

Part II
Division 0

Supplemental Information

SECTION 00 30 00

INFORMATION AVAILABLE TO BIDDERS

- 1.1 SW COLE GEO TECHNICAL REPORT
- 1.2 SW COLE BORING LOG
- 1.3 IBC AND NFPA CODE ANALYSIS

... END OF SECTION

**GEOTECHNICAL ENGINEERING SERVICES
PROPOSED BUILDING RENOVATIONS
645 CONGRESS STREET
PORTLAND, MAINE**

09-0077 March 30, 2009

Prepared for:
Bayside Maine, LLC
c/o Greg Shinberg Consulting, LLC
477 Congress Street, Suite 1012
Portland, ME 04101

Prepared by:

17 Chestnut Street, Suite 1A
Portland, Maine 04101

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• Geotechnical Engineering • Field & Lab Testing • Scientific & Environmental Consulting

09-0077

March 30, 2009

Bayside Maine, LLC
c/o Shinberg Consulting, LLC
Attn: Greg Shinberg
477 Congress Street, Suite 1012
Portland, ME 04101

Subject: Geotechnical Engineering Services
Proposed Building Renovations
645 Congress Street
Portland, Maine

Dear Greg:

In accordance with our Proposal and Addendum No. 1, dated February 18, 2009, we have made a subsurface investigation for the proposed renovations for the 5 and 6 story building located at 645 Congress Street in Portland, Maine. This report presents our findings and recommendations relative to seismic soil site class related to the proposed building renovations. The contents of this report are subject to the limitations set forth in Attachment A.

1.0 INTRODUCTION

1.1 Scope and Purpose

The purpose of our geotechnical work was to obtain subsurface soils information in order to assess the seismic soil Site Class according to 2006 IBC (N-value method) relative to the planned building renovations at 645 Congress Street. Our scope of work included three test boring explorations, soils laboratory testing, a geotechnical analysis of the subsurface findings relative to seismic soil site class, and preparation of this report.

1.1.1 Additional Scope and Purpose

The purpose of our additional geotechnical work was to obtain preliminary subsurface soils information in areas of proposed future buildings on the site. As requested, our additional scope included four test borings at locations selected by the Client, soils

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Other Offices in Bangor, Caribou, Augusta and Gray, Maine & Keene and Somersworth, New Hampshire

laboratory testing, preparation of logs and a plan showing the approximate locations of the test borings, which are attached as Sheet 1 and Appendix A.

1.2 Proposed Construction

Based on information provided by Shinberg Consulting, we understand renovation plans call for demolition of three, 3 story buildings on the site and renovation of the existing 5 and 6 story building along Congress Street. We understand structural framing of the existing building will be altered and modified as part of the renovation work. Proposed and existing site features are shown on the "Exploration Location Plan" attached as Sheet 1.

2.0 EXPLORATION AND TESTING

2.1 Exploration

Three test boring explorations (B-1, B-2 and B-3) were made at the site on March 24, 2009. The test borings were drilled by Northern Test Boring of Gorham, Maine working under subcontract to S.W. COLE ENGINEERING, INC. The exploration locations were selected and established in the field by S.W. COLE ENGINEERING, INC using taped measurements from existing site features. The approximate exploration locations are shown on the "Exploration Location Plan" attached as Sheet 1. Logs of the test borings are attached as Sheets 2 through 4. Logs of rock core obtained at B-1 through B-3 are attached as Sheets 5 through 7. A key to the notes and symbols used on the logs is attached as Sheet 8.

2.2 Testing

Soil samples obtained from the explorations were returned to our laboratory for further classification and testing. The results of moisture content tests are shown on the logs. The results of one gradation test are attached as Sheet 9.

2.3 Additional Exploration and Testing

According to our Proposal Addendum No. 1, dated February 18, 2009, we also completed four additional test borings (B-101 through B-104) in areas of proposed future buildings on the site. The locations of these borings were selected by the Client and are shown on Sheet 1. Logs and laboratory test results for these additional borings are attached in Appendix A.

3.0 SITE AND SUBSURFACE CONDITIONS

3.1 Surficial Conditions

The site is located at 645 Congress Street in Portland, Maine. The site is relatively flat and slopes gently downward from Congress Street at about elevation 116 feet (project datum) to elevation 107 along Deering Street with about 5 feet of topographic relief from the front of the building area to the rear. The existing buildings to be renovated are attached 5 and 6 story structures with a basement level extending about 10 feet below the elevation of Congress Street.

3.2 Subsurface Conditions

Below a surficial layer of asphalt, test borings B-1 through B-3 encountered uncontrolled fill and backfill to depths of 6 to 12 feet overlying relic foundations and slabs overlying native glacial till that was dense where undisturbed. These test boring encountered bedrock at depths varying from about 11 to 17 feet below the ground surface (approximately 6 to 7 feet below basement slab level of the existing buildings to be renovated). Please refer to the attached logs for more detailed descriptions of the subsurface findings.

3.3 Groundwater Conditions

Groundwater was observed at depths varying from about 5 to 12 feet below the ground surface. Actual groundwater levels were not determined due to the short time-frame which the explorations remained open. In general, it should be anticipated that seasonal groundwater levels will fluctuate, especially during times of snowmelt and heavy precipitation.

4.0 EVALUATION AND RECOMMENDATIONS

4.1 Seismic Soil Site Class

Based on the subsurface findings, the elevation of the basement level and foundations, and our understanding of the proposed renovations, we interpret the existing building is likely founded on bedrock or less than 10 feet of stable, dense soils overlying sound bedrock. Therefore, we recommend that structural analysis for renovation of the existing 5 and 6 story building consider a seismic soil Site Class B according to IBC 2006.

4.2 Design Review and Construction Testing

S. W. COLE ENGINEERING, INC. should be retained to review the foundation design and specifications to determine that our earthwork recommendations have been properly interpreted and implemented.

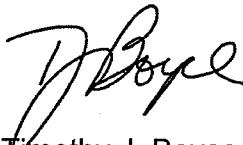
A soils and concrete testing program should also be implemented during construction to observe compliance with the design concepts, plans, and specifications. S. W. COLE ENGINEERING, INC. is available to provide field and laboratory testing services for soil, concrete, steel, masonry, spray-applied fire-proofing, and asphalt construction materials.

5.0 CLOSURE

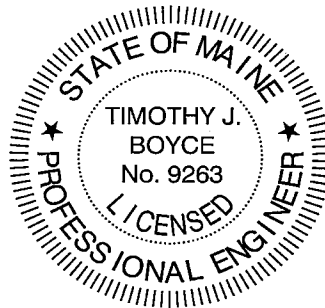
It has been a pleasure to be of assistance to you with this phase of your project. We look forward to working with you as the design progresses and during the construction phase of this project.

