Bayside Village Student Apartments				**CWS Architects**
Marginal Way, Portland, Maine				**24-Jul-07**
Code Analysis				
International Building Code 2003				
Floor Plate - Floors 1-2 (Buildng Area)	46,960			
Second Floor Courtyard	11,261			
Floor Plate - Floors 3-5	35,699			
Section 302.3.2 Separated Uses				
S-2 (Parking) to R2 (Residential Apartments)	2 Hours			
	Floors 1	Floor 1	Floor 2	Floors 2-5
Buildng Use Summary	Parking S2	Mercantile M	Assemebly A-3	Residential R2
Number of Floors (Proposed)	1	1	2	4
Level 1	43,127	3,833		
Level 2			11,261	35,699
Level 3				35,699
Level 4				35,699
Level 5				35,699
Total floor area per use (SF)	43,127	3,833	11,261	142,796
2 Hour Separated Use Areas 302.3.2	46,960		154,057	
Total Building Area	201,017			
Allowable Height and Building Areas Table 503	Parking S-2	Mercantile M	Assemebly A-3	Residential R-2
Type of Construction	IA (a)	IA (a)	VA	VA
Number of Floors	11	11	3	3
Building Height (Feet)	160	160	65	50
Area (Square Feet)	79,000	UL	15,500	12,000
			Exterior	
			Plaza	
Frontage Calculations 506.2	North	East	South	West
Frontage	0	101.83	348.00	177.58
Width	N/A	>30	>30	>30
Total Frontage	627.42	627.42	627.42	627.42
Perimeter	1030.75	1030.75	1030.75	1030.75
Frontage increase I(f) = 100[F/P-0.25]W/30	35.87%	35.87%	35.87%	35.87%
Area Modifications 506				
Allowable tabular area	100%	100%	100%	100%
Increase for frontage	35.87%	35.87%	35.87%	35.87%
Increase for sprinklers (NFPA 13 system)	200%	200%	200%	200%
Total percentage factor	336%	336%	336%	336%
Conversion factor	3.36	3.36	3.36	3.36
Adjusted Allowable Building Area	265,337	UL	52,060	40,304
Actual building area	43,127	3,833	11,261	35,699
If Actual building area < Adjusted, then OK	OK	OK	OK	OK
Requide Fire Wall Separation per 506.4	0	0	0	2

Bayside Village Student Apartments				**CWS Architects**
Marginal Way, Portland, Maine				**24-Jul-07**
Code Analysis				
International Building Code 2003				
Section 504 Height Modifications	S-2 Use Group		R-2 Use Group	
	Feet	Stories	Feet	Stories
Actual buildng height	13.25	1	63.42	5
Tabular building height - Type IB		11		
Tabular building height - Type VA			50	3
Increase for sprinklers (NFPA 13 system)	N/A	N/A	20	1
Allowable building height (b)	0	11	70	4
Section 506.4 Area determinations				
Total floor area (all stories)	43,127	3,833	11,261	142,796
A. Allowable area per floor (SF)	265,337	UL	52,060	40,304
B. Number of Applicable Floors	1	1	1	3
C. Tabular area A x B	265,337	UL	52,060	120,913
If C > Total Building Floor Area, then OK	OK	OK	OK	Not OK (c)
Section 508 Special Provisions				
508.2 Parking beneath Group A, B, M or R as separate buildings, number of stories measured from second floor.				
Separation between S2 and R uses	3 Hours	provided		
Table 601 Fire Resistance Ratings (hours)	S-2 Use	Provided	R-2 Use	Provided
	IB	IB	VA	VA
Structural Frame including Columns	3	3	1	1
Bearing Walls - Exterior	3	3	1	1
Bearing Walls - Interior	3	3	1	1
Nonbearing Walls - Exterior >10' (d)	1	1	1	1
Nonbearing Walls - Exterior >30'	0	0	0	0
Nonbearing Walls - Interior	0	0	0	0
Floor Construction including Beams	2	2+	1	1
Roof Construction including Beams	1.5	1.5+	1	1
Notes:				
a) Supporting Members of Residential use (V-A) that penetrate garage shall maintain 5A rating.				
b) Number or stories measured from floor space above parking as per 508.4.				
c) 2 Hour USG Shaft Wall Fire Wall required to reduce Total Floor Area into 2 Buildings on same lot.				
d) Rated from the inside only unless under 5'				
704.3 Buildings on the same lot				
Assume to have an imaginary (property) line between them				
Provided: between 9' and 20' at Courtyard				
704.5 Fire-resistance ratings				
Exterior Wall, Rated from inside only if greater than 5', both sides if less than 5'.				
704.8 Allowable area of openings				
Table 704.8				

Bayside Village Student Apartments				**CWS Architects**
Marginal Way, Portland, Maine				**24-Jul-07**
Code Analysis				
International Building Code 2003				
Between 5-10' - Unprotected 10% Max, Protected 25% Max				
Between 15-20' - Unprotected 25% Max, Protected 75% Max				
Between 10-15' - Unprotected 15% Max, Protected 45% Max				
Provided: "Protected" with NFPA 13 Sprinkler System at Table 704.8 (Max existing openings = 24.1%)				
704.12 Opening Protection				
Provide water curtain using NFPA 13 Sprinkler System at exterior walls required to be protected.				
Section 707 Shaft Enclosures				
Required fire rating	2 hours			
Provided	2 hours			
Section 708 Fire Partitions				
Required fire rating - dwelling unit separation - NFPA 13 sprinkler system	1/2 hour			
Provided	1 hour			
Sectin 903.2.10.3 Buildings over 55 feet in height				
Automatic Sprinkler System Required, Exception 2: Open Parking Structures.				
Section 1004 Occupant Load	Parking S-2	Mercantile M	Assemebly A-3	Residential R-2
Floor area allowance - persons/SF	200	60	7	200
Largest Floor area (SF)	43,127	3,833	6,900	35,699
Occupancy load per floor	216	64	986	178
			Landscaped	
			Areas	
			Excluded *	
* By agreement between the City of Portland and Fire Marshal, State of Maine, occupancy in the Courtyard				
A-3 Assembly space to be limited to 500 occupants and posted accordingly.				
Section 1005 Required Egress Width				
Total Stairway Width - 0.3"/person	64.7	19.2	295.7	53.5
Provided (Clear 50" Interior, 146" Exterior Stairs)	N/A	N/A	296	150
Egress Doors - 0.2"/person	43.1	12.8	197.1	35.7
Provided - minimum @ doorways	68	102	204	102
Provided 34" Clear Door Leafs	2	3	3	3
Provided 48" Clear Gate Leafs			2	
Section 1018 Number of Exits				
Required	2	2	3	3
Provided	2	2	3	3

S.W.COLE ENGINEERING, INC. • Geotechnical Engineering • Field & Lab Testing • Scientific & Environmental Consulting

Submittal #	SWCE Project No. 05-1177.3
Item: Pile Capacity and Negative Skin Friction Evaluation - GTR 7/18/2007	
☑ 1 Reviewed No Exceptions	☐ 2 Reviewed Exceptions Noted
☐ 3 Revise & Resubmit	☐ 4 Rejected
☐ 5 Information Only	

Reviewed only for general conformance with the project geotechnical requirements. This review does not relieve the Contractor from responsibility, for errors or omissions in designs for which the contractor is responsible for compliance with all requirements of the Contract Documents, and for the safe and successful construction of the work. This review does not consider the means, methods, techniques, sequences, and operations of construction, or safety, precautions or programs incidental thereto, which are the sole responsibility of the Contractor.

S. W. COLE ENGINEERING, INC.

Date: 7/24/07
Reviewed: MPL
Signature: Mathew P. Tilley, PE

GRAY, ME OFFICE
286 Portland Road, Gray, ME 04039-9589 ■ Tel (207) 657-2866 ■ Fax (207) 657-2840 ■ E-Mail infogray@swcole.com ■ www.swcole.com
Other offices in Augusta, Bangor, and Caribou, Maine & Somersworth, New Hampshire

Submittal #	SWCE Project No. 05-1177.3
Item: Wave Equation Analysis Report GTR 7/18/2007	
☑ 1 Reviewed No Exceptions	☐ 2 Reviewed Exceptions Noted
☐ 3 Revise & Resubmit	☐ 4 Rejected
☐ 5 Information Only	

Reviewed only for general conformance with the project geotechnical requirements. This review does not relieve the Contractor from responsibility, for errors or omissions in designs for which the contractor is responsible for compliance with all requirements of the Contract Documents, and for the safe and successful construction of the work. This review does not consider the means, methods, techniques, sequences, and operations of construction, or safety, precautions or programs incidental thereto, which are the sole responsibility of the Contractor.

S. W. COLE ENGINEERING, INC.

Date: 7/24/07
Reviewed: MPT
Signature: Matthew P. Tilley, PE

Gray, ME Office
256 Portland Road, Gray, ME 04039-9586 ▪ Tel (207) 657-2866 ▪ Fax (207) 657-2840 ▪ E-Mail infogray@swcole.com ▪ www.swcole.com
Other offices in Augusta, Bangor, and Caribou, Maine & Somersworth, New Hampshire

S.W.COLE ENGINEERING, INC. • Geotechnical Engineering • Field & Lab Testing • Scientific & Environmental Consulting

Submittal #	SWCE Project No. 05-1177.3
Item: Dynamic Pile Testing Procedure GTR 7/19/2007	
☑ 1 Reviewed No Exceptions	☐ 2 Reviewed Exceptions Noted
☐ 3 Revise & Resubmit	☐ 4 Rejected
☐ 5 Information Only	

Reviewed only for general conformance with the project geotechnical requirements. This review does not relieve the Contractor from responsibility, for errors or omissions in designs for which the contractor is responsible for compliance with all requirements of the Contract Documents, and for the safe and successful construction of the work. This review does not consider the means, methods, techniques, sequences, and operations of construction, or safety, precautions or programs incidental thereto, which are the sole responsibility of the Contractor.

S. W. COLE ENGINEERING, INC.

Date: 7/24/07
Reviewed: MPL
Signature: Matthew P. Tilley, PE

GRAY, ME OFFICE
286 Portland Road, Gray, ME 04039-9586 ■ Tel (207) 657-2866 ■ Fax (207) 657-2840 ■ E-Mail infogray@swcole.com ■ www.swcole.com
Other offices in Augusta, Bangor, and Caribou, Maine & Somersworth, New Hampshire

BECKER
structural engineers, inc.

75 York Street • Portland, ME 04062
ph (207) 879-1838 • fax (207) 879-1822

SHOP DRAWING COVER SHEET

PROJECT NAME: Bayside Village

PROJECT NUMBER: 1575

DESCRIPTION: Pile Performance Design Submittals

SUBMITTAL NO. 02300-1.06G

SHEET 1 OF

☒ Reviewed see comments
☐ Rejected
☐ Submit Specific Item:
☐ Furnish as Corrected
☐ Revise and Resubmit

This review is only for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Corrections or comments made on the shop drawings during this review do not relieve the contractor from compliance with the requirements of the plans and specifications. Approval of a specific item shall not include approval of an assembly of which the item is a component. Contractor is responsible for: dimensions to be confirmed and correlated at the jobsite: information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences and procedures of construction: coordination of his or her Work with that of all other trades: and for performing all work in a safe and satisfactory manner.

BECKER STRUCTURAL ENGINEERS, INC.

Date: 7/23/2007

By: M. MILLER

COMMENTS:

- Review contingent upon review by S.W. Col

pizzagalli
construction company

Bayside Village Student Housing

Submittal 02300-1.06G-001

Performance Design

Primary Submittal Information

Project No:	12551	Date Sent:	7/20/2007	Category:	Calculations
Submittal No:	02300-1.06G	Due Date:		Type:	PRECON
Review Cycle:	Original	Resubmittal?	No	Priority:	

Sent To For Review

Ben Walter
CWS Architects
434 Cumberland Ave.
Portland, ME 04101-2325
T:207-774-4441
F:207-774-4016

Responsible Subcontractor or Vendor

Mike Lally
Sea and Shore Contracting, Inc.
101 Messina Drive
Braintree, MA 02184
T:781-380-0750
F:781-380-0752

Manufacturer

Items Being Submitted

Contractor's Review Comments

Reviewed By:

Erica Martin
Project Engineer
Pizzagalli Construction Company

Contractor's Review Stamp

I hereby certify that I have examined the enclosed submittal(s) and have determined and verified all field measurements, construction criteria, materials, catalog numbers and similar data, coordinated the submittal(s) with other submissions and the work of other trades and contractors, and to the best of my knowledge and belief, the enclosed submittal(s) is/are in full compliance with the Contract requirements, except as follows or noted above:

Engineer's Review Stamp

pizzagalli
construction company

General Building Foundation Permit
Bayside Village Student Housing
120 Marginal Way
Portland, Maine

Table of Contents:

Attachments:

- Pizzagalli Check #733710, dated June 18, 2007 in the amount of $23,655.90 for Foundation Permit Fee and fee calculation spreadsheet
- CD containing drawings and specs (PDF Files)
- Becker Structural Foundation Permit Drawings
  - S1.0 General Notes
  - S1.1 Foundation/Pile/Grade Beam Plans
  - S2.1 Foundation Sections & Details
  - S2.2 Foundation Sections & Details
  - S2.3 Foundation Sections & Details
  - S2.4 Foundation Sections & Details
- CWS Foundation Permitting Drawings
  - TP Title Page
  - A0.01 Partition Schedule for Walls, Ceiling, & Roof Assemblies
  - A1.0G Overall Floor Plan – Lower Level
  - A1.01 Overall Floor Plan – First Floor
  - A1.02 Overall Floor Plan – Second Floor
  - A1.03 Overall Floor Plan – Third Floor
  - A1.04 Overall Floor Plan – Fourth Floor
  - A1.0R Overall Floor Plan – Roof Plan
  - A1.G1 Enlarged Plan – Garage – Area A
  - A1.G2 Enlarged Plan – Garage – Area B
  - A1.G3 Enlarged Plan – Garage – Area C
  - A1.G4 Enlarged Plan – Garage – Area D
  - A1.U1 Enlarged Unit Plans – Unit 1 "IBC Unit Type A"
  - A1.U2 Enlarged Unit Plans – Unit 2 "IBC Unit Type B"
  - A1.U3 Enlarged Unit Plans – Unit 3 "IBC Unit Type B"

pizzagalli
construction company

Attachments Cont.:

- A1.U4 Enlarged Unit Plans – Unit 4 "IBC Unit Type A"
- A1.U5 Enlarged Unit Plans – Unit 5 "IBC Unit Type B"
- A1.U6 Enlarged Unit Plans – Unit 6 "IBC Unit Type B"
- A1.U7 Enlarged Unit Plans – Unit 7 "IBC Unit Type B"
- A3.01 Overall Building Elevations
- A3.02 Overall Building Elevations
- A3.03 Overall Building Elevations
- A3.11 Enlarged Building Elevation
- A6.01 Wall Sections
- A6.02 Wall Sections
- A6.03 Wall Sections
- A6.04 Wall Sections
- A7.01 Misc Details
- A7.02 Misc Details
- A8.11 Door and Frame Elevations & Misc. Details
- A8.21 Window Elevations & Misc. Details
- A8.31 Garage Screen Elevations & Misc. Details

➢ Mitchell & Associates and Gorrill-Palmer Site Drawings

- 1 Existing Conditions and Demolition Plan
- 2 Layout and Lighting Plan
- 3 Grading and Drainage Plan
- 4 Utilities Plan
- 5 Planting Plan and Roof Plan
- 6 Erosion and Sedimentation Control Plan
- 7 Site Details
- 8 Site Details
- 9 Utility and Drainage Details
- 10 Utility and Drainage Details
- 11 Utility and Drainage Details
- 12 Erosion and Sedimentation Control Details and Notes

BECKER STRUCTURAL ENGINEERS

FROM DESIGNER: CWS ARCHITECTS

DATE: 6/15/07

Job Name: BAYSIDE VILLAGE

Address of Construction: 120 MARGINAL WAY PORTLAND, ME

2003 *International Building Code*

Construction project was designed according to the building code criteria listed below:

Building Code and Year 2003 IBC Use Group Classification(s) II

Type of Construction IA & VA (SEE ATTACHED CODE ANALYSIS)

Will the Structure have a Fire suppression system in Accordance with Section 903.3.1 of the 2003 IBC YES

Is the Structure mixed use? YES if yes, separated or non separated (see Section 302.3) SEPARATED

Supervisory alarm system? YES Geotechnical/Soils report required?(See Section 1802.2) YES

STRUCTURAL DESIGN CALCULATIONS

Completed Submitted for all structural members *(106.1, 106.1.1)*

DESIGN LOADS ON CONSTRUCTION DOCUMENTS (1603)

Uniformly distributed floor live loads *(7603.11, 1607)*

Floor Area Use	Loads Shown
RESIDENTIAL	40 PSF
CORRIDORS	100 PSF
PUBLIC SPACES	100 PSF
STAIRS	100 PSF
RETAIL	100 PSF

Wind loads *(1603.1.4, 1609)*

ANALYTICAL Design option utilized (1609.1. *1*, 1609.6)

100 **Basic** wind speed *(1809.3)*

I/Iw=1.0 Building category and wind importance factor, I_w (Table *1604.5*, 1609.5)

C Wind exposure category *(1609.4)*

±0.18 Internal pressure coefficient *(ASCE 7)*

ASCE 7-02 Component and cladding pressures *(1609.1.1, 1609.6.2.2)*

17.8 PSF MAX Main force wind pressures (7603.1, *1*, *1609.6.2.1)*

Earthquake design data *(1603.1.5,* 1614 - *1623)*

ELFP Design option utilized *(1614.1)*

II Seismic use group ("Category") *(Table* 1604.5, *1616.3)*

0.522 0.230 Spectral response coefficients, S_{DS} & S_{D1} *(1615.1)*

E Site class *(1615.1.5)*

PER 1607.9 Live load reduction *(1603.1.1, 1607.9, 1607.10)*

SEE SNOW Roof *live* loads *(1603.1.2,* 1607.11)

Roof snow loads *(7603.7.3,1608)*

60 PSF Ground snow load, P_g (1608.2)

46 PSF If P_g > 10 psf, flat-roof snow load, P_f *(1608.3)*

1.0 If P_g > 10 psf, snow exposure factor, C_e *(Table 1608.3.1)*

1.0 If P_g > 10 psf, snow load importance factor, I_s *(Table 1604.5)*

1.1 Roof **thermal** factor, C_t *(Table 1608.3.2)*

N/A Sloped roof snowload, P_s *(1608.4)*

D Seismic design category *(1616.3)*

SPECIAL CONCENTRIC BRACED FRAMES Basic seismic-force-resisting system *(Table 1617.6.2)*

R=6 Response modification coefficient, *R*, and **deflection** amplification factor, C_d *(Table 1617.6.2)*

Cd=5

ELFP Analysis procedure *(1616.6,* 1617.5)

960 K Design base shear (1617.4, *1617.5.1)*

Flood loads *(1603.1.6, 1612)*

N/A Floodhazard area (1612.3)

12.0 FT Elevation of structure

Other loads

IBC 2003 Concentrated loads (1607.4)

N/A Partition loads (1607.5)

N/A Impact loads *(1607.8)*

AS APPLICABLE Misc. loads (*Table 1607.6, 1607.6.1, 1607.7, 1607.12, 1607.13, 1610, 1611, 2404)*

Bayside Village Student Apartments			**DRAFT:**	**15-Jun-07**
Marginal Way, Portland, Maine				
Code Analysis				
International Building Code 200				
Floor Plate - Floors 1-2 (Buildng Area)	47,202			
Floor Plate - Floors 3-5	36,142			
Section 302.3.2 Separated Uses				
S-2 (Parking) to R2 (Residential Apartments)	2 Hours			
	Floors 1	Floor 1	Floor 2	Floors 2-5
Buildng Use Summary	Parking S2	Mercantile M	Assemebly A-3	Residential R2
Number of Floors (Proposed)	1	1	2	4
Level 1	43,369	3,833		
Level 2			10,957	36,142
Level 3				36,142
Level 4				36,142
Level 5				36,142
Total floor area per use (SF)	43,369	3,833	10,957	144,567
2 Hour Separated Use Areas 302.3.2	47,202		155,524	
Total Building Area	202,726			
Allowable Height and Building Areas Table 503	Parking S-2	Mercantile M	Assemebly A-3	Residential R-2
Type of Construction	IA (a)	IA (a)	VA	VA
Number of Floors	11	11	3	3
Building Height (Feet)	160	160	65	50
Area (Square Feet)	79,000	UL	15,500	12,000
			Exterior Plaza	
Frontage Calculations 506.2	North	East	South	West
Frontage	0	101.83	348.00	177.58
Width	N/A	>30	>30	>30
Total Frontage	627.42	627.42	627.42	627.42
Perimeter	1030.75	1030.75	1030.75	1030.75
Frontage increase I(f) = 100[F/P-0.25]W/30	35.87%	35.87%	35.87%	35.87%
Area Modifications 506				
Allowable tabular area	100%	100%	100%	100%
Increase for frontage	35.87%	35.87%	35.87%	35.87%
Increase for sprinklers (13 System Throughout)	200%	200%	200%	200%
Total percentage factor	336%	336%	336%	336%
Conversion factor	3.36	3.36	3.36	3.36
Adjusted Allowable Building Area	265,337	UL	52,060	40,304
Actual building area	43,369	3,833	10,957	36,142
If Actual building area < Adjusted, then OK	OK	OK	OK	OK
Requide Fire Wall Separation per 506.4	0	0	0	2
Section 504 Height Modifications	S-2 Use Group		R-2 Use Group	
	Feet	Stories	Feet	Stories

Bayside Village Student Apartments			**DRAFT:**	**15-Jun-07**
Marginal Way, Portland, Maine				
Code Analysis				
International Building Code 200				
Actual buildng height	13.25	1	63.42	5
Tabular building height - Type IB		11		
Tabular building height - Type VA			50	3
Increase for sprinklers (NFPA 13R)	N/A	N/A	20	1
Allowable building height (b)	0	11	70	4
Section 506.4 Area determinations				
Total floor area (all stories)	43,369	3,833	10,957	144,567
A. Allowable area per floor (SF)	265,337	UL	52,060	40,304
B. Number of Applicable Floors	1	1	1	3
C. Tabular area A x B	265,337	UL	52,060	120,913
If C > Total Building Floor Area, then OK	OK	OK	OK	Not OK (c)
Section 508 Special Provisions				
508.2 Parking beneath Group A, B, M or R as separate buildings, number of stories measured from second floor.				
Separation between S2 and R uses	3 Hours	provided		
Table 601 Fire Resistance Ratings (hours	S-2 Use	Provided	R-2 Use	Provided
	IB	IB	VA	VA
Structural Frame including Columns	3	3	1	1
Bearing Walls - Exterior	3	3	1	1
Bearing Walls - Interior	3	3	1	1
Nonbearing Walls - Exterior >10' (d)	1	1	1	1
Nonbearing Walls - Exterior >30'	0	0	0	0
Nonbearing Walls - Interior	0	0	0	0
Floor Construction including Beams	2	2+	1	1
Roof Construction including Beams	1.5	1.5+	1	1
Notes:				
a) Supporting Members of Residential use (V-A) that penetrate garage shall maintain 5A rating.				
b) Number or stories measured from floor space above parking as per 508.4.				
c) 2 Hour USG Shaft Wall Fire Wall required at unit dimising wall between E and F lines in North Wing.				
d) Rated from the inside only unless under 5'				
704.3 Buildings on the same lo				
Assume to have an imaginary (property) line between them				
Provided: between 9' and 20' at Courtyard				
704.5 Fire-resistance ratings				
Exterior Wall, Rated from inside only if greater than 5', both sides if less than 5'.				
704.8 Allowable area of openings				
Table 704.8				
Between 5-10' - Unprotected 10% Max, Protected 25% Max				
Between 15-20' - Unprotected 25% Max, Protected 75% Max				
Between 10-15' - Unprotected 15% Max, Protected 45% Max				
Provided: 23% +/-				

Bayside Village Student Apartments			**DRAFT:**	**15-Jun-07**
Marginal Way, Portland, Maine				
Code Analysis				
International Building Code 200				
704.12 Opening Protection				
Provide water curtain using NFPA 13autmatic sprinklers at exterior walls required to be protected.				
Section 707 Shaft Enclosures				
Required fire rating	2 hours			
Provided	2 hours			
Section 708 Fire Partitions				
Required fire rating - dwelling unit separation - 13R sprinkler	1/2 hour			
Provided	1 hour			
Sectin 903.2.10.3 Buildings over 55 feet in heigh				
Automatic Sprinkler System Required, Exception 2: Open Parking Structures.				
Section 1004 Occupant Load	Parking S-2	Mercantile M	Assemebly A-3	Residential R-2
Floor area allowance - persons/SF	200	60	7	200
Largest Floor area (SF)	43,369	3,833	6,900	36,142
Occupancy load per floor	217	64	986	181
			Landscaped	
			Areas	
			Excluded	
Section 1005 Required Egress Width				
Total Stairway Width - 0.3"/person	65.1	19.2	295.7	54.2
Provided (Clear 50" Interior, 146" Exterior Stairs)	N/A	N/A	296	150
Egress Doors - 0.2"/person	43.4	12.8	197.1	36.1
Provided - minimum @ doorways	68	102	204	102
Provided 34" Clear Door Leafs	2	3	3	3
Provided 48" Clear Gate Leafs			2	
Section 1018 Number of Exits				
Required	2	2	3	3
Provided	2	2	3	3

CITY OF PORTLAND
BUILDING CODE CERTFICATE
389 Congress St., Room 315
Portland, Maine 04101

TO: Inspector of Buildings City of Portland, Maine
Department of Planning & Urban Development
Division of Housing & Community Service

FROM: _____

RE: Certificate of Design

DATE: 6/15/2007

These plans and / or specifications covering construction work on:

FOUNDATIONS FOR BAYSIDE VILLAGE, 120 MARGINAL WAY, PORTLAND, ME

Have been designed and drawn up by the undersigned, a Maine registered Architect / Engineer according to the ***2003 International Building Code*** and local amendments.

(SEAL)

STATE OF MAINE
PAUL B. BECKER
NO. 6554
LICENSED
PROFESSIONAL ENGINEER

Signature: _____

Title: PRESIDENT

Firm: BECKER STRUCTURAL ENGINEERS

Address: 75 YORK STREET
PORTLAND, ME 04101

As per Maine State Law:

$50,000.00 or more in new construction, repair expansion, addition, or modification for Building or Structures, shall be prepared by a registered design Professional.

CITY OF PORTLAND
BUILDING CODE CERTIFICATE
389 Congress St., Room 315
Portland, Maine 04101

ACCESSIBILITY CERTIFICATE

Designer: CWS Architects

Address of Project: 120 Marginal Way, Portland

Nature of Project: student lodging

The technical submissions covering the proposed construction work as described above have been designed in compliance with applicable referenced standards found in the Maine Human Rights Law and Federal Americans with Disability Act.

Signature: [signature] 6-19-07

Title: Vice-President

(SEAL)

Firm: CWS Architects

Address: 434 Cumberland Ave.
Portland, ME 04101

Phone: 207-774-4441

Project: Bayside Village – A Student Housing Complex, Portland, Maine
Date Prepared: 6/15/2007

Structural Statement of Special Inspections

Project: *Bayside Village – A Student Housing Project*

Location: *120 Marginal Way, Portland, Maine*

Owner: *Realty Resources*

This *Statement of Special Inspections* encompass the following discipline: **Structural (Foundation)**

This *Statement of Special Inspections* is submitted as a condition for permit issuance in accordance with the Special Inspection and Structural Testing requirements of the Building Code. It includes a schedule of Special Inspection services applicable to this project as well as the name of the Structural Special Inspection Coordinator (SSIC) and the identity of other approved agencies to be retained for conducting these inspections and tests.

The Structural Special Inspection Coordinator shall keep records of all Structural Inspections and shall furnish inspection reports to the Building Code Official (BCO) and the Structural Registered Design Professional in Responsible Charge (SRDP). Discovered discrepancies shall be brought to the immediate attention of the Contractor for correction. If such discrepancies are not corrected, the discrepancies shall be brought to the attention of the Building Official and the Structural Registered Design Professional in Responsible Charge. The Special Inspection program does not relieve the Contractor of his or her responsibilities.

Interim reports shall be submitted to the Building Official and the Structural Registered Design Professional in Responsible Charge at an interval determined by the SSIC and the BCO.

A *Final Report of Special Inspections* documenting completion of all required Special Inspections, testing and correction of any discrepancies noted in the inspections shall be submitted to the BCO prior to issuance of a Certificate of Use and Occupancy.

Job site safety and means and methods of construction are solely the responsibility of the Contractor.

Interim Report Frequency: ☐ *Upon request of Building Official* _____ or ☐ per attached schedule.

Prepared by:

Paul B Becker, P.E., Becker Structural Engineers
(type or print name of the Structural Registered Design Professional in Responsible Charge)

Signature — Date: *6/15/2007*

STATE OF MAINE
PAUL B. BECKER
NO. 6554
LICENSED PROFESSIONAL ENGINEER
Design Professional Seal

Owner's Authorization:
Bayside Village Student Housing LLC
by Southern Maine Student Housing LLC

Signature *Its Manager* Date

William P Lunt *6/20/07*
Its Manager

Building Code Official's Acceptance:

Signature Date

Structural Statement of Special Inspections (Continued)

List of Agents

Project: *Bayside Village – A Student Housing Project*

Location: *120 Marginal Way, Portland, Maine*

Owner: *Realty Resources*

This *Statement of Special Inspections* encompass the following discipline: **Structural (Foundation)**

(Note: *Statement of Special Inspections* for other disciplines may be included under a separate cover)

This Statement of Special Inspections / Quality Assurance Plan includes the following building systems:

- ☒ Soils and Foundations
- ☒ Cast-in-Place Concrete
- ☒ Precast Concrete System
- ☐ Masonry Systems
- ☐ Structural Steel
- ☐ Wood Construction
- ☐ Special Cases

Special Inspection Agencies	Firm	Address, Telephone, e-mail
1. **STRUCTURAL Special Inspections Coordinator (SSIC)**	*To Be Determined*	
2. Special Inspector (SI 1)	*To Be Determined*	
3. Special Inspector (SI 2)	*To Be Determined*	
4. Testing Agency (TA 1)	*To Be Determined*	
5. Testing Agency (TA 2)	*To Be Determined*	
6. Other (O1)	*To Be Determined*	

Note: The inspectors and testing agencies shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official, prior to commencing work.

Structural Statement of Special Inspections (Continued)

Final Report of Special Inspections (SSIC/SI 1)

[To be completed by the Structural Special Inspections Coordinator (SSIC/SI 1). Note that all Agent's Final Reports must be received prior to issuance.]

Project: *Bayside Village – A Student Housing Project*

Location: *120 Marginal Way, Portland, Maine*

Owner: *Realty Resources*

Owner's Address: *247 Commercial Street, Suite A*
Rockport, ME 04856

Architect of Record: *Benedict B. Walter* (name) — *CWS Architects* (firm)

Structural Registered Design Professional in Responsible Charge: *Paul B. Becker, P. E.* (name) — *Becker Structural Engineers* (firm)

To the best of my information, knowledge and belief, the Special Inspections required for this project, and itemized in the *Statement of Special Inspections* submitted for permit, have been performed and all discovered discrepancies have been reported and resolved.

Interim reports submitted prior to this final report form a basis for and are to be considered an integral part of this final report.

Respectfully submitted,
Structural Special Inspection Coordinator

(Type or print name)

(Firm Name)

Signature Date

Licensed Professional Seal

Structural Statement of Special Inspections (Continued)

Special Inspector's/Agent's Final Report

Project: *Bayside Village – A Student Housing Complex*

Special Inspector or Agent: _____

(name) *(firm)*

Designation:

To the best of my information, knowledge and belief, the Special Inspections or testing required for this project, and designated for this Inspector/Agent in the *Statement of Special Inspections* submitted for permit, have been performed and all discovered discrepancies have been reported and resolved.

Interim reports submitted prior to this final report form a basis for and are to be considered an integral part of this final report.

Respectfully submitted,
Special Inspector or Agent:

_____
(Type or print name)

_____
Signature Date

Licensed Professional Seal or
Certification Number

Structural Schedule of Special Inspections

Qualifications of Inspectors and Testing Technicians

The qualifications of all personnel performing Special Inspection and testing activities are subject to the approval of the Building Official. The credentials of all Inspectors and testing technicians shall be provided to the Special Inspector for their records. *NOTE VERIFICATION THAT QUALIFIED INDIVIDUALS ARE AVAILABLE TO PERFORM STIPULATED TESTING AND/OR INSPECTION SHOULD BE PROVIDED PRIOR TO SUBMITTING STATEMENT. AGENT QUALIFICATIONS IN SCHEDULE ARE SUGGESTIONS ONLY; FINAL QUALIFICATIONS ARE SUBJECT TO THE DISCRETION OF THE REGISTERED DESIGN PROFESSIONAL PREPARING THE SCHEDULE.*

Key for Minimum Qualifications of Inspection Agents:

When the Registered Design Professional in Responsible Charge or Special Inspector of Record deems it appropriate that the individual performing a stipulated test or inspection have a specific certification, license or experience as indicated below, such requirement shall be listed below and shall be clearly identified within the schedule under the Agent Qualification Designation.

PE/SE	Structural Engineer – a licensed SE or PE specializing in the design of building structures
PE/GE	Geotechnical Engineer – a licensed PE specializing in soil mechanics and foundations
EIT	Engineer-In-Training – a graduate engineer who has passed the Fundamentals of Engineering examination

Experienced Testing Technician

ETT	Experienced Testing Technician – An Experienced Testing Technician with a minimum 5 years experience with the stipulated test or inspection

American Concrete Institute (ACI) Certification

ACI-CFTT	Concrete Field Testing Technician – Grade 1
ACI-CCI	Concrete Construction Inspector
ACI-LTT	Laboratory Testing Technician – Grade 1&2
ACI-STT	Strength Testing Technician

American Welding Society (AWS) Certification

AWS-CWI	Certified Welding Inspector
AWS/AISC-SSI	Certified Structural Steel Inspector

American Society of Non-Destructive Testing (ASNT) Certification

ASNT	Non-Destructive Testing Technician – Level II or III.

