

**ECS Southeast, LLC**

133 West Oxmoor Road, Suite 205
Birmingham, AL 35209
2055885099
6785468056

LETTER OF TRANSMITTAL

June 26, 2024
Marvel City Properties, LLC

Homewood, AL 35209
ATTN: Morgan Duncan

RE: **Pyne Rock Site Stockpile Evaluation**
ECS Job # **30:2691**

Permits:
Location: **1611 AL 150**
Bessemer, AL 35022

We are enclosing:	<input checked="" type="checkbox"/>	Field Reports	<input checked="" type="checkbox"/>	For your use	<input checked="" type="checkbox"/>	As requested
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CC:

ENCL:

The results of laboratory testing of soil/rock collected from onsite existing material.

Three bulk samples were collected from randomly selected locations within the on-site stockpile. These samples were returned to the ECS laboratory for classification.

- Attached are Natural Moisture Content, Atterberg Limits, Sieve Analysis, and Standard Proctor test results for the sample, performed in general accordance with ASTM D2216, ASTM D4318, ASTM D6913, and ASTM D698, respectively.

- Based on laboratory classification, the onsite soil sample D4-S1 classified as a (GP) Red Brown Poorly Graded Gravel.

- Based on laboratory classification, the onsite soil sample D4-S2 classified as a (GP-GM) Red Brown Poorly Graded Gravel w Silt & Sand.

- Based on laboratory classification, the onsite soil sample D4-S3 classified as a (GW) Red Brown Well Graded Gravel.

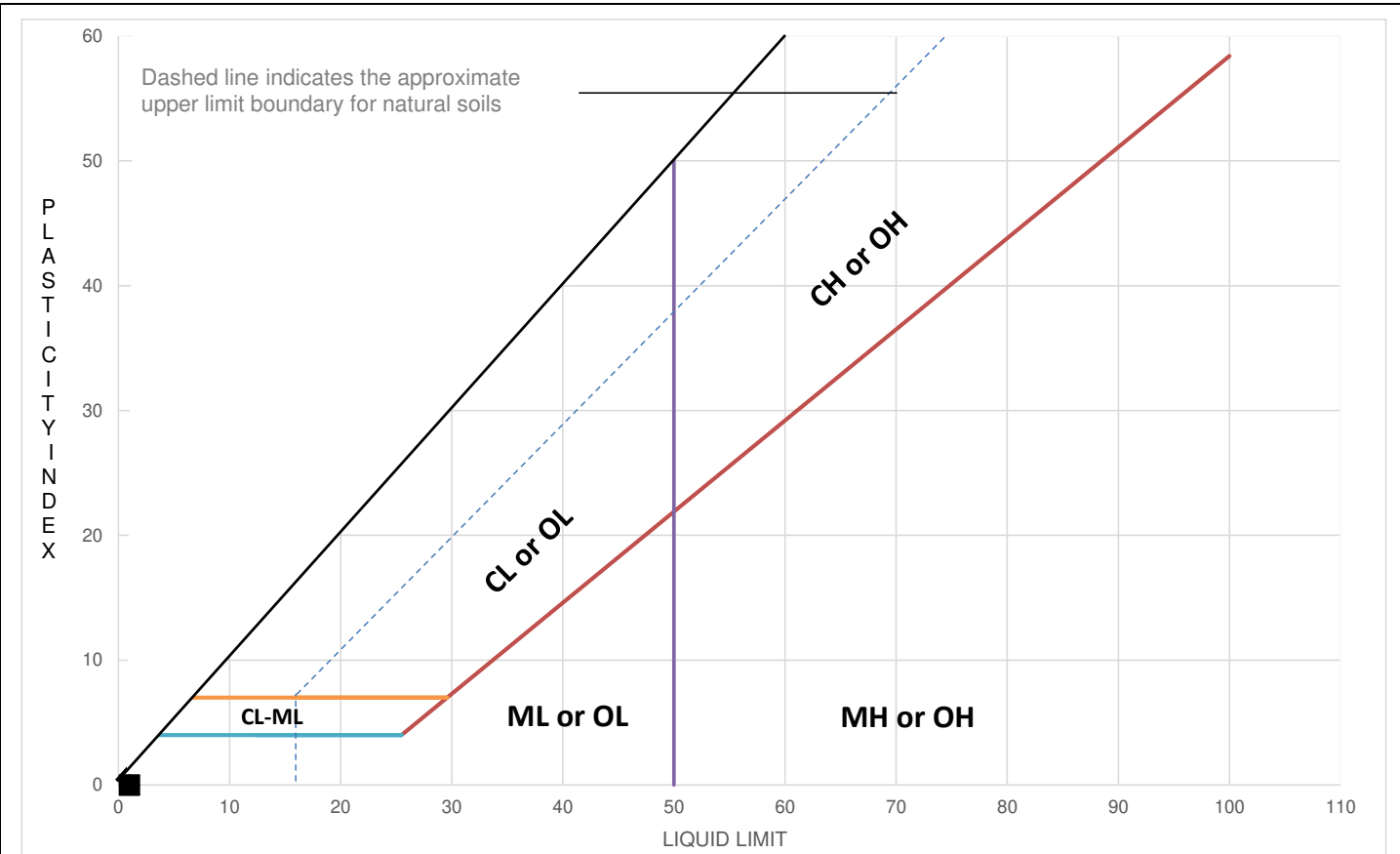
David G. Marsh, P.E.
Office Manager, Principal