Sincerely,

S. W. COLE ENGINEERING, INC.



Timothy J. Boyce, P. E.
Senior Geotechnical Engineer



TJB:pfk

Attachment A - Limitations

This report has been prepared for the exclusive use of Bayside Maine, LLC for specific application to the proposed renovation of the existing 5 and 6 story buildings at 645 Congress Street in Portland, Maine. S.W.COLE ENGINEERING, INC. has endeavored to conduct the work in accordance with generally accepted soil and foundation engineering practices. No warranty, expressed or implied, is made.

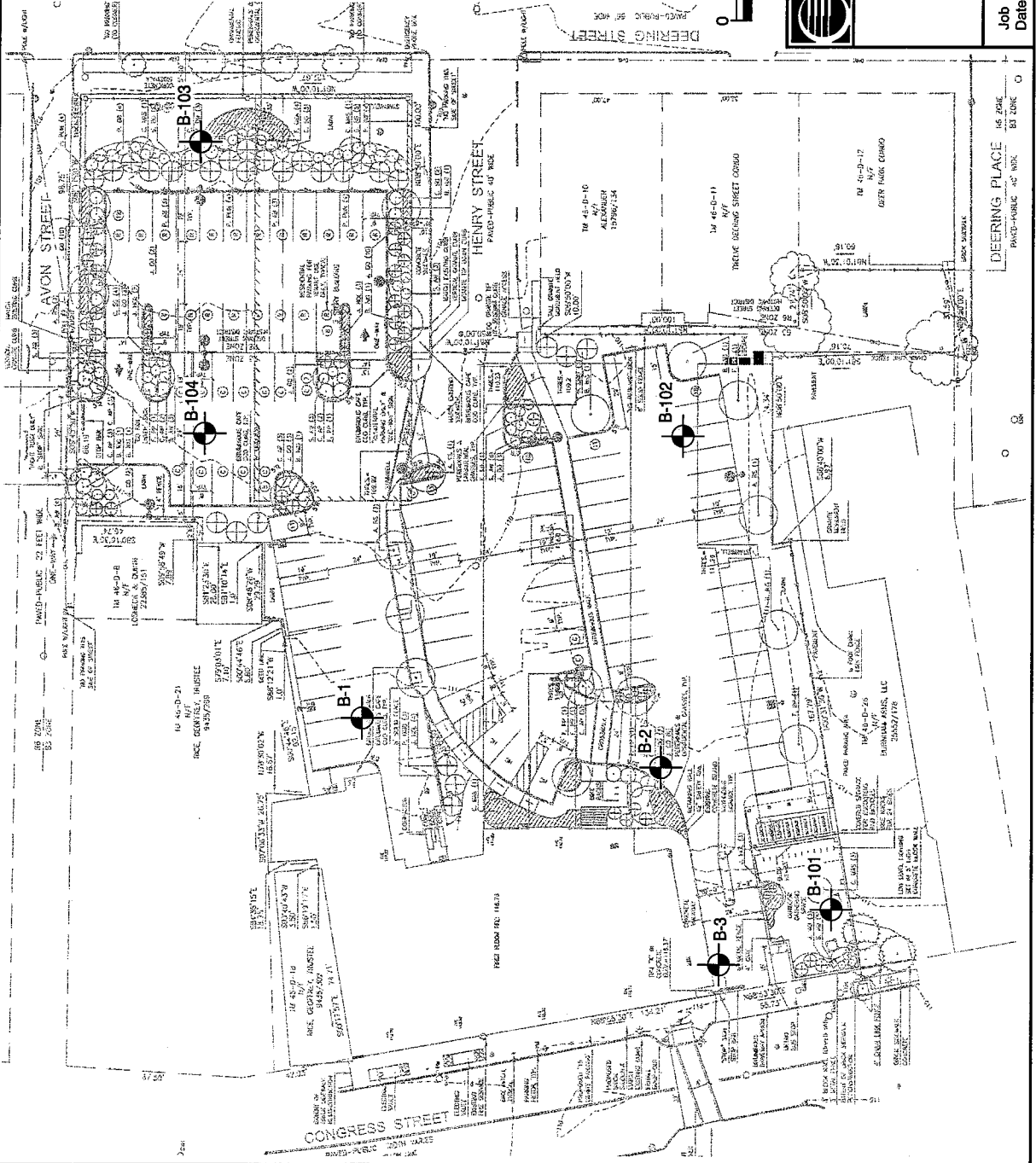
The soil profiles described in the report are intended to convey general trends in subsurface conditions. The boundaries between strata are approximate and are based upon interpretation of exploration data and samples.

The analyses performed during this investigation and recommendations presented in this report are based in part upon the data obtained from subsurface explorations made at the site. Variations in subsurface conditions may occur between explorations and may not become evident until construction. If variations in subsurface conditions become evident after submission of this report, it will be necessary to evaluate their nature and to review the recommendations of this report.

Observations have been made during exploration work to assess site groundwater levels. Fluctuations in water levels will occur due to variations in rainfall, temperature, and other factors.

S. W. COLE ENGINEERING, INC.'s scope of work has not included the investigation, detection, or prevention of any Biological Pollutants at the project site or in any existing or proposed structure at the site. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and the byproducts of any such biological organisms.

Recommendations contained in this report are based substantially upon information provided by others regarding the proposed project. In the event that any changes are made in the design, nature, or location of the proposed project, S. W. COLE ENGINEERING, INC. should review such changes as they relate to analyses associated with this report. Recommendations contained in this report shall not be considered valid unless the changes are reviewed by S. W. COLE ENGINEERING, INC.



APPROXIMATE BORING LOCATION



NOTES:

1. EXPLORATION LOCATION PLAN WAS PREPARED FROM A 1"=20' SCALE PLAN OF THE SITE ENTITLED "LAYOUT, LIGHTING AND LANDSCAPING PLAN," PREPARED BY MITCHELL & ASSOCIATES, LANDSCAPE ARCHITECTS, DATED DECEMBER 15, 2008, REVISED MARCH 24, 2009.
2. THE BORINGS WERE LOCATED IN THE FIELD BY TAPED MEASUREMENTS FROM EXISTING SITE FEATURES.
3. THIS PLAN SHOULD BE USED IN CONJUNCTION WITH THE ASSOCIATED S.W. COLE ENGINEERING, INC. GEOTECHNICAL REPORT.
4. THE PURPOSE OF THIS PLAN IS ONLY TO DEPICT THE LOCATION OF THE EXPLORATIONS IN RELATION TO THE EXISTING CONDITIONS AND PROPOSED CONSTRUCTION AND IS NOT TO BE USED FOR CONSTRUCTION.



SCALE IN FEET



S.W. COLE
ENGINEERING, INC.