International Code Council (ICC) Certification

ICC-SMSI	Structural Masonry Special Inspector
ICC-SWSI	Structural Steel and Welding Special Inspector
ICC-SFSI	Spray-Applied Fireproofing Special Inspector
ICC-PCSI	Prestressed Concrete Special Inspector
ICC-RCSI	Reinforced Concrete Special Inspector

National Institute for Certification in Engineering Technologies (NICET)

NICET-CT	Concrete Technician – Levels I, II, III & IV
NICET-ST	Soils Technician - Levels I, II, III & IV
NICET-GET	Geotechnical Engineering Technician - Levels I, II, III & IV

Other

Project: Bayside Village – A Student Housing Complex, Portland, Maine
Date Prepared: 6/15/2007

Structural Schedule of Special Inspections

SOILS & FOUNDATION CONSTRUCTION

VERIFICATION AND INSPECTION IBC Section 1704.7, 1704.8, 1704.9	Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
1. Verify existing soil conditions, fill placement and load bearing requirements						
a. Prior to placement of prepared fill, determine that the site has been prepared in accordance with the approved soils report.	Y	P	IBC 1704.7.1	TA1	PE/GE, EIT or ETT	
b. During placement and compaction of fill material, verify material being used and maximum lift thickness comply with the approved soils report.	Y	P	IBC 1704.7.2	TA1	PE/GE, EIT or ETT	
c. Test in-place dry density of compacted fill complies with the approved soils report.	Y	p	IBC 1704.7.2	TA1	PE/GE, EIT or ETT	
2. Pile foundations:						
a. Observe and record procedures for static load testing of piles.	Y	C	IBC 1704.8	TA1	PE/GE, EIT or ETT	
b. Observe and record procedures for dynamic load testing of piles.	Y	C		TA1	PE/GE, EIT or ETT	
c. Record installation of each pile and results of load test. Include cutoff and tip elevations of each pile relative to permanent reference.	Y	C		TA1	PE/GE, EIT or ETT	
d. Test welded splices of steel piles	Y	C	AWS D1.1	TA1	AWS-CWI	
3. Pier foundations: Verify installation of pier foundations for buildings assigned to Seismic Design Category C, D, E or F.	NA	N				
a. Verify pier diameter and length	NA	N				
b. Verify pier embedment (socket) into bedrock	NA	N				
c. Verify suitability of end bearing strata	NA	N				

Project: Bayside Village – A Student Housing Complex, Portland, Maine
Date Prepared: 6/15/2007

Structural Schedule of Special Inspections
CONCRETE CONSTRUCTION

VERIFICATION AND INSPECTION IBC Section 1704.4	Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
1. Inspection of reinforcing steel, including prestressing tendons, and placement	Y	P	ACI 318: 3.5, 7.1-7.7	SI1	PE/SE or EIT	
2. Inspection of reinforcing steel welding in accordance with Table 1704.3, Item 5B	N	N	Welding of Reinf Not Allowed			
3. Inspect bolts to be installed in concrete prior to and during placement of concrete where allowable loads have been increased	Y	C	IBC 1912.5	SI1	PE/SE or EIT	
4. Verifying use of required design mix	Y	P	ACI 318: Ch 4, 5.2-5.4	TA1	ACI-CFTT or ACI-STT	
5. At time fresh concrete is sampled to fabricate specimens for strength test, perform slump and air content test and temperature	Y	C	ASTM C 172 ASTM C 31 ACI 318: 5.6, 5.8	TA1	ACI-CFTT or ACI-STT	
6. Inspection of concrete and shotcrete placement for proper application techniques	Y	C	ACI 318: 5.9, 5.10	SI1	PE/SE or EIT	
7. Inspection for maintenance of specified curing temperature and techniques	Y	P	ACI 318: 5.11-5.13	SI1	PE/SE or EIT	
8. Inspection of Prestressed Concrete						
a. Application of prestressing force.	N	N				
b. Grouting of bonded prestressing tendons in seismic force resisting system	N	N				
9. Erection of precast concrete members	Y	P	ACI 318: Ch 16	SI1	PE/SE or EIT	
10. Verification of in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms beans and structural slabs	N	N				

Structural Schedule of Special Inspection Services

FABRICATION AND IMPLEMENTATION PROCEDURES – PRECAST CONCRETE PILES

VERIFICATION AND INSPECTION IBC Section 1704.2	Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
1. Fabrications Procedures: Review of fabricator's written procedural and quality control manuals and periodic auditing of fabrication practices by an approved special inspection agency. At the completion of fabrication, the approved fabricator shall submit a certificate of compliance to the building code official stating that the work was performed in accordance with the approved construction documents. -OR- 2. PCI Certification	Y	S	Fabricator shall submit one of the two qualifications	SI1	PE/SE or EIT	
3. At completion of fabrication, the approved fabricator shall submit a certificate of compliance to the building code official stating that the work was performed in accordance with the approved construction documents.	Y	S	IBC 1704.2.2	SI1	PE/SE or EIT	

Quality Assurance Plan – Seismic and Wind

QUALITY ASSURANCE FOR SEISMIC RESISTANCE CHECK LIST [IBC 1705]

Seismic Design Category D

☒ FOR SEISMIC DESIGN CATEGORY C OR HIGHER:

Structural:

☒ The seismic-force-resisting systems
- ☒ Steel Braced Frames and associated connections/anchorage
- ☐ Steel Moment Frames and associated connections
- ☐ Shear walls: ☐ CMU ☐ Wood ☐ Concrete ☒ Diaphragms: ☒ Floor ☒ Roof
- ☐ Other:

QUALITY ASSURANCE FOR WIND RESISTANCE CHECK LIST [IBC 1706]

Wind Exposure Category C

REQUIRED	NOT REQUIRED	NOT APPLICABLE	QUALITY ASSURANCE PLAN REQUIREMENTS (A Quality Assurance Plan is required where indicated below)
☐	☒	☐	In wind exposure Categories A and B, where the 3-second-gust basic wind speed is 120 miles per hour (mph) (52.8 *m/sec)* or greater.
☐	☒	☐	In wind exposure Categories C and D, where the 3-second-gust basic wind speed is 110 mph (49 *m/sec)* or greater.

Prepared by:

Signature Date 6/15/07

Building Code Official's Acceptance:

Signature Date

Contractor's Statement of Responsibility

Each contractor responsible for the construction or fabrication of a system or component designated in the Quality Assurance Plan must submit a Statement of Responsibility. The Statement of Responsibility is required for Seismic Design Category C or higher. Make additional copies of this form as required.

Project: Bayside Village, 120 Marginal Way and Preble Streets, Portland, Maine

Contractor's Name: Pizzagalli Construction Company

Address: 131 Presumpscot Street, Portland, Maine

License No.: N/A

Description of designated building systems and components included in the Statement of Responsibility:

Contractor's Acknowledgment of Special Requirements

I hereby acknowledge that I have received, read, and understand the Quality Assurance Plan and Special Inspection program.

I hereby acknowledge that control will be exercised to obtain conformance with the construction documents approved by the Building Official.

Signature

6/19/07
Date

Contractor's Provisions for Quality Control

Procedures for exercising control within the contractor's organization, the method and frequency of reporting and the distribution of reports is attached to this Statement.

Identification and qualifications of the person(s) exercising such control and their position(s) in the organization are attached to this Statement.

MITCHELL & ASSOCIATES
LANDSCAPE ARCHITECTS

October 4, 2006

Mr. Richard Knowland, Senior Planner
and Planning Board Members
City of Portland
389 Congress Street
Portland, Maine 04101

10/4/06

DEPT. OF BUILDING INSPECTION
CITY OF PORTLAND, ME
OCT - 4 2006
RECEIVED

RE: Bayside Village – A Student Housing Complex

F 2006 0125 034 AB 001
190 Marginal Way

Dear Rick and Board Members:

We have prepared the following correspondence in response to comments received from the board members during the workshop session on September 26, 2006 and subsequent staff comments. Changes have been made to site drawings and architectural drawings to address these comments. The following written response addresses questions and comments:

Staff Comments

- Public Works requested that an existing catch basin in Marginal Way, located in the proposed parking/bus stop be relocated to the proposed curbline. Due to the lack of grade or pitch on Marginal Way, we have introduced two new structures located to the east and west of the catch basin along the curbline and converted the catchbasin to a manhole.

- The city arborist Jeff Tarling requested that additional plantings be introduced along Marginal Way. He has recommended use of medium size (height) trees to supplement the shrub massings. In addition, Jeff has recommended that trees be provided along the I-295 right-of-way.

  In response to the first part, we have added two River Birch, clump form, in between the ornamental pear trees to provide height and character. The birch will provide added texture and color to the plantings.

  Concerning the request for additional trees to be planted in the I-295 right-of-way, we contacted Mr. David Sherlock, P.E. – Division Engineer, to discuss the request. Mr. Sherlock indicated that MDOT does not want to have additional plantings within the right-of-way. The issue concerns long term maintenance and future cost to remove vegetation if and when I-295 is widened. We have requested an e-mail confirming our discussion and will provide a copy once we have received it.

  To address Jeff's comment, we have selected some columnar form trees that have and a narrow crown and have located eight trees along the right-of-way/property line. We have also indicated replacements for two existing trees in the R.O.W. that have to be removed to accommodate grading and drainage improvements within the right-of-way.

THE STAPLES SCHOOL
70 CENTER STREET
PORTLAND, MAINE 04101

Telephone (207) 774-4427
Fax (207) 874-2460
Website www.mitchellassociates.biz

- Architectural comments in response to Carrie Marsh's previous memorandum were addressed by CWS Architects and submitted at the last workshop meeting. A Memorandum outlining the revisions since the workshop meeting will be submitted separately.

- We received comments from Captain Cass - Portland Fire Department, several months ago and these were responded to by CWS Architects. You indicated in a telephone conversation last Friday that Captain Cass had not received the responses. CWS Architects resubmitted the responses via e-mail attachments to Captain Cass. Efforts by CWS and our office to reach Captain Cass have been unsuccessful. CWS received an e-mail this morning with a request for additional documentation. Due to time constraint, we will try to have a response for your packet on Friday.

Traffic Engineer

We have responded to comments 1-9 that pertain to the Site Plan. Gorrill-Palmer Consulting Engineers have responded to traffic impact study comments submitted under separate cover.

1. The secondary driveway should be designed to be compatible with anticipated future conditions (right-turn entry/exit only).

   The secondary driveway between the student housing development and the proposed medical office building has been designed to include a raised/curbed Delta Island to limit traffic movement to right turn in – right turn out.

2. The applicant should provide documentation that METRO has reviewed the proposed plans for a bus stop and bus shelter and approve location and design elements.

   We have had conversations with Mr. Peter Cavanaugh of METRO to discuss the bus stop and bus shelter. He supports having a stop in this location. The earliest we could meet with Mr. Cavanaugh is Wednesday October 4, 2006. We will provide documentation of our meeting before Friday October 6, 2006 for inclusion in the planning board packet.

3. The primary driveway entrance opposite Chestnut Street should be redesigned to allow for optimal approach capacity. Based upon future development opportunities, including the Miss Portland Diner and an AMTRAK Rail Station, it is suggested that two approach lanes be provided. The public right-of-way on this approach is 36 feet and it is my recommendation that this space consist of two 10 foot approach lanes, one 11-foot entry lane, and one 5 foot sidewalk.

   Plan was revised before the last workshop and reviewed by Mr. Errico, no comment is necessary.

4. I would suggest that Eric Labelle closely review the plans as it relates to geometric modifications along the Marginal Way curb line.

   No comment required.

5. The City does not mark parking stalls. The site plan should be modified accordingly.

   We have revised the site plan to remove the graphic that indicated striped parking.

6. A flush concrete surface currently exists on Marginal Way in the vicinity of the project. I would suggest that it be removed.

   The applicant agrees to remove the existing concrete island as part of their responsibility for improvements on Marginal Way.

7. The dimensions on the site plan for the Marginal Way cross-section and those depicted on a conceptual plan included in the traffic study are different. The plans should be consistent.

   We have coordinated the dimensional requirements for Marginal Way Improvements, for the student housing project as a stand alone development with Gorrill-Palmer Consulting Engineers road way improvement plans.

8. It is unclear on what is being proposed by this project for physical improvements to Marginal Way and along Preble Street.

   We have revised the site plan for the student housing development to indicate required improvements as a stand alone project. Refer to traffic plans prepared by Gorrill-Palmer Consulting Engineers for lane striping requirements on Marginal Way and for cross walk on Preble Street. For point of clarification, the crosswalk design on Preble Street do not reflect improvements associated with road way improvements proposed by the 84 Marginal Way Development.

9. A crosswalk should be provided across Marginal Way on the west side of Chestnut Street. This will require an ADA compliant HC ramp.

   A crosswalk across Marginal Way as recommended has been added to the plan.

Planning Board Comments

- The Board requested additional planting with variety along the I-295 façade. In our response to the staff comment above, we had a discussion with MDOT and they do not want additional planting in the R.O.W. Refer to detailed response above.

- The Board requested that planting and or species of plants be added to screen the air vent/screen for the garage. We have added additional trees as requested by Jeff Tarling and replaced lower vegetation in front of the air flow grid with a taller evergreen that will provide screening. Selected plants will have a mature height of six feet.

- The Board questioned if the cross walk on Preble would be provided if the proposed Medical OfficeDevelopment did not occur. The Applicant confirmed that the crosswalk would be provided. We need to point out that the configuration of the crosswalk will differ from the design proposed to the Board at the last workshop. The design shown was based upon improvements to Preble Street for a left turn lane. There are no roadway improvements required for this development.

- The Board requested improvements to sidewalk and lighting on the west side of the under pass in included. This development does not require roadway improvements or changes to the sidewalk under the overpass. Based on discussions with staff, Bayside Village would be only responsible for providing the Bollard Lighting on both sides of the road in addition to the crosswalk. The Applicant is requesting a temporary waiver for submission of a light bollard so that they can work with staff to select a suitable fixture.

- The Board wanted to know who would be responsible for maintaining the drive, opposite Chestnut Street, that will serve the student housing. The Applicant will be responsible to maintain the portion of the drive constructed for their development. When the Miss Portland Diner site is developed an agreement on maintenance will be negotiated.

- The Board requested confirmation of approval of the bus stop location and shelter design. As documented above, we have verbal support from METRO. We will be meeting with Mr. Peter Cavanaugh, METRO to review the plan and shelter design on October 4, 2006. This was the earliest we could meet with Mr. Cavanaugh due to his schedule. We will submit documentation for inclusion with the planning board packet as soon as it is available.

- Is the Fire Department satisfied with the plan? We had met with Captain Cass of the Portland Fire Department several months ago and he had only one concern and that was addressed by providing a small pull out area on the west side of the shared drive with the 84 Marginal Way Development. The extra width is to accommodate the out rigger leveling legs for the ladder truck the previous plans have had this shown. We had unsuccessfully tried to reach Captain Cass to see if he had identified any other issues. As of this letter we have had no response.

We have enclosed the following documentation for review:

Site Plan

Plan Sheet #2 Layout and Lighting Plan
Plan Sheet #3 Grading, Drainage and Utilities
Plan Sheet #4 Planting Plan and Roof Plan

Architecture Plans

Plan Sheet A1.01	Overall Floor Plan – Lower Level
Plan Sheet A1.02	Overall Floor Plan – First Floor
Plan Sheet A3.01	Overall Building Elevations
Plan Sheet A3.02	Overall Building Elevations
Plan Sheet A3.03	Overall Building Elevations
Plan Sheet A4.00	Miscellaneous Elevations and Details

- Architectural comment response letter, prepared by CWS Architects will be submitted under separate cover.

- E-mail response: David Sherlock, Division Engineer, MDOT Scarborough will be submitted under separate cover.

Gorrill-Palmer Consulting Engineers has prepared a response letter and documentation to address Mr. Errico's comments and those of the planning board that will be submitted under separate cover. Their documentation will have a discussion on parking. Southern Maine Student Housing, LLC/Realty Resources will be submitting documentation in response to parking agreements and management plans as requested by the planning board and staff.

We trust this documentation addresses the Board's comments and those of the staff. Should you have any questions or comments before issuance of the planning board packet, please do not hesitate to call me. We look forward to meeting with you and the Board at the scheduled public hearing on October 10, 2006.

Sincerely,
Mitchell & Associates

Robert B. Metcalf

Enclosure

cc: Ed Marsh
Ben Walter
Tom Gorrill
Will Haskell

CITY OF PORTLAND, MAINE
PLANNING BOARD

November 20, 2006

Mr. Ed Marsh
Realty Resources (Southern Maine Student Housing, LLC)
247 Commercial Street
Rockport, Maine 04856

RE: Bayside Village Student Housing; Southern Maine Student Housing, LLC, (Applicant); 120 Marginal Way; #2006-0125; CBL- 034A-B-001 84 Marginal Way

Dear Mr. Marsh:

The Planning Board considered the proposal by Southern Maine Student Housing, LLC to create a 400 bed student lodging house in the vicinity of 120 Marginal Way and voted on the motions described in this letter.

On October 10, 2006, the Planning Board voted 5-0 (Hall and Tevanian absent) that the Bayside Village housing development was in conformance with the Conditional Use (parking garage) Standards of the Land Use Code.

On November 14, 2006, the Planning Board voted 5-2 (Silk and Tevanian opposed) that the Bayside Village housing development was in conformance with the Site Plan Ordinance of the Land Use Code, including Traffic Movement Permit. The approval was granted for this project with the following conditions:

i. That the Applicant shall revise the plan and implement the recommendations contained in Tom Errico's (Traffic Review Consultant) memo dated October 20, 2006, except that the Applicant shall not be required to operate a car-share program.

ii. The Applicant shall contribute $90,000 towards a Transportation Demand Management Fund to be established by the City of Portland to implement Transportation Demand Management measures in Bayside. The parking monitoring study of the site, which will be performed by the Applicant as noted in Mr. Errico's memo, will be used to guide the use of those funds. For the purposes of conducting the monitoring study full occupancy shall be considered 90% of the beds.

iii. That the pedestrian easement for the easterly side of the building shall be submitted for City staff review and approval.

iv. That all exterior signs shall be subject to Planning staff review and approval.

v. That the project lighting shall be subject to Planning staff review and approval.

vi. That final details and materials of the building façade shall be subject to Planning staff review and approval.

vii. In the event that the project changes from student housing as presented by the Applicant to another use, the Applicant shall submit such changes to the Planning Board for review and approval.

viii. The project is approved for a maximum of 400 beds with one occupant per bed.

iv. Applicant shall provide a binding lease agreement for off-hours parking at 84 Marginal Way.

The approval is based on the submitted site plan and the findings related to site plan and conditional use review standards as contained in Planning Report 52-06 and Planning staff memo dated for November 14,2006.

Please note the following provisions and requirements for all site plan approvals:

1. Where submission drawings are available in electronic form, the Applicant shall submit any available electronic Autocad files (*.dwg), release 14 or greater, with seven (7) seta of the final plans.

2. A performance guarantee covering the site improvements as well as an inspection fee payment of 2.0% of the guarantee amount and 7 final sets of plans must be submitted to and approved by the Planning Division and Public Works prior to the release of the building permit. If you need to make any modifications to the approved site plan, you must submit a revised site plan for staff review and approval.

3. The site plan approval will be deemed to have expired unless work in the development has commenced within one (1) year of the approval or within a time period agreed upon in writing by the City and the applicant. Requests to extend approvals must be received before the expiration date.

4. A defect guarantee, consisting of 10% of the performance guarantee, must be posted before the performance guarantee will be released.

5. Prior to construction, a pre-construction meeting shall be held at the project site with the contractor, development review coordinator, Public Work's representative and owner to review the construction schedule and critical aspects of the site work. At that time, the site/building contractor shall provide three (3) copies of a detailed construction schedule to the attending City representatives. It shall be the contractor's responsibility to arrange a mutually agreeable time for the pre-construction meeting.

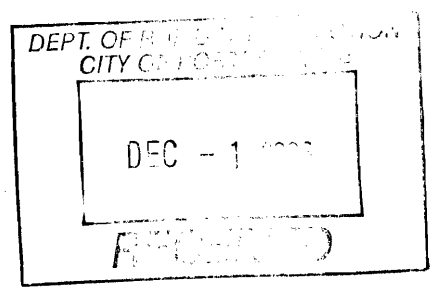
6. If work will occur within the public right-of-way such as utilities, curb, sidewalk and driveway construction, a street opening permit(s) is required for your site. Please contact Carol Merritt at 874-8300, ext. 8828. (Only excavators licensed by the City of Portland are eligible.)

The Development Review Coordinator must be notified five (5) working days prior to date required for final site inspection. The Development Review Coordinator can be reached at the Planning Division at 874-8632. Please make allowances for completion of site plan requirements determined to be incomplete or defective during the inspection. This is essential as all site plan requirements must be completed and approved by the Development Review Coordinator prior to issuance of a Certificate of Occupancy. Please schedule any property closing with these requirements in mind.

If there are any questions, please contact Richard Knowland at 874-8725.

Sincerely,

Kevin Beal, Chair
Portland Planning Board



cc: Lee D. Urban, Planning and Development Department Director
Alexander Jaegerman, Planning Division Director
Sarah Hopkins, Development Review Services Manager
Richard Knowland, Senior Planner
Jay Reynolds, Development Review Coordinator
Marge Schmuckal, Zoning Administrator
Jeanne Bourke, Inspections Division
Michael Bobinsky, Public Works Director
Eric Labelle, City Engineer
Bill Clark, Public works

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Jim Carmody, Transportation Manager
Jeff Tarling, City Arborist
Penny Littell, Associate Corporation Counsel
Captain Greg Cass, Fire Prevention
Assessor's Office
Approval Letter File
Robert Metcalf, Mitchell Associates, 70 Center Street, Portland, ME 04103

MITCHELL & ASSOCIATES
LANDSCAPE ARCHITECTS

September 20, 2006

9/27/06

Mr. Richard Knowland, Senior Planner
and Planning Board Members
City of Portland
389 Congress Street
Portland, Maine 04101

034 AB 001

RE: Bayside Village – A Student Housing Complex

#2006 0175
130 Marginal Way

Dear Rick and Board Members:

The following correspondence has been prepared to address planning board and staff comments from our workshop with the board and subsequent discussions with staff. We have made changes to the site plan and architecture that will be addressed as follows:

Site Plan

- The plan has been revised to address Mr. Errico's comments and planning board comments concerning site access opposite Chestnut Street Extension. To accommodate the 3 lane section, (1) eleven FT entry lane and (2) ten FT exit lanes with sidewalks on the both sides the building footprint was modified. We have revised the building footprint, shrinking the building to accommodate the cross section. Per Mr. Errico's previous memo, he requested a five foot sidewalk and the 3 lane section. By adjusting the building we have achieved two five foot sidewalks to address safety issues raised by the board.

- The main entry to the lobby for the student housing has been relocated to the Marginal Way frontage. To address grade changes we have provided an entry stairway and sloped sidewalk to provide handicap access.

- The plan has been revised to remove the graphic indicating striped parking along Marginal Way as requested in Mr. Errico's memo.

- We have added the crosswalk on marginal Way on the easterly side of the entry drive as requested in Mr. Errico's memo.

THE STAPLES SCHOOL
70 CENTER STREET
PORTLAND, MAINE 04101

Telephone (207) 774-4427
Fax (207) 874-2460
Website www.mitchellassociates.biz

- As stated above, the building was modified to accommodate circulation revisions. The footprint was revised, the size did not change only the configuration, however, and the square footage of the building did change as a result of reconfiguration of the floors above. The original (total) square footage was 208,332 S.F., the new is 205,583 S.F.

Grading and Drainage Plan

- Our drainage design in the garage has been revised to address the structural design requirements for the building. Because of conflicts with grade beams and pile caps, routing of drain lines and catch basins was required. We also revised the plan to include a Downstream Defender water quality unit as requested by Mr. Goyette in his previous memo.

- Minor grading revisions were made on the exterior of the building to accommodate for the new entry lane structure and the relocation of the main entry to the building.

Planting Plan

- The planting plan was revised to address design changes along Marginal Way for the relocation of the main entry and relocation of the bus shelter. Plant material was relocated and some selection of plants were changed to address special requirements.

- We have added six (6) additional trees along I-295 in the right-of-way to replace trees that will be removed to accommodate for grading and drainage requirement.

General Comments

- We have revised the application form to address the change from multi-family to lodging and to remove the subdivision reference. The application also reflects the change in total building square footage.

- We have revised the project description to address the change in use references as well as revisions in the building program.

- The photometric plan has been revised to address fixture locations and illumination levels. Because of the first plan, we have reduced the number of building mounted fixtures. In addition, we have reduced the wattage of the pole-mounted fixtures from 100-watt metal halide to 70-watt metal halide lamps.

- We are presently working on a site improvement plan to address recommendations for pedestrian movement along the Preble Street sidewalk under the I-295 overpass. A plan will be prepared for discussion with the planning board on September 26, 2006.

- The planning board requested information on the distance from the student housing project to the USM campus. We have calculated the distance from our site to the USM campus via the Hannaford shopping center to Forest Avenue to the parking garage on campus. The distance is approximately 2/3 of a mile. Depending upon individual walking pace, the estimated walking time is fifteen minutes.

Parking and Parking Management

- The applicant has a written agreement with Capital, LLC to provide off peak parking. At the time of this submission the letter was not available. A copy will be submitted as soon as it becomes available.

- As discussed in a meeting with staff on September 20, 2006, the applicant is exploring additional options for parking and re-evaluating projected parking requirements.

- The property management entity is preparing the requested documentation concerning parking and for management of parking spaces for off peak demand. This information was not available at the time of this correspondence and will be submitted as soon as it becomes available.

Traffic and Marginal Way Improvements

- Gorrill-Palmer Consulting Engineers have been working on the issues raised by the board and by Mr. Errico. Gorrill-Palmer submitted responses to Mr. Errico's previous memo before the last workshop. During the staff meeting on September 20, 2006 Mr. Errico provided some additional comments however, he had not completed his review of Gorrill-Palmer's responses. Revisions based upon the meeting referenced above are being made and will be submitted to Mr. Errico for review.

Architecture

- CWS Architects prepared and updated submission addressing the request by the board and staff regarding materials. This is being submitted under separate cover.

- Revised architectural elevations are included in this submission.

Enclosed for your review are the following:

- Revised application form
- Revised Project Description
- Bus shelter cut sheets
- Plan set: Sheets 2,3,4&5
- Architectural plan set: Sheets A1.01, A1.02,A3.01, A3.02, A3.03, A4.00

- Cross Section I-295: Sheet A&B

We look forward to our continued discussions with the board members and staff at the workshop session scheduled for September 26, 2006. Should you have any questions or comments, please do not hesitate to call me.

Sincerely,
Mitchell & Associates

Robert B. Metcalf

Enclosure

cc: Ed Marsh
Ben Walter
Tom Gorrill
Will Haskell

City of Portland Site Plan Application

If you or the property owner owe real estate taxes, personal property taxes or user charges on any property within the City of Portland, payment arrangements must be made before permit applications can be received by the Inspections Dept.

Address of Construction: 120 Marginal Way		**Zone:** B-7
Total Square Footage of Proposed Structure: 205,583 SF	**Square Footage of Lot:** 57,887 SF (1.33 Acres)	
Tax Assessor's Chart, Block & Lot Chart# 34A Block# B Lot# 1 Chart# 442 Block# A Lot# 1	**Property owner, mailing address:** City of Portland c/o Jack Lufkin 389 Congress Street Portland, Maine 04101	**Telephone:** 207.874.8945
Consultant/Agent, mailing address, phone & contact person: Robert Metcalf, Agent Mitchell & Associates 70 Center Street Portland, Maine 04101 Tel. 207-774-4427	**Applicant name, mailing address, telephone #/Fax#/Pager#:** Southern Maine Student Housing, LLC 247 Commercial Street Rockport, Maine 04856 Tel. 207.236.4067 Fax 207.236.6307	**Project name:** Bayside Village – A Student Housing Complex

Fee For Service Deposit (all applications) **_X_ ($200.00)**

Proposed Development (check all that apply)

_X_ New Building ___ Building Addition ___ Change of Use ___ Residential ___ Office _X_ Retail
___ Manufacturing ___ Warehouse/Distribution ___ Parking lot
___ Subdivision ($500.00) + amount of lots ___ $25.00 per lot _____ + major site plan fee if applicable
___ Site Location of Development ($3,000.00)
(except for residential projects which shall be $200 per lot_____)
_X_ Traffic Movement ($1,000.00) ___ Stormwater Quality ($250.00)
___ Section 14-403 Review ($400.00 + 25.00 per lot)
___ Other_____

Major Development (more than 10,000 Sq. ft.)

__ Under 50,000 sq. ft. ($500.00)
__ 50,000 - 100,000 sq. ft. ($1,000.00)
__ Parking Lots over 100 spaces ($1,000.00)
__ 100,000 - 200,000 sq. ft. ($2,000.00)
X 200,000 - 300,000 sq. ft. ($3,000.00)
__ Over 300,000 sq. ft. ($5,000.00)
__ After-the-fact Review ($1,000.00 + applicable application fee)

Minor Site Plan Review

__ Less than 10,000 sq. ft. ($400.00)
__ After-the-fact Review ($1,000.00 + applicable application fee)

Plan Amendments

__ Planning Staff Review ($250.00)
__ Planning Board Review ($500.00)

- Please see next page -

Who billing will be sent to: (Company, Contact Person, Address, Phone #)
Southern Maine Student Housing, LLC
Attn: Edward Marsh, Jr.
247 Commercial Street
Rockport, Maine 04856
Tel. 207.236.4067
Fax 207.236.6307

Submittals shall include (9) separate **folded** packets of the following:

a. copy of application
b. cover letter stating the nature of the project
c. site plan containing the information found in the attached sample plans check list
d. 1 set of 11 x 17 plans

Amendment to Plans: **Amendment applications should include 6 separate packets of the above (a, b, and c)**

ALL PLANS MUST BE FOLDED NEATLY AND IN PACKET FORM

Section 14-522 of the Zoning Ordinance outlines the process which is available on our web site: **portlandmaine.gov**

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

Signature of applicant: (Robert B. Metcalf, Agent)	**Date:** July 11, 2006 Amended September 20, 2006

This application is for site review ONLY, a building Permit application and associated fees will be required prior to construction.

PROJECT DESCRIPTION

Revised September 20, 2006

The City of Portland is currently the owner of the subject parcel which will be developed by two separate entities. Campobello Island, LLC has a Purchase and Sale Agreement with the City of Portland for 2.70 acres located between Interstate 295 and Marginal Way, adjacent to Preble Street Extension. Campobello Island, LLC is comprised of two development entities, Southern Maine Student Housing, LLC and Capital, LLC. Southern Maine Student Housing, LLC is proposing a mixed retail and student housing development and Capital, LLC is proposing a mixed retail and office building development. The site has been rezoned from B-5 Urban Commercial Mixed Use Zone to B-7 Mixed Development District Zone. This application is for the Southern Maine Student Housing, LLC portion of the project, with the Capital, LLC portion as separate submission.

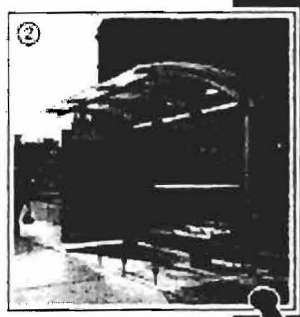
The total site area under the Purchase and Sale Agreement is 117,464 SF, or 2.70 Acres, with the proposed Southern Maine Student Housing, LLC portion of the being 57,887 SF, or 1.33 Acres. The site is currently a parking lot which also houses a Maine Department of Environmental Protection air quality station and portable recycling containers. The Maine DEP has a one month notice agreement with the City of Portland to remove their structure from the site. The portable recycling containers will be relocated by the City of Portland. A bus shelter exists on adjacent City owned property, opposite Chestnut Street. The shelter should be removed by the City of Portland for future re-use, due to the fact that the Miss Portland Diner and a vehicular access way are proposed on this site. A new bus shelter will be constructed as part of this project.

The proposed Bayside Village – A Student Housing Complex project is a five story building with a 47,501 SF footprint and 205,583 SF gross area. The ground floor is comprised of 3,857 SF of retail space, bicycle storage area for 95 bicycles and parking facility for 102 spaces and the second through fifth floors consist of 100 lodging units, with four bedrooms each, and common areas that include a fitness room, common kitchen area and areas for studying. The units have frontage on Marginal Way, Interstate 295 and the eastern side of the site with the center of the building an open courtyard, with rooftop plantings over the parking garage. Tenants would have one year leases and could be students at any of the local colleges or universities. A 24 hour management staff will be present.

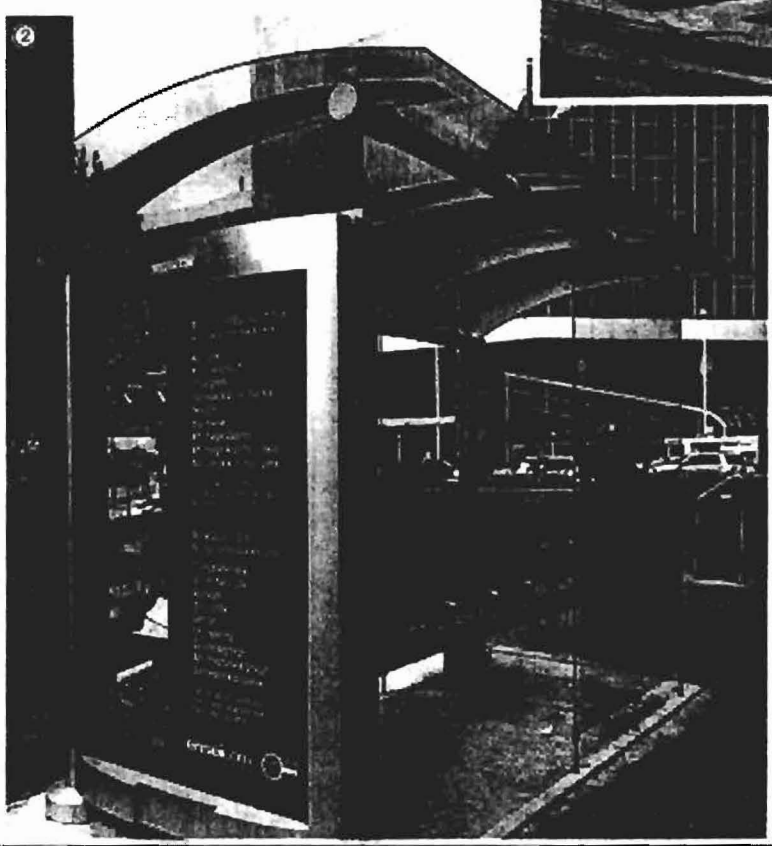
The building is built along the Marginal Way property line with several step-backs from the property line as well as awning structures over entry points to create visual interest and allow for plantings adjacent to the sidewalk. Two vehicular access points are located on Marginal Way, one directly across from Chestnut Street, on City of Portland property, and the other midway between the Wild Oats access ways. Both drives allow for two way vehicular circulation, with the drive across from Chestnut Street for parking garage access for the student housing with one lane in and two lanes out and the other drive for service access and access to the neighboring proposed office building and parking garage limited to right turn in and right turn out. The parking garage provides 102 spaces, all dedicated to the student housing.

An eight (8) foot sidewalk is proposed along Marginal Way and five (5) foot sidewalks are proposed within the site. A sidewalk is proposed along the access drive between the student housing and the proposed retail and office building which will connects to Preble Street Extension. An emergency egress stairway from the rooftop garden connects to this walkway. A bus shelter is proposed along the northeastern portion of the site, along Marginal Way. An internal room provides bicycle storage for 95 bicycles with exterior access from the southwesterly corner of the building connecting to the sidewalk between the student housing and the proposed medical office building.

Street Furniture



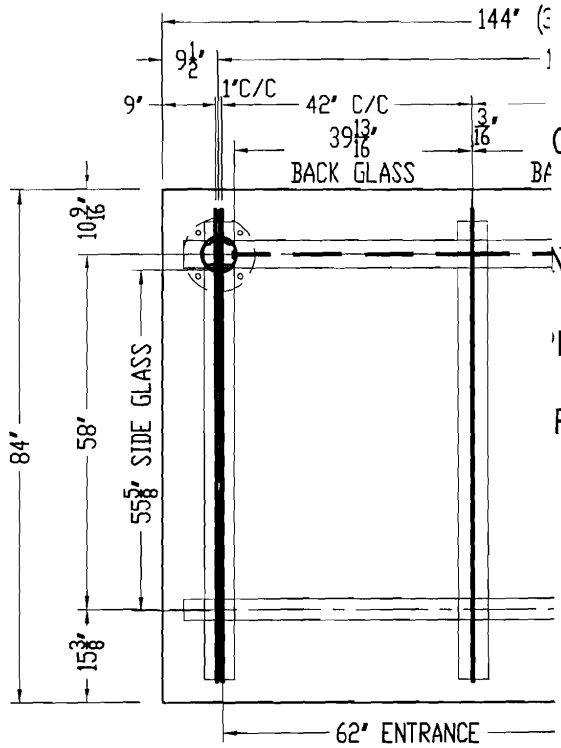
① DESIGNED, ENGINEERED, FABRICATED & INSTALLED BY ENSEICOM
② ENGINEERED, FABRICATED & INSTALLED BY ENSEICOM



Cantilever Shelter

enseicom

AWARD-WINNING PROJECT

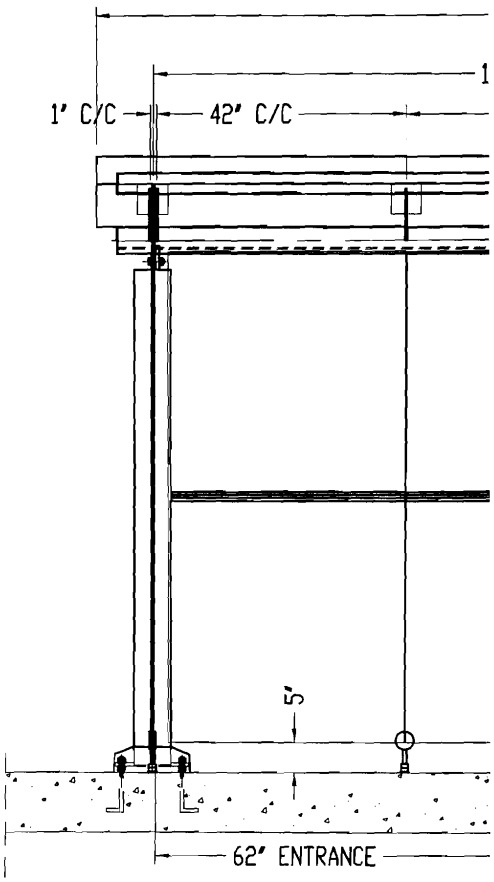


OR BROWN COLD FORMED

ND COLOR TO BE CONFIRMED BY CLIENTS

'ERED GLASS & SAFETY STRIPES

RUST PROOF STEEL PEDSTAL



GENERAL ASSEMBLY

SCALE: 3/8"=1'(1:32)

enseicom
Les enseignes Enseicom
225 NORMAN, VILLE ST. PIE
QUEBEC, CANADA H8R
TEL: 514-486-2626
FAX: 514-486-6465
E-MAIL: enseicom@total.net
www.ensei.com

SOUMISSION / PROPOSAL

DATE 04-05-06

DATE DD-MM-YY

TITRE / TITLE: CANTILEVER SHELTER
GENERAL ASSEMBLY

DESSIN / DWG

FEUILLE / SHEET 1

pizzagalli
construction company

Bayside Village Foundation / Site Permit Estimate

Division	Phase	Description	Total Amount
Div 2	2250.98	**Piles**	
		Precast piles-275 90' avg	891,000.00
		Mobilization	50,000.00
		Pile Inspections	12,000.00
		Precast piles-275 10' avg	99,000.00
		Piles	1,052,000.00
	2317.21	**Earthwork**	
		Remove asphalt for concrete	55,556.00
		Asphalt Paving	305,556.00
		Construction Survey & Layout	25,000.00
		Excavation	65,000.00
		Asphalt Site Paving	85,525
		Earthwork	536,637.00
	2511.101	**Site Utilities**	
		Catch Basins	25,200
		New 8" Sewer	6,150.00
		New 8" Water	4,800.00
		New 12" & 15" Storm	53,834.00
		New 6" Storm	3,745
		New 6" Water	9,800.00
		Site Utilities	103,529.00
	2631.201	**Utilities**	
		Electic Supply	28,200
		Gas Supply	15,600
		Teledata	11,070.00
		Utilities	54,870
	2750.1	**Concrete Paving**	
		Concrete Paving 4"	34,207.00
	2780.1	**Site Pavers**	
		Brick Pavers	44,800.00
		Site Pavers	44,800.00
Div 3.	3000.12	**Foundation**	
		Concrete Pile caps	197,196.00
		concrete grade beams	287,874.00
		Foundation	485,070.00
	3100.014	**SOG**	
		Slad on grade- 10" to mech, retail & entance	52,476.00
		SOG	52,476.00

Total Estimate	2,363,589.00

Permit Fee:	23655.9

SECTION 03300 – CAST -IN-PLACE CONCRETE

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. The drawings and general conditions of the contract including General and Supplementary Conditions and other Division 1 Specification sections apply to work of this section.

