TEST SUMMARY

Quality Assurance

S&ME, Inc. Raleigh, 3201 Spring Forest Road, Raleigh, North Carolina 27616

Project #:	**1053-09-049**	Report Date:	8/8/2014
Project Name:	Governors Island	Test Date(s):	7/16 - 8/8/14
Client Name:	Allied Concrete Products		
Client Address:	3900 Shannon Street, Chesapeake, VA 23324		

Source:	Witelite Pumice	Sample #:	S-1	Sample Date:	Unknown
Location:	Plant	Offset:	N/A	Sample Type:	Bulk

Sample Description: Witelite Pumice Lightweight Aggregate

Sieve Analysis ASTM C136/C117

Sieve Size (mm)	Sieve Size	% Retained	ASTM C-331 Specifications
12.50	1/2"	0.0%	--
9.50	3/8"	0.0%	0 - 2
4.75	#4	9.5%	0 -10
2.360	#8	32.8%	15 - 35
1.800	#16	16.2%	15 - 35
0.600	#30	10.0%	5 - 20
0.300	#50	7.2%	5 - 15
0.150	#100	5.2%	5 - 15

PHYSICAL PROPERTIES		Test Designation	Test Results	Project Specifications
Moisture - Density (Proctor)		ASTM D698	56.0 pcf	<60 pcf
Minimum Index Density		ASTM D4254	47.2 pcf	<60 pcf
Maximum Index Density		ASTM D4253	57.4 pcf	<65 pcf
LA Abrastion - Grading D		ASTM C131	36%	N/A
Triaxial Compression	Cohesion C' (lbf/in2)	ASTM D7181	0	N/A
	Friction Angle (deg)	ASTM D7181	43.1	42
Resistivity - (ohms-cm)		AASHTO T288	2689	N/A
Maximum Chloride Content		AASHTO T291	28.45	100 ppm

Notes / Deviations / References:

Mal Krajan, ET		Laboratory Manager	8/8/2014
Technical Responsibility	*Signature*	*Position*	*Date*

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Form No: TR-T27-1T1
Revision No. 0
Revision Date: 03/05/08

Sieve Analysis of Fine and Coarse Aggregates

AASHTO T27, T11

Quality Assurance

S&ME, Inc. Raleigh, 3201 Spring Forest Road, Raleigh, North Carolina 27616

Project #:	**1053-09-049**	Report Date:	7/18/14
Project Name:	Governors Island	Test Date(s):	7/16 - 7/17/14
Client Name:	Allied Concrete Products		
Client Address:	3900 Shannon Street, Chesapeake, VA 23324		

Source:	Witelite Pumice	Sample #:	S-1	Sample Date:	Unknown
Location:	Plant	From:	Concrete Plant	Sample Type:	Bulk

Sample Description: Witelite Pumice Lightweight Aggregate

Sieve Size (mm)	Sieve Size	% Retained	C331 Specifications
75.00	3.0"	0.0%	--
50.00	2.0"	0.0%	--
37.50	1.5"	0.0%	--
25.00	1.0"	0.0%	--
19.00	3/4"	0.0%	--
12.50	1/2"	0.0%	--
9.50	3/8"	0.0%	**0 - 2**
4.75	#4	9.5%	**0 - 10**
2.360	#8	32.8%	**15 - 35**
1.800	#16	16.2%	**15 - 35**
0.600	#30	10.0%	**5 - 20**
0.300	#50	7.2%	**5 - 15**
0.150	#100	5.2%	**5 - 15**

Notes / Deviations / References:

ASTM C 117: Material Finer than the #200 Sieve in Mineral Aggregates by Washing
ASTM C702: Practice for Reducing Samples of Aggregate to Testing Size
ASTM C 136: Sieve Analysis of Fine and Coarse Aggregates

Mal Krajan, ET		Laboratory Manager	7/18/2014
Technical Responsibility	*Signature*	*Position*	*Date*

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Form No. TR-D698-2
Revision No. : 0
Revision Date: 11/21/07

Moisture - Density Report

S&ME

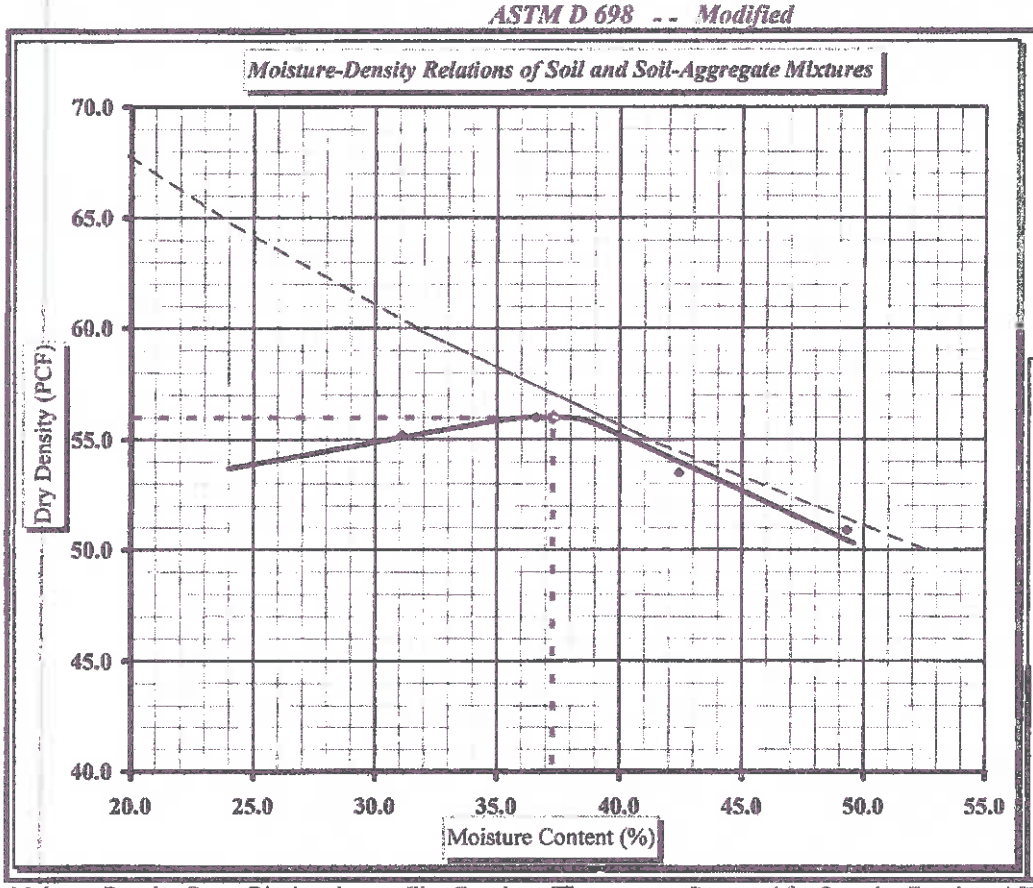
Quality Assurance

S&ME, Inc. Raleigh, 3201 Spring Forest Road, Raleigh, North Carolina 27616

S&ME Project #:	1053-09-049			Report Date:	7/24/14
Project Name:	Governors Island			Test Date(s):	7/23 - 7/24/14
Client Name:	Allied Concrete Products				
Client Address:	3900 Shannon Street, Chesapeake, VA 23324				
Boring #:	Witelite Pumice	Sample #:	S-1	Sample Date:	Unknown
Location:	Plant	Offset:	N/A	Depth:	N/A
Sample Description:	Witelite Pumice Lightweight Aggregate				

Maximum Dry Density 56.0 **PCF.** **Optimum Moisture Content** 37.3%

ASTM D 698 -- Modified



Soil Properties	
Natural Moisture Content	ND
Assumed Specific Gravity	1.386
Liquid Limit	ND
Plastic Limit	ND
Plastic Index	ND

% Passing	
3/4"	100.0%
3/8"	100.0%
#4	90.5%
#10	ND
#40	ND
#60	ND
#200	ND

Oversize Fraction

Bulk Gravity
% Moisture
% Oversize
MDD
Opt. MC

Moisture-Density Curve Displayed: Fine Fraction ☒ Corrected for Oversize Fraction (ASTM D 4718) ☐

Sieve Size used to separate the Oversize Fraction: #4 Sieve ☐ 3/8 inch Sieve ☐ 3/4 inch Sieve ☐

Mechanical Rammer ☐ Manual Rammer ☒ Moist Preparation ☐ Dry Preparation ☒

References / Comments / Deviations: ND=Not Determined

ASTM D 422: Particle Size Analysis of Soils

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 698: Laboratory Compaction Characteristics of Soil Using Standard Effort

Mal Krajan, ET		Laboratory Manager	7/24/2014
Technical Responsibility	*Signature*	*Position*	*Date*

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Form No: TR-C131-T96
Revision No. 0
Revision Date: 05/11/09

Los Angeles Abrasion Test

Methods: **ASTM C-131** ☒ **AASHTO T-96** ☐ *Quality Assurance*

S&ME, Inc. Raleigh, 3201 Spring Forest Road, Raleigh, North Carolina 27616

Project #:	**1053-09-049**	Report Date:	7/20/14
Project Name:	Governors Island	Test Date(s):	7/16 - 7/20/14
Client Name:	Allied Concrete Products		
Client Address:	3900 Shannon Street, Chesapeake, VA 23324		

Source:	Witelite Pumice	Sample #:	S-1	Sample Date:	Unknown
Location:	Plant	Offset:	N/A	Depth (ft):	Stockpile

Sample Description: Witelite Pumice Lightweight Aggregate

Equipment:	*LA Machine*	*S&ME ID#*	*1455*	*Cal. Date*	*12/9/13*	*Due*	*12/9/15*
Balance		*S&ME ID#*	*1002*	*Cal. Date*	*11/14/13*	*Due*	*11/3/14*
Oven		*S&ME ID#*	*1454*	*Cal. Date*	*10/1/13*	*Due*	*10/1/14*
Sieve #12		*S&ME ID#*	*1244*	*Cal. Date:*	*12/10/13*	*Due*	*12/10/14*

LA Abrasion Test Data				
Grading of Test Sample:	A ☐	B ☐	C ☐	D ☒
Number of Spheres:	12 ☐	11 ☐	8 ☐	6 ☒
Mass of Charge (g):	2494.6	Number of Revolutions:		500

