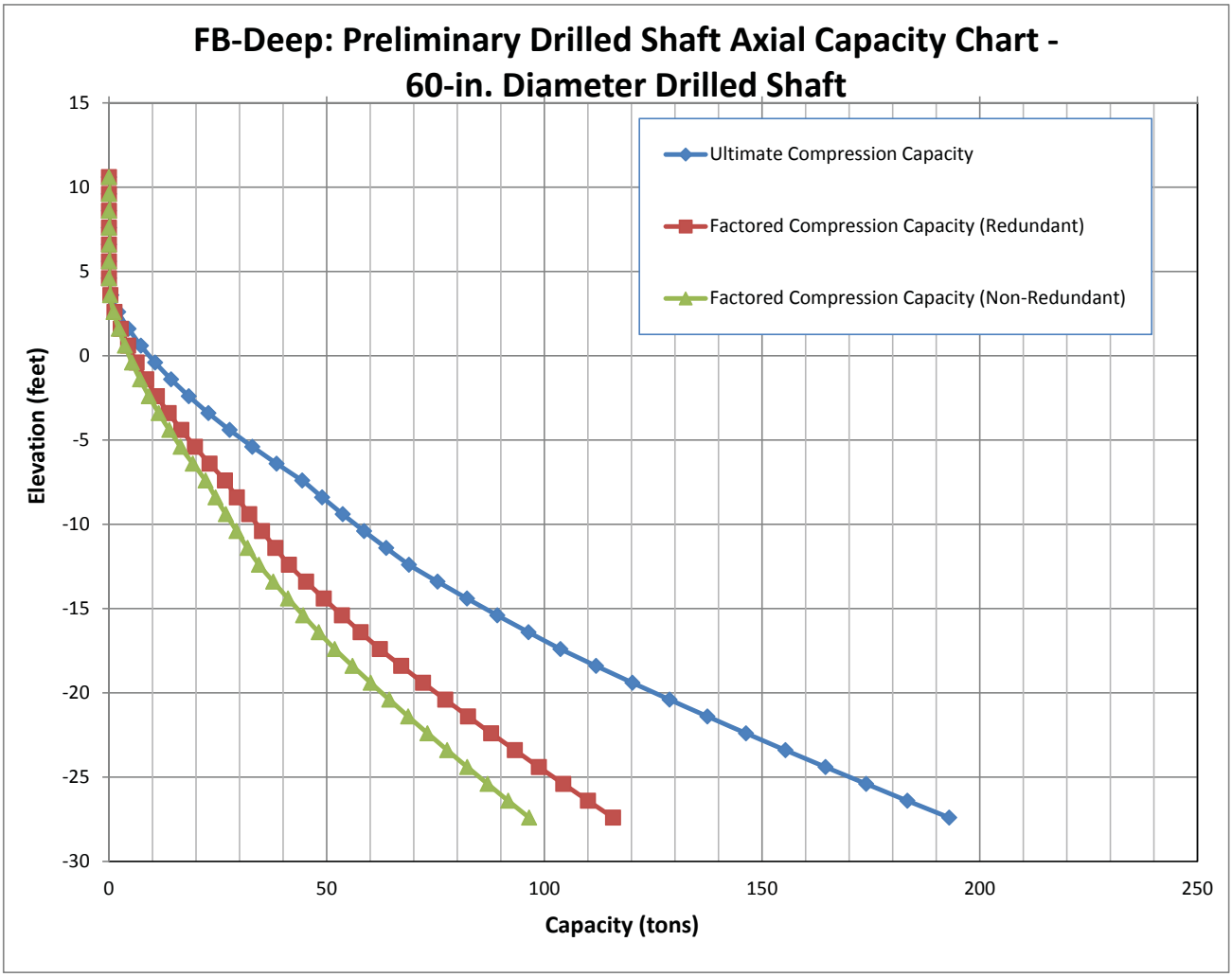
Project: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-3



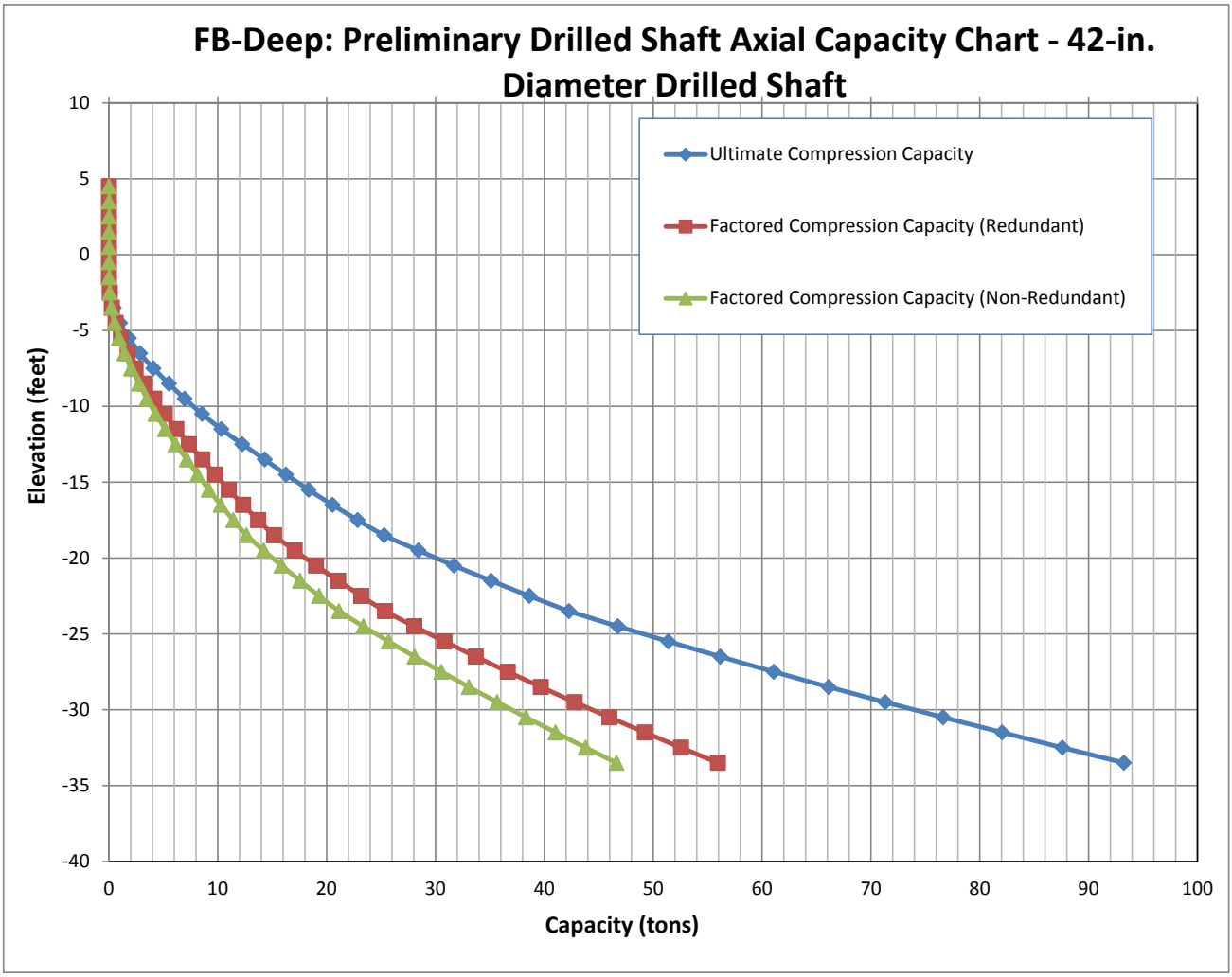
Project: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-3



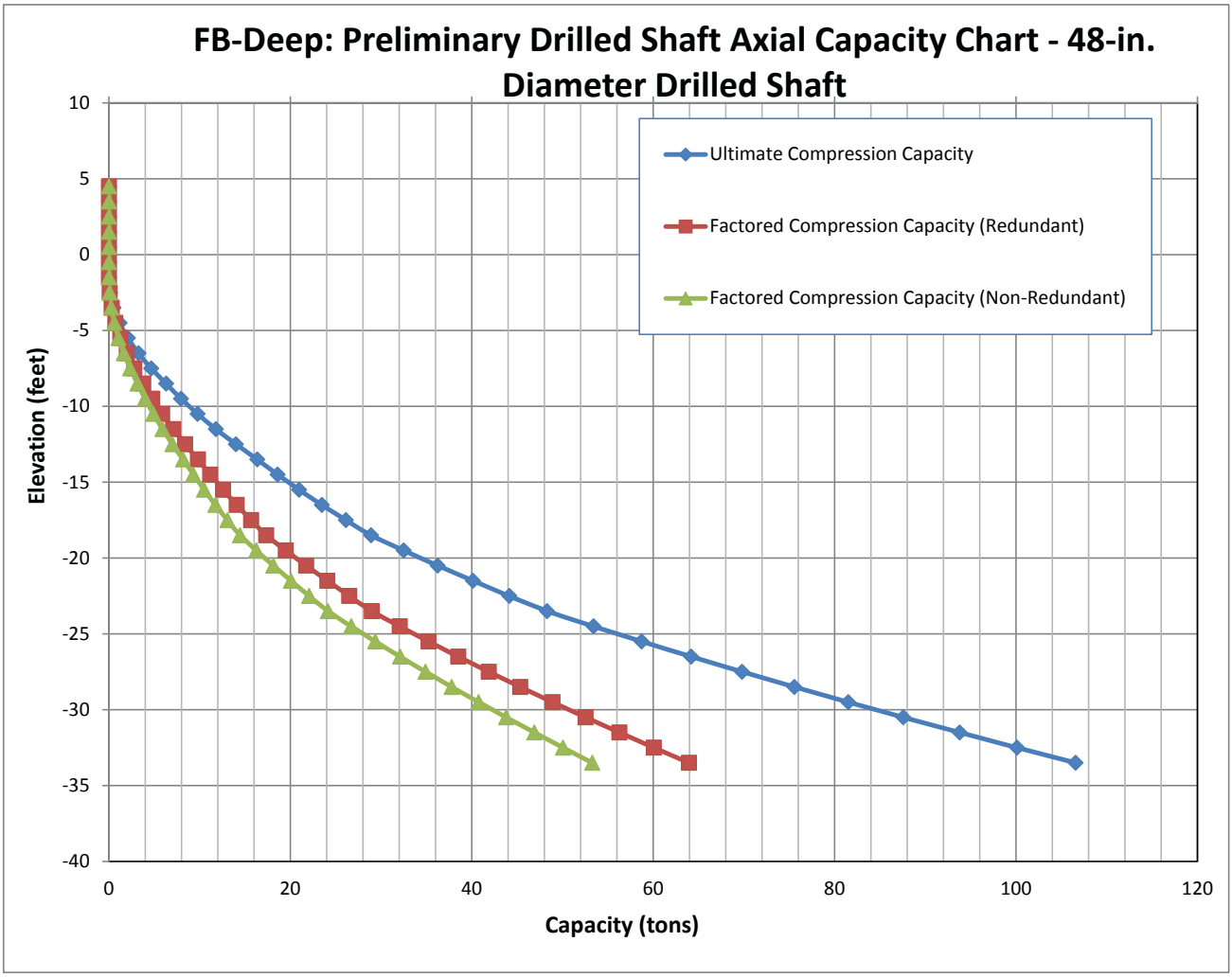
Project: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-3



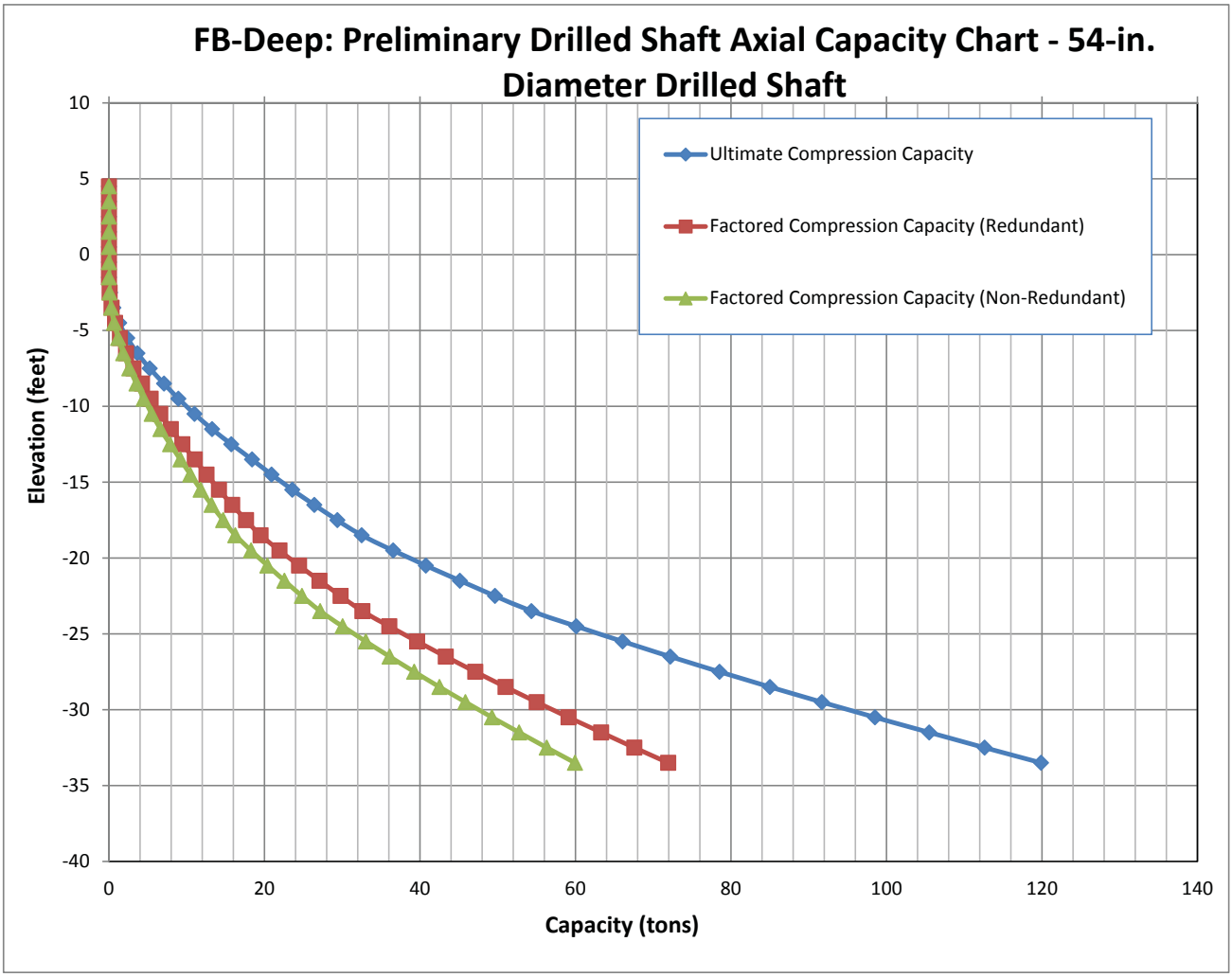
Project: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-4



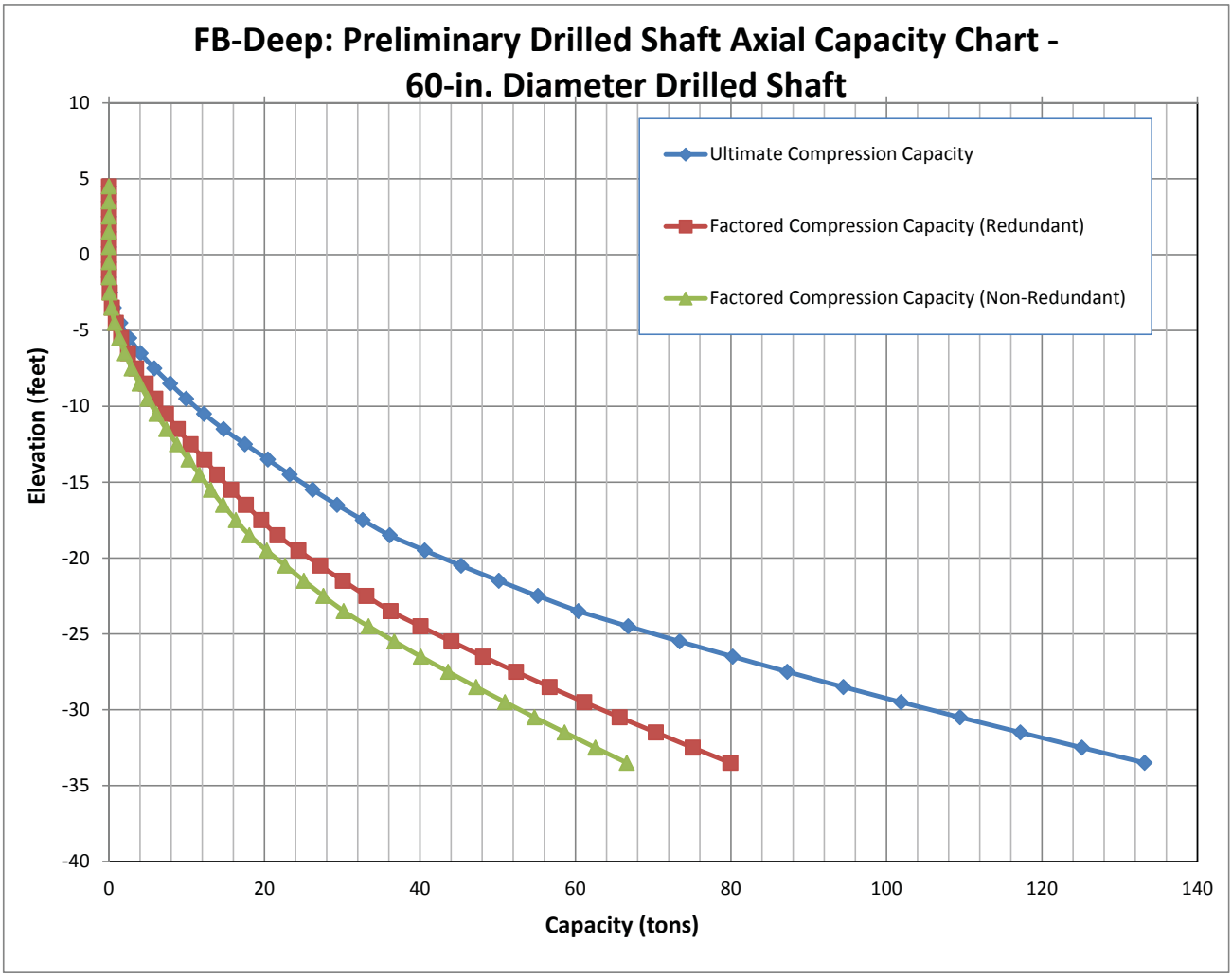
Project: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-4



Project: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-4



Project: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
FROM NORTH OF NW 7TH STREET TO SW 80TH STREET
Project No.: 218144
Location: Miami-Dade County, FL
Boring No.: CC-4



General Information:
==========
Input file: .....Street - AECOM\FB-Deep Runs\Drilled Shafts - 218144 - CC-1.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, PE
Units: English

Analysis Information:
==========
Analysis Type: Drilled Shaft Analysis

Soil Information:
==========
Boring date: 9/10/2018
Boring number: CC-1
Station number: Offset:

Ground Elevation: 14.80(ft)
Water table Elevation = 2.20(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	Elevation (ft)	SPT Blows (Blows/ft)	Unit Weight (pcf)	Soil Type
1	0.00	14.80	N/A	100.00	5- Cavity layer
2	1.00	13.80	N/A	110.00	5- Cavity layer
3	3.00	11.80	N/A	120.00	5- Cavity layer
4	5.00	9.80	N/A	120.00	5- Cavity layer
5	7.00	7.80	13.00	115.00	3- Clean sand
6	9.00	5.80	14.00	120.00	3- Clean sand
7	14.00	0.80	18.00	115.00	3- Clean sand
8	19.00	-4.20	5.00	115.00	3- Clean sand
9	24.00	-9.20	6.00	115.00	3- Clean sand
10	29.00	-14.20	12.00	115.00	3- Clean sand
11	34.00	-19.20	16.00	115.00	3- Clean sand
12	39.00	-24.20	25.00	115.00	3- Clean sand
13	44.00	-29.20	24.00	115.00	3- Clean sand
14	49.00	-34.20	30.00	115.00	3- Clean sand

ID	Cu-DIR (tsf)	qu (tsf)	qt (tsf)	Em (ksi)	qb (tsf)
1	N/A	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A	N/A
12	N/A	N/A	N/A	N/A	N/A
13	N/A	N/A	N/A	N/A	N/A
14	N/A	N/A	N/A	N/A	N/A

ID	RQD F.M.	S.R.I.	Rock Recovery
1	N/A	N/A	N/A
2	N/A	N/A	N/A
3	N/A	N/A	N/A
4	N/A	N/A	N/A
5	N/A	N/A	N/A
6	N/A	N/A	N/A
7	N/A	N/A	N/A
8	N/A	N/A	N/A
9	N/A	N/A	N/A
10	N/A	N/A	N/A
11	N/A	N/A	N/A
12	N/A	N/A	N/A
13	N/A	N/A	N/A
14	N/A	N/A	N/A

Drilled Shaft Data:
==========

Shaft Geometry:

ID	Length (ft)	Tip Elev. (ft)	Case Len. (ft)	Diameter (in)	Base Diam. (in)	Bell Len. (ft)
1	1.00	13.80	0.00	42.00	42.00	0.00
2	2.00	12.80	0.00	42.00	42.00	0.00
3	3.00	11.80	0.00	42.00	42.00	0.00
4	4.00	10.80	0.00	42.00	42.00	0.00
5	5.00	9.80	0.00	42.00	42.00	0.00
6	6.00	8.80	0.00	42.00	42.00	0.00
7	7.00	7.80	0.00	42.00	42.00	0.00
8	8.00	6.80	0.00	42.00	42.00	0.00
9	9.00	5.80	0.00	42.00	42.00	0.00
10	10.00	4.80	0.00	42.00	42.00	0.00
11	11.00	3.80	0.00	42.00	42.00	0.00
12	12.00	2.80	0.00	42.00	42.00	0.00
13	13.00	1.80	0.00	42.00	42.00	0.00

14	14.00	0.80	0.00	42.00	42.00	0.00
15	15.00	-0.20	0.00	42.00	42.00	0.00
16	16.00	-1.20	0.00	42.00	42.00	0.00
17	17.00	-2.20	0.00	42.00	42.00	0.00
18	18.00	-3.20	0.00	42.00	42.00	0.00
19	19.00	-4.20	0.00	42.00	42.00	0.00
20	20.00	-5.20	0.00	42.00	42.00	0.00
21	21.00	-6.20	0.00	42.00	42.00	0.00
22	22.00	-7.20	0.00	42.00	42.00	0.00
23	23.00	-8.20	0.00	42.00	42.00	0.00
24	24.00	-9.20	0.00	42.00	42.00	0.00
25	25.00	-10.20	0.00	42.00	42.00	0.00
26	26.00	-11.20	0.00	42.00	42.00	0.00
27	27.00	-12.20	0.00	42.00	42.00	0.00
28	28.00	-13.20	0.00	42.00	42.00	0.00
29	29.00	-14.20	0.00	42.00	42.00	0.00
30	30.00	-15.20	0.00	42.00	42.00	0.00
31	31.00	-16.20	0.00	42.00	42.00	0.00
32	32.00	-17.20	0.00	42.00	42.00	0.00
33	33.00	-18.20	0.00	42.00	42.00	0.00
34	34.00	-19.20	0.00	42.00	42.00	0.00
35	35.00	-20.20	0.00	42.00	42.00	0.00
36	36.00	-21.20	0.00	42.00	42.00	0.00
37	37.00	-22.20	0.00	42.00	42.00	0.00
38	38.00	-23.20	0.00	42.00	42.00	0.00
39	39.00	-24.20	0.00	42.00	42.00	0.00

Drilled Shaft Capacity (sorted by shaft diameter):
==========

Strength reduction factors: Skin-friction = 1.00, End-bearing = 0.00

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	42.00	1.00	0.000	0.000	0.000
2	42.00	2.00	0.000	0.000	0.000
3	42.00	3.00	0.000	0.000	0.000
4	42.00	4.00	0.000	0.000	0.000
5	42.00	5.00	0.000	0.000	0.000
6	42.00	6.00	0.000	0.000	0.000
7	42.00	7.00	0.000	0.000	0.000
8	42.00	8.00	0.357	0.000	0.357
9	42.00	9.00	1.414	0.000	1.414
10	42.00	10.00	3.142	0.000	3.142
11	42.00	11.00	5.544	0.000	5.544
12	42.00	12.00	8.599	0.000	8.599
13	42.00	13.00	12.001	0.000	12.001
14	42.00	14.00	15.346	0.000	15.346
15	42.00	15.00	19.514	0.000	19.514
16	42.00	16.00	23.891	0.000	23.891
17	42.00	17.00	28.470	0.000	28.470
18	42.00	18.00	33.246	0.000	33.246
19	42.00	19.00	38.213	0.000	38.213
20	42.00	20.00	40.333	0.000	40.333
21	42.00	21.00	42.524	0.000	42.524
22	42.00	22.00	44.784	0.000	44.784
23	42.00	23.00	47.112	0.000	47.112
24	42.00	24.00	49.506	0.000	49.506
25	42.00	25.00	52.443	0.000	52.443
26	42.00	26.00	55.451	0.000	55.451
27	42.00	27.00	58.527	0.000	58.527
28	42.00	28.00	61.668	0.000	61.668
29	42.00	29.00	64.874	0.000	64.874
30	42.00	30.00	71.389	0.000	71.389
31	42.00	31.00	78.017	0.000	78.017
32	42.00	32.00	84.754	0.000	84.754
33	42.00	33.00	91.597	0.000	91.597
34	42.00	34.00	98.540	0.000	98.540
35	42.00	35.00	105.618	0.000	105.618
36	42.00	36.00	112.785	0.000	112.785
37	42.00	37.00	120.036	0.000	120.036
38	42.00	38.00	127.368	0.000	127.368
39	42.00	39.00	134.777	0.000	134.777

Drilled Shaft Capacity at User-Defined Settlement (sorted by shaft diameter):
==========

***** Capacity is NOT modified by the strength reduction factors *****

User-Defined Settlement = 5.00%

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	42.00	1.00	0.000	0.000	0.000
2	42.00	2.00	0.000	0.000	0.000
3	42.00	3.00	0.000	0.000	0.000
4	42.00	4.00	0.000	0.000	0.000
5	42.00	5.00	0.000	0.000	0.000
6	42.00	6.00	0.000	0.000	0.000
7	42.00	7.00	0.000	54.300	54.300
8	42.00	8.00	0.349	56.051	56.401
9	42.00	9.00	1.383	56.229	57.612
10	42.00	10.00	3.073	54.757	57.830
11	42.00	11.00	5.422	51.560	56.982
12	42.00	12.00	8.411	46.637	55.048
13	42.00	13.00	11.738	94.499	106.237
14	42.00	14.00	15.010	90.947	105.957
15	42.00	15.00	19.087	86.948	106.035
16	42.00	16.00	23.368	82.076	105.444
17	42.00	17.00	27.846	76.325	104.171
18	42.00	18.00	32.518	69.947	102.465
19	42.00	19.00	37.377	63.198	100.575
20	42.00	20.00	39.450	56.960	96.410

21	42.00	21.00	41.593	53.053	94.646
22	42.00	22.00	43.804	51.547	95.351
23	42.00	23.00	46.081	52.342	98.423
24	42.00	24.00	48.422	55.336	103.759
25	42.00	25.00	51.295	60.081	111.376
26	42.00	26.00	54.237	65.359	119.596
27	42.00	27.00	57.246	71.110	128.356
28	42.00	28.00	60.319	77.589	137.908
29	42.00	29.00	63.454	85.049	148.504
30	42.00	30.00	69.827	93.266	163.093
31	42.00	31.00	76.310	101.741	178.051
32	42.00	32.00	82.899	110.453	193.352
33	42.00	33.00	89.592	118.894	208.486
34	42.00	34.00	96.383	126.557	222.940
35	42.00	35.00	103.307	133.602	236.909
36	42.00	36.00	110.316	140.301	250.617
37	42.00	37.00	117.409	146.661	264.070
38	42.00	38.00	124.580	153.039	277.619
39	42.00	39.00	131.827	159.788	291.615

General Information:
==========
Input file: .....Street - AECOM\FB-Deep Runs\Drilled Shafts - 218144 - CC-1.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, PE
Units: English

Analysis Information:
==========
Analysis Type: Drilled Shaft Analysis

Soil Information:
==========
Boring date: 9/10/2018
Boring number: CC-1
Station number: Offset:

Ground Elevation: 14.80(ft)
Water table Elevation = 2.20(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	Elevation (ft)	SPT Blows (Blows/ft)	Unit Weight (pcf)	Soil Type
1	0.00	14.80	N/A	100.00	5- Cavity layer
2	1.00	13.80	N/A	110.00	5- Cavity layer
3	3.00	11.80	N/A	120.00	5- Cavity layer
4	5.00	9.80	N/A	120.00	5- Cavity layer
5	7.00	7.80	13.00	115.00	3- Clean sand
6	9.00	5.80	14.00	120.00	3- Clean sand
7	14.00	0.80	18.00	115.00	3- Clean sand
8	19.00	-4.20	5.00	115.00	3- Clean sand
9	24.00	-9.20	6.00	115.00	3- Clean sand
10	29.00	-14.20	12.00	115.00	3- Clean sand
11	34.00	-19.20	16.00	115.00	3- Clean sand
12	39.00	-24.20	25.00	115.00	3- Clean sand
13	44.00	-29.20	24.00	115.00	3- Clean sand
14	49.00	-34.20	30.00	115.00	3- Clean sand

ID	Cu-DIR (tsf)	qu (tsf)	qt (tsf)	Em (ksi)	qb (tsf)
1	N/A	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A	N/A
12	N/A	N/A	N/A	N/A	N/A
13	N/A	N/A	N/A	N/A	N/A
14	N/A	N/A	N/A	N/A	N/A

ID	RQD	F.M.	S.R.I.	Rock Recovery
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A
12	N/A	N/A	N/A	N/A
13	N/A	N/A	N/A	N/A
14	N/A	N/A	N/A	N/A

Drilled Shaft Data:
==========

Shaft Geometry:

ID	Length (ft)	Tip Elev. (ft)	Case Len. (ft)	Diameter (in)	Base Diam. (in)	Bell Len. (ft)
40	1.00	13.80	0.00	48.00	48.00	0.00
41	2.00	12.80	0.00	48.00	48.00	0.00
42	3.00	11.80	0.00	48.00	48.00	0.00
43	4.00	10.80	0.00	48.00	48.00	0.00
44	5.00	9.80	0.00	48.00	48.00	0.00
45	6.00	8.80	0.00	48.00	48.00	0.00
46	7.00	7.80	0.00	48.00	48.00	0.00
47	8.00	6.80	0.00	48.00	48.00	0.00
48	9.00	5.80	0.00	48.00	48.00	0.00
49	10.00	4.80	0.00	48.00	48.00	0.00
50	11.00	3.80	0.00	48.00	48.00	0.00
51	12.00	2.80	0.00	48.00	48.00	0.00
52	13.00	1.80	0.00	48.00	48.00	0.00