Franklin Delano Hyde
Construction Materials Project Manager

Disclaimer

1. This report (and any attachments) shall not be reproduced except in full without prior written approval of ECS.
2. The information in this report relates only to the activities performed on the report date.
3. Where appropriate, this report includes statements as to compliance with applicable project drawings, and specifications for the activities, performed on this report date.
4. Incomplete or non-conforming work will be reported for future resolution.
5. The results of samples and/or specimens obtained or prepared for subsequent laboratory testing will be presented in separate reports/documents.

LIQUID AND PLASTIC LIMITS TEST REPORT



TEST RESULTS (ASTM D4318-10 (MULTIPOINT TEST))

	Sample Location	Sample Number	Sample Depth (ft)	LL	PL	PI	%<#40	%<#200	AASHTO	USCS	Material Description
■	Onsite	D4S-1	0.00-1.00	NP	NP	NP		1.2		GP	Red Brown Poorly Graded Gravel
◆	Onsite	D4S-2	0.00-1.00	NP	NP	NP		10.6		GP-GM	Red Brown Poorly Graded Gravel w Silt & Sand
▲	Onsite	D4S-3	0.00-1.00	NP	NP	NP		2.9		GW	Red Brown Well Graded Gravel

Project: Pyne Rock Site Stockpile Evaluation
Client: Marvel City Properties, LLC

Project No.: 30:2691
Date Reported: 6/24/2024



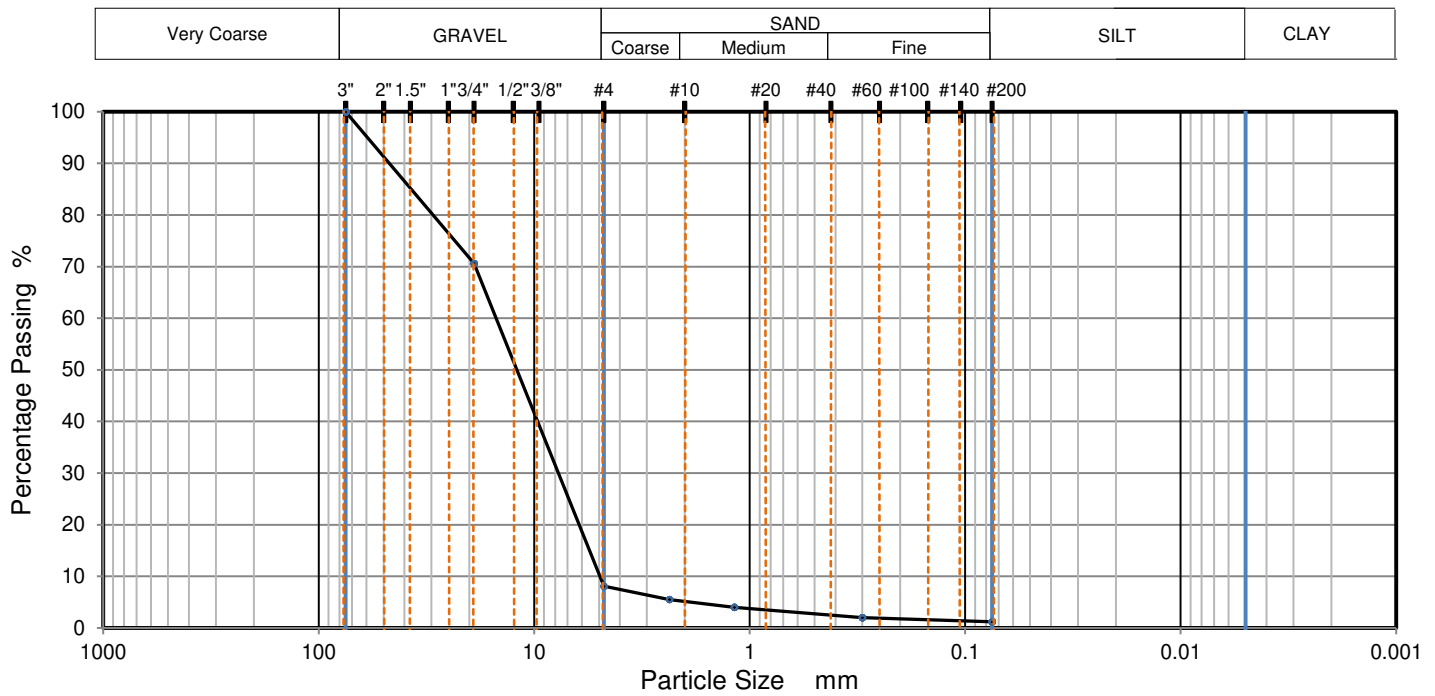
Office / Lab
ECS Southeast LLC - Birmingham