BAYSIDE MAINE, LLC

EXPLORATION LOCATION PLAN
PROPOSED 645 CONGRESS STREET RENOVATIONS
645 CONGRESS STREET
PORTLAND, MAINE

Job No. 08-0077
Date: 03/27/09

Scale 1"=40'
Sheet 1



BORING LOG

BORING NO.: **B-2**
 SHEET: 1 OF 1
 PROJECT NO.: 09-0077
 DATE START: 3/24/2009
 DATE FINISH: 3/24/2009
 ELEVATION: 111' +/-
 SWC REP.: K. GIMPEL

PROJECT / CLIENT: CONGRESS STREET BUILDING RENOVATIONS / BAYSIDE MAINE, LLC
 LOCATION: 645 CONGRESS STREET PORTLAND, MAINE
 DRILLING CO.: NORTHERN TEST BORING, INC. DRILLER: MIKE NADEAU

CASING: TYPE HW SIZE I.D. 4" HAMMER WT. 140-lb HAMMER FALL 30"
 SAMPLER: SS 2 3/8" 140-lb 30"
 CORE BARREL: NQ 2"

WATER LEVEL INFORMATION
 NO FREE WATER OBSERVED WHILE DRILLING
 WATER AT 4.5' +/- AFTER CASING WAS PULLED

CASING BLOWS PER FOOT	SAMPLE				SAMPLER BLOWS PER 6"				DEPTH	STRATA & TEST DATA
	NO.	PEN.	REC.	DEPTH @ BOT	0-6	6-12	12-18	18-24		
SSA									0.1'	1 -INCH ASPHALT PAVEMENT
TO 10'	1D	24"	14"	2.5'	6	6	7	4		BROWN SILTY SAND SOME GRAVEL TRACE BRICK (FILL) ~LOOSE TO MEDIUM DENSE~
									6.0'	BROWN SILT AND SAND TRACE GRAVEL TRACE BRICK (FILL / REWORKED NATIVE SOILS)
	2D	24"	17"	7.0'	14	7	7	6	7.5'	BROWN SILT AND SAND TRACE GRAVEL BECOMING...
SET CASING TO 12.6'										...BROWN SAND AND SILT SOME GRAVEL (TILL) ~DENSE~
CORE									12.6'	(SEE ROCK CORE LOG) RQD - 46 %
	1R	56"	44"	17.2'					17.2'	BOTTOM OF EXPLORATION AT 17.2'

SAMPLES: D = SPLIT SPOON
 C = 3" SHELBY TUBE
 U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
 DRILLER - VISUALLY
 SOIL TECH. - VISUALLY
 LABORATORY TEST

REMARKS: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.



BORING LOG

BORING NO.: **B-3**
 SHEET: 1 OF 1
 PROJECT NO.: 09-0077
 DATE START: 3/24/2009
 DATE FINISH: 3/24/2009
 ELEVATION: 116' +/-
 SWC REP.: K. GIMPEL

PROJECT / CLIENT: CONGRESS STREET BUILDING RENOVATIONS / BAYSIDE MAINE, LLC
 LOCATION: 645 CONGRESS STREET PORTLAND, MAINE
 DRILLING CO.: NORTHERN TEST BORING, INC. DRILLER: MIKE NADEAU

CASING: TYPE HW SIZE I.D. 4" HAMMER WT. 30" HAMMER FALL
 SAMPLER: SS 2 3/8" 140-lb 30"
 CORE BARREL: NQ 2"

WATER LEVEL INFORMATION
 WATER AT 12' +/-

CASING BLOWS PER FOOT	SAMPLE				SAMPLER BLOWS PER 6"				DEPTH	STRATA & TEST DATA
	NO.	PEN.	REC.	DEPTH @ BOT	0-6	6-12	12-18	18-24		
SSA									0.2'	3-INCHES ASPHALT PAVEMENT
TO 10'	1D	24"	16"	2.5'	11	11	10	9	0.5'	BROWN GRAVELLY SAND TRACE SILT (FILL)
										BROWN SILTY SAND (FILL)
										~LOOSE~
	2D	24"	19"	7.0'	2	2	2	2		
									9.8'	
CASING										BLACK SILTY SAND WITH WOOD AND BRICK (FILL)
TO 15'	3D	24"	22"	12.0'	2	2	7	5	12.1'	RELIC CONCRETE SLAB
									12.6'	PROBABLE LOOSE FILL OR SATURATED SANDY TILL
									16.0'	
	4D	19"	17"	16.7'	WOH / 12"	6	50/2"		17.2'	GRAY GRAVELLY SILT AND SAND (TILL) ~LOOSE~
CORE										(SEE ROCK CORE LOG)
	1R	50"	42"	21.4'					21.4'	RQD = 30 %
										BOTTOM OF EXPLORATION AT 21.4'

SAMPLES: D = SPLIT SPOON
 C = 3" SHELBY TUBE
 U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY: DRILLER - VISUALLY
 SOIL TECH. - VISUALLY
 LABORATORY TEST

REMARKS: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

PROJECT: 645 CONGRESS STREET BUILDING RENOVATIONS

BORING NO.: B-1

CLIENT: BAYSIDE MAINE, LLC

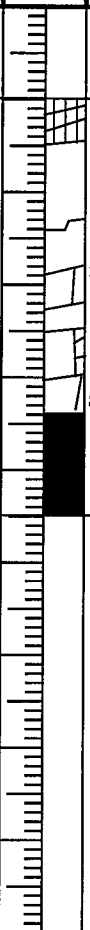
PROJECT NO.: 09-0077

LOGGED BY: K. GIMPEL DATE: 3/25/2009

SHEET NO.: 1 OF 1

CHECKED BY: G. BUCKLIN DATE: 3/26/2009

CORE SIZE: NQ2

DEPTH BELOW SURFACE (FT)	CORE RUN	CORE INTERVAL (FT)	CORE RECOVERY (FT)	RQD (%)	ROCK QUALITY	GRAPHIC LOG	ROCK DESCRIPTION AND IDENTIFICATION
11							(SEE SHEET 2 FOR SOILS DESCRIPTION) BEGINNING OF CORE RUN AT 11.0'
15	1R	11.0' 54"	40"	16/54 30%	POOR		GRAY PELITE / PHYLLITE MODERATELY WEATHERED FINE GRAINED TEXTURE MODERATELY HARD THIN CALCITE BANDS PARALLEL TO FOLIATION (85°) SLIGHT IRON OXIDE STAINING ON FRACTURE SURFACES
		15.5'					BOTTOM OF EXPLORATION AT 15.5'