B. Examine all other sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

1.02 DESCRIPTION OF WORK:

A. Work included: Provide labor, materials, and equipment necessary to complete the work of this Section and, without limiting the generality thereof, furnish and include the following:

1. The extent of cast-in-place concrete work is shown on drawings and includes (but not by way of limitation) formwork, reinforcing, cast-in-place concrete, accessories, finishing, and casting in of items specified under other Sections of the Specifications or furnished by Design-Build Contractor that are required to be built-in with the concrete.

2. Equipment support pads indicated on mechanical drawings to be installed.

3. Cast-in-place retaining walls, exterior slabs on grade and other concrete shown on site drawings, unless specifically noted otherwise.

1.03 RELATED WORK:

A. Metal Fabrications: Section 05500

1. Expansion Anchors - Section 05120

2. Embedded Items - Section 05500

B. Anchor Bolts: Section 05120

C. Joint Sealants: Section 07900

D. Underslab Vapor Retarders/Wall Waterproofing: Division 7

1.04 QUALITY ASSURANCE:

A. Codes and Standards: Comply with provisions of the latest edition of the following except where more stringent requirements are shown or specified:

1. ACI "Manual of Concrete Practice".

2. ACI 117 "Standard Specifications for Tolerances for Concrete Construction and Materials".

3. ACI 211.1 "Standard Practice for Selecting Proportions for Normal, Heavyweight and Mass Concrete."

4. ACI 212.3R "Chemical Admixtures for Concrete."

5. ACI 301 "Specifications for Structural Concrete for Buildings."

6. ACI 302.1R "Guide for Concrete Floor and Slab Construction."

7. ACI 304R "Guide for Measuring, Mixing, Transporting and Placing Concrete."

8. ACI 304.2R "Placing Concrete by Pumping Methods."

9. ACI 306 R "Cold Weather Concreting."

10. ACI 308 "Standard Practice for Curing Concrete."

11. ACI 309R "Guide for Consolidation of Concrete."

12. ACI 315 "ACI Detailing Manual."

13. ACI 318 "Building Code Requirements for Reinforced Concrete."

14. ACI 347R "Guide to Formwork for Concrete."

15. Concrete Reinforcing Steel Institute, "Placing Reinforcing Bars."

16. AISC "Code of Standard Practice for Steel Buildings and Bridges."

17. "Code of Federal Regulations, Part 1926" per the Occupational Safety and Health Administration (OSHA), Department of Labor (Latest Revision).

B. Materials and installed work may require testing and retesting, as directed by the Engineer, at any time during progress of work. Allow free access to material stockpiles and facilities.

1.05 SUBMITTALS:

A. Unless otherwise specified, submittals required in this section shall be submitted for review. Submittals shall be prepared and submitted in accordance with Division 1.

B. Design-Build Contractor shall submit a Submittal Schedule to the engineer within 30 days of project mobilization.

C. All submittals shall be reviewed and returned to the Design Build Contractor within 10 working days.

D. Incomplete submittals will not be reviewed.

E. Submittals not reviewed by the Design-Build Contractor prior to submission to the Engineer will not be reviewed. Include on the submittal statement or stamp of approval by Design-Build Contractor, representing that the Design-Build Contractor has seen and examined the submittal and that all requirements listed in this Section and Division 1 have been complied with.

F. Engineer will review submittals a maximum of two review cycles as part of their normal services. If submittals are incomplete or otherwise unacceptable and re-submitted, Design-Build Contractor shall compensate Engineer for additional review cycles.

G. Product Data: Submit producer's or manufacturer's specifications and installation instructions for the following products. Include laboratory test reports and other data to show compliance with specifications (including specified standards).

1. Reinforcement certified mill reports covering chemical and physical properties and yield strength.

2. Patching products.

3. Non-shrink grout.

4. Curing compounds, where applicable.

5. Admixtures.

6. Expansion/Adhesive Anchors.

H. Shop Drawings:

1. Shop Drawing Preparation: Electronic files of structural drawings will <u>not</u> be provided to the contractor for preparation of shop drawings. Reproduction of any portion of the Construction Documents for use as Shop drawings is prohibited. Shop drawings created from reproduced Construction Documents will be returned without review. Submit shop drawings for fabrication, bending and placement of concrete reinforcement. Comply with ACI 315, showing bar schedules, stirrup and tie spacing, diagrams of bent bars, and arrangement of concrete reinforcement. Include special reinforcement required at openings through concrete elements. Include supplemental reinforcing and bar supports necessary to support reinforcing steel at proper location within forms or slabs.

a. Review of the shop drawings will be made for the size and arrangement of reinforcement. Conformance of the Shop Drawings to the Contract Drawings remains the responsibility of the Design-Build Contractor. Engineer's review in no way relieves the Design-Build Contractor of this responsibility. Submit three prints. Prints will be reviewed by the Engineer, and then the Architect. One marked print will be returned to Design-Build Contractor for printing and distribution. Multiple copies will not be marked by the Engineer.

b. Shop drawings will not be reviewed as partial submittals. A complete submittal shall be provided all items listed prior. Incomplete submittals will not be reviewed.

I. Mix designs: Submit all laboratory test reports and materials for each mix design listed within. Prepare mixes by the field experience method and/or trial mixtures per the requirements of chapter 5 of ACI 318. Include the calculation of average strength and standard deviation. <u>Proportioning by water cement ratio method will not be permitted.</u>

J. Samples: Submit samples of materials as specified and as otherwise requested by Engineer or Architect, including names, sources and descriptions.

K. Curing Methods: Submit documentation of curing methods to be used for review. Account for anticipated project temperature ranges and conditions in curing methods.

L. Contraction/Construction Joints: Submit plan indicating proposed location of contraction and construction joints in walls and slabs.

M. Test Reports: Test reports shall be submitted to the Design-Build Contractor and Engineer within 48 hour after completion of each test.

PART 2 PRODUCTS

2.01 FORM MATERIALS:

A. Forms for Exposed Finish Concrete: Unless otherwise indicated, construct formwork for exposed concrete surfaces with plywood, metal, metal-framed plywood faced or other acceptable panel-type materials, to provide continuous, straight, smooth, exposed surfaces. Furnish in largest practicable sizes to minimize number of joints and to conform to joint system shown on drawings. Provide form material with sufficient thickness to withstand pressure of newly-placed concrete without bow or deflection.

1. Use plywood complying with U.S. Product Standard PS-1 "B-B (Concrete Form) Plywood", Class I, Exterior Grade or better, mill-oiled and edge-sealed, with piece bearing legible inspection trademark.

B. Forms for Unexposed Finish Concrete: Form concrete surfaces which will be unexposed in finished structure with plywood, lumber, metal or other acceptable material. Provide lumber dressed on at least 2 edges and one side for tight fit.

C. Form Coatings: Provide commercial formulation form-coating compounds that will not bond with, stain nor adversely affect concrete surfaces, and will not impair subsequent treatments of concrete surfaces.

2.02 REINFORCING MATERIALS:

A. Reinforcing Bars: ASTM A 615, Grade 60, deformed.

B. Welded Wire Fabric: ASTM A 185, welded steel wire fabric. Provide welded wire fabric in flat sheets.

C. Supports for Reinforcement: Provide supports for reinforcement including bolsters, chairs, spacers, and other devices for spacing, supporting and fastening reinforcing bars and welded wire fabric in place. Use plastic, wire bar type supports or concrete block supports complying with CRSI recommendations, unless otherwise specified. Wood, clay brick and other unspecified devices are not acceptable.

1. For slabs-on-grade, use supports with sand plates or horizontal runners where base material will not support chair legs.

2. For exposed-to-view concrete surfaces, where legs of supports are in contact with forms, provide supports with legs which are plastic protected (CRSI, Class I) or stainless steel protected (CRSI, Class 2).

2.03 CONCRETE MATERIALS:

A. Portland Cement: ASTM C 150, Type I or Type II, unless otherwise approved Use one brand of cement throughout project, unless otherwise acceptable to Engineer.

B. Normal Weight Aggregates: ASTM C 33. Provide from a single source for exposed concrete. Do not use aggregates containing soluble salts or other substances such as iron sulfides, pyrite, marcasite, or ochre which can cause stains on exposed concrete surfaces.

C. Light Weight Aggregates: ASTM C 330.

D. Water: Potable.

E. Air-Entraining Admixture: ASTM C 260.

F. High-Range Water-Reducing Admixture (Super Plasticizer): ASTM C 494, Type F or Type G containing not more than 1% chloride ions.

G. Fiber reinforcement shall be Type III Synthetic Virgin Homopolymer Polypropylene Fibers conforming to ASTM C1116. Fiber reinforcing shall be added and distributed prior to incorporation of Super Plasticizer.

H. Normal range water reducing admixture: ASTM C 494 Type A containing no calcium chloride.

I. Accelerating Admixture: ASTM C 494, Type C or E.

J. Blast Furnace Slag: ASTM C989

K. Fly Ash: ASTM C618, Class C or F

L. Calcium Chloride is not permitted.

2.04 RELATED MATERIALS:

A. Underslab Vapor Retarder: Provide vapor retarder over prepared sub base for interior slabs. Refer to Architectural drawings, geotechnical report and/or division 7 specifications for additional requirements and vapor retarder location.

B. Non-Shrink Cement-based Grout: Provide grout consisting of pre-measured, prepackaged materials supplied by the manufacturer requiring only the addition of water. Manufacturer's instructions must be printed on the outside of each bag.

1. Non-shrink: No shrinkage (0.0%) and a maximum 4.0% expansion when tested in accordance with ASTM C-827. No shrinkage (0.0%) and a maximum of 0.2% expansion in the hardened state when tested in accordance with CRD-C-621.

2. Compressive strength: A minimum 28 day compressive strength of 5000 psi when tested in accordance with ASTM C-109.

3. Setting time: A minimum initial set time of 60 minutes when tested in accordance with ASTM C-191.

4. Composition: Shall not contain metallic particles or expansive cement.

C. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yd., complying with AASHTO M182, Class 2.

D. Moisture-Retaining Cover: One of the following, complying with ANSI/ASTM C 171.

1. Waterproof paper.

2. Polyethylene film.

3. Polyethylene-coated burlap.

E. Liquid Membrane-Forming Curing Compound: Liquid type membrane forming curing compound complying with ASTM C 309, Type I, Class A unless other type acceptable to Engineer. Curing compound shall not impair bonding of any material, including floor finishes, to be applied directly to the concrete. Demonstrate the non-impairment prior to use.

F. Preformed Expansion Joint Formers:

1. Bituminous Fiber Type, ASTM D 1751.

2. Felt Void, Poly-Styrene Cap with removable top as manufactured by SUPERIOR.

G. Slab Joint Filler: Multi-component polyurethane sealant (self-leveling type).

H. Waterstops shall be Bentonite/Butyl Rubberbased product. Use in conjunction with manufacturer's approved mastic. Acceptable products include:

1. "Waterstop Rx," by American Colloid Co.

2. "Adeka Ultra Seal MC-2010," by Asahi Denka Koeyo, Kik MN.

2.05 PROPORTIONING AND DESIGN OF MIXES:

A. Prepare design mixes for each type and strength of concrete by either laboratory trial batch or field experience methods as specified in ACI 318. Use material, including all admixtures, proposed for use on the project. If trial batch method used, use an independent testing facility acceptable to Engineer for preparing and reporting proposed mix designs. The testing facility shall not be the same as used for field quality control testing unless otherwise acceptable to Engineer.

B. Submit written reports to Engineer of each proposed mix for each class of concrete. Do not begin concrete production until mixes have been reviewed by Engineer.

C. Proportion design mixes to provide concrete with the following properties:

1. Footings, foundation walls, pile caps and grade beams.

a. Strength: 3000 psi at 28 days.

b. Aggregate: 3/4"

c. W/C Ratio: 0.54 maximum

d. Entrained Air: 6% +/- 1.5%

e. Slump: 4" maximum

2. Interior Slabs on grade and elevated slabs (including plank topping):

a. Strength: 3000 psi at 28 days, Fiber Reinforced

b. Aggregate: 3/4" minimum, 1 1/2" maximum, 3/8" aggregate for plank topping 2 inches and less thickness..

c. W/C Ratio: 0.54 maximum

d. Entrapped Air only (no entrainment), 2% maximum

e. Slump: 4" maximum

3. Exterior Slabs and all other exposed Site Concrete not specified elsewhere:

a. Strength: 5000 psi at 28 days, Fiber Reinforced

b. Aggregate: 3/4"

c. W/C Ratio: 0.40 maximum

d. Entrained Air: 6% +/- 1.5%

e. Slump: 4" maximum

4. Add air entraining admixture at manufacturers prescribed rate to result in concrete at point of placement having the above noted air contents.

5. Additional slump may be achieved by the addition of a mid-range or high-range water reducing admixture. Maximum slump after the addition of admixture shall be 6 or 8 inches for mid-range or high range water reducing admixtures, respectively.

D. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor, when characteristics of materials, job conditions, weather, test results, or other circumstances warrant, at no additional cost to Design-Build Contractor and as accepted by Engineer. Laboratory test data for revised mix design and strength results must be submitted to and accepted by Structural Engineer before using in work.

1. Water may be added at the project only if the maximum specified slump and design mix maximum water/cement ratio is not exceeded.

2. Additional dosages of superplastisizer should be used when delays occur and required slump has not been maintained. A maximum of two additional dosages will be permitted per ACI 212.3R recommendations.

2.06 CONCRETE MIXING:

A. Job-Site Mixing will not be permitted.

B. Ready-Mix Concrete: Must comply with the requirements of ASTM C 94, and as herein specified. Provide batch ticket for each batch discharged and used in work, indicating project name, mix type, mix time and quantity.

1. During hot weather, or under conditions contributing to rapid setting of concrete, a shorter mixing time than specified in ASTM C94 may be required by Structural Engineer.

2. When the air temperature is between 85 degrees F. and 90 degrees F., reduce the mixing and delivery time from 1 1/2 hours to 75 minutes, and when the air temperature is above 90 degrees F., reduce the mixing and delivery time to 60 minutes.

PART 3 EXECUTION

3.01 FORMS:

A. Design, erect, support, brace and maintain formwork to support vertical and lateral loads that might be applied until such loads can be supported by concrete structure. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation and position.

B. Design, construct, erect, maintain, and remove forms for cast-in-place concrete work in compliance with ACI 347.

C. Design formwork to be readily removable without impact, shock or damage to cast-in-place concrete surfaces and adjacent materials.

D. Construct forms to sizes, shapes, lines and dimensions shown, and to obtain accurate alignment, location, grades, level and plumb work in finished structures. Provide for openings, offsets, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required in work. Use selected materials to obtain required finishes. Solidly butt joints and provide backup at joints to prevent leakage of cement paste.

E. Vertical dovetail slots may be required for masonry tie installation. Coordinate dovetail slot spacing and location with division 4 specifications and Architectural drawings.

F. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only. Kerf wood inserts for forming keyways, dovetail slots, reglets, recesses, and the like to prevent swelling and for easy removal.

G. Provide temporary openings where interior area of formwork is inaccessible for clean out, for inspection before concrete placement and for placement of concrete. Securely brace temporary openings and set tightly to forms to prevent loss of concrete mortar. Locate temporary openings on forms at inconspicuous locations.

H. Chamfer exposed corners and edges as indicated, using wood, metal, PVC or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints.

I. Form Ties: Factory-fabricated, adjustable-length, removable or snap-off metal form ties, designed to prevent form deflection, and to prevent spalling concrete surfaces upon removal.

1. Unless otherwise indicated, provide ties for concrete surfaces to be exposed to view in the final condition so portion remaining within concrete after removal is 1" (minimum) inside concrete.

2. Form ties shall not leave holes larger than 1" diameter in concrete surface. Repair holes left by form ties after removal of formwork.

J. Provision for Other Trades: Provide openings in concrete formwork to accommodate work of other trades. Determine size and location of openings, recesses, and chases from trades providing such items. Accurately place and securely support items built into forms.

K. Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt or other debris just before concrete is placed. Retighten forms and bracing after concrete placement as required to eliminate mortar leaks and maintain proper alignment.

3.02 PLACING REINFORCEMENT:

A. Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars", for details and methods of reinforcement placement and supports, and as herein specified.

1. Subgrade tolerance shall conform to a tolerance of +0/-1 1/2". Base tolerance (fine grading) for slabs shall conform to a tolerance of +0"/-3/4" in. Confirm compliance of above tolerances with surveyed measurements taken at 20 ft. intervals in each direction.

2. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials which reduce or destroy bond with concrete.

3. Accurately position, support and secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers and hangers, as required.

4. Place reinforcement to obtain specified coverage for concrete protection within tolerances of ACI-318. Arrange, space and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.

5. Install welded wire fabric in flat sheets in as long lengths as practicable. Lap adjoining pieces at least one full mesh and lace splices with wire. Offset end laps in adjacent widths to prevent continuous laps in either direction.

3.03 JOINTS:

A. Construction Joints: Locate and install construction joints, which are not shown on drawings, so as not to impair strength and appearance of the structure, as acceptable to Engineer. Submit plan indicating proposed location of construction joints for review prior to beginning work.

1. Provide keyways at least 1-1/2" deep in construction joints in walls, and slabs; bulkheads reviewed by the Engineer, designed for this purpose may be used for slabs.

2. Roughened surfaces shall be used between walls and footings unless shown otherwise on the drawings. The footing surface shall be roughened to at least an amplitude of 1/4" for the width of the wall before placing the wall concrete.

3. Place construction joints perpendicular to the main reinforcement. Continue reinforcement across construction joints.

4. Joints in slabs on grade shall be located and detailed as indicated on the drawings. If saw-cut joints are required, the early-entry dry-cut process shall be used. Refer to ACI 302, section 8.3.12.

3.04 INSTALLATION OF EMBEDDED ITEMS:

A. General: Set and build into work anchorage devices and other embedded items required for other work that is attached to, or supported by, cast-in-place concrete. Use setting drawings, diagrams, instructions and directions provided by suppliers of items to be attached thereto. Notify other trades to permit installation of their work. Templates to be utilized for setting of anchorage devices shall be constructed in a manner to allow mechanical consolidation of concrete. "Wet Setting" of embedded items into plastic concrete will not be permitted without special permission from the Engineer.

B. Edge Forms and Screed Strips for Slabs: Set edge forms or bulkheads and intermediate screed strips for slabs to obtain required elevations and contours in finished slab surface.

C. Provide PVC sleeves where pipes and/or conduit pass through exterior concrete or slabs. Sleeves or penetrations shall not be placed through footings, piers, pedestals, drop caps, columns or pilasters unless specifically noted.

D. Tolerances: Tolerances for Anchor Bolts/Rods, bearing surfaces and other embedded items shall meet the requirement set forth in the latest edition of the American Institute of Steel Construction "Code of Standard Practice for Steel Buildings and Bridges," and ACI 117. The more stringent criteria from these documents shall apply.

3.05 INSTALLATION OF GROUT

A. Place grout for base plates in accordance with manufacturer's recommendations.

B. Grout below setting plates as soon as practicable to facilitate erection of steel and prior to removal of temporary bracing and guys. If leveling bolts or shims are used for erection grout shall be installed prior to addition of any column load.

C. Pack grout solidly between bearing surfaces and bases or plates to ensure that no voids remain. Finish exposed surfaces, protect installed materials and allow to cure. For proprietary grout materials, comply with manufacturer's instructions.

3.06 PREPARATION OF FORM SURFACES:

A. Coat contact surfaces of forms with a form-coating compound before reinforcement is placed.

B. Thin form-coating compounds only with thinning agent of type, and in amount, and under conditions of form-coating material manufacturer's directions. Do not allow excess form coating to accumulate in forms or to come into contact with concrete surfaces against which fresh concrete will be placed. Apply in compliance with manufacturer's instructions.

3.07 CONCRETE PLACEMENT:

A. Preplacement Review: Footing bottoms are subject to review by the Geotechnical Engineer. Reinforcement and all concrete preparation work shall be subject to review by the Structural Engineer. Verify that reinforcing, ducts, anchors, seats, plates and other items cast into concrete are placed and securely held. Notify Engineer/Project Special Inspector 48 hours prior to scheduled placement and obtain approval or waiver of review prior to placement. Be sure that all debris and foreign matter is removed from forms.

B. Concrete shall be placed in the presence of an approved testing agency.

C. General: Comply with ACI 304, and as herein specified.

1. Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as herein specified. Deposit concrete as nearly as practicable to its final location to avoid segregation due to rehandling or flowing.

2. Concrete shall be handled from the mixer to the place of final deposit as rapidly as practicable by methods which will prevent segregation or loss of ingredients and in a manner which will assure that the required quality of the concrete is maintained.

3. Conveying equipment shall be approved and shall be of a size and design such that detectable setting of concrete shall not occur before adjacent concrete is placed. Conveying equipment shall be cleaned at the end of each operation or work day. Conveying equipment and operations shall conform to the following additional requirements:

a. Belt conveyors shall be horizontal or at a slope which will not cause excessive segregation or loss of ingredients. Concrete shall be protected against undue drying or rise in temperature. An arrangement shall be used at the discharge end to prevent apparent segregation. Mortar shall not be allowed to adhere to the return length of the belt. Long runs shall be discharged into a hopper or through a baffle.

b. Chutes shall be metal or metal-lined and shall have a slope not exceeding 1 vertical to 2 horizontal and not less than 1 vertical to 3 horizontal. Chutes more than 20 feet long, and chutes not meeting the slope requirements may be used provided they discharge into a hopper before distribution.

c. Pumping or pneumatic conveying equipment shall be of suitable kind with adequate pumping capacity. Pneumatic placement shall be controlled so that segregation is not apparent in the discharged concrete.

d. Concrete shall not be conveyed through pipe made of aluminum alloy. Standby equipment shall be provided on the site.

e. Tined rakes are prohibited as a means of conveying fiber reinforced concrete.

4. Do not use reinforcement as bases for runways for concrete conveying equipment or other construction loads.

D. Placing Concrete in Forms: Deposit concrete in forms in horizontal layers not deeper than 18 inches and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints.

1. Consolidate placed concrete by mechanical vibrating equipment. Hand-spading, rodding or tamping as the sole means for the consolidation of concrete will only be permitted with special permission from the Engineer. Use equipment and procedures for consolidation of concrete in accordance with ACI recommended practices.

2. Use vibrators designed to operate with vibratory equipment submerged in concrete, maintaining a speed of not less than 8000 impulses per minute and of sufficient amplitude to consolidate the concrete effectively. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than visible effectiveness of machine, generally at points 18 inches maximum apart. Place vibrators to rapidly penetrate placed layer and at least 6 inches into the preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion maintain the duration of vibration for the time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing segregation of mix, generally from 5 to 15 seconds. A spare vibrator shall be kept on the job site during all concrete placing operation.

E. Placing Concrete Slabs: Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is completed.

1. Consolidate concrete using internal vibrators during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.

2. Bring slab surfaces to correct level with straightedge and strike off. Use bull floats or darbies to smooth surface, free of humps or hollows. Do not disturb slab surfaces prior to beginning finishing operations. Do not sprinkle water on plastic surface.

3. Maintain reinforcing in proper position during concrete placement operations.

4. Slab thicknesses indicated on the drawings are minimums. Provide sufficient concrete to account for structure deflection, subgrade fluctuations, and to obtain the specified slab elevation at the flatness and levelness indicated here within.

5. Finish: See "Monolithic Slab Finishes" in this specification for slab finish requirements.

F. Cold Weather Placing: Protect concrete work from physical damage or reduced strength which could be caused by frost, freezing actions, or low temperatures, in compliance with ACI 306 and as herein specified (whichever requirement is more stringent).

1. When air temperature has fallen to or is expected to fall below 40 degrees F (4 degrees C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 degrees F (10 degrees C), and not more than 80 degrees F (27degrees C) at point of placement.

2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.

3. Do not use calcium chloride, salt and other materials containing antifreeze agents or chemical accelerators.

4. All temporary heat, form insulation, insulated blankets, coverings, hay or other equipment and materials necessary to protect the concrete work from physical damage caused by frost , freezing action, or low temperature shall be provided prior to start of placing operations.

5. When the air temperature has fallen to or is expected to fall below 40 degrees F, provide adequate means to maintain the temperature in the area where concrete is being placed between 50 and 70 degrees F.

G. Hot Weather Placing: When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 305 and as herein specified (whichever requirement is more stringent).

1. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 degrees F. Mixing water may be chilled, or chopped ice may be used to control the concrete temperature provided the water equivalent of the ice is calculated to the total amount of mixing water.

2. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that the steel temperature will not exceed the ambient air temperature immediately before embedment in concrete.

3. Wet forms thoroughly before placing concrete.

4. Do not use retarding admixtures without the written acceptance by the Engineer.

3.08 FINISH OF FORMED SURFACES:

A. Rough Form Finish: For formed concrete surfaces not exposed-to-view in the finish work or by other construction, unless otherwise indicated. This concrete surface shall have texture imparted by form facing material, with tie holes and defective areas repaired and patched and fins and other projections exceeding 1/4 in. in height rubbed down or chipped off.

B. Smooth Form Finish: For formed concrete surfaces exposed-to-view, or that are to be covered with a coating material applied directly to concrete, or a covering material applied directly to concrete, such as waterproofing, damp-proofing, painting or other similar system. This as-cast concrete surface shall be obtained with selected form facing material, arranged orderly and symmetrically with a minimum of seams. Repair and patch defective areas with fins or other projections completely removed and smoothed.

C. Grout Cleaned Finish: Provide grout cleaned finish to scheduled concrete surfaces which have received smooth form finish treatment. Combine one part Portland cement to 1-1/2 parts fine sand by volume and mix with water to consistency of thick paint. Proprietary additives may be used at Contractor's option. Blend standard Portland cement and white Portland cement, amounts determined by trial patches, so that final color of dry grout will closely match adjacent surfaces.

1. Thoroughly wet concrete surfaces and apply grout to coat surfaces and fill small holes. Remove excess grout by scraping and rubbing with clean burlap. Keep damp by fog spray for at least 36 hours after rubbing.

D. Related Unformed Surfaces: At tops of walls and grade beams, horizontal offset surfaces occurring adjacent to formed surfaces, strike-off, smooth and finish with a texture matching adjacent uniformed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.09 FLOOR FLATNESS AND LEVELNESS

A. Floor flatness/levelness tolerances: Tolerances for various floor uses shall conform to the requirements set forth in ACI 117 and ACI 302 for "flat" floor profile.

1. Minimum Test Area Flatness/Levelness: F_F30/F_L20

2. Minimum Local F Number: F_F15/F_L10

B. Levelness criteria shall be applied to slabs-on-grade only.

C. Contractor shall measure floor finish within 72 hours after slab finishing and provide corrective measures for finishes not within tolerance. Corrective procedures shall be reviewed by the Engineer prior to implementation.

3.10 MONOLITHIC SLAB FINISHES:

A. Scratch Finish: Apply scratch finish to monolithic slab surfaces that are to receive concrete floor topping or mortar setting beds, and as otherwise indicated.

1. After placing slabs, plane surface to a tolerance not exceeding 1/2 in. in 10 ft. when tested with a 10-ft. straightedge. Slope surfaces uniformly to drains where required. After leveling, roughen surface before final set with stiff brushes, brooms or rakes.

B. Float Finish: Apply float finish to monolithic slab surfaces to receive trowel finish and other finishes as hereinafter specified, and slab surfaces which are to be covered with membrane or elastic waterproofing, and as otherwise indicated.

C. Trowel Finish: Apply trowel finish to monolithic slab surfaces indicated, including slab surfaces to be covered with carpet, resilient flooring, paint or other thin-film finish coating system.

D. Non-Slip Broom Finish: Apply non-slip broom finish to exterior concrete platforms, steps and ramps (including garage ramp), and elsewhere as indicated.

E. Slab finishes for floor coverings not indicated or exposed to view in the final condition shall be coordinated with the Engineer prior to slab placement.

F. Slab Joints: Where indicated, sawn slab contraction joints shall be "soft cut", immediately after concrete surface is firm enough not to be torn or damaged by the blade.

3.11 CONCRETE CURING AND PROTECTION:

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Protect concrete work from physical damage or reduced strength which could be caused by frost, freezing actions, or low temperatures, in compliance with the requirements of ACI 308 as herein specified.

B. Curing Methods: Perform curing of concrete by moist curing, by moisture-retaining cover curing, by curing compound, and by combinations thereof, as herein specified unless noted otherwise. Curing shall commence as soon as concrete surfaces are sufficiently hard as to withstand surface damage. Slabs-on-grade shall be cured by moist curing methods.

C. Curing Formed Surfaces: Cure formed concrete surfaces, including undersides of beams, supported slabs and other similar surfaces by moist curing with forms in place for full curing period or until forms are removed. If forms are removed, continue curing by methods specified above, as applicable.

D. Protection From Mechanical Injury: During the curing period and duration of construction, the concrete shall be protected from damaging mechanical disturbances, such as load stresses, heavy shock, and excessive vibration. All finished concrete surfaces shall be protected from damage by construction equipment, materials, or methods, by application of curing procedures, and by rain or running water. Self-supporting structures shall not be loaded in such a way as to overstress the concrete.

3.12 REMOVAL OF FORMS:

A. Formwork not supporting weight of concrete, such as sides of beams, walls, columns, and similar parts of the work, may be removed after cumulatively curing at not less than 50 degrees F for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form removal operations, and provided curing and protection operations are maintained.

B. Formwork supporting weight of concrete, such as joints, slabs and other structural elements, may not be removed in fewer than 14 days or until concrete has attained design minimum compressive strength at 28 days. Determine potential compressive strength of in-place concrete by testing field-cured specimens representative of concrete location or members.

C. Form facing material may be removed 4 days after placement only if shores and other vertical supports have been arranged to permit removal of form facing material without loosening or disturbing shores and support.

3.13 REUSE OF FORMS:

A. Clean and repair surfaces of forms to be reused in work. Split, frayed, delaminated or otherwise damaged form facing material will not be acceptable for exposed surfaces. Apply new form coating compound as specified for new formwork.

B. When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and latency, and tighten forms to close joints. Align and secure joint to avoid offsets. Do not use "patched" forms for exposed concrete surfaces, except as acceptable to Engineer.

3.14 MISCELLANEOUS CONCRETE ITEMS:

A. Fill in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work of other trades is in place. Mix, place, and cure concrete as herein specified, to blend with in-place construction. Provide other miscellaneous concrete filling shown or required to complete work.

3.15 CONCRETE SURFACE REPAIRS:

A. Patching Defective Areas: Repair and patch defective areas with cement mortar immediately after removal of forms, when acceptable to the Engineer.

1. Cut out honeycomb, rock pockets, voids over 1/4 inch in any dimension, and holes left by tie rods and bolts, down to solid concrete but in no case to a depth of less than 1 inch. Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen with water, and brush coat the area to be patched with specified bonding agent. Place patching mortar after bonding compound has dried.

2. For exposed-to-view surfaces, blend white Portland cement and standard Portland cement so that, when dry, patching mortar will match color surrounding. Provide test areas at inconspicuous location to verify mixture and color match before proceeding with patching. Compact mortar in place and strike-off slightly higher than surrounding surface.

B. Repair of Formed Surfaces: Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of Engineer. Surface defects, as such, include color and texture irregularities, form tie holes, cracks, spalls, air bubbles, honeycomb, rock pockets, fins, and other projections on surface and stains and other discolorations that cannot be removed by cleaning.

3.16 QUALITY CONTROL TESTING DURING CONSTRUCTION:

A. Testing Agency/Project Special Inspector shall verify reinforcement, including foundation reinforcement and slab reinforcement (WWF or reinforcing bar). Agent shall verify WWF or reinforcement has been chair/placed with proper clearances.

B. The Design-Build Contractor shall employ a Testing Laboratory to inspect, sample and test the materials and the production of concrete and to submit test reports. Concrete testing shall be performed by technicians certified by the Maine Concrete Technician Certification Board and/or ACI Concrete Field Testing Technician Grade I.

C. Concrete shall be sampled and tested for quality control during placement. Quality control testing shall include the following, unless otherwise directed by the Engineer.

D. See Submittals section for report requirements.

E. Sampling Fresh Concrete: ASTM C 172.

1. Slump: ASTM C143; One test for each set of compressive strength test specimens. Sample shall be taken from middle third of the load per ASTM C172. A slump test must be run prior to the incorporation of the CFP fibers per recommendations of ACI 544. A slump test must be run prior to and following the addition of a water reducer (superplasticizer) per recommendations of ACI 301.

2. Air Content: ASTM C231 "Pressure method for normal weight concrete." one test for each set of compressive strength specimens measured at point of discharge.

3. Concrete Temperature: Per ASTM C-1064; one test each time a set of compression test specimens are made.

4. Compression Test Specimen: ASTM C31; one set of 4 standard cylinders for each compressive strength test, unless otherwise directed. Mold and store cylinders for laboratory cured test specimens except when field-cure test specimens are required.

a. An insulated Cure Box for specimen curing shall be supplied by Testing Agency for initial curing as defined in ACI C31.

b. Means of heating or cooling the Cure Box shall be provided by the Inspection Agency if required in order to maintain a temperature between 60 and 80 degrees F. Contractor shall provide an electrical source to the Testing Agency when required for temperature control.

c. A maximum-minimum thermometer shall be provided in the Cure Box by the Testing Agency to record the temperature range of the Cure Box during specimen curing. The Testing Agency shall record the maximum/minimum temperature of the Cure Box when transferring the specimens to the laboratory.

d. Test Specimens shall be moist cured.

e. Refer to ACI C31 for additional requirements for Test Specimens.

5. Compressive Strength Tests: ASTM C39; one set for each 50 cu. yds. or fraction thereof, of each concrete class placed in any one day or for each 4,000 sq. ft. of surface area placed; 1 specimen tested at 7 days, 2 specimens tested at 28 days, 1 specimen retained in reserve for later testing if required.

6. Pumped concrete shall be tested at point of discharge per ACI 301.

F. Additional Tests: The testing service will make additional tests of in-place concrete when test results indicate specified concrete strengths and other characteristics have not been attained in the structure, as directed by the Engineer. Testing service may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42, or by other methods, as directed. Cast-in-place Contractor shall pay for such tests conducted, and any other additional testing as may be required, when unacceptable concrete is verified.