Address
133 West Oxmoor Road
Suite 205
Birmingham, AL 35209

Office Number / Fax
(205)588-5099
(678)546-8056

Tested by JKang	Checked by Trey Hyde	Approved by	Date Received
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PARTICLE SIZE DISTRIBUTION



TEST RESULTS ()

Sieving		Hydrometer Sedimentation	
Particle Size	% Passing	Particle Size mm	% Passing
3"	100.0		
3/4"	70.6		
#4	8.1		
#8	5.5		
#16	4.0		
#50	2.0		
#200	1.2		

Dry Mass of sample, g

20608.8

Sample Proportions	% dry mass
Very coarse, >3" sieve	0.0
Gravel, 3" to # 4 sieve	91.9
Coarse Sand, #4 to #10 sieve	
Medium Sand, #10 to #40	
Fine Sand, #40 to #200	
Fines <#200	1.2

USCS	GP	Liquid Limit	NP	D90	47.010	D50	12.030	D10	4.954
AASHTO		Plastic Limit	NP	D85	37.220	D30	7.721	Cu	3.032
USCS Group Name	Poorly graded gravel	Plasticity Index	NP	D60	15.020	D15	5.536	Cc	0.801

Project: Pyne Rock Site Stockpile Evaluation
 Client: Marvel City Properties, LLC
 Sample Description: Red Brown Poorly Graded Gravel
 Sample Source: Onsite

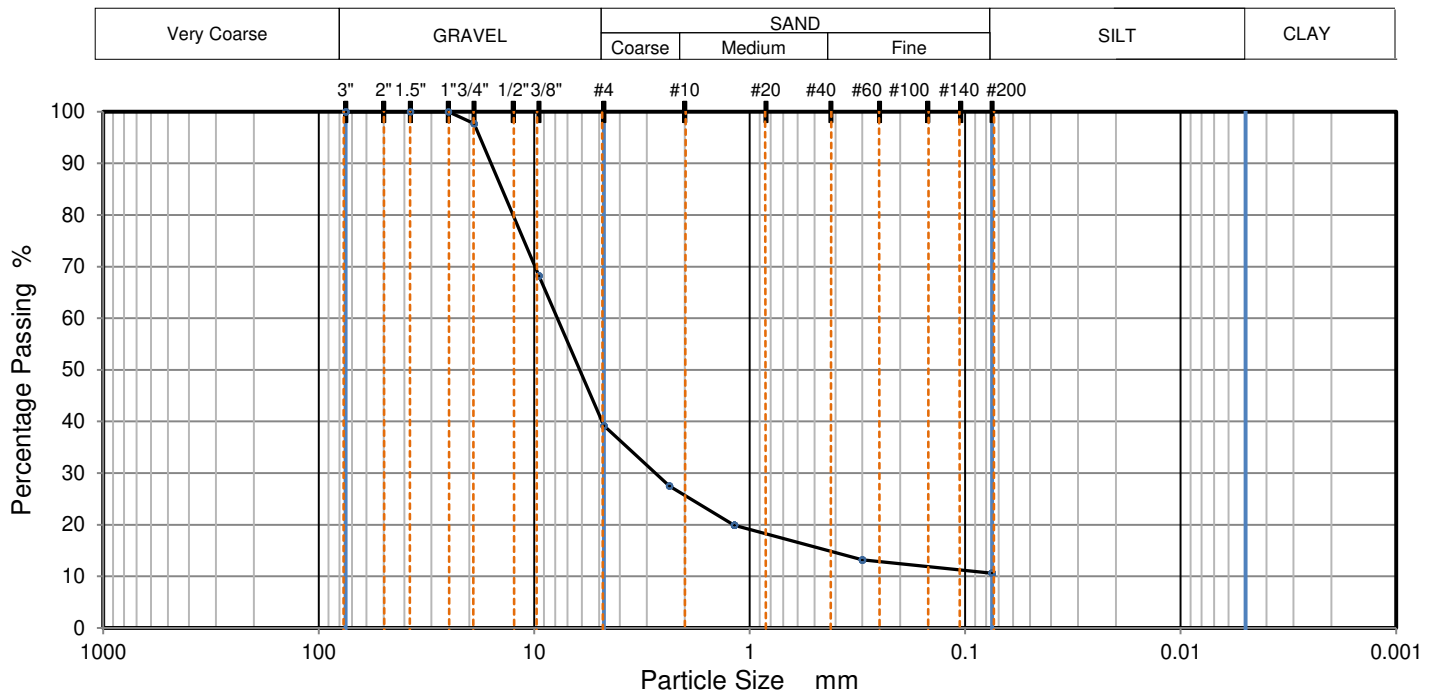
Project No.: 30:2691
 Depth (ft): 0.0 - 1.0
 Sample No.: D4S-1
 Date Reported: 6/24/2024