PROJECT: 645 CONGRESS STREET BUILDING RENOVATIONS

BORING NO.: B-2

CLIENT: BAYSIDE MAINE, LLC

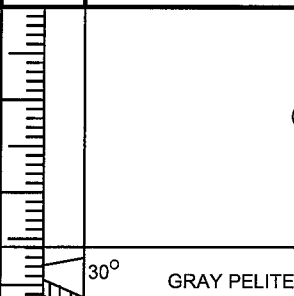

PROJECT NO.: 09-0077

LOGGED BY: K. GIMPEL DATE: 3/25/2009

SHEET NO.: 1 OF 1

CHECKED BY: G. BUCKLIN DATE: 3/26/2009

CORE SIZE: NQ2

DEPTH BELOW SURFACE (FT)	CORE RUN	CORE INTERVAL (FT)	CORE RECOVERY (FT)	RQD (%)	ROCK QUALITY	GRAPHIC LOG	ROCK DESCRIPTION AND IDENTIFICATION
11							(SEE SHEET 3 FOR SOILS DESCRIPTION)
		12.6'					BEGINNING OF CORE RUN AT 12.6'
15	1R	56"	44"	26/56 46%	POOR		GRAY PELITE MODERATELY WEATHERED FINE GRAINED TEXTURE CALCITE BANDS ABUNDANT MODERATELY HARD SOME PITTING ON FRACTURE SURFACES
		17.2'					ZONE OF NO RECOVERY BOTTOM OF EXPLORATION AT 17.2'

PROJECT: 645 CONGRESS STREET BUILDING RENOVATIONS

BORING NO.: B-3

CLIENT: BAYSIDE MAINE, LLC

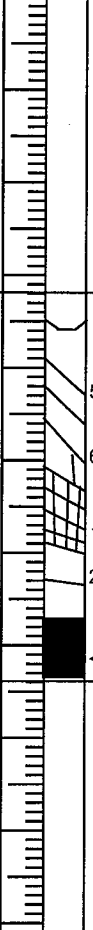
PROJECT NO.: 09-0077

LOGGED BY: K. GIMPEL DATE: 3/25/2009

SHEET NO.: 1 OF 1

CHECKED BY: G. BUCKLIN DATE: 3/26/2009

CORE SIZE: NQ2

DEPTH BELOW SURFACE (FT)	CORE RUN	CORE INTERVAL (FT)	CORE RECOVERY (FT)	RQD (%)	ROCK QUALITY	GRAPHIC LOG	ROCK DESCRIPTION AND IDENTIFICATION
15							(SEE SHEET 4 FOR SOILS DESCRIPTION)
							BEGINNING OF CORE RUN AT 17.2'
20	1R	17.2' 50"	42"	15/50 30%	POOR	 <p>50° 65° 20°</p> <p>HIGHLY FRACTURED ZONE</p> <p>ZONE OF NO RECOVERY</p>	<p>GRAY PELITE MODERATELY TO SEVERELY WEATHERED FINE GRAINED TEXTURE CALCITE BANDS ABUNDANT MODERATELY HARD SOME PITTING ON ROCK SURFACES</p>
		21.4'					BOTTOM OF EXPLORATION AT 21.4'



KEY TO THE NOTES & SYMBOLS **Test Boring and Test Pit Explorations**

All stratification lines represent the approximate boundary between soil types and the transition may be gradual.

Key to Symbols Used:

w	-	water content, percent (dry weight basis)
q _u	-	unconfined compressive strength, kips/sq. ft. - based on laboratory unconfined compressive test
S _v	-	field vane shear strength, kips/sq. ft.
L _v	-	lab vane shear strength, kips/sq. ft.
q _p	-	unconfined compressive strength, kips/sq. ft. based on pocket penetrometer test
O	-	organic content, percent (dry weight basis)
W _L	-	liquid limit - Atterberg test
W _P	-	plastic limit - Atterberg test
WOH	-	advance by weight of hammer
WOM	-	advance by weight of man
WOR	-	advance by weight of rods
HYD	-	advance by force of hydraulic piston on drill
RQD	-	Rock Quality Designator - an index of the quality of a rock mass. RQD is computed from recovered core samples.
γ _T	-	total soil weight
γ _B	-	buoyant soil weight

Description of Proportions:

0 to 5% TRACE
5 to 12% SOME
12 to 35% "Y"
35+% AND

REFUSAL: Test Boring Explorations - Refusal depth indicates that depth at which, in the drill foreman's opinion, sufficient resistance to the advance of the casing, auger, probe rod or sampler was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

REFUSAL: Test Pit Explorations - Refusal depth indicates that depth at which sufficient resistance to the advance of the backhoe bucket was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

Although refusal may indicate the encountering of the bedrock surface, it may indicate the striking of large cobbles, boulders, very dense or cemented soil, or other buried natural or man-made objects or it may indicate the encountering of a harder zone after penetrating a considerable depth through a weathered or disintegrated zone of the bedrock.