Test Sample: Sieve Sizes				
Passing	Retained on	Sample Percent Passing	Sample Percent Retained	LA Test Mass (grams)
62.5 mm (2.5 in.)	50.0 mm (2.0 in.)			
50.0 mm (2 in.)	37.5 mm (1.5 in.)			
37.5 mm (1.5 in.)	25 mm (1.0 in.)			
25 mm (1.0 in.)	19 mm (0.75 in.)			
19 mm (0.75 in.)	12.5 mm (0.5 in.)			
12.5 mm (0.5 in.)	9.5 mm (3/8 in.)			
9.5 mm (3/8 in.)	6.3 mm (1/4 in.)			
6.3 mm (1/4 in.)	4.75 mm (#4)			
4.75 mm (#4)	2.36 mm (#8)			5004.3
Total Mass (Oven Dry Wt.):				5004.3
Final Oven Dry Wt. of Coarser than 1.70 mm (#12)				3197.1
Loss by Abrasion [A-B/A]*100				36%

Notes / Deviations / References:

AASHTO T-248 Practice for Reducing Samples of Aggregate to Testing Size

AASHTO T-27 Test Method for Sieve Analysis of Fine and Coarse Aggregates

ASTM C-136 Test Method for Sieve Analysis of Fine and Coarse Aggregates

ASTM C-702 Practice for Reducing Samples of Aggregate to Testing Size

Mal Krajan, ET		Laboratory Manager	7/20/2014
Technical Responsibility	*Signature*	*Position*	*Date*

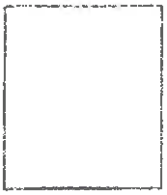
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Effective Stress Triaxial Compression

Consolidated Drained

Sample details

Sketch showing specimen location in original Sample



Depth: N/A
Description: Witelite Pumice Lightweight Aggregate

	Specimen 1	Specimen 2	Specimen 3
Type	Remolded	Remolded	Remolded
Height H_0 (in)	5.873	5.873	5.873
Diameter D_0 (in)	2.879	2.879	2.879
Weight W_0 (gr)	620	619.9	620.1
Bulk Density ρ (PCF)	61.73	61.77	61.79
Particle Density ρ_s	1.386 (measured)	1.386 (measured)	1.386 (measured)

Initial Conditions

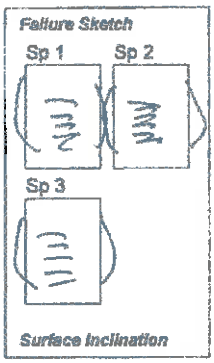
	Specimen 1	Specimen 2	Specimen 3
Cell Pressure σ_3 (lbf/in2)	12.0	20.0	28.0
Pore Pressure u (lbf/in2)	0.0	0.0	0.0
Machine Speed d_z(in/min)	0.0084	0.0157	0.0157
No. of Membranes	1	1	1
Total Thickness (in)	0.012	0.012	0.012
Strain Channel	1798	1798	1798
Load Channel	1776	1776	1776
Pore P. Channel	1779	1779	1779
Volume Channel	Volume Chang	Volume Chang	Volume Chang
Moisture Content w_0%	37.5	37.5	37.5
Dry Density ρ_{d0} (PCF)	44.94	44.93	44.95
Voids Ratio e_0	0.92	0.92	0.92
Deg of Saturation S_0%	56.17	56.16	56.19
Final B Value	0.95	0.96	0.96

Final Conditions

	Specimen 1	Specimen 2	Specimen 3
Moisture Content w_f%	60.4	56.9	66.4
Dry Density ρ_d (PCF)	46.02	46.40	46.70
Voids Ratio e_f	0.88	0.86	0.86
Deg of Saturation S_f%	95.21	91.22	100.00
Failure Criteria	Mx Stress Ratio	Mx Stress Ratio	Mx Stress Ratio
Axial Strain ε_f%	6.0	8.0	15.0
Corr Dev Stress $(\sigma_1 - \sigma_3)f$ (lbf/in2)	50.8	86.6	121.7
Minor Stress σ_{3f} (lbf/in2)	12.0	20.0	28.0
Major Stress σ_{1f} (lbf/in2)	62.8	106.6	149.7
Stress Ratio $(\sigma_1/\sigma_3)_f$	5.2	5.3	5.3

Notes: Test specimens compacted to 80% at optimum.

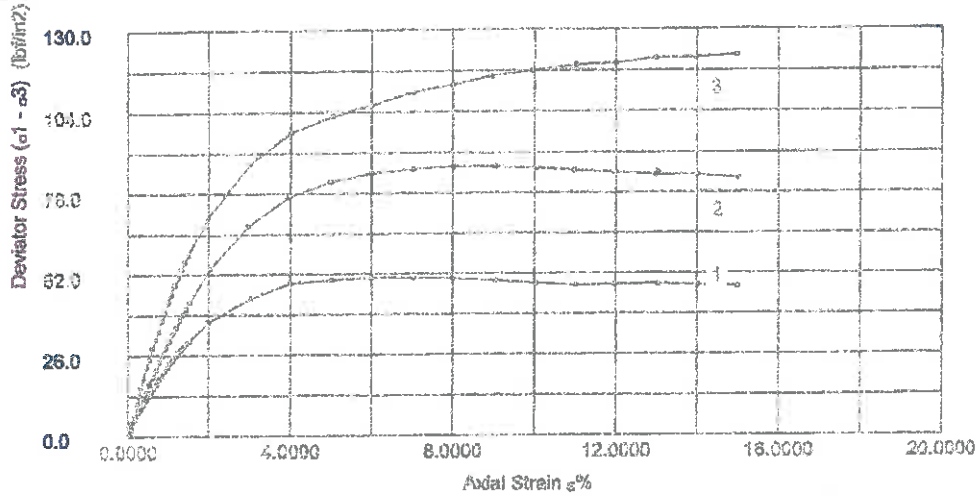
Failure Sketch

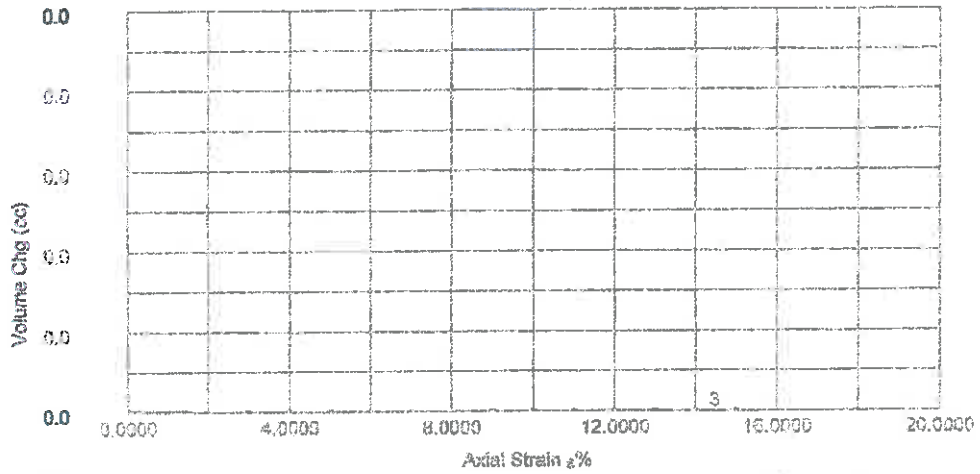


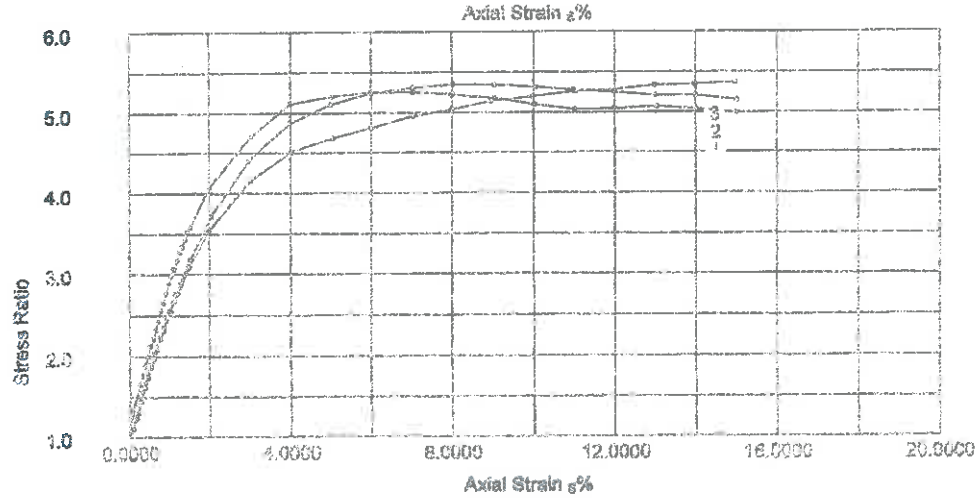
S&ME	Test Method: ASTM D7181	Test name: CD Triaxial (SS, MS)	
		Date of Test: 7-22-14	
	Site Reference: Allied Concrete Products LLC	Sample: S-1	
	Jobfile: E:\ALLIED14.JOB	Borehole: N/A	
	Operator: MC	Checked: MC	Approved: MC