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JKang	Trey Hyde			

PARTICLE SIZE DISTRIBUTION



TEST RESULTS (ASTM C136M - 19)

Sieving		Hydrometer Sedimentation	
Particle Size	% Passing	Particle Size mm	% Passing
3"	100.0		
1 1/2"	100.0		
1"	100.0		
3/4"	97.7		
3/8"	68.2		
#4	39.2		
#8	27.5		
#16	19.9		
#50	13.2		
#200	10.6		

Dry Mass of sample, g

25160.0

Sample Proportions	% dry mass
Very coarse, >3" sieve	0.0
Gravel, 3" to # 4 sieve	60.8
Coarse Sand, #4 to #10 sieve	
Medium Sand, #10 to #40	
Fine Sand, #40 to #200	
Fines <#200	10.6

USCS	GP-GM	Liquid Limit	NP	D90	15.860	D50	6.149	D10	
AASHTO		Plastic Limit	NP	D85	14.100	D30	2.740	Cu	
USCS Group Name	Poorly graded gravel with silt and sand	Plasticity Index	NP	D60	7.809	D15	0.433	Cc	

Project: Pyne Rock Site Stockpile Evaluation
 Client: Marvel City Properties, LLC
 Sample Description: Red Brown Poorly Graded Gravel w Silt & Sand
 Sample Source: Onsite

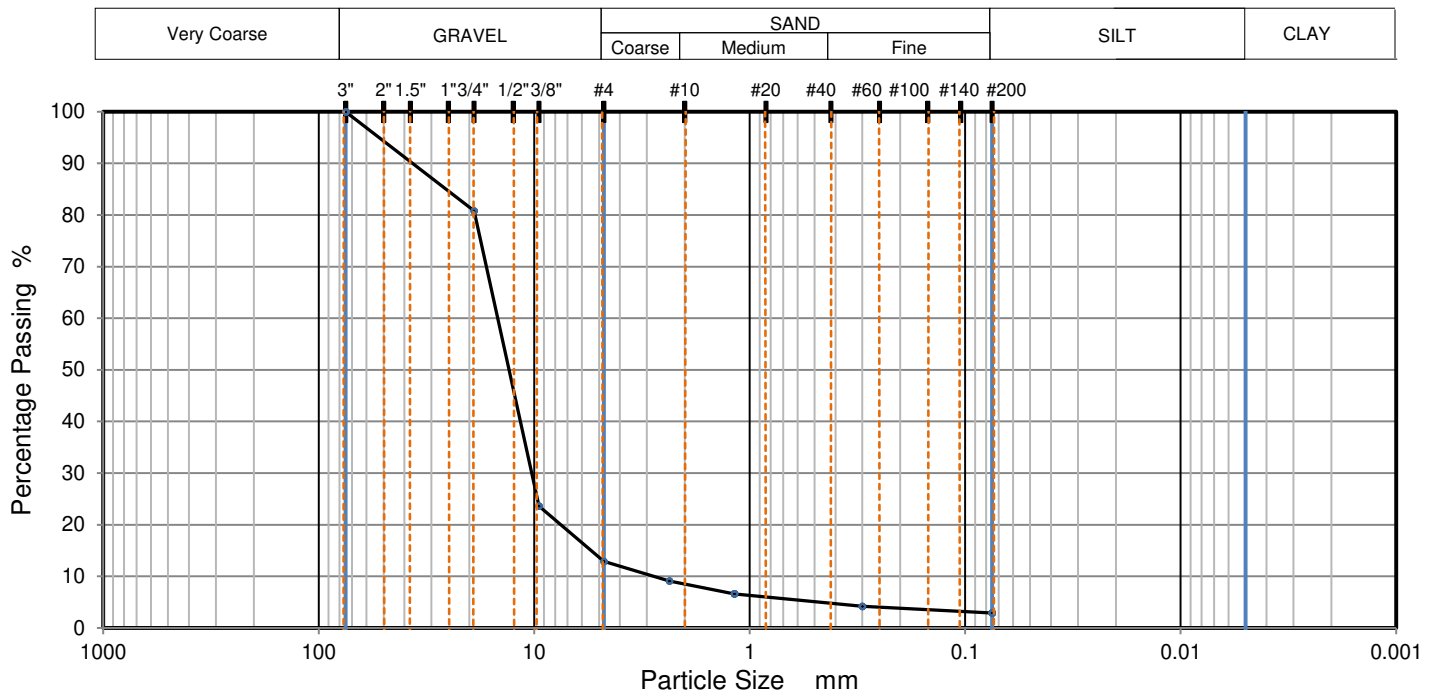
Project No.: 30:2691
 Depth (ft): 0.0 - 1.0
 Sample No.: D4S-2
 Date Reported: 6/24/2024