Report of Gradation

ASTM C-117 & C-136

Project Name PORTLAND ME - 645 CONGRESS STREET RENOVATIONS -
GEOTECHNICAL ENGINEERING SERVICES

Project Number 09-0077

Client

Lab ID 10431G

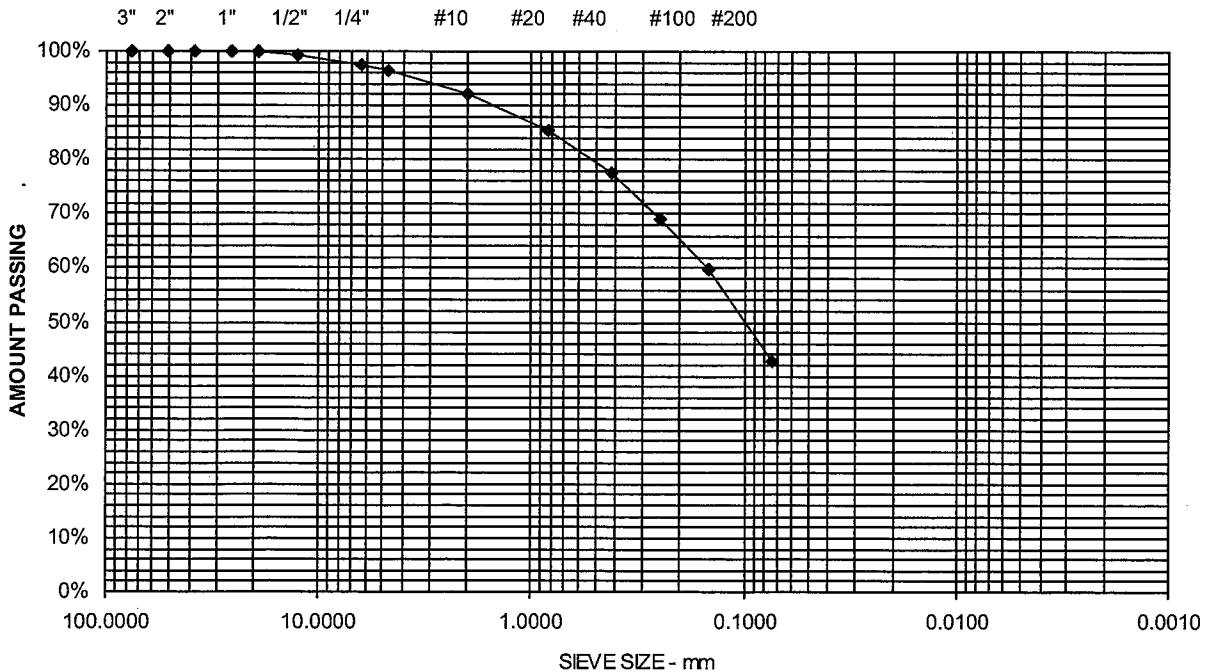
Date Received 3/26/2009

Date Complete 3/27/2009

Material Source B-2, 3D (10' - 12')

Tested By JUSTIN BISSON

<u>STANDARD DESIGNATION (mm/μm)</u>	<u>SIEVE SIZE</u>	<u>AMOUNT PASSING (%)</u>	
150 mm	6"	100	
125 mm	5"	100	
100 mm	4"	100	
75 mm	3"	100	
50 mm	2"	100	
38.1 mm	1-1/2"	100	
25.0 mm	1"	100	
19.0 mm	3/4"	100	
12.5 mm	1/2"	99	
6.3 mm	1/4"	98	
4.75 mm	No. 4	97	3.4% Gravel
2.00 mm	No. 10	92	
850 μm	No. 20	86	
425 μm	No. 40	77	54% Sand
250 μm	No. 60	69	
150 μm	No. 100	60	
75 μm	No. 200	42.6	42.6% Fines



Comments: w = 14.6%

APPENDIX A



BORING LOG

BORING NO.: **B-103**
 SHEET: 1 OF 1
 PROJECT NO.: 09-0077
 DATE START: 3/25/2009
 DATE FINISH: 3/25/2009
 ELEVATION: 108' +/-
 SWC REP.: K. GIMPEL

PROJECT / CLIENT: PROPOSED NEW BUILDINGS / BAYSIDE MAINE, LLC
 LOCATION: 645 CONGRESS STREET PORTLAND, MAINE
 DRILLING CO.: NORTHERN TEST BORING, INC. DRILLER: MIKE NADEAU

CASING: TYPE: HW SIZE I.D.: 4" HAMMER WT.: 30" HAMMER FALL: 30"
 SAMPLER: SS 2 3/8" 140-lb 30"
 CORE BARREL: NQ 2"

WATER LEVEL INFORMATION
 WATER AT 8.5' +/-

CASING BLOWS PER FOOT	SAMPLE				SAMPLER BLOWS PER 6"				DEPTH	STRATA & TEST DATA
	NO.	PEN.	REC.	DEPTH @ BOT	0-6	6-12	12-18	18-24		
SSA									0.2'	2 1/2 -INCHES ASPHALT PAVEMENT
TO 15'	1D	12"	7"	1.5'	6	32				BROWN GRAVELLY SILTY SAND WITH OCCASIONAL COBBLES (FILL) -MEDIUM DENSE-
									4.5'	
	2D	24"	16"	7.0'	5	4	3	5		BROWN SILT AND SAND TRACE GRAVEL -MEDIUM DENSE BECOMING... w = 20.3 %
SET										
CASING										
TO 10'										
	3D	24"	24"	12.0'	7	15	22	21	12.0'	...DENSE- PROBABLE GRAY SAND AND SILT SOME GRAVEL (TILL)
CORE									14.5'	
										(SEE ROCK CORE LOG)
										RQD = 20 %
	1R	60"	56"	19.5'					19.5'	
										BOTTOM OF EXPLORATION AT 19.5'

SAMPLES: D = SPLIT SPOON
 C = 3" SHELBY TUBE
 U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
 DRILLER - VISUALLY
 SOIL TECH. - VISUALLY
 LABORATORY TEST

REMARKS: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

(A-3)

BORING NO.: **B-103**

PROJECT: PROPOSED NEW BUILDINGS AT 645 CONGRESS STREET

BORING NO.: B-102

CLIENT: BAYSIDE MAINE, LLC

PROJECT NO.: 09-0077

LOGGED BY: K. GIMPEL DATE: 3/25/2009

SHEET NO.: 1 OF 1

CHECKED BY: G. BUCKLIN DATE: 3/26/2009

CORE SIZE: NQ2

DEPTH BELOW SURFACE (FT)	CORE RUN	CORE INTERVAL (FT)	CORE RECOVERY (FT)	RQD (%)	ROCK QUALITY	GRAPHIC LOG	ROCK DESCRIPTION AND IDENTIFICATION
15							(SEE SHEET A-2 FOR SOILS DESCRIPTION) BEGINNING OF CORE RUN AT 15.0'
	1R	15.0' 36"	32"	0/36 0%	VERY POOR	85° 50° 50° 55°	GRAY PELITE FINE GRAINED TEXTURE HIGHLY FRACTURED MODERATELY WEATHERED MODERATELY HARD ← ZONE OF NO RECOVERY
20	2R	24" 20.0'	17"	11/24 46%	POOR	50° 10°	IRON OXIDE STAINING ON SOME FRACTURE SURFACES CALCITE AND MUSCOVITE MICA EVIDENT ← ZONE OF NO RECOVERY
							BOTTOM OF EXPLORATION AT 20.0'

PROJECT: PROPOSED NEW BUILDINGS AT 645 CONGRESS STREET

BORING NO.: B-103

CLIENT: BAYSIDE MAINE, LLC

PROJECT NO.: 09-0077

LOGGED BY: K. GIMPEL


DATE: 3/25/2009

SHEET NO.: 1 OF 1

CHECKED BY: G. BUCKLIN

DATE: 3/26/2009

CORE SIZE: NQ2

DEPTH BELOW SURFACE (FT)	CORE RUN	CORE INTERVAL (FT)	CORE RECOVERY (FT)	RQD (%)	ROCK QUALITY	GRAPHIC LOG	ROCK DESCRIPTION AND IDENTIFICATION
14							(SEE SHEET A-3 FOR SOILS DESCRIPTION)
		14.5'					BEGINNING OF CORE RUN AT 14.5'
	1R	60"	56"	12/60 20%	VERY POOR		GRAY PELITE FINE TO MEDIUM GRAINED TEXTURE SEVERELY TO MODERATELY WEATHERED SOME PITTING ON ROCK SURFACES SLIGHT IRON OXIDE STAINING ON FRACTURE SURFACES CALCITE BANDS UP TO 1/2-INCH DIAMETER
20		19.5'					BOTTOM OF EXPLORATION AT 19.5'