53	14.00	0.80	0.00	48.00	48.00	0.00
54	15.00	-0.20	0.00	48.00	48.00	0.00
55	16.00	-1.20	0.00	48.00	48.00	0.00
56	17.00	-2.20	0.00	48.00	48.00	0.00
57	18.00	-3.20	0.00	48.00	48.00	0.00
58	19.00	-4.20	0.00	48.00	48.00	0.00
59	20.00	-5.20	0.00	48.00	48.00	0.00
60	21.00	-6.20	0.00	48.00	48.00	0.00
61	22.00	-7.20	0.00	48.00	48.00	0.00
62	23.00	-8.20	0.00	48.00	48.00	0.00
63	24.00	-9.20	0.00	48.00	48.00	0.00
64	25.00	-10.20	0.00	48.00	48.00	0.00
65	26.00	-11.20	0.00	48.00	48.00	0.00
66	27.00	-12.20	0.00	48.00	48.00	0.00
67	28.00	-13.20	0.00	48.00	48.00	0.00
68	29.00	-14.20	0.00	48.00	48.00	0.00
69	30.00	-15.20	0.00	48.00	48.00	0.00
70	31.00	-16.20	0.00	48.00	48.00	0.00
71	32.00	-17.20	0.00	48.00	48.00	0.00
72	33.00	-18.20	0.00	48.00	48.00	0.00
73	34.00	-19.20	0.00	48.00	48.00	0.00
74	35.00	-20.20	0.00	48.00	48.00	0.00
75	36.00	-21.20	0.00	48.00	48.00	0.00
76	37.00	-22.20	0.00	48.00	48.00	0.00
77	38.00	-23.20	0.00	48.00	48.00	0.00
78	39.00	-24.20	0.00	48.00	48.00	0.00

Drilled Shaft Capacity (sorted by shaft diameter):
==========
Strength reduction factors: Skin-friction = 1.00, End-bearing = 0.00

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	48.00	1.00	0.000	0.000	0.000
2	48.00	2.00	0.000	0.000	0.000
3	48.00	3.00	0.000	0.000	0.000
4	48.00	4.00	0.000	0.000	0.000
5	48.00	5.00	0.000	0.000	0.000
6	48.00	6.00	0.000	0.000	0.000
7	48.00	7.00	0.000	0.000	0.000
8	48.00	8.00	0.408	0.000	0.408
9	48.00	9.00	1.616	0.000	1.616
10	48.00	10.00	3.591	0.000	3.591
11	48.00	11.00	6.336	0.000	6.336
12	48.00	12.00	9.828	0.000	9.828
13	48.00	13.00	13.715	0.000	13.715
14	48.00	14.00	17.539	0.000	17.539
15	48.00	15.00	22.302	0.000	22.302
16	48.00	16.00	27.304	0.000	27.304
17	48.00	17.00	32.537	0.000	32.537
18	48.00	18.00	37.995	0.000	37.995
19	48.00	19.00	43.672	0.000	43.672
20	48.00	20.00	46.095	0.000	46.095
21	48.00	21.00	48.599	0.000	48.599
22	48.00	22.00	51.182	0.000	51.182
23	48.00	23.00	53.843	0.000	53.843
24	48.00	24.00	56.578	0.000	56.578
25	48.00	25.00	59.935	0.000	59.935
26	48.00	26.00	63.372	0.000	63.372
27	48.00	27.00	66.887	0.000	66.887
28	48.00	28.00	70.478	0.000	70.478
29	48.00	29.00	74.142	0.000	74.142
30	48.00	30.00	81.588	0.000	81.588
31	48.00	31.00	89.163	0.000	89.163
32	48.00	32.00	96.862	0.000	96.862
33	48.00	33.00	104.682	0.000	104.682
34	48.00	34.00	112.617	0.000	112.617
35	48.00	35.00	120.707	0.000	120.707
36	48.00	36.00	128.897	0.000	128.897
37	48.00	37.00	137.184	0.000	137.184
38	48.00	38.00	145.563	0.000	145.563
39	48.00	39.00	154.031	0.000	154.031

Drilled Shaft Capacity at User-Defined Settlement (sorted by shaft diameter):
==========
***** Capacity is NOT modified by the strength reduction factors *****

User-Defined Settlement = 5.00%

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	48.00	1.00	0.000	0.000	0.000
2	48.00	2.00	0.000	0.000	0.000
3	48.00	3.00	0.000	0.000	0.000
4	48.00	4.00	0.000	0.000	0.000
5	48.00	5.00	0.000	0.000	0.000
6	48.00	6.00	0.000	0.000	0.000
7	48.00	7.00	0.000	71.743	71.743
8	48.00	8.00	0.399	72.236	72.635
9	48.00	9.00	1.581	70.931	72.512
10	48.00	10.00	3.512	67.741	71.253
11	48.00	11.00	6.197	62.579	68.776
12	48.00	12.00	9.613	56.258	65.870
13	48.00	13.00	13.415	118.721	132.136
14	48.00	14.00	17.155	115.067	132.222
15	48.00	15.00	21.814	110.969	132.783
16	48.00	16.00	26.706	105.981	132.687
17	48.00	17.00	31.824	100.278	132.102
18	48.00	18.00	37.163	94.149	131.313
19	48.00	19.00	42.716	87.596	130.312
20	48.00	20.00	45.086	80.887	125.973

21	48.00	21.00	47.535	75.609	123.144
22	48.00	22.00	50.062	72.961	123.023
23	48.00	23.00	52.664	72.826	125.490
24	48.00	24.00	55.340	75.204	130.543
25	48.00	25.00	58.623	80.191	138.814
26	48.00	26.00	61.985	86.803	148.788
27	48.00	27.00	65.423	94.246	159.669
28	48.00	28.00	68.936	102.810	171.746
29	48.00	29.00	72.519	112.496	185.015
30	48.00	30.00	79.802	123.264	203.066
31	48.00	31.00	87.211	134.690	221.901
32	48.00	32.00	94.742	145.806	240.548
33	48.00	33.00	102.391	156.033	258.423
34	48.00	34.00	110.152	165.370	275.523
35	48.00	35.00	118.065	173.915	291.980
36	48.00	36.00	126.076	181.919	307.995
37	48.00	37.00	134.181	189.942	324.123
38	48.00	38.00	142.377	198.390	340.768
39	48.00	39.00	150.659	207.264	357.923

General Information:
==========
Input file: .....Street - AECOM\FB-Deep Runs\Drilled Shafts - 218144 - CC-1.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, PE
Units: English

Analysis Information:
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Analysis Type: Drilled Shaft Analysis

Soil Information:
==========
Boring date: 9/10/2018
Boring number: CC-1
Station number: Offset:

Ground Elevation: 14.80(ft)
Water table Elevation = 2.20(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	Elevation (ft)	SPT Blows (Blows/ft)	Unit Weight (pcf)	Soil Type
1	0.00	14.80	N/A	100.00	5- Cavity layer
2	1.00	13.80	N/A	110.00	5- Cavity layer
3	3.00	11.80	N/A	120.00	5- Cavity layer
4	5.00	9.80	N/A	120.00	5- Cavity layer
5	7.00	7.80	13.00	115.00	3- Clean sand
6	9.00	5.80	14.00	120.00	3- Clean sand
7	14.00	0.80	18.00	115.00	3- Clean sand
8	19.00	-4.20	5.00	115.00	3- Clean sand
9	24.00	-9.20	6.00	115.00	3- Clean sand
10	29.00	-14.20	12.00	115.00	3- Clean sand
11	34.00	-19.20	16.00	115.00	3- Clean sand
12	39.00	-24.20	25.00	115.00	3- Clean sand
13	44.00	-29.20	24.00	115.00	3- Clean sand
14	49.00	-34.20	30.00	115.00	3- Clean sand

ID	Cu-DIR (tsf)	qu (tsf)	qt (tsf)	Em (ksi)	qb (tsf)
1	N/A	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A	N/A
12	N/A	N/A	N/A	N/A	N/A
13	N/A	N/A	N/A	N/A	N/A
14	N/A	N/A	N/A	N/A	N/A

ID	RQD F.M.	S.R.I.	Rock Recovery
1	N/A	N/A	N/A
2	N/A	N/A	N/A
3	N/A	N/A	N/A
4	N/A	N/A	N/A
5	N/A	N/A	N/A
6	N/A	N/A	N/A
7	N/A	N/A	N/A
8	N/A	N/A	N/A
9	N/A	N/A	N/A
10	N/A	N/A	N/A
11	N/A	N/A	N/A
12	N/A	N/A	N/A
13	N/A	N/A	N/A
14	N/A	N/A	N/A

Drilled Shaft Data:
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Shaft Geometry:

ID	Length (ft)	Tip Elev. (ft)	Case Len. (ft)	Diameter (in)	Base Diam. (in)	Bell Len. (ft)
79	1.00	13.80	0.00	54.00	54.00	0.00
80	2.00	12.80	0.00	54.00	54.00	0.00
81	3.00	11.80	0.00	54.00	54.00	0.00
82	4.00	10.80	0.00	54.00	54.00	0.00
83	5.00	9.80	0.00	54.00	54.00	0.00
84	6.00	8.80	0.00	54.00	54.00	0.00
85	7.00	7.80	0.00	54.00	54.00	0.00
86	8.00	6.80	0.00	54.00	54.00	0.00
87	9.00	5.80	0.00	54.00	54.00	0.00
88	10.00	4.80	0.00	54.00	54.00	0.00
89	11.00	3.80	0.00	54.00	54.00	0.00
90	12.00	2.80	0.00	54.00	54.00	0.00
91	13.00	1.80	0.00	54.00	54.00	0.00

92	14.00	0.80	0.00	54.00	54.00	0.00
93	15.00	-0.20	0.00	54.00	54.00	0.00
94	16.00	-1.20	0.00	54.00	54.00	0.00
95	17.00	-2.20	0.00	54.00	54.00	0.00
96	18.00	-3.20	0.00	54.00	54.00	0.00
97	19.00	-4.20	0.00	54.00	54.00	0.00
98	20.00	-5.20	0.00	54.00	54.00	0.00
99	21.00	-6.20	0.00	54.00	54.00	0.00
100	22.00	-7.20	0.00	54.00	54.00	0.00
101	23.00	-8.20	0.00	54.00	54.00	0.00
102	24.00	-9.20	0.00	54.00	54.00	0.00
103	25.00	-10.20	0.00	54.00	54.00	0.00
104	26.00	-11.20	0.00	54.00	54.00	0.00
105	27.00	-12.20	0.00	54.00	54.00	0.00
106	28.00	-13.20	0.00	54.00	54.00	0.00
107	29.00	-14.20	0.00	54.00	54.00	0.00
108	30.00	-15.20	0.00	54.00	54.00	0.00
109	31.00	-16.20	0.00	54.00	54.00	0.00
110	32.00	-17.20	0.00	54.00	54.00	0.00
111	33.00	-18.20	0.00	54.00	54.00	0.00
112	34.00	-19.20	0.00	54.00	54.00	0.00
113	35.00	-20.20	0.00	54.00	54.00	0.00
114	36.00	-21.20	0.00	54.00	54.00	0.00
115	37.00	-22.20	0.00	54.00	54.00	0.00
116	38.00	-23.20	0.00	54.00	54.00	0.00
117	39.00	-24.20	0.00	54.00	54.00	0.00

Drilled Shaft Capacity (sorted by shaft diameter):
==========
Strength reduction factors: Skin-friction = 1.00, End-bearing = 0.00

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	54.00	1.00	0.000	0.000	0.000
2	54.00	2.00	0.000	0.000	0.000
3	54.00	3.00	0.000	0.000	0.000
4	54.00	4.00	0.000	0.000	0.000
5	54.00	5.00	0.000	0.000	0.000
6	54.00	6.00	0.000	0.000	0.000
7	54.00	7.00	0.000	0.000	0.000
8	54.00	8.00	0.459	0.000	0.459
9	54.00	9.00	1.818	0.000	1.818
10	54.00	10.00	4.040	0.000	4.040
11	54.00	11.00	7.128	0.000	7.128
12	54.00	12.00	11.056	0.000	11.056
13	54.00	13.00	15.430	0.000	15.430
14	54.00	14.00	19.731	0.000	19.731
15	54.00	15.00	25.090	0.000	25.090
16	54.00	16.00	30.717	0.000	30.717
17	54.00	17.00	36.604	0.000	36.604
18	54.00	18.00	42.744	0.000	42.744
19	54.00	19.00	49.131	0.000	49.131
20	54.00	20.00	51.856	0.000	51.856
21	54.00	21.00	54.673	0.000	54.673
22	54.00	22.00	57.580	0.000	57.580
23	54.00	23.00	60.573	0.000	60.573
24	54.00	24.00	63.650	0.000	63.650
25	54.00	25.00	67.427	0.000	67.427
26	54.00	26.00	71.294	0.000	71.294
27	54.00	27.00	75.248	0.000	75.248
28	54.00	28.00	79.288	0.000	79.288
29	54.00	29.00	83.410	0.000	83.410
30	54.00	30.00	91.786	0.000	91.786
31	54.00	31.00	100.308	0.000	100.308
32	54.00	32.00	108.970	0.000	108.970
33	54.00	33.00	117.767	0.000	117.767
34	54.00	34.00	126.694	0.000	126.694
35	54.00	35.00	135.795	0.000	135.795
36	54.00	36.00	145.009	0.000	145.009
37	54.00	37.00	154.332	0.000	154.332
38	54.00	38.00	163.759	0.000	163.759
39	54.00	39.00	173.285	0.000	173.285

Drilled Shaft Capacity at User-Defined Settlement (sorted by shaft diameter):
==========
***** Capacity is NOT modified by the strength reduction factors *****

User-Defined Settlement = 5.00%

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	54.00	1.00	0.000	0.000	0.000
2	54.00	2.00	0.000	0.000	0.000
3	54.00	3.00	0.000	0.000	0.000
4	54.00	4.00	0.000	0.000	0.000
5	54.00	5.00	0.000	0.000	0.000
6	54.00	6.00	0.000	0.000	0.000
7	54.00	7.00	0.000	83.251	83.251
8	54.00	8.00	0.449	82.193	82.643
9	54.00	9.00	1.778	79.263	81.041
10	54.00	10.00	3.951	74.370	78.321
11	54.00	11.00	6.972	68.268	75.240
12	54.00	12.00	10.814	61.804	72.618
13	54.00	13.00	15.092	54.977	70.069
14	54.00	14.00	19.299	131.348	150.647
15	54.00	15.00	24.541	127.501	152.042
16	54.00	16.00	30.044	123.144	153.188
17	54.00	17.00	35.803	118.412	154.214
18	54.00	18.00	41.809	113.236	155.045
19	54.00	19.00	48.056	107.618	155.674
20	54.00	20.00	50.721	101.838	152.559

21	54.00	21.00	53.477	96.144	149.621
22	54.00	22.00	56.320	92.298	148.617
23	54.00	23.00	59.247	91.069	150.316
24	54.00	24.00	62.257	92.459	154.716
25	54.00	25.00	65.951	96.567	162.518
26	54.00	26.00	69.733	103.726	173.459
27	54.00	27.00	73.601	112.687	186.289
28	54.00	28.00	77.553	122.817	200.369
29	54.00	29.00	81.584	134.114	215.699
30	54.00	30.00	89.777	146.540	236.317
31	54.00	31.00	98.112	159.423	257.535
32	54.00	32.00	106.585	171.606	278.191
33	54.00	33.00	115.189	182.863	298.053
34	54.00	34.00	123.921	193.194	317.116
35	54.00	35.00	132.823	202.699	335.522
36	54.00	36.00	141.835	211.913	353.748
37	54.00	37.00	150.954	221.478	372.432
38	54.00	38.00	160.174	231.487	391.661
39	54.00	39.00	169.492	241.938	411.430

General Information:
==========
Input file: .....Street - AECOM\FB-Deep Runs\Drilled Shafts - 218144 - CC-1.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, PE
Units: English

Analysis Information:
==========
Analysis Type: Drilled Shaft Analysis

Soil Information:
==========
Boring date: 9/10/2018
Boring number: CC-1
Station number: Offset:

Ground Elevation: 14.80(ft)
Water table Elevation = 2.20(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	Elevation (ft)	SPT Blows (Blows/ft)	Unit Weight (pcf)	Soil Type
1	0.00	14.80	N/A	100.00	5- Cavity layer
2	1.00	13.80	N/A	110.00	5- Cavity layer
3	3.00	11.80	N/A	120.00	5- Cavity layer
4	5.00	9.80	N/A	120.00	5- Cavity layer
5	7.00	7.80	13.00	115.00	3- Clean sand
6	9.00	5.80	14.00	120.00	3- Clean sand
7	14.00	0.80	18.00	115.00	3- Clean sand
8	19.00	-4.20	5.00	115.00	3- Clean sand
9	24.00	-9.20	6.00	115.00	3- Clean sand
10	29.00	-14.20	12.00	115.00	3- Clean sand
11	34.00	-19.20	16.00	115.00	3- Clean sand
12	39.00	-24.20	25.00	115.00	3- Clean sand
13	44.00	-29.20	24.00	115.00	3- Clean sand
14	49.00	-34.20	30.00	115.00	3- Clean sand

ID	Cu-DIR (tsf)	qu (tsf)	qt (tsf)	Em (ksi)	qb (tsf)
1	N/A	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A	N/A
12	N/A	N/A	N/A	N/A	N/A
13	N/A	N/A	N/A	N/A	N/A
14	N/A	N/A	N/A	N/A	N/A

ID	RQD F.M.	S.R.I.	Rock Recovery
1	N/A	N/A	N/A
2	N/A	N/A	N/A
3	N/A	N/A	N/A
4	N/A	N/A	N/A
5	N/A	N/A	N/A
6	N/A	N/A	N/A
7	N/A	N/A	N/A
8	N/A	N/A	N/A
9	N/A	N/A	N/A
10	N/A	N/A	N/A
11	N/A	N/A	N/A
12	N/A	N/A	N/A
13	N/A	N/A	N/A
14	N/A	N/A	N/A

Drilled Shaft Data:
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Shaft Geometry:

ID	Length (ft)	Tip Elev. (ft)	Case Len. (ft)	Diameter (in)	Base Diam. (in)	Bell Len. (ft)
118	1.00	13.80	0.00	60.00	60.00	0.00
119	2.00	12.80	0.00	60.00	60.00	0.00
120	3.00	11.80	0.00	60.00	60.00	0.00
121	4.00	10.80	0.00	60.00	60.00	0.00
122	5.00	9.80	0.00	60.00	60.00	0.00
123	6.00	8.80	0.00	60.00	60.00	0.00
124	7.00	7.80	0.00	60.00	60.00	0.00
125	8.00	6.80	0.00	60.00	60.00	0.00
126	9.00	5.80	0.00	60.00	60.00	0.00
127	10.00	4.80	0.00	60.00	60.00	0.00
128	11.00	3.80	0.00	60.00	60.00	0.00
129	12.00	2.80	0.00	60.00	60.00	0.00
130	13.00	1.80	0.00	60.00	60.00	0.00

131	14.00	0.80	0.00	60.00	60.00	0.00
132	15.00	-0.20	0.00	60.00	60.00	0.00
133	16.00	-1.20	0.00	60.00	60.00	0.00
134	17.00	-2.20	0.00	60.00	60.00	0.00
135	18.00	-3.20	0.00	60.00	60.00	0.00
136	19.00	-4.20	0.00	60.00	60.00	0.00
137	20.00	-5.20	0.00	60.00	60.00	0.00
138	21.00	-6.20	0.00	60.00	60.00	0.00
139	22.00	-7.20	0.00	60.00	60.00	0.00
140	23.00	-8.20	0.00	60.00	60.00	0.00
141	24.00	-9.20	0.00	60.00	60.00	0.00
142	25.00	-10.20	0.00	60.00	60.00	0.00
143	26.00	-11.20	0.00	60.00	60.00	0.00
144	27.00	-12.20	0.00	60.00	60.00	0.00
145	28.00	-13.20	0.00	60.00	60.00	0.00
146	29.00	-14.20	0.00	60.00	60.00	0.00
147	30.00	-15.20	0.00	60.00	60.00	0.00
148	31.00	-16.20	0.00	60.00	60.00	0.00
149	32.00	-17.20	0.00	60.00	60.00	0.00
150	33.00	-18.20	0.00	60.00	60.00	0.00
151	34.00	-19.20	0.00	60.00	60.00	0.00
152	35.00	-20.20	0.00	60.00	60.00	0.00
153	36.00	-21.20	0.00	60.00	60.00	0.00
154	37.00	-22.20	0.00	60.00	60.00	0.00
155	38.00	-23.20	0.00	60.00	60.00	0.00
156	39.00	-24.20	0.00	60.00	60.00	0.00

Drilled Shaft Capacity (sorted by shaft diameter):
==========
Strength reduction factors: Skin-friction = 1.00, End-bearing = 0.00

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	60.00	1.00	0.000	0.000	0.000
2	60.00	2.00	0.000	0.000	0.000
3	60.00	3.00	0.000	0.000	0.000
4	60.00	4.00	0.000	0.000	0.000
5	60.00	5.00	0.000	0.000	0.000
6	60.00	6.00	0.000	0.000	0.000
7	60.00	7.00	0.000	0.000	0.000
8	60.00	8.00	0.510	0.000	0.510
9	60.00	9.00	2.020	0.000	2.020
10	60.00	10.00	4.489	0.000	4.489
11	60.00	11.00	7.920	0.000	7.920
12	60.00	12.00	12.285	0.000	12.285
13	60.00	13.00	17.144	0.000	17.144
14	60.00	14.00	21.923	0.000	21.923
15	60.00	15.00	27.878	0.000	27.878
16	60.00	16.00	34.130	0.000	34.130
17	60.00	17.00	40.671	0.000	40.671
18	60.00	18.00	47.494	0.000	47.494
19	60.00	19.00	54.590	0.000	54.590
20	60.00	20.00	57.618	0.000	57.618
21	60.00	21.00	60.748	0.000	60.748
22	60.00	22.00	63.978	0.000	63.978
23	60.00	23.00	67.303	0.000	67.303
24	60.00	24.00	70.723	0.000	70.723
25	60.00	25.00	74.919	0.000	74.919
26	60.00	26.00	79.215	0.000	79.215
27	60.00	27.00	83.609	0.000	83.609
28	60.00	28.00	88.098	0.000	88.098
29	60.00	29.00	92.678	0.000	92.678
30	60.00	30.00	101.985	0.000	101.985
31	60.00	31.00	111.453	0.000	111.453
32	60.00	32.00	121.078	0.000	121.078
33	60.00	33.00	130.852	0.000	130.852
34	60.00	34.00	140.771	0.000	140.771
35	60.00	35.00	150.883	0.000	150.883
36	60.00	36.00	161.121	0.000	161.121
37	60.00	37.00	171.480	0.000	171.480
38	60.00	38.00	181.954	0.000	181.954
39	60.00	39.00	192.539	0.000	192.539

Drilled Shaft Capacity at User-Defined Settlement (sorted by shaft diameter):
==========
***** Capacity is NOT modified by the strength reduction factors *****

User-Defined Settlement = 5.00%

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	60.00	1.00	0.000	0.000	0.000
2	60.00	2.00	0.000	0.000	0.000
3	60.00	3.00	0.000	0.000	0.000
4	60.00	4.00	0.000	0.000	0.000
5	60.00	5.00	0.000	0.000	0.000
6	60.00	6.00	0.000	0.000	0.000
7	60.00	7.00	0.000	90.198	90.198
8	60.00	8.00	0.499	87.570	88.070
9	60.00	9.00	1.976	83.069	85.045
10	60.00	10.00	4.390	77.451	81.841
11	60.00	11.00	7.746	71.470	79.216
12	60.00	12.00	12.016	65.126	77.142
13	60.00	13.00	16.769	58.420	75.190
14	60.00	14.00	21.444	51.352	72.796
15	60.00	15.00	27.268	139.607	166.874
16	60.00	16.00	33.383	136.284	169.667
17	60.00	17.00	39.781	132.730	172.510
18	60.00	18.00	46.454	128.763	175.217
19	60.00	19.00	53.395	124.352	177.748
20	60.00	20.00	56.357	119.660	176.017

21	60.00	21.00	59.419	114.847	174.266
22	60.00	22.00	62.577	110.256	172.833
23	60.00	23.00	65.830	107.940	173.770
24	60.00	24.00	69.175	108.242	177.417
25	60.00	25.00	73.279	111.565	184.844
26	60.00	26.00	77.481	118.311	195.792
27	60.00	27.00	81.779	128.199	209.978
28	60.00	28.00	86.170	139.536	225.706
29	60.00	29.00	90.649	152.042	242.691
30	60.00	30.00	99.753	165.072	264.824
31	60.00	31.00	109.014	177.980	286.994
32	60.00	32.00	118.428	190.667	309.095
33	60.00	33.00	127.988	202.528	330.516
34	60.00	34.00	137.690	213.463	351.153
35	60.00	35.00	147.581	223.995	371.576
36	60.00	36.00	157.595	234.648	392.243
37	60.00	37.00	167.727	245.463	413.189
38	60.00	38.00	177.972	256.679	434.651
39	60.00	39.00	188.324	268.339	456.664

General Information:
==========
Input file: .....Street - AECOM\FB-Deep Runs\Drilled Shafts - 218144 - CC-2.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, PE
Units: English

Analysis Information:
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Analysis Type: Drilled Shaft Analysis

Soil Information:
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Boring date: 9/9/2018
Boring number: CC-2
Station number: Offset:

Ground Elevation: 15.40(ft)
Water table Elevation = 2.20(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	Elevation (ft)	SPT Blows (Blows/ft)	Unit Weight (pcf)	Soil Type
1	0.00	15.40	N/A	100.00	5- Cavity layer
2	1.00	14.40	N/A	110.00	5- Cavity layer
3	3.00	12.40	N/A	120.00	5- Cavity layer
4	5.00	10.40	N/A	120.00	5- Cavity layer
5	7.00	8.40	12.00	115.00	3- Clean sand
6	9.00	6.40	11.00	115.00	3- Clean sand
7	14.00	1.40	19.00	120.00	3- Clean sand
8	19.00	-3.60	6.00	105.00	3- Clean sand
9	24.00	-8.60	7.00	105.00	3- Clean sand
10	29.00	-13.60	11.00	115.00	3- Clean sand
11	34.00	-18.60	15.00	115.00	3- Clean sand
12	39.00	-23.60	24.00	115.00	3- Clean sand
13	44.00	-28.60	24.00	115.00	3- Clean sand
14	49.00	-33.60	25.00	115.00	3- Clean sand

ID	Cu-DIR (tsf)	qu (tsf)	qt (tsf)	Em (ksi)	qb (tsf)
1	N/A	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A	N/A
12	N/A	N/A	N/A	N/A	N/A
13	N/A	N/A	N/A	N/A	N/A
14	N/A	N/A	N/A	N/A	N/A

ID	RQD F.M.	S.R.I.	Rock Recovery
1	N/A	N/A	N/A
2	N/A	N/A	N/A
3	N/A	N/A	N/A
4	N/A	N/A	N/A
5	N/A	N/A	N/A
6	N/A	N/A	N/A
7	N/A	N/A	N/A
8	N/A	N/A	N/A
9	N/A	N/A	N/A
10	N/A	N/A	N/A
11	N/A	N/A	N/A
12	N/A	N/A	N/A
13	N/A	N/A	N/A
14	N/A	N/A	N/A

Drilled Shaft Data:
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Shaft Geometry:

ID	Length (ft)	Tip Elev. (ft)	Case Len. (ft)	Diameter (in)	Base Diam. (in)	Bell Len. (ft)
1	1.00	14.40	0.00	42.00	42.00	0.00
2	2.00	13.40	0.00	42.00	42.00	0.00
3	3.00	12.40	0.00	42.00	42.00	0.00
4	4.00	11.40	0.00	42.00	42.00	0.00
5	5.00	10.40	0.00	42.00	42.00	0.00
6	6.00	9.40	0.00	42.00	42.00	0.00
7	7.00	8.40	0.00	42.00	42.00	0.00
8	8.00	7.40	0.00	42.00	42.00	0.00
9	9.00	6.40	0.00	42.00	42.00	0.00
10	10.00	5.40	0.00	42.00	42.00	0.00
11	11.00	4.40	0.00	42.00	42.00	0.00
12	12.00	3.40	0.00	42.00	42.00	0.00
13	13.00	2.40	0.00	42.00	42.00	0.00

14	14.00	1.40	0.00	42.00	42.00	0.00
15	15.00	0.40	0.00	42.00	42.00	0.00
16	16.00	-0.60	0.00	42.00	42.00	0.00
17	17.00	-1.60	0.00	42.00	42.00	0.00
18	18.00	-2.60	0.00	42.00	42.00	0.00
19	19.00	-3.60	0.00	42.00	42.00	0.00
20	20.00	-4.60	0.00	42.00	42.00	0.00
21	21.00	-5.60	0.00	42.00	42.00	0.00
22	22.00	-6.60	0.00	42.00	42.00	0.00
23	23.00	-7.60	0.00	42.00	42.00	0.00
24	24.00	-8.60	0.00	42.00	42.00	0.00
25	25.00	-9.60	0.00	42.00	42.00	0.00
26	26.00	-10.60	0.00	42.00	42.00	0.00
27	27.00	-11.60	0.00	42.00	42.00	0.00
28	28.00	-12.60	0.00	42.00	42.00	0.00
29	29.00	-13.60	0.00	42.00	42.00	0.00
30	30.00	-14.60	0.00	42.00	42.00	0.00
31	31.00	-15.60	0.00	42.00	42.00	0.00
32	32.00	-16.60	0.00	42.00	42.00	0.00
33	33.00	-17.60	0.00	42.00	42.00	0.00
34	34.00	-18.60	0.00	42.00	42.00	0.00
35	35.00	-19.60	0.00	42.00	42.00	0.00
36	36.00	-20.60	0.00	42.00	42.00	0.00
37	37.00	-21.60	0.00	42.00	42.00	0.00
38	38.00	-22.60	0.00	42.00	42.00	0.00
39	39.00	-23.60	0.00	42.00	42.00	0.00

Drilled Shaft Capacity (sorted by shaft diameter):
==========
Strength reduction factors: Skin-friction = 1.00, End-bearing = 0.00

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	42.00	1.00	0.000	0.000	0.000
2	42.00	2.00	0.000	0.000	0.000
3	42.00	3.00	0.000	0.000	0.000
4	42.00	4.00	0.000	0.000	0.000
5	42.00	5.00	0.000	0.000	0.000
6	42.00	6.00	0.000	0.000	0.000
7	42.00	7.00	0.000	0.000	0.000
8	42.00	8.00	0.354	0.000	0.354
9	42.00	9.00	1.403	0.000	1.403
10	42.00	10.00	2.960	0.000	2.960
11	42.00	11.00	5.104	0.000	5.104
12	42.00	12.00	7.817	0.000	7.817
13	42.00	13.00	11.082	0.000	11.082
14	42.00	14.00	14.234	0.000	14.234
15	42.00	15.00	18.483	0.000	18.483
16	42.00	16.00	22.966	0.000	22.966
17	42.00	17.00	27.676	0.000	27.676
18	42.00	18.00	32.607	0.000	32.607
19	42.00	19.00	37.753	0.000	37.753
20	42.00	20.00	40.377	0.000	40.377
21	42.00	21.00	43.060	0.000	43.060
22	42.00	22.00	45.802	0.000	45.802
23	42.00	23.00	48.600	0.000	48.600
24	42.00	24.00	51.453	0.000	51.453
25	42.00	25.00	54.833	0.000	54.833
26	42.00	26.00	58.270	0.000	58.270
27	42.00	27.00	61.761	0.000	61.761
28	42.00	28.00	65.306	0.000	65.306
29	42.00	29.00	68.902	0.000	68.902
30	42.00	30.00	74.634	0.000	74.634
31	42.00	31.00	80.474	0.000	80.474
32	42.00	32.00	86.417	0.000	86.417
33	42.00	33.00	92.461	0.000	92.461
34	42.00	34.00	98.601	0.000	98.601
35	42.00	35.00	105.436	0.000	105.436
36	42.00	36.00	112.363	0.000	112.363
37	42.00	37.00	119.379	0.000	119.379
38	42.00	38.00	126.480	0.000	126.480
39	42.00	39.00	133.661	0.000	133.661

Drilled Shaft Capacity at User-Defined Settlement (sorted by shaft diameter):
==========
***** Capacity is NOT modified by the strength reduction factors *****