Effective Stress Triaxial Compression

Consolidated Drained



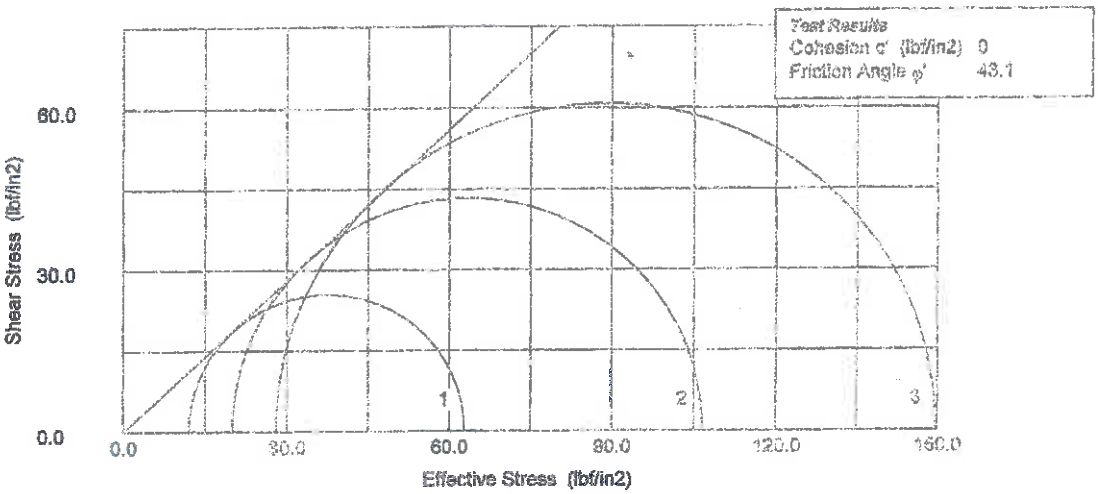


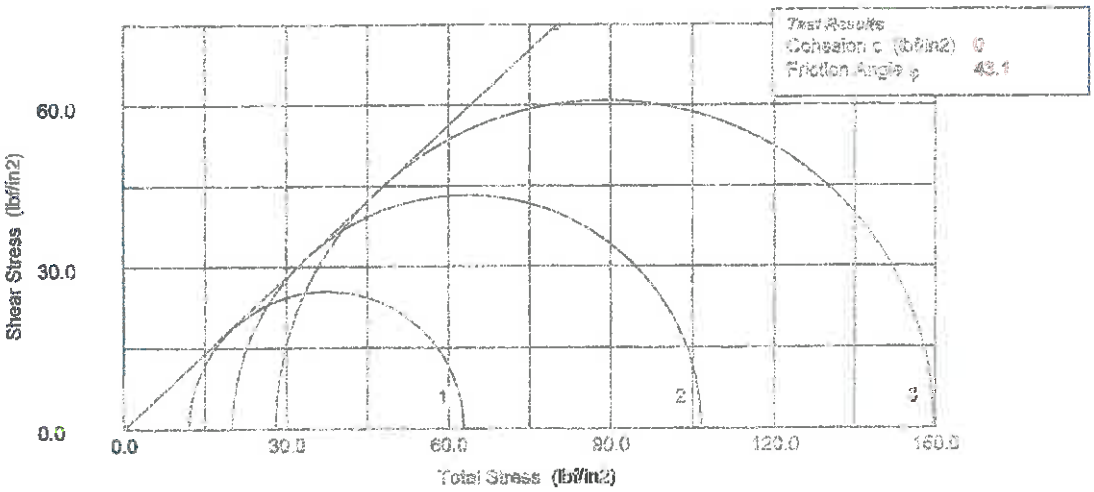


S&ME	Test Method: ASTM D7181	Test name: CD Triaxial (SS, MS)	Date of Test: 7-22-14
	Site Reference: Allied Concrete Products LLC	Sample: S-1	
	Jobfile: E:\ALLIED14.JOB	Borehole: N/A	
	Operator: MK	Checked: MK	Approved: MK

Effective Stress Triaxial Compression

Consolidated Drained





S&ME	Test Method: ASTM D7181	Test name: CD Triaxial (RS, MS)	
		Date of Test: 7-22-14	
	Site Reference: Allied Concrete Products LLC	Sample: S-1	
	Jobfile: E:\ALLIED14.JOB	Borehole: N/A	
	Operator: MLC	Checked: MLC	Approved: MLC

Effective Stress Triaxial Compression

Consolidated Drained Shear (Specimen 1)

No.	Strain (divs)	Strain ε%	Load (divs)	Load (lbs)	Volume (divs)	Volume (cc)	D. Stress $(\sigma_1 - \sigma_3)_m$ (lbf/in2)	D. Stress $(\sigma_1 - \sigma_3)_c$ (lbf/in2)	Minor Str σ_3' (lbf/in2)	Major Str σ_1' (lbf/in2)	Ratio σ_1'/σ_3'
1	1	0.00	105	0.0	0	0.0	0.0	0.0	12.00	12.00	1.00
2	37	0.08	343	23.8	0	0.0	3.7	3.7	12.00	15.71	1.31
3	74	0.13	410	30.5	0	0.0	4.8	4.8	12.00	16.76	1.40
4	113	0.19	493	38.8	0	0.0	6.0	6.0	12.00	18.05	1.50
5	150	0.26	566	46.3	0	0.0	7.7	7.7	12.00	19.68	1.64
6	189	0.32	684	57.9	0	0.0	9.0	9.0	12.00	21.01	1.75
7	227	0.39	764	65.9	0	0.0	10.2	10.2	12.00	22.25	1.85
8	268	0.46	864	75.9	0	0.0	11.8	11.8	12.00	23.79	1.98
9	304	0.52	961	85.6	0	0.0	13.3	13.1	12.00	25.13	2.09
10	342	0.59	1036	93.1	0	0.0	14.4	14.3	12.00	26.29	2.19
11	381	0.65	1122	101.7	0	0.0	15.8	15.6	12.00	27.61	2.30
12	421	0.72	1213	110.8	0	0.0	17.2	17.0	12.00	29.01	2.42
13	459	0.79	1310	120.5	0	0.0	18.7	18.5	12.00	30.50	2.54
14	499	0.85	1379	127.4	0	0.0	19.7	19.6	12.00	31.36	2.63
15	538	0.92	1471	136.6	0	0.0	21.1	21.0	12.00	32.97	2.75
16	577	0.99	1557	145.2	0	0.0	22.4	22.3	12.00	34.25	2.86
17	617	1.06	1640	153.5	0	0.0	23.7	23.6	12.00	35.55	2.96
18	656	1.12	1701	159.6	0	0.0	24.6	24.5	12.00	36.48	3.04
19	693	1.19	1787	168.2	0	0.0	25.9	25.8	12.00	37.79	3.15
20	732	1.25	1864	175.9	0	0.0	27.1	27.0	12.00	38.96	3.25
21	772	1.32	1920	181.6	0	0.0	28.0	27.8	12.00	39.80	3.32
22	812	1.39	1995	189.0	0	0.0	29.1	28.9	12.00	40.93	3.41
23	852	1.46	2067	196.2	0	0.0	30.2	30.0	12.00	42.02	3.50
24	890	1.53	2119	201.4	0	0.0	31.0	30.7	12.00	42.68	3.56
25	1169	2.00	2515	241.0	0	0.0	36.9	36.6	12.00	48.59	4.05
26	1763	3.02	3056	295.1	0	0.0	44.7	44.3	12.00	56.32	4.69
27	2324	3.99	3411	330.8	0	0.0	49.6	49.1	12.00	61.08	5.09
28	2928	5.02	3525	342.4	0	0.0	50.8	50.2	12.00	62.21	5.18
29	3493	5.99	3610	350.5	0	0.0	51.4	50.8	12.00	62.80	5.23
30	4096	7.03	3662	354.7	0	0.0	51.5	50.8	12.00	62.77	5.23
31	4666	8.01	3674	356.9	0	0.0	51.3	50.5	12.00	62.48	5.21
32	5274	9.05	3677	357.2	0	0.0	50.7	49.8	12.00	61.84	5.15
33	5845	10.03	3667	355.2	0	0.0	49.9	48.9	12.00	60.96	5.08
34	6412	11.00	3649	354.4	0	0.0	49.2	48.2	12.00	60.21	5.02
35	6981	11.98	3704	359.9	0	0.0	49.5	48.3	12.00	60.34	5.03
36	7596	13.04	3774	366.9	0	0.0	49.8	48.6	12.00	60.64	5.05
37	8166	14.01	3793	368.8	0	0.0	49.5	48.3	12.00	60.25	5.02
38	8738	15.00	3799	369.4	0	0.0	49.0	47.7	12.00	59.71	4.98

Effective Stress Triaxial Compression

Consolidated Drained Shear (Specimen 2)

No.	Strain (divs)	Strain ε%	Load (divs)	Load (lbs)	Volume (divs)	Volume (cc)	D. Stress $(\sigma_1 - \sigma_3)_m$ (lbf/in2)	D. Stress $(\sigma_1 - \sigma_3)_c$ (lbf/in2)	Minor Str σ_3' (lbf/in2)	Major Str σ_1' (lbf/in2)	Ratio σ_1'/σ_3'
1	4	0.00	155	0.0	0	0.0	0.0	0.0	20.00	20.00	1.00
2	40	0.06	443	28.8	0	0.0	4.5	4.5	20.00	24.52	1.23
3	87	0.14	471	31.6	0	0.0	5.0	5.0	20.00	24.95	1.25
4	131	0.22	526	37.1	0	0.0	5.8	5.8	20.00	25.81	1.29
5	177	0.30	703	54.6	0	0.0	8.8	8.6	20.00	28.58	1.43
6	225	0.38	922	76.7	0	0.0	12.0	12.0	20.00	31.99	1.60
7	273	0.46	1075	92.0	0	0.0	14.4	14.4	20.00	34.37	1.72
8	322	0.55	1255	110.0	0	0.0	17.2	17.0	20.00	37.01	1.85
9	368	0.63	1393	123.8	0	0.0	19.3	19.2	20.00	39.15	1.96
10	416	0.71	1535	138.0	0	0.0	21.5	21.3	20.00	41.35	2.07
11	464	0.79	1709	155.4	0	0.0	24.2	24.0	20.00	44.04	2.20
12	512	0.87	1839	168.4	0	0.0	26.2	26.0	20.00	46.04	2.30
13	559	0.96	2003	184.8	0	0.0	28.7	28.6	20.00	48.57	2.43
14	608	1.04	2139	198.4	0	0.0	30.8	30.7	20.00	50.66	2.53
15	657	1.12	2294	213.9	0	0.0	33.2	33.0	20.00	53.04	2.65
16	705	1.21	2421	226.6	0	0.0	35.1	35.0	20.00	54.98	2.75
17	753	1.29	2574	241.9	0	0.0	37.5	37.3	20.00	57.32	2.87
18	800	1.37	2696	254.1	0	0.0	39.3	39.2	20.00	59.18	2.96
19	849	1.45	2815	266.0	0	0.0	41.1	41.0	20.00	60.98	3.05
20	897	1.54	2964	280.9	0	0.0	43.4	43.1	20.00	63.13	3.16
21	1192	2.04	3679	352.4	0	0.0	54.2	53.9	20.00	73.90	3.70
22	1724	2.93	4619	446.4	0	0.0	68.0	67.6	20.00	87.63	4.38
23	2312	3.97	5295	514.0	0	0.0	77.6	77.0	20.00	96.99	4.85
24	2904	4.99	5669	551.4	0	0.0	82.2	81.7	20.00	101.67	5.08
25	3492	6.00	5926	577.1	0	0.0	85.1	84.5	20.00	104.51	5.23
26	4080	7.01	6082	592.7	0	0.0	86.5	86.3	20.00	105.79	5.29
27	4667	8.03	6209	605.4	0	0.0	87.4	86.6	20.00	106.60	5.33
28	5256	9.04	6275	612.0	0	0.0	87.4	86.5	20.00	106.50	5.33
29	5840	10.04	6314	615.9	0	0.0	87.0	86.0	20.00	106.01	5.30
30	6379	10.97	6323	616.8	0	0.0	86.2	85.2	20.00	105.16	5.26
31	6963	11.98	6356	620.1	0	0.0	85.7	84.6	20.00	104.56	5.23
32	7553	12.99	6375	622.0	0	0.0	84.9	83.8	20.00	103.77	5.19
33	8141	14.00	6450	629.5	0	0.0	85.0	83.7	20.00	103.71	5.19
34	8729	15.02	6444	628.9	0	0.0	83.9	82.6	20.00	102.58	5.13