END OF SECTION

pizzagalli construction company

Bayside Village Student Housing

Transmittal 00002

7/11/2007

Transmittal To	Transmittal From
Michael Nugent City of Portland 389 Congress Street City Hall Room 315 Portland, ME 04101 T: 207-874-8700 F: 207-874-8716	Erica Martin Pizzagalli Construction Company 131 Presumpscot Street Portland, ME 04103 T: 207-874-2323 F: 207-874-2727

WE ARE SENDING:		SUBMITTED FOR:	ACTION TAKEN:
☐ Shop Drawings	☐ Letter	☐ Approval	☐ Approved as Submitted
☐ Prints	☐ Change Order	☐ Your Use	☐ Approved as Noted
☐ Plans	☐ Specifications	☐ As Requested	☐ Returned After Loan
☐ Samples		☐ Review and Comment	☐ Resubmit
☐ Other:			☐ Submit
Reference:		**SENT VIA:**	☐ Returned
Project Schedule		☐ Attached	☐ Returned for Corrections
		☐ Separate Cover Via:	☐ Due Date:

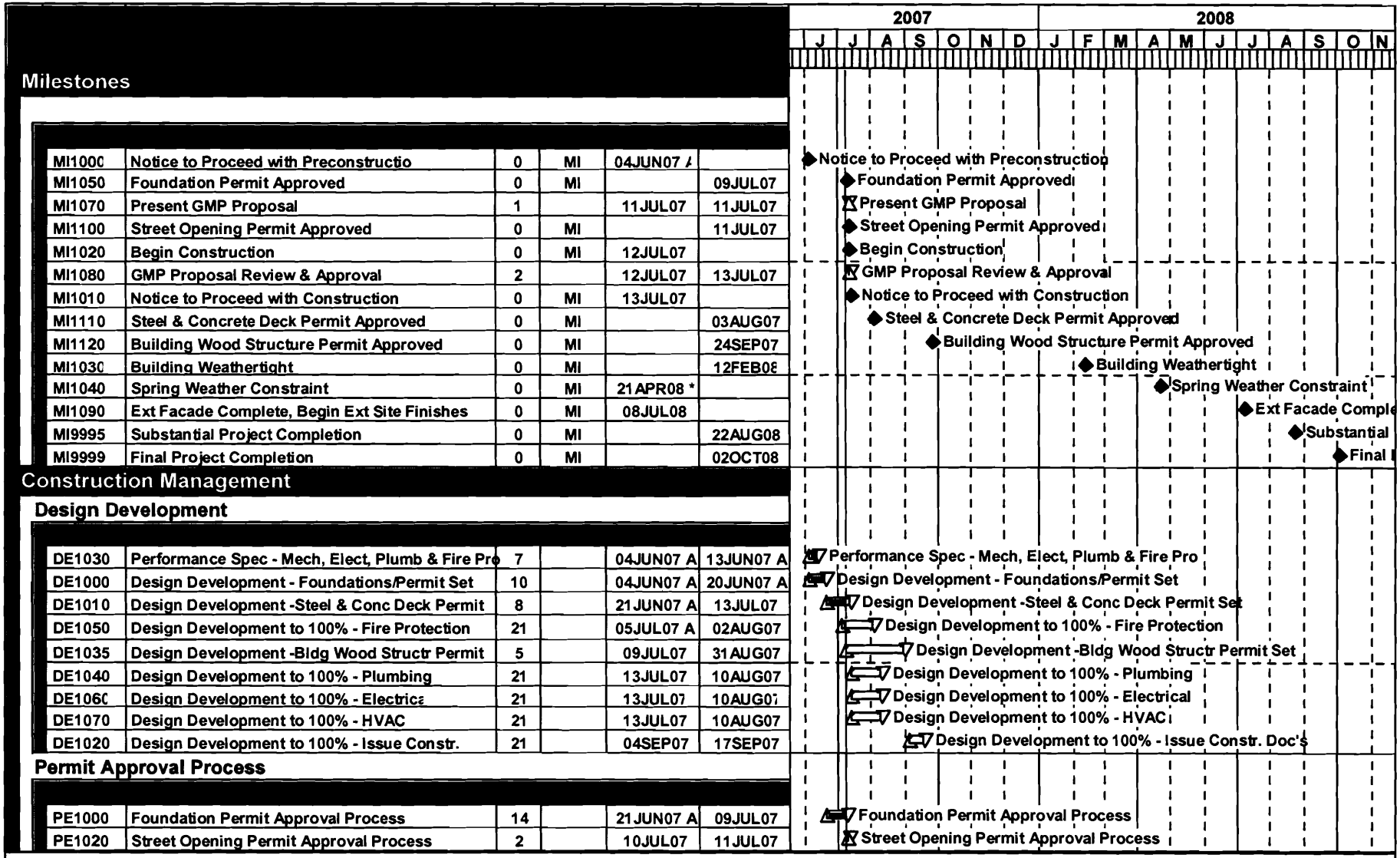
ITEM NO.	COPIES	DATE	ITEM	NUMBER	REV. NO.	DESCRIPTION	STATUS
001	1	7/6/2007				Bayside Village Student Housing Project Schedule	NEW

Remarks

CC: File

Signed:

Erica Martin



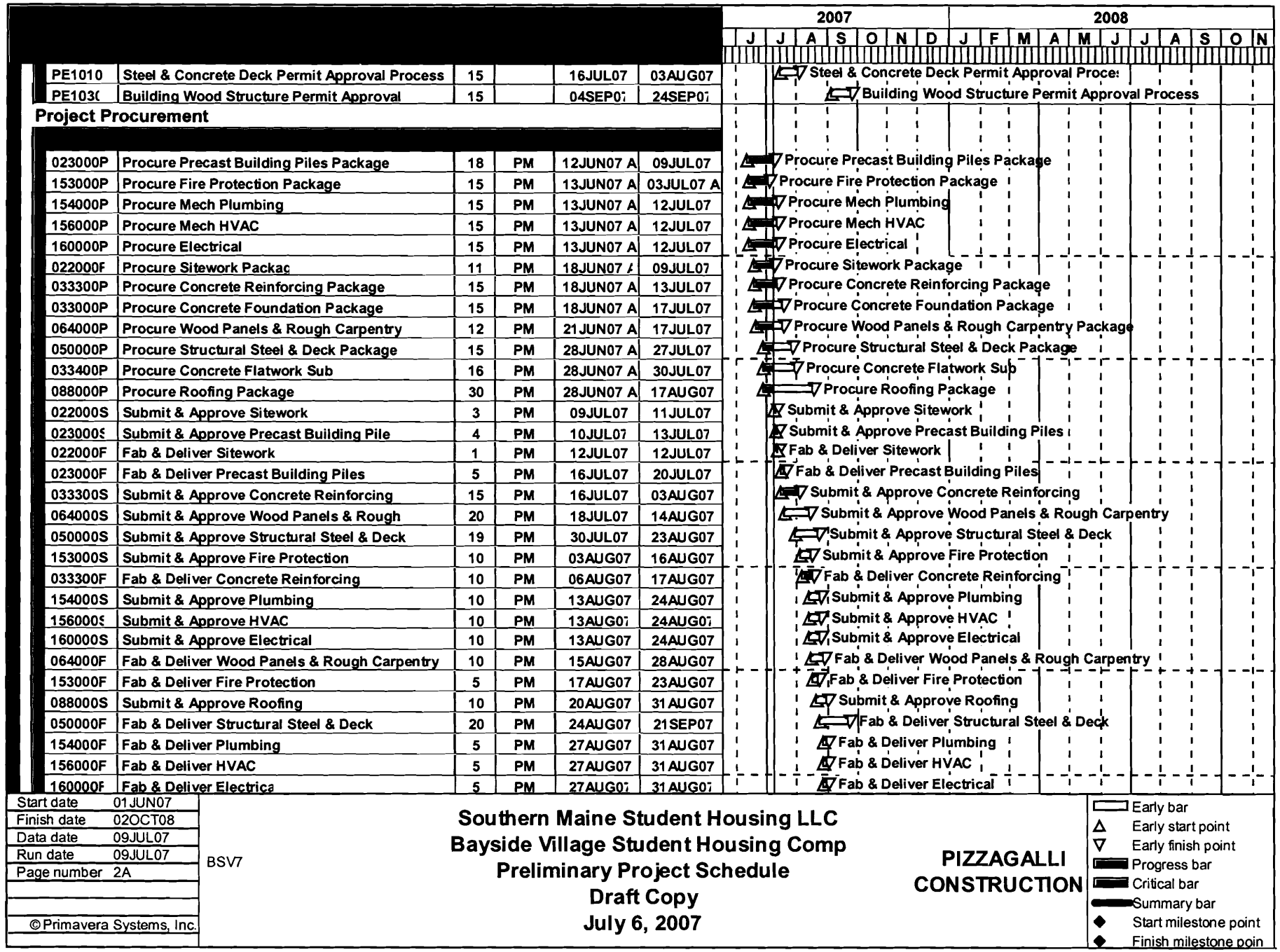
Start date	01JUN07
Finish date	02OCT08
Data date	09JUL07
Run date	09JUL07
Page number	1A

BSV7

Southern Maine Student Housing LLC
Bayside Village Student Housing Comp
Preliminary Project Schedule
Draft Copy
July 6, 2007

PIZZAGALLI CONSTRUCTION

- Early bar
- Early start point
- Early finish point
- Progress bar
- Critical bar
- Summary bar
- Start milestone point
- Finish milestone poin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2008
J J A S O N D J F M A M J J A S O N
PE1010 Steel & Concrete Deck Permit Approval Process 15 16JUL07 03AUG07
PE103(Building Wood Structure Permit Approval 15 04SEP07 24SEP07
Project Procurement
023000P Procure Precast Building Piles Package 18 PM 12JUN07 A 09JUL07
153000P Procure Fire Protection Package 15 PM 13JUN07 A 03JUL07 A
154000P Procure Mech Plumbing 15 PM 13JUN07 A 12JUL07
156000P Procure Mech HVAC 15 PM 13JUN07 A 12JUL07
160000P Procure Electrical 15 PM 13JUN07 A 12JUL07
022000F Procure Sitework Packag 11 PM 18JUN07 A 09JUL07
033300P Procure Concrete Reinforcing Package 15 PM 18JUN07 A 13JUL07
033000P Procure Concrete Foundation Package 15 PM 18JUN07 A 17JUL07
064000P Procure Wood Panels & Rough Carpentry 12 PM 21JUN07 A 17JUL07
050000P Procure Structural Steel & Deck Package 15 PM 28JUN07 A 27JUL07
033400P Procure Concrete Flatwork Sub 16 PM 28JUN07 A 30JUL07
088000P Procure Roofing Package 30 PM 28JUN07 A 17AUG07
022000S Submit & Approve Sitework 3 PM 09JUL07 11JUL07
023000S Submit & Approve Precast Building Pile 4 PM 10JUL07 13JUL07
022000F Fab & Deliver Sitework 1 PM 12JUL07 12JUL07
023000F Fab & Deliver Precast Building Piles 5 PM 16JUL07 20JUL07
033300S Submit & Approve Concrete Reinforcing 15 PM 16JUL07 03AUG07
064000S Submit & Approve Wood Panels & Rough 20 PM 18JUL07 14AUG07
050000S Submit & Approve Structural Steel & Deck 19 PM 30JUL07 23AUG07
153000S Submit & Approve Fire Protection 10 PM 03AUG07 16AUG07
033300F Fab & Deliver Concrete Reinforcing 10 PM 06AUG07 17AUG07
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156000S Submit & Approve HVAC 10 PM 13AUG07 24AUG07
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153000F Fab & Deliver Fire Protection 5 PM 17AUG07 23AUG07
088000S Submit & Approve Roofing 10 PM 20AUG07 31AUG07
050000F Fab & Deliver Structural Steel & Deck 20 PM 24AUG07 21SEP07
154000F Fab & Deliver Plumbing 5 PM 27AUG07 31AUG07
156000F Fab & Deliver HVAC 5 PM 27AUG07 31AUG07
160000F Fab & Deliver Electrica 5 PM 27AUG07 31AUG07
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Building Wood Structure Permit Approval Process
Procure Precast Building Piles Package
Procure Fire Protection Package
Procure Mech Plumbing
Procure Mech HVAC
Procure Electrical
Procure Sitework Package
Procure Concrete Reinforcing Package
Procure Concrete Foundation Package
Procure Wood Panels & Rough Carpentry Package
Procure Structural Steel & Deck Package
Procure Concrete Flatwork Sub
Procure Roofing Package
Submit & Approve Sitework
Submit & Approve Precast Building Piles
Fab & Deliver Sitework
Fab & Deliver Precast Building Piles
Submit & Approve Concrete Reinforcing
Submit & Approve Wood Panels & Rough Carpentry
Submit & Approve Structural Steel & Deck
Submit & Approve Fire Protection
Fab & Deliver Concrete Reinforcing
Submit & Approve Plumbing
Submit & Approve HVAC
Submit & Approve Electrical
Fab & Deliver Wood Panels & Rough Carpentry
Fab & Deliver Fire Protection
Submit & Approve Roofing
Fab & Deliver Structural Steel & Deck
Fab & Deliver Plumbing
Fab & Deliver HVAC
Fab & Deliver Electrical
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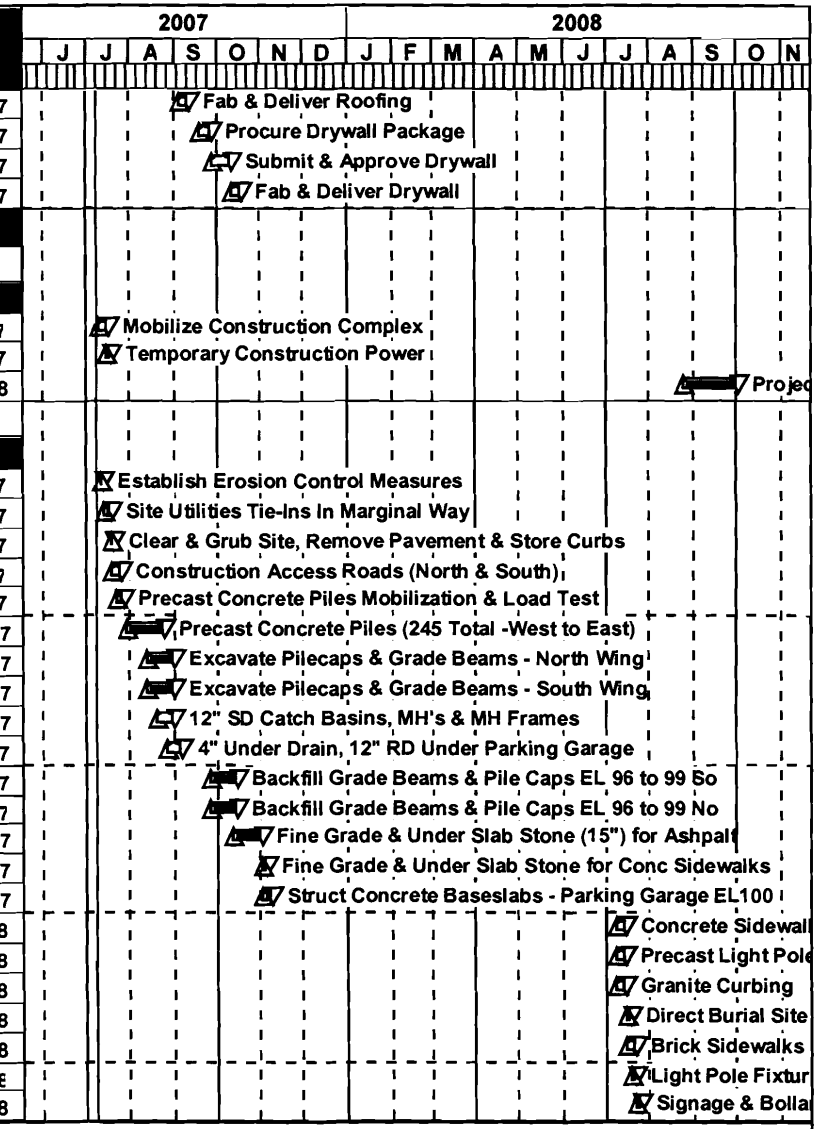
088000F	Fab & Deliver Roofing	5	PM	04SEP07	10SEP07
099000P	Procure Drywall Package	7	PM	18SEP07	26SEP07
099000S	Submit & Approve Drywall	10	PM	27SEP07	10OCT07
099000F	Fab & Deliver Drywall	5	PM	11OCT07	17OCT07
Construction					
Project General					
PG100(	Mobilize Construction Complex	5	PC	10JUL07	16JUL07
PG1020	Temporary Construction Power	3	EL	16JUL07 *	18JUL07
PG9999	Project Close-Out & Demobilization	28	PM	25AUG08	02OCT08
Site Work					
SI1000	Establish Erosion Control Measures	2	SI	12JUL07	13JUL07
SI1040	Site Utilities Tie-Ins In Marginal Way	3	YP	13JUL07	17JUL07
SI1010	Clear & Grub Site, Remove Pavement & Store	3	SI	18JUL07	20JUL07
SI113(	Construction Access Roads (North & South	5	SI	18JUL07	24JUL07
BC1000	Precast Concrete Piles Mobilization & Load Test	5	PILE	23JUL07	27JUL07
BC1010	Precast Concrete Piles (245 Total -West to East)	20	PILE	30JUL07	24AUG07
BN1000	Excavate Pilecaps & Grade Beams - North Wing	15	SI	13AUG07	31AUG07
BS1000	Excavate Pilecaps & Grade Beams - South Wing	15	SI	13AUG07	31AUG07
SI1050	12" SD Catch Basins, MH's & MH Frames	10	YP	20AUG07	31AUG07
SI1060	4" Under Drain, 12" RD Under Parking Garage	8	YP	27AUG07	06SEP07
SI1070	Backfill Grade Beams & Pile Caps EL 96 to 99 So	15	SI	25SEP07	15OCT07
SI108(	Backfill Grade Beams & Pile Caps EL 96 to 99 I	15	SI	25SEP07	15OCT07
SI1090	Fine Grade & Under Slab Stone (15") for Ashpalt	15	SI	12OCT07	01NOV07
SI1110	Fine Grade & Under Slab Stone for Conc	2	SI	02NOV07	05NOV07
SI1100	Struct Concrete Baseslabs - Parking Garage EL100	5	CO	02NOV07	08NOV07
SI1120	Concrete Sidewalks	5	SW	08JUL08	14JUL08
SI1140	Precast Light Pole Bases	5	SI	08JUL08	14JUL08
SI1200	Granite Curbing	5	SI	08JUL08	14JUL08
SI1150	Direct Burial Site Electric for Ext Lighting	3	EL	15JUL08	17JUL08
SI1230	Brick Sidewalks & Seating Walls	5	LAND	15JUL08	21JUL08
SI116(	Light Pole Fixturess & Termination	3	EL	18JUL08	22JUL08
SI1240	Signage & Bollards	4	SIGN	22JUL08	25JUL08



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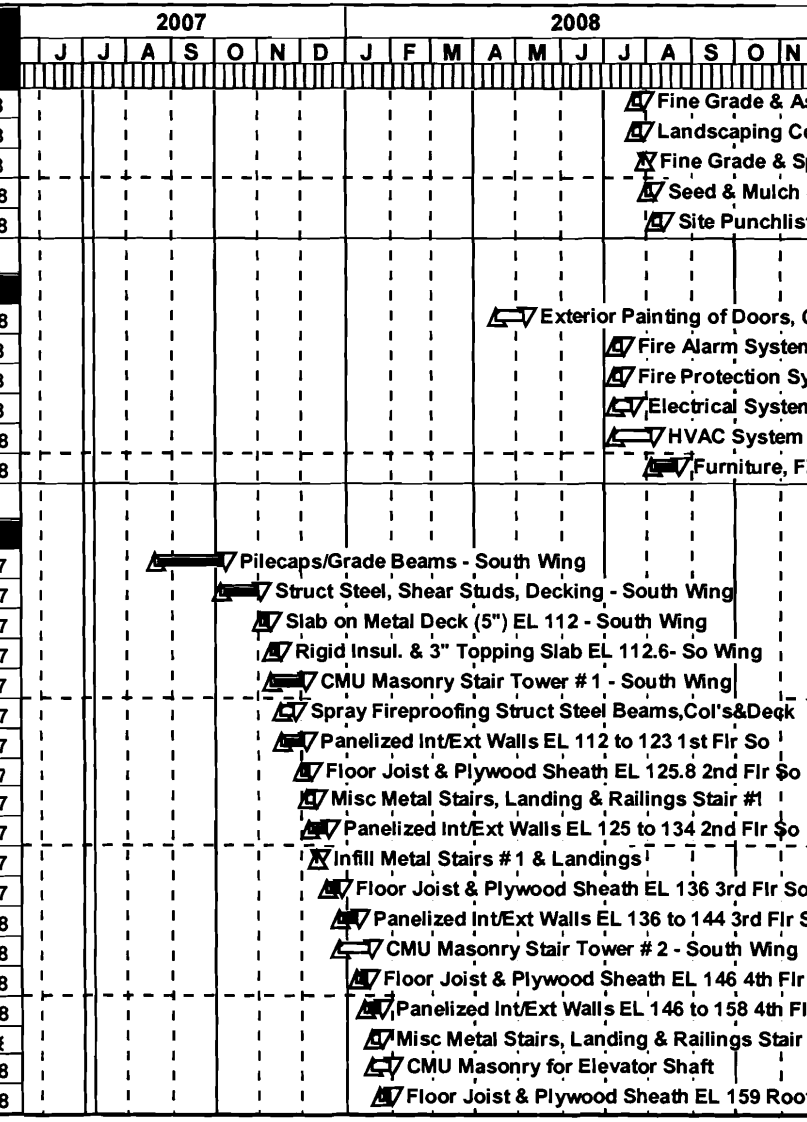
SI1210	Fine Grade & Asphalt Paving Parking Lot & Roads	5	PAVE	22JUL08	28JUL08
SI1220	Landscaping Courtyard and Site	5	LAND	23JUL08	29JUL08
SI1180	Fine Grade & Spread Topsoil	2	SI	29JUL08	30JUL08
SI1190	Seed & Mulch Site	3	LAND	31JUL08	04AUG08
SI1170	Site Punchlist	5	TEAM	05AUG08	11AUG08
Building General, Commissioning & Occupancy					
BC1040	Exterior Painting of Doors, Columns, Rails Ect.	15	PA	16APR08	06MAY08
BC1020	Fire Alarm System Check-out & Commissioning	5	SU	08JUL08	14JUL08
BC9990	Fire Protection System Check-out &	5	SU	08JUL08	14JUL08
BC9992	Electrical System Check-out & Commissioning	10	SU	08JUL08	21JUL08
BC9994	HVAC System Check-out,Test Balan &	21	SU	08JUL08	05AUG08
BC9996	Furniture, Fixtures & Equipment (By Others)	15	OTHR	04AUG08	22AUG08
Building Constr South Wing Col 1 to 7 & AA to QQ					
South Wing General					
BS1010	Pilecaps/Grade Beams - South Wing	35	CO	20AUG07	08OCT07
BS1020	Struct Steel, Shear Studs, Decking - South Wing	20	SS	05OCT07	01NOV07
BS1030	Slab on Metal Deck (5") EL 112 - South Wing	5	CO	02NOV07	08NOV07
BS1040	Rigid Insul. & 3" Topping Slab EL 112.6- So Wing	5	CO	09NOV07	15NOV07
BS1170	CMU Masonry Stair Tower # 1 - South Wing	15	MA	09NOV07	03DEC07
BS1160	Spray Fireproofing Struct Steel Beams,Col's&Deck	5	SFP	16NOV07	26NOV07
BS1050	Panelized Int/Ext Walls EL 112 to 123 1st Flr So	10	RGCA	16NOV07	03DEC07
BS1060	Floor Joist & Plywood Sheath EL 125.8 2nd Flr S	6	RGCA	30NOV07	07DEC07
BS1180	Misc Metal Stairs, Landing & Railings Stair #1	5	MM	04DEC07	10DEC07
BS1070	Panelized Int/Ext Walls EL 125 to 134 2nd Flr So	10	RGCA	06DEC07	19DEC07
BS1190	Infill Metal Stairs # 1 & Landings	2	CO	11DEC07	12DEC07
BS1080	Floor Joist & Plywood Sheath EL 136 3rd Flr So	6	RGCA	18DEC07	27DEC07
BS1090	Panelized Int/Ext Walls EL 136 to 144 3rd Flr So	10	RGCA	26DEC07	09JAN08
BS1200	CMU Masonry Stair Tower # 2 - South Wing	15	MA	27DEC07	17JAN08
BS1100	Floor Joist & Plywood Sheath EL 146 4th Flr So	6	RGCA	08JAN08	15JAN08
BS1110	Panelized Int/Ext Walls EL 146 to 158 4th Flr So	10	RGCA	14JAN08	25JAN08
BS1210	Misc Metal Stairs, Landing & Railings Stair #	5	MM	18JAN08	24JAN08
BS1230	CMU Masonry for Elevator Shaft	10	MA	18JAN08	31JAN08
BS1120	Floor Joist & Plywood Sheath EL 159 Roof So	6	RGCA	24JAN08	31JAN08



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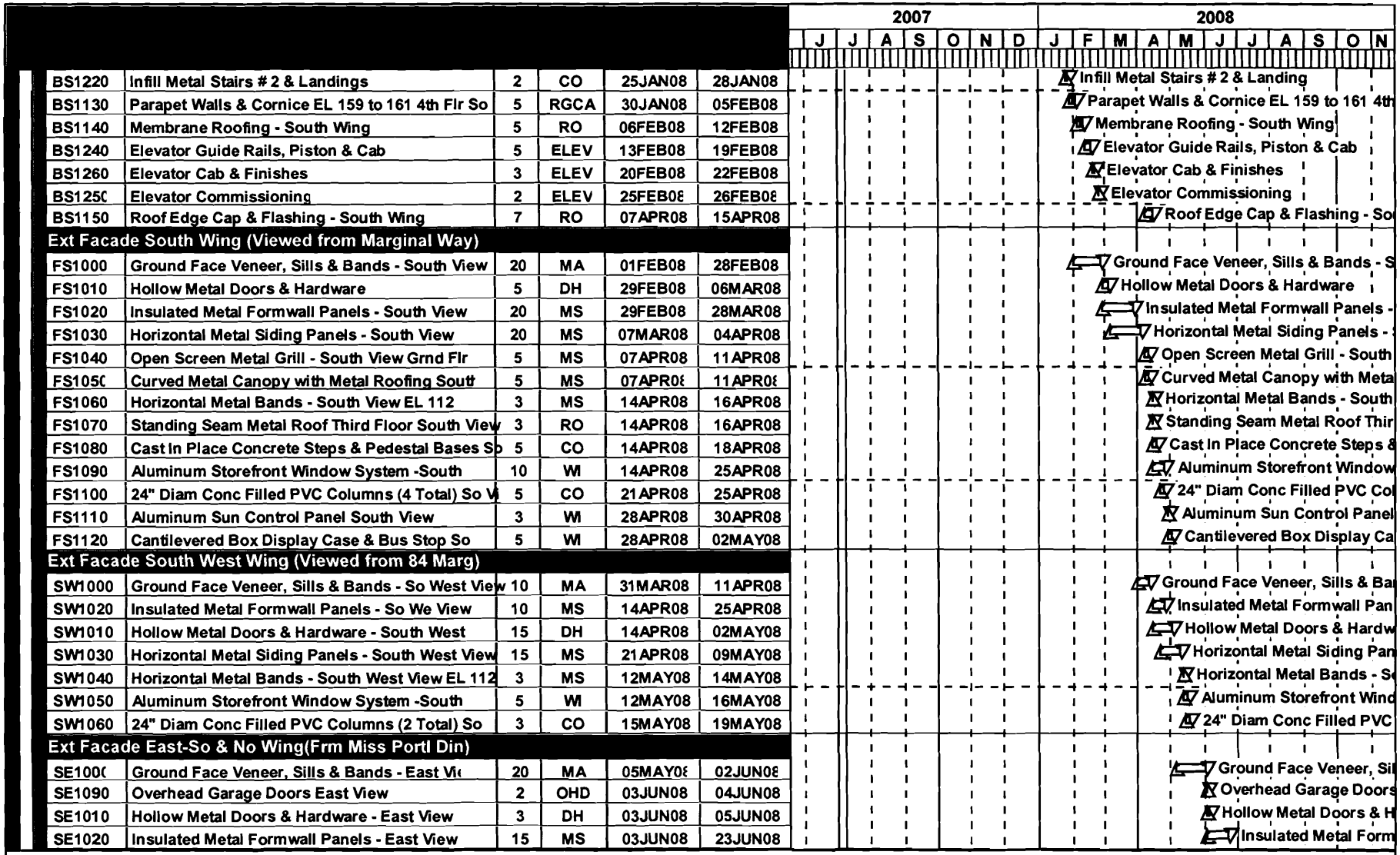

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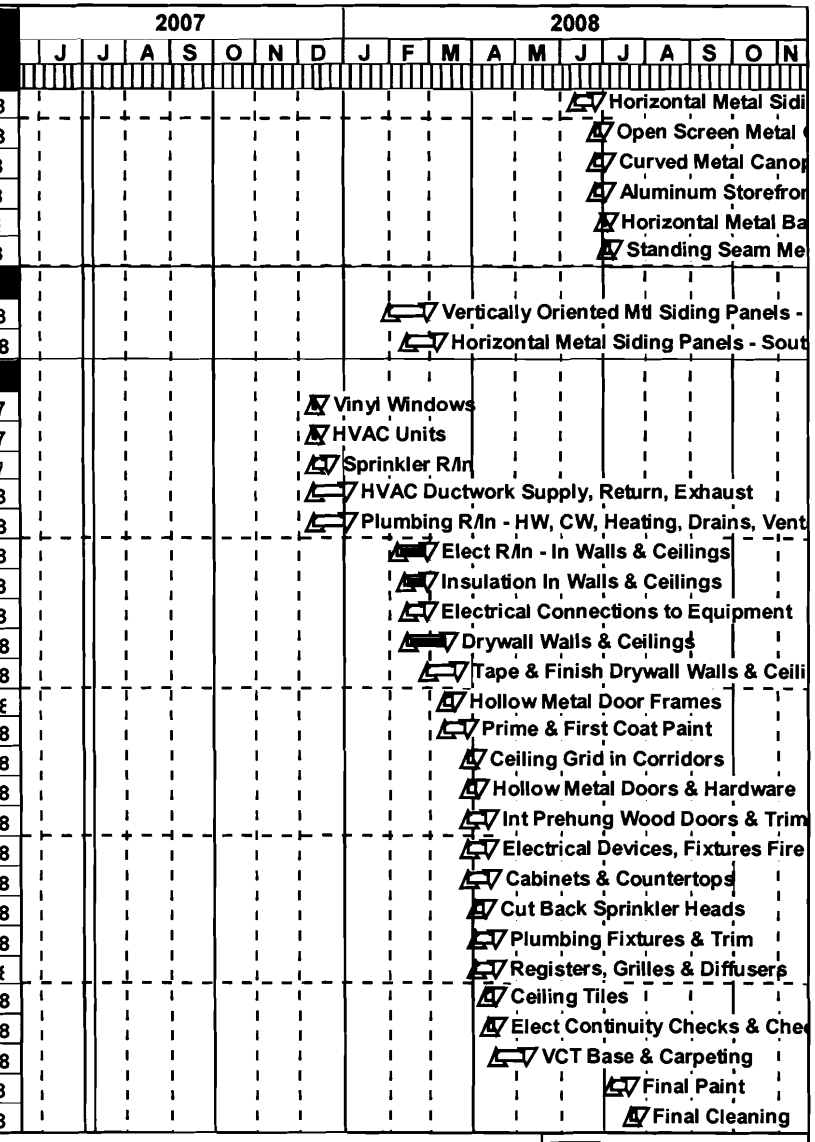
SE1030	Horizontal Metal Siding Panels - East View	10	MS	12JUN08	25JUN08
SE1040	Open Screen Metal Grill - East View	3	MS	26JUN08	30JUN08
SE1050	Curved Metal Canopy with Metal Roofing East	4	MS	26JUN08	01JUL08
SE1080	Aluminum Storefront Window System -East View	5	WI	26JUN08	02JUL08
SE106(	Horizontal Metal Bands - East Vie\	3	MS	01JUL0E	03JUL0E
SE1070	Standing Seam Metal Roof Third Floor East View	3	RO	02JUL08	07JUL08
Ext Facade South Wing (Viewed from Courtyard)					
CS1000	Vertically Oriented Mtl Siding Panels - So View	20	MS	01FEB08	28FEB08
CS1010	Horizontal Metal Siding Panels - South View	15	MS	15FEB08	06MAR08
First Floor - EL 112					
S11000	Vinyl Windows	5	WI	10DEC07	14DEC07
S11010	HVAC Units	5	HVAC	10DEC07	14DEC07
S1102(	Sprinkler R/In	10	FP	10DEC07	21DEC07
S11030	HVAC Ductwork Supply, Return, Exhaust	15	HVAC	10DEC07	02JAN08
S11050	Plumbing R/In - HW, CW, Heating, Drains, Vents	15	PLMB	10DEC07	02JAN08
S11040	Elect R/In - In Walls & Ceilings	15	EL	08FEB08	28FEB08
S11080	Insulation In Walls & Ceilings	12	INSU	13FEB08	28FEB08
S11060	Electrical Connections to Equipment	10	EL	15FEB08	28FEB08
S11070	Drywall Walls & Ceilings	20	DW	15FEB08	13MAR08
S11100	Tape & Finish Drywall Walls & Ceilings	15	DW	29FEB08	20MAR08
S1111(	Hollow Metal Door Frame:	5	DH	11MAR0E	17MAR0E
S11090	Prime & First Coat Paint	10	PA	12MAR08	26MAR08
S11120	Ceiling Grid in Corridors	4	AC	27MAR08	01APR08
S11130	Hollow Metal Doors & Hardware	5	DH	27MAR08	02APR08
S11140	Int Prehung Wood Doors & Trim	10	FNCA	27MAR08	09APR08
S11170	Electrical Devices, Fixtures Fire Alarm & Trim	10	EL	27MAR08	09APR08
S11150	Cabinets & Countertops	12	FNCA	27MAR08	11APR08
S11180	Cut Back Sprinkler Heads	5	FP	02APR08	08APR08
S11160	Plumbing Fixtures & Trim	10	PLMB	02APR08	15APR08
S1200(	Registers, Grilles & Diffuser	10	HVAC	02APR0E	15APR0E
S11190	Ceiling Tiles	5	AC	09APR08	15APR08
S11210	Elect Continuity Checks & Check-Out	5	EL	10APR08	16APR08
S11200	VCT Base & Carpeting	15	FL	16APR08	06MAY08
S19990	Final Paint	10	PA	07JUL08	18JUL08
S19995	Final Cleaning	5	FC	21JUL08	25JUL08



