HALEY & ALDRICH

WEEKLY FIELD REPORT

Project	OCEAN GATEWAY PARKING GARAGE	**Report No.**	15
Location	PORTLAND, MAINE	**Period From**	27 August 2007
		To	31 August 2007
Client	RIVERWALK, LLC.	**Page**	1 of 4
Contractor	LEDGEWOOD CONSTRUCTION (CM) SHAW BROTHERS CONSTRUCTION (EARTHWORK) G. DONALDSON CONSTRUCTION (PILE DRIVING)	**File No.**	30322-030

Note: Contractor's activities were partially conducted prior to Field Representatives arrival at the site.

I. CONTRACTOR'S ACTIVITIES:

Monday, August 27, 2007 (70 degrees, sunny at 0630)

1. Shaw Bros. installed the oil/water separator located within the limits of the entrance roadway off of Middle Street, west of column line 1 (see Figure 1). The installation was completed prior to Field Representatives arrival at site.
2. Shaw Bros. previously installed waterproofing (Procor® 75 Spray Grade) and drainage board (Grace Hydroduct® 220) on the exterior side of the foundation wall along column line 1 from column line A to column line D and on the interior side of the foundation wall along column line D from column line 1 to column 1.9/2.1 up to approximately El. 19-20 (see photographs).
3. Shaw Bros. installed a portion of the underslab drain north of column line D, between column line 1 and column line 1.9/2.1 (see Figure 1 and photographs). The perimeter drain consisted of a 4-in. diameter perforated HDPE plastic pipe and was installed with the perforations oriented down. The pipe was embedded in 4-in. of ¾-in. crushed stone and was entirely wrapped in geosynthetic separation fabric (Mirafi 140N). The pipe was installed at the invert elevation shown on the plans (El. 12.67). The pipe was backfilled with granular fill imported to the site from Shaw Bros. Dayton Pit.
4. Shaw Bros. began placing granular fill in the area bound by column lines D, E, 1 and 1.9/2 with a CAT 320C excavator and/or hand tools (see Figure 1). The fill consisted of granular soil imported to the site from Shaw Bros. Dayton Pit (see attached for laboratory test results). The material was spread in approximate 12-in. thick (loose measure) lifts. Water was added to the granular fill as necessary to meet the compaction requirements outlined in the project specifications. Each lift of soil was compacted with 4 to 5 passes of a self propelled vibratory plate compactor or 3 to 4 passes of a BOMAG BW172D-2 smooth drum vibratory roller. Fill was placed from approximately El. 13 to El. 21.5 in this area.
5. Shaw Bros. damaged a portion of the waterproofing along column line D while spreading/compacting granular fill (see Photographs). The waterproofing will require repair prior to placement of the drainage board and backfill.

Tuesday, August 28, 2007 (70 degrees, sunny at 0700)

1. Shaw Bros. backfilled a section of plumbing utility trench running from north to south between column lines 1.9/2.1 and 3 (see Figure 1). An approximate 6-in. thick (loose measure) lift of screened sand was placed directly over the top of the pipe and was compacted with one pass of a self-propelled vibratory plate compactor. One approximate 12-in. thick (loose measure) lift of granular fill imported to the site from Shaw Bros. Dayton Pit was placed above the screened sand (see attached for laboratory test results). Water was added to the granular fill as necessary to meet the compaction requirements outlined in the project specifications. The granular fill was compacted with 4 to 5 passes of a self-propelled vibratory plate compactor. Fill was placed to approximately El. 16.5 in this area.
2. Shaw Bros. placed granular fill in the area immediately west of the pile cap located at column E-1, within the limits of the entrance roadway off of Middle Street (see Figure 1). The fill consisted of granular soil imported to the site from Shaw Bros. Dayton Pit (see attached for laboratory test results). The material was spread in approximate 12-in. thick (loose measure) lifts. Each lift of soil was compacted with 3 to 4 passes of a BOMAG BW172D-2 smooth drum vibratory roller. Fill was placed from approximately El. 21.0 to El. 24.0 in this area.