S&ME	Test Method: ASTM D7181	Test name: CD Triaxial (SS, MS) Shear (Specimen 2)	
		Date of Test: 7-22-14	
	Site Reference: Allied Concrete Products LLC	Sample: S-1	
	Jobfile: E:\ALLIED14.JOB	Borehole: N/A	
	Operator: MK	Checked: MK	Approved: MK

Effective Stress Triaxial Compression

Consolidated Drained Shear (Specimen 3)

No.	Strain (divs)	Strain s%	Load (divs)	Load (lbs)	Volume (divs)	Volume (cc)	D. Stress $(\sigma_1 - \sigma_3)_m$ (lbf/in2)	D. Stress $(\sigma_1 - \sigma_3)_c$ (lbf/in2)	Minor Str σ_3 (lbf/in2)	Major Str σ_1 (lbf/in2)	Ratio σ_1'/σ_3'
1	411	0.00	359	0.0	0	0.0	0.0	0.0	28.00	28.00	1.00
2	460	0.08	509	15.0	0	0.0	2.4	2.4	28.00	30.37	1.08
3	508	0.17	750	39.1	0	0.0	6.2	6.2	28.00	34.18	1.22
4	551	0.24	1041	68.2	0	0.0	10.7	10.7	28.00	38.74	1.38
5	593	0.31	1330	97.1	0	0.0	15.3	15.3	28.00	43.28	1.55
6	635	0.39	1532	117.3	0	0.0	18.4	18.4	28.00	46.44	1.66
7	679	0.46	1773	141.4	0	0.0	22.2	22.2	28.00	50.21	1.79
8	725	0.54	1947	158.8	0	0.0	24.9	24.8	28.00	52.77	1.88
9	766	0.62	2175	181.6	0	0.0	28.5	28.3	28.00	56.32	2.01
10	812	0.69	2352	199.3	0	0.0	31.2	31.1	28.00	59.08	2.11
11	856	0.77	2527	216.8	0	0.0	34.0	33.8	28.00	61.79	2.21
12	902	0.85	2751	239.2	0	0.0	37.4	37.3	28.00	65.27	2.33
13	950	0.93	2912	255.3	0	0.0	39.9	39.8	28.00	67.76	2.42
14	997	1.01	3131	277.2	0	0.0	43.3	43.1	28.00	71.14	2.54
15	1040	1.09	3291	293.2	0	0.0	45.8	45.6	28.00	73.61	2.63
16	1088	1.17	3486	312.6	0	0.0	48.8	48.6	28.00	76.60	2.74
17	1136	1.25	3640	328.1	0	0.0	51.1	51.0	28.00	78.97	2.82
18	1184	1.33	3818	345.9	0	0.0	53.9	53.7	28.00	81.70	2.92
19	1231	1.42	3987	360.8	0	0.0	56.1	56.0	28.00	83.97	3.00
20	1279	1.50	4109	375.0	0	0.0	58.3	58.1	28.00	86.13	3.08
21	1569	2.00	4934	457.6	0	0.0	70.8	70.5	28.00	98.48	3.52
22	2162	3.00	6120	576.1	0	0.0	88.2	87.8	28.00	115.83	4.14
23	2740	4.02	6844	648.5	0	0.0	98.2	97.8	28.00	125.75	4.49
24	3335	5.05	7255	689.8	0	0.0	103.3	102.8	28.00	130.78	4.67
25	3893	6.01	7563	720.4	0	0.0	106.9	106.2	28.00	134.22	4.79
26	4485	7.03	7924	756.5	0	0.0	111.0	110.3	28.00	138.28	4.94
27	5046	8.00	8136	780.7	0	0.0	113.3	112.6	28.00	140.88	5.02
28	5607	8.97	8447	808.8	0	0.0	116.2	115.3	28.00	143.32	5.12
29	6183	9.95	8655	829.6	0	0.0	117.9	116.9	28.00	144.93	5.18
30	6796	11.02	8888	852.9	0	0.0	119.8	118.7	28.00	146.73	5.24
31	7367	12.00	9036	867.7	0	0.0	120.5	119.4	28.00	147.39	5.26
32	7936	12.99	9245	888.6	0	0.0	122.0	120.8	28.00	148.85	5.32
33	8507	13.97	9374	901.5	0	0.0	122.4	121.1	28.00	149.14	5.33
34	9089	14.98	9528	916.9	0	0.0	123.0	121.7	28.00	149.72	5.35

S&ME	Test Method: ASTM D7181	Test name: CD Triaxial (SS, MS) Shear (Specimen 3)	
		Date of Test: 7-22-14	
	Site Reference: Allied Concrete Products LLC	Sample: S-1	
	Jobfile: E:\ALLIED14.JOB	Borehole: N/A	
	Operator: MK	Checked: MK	Approved: MK

MINIMUM AND MAXIMUM DENSITY

ASTM D 4254-00, D 4253-00(SOP S-40S,40A)

Client	S&ME, INC.	Boring No.	N/A
Client Reference	ALLIED CONCRETE PRODUCT	Depth (ft)	N/A
Project No.	2014-729-01	Sample No.	1
Lab ID	2014-729-01-01	Visual	LIGHT GRAY PUMICE

Method Used 2A/2B (DRY/WET)
Mold Size (cf) 0.1

MINIMUM DENSITY - DRY

	Trial 1	Trial 2	Trial 3
Wght. of Mold & Soil (gm)	5806.0	5797.1	5803.9
Volume of Mold(cc)	2875.3	2875.3	2875.3
Weight of Mold (gm)	3626.7	3626.7	3626.7
Wght. of Soil (gm)	2179.3	2170.4	2177.2
Minimum Density(gm/cc)	0.76	0.75	0.76
Minimum Density (pcf)	47.3	47.1	47.3

	in	cm		in	cm
SurchargePlate Thickness	0.5143	1.3063	*Straight Edge Thickness (in)*	0.2510	0.6375

MAXIMUM DENSITY - WET

Trial 1

INITIAL DIAL READINGS

LEFT		*RIGHT*	
Reading 1	1533	Reading 1	1573
Reading 2	1530	Reading 2	1561
Reading 3	1524	Reading 3	1570
Initial Average	*1548.5*		

FINAL DIAL READINGS

LEFT		*RIGHT*	
Reading 1	1236	Reading 1	1291
Reading 2	1246	Reading 2	1302
Reading 3	1252	Reading 3	1314
Final Average	*1273.5*		

Water Content (%) 25.2

Trial 2

INITIAL DIAL READINGS

LEFT		*RIGHT*	
Reading 1	1558	Reading 1	1569
Reading 2	1553	Reading 2	1561
Reading 3	1550	Reading 3	1554
Initial Average	*1557.5*		

FINAL DIAL READINGS

LEFT		*RIGHT*	
Reading 1	1006	Reading 1	1025
Reading 2	996	Reading 2	1012
Reading 3	978	Reading 3	995
Final Average	*1002.0*		

Water Content (%) 25.6

Average Minimum and Maximum Density

		Final Volume trial 1 (cc)	*2748*
		Final Volume trial 2 (cc)	*2618*
		Maximum Wet Density trial 1 (gm/cc)	1.29
Average Minimum Density (gm/cc)	0.76	Maximum Wet Density trial 2 (gm/cc)	1.37
Average Minimum Dry Density (pcf)	47.2	Maximum Wet Density trial 1 (pcf)	80.7
		Maximum Wet Density trial 2 (pcf)	85.2
		Maximum Dry Density trial 1 (pcf)	56.1
		Maximum Dry Density trial 2 (pcf)	58.7
		Average Maximum Dry Density (pcf)	**57.4**

Tested By BW *Date* 07/31/14 *Checked By* MPS *Date* 8/1/2014

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Form No: TR-T288-1
Revision No. 9
Revision Date: 07/11/08

Soil Resistivity

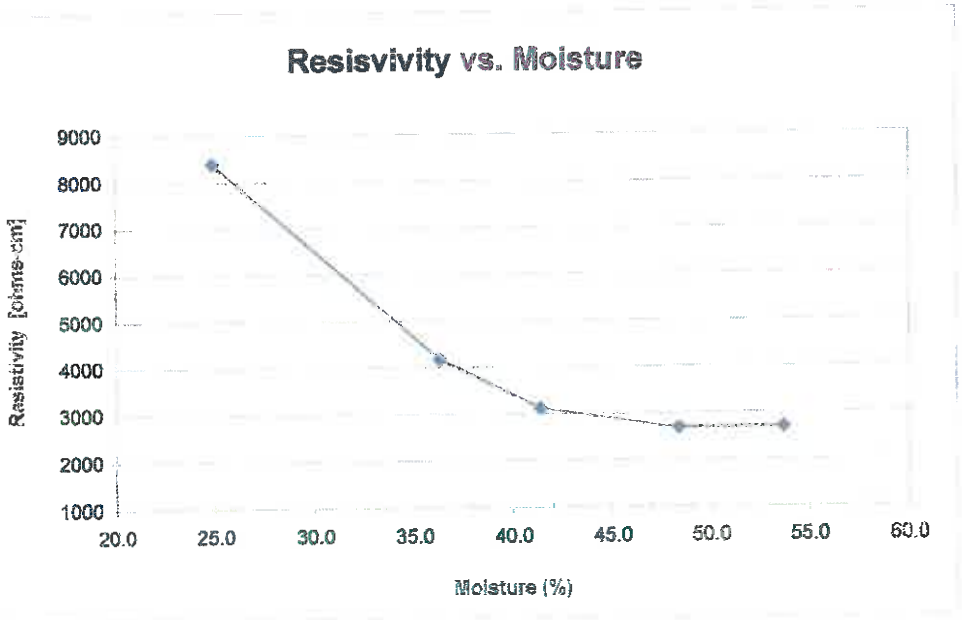
AASTHO T-288

Quality Assurance

S&ME, Inc. - Raleigh, 3201 Spring Forest Road, Raleigh, North Carolina 27616

Project #:	**1053-09-049**	Report Date:	8/1/14
Project Name:	Governors Island	Test Date(s):	7/26 - 8/1/14
Client Name:	Allied Concrete Products		
Client Address:	3900 Shannon Street, Chesapeake, VA 23324		
Source:	Witelite Pumice	Sample #: S-1	Sample Date: Unknown
Location:	Plant	Offset: N/A	Depth (ft): Stockpile
Sample Description:	Witelite Pumice Lightweight Aggregate		

Resistivity Determination	
Moisture (%)	Resistivity (ohms-cm)
24.9	8400
36.3	4167
41.3	3113
48.4	2689
53.7	2700
Minimum Resistivity	2689



Notes / Deviations / References:

Test was performed on crushed material passing the No. 10 sieve in general accordance with AASHTO T288.