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PARTICLE SIZE DISTRIBUTION



TEST RESULTS ()

Sieving		Hydrometer Sedimentation	
Particle Size	% Passing	Particle Size mm	% Passing
3"	100.0		
3/4"	80.8		
3/8"	23.6		
#4	12.9		
#8	9.1		
#16	6.6		
#50	4.2		
#200	2.9		

Dry Mass of sample, g

25940.0

Sample Proportions	% dry mass
Very coarse, >3" sieve	0.0
Gravel, 3" to # 4 sieve	87.1
Coarse Sand, #4 to #10 sieve	
Medium Sand, #10 to #40	
Fine Sand, #40 to #200	
Fines <#200	2.9

USCS	GW	Liquid Limit	NP	D90	36.680	D50	13.080	D10	2.785
AASHTO		Plastic Limit	NP	D85	25.660	D30	10.270	Cu	5.303
USCS Group Name	Well graded gravel	Plasticity Index	NP	D60	14.770	D15	5.442	Cc	2.564

Project: Pyne Rock Site Stockpile Evaluation
 Client: Marvel City Properties, LLC
 Sample Description: Red Brown Well Graded Gravel
 Sample Source: Onsite

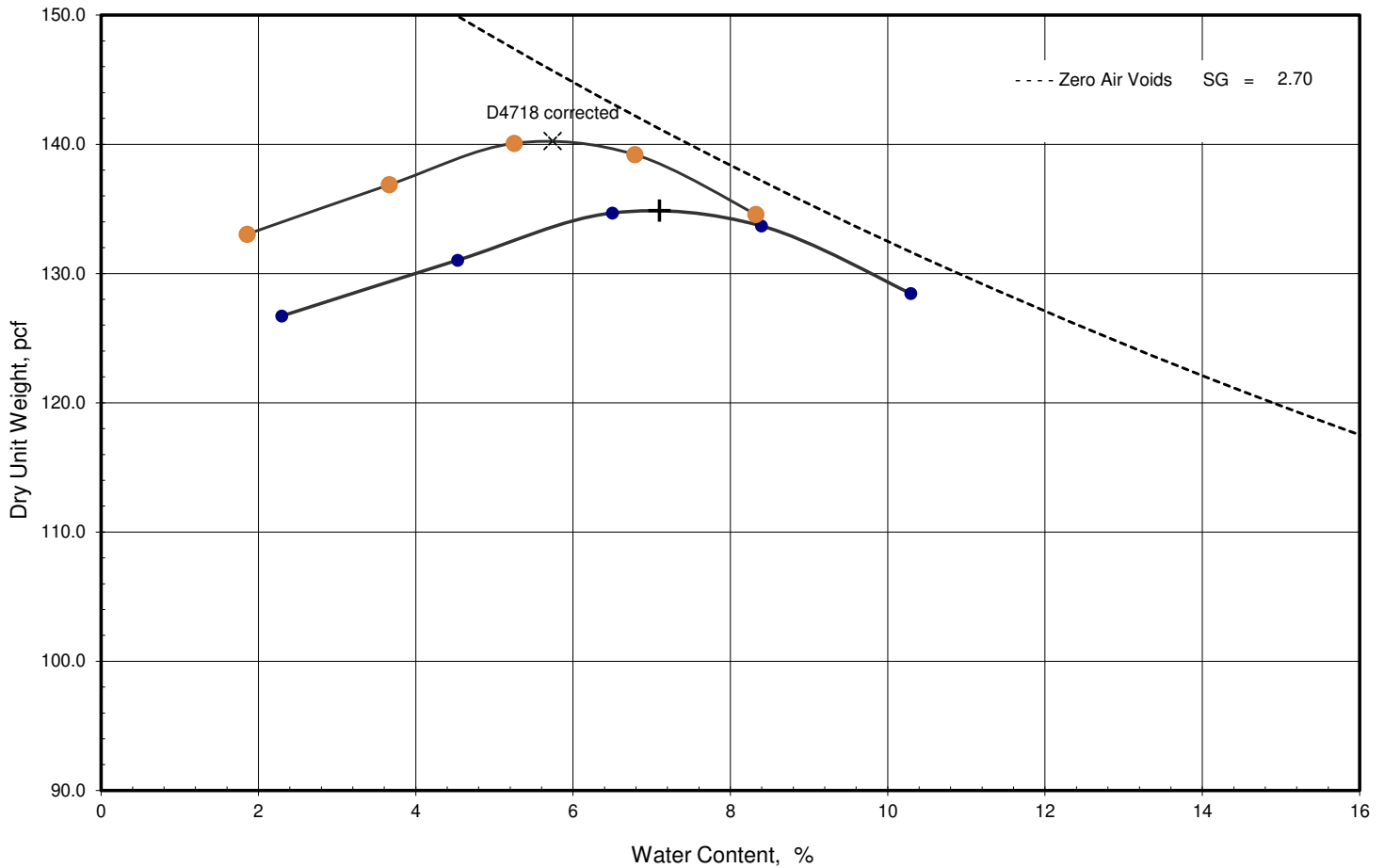
Project No.: 30:2691
 Depth (ft): 0.0 - 1.0
 Sample No.: D4S-3
 Date Reported: 6/24/2024