Wednesday, August 29, 2007

1. Shaw Bros. did not perform any geotechnical related earthwork activities today.

Thursday, August 30, 2007 (70 degrees, sunny at 0645)

1. Shaw Bros. repaired the portion of damaged waterproofing described under Contractors Activities, Item No. 5 on Monday and installed drainage board (Grace Hydroduct® 220) over this area prior to Field Representatives arrival at site.
2. Shaw Bros. began backfilling west of column line 1 between the foundation wall and the steel sheet piles installed for the support of excavation system (see Figure 1). The fill consisted of granular soil imported to the site from Shaw Bros. Dayton Pit (see attached for laboratory test results). The material was spread in approximate 12-in. thick (loose measure) lifts up to approximately 1.5 ft below the continuous steel waler (El. 20) installed for the support of excavation system. Water was added to the granular fill as necessary to meet the compaction requirements outlined in the project specifications. Each lift of soil was compacted with 4 to 5 passes of a self propelled vibratory plate compactor.

Friday, August 31, 2007 (75 degrees, cloudy at 1100)

1. Shaw Bros. began installing the oil/water separator between column lines A, B, 1.9/2.1 and 3 (see Figure 1 and photographs). The area was previously excavated down to El. 4.5 (approximate) with a CAT 320C excavator. The excavated material consisted of naturally deposited marine clay, which was loaded into dump trucks and hauled off site. An approximate 1 ft thick lift of 1½-in. crushed stone was placed on the subgrade up to the proposed bottom of structure elevation.

II. FIELD REPRESENTATIVE'S ACTIVITIES:

General

1. Haley & Aldrich Field Representative performed part-time monitoring of construction activities from Monday, August 27 through Friday, August 31 and documented the activities noted above and shown on the attached figures.
2. Discussed activities and construction schedule with contractors (Ledgewood and Shaw Bros.). Field Representative time on site was closely coordinated with Ledgewood and Shaw Bros.
3. Took digital photographs of construction activities. Select photographs are provided in the attachment, additional photographs can be provided upon request.

Monday, August 27, 2007

1. Field Representative observed and inspected the installation of the section of underslab drain described under Item No. 3, above, and shown on Figure 1. Field Representative judged that this section of the perimeter foundation drain was installed as shown on the construction drawings.
2. Field Representative observed placement of compacted granular fill in the area described under Contractors Activities, Item No. 4 on Monday and shown on Figure 1. Fill material consisted of imported granular soil from Shaw Bros. Dayton Pit. Field Representative used a Humboldt 5001EZ nuclear density gauge to monitor relative compaction during fill placement. The granular fill appeared stable under the compactive effort of a self propelled vibratory plate compactor or a BOMAG BW172D-2 smooth drum vibratory roller. In-situ density tests

indicated the fill material met the minimum compaction specifications (see Table 1, test nos. 107 to 122 for results and Figure 1 for density test locations).

Tuesday, August 28, 2007

1. Field Representative observed placement of compacted granular fill in the areas described under Contractors Activities, Item Nos. 1 and 2 on Tuesday and shown on Figure 1. Fill material consisted of imported granular soil from Shaw Bros. Dayton Pit. Field Representative used a Humboldt 5001EZ nuclear density gauge to monitor relative compaction during fill placement. The granular fill appeared stable under the compactive effort of a self propelled vibratory plate compactor or a BOMAG BW172D-2 smooth drum vibratory roller. In-situ density tests indicated the fill material met the minimum compaction specifications (see Table 1, test nos. 123 to 127 for results and Figure 1 for density test locations).