AASHTO T 288, Determining Minimum Laboratory Soil Resistivity

AASHTO M-2, Wire-Cloth Sieves for Testing Purposes

AASHTO T 2, Sampling of Aggregate

AASHTO T 248, Reducing Samples of Aggregate to Testing Size

Mal Krajan, EIT		Laboratory Manager	8/1/2014
Technical Responsibility	*Signature*	*Position*	*Date*

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geotechnics
INTEGRITY IN TESTING

CHLORIDE ION CONTENT IN SOILS

AASHTO T 291 - 94 (2004) (METHOD B)

Client:	S&ME	Boring No.:	NA
Client Reference:	Allied Concrete Products, LLC	Depth (ft):	NA
Project No.:	2014-729-01	Sample No.:	1
Lab ID:	2014-729-01-01	Description:	GRAY CLAY
			(- # 10 Sieve material)

CHLORIDE STANDARD: CALIBRATION CURVE

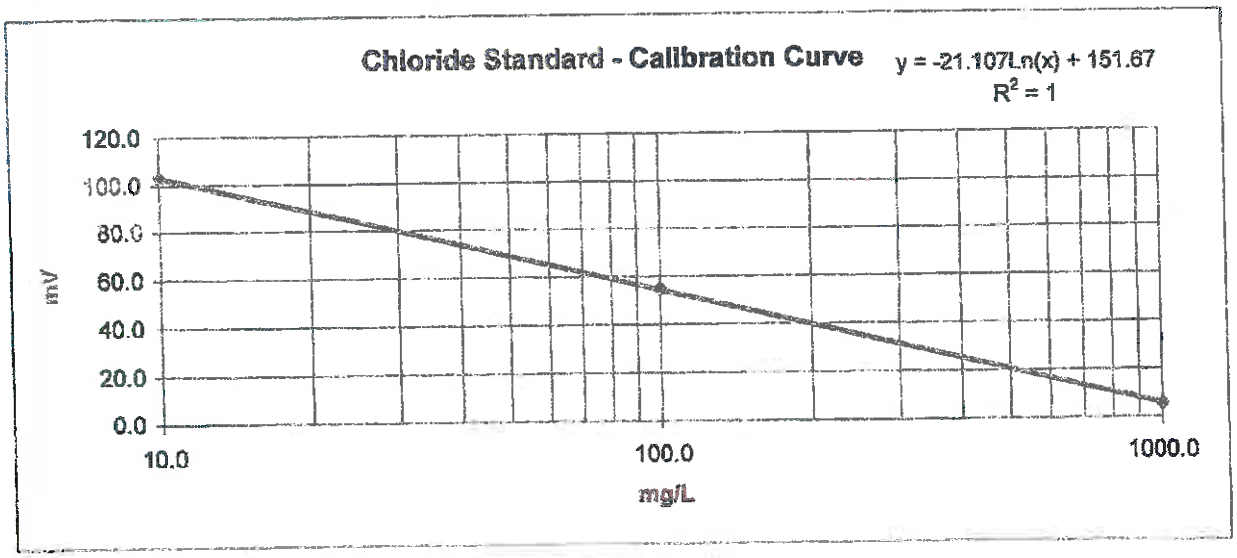
STANDARD	MILLIVOLTS (mV)
10.0 mg/L	102.9
100.0 mg/L	54.8
1000.0 mg/L	5.7

MEASUREMENT OF CHLORIDES

Sample Weight:	100.0	grams
Water added to Sample:	100.0	ml
Size of Sample Aliquot:	50.0	ml
Sample Reading:	81.0	mV

CONCENTRATION (mg/L)	CONCENTRATION (mg/kg)
28.45	28.45

Notes: Samples and standards were buffered by the addition of an equal volume of the 0.2 M KNO_3 solution (1:1 volume).
Samples were dried for a minimum of 12 hours at 110 °C ± 5°C.



Notes:

Tested By JAM Date 8/7/14 Checked By KC Date 8/7/14

\\GEOSERVER\Data Drive\2014 GEOTECHNICAL PROJECTS\S&ME\2014-729-01 Allied Concrete\[2014-729-01-01 Chloride.xls]Chloride

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TEST SUMMARY

S&ME

Quality Assurance

S&ME, Inc. Raleigh, 3201 Spring Forest Road, Raleigh, North Carolina 27616

Project #:	1053-09-049	Report Date:	12/16/13
Project Name:	Witelite Pumice Lightweight Aggregate	Test Date(s):	11/18 - 12/16/13
Client Name:			
Client Address:			
Source:	Witelite Pumice	Sample #:	S-1
Location:	Unknown	From:	Stockpile
Sample Description:	Witelite Pumice Lightweight Aggregate		

Sieve Analysis ASTM C136/C117

Sieve Size (mm)	Sieve Size	% Retained Between Sieves	% Retained Total Sample	Percent Passing Total Sample	Specifications
75.00	3.0"	0.0%	0.0%	100.0%	N/A
50.00	2.0"	0.0%	0.0%	100.0%	N/A
37.50	1.5"	0.0%	0.0%	100.0%	N/A
25.00	1.0"	0.0%	0.0%	100.0%	N/A
19.00	3/4"	0.0%	0.0%	100.0%	N/A
12.50	1/2"	11.9%	11.9%	88.1%	N/A
9.50	3/8"	51.1%	63.0%	37.0%	N/A
4.75	#4	24.9%	88.0%	12.0%	N/A
2.360	#8	0.8%	88.7%	11.3%	N/A
1.800	#16	0.7%	89.4%	10.6%	N/A
0.600	#30	0.6%	90.0%	10.0%	N/A
0.300	#50	0.7%	90.7%	9.3%	N/A
0.150	#100	1.1%	91.8%	8.2%	N/A
0.075	#200	1.5%	93.3%	6.7%	N/A
Washed #200				4.5%	N/A

Dry Unit Weight (Loose) - ASTM C-29		36.3 pcf	N/A
Moisture - Density (Proctor) - ASTM D698 Method C		45.0 pcf	N/A
Soundness - ASTM C88 (Magnesium Sulfate)		40.7%	N/A
LA Abrasion - ASTM C131 Method B		43%	N/A
Triaxial Compression - ASTM D4767	Cohesion C' (lbf/in2)	3.67	N/A
	Friction Angle (deg)	45.6	N/A
Resistivity - AASHTO T288 (ohms-cm)		2402	N/A

Notes / Deviations / References:

Mal Krajan, ET — *Technical Responsibility*

Signature

Laboratory Manager — *Position*

12/16/2013 — *Date*

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Form No: TR-C136-1T1
Revision No. 0
Revision Date: 03/05/08

Sieve Analysis of Fine and Coarse Aggregates

S&ME

ASTM C136, C117 *Quality Assurance*

S&ME, Inc. Raleigh, 3201 Spring Forest Road, Raleigh, North Carolina 27616

Project #:	**1053-09-049**	Report Date:	11/20/13
Project Name:	Witelite Pumice Lightweight Aggregate	Test Date(s):	11/18 - 11/20/13
Client Name:			
Client Address:			
Source:	Witelite Pumice	Sample #:	S-1
Location:	Unknown	From:	Stockpile
Sample Description:	Witelite Pumice Lightweight Aggregate		

Sieve Size (mm)	Sieve Size	% Retained Between Sieves	% Retained Total Sample	Percent Passing Total Sample	Specifications
75.00	3.0"	0.0%	0.0%	**100.0%**	**N/A**
50.00	2.0"	0.0%	0.0%	**100.0%**	**N/A**
37.50	1.5"	0.0%	0.0%	**100.0%**	**N/A**
25.00	1.0"	0.0%	0.0%	**100.0%**	**N/A**
19.00	3/4"	0.0%	0.0%	**100.0%**	**N/A**
12.50	1/2"	11.9%	11.9%	**88.1%**	**N/A**
9.50	3/8"	51.1%	63.0%	**37.0%**	**N/A**
4.75	#4	24.9%	88.0%	**12.0%**	**N/A**
2.360	#8	0.8%	88.7%	**11.3%**	**N/A**
1.800	#16	0.7%	89.4%	**10.6%**	**N/A**
0.600	#30	0.6%	90.0%	**10.0%**	**N/A**
0.300	#50	0.7%	90.7%	**9.3%**	**N/A**
0.150	#100	1.1%	91.8%	**8.2%**	**N/A**
0.075	#200	1.5%	93.3%	**6.7%**	**N/A**
			Washed #200	**4.5%**	

Maximum Particle Size	3/4"	% Absorption	19.4%	Moisture Content	ND
Specific Gravity (SSD)	1.17	Fineness Modulus	6.02		

Notes / Deviations / References: ND=Not Determined.