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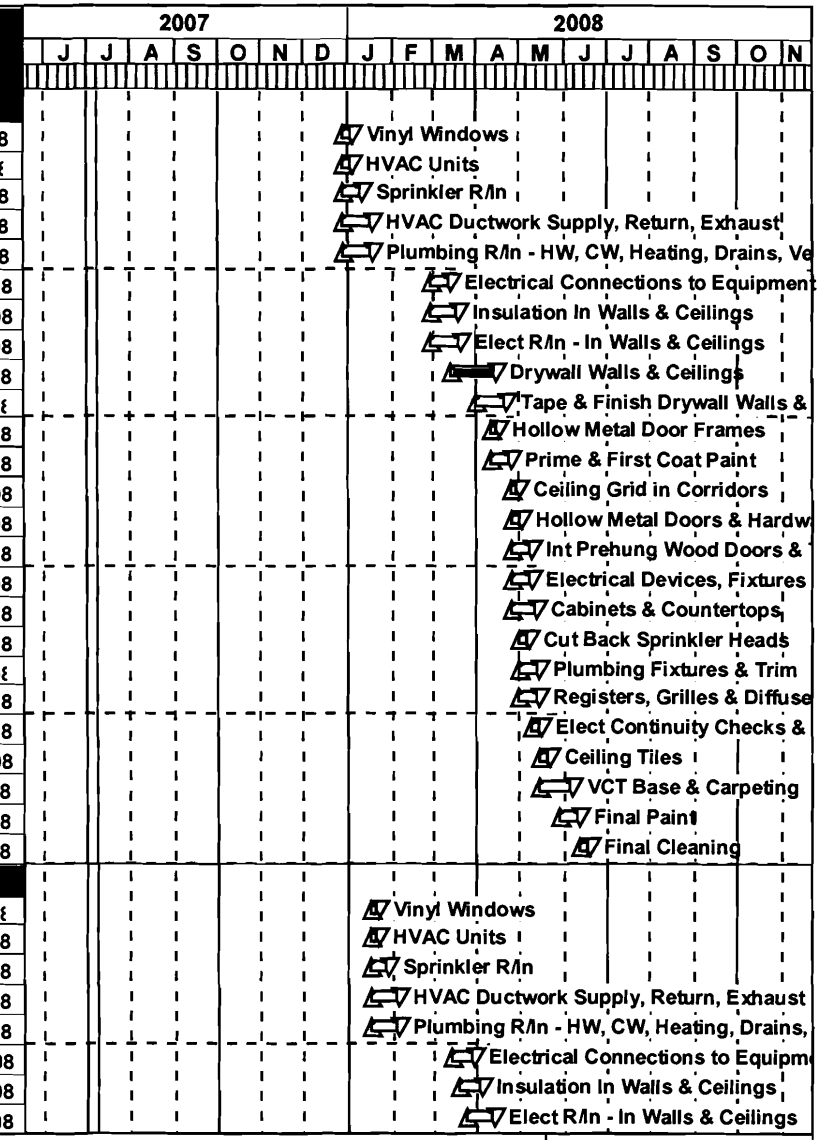
Second Floor - EL 125					
S21000	Vinyl Windows	5	WI	28DEC07	04JAN08
S2101(	HVAC Units	5	HVAC	28DEC07	04JAN0(
S21020	Sprinkler R/In	10	FP	28DEC07	11JAN08
S21030	HVAC Ductwork Supply, Return, Exhaust	15	HVAC	28DEC07	18JAN08
S21050	Plumbing R/In - HW, CW, Heating, Drains, Vents	15	PLMB	28DEC07	18JAN08
S21060	Electrical Connections to Equipment	10	EL	29FEB08	13MAR08
S21070	Insulation In Walls & Ceilings	12	INSU	29FEB08	17MAR08
S21040	Elect R/In - In Walls & Ceilings	15	EL	29FEB08	20MAR08
S21080	Drywall Walls & Ceilings	21	DW	14MAR08	14APR08
S2109(	Tape & Finish Drywall Walls & Ceiling	15	DW	01APR0(	21APR0(
S21110	Hollow Metal Door Frames	5	DH	10APR08	16APR08
S21100	Prime & First Coat Paint	10	PA	11APR08	24APR08
S21120	Ceiling Grid in Corridors	4	AC	25APR08	30APR08
S21130	Hollow Metal Doors & Hardware	5	DH	25APR08	01MAY08
S21140	Int Prehung Wood Doors & Trim	10	FNCA	25APR08	08MAY08
S21170	Electrical Devices, Fixtures Fire Alarm & Trim	10	EL	25APR08	08MAY08
S21150	Cabinets & Countertops	12	FNCA	25APR08	12MAY08
S21180	Cut Back Sprinkler Heads	5	FP	01MAY08	07MAY08
S2116(	Plumbing Fixtures & Trim	10	PLMB	01MAY0(	14MAY0(
S22000	Registers, Grilles & Diffusers	10	HVAC	01MAY08	14MAY08
S21200	Elect Continuity Checks & Check-Out	5	EL	09MAY08	15MAY08
S21190	Ceiling Tiles	5	AC	15MAY08	21MAY08
S21210	VCT Base & Carpeting	15	FL	15MAY08	05JUN08
S29990	Final Paint	10	PA	28MAY08	10JUN08
S29995	Final Cleaning	5	FC	11JUN08	17JUN08
Third Floor - EL 136					
S3100(	Vinyl Windows	5	WI	16JAN0(	22JAN0(
S31010	HVAC Units	5	HVAC	16JAN08	22JAN08
S31020	Sprinkler R/In	10	FP	16JAN08	29JAN08
S31030	HVAC Ductwork Supply, Return, Exhaust	15	HVAC	16JAN08	05FEB08
S31050	Plumbing R/In - HW, CW, Heating, Drains, Vents	15	PLMB	16JAN08	05FEB08
S31060	Electrical Connections to Equipment	10	EL	14MAR08	28MAR08
S31070	Insulation In Walls & Ceilings	12	INSU	18MAR08	03APR08
S31040	Elect R/In - In Walls & Ceilings	15	EL	24MAR08	11APR08



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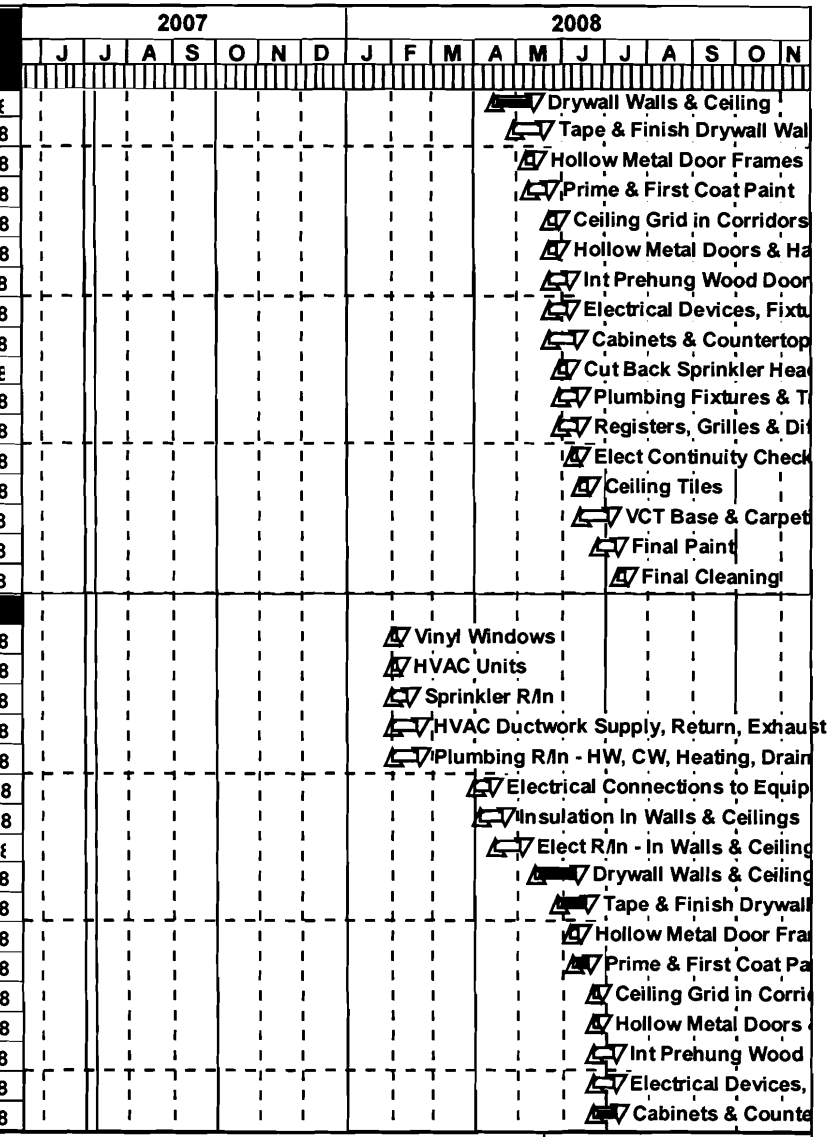
S3108(	Drywall Walls & Ceiling	20	DW	15APR0(	12MAY0(
S31090	Tape & Finish Drywall Walls & Ceilings	15	DW	29APR08	19MAY08
S31110	Hollow Metal Door Frames	5	DH	08MAY08	14MAY08
S31100	Prime & First Coat Paint	10	PA	09MAY08	22MAY08
S31120	Ceiling Grid in Corridors	4	AC	23MAY08	29MAY08
S31130	Hollow Metal Doors & Hardware	5	DH	23MAY08	30MAY08
S31140	Int Prehung Wood Doors & Trim	10	FNCA	23MAY08	06JUN08
S31170	Electrical Devices, Fixtures Fire Alarm & Trim	10	EL	23MAY08	06JUN08
S31150	Cabinets & Countertops	12	FNCA	23MAY08	10JUN08
S3118(	Cut Back Sprinkler Head:	5	FP	30MAY0(	05JUN0(
S31160	Plumbing Fixtures & Trim	10	PLMB	30MAY08	12JUN08
S32000	Registers, Grilles & Diffusers	10	HVAC	30MAY08	12JUN08
S31200	Elect Continuity Checks & Check-Out	5	EL	09JUN08	13JUN08
S31190	Ceiling Tiles	5	AC	13JUN08	19JUN08
S31210	VCT Base & Carpeting	15	FL	13JUN08	03JUL08
S39990	Final Paint	10	PA	25JUN08	09JUL08
S39995	Final Cleaning	5	FC	10JUL08	16JUL08
Fourth Floor - EL 146					
S41000	Vinyl Windows	5	WI	01FEB08	07FEB08
S41010	HVAC Units	5	HVAC	01FEB08	07FEB08
S41020	Sprinkler R/In	10	FP	01FEB08	14FEB08
S41030	HVAC Ductwork Supply, Return, Exhaust	15	HVAC	01FEB08	21FEB08
S41050	Plumbing R/In - HW, CW, Heating, Drains, Vents	15	PLMB	01FEB08	21FEB08
S41060	Electrical Connections to Equipment	10	EL	31MAR08	11APR08
S41070	Insulation In Walls & Ceilings	12	INSU	04APR08	21APR08
S4104(	Elect R/In - In Walls & Ceiling:	15	EL	14APR0(	02MAY0(
S41080	Drywall Walls & Ceilings	20	DW	13MAY08	10JUN08
S41090	Tape & Finish Drywall Walls & Ceilings	15	DW	28MAY08	17JUN08
S41110	Hollow Metal Door Frames	5	DH	06JUN08	12JUN08
S41100	Prime & First Coat Paint	10	PA	09JUN08	20JUN08
S41120	Ceiling Grid in Corridors	4	AC	23JUN08	26JUN08
S41130	Hollow Metal Doors & Hardware	5	DH	23JUN08	27JUN08
S41140	Int Prehung Wood Doors & Trim	10	FNCA	23JUN08	07JUL08
S41170	Electrical Devices, Fixtures Fire Alarm & Trim	10	EL	23JUN08	07JUL08
S41150	Cabinets & Countertops	12	FNCA	23JUN08	09JUL08



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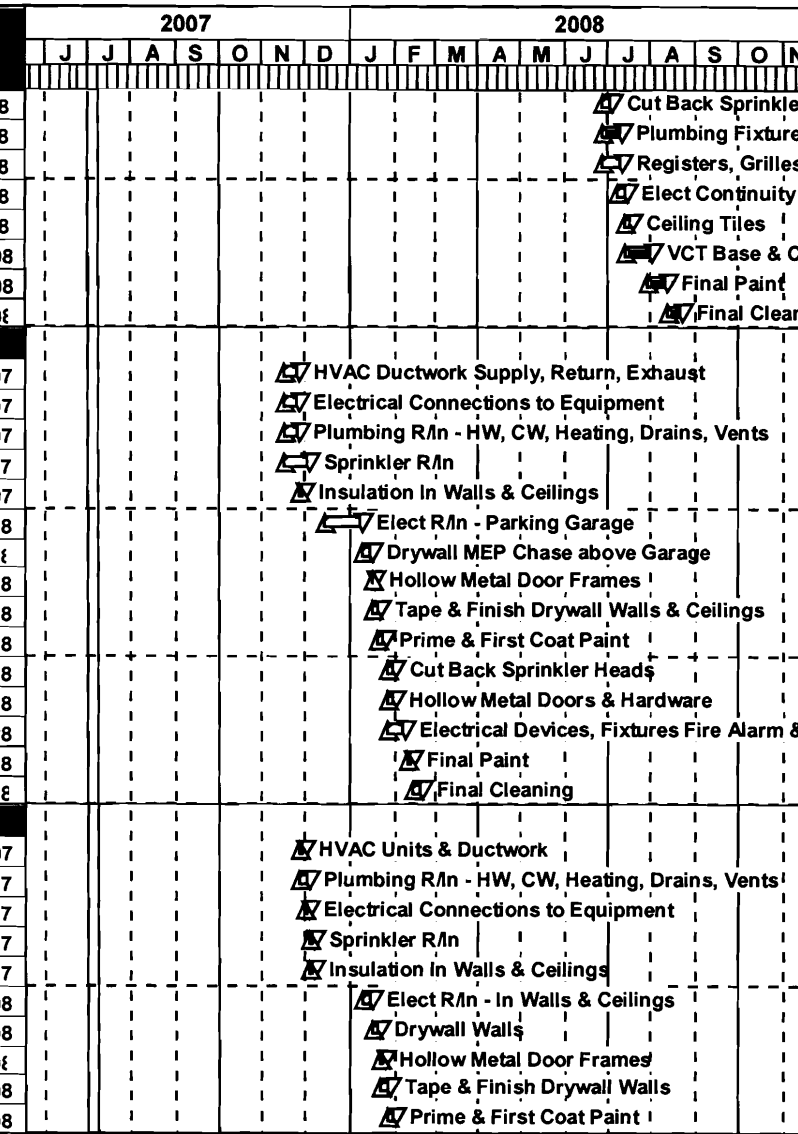
S41180	Cut Back Sprinkler Heads	5	FP	27JUN08	03JUL08
S41160	Plumbing Fixtures & Trim	10	PLMB	27JUN08	11JUL08
S42000	Registers, Grilles & Diffusers	10	HVAC	27JUN08	11JUL08
S41200	Elect Continuity Checks & Check-Out	5	EL	08JUL08	14JUL08
S41190	Ceiling Tiles	5	AC	14JUL08	18JUL08
S41210	VCT Base & Carpeting	15	FL	14JUL08	01AUG08
S49990	Final Paint	10	PA	30JUL08	12AUG08
S4999[illegible]	Final Cleaning	8	FC	13AUG0[illegible]	22AUG0[illegible]
Parking Garage (102 Spaces) Lower Level EL 100					
GA1010	HVAC Ductwork Supply, Return, Exhaust	5	HVAC	16NOV07	26NOV07
GA1020	Electrical Connections to Equipment	5	EL	16NOV07	26NOV07
GA1040	Plumbing R/In - HW, CW, Heating, Drains, Vents	5	PLMB	16NOV07	26NOV07
GA1000	Sprinkler R/In	10	FP	16NOV07	03DEC07
GA1050	Insulation In Walls & Ceilings	3	INSU	27NOV07	29NOV07
GA1030	Elect R/In - Parking Garage	15	EL	14DEC07	08JAN08
GA106[illegible]	Drywall MEP Chase above Garag	5	DW	09JAN0[illegible]	15JAN0[illegible]
GA1070	Hollow Metal Door Frames	2	DH	16JAN08	17JAN08
GA1080	Tape & Finish Drywall Walls & Ceilings	5	DW	16JAN08	22JAN08
GA1090	Prime & First Coat Paint	5	PA	21JAN08	25JAN08
GA1100	Cut Back Sprinkler Heads	5	FP	28JAN08	01FEB08
GA1110	Hollow Metal Doors & Hardware	5	DH	28JAN08	01FEB08
GA1120	Electrical Devices, Fixtures Fire Alarm & Trim	10	EL	28JAN08	08FEB08
GA1130	Final Paint	4	PA	11FEB08	14FEB08
GA114[illegible]	Final Cleaning	5	FC	15FEB0[illegible]	21FEB0[illegible]
Entry Lobby, Dumpster Rm EL 100					
EL1010	HVAC Units & Ductwork	3	HVAC	27NOV07	29NOV07
EL1040	Plumbing R/In - HW, CW, Heating, Drains, Vents	5	PLMB	27NOV07	03DEC07
EL1020	Electrical Connections to Equipment	2	EL	30NOV07	03DEC07
EL1000	Sprinkler R/In	3	FP	04DEC07	06DEC07
EL1050	Insulation In Walls & Ceilings	3	INSU	04DEC07	06DEC07
EL1030	Elect R/In - In Walls & Ceilings	5	EL	09JAN08	15JAN08
EL1060	Drywall Walls	5	DW	16JAN08	22JAN08
EL107[illegible]	Hollow Metal Door Frames	2	DH	23JAN0[illegible]	24JAN0[illegible]
EL1080	Tape & Finish Drywall Walls	5	DW	23JAN08	29JAN08
EL1090	Prime & First Coat Paint	5	PA	28JAN08	01FEB08



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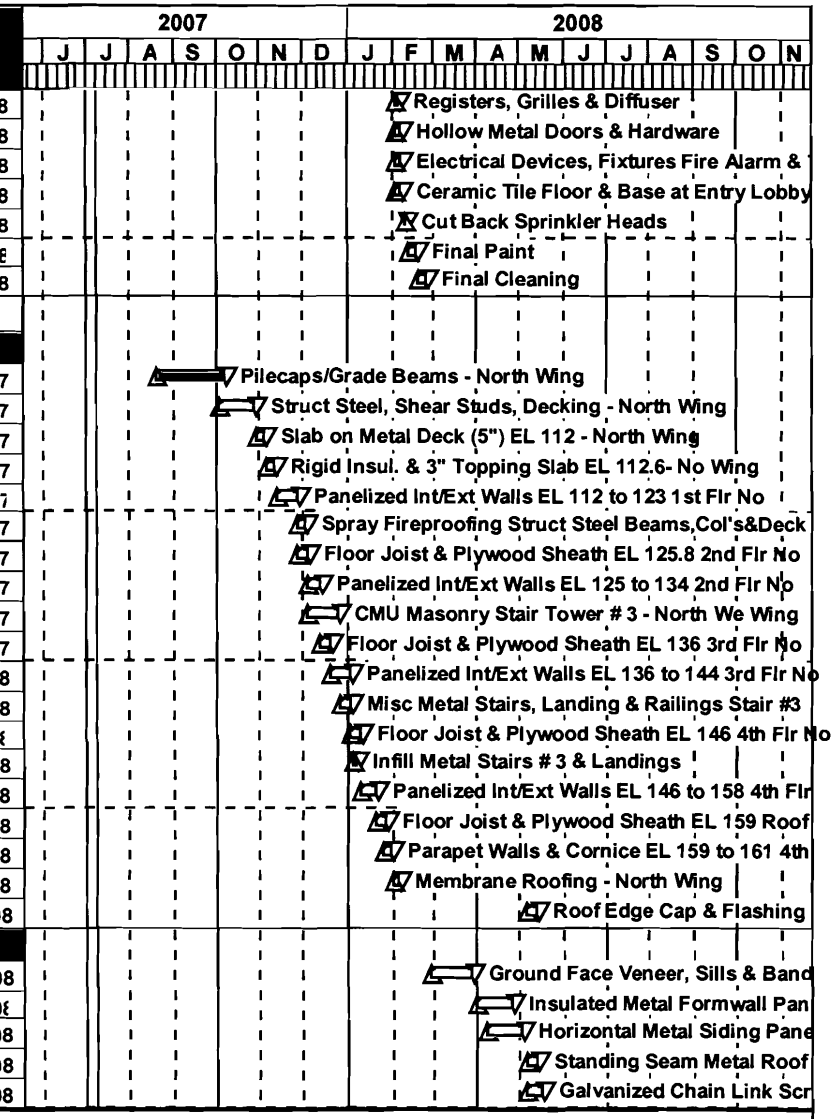
EL1200	Registers, Grilles & Diffusers	3	HVAC	04FEB08	06FEB08
EL1100	Hollow Metal Doors & Hardware	5	DH	04FEB08	08FEB08
EL1110	Electrical Devices, Fixtures Fire Alarm & Trim	5	EL	04FEB08	08FEB08
EL1120	Ceramic Tile Floor & Base at Entry Lobby	5	CT	04FEB08	08FEB08
EL1130	Cut Back Sprinkler Heads	2	FP	11FEB08	12FEB08
EL1140	Final Paint	4	PA	13FEB08	18FEB08
EL1150	Final Cleaning	5	FC	19FEB08	25FEB08
Building Constr. North Wing Col 7 to 10 & A to R					
North Wing General					
BN1010	Pilecaps/Grade Beams - North Wing	35	CO	20AUG07	08OCT07
BN1020	Struct Steel, Shear Studs, Decking - North Wing	20	SS	02OCT07	29OCT07
BN1030	Slab on Metal Deck (5") EL 112 - North Wing	5	CO	30OCT07	05NOV07
BN1040	Rigid Insul. & 3" Topping Slab EL 112.6- No Wing	5	CO	06NOV07	12NOV07
BN1050	Panelized Int/Ext Walls EL 112 to 123 1st Flr N	10	RGCA	13NOV07	28NOV07
BN1160	Spray Fireproofing Struct Steel Beams,Col's&Deck	5	SFP	27NOV07	03DEC07
BN1060	Floor Joist & Plywood Sheath EL 125.8 2nd Flr No	6	RGCA	27NOV07	04DEC07
BN1070	Panelized Int/Ext Walls EL 125 to 134 2nd Flr No	10	RGCA	03DEC07	14DEC07
BN1170	CMU Masonry Stair Tower # 3 - North We Wing	15	MA	04DEC07	26DEC07
BN1080	Floor Joist & Plywood Sheath EL 136 3rd Flr No	6	RGCA	13DEC07	20DEC07
BN1090	Panelized Int/Ext Walls EL 136 to 144 3rd Flr No	10	RGCA	19DEC07	04JAN08
BN1180	Misc Metal Stairs, Landing & Railings Stair #3	5	MM	27DEC07	03JAN08
BN1100	Floor Joist & Plywood Sheath EL 146 4th Flr N	6	RGCA	03JAN08	10JAN08
BN1190	Infill Metal Stairs # 3 & Landings	2	CO	04JAN08	07JAN08
BN1110	Panelized Int/Ext Walls EL 146 to 158 4th Flr No	10	RGCA	09JAN08	22JAN08
BN1120	Floor Joist & Plywood Sheath EL 159 Roof No	6	RGCA	21JAN08	28JAN08
BN1130	Parapet Walls & Cornice EL 159 to 161 4th Flr No	5	RGCA	25JAN08	31JAN08
BN1140	Membrane Roofing - North Wing	5	RO	01FEB08	07FEB08
BN1150	Roof Edge Cap & Flashing - North Wing	7	RO	05MAY08	13MAY08
Ext Facade North Wing (Viewed from Rd 295)					
FN1000	Ground Face Veneer, Sills & Bands - North View	20	MA	29FEB08	28MAR08
FN1010	Insulated Metal Formwall Panels - North Vie	20	MS	31MAR08	25APR08
FN1020	Horizontal Metal Siding Panels - North View	20	MS	07APR08	02MAY08
FN1040	Standing Seam Metal Roof Third Floor North View	7	RO	05MAY08	13MAY08
FN1030	Galvanized Chain Link Scrn - North View Grnd Flr	10	MS	05MAY08	16MAY08



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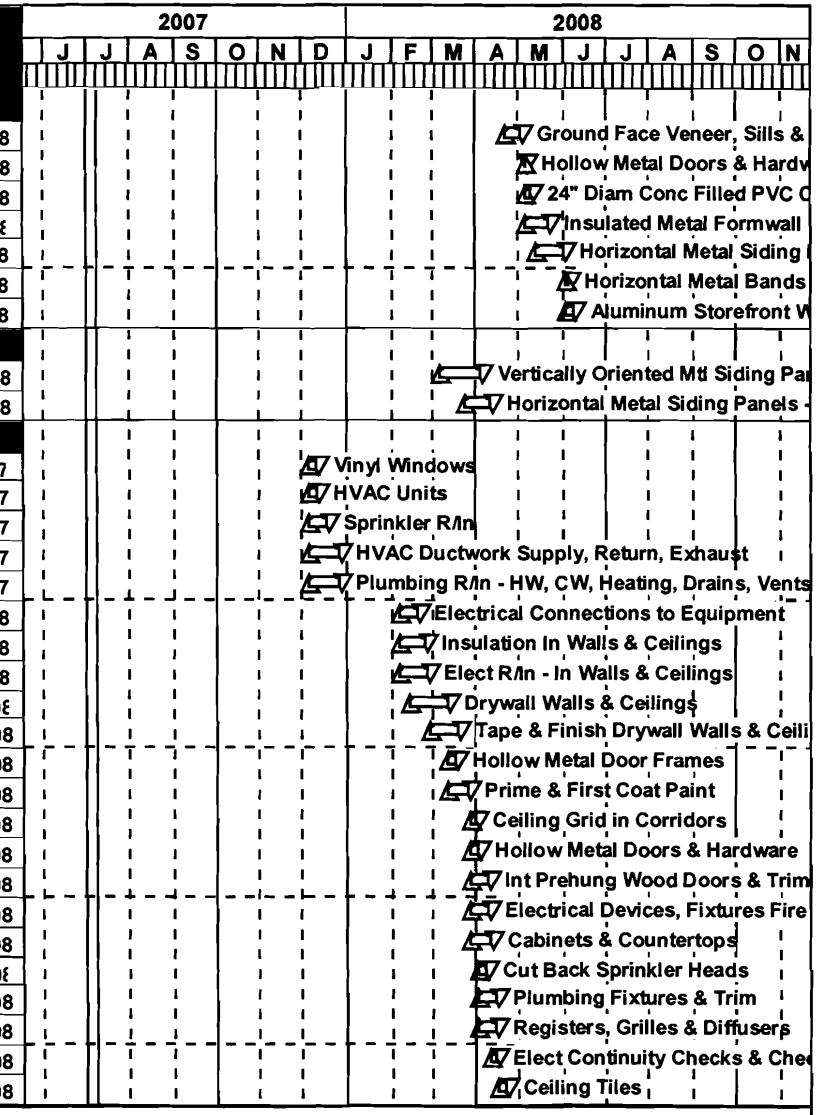
Ext Facade North West Wing (Viewed from 84 Marg)					
NW1000	Ground Face Veneer, Sills & Bands - No West View	10	MA	21APR08	02MAY08
NW1010	Hollow Metal Doors & Hardware - North West	3	DH	05MAY08	07MAY08
NW1060	24" Diam Conc Filled PVC Columns (2 Total) No	5	CO	05MAY08	09MAY08
NW1020	Insulated Metal Formwall Panels - NSo We Vie	15	MS	05MAY0[illegible]	23MAY0[illegible]
NW1030	Horizontal Metal Siding Panels - Nouth West View	15	MS	12MAY08	02JUN08
NW1040	Horizontal Metal Bands - North West View EL 112	3	MS	03JUN08	05JUN08
NW1050	Aluminum Storefront Window System -North	5	WI	03JUN08	09JUN08
Ext Facade North Wing (Viewed from Courtyard)					
CN1000	Vertically Oriented Mtl Siding Panels - No View	20	MS	07MAR08	04APR08
CN1010	Horizontal Metal Siding Panels - North View	15	MS	24MAR08	11APR08
First Floor - EL 112					
N11000	Vinyl Windows	5	WI	05DEC07	11DEC07
N11010	HVAC Units	5	HVAC	05DEC07	11DEC07
N11020	Sprinkler R/In	10	FP	05DEC07	18DEC07
N11030	HVAC Ductwork Supply, Return, Exhaust	15	HVAC	05DEC07	27DEC07
N11050	Plumbing R/In - HW, CW, Heating, Drains, Vents	15	PLMB	05DEC07	27DEC07
N11060	Electrical Connections to Equipment	10	EL	08FEB08	21FEB08
N11070	Insulation In Walls & Ceilings	12	INSU	08FEB08	25FEB08
N11040	Elect R/In - In Walls & Ceilings	15	EL	08FEB08	28FEB08
N11080	Drywall Walls & Ceiling	20	DW	15FEB0[illegible]	13MAR0[illegible]
N11090	Tape & Finish Drywall Walls & Ceilings	15	DW	29FEB08	20MAR08
N11110	Hollow Metal Door Frames	5	DH	11MAR08	17MAR08
N11100	Prime & First Coat Paint	10	PA	12MAR08	26MAR08
N11120	Ceiling Grid in Corridors	4	AC	27MAR08	01APR08
N11130	Hollow Metal Doors & Hardware	5	DH	27MAR08	02APR08
N11140	Int Prehung Wood Doors & Trim	10	FNCA	27MAR08	09APR08
N11170	Electrical Devices, Fixtures Fire Alarm & Trim	10	EL	27MAR08	09APR08
N11150	Cabinets & Countertops	12	FNCA	27MAR08	11APR08
N11180	Cut Back Sprinkler Heads	5	FP	02APR0[illegible]	08APR0[illegible]
N11160	Plumbing Fixtures & Trim	10	PLMB	02APR08	15APR08
N12000	Registers, Grilles & Diffusers	10	HVAC	02APR08	15APR08
N11200	Elect Continuity Checks & Check-Out	5	EL	10APR08	16APR08
N11190	Ceiling Tiles	5	AC	16APR08	22APR08



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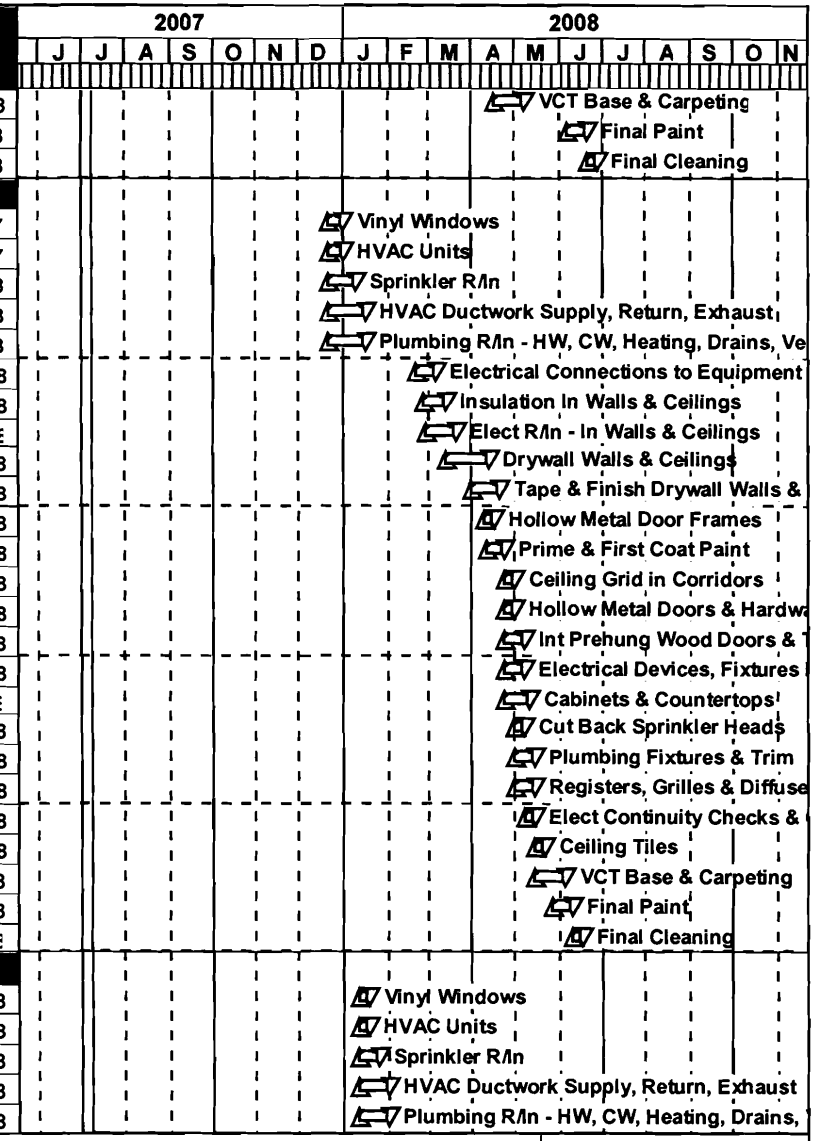
N11210	VCT Base & Carpeting	15	FL	16APR08	06MAY08
N19990	Final Paint	10	PA	06JUN08	19JUN08
N19995	Final Cleaning	5	FC	20JUN08	26JUN08
Second Floor - EL 125					
N21000	Vinyl Windows	5	WI	21DEC07	31DEC07
N21010	HVAC Units	5	HVAC	21DEC07	31DEC07
N21020	Sprinkler R/In	10	FP	21DEC07	08JAN08
N21030	HVAC Ductwork Supply, Return, Exhaust	15	HVAC	21DEC07	15JAN08
N21050	Plumbing R/In - HW, CW, Heating, Drains, Vents	15	PLMB	21DEC07	15JAN08
N21060	Electrical Connections to Equipment	10	EL	22FEB08	06MAR08
N21070	Insulation In Walls & Ceilings	12	INSU	26FEB08	12MAR08
N2104C	Elect R/In - In Walls & Ceilings	15	EL	29FEB08	20MAR08
N21080	Drywall Walls & Ceilings	20	DW	14MAR08	11APR08
N21090	Tape & Finish Drywall Walls & Ceilings	15	DW	31MAR08	18APR08
N21110	Hollow Metal Door Frames	5	DH	09APR08	15APR08
N21100	Prime & First Coat Paint	10	PA	10APR08	23APR08
N21120	Ceiling Grid in Corridors	4	AC	24APR08	29APR08
N21130	Hollow Metal Doors & Hardware	5	DH	24APR08	30APR08
N21140	Int Prehung Wood Doors & Trim	10	FNCA	24APR08	07MAY08
N21170	Electrical Devices, Fixtures Fire Alarm & Trim	10	EL	24APR08	07MAY08
N2115C	Cabinets & Countertops	12	FNCA	24APR08	09MAY08
N21180	Cut Back Sprinkler Heads	5	FP	30APR08	06MAY08
N21160	Plumbing Fixtures & Trim	10	PLMB	30APR08	13MAY08
N22000	Registers, Grilles & Diffusers	10	HVAC	30APR08	13MAY08
N21200	Elect Continuity Checks & Check-Out	5	EL	08MAY08	14MAY08
N21190	Ceiling Tiles	5	AC	14MAY08	20MAY08
N21210	VCT Base & Carpeting	15	FL	14MAY08	04JUN08
N29990	Final Paint	10	PA	27MAY08	09JUN08
N29995	Final Cleaning	5	FC	10JUN08	16JUN08
Third Floor - EL 136					
N31000	Vinyl Windows	5	WI	11JAN08	17JAN08
N31010	HVAC Units	5	HVAC	11JAN08	17JAN08
N31020	Sprinkler R/In	10	FP	11JAN08	24JAN08
N31030	HVAC Ductwork Supply, Return, Exhaust	15	HVAC	11JAN08	31JAN08
N31050	Plumbing R/In - HW, CW, Heating, Drains, Vents	15	PLMB	11JAN08	31JAN08