User-Defined Settlement = 5.00%

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	42.00	1.00	0.000	0.000	0.000
2	42.00	2.00	0.000	0.000	0.000
3	42.00	3.00	0.000	0.000	0.000
4	42.00	4.00	0.000	0.000	0.000
5	42.00	5.00	0.000	0.000	0.000
6	42.00	6.00	0.000	0.000	0.000
7	42.00	7.00	0.000	49.733	49.733
8	42.00	8.00	0.347	52.752	53.099
9	42.00	9.00	1.372	54.706	56.078
10	42.00	10.00	2.896	55.061	57.957
11	42.00	11.00	4.993	53.285	58.278
12	42.00	12.00	7.646	49.378	57.023
13	42.00	13.00	10.839	92.050	102.890
14	42.00	14.00	13.922	90.629	104.552
15	42.00	15.00	18.078	89.164	107.242
16	42.00	16.00	22.463	86.322	108.785
17	42.00	17.00	27.070	82.059	109.129
18	42.00	18.00	31.893	76.528	108.421
19	42.00	19.00	36.927	69.880	106.807
20	42.00	20.00	39.493	63.151	102.644

21	42.00	21.00	42.117	58.533	100.651
22	42.00	22.00	44.799	56.114	100.914
23	42.00	23.00	47.536	55.895	103.431
24	42.00	24.00	50.326	57.874	108.200
25	42.00	25.00	53.633	61.570	115.203
26	42.00	26.00	56.994	65.731	122.726
27	42.00	27.00	60.410	70.298	130.708
28	42.00	28.00	63.877	75.526	139.402
29	42.00	29.00	67.393	81.666	149.059
30	42.00	30.00	73.000	88.606	161.606
31	42.00	31.00	78.712	96.066	174.778
32	42.00	32.00	84.526	104.033	188.559
33	42.00	33.00	90.437	112.051	202.488
34	42.00	34.00	96.443	119.663	216.106
35	42.00	35.00	103.128	126.954	230.083
36	42.00	36.00	109.904	134.008	243.912
37	42.00	37.00	116.766	140.825	257.592
38	42.00	38.00	123.711	147.456	271.168
39	42.00	39.00	130.735	153.952	284.687

General Information:
==========
Input file: .....Street - AECOM\FB-Deep Runs\Drilled Shafts - 218144 - CC-2.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, PE
Units: English

Analysis Information:
==========
Analysis Type: Drilled Shaft Analysis

Soil Information:
==========
Boring date: 9/9/2018
Boring number: CC-2
Station number: Offset:

Ground Elevation: 15.40(ft)
Water table Elevation = 2.20(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	Elevation (ft)	SPT Blows (Blows/ft)	Unit Weight (pcf)	Soil Type
1	0.00	15.40	N/A	100.00	5- Cavity layer
2	1.00	14.40	N/A	110.00	5- Cavity layer
3	3.00	12.40	N/A	120.00	5- Cavity layer
4	5.00	10.40	N/A	120.00	5- Cavity layer
5	7.00	8.40	12.00	115.00	3- Clean sand
6	9.00	6.40	11.00	115.00	3- Clean sand
7	14.00	1.40	19.00	120.00	3- Clean sand
8	19.00	-3.60	6.00	105.00	3- Clean sand
9	24.00	-8.60	7.00	105.00	3- Clean sand
10	29.00	-13.60	11.00	115.00	3- Clean sand
11	34.00	-18.60	15.00	115.00	3- Clean sand
12	39.00	-23.60	24.00	115.00	3- Clean sand
13	44.00	-28.60	24.00	115.00	3- Clean sand
14	49.00	-33.60	25.00	115.00	3- Clean sand

ID	Cu-DIR (tsf)	qu (tsf)	qt (tsf)	Em (ksi)	qb (tsf)
1	N/A	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A	N/A
12	N/A	N/A	N/A	N/A	N/A
13	N/A	N/A	N/A	N/A	N/A
14	N/A	N/A	N/A	N/A	N/A

ID	RQD	F.M.	S.R.I.	Rock Recovery
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A
12	N/A	N/A	N/A	N/A
13	N/A	N/A	N/A	N/A
14	N/A	N/A	N/A	N/A

Drilled Shaft Data:
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Shaft Geometry:

ID	Length (ft)	Tip Elev. (ft)	Case Len. (ft)	Diameter (in)	Base Diam. (in)	Bell Len. (ft)
40	1.00	14.40	0.00	48.00	48.00	0.00
41	2.00	13.40	0.00	48.00	48.00	0.00
42	3.00	12.40	0.00	48.00	48.00	0.00
43	4.00	11.40	0.00	48.00	48.00	0.00
44	5.00	10.40	0.00	48.00	48.00	0.00
45	6.00	9.40	0.00	48.00	48.00	0.00
46	7.00	8.40	0.00	48.00	48.00	0.00
47	8.00	7.40	0.00	48.00	48.00	0.00
48	9.00	6.40	0.00	48.00	48.00	0.00
49	10.00	5.40	0.00	48.00	48.00	0.00
50	11.00	4.40	0.00	48.00	48.00	0.00
51	12.00	3.40	0.00	48.00	48.00	0.00
52	13.00	2.40	0.00	48.00	48.00	0.00

53	14.00	1.40	0.00	48.00	48.00	0.00
54	15.00	0.40	0.00	48.00	48.00	0.00
55	16.00	-0.60	0.00	48.00	48.00	0.00
56	17.00	-1.60	0.00	48.00	48.00	0.00
57	18.00	-2.60	0.00	48.00	48.00	0.00
58	19.00	-3.60	0.00	48.00	48.00	0.00
59	20.00	-4.60	0.00	48.00	48.00	0.00
60	21.00	-5.60	0.00	48.00	48.00	0.00
61	22.00	-6.60	0.00	48.00	48.00	0.00
62	23.00	-7.60	0.00	48.00	48.00	0.00
63	24.00	-8.60	0.00	48.00	48.00	0.00
64	25.00	-9.60	0.00	48.00	48.00	0.00
65	26.00	-10.60	0.00	48.00	48.00	0.00
66	27.00	-11.60	0.00	48.00	48.00	0.00
67	28.00	-12.60	0.00	48.00	48.00	0.00
68	29.00	-13.60	0.00	48.00	48.00	0.00
69	30.00	-14.60	0.00	48.00	48.00	0.00
70	31.00	-15.60	0.00	48.00	48.00	0.00
71	32.00	-16.60	0.00	48.00	48.00	0.00
72	33.00	-17.60	0.00	48.00	48.00	0.00
73	34.00	-18.60	0.00	48.00	48.00	0.00
74	35.00	-19.60	0.00	48.00	48.00	0.00
75	36.00	-20.60	0.00	48.00	48.00	0.00
76	37.00	-21.60	0.00	48.00	48.00	0.00
77	38.00	-22.60	0.00	48.00	48.00	0.00
78	39.00	-23.60	0.00	48.00	48.00	0.00

Drilled Shaft Capacity (sorted by shaft diameter):
==========
Strength reduction factors: Skin-friction = 1.00, End-bearing = 0.00

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	48.00	1.00	0.000	0.000	0.000
2	48.00	2.00	0.000	0.000	0.000
3	48.00	3.00	0.000	0.000	0.000
4	48.00	4.00	0.000	0.000	0.000
5	48.00	5.00	0.000	0.000	0.000
6	48.00	6.00	0.000	0.000	0.000
7	48.00	7.00	0.000	0.000	0.000
8	48.00	8.00	0.405	0.000	0.405
9	48.00	9.00	1.603	0.000	1.603
10	48.00	10.00	3.383	0.000	3.383
11	48.00	11.00	5.833	0.000	5.833
12	48.00	12.00	8.934	0.000	8.934
13	48.00	13.00	12.665	0.000	12.665
14	48.00	14.00	16.267	0.000	16.267
15	48.00	15.00	21.123	0.000	21.123
16	48.00	16.00	26.246	0.000	26.246
17	48.00	17.00	31.629	0.000	31.629
18	48.00	18.00	37.265	0.000	37.265
19	48.00	19.00	43.146	0.000	43.146
20	48.00	20.00	46.145	0.000	46.145
21	48.00	21.00	49.211	0.000	49.211
22	48.00	22.00	52.345	0.000	52.345
23	48.00	23.00	55.543	0.000	55.543
24	48.00	24.00	58.803	0.000	58.803
25	48.00	25.00	62.666	0.000	62.666
26	48.00	26.00	66.594	0.000	66.594
27	48.00	27.00	70.585	0.000	70.585
28	48.00	28.00	74.635	0.000	74.635
29	48.00	29.00	78.745	0.000	78.745
30	48.00	30.00	85.296	0.000	85.296
31	48.00	31.00	91.970	0.000	91.970
32	48.00	32.00	98.762	0.000	98.762
33	48.00	33.00	105.669	0.000	105.669
34	48.00	34.00	112.687	0.000	112.687
35	48.00	35.00	120.498	0.000	120.498
36	48.00	36.00	128.415	0.000	128.415
37	48.00	37.00	136.433	0.000	136.433
38	48.00	38.00	144.548	0.000	144.548
39	48.00	39.00	152.755	0.000	152.755

Drilled Shaft Capacity at User-Defined Settlement (sorted by shaft diameter):
==========
***** Capacity is NOT modified by the strength reduction factors *****

User-Defined Settlement = 5.00%

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	48.00	1.00	0.000	0.000	0.000
2	48.00	2.00	0.000	0.000	0.000
3	48.00	3.00	0.000	0.000	0.000
4	48.00	4.00	0.000	0.000	0.000
5	48.00	5.00	0.000	0.000	0.000
6	48.00	6.00	0.000	0.000	0.000
7	48.00	7.00	0.000	67.103	67.103
8	48.00	8.00	0.396	69.046	69.442
9	48.00	9.00	1.568	69.771	71.339
10	48.00	10.00	3.309	68.669	71.978
11	48.00	11.00	5.706	65.131	70.837
12	48.00	12.00	8.738	59.969	68.708
13	48.00	13.00	12.388	115.705	128.093
14	48.00	14.00	15.911	113.907	129.818
15	48.00	15.00	20.661	112.515	133.176
16	48.00	16.00	25.672	110.311	135.983
17	48.00	17.00	30.937	106.658	137.594
18	48.00	18.00	36.449	101.728	138.177
19	48.00	19.00	42.202	95.522	137.724
20	48.00	20.00	45.135	88.311	133.446

21	48.00	21.00	48.134	81.989	130.123
22	48.00	22.00	51.199	78.181	129.380
23	48.00	23.00	54.327	76.885	131.212
24	48.00	24.00	57.516	78.103	135.619
25	48.00	25.00	61.295	81.893	143.187
26	48.00	26.00	65.136	87.228	152.365
27	48.00	27.00	69.040	93.318	162.358
28	48.00	28.00	73.002	100.452	173.454
29	48.00	29.00	77.021	108.629	185.651
30	48.00	30.00	83.429	117.851	201.280
31	48.00	31.00	89.957	127.885	217.841
32	48.00	32.00	96.601	137.976	234.577
33	48.00	33.00	103.356	147.604	250.960
34	48.00	34.00	110.220	156.767	266.988
35	48.00	35.00	117.861	165.564	283.425
36	48.00	36.00	125.605	174.089	299.694
37	48.00	37.00	133.447	182.402	315.849
38	48.00	38.00	141.384	190.561	331.945
39	48.00	39.00	149.412	198.564	347.976

General Information:
==========
Input file: .....Street - AECOM\FB-Deep Runs\Drilled Shafts - 218144 - CC-2.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, PE
Units: English

Analysis Information:
==========
Analysis Type: Drilled Shaft Analysis

Soil Information:
==========
Boring date: 9/9/2018
Boring number: CC-2
Station number: Offset:

Ground Elevation: 15.40(ft)
Water table Elevation = 2.20(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	Elevation (ft)	SPT Blows (Blows/ft)	Unit Weight (pcf)	Soil Type
1	0.00	15.40	N/A	100.00	5- Cavity layer
2	1.00	14.40	N/A	110.00	5- Cavity layer
3	3.00	12.40	N/A	120.00	5- Cavity layer
4	5.00	10.40	N/A	120.00	5- Cavity layer
5	7.00	8.40	12.00	115.00	3- Clean sand
6	9.00	6.40	11.00	115.00	3- Clean sand
7	14.00	1.40	19.00	120.00	3- Clean sand
8	19.00	-3.60	6.00	105.00	3- Clean sand
9	24.00	-8.60	7.00	105.00	3- Clean sand
10	29.00	-13.60	11.00	115.00	3- Clean sand
11	34.00	-18.60	15.00	115.00	3- Clean sand
12	39.00	-23.60	24.00	115.00	3- Clean sand
13	44.00	-28.60	24.00	115.00	3- Clean sand
14	49.00	-33.60	25.00	115.00	3- Clean sand

ID	Cu-DIR (tsf)	qu (tsf)	qt (tsf)	Em (ksi)	qb (tsf)
1	N/A	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A	N/A
12	N/A	N/A	N/A	N/A	N/A
13	N/A	N/A	N/A	N/A	N/A
14	N/A	N/A	N/A	N/A	N/A

ID	RQD F.M.	S.R.I.	Rock Recovery
1	N/A	N/A	N/A
2	N/A	N/A	N/A
3	N/A	N/A	N/A
4	N/A	N/A	N/A
5	N/A	N/A	N/A
6	N/A	N/A	N/A
7	N/A	N/A	N/A
8	N/A	N/A	N/A
9	N/A	N/A	N/A
10	N/A	N/A	N/A
11	N/A	N/A	N/A
12	N/A	N/A	N/A
13	N/A	N/A	N/A
14	N/A	N/A	N/A

Drilled Shaft Data:
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Shaft Geometry:

ID	Length (ft)	Tip Elev. (ft)	Case Len. (ft)	Diameter (in)	Base Diam. (in)	Bell Len. (ft)
79	1.00	14.40	0.00	54.00	54.00	0.00
80	2.00	13.40	0.00	54.00	54.00	0.00
81	3.00	12.40	0.00	54.00	54.00	0.00
82	4.00	11.40	0.00	54.00	54.00	0.00
83	5.00	10.40	0.00	54.00	54.00	0.00
84	6.00	9.40	0.00	54.00	54.00	0.00
85	7.00	8.40	0.00	54.00	54.00	0.00
86	8.00	7.40	0.00	54.00	54.00	0.00
87	9.00	6.40	0.00	54.00	54.00	0.00
88	10.00	5.40	0.00	54.00	54.00	0.00
89	11.00	4.40	0.00	54.00	54.00	0.00
90	12.00	3.40	0.00	54.00	54.00	0.00
91	13.00	2.40	0.00	54.00	54.00	0.00

92	14.00	1.40	0.00	54.00	54.00	0.00
93	15.00	0.40	0.00	54.00	54.00	0.00
94	16.00	-0.60	0.00	54.00	54.00	0.00
95	17.00	-1.60	0.00	54.00	54.00	0.00
96	18.00	-2.60	0.00	54.00	54.00	0.00
97	19.00	-3.60	0.00	54.00	54.00	0.00
98	20.00	-4.60	0.00	54.00	54.00	0.00
99	21.00	-5.60	0.00	54.00	54.00	0.00
100	22.00	-6.60	0.00	54.00	54.00	0.00
101	23.00	-7.60	0.00	54.00	54.00	0.00
102	24.00	-8.60	0.00	54.00	54.00	0.00
103	25.00	-9.60	0.00	54.00	54.00	0.00
104	26.00	-10.60	0.00	54.00	54.00	0.00
105	27.00	-11.60	0.00	54.00	54.00	0.00
106	28.00	-12.60	0.00	54.00	54.00	0.00
107	29.00	-13.60	0.00	54.00	54.00	0.00
108	30.00	-14.60	0.00	54.00	54.00	0.00
109	31.00	-15.60	0.00	54.00	54.00	0.00
110	32.00	-16.60	0.00	54.00	54.00	0.00
111	33.00	-17.60	0.00	54.00	54.00	0.00
112	34.00	-18.60	0.00	54.00	54.00	0.00
113	35.00	-19.60	0.00	54.00	54.00	0.00
114	36.00	-20.60	0.00	54.00	54.00	0.00
115	37.00	-21.60	0.00	54.00	54.00	0.00
116	38.00	-22.60	0.00	54.00	54.00	0.00
117	39.00	-23.60	0.00	54.00	54.00	0.00

Drilled Shaft Capacity (sorted by shaft diameter):
==========
Strength reduction factors: Skin-friction = 1.00, End-bearing = 0.00

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	54.00	1.00	0.000	0.000	0.000
2	54.00	2.00	0.000	0.000	0.000
3	54.00	3.00	0.000	0.000	0.000
4	54.00	4.00	0.000	0.000	0.000
5	54.00	5.00	0.000	0.000	0.000
6	54.00	6.00	0.000	0.000	0.000
7	54.00	7.00	0.000	0.000	0.000
8	54.00	8.00	0.456	0.000	0.456
9	54.00	9.00	1.803	0.000	1.803
10	54.00	10.00	3.806	0.000	3.806
11	54.00	11.00	6.563	0.000	6.563
12	54.00	12.00	10.050	0.000	10.050
13	54.00	13.00	14.248	0.000	14.248
14	54.00	14.00	18.301	0.000	18.301
15	54.00	15.00	23.764	0.000	23.764
16	54.00	16.00	29.527	0.000	29.527
17	54.00	17.00	35.583	0.000	35.583
18	54.00	18.00	41.923	0.000	41.923
19	54.00	19.00	48.540	0.000	48.540
20	54.00	20.00	51.913	0.000	51.913
21	54.00	21.00	55.363	0.000	55.363
22	54.00	22.00	58.888	0.000	58.888
23	54.00	23.00	62.485	0.000	62.485
24	54.00	24.00	66.153	0.000	66.153
25	54.00	25.00	70.499	0.000	70.499
26	54.00	26.00	74.918	0.000	74.918
27	54.00	27.00	79.408	0.000	79.408
28	54.00	28.00	83.965	0.000	83.965
29	54.00	29.00	88.588	0.000	88.588
30	54.00	30.00	95.958	0.000	95.958
31	54.00	31.00	103.466	0.000	103.466
32	54.00	32.00	111.108	0.000	111.108
33	54.00	33.00	118.878	0.000	118.878
34	54.00	34.00	126.773	0.000	126.773
35	54.00	35.00	135.561	0.000	135.561
36	54.00	36.00	144.467	0.000	144.467
37	54.00	37.00	153.488	0.000	153.488
38	54.00	38.00	162.617	0.000	162.617
39	54.00	39.00	171.850	0.000	171.850

Drilled Shaft Capacity at User-Defined Settlement (sorted by shaft diameter):
==========
***** Capacity is NOT modified by the strength reduction factors *****

User-Defined Settlement = 5.00%

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	54.00	1.00	0.000	0.000	0.000
2	54.00	2.00	0.000	0.000	0.000
3	54.00	3.00	0.000	0.000	0.000
4	54.00	4.00	0.000	0.000	0.000
5	54.00	5.00	0.000	0.000	0.000
6	54.00	6.00	0.000	0.000	0.000
7	54.00	7.00	0.000	79.022	79.022
8	54.00	8.00	0.446	79.475	79.921
9	54.00	9.00	1.764	78.659	80.423
10	54.00	10.00	3.723	75.941	79.664
11	54.00	11.00	6.419	71.530	77.949
12	54.00	12.00	9.830	66.274	76.105
13	54.00	13.00	13.936	60.172	74.109
14	54.00	14.00	17.900	129.762	147.662
15	54.00	15.00	23.244	128.131	151.374
16	54.00	16.00	28.881	126.628	155.509
17	54.00	17.00	34.804	124.272	159.076
18	54.00	18.00	41.005	120.587	161.592
19	54.00	19.00	47.477	115.572	163.050
20	54.00	20.00	50.776	109.511	160.287

21	54.00	21.00	54.151	102.790	156.941
22	54.00	22.00	57.599	97.735	155.334
23	54.00	23.00	61.118	95.298	156.416
24	54.00	24.00	64.705	95.479	160.185
25	54.00	25.00	68.956	98.339	167.295
26	54.00	26.00	73.278	104.169	177.448
27	54.00	27.00	77.670	111.721	189.390
28	54.00	28.00	82.127	120.360	202.487
29	54.00	29.00	86.649	130.087	216.735
30	54.00	30.00	93.857	140.901	234.758
31	54.00	31.00	101.201	152.244	253.445
32	54.00	32.00	108.676	163.239	271.915
33	54.00	33.00	116.276	173.751	290.027
34	54.00	34.00	123.998	183.780	307.778
35	54.00	35.00	132.594	193.426	326.019
36	54.00	36.00	141.305	202.851	344.156
37	54.00	37.00	150.128	212.114	362.242
38	54.00	38.00	159.057	221.216	380.274
39	54.00	39.00	168.088	230.158	398.246

General Information:
==========
Input file: .....Street - AECOM\FB-Deep Runs\Drilled Shafts - 218144 - CC-2.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, PE
Units: English

Analysis Information:
==========
Analysis Type: Drilled Shaft Analysis

Soil Information:
==========
Boring date: 9/9/2018
Boring number: CC-2
Station number: Offset:

Ground Elevation: 15.40(ft)
Water table Elevation = 2.20(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	Elevation (ft)	SPT Blows (Blows/ft)	Unit Weight (pcf)	Soil Type
1	0.00	15.40	N/A	100.00	5- Cavity layer
2	1.00	14.40	N/A	110.00	5- Cavity layer
3	3.00	12.40	N/A	120.00	5- Cavity layer
4	5.00	10.40	N/A	120.00	5- Cavity layer
5	7.00	8.40	12.00	115.00	3- Clean sand
6	9.00	6.40	11.00	115.00	3- Clean sand
7	14.00	1.40	19.00	120.00	3- Clean sand
8	19.00	-3.60	6.00	105.00	3- Clean sand
9	24.00	-8.60	7.00	105.00	3- Clean sand
10	29.00	-13.60	11.00	115.00	3- Clean sand
11	34.00	-18.60	15.00	115.00	3- Clean sand
12	39.00	-23.60	24.00	115.00	3- Clean sand
13	44.00	-28.60	24.00	115.00	3- Clean sand
14	49.00	-33.60	25.00	115.00	3- Clean sand

ID	Cu-DIR (tsf)	qu (tsf)	qt (tsf)	Em (ksi)	qb (tsf)
1	N/A	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A	N/A
12	N/A	N/A	N/A	N/A	N/A
13	N/A	N/A	N/A	N/A	N/A
14	N/A	N/A	N/A	N/A	N/A

ID	RQD F.M.	S.R.I.	Rock Recovery
1	N/A	N/A	N/A
2	N/A	N/A	N/A
3	N/A	N/A	N/A
4	N/A	N/A	N/A
5	N/A	N/A	N/A
6	N/A	N/A	N/A
7	N/A	N/A	N/A
8	N/A	N/A	N/A
9	N/A	N/A	N/A
10	N/A	N/A	N/A
11	N/A	N/A	N/A
12	N/A	N/A	N/A
13	N/A	N/A	N/A
14	N/A	N/A	N/A

Drilled Shaft Data:
==========

Shaft Geometry:

ID	Length (ft)	Tip Elev. (ft)	Case Len. (ft)	Diameter (in)	Base Diam. (in)	Bell Len. (ft)
118	1.00	14.40	0.00	60.00	60.00	0.00
119	2.00	13.40	0.00	60.00	60.00	0.00
120	3.00	12.40	0.00	60.00	60.00	0.00
121	4.00	11.40	0.00	60.00	60.00	0.00
122	5.00	10.40	0.00	60.00	60.00	0.00
123	6.00	9.40	0.00	60.00	60.00	0.00
124	7.00	8.40	0.00	60.00	60.00	0.00
125	8.00	7.40	0.00	60.00	60.00	0.00
126	9.00	6.40	0.00	60.00	60.00	0.00
127	10.00	5.40	0.00	60.00	60.00	0.00
128	11.00	4.40	0.00	60.00	60.00	0.00
129	12.00	3.40	0.00	60.00	60.00	0.00
130	13.00	2.40	0.00	60.00	60.00	0.00

131	14.00	1.40	0.00	60.00	60.00	0.00
132	15.00	0.40	0.00	60.00	60.00	0.00
133	16.00	-0.60	0.00	60.00	60.00	0.00
134	17.00	-1.60	0.00	60.00	60.00	0.00
135	18.00	-2.60	0.00	60.00	60.00	0.00
136	19.00	-3.60	0.00	60.00	60.00	0.00
137	20.00	-4.60	0.00	60.00	60.00	0.00
138	21.00	-5.60	0.00	60.00	60.00	0.00
139	22.00	-6.60	0.00	60.00	60.00	0.00
140	23.00	-7.60	0.00	60.00	60.00	0.00
141	24.00	-8.60	0.00	60.00	60.00	0.00
142	25.00	-9.60	0.00	60.00	60.00	0.00
143	26.00	-10.60	0.00	60.00	60.00	0.00
144	27.00	-11.60	0.00	60.00	60.00	0.00
145	28.00	-12.60	0.00	60.00	60.00	0.00
146	29.00	-13.60	0.00	60.00	60.00	0.00
147	30.00	-14.60	0.00	60.00	60.00	0.00
148	31.00	-15.60	0.00	60.00	60.00	0.00
149	32.00	-16.60	0.00	60.00	60.00	0.00
150	33.00	-17.60	0.00	60.00	60.00	0.00
151	34.00	-18.60	0.00	60.00	60.00	0.00
152	35.00	-19.60	0.00	60.00	60.00	0.00
153	36.00	-20.60	0.00	60.00	60.00	0.00
154	37.00	-21.60	0.00	60.00	60.00	0.00
155	38.00	-22.60	0.00	60.00	60.00	0.00
156	39.00	-23.60	0.00	60.00	60.00	0.00

Drilled Shaft Capacity (sorted by shaft diameter):
==========
Strength reduction factors: Skin-friction = 1.00, End-bearing = 0.00

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	60.00	1.00	0.000	0.000	0.000
2	60.00	2.00	0.000	0.000	0.000
3	60.00	3.00	0.000	0.000	0.000
4	60.00	4.00	0.000	0.000	0.000
5	60.00	5.00	0.000	0.000	0.000
6	60.00	6.00	0.000	0.000	0.000
7	60.00	7.00	0.000	0.000	0.000
8	60.00	8.00	0.506	0.000	0.506
9	60.00	9.00	2.004	0.000	2.004
10	60.00	10.00	4.229	0.000	4.229
11	60.00	11.00	7.292	0.000	7.292
12	60.00	12.00	11.167	0.000	11.167
13	60.00	13.00	15.831	0.000	15.831
14	60.00	14.00	20.334	0.000	20.334
15	60.00	15.00	26.404	0.000	26.404
16	60.00	16.00	32.808	0.000	32.808
17	60.00	17.00	39.537	0.000	39.537
18	60.00	18.00	46.581	0.000	46.581
19	60.00	19.00	53.933	0.000	53.933
20	60.00	20.00	57.681	0.000	57.681
21	60.00	21.00	61.514	0.000	61.514
22	60.00	22.00	65.431	0.000	65.431
23	60.00	23.00	69.428	0.000	69.428
24	60.00	24.00	73.504	0.000	73.504
25	60.00	25.00	78.333	0.000	78.333
26	60.00	26.00	83.243	0.000	83.243
27	60.00	27.00	88.231	0.000	88.231
28	60.00	28.00	93.294	0.000	93.294
29	60.00	29.00	98.431	0.000	98.431
30	60.00	30.00	106.620	0.000	106.620
31	60.00	31.00	114.962	0.000	114.962
32	60.00	32.00	123.453	0.000	123.453
33	60.00	33.00	132.087	0.000	132.087
34	60.00	34.00	140.858	0.000	140.858
35	60.00	35.00	150.623	0.000	150.623
36	60.00	36.00	160.519	0.000	160.519
37	60.00	37.00	170.542	0.000	170.542
38	60.00	38.00	180.685	0.000	180.685
39	60.00	39.00	190.944	0.000	190.944

Drilled Shaft Capacity at User-Defined Settlement (sorted by shaft diameter):
==========
***** Capacity is NOT modified by the strength reduction factors *****

User-Defined Settlement = 5.00%

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	60.00	1.00	0.000	0.000	0.000
2	60.00	2.00	0.000	0.000	0.000
3	60.00	3.00	0.000	0.000	0.000
4	60.00	4.00	0.000	0.000	0.000
5	60.00	5.00	0.000	0.000	0.000
6	60.00	6.00	0.000	0.000	0.000
7	60.00	7.00	0.000	86.573	86.573
8	60.00	8.00	0.495	85.456	85.951
9	60.00	9.00	1.960	83.069	85.029
10	60.00	10.00	4.137	79.626	83.763
11	60.00	11.00	7.132	75.336	82.469
12	60.00	12.00	10.923	70.201	81.124
13	60.00	13.00	15.485	64.220	79.705
14	60.00	14.00	19.889	57.393	77.282
15	60.00	15.00	25.826	139.587	165.413
16	60.00	16.00	32.090	138.318	170.408
17	60.00	17.00	38.671	137.200	175.872
18	60.00	18.00	45.562	134.965	180.527
19	60.00	19.00	52.753	131.401	184.153
20	60.00	20.00	56.418	126.789	183.207

21	60.00	21.00	60.168	121.412	181.580
22	60.00	22.00	63.999	115.693	179.692
23	60.00	23.00	67.909	112.169	180.078
24	60.00	24.00	71.895	111.263	183.158
25	60.00	25.00	76.618	113.337	189.955
26	60.00	26.00	81.421	118.754	200.175
27	60.00	27.00	86.299	127.232	213.532
28	60.00	28.00	91.252	137.080	228.332
29	60.00	29.00	96.276	148.015	244.291
30	60.00	30.00	104.286	159.493	263.779
31	60.00	31.00	112.446	170.972	283.418
32	60.00	32.00	120.751	182.390	303.141
33	60.00	33.00	129.196	193.386	322.581
34	60.00	34.00	137.775	203.898	341.673
35	60.00	35.00	147.326	214.088	361.414
36	60.00	36.00	157.006	224.116	381.122
37	60.00	37.00	166.809	233.984	400.793
38	60.00	38.00	176.730	243.690	420.421
39	60.00	39.00	186.765	253.236	440.001

General Information:
==========
Input file: .....Street - AECOM\FB-Deep Runs\Drilled Shafts - 218144 - CC-3.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, PE
Units: English

Analysis Information:
==========
Analysis Type: Drilled Shaft Analysis

Soil Information:
==========
Boring date: 9/16/2018
Boring number: CC-3
Station number: Offset:

Ground Elevation: 11.60(ft)
Water table Elevation = 2.20(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	Elevation (ft)	SPT Blows (Blows/ft)	Unit Weight (pcf)	Soil Type
1	0.00	11.60	N/A	100.00	5- Cavity layer
2	1.00	10.60	N/A	110.00	5- Cavity layer
3	3.00	8.60	N/A	120.00	5- Cavity layer
4	5.00	6.60	N/A	120.00	5- Cavity layer
5	7.00	4.60	13.00	120.00	3- Clean sand
6	9.00	2.60	15.00	120.00	3- Clean sand
7	14.00	-2.40	13.00	120.00	3- Clean sand
8	19.00	-7.40	9.00	110.00	3- Clean sand
9	24.00	-12.40	11.00	115.00	3- Clean sand
10	29.00	-17.40	12.00	115.00	3- Clean sand
11	34.00	-22.40	23.00	115.00	3- Clean sand
12	39.00	-27.40	27.00	115.00	3- Clean sand
13	44.00	-32.40	24.00	115.00	3- Clean sand
14	49.00	-37.40	27.00	115.00	3- Clean sand

ID	Cu-DIR (tsf)	qu (tsf)	qt (tsf)	Em (ksi)	qb (tsf)
1	N/A	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A	N/A
12	N/A	N/A	N/A	N/A	N/A
13	N/A	N/A	N/A	N/A	N/A
14	N/A	N/A	N/A	N/A	N/A

ID	RQD F.M.	S.R.I.	Rock Recovery
1	N/A	N/A	N/A
2	N/A	N/A	N/A
3	N/A	N/A	N/A
4	N/A	N/A	N/A
5	N/A	N/A	N/A
6	N/A	N/A	N/A
7	N/A	N/A	N/A
8	N/A	N/A	N/A
9	N/A	N/A	N/A
10	N/A	N/A	N/A
11	N/A	N/A	N/A
12	N/A	N/A	N/A
13	N/A	N/A	N/A
14	N/A	N/A	N/A