Wednesday, August 29, 2007

1. Field Representative not on site.

Thursday, August 30, 2007

1. Field Representative observed placement of compacted granular fill in the area described under Contractors Activities, Item No. 2 on Thursday and shown on Figure 1. Fill material consisted of imported granular soil from Shaw Bros. Dayton Pit. Field Representative used a Humboldt 5001EZ nuclear density gauge to monitor relative compaction during fill placement. The granular fill appeared stable under the compactive effort of a self propelled vibratory plate compactor or a BOMAG BW172D-2 smooth drum vibratory roller. In-situ density tests indicated the fill material met the minimum compaction specifications (see Table 1, test nos. 128 to 132 for results and Figure 1 for density test locations).
2. Field Representative spoke with Bob Parsons (Ledgewood) regarding the schedule for removing the support of excavation system west of column line 1. Shaw Bros. will backfill the area north of the elevator pit in the northeast building corner up to the bottom of the continuous waler. Mr. Parsons indicated that G. Donaldson will be on site Tuesday (9/4) to remove rakers along column line 1 and the continuous waler north of the elevator pit. G. Donaldson will be back on site on 10 September to remove the continuous waler along column line 1 and to begin removing the steel sheet piles for both of the support of excavation systems (west of column line 1 and in the northeast building corner). Mr. Parsons indicated that a portion of the steel sheet piles along column line 1 (south of column line A) will be cutoff below grade and left in place.
3. Field Representative collected one sample of granular material imported to the site from Shaw Bros. Dayton Pit for gradation and modified proctor compaction tests. The samples were transported to R.W. Gillespie Associates (RWG) in Saco, Maine for testing. Shaw Bros. proposed use of the material as granular fill per the project specifications. Results of the tests are provided in the attachment. The gradation of the material generally falls outside the limits of granular fill outlined in the project specifications (higher percentage of sand size soil particles). However, 1) the remaining areas within the proposed garage footprint left to be backfilled are minimal, 2) only one out of five soil samples submitted for laboratory testing fell outside of the "allowable" limits and 3) it is our opinion that this material will still be able to be placed and compacted in accordance with the specifications and provide suitable support. Based on these criteria, we allowed this material to be used as backfill in the few remaining areas within the garage footprint.

HALEY & ALDRICH

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		To	31 August 2007
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Contractor	LEDGEWOOD CONSTRUCTION (CM)	**File No.**	30322-030
	SHAW BROTHERS CONSTRUCTION (EARTHWORK)		
	G. DONALDSON CONSTRUCTION (PILE DRIVING)		

Friday, August 31, 2007

1. Field Representative spoke with John Fairweather (Shaw Bros.) regarding relocating the perimeter foundation and underslab drain located in the southwest corner of the garage. Mr. Fairweather proposed to terminate the perimeter drain along column line A, between column line 1.9/2.1 and column line 2.7 and run the drain pipe north into the building, tying into the underslab drain running from west to east between column lines A and B. Mr. Fairweather proposed that the new section of pipe would be installed at invert El. 14.1. Mr. Fairweather suggested the reason for the proposed change is that during erection of the concrete forms and reinforcing steel, no "box-out" was provided through the grade beam extending from column line A-2.7 to A-3. In addition, a 3-ft diameter odor vent pipe for Portland Water District was installed between column lines A and A.2. Due to these reasons, Mr. Fairweather suggested that it would be simpler to relocate the drain which would allow it to be installed beneath the existing exterior grade beam and prevent interference with the already poured grade beam and PWD odor vent pipe. Field Representative told Mr. Fairweather that he would review the proposal and let him know if the proposed change was acceptable.

ATTACHMENTS:
1. Foundation Plan (Figure 1)
2. Weekly Summary of Field Unit Weight Test (1 page)
3. Photograph Summary (3 pages)
4. Laboratory Test Results (2 pages)

Field Representative(s)	**Total Weekly Time**
B. Steinert	29.50

Distribution: Drew Swenson, Riverwalk, LLC. (email)
Rich Libardoni, Intercontinental Real Estate Co. (email and hardcopy)
Stephen Fraser, Scott Simons Architects (email)
Steve Pitts & Bob Parsons, Ledgewood Construction (email)
Alan Simon, Simon Design Engineering, LLC. (email)

Brian C. Steinert
Haley & Aldrich, Inc.

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APPROXIMATE LOCATION OF STEEL SHEET PILING

IN-SITU DENSITY TEST NOS. 123-125

APPROXIMATE LOCATION OF THE OIL/WATER SEPERATOR INSTALLED ON 8/27/07

IN-SITU DENSITY TEST NOS. 107-122

PORTION OF UNDERSLAB DRAIN INSTALLED ON 8/27/2007

APPROXIMATE LOCATION OF THE OIL/WATER SEPARATOR INSTALLED ON 8/31/07

1'-0" DIA x 4'-6" DEEP SONO TUBE W/ (3) #9 VERT BARS AND #4@12" OC TIES (TYP)

APPROXIMATE EXTENT OF GRANULAR FILL PLACED ON 8/27

APPROXIMATE LOCATION AND EXTENT OF PLUMBING UTILITY TRENCH BACKFILLED ON 8/28/07.