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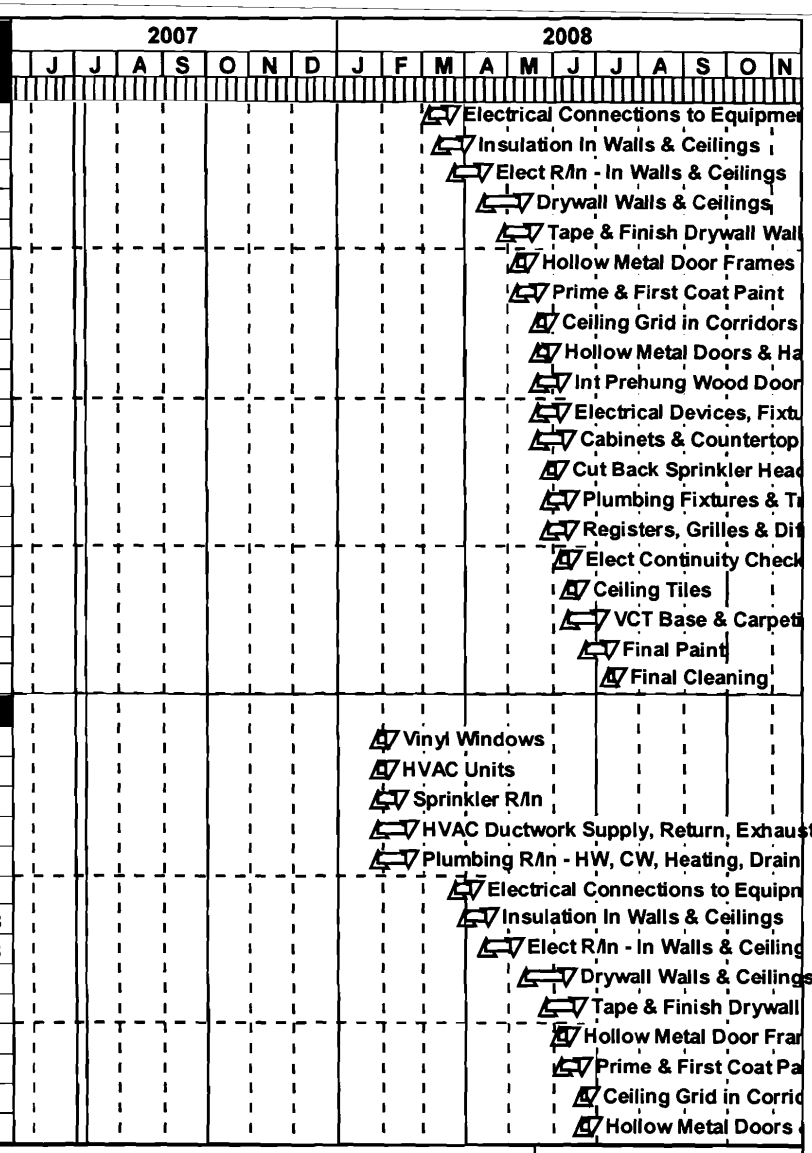
N31060	Electrical Connections to Equipment	10	EL	07MAR08	20MAR08
N3107C	Insulation In Walls & Ceilings	12	INSU	13MAR0E	31MAR0E
N31040	Elect R/In - In Walls & Ceilings	15	EL	24MAR08	11APR08
N31080	Drywall Walls & Ceilings	20	DW	14APR08	09MAY08
N31090	Tape & Finish Drywall Walls & Ceilings	15	DW	28APR08	16MAY08
N31110	Hollow Metal Door Frames	5	DH	07MAY08	13MAY08
N31100	Prime & First Coat Paint	10	PA	08MAY08	21MAY08
N31120	Ceiling Grid in Corridors	4	AC	22MAY08	28MAY08
N31130	Hollow Metal Doors & Hardware	5	DH	22MAY08	29MAY08
N31140	Int Prehung Wood Doors & Trim	10	FNCA	22MAY08	05JUN08
N3117C	Electrical Devices, Fixtures Fire Alarm & Tr	10	EL	22MAY0E	05JUN0E
N31150	Cabinets & Countertops	12	FNCA	22MAY08	09JUN08
N31180	Cut Back Sprinkler Heads	5	FP	29MAY08	04JUN08
N31160	Plumbing Fixtures & Trim	10	PLMB	29MAY08	11JUN08
S32005	Registers, Grilles & Diffusers	10	HVAC	29MAY08	11JUN08
N31200	Elect Continuity Checks & Check-Out	5	EL	06JUN08	12JUN08
N31190	Ceiling Tiles	5	AC	12JUN08	18JUN08
N31210	VCT Base & Carpeting	15	FL	12JUN08	02JUL08
N3999C	Final Paint	10	PA	24JUN0E	08JUL0E
N39995	Final Cleaning	5	FC	09JUL08	15JUL08
Fourth Floor - EL 146					
N41000	Vinyl Windows	5	WI	29JAN08	04FEB08
N41010	HVAC Units	5	HVAC	29JAN08	04FEB08
N41020	Sprinkler R/In	10	FP	29JAN08	11FEB08
N41030	HVAC Ductwork Supply, Return, Exhaust	15	HVAC	29JAN08	18FEB08
N41050	Plumbing R/In - HW, CW, Heating, Drains, Vents	15	PLMB	29JAN08	18FEB08
N4106C	Electrical Connections to Equipmen	10	EL	24MAR0E	04APR0E
N41070	Insulation In Walls & Ceilings	12	INSU	01APR08	16APR08
N41040	Elect R/In - In Walls & Ceilings	15	EL	14APR08	02MAY08
N41080	Drywall Walls & Ceilings	20	DW	12MAY08	09JUN08
N41090	Tape & Finish Drywall Walls & Ceilings	15	DW	27MAY08	16JUN08
N41110	Hollow Metal Door Frames	5	DH	05JUN08	11JUN08
N41100	Prime & First Coat Paint	10	PA	06JUN08	19JUN08
N41120	Ceiling Grid in Corridors	4	AC	20JUN08	25JUN08
N41130	Hollow Metal Doors & Hardware	5	DH	20JUN08	26JUN08



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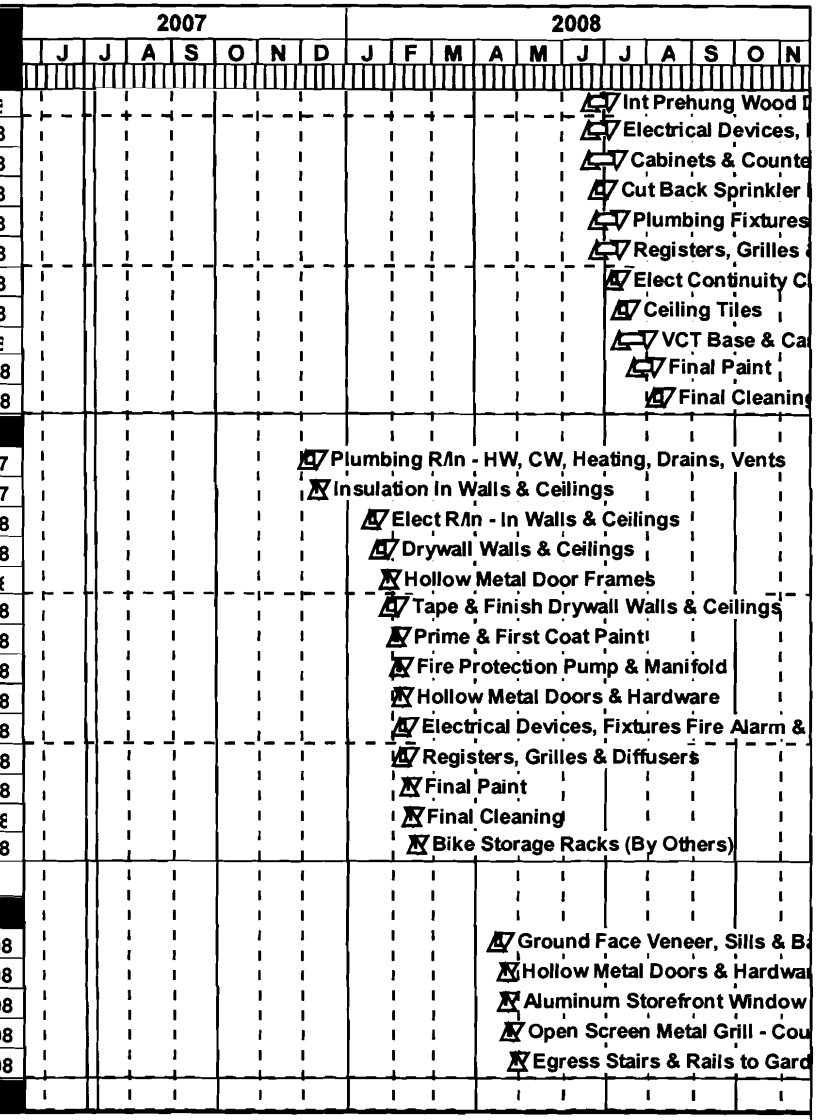
N41140	Int Prehung Wood Doors & Trim	10	FNCA	20JUN08	03JUL08
N41170	Electrical Devices, Fixtures Fire Alarm & Trim	10	EL	20JUN08	03JUL08
N41150	Cabinets & Countertops	12	FNCA	20JUN08	08JUL08
N41180	Cut Back Sprinkler Heads	5	FP	26JUN08	02JUL08
N41160	Plumbing Fixtures & Trim	10	PLMB	26JUN08	10JUL08
N42000	Registers, Grilles & Diffusers	10	HVAC	26JUN08	10JUL08
N41200	Elect Continuity Checks & Check-Out	5	EL	07JUL08	11JUL08
N41190	Ceiling Tiles	5	AC	11JUL08	17JUL08
N41210	VCT Base & Carpeting	15	FL	11JUL08	31JUL08
N49990	Final Paint	10	PA	23JUL08	05AUG08
N49995	Final Cleaning	5	FC	06AUG08	12AUG08
Bike Storage, Elect Rm, Mech Space EL 100					
NL1010	Plumbing Rfin - HW, CW, Heating, Drains, Vents	5	PLMB	04DEC07	10DEC07
NL1020	Insulation In Walls & Ceilings	2	INSU	11DEC07	12DEC07
NL1000	Elect Rfin - In Walls & Ceilings	5	EL	16JAN08	22JAN08
NL1030	Drywall Walls & Ceilings	5	DW	23JAN08	29JAN08
NL1060	Hollow Metal Door Frames	1	DH	30JAN08	30JAN08
NL1040	Tape & Finish Drywall Walls & Ceilings	4	DW	30JAN08	04FEB08
NL1050	Prime & First Coat Paint	4	PA	04FEB08	07FEB08
NL1120	Fire Protection Pump & Manifold	4	FP	05FEB08	08FEB08
NL1070	Hollow Metal Doors & Hardware	1	DH	08FEB08	08FEB08
NL1080	Electrical Devices, Fixtures Fire Alarm & Trim	2	EL	08FEB08	11FEB08
NL1200	Registers, Grilles & Diffusers	2	HVAC	08FEB08	11FEB08
NL1090	Final Paint	2	PA	12FEB08	13FEB08
NL1100	Final Cleaning	2	FC	14FEB08	15FEB08
NL1110	Bike Storage Racks (By Others)	1	OTHR	18FEB08	18FEB08
Building Constr Courtyard Area					
Ext Facade CourtyWest Wing (Viewed from 84 Marg)					
CW1000	Ground Face Veneer, Sills & Bands - Courtyard	5	MA	14APR08	18APR08
CW1010	Hollow Metal Doors & Hardware - CY West	2	DH	21APR08	22APR08
CW1030	Aluminum Storefront Window System -CY West	2	WI	21APR08	22APR08
CW1020	Open Screen Metal Grill - Courtyard West	3	MS	23APR08	25APR08
CW1040	Egress Stairs & Rails to Garden Plaza	3	MM	28APR08	30APR08



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						2007							2008									
						J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N
CY1000	Spray Applied Waterproofing over SOMD	2	WPRF	04DEC07	05DEC07								Spray Applied Waterproofing over SOMD Courtyar									
CY1010	Plumbing R/In is Slab on Metal Deck EL 112	2	PLMB	06DEC07	07DEC07								Plumbing R/In is Slab on Metal Deck EL 112									
CY1030	Slab On Metal Deck Stamped Concrete EL 112	2	CO	10DEC07	11DEC07								Slab On Metal Deck Stamped Concrete EL 112 Cy									
CY1040	Spray Fireproofing Struct Steel Beams & Col's CY	2	SFP	12DEC07	13DEC07								Spray Fireproofing Struct Steel Beams & Col's CY									

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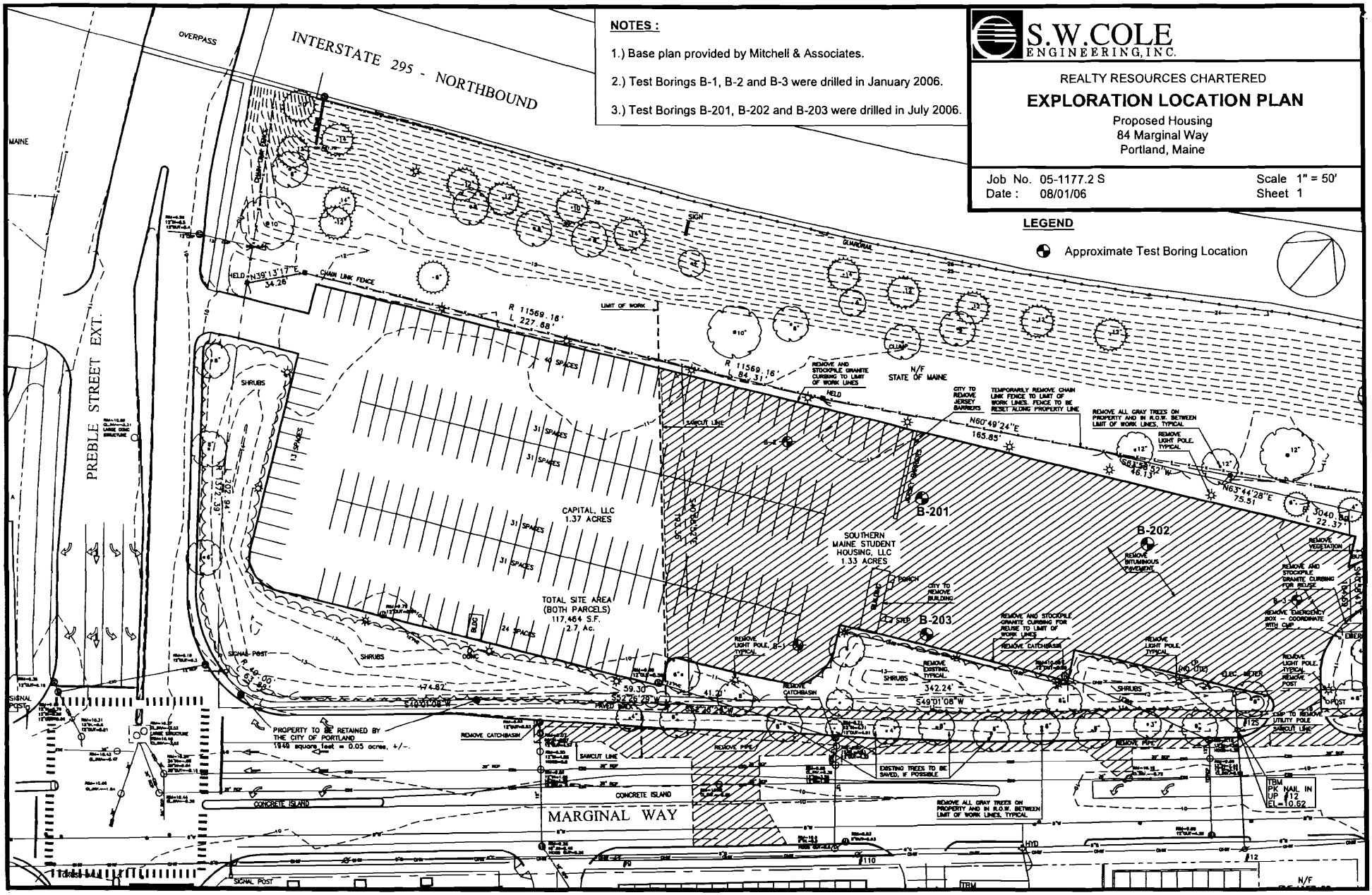

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-201
SHEET: 1 OF 4
PROJECT NO.: 05-1177.2
DATE START: 7/19/2006
DATE FINISH: 7/20/2006
ELEVATION: 11' ±
SWC REP.: MPL

PROJECT / CLIENT: PROPOSED HOUSING / REALTY RESOURCES CHARTERED
LOCATION: PORTLAND, MAINE
DRILLING CO. : GREAT WORKS TEST BORING
DRILLER: WAYNE MCPHERSON

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	CASED	4"		
SAMPLER:	SS	1 3/8"	140 lbs	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS APPEAR SATURATED @ ABOUT 5'

CASING BLOWS PER FOOT	SAMPLE TYPE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										3 1/2"± ASPHALT PAVEMENT
	1D	24"	16"	2.6'	18	42	13	20		TAN SILTY SAND AND GRAVEL (FILL)
	2D	24"	15"	4.6'	24	35	34	32		
	3D	24"	20"	7.0'	45	29	14	11		
									9.0'	
	4D	24"	4"	12.0'	4	10	7	5		BLACK ASH, SAND (FILL)
									14.0'	
									15.0'	BLACK ORGANIC SILT, PIECES OF WOOD
	5D	24"	24"	17.0'	4	7	10	11		GRAY CLAYEY SILT OR SILTY CLAY WITH SHELLS w = 31.6% ~MEDIUM~
	6D	24"	15"	22.0'	3	3	3	2		w = 53.7%
									26.0'	
	7D	24"	24"	27.0'	WOH	3	10	11		w = 30.0% GRAY SILTY CLAY
	8D	24"	24"	32.0'	WOH/18"			5		~SOFT~ w = 42.7%

SAMPLES:
D = SPLIT SPOON
C = 2" SHELBY TUBE
S = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

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

BORING NO.: B-201

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-201
SHEET: 2 OF 4
PROJECT NO.: 05-1177.2
DATE START: 7/19/2006
DATE FINISH: 7/20/2006
ELEVATION: 11' ±
SWC REP.: MPL

PROJECT / CLIENT: PROPOSED HOUSING / REALTY RESOURCES CHARTERED
LOCATION: PORTLAND, MAINE
DRILLING CO. : GREAT WORKS TEST BORING DRILLER: WAYNE MCPHERSON

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	CASED	4"		
SAMPLER:	SS	1 3/8"	140 lbs	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS APPEAR SATURATED @ ABOUT 5'

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
	1V	3.5 X 7 VANE		40.6'						S_v = 0.27 / 0.04 ksf ~SOFT~
	1V	3.5 X 7 VANE		41.8'						S_v = 0.44 / 0.11 ksf GRAY SILTY CLAY CONTINUED
	2V	3.5 X 7 VANE		50.6'						S_v = 0.30 / 0.07 ksf
	2V	3.5 X 7 VANE		51.8'						S_v = 0.62 / 0.13 ksf
	3V	3.5 X 7 VANE		60.6'						S_v = 0.41 / 0.03 ksf ~MEDIUM~
	3V	3.5 X 7 VANE		61.8'						S_v = 0.83 / 0.08 ksf
	4V	3.5 X 7 VANE		70.6'						S_v = 0.52 / 0.16 ksf ~MEDIUM~
	4V	3.5 X 7 VANE		71.8'						S_v = 0.59 / 0.20 ksf

SAMPLES:
D = SPLIT SPOON
C = 2" SHELBY TUBE
S = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

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

BORING NO.: B-201

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-201
SHEET: 3 OF 4
PROJECT NO.: 05-1177.2
DATE START: 7/19/2006
DATE FINISH: 7/20/2006
ELEVATION: 11' ±
SWC REP.: MPL

PROJECT / CLIENT: PROPOSED HOUSING / REALTY RESOURCES CHARTERED
LOCATION: PORTLAND, MAINE
DRILLING CO. : GREAT WORKS TEST BORING DRILLER: WAYNE MCPHERSON

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	CASED	4"		
SAMPLER:	SS	1 3/8"	140 lbs	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS APPEAR SATURATED @ ABOUT 5'

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										~SOFT~
	9D	24"	24"	82.0'	WOR / 24"					GRAY SILTY CLAY CONTINUED
									87.0'	
										GRAY SILTY SAND, TRACE FINE GRAVEL
									91.0'	
	10D	24"		92.0'	19	12	15	18		~DENSE~ GRAY SILTY SAND WITH GRAVEL, OCCASIONAL COBBLES (GLACIAL TILL)
	11D	5"	4"	100.4'	50/5"					~VERY DENSE~
									115.8'	
										ROLLER CONE 115.8' TO 120.0' PROBABLE BEDROCK
										BOTTOM OF EXPLORATION @ 120.0'

SAMPLES:
D = SPLIT SPOON
C = 2" SHELBY TUBE
S = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST-

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

BORING NO.: B-201

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-202
SHEET: 1 OF 3
PROJECT NO.: 05-1177.2
DATE START: 7/20/2006
DATE FINISH: 7/20/2006
ELEVATION: 11' ±
SWC REP.: MPL

PROJECT / CLIENT: PROPOSED HOUSING / REALTY RESOURCES CHARTERED
LOCATION: PORTLAND, MAINE
DRILLING CO. : GREAT WORKS TEST BORING
DRILLER: WAYNE MCPHERSON

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	CASED	4"		
SAMPLER:	SS	1 3/8"	140 lbs	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS APPEAR SATURATED @ ABOUT 5'

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										3 1/2"± ASPHALT PAVEMENT
									1.7'	TAN SAND AND GRAVEL (FILL)
	1D	24"	16"	2.5'	13	22	16	20		GRAY SILTY SAND WITH GRAVEL (FILL)
	2D	24"	18"	4.5'	26	30	25	13	5.0'	
	3D	24"	24"	7.0'	6	6	6	5		GRAY SILT (FILL)
									9.0'	
	4D	24"	10"	12.0'	4	12	15	15		GRAY SILTY SAND AND GRAVEL (FILL)
									14.8'	
	5D	24"	24"	17.0'	4	5	5	8		GRAY ORGANIC SILT, SHELLS
									19.0'	
	6D	24"	20"	22.0'	13	13	15	13		OLIVE BROWN SILTY CLAY ~STIFF TRANSITIONING TO MEDIUM~ w = 28.2%
	7D	24"	19"	27.0'	5	5	6	6		GRAY SILTY CLAY w = 36.9%
	8D	24"	24"	32.0'	WOR/12"		WOH/12"			~SOFT~

SAMPLES:
D = SPLIT SPOON
C = 2" SHELBY TUBE
S = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[X] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

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

BORING NO.: B-202

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-202
SHEET: 2 OF 3
PROJECT NO.: 05-1177.2
DATE START: 7/20/2006
DATE FINISH: 7/20/2006
ELEVATION: 11' ±
SWC REP.: MPL

PROJECT / CLIENT: PROPOSED HOUSING / REALTY RESOURCES CHARTERED
LOCATION: PORTLAND, MAINE
DRILLING CO. : GREAT WORKS TEST BORING
DRILLER: WAYNE MCPHERSON

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	CASED	4"		
SAMPLER:	SS	1 3/8"	140 lbs	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS APPEAR SATURATED @ ABOUT 5'

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										~SOFT~ GRAY SILTY CLAY CONTINUED
									78.0'	GRAY SILTY SAND WITH GRAVEL, OCCASIONAL COBBLES (GLACIAL TILL)

SAMPLES:
D = SPLIT SPOON
C = 2" SHELBY TUBE
S = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[X] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

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

BORING NO.: B-202

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-202
SHEET: 3 OF 3
PROJECT NO.: 05-1177.2
DATE START: 7/20/2006
DATE FINISH: 7/20/2006
ELEVATION: 11' ±
SWC REP.: MPL

PROJECT / CLIENT: PROPOSED HOUSING / REALTY RESOURCES CHARTERED
LOCATION: PORTLAND, MAINE
DRILLING CO. : GREAT WORKS TEST BORING DRILLER: WAYNE MCPHERSON

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	CASED	4"		
SAMPLER:	SS	1 3/8"	140 lbs	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS APPEAR SATURATED @ ABOUT 5'

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										GRAY SILTY SAND WITH GRAVEL, OCCASIONAL COBBLES CONTINUED
	9D	24"	17"	82.0'	10	13	20	27		~MEDIUM DENSE~
										(GLACIAL TILL)
	10D	24"	21"	92.0'	48	44	39	55		~VERY DENSE~
									106.4'	ROLLER CONE 106.4' TO 110.5'
										PROBABLE BEDROCK
									110.5'	BOTTOM OF EXPLORATION @ 110.5'

SAMPLES:
D = SPLIT SPOON
C = 2" SHELBY TUBE
S = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[X] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

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

BORING NO.: B-202

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-203
SHEET: 1 OF 4
PROJECT NO.: 05-1177.2
DATE START: 7/18/2006
DATE FINISH: 7/18/2006
ELEVATION: 11' ±
SWC REP.: MPL

PROJECT / CLIENT: PROPOSED HOUSING / REALTY RESOURCES CHARTERED
LOCATION: PORTLAND, MAINE
DRILLING CO. : GREAT WORKS TEST BORING DRILLER: WAYNE MCPHERSON

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	CASED	4"		
SAMPLER:	SS	1 3/8"	140 lbs	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS APPEAR SATURATED @ ABOUT 5'

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										3 1/2"± ASPHALT PAVEMENT
	1D	24"	12"	2.5'	13	23	14	13	3.0'	BROWN SAND AND GRAVEL (FILL)
	2D	24"	22"	4.5'	2	20	46	34		~MEDIUM DENSE TO DENSE~
	3D	24"	18"	6.5'	7	24	16	21		BROWN TO BLACK SILTY SAND, ASH, BRICK (FILL)
	4D	24"	15"	12.0'	14	21	25	21	14.5'	
	5D	24"	24"	17.0'	2	2	3	2	19.0'	GRAY ORGANIC SILT, SHELLS ~SOFT~
	6D	24"	24"	22.0'	WOH	2	2	2	22.0'	GRAY SILTY CLAY ~SOFT~
	7D	24"	24"	27.0'	12	13	17	19		OLIVE BROWN SILTY CLAY
	8D	24"	24"	32.0'	WOH/18"			3		GRAY SILTY CLAY ~SOFT~
	1V	2 X 4 VANE		35.5'						q_p = 3.0 tsf ~VERY STIFF TRANSITIONING TO MEDIUM~
	1V	2 X 4 VANE		36.0'						S_v = 0.45 / 0.11 ksf S_v = 0.50 / 0.17 ksf

SAMPLES:
D = SPLIT SPOON
C = 2" SHELBY TUBE
S = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

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

BORING NO.: B-203

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-203
SHEET: 2 OF 4
PROJECT NO.: 05-1177.2
DATE START: 7/18/2006
DATE FINISH: 7/18/2006
ELEVATION: 11' ±
SWC REP.: MPL

PROJECT / CLIENT: PROPOSED HOUSING / REALTY RESOURCES CHARTERED
LOCATION: PORTLAND, MAINE
DRILLING CO.: GREAT WORKS TEST BORING DRILLER: WAYNE MCPHERSON

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	CASED	4"		
SAMPLER:	SS	1 3/8"	140 lbs	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS APPEAR SATURATED @ ABOUT 5'

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										GRAY SILTY CLAY CONTINUED
	2V	3.5 X 7 VANE		45.8'						S_v = 0.62 / 0.13 ksf ~MEDIUM~
	2V	3.5 X 7 VANE		46.6'						S_v = 0.63 / 0.12 ksf
	3V	3.5 X 7 VANE		55.8'						S_v = 0.73 / 0.06 ksf ~MEDIUM~
	3V	3.5 X 7 VANE		56.6'						S_v = 0.75 / 0.05 ksf
	4V	3.5 X 7 VANE		65.8'						S_v = 0.57 / 0.03 ksf ~MEDIUM~
	4V	3.5 X 7 VANE		66.6'						S_v = 0.65 / 0.03 ksf

SAMPLES:
D = SPLIT SPOON
C = 2" SHELBY TUBE
S = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

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

BORING NO.: B-203

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-203
SHEET: 3 OF 4
PROJECT NO.: 05-1177.2
DATE START: 7/18/2006
DATE FINISH: 7/18/2006
ELEVATION: 11' ±
SWC REP.: MPL

PROJECT / CLIENT: PROPOSED HOUSING / REALTY RESOURCES CHARTERED
LOCATION: PORTLAND, MAINE
DRILLING CO. : GREAT WORKS TEST BORING DRILLER: WAYNE MCPHERSON

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	CASED	4"		
SAMPLER:	SS	1 3/8"	140 lbs	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS APPEAR SATURATED @ ABOUT 5'

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									83.0'	GRAY SILTY CLAY CONTINUED
										GRAY SILTY SAND
	9D	24"	19"	87.0'	15	15	15	22	87.0'	
										GRAY SILTY SAND WITH GRAVEL, OCCASIONAL COBBLES (GLACIAL TILL)
	10D	24"	17"	92.0'	30	34	29	23		-VERY DENSE-
	11D	11"	7"	95.9'	40	50/5"				
	12D	21"	16"	106.7'	38	47	43	50/3"		
	13D	3"	3"	115.3'	50/3"					
									118.5'	PROBABLE BEDROCK

SAMPLES:
D = SPLIT SPOON
C = 2" SHELBY TUBE
S = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
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BORING NO.: B-203

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-203
SHEET: 4 OF 4
PROJECT NO.: 05-1177.2
DATE START: 7/18/2006
DATE FINISH: 7/18/2006
ELEVATION: 11' ±
SWC REP.: MPL

PROJECT / CLIENT: PROPOSED HOUSING / REALTY RESOURCES CHARTERED
LOCATION: PORTLAND, MAINE
DRILLING CO. : GREAT WORKS TEST BORING
DRILLER: WAYNE MCPHERSON

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	CASED	4"		
SAMPLER:	SS	1 3/8"	140 lbs	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS APPEAR SATURATED @ ABOUT 5'

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										PROBABLE BEDROCK CONTINUED
										ROLLER CONE FROM 118.5' TO 122.5'
									122.5'	
										BOTTOM OF EXPLORATION @ 122.5'

SAMPLES:
D = SPLIT SPOON
C = 2" SHELBY TUBE
S = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

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

BORING NO.: B-203

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.

S.W.COLE ENGINEERING, INC.

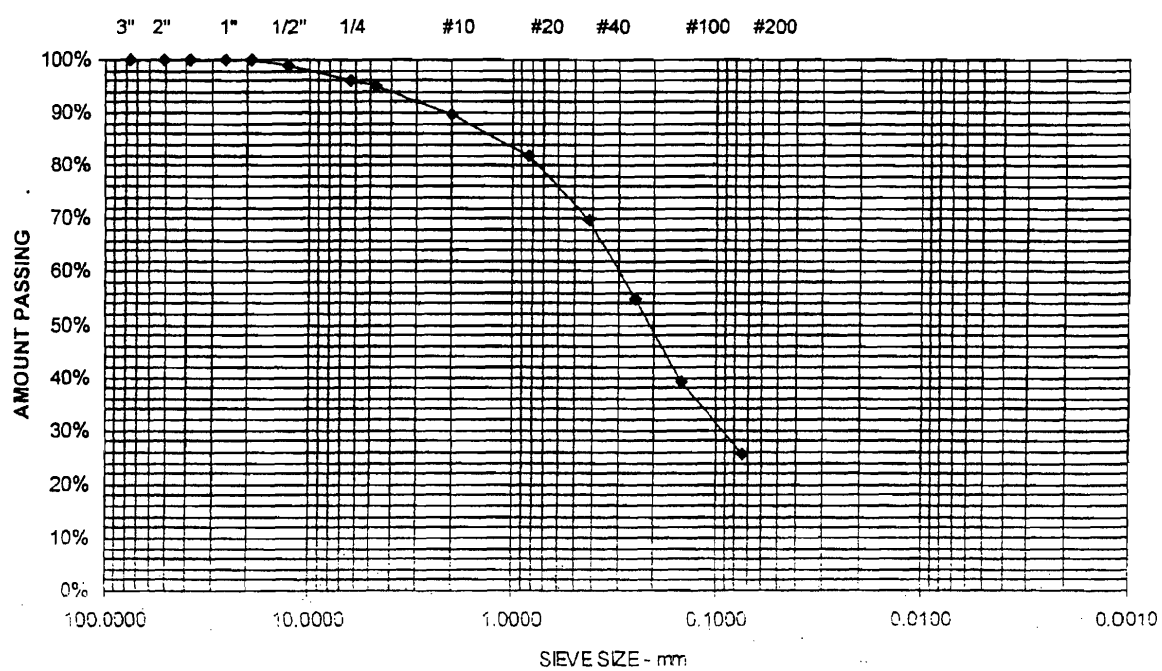
Report of Gradation

ASTM C-117 & C-136

Project Name: PORTLAND - 84 MARGINAL WAY HOUSING - GEOTECHNICAL ENGINEERING SERVICES
Client: REALTY RESOURCES CHARTERED
Material Source: **B-201 2D 2.6-4.6**

Project Number: 05-1177.2
Lab ID: 5477G
Date Received: 7/24/2006
Date Complete: 7/25/2006
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"	99	
6.3 mm	1/4"	96	
4.75 mm	No. 4	95	5.1% Gravel
2.00 mm	No. 10	90	
850 um	No. 20	82	
425 um	No. 40	70	69.3% Sand
250 um	No. 60	55	
150 um	No. 100	39	
75 um	No. 200	25.6	25.6% Fines



Comments:

S.W.COLE ENGINEERING, INC.

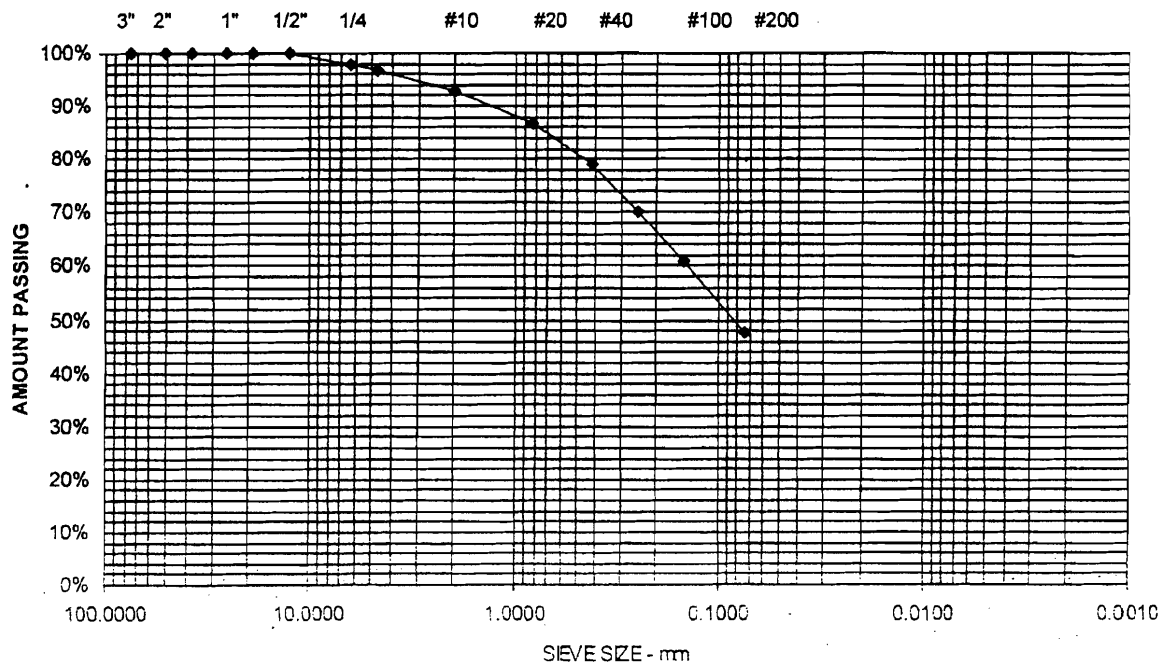
Report of Gradation

ASTM C-117 & C-136

Project Name: PORTLAND - 84 MARGINAL WAY HOUSING - GEOTECHNICAL ENGINEERING SERVICES
Client: REALTY RESOURCES CHARTERED
Material Source: **B-203 10D 90-92**

Project Number: 05-1177.2
Lab ID: 5478G
Date Received: 7/24/2006
Date Complete: 7/25/2006
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"	98	
4.75 mm	No. 4	97	3.2% Gravel
2.00 mm	No. 10	93	
850 um	No. 20	87	
425 um	No. 40	79	49.2% Sand
250 um	No. 60	70	
150 um	No. 100	61	
75 um	No. 200	47.6	47.6% Fines



Comments:

MITCHELL & ASSOCIATES
LANDSCAPE ARCHITECTS

August 22, 2006

Mr. Rick Knowland, Senior Planner
and Planning Board Members
City of Portland
389 Congress Street
Portland, Maine 04101

RE: Bayside Village – A Student Housing Complex
120 Marginal Way

Dear Rick and Board Members:

The following correspondence and attached documentation has been prepared to respond to Planning Board and staff comments that we have received. The plans have been revised to include comments as well as minor design changes that have been a result of design development review. The following are responses to staff and engineering comments.

DEPT. OF BUILDING INSPECTION
CITY OF PORTLAND, ME
AUG 23 2006
RECEIVED

Planning Staff

- A photometric plan including mounting height and fixture data should be provided. Include parking garage lighting.

  A photometric plan will be provided to address these comments. We have included cut sheets for the building mounted and pole mounted fixtures. The garage will be fitted with fluorescent light strips.

- A waiver of parking space size should be submitted.

  The building ground floor footprint has been modified to address construction issues. As a result, the parking spaces conform to or exceed the city design standards. There are 5 compact spaces proposed that meet or exceed the required 8 feet by 15 feet standard.

THE STAPLES SCHOOL
70 CENTER STREET
PORTLAND, MAINE 04101

Telephone (207) 774-4427
Fax (207) 874-2460
Website www.mitchellassociates.biz

- A written agreement with the medical office building and parking garage shall be provided to address use of additional parking spaces.

  The applicant is currently formalizing the agreement with Capital, LLC developer for the proposed medical office/garage development. The agreement will be submitted separately.

- A letter from MDOT for construction activities in the State right of way shall be provided.

  We have met with MDOT to review the proposed activity. They are in the process of writing a letter. We will submit the letter as soon as we receive it.

- Add standard City approval notes to plan.

  We have revised the plan to include the standard notes.

- The plan should indicate which entrances are open to the public.

  The plan has been revised by providing a key to indicate public access, emergency and or controlled access and owner access.

- Is it possible to add more on-street parking.

  Due to the sight triangle/distance from the entry to the proposed medical office development, we cannot provide additional spaces.

- Reduce the landscape area on the open space deck/plaza to provide more usable space.

  We have revised the roof deck plaza to address this comment. The active usable space has been reconfigured to provide more usable space.

- Indicate the height of the berm along I-295 adjacent to the site.

  The road elevation of I-295 is between elevations 26 feet and 27 feet. The finish floor elevation of the second floor living units is at elevation 26 feet. The roadway edge varies from 100 feet to 120 feet from face of structure.

- Address architectural comments.

  We have included an architectural narrative to address these comments, prepared by CWS Architects.

- Sidewalk material should be indicated on the plan.

  The plan has been revised to indicate brick within the public right of way and on-site concrete walkways.

- What does the bus shelter look like?

  The architectural drawings show the bus shelter.