Drilled Shaft Data:
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Shaft Geometry:

ID	Length (ft)	Tip Elev. (ft)	Case Len. (ft)	Diameter (in)	Base Diam. (in)	Bell Len. (ft)
1	1.00	10.60	0.00	42.00	42.00	0.00
2	2.00	9.60	0.00	42.00	42.00	0.00
3	3.00	8.60	0.00	42.00	42.00	0.00
4	4.00	7.60	0.00	42.00	42.00	0.00
5	5.00	6.60	0.00	42.00	42.00	0.00
6	6.00	5.60	0.00	42.00	42.00	0.00
7	7.00	4.60	0.00	42.00	42.00	0.00
8	8.00	3.60	0.00	42.00	42.00	0.00
9	9.00	2.60	0.00	42.00	42.00	0.00
10	10.00	1.60	0.00	42.00	42.00	0.00
11	11.00	0.60	0.00	42.00	42.00	0.00
12	12.00	-0.40	0.00	42.00	42.00	0.00
13	13.00	-1.40	0.00	42.00	42.00	0.00

14	14.00	-2.40	0.00	42.00	42.00	0.00
15	15.00	-3.40	0.00	42.00	42.00	0.00
16	16.00	-4.40	0.00	42.00	42.00	0.00
17	17.00	-5.40	0.00	42.00	42.00	0.00
18	18.00	-6.40	0.00	42.00	42.00	0.00
19	19.00	-7.40	0.00	42.00	42.00	0.00
20	20.00	-8.40	0.00	42.00	42.00	0.00
21	21.00	-9.40	0.00	42.00	42.00	0.00
22	22.00	-10.40	0.00	42.00	42.00	0.00
23	23.00	-11.40	0.00	42.00	42.00	0.00
24	24.00	-12.40	0.00	42.00	42.00	0.00
25	25.00	-13.40	0.00	42.00	42.00	0.00
26	26.00	-14.40	0.00	42.00	42.00	0.00
27	27.00	-15.40	0.00	42.00	42.00	0.00
28	28.00	-16.40	0.00	42.00	42.00	0.00
29	29.00	-17.40	0.00	42.00	42.00	0.00
30	30.00	-18.40	0.00	42.00	42.00	0.00
31	31.00	-19.40	0.00	42.00	42.00	0.00
32	32.00	-20.40	0.00	42.00	42.00	0.00
33	33.00	-21.40	0.00	42.00	42.00	0.00
34	34.00	-22.40	0.00	42.00	42.00	0.00
35	35.00	-23.40	0.00	42.00	42.00	0.00
36	36.00	-24.40	0.00	42.00	42.00	0.00
37	37.00	-25.40	0.00	42.00	42.00	0.00
38	38.00	-26.40	0.00	42.00	42.00	0.00
39	39.00	-27.40	0.00	42.00	42.00	0.00

Drilled Shaft Capacity (sorted by shaft diameter):
==========
Strength reduction factors: Skin-friction = 1.00, End-bearing = 0.00

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	42.00	1.00	0.000	0.000	0.000
2	42.00	2.00	0.000	0.000	0.000
3	42.00	3.00	0.000	0.000	0.000
4	42.00	4.00	0.000	0.000	0.000
5	42.00	5.00	0.000	0.000	0.000
6	42.00	6.00	0.000	0.000	0.000
7	42.00	7.00	0.000	0.000	0.000
8	42.00	8.00	0.373	0.000	0.373
9	42.00	9.00	1.475	0.000	1.475
10	42.00	10.00	3.152	0.000	3.152
11	42.00	11.00	5.134	0.000	5.134
12	42.00	12.00	7.414	0.000	7.414
13	42.00	13.00	9.984	0.000	9.984
14	42.00	14.00	12.834	0.000	12.834
15	42.00	15.00	15.987	0.000	15.987
16	42.00	16.00	19.394	0.000	19.394
17	42.00	17.00	23.047	0.000	23.047
18	42.00	18.00	26.940	0.000	26.940
19	42.00	19.00	31.066	0.000	31.066
20	42.00	20.00	34.263	0.000	34.263
21	42.00	21.00	37.581	0.000	37.581
22	42.00	22.00	41.016	0.000	41.016
23	42.00	23.00	44.566	0.000	44.566
24	42.00	24.00	48.226	0.000	48.226
25	42.00	25.00	52.822	0.000	52.822
26	42.00	26.00	57.560	0.000	57.560
27	42.00	27.00	62.436	0.000	62.436
28	42.00	28.00	67.445	0.000	67.445
29	42.00	29.00	72.584	0.000	72.584
30	42.00	30.00	78.306	0.000	78.306
31	42.00	31.00	84.154	0.000	84.154
32	42.00	32.00	90.123	0.000	90.123
33	42.00	33.00	96.210	0.000	96.210
34	42.00	34.00	102.410	0.000	102.410
35	42.00	35.00	108.751	0.000	108.751
36	42.00	36.00	115.193	0.000	115.193
37	42.00	37.00	121.730	0.000	121.730
38	42.00	38.00	128.360	0.000	128.360
39	42.00	39.00	135.079	0.000	135.079

Drilled Shaft Capacity at User-Defined Settlement (sorted by shaft diameter):
==========
***** Capacity is NOT modified by the strength reduction factors *****

User-Defined Settlement = 5.00%

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	42.00	1.00	0.000	0.000	0.000
2	42.00	2.00	0.000	0.000	0.000
3	42.00	3.00	0.000	0.000	0.000
4	42.00	4.00	0.000	0.000	0.000
5	42.00	5.00	0.000	0.000	0.000
6	42.00	6.00	0.000	0.000	0.000
7	42.00	7.00	0.000	49.733	49.733
8	42.00	8.00	0.365	49.276	49.641
9	42.00	9.00	1.443	47.906	49.349
10	42.00	10.00	3.083	45.978	49.060
11	42.00	11.00	5.022	43.846	48.868
12	42.00	12.00	7.252	41.512	48.764
13	42.00	13.00	9.765	89.870	99.635
14	42.00	14.00	12.553	87.333	99.886
15	42.00	15.00	15.638	84.487	100.124
16	42.00	16.00	18.970	81.949	100.919
17	42.00	17.00	22.543	79.750	102.293
18	42.00	18.00	26.350	77.839	104.189
19	42.00	19.00	30.386	76.164	106.550
20	42.00	20.00	33.513	74.904	108.417

21	42.00	21.00	36.758	74.346	111.104
22	42.00	22.00	40.118	74.498	114.616
23	42.00	23.00	43.590	75.868	119.458
24	42.00	24.00	47.170	78.964	126.134
25	42.00	25.00	51.666	83.539	135.205
26	42.00	26.00	56.300	89.020	145.320
27	42.00	27.00	61.069	95.381	156.450
28	42.00	28.00	65.969	102.265	168.234
29	42.00	29.00	70.996	109.319	180.315
30	42.00	30.00	76.592	116.750	193.342
31	42.00	31.00	82.312	124.819	207.130
32	42.00	32.00	88.150	133.530	221.681
33	42.00	33.00	94.104	142.530	236.634
34	42.00	34.00	100.169	151.461	251.630
35	42.00	35.00	106.371	159.826	266.197
36	42.00	36.00	112.671	166.576	279.247
37	42.00	37.00	119.066	171.667	290.733
38	42.00	38.00	125.551	175.406	300.956
39	42.00	39.00	132.122	178.095	310.218

General Information:
==========
Input file: .....Street - AECOM\FB-Deep Runs\Drilled Shafts - 218144 - CC-3.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, PE
Units: English

Analysis Information:
==========
Analysis Type: Drilled Shaft Analysis

Soil Information:
==========
Boring date: 9/16/2018
Boring number: CC-3
Station number: Offset:

Ground Elevation: 11.60(ft)
Water table Elevation = 2.20(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	Elevation (ft)	SPT Blows (Blows/ft)	Unit Weight (pcf)	Soil Type
1	0.00	11.60	N/A	100.00	5- Cavity layer
2	1.00	10.60	N/A	110.00	5- Cavity layer
3	3.00	8.60	N/A	120.00	5- Cavity layer
4	5.00	6.60	N/A	120.00	5- Cavity layer
5	7.00	4.60	13.00	120.00	3- Clean sand
6	9.00	2.60	15.00	120.00	3- Clean sand
7	14.00	-2.40	13.00	120.00	3- Clean sand
8	19.00	-7.40	9.00	110.00	3- Clean sand
9	24.00	-12.40	11.00	115.00	3- Clean sand
10	29.00	-17.40	12.00	115.00	3- Clean sand
11	34.00	-22.40	23.00	115.00	3- Clean sand
12	39.00	-27.40	27.00	115.00	3- Clean sand
13	44.00	-32.40	24.00	115.00	3- Clean sand
14	49.00	-37.40	27.00	115.00	3- Clean sand

ID	Cu-DIR (tsf)	qu (tsf)	qt (tsf)	Em (ksi)	qb (tsf)
1	N/A	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A	N/A
12	N/A	N/A	N/A	N/A	N/A
13	N/A	N/A	N/A	N/A	N/A
14	N/A	N/A	N/A	N/A	N/A

ID	RQD F.M.	S.R.I.	Rock Recovery
1	N/A	N/A	N/A
2	N/A	N/A	N/A
3	N/A	N/A	N/A
4	N/A	N/A	N/A
5	N/A	N/A	N/A
6	N/A	N/A	N/A
7	N/A	N/A	N/A
8	N/A	N/A	N/A
9	N/A	N/A	N/A
10	N/A	N/A	N/A
11	N/A	N/A	N/A
12	N/A	N/A	N/A
13	N/A	N/A	N/A
14	N/A	N/A	N/A

Drilled Shaft Data:
==========

Shaft Geometry:

ID	Length (ft)	Tip Elev. (ft)	Case Len. (ft)	Diameter (in)	Base Diam. (in)	Bell Len. (ft)
40	1.00	10.60	0.00	48.00	48.00	0.00
41	2.00	9.60	0.00	48.00	48.00	0.00
42	3.00	8.60	0.00	48.00	48.00	0.00
43	4.00	7.60	0.00	48.00	48.00	0.00
44	5.00	6.60	0.00	48.00	48.00	0.00
45	6.00	5.60	0.00	48.00	48.00	0.00
46	7.00	4.60	0.00	48.00	48.00	0.00
47	8.00	3.60	0.00	48.00	48.00	0.00
48	9.00	2.60	0.00	48.00	48.00	0.00
49	10.00	1.60	0.00	48.00	48.00	0.00
50	11.00	0.60	0.00	48.00	48.00	0.00
51	12.00	-0.40	0.00	48.00	48.00	0.00
52	13.00	-1.40	0.00	48.00	48.00	0.00

53	14.00	-2.40	0.00	48.00	48.00	0.00
54	15.00	-3.40	0.00	48.00	48.00	0.00
55	16.00	-4.40	0.00	48.00	48.00	0.00
56	17.00	-5.40	0.00	48.00	48.00	0.00
57	18.00	-6.40	0.00	48.00	48.00	0.00
58	19.00	-7.40	0.00	48.00	48.00	0.00
59	20.00	-8.40	0.00	48.00	48.00	0.00
60	21.00	-9.40	0.00	48.00	48.00	0.00
61	22.00	-10.40	0.00	48.00	48.00	0.00
62	23.00	-11.40	0.00	48.00	48.00	0.00
63	24.00	-12.40	0.00	48.00	48.00	0.00
64	25.00	-13.40	0.00	48.00	48.00	0.00
65	26.00	-14.40	0.00	48.00	48.00	0.00
66	27.00	-15.40	0.00	48.00	48.00	0.00
67	28.00	-16.40	0.00	48.00	48.00	0.00
68	29.00	-17.40	0.00	48.00	48.00	0.00
69	30.00	-18.40	0.00	48.00	48.00	0.00
70	31.00	-19.40	0.00	48.00	48.00	0.00
71	32.00	-20.40	0.00	48.00	48.00	0.00
72	33.00	-21.40	0.00	48.00	48.00	0.00
73	34.00	-22.40	0.00	48.00	48.00	0.00
74	35.00	-23.40	0.00	48.00	48.00	0.00
75	36.00	-24.40	0.00	48.00	48.00	0.00
76	37.00	-25.40	0.00	48.00	48.00	0.00
77	38.00	-26.40	0.00	48.00	48.00	0.00
78	39.00	-27.40	0.00	48.00	48.00	0.00

Drilled Shaft Capacity (sorted by shaft diameter):
==========
Strength reduction factors: Skin-friction = 1.00, End-bearing = 0.00

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	48.00	1.00	0.000	0.000	0.000
2	48.00	2.00	0.000	0.000	0.000
3	48.00	3.00	0.000	0.000	0.000
4	48.00	4.00	0.000	0.000	0.000
5	48.00	5.00	0.000	0.000	0.000
6	48.00	6.00	0.000	0.000	0.000
7	48.00	7.00	0.000	0.000	0.000
8	48.00	8.00	0.426	0.000	0.426
9	48.00	9.00	1.686	0.000	1.686
10	48.00	10.00	3.602	0.000	3.602
11	48.00	11.00	5.868	0.000	5.868
12	48.00	12.00	8.473	0.000	8.473
13	48.00	13.00	11.410	0.000	11.410
14	48.00	14.00	14.667	0.000	14.667
15	48.00	15.00	18.271	0.000	18.271
16	48.00	16.00	22.165	0.000	22.165
17	48.00	17.00	26.340	0.000	26.340
18	48.00	18.00	30.788	0.000	30.788
19	48.00	19.00	35.504	0.000	35.504
20	48.00	20.00	39.158	0.000	39.158
21	48.00	21.00	42.950	0.000	42.950
22	48.00	22.00	46.876	0.000	46.876
23	48.00	23.00	50.932	0.000	50.932
24	48.00	24.00	55.115	0.000	55.115
25	48.00	25.00	60.368	0.000	60.368
26	48.00	26.00	65.783	0.000	65.783
27	48.00	27.00	71.355	0.000	71.355
28	48.00	28.00	77.080	0.000	77.080
29	48.00	29.00	82.953	0.000	82.953
30	48.00	30.00	89.493	0.000	89.493
31	48.00	31.00	96.176	0.000	96.176
32	48.00	32.00	102.998	0.000	102.998
33	48.00	33.00	109.954	0.000	109.954
34	48.00	34.00	117.040	0.000	117.040
35	48.00	35.00	124.287	0.000	124.287
36	48.00	36.00	131.649	0.000	131.649
37	48.00	37.00	139.120	0.000	139.120
38	48.00	38.00	146.697	0.000	146.697
39	48.00	39.00	154.376	0.000	154.376

Drilled Shaft Capacity at User-Defined Settlement (sorted by shaft diameter):
==========
***** Capacity is NOT modified by the strength reduction factors *****

User-Defined Settlement = 5.00%

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	48.00	1.00	0.000	0.000	0.000
2	48.00	2.00	0.000	0.000	0.000
3	48.00	3.00	0.000	0.000	0.000
4	48.00	4.00	0.000	0.000	0.000
5	48.00	5.00	0.000	0.000	0.000
6	48.00	6.00	0.000	0.000	0.000
7	48.00	7.00	0.000	64.145	64.145
8	48.00	8.00	0.417	63.159	63.576
9	48.00	9.00	1.649	61.129	62.779
10	48.00	10.00	3.523	58.462	61.984
11	48.00	11.00	5.739	55.562	61.301
12	48.00	12.00	8.288	52.778	61.066
13	48.00	13.00	11.160	116.034	127.194
14	48.00	14.00	14.346	113.946	128.292
15	48.00	15.00	17.871	111.201	129.072
16	48.00	16.00	21.680	108.301	129.980
17	48.00	17.00	25.763	105.730	131.493
18	48.00	18.00	30.115	103.429	133.544
19	48.00	19.00	34.727	101.399	136.126
20	48.00	20.00	38.301	99.756	138.057

21	48.00	21.00	42.010	98.770	140.779
22	48.00	22.00	45.850	99.176	145.025
23	48.00	23.00	49.817	101.554	151.371
24	48.00	24.00	53.909	105.904	159.812
25	48.00	25.00	59.046	112.206	171.252
26	48.00	26.00	64.343	119.978	184.320
27	48.00	27.00	69.793	128.349	198.142
28	48.00	28.00	75.393	136.913	212.306
29	48.00	29.00	81.138	145.671	226.808
30	48.00	30.00	87.534	154.815	242.349
31	48.00	31.00	94.070	164.616	258.687
32	48.00	32.00	100.743	174.747	275.490
33	48.00	33.00	107.547	184.800	292.347
34	48.00	34.00	114.479	194.775	309.254
35	48.00	35.00	121.567	204.538	326.105
36	48.00	36.00	128.767	213.180	341.947
37	48.00	37.00	136.075	220.275	356.350
38	48.00	38.00	143.486	226.171	369.658
39	48.00	39.00	150.997	230.869	381.866

General Information:
==========
Input file: .....Street - AECOM\FB-Deep Runs\Drilled Shafts - 218144 - CC-3.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, PE
Units: English

Analysis Information:
==========
Analysis Type: Drilled Shaft Analysis

Soil Information:
==========
Boring date: 9/16/2018
Boring number: CC-3
Station number: Offset:

Ground Elevation: 11.60(ft)
Water table Elevation = 2.20(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	Elevation (ft)	SPT Blows (Blows/ft)	Unit Weight (pcf)	Soil Type
1	0.00	11.60	N/A	100.00	5- Cavity layer
2	1.00	10.60	N/A	110.00	5- Cavity layer
3	3.00	8.60	N/A	120.00	5- Cavity layer
4	5.00	6.60	N/A	120.00	5- Cavity layer
5	7.00	4.60	13.00	120.00	3- Clean sand
6	9.00	2.60	15.00	120.00	3- Clean sand
7	14.00	-2.40	13.00	120.00	3- Clean sand
8	19.00	-7.40	9.00	110.00	3- Clean sand
9	24.00	-12.40	11.00	115.00	3- Clean sand
10	29.00	-17.40	12.00	115.00	3- Clean sand
11	34.00	-22.40	23.00	115.00	3- Clean sand
12	39.00	-27.40	27.00	115.00	3- Clean sand
13	44.00	-32.40	24.00	115.00	3- Clean sand
14	49.00	-37.40	27.00	115.00	3- Clean sand

ID	Cu-DIR (tsf)	qu (tsf)	qt (tsf)	Em (ksi)	qb (tsf)
1	N/A	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A	N/A
12	N/A	N/A	N/A	N/A	N/A
13	N/A	N/A	N/A	N/A	N/A
14	N/A	N/A	N/A	N/A	N/A

ID	RQD F.M.	S.R.I.	Rock Recovery
1	N/A	N/A	N/A
2	N/A	N/A	N/A
3	N/A	N/A	N/A
4	N/A	N/A	N/A
5	N/A	N/A	N/A
6	N/A	N/A	N/A
7	N/A	N/A	N/A
8	N/A	N/A	N/A
9	N/A	N/A	N/A
10	N/A	N/A	N/A
11	N/A	N/A	N/A
12	N/A	N/A	N/A
13	N/A	N/A	N/A
14	N/A	N/A	N/A

Drilled Shaft Data:
==========

Shaft Geometry:

ID	Length (ft)	Tip Elev. (ft)	Case Len. (ft)	Diameter (in)	Base Diam. (in)	Bell Len. (ft)
79	1.00	10.60	0.00	54.00	54.00	0.00
80	2.00	9.60	0.00	54.00	54.00	0.00
81	3.00	8.60	0.00	54.00	54.00	0.00
82	4.00	7.60	0.00	54.00	54.00	0.00
83	5.00	6.60	0.00	54.00	54.00	0.00
84	6.00	5.60	0.00	54.00	54.00	0.00
85	7.00	4.60	0.00	54.00	54.00	0.00
86	8.00	3.60	0.00	54.00	54.00	0.00
87	9.00	2.60	0.00	54.00	54.00	0.00
88	10.00	1.60	0.00	54.00	54.00	0.00
89	11.00	0.60	0.00	54.00	54.00	0.00
90	12.00	-0.40	0.00	54.00	54.00	0.00
91	13.00	-1.40	0.00	54.00	54.00	0.00

92	14.00	-2.40	0.00	54.00	54.00	0.00
93	15.00	-3.40	0.00	54.00	54.00	0.00
94	16.00	-4.40	0.00	54.00	54.00	0.00
95	17.00	-5.40	0.00	54.00	54.00	0.00
96	18.00	-6.40	0.00	54.00	54.00	0.00
97	19.00	-7.40	0.00	54.00	54.00	0.00
98	20.00	-8.40	0.00	54.00	54.00	0.00
99	21.00	-9.40	0.00	54.00	54.00	0.00
100	22.00	-10.40	0.00	54.00	54.00	0.00
101	23.00	-11.40	0.00	54.00	54.00	0.00
102	24.00	-12.40	0.00	54.00	54.00	0.00
103	25.00	-13.40	0.00	54.00	54.00	0.00
104	26.00	-14.40	0.00	54.00	54.00	0.00
105	27.00	-15.40	0.00	54.00	54.00	0.00
106	28.00	-16.40	0.00	54.00	54.00	0.00
107	29.00	-17.40	0.00	54.00	54.00	0.00
108	30.00	-18.40	0.00	54.00	54.00	0.00
109	31.00	-19.40	0.00	54.00	54.00	0.00
110	32.00	-20.40	0.00	54.00	54.00	0.00
111	33.00	-21.40	0.00	54.00	54.00	0.00
112	34.00	-22.40	0.00	54.00	54.00	0.00
113	35.00	-23.40	0.00	54.00	54.00	0.00
114	36.00	-24.40	0.00	54.00	54.00	0.00
115	37.00	-25.40	0.00	54.00	54.00	0.00
116	38.00	-26.40	0.00	54.00	54.00	0.00
117	39.00	-27.40	0.00	54.00	54.00	0.00

Drilled Shaft Capacity (sorted by shaft diameter):
==========
Strength reduction factors: Skin-friction = 1.00, End-bearing = 0.00

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	54.00	1.00	0.000	0.000	0.000
2	54.00	2.00	0.000	0.000	0.000
3	54.00	3.00	0.000	0.000	0.000
4	54.00	4.00	0.000	0.000	0.000
5	54.00	5.00	0.000	0.000	0.000
6	54.00	6.00	0.000	0.000	0.000
7	54.00	7.00	0.000	0.000	0.000
8	54.00	8.00	0.479	0.000	0.479
9	54.00	9.00	1.897	0.000	1.897
10	54.00	10.00	4.052	0.000	4.052
11	54.00	11.00	6.601	0.000	6.601
12	54.00	12.00	9.533	0.000	9.533
13	54.00	13.00	12.836	0.000	12.836
14	54.00	14.00	16.501	0.000	16.501
15	54.00	15.00	20.555	0.000	20.555
16	54.00	16.00	24.935	0.000	24.935
17	54.00	17.00	29.632	0.000	29.632
18	54.00	18.00	34.637	0.000	34.637
19	54.00	19.00	39.942	0.000	39.942
20	54.00	20.00	44.053	0.000	44.053
21	54.00	21.00	48.318	0.000	48.318
22	54.00	22.00	52.735	0.000	52.735
23	54.00	23.00	57.299	0.000	57.299
24	54.00	24.00	62.004	0.000	62.004
25	54.00	25.00	67.914	0.000	67.914
26	54.00	26.00	74.005	0.000	74.005
27	54.00	27.00	80.274	0.000	80.274
28	54.00	28.00	86.715	0.000	86.715
29	54.00	29.00	93.323	0.000	93.323
30	54.00	30.00	100.679	0.000	100.679
31	54.00	31.00	108.198	0.000	108.198
32	54.00	32.00	115.872	0.000	115.872
33	54.00	33.00	123.698	0.000	123.698
34	54.00	34.00	131.670	0.000	131.670
35	54.00	35.00	139.823	0.000	139.823
36	54.00	36.00	148.105	0.000	148.105
37	54.00	37.00	156.510	0.000	156.510
38	54.00	38.00	165.034	0.000	165.034
39	54.00	39.00	173.673	0.000	173.673

Drilled Shaft Capacity at User-Defined Settlement (sorted by shaft diameter):
==========
***** Capacity is NOT modified by the strength reduction factors *****

User-Defined Settlement = 5.00%

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	54.00	1.00	0.000	0.000	0.000
2	54.00	2.00	0.000	0.000	0.000
3	54.00	3.00	0.000	0.000	0.000
4	54.00	4.00	0.000	0.000	0.000
5	54.00	5.00	0.000	0.000	0.000
6	54.00	6.00	0.000	0.000	0.000
7	54.00	7.00	0.000	73.947	73.947
8	54.00	8.00	0.469	72.437	72.905
9	54.00	9.00	1.855	69.839	71.694
10	54.00	10.00	3.963	66.576	70.540
11	54.00	11.00	6.457	63.435	69.891
12	54.00	12.00	9.324	60.777	70.101
13	54.00	13.00	12.555	58.602	71.157
14	54.00	14.00	16.140	133.208	149.348
15	54.00	15.00	20.105	131.194	151.300
16	54.00	16.00	24.389	128.430	152.820
17	54.00	17.00	28.983	125.631	154.615
18	54.00	18.00	33.879	123.114	156.993
19	54.00	19.00	39.068	120.879	159.946
20	54.00	20.00	43.088	119.046	162.134

21	54.00	21.00	47.261	118.351	165.612
22	54.00	22.00	51.581	119.620	171.201
23	54.00	23.00	56.044	122.943	178.987
24	54.00	24.00	60.647	128.320	188.967
25	54.00	25.00	66.427	135.730	202.158
26	54.00	26.00	72.386	144.702	217.088
27	54.00	27.00	78.517	154.147	232.664
28	54.00	28.00	84.817	163.793	248.610
29	54.00	29.00	91.280	173.640	264.920
30	54.00	30.00	98.476	183.891	282.366
31	54.00	31.00	105.829	194.327	300.156
32	54.00	32.00	113.336	204.638	317.974
33	54.00	33.00	120.991	214.868	335.859
34	54.00	34.00	128.788	225.017	353.806
35	54.00	35.00	136.763	234.946	371.708
36	54.00	36.00	144.863	244.823	389.686
37	54.00	37.00	153.084	253.905	406.990
38	54.00	38.00	161.422	261.739	423.161
39	54.00	39.00	169.871	268.324	438.196

General Information:
==========
Input file: .....Street - AECOM\FB-Deep Runs\Drilled Shafts - 218144 - CC-3.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, PE
Units: English

Analysis Information:
==========
Analysis Type: Drilled Shaft Analysis

Soil Information:
==========
Boring date: 9/16/2018
Boring number: CC-3
Station number: Offset:

Ground Elevation: 11.60(ft)
Water table Elevation = 2.20(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	Elevation (ft)	SPT Blows (Blows/ft)	Unit Weight (pcf)	Soil Type
1	0.00	11.60	N/A	100.00	5- Cavity layer
2	1.00	10.60	N/A	110.00	5- Cavity layer
3	3.00	8.60	N/A	120.00	5- Cavity layer
4	5.00	6.60	N/A	120.00	5- Cavity layer
5	7.00	4.60	13.00	120.00	3- Clean sand
6	9.00	2.60	15.00	120.00	3- Clean sand
7	14.00	-2.40	13.00	120.00	3- Clean sand
8	19.00	-7.40	9.00	110.00	3- Clean sand
9	24.00	-12.40	11.00	115.00	3- Clean sand
10	29.00	-17.40	12.00	115.00	3- Clean sand
11	34.00	-22.40	23.00	115.00	3- Clean sand
12	39.00	-27.40	27.00	115.00	3- Clean sand
13	44.00	-32.40	24.00	115.00	3- Clean sand
14	49.00	-37.40	27.00	115.00	3- Clean sand

ID	Cu-DIR (tsf)	qu (tsf)	qt (tsf)	Em (ksi)	qb (tsf)
1	N/A	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A	N/A
12	N/A	N/A	N/A	N/A	N/A
13	N/A	N/A	N/A	N/A	N/A
14	N/A	N/A	N/A	N/A	N/A

ID	RQD F.M.	S.R.I.	Rock Recovery
1	N/A	N/A	N/A
2	N/A	N/A	N/A
3	N/A	N/A	N/A
4	N/A	N/A	N/A
5	N/A	N/A	N/A
6	N/A	N/A	N/A
7	N/A	N/A	N/A
8	N/A	N/A	N/A
9	N/A	N/A	N/A
10	N/A	N/A	N/A
11	N/A	N/A	N/A
12	N/A	N/A	N/A
13	N/A	N/A	N/A
14	N/A	N/A	N/A

Drilled Shaft Data:
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Shaft Geometry:

ID	Length (ft)	Tip Elev. (ft)	Case Len. (ft)	Diameter (in)	Base Diam. (in)	Bell Len. (ft)
118	1.00	10.60	0.00	60.00	60.00	0.00
119	2.00	9.60	0.00	60.00	60.00	0.00
120	3.00	8.60	0.00	60.00	60.00	0.00
121	4.00	7.60	0.00	60.00	60.00	0.00
122	5.00	6.60	0.00	60.00	60.00	0.00
123	6.00	5.60	0.00	60.00	60.00	0.00
124	7.00	4.60	0.00	60.00	60.00	0.00
125	8.00	3.60	0.00	60.00	60.00	0.00
126	9.00	2.60	0.00	60.00	60.00	0.00
127	10.00	1.60	0.00	60.00	60.00	0.00
128	11.00	0.60	0.00	60.00	60.00	0.00
129	12.00	-0.40	0.00	60.00	60.00	0.00
130	13.00	-1.40	0.00	60.00	60.00	0.00

131	14.00	-2.40	0.00	60.00	60.00	0.00
132	15.00	-3.40	0.00	60.00	60.00	0.00
133	16.00	-4.40	0.00	60.00	60.00	0.00
134	17.00	-5.40	0.00	60.00	60.00	0.00
135	18.00	-6.40	0.00	60.00	60.00	0.00
136	19.00	-7.40	0.00	60.00	60.00	0.00
137	20.00	-8.40	0.00	60.00	60.00	0.00
138	21.00	-9.40	0.00	60.00	60.00	0.00
139	22.00	-10.40	0.00	60.00	60.00	0.00
140	23.00	-11.40	0.00	60.00	60.00	0.00
141	24.00	-12.40	0.00	60.00	60.00	0.00
142	25.00	-13.40	0.00	60.00	60.00	0.00
143	26.00	-14.40	0.00	60.00	60.00	0.00
144	27.00	-15.40	0.00	60.00	60.00	0.00
145	28.00	-16.40	0.00	60.00	60.00	0.00
146	29.00	-17.40	0.00	60.00	60.00	0.00
147	30.00	-18.40	0.00	60.00	60.00	0.00
148	31.00	-19.40	0.00	60.00	60.00	0.00
149	32.00	-20.40	0.00	60.00	60.00	0.00
150	33.00	-21.40	0.00	60.00	60.00	0.00
151	34.00	-22.40	0.00	60.00	60.00	0.00
152	35.00	-23.40	0.00	60.00	60.00	0.00
153	36.00	-24.40	0.00	60.00	60.00	0.00
154	37.00	-25.40	0.00	60.00	60.00	0.00
155	38.00	-26.40	0.00	60.00	60.00	0.00
156	39.00	-27.40	0.00	60.00	60.00	0.00

Drilled Shaft Capacity (sorted by shaft diameter):
==========
Strength reduction factors: Skin-friction = 1.00, End-bearing = 0.00