APPROXIMATE EXTENT OF GRANULAR FILL PLACED ON 8/28/07.

APPROXIMATE EXTENT OF GRANULAR FILL PLACED ON 8/30/2007

● 126 DESIGNATION AND APPROXIMATE LOCATION OF IN-SITU DENSITY TEST

FOUNDATION PLAN
3/32"=1'-0"

PLAN NORTH

HALEY & ALDRICH

OCEAN GATEWAY PARKING GARAGE
MIDDLE STREET
PORTLAND, MAINE

FOUNDATION PLAN (SHEET NO. S1.00)
WEEKLY FIELD REPORT NO.: 15

SCALE: AS SHOWN
~~APRIL 2007~~ 9/1/2007

FIGURE 1

S:\30322\2007_0124 - CURRENT RES. FIG 2\2007_0322_BCS_COMMONPLANS.DWG

HALEY & ALDRICH

WEEKLY SUMMARY
FIELD UNIT WEIGHT TEST

PROJECT	OCEAN GATEWAY PARKING GARAGE	**H&A FILE NO.**	30322-030
LOCATION	PORTLAND, MAINE	**PROJECT MGR.**	W. CHADBOURNE
CLIENT	RIVERWALK, LLC.	**FIELD REP**	B. STEINERT
GEN. CONTRACTOR	LEDGEWOOD CONSTRUCTION	**DATE**	09/01/07
SUBCONTRACTOR	SHAW BROTHERS CONSTRUCTION	**WFR NUMBER**	15

Gage:
Make: Humboldt Scientific, Inc. Model 5001 EZ122 Serial Number: 3289 Calibration Date: 04/05/06