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Laboratory Compaction Characteristics of Soil Using Standard Effort



Optimum Moisture Content	7.1	%
Maximum Dry Unit Weight	134.9	pcf
Corrected Opt. Moisture Content	5.7	%
Corrected Max. Dry Density	140.3	pcf
Cumulative material retained on:		
3/4 in. sieve	19.2	%
3/8 in. sieve	76.4	%
#4 sieve	92.5	%

19.16 % retained on 3/4 in. sieve.

Preparation	
Type of rammer	
Test Specification / Method	ASTM D698-12e2-method C
Specific gravity - D854 water pycnometer	2.70
Coarse Aggregate Specific Gravity -	2.70

Soil Description	Nat. Moist. %	Liquid Limit	Plasticity Index	% < #200	USCS	AASHTO
Red Brown Well Graded Gravel	1.8	NP	NP	2.9	GW	

Project: Pyne Rock Site Stockpile Evaluation
Client: Marvel City Properties, LLC
Sample / Source Onsite
Test Reference/No.:

Project No.: 30:2691
Depth (ft.): 0 - 1
Sample No.: D4S-3
Date Reported: 6/24/2024



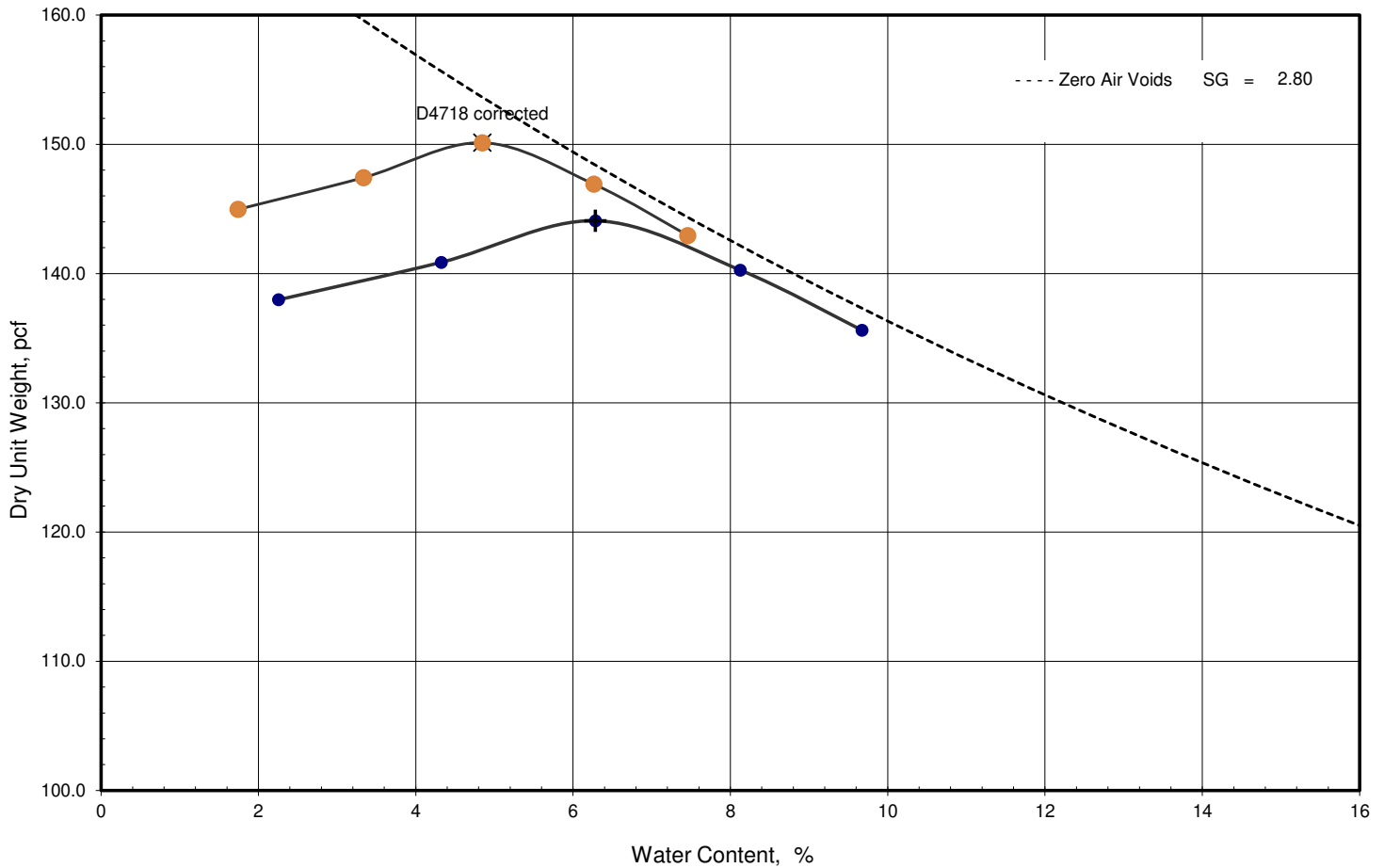
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Laboratory Compaction Characteristics of Soil Using Standard Effort



Optimum Moisture Content	6.3	%
Maximum Dry Unit Weight	144.1	pcf
Corrected Opt. Moisture Content	4.8	%
Corrected Max. Dry Density	150.1	pcf
Cumulative material retained on:		
3/4 in. sieve	22.9	%
3/8 in. sieve	41.7	%
#4 sieve	72.8	%

22.89 % retained on 3/4 in. sieve.

Preparation	
Type of rammer	
Test Specification / Method	ASTM D698-12e2-method C
Specific gravity - D854 water pycnometer	2.80
Coarse Aggregate Specific Gravity -	2.80

Soil Description	Nat. Moist. %	Liquid Limit	Plasticity Index	% < #200	USCS	AASHTO
Red Brown Poorly Graded Gravel w Silt & Sand	0.9	NP	NP	10.6	GP-GM	

Project: Pyne Rock Site Stockpile Evaluation
Client: Marvel City Properties, LLC
Sample / Source Onsite
Test Reference/No.:

Project No.: 30:2691
Depth (ft.): 0 - 1
Sample No.: D4S-2
Date Reported: 6/24/2024