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	60.00	1.00	0.000	0.000	0.000
2	60.00	2.00	0.000	0.000	0.000
3	60.00	3.00	0.000	0.000	0.000
4	60.00	4.00	0.000	0.000	0.000
5	60.00	5.00	0.000	0.000	0.000
6	60.00	6.00	0.000	0.000	0.000
7	60.00	7.00	0.000	0.000	0.000
8	60.00	8.00	0.533	0.000	0.533
9	60.00	9.00	2.108	0.000	2.108
10	60.00	10.00	4.502	0.000	4.502
11	60.00	11.00	7.334	0.000	7.334
12	60.00	12.00	10.592	0.000	10.592
13	60.00	13.00	14.262	0.000	14.262
14	60.00	14.00	18.334	0.000	18.334
15	60.00	15.00	22.839	0.000	22.839
16	60.00	16.00	27.706	0.000	27.706
17	60.00	17.00	32.924	0.000	32.924
18	60.00	18.00	38.486	0.000	38.486
19	60.00	19.00	44.380	0.000	44.380
20	60.00	20.00	48.947	0.000	48.947
21	60.00	21.00	53.687	0.000	53.687
22	60.00	22.00	58.595	0.000	58.595
23	60.00	23.00	63.665	0.000	63.665
24	60.00	24.00	68.894	0.000	68.894
25	60.00	25.00	75.460	0.000	75.460
26	60.00	26.00	82.228	0.000	82.228
27	60.00	27.00	89.194	0.000	89.194
28	60.00	28.00	96.350	0.000	96.350
29	60.00	29.00	103.692	0.000	103.692
30	60.00	30.00	111.866	0.000	111.866
31	60.00	31.00	120.219	0.000	120.219
32	60.00	32.00	128.747	0.000	128.747
33	60.00	33.00	137.443	0.000	137.443
34	60.00	34.00	146.300	0.000	146.300
35	60.00	35.00	155.359	0.000	155.359
36	60.00	36.00	164.561	0.000	164.561
37	60.00	37.00	173.900	0.000	173.900
38	60.00	38.00	183.372	0.000	183.372
39	60.00	39.00	192.970	0.000	192.970

Drilled Shaft Capacity at User-Defined Settlement (sorted by shaft diameter):
==========
***** Capacity is NOT modified by the strength reduction factors *****

User-Defined Settlement = 5.00%

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	60.00	1.00	0.000	0.000	0.000
2	60.00	2.00	0.000	0.000	0.000
3	60.00	3.00	0.000	0.000	0.000
4	60.00	4.00	0.000	0.000	0.000
5	60.00	5.00	0.000	0.000	0.000
6	60.00	6.00	0.000	0.000	0.000
7	60.00	7.00	0.000	80.592	80.592
8	60.00	8.00	0.521	78.599	79.120
9	60.00	9.00	2.062	75.518	77.579
10	60.00	10.00	4.404	72.134	76.538
11	60.00	11.00	7.174	69.235	76.408
12	60.00	12.00	10.360	66.818	77.178
13	60.00	13.00	13.950	64.885	78.835
14	60.00	14.00	17.933	63.435	81.368
15	60.00	15.00	22.339	146.283	168.622
16	60.00	16.00	27.099	144.209	171.308
17	60.00	17.00	32.204	141.429	173.633
18	60.00	18.00	37.643	138.791	176.435
19	60.00	19.00	43.409	136.435	179.844
20	60.00	20.00	47.876	135.086	182.962

21	60.00	21.00	52.512	135.469	187.981
22	60.00	22.00	57.312	137.623	194.935
23	60.00	23.00	62.272	141.792	204.064
24	60.00	24.00	67.386	148.015	215.401
25	60.00	25.00	73.808	155.848	229.656
26	60.00	26.00	80.429	164.850	245.279
27	60.00	27.00	87.242	174.899	262.140
28	60.00	28.00	94.241	185.270	279.511
29	60.00	29.00	101.422	195.842	297.265
30	60.00	30.00	109.417	206.395	315.812
31	60.00	31.00	117.588	216.705	334.294
32	60.00	32.00	125.929	226.795	352.724
33	60.00	33.00	134.434	236.783	371.217
34	60.00	34.00	143.098	246.691	389.789
35	60.00	35.00	151.959	256.740	408.699
36	60.00	36.00	160.959	267.151	428.110
37	60.00	37.00	170.094	277.724	447.818
38	60.00	38.00	179.358	287.249	466.607
39	60.00	39.00	188.746	295.526	484.272

General Information:
==========
Input file: .....Street - AECOM\FB-Deep Runs\Drilled Shafts - 218144 - CC-4.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, PE
Units: English

Analysis Information:
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Analysis Type: Drilled Shaft Analysis

Soil Information:
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Boring date: 9/17/2018
Boring number: CC-4
Station number: Offset:

Ground Elevation: 5.50(ft)
Water table Elevation = 2.20(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	Elevation (ft)	SPT Blows (Blows/ft)	Unit Weight (pcf)	Soil Type
1	0.00	5.50	N/A	100.00	5- Cavity layer
2	1.00	4.50	N/A	110.00	5- Cavity layer
3	3.00	2.50	N/A	120.00	5- Cavity layer
4	5.00	0.50	N/A	120.00	5- Cavity layer
5	7.00	-1.50	9.00	110.00	3- Clean sand
6	9.00	-3.50	10.00	110.00	3- Clean sand
7	14.00	-8.50	9.00	110.00	3- Clean sand
8	19.00	-13.50	8.00	110.00	3- Clean sand
9	24.00	-18.50	10.00	110.00	3- Clean sand
10	29.00	-23.50	12.00	115.00	3- Clean sand
11	34.00	-28.50	26.00	115.00	3- Clean sand
12	39.00	-33.50	30.00	115.00	3- Clean sand
13	44.00	-38.50	31.00	115.00	3- Clean sand
14	49.00	-43.50	27.00	115.00	3- Clean sand

ID	Cu-DIR (tsf)	qu (tsf)	qt (tsf)	Em (ksi)	qb (tsf)
1	N/A	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A	N/A
12	N/A	N/A	N/A	N/A	N/A
13	N/A	N/A	N/A	N/A	N/A
14	N/A	N/A	N/A	N/A	N/A

ID	RQD F.M.	S.R.I.	Rock Recovery
1	N/A	N/A	N/A
2	N/A	N/A	N/A
3	N/A	N/A	N/A
4	N/A	N/A	N/A
5	N/A	N/A	N/A
6	N/A	N/A	N/A
7	N/A	N/A	N/A
8	N/A	N/A	N/A
9	N/A	N/A	N/A
10	N/A	N/A	N/A
11	N/A	N/A	N/A
12	N/A	N/A	N/A
13	N/A	N/A	N/A
14	N/A	N/A	N/A

Drilled Shaft Data:
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Shaft Geometry:

ID	Length (ft)	Tip Elev. (ft)	Case Len. (ft)	Diameter (in)	Base Diam. (in)	Bell Len. (ft)
1	1.00	4.50	0.00	42.00	42.00	0.00
2	2.00	3.50	0.00	42.00	42.00	0.00
3	3.00	2.50	0.00	42.00	42.00	0.00
4	4.00	1.50	0.00	42.00	42.00	0.00
5	5.00	0.50	0.00	42.00	42.00	0.00
6	6.00	-0.50	0.00	42.00	42.00	0.00
7	7.00	-1.50	0.00	42.00	42.00	0.00
8	8.00	-2.50	0.00	42.00	42.00	0.00
9	9.00	-3.50	0.00	42.00	42.00	0.00
10	10.00	-4.50	0.00	42.00	42.00	0.00
11	11.00	-5.50	0.00	42.00	42.00	0.00
12	12.00	-6.50	0.00	42.00	42.00	0.00
13	13.00	-7.50	0.00	42.00	42.00	0.00

14	14.00	-8.50	0.00	42.00	42.00	0.00
15	15.00	-9.50	0.00	42.00	42.00	0.00
16	16.00	-10.50	0.00	42.00	42.00	0.00
17	17.00	-11.50	0.00	42.00	42.00	0.00
18	18.00	-12.50	0.00	42.00	42.00	0.00
19	19.00	-13.50	0.00	42.00	42.00	0.00
20	20.00	-14.50	0.00	42.00	42.00	0.00
21	21.00	-15.50	0.00	42.00	42.00	0.00
22	22.00	-16.50	0.00	42.00	42.00	0.00
23	23.00	-17.50	0.00	42.00	42.00	0.00
24	24.00	-18.50	0.00	42.00	42.00	0.00
25	25.00	-19.50	0.00	42.00	42.00	0.00
26	26.00	-20.50	0.00	42.00	42.00	0.00
27	27.00	-21.50	0.00	42.00	42.00	0.00
28	28.00	-22.50	0.00	42.00	42.00	0.00
29	29.00	-23.50	0.00	42.00	42.00	0.00
30	30.00	-24.50	0.00	42.00	42.00	0.00
31	31.00	-25.50	0.00	42.00	42.00	0.00
32	32.00	-26.50	0.00	42.00	42.00	0.00
33	33.00	-27.50	0.00	42.00	42.00	0.00
34	34.00	-28.50	0.00	42.00	42.00	0.00
35	35.00	-29.50	0.00	42.00	42.00	0.00
36	36.00	-30.50	0.00	42.00	42.00	0.00
37	37.00	-31.50	0.00	42.00	42.00	0.00
38	38.00	-32.50	0.00	42.00	42.00	0.00
39	39.00	-33.50	0.00	42.00	42.00	0.00

Drilled Shaft Capacity (sorted by shaft diameter):
==========
Strength reduction factors: Skin-friction = 1.00, End-bearing = 0.00

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	42.00	1.00	0.000	0.000	0.000
2	42.00	2.00	0.000	0.000	0.000
3	42.00	3.00	0.000	0.000	0.000
4	42.00	4.00	0.000	0.000	0.000
5	42.00	5.00	0.000	0.000	0.000
6	42.00	6.00	0.000	0.000	0.000
7	42.00	7.00	0.000	0.000	0.000
8	42.00	8.00	0.110	0.000	0.110
9	42.00	9.00	0.435	0.000	0.435
10	42.00	10.00	1.022	0.000	1.022
11	42.00	11.00	1.828	0.000	1.828
12	42.00	12.00	2.849	0.000	2.849
13	42.00	13.00	4.078	0.000	4.078
14	42.00	14.00	5.508	0.000	5.508
15	42.00	15.00	6.948	0.000	6.948
16	42.00	16.00	8.552	0.000	8.552
17	42.00	17.00	10.317	0.000	10.317
18	42.00	18.00	12.237	0.000	12.237
19	42.00	19.00	14.309	0.000	14.309
20	42.00	20.00	16.265	0.000	16.265
21	42.00	21.00	18.342	0.000	18.342
22	42.00	22.00	20.539	0.000	20.539
23	42.00	23.00	22.851	0.000	22.851
24	42.00	24.00	25.276	0.000	25.276
25	42.00	25.00	28.425	0.000	28.425
26	42.00	26.00	31.701	0.000	31.701
27	42.00	27.00	35.101	0.000	35.101
28	42.00	28.00	38.620	0.000	38.620
29	42.00	29.00	42.257	0.000	42.257
30	42.00	30.00	46.746	0.000	46.746
31	42.00	31.00	51.381	0.000	51.381
32	42.00	32.00	56.157	0.000	56.157
33	42.00	33.00	61.070	0.000	61.070
34	42.00	34.00	66.116	0.000	66.116
35	42.00	35.00	71.311	0.000	71.311
36	42.00	36.00	76.625	0.000	76.625
37	42.00	37.00	82.054	0.000	82.054
38	42.00	38.00	87.593	0.000	87.593
39	42.00	39.00	93.239	0.000	93.239

Drilled Shaft Capacity at User-Defined Settlement (sorted by shaft diameter):
==========
***** Capacity is NOT modified by the strength reduction factors *****

User-Defined Settlement = 5.00%

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	42.00	1.00	0.000	0.000	0.000
2	42.00	2.00	0.000	0.000	0.000
3	42.00	3.00	0.000	0.000	0.000
4	42.00	4.00	0.000	0.000	0.000
5	42.00	5.00	0.000	0.000	0.000
6	42.00	6.00	0.000	0.000	0.000
7	42.00	7.00	0.000	33.747	33.747
8	42.00	8.00	0.108	33.570	33.677
9	42.00	9.00	0.426	33.037	33.463
10	42.00	10.00	0.999	32.326	33.326
11	42.00	11.00	1.788	31.616	33.404
12	42.00	12.00	2.787	30.905	33.692
13	42.00	13.00	3.988	64.524	68.512
14	42.00	14.00	5.388	63.915	69.303
15	42.00	15.00	6.796	63.270	70.066
16	42.00	16.00	8.365	62.915	71.280
17	42.00	17.00	10.091	62.864	72.955
18	42.00	18.00	11.969	63.118	75.087
19	42.00	19.00	13.996	63.676	77.672
20	42.00	20.00	15.909	64.589	80.498

21	42.00	21.00	17.941	65.909	83.850
22	42.00	22.00	20.089	67.634	87.723
23	42.00	23.00	22.351	70.375	92.726
24	42.00	24.00	24.723	74.739	99.462
25	42.00	25.00	27.803	80.613	108.416
26	42.00	26.00	31.007	87.718	118.725
27	42.00	27.00	34.333	96.040	130.373
28	42.00	28.00	37.775	105.073	142.849
29	42.00	29.00	41.332	114.310	155.641
30	42.00	30.00	45.722	123.952	169.674
31	42.00	31.00	50.256	134.203	184.459
32	42.00	32.00	54.928	145.063	199.990
33	42.00	33.00	59.733	156.380	216.113
34	42.00	34.00	64.669	168.001	232.670
35	42.00	35.00	69.750	179.301	249.051
36	42.00	36.00	74.948	188.994	263.942
37	42.00	37.00	80.258	197.029	277.286
38	42.00	38.00	85.676	203.152	288.828
39	42.00	39.00	91.198	207.111	298.309

General Information:
==========
Input file: .....Street - AECOM\FB-Deep Runs\Drilled Shafts - 218144 - CC-4.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, PE
Units: English

Analysis Information:
==========
Analysis Type: Drilled Shaft Analysis

Soil Information:
==========
Boring date: 9/17/2018
Boring number: CC-4
Station number: Offset:

Ground Elevation: 5.50(ft)
Water table Elevation = 2.20(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	Elevation (ft)	SPT Blows (Blows/ft)	Unit Weight (pcf)	Soil Type
1	0.00	5.50	N/A	100.00	5- Cavity layer
2	1.00	4.50	N/A	110.00	5- Cavity layer
3	3.00	2.50	N/A	120.00	5- Cavity layer
4	5.00	0.50	N/A	120.00	5- Cavity layer
5	7.00	-1.50	9.00	110.00	3- Clean sand
6	9.00	-3.50	10.00	110.00	3- Clean sand
7	14.00	-8.50	9.00	110.00	3- Clean sand
8	19.00	-13.50	8.00	110.00	3- Clean sand
9	24.00	-18.50	10.00	110.00	3- Clean sand
10	29.00	-23.50	12.00	115.00	3- Clean sand
11	34.00	-28.50	26.00	115.00	3- Clean sand
12	39.00	-33.50	30.00	115.00	3- Clean sand
13	44.00	-38.50	31.00	115.00	3- Clean sand
14	49.00	-43.50	27.00	115.00	3- Clean sand

ID	Cu-DIR (tsf)	qu (tsf)	qt (tsf)	Em (ksi)	qb (tsf)
1	N/A	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A	N/A
12	N/A	N/A	N/A	N/A	N/A
13	N/A	N/A	N/A	N/A	N/A
14	N/A	N/A	N/A	N/A	N/A

ID	RQD F.M.	S.R.I.	Rock Recovery
1	N/A	N/A	N/A
2	N/A	N/A	N/A
3	N/A	N/A	N/A
4	N/A	N/A	N/A
5	N/A	N/A	N/A
6	N/A	N/A	N/A
7	N/A	N/A	N/A
8	N/A	N/A	N/A
9	N/A	N/A	N/A
10	N/A	N/A	N/A
11	N/A	N/A	N/A
12	N/A	N/A	N/A
13	N/A	N/A	N/A
14	N/A	N/A	N/A

Drilled Shaft Data:
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Shaft Geometry:

ID	Length (ft)	Tip Elev. (ft)	Case Len. (ft)	Diameter (in)	Base Diam. (in)	Bell Len. (ft)
40	1.00	4.50	0.00	48.00	48.00	0.00
41	2.00	3.50	0.00	48.00	48.00	0.00
42	3.00	2.50	0.00	48.00	48.00	0.00
43	4.00	1.50	0.00	48.00	48.00	0.00
44	5.00	0.50	0.00	48.00	48.00	0.00
45	6.00	-0.50	0.00	48.00	48.00	0.00
46	7.00	-1.50	0.00	48.00	48.00	0.00
47	8.00	-2.50	0.00	48.00	48.00	0.00
48	9.00	-3.50	0.00	48.00	48.00	0.00
49	10.00	-4.50	0.00	48.00	48.00	0.00
50	11.00	-5.50	0.00	48.00	48.00	0.00
51	12.00	-6.50	0.00	48.00	48.00	0.00
52	13.00	-7.50	0.00	48.00	48.00	0.00

53	14.00	-8.50	0.00	48.00	48.00	0.00
54	15.00	-9.50	0.00	48.00	48.00	0.00
55	16.00	-10.50	0.00	48.00	48.00	0.00
56	17.00	-11.50	0.00	48.00	48.00	0.00
57	18.00	-12.50	0.00	48.00	48.00	0.00
58	19.00	-13.50	0.00	48.00	48.00	0.00
59	20.00	-14.50	0.00	48.00	48.00	0.00
60	21.00	-15.50	0.00	48.00	48.00	0.00
61	22.00	-16.50	0.00	48.00	48.00	0.00
62	23.00	-17.50	0.00	48.00	48.00	0.00
63	24.00	-18.50	0.00	48.00	48.00	0.00
64	25.00	-19.50	0.00	48.00	48.00	0.00
65	26.00	-20.50	0.00	48.00	48.00	0.00
66	27.00	-21.50	0.00	48.00	48.00	0.00
67	28.00	-22.50	0.00	48.00	48.00	0.00
68	29.00	-23.50	0.00	48.00	48.00	0.00
69	30.00	-24.50	0.00	48.00	48.00	0.00
70	31.00	-25.50	0.00	48.00	48.00	0.00
71	32.00	-26.50	0.00	48.00	48.00	0.00
72	33.00	-27.50	0.00	48.00	48.00	0.00
73	34.00	-28.50	0.00	48.00	48.00	0.00
74	35.00	-29.50	0.00	48.00	48.00	0.00
75	36.00	-30.50	0.00	48.00	48.00	0.00
76	37.00	-31.50	0.00	48.00	48.00	0.00
77	38.00	-32.50	0.00	48.00	48.00	0.00
78	39.00	-33.50	0.00	48.00	48.00	0.00

Drilled Shaft Capacity (sorted by shaft diameter):
==========
Strength reduction factors: Skin-friction = 1.00, End-bearing = 0.00

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	48.00	1.00	0.000	0.000	0.000
2	48.00	2.00	0.000	0.000	0.000
3	48.00	3.00	0.000	0.000	0.000
4	48.00	4.00	0.000	0.000	0.000
5	48.00	5.00	0.000	0.000	0.000
6	48.00	6.00	0.000	0.000	0.000
7	48.00	7.00	0.000	0.000	0.000
8	48.00	8.00	0.126	0.000	0.126
9	48.00	9.00	0.498	0.000	0.498
10	48.00	10.00	1.168	0.000	1.168
11	48.00	11.00	2.089	0.000	2.089
12	48.00	12.00	3.256	0.000	3.256
13	48.00	13.00	4.660	0.000	4.660
14	48.00	14.00	6.295	0.000	6.295
15	48.00	15.00	7.941	0.000	7.941
16	48.00	16.00	9.774	0.000	9.774
17	48.00	17.00	11.791	0.000	11.791
18	48.00	18.00	13.985	0.000	13.985
19	48.00	19.00	16.353	0.000	16.353
20	48.00	20.00	18.588	0.000	18.588
21	48.00	21.00	20.963	0.000	20.963
22	48.00	22.00	23.473	0.000	23.473
23	48.00	23.00	26.116	0.000	26.116
24	48.00	24.00	28.887	0.000	28.887
25	48.00	25.00	32.486	0.000	32.486
26	48.00	26.00	36.230	0.000	36.230
27	48.00	27.00	40.115	0.000	40.115
28	48.00	28.00	44.138	0.000	44.138
29	48.00	29.00	48.293	0.000	48.293
30	48.00	30.00	53.424	0.000	53.424
31	48.00	31.00	58.721	0.000	58.721
32	48.00	32.00	64.179	0.000	64.179
33	48.00	33.00	69.794	0.000	69.794
34	48.00	34.00	75.561	0.000	75.561
35	48.00	35.00	81.499	0.000	81.499
36	48.00	36.00	87.572	0.000	87.572
37	48.00	37.00	93.776	0.000	93.776
38	48.00	38.00	100.106	0.000	100.106
39	48.00	39.00	106.559	0.000	106.559

Drilled Shaft Capacity at User-Defined Settlement (sorted by shaft diameter):
==========
***** Capacity is NOT modified by the strength reduction factors *****

User-Defined Settlement = 5.00%

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	48.00	1.00	0.000	0.000	0.000
2	48.00	2.00	0.000	0.000	0.000
3	48.00	3.00	0.000	0.000	0.000
4	48.00	4.00	0.000	0.000	0.000
5	48.00	5.00	0.000	0.000	0.000
6	48.00	6.00	0.000	0.000	0.000
7	48.00	7.00	0.000	43.730	43.730
8	48.00	8.00	0.123	43.411	43.534
9	48.00	9.00	0.487	42.686	43.173
10	48.00	10.00	1.142	41.758	42.900
11	48.00	11.00	2.044	40.830	42.874
12	48.00	12.00	3.185	40.076	43.261
13	48.00	13.00	4.558	84.058	88.616
14	48.00	14.00	6.157	83.884	90.041
15	48.00	15.00	7.767	83.516	91.283
16	48.00	16.00	9.560	83.227	92.787
17	48.00	17.00	11.533	83.285	94.817
18	48.00	18.00	13.679	83.690	97.370
19	48.00	19.00	15.995	84.444	100.440
20	48.00	20.00	18.181	85.604	103.786

21	48.00	21.00	20.504	87.228	107.732
22	48.00	22.00	22.959	90.012	112.971
23	48.00	23.00	25.544	94.652	120.196
24	48.00	24.00	28.255	101.148	129.402
25	48.00	25.00	31.775	109.499	141.274
26	48.00	26.00	35.437	119.475	154.912
27	48.00	27.00	39.237	130.263	169.500
28	48.00	28.00	43.172	141.282	184.454
29	48.00	29.00	47.236	152.534	199.770
30	48.00	30.00	52.254	164.249	216.503
31	48.00	31.00	57.435	176.661	234.096
32	48.00	32.00	62.774	189.594	252.368
33	48.00	33.00	68.267	202.875	271.142
34	48.00	34.00	73.907	216.505	290.412
35	48.00	35.00	79.715	230.289	310.004
36	48.00	36.00	85.655	243.106	328.761
37	48.00	37.00	91.723	253.739	345.463
38	48.00	38.00	97.915	261.898	359.813
39	48.00	39.00	104.227	267.581	371.808

General Information:
==========
Input file: .....Street - AECOM\FB-Deep Runs\Drilled Shafts - 218144 - CC-4.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, PE
Units: English

Analysis Information:
==========
Analysis Type: Drilled Shaft Analysis

Soil Information:
==========
Boring date: 9/17/2018
Boring number: CC-4
Station number: Offset:

Ground Elevation: 5.50(ft)
Water table Elevation = 2.20(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	Elevation (ft)	SPT Blows (Blows/ft)	Unit Weight (pcf)	Soil Type
1	0.00	5.50	N/A	100.00	5- Cavity layer
2	1.00	4.50	N/A	110.00	5- Cavity layer
3	3.00	2.50	N/A	120.00	5- Cavity layer
4	5.00	0.50	N/A	120.00	5- Cavity layer
5	7.00	-1.50	9.00	110.00	3- Clean sand
6	9.00	-3.50	10.00	110.00	3- Clean sand
7	14.00	-8.50	9.00	110.00	3- Clean sand
8	19.00	-13.50	8.00	110.00	3- Clean sand
9	24.00	-18.50	10.00	110.00	3- Clean sand
10	29.00	-23.50	12.00	115.00	3- Clean sand
11	34.00	-28.50	26.00	115.00	3- Clean sand
12	39.00	-33.50	30.00	115.00	3- Clean sand
13	44.00	-38.50	31.00	115.00	3- Clean sand
14	49.00	-43.50	27.00	115.00	3- Clean sand

ID	Cu-DIR (tsf)	qu (tsf)	qt (tsf)	Em (ksi)	qb (tsf)
1	N/A	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A	N/A
12	N/A	N/A	N/A	N/A	N/A
13	N/A	N/A	N/A	N/A	N/A
14	N/A	N/A	N/A	N/A	N/A

ID	RQD F.M.	S.R.I.	Rock Recovery
1	N/A	N/A	N/A
2	N/A	N/A	N/A
3	N/A	N/A	N/A
4	N/A	N/A	N/A
5	N/A	N/A	N/A
6	N/A	N/A	N/A
7	N/A	N/A	N/A
8	N/A	N/A	N/A
9	N/A	N/A	N/A
10	N/A	N/A	N/A
11	N/A	N/A	N/A
12	N/A	N/A	N/A
13	N/A	N/A	N/A
14	N/A	N/A	N/A

Drilled Shaft Data:
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Shaft Geometry:

ID	Length (ft)	Tip Elev. (ft)	Case Len. (ft)	Diameter (in)	Base Diam. (in)	Bell Len. (ft)
79	1.00	4.50	0.00	54.00	54.00	0.00
80	2.00	3.50	0.00	54.00	54.00	0.00
81	3.00	2.50	0.00	54.00	54.00	0.00
82	4.00	1.50	0.00	54.00	54.00	0.00
83	5.00	0.50	0.00	54.00	54.00	0.00
84	6.00	-0.50	0.00	54.00	54.00	0.00
85	7.00	-1.50	0.00	54.00	54.00	0.00
86	8.00	-2.50	0.00	54.00	54.00	0.00
87	9.00	-3.50	0.00	54.00	54.00	0.00
88	10.00	-4.50	0.00	54.00	54.00	0.00
89	11.00	-5.50	0.00	54.00	54.00	0.00
90	12.00	-6.50	0.00	54.00	54.00	0.00
91	13.00	-7.50	0.00	54.00	54.00	0.00

92	14.00	-8.50	0.00	54.00	54.00	0.00
93	15.00	-9.50	0.00	54.00	54.00	0.00
94	16.00	-10.50	0.00	54.00	54.00	0.00
95	17.00	-11.50	0.00	54.00	54.00	0.00
96	18.00	-12.50	0.00	54.00	54.00	0.00
97	19.00	-13.50	0.00	54.00	54.00	0.00
98	20.00	-14.50	0.00	54.00	54.00	0.00
99	21.00	-15.50	0.00	54.00	54.00	0.00
100	22.00	-16.50	0.00	54.00	54.00	0.00
101	23.00	-17.50	0.00	54.00	54.00	0.00
102	24.00	-18.50	0.00	54.00	54.00	0.00
103	25.00	-19.50	0.00	54.00	54.00	0.00
104	26.00	-20.50	0.00	54.00	54.00	0.00
105	27.00	-21.50	0.00	54.00	54.00	0.00
106	28.00	-22.50	0.00	54.00	54.00	0.00
107	29.00	-23.50	0.00	54.00	54.00	0.00
108	30.00	-24.50	0.00	54.00	54.00	0.00
109	31.00	-25.50	0.00	54.00	54.00	0.00
110	32.00	-26.50	0.00	54.00	54.00	0.00
111	33.00	-27.50	0.00	54.00	54.00	0.00
112	34.00	-28.50	0.00	54.00	54.00	0.00
113	35.00	-29.50	0.00	54.00	54.00	0.00
114	36.00	-30.50	0.00	54.00	54.00	0.00
115	37.00	-31.50	0.00	54.00	54.00	0.00
116	38.00	-32.50	0.00	54.00	54.00	0.00
117	39.00	-33.50	0.00	54.00	54.00	0.00

Drilled Shaft Capacity (sorted by shaft diameter):
==========
Strength reduction factors: Skin-friction = 1.00, End-bearing = 0.00

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	54.00	1.00	0.000	0.000	0.000
2	54.00	2.00	0.000	0.000	0.000
3	54.00	3.00	0.000	0.000	0.000
4	54.00	4.00	0.000	0.000	0.000
5	54.00	5.00	0.000	0.000	0.000
6	54.00	6.00	0.000	0.000	0.000
7	54.00	7.00	0.000	0.000	0.000
8	54.00	8.00	0.141	0.000	0.141
9	54.00	9.00	0.560	0.000	0.560
10	54.00	10.00	1.314	0.000	1.314
11	54.00	11.00	2.351	0.000	2.351
12	54.00	12.00	3.663	0.000	3.663
13	54.00	13.00	5.243	0.000	5.243
14	54.00	14.00	7.082	0.000	7.082
15	54.00	15.00	8.933	0.000	8.933
16	54.00	16.00	10.996	0.000	10.996
17	54.00	17.00	13.264	0.000	13.264
18	54.00	18.00	15.734	0.000	15.734
19	54.00	19.00	18.398	0.000	18.398
20	54.00	20.00	20.912	0.000	20.912
21	54.00	21.00	23.583	0.000	23.583
22	54.00	22.00	26.407	0.000	26.407
23	54.00	23.00	29.380	0.000	29.380
24	54.00	24.00	32.498	0.000	32.498
25	54.00	25.00	36.546	0.000	36.546
26	54.00	26.00	40.759	0.000	40.759
27	54.00	27.00	45.130	0.000	45.130
28	54.00	28.00	49.655	0.000	49.655
29	54.00	29.00	54.330	0.000	54.330
30	54.00	30.00	60.102	0.000	60.102
31	54.00	31.00	66.061	0.000	66.061
32	54.00	32.00	72.202	0.000	72.202
33	54.00	33.00	78.519	0.000	78.519
34	54.00	34.00	85.006	0.000	85.006
35	54.00	35.00	91.686	0.000	91.686
36	54.00	36.00	98.518	0.000	98.518
37	54.00	37.00	105.498	0.000	105.498
38	54.00	38.00	112.620	0.000	112.620
39	54.00	39.00	119.879	0.000	119.879

Drilled Shaft Capacity at User-Defined Settlement (sorted by shaft diameter):
==========
***** Capacity is NOT modified by the strength reduction factors *****

User-Defined Settlement = 5.00%

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	54.00	1.00	0.000	0.000	0.000
2	54.00	2.00	0.000	0.000	0.000
3	54.00	3.00	0.000	0.000	0.000
4	54.00	4.00	0.000	0.000	0.000
5	54.00	5.00	0.000	0.000	0.000
6	54.00	6.00	0.000	0.000	0.000
7	54.00	7.00	0.000	50.808	50.808
8	54.00	8.00	0.138	50.355	50.494
9	54.00	9.00	0.548	49.479	50.027
10	54.00	10.00	1.285	48.392	49.676
11	54.00	11.00	2.299	47.486	49.785
12	54.00	12.00	3.583	46.942	50.525
13	54.00	13.00	5.128	46.761	51.888
14	54.00	14.00	6.927	98.684	105.611
15	54.00	15.00	8.738	98.845	107.583
16	54.00	16.00	10.755	98.822	109.578
17	54.00	17.00	12.974	99.004	111.978
18	54.00	18.00	15.389	99.547	114.937
19	54.00	19.00	17.995	100.454	118.448
20	54.00	20.00	20.454	101.783	122.237

21	54.00	21.00	23.067	104.320	127.387
22	54.00	22.00	25.829	108.791	134.620
23	54.00	23.00	28.737	115.195	143.932
24	54.00	24.00	31.786	123.532	155.318
25	54.00	25.00	35.747	133.802	169.549
26	54.00	26.00	39.867	145.387	185.253
27	54.00	27.00	44.142	157.349	201.490
28	54.00	28.00	48.568	169.552	218.120
29	54.00	29.00	53.141	181.998	235.138
30	54.00	30.00	58.786	194.926	253.712
31	54.00	31.00	64.615	208.399	273.013
32	54.00	32.00	70.621	222.233	292.855
33	54.00	33.00	76.800	236.431	313.231
34	54.00	34.00	83.146	250.990	334.136
35	54.00	35.00	89.679	265.711	355.391
36	54.00	36.00	96.362	280.030	376.391
37	54.00	37.00	103.189	292.314	395.502
38	54.00	38.00	110.155	302.020	412.175
39	54.00	39.00	117.255	309.149	426.404