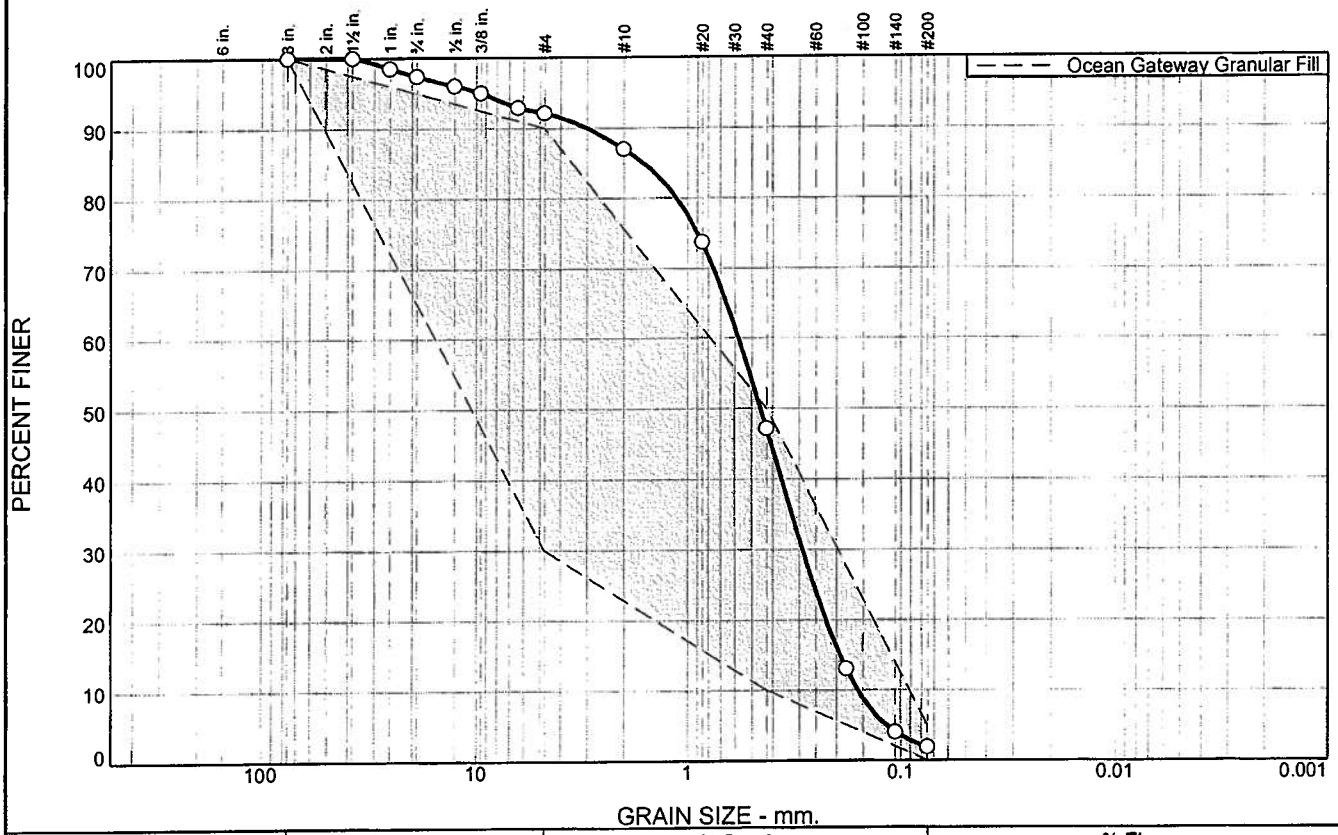
Test No.	Location	Elevation (ft)	Depth Of Test (in)	Maximum Dry Unit Weight[(a)] (pcf)	Optimum Moisture Content (%)	In-place Dry Unit Weight (pcf)	In-place Moisture Content (%)	Compaction		Remarks
								Actual (%)	Required (%)	
107	see Figure 1	14.0	12	116.5	12.0	112.0	2.4	96%	95%	8/27/2007
108	see Figure 1	15.0	12	116.5	12.0	109.9	3.3	94%	95%	8/27/2007, recompact, see test no. 109
109	see Figure 1	15.3	12	116.5	12.0	111.7	2.4	96%	95%	8/27/2007
110	see Figure 1	16.0	12	116.5	12.0	109.7	2.8	94%	95%	8/27/2007, recompact, see test no. 111
111	see Figure 1	16.0	12	116.5	12.0	111.0	2.0	95%	95%	8/27/2007
112	see Figure 1	17.0	12	116.5	12.0	111.1	2.7	95%	95%	8/27/2007
113	see Figure 1	18.0	12	116.5	12.0	110.2	7.5	95%	95%	8/27/2007
114	see Figure 1	17.5	12	116.5	12.0	110.6	3.2	95%	95%	8/27/2007
115	see Figure 1	18.0	12	116.5	12.0	111.2	6.0	95%	95%	8/27/2007
116	see Figure 1	19.8	12	116.5	12.0	111.1	5.8	95%	95%	8/27/2007
117	see Figure 1	19.5	12	116.5	12.0	108.4	4.0	93%	95%	8/27/2007, recompact, see test no. 118
118	see Figure 1	19.5	12	116.5	12.0	110.4	3.9	95%	95%	8/27/2007
119	see Figure 1	20.5	12	116.5	12.0	110.8	4.3	95%	95%	8/27/2007
120	see Figure 1	20.5	12	116.5	12.0	110.9	4.5	95%	95%	8/27/2007
121	see Figure 1	21.5	12	116.5	12.0	111.6	3.4	96%	95%	8/27/2007
122	see Figure 1	21.5	12	116.5	12.0	116.5	3.3	100%	95%	8/27/2007
123	see Figure 1	22.0	12	116.5	12.0	111.1	1.5	95%	95%	8/28/2007
124	see Figure 1	23.0	12	116.5	12.0	108.8	1.8	93%	95%	8/28/2007
125	see Figure 1	24.0	12	116.5	12.0	102.3	4.4	88%	95%	8/28/2007, recompact, not tested
126	see Figure 1	16.5	12	116.5	12.0	110.4	2.5	95%	95%	8/28/2007
127	see Figure 1	16.5	12	116.5	12.0	110.6	3.1	95%	95%	8/28/2007
128	see Figure 1	17.5	12	116.5	12.0	109.6	7.3	94%	95%	8/30/2007
129	see Figure 1	17.5	12	116.5	12.0	109.8	6.1	94%	95%	8/30/2007, recompact, see test no. 130
130	see Figure 1	17.5	12	116.5	12.0	112.4	8.0	96%	95%	8/30/2007
131	see Figure 1	17.5	12	116.5	12.0	113.6	2.0	98%	95%	8/30/2007
132	see Figure 1	18.5	12	116.5	12.0	113.8	3.0	98%	95%	8/30/2007