Engineering Comments

- The subdivision plat should tie into the Maine State Plane Coordinate System (2-Zone Projection) and West Zone using the NAD 1983 (HARN) Datum.

  The plan shall conform to both the NGVD Datum and Maine State Coordinate Requirements.

- General notes on Sheet #6 call for use of Casco traps. A detail should be provided.

  A detail has been added to the plan set.

- Stormwater and sanitary sewer tie in details should be provided.

  We are collecting additional field data on the existing sewer manhole and will provide a connection detail with our next submission.

- It is unclear what type of sidewalk will be constructed in front of the housing complex.

  Brick sidewalk will be provided within the public right of way.

- Water quality treatment should be addressed for the parking garage runoff.

  A four foot diameter Downstream Defender has been included to provide oil/water separation for the storm drain line for the parking garage. This drain line has several catch basins located in the garage to collect runoff/drips from the vehicles. There is also one exterior

catch basin tributary to this line with a tributary area of about 9,900 SF. The estimated 25 year peak flow to the proposed Downstream Defender is about 1.1 CFS (see attached calculations). Based on information from the EPA, the Downstream Defender will provide oil and grease removal and is designed so that these contaminants do not get re-entrained during major storm events (see attached literature).

We have made several minor revisions to the plan to address construction issued and function of spaces. The ground floor footprint has been revised to reduce the number of bump-outs along Marginal Way and along I-295. The mechanical room has been reconfigured and has eliminated the need for external vehicle access. The service drive along the entry to the adjacent office/garage development has been eliminated. The bicycle storage area has been relocated to the northwest corner of the building. The retail space has been increased from 3,143 SF to 3,857 SF.

Enclosed for your review are the following:

- Revised plan set
- 11 x 17 reductions of plan set
- Revised stormwater document/water quality prepared by Gorrill-Palmer Consulting Engineers
- Light Fixture Data Sheets
- Bayside Village Architectural Narrative prepared by CWS Architects.
- Traffic Report prepared by Gorrill-Palmer Consulting Engineers.

We look forward to meeting with you and the planning board at the next workshop meeting on September 12, 2006. Should you have any questions or comments, please do not hesitate to call me.

Sincerely,
Mitchell & Associates

Robert B. Metcalf

Enclosure

cc: Ed Marsh
Terry Turner
Ben Walter
Will Haskell
Tom Gorrill

U.S. Environmental Protection Agency

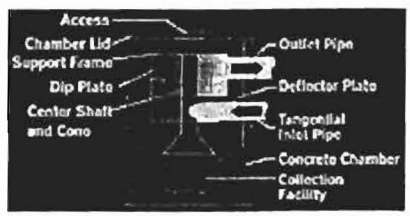
EPA New England's Center for Environmental Industry and Technology (CEIT)

Serving Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont & Tribal Nations

Storm Water Virtual Trade Show Downstream Defender™

--- Select a Company/Technology ---

Narrative Description



HIL Technology, Inc. offers cost-effective non-point source pollution prevention with the **Downstream Defender™**; a treatment device engineered to capture settleable solids, floatables, oil and grease from storm water runoff. It is one of the family of advanced Hydrodynamic Vortex Separators provided by HIL Technology, Inc. that augments gravitational forces with complex but stabilized vortex forces to maximize solids/liquids separation. The result is a compact separator that requires a smaller land area than conventional gravitational sedimentation. A floatables trap is incorporated within the same vessel.

Benefits

- Removes sediment, floatables, oil and grease
- Small footprint
- No pollutant re-entrainment
- No loss of treatment capacity between clean-outs
- Low head loss, typically < 12 inches
- Efficient over a wide range of flows
- Easy to install
- Low maintenance

Applications

- New developments and retrofits
- Construction sites
- Streets and roadways
- Parking lots
- Vehicle maintenance wash-down yards
- Industrial and commercial facilities
- Wetlands protection

Four standard sizes are available, each designed to treat a range of flows to a specific solids removal efficiency. To meet specific performance criteria or for larger flow applications, HIL offers custom designed units up to forty (40) feet in diameter.

The **Downstream Defender™** is a primary treatment device that requires no pretreatment. However, it can be used as a pretreatment device before detention systems, mitigating wetlands or other polishing systems.

Components:

Importa

Criteria innovat technol in the i Vendor for conf the acc informa 1 of eac informa remove

The tec descript this site limited technol perform benefits been pr the ven was ma screen or techi Therefo confirm legal ac disclos perform informa the con by EPA The inc compar product does nc imply e recomn EPA.

The **Downstream Defender™** has no moving parts and no external power requirements. It consists of a concrete cylindrical vessel with polypropylene internal components and a stainless steel support frame. The concrete vessel is a standard manhole, installed below grade with a tangential inlet pipe and an overflow pipe which connect the treatment unit directly to the storm sewer. Two ports at ground level provide access for inspection and clean-out of stored floatables and sediment. The internal components consist of two concentric hollow cylinders (the dip plate and center shaft), an inverted cone (the center cone), a benching skirt and a floatables lid. The internal components are labeled on the **Downstream Defender™** Interior View.

The purpose of the internal components is two-fold:

- The components act as flow modifying members to effect a complex but stable flow regime through the device; which maximizes solids separation and prevents short circuiting.
- The components create isolated zones for pollutant capture and storage.

System Dynamics:
The Downstream Defendertm is self-activating and operates on simple fluid hydraulics. The geometry of the internal components and placement of the inlet and outlet pipes are designed to direct the flow in a pre-determined path through the vessel as described below.

Storm water is introduced tangentially into the side of the vessel and initially spirals around the perimeter, in the outer annular space (between the dip plate cylinder and manhole wall), where oil and floatables rise to the water surface and are trapped. As the flow continues to rotate about the vertical axis, it travels down towards the bottom of the dip plate. Sediment is directed toward the center and base of the vessel where it is collected in the sediment storage facility, beneath the vortex chamber. The center cone protects stored sediment and redirects the main flow upwards and inwards. Flow passes under the dip plate and up through the inner annular space, inside the dip plate (between the dip plate and center shaft cylinders), as a narrower spiraling column rotating at a slower velocity than the outer downward flow. By the time the flow reaches the top of the vessel, it is virtually free of solids and is discharged from the inner annular space, through the outlet pipe.

The dip plate and center shaft cylinders are suspended from the underside of a component support frame. This dip plate serves two purposes:

- It locates the shear zone, the interface between the outer downward circulation and the inner upward circulation where a marked difference in velocity encourages solids separation, and
- It establishes a zone between it and the outer wall where floatables, oil and grease are captured and retained after a storm.

The floatables lid covers the inner annular space between the dip plate and center shaft. It separates oil and floatables stored in the outer annular space, between the dip plate and the manhole wall, from the treated effluent in the inner annular space.

Specifications

Standard specifications are available for typical design criteria of 90% removal of all particles greater than 150 microns with a specific gravity of 2.65 at design flow. However, the **Downstream Defender™** can easily be sized to

meet higher or lower performance requirements. Headloss through the unit, at design flow, is typically less than 12 inches. At lower flows, the removal efficiencies are enhanced and headlosses decrease.

Site Constraints/Installation Requirements

The unit should be installed in a location that is easily accessible for the maintenance vehicle, preferably in a flat area close to a roadway or parking area. The **Downstream Defender™** is delivered to site completely fabricated, ready to be installed into the excavated hole and connected to the inlet and outlet piping. It is compact and can fit within an excavation trench guard. Larger units are delivered to site in component form for final assembly at the job site. Installation time for a 6 foot unit is typically 1½ hours.

Performance

The **Downstream Defender™** is designed to remove settleable solids, floatables, oils and grease from storm water runoff. Full-scale test results show settleable solids removal efficiencies of 90% at design flows. Because the sediment and oil storage areas are outside the main flow path through the unit, previously collected solids, oil and floatables are not re-entrained in the effluent during major storm events or surcharge conditions. In addition, treatment capacities are not reduced as pollutants accumulate between clean-outs.

Maintenance

The **Downstream Defender™** is unique in that the sediment and oil storage areas are outside the treatment flow path. As mentioned above, previously collected solids, oil and floatables are thereby protected from re-entrainment into the effluent during major storms or surcharge conditions. Furthermore, as sediment, floatables and oil are collected and stored over a period of several months, treatment capacities are not reduced as pollutants accumulate between clean-outs.

After a storm event, the water level in the **Downstream Defender™** drains down to the invert of the outlet pipe, keeping the unit wet. Maintaining a wet unit has two major advantages:

1. It keeps the oil and floatables stored on the water surface separate from sediment stored below the vortex chamber, providing the option for separate oil disposal, such as passive skimmers, if desired.

2. It prevents stored sediment from solidifying in the base of the unit. The clean-out procedure becomes much more difficult and labor intensive if the system allows fine sediment to dry-out and consolidate. When this occurs, clean-out crews must enter the chamber and manually remove the sediment; a labor intensive operation in a hazardous environment.

The **Downstream Defender™** has large clear openings and no internal restrictions or weirs, minimizing the risk of blockage and hydraulic losses. Orifices and internal weirs can create two serious hydraulic problems:

1. Increased risk of blockage - Small orifices tend to collect debris and trash such as soda cans, sticks and Styrofoam cups which further

reduce opening size and may even block openings completely. This alters the hydraulics in a flow-through treatment device, adversely affecting operation and performance and can eventually lead to system back-ups and maintenance issues. Removing debris from a submerged orifice may require pumping down the chamber.

2. Increased head losses - Internal restrictions, such as weirs and baffles, significantly increase hydraulic losses in a flow-through treatment device. The higher the flow through the system, the higher the head loss. This problem is exacerbated during the more intense storm events, backing up the storm sewer and increasing the risk for upstream flooding.

Maintenance Procedures:
A commercially or municipally owned sump-vac is used to remove captured sediment and floatables. Access ports are located in the top of the manhole. The floatables access port is above the outer annular space between the dip plate and the manhole wall, where floatables are retained. The sediment removal access port is located directly over the hollow center shaft that leads to the sediment storage facility below the vortex chamber. Floatables and oil should be removed prior to the removal of the sediment.

The frequency of the sump-vac procedure is determined in the field after installation. During the first year of operation, the unit should be inspected every six months to determine the rate of sediment and floatables accumulation. A probe can be used to determine the level of solids in the sediment storage facility. This information can then be used to establish a maintenance schedule. When sediment depth has accumulated to the specified depth, the contents should be removed by sump-vac. In most situations, it is recommended that the units be cleaned annually.

Although a small portion of water is removed along with the pollutants during the clean-out process, the units are typically not completely dewatered - minimizing disposal costs. The sump-vac procedure for a typical 6-ft diameter **Downstream Defender™** with one foot of sediment depth and two inches of oil and debris takes about 25 minutes and removes about 150-200 gallons of water in the process.

Longevity

The **Downstream Defender™** consists of a standard concrete manhole with internal components made from either polypropylene or Type 304 stainless steel. There are no moving parts, and it has no external power requirements. With regular maintenance, the **Downstream Defender™** will treat storm water for a period in excess of 30 years.

Additional Information

HIL's professional engineers work closely with municipalities, consultants, industries and developers. They offer a full technical support service and can advise on the design of storm water treatment and storm water management schemes. Customized Plan and Elevation Views, which show hydraulic grade lines, are generated in AutoCAD 14 for each **Downstream Defender™** application.

HIL Technology offers free training and technical seminars. Standard engineering drawings (AutoCAD 14) and specifications (WordPerfect) are available on disk. For more information or to submit an on-line inquiry, visit HIL

Technology's web site at www.hil-tech.com [EXIT Disclaimer].

Manufacturer

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Contact: David Mongeau, Regional Sales Engineer

Serving Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, & Tribal Nations

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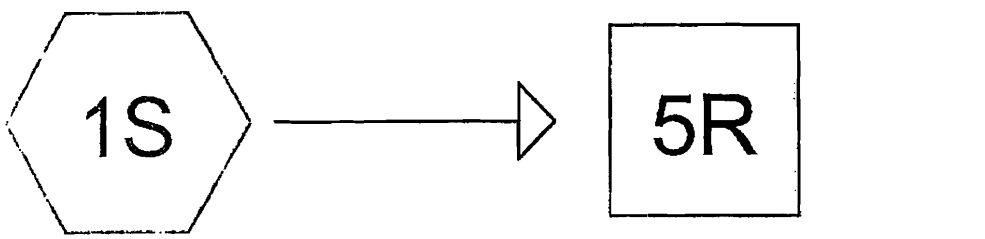
Last updated on Friday, March 3rd, 2006
URL: http://www.epa.gov/NE/assistance/ceitts/stormwater/techs/downstreamdefender.html



CB#1 Oil/Water Separator

Subcat Reach Pond Link

Drainage Diagram for Marginal Way PostDevelopment
Prepared by Gorrill-Palmer Consulting Engineers, Inc. 8/22/2006

Area Listing (selected nodes)

Area (acres)	CN	Description (subcats)	
0.146	80	>75% Grass cover, Good, HSG D (1S)	6366 sf
0.081	98	Paved parking & roofs (1S)	3534 sf
0.227			9900 sf

Time span=1.00-20.00 hrs, dt=0.03 hrs, 634 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: CB#1 Runoff Area=9,900 sf Runoff Depth>1.55"
Tc=5.0 min CN=86 Runoff=0.46 cfs 0.029 af

Reach 5R: Oil/Water Separator Inflow=0.46 cfs 0.029 af
Outflow=0.46 cfs 0.029 af

Total Runoff Area = 0.227 ac **Runoff Volume = 0.029 af Average Runoff Depth = 1.55"**
64.30% Pervious Area = 0.146 ac **35.70% Impervious Area = 0.081 ac**

Time span=1.00-20.00 hrs, dt=0.03 hrs, 634 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: CB#1 Runoff Area=9,900 sf Runoff Depth>3.00"
Tc=5.0 min CN=86 Runoff=0.87 cfs 0.057 af

Reach 5R: Oil/Water Separator Inflow=0.87 cfs 0.057 af
Outflow=0.87 cfs 0.057 af

Total Runoff Area = 0.227 ac **Runoff Volume = 0.057 af Average Runoff Depth = 3.00"**
64.30% Pervious Area = 0.146 ac **35.70% Impervious Area = 0.081 ac**

Time span=1.00-20.00 hrs, dt=0.03 hrs, 634 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: CB#1 Runoff Area=9,900 sf Runoff Depth>3.71"
Tc=5.0 min CN=86 Runoff=1.06 cfs 0.070 af

Reach 5R: Oil/Water Separator Inflow=1.06 cfs 0.070 af
Outflow=1.06 cfs 0.070 af

Total Runoff Area = 0.227 ac **Runoff Volume = 0.070 af Average Runoff Depth = 3.71"**
64.30% Pervious Area = 0.146 ac **35.70% Impervious Area = 0.081 ac**

Shaper
shaperlighting.com

DESCRIPTION

695-WP Half Pyramid with Direct Illumination and a Back Panel.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Material
Solid bronze construction with a clear textured refractive glass lense for MH or white acrylic lense for incandescent and CFL lamps.

Finish
Natural bronze or two component polyurethane paint, 2.5 mil nominal thickness for superior protection against fade and wear. Standard: Natural Bronze (NBZ) [Sustainable Design]. Note: Bronze will weather to a dark bronze patina. Premium: White (WH), Black (BK), Grey (GY), Silver Metallic (SM), Gold Metallic (GM), Bronze Metallic (BM), Dark Platinum (DP), Graphite Metallic (GRM), Lacquered Satin Nickel (SNL) or Custom Color (CC).

Optics
Refer to www.shaperlighting.com for complete photometrics.

Ballast
Integral electronic HPF, multi-volt 120/277V (347V Canada), thermally protected with end-of-life circuitry to accommodate specified lamp wattage. Integral metal halide ballast is electronic HPF, multi-volt 120/277V for the specified lamp wattage. 347V ballast for metal halide - Contact factory.

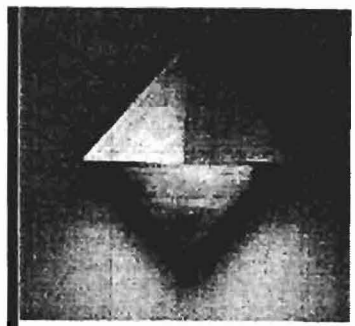
Lamp/Socket
One (1) 26W, 32W (GX24q-3) or 42W (GX24q-4) 4-pin triple tube CFL lamp or one (1) 60W A-19 lamp. CFL socket injection molded plastic. INC socket fired ceramic rated for 660W-250V. Metal halide is ceramic pulse-rated, 4KV. Lamps furnished by others.

Installation
Supplied with a universal mounting back for a standard 4" J-box or plaster ring. Optional rear (through wall) feed conduit mounting.

Options
Quartz Restrike - MH only (QR), Rear (through wall) Feed Conduit Mounting (C), Photocell (PH). Energy Star Rating - Consult factory.

Labels
U.L. and C.U.L. listed for wet location.

Modifications
Shaper's skilled craftspeople with their depth of experience offer the designer the flexibility to modify standard exterior wall luminaires for project specific solutions. Contact the factory regarding scale options, unique finishes, mounting, additional materials/colors, or decorative detailing.



695-WP-DB SERIES

Exterior Wall Luminaire
Half Pyramid
with a Back Panel

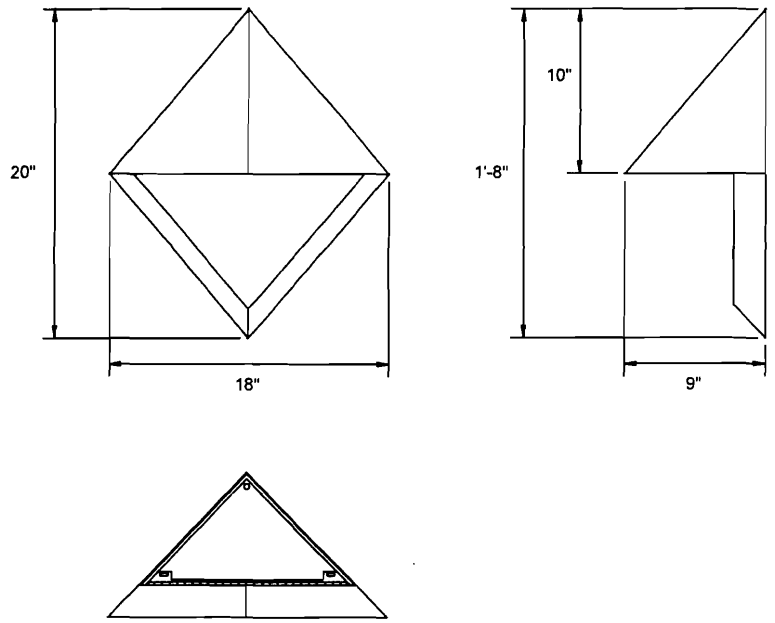
ORDERING INFORMATION

Sample Number: 695-WP-DB-CFL/1-347V-DP

Series	Lamp	Voltage	Finish [3,4]	Options
695-WP-DB: Half Pyramid w/ Back Panel	CFL/1 (26/32/42W-Triple)	120V	**Standard**	**C**: Rear (through wall) Feed Conduit Mounting
	INC/1/60	277V[1]	**NBZ**: Natural Bronze	**PH**: Photocell
	MH/1/50	347V[2]	**Premium**	**QR**: Quartz Restrike[5]
	MH/1/70		**BK**: Black	
	MH/1/100		**BM**: Bronze Metallic	
			CC: Custom Color	
			DP: Dark Platinum	
			GM: Gold Metallic	
			GRM: Graphite Metallic	
			GY: Grey	
			SCL: Lacquered Satin Chrome	
			SM: Silver Metallic	
			WH: White	

Notes: 1 CFL and MH only.
2 Available with CFL only.
3 Premium TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear.
4 Bronze will weather to a dark bronze patina.
5 MH only.

Dimensions



Shaper
shaperlighting.com

DESCRIPTION

The 995 Post Top luminaire features a classic architectural half-pyramid geometric in a one or two fixture configuration.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Material
Post: 3 5/8" Diameter seamless pure copper tube attached to a sand cast bronze base covered by a spun copper alloy cover.

Fixture: Available with one (1) or two (2) 13 3/8" H x 24" W formed natural copper alloy housing with either a clear refractive glass lense for (MH, INC) or a white acrylic lense for (CFL). Optional tempered clear lense for full cut-off [Dark Sky Compliant]. Aluminum components are used with a painted finish.

Reflector/Optics
Full cut-off, formed white painted aluminum. Refer to www.shaperlighting.com for complete photometrics.

Ballast
One (1) low temperature (0°F,-18°C) AC electronic CFL multi-watt, multi-volt 120/277V (347V-Canada) ballast. One (1) 70W (120V only) electronic metal halide (contact factory for 277V) or one (1) 100W metal halide core and coil 120V or 277V potted and encased HPF magnetic ballast. CFL and MH electronic ballast mounted in post and MH magnetic ballast mounted in fixture.

Finish
Copper alloy or premium TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear.

Post Standard: Natural Copper Alloy (CA) [Sustainable Design].
Post Premium: Black (BK), Grey (GY), White (WH), Dark Platinum (DP), Graphite Metallic (GRM), Silver Metallic (SM), Gold Metallic (GM), Bronze Metallic (BM) or Custom Color (CC).
Fixture Standard: Natural Copper Alloy (CA) [Sustainable Design].
Fixture Premium: Verdigris (VG), Black (BK), Grey (GY), White (WH), Dark Platinum (DP), Graphite Metallic (GRM), Silver Metallic (SM), Gold Metallic (GM), Bronze Metallic (BM) or Custom Color (CC).
Note: Bronze will weather to a dark bronze patina.

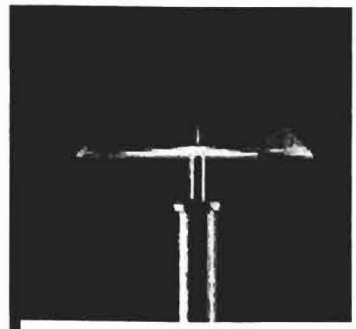
Lamp/Socket
Two (2) 26W (GX24q-3 base), 32W (GX24q-3 base) or 42W (GX24q-4 base) 4-pin triple tube CFL lamps or one (1) 70W or 100W ED-17 medium base metal halide lamp or two (2) 75W A-19 incandescent lamps. CFL socket injection molded plastic. MH and INC socket fired ceramic rated for 4KV. Lamps furnished by others.

Installation
Pole mounted on an EPDM pad with three 3/4"-10 UNC-2A X 18" J-bolts on a 6 1/2" dia. bolt circle. Three conduit feeds in base (by others). Wiring connection via hand hole in post (ground lug at hand hole). Supplied with mounting pad, bolts, mounting hardware and template.

Options
Quartz Restrike (QR) available with 100W magnetic only metal halide fixtures. Photocell (PH), Clear Tempered Glass Lense for full cut-off (TGL) [Dark Sky Compliant]. Energy Star Rating - Consult factory.

Labels
U.L. and C.U.L. listed for wet location. Tamper resistant.

Modifications
Shaper's skilled craftspeople with their depth of experience offer the designer the flexibility to modify standard post top luminaires for project specific solutions. Contact the factory regarding scale options, unique finishes, mounting, additional materials/colors, or decorative detailing.



995-PT SERIES

Exterior Post Top Architectural Half-Pyramid Luminaire

ORDERING INFORMATION

Sample Number: 995-PT-1-MH/1/100-277V-CA-DP-12-6

Series
995-PT: Architectural Half Pyramid Luminaire

Fixture Number
1: 1 Fixture
2: 2 Fixtures

Lamp
CFL/2 (26/32/42W-Triple)
INC/2/75
MH/1/70
MH/1/100

Voltage
120V
277V[1]
347V[2]

Post Finish [3]
Standard
CA: Natural Copper Alloy
Premium
BK: Black
BM: Bronze Metallic
CC: Custom Color
DP: Dark Platinum
GM: Gold Metallic
GRM: Graphite Metallic
GY: Grey
SM: Silver Metallic
WH: White

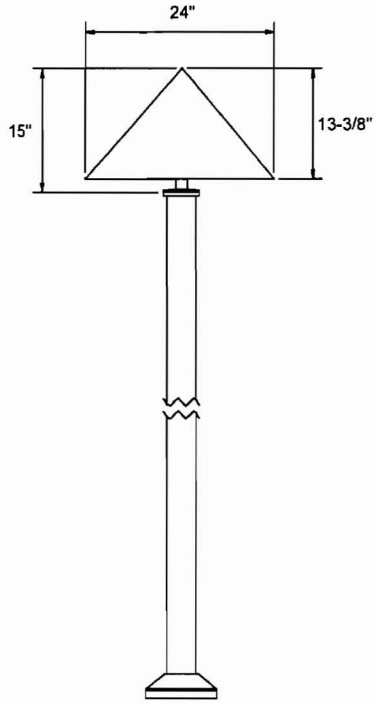
Finish [3]
Standard
CA: Natural Copper Alloy
Premium
BK: Black
BM: Bronze Metallic
CC: Custom Color
DP: Dark Platinum
GM: Gold Metallic
GRM: Graphite Metallic
GY: Grey
SM: Silver Metallic
VG: Verdigris
WH: White

Mounting Height
8'-6"
9'-6"
10'-6"
11'-6"
12'-6"
13'-6"
14'-6"

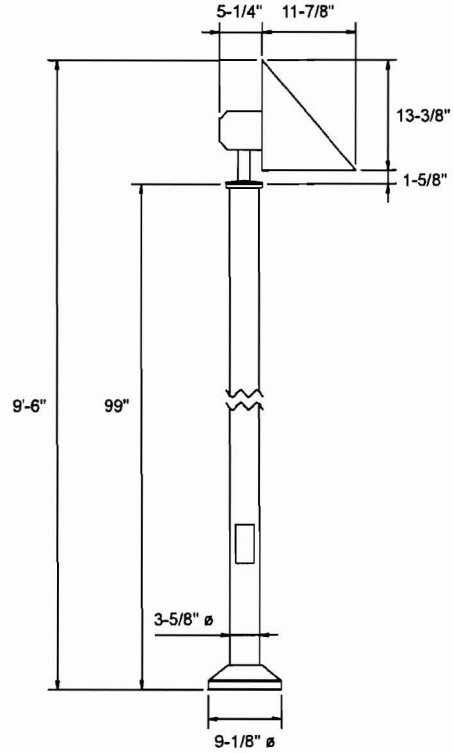
Options
PH: Photocell
QR: Quartz Restrike[4]
TGL: Sandblasted Tempered Glass Lense

Notes: 1 Available with CFL or 100W magnetic MH only.
2 Available with CFL only.
3 Copper alloy or premium TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear.
4 Available with 100W magnetic MH only.

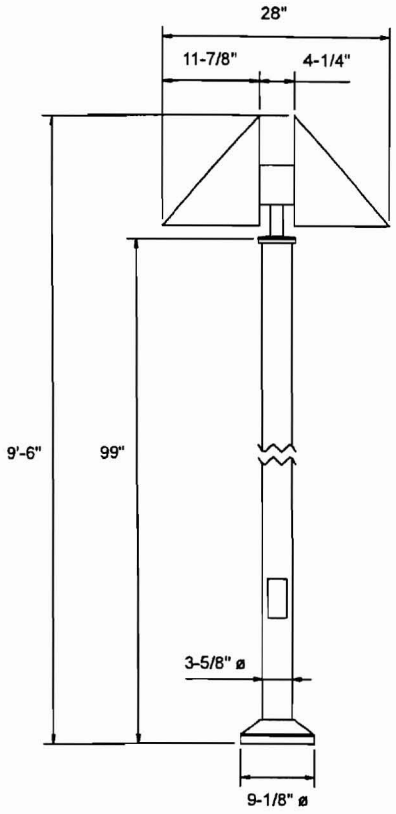
Specifications and Dimensions subject to change without notice.
Consult your representative for additional options and finishes.



995-PT

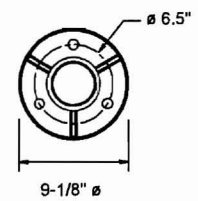


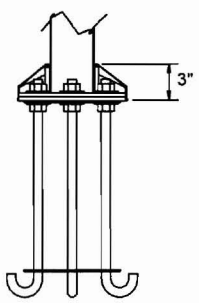
995-PT SIDE



DUAL HEAD VERSION

MOUNTING DETAILS

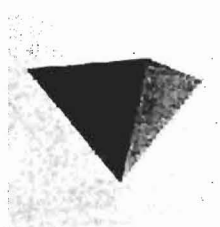




COMPANION PRODUCTS

695-WP

695-WP-DB



651-WP

BAYSIDE VILLAGE – ARCHITECTURAL NARRATIVE

A Student Housing Complex — Marginal Way, Portland, Maine

BUILDING PROGRAM

Bayside Village is a five-level student housing community consisting of 100 four-bedroom apartment style residential units. In addition to the apartments, the building includes associated program spaces such as lobbies, offices, lounges, fitness rooms and meeting rooms. The building will also include a parking use, a retail use and building support spaces on the first level. A large, secure indoor bicycle "parking area" capable of accommodating 96 bicycles has been conveniently located directly off the Marginal Way sidewalk. The property's location is conveniently adjacent to Portland's extensive pedestrian/bicycle trail system.

BUILDING CONFIGURATION

This single building is configured in two wings on the upper floors – one paralleling I-295 and the other paralleling Marginal Way. The Marginal Way facade will reinforce the streetscape with 5 story, broken street wall, which is in keeping with the Bayside plan and new urbanism principals.

RESIDENTIAL DENSITY

At 1.328 acres, the sites residential density is 75 units per acre and 301 bedrooms per acre. This density is high for Portland but consistent with the objectives of sustainable new urban neighborhoods.

DESIGN CHARACTER

The building is proposed with a contemporary character and detailing that will help define downtown Portland's first and only 21st century neighborhood. The new Bayside, as a large urban redevelopment project, is ripe for development with a contemporary vocabulary that will contrast yet compliment the traditional vocabulary of old Portland. During pre-submission neighborhood meetings, the Bayside Neighborhood Association has indicated a strong desire to explore a more contemporary approach to design in lower Bayside. The discussion of this approach will continue through the formal neighborhood meeting process.

EXTERIOR BUILDING CLADDING SYSTEM

The building's exterior cladding is proposed primarily of a variety of durable, long life and easily maintained Kynar 500/Hylar 5000 painted metal panels, copings, trim and sun control systems. Windows will be solid vinyl single hung type units. Architectural concrete panels are proposed along with an aluminum storefront system at the first floor retail façade and main entrance along Marginal way.

This current submission differs from the previous sketch plan submission it two ways:

1) The upper levels of the building is now proposed as "all metal" façade to provide a more unified façade character.
2) The lower level finish material has been changed from face brick to architecturally formed cast in place concrete panels to provide for a more unified contemporary façade character.

Green Building Design Components

Bayside Village will be designed to incorporate many of the latest green building initiatives so as to result in a building that is energy efficient to operate and promote sustainability. As part of this project, the owner will pursue LEED certification of the project. Several of the unique green components proposed are:

- Tri-generation Mechanical/Electrical Plant – The project will incorporate a gas fired system that will provide heat, hot water, cooling and electricity for the project. Though costly to install, this system is expected significantly reduce energy use for the building.
- Recycle excess heat from the tri-generation system to provide a no-energy cost sidewalk snow melt system at the second level courtyard area, thus providing a safe and usable walking surface in winter and reducing maintenance costs for this difficult to manage area.
- Metal Building Cladding – Metal building cladding is considered highly advantageous as a green building system due to its high reflectivity of solar gain, high recycled material content, 100% recycle ability, light weight, durability, long life minimal maintenance requirements.
- Incorporate low-water plant materials and Xeriscape landscaping concepts at the courtyard patio deck in conjunction with raised planter boxes that will support larger and more varied plant materials.
- The wood frame modular units will incorporate numerous green components.
- The specification will call for Energy Star Rated Appliances and Materials.

CONSTRUCTION SCHEDULE

In order to achieve occupancy on August 1, 2007, planning board approval must be secured by September 26, 2006, construction must begin no later than November 1, 2006.

CWS
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BAYSIDE VILLAGE – CASE STUDIES: CONTEMPORARY METAL-CLAD RESIDENTIAL BUILDINGS

A Student Housing Complex — Marginal Way, Portland, Maine

RECENT SHIFT OF METAL CLADDING FROM AN INDUSTRIAL TO A CONTEMPORARY MATERIAL

The use of metal cladding in contemporary architecture has become increasingly popular in recent years. In response to the rising cost or traditional construction materials, the metal industry has shifted its market focus from utilitarian industrial uses to buildings of all uses and types: Commercial Office, Residential; Retail, Recreational; Government, Institutional and more. As a result, the range of metal choices, quality of material coatings and attention to details have evolved to include options that can result it quality, attractive, long life developments.

METAL AS A QUALITY 21ST CENTURY CONTEMPORARY MATERIAL

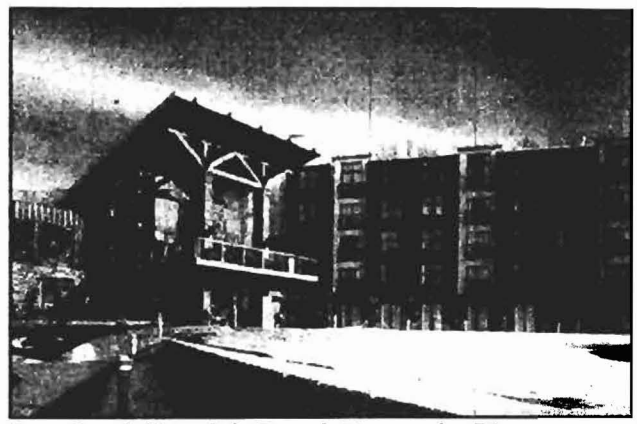
As a result of the above, the design community has embraced metal building cladding as a material that meets their cost, quality and aesthetic objectives. Hence, the use of metal as a preferred contemporary exterior cladding material has grown exponentially over the past five to 10 years. With better quality and more design option enhancements being introduced every year, metal siding will become more prevalent in coming years.

THE LASTING & "GREEN" QUALITIES OF METAL

Metal Cladding has come a long way in the past few decades. What was traditionally prone to paint system failures, corrosion and rusting has evolved, using 21st century technology, into a high quality, maintenance free architectural cladding material with a longevity rivaling that of brick and stone (with less maintenance). This has been achieved through the incorporation of corrosion resistant alloys and materials to create the panels and the use of high performance, durable coating systems with long color retention. As a result, a quality 21st metal siding system has the ability to perform structurally and aesthetically form many decades without significant maintenance and is considered a "Green" product. Also, when regular maintenance is schedule, it is less costly (and thus apt to be scheduled) than more traditional materials such as brick or wood siding.

CASE STUDIES

The following are case studies of multi-family residential buildings that have recently been developed around the country using metal-cladding systems. While relatively new to northern New England with its many traditional neighborhoods, the redevelopment of former industrial neighborhoods such as Bayside offer the opportunity to introduce a 21st century design vocabulary as a complementary, yet clearly contemporary sector of our cities.



Bear Creak Mountain Resort, Macungie, PA
Ski Resort Hotel/Residence
Peter Filiat Architects, Blatimore, MD

The Cate Apartments, Seattle, Washington
31 Units of Affordable Housing
Runberg Architecture Group, Seattle, Washington

Condominium Building, San Francisco, CA

CWS
Architects
Architecture & Planning
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SECTION 02300

PERFORMANCE DESIGN, DESIGN-BUILD PILE FOUNDATIONS

PART 1 GENERAL

1.01 RELATED DOCUMENTS:

A. Drawings and general provisions of the contract, including General and Supplementary Conditions and Division I Specification sections apply to work of this section.

B. The drawings and general conditions of the contract including General and Supplementary Conditions and other Division 1 Specification sections apply to work of this section.

C. Examine all other sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

D. Coordinate work with that of all trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

1.02 DEFINITIONS

A. Design-Build Contractor: Pizzagalli Construction Company

1.03 DESCRIPTION OF WORK

A. PERFORMANCE DESIGN: The complete pile design shall be the responsibility of the Pile Subcontractor. The Pile Subcontractor's Engineer shall be the Engineer of Record for the pile foundations. Submittals prepared by the Pile Subcontractor's Engineer shall be signed and sealed. The Pile Subcontractor's Engineer shall be licensed in the State of Maine at the time of project bidding and for the duration of the project.

B. The work covered by this Section, without limiting the generality thereof, consists of labor, equipment, and material and performing all operations in connection with the furnishing and installing 70 ton (140 kips) minimum net allowable axial capacity piles at the locations and to the lines and grades shown on the drawings. Additional requirements are indicated within this specification.

C. If a pile spacing greater than indicated on the Drawings is required for the Design Build Pile design and/or installation purposes, notify the Design-Build Contractor at time of bidding.