AASHTO T11: Material Finer than the #200 Sieve in Mineral Aggregates by Washing
AASHTO T248: Practice for Reducing Samples of Aggregate to Testing Size
AASHTO T27: Sieve Analysis of Fine and Coarse Aggregates

Mal Krajan, ET		Laboratory Manager	12/5/2013
Technical Responsibility	*Signature*	*Position*	*Date*

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Form No: TR-C29
Revision No. 0
Revision Date: 03/05/09

Bulk Density (Unit Weight) and Voids

ASTM C-29

Quality Assurance

S&ME, Inc. Raleigh. 3201 Spring Forest Road. Raleigh, North Carolina 27616

Project #:	**1053-09-049**	Report Date:	11/22/13
Project Name:	Witelite Pumice Lightweight Aggregate	Test Date(s):	11/18 - 11/22/13
Client Name:			
Client Address:			
Source:	Witelite Pumice	Sample #: S-1	Sample Date: Unknown
Location:	Stockpile	Offset: N/A	Depth (ft): Stockpile
Sample Description:	Witelite Pumice Lightweight Aggregate		

Equipment:	*Balance*	*S&ME ID#*	*1002*	*Cal Date*	*11/4/09*	*Due*	*11/4/10*
Oven		*S&ME ID#*	*1454*	*Cal Date*	*9/30/13*	*Due*	*2/30/14*
Measure		*S&ME ID#*	*1912*	*Cal Date*	*11/3/13*	*Due*	*11/3/14*
Tamping Rod		*S&ME ID#*	*390*	*Cal Date*	*11/29/13*	*Due*	*11/29/14*

Methods Rodding : ☐ Jigging : ☐ Shoveling : ☒

	Measurements	#	1912	1912
T	Mass of Measure	lbs.	11.18	11.18
G	Mass of Measure plus Aggregate	lbs.	29.38	29.39
m	Mass of Aggregate (lbs.)	G - T	18.20	18.21
V	Volume of Measure	cubic feet	0.5018	0.5018
M	Bulk Density of the Aggregate (pcf)	M = m / V	36.3	
S	Bulk Specific Gravity (Dry)	ASTM C127	0.981	
W	Density of Water	62.3 lb/ft^3	62.4	
	% Voids	100 [(S x W) - M] / (S x W)	40.3%	
A	% Absorption	ASTM C127	19.4%	
M_{ssd}	Bulk Density (SSD condition)	M[1+(A/100)]	43.3	

Notes / Deviations / References:

ASTM C-127 Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregates
ASTM C-29 Standard Test Method for Bulk Density (Unit Weight) and Voids in Aggregate
ASTM C-702 Practice for Reducing Samples of Aggregate to Testing Size
ASTM D-75 Practice for Sampling Aggregates

Mal Krajan, ET		Laboratory Technician	
Technician Name	*certification #*	*Position*	*Date*
Mal Krajan, ET		Laboratory Manager	12/5/2013
Technical Responsibility	*Signature*	*Position*	*Date*

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Form No. TR-D698-2
Revision No. : 0
Revision Date: 11/21/07

Moisture - Density Report

S&ME

Quality Assurance

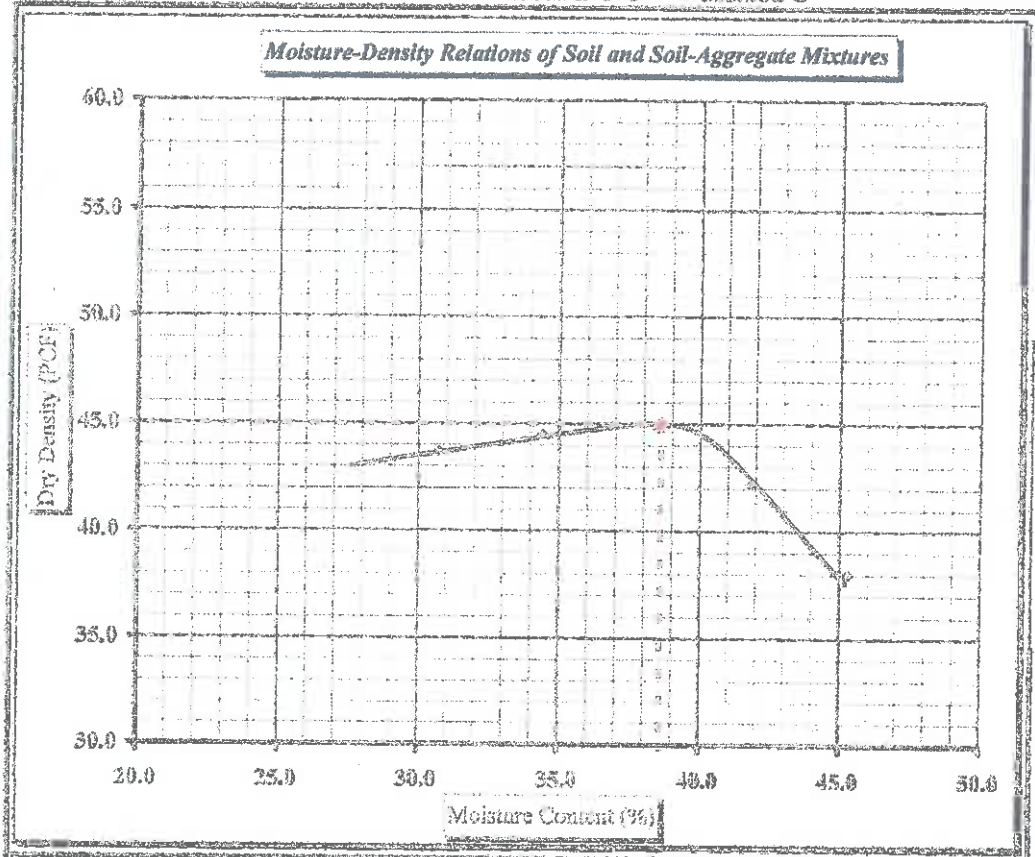
S&ME, Inc. Raleigh, 3201 Spring Forest Road, Raleigh, North Carolina 27616

S&ME Project #:	1053-09-049	Report Date:	12/4/13
Project Name:	Witelite Pumice Lightweight Aggregate	Test Date(s):	11/29 - 12/4/13
Client Name:			
Client Address:			

Boring #:	NA	Sample #:	Bulk	Sample Date:	Unknown
Location:	Stockpile	Offset:	NA	Depth:	Stockpile
Sample Description:	Witelite Pumice Lightweight Aggregate				

Maximum Dry Density 45.0 **PCF.** **Optimum Moisture Content** 38.6%

ASTM D 698 - - Method C



Soil Properties

Natural Moisture Content	ND
Specific Gravity of Soil	1.171
Liquid Limit	ND
Plastic Limit	ND
Plastic Index	ND

% Passing

3/4"	100.0%
3/8"	17.0%
#4	12.5%
#8	11.3%
#30	10.0%
#50	8.2%
#200	6.7%

Oversize Fraction

Bulk Gravity	
% Moisture	
% Oversize	
MDD	
Opt. MC	

Moisture-Density Curve Displayed: Fine Fraction ☒ Corrected for Oversize Fraction (ASTM D 4718) ☐

Sieve Size used to separate the Oversize Fraction: #4 Sieve ☐ 3/8 inch Sieve ☐ 3/4 inch Sieve ☒

Mechanical Rammer ☐ Manual Rammer ☒ Moist Preparation ☒ Dry Preparation ☐

References / Comments / Deviations: ND=Not Determined.

ASTM C 136: Sieve Analysis of Fine and Coarse Aggregates

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 698: Laboratory Compaction Characteristics of Soil Using Standard Effort

Mal Krajan		Laboratory Manager	12/5/2013
Technical Responsibility	*Signature*	*Position*	*Date*

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Form No: TR-C88-T104
Revision No. 0
Revision Date: 05/11/09
Test Methods:

Soundness of Aggregates by Use of Sodium Sulphate or Magnesium Sulphate

ASTM C-88 ☒ AASHTO T-104 ☐

S&ME *Quality Assurance*

S&ME, Inc. Raleigh, 3201 Spring Forest Road, Raleigh, North Carolina 27616

Project #:	**1053-09-049**	Report Date:	12/2/13
Project Name:	Witelite Pumice Lightweight Aggregate	Test Date(s):	11/18 - 12/2/13
Client Name:			
Client Address:			
Source:	Witelite Pumice	Sample #: S-1	Sample Date: Unknown
Location:	Stockpile	Sample From: Stockpile	Sample Type: Bulk
Sample Description:	Witelite Pumice Lightweight Aggregate		

Equipment:	*Balance*	*S&ME ID#*	*1002*	*Cal. Date*	*11/3/13*	*Due*	*11/3/14*
	Oven	*S&ME ID#*	*1454*	*Cal. Date*	*9/30/13*	*Due*	*1/30/14*

Solution Type: Sodium Sulphate ☐ Magnesium Sulphate ☒

Soundness Test of Coarse Aggregate						
Sieve Size		Grading	Weight of Test Fraction (grams)		Percent Loss On Sieve After Test	Weighted Percent Loss
% Passing	% Retained		Initial	Final		
3"	2 1/2"					
2 1/2"	2"					
2"	1 1/2"					
1 1/2"	1"					
1"	3/4"					
3/4"	1/2"	14	670.5	477.0	28.86	4.0
1/2"	3/8"	58	330.6	191.8	41.98	24.4
3/8"	#4	28	300.5	168.5	43.93	12.3
Total		100				40.7
Soundness Test of Fine Aggregate						
3/8"	#4	3				
#4	#8	19				
#8	#16	29				
#16	#30	27				
#30	#50	22				
-#50						
Total		100				

Notes / Deviations / References: *Total Percent Weighted Average Loss Based on Five (5) Cycles.*

ASTM C-702 Practice for Reducing Samples of Aggregate to Testing Size

ASTM C-136 Test Method for Sieve Analysis of Fine and Coarse Aggregates

AASHTO M-92 Wire-Cloth Sieves for Testing Purposes

AASHTO T-27 Test Method for Sieve Analysis of Fine and Coarse Aggregates

Mal Krajan, ET		Laboratory Manager	12/2/2013
Technical Responsibility	*Signature*	*Position*	*Date*

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Form No: TR-C131-T96
Revision No. 0
Revision Date: 05/11/09

Los Angeles Abrasion Test

S&ME

Methods: **ASTM C-131** ☒ **AASHTO T-96** ☐ *Quality Assurance*

S&ME, Inc. Raleigh, 3201 Spring Forest Road, Raleigh, North Carolina 27616

Project #:	**1053-09-049**	Report Date:	11/22/13
Project Name:	Witelite Pumice Lightweight Aggregate	Test Date(s):	11/18 - 11/21/13
Client Name:			
Client Address:			

Source:	Witelite Pumice	Sample #:	S-1	Sample Date:	Unknown
Location:	Stockpile	Offset:	N/A	Depth (ft):	Stockpile
Sample Description:	Witelite Pumice Lightweight Aggregate				

Equipment:	*LA Machine*	*S&ME ID#*	*1455*	*Cal. Date:*	*12/9/13*	*Due*	*12/9/15*
Balance		*S&ME ID#*	*1002*	*Cal. Date:*	*11/3/13*	*Due*	*11/3/14*
Oven		*S&ME ID#*	*1454*	*Cal. Date:*	*9/30/13*	*Due*	*2/30/14*
Sieve #12		*S&ME ID#*	*1244*	*Cal. Date:*	*12/10/12*	*Due*	*12/10/13*