Additional Remarks:
(a) Maximum dry unit weight represents the laboratory test value corrected for +3/4 material (ASTM ☑ D1557 ☐ D698)

Haley & Aldrich, Inc.

Form 4005

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	2.6	5.3	5.1	39.8	45.3	1.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3"	100.0	100.0 - 100.0	
1 1/2"	100.0		
1"	98.5		
3/4"	97.4		
1/2"	96.0		
3/8"	95.1		
1/4"	92.9		
#4	92.1	30.0 - 90.0	X
#10	87.0		
#20	73.7		
#40	47.2	10.0 - 50.0	
#80	13.1		
#140	4.0		
#200	1.9	0.0 - 5.0	

* Ocean Gateway Granular Fill

Soil Description

Granular Fill - poorly graded sand

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 1.6094 D_{60}= 0.5732 D_{50}= 0.4530
D_{30}= 0.2882 D_{15}= 0.1925 D_{10}= 0.1589
C_u= 3.61 C_c= 0.91

Classification

USCS= SP AASHTO=

Remarks

Moisture content: 2.6%

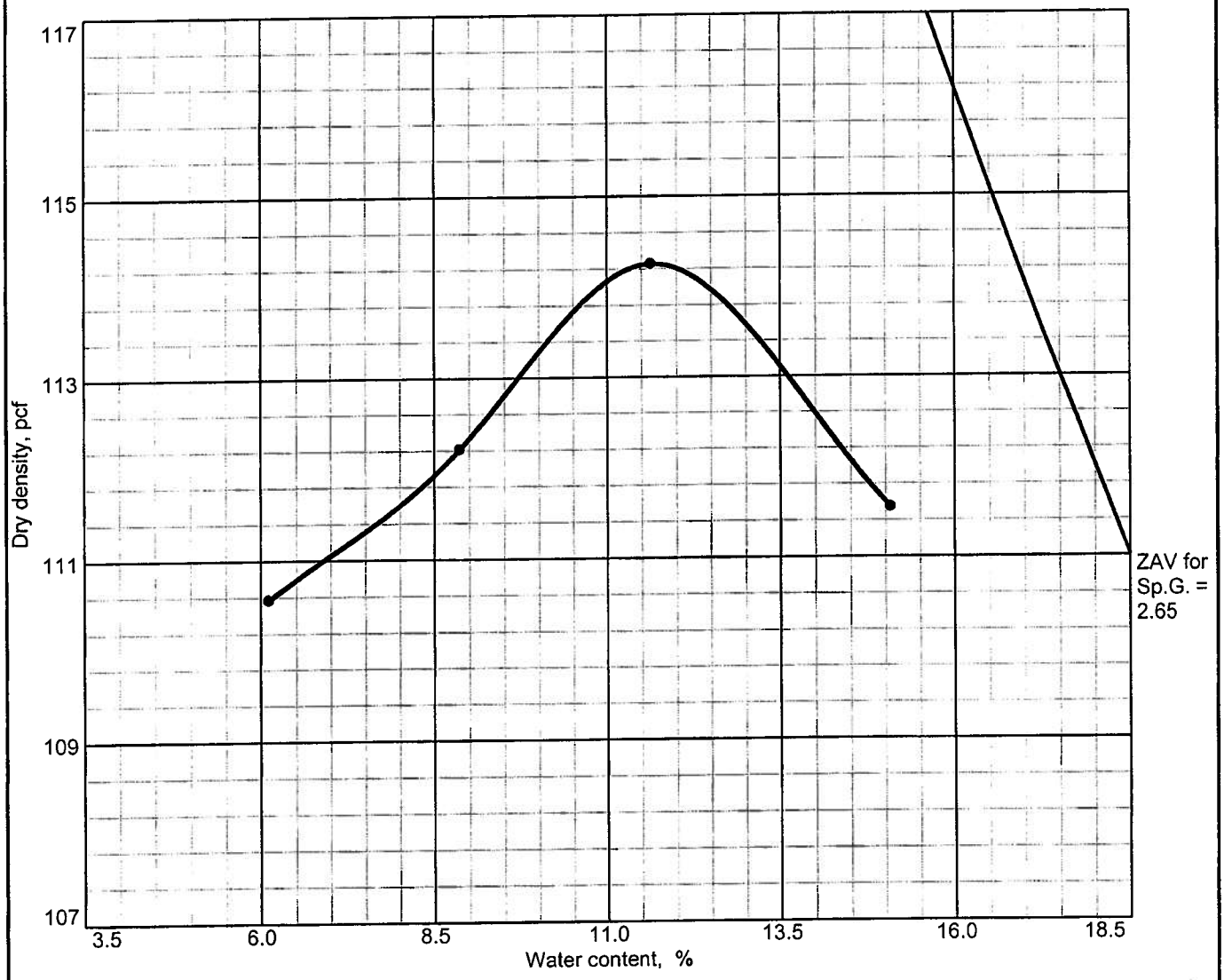
Sample No.: S-5 **Source of Sample:** Shaw Bros. - Dayton Pit **Date:** 9/5/07
Location: Stockpile **Elev./Depth:**