PROJECT: PROPOSED NEW BUILDINGS AT 645 CONGRESS STREET

BORING NO.: B-104

CLIENT: BAYSIDE MAINE, LLC

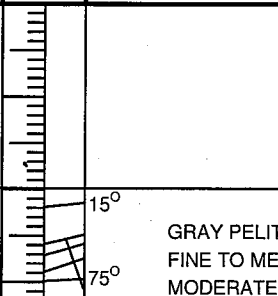
PROJECT NO.: 09-0077

LOGGED BY: K. GIMPEL DATE: 3/25/2009

SHEET NO.: 1 OF 1

CHECKED BY: G. BUCKLIN DATE: 3/26/2009

CORE SIZE: NQ2

DEPTH BELOW SURFACE (FT)	CORE RUN	CORE INTERVAL (FT)	CORE RECOVERY (FT)	RQD (%)	ROCK QUALITY	GRAPHIC LOG	ROCK DESCRIPTION AND IDENTIFICATION
10							(SEE SHEET A-4 FOR SOILS DESCRIPTION) BEGINNING OF CORE RUN AT 10.0'
	1R	10.0' 48" 14.0'	48"	15/48 31%	POOR		GRAY PELITE / META-SANDSTONE FINE TO MEDIUM GRAINED TEXTURE MODERATELY WEATHERED MODERATELY HARD IRON OXIDE STAINING ON FRACTURE SURFACES CALCITE BANDS HIGHLY FRACTURED AND SEVERELY WEATHERED
15							BOTTOM OF EXPLORATION AT 14.0'



Report of Gradation

ASTM C-117 & C-136

Project Name PORTLAND ME - 645 CONGRESS STREET RENOVATIONS -
GEOTECHNICAL ENGINEERING SERVICES

Project Number 09-0077

Client

Lab ID 10432G

Date Received 3/26/2009

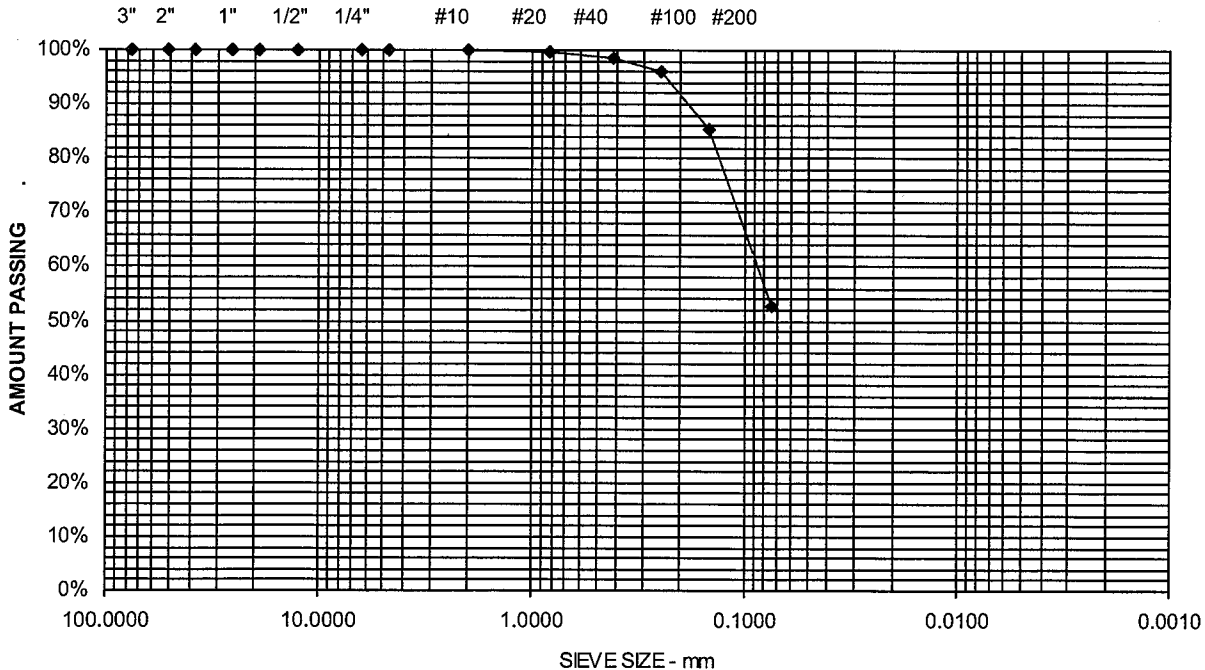
Date Complete 3/27/2009

Material Source B-102, 2D (5' - 7')

Tested By JUSTIN BISSON

STANDARD DESIGNATION (mm/μm) SIEVE SIZE AMOUNT PASSING (%)

150 mm	6"	100	
125 mm	5"	100	
100 mm	4"	100	
75 mm	3"	100	
50 mm	2"	100	
38.1 mm	1-1/2"	100	
25.0 mm	1"	100	
19.0 mm	3/4"	100	
12.5 mm	1/2"	100	
6.3 mm	1/4"	100	
4.75 mm	No. 4	100	0% Gravel
2.00 mm	No. 10	100	
850 μm	No. 20	99	
425 μm	No. 40	99	47.2% Sand
250 μm	No. 60	96	
150 μm	No. 100	85	
75 μm	No. 200	52.8	52.8% Fines