General Information:
==========
Input file: .....Street - AECOM\FB-Deep Runs\Drilled Shafts - 218144 - CC-4.spc
Project number: 218144
Job name: LUDLAM TRAIL CORRIDOR - ACQUISITION ANALYSIS PLANNING
Engineer: Adnan Ismail, PE
Units: English

Analysis Information:
==========
Analysis Type: Drilled Shaft Analysis

Soil Information:
==========
Boring date: 9/17/2018
Boring number: CC-4
Station number: Offset:

Ground Elevation: 5.50(ft)
Water table Elevation = 2.20(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	Elevation (ft)	SPT Blows (Blows/ft)	Unit Weight (pcf)	Soil Type
1	0.00	5.50	N/A	100.00	5- Cavity layer
2	1.00	4.50	N/A	110.00	5- Cavity layer
3	3.00	2.50	N/A	120.00	5- Cavity layer
4	5.00	0.50	N/A	120.00	5- Cavity layer
5	7.00	-1.50	9.00	110.00	3- Clean sand
6	9.00	-3.50	10.00	110.00	3- Clean sand
7	14.00	-8.50	9.00	110.00	3- Clean sand
8	19.00	-13.50	8.00	110.00	3- Clean sand
9	24.00	-18.50	10.00	110.00	3- Clean sand
10	29.00	-23.50	12.00	115.00	3- Clean sand
11	34.00	-28.50	26.00	115.00	3- Clean sand
12	39.00	-33.50	30.00	115.00	3- Clean sand
13	44.00	-38.50	31.00	115.00	3- Clean sand
14	49.00	-43.50	27.00	115.00	3- Clean sand

ID	Cu-DIR (tsf)	qu (tsf)	qt (tsf)	Em (ksi)	qb (tsf)
1	N/A	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A	N/A
12	N/A	N/A	N/A	N/A	N/A
13	N/A	N/A	N/A	N/A	N/A
14	N/A	N/A	N/A	N/A	N/A

ID	RQD	F.M.	S.R.I.	Rock Recovery
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A
12	N/A	N/A	N/A	N/A
13	N/A	N/A	N/A	N/A
14	N/A	N/A	N/A	N/A

Drilled Shaft Data:
==========

Shaft Geometry:

ID	Length (ft)	Tip Elev. (ft)	Case Len. (ft)	Diameter (in)	Base Diam. (in)	Bell Len. (ft)
118	1.00	4.50	0.00	60.00	60.00	0.00
119	2.00	3.50	0.00	60.00	60.00	0.00
120	3.00	2.50	0.00	60.00	60.00	0.00
121	4.00	1.50	0.00	60.00	60.00	0.00
122	5.00	0.50	0.00	60.00	60.00	0.00
123	6.00	-0.50	0.00	60.00	60.00	0.00
124	7.00	-1.50	0.00	60.00	60.00	0.00
125	8.00	-2.50	0.00	60.00	60.00	0.00
126	9.00	-3.50	0.00	60.00	60.00	0.00
127	10.00	-4.50	0.00	60.00	60.00	0.00
128	11.00	-5.50	0.00	60.00	60.00	0.00
129	12.00	-6.50	0.00	60.00	60.00	0.00
130	13.00	-7.50	0.00	60.00	60.00	0.00

131	14.00	-8.50	0.00	60.00	60.00	0.00
132	15.00	-9.50	0.00	60.00	60.00	0.00
133	16.00	-10.50	0.00	60.00	60.00	0.00
134	17.00	-11.50	0.00	60.00	60.00	0.00
135	18.00	-12.50	0.00	60.00	60.00	0.00
136	19.00	-13.50	0.00	60.00	60.00	0.00
137	20.00	-14.50	0.00	60.00	60.00	0.00
138	21.00	-15.50	0.00	60.00	60.00	0.00
139	22.00	-16.50	0.00	60.00	60.00	0.00
140	23.00	-17.50	0.00	60.00	60.00	0.00
141	24.00	-18.50	0.00	60.00	60.00	0.00
142	25.00	-19.50	0.00	60.00	60.00	0.00
143	26.00	-20.50	0.00	60.00	60.00	0.00
144	27.00	-21.50	0.00	60.00	60.00	0.00
145	28.00	-22.50	0.00	60.00	60.00	0.00
146	29.00	-23.50	0.00	60.00	60.00	0.00
147	30.00	-24.50	0.00	60.00	60.00	0.00
148	31.00	-25.50	0.00	60.00	60.00	0.00
149	32.00	-26.50	0.00	60.00	60.00	0.00
150	33.00	-27.50	0.00	60.00	60.00	0.00
151	34.00	-28.50	0.00	60.00	60.00	0.00
152	35.00	-29.50	0.00	60.00	60.00	0.00
153	36.00	-30.50	0.00	60.00	60.00	0.00
154	37.00	-31.50	0.00	60.00	60.00	0.00
155	38.00	-32.50	0.00	60.00	60.00	0.00
156	39.00	-33.50	0.00	60.00	60.00	0.00

Drilled Shaft Capacity (sorted by shaft diameter):
==========
Strength reduction factors: Skin-friction = 1.00, End-bearing = 0.00

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	60.00	1.00	0.000	0.000	0.000
2	60.00	2.00	0.000	0.000	0.000
3	60.00	3.00	0.000	0.000	0.000
4	60.00	4.00	0.000	0.000	0.000
5	60.00	5.00	0.000	0.000	0.000
6	60.00	6.00	0.000	0.000	0.000
7	60.00	7.00	0.000	0.000	0.000
8	60.00	8.00	0.157	0.000	0.157
9	60.00	9.00	0.622	0.000	0.622
10	60.00	10.00	1.459	0.000	1.459
11	60.00	11.00	2.612	0.000	2.612
12	60.00	12.00	4.070	0.000	4.070
13	60.00	13.00	5.825	0.000	5.825
14	60.00	14.00	7.869	0.000	7.869
15	60.00	15.00	9.926	0.000	9.926
16	60.00	16.00	12.218	0.000	12.218
17	60.00	17.00	14.738	0.000	14.738
18	60.00	18.00	17.482	0.000	17.482
19	60.00	19.00	20.442	0.000	20.442
20	60.00	20.00	23.235	0.000	23.235
21	60.00	21.00	26.203	0.000	26.203
22	60.00	22.00	29.341	0.000	29.341
23	60.00	23.00	32.644	0.000	32.644
24	60.00	24.00	36.109	0.000	36.109
25	60.00	25.00	40.607	0.000	40.607
26	60.00	26.00	45.287	0.000	45.287
27	60.00	27.00	50.144	0.000	50.144
28	60.00	28.00	55.172	0.000	55.172
29	60.00	29.00	60.366	0.000	60.366
30	60.00	30.00	66.780	0.000	66.780
31	60.00	31.00	73.401	0.000	73.401
32	60.00	32.00	80.224	0.000	80.224
33	60.00	33.00	87.243	0.000	87.243
34	60.00	34.00	94.451	0.000	94.451
35	60.00	35.00	101.873	0.000	101.873
36	60.00	36.00	109.465	0.000	109.465
37	60.00	37.00	117.220	0.000	117.220
38	60.00	38.00	125.133	0.000	125.133
39	60.00	39.00	133.199	0.000	133.199

Drilled Shaft Capacity at User-Defined Settlement (sorted by shaft diameter):
==========
***** Capacity is NOT modified by the strength reduction factors *****

User-Defined Settlement = 5.00%

ID	Diameter (in)	Length (ft)	Skin Fric. (tons)	End Bearing (tons)	Capacity (tons)
1	60.00	1.00	0.000	0.000	0.000
2	60.00	2.00	0.000	0.000	0.000
3	60.00	3.00	0.000	0.000	0.000
4	60.00	4.00	0.000	0.000	0.000
5	60.00	5.00	0.000	0.000	0.000
6	60.00	6.00	0.000	0.000	0.000
7	60.00	7.00	0.000	55.943	55.943
8	60.00	8.00	0.154	55.370	55.523
9	60.00	9.00	0.608	54.373	54.981
10	60.00	10.00	1.428	53.346	54.773
11	60.00	11.00	2.555	52.681	55.236
12	60.00	12.00	3.981	52.379	56.360
13	60.00	13.00	5.698	52.439	58.137
14	60.00	14.00	7.697	52.862	60.559
15	60.00	15.00	9.708	110.709	120.417
16	60.00	16.00	11.950	111.212	123.163
17	60.00	17.00	14.416	111.585	126.001
18	60.00	18.00	17.099	112.249	129.348
19	60.00	19.00	19.994	113.276	133.271
20	60.00	20.00	22.727	115.451	138.178

21	60.00	21.00	25.630	119.560	145.189
22	60.00	22.00	28.699	125.601	154.300
23	60.00	23.00	31.930	133.576	165.506
24	60.00	24.00	35.318	143.484	178.802
25	60.00	25.00	39.718	154.721	194.439
26	60.00	26.00	44.296	166.683	210.979
27	60.00	27.00	49.046	179.309	228.356
28	60.00	28.00	53.964	192.238	246.202
29	60.00	29.00	59.045	205.408	264.453
30	60.00	30.00	65.318	218.880	284.198
31	60.00	31.00	71.794	232.715	304.509
32	60.00	32.00	78.468	246.913	325.381
33	60.00	33.00	85.333	261.472	346.806
34	60.00	34.00	92.384	276.395	368.779
35	60.00	35.00	99.643	291.176	390.819
36	60.00	36.00	107.069	305.313	412.382
37	60.00	37.00	114.654	318.564	433.218
38	60.00	38.00	122.394	329.479	451.873
39	60.00	39.00	130.283	337.816	468.099

Ludlam Trail Corridor - Acquisition Analysis and Planning
From North of NW 7th Street to SW 80th Street
Miami-Dade County, Florida
GEOSOL PROJECT No. 218144

SUMMARY OF N-VALUES AND REDUCTION OF SHEAR STRENGTH VALUES

GRANULAR FILL
SANDY SILT
NATURAL LIMESTONE FORMATION
NATURAL SAND FORMATION

NOTE: $N_{AUTO} = 1.24*N_{SAFETY}$ (FDOT "SOILS AND FOUNDATIONS HANDBOOK" 2018)

STATISTICAL ANALYSES OF DATA

1. FOR SPT "N" VALUE DATA, CALCULATE MEAN AND STANDARD DEVIATION.

2. NORMALIZE DATA BY EXCLUDING ALL TEST RESULTS WHICH ARE LESS THAN (MEAN - STANDARD DEVIATION) AND WHICH ARE GREATER THAN (MEAN + STANDARD DEVIATION).

3. RECALCULATE THE MEAN OF THE DATA WHICH REMAINS.

BORING No.	STRATUM	N VALUE AUTO. (BPF)	N VALUE SAFETY (BPF)	PHI (DEGREES) PHI = 28+N/4	N VALUE SAFETY (BPF)	PHI (DEGREES) PHI = 28+N/4
CC-1	Granular Fill	14	17	32		
	Granular Fill	15	19	33		
	Granular Fill	17	21	33		
	Granular Fill	13	16	32		
	Granular Fill	14	17	32		
CC-2	Granular Fill	23	29	35		
	Granular Fill	16	20	33		
	Granular Fill	15	19	33		
	Granular Fill	12	15	32		
	Granular Fill	11	14	31		
CC-3	Granular Fill	23	29	35		
	Granular Fill	11	14	31		
	Granular Fill	8	10	30		
CC-4	Granular Fill	15	19	33		
	Granular Fill	8	10	30	12	31
MJ-1	Granular Fill	26	32	36	12	31
MJ-2	Granular Fill	15	19	33	12	31
MJ-3	Granular Fill	25	31	36	12	31
MJ-4	Granular Fill	27	34	36	12	31
MJ-5	Granular Fill	21	26	35	14	31
	Granular Fill	18	22	34	14	31
MJ-6	Granular Fill	26	32	36	14	31
MJ-7	Granular Fill	26	32	36	14	31
	Granular Fill	16	20	33	14	31
	Granular Fill	8	10	30	14	31
	Granular Fill	7	9	30	14	31
MJ-8	Granular Fill	19	24	34	14	31
	Granular Fill	14	17	32	15	32
	Granular Fill	9	11	31	15	32
	Granular Fill	7	9	30	15	32
MJ-9	Granular Fill	35	43	39	15	32
	Granular Fill	21	26	35	15	32
	Granular Fill	9	11	31	15	32
	Granular Fill	8	10	30	16	32
MJ-10	Granular Fill	20	25	34	16	32
	Granular Fill	17	21	33	16	32
	Granular Fill	9	11	31	17	32
	Granular Fill	7	9	30	17	32
MJ-11	Granular Fill	23	29	35	17	32
	Granular Fill	10	12	31	17	32
	Granular Fill	12	15	32	17	32
MJ-12	Granular Fill	16	20	33	17	32
	Granular Fill	10	12	31	19	33
	Granular Fill	11	14	31	19	33
MJ-13	Granular Fill	19	24	34	19	33
	Granular Fill	10	12	31	19	33
	Granular Fill	9	11	31	19	33
MJ-14	Granular Fill	19	24	34	20	33
	Granular Fill	11	14	31	20	33
	Granular Fill	9	11	31	20	33
MI-1	Granular Fill	23	29	35	20	33
MI-2	Granular Fill	28	35	37	20	33

STATISTICS OF VALUES

Ludlam Trail Corridor - Acquisition Analysis and Planning
From North of NW 7th Street to SW 80th Street
Miami-Dade County, Florida
GEOSOL PROJECT No. 218144

SUMMARY OF N-VALUES AND REDUCTION OF SHEAR STRENGTH VALUES

GRANULAR FILL
SANDY SILT
NATURAL LIMESTONE FORMATION
NATURAL SAND FORMATION

NOTE: $N_{AUTO} = 1.24*N_{SAFETY}$ (FDOT "SOILS AND FOUNDATIONS HANDBOOK" 2018)

STATISTICAL ANALYSES OF DATA

1. FOR SPT "N" VALUE DATA, CALCULATE MEAN AND STANDARD DEVIATION.

2. NORMALIZE DATA BY EXCLUDING ALL TEST RESULTS WHICH ARE LESS THAN (MEAN - STANDARD DEVIATION) AND WHICH ARE GREATER THAN (MEAN + STANDARD DEVIATION).

3. RECALCULATE THE MEAN OF THE DATA WHICH REMAINS.

BORING No.	STRATUM	N VALUE AUTO. (BPF)	N VALUE SAFETY (BPF)	PHI (DEGREES) PHI = 28+N/4
MI-3	Granular Fill	18	22	34
	Granular Fill	17	21	33
	Granular Fill	13	16	32
	Granular Fill	15	19	33
MI-4	Granular Fill	18	22	34
	Granular Fill	22	27	35
MI-5	Granular Fill	16	20	33
	Granular Fill	14	17	32
MI-6	Granular Fill	14	17	32
	Granular Fill	11	14	31
MI-7	Granular Fill	14	17	32
	Granular Fill	11	14	31
MI-8	Granular Fill	25	31	36
	Granular Fill	10	12	31
	Granular Fill	11	14	31
CB-1	Granular Fill	21	26	35
CB-2	Granular Fill	26	32	36
CB-3	Granular Fill	25	31	36
CB-4	Granular Fill	18	22	34
CB-5	Granular Fill	21	26	35
CB-6	Granular Fill	18	22	34
	Granular Fill	12	15	32
CB-7	Granular Fill	19	24	34
CB-8	Granular Fill	25	31	36
	Granular Fill	17	21	33
	Granular Fill	16	20	33
	Granular Fill	13	16	32
	Granular Fill	12	15	32
CB-9	Granular Fill	20	25	34
	Granular Fill	11	14	31
CB-10	Granular Fill	16	20	33
	Granular Fill	10	12	31
CB-11	Granular Fill	12	15	32
	Granular Fill	8	10	30
CB-12	Granular Fill	12	15	32
	Granular Fill	8	10	30

STATISTICS OF VALUES

N VALUE SAFETY (BPF)	PHI (DEGREES) PHI = 28+N/4
20	33
21	33
21	33
21	33
21	33
22	34
22	34
22	34
22	34
22	34
24	34
24	34
24	34
24	34
25	34
25	34
26	35
26	35
26	35
26	35
27	35

MINIMUM	7	9	30	MINIMUM	12	31
MAXIMUM	35	43	39	MAXIMUM	27	35
AVERAGE	16	19	33	**AVERAGE**	**19**	**33**
STA. DEV.	6	7	2	STA. DEV.	4	1
AVE-STA. DEV.	10	12	31	AVE-STA. DEV.	14	32
AVE+STA. DEV.	22	27	35	AVE+STA. DEV.	23	34

FOR DESIGN USE PHI = 33 DEGREES

Ludlam Trail Corridor - Acquisition Analysis and Planning
From North of NW 7th Street to SW 80th Street
Miami-Dade County, Florida
GEOSOL PROJECT No. 218144

SUMMARY OF N-VALUES AND REDUCTION OF SHEAR STRENGTH VALUES

GRANULAR FILL
SANDY SILT
NATURAL LIMESTONE FORMATION
NATURAL SAND FORMATION

NOTE: $N_{AUTO} = 1.24*N_{SAFETY}$ (FDOT "SOILS AND FOUNDATIONS HANDBOOK" 2018)

STATISTICAL ANALYSES OF DATA

1. FOR SPT "N" VALUE DATA, CALCULATE MEAN AND STANDARD DEVIATION.

2. NORMALIZE DATA BY EXCLUDING ALL TEST RESULTS WHICH ARE LESS THAN (MEAN - STANDARD DEVIATION) AND WHICH ARE GREATER THAN (MEAN + STANDARD DEVIATION).

3. RECALCULATE THE MEAN OF THE DATA WHICH REMAINS.

BORING No.	STRATUM	N VALUE AUTO. (BPF)	N VALUE SAFETY (BPF)	PHI (DEGREES) PHI = 26+N/4
MJ-1	Sandy Silt	10	12	29
MJ-2	Sandy Silt	8	10	28
CB-7	Sandy Silt	9	11	29
CB-9	Sandy Silt	9	11	29

STATISTICS OF VALUES

N VALUE SAFETY (BPF)	PHI (DEGREES) PHI = 26+N/4
10	28
11	29
11	29
12	29

MINIMUM	8	10	28	MINIMUM	10	28
MAXIMUM	10	12	29	MAXIMUM	12	29
AVERAGE	9	11	29	**AVERAGE**	**11**	**29**
STA. DEV.	1	1	0	STA. DEV.	1	0
AVE-STA. DEV.	8	10	29	AVE-STA. DEV.	10	29
AVE+STA. DEV.	10	12	29	AVE+STA. DEV.	12	29

FOR DESIGN LIMIT AND USE PHI = 26 DEGREES

Ludlam Trail Corridor - Acquisition Analysis and Planning
Effluent Pump Station Electrical Improvements
Consent Decree Capital Project Number 1.05
GEOSOL PROJECT No. 218101

SUMMARY OF N-VALUES AND REDUCTION OF SHEAR STRENGTH VALUES

GRANULAR FILL
SANDY SILT
NATURAL LIMESTONE FORMATION
NATURAL SAND FORMATION

NOTE: $N_{AUTO} = 1.24*N_{SAFETY}$ (FDOT "SOILS AND FOUNDATIONS HANDBOOK" 2018)

STATISTICAL ANALYSES OF DATA

1. FOR SPT "N" VALUE DATA, CALCULATE MEAN AND STANDARD DEVIATION.

2. NORMALIZE DATA BY EXCLUDING ALL TEST RESULTS WHICH ARE LESS THAN (MEAN - STANDARD DEVIATION) AND WHICH ARE GREATER THAN (MEAN + STANDARD DEVIATION).

3. RECALCULATE THE MEAN OF THE DATA WHICH REMAINS.

BORING No.	STRATUM	N VALUE AUTO. (BPF)	N VALUE SAFETY (BPF)	PHI (DEGREES) PHI = 33+N/4	STATISTICS OF VALUES: N VALUE SAFETY (BPF)	STATISTICS OF VALUES: PHI (DEGREES) PHI = 33+N/4
CC-1	Natural Limestone	18	22	39		
CC-2	Natural Limestone	19	24	39		
CC-3	Natural Limestone	13	16	37		
	Natural Limestone	15	19	38		
	Natural Limestone	13	16	37		
CC-4	Natural Limestone	14	17	37		
MJ-1	Natural Limestone	21	26	40		
	Natural Limestone	19	24	39		
	Natural Limestone	18	22	39		
MJ-2	Natural Limestone	21	26	40		
	Natural Limestone	25	31	41		
	Natural Limestone	13	16	37		
MJ-3	Natural Limestone	24	30	40		
	Natural Limestone	18	22	39		
	Natural Limestone	16	20	38	14	36
	Natural Limestone	11	14	36	14	36
MJ-4	Natural Limestone	21	26	40	14	36
	Natural Limestone	21	26	40	14	36
	Natural Limestone	26	32	41	14	36
	Natural Limestone	19	24	39	14	36
MJ-5	Natural Limestone	15	19	38	15	37
	Natural Limestone	13	16	37	15	37
	Natural Limestone	12	15	37	15	37
MJ-6	Natural Limestone	20	25	39	15	37
	Natural Limestone	23	29	40	15	37
	Natural Limestone	17	21	38	15	37
	Natural Limestone	13	16	37	16	37
MJ-7	Natural Limestone	6	7	35	16	37
MJ-8	Natural Limestone	5	6	35	16	37
MJ-9	Natural Limestone	6	7	35	16	37
MJ-10	Natural Limestone	6	7	35	16	37
MJ-11	Natural Limestone	13	16	37	16	37
MJ-12	Natural Limestone	13	16	37	16	37
MJ-13	Natural Limestone	13	16	37	16	37
	Natural Limestone	11	14	36	16	37
MJ-14	Natural Limestone	17	21	38	16	37
	Natural Limestone	14	17	37	16	37
MI-1	Natural Limestone	26	32	41	16	37
	Natural Limestone	18	22	39	16	37
	Natural Limestone	13	16	37	16	37
	Natural Limestone	14	17	37	16	37
MI-2	Natural Limestone	19	24	39	17	37
	Natural Limestone	17	21	38	17	37
	Natural Limestone	15	19	38	17	37
	Natural Limestone	13	16	37	17	37
MI-4	Natural Limestone	12	15	37	17	37
	Natural Limestone	14	17	37	19	38
	Natural Limestone	9	11	36	19	38
MI-5	Natural Limestone	13	16	37	19	38
	Natural Limestone	12	15	37	19	38
	Natural Limestone	10	12	36	19	38
MI-8	Natural Limestone	15	19	38	20	38
CB-1	Natural Limestone	19	24	39	20	38
	Natural Limestone	22	27	40	21	38

Ludlam Trail Corridor - Acquisition Analysis and Planning
Effluent Pump Station Electrical Improvements
Consent Decree Capital Project Number 1.05
GEOSOL PROJECT No. 218101

SUMMARY OF N-VALUES AND REDUCTION OF SHEAR STRENGTH VALUES

GRANULAR FILL
SANDY SILT
NATURAL LIMESTONE FORMATION
NATURAL SAND FORMATION

NOTE: $N_{AUTO} = 1.24*N_{SAFETY}$ (FDOT "SOILS AND FOUNDATIONS HANDBOOK" 2018)

STATISTICAL ANALYSES OF DATA

1. FOR SPT "N" VALUE DATA, CALCULATE MEAN AND STANDARD DEVIATION.

2. NORMALIZE DATA BY EXCLUDING ALL TEST RESULTS WHICH ARE LESS THAN (MEAN - STANDARD DEVIATION) AND WHICH ARE GREATER THAN (MEAN + STANDARD DEVIATION).

3. RECALCULATE THE MEAN OF THE DATA WHICH REMAINS.

BORING No.	STRATUM	N VALUE AUTO. (BPF)	N VALUE SAFETY (BPF)	PHI (DEGREES) PHI = 33+N/4
	Natural Limestone	18	22	39
	Natural Limestone	16	20	38
CB-2	Natural Limestone	21	26	40
	Natural Limestone	17	21	38
	Natural Limestone	13	16	37
	Natural Limestone	12	15	37
CB-3	Natural Limestone	21	26	40
	Natural Limestone	17	21	38
	Natural Limestone	13	16	37
	Natural Limestone	11	14	36
CB-4	Natural Limestone	15	19	38
	Natural Limestone	12	15	37
	Natural Limestone	10	12	36
	Natural Limestone	11	14	36
CB-5	Natural Limestone	17	21	38
	Natural Limestone	14	17	37
	Natural Limestone	11	14	36
	Natural Limestone	10	12	36
CB-6	Natural Limestone	13	16	37
	Natural Limestone	9	11	36
	Natural Limestone	10	12	36
CB-7	Natural Limestone	25	31	41
	Natural Limestone	19	24	39
	Natural Limestone	9	11	36
CB-9	Natural Limestone	13	16	37
CB-10	Natural Limestone	9	11	36
	Natural Limestone	10	12	36
	Natural Limestone	10	12	36
CB-11	Natural Limestone	12	15	37
CB-12	Natural Limestone	11	14	36

STATISTICS OF VALUES

N VALUE SAFETY (BPF)	PHI (DEGREES) PHI = 33+N/4
21	38
21	38
21	38
21	38
21	38
22	39
22	39
22	39
22	39
22	39
24	39
24	39
24	39
24	39
24	39
24	39

MINIMUM	5.0	6	35	MINIMUM	14	36
MAXIMUM	26.0	32	41	MAXIMUM	24	39
AVERAGE	14.9	18	38	**AVERAGE**	**18**	**38**
STA. DEV.	4.7	6	1	STA. DEV.	3	1
AVE-STA. DEV.	10.2	13	36	AVE-STA. DEV.	15	37
AVE+STA. DEV.	19.7	24	39	AVE+STA. DEV.	21	38

FOR DESIGN USE PHI = 38 DEGREES

Ludlam Trail Corridor - Acquisition Analysis and Planning
Effluent Pump Station Electrical Improvements
Consent Decree Capital Project Number 1.05
GEOSOL PROJECT No. 218101

SUMMARY OF N-VALUES AND REDUCTION OF SHEAR STRENGTH VALUES

GRANULAR FILL
SANDY SILT
NATURAL LIMESTONE FORMATION
NATURAL SAND FORMATION

NOTE: $N_{AUTO} = 1.24*N_{SAFETY}$ (FDOT "SOILS AND FOUNDATIONS HANDBOOK" 2018)

STATISTICAL ANALYSES OF DATA

1. FOR SPT "N" VALUE DATA, CALCULATE MEAN AND STANDARD DEVIATION.

2. NORMALIZE DATA BY EXCLUDING ALL TEST RESULTS WHICH ARE LESS THAN (MEAN - STANDARD DEVIATION) AND WHICH ARE GREATER THAN (MEAN + STANDARD DEVIATION).

3. RECALCULATE THE MEAN OF THE DATA WHICH REMAINS.

STATISTICS OF VALUES

BORING No.	STRATUM	N VALUE AUTO. (BPF)	N VALUE SAFETY (BPF)	PHI (DEGREES) PHI = 28+N/4	N VALUE SAFETY (BPF)	PHI (DEGREES) PHI = 28+N/4
CC-1	Natural Sand	5	6	30		
	Natural Sand	6	7	30		
	Natural Sand	12	15	32		
	Natural Sand	16	20	33	9	30
	Natural Sand	25	31	36	10	30
	Natural Sand	24	30	35	11	31
	Natural Sand	30	37	37	11	31
CC-2	Natural Sand	19	24	34	11	31
	Natural Sand	6	7	30	11	31
	Natural Sand	7	9	30	11	31
	Natural Sand	11	14	31	11	31
	Natural Sand	15	19	33	11	31
	Natural Sand	24	30	35	12	31
	Natural Sand	24	30	35	12	31
	Natural Sand	25	31	36	12	31
CC-3	Natural Sand	9	11	31	14	31
	Natural Sand	11	14	31	14	31
	Natural Sand	12	15	32	14	31
	Natural Sand	23	29	35	14	31
	Natural Sand	27	34	36	14	31
	Natural Sand	24	30	35	14	31
	Natural Sand	27	34	36	14	31
CC-4	Natural Sand	9	11	31	14	31
	Natural Sand	8	10	30	15	32
	Natural Sand	10	12	31	15	32
	Natural Sand	12	15	32	15	32
	Natural Sand	26	32	36	15	32
	Natural Sand	30	37	37	16	32
	Natural Sand	31	38	38	19	33
	Natural Sand	27	34	36	20	33
MJ-11	Natural Sand	11	14	31	24	34
MJ-12	Natural Sand	11	14	31	29	35
MI-3	Natural Sand	9	11	31		
MI-6	Natural Sand	11	14	31		
	Natural Sand	10	12	31		
	Natural Sand	9	11	31		
MI-7	Natural Sand	11	14	31		
	Natural Sand	10	12	31		
	Natural Sand	9	11	31		
MI-8	Natural Sand	11	14	31		
CB-9	Natural Sand	9	11	31		
CB-11	Natural Sand	11	14	31		
	Natural Sand	13	16	32		
CB-12	Natural Sand	12	15	32		
	Natural Sand	9	11	31		

MINIMUM	5	6	30	MINIMUM	9	30
MAXIMUM	31	38	38	MAXIMUM	29	35
AVERAGE	15	19	33	**AVERAGE**	**14**	**32**
STA. DEV.	8	10	2	STA. DEV.	4	1
AVE-STA. DEV.	8	9	30	AVE-STA. DEV.	10	31
AVE+STA. DEV.	23	29	35	AVE+STA. DEV.	18	33

FOR DESIGN LIMIT AND USE PHI = 32 DEGREES

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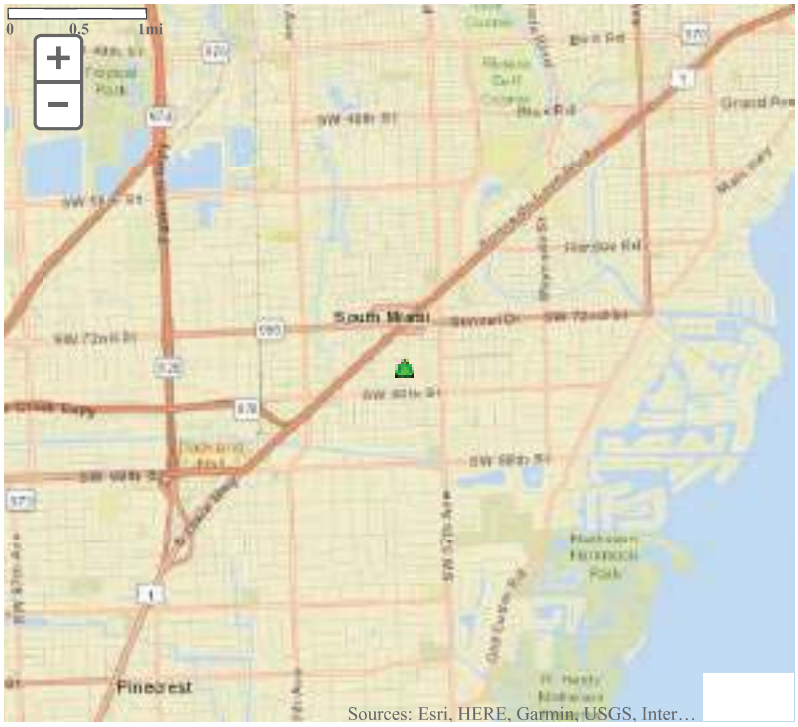
Groundwater Watch

Site Number: 254156080172101 - G -3607



DESCRIPTION:
Latitude 25°41'57.5", Longitude 80°17'21.7" NAD83
Miami-Dade County, Florida, Hydrologic Unit 03090202
Well depth: 120 feet
Hole depth: 120 feet
Land surface altitude: 9feet above NGVD29.
Well completed in "Biscayne aquifer" (N400BISCYN) national aquifer.
Well completed in "Biscayne Limestone Aquifer" (112BSCNN) local aquifer

AVAILABLE DATA:

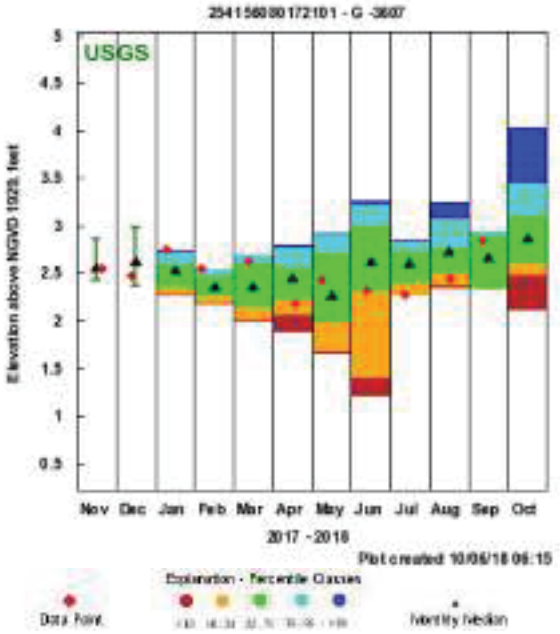
Data Type	Begin Date	End Date	Count
Field groundwater-level measurements	1996-10-17	2018-08-16	167
Field/Lab water-quality samples			
Revisions	Loading...		