LA Abrasion Test Data				
Grading of Test Sample:	A ☐	B ☒	C ☐	D ☐
Number of Spheres:	12 ☐	11 ☒	8 ☐	6 ☐
Mass of Charge (g):	4593.2	Number of Revolutions:		500

Test Sample: Sieve Sizes				
Passing	Retained on	Sample Percent Passing	Sample Percent Retained	LA Test Mass (grams)
62.5 mm (2.5 in.)	50.0 mm (2.0 in.)			
50.0 mm (2 in.)	37.5 mm (1.5 in.)			
37.5 mm (1.5 in.)	25 mm (1.0 in.)			
25 mm (1.0 in.)	19 mm (0.75 in.)			
19 mm (0.75 in.)	12.5 mm (0.5 in.)			2501.2
12.5 mm (0.5 in.)	9.5 mm (3/8 in.)			2501.5
9.5 mm (3/8 in.)	6.3 mm (1/4 in.)			
6.3 mm (1/4 in.)	4.75 mm (#4)			
4.75 mm (#4)	2.36 mm (#8)			
Total Mass (Oven Dry Wt.):				5002.7
Final Oven Dry Wt. of Coarser than 1.70 mm (#12)				2846.9
Loss by Abrasion [A-B/A]*100				43%

Notes / Deviations / References:

AASHTO T-248 Practice for Reducing Samples of Aggregate to Testing Size
AASHTO T-27 Test Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM C-136 Test Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM C-702 Practice for Reducing Samples of Aggregate to Testing Size

Mal Krajan, ET		Laboratory Manager	12/2/2013
Technical Responsibility	*Signature*	*Position*	*Date*

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Effective Stress Triaxial Compression

Consolidated Undrained

Sample details

Sketch showing specimen location in original Sample



Depth N/A
Description: Witelite Pumice Lightweight Aggregate

	Specimen 1	Specimen 2	Specimen 3
Type	Lab-Compacted	Lab-Compacted	Lab-Compacted
Height H_0 (in)	5.894	5.893	5.894
Diameter D_0 (in)	2.893	2.895	2.893
Weight W_0 (gr)	600	600.5	600.1
Bulk Density ρ (PCF)	59.00	59.02	59.11
Particle Density ρ_s	1.117 (measured)	1.171 (measured)	1.171 (measured)

Initial Conditions

	Specimen 1	Specimen 2	Specimen 3
Cell Pressure σ_3 (lbf/in2)	5.0	10.0	20.0
Pore Pressure u (lbf/in2)	0.0	0.0	0.0
Machine Speed d_r(in/min)	0.0118	0.0133	0.0131
No. of Membranes	1	1	1
Total Thickness (in)	0.012	0.012	0.012
Strain Channel	1798	1798	1798
Load Channel	1776	1776	1776
Pore P. Channel	1779	1779	1779
Volume Channel	Volume Chang	Volume Chang	Volume Chang
Moisture Content w_0%	38.6	38.6	38.6
Dry Density ρ_{d0} (PCF)	42.58	42.58	42.64
Voids Ratio e_0	0.64	0.72	0.71
Deg of Saturation S_0%	97.35	83.16	83.37
Final B Value	0.96	0.95	0.96

Final Conditions

	Specimen 1	Specimen 2	Specimen 3
Moisture Content w_f%	53.2	55.9	55.6
Dry Density ρ_d (PCF)	42.81	42.55	43.21
Voids Ratio e_f	0.63	0.70	0.69
Deg of Saturation S_f%	94.55	88.00	94.01
Failure Criteria	Mx Stress Ratio	Mx Stress Ratio	Mx Stress Ratio
Axial Strain ε_f%	2.0	3.0	3.0
Corr Dev Stress $(\sigma_1 - \sigma_3)f$ (lbf/in2)	43.2	57.3	100.2
Minor Stress σ_{3f} (lbf/in2)	4.8	8.6	16.5
Major Stress σ_{1f} (lbf/in2)	48.0	65.9	116.7
Stress Ratio $(\sigma_1/\sigma_3)_f$	10.0	7.7	7.1

Notes.

Failure Sketch



S&ME

Test Method: ASTM D4767-95 | Test name: CU Triaxial (SS, MS) | Date of Test: 12-9-15

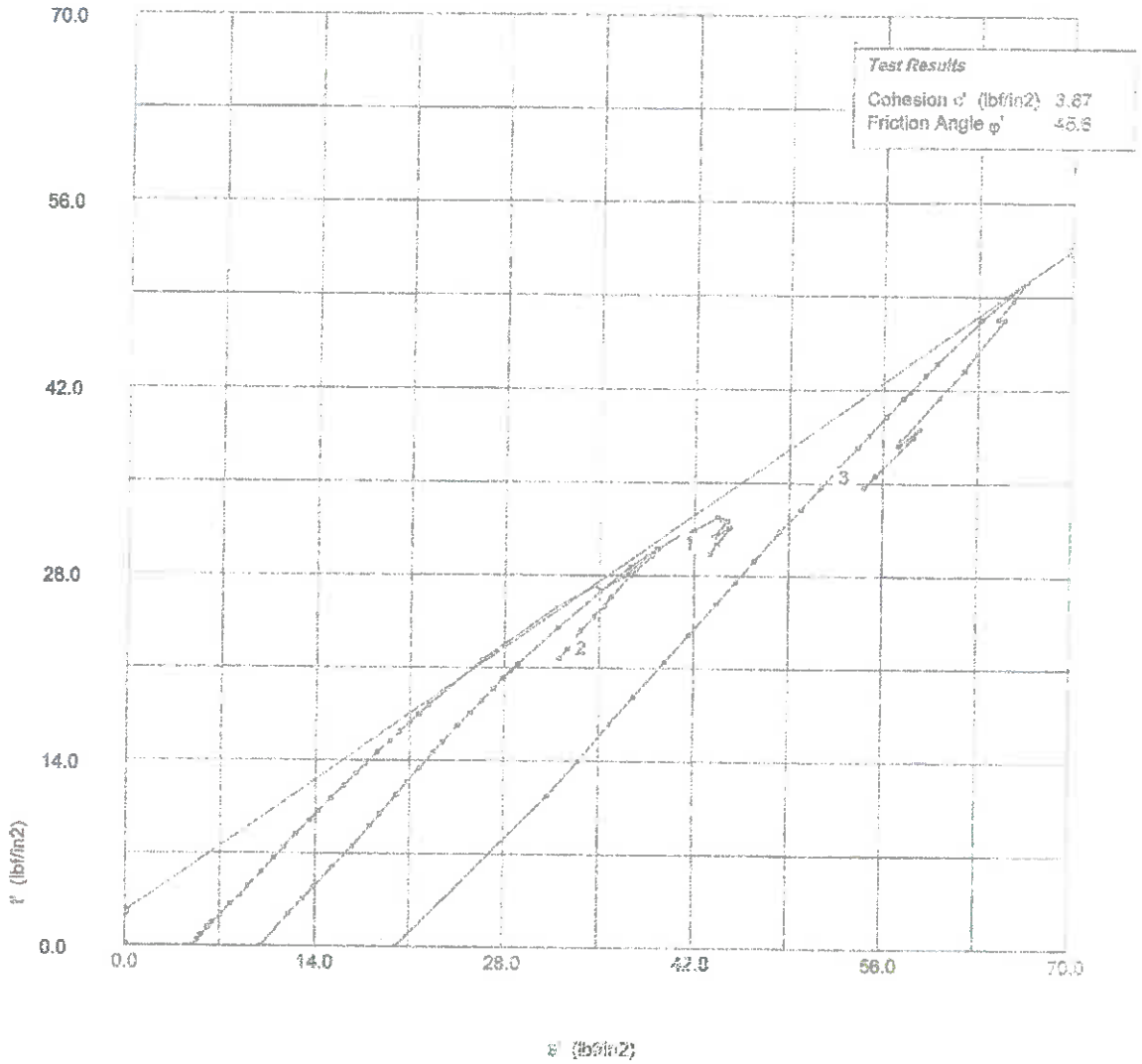
Site Reference: Witelite Pumice Lightweight Aggr | Sample: Sample #1

Jobfile: E:\WITELITE.JOB | Borehole: S-1

Operator: | Checked: | Approved:

Effective Stress Triaxial Compression

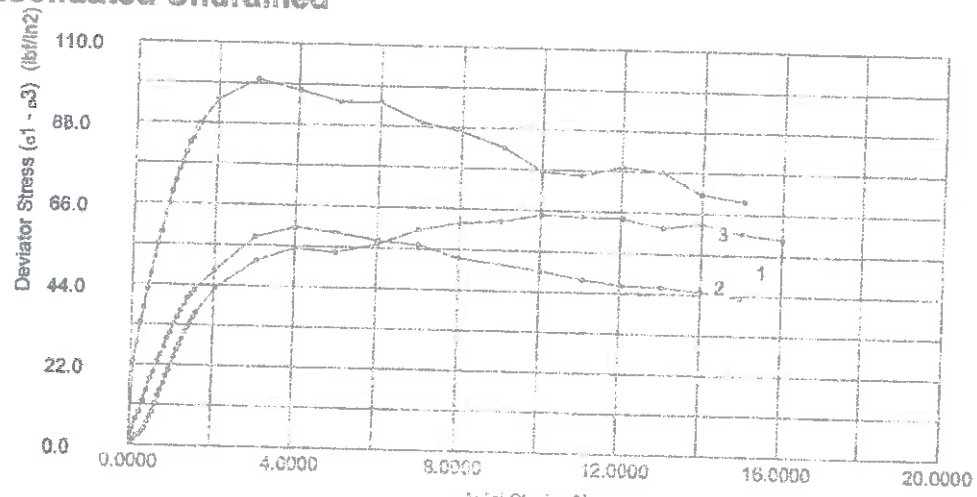
Consolidated Undrained

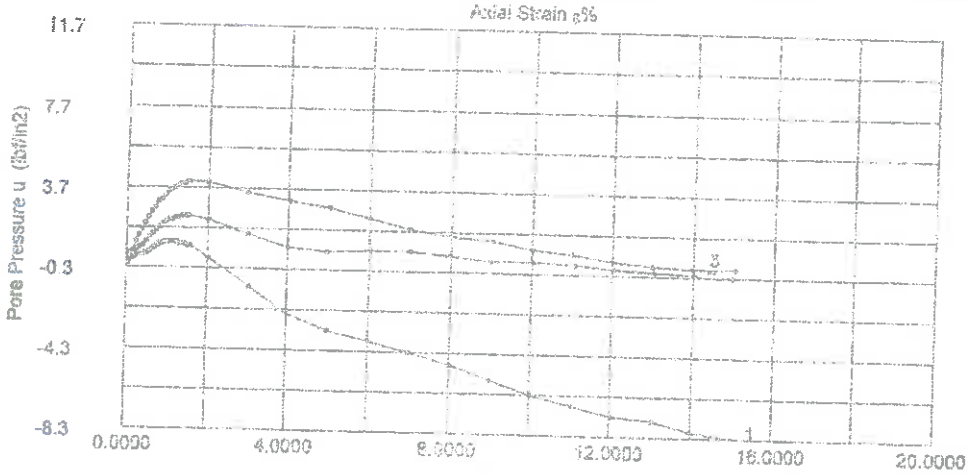


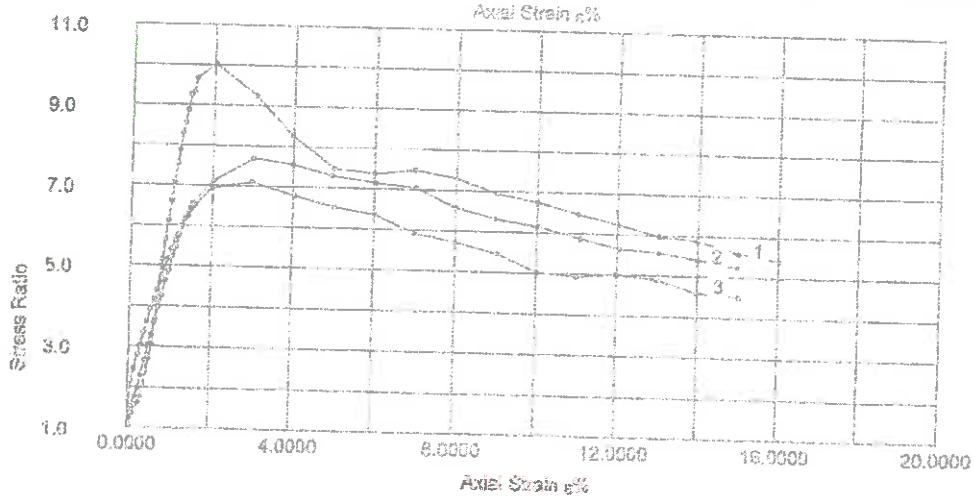
S&ME	Test Method: ASTM D4767-95	Test name: CU Triaxial (SS, MS)	
		Date of Test: 12-6-13	
	Site Reference: Witelite Pumice Lightweight Aggr	Sample: Sample #1	
	Jobfile: S:\WITELITE.JOB	Borehole: S-1	
	Operator:	Checked:	Approved:

Effective Stress Triaxial Compression

Consolidated Undrained



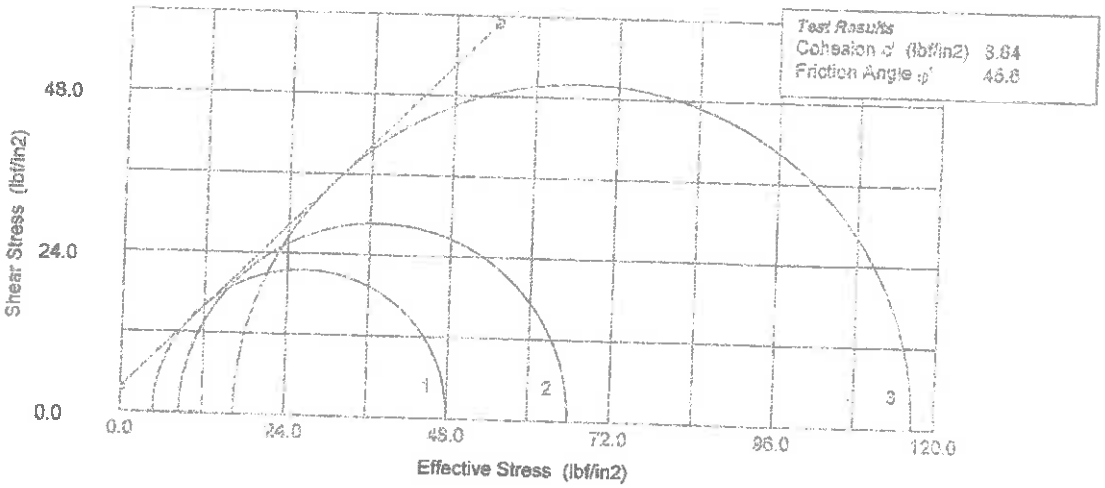


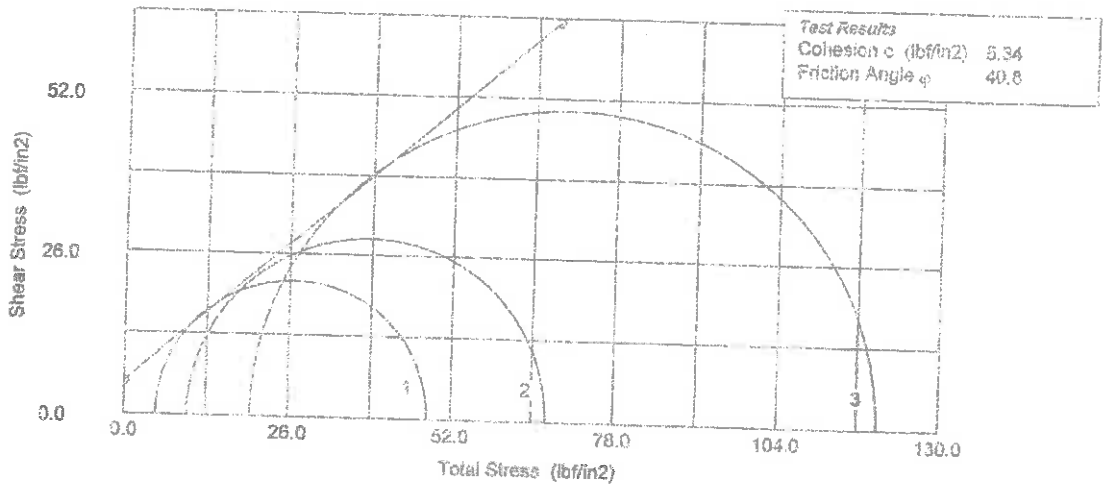


S&ME	Test Method: ASTM D4767-95	Test name: CU Triaxial (SS, MS)	
		Date of Test: 12-9-13	
	Site Reference: Witelite Pumice Lightweight Aggr	Sample: Sample #1	
	Jobfile: E:\WITELITE.JOB	Borehole: S-1	
	Operator:	Checked:	Approved:

Effective Stress Triaxial Compression

Consolidated Undrained





S&ME	Test Method: ASTM D4767-95	Test name: CU Triaxial (SS, MS)	
		Date of Test: 12-9-13	
	Site Reference: Witelite Pumice Lightweight Aggr	Sample: Sample #1	
	Jobfile: E:\WITELITE.JOB	Borehole: S-1	
	Operator:	Checked:	Approved:

Form No: TR-T288-1
Revision No. 0
Revision Date: 07/11/08

Soil Resistivity

AASTHO T-288

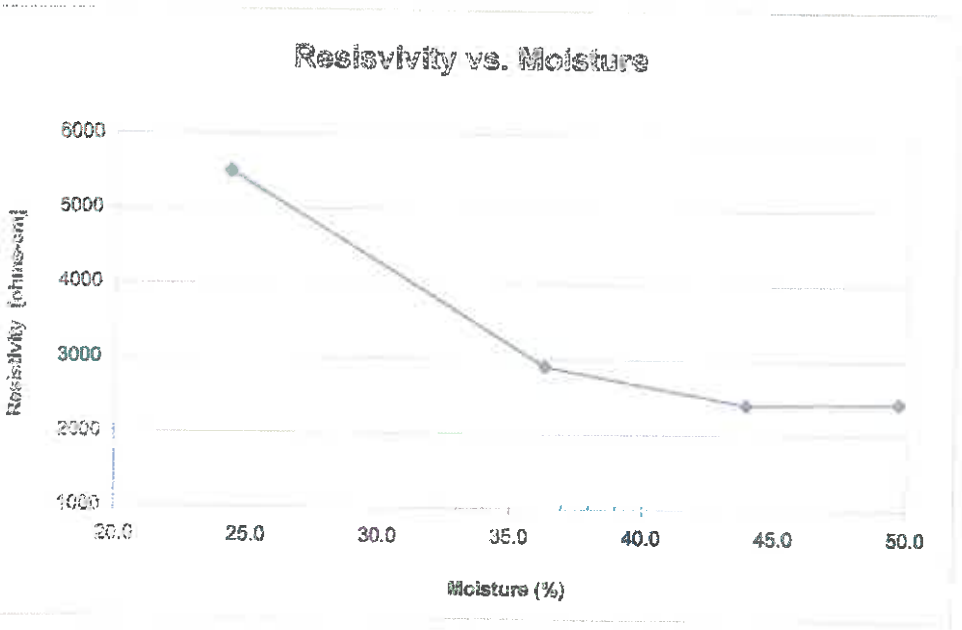
Quality Assurance

S&ME, Inc. - Raleigh, 3201 Spring Forest Road, Raleigh, North Carolina 27616

Project #:	**1053-09-049**	Report Date:	12/5/13
Project Name:	Witelite Pumice Lightweight Aggregate	Test Date(s):	11/29 - 12/5/13
Client Name:			
Client Address:			

Source:	Witelite Pumice	Sample #: S-1		Sample Date:	Unknown
Location:	Stockpile	Offset:	N/A	Depth (ft):	Stockpile
Sample Description:	Witelite Pumice Lightweight Aggregate				

Resistivity Determination	
Moisture (%)	Resistivity (ohms-cm)
24.3	5500
36.3	2900
43.9	2402
49.7	2427
Minimum Resistivity	2402



Notes / Deviations / References:

Test was performed on crushed material passing the No. 10 sieve in general accordance with AASHTO T288.

AASHTO T 288, Determining Minimum Laboratory Soil Resistivity

AASHTO M-2, Wire-Cloth Sieves for Testing Purposes

AASHTO T 2, Sampling of Aggregate

AASHTO T 248, Reducing Samples of Aggregate to Testing Size

Mal Krajan, ET		Laboratory Manager	12/5/2013
Technical Responsibility	*Signature*	*Position*	*Date*

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