R.W. Gillespie & Associates, Inc.
Saco, Maine

Client: Haley & Aldrich, Inc.
Project: Ocean Gateway Parking Garage
Project No: 956-06 **Lab #** 9743

Tested By: DCH **Checked By:** MTG

Moisture-Density Test Report



Test specification: ASTM D 1557-02 Method A Modified
Oversize correction applied to each point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
	SP		2.6%				7.9	1.9

ROCK CORRECTED TEST RESULTS

Maximum dry density = 114.3 pcf

Optimum moisture = 11.7 %

MATERIAL DESCRIPTION

Granular Fill - poorly graded sand

Project No. 956-06 **Client:** Haley & Aldrich, Inc.

Project: Ocean Gateway Parking Garage

● **Location:** Stockpile

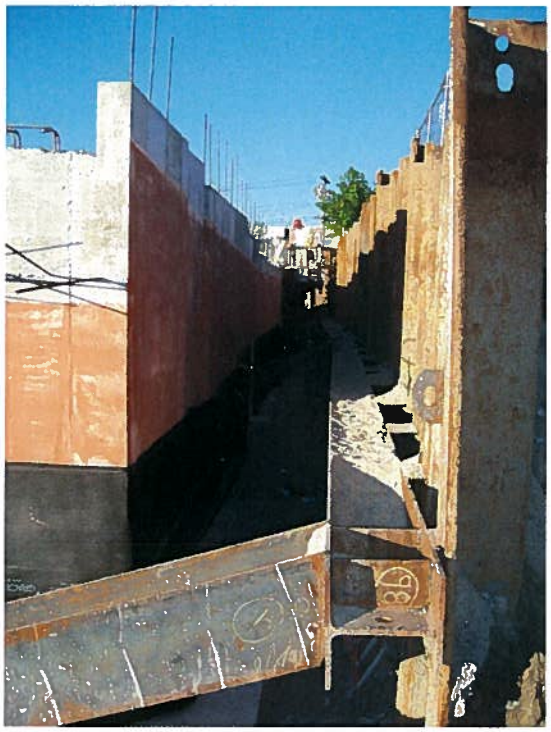
R.W. Gillespie & Associates, Inc.