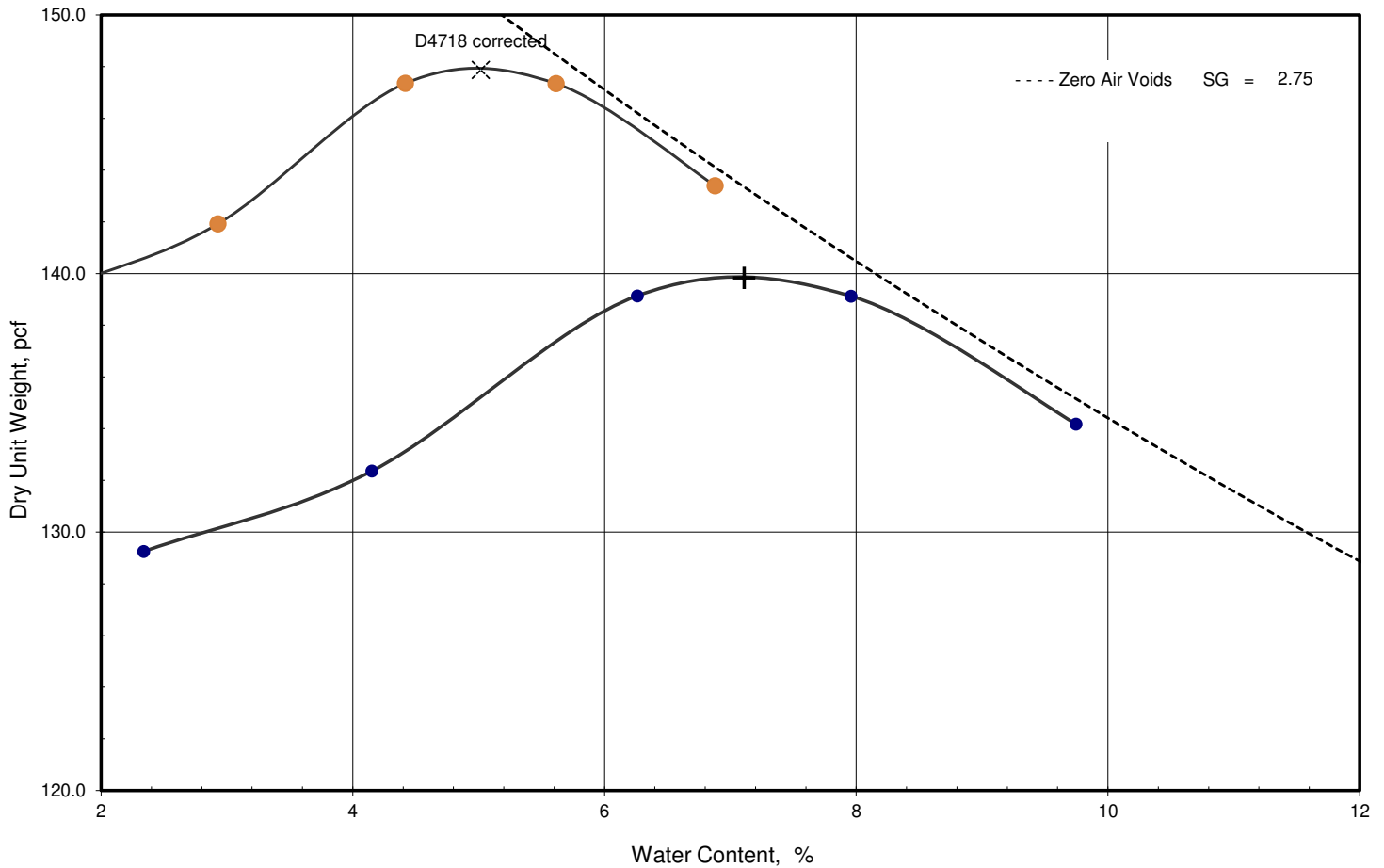
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Laboratory Compaction Characteristics of Soil Using Standard Effort



Optimum Moisture Content	7.1	%
Maximum Dry Unit Weight	139.8	pcf
Corrected Opt. Moisture Content	5.0	%
Corrected Max. Dry Density	147.9	pcf
Cumulative material retained on:		
3/4 in. sieve	29.4	%
3/8 in. sieve	85.6	%
#4 sieve	91.9	%

29.43 % retained on 3/4 in. sieve.

Preparation	
Type of rammer	
Test Specification / Method	ASTM D698-12e2-method C
Specific gravity - D854 water pycnometer	2.75
Coarse Aggregate Specific Gravity -	2.75

Soil Description	Nat. Moist. %	Liquid Limit	Plasticity Index	% < #200	USCS	AASHTO
Red Brown Poorly Graded Gravel	0.8	NP	NP	1.2	GP	

Project: Pyne Rock Site Stockpile Evaluation
 Client: Marvel City Properties, LLC
 Sample / Source: Onsite
 Test Reference/No.:

Project No.: 30:2691
 Depth (ft.): 0 - 1
 Sample No.: D4S-1
 Date Reported: 6/24/2024



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Laboratory Testing Summary

Sample Location	Sample Number	Depth (ft)	^MC (%)	Soil Type	Atterberg Limits			**Percent Passing No. 200 Sieve	Moisture - Density		CBR (%)		#Organic Content (%)
					LL	PL	PI		<Maximum Density (pcf)	<Optimum Moisture (%)	0.1 in.	0.2 in.	
Onsite	D4S-1	0.0-1.0	0.8	GP	NP	NP	NP	1.2	139.8	7.1			
Onsite	D4S-2	0.0-1.0	0.9	GP-GM	NP	NP	NP	10.6	144.1	6.3			
Onsite	D4S-3	0.0-1.0	1.8	GW	NP	NP	NP	2.9	134.9	7.1			

Notes: See test reports for test method, ^ASTM D2216-19, *ASTM D2488, **ASTM D1140-17, #ASTM D2974-20e1 < See test report for D4718 corrected values

Definitions: MC: Moisture Content, Soil Type: USCS (Unified Soil Classification System), LL: Liquid Limit, PL: Plastic Limit, PI: Plasticity Index, CBR: California Bearing Ratio, OC: Organic Content

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