Additional Data Sources	Begin Date	End Date	Count
Groundwater Watch **offsite**	1996	2018	166
Annual Water-Data Report (pdf) **offsite**	2006	2012	7

OPERATION:
Record for this site is maintained by the USGS Florida Water Science Center - Ft. Lauderdale
Email questions about this site toFlorida Water-Data Inquiries

Groundwater Watch Help Page

Site Statistics



Most recent data value: 2.84 on 9/10/2018
Period of Record Monthly Statistics for 254156080172101
Elevation above NGVD 1929, feet
All Approved Continuous & Periodic Data Used In Analysis
Note: Highlighted values in the table indicate closest statistic to the most recent data value.

Month	Lowest Median	10th %ile	25th %ile	50th %ile	75th %ile	90th %ile	Highest Median	Number of Years
Jan	2.28	2.29	2.37	2.52	2.60	2.73	2.75	20
Feb	2.18	2.20	2.28	2.35	2.47	2.55	2.56	11
Mar	2.00	2.01	2.15	2.35	2.61	2.70	2.71	10
Apr	1.90	2.07	2.25	2.45	2.57	2.78	2.81	19
May	1.67	1.69	2.00	2.26	2.70	2.92	2.94	11
Jun	1.22	1.42	2.32	2.61	3.00	3.23	3.27	11
Jul	2.27	2.27	2.42	2.60	2.74	2.85	2.86	18
Aug	2.35	2.39	2.53	2.72	2.77	3.09	3.26	13
Sep	2.35	2.35	2.35	2.66	2.90	2.96	2.96	10
Oct	2.13	2.49	2.62	2.86	3.11	3.46	4.04	19
Nov	2.43	-	-	-	-	-	2.86	9
Dec	2.37	-	-	-	-	-	2.98	9

.As of 10/5/2018 17:24-2

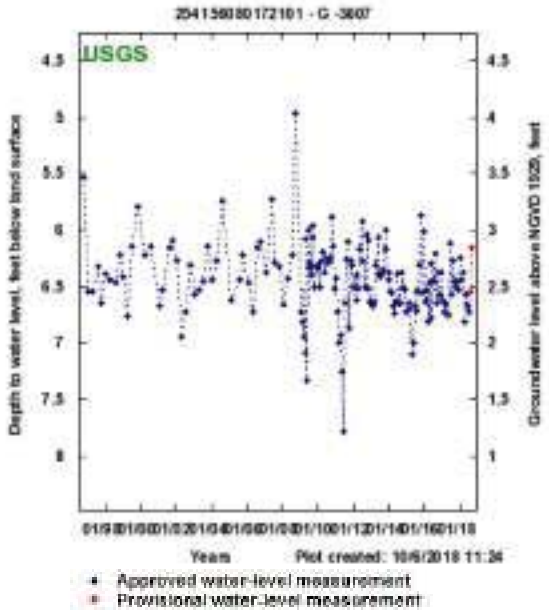
Statistics Options

View month/year statistics

Periodic Groundwater Data

Summary for Period of Record Periodic Water Levels
Elevation above NGVD 1929, feet
Approved Periodic Water Level Values

Begin Date	End Date	Number of Values
10/17/96	09/10/18	168



Lowest WL	Date of Lowest WL	Highest WL	Date of Highest WL
1.22	06/16/11	4.04	10/06/08

Groundwater Levels Options

View latest data on NWISWeb

Download groundwater levels in text format

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*References to non-Department of the Interior (DOI) products do not constitute an endorsement by the DOI.

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Last update: Friday, August 10, 2018 at 08:39

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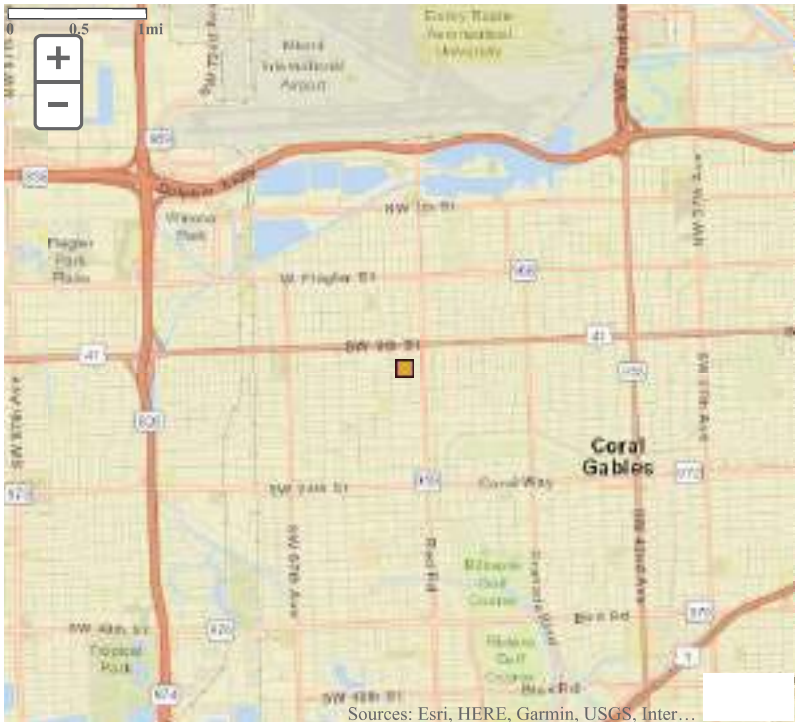
Groundwater Watch

Site Number: 254536080172601 - G -3570



DESCRIPTION:
Latitude 25°45'38.6", Longitude 80°17'23.3" NAD83
Miami-Dade County, Florida, Hydrologic Unit 03090202
Well depth: 18.7 feet
Land surface altitude: 10.3feet above NGVD29.
Well completed in "Biscayne aquifer" (N400BISCYN) national aquifer.
Well completed in "Biscayne Limestone Aquifer" (112BSCNN) local aquifer

AVAILABLE DATA:

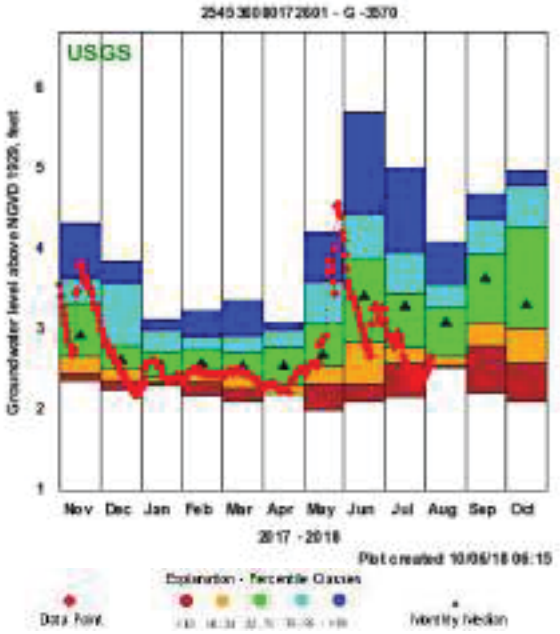
Data Type	Begin Date	End Date	Count
Current / Historical Observations	2007-10-01	2018-08-06	
Daily Data			
Groundwater level above NGVD 1929, feet	1994-09-02	2018-08-05	8448
Field groundwater-level measurements	1994-10-11	2018-08-06	120
Water-Year Summary	2006	2016	11
Revisions	Loading...		

Additional Data Sources	Begin Date	End Date	Count
Groundwater Watch **offsite**	1994	2018	8500

OPERATION:
Record for this site is maintained by the USGS Florida Water Science Center - Ft. Lauderdale
Email questions about this site toFlorida Water-Data Inquiries

Groundwater Watch Help Page

Site Statistics



Most recent data value: 2.77 on 10/4/2018
Period of Record Monthly Statistics for 254536080172601
Groundwater level above NGVD 1929, feet
All Approved Continuous & Periodic Data Used In Analysis
Note: Highlighted values in the table indicate closest statistic to the most recent data value.

Month	Lowest Median	10th %ile	25th %ile	50th %ile	75th %ile	90th %ile	Highest Median	Number of Years
Jan	2.29	2.32	2.41	2.54	2.71	2.99	3.12	24
Feb	2.16	2.32	2.45	2.56	2.74	2.89	3.22	24
Mar	2.09	2.25	2.42	2.53	2.70	2.92	3.35	22
Apr	2.18	2.19	2.30	2.53	2.76	2.99	3.07	24
May	1.98	2.31	2.53	2.67	3.07	3.59	4.21	23
Jun	2.10	2.31	2.84	3.41	3.88	4.43	5.70	24
Jul	2.15	2.57	2.77	3.28	3.44	3.95	5.01	24
Aug	2.51	2.55	2.66	3.08	3.26	3.54	4.07	24
Sep	2.20	2.79	3.07	3.63	3.94	4.37	4.67	24
Oct	2.09	2.57	3.01	3.29	4.26	4.79	4.97	24
Nov	2.34	2.43	2.65	2.91	3.31	3.63	4.32	24
Dec	2.23	2.35	2.51	2.61	2.79	3.56	3.84	24

.As of 10/5/2018 17:28-2

Statistics Options

View month/year statistics

Daily Groundwater Data

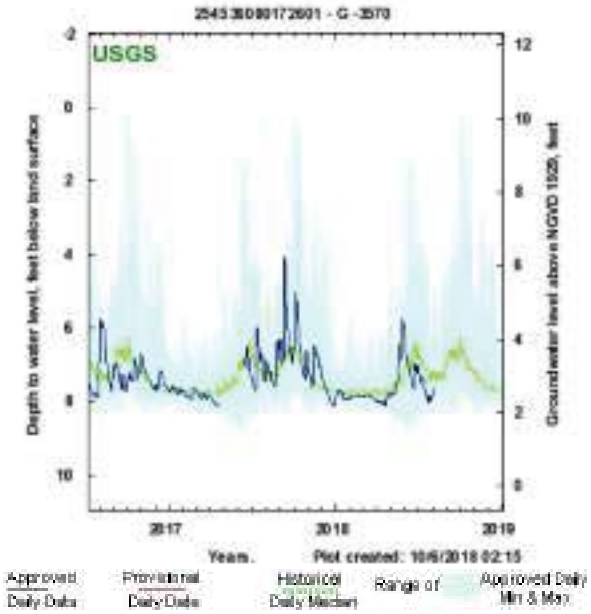
Most recent Approved daily data value: 2.62 on 08/05/18

Summary for Period of Continuous Record

Groundwater level above NGVD 1929, feet

Approved Daily Maximum Values Data Used in Analysis

Begin Date	End Date	Days	% Complete



09/02/94	08/05/18					8,443		96
Lowest Level	**5th %ile**	**10th %ile**	**25th %ile**	**50th %ile**	**75th %ile**	**90th %ile**	**95th %ile**	**Highest Level**
1.50	2.24	2.34	2.54	2.81	3.35	4.08	4.65	10.16

Daily Data Options

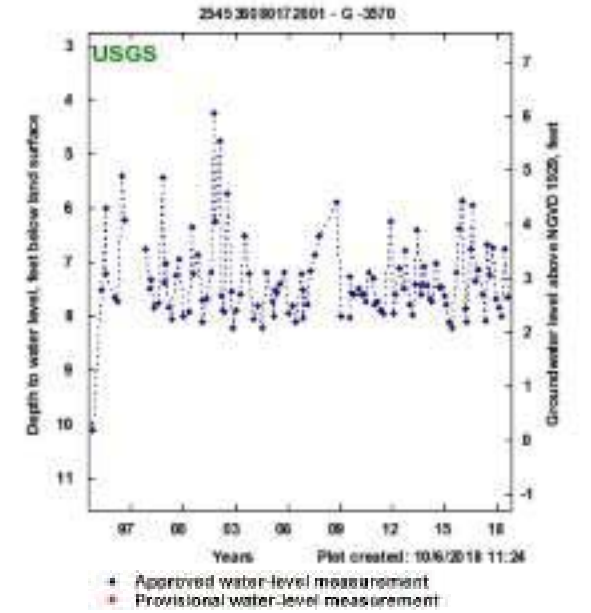
View latest data on NWISWeb

View data in calendar format

Download data in text format

View daily medians

Periodic Groundwater Data



Summary for Period of Record Periodic Water Levels

Elevation above NGVD 1929, feet

Approved Periodic Water Level Values

Begin Date	End Date	Number of Values
10/11/94	10/04/18	121

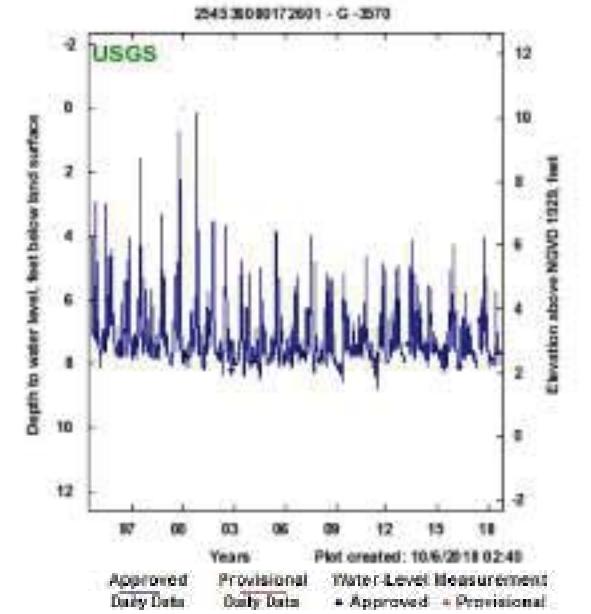
Lowest WL	Date of Lowest WL	Highest WL	Date of Highest WL
0.18	10/11/94	6.06	10/01/01

Groundwater Levels Options

View latest data on NWISWeb

Download groundwater levels in text format

Period of Record - All Data Types



Summary for Period of Record - All Data Types

Elevation above NGVD 1929, feet

Begin Date	End Date	Number of Values
09/02/94	10/04/18	8,570

Lowest WL	Date of Lowest WL	Highest WL	Date of Highest WL
0.18	10/11/94	10.16	10/03/00

Period of Record Options

View latest data on NWISWeb for all data types

View month/year statistics

Download groundwater levels in text format of all data types

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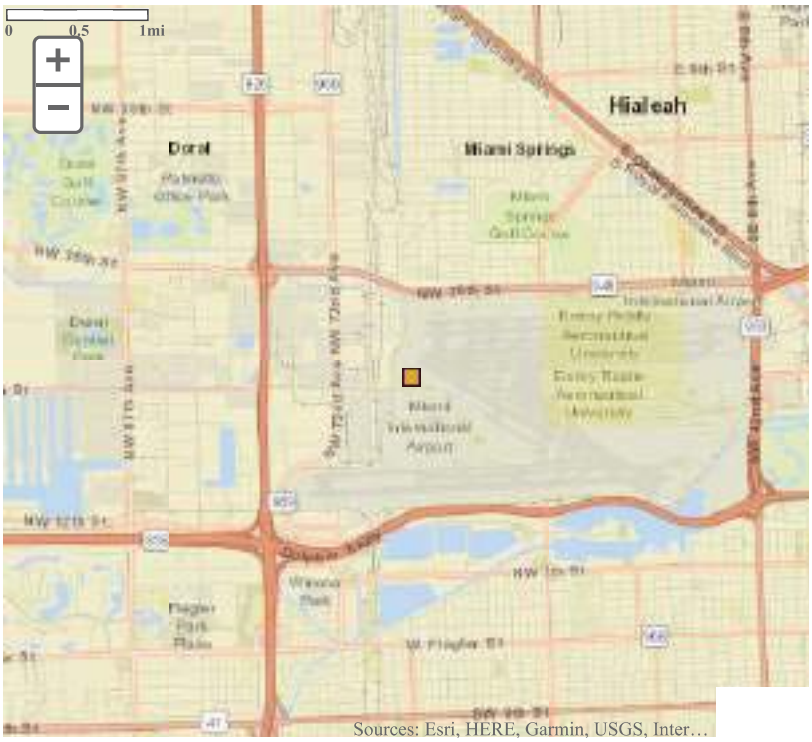
Groundwater Watch

Site Number: 254752080181501 - G -3329



DESCRIPTION:
Latitude 25°47'52", Longitude 80°18'15" NAD27
Miami-Dade County, Florida, Hydrologic Unit 03090202
Well depth: 54 feet
Land surface altitude: 6.6feet above NGVD29.
Well completed in "Biscayne aquifer" (N400BISCYN) national aquifer.
Well completed in "Biscayne Limestone Aquifer" (112BSCNN) local aquifer

AVAILABLE DATA:

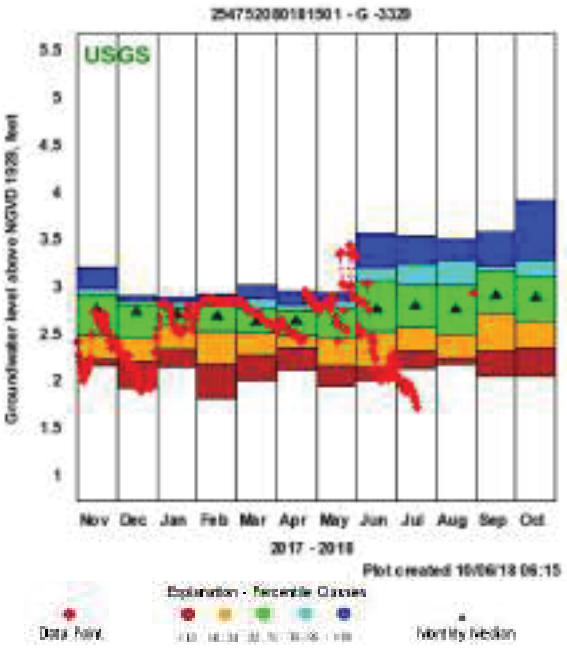
Data Type	Begin Date	End Date	Count
Current / Historical Observations	2007-10-01	2018-07-18	
Daily Data			
Groundwater level above NGVD 1929, feet	1984-01-20	2018-07-17	12393
Field groundwater-level measurements	1989-11-27	2018-06-26	156
Water-Year Summary	2006	2017	12
Revisions	Loading...		

Additional Data Sources	Begin Date	End Date	Count
Groundwater Watch **offsite**	1984	2018	12458

OPERATION:
Record for this site is maintained by the USGS Florida Water Science Center - Ft. Lauderdale
Email questions about this site toFlorida Water-Data Inquiries

Groundwater Watch Help Page

Site Statistics



Most recent data value: 2.43 on 9/26/2018
Period of Record Monthly Statistics for 254752080181501
Groundwater level above NGVD 1929, feet
All Approved Continuous & Periodic Data Used In Analysis
Note: Highlighted values in the table indicate closest statistic to the most recent data value.

Month	Lowest Median	10th %ile	25th %ile	50th %ile	75th %ile	90th %ile	Highest Median	Number of Years
Jan	2.15	2.34	2.59	2.70	2.78	2.85	2.89	35
Feb	1.81	2.18	2.52	2.69	2.79	2.85	2.92	35
Mar	2.00	2.27	2.51	2.62	2.76	2.87	3.01	35
Apr	2.12	2.36	2.48	2.63	2.74	2.81	2.95	35
May	1.95	2.16	2.47	2.63	2.77	2.86	2.94	34
Jun	2.01	2.15	2.52	2.77	3.07	3.21	3.57	34
Jul	2.14	2.33	2.57	2.79	3.01	3.24	3.54	34
Aug	2.18	2.24	2.49	2.77	3.01	3.28	3.50	34
Sep	2.06	2.33	2.72	2.90	3.17	3.22	3.58	34
Oct	2.06	2.35	2.63	2.89	3.11	3.29	3.92	34
Nov	2.16	2.23	2.48	2.77	2.90	2.98	3.20	34
Dec	1.93	2.21	2.47	2.73	2.81	2.86	2.91	34

.As of 10/5/2018 17:29-2

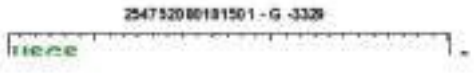
Statistics Options

View month/year statistics

Daily Groundwater Data

Most recent Provisional daily data value: 1.73 on 07/17/18

Summary for Period of Continuous Record
Groundwater level above NGVD 1929, feet
Approved Daily Maximum Values Data Used in Analysis



Begin Date	End Date	Days	% Complete
01/20/84	04/17/18	12,302	98

Lowest Level	5th %ile	10th %ile	25th %ile	50th %ile	75th %ile	90th %ile	95th %ile	Highest Level
1.35	2.13	2.27	2.52	2.72	2.91	3.23	3.53	7.86

Daily Data Options

View latest data on NWISWeb

View data in calendar format

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DBHYDRO reports

DBKEY	STATION	AGENCY	COUNTY	TYPE	UNITS	STAT	FQ	RECORDER	START	END	LAT	LONG	SECTION	TOWN	RANGE	ALTERNATE ID
OU842	C2SW2	WMD	DAD	STG	ft NGVD29	MEAN	DA	CR10	2002	2018	254128	801806	35	54	40	C2SW2+

Period of Record Statistical Summary by Year Month For DBKEY OU842
For Period 20021116 to 20181010

DBKEY	Station	Data Type	Year	Month	Sample Size	Minimum	Mean	Maximum	Median	Std. Dev.
OU842	C2SW2	STG	2002	11	14	2.146	3.101	3.334	3.203	.34
OU842	C2SW2	STG	2002	12	31	2.033	2.977	3.312	3.220	.44
OU842	C2SW2	STG	2003	01	31	2.949	3.147	3.321	3.146	.12
OU842	C2SW2	STG	2003	02	28	2.828	2.904	3.003	2.887	.05
OU842	C2SW2	STG	2003	03	31	2.160	2.983	3.272	3.004	.21
OU842	C2SW2	STG	2003	04	30	2.526	3.009	3.238	3.008	.12
OU842	C2SW2	STG	2003	05	31	2.244	2.988	3.368	3.227	.41
OU842	C2SW2	STG	2003	06	30	2.202	2.877	3.415	2.931	.35
OU842	C2SW2	STG	2003	07	31	2.748	3.097	3.337	3.117	.14
OU842	C2SW2	STG	2003	08	31	1.982	2.790	3.383	2.859	.48
OU842	C2SW2	STG	2003	09	30	2.104	2.606	3.055	2.748	.33
OU842	C2SW2	STG	2003	10	31	2.313	3.015	3.470	3.089	.34
OU842	C2SW2	STG	2003	11	30	2.253	2.980	3.346	3.164	.39
OU842	C2SW2	STG	2003	12	31	2.872	2.985	3.116	2.978	.08
OU842	C2SW2	STG	2004	01	31	2.184	2.954	3.095	2.984	.17
OU842	C2SW2	STG	2004	02	29	2.540	3.073	3.356	3.086	.17
OU842	C2SW2	STG	2004	03	31	2.856	2.996	3.160	2.986	.06
OU842	C2SW2	STG	2004	04	30	2.732	2.874	3.247	2.805	.15
OU842	C2SW2	STG	2004	05	31	2.453	2.889	3.221	2.953	.23
OU842	C2SW2	STG	2004	06	30	2.133	2.342	2.597	2.340	.14
OU842	C2SW2	STG	2004	07	31	2.188	2.499	3.103	2.395	.25
OU842	C2SW2	STG	2004	08	31	2.298	2.899	3.407	2.973	.40
OU842	C2SW2	STG	2004	09	30	2.150	2.653	3.297	2.425	.42
OU842	C2SW2	STG	2004	10	31	2.201	3.216	3.959	3.447	.56
OU842	C2SW2	STG	2004	11	30	2.708	3.136	3.425	3.117	.18
OU842	C2SW2	STG	2004	12	31	2.870	2.955	3.091	2.946	.06
OU842	C2SW2	STG	2005	01	31	2.769	2.927	3.009	2.931	.06
OU842	C2SW2	STG	2005	02	28	2.683	2.841	2.986	2.836	.10
OU842	C2SW2	STG	2005	03	31	2.636	2.946	3.247	2.952	.16
OU842	C2SW2	STG	2005	04	30	2.761	3.022	3.375	2.991	.17
OU842	C2SW2	STG	2005	05	31	2.747	2.912	3.236	2.845	.16
OU842	C2SW2	STG	2005	06	30	1.802	2.344	3.133	2.256	.32
OU842	C2SW2	STG	2005	07	31	2.109	2.993	3.470	3.041	.35
OU842	C2SW2	STG	2005	08	30	2.077	2.551	3.410	2.415	.43
OU842	C2SW2	STG	2005	09	30	2.144	2.789	3.443	2.927	.39
OU842	C2SW2	STG	2005	10	31	2.108	2.683	3.457	2.631	.40
OU842	C2SW2	STG	2005	11	30	2.128	2.579	3.203	2.354	.36
OU842	C2SW2	STG	2005	12	31	2.691	3.182	3.462	3.259	.22
OU842	C2SW2	STG	2006	01	31	2.942	3.073	3.263	3.061	.10
OU842	C2SW2	STG	2006	02	28	2.862	3.063	3.372	3.037	.13
OU842	C2SW2	STG	2006	03	31	2.944	3.013	3.174	2.997	.06
OU842	C2SW2	STG	2006	04	30	2.566	2.780	2.947	2.803	.11
OU842	C2SW2	STG	2006	05	31	1.361	2.551	3.118	2.527	.36
OU842	C2SW2	STG	2006	06	30	2.368	2.602	2.885	2.562	.16
OU842	C2SW2	STG	2006	07	31	2.173	2.911	3.346	2.946	.35
OU842	C2SW2	STG	2006	08	31	2.099	2.974	3.348	3.025	.28
OU842	C2SW2	STG	2006	09	30	2.259	2.978	3.249	3.055	.24
OU842	C2SW2	STG	2006	10	31	2.965	3.157	3.311	3.199	.13
OU842	C2SW2	STG	2006	11	30	3.001	3.125	3.229	3.118	.06
OU842	C2SW2	STG	2006	12	31	2.924	3.049	3.174	3.072	.07
OU842	C2SW2	STG	2007	01	31	2.859	2.950	3.050	2.953	.05
OU842	C2SW2	STG	2007	02	28	2.770	2.906	3.004	2.891	.07
OU842	C2SW2	STG	2007	03	31	2.594	2.748	2.863	2.752	.08
OU842	C2SW2	STG	2007	04	30	2.502	2.957	3.372	3.003	.30
OU842	C2SW2	STG	2007	05	31	2.771	2.953	3.200	2.953	.11
OU842	C2SW2	STG	2007	06	30	2.172	2.915	3.375	2.891	.31
OU842	C2SW2	STG	2007	07	31	2.106	2.949	3.379	3.083	.36
OU842	C2SW2	STG	2007	08	31	2.690	3.155	3.351	3.190	.18
OU842	C2SW2	STG	2007	09	30	2.171	2.986	3.335	3.121	.34
OU842	C2SW2	STG	2007	10	31	2.306	2.743	2.977	2.768	.16
OU842	C2SW2	STG	2007	11	30	2.665	2.996	3.186	3.076	.16
OU842	C2SW2	STG	2007	12	31	2.873	2.960	3.047	2.955	.05
OU842	C2SW2	STG	2008	01	31	2.630	2.741	2.883	2.747	.07
OU842	C2SW2	STG	2008	02	29	2.506	2.683	2.921	2.704	.10
OU842	C2SW2	STG	2008	03	31	2.516	2.673	2.804	2.690	.09
OU842	C2SW2	STG	2008	04	30	2.659	2.903	3.227	2.928	.14
OU842	C2SW2	STG	2008	05	31	2.393	2.628	2.911	2.575	.16
OU842	C2SW2	STG	2008	06	30	2.062	2.512	3.263	2.367	.38
OU842	C2SW2	STG	2008	07	31	2.712	3.140	3.280	3.148	.12
OU842	C2SW2	STG	2008	08	31	2.065	2.541	3.341	2.382	.38
OU842	C2SW2	STG	2008	09	30	2.193	2.826	3.459	2.870	.33
OU842	C2SW2	STG	2008	10	31	2.217	2.481	3.101	2.456	.19
OU842	C2SW2	STG	2008	11	30	2.905	3.083	3.279	3.061	.12
OU842	C2SW2	STG	2008	12	31	2.904	3.006	3.083	3.019	.05
OU842	C2SW2	STG	2009	01	31	2.806	2.943	3.054	2.982	.09
OU842	C2SW2	STG	2009	02	28	2.591	2.705	2.820	2.707	.07
OU842	C2SW2	STG	2009	03	31	2.396	2.533	2.637	2.557	.07
OU842	C2SW2	STG	2009	04	30	2.214	2.394	2.547	2.393	.10
OU842	C2SW2	STG	2009	05	31	1.783	2.279	3.339	2.101	.43
OU842	C2SW2	STG	2009	06	30	2.021	2.601	3.316	2.666	.47
OU842	C2SW2	STG	2009	07	31	2.010	2.688	3.227	2.783	.38