Saco, Maine

Remarks:

Tested by: MJK

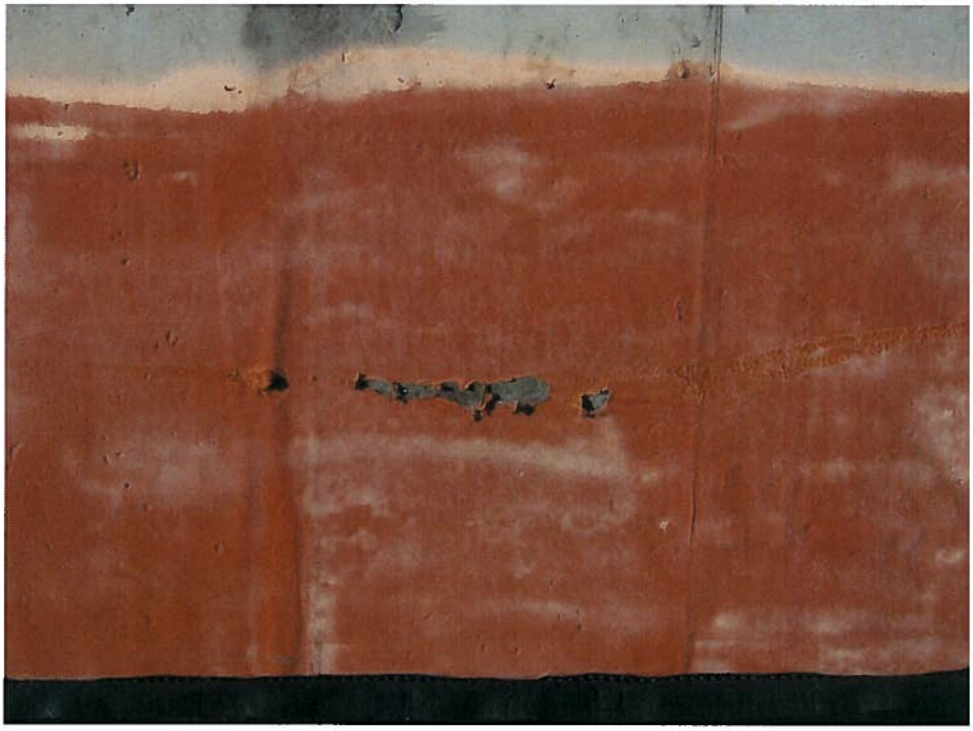
Lab # 9743



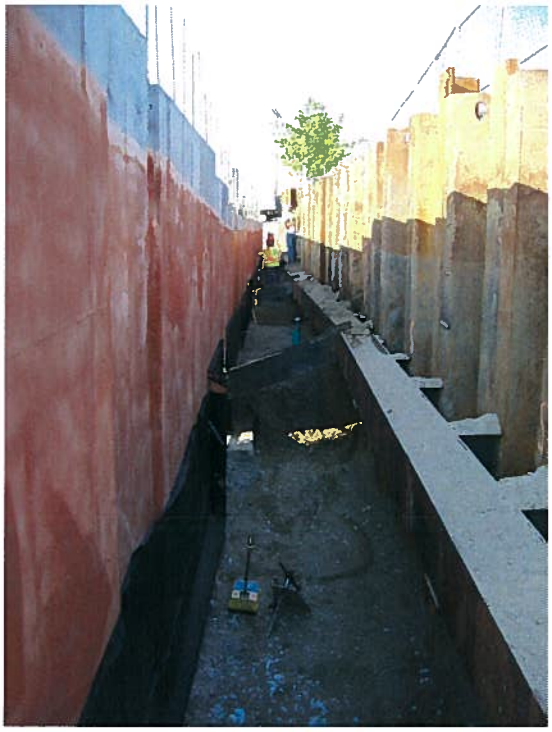
Photograph 1. Dampproofing and drainage board installed on the exterior side of the foundation wall along column line 1, from column line A to column line D, looking south (8/27/07).

Photograph 2. Dampproofing and drainage board installed on the interior side of the foundation wall along column line D from column line 1 to column line 1.9/2.1, looking southeast (8/27/07).

Photograph 3. Installation of underslab drain north of column line D, looking east (8/27/07).



Photograph 4. Damaged waterproofing along column line D, looking south (7/28/07).



Photograph 5. Backfilling along column line 1 between the foundation wall and the steel sheet pile support of excavation system, looking south (8/30/07).

Photograph 6. Excavation for the oil/water separator in the southeast building corner, looking southwest (8/30/07).