Comments: w = 19.1%



Report of Gradation

ASTM C-117 & C-136

Project Name PORTLAND ME - 645 CONGRESS STREET RENOVATIONS -
GEOTECHNICAL ENGINEERING SERVICES

Project Number 09-0077

Client

Lab ID 10433G

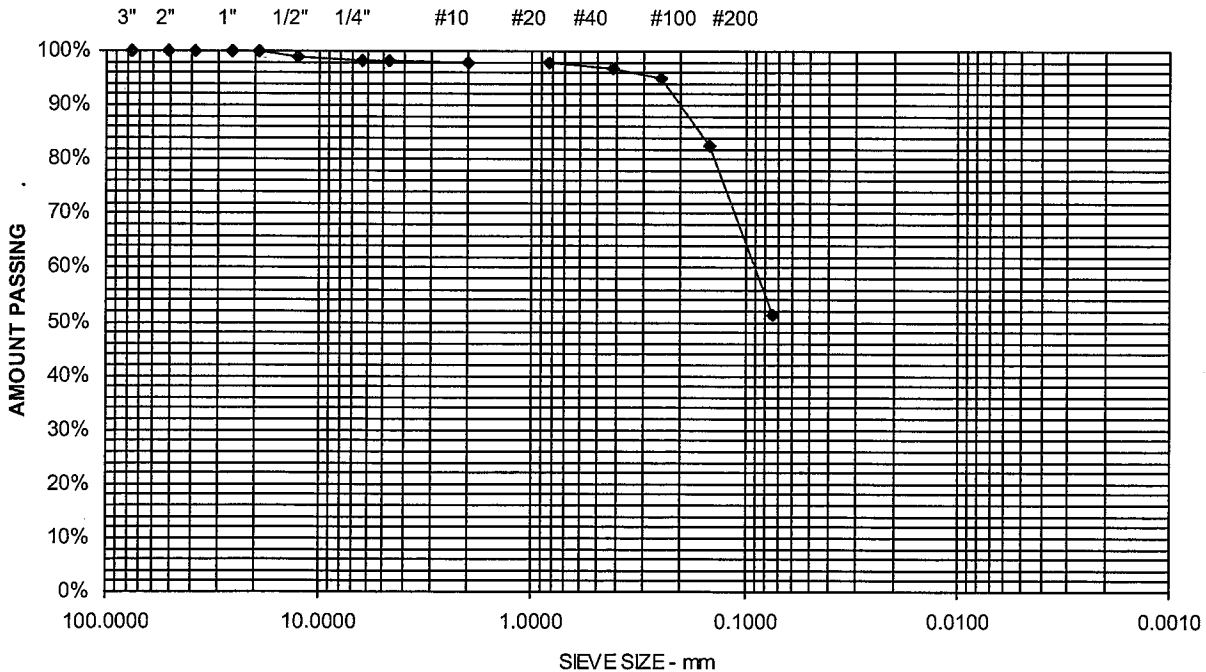
Date Received 3/26/2009

Date Complete 3/27/2009

Material Source B-103, 2D (5' - 7')

Tested By JUSTIN BISSON

<u>STANDARD DESIGNATION (mm/μm)</u>	<u>SIEVE SIZE</u>	<u>AMOUNT PASSING (%)</u>	
150 mm	6"	100	
125 mm	5"	100	
100 mm	4"	100	
75 mm	3"	100	
50 mm	2"	100	
38.1 mm	1-1/2"	100	
25.0 mm	1"	100	
19.0 mm	3/4"	100	
12.5 mm	1/2"	99	
6.3 mm	1/4"	98	
4.75 mm	No. 4	98	1.8% Gravel
2.00 mm	No. 10	98	
850 μm	No. 20	98	
425 μm	No. 40	97	47.1% Sand
250 μm	No. 60	95	
150 μm	No. 100	83	
75 μm	No. 200	51.1	51.1% Fines



Comments: w = 20.3%

Notes:

1. This renovation includes the demolition three (3) existing building building wings consisting of 112 dormitory units.
2. For the most part, the proposed renovations do not represent a change of use. Where changes of use do occur, they are generally a reduction in the required level of protection (i.e. Mercantile is generally a less restrictive use than Assembly).

Code Analysis

Category	Reference	IBC 2003 Code Requirements	Reference	NFPA 101 - 2006 Code Requirements	Proposed
Existing Use Group	310.0	R-2 Dormitory A-2 Restaurants / A-3 Community Halls	6.1.8.1.4 6.1.2.1	Residential - Existing Dormatory Building, Re: 29.1.1.2 Assembly	Existing: 43 Units, 1 Office, 1 Common Room
Proposed Use Group	310.0	R-2 Apartments M Mercantile	6.1.8.1.5	Residential - New Apartment Building, Re: 30.1.1.2 Mercantile Class C, Re: 36.1.1.2	Proposed: 56 Units
Building Construction	Table 602		Table 8.2.1.2		
Height & Area Limitations	Ground Level	Type IIIB - Non-Combustible Protected	36.1.6	New Mercantile Class C, Type III (200) Provided	Ordinary Concstruction
	Upper Four Levels	Type IIIB - Combustible Protected	30.1.6	New Apartment Building Type III (200) Provided	Ordinary Construction
	Table 503	See IBC 2003 - Code Calculations			
Height Modifications	504.2	See IBC 2003 - Code Calculations 4 stories* / 55'			
Maximum allowable height	506.2	See IBC 2003 - Code Calculations			Sprinklered - NFPA 13 4 stories* / 63.42'
Maximum allowable area	506.3	See IBC 2003 - Code Calculations			
	506.1	See IBC 2003 - Code Calculations			43,127 SF 1st floor 24,984 SF 2nd-5th floors
					* From level above S-2 per 508.2

Fire ratings

Table 602	Loadbearing Ext walls - 2 hr	Table 8.2.1.2 Loadbearing Ext walls - 2 hr	2 hour
	Nonloadbearing Ext walls - 0 hr	Nonloadbearing Ext walls - 0 hr	0 hour
Table 1016.1	Exit access corridors - 1/2 hour (with sprinkler system)	Exit access corridors - 1/2 hour	1/2 hour (1 hour protected wood frame provided)
1019.1	Fire Enclosure of 6 story Vertical Exit Enclosures - 2 hour	Exit access corridor doors - 20-minute self-closing & latching Exits: 2 Hour (Sprinklered)	20 minute doors, spring hinges
707.4	5 story Shafts & Elevator Hoistways - 2 hr	Shafts: 2 Hour (Sprinklered) and 1-hour doors	2 hour
708.3	Dwelling Unit Separation - 1/2 hour	Dwelling Unit Separation - 1 hour	1 hour
711.3	Dwelling Unit Separation floor and roof - 1 hour		1 hour
Table 601	Interior loadbearing walls - 0 hour		0 Hour
Table 601	Int. nonloadbearing walls - 0 hour		1 hour protected wood frame provided
Table 601	Floor Construction - 0 hour		1 hour protected wood frame provided
Table 601	Roof construction - 0 hour		1 Hour & Sprinklered
Table 302.1.1	Boiler Rooms over 10 HP - 1 hour or automatic fire extinguishing	Boiler Rooms - 1 Hour and sprinkler	Sprinklered
Table 302.1.1	Laundry Rooms over 100 s.f. - 1 hour or automatic fire extinguishing	Laundries over 100 s.f. - 1 hour and sprinklers with smoke partitions	Sprinklered
Table 302.1.1	Storage Rooms over 100 s.f. - 1 hour or automatic fire extinguishing	Storage rooms outside of dwelling units - 1 hour OR sprinklers with smoke partitions	Sprinklered
Table 715.3	1/2 Hour Rated Exit access corridors - 20 min. Doors	Exit access corridor doors - 20-minute self-closing & latching	20 min.
Table 715.3	1 Hour Barriers - 45 min. Doors		45 min.
Table 715.3	1 Hour Shafts & Exits - 60 min. Doors		60 min.
Table 715.4.3	20 min. opening = Not limited		As required
	3/4 hour opening = 1296 sq in		As required
	1-1/2 hour opening = 100 sq in		As required
Table 803.5	Required vertical exits and passageways - C	In exits - Class A	As required
Table 803.5	Corridors providing exit access - C	Lobbies and corridors - Class A or B	As required
Table 803.5	Rooms or enclosed spaces - C	Other Spaces - Class A, B or C	As required
		Exit enclosures and corridor floors - Not less than Class II	As required