OU842 C2SW2	STG	2009	08	31	2.309	2.648	2.905	2.677	.11
OU842 C2SW2	STG	2009	09	30	2.482	2.677	2.879	2.707	.11
OU842 C2SW2	STG	2009	10	31	2.530	2.923	3.391	2.826	.26
OU842 C2SW2	STG	2009	11	30	2.670	3.150	3.303	3.180	.13
OU842 C2SW2	STG	2009	12	31	2.374	2.980	3.348	3.008	.26
OU842 C2SW2	STG	2010	01	31	2.691	3.118	3.259	3.174	.13
OU842 C2SW2	STG	2010	02	28	2.270	2.896	3.124	2.964	.20
OU842 C2SW2	STG	2010	03	31	2.919	3.053	3.204	3.047	.07
OU842 C2SW2	STG	2010	04	30	2.219	3.061	3.438	3.074	.29
OU842 C2SW2	STG	2010	05	31	2.527	3.016	3.471	3.138	.29
OU842 C2SW2	STG	2010	06	30	2.279	2.902	3.233	2.920	.19
OU842 C2SW2	STG	2010	07	31	2.416	3.065	3.238	3.110	.17
OU842 C2SW2	STG	2010	08	31	2.240	2.955	3.250	3.003	.21
OU842 C2SW2	STG	2010	09	30	2.217	2.892	3.450	2.894	.36
OU842 C2SW2	STG	2010	10	31	2.694	3.061	3.340	3.083	.20
OU842 C2SW2	STG	2010	11	30	3.015	3.269	3.384	3.269	.09
OU842 C2SW2	STG	2010	12	31	2.952	3.057	3.212	3.032	.08
OU842 C2SW2	STG	2011	01	31	2.831	3.003	3.219	2.966	.11
OU842 C2SW2	STG	2011	02	28	2.711	2.908	3.034	2.923	.10
OU842 C2SW2	STG	2011	03	31	2.273	2.488	2.718	2.515	.14
OU842 C2SW2	STG	2011	04	30	1.903	2.161	2.336	2.182	.12
OU842 C2SW2	STG	2011	05	31	1.462	1.881	2.225	1.942	.23
OU842 C2SW2	STG	2011	06	30	1.127	1.429	2.061	1.328	.27
OU842 C2SW2	STG	2011	07	31	2.280	2.778	3.073	2.808	.26
OU842 C2SW2	STG	2011	08	31	2.483	3.059	3.348	3.080	.23
OU842 C2SW2	STG	2011	09	30	2.958	3.199	3.425	3.233	.11
OU842 C2SW2	STG	2011	10	31	2.231	2.748	3.371	2.711	.32
OU842 C2SW2	STG	2011	11	30	2.433	3.050	3.465	3.037	.22
OU842 C2SW2	STG	2011	12	31	3.272	3.341	3.384	3.342	.03
OU842 C2SW2	STG	2012	01	31	3.194	3.253	3.287	3.255	.02
OU842 C2SW2	STG	2012	02	29	2.665	2.985	3.262	2.959	.18
OU842 C2SW2	STG	2012	03	31	2.852	3.050	3.268	3.073	.10
OU842 C2SW2	STG	2012	04	30	2.249	2.829	3.070	2.891	.18
OU842 C2SW2	STG	2012	05	31	2.120	2.587	3.434	2.278	.49
OU842 C2SW2	STG	2012	06	30	2.247	2.711	3.273	2.766	.30
OU842 C2SW2	STG	2012	07	31	2.138	2.735	3.626	2.802	.41
OU842 C2SW2	STG	2012	08	31	2.253	2.871	3.278	2.910	.33
OU842 C2SW2	STG	2012	09	30	2.068	2.478	3.086	2.320	.34
OU842 C2SW2	STG	2012	10	31	2.123	2.667	3.415	2.549	.43
OU842 C2SW2	STG	2012	11	30	2.597	2.734	3.174	2.685	.12
OU842 C2SW2	STG	2012	12	31	2.656	2.702	2.787	2.697	.03
OU842 C2SW2	STG	2013	01	31	2.735	2.806	2.874	2.791	.04
OU842 C2SW2	STG	2013	02	28	2.744	2.820	2.949	2.806	.06
OU842 C2SW2	STG	2013	03	31	2.678	2.762	2.860	2.751	.06
OU842 C2SW2	STG	2013	04	30	2.467	2.873	2.982	2.896	.10
OU842 C2SW2	STG	2013	05	31	2.255	2.707	2.948	2.736	.21
OU842 C2SW2	STG	2013	06	30	1.711	2.575	2.975	2.712	.31
OU842 C2SW2	STG	2013	07	31	2.000	2.584	3.577	2.501	.42
OU842 C2SW2	STG	2013	08	31	2.116	2.592	3.253	2.500	.35
OU842 C2SW2	STG	2013	09	30	2.239	2.653	3.395	2.652	.24
OU842 C2SW2	STG	2013	10	31	2.277	3.008	3.325	3.053	.28
OU842 C2SW2	STG	2013	11	30	2.264	2.955	3.355	3.022	.28
OU842 C2SW2	STG	2013	12	31	2.193	2.916	3.079	2.998	.24
OU842 C2SW2	STG	2014	01	31	2.629	2.745	2.973	2.727	.09
OU842 C2SW2	STG	2014	02	28	2.624	2.743	2.862	2.740	.06
OU842 C2SW2	STG	2014	03	31	2.615	2.726	2.846	2.720	.06
OU842 C2SW2	STG	2014	04	30	2.606	2.729	2.790	2.728	.05
OU842 C2SW2	STG	2014	05	31	2.425	2.625	2.791	2.625	.10
OU842 C2SW2	STG	2014	06	30	2.071	2.650	3.087	2.668	.26
OU842 C2SW2	STG	2014	07	31	2.143	2.672	3.312	2.680	.38
OU842 C2SW2	STG	2014	08	31	2.100	2.447	2.899	2.588	.28
OU842 C2SW2	STG	2014	09	30	2.100	2.530	2.970	2.630	.20
OU842 C2SW2	STG	2014	10	31	2.111	2.537	2.729	2.652	.20
OU842 C2SW2	STG	2014	11	30	2.622	2.658	2.701	2.653	.02
OU842 C2SW2	STG	2014	12	31	2.592	2.639	2.691	2.638	.02
OU842 C2SW2	STG	2015	01	31	2.601	2.654	2.722	2.654	.03
OU842 C2SW2	STG	2015	02	28	2.627	2.682	2.738	2.688	.03
OU842 C2SW2	STG	2015	03	31	2.480	2.617	2.719	2.640	.07
OU842 C2SW2	STG	2015	04	30	2.110	2.282	2.742	2.252	.13
OU842 C2SW2	STG	2015	05	31	2.244	2.563	2.782	2.612	.18
OU842 C2SW2	STG	2015	06	30	2.258	2.523	2.769	2.499	.18
OU842 C2SW2	STG	2015	07	31	2.328	2.566	2.836	2.541	.16
OU842 C2SW2	STG	2015	08	31	2.077	2.691	2.832	2.754	.17
OU842 C2SW2	STG	2015	09	30	2.121	2.631	3.115	2.676	.24
OU842 C2SW2	STG	2015	10	31	2.765	2.857	2.958	2.866	.05
OU842 C2SW2	STG	2015	11	30	2.235	2.534	2.763	2.573	.19
OU842 C2SW2	STG	2015	12	31	2.136	2.587	3.045	2.677	.24
OU842 C2SW2	STG	2016	01	31	2.148	2.522	2.707	2.639	.20
OU842 C2SW2	STG	2016	02	29	2.087	2.439	2.707	2.508	.22
OU842 C2SW2	STG	2016	03	31	2.346	2.650	2.757	2.656	.09
OU842 C2SW2	STG	2016	04	30	2.288	2.682	2.898	2.683	.11
OU842 C2SW2	STG	2016	05	31	2.068	2.672	3.025	2.730	.23
OU842 C2SW2	STG	2016	06	30	2.015	2.677	3.301	2.761	.41
OU842 C2SW2	STG	2016	07	31	2.720	2.925	3.143	2.889	.15
OU842 C2SW2	STG	2016	08	31	2.094	2.461	3.138	2.272	.34
OU842 C2SW2	STG	2016	09	30	2.070	2.178	3.032	2.136	.17
OU842 C2SW2	STG	2016	10	31	2.151	2.418	3.047	2.401	.21
OU842 C2SW2	STG	2016	11	30	2.114	2.551	2.715	2.650	.20
OU842 C2SW2	STG	2016	12	31	2.555	2.698	2.785	2.701	.04
OU842 C2SW2	STG	2017	01	31	2.654	2.712	2.814	2.713	.04
OU842 C2SW2	STG	2017	02	28	2.422	2.763	2.829	2.779	.07
OU842 C2SW2	STG	2017	03	31	2.667	2.752	2.847	2.754	.05
OU842 C2SW2	STG	2017	04	30	2.488	2.689	2.838	2.695	.11
OU842 C2SW2	STG	2017	05	31	2.336	2.572	2.815	2.545	.16
OU842 C2SW2	STG	2017	06	30	1.987	2.375	2.783	2.312	.25
OU842 C2SW2	STG	2017	07	31	2.144	2.475	2.782	2.396	.25
OU842 C2SW2	STG	2017	08	31	2.091	2.302	2.738	2.228	.21
OU842 C2SW2	STG	2017	09	30	2.022	2.565	4.913	2.522	.52
OU842 C2SW2	STG	2017	10	31	2.198	2.520	3.454	2.432	.29
OU842 C2SW2	STG	2017	11	30	2.041	2.358	3.185	2.249	.26
OU842 C2SW2	STG	2017	12	31	2.119	2.990	3.328	3.057	.32

OU842 C2SW2	STG	2018	01	31	3.077	3.187	3.295	3.170	.07
OU842 C2SW2	STG	2018	02	28	2.792	2.985	3.100	2.980	.06
OU842 C2SW2	STG	2018	03	31	2.640	2.851	3.016	2.873	.12
OU842 C2SW2	STG	2018	04	30	2.375	2.587	2.882	2.579	.14
OU842 C2SW2	STG	2018	05	31	2.066	2.462	2.934	2.344	.31
OU842 C2SW2	STG	2018	06	30	2.038	2.244	3.030	2.163	.23
OU842 C2SW2	STG	2018	07	31	2.046	2.173	2.287	2.169	.06
OU842 C2SW2	STG	2018	08	31	2.153	2.482	2.780	2.556	.25
OU842 C2SW2	STG	2018	09	30	2.108	2.481	2.759	2.477	.21
OU842 C2SW2	STG	2018	10	7	2.709	2.727	2.746	2.730	.02

Provisional data are excluded from this statistical report.

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Horizontal Information

	Source	Target
Reference Frame:	NAD83(2011/2007/CORS96/HARN) - North American techtonic plate fixed	NAD83(2011/2007/CORS96/HARN) - North American techtonic plate fixed
Coor. System:	Geographic (Longitude, Latitude)	Geographic (Longitude, Latitude)
Unit:	meter (m)	meter (m)
Zone:	AL E - 0101	AL E - 0101

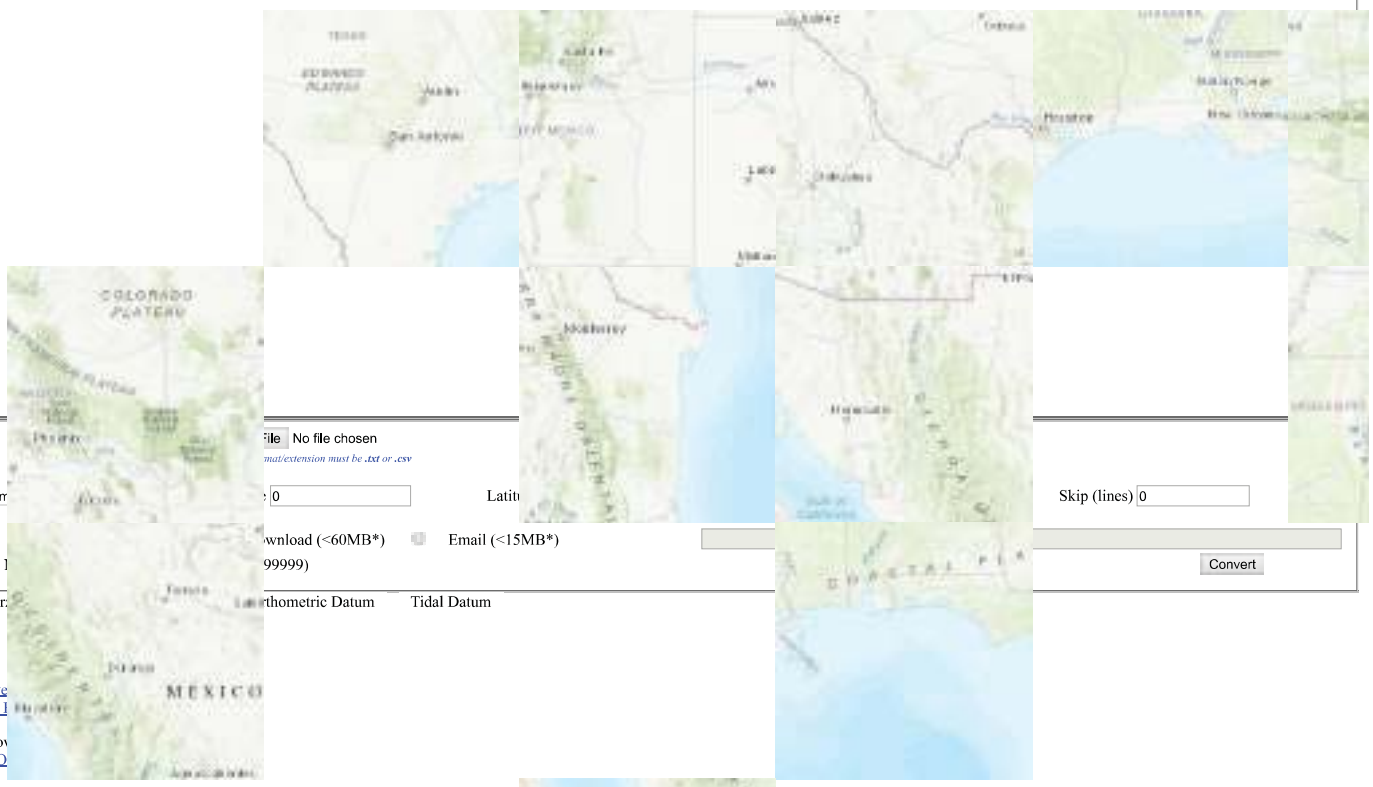
Vertical Information

	Source	Target
Reference Frame:	NGVD 1929	NAVD 88
Unit:	foot (U.S. Survey) (US_ft)	foot (U.S. Survey) (US_ft)
	Height Sounding	Height Sounding
	GEOID model: GEOID12B	GEOID model: GEOID12B

- Point Conversion
- ASCII File Conversion

Input			Output	
Longitude:	-80.306937	Convert	Longitude:	-80.3069370000
Latitude:	25.714473	Reset	Latitude:	25.7144730000
Height:		DMS	Height:	-1.555
	Drive to on map Reset Map			Drive to on map Reset Map
	to DMS		Vertical Uncertainty:	18.78829 cm

Vertical_Area: /core/vcn



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APPENDIX "D"

FHWA Checklist

GEOTECHNICAL REPORT REVIEW CHECKLISTS

The following checklists cover the major information and recommendations which should be addressed in project geotechnical reports.

Section A covers site investigation information which will be common to all geotechnical reports for any type of geotechnical feature.

Sections B through I cover the basic information and recommendations which should be presented in geotechnical reports for specific geotechnical features: centerline cuts and embankments, embankments over soft ground, landslides, retaining walls, structure foundations and material sites.

Subject Page

SECTION A, Site Investigation Information 2
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In most sections and subsections, the user has been provided supplemental page references to the Soils and Foundations Workshop Manual. These page numbers appear in parentheses ( ) immediately adjacent to the section or subsection topic. Generalist engineers are particularly encouraged to read these references. Additional reference information on these topics is available in the Geotechnical Notebook, a copy of which is kept in all Division Offices by either the Bridge Engineer or the engineer with the soils responsibility.

Certain checklist items are of vital importance to have been included in the geotechnical report. These checklist items have been marked with an asterisk (*). A negative response to any of these asterisked items is cause to contact the geotechnical engineer for clarification of this omission.

"GTR REVIEW CHECKLIST" (SITE INVESTIGATION)

A. Site Investigation Information

Since the most important step in the geotechnical design process is the conduct of an adequate site investigation, presentation of the subsurface information in the geotechnical report and on the plans deserves careful attention.

Geotechnical Report Text (Introduction) (Pages 322-325)	Yes	No	Unknown or N/A
1. Is the general location of the investigation described and/or vicinity map included?	X		
2. Is scope and purpose of the investigation summarized?	X		
3. Is concise description given of geologic setting and topography of area?	X		
4. Are the field explorations and laboratory tests on which the report is based listed?	X		
5. Is general description of subsurface soil, rock, and groundwater conditions given?	X		
*6. Is the following information included with the geotechnical report (typically included in report appendices):			
a. Test hole logs? (Pages 25-33)	X		
b. Field test data?	X		
c. Laboratory test data? (Pages 74-75)	X		
d. Photographs (if pertinent)?			X
Plan and Subsurface Profile (Pages 24, 47-49, 335)			
*7. Is a plan and subsurface profile of the investigation site provided?	X		

* A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

A. Site Investigation Information (Cont.)	Yes	No	Unknown or N/A
8. Are the field explorations located on the plan view?	X		
*9. Does the conducted site investigation meet minimum criteria outlined in Table 2?	X		
10. Are the explorations plotted and correctly numbered on the profile at their true elevation and location?	X		
11. Does the subsurface profile contain a word description and/or graphic depiction of soil and rock types?	X		
12. Are groundwater levels and data measured shown on the subsurface profile?	X		
Subsurface Profile or Field Boring Log (Pages 16-17, 25-29)			
13. Are sample types and depths noted?	X		
*14. Are SPT blow counts, percent core recovery, and RQD values shown?	X		
15. If cone penetration tests were made, are plots of cone resistance and friction ratio shown with depth?			X
Laboratory Test Data (Pages 60, 74-75)			
*16. Were lab soil classification tests such as natural moisture content, gradation, Atterberg limits, performed on selected representative samples to verify field visual soil identifications?	X		
17. Are laboratory test results such as shear strength (Page 62), consolidation (Page 68), etc., included and/or summarized?			X

* A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

"GTR REVIEW CHECKLIST" (CENTERLINE CUTS AND EMBANKMENTS)

B. Centerline Cuts and Embankments (Pages 6-9)

In addition to the basic information listed in Section A, is the following information provided in the project geotechnical report?

Are station to station descriptions included for:	Yes	No	Unknown or N/A
1. Existing surface and subsurface drainage?	___	___	X
2. Evidence of springs and excessively wet areas?	___	___	X
3. Slides, slumps, and faults noted along the alignment?	___	___	X
Are station to station recommendations included for the following:			
General Soil Cut or Fill			
4. Specific surface/subsurface drainage recommendations.	___	___	X
5. Excavation limits of unsuitable materials?	___	___	x
*6. Erosion protection measures for backslopes, side slopes, and ditches, including riprap recommendations or special slope treatments?	___	___	X
Soil Cuts (Pages 101-102)			
*7. Recommended cut slope design?	X		
8. Are clay cut slopes designed for minimum F.S. = 1.50?	___	___	X
9. Special usage of excavated soils?	___	___	X
10. Estimated shrink-swell factors for excavated materials?	___	___	X
11. If answer to 3 is yes, are recommendations	___	___	X

* A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

B. Centerline Cuts and Embankments (Cont.)	Yes	No	Unknown or N/A
Fills (Pages 77-79)			
11. Recommended fill slope design?	___	___	X
12. Will fill slope design provide minimum F.S. = 1.25?	___	___	X
Rock Slopes			
*13. Are recommended slope designs and blasting specifications provided?	___	___	X
*14. Is the need for special rock slope stabilization measures, e.g., rockfall catch ditch, wire mesh slope protection, shotcrete, rock bolts, addressed?	___	___	X
15. Has the use of "template" designs been avoided (such as designing all rock slopes on 1/4 to 1 rather than designing based on orientation of major rock jointing)?	___	___	X
*16. Have effects of blast induced vibrations on adjacent structures been evaluated?	___	___	X

* A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

THIS SECTION IS NOT APPLICABLE TO THE PROJECT

"GTR REVIEW CHECKLIST" (EMBANKMENTS OVER SOFT GROUND)

C. Embankments over Soft Ground

Where embankments must be built over soft ground (such as soft clays, organic silts, or peat), stability and settlement of the fill should be carefully evaluated. In addition to the basic information listed in Section A, is the following information provided in the project geotechnical report?

Embankment Stability (Pages 77-79, 95-97)	Yes	No	Unknown or N/A
*1. Has the stability of the embankment been evaluated for minimum safety factors of 1.25 for side slope stability and 1.30 for end slope stability of bridge approach embankments?			
*2. Has the shear strength of the foundation soil been determined from lab testing and/or field vane shear or static cone penetrometer tests?			
*3. If the proposed embankment does not provide minimum factors of safety given above, are recommendations given for feasible treatment alternates which will increase factor of safety to minimum acceptable (such as change alignment, lower grade, use stabilizing counterberms, excavate and replace weak subsoil, fill stage construction, lightweight fill, geotextile fabric reinforcement, etc.)?			
*4. Are cost comparisons of treatment alternates given and a specific alternate recommended?			
Settlement of Subsoil (Pages 146-160)			
5. Have consolidation properties of fine grained soils been determined from laboratory consolidation tests?			
*6. Have settlement amount and settlement time been estimated?			
7. For bridge approach embankments, are recommendations made to get the settlement out before the bridge abutment is constructed (waiting period, surcharge, or wick drains)?			

* A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

THIS SECTION IS NOT APPLICABLE TO THE PROJECT

C. Embankments Over Soft Ground (Cont.)	Yes	No	Unknown or N/A
8. If geotechnical instrumentation is proposed to monitor fill stability and settlement, are detailed recommendations provided on the number, type, and specific locations of the proposed instruments?			
9. Construction Considerations (Pages 183, 331-334)			
a. If excavation and replacement of unsuitable shallow surface deposits (peat, muck, topsoil) is recommended. Are vertical and lateral limits of recommended excavation provided?			
b. Where a surcharge treatment is recommended, are plan and cross-section of surcharge treatment provided in geotechnical report for benefit of the roadway designer?			
c. Are instructions or specifications providing concerning instrumentation, fill placement rates and estimated delay times for the contractor?			
d. Are recommendations provided for disposal of surcharge material after the settlement period is complete?			

* A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

THIS SECTION IS NOT APPLICABLE TO THE PROJECT

GTR REVIEW CHECKLIST" (LANDSLIDE CORRECTIONS)

D. Landslide Corrections (Pages 77-80, 103-105)

In addition to the basic information listed in Section A, is the following information provided in the landslide study geotechnical report? (Refer to Table 4 for guidance on the necessary technical support data for correction of slope instabilities)

	Yes	No	Unknown or N/A
*1. Is a site plan and scaled cross-section provided showing ground surface conditions both before and after failure?			
*2. Is the past history of the slide area summarized - including movement history, summary of maintenance work and costs, and previous corrective measures taken (if any)?			
*3. Is a summary given of results of site investigation, field and lab testing, and stability analysis, including cause(s) of the slide?			
Plan			
4. Are detailed slide features - including locations of ground surface cracks, head scarp, and toe bulge - shown on the site plan?			
Cross Section			
*5. Are the cross sections used for stability analysis included with the soil profile, water table, soil unit weights, soil shear strengths, and failure plane shown as it exists?			
6. Is slide failure plane location determined from slope indicators?			
*7. For an active slide, was soil strength along the slide failure plane backfigured using a safety factor equal to 1.0 at the time of failure?			

* A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

THIS SECTION IS NOT APPLICABLE TO THE PROJECT

D. Landslide Corrections (Cont.)	Yes	No	Unknown or N/A
Text			
*8. Is the following information presented for each proposed correction alternate: (typical correction methods include buttress, shear key, rebuild slope, surface drainage, subsurface drainage-interceptor, drain trenches or horizontal drains and retaining structures)?			
a. Cross-section of proposed alternate?			
b. Estimated safety factor?			
c. Estimated cost?			
d. Advantages and disadvantages?			
9. Is a recommended correction alternate(s) given which provide a minimum F.S. = 1.25?			
10. If horizontal drains are proposed as part of slide correction, has subsurface investigation located definite water bearing strata that can be tapped with horizontal drains?			
11. If a toe counterberm is proposed to stabilize an active slide, has field investigation confirmed that the toe of the existing slide does not extend beyond the toe of the proposed counterberm?			
12. Construction Considerations			
a. Where proposed correction will require excavation into the toe of an active slide (such as for buttress or shear key), has the "during construction backslope F.S." with open excavation been determined?			
b. If open excavation F.S. is near 1.0, has excavation stage construction been proposed?			
c. Has seasonal fluctuation of groundwater table been considered?			
d. Are special construction features, techniques and materials described and specified?			

* A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

THIS SECTION IS NOT APPLICABLE TO THE PROJECT

E. Retaining Walls (See Section 5 of "Geotechnical Engineering Notebook")

In addition to the basic information listed in Section A, is the following information provided in the project geotechnical report?

	Yes	No	Unknown or N/A
*1. Does the geotechnical report include recommended soil strength parameters and groundwater elevation for use in computing wall design lateral earth pressures and factor of safety for overturning, sliding, and external slope stability?			
2. Is it proposed to bid alternate wall designs?			
*3. Are acceptable reasons given for the choice and/or exclusion of certain wall types (gravity, reinforced soil, tieback, cantilever, etc.)?			
*4. Is an analysis of the wall stability included with minimum acceptable factors of safety against overturning (F.S. = 2.0), sliding (F.S. = 1.5), and external slope stability (F.S. = 1.5)?			
5. If wall will be placed on compressible foundation soils, is estimated total settlement, differential settlement, and time rate of settlement given?			
6. Will wall types selected for compressible foundation soils allow differential movement without distress?			
7. Are wall drainage details including materials and compaction provided?			
8. Construction Considerations:			
a. Are excavation requirements covered - safe slopes for open excavations, need for sheeting or shoring?			
b. Fluctuation of groundwater table?			

* A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

"THIS SECTION IS NOT APPLICABLE TO THE PROJECT"

THIS SECTION IS NOT APPLICABLE TO THE PROJECT

"GTR REVIEW CHECKLIST" (SPREAD FOOTINGS)

F. Structure Foundations - Spread Footings (Pages 191-205)

In addition to the basic information listed in Section A, is the following information provided in the project foundation report?

	Yes	No	Unknown or N/A
*1. Are spread footings recommended for foundation support? If not, are reasons for not using them discussed.			
*2. Is recommended bottom of footing elevation and reason for recommendation (e.g., based on frost depth, estimated scour depth, or depth to competent bearing material) given?			
*3. Is recommended allowable soil or rock bearing pressure given?			
*4. Is estimated footing settlement and time given?			
*5. Where spread footings are recommended to support abutments placed in the bridge end fills, are special gradation and compaction requirements provided for select end fill and backwall drainage material? (Pages 137-141)			
6. Construction Considerations:			
a. Have the materials been adequately described on which the footing is to be placed so the project inspector can verify that material is as expected?			
b. Have excavation requirements been included for safe slopes in open excavations, need for sheeting or shoring, etc.?			
c. Has fluctuations of the groundwater table been addressed?			

* A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

"GTR REVIEW CHECKLIST" (PILE FOUNDATIONS)

G. Structure Foundations - Piles (Pages 224-311)

In addition to the basic information listed in Section A, if pile support is recommended or given as an alternate, conclusions/recommendations should be provided in the project geotechnical report for the following:

	Yes	No	Unknown or N/A
*1. Is the recommended pile type given (displacement, nondisplacement, pipe pile, concrete pile, H-pile, etc.) with valid reasons given for choice and/or exclusion? (Pages 224-226)	X		
2. Do you consider the recommended pile type(s) to be the most suitable and economical?	X		
*3. Are estimated pile lengths and estimated tip elevations given for the recommended allowable pile design loads?	X		
4. Do you consider the recommended design loads to be reasonable?	X		
5. Has pile group settlement been estimated (only of practical significance for friction pile groups ending in cohesive soil)? (Pages 245-247)			X
6. If a specified or minimum pile tip elevation is recommended, is a clear reason given for the required tip elevation, such as underlying soft layers, scour, downdrag, piles uneconomically long, etc.?	X		
*7. Has design analysis (wave equation analysis) verified that the recommended pile section can be driven to the estimated or specified tip elevation without damage (especially applicable where dense gravel-cobble-boulder layers or other obstructions have to be penetrated?			X
8. Where scour piles are required, have pile design and driving criteria been established based on mobilizing the full pile design capacity below the scour zone?			X

* A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

G. Pile Foundations (Cont.)	Yes	No	Unknown or N/A
9. Where lateral load capacity of large diameter piles is an important design consideration, are p-y curves (load vs. deflection) or soil parameters given in the geotechnical report to allow the structural engineer to evaluate lateral load capacity of all piles?	X		
*10. For pile supported bridge abutments over soft ground:			
a. Has abutment pile downdrag load been estimated and solutions such as bitumen coating considered in design? Not generally required if surcharging of the fill is being performed. (Pages 248-251)			X
b. Is bridge approach slab recommended to moderate differential settlement between bridge ends and fill?			X
c. If the majority of subsoil settlement will not be removed prior to abutment construction (by surcharging), has estimate been made of the amount of abutment rotation that can occur due to lateral squeeze of soft subsoil? (Pages 114-115)			X
d. Does the geotechnical report specifically alert the structural designer to the estimated horizontal abutment movement?			X
11. If bridge project is large, has pile load test program been recommended? (Pages 229-302)			X
12. For a major structure in high seismic risk area, has assessment been made of liquefaction potential of foundation soil during design earthquake (note: only loose saturated sands and silts are "susceptible" to liquefaction)?	___	___	X

*A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for clarification and/or to discuss the project.

G. Pile Foundations (Cont.)	Yes	No	Unknown or N/A
13. Construction Considerations: (Pages 279-311)			
Have the following important construction considerations been adequately addressed?			
a. Pile driving details such as: boulders, or obstructions which may be encountered during driving - need for preaugering, jetting, spudding, need for pile tip reinforcement, driving shoes, etc.?	X		
b. Excavation requirements - safe slope for open excavations, need for sheeting or shoring? Fluctuation of groundwater table?	X		
c. Have effects of pile driving operation on adjacent structures been evaluated such as protection against damage caused by footing excavations or pile driving vibrations?	X		
d. Is preconstruction condition survey to be made of adjacent structures to prevent unwarranted damage claims?	X		
e. On large pile driving projects have other methods of pile driving control been considered such as dynamic testing or wave equation analysis?	X		

THIS SECTION IS NOT APPLICABLE TO THE PROJECT

"GTR REVIEW CHECKLIST" (DRILLED SHAFTS)

H. Structure Foundations - Drilled Shafts (Pages 252-260)

In addition to the basic information listed in Section A, if drilled shaft support is recommended or given as an alternate, are conclusions/recommendations provided in the project foundation report for the following:

	Yes	No	Unknown or N/A
*1. Are recommended shaft diameter(s) and length(s) for allowable design loads based on an analysis using soil parameters for side friction and end bearing?			
*2. Settlement estimated for recommended design load?			
*3. Where lateral load capacity of shaft is an important design consideration, are P-Y (load vs. deflection) curves or soils data provided in geotechnical report which will allow structural engineer to evaluate lateral load capacity of shaft?			
4. Is static load test (to plunging failure) recommended?			
5. Construction Considerations:			
a. Have construction methods been evaluated, i.e., can less expensive dry method or slurry method be used or will casing be required?			
b. If casing will be required, can casing be pulled as shaft is concreted (this can result in significant cost savings or very large diameter shafts)?			
c. If artesian water was encountered in explorations, have design provisions been included to handle it (such as by requiring casing and tremie seal)?			
d. Will boulders be encountered? (Note: If boulders will be encountered, then the use of shafts should be seriously questioned due to construction installation difficulties and resultant higher cost the boulders can cause.)			

* A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

THIS SECTION IS NOT APPLICABLE TO THE PROJECT

"GTR REVIEW CHECKLIST" (MATERIAL SITES)

I. Material Sites

In addition to the basic information listed in Section A, is the following information provided in the project Material Site Report?:

	Yes	No	Unknown or N/A
1. Material site location, including description of existing or proposed access routes and bridge load limits (if any)?			
*2. Have soil samples representative of all materials encountered during the pit investigation been submitted and tested?			
*3. Are laboratory quality test results included in the report?			
4. For aggregate sources, do the laboratory quality test results (such as L.A. abrasion, sodium sulfate, degradation, absorption, reactive aggregate, etc.) indicate if specification materials can be obtained from the deposit using normal processing methods?			
5. If the lab quality test results indicate that specification material cannot be obtained from the pit materials as they exist naturally - has the source been rejected or are detailed recommendations provided for processing or controlling production so as to ensure a satisfactory product.			
*6. For soil borrow sources, have possible difficulties been noted - such as above optimum moisture content clay-silt soils, waste due to high PI, boulders, etc?			
*7. Where high moisture content clay-silt soils must be used, are recommendations provided on the need for aeration to allow the materials to dry out sufficiently to meet compaction requirements?			
8. Are estimated shrink-swell factors provided?			

* A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

THIS SECTION IS NOT APPLICABLE TO THE PROJECT

I. Material Sites (Cont.)	Yes	No	Unknown or N/A
*9. Do the proven material site quantities satisfy the estimated project quantity needs?			
10. Where materials will be excavated from below the water table, has seasonal fluctuation of the water table been determined?			
11. Are special permit requirements covered?			
12. Have pit reclamation requirements been covered adequately?			
13. Has a material site sketch (plan and profile) been provided for inclusion in the plans, which contains:			
➢ Material site number?			
➢ North arrow and legal subdivision?			
➢ Test hole or test pit logs, location, number and date?			
➢ Water table elevation and date?			
➢ Depth of unsuitable overburden which will have to be stripped?			
➢ Suggested overburden disposal area?			
➢ Proposed mining area and previously mined areas?			
➢ Existing stockpile locations?			
➢ Existing or suggested access roads?			
➢ Bridge load limits?			
➢ Reclamation details?			
14. Are recommended special provisions provided?			

* A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

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