Opening Protectives

Wired Glass Panels

Interior Flame Spread Index

Occupant Load	T 1004.1.2 Residential Occupancy = 1/200 GSF	Table 7.3.1.2 Residential Apartment occupant load = 1/200 SF	Refer to IBC 2003 Code Calculations, NFPA the same.
Means of Egress	T 1004.1.2 Storage areas, mechanical rooms = 1/300 GSF	Storage areas, mechanical equipment rooms = 1/300 GSF	Refer to IBC 2003 Code Calculations, NFPA the same.
Emergency Lighting	1011.1 (exc. #2) 1006.1 Exit Signs are required except at main exterior exit doors Emergency lighting is required except in dwelling units	7.10.1.2 30.2.9 Exit Signs are required except at main exterior exit doors Emergency lighting is required	Provided Provided
Fire Suppression Systems	903.2.7 13 Required	30.3.5 13 Required	13 Provided
Standpipes	905.3 Required	Required	Provided
Fire Alarm Systems	907.2.9 Required	30.3.4.1.3 Required	Provided
Smoke Detectors	907.2.10.1.2 Required	30.3.4.5.1 Required outside every sleeping area	Provided
Extinguishment requirements	906 Portable fire extinguishers shall be installed as per NFPA 10	30.3.5.11 Not Required	Provided

645 Congress Street Apartments - Renovations		CWS Architects		
Portland, Maine		27-May-09		
International Building Code 2003 - Code Calculations				
Floor Plate - Floors 1		10,725		
Second - Fifth Floors		8,406		
Sixth Floor		4,982		
Section 302.3.2 Separated Uses				
M (Mercantile) to R2 (Residential Apartments)		1 Hour Required (Sprinkled per 903.3.1.1), 1 Hour Provided		
M (Mercantile) to S-1 (Residential Apartments)		0 Hour Required, 1 Hour Provided per Table 508.2		
		Floor 0	Floor 1	Floors 2-6
Building Use Summary		Storage S-1	Mercantile M	Residential R-2
Number of Floors (Proposed)		1	1	5
Level 0	Basement	4,262	2,130	
Level 1			10,725	
Level 2				8,406
Level 3				8,406
Level 4				8,406
Level 5				8,406
Level 6				4,982
Total floor area per use (SF)		4,262	12,855	38,606
Total Building Area		51,461		
Allowable Height and Building Areas Table 503			Mercantile M	Residential R-2
Type of Construction			IIIB	IIIB
Number of Floors			4	4
Building Height (Feet)			55	55
Area (Square Feet)			12,500	16,000
Frontage Calculations 506.2		North	East	South
Frontage		96.00	62.00	135.00
Width		24	24	30
Total Frontage		293.00	293.00	293.00
Perimeter		332	332	332
Frontage increase $I(f) = 100[F/P - 0.25]W/30$		63.25%	63.25%	63.25%
Area Modifications 506				
Allowable tabular area			100%	100%
Increase for frontage			63.25%	63.25%
Increase for sprinklers (NFPA 13 system)			200%	200%
Total percentage factor			363%	363%
Conversion factor			3.63	3.63
Adjusted Allowable Building Area			45,407	58,120
Actual building area			12,855	24,984
If Actual building area < Adjusted, then OK			OK	OK
Require Fire Wall Separation per 506.4 (c)			0	0

645 Congress Street Apartments - Renovations			CWS Architects	
Portland, Maine			27-May-09	
International Building Code 2003 - Code Calculations				
Section 504 Height Modifications				
	M Use Group		R-2 Use Group	
	Feet	Stories	Feet	Stories
Actual building height *	11	1	71.33	6 *
Tabular building height - Type IIIB	55	4	55	4
Increase for sprinklers (NFPA 13 system)	20	1	20	1
Allowable building height (b)	75	5	75	5
* Existing Condition / No Change of Use				
Section 506.4 Area determinations				
Total floor area (all stories)	4,262	12,855	0	38,606
A. Allowable area per floor (SF)	0	45,407	0	58,120
B. Number of Applicable Floors (Exception 2)	1	1	0	5
C. Tabular area A x B	0	45,407	0	290,602
If C > Total Building Floor Area, then OK	OK	OK	OK	OK
Table 601 Fire Resistance Ratings (hours)				
	M Use	Provided	R-2 Use	Provided
	IIIA	IIIA	IIIA	IIIA
Structural Frame including Columns	0	0	0	0
Bearing Walls - Exterior	2	2	2	2
Bearing Walls - Interior	0	0	0	0
Nonbearing Walls - Interior	0	0	0	0
Floor Construction including Beams	0	0	0	0
Roof Construction including Beams	0	0	0	0
704.8 Allowable area of openings				
Table 704.8				
Between 5-10' - Unprotected 10% Max, Protected 25% Max				
Between 10-15' - Unprotected 15% Max, Protected 45% Max				
Between 15-20' - Unprotected 25% Max, Protected 75% Max				
Between 20-25' - Unprotected 45% Max, Protected No Limit				
Between 25-30' - Unprotected 25% Max, Protected No Limit				
>30' - Unprotected No Limit, Protected No Limit				
Provided: "Unprotected"				
Section 707 Shaft Enclosures				
Required fire rating	2 hours			
Provided	2 hours	Existing		
Section 708 Fire Partitions				
Required fire rating - dwelling unit separation - NFPA 13 sprinkler system	1/2 hour			
Provided	1/2 hour	Existing		
Sectin 903.2.10.3 Buildings over 55 feet in height				
Automatic Sprinkler System Required, Provided				

645 Congress Street Apartments - Renovations				CWS Architects
Portland, Maine				27-May-09
International Building Code 2003 - Code Calculations				
Section 1004 Occupant Load				
		Mercantile M		Residential R-2
Floor area allowance - persons/SF		60		200
Largest Floor area (SF)		10,725		8,406
Occupancy load per floor		179		42
Section 1005 Required Egress Width				
Total Stairway Width - 0.3"/person		53.6		12.6
Provided (See Plans)		N/A		92
Egress Doors - 0.2"/person		35.8		8.4
Provided - minimum @ doorways		68		68
Provided 34" Clear Door Leafs		2		2
Section 1018 Number of Exits				
Required		2		2
Provided		2		2