D. Suitable pile types are indicated here within.

1.04 RELATED WORK:

1. Cast-in-Place Concrete: Section 03300

2. Structural Steel: Section 05120

1.05 QUALITY ASSURANCE

A. Codes and Standards: Comply with provisions of the latest edition of the following except where more stringent requirements are shown or specified:

1. IBC: "International Building Code, 2003 edition", as published by the International Code Council

2. ASTM: Specifications of the American Society for Testing and Materials.

3. AWS: Standard Code for Welding in Building Construction, of the American Welding Society,

4. AISC: Specification of the American Institute of Steel Construction.

5. ACI: Specification of the American Concrete Institute

6. PCI: Precast, Prestressed Concrete Institute

7. "Code of Federal Regulations, Part 1926" per the Occupational Safety and Health Administration (OSHA), Department of Labor (Latest Revision).

B. Comply with all rules, regulations, laws and ordinances of the City of Portland, and of all other authorities having jurisdiction, including State and Federal laws including OSHA. All labor, materials, equipment and services necessary to make work comply with such requirements shall be provided without additional cost to Design-Build Contractor.

C. All welding shall be performed by operators who have been previously qualified by tests as prescribed in the AWS D1.1 "Standard Code for Welding in Building Construction". Evidence that welders meet qualification requirements shall be submitted to the Design-Build Contractor's Representative (Testing & Inspection Agency) before welding has begun. The Design-Build Contractor's Representative (Testing & Inspection Agency) may require a weld test for each operator.

D. Field Monitoring and Testing

1. Full-time monitoring of pile driving operations shall be provided by the Design-Build Contractor's Representative (Geotechnical Consultant and Testing & Inspection Agency). No piles shall be driven except in the presence of the Design-Build Contractor's Representative (Geotechnical Consultant and Testing & Inspection Agency).

2. Monitoring of welding and weld testing (if applicable) will be performed by the Design-Build Contractor's Representative (Testing & Inspection Agency). The Pile Installation Subcontractor and Design-Build Contractor shall fully cooperate with the agency to facilitate inspection, notifying it in advance when welding operations are to be performed. Welds which do not conform to applicable specifications shall be repaired as directed by the Design-Build Contractor's Representative (Geotechnical Consultant and Testing & Inspection Agency).

    a. Visual Inspection: All pile splice welds shall be visually inspected.

    b. Ultrasonic Testing: Ultrasonic testing of welded pile spices shall be performed on the first 5 pile splices, and on of 15 percent of the pile splices throughout the project.

3. Certification of quality of pile materials to be used in the work shall be furnished, in a form acceptable to the Design-Build Contractor's Representative (Testing & Inspection Agency), at the time of delivery of materials to the site. Pile materials shall also be subject to on-site observation for conformance with specifications.

4. Approvals given by the Design-Build Contractor's Representative (Geotechnical Consultant and Testing & Inspection Agency) shall not relieve the Pile Subcontractor and Design-Build

Contractor of their responsibility for performing the work in accordance with the Contract Documents.

5. Instrumentation for Pile Installation

    a. Diesel Hammers: Open-type diesel hammers shall be equipped with a gauge for measuring ram height at the top of the stroke. Closed-type diesel hammers shall be equipped with an output energy gauge, calibrated for measurement of the total hammer energy. One spare output gauge shall be maintained at the site.

6. The Design-Build Contractor's Representative (Geotechnical Consultant and Testing & Inspection Agency) shall submit an installation summary. An installation summary given by the Design-Build Contractor's Representative (Geotechnical Consultant and Testing & Inspection Agency) shall not relieve the Pile Subcontractor and Design-Build Contractor of their responsibility for performing the work in accordance with the Contract Documents. Installation summary shall include the following:

    A. Project name and number.
    B. Name of Contractor.
    C. Pile location in pile group and designation of pile group.
    D. Sequence of driving in pile group.
    E. Pile dimensions, plumbness and offset.
    F. Ground elevation.
    G. Elevation of tips after driving.
    H. Final tip and cutoff elevations of piles after driving pile group.
    I. Records of redriving.
    J. Elevation of splices.
    K. Type, make, model, and rated energy of hammer.
    L. Weight and stroke of hammer.
    M. Type of pile-driving cap used.
    N. Cushion material and thickness.
    O. Actual stroke and blow rate of hammer.
    P. Pile-driving start and finish times, and total driving time.
    Q. Time, pile-tip elevation, and reason for interruptions.
    R. Number of blows for each 12 inches of penetration, and number of blows per for set criteria.
    S. Pile deviations from location and plumb.
    T. Weld testing and inspection results.
    U. Unusual occurrences during pile driving.

1.06 SUBMITTALS

A. Unless otherwise specified, submittals required in this section shall be submitted to the Design-Build Contractor for review. The Design Build Contractor will forward the submittals to the Design-Build Contactor's Representative (Geotechnical Consultant). Submittals shall be prepared and submitted in accordance with this section and Division 1.

B. Design-Build Contractor shall submit a Submittal Schedule to the engineer within 30 days after they have received the Notice to Proceed.

C. All submittals shall be reviewed by the Design-Build Contactor's Representative (Geotechnical Consultant) and returned to the Design-Build Contractor within 10 working days following receipt by the Design-Build Contactor's Representative (Geotechnical Consultant).

D. INCOMPLETE SUBMITTALS WILL NOT BE REVIEWED. SUBMITTALS NOT BEARING AN ENGINEERING SEAL AND SIGNATURE WHEN REQUIRED WILL BE REJECTED AND RETURNED WITHOUT REVIEW.

E. Submittals not reviewed by the Design-Build Contractor prior to submission to the Design-Build Contractor's Representative (Geotechnical Consultant) will not be reviewed. Include on the submittal statement or stamp of approval by Design-Build Contractor, representing that the Design-Build Contractor has seen and examined the submittal and that all requirements listed in Division 1 have been complied with.

F. The Design-Build Contractor's Representative (Geotechnical Consultant) will review submittals a maximum of two review cycles as part of their normal services. If submittals are incomplete or otherwise unacceptable and re-submitted, Design-Build Contractor shall compensate Design-Build Contractor's Representative (Geotechnical Consultant) for additional review cycles.

G. PERFORMANCE DESIGN: Performance design shall be prepared by an Engineer registered in the State of Maine, retained by the Pile Subcontractor. The Performance Design submittal shall bear the Engineer's seal and signature. The Pile Subcontractor's Engineer shall be the Engineer of Record for the pile foundations. The Performance Design is subject to the review of the Design-Build Contractor's Representative (Geotechnical Consultant) prior to equipment mobilization.

1. All project piles shall be of uniform section and material

2. Acceptable Pile Materials and Sections:

    a. Steel HP Piles, HP12 or HP14 nominal section, ASTM A992 or A572, Grade 50 Materal.

    b. Square, Solid Core, Precast, Prestressed Concrete Piles, 12 or 14 inches square, minimum 5,000 psi 28-day Concrete Compressive Strength and minimum 700 psi effective prestressing.

    c. ICP High Performance, Pretensioned Spun Concrete Piles, 9.8 or 11.8 inch diameter (proprietary design).

    d. Concrete filled Steel Pipe Piles: Minimum 10" nominal diameter, steel ASTM A252 or ASTM A283, minimum yield stress 36 ksi and concrete minimum 3,000 psi.

    e. Alternate Pile Sections: Pile Sections not indicated are subject to the approval of the Design-Build Contractor's Representative (Geotechnical Consultant).

3. Design Requirements: Unless noted otherwise the piles shall meet the following design requirements:

    a. Minimum net allowable axial pile load: 70 tons (140 kips). Net capacity shall be determined after including the effects of downward frictional forces imposed on pile from subsiding soil strata(s) (down drag).

    b. Minimum factor of safety for ultimate capacity: 2.0 after all reductions including soil down drag, corrosion reduction and as indicated in the IBC Code.

    c. Building Code Requirements: The pile design shall meet the requirements of Chapter 18 of the International Building Code, 2003 Edition, except where more stringent requirements are noted here within and/or on the Documents.

d. Material Stresses: Material Stresses indicated in the Code shall not be increased without the approval of the Design Build Contractor's Representative (Geotechnical Consultant).

e. Splices: Splices shall develop the full engineering and material properties of the spliced sections. Submit evidence of compliance to this requirement.

f. Cut offs and connection to pile cap: The Pile Contractor is responsible for cutting off and disposing of pile waste, and providing sufficient tie-in to pile caps. Connection to pile cap will be determined by the Structural Engineer once a pile design is submitted. Reinforcement from pile may be required to be embedded within the pile cap.

g. Pile Interaction: Pile spacing shall be as shown on Drawings. Pile design shall account for pile-to-pile interaction. Design shall be such that interaction effects shall not reduce the net capacity of the piles. If a pile spacing greater than indicated on the Drawings is required for the Design Build Pile design and/or installation purposes, notify the Design-Build Contractor at time of bidding.

4. Corrosion Allowance:

   a. Steel Sections: 1/8 inch Corrosion Allowance

   b. Alternate to Corrosion Allowance for Steel Piles: Coating may be permitted as an alternate to a corrosion allowance. When acceptable, coating is required at the fill levels anticipated at the upper strata of the soils. Coating system is subject to the review of the Design-Build Contractor's Representative (Geotechnical Consultant).

   c. Concrete Pile Corrosion Protection: Reinforcement for prestressing steel and pile reinforcement shall have a cover of not less than 1 1/2".

   d. Splices: Splice made within the upper fill soil strata shall have adequate corrosion protection. Submit proposed corrosion protection for review by the Design-Build Contractor's Representative (Geotechnical Consultant).

5. Determination of Allowable Geotechnical Capacity/Driving Criteria

   a. Submit information on proposed pile driving system and procedures for review by the Design-Build Contractor's Representative (Geotechnical Consultant) prior to equipment mobilization. The system should be capable of installing the piles to the specified minimum ultimate geotechnical capacity without exceeding the allowable driving stresses.

   b. Proposed 'set' or stop driving criteria determined the Pile Subcontractor using information obtain from the pile load testing.

   c. Submit a Wave Equation Analysis which indicates the selected pile hammer can drive the piles to the required minimum ultimate capacity without overstressing or damaging piles. Minimum ultimate pile factor of safety shall be 2.0.

d. Soil Down Drag: Determine soil down drag anticipated from site soil subsidence. Include soil down drag in design when determining net pile capacity. The determination of down drag is the responsibility of the Pile Subcontractor's Engineer. Calculations of down drag shall be included in the signed and sealed submittal.

e. Submit driving tip product information for driving tip to be utilized for pile installation, if applicable.

6. Load Tests: Per the requirements of Chapter 18 of the IBC Code, pile load test(s) shall be a requirement of this work. The proposed load testing procedures shall be included in the pile design submission.

   a. Load Testing shall be the responsibility of the Pile Subcontractor.

   b. The Design-Build Contractor shall engage a qualified firm with a minimum of 5 years experience in such testing to perform dynamic load testing if utilized.

   c. Static Load Tests: Per ASTM D1143; If static load testing methods are employed, at least one pile shall be load tested in each area of uniform soil conditions.

   d. Dynamic Load Tests: Per ASTM D4945; If dynamic load testing methods are employed, at a minimum a total of 10 piles shall be tested. A minimum of 5, single piles shall be tested in unique pile groups of 3 or more. All test piles shall be re-struck and tested after 24 hours to verify the effects of soil relaxation.

   e. Additional tests and testing requirements may be required by the Building Code Official. The Design-Build Contractor shall with the Pile Subcontractor and the Build Code Official to coordinate load testing.

   f. Load Tests shall be continuously documented by the Design-Build Contractor's Representative (Geotechnical Consultant).

H. Shop Drawings

1. Pile location plan: A plan, prepared by the Pile Installation Subcontractor, showing the location and designation of piles by an identification system shall be submitted prior installation. Detailed records for piles shall bear an identification corresponding to that shown on the plan. The pile location plan should indicate which piles are to be designated as test piles.

2. Shop Drawings showing sizes, tip details, and details for splice and shear connections, and other items pertinent to pile design.

3. Information on proposed pile driving system for review by the Design-Build Contractor's Representative (Geotechnical Consultant) prior to equipment mobilization. The system should be capable of installing the piles to the specified minimum ultimate geotechnical capacity without exceeding the allowable driving stresses. Review by the Design-Build Contractor's Representative (Geotechnical Consultant) shall not relieve the Pile Installation Subcontractor and Design-Build Contractor of their responsibility for performing the work in accordance with the Contract Documents.

4. Details of equipment and procedures.

I. Manufacturer's literature, including technical and performance literature for pile driving hammer, cushions, driving tips and other equipment for piles.

J. Mill certificates stating the chemical composition, yield point and ultimate strength of the steel and/or concrete strength data.

K. Qualifications for Welding Work: Qualify welding processes and welding operators in accordance with AWS D1.1 "Standard Qualification Procedure."

1. Provide certification that welders to be employed in work have satisfactorily passed AWS qualification tests.

2. If re-certification of welders is required, retesting will be the Contractor's responsibility.

L. As-Driven Pile Location Data:

1. Submit pile location two days after individual pile or pile cluster is completed.

2. All survey information to locate pile locations, elevations and offsets shall be supplied by the Design-Build Contractor.

3. At the completion of pile driving, submit final as-driven pile location plan with tabulated lengths, certified by a Registered Land Surveyor or Registered Professional Engineer.

M. Pile Installation Summary

1.07 JOB CONDITIONS

A. Site and Subsurface Conditions

1. Subsurface investigation data are available from the Design-Build Contractor in the report "Geotechnical Engineering Services, Proposed Housing, 84Marginal Way, Portland Maine" dated September 7, 2006 prepared by SW Cole Engineering. Prior to submitting a bid, the Pile Installation Subcontractor shall review and understand the information contained in the report. The geotechnical investigation report is made available to the Pile Installation Subcontractor for information on factual data only and shall not be interpreted as a warranty for subsurface conditions whether interpreted from written text, boring logs, or other data.

B. Adjacent properties

1. Pre-driving survey: The Pile Subcontractor shall perform a pre-driving survey on structures adjacent to the project. The pre-driving survey shall include photographs and the installation of crack monitors as appropriate to establish a base line prior to the start of pile driving activities.

2. The Pile Subcontractor shall protect adjacent property, public utilities and structures, and completed work, from damage associated with the pile driving operation. All damage due to any pile driving operations shall be repaired by the Pile Subcontractor at the Subcontractor's own expense.

1.08 PRODUCT DELIVERY, STORAGE AND HANDLING

A. The Contractor shall deliver piles at times and in sequence to assure continuity of pile driving.

B. Piles shall be handled, transported, stacked and protected to prevent damage to piles.

1.09 LINES AND GRADES

A. The Pile Subcontractor shall stake the pile locations and establish all elevations required. A baseline and benchmark located on or close to the site will be provided by the Design-Build Contractor. The Pile Subcontractor shall be responsible for the maintenance and protection of the baseline and benchmark, and all pile location stakes.

B. The Design-Build Contractor shall employ a licensed Registered Land Surveyor familiar with pile installation, who shall verify driven pile. Locations of the centers of as-driven piles shall be shown on a drawing in relation to the design location and submitted to the Design-Build Contractor within two days after the individual pile or pile group is completed. Drawings shall include the following:

1. Base line and north arrow.

2. Each pile identified by a separate number.

3. Elevation of each top of pile prior to cutting, to nearest 0.1 foot.

4. Deviation in inches, to the nearest one-fourth inch, from plan location at cutoff elevation.

C. Within one week after the completion of all pile driving, the Surveyor shall provide to the Design-Build Contractor a plan, certified by said Surveyor or Engineer, showing the as-driven location of all piles. Plan shall be immediately distributed to Structural Engineer.

PART 2 EXECUTION

2.01 SEQUENCE OF OPERATIONS AND EQUIPMENT REQUIREMENTS

A. The Pile Subcontractor shall provide equipment to maintain the schedule as developed by the Design-Build Contractor, and shall mobilize additional equipment, if necessary, to complete the work on schedule.

B. Pile Load Test: As indicated in this specification.

C. When piles are located in an area where excavation is to be made, the piles shall not be driven until the excavation has been completed.

D. The Design-Build Contractor shall coordinate his pile driving operations with other work on the project.

2.02 EQUIPMENT

A. Piles shall be installed with modern equipment as approved by the Design-Build Contractor's Representative (Geotechnical Consultant), per the Performance Design. Approval shall be obtained from the Design-Build Contractor's Representative (Geotechnical Consultant) a minimum of one week prior to commencement of pile driving.

B. The leads of the pile driving rig shall be fixed at two points; the points shall be at least half the length of the leads apart in order to maintain the pile and hammer in axial alignment at the correct plan location during the entire driving operation. The leads shall extend down to the lowest point at which the hammer must operate.

C. Piles may be driven with a single acting, double acting, or differential acting hammer.

D. In the case of diesel hammers, the Pile Installation Subcontractor will be required to provide an apparatus, approved by the Design-Build Contractor's Representative (Geotechnical Consultant), to measure gas pressures inside the hammer for closed hammers or ram bounce height in the case of open hammers.

E. An aluminum micarta cushion block, or other cushion material approved by the Design-Build Contractor's Representative (Geotechnical Consultant), shall be used in the hammer for driving piles. The cushion shall be replaced when, burned or otherwise worn. The introduction of fresh hammer cushion or pile cushion material just prior to final penetration

F. The use of followers will not be permitted unless authorized in writing by the Design-Build Contractor's Representative (Geotechnical Consultant).

2.03 OBSTRUCTIONS AND OUT-OF-TOLERANCE PILES

A. The Pile Installation Subcontractor shall make reference to the test boring and test pit logs and available plans showing the site conditions.

B. Piles abandoned because of obstructions encountered or out of tolerance shall be cut off or pulled out at the discretion of the Design-Build Contractor's Representative (Geotechnical Consultant) and the hole filled with sand.

C. Removal of obstructions by spudding, augering, drilling, etc. is not recommended, however, may be allowed in certain conditions with the approval of the Design-Build Contractor's Representative (Geotechnical Consultant).

2.04 INSTALLATION

A. Driving

1. As part of the preparation for driving, each pile shall be marked at one-foot intervals. In addition, the footage shall be marked and designated at five-foot intervals, starting from the tip of the pile.

2. All Piles shall be driven at the locations and orientations shown on the drawings. Pile location shall be checked during driving and appropriate measures taken, as necessary, to maintain the correct pile position.

3. Each pile shall be driven to the Pile Subcontractor's set criteria to achieve the required capacity of the Performance Design. Pile driving shall be continuous and without interruption for the final 20 feet of penetration. The set criteria shall be as determined in the approved Pile Performance Design. An abrupt increase in driving resistance shall be evaluated by the Pile Subcontractor. All production piles shall be restruck as determined by the dynamic load test report.

4. Immediately after a pile in a pile group is driven, the Contractor shall establish a reference point and its elevation on the pile for the purpose of checking uplift of the pile tip.

5. After all piles within the radius of uplift have been driven, the Pile Subcontractor shall determine the elevation of the reference points on each of the piles in the group. If uplift determined to be unacceptable by the Design-Build Performance Design has occurred, the pile shall be re-driven to its original elevation, and deeper if necessary to the specified final driving resistance. After re-driving each pile, the Pile Subcontractor shall re-establish the

elevation of the reference point. Re-driving shall be repeated as often as necessary until the measured uplift on any pile is within the acceptable limit of the design.

6. The radius of uplift is defined as the maximum distance between piles such that pile driving causes uplift of an amount greater than that indicated in the Design-Build Performance Design, in the affected pile. Survey instruments used to establish the reference elevations shall be carefully checked and adjusted as necessary to insure accurate readings. Uplift measurements shall be submitted to the Design-Build Contractor Representative (Geotechnical Consultant).

B. Splicing

1. A maximum of 2 pile splices shall be allowed for any pile type

2. No splices will be permitted in the upper 10 feet of the embedded portion of the pile.

3. The strength of all splices, in compression, tension, and bending, shall be equal to or greater than the ultimate capacities of the pile section.

4. Piles may be spliced in the leads. The sections of piles to be spliced shall be secured in alignment such that there is no eccentricity between the axes of the two spliced lengths, or angle between them, after the splice has been completed.

5. Welded steel sections shall be spliced by continuous, butt-joint, 45 degree bevel; or vee, complete penetration, arc welding around the entire circumference, to produce joints developing 100 percent of the pile section strength.

   a. Electrodes conforming to ASTM A233, E-70 series, compatible with the pile steel, shall be used.

   b. Welds which do not conform to specifications shall be gouged and repaired as directed by the inspector.

6. Mechanical drive-fit splices shall not be used.

C. Cutting off Piles

1. Pile tops shall be cut off square within one inch of the elevations shown on the drawings. The pile cut-offs shall become the property of the Pile Installation Subcontractor and shall be removed from the site. Strands or reinforcement may be required to be exposed to allow embedment into the pile cap.

2. When piles are driven below the design cut-off grade, due to unexpected penetration, a limited number of build-ups will be permitted in accordance with designs provided by the Pile Installation Subcontractor and reviewed by the Design-Build Contractor's Representative (Geotechnical Consultant). Build up costs shall be the responsibility of the Pile Installation Subcontractor.

2.05 TOLERANCES AND CRITERIA FOR ACCEPTANCE

A. Piles shall be driven as close as practicable to the plan location. Allowable maximum deviations shall be as follows:

1. Lateral deviation from column centerline and centroid of pile or pile group for single piles and groups of two piles: 1 inches.

2. Lateral deviations from column centerline and centroid of pile group for groups of three or more piles: 3 inches.

3. Design cut off elevations: 1 inch.

4. Plumbness of a driven pile measured on the projection above ground: 3 inches in 10 feet.

B. Structural Engineer shall be immediately informed of out-of-tolerance piles. The Structural Engineer will evaluate out-of-tolerance piles and recommend remedial action if required.

C. Pile damage: The Design-Build Contractor's Representative (Geotechnical Consultant) will note if a pile is likely to have been unacceptably damaged based on his knowledge of the subsurface conditions and comparison of the subject piles driving performance with that of other driven piles. In the case of a questionable pile, the pile shall be considered rejected unless the pile can be proven intact by methods approved by the Design-Build Contractor's Representative (Geotechnical Consultant).

D. Piles indicating sudden or peculiar decrease in penetration resistance during driving will be assumed to be broken and will be rejected unless Design-Build Contractor's Representative (Geotechnical Consultant) review of available data indicates that sudden decrease in driving resistance is due to natural, subsurface conditions and continued acceptable driving behavior is observed. In the case of a questionable pile, the pile shall be considered rejected unless the pile can be proven intact by methods approved by the Design-Build Contractor's Representative (Geotechnical Consultant).

E. Except in the case of obstructions, piles that are rejected because of damage, mis-location or misalignment, or failure to meet the driving criteria, shall be cut off below the limits of the structure and abandoned, and additional piles shall be driven as directed by the Design-Build Contractor's Representative or the Structural Engineer. New piles required due to piles driven out-of-tolerance shall be provided at the Pile Installation Subcontractor's expense.

F. When otherwise acceptable, the Design-Build Contractor shall provide an accurate survey to the Structural Engineer of installed piles exceeding the specified tolerances as specified. The maximum compressive load on any pile due to mis-location shall not exceed 110 percent of the minimum net allowable axial capacity. If the load on any pile exceeds 110 percent of the minimum net allowable axial capacity, corrections shall be made in accordance with a design provided by the Structural Engineer.

G. The installation of replacement piles and other corrective measures shall in all cases be in accordance with designs provided by the Structural Engineer.

PART 3 MEASUREMENT AND PAYMENT

3.01 MEASUREMENT

A. Piles will be measured for payment on the basis of length along the axis of the pile in place below the design cutoff elevation.

3.02 BASIS OF PAYMENT

A. Work included under this contract shall include installation of the piles. The amount of such work shall include, but not by way of limitation, location of, design, furnishing and driving the piles, load testing, splicing, pile tips, and all work incidental thereto, and mobilization and demobilization which

shall include job set-up, moving, equipment including pile driving rigs on and off the project, establishing and dismantling the Pile Installation Subcontractor's field administration forces and equipment, and all other work incidental thereto.

B. The footage of foundation piles for payment shall be the sum of the lengths of the piles below design cutoff grade actually driven and accepted.

C. Piles rejected in accordance with the provisions of these Specifications and which result in the judgment of the Design-Build Contractor's Representative (Geotechnical Consultant and Testing & Inspection Agency) or Structural Engineer, from the Pile Installation Subcontractor's violation of the Specifications or his other error, will not be paid for. If one or more replacement piles are required by the Design-Build Contractor's Representative (Geotechnical Consultant and Testing Agency) or Structural Engineer to compensate for a rejected pile, the Pile Installation Subcontractor will be paid at the Contract unit price per foot for only the longer of the replacement piles and not for the rejected pile. Additional piles required to compensate for production piles or replacement piles driven out of design location or tolerance due to Pile Installation Subcontractor error will be installed at no additional cost to the Design-Build Contractor.

D. Piles rejected, in the judgment of the Design-Build Contractor's Representative (Geotechnical Consultant) due to causes other than the Pile Installation Subcontractor's violation of the Specifications or his other error, will be measured and included in the aggregate footage of piles for payment.

E. Whenever, in the judgment of the Design-Build Contractor's Representative (Geotechnical Consultant) and/or Structural Engineer, misalignment or rejection of a pile or piles caused by the Pile Installation Subcontractor's violation of the specifications or his other error necessitates structural redesign of the pile cap, and the redesigned pile cap requires greater quantities of concrete and reinforcing steel, the quantities required shall be compared with quantities required for the pile cap for the design pile group configuration, and the additional cost for pile cap concrete, reinforcing steel and form work shall be deducted from the contract price, in addition to redesign cost. Whenever, in the judgment of the Design Build Contractor's Representative (Geotechnical Consultant) and/or Structural Engineer, misalignment or rejection of a pile or piles caused by the Pile Installation Subcontractor's violation of the specifications or his other error necessitates structural redesign, the cost of such redesign shall be deducted from sums otherwise due to the Pile Installation Subcontractor under the contract.

F. No payment will be made for pile cut-offs, splices and pile buildups.

END OF SECTION

GEOTECHNICAL ENGINEERING SERVICES
PROPOSED HOUSING
84 MARGINAL WAY
PORTLAND, MAINE

05-1177.2 **September 7, 2006**

PREPARED FOR:

Realty Resources Chartered
Attention: Ed Marsh, Jr.
28 Merchants Plaza
Bangor, Maine 04401

PREPARED BY:

S.W.COLE ENGINEERING, INC.

286 Portland Road
Gray, Maine 04039

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S.W.COLE ENGINEERING, INC. • Geotechnical Engineering • Field & Lab Testing • Scientific & Environmental Consulting

05-1177.2

September 7, 2006

Realty Resources Chartered
Attention: Ed Marsh, Jr.
28 Merchants Plaza
Bangor, Maine 04401

Subject: Geotechnical Engineering Services
Proposed Housing
84 Marginal Way
Portland, Maine

Dear Mr. Marsh:

In accordance with our Agreement, dated July 13, 2006, we have made a subsurface investigation for the Proposed Housing at 84 Marginal Way in Portland, Maine. This report presents our findings and recommendations and is subject to the limitations set forth in Attachment A.

1.0 INTRODUCTION

1.1 Scope of Work

The purpose of our work was to obtain additional subsurface information at the site in order to develop geotechnical recommendations relative to foundations and earthwork associated with the proposed construction. The investigation has included subsurface explorations, a geotechnical analysis of the subsurface findings, and preparation of this report.

S. W. COLE ENGINEERING, INC. had previously completed preliminary geotechnical engineering services and presented a preliminary report dated March 7, 2006 (SWCE Project No. 05-1177).

1.2 Proposed Construction

Based on the information provided, the proposed construction consists of two, five-story student housing structures with at grade parking below the first floor. The structures will be about 50 by 350 feet in plan dimensions. The structures will be located on the easterly end of the approximately 3.1 acre parcel. It is understood the first level will be predominantly paved parking with a portion of the first level area in the southwest area being used for retail and mechanical spaces. It is understood the structures will be of modular wood construction and wood framed. Based on information provide by Becker Structural Engineers (project structural engineers), column loads on the order of 400 kips for interior columns and 200 kips for perimeter columns are anticipated for the structure. We understand that 70 ton working capacity piles are being considered for this project. Based on information provided by Mitchell & Associates (project site civil engineers), it is anticipated that finished grades and the finished floor elevation for the retail areas will be at about elevation 12.

2.0 EXPLORATION AND TESTING

2.1 Exploration

Three test borings (B-1, B-2, and B-3) were drilled during the preliminary subsurface investigation in January 2006. Three additional test borings (B-201, B-202, and B-203) were drilled recently at the project site during July 18 to July 20, 2006. The borings were made by Great Works Test Boring of Rollinsford, New Hampshire working under subcontract to S. W. COLE ENGINEERING, INC. The explorations were established in the field by S. W. COLE ENGINEERING, INC. based on 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 11. A key to the notes and symbols used on the logs is attached as Sheet 12.

A Phase I Environmental Site Assessment was conducted concurrent with the geotechnical exploration. Soil samples were collected from each boring. The soil samples were screened for petroleum and other volatile organic compounds (VOCs) with a photoionization detector (PID). Two soil samples containing ash were submitted to Katahdin Analytical Services in Westbrook, Maine for total RCRA 8 metals analyses. A separate letter report for this work has been provided to you (SWCE Project No. 05-1177.1 E).

2.2 Testing

Field tests included standard penetration resistance tests (SPT) performed with split-spoon samplers, pocket penetrometer tests, and field vane shear tests. Laboratory testing was performed on selected samples from the explorations. The results of field tests and laboratory moisture content tests are shown on the boring logs. Results of grain-size testing are attached as Sheets 13 and 14.

3.0 SITE AND SUBSURFACE CONDITIONS

3.1 Site Conditions

The site is generally bounded by Interstate 295 to the north, Marginal Way to the south, Preble Street to the west, and an existing bus shelter and skateboard park to the east. The site is currently a paved parking lot used by the city as a recycling center, with recycling dumpsters placed on the site. The site is relatively flat and the elevation is about 11 feet.

3.2 Subsurface Conditions

In general the borings encountered a soil profile consisting of fill overlying organic silt (bay mud) with shells overlying silty clay. The silty clay deposit is underlain by a layer of sand (glacial outwash) which is underlain by silty sand with gravel (glacial till). Apparent bedrock was encountered in four of the six test borings. The principal strata encountered at the borings are summarized below. Refer to the attached logs for more detailed descriptions of the subsurface findings at each of the test boring locations.

Fill: The fill generally consists of two units, an upper sand and gravel fill, and a lower silt, sand, and gravel fill. The sand and gravel is a base course / subbase fill, was found to be generally medium to very dense and extends to depths of 1.7 to 9 feet below the pavement at the borings. The lower fill is generally loose to medium dense and is composed of silts, sand, gravel, and some ash and brick. The lower fill was found to extend to about 15 feet below the pavement at the borings.

Glaciomarine Strata: The glaciomarine stratum generally consists of a soft relic bay-mud layer with organics and seashells overlying a stiff layer of brown silty clay overlying a medium to soft layer of gray silty clay. The stiff brown silty clay was not encountered in boring B-201. The relic bay-mud ranges in thickness from about 4 to 11 feet. The stiff brown clay ranges in thickness from about 6 to 8 feet, where encountered. The medium to

soft gray clay begins at depths ranging from about 15 to 36 feet below the ground surface and ranges in thickness from about 50 to 60 feet at the borings.

Glacial Outwash: The glacial outwash stratum found at borings B-201 and B-203, generally consists of medium dense silty fine to medium sand and a trace of gravel. The outwash sands were encountered at depths ranging from about 83 to 87 feet and are interpreted to be about 4 feet in thickness. The glacial outwash was not encountered at boring B-202.

Glacial Till: The glacial till stratum ranges from medium-dense to very dense gray silty sand with gravel. The glacial till stratum was generally encountered at depths ranging from about 78 to 91 feet at the explorations. Occasional cobbles and boulders were encountered in boring B-201 and the glacial till is generally dense to very dense below depths of ranging from about 90 to 100 feet. Glacial till typically contains cobble and boulders of various sizes.

3.3 Groundwater Conditions

Based on visual observations of soil samples, the soils appeared saturated below about 5 feet below the ground surface. Water level measurements were taken on July 19, 2006 at the piezometer installed in boring B-2 from the previous explorations at the site. The groundwater was measured to be about 5 feet below the existing pavement surface.

3.4 Seismic and Frost Conditions

According to the 2003 International Building Code, we interpret the subsurface conditions to correspond to a seismic soil Site Class E. The design freezing index for the Portland area is about 1,250-Fahrenheit-degree-days, which corresponds to a frost penetration depth on the order of 4.5 feet.

4.0 EVALUATIONS AND RECOMMENDATIONS

4.1 General

Based on the subsurface findings and our understanding of the proposed project and structural loads, it is our opinion that the site soils are not suitable for support of the proposed structure on spread footings. Due to the presence of uncontrolled fills and thick deposits of glaciomarine clays at the site, the proposed structure will require a deep foundation system. Because the site is underlain by uncontrolled fills, we recommend that

any concrete floor slabs at ground level also be structurally supported. This includes the proposed retail / mechanical space or other concrete slab areas.

Considering the site has been utilized as a parking area for many years and the existing pavement is in good condition, it is our opinion that the asphalt pavement section proposed for the on-grade parking can be supported on the prepared existing soils.

Excavation work below a depth of about 5 to 6 feet will likely encounter groundwater seepage that will cause softening of subgrades and destabilize excavations. Controlling groundwater to a depth of at least 1 foot below subgrades will help to stabilize subgrades. Deeper excavations will need braced sheeting or trench boxes.

4.2 Pile Foundations

Based on the subsurface findings, it appears that driven steel H-piles or driven displacement piling such as concrete filed steel pipe piles or precast-prestressed concrete piles would be suitable for support of the structure and structural slabs. Piles will need to be driven to practical refusal in the dense glacial till or to bedrock. Based on our understanding of the proposed project, we offer the following table of sample pile sections and estimated allowable capacities.

Recommended Pile Capacities		
Pile Type	**Section**	**Estimated Allowable Axial Compressive Capacity (kips)**
Concrete filled Steel Pipe Pile, 0.3" min wall thickness, 1" flat plate at tip	10 ¾" diameter	80
	12 ¾" diameter	100
Precast-Prestressed, Solid Core, Reinforced Concrete Pile (f'c = 5000 psi)	10" square	80
	12" square	100
Steel H-Pile with cast driving tips, 50-ksi steel, driven to practical refusal		⅛" corrosion
	HP 12 x 53	100
	HP 12 x 74	200
	HP 14 x 89	250
	HP 14 x 117	380

NOTES:

1) A reduction in pile capacity will need to be considered, due to soil downdrag, if surficial loads, such as new fills or surface loads over 200 psf, are placed on the site.
2) The above capacities are estimates only. Actual capacities will need to be assessed by the pile contractor through a test pile and load testing program.
3) The estimated capacities shown above for concrete-filled steel pipe pile are based on capacities achieved at a nearby site driven into the glacial outwash sands or just into the glacial till. A pile capacity of at least 100 kips was required for that project. We would expect capacities of the pipe pile, solid core concrete piles, and ICP concrete piles to be similar, using similar dimensional piles. We expect, however, that higher capacities of pipe pile, solid core concrete piles, and ICP piles could be achieved by driving these piles deeper into the glacial till stratum.

Considering the depths to dense glacial till encountered at the test borings and a pile cap depth of at-least 4.5 feet below finished grade, we estimate pile lengths may range from 85 to 100 feet for steel pipe and prestressed concrete piles. H-piles should be driven into the very dense glacial till stratum, or to bedrock, or until a practical refusal surface is encountered, which may result in pile lengths generally ranging from about 100 to 120 feet. Because subsurface conditions vary across the site, the actual tip elevations and lengths of driven piling will also vary with location. Lengths of any pile type driven into the glacial till would be variable due the presence of cobbles and boulders within the glacial till that may result in practical pile refusal. For any pile option, it is likely that some piles may encounter cobbles and/or boulders at depth and could be damaged during driving, thus the project should account for a loss of piles and/or capacity reduction, due to damage. To assess the variability of depth to bearing strata and to better refine estimates for pile lengths, we recommend that the contractor coordinate several test piles to be driven at different locations at the site.

We understand that prestressed ICP concrete piles are being considered for foundations support. We anticipate that ICP piles would have allowable axial compressive capacities similar to concrete filled steel pipe piles or precast-prestressed reinforced concrete piles. Since this pile type is new to the Portland area, we recommend that further evaluation of this pile type by the contractor to include a test pile and load test program to evaluate drivability and allowable capacities.

Uplift capacity of the piles will be affected by the pile spacing, pile type, splices and actual depths required to achieve capacity. S. W. COLE ENGINEERING, INC. can assist the

design team to help estimate uplift capacities of the piles after a proposed pile type has been selected and again after the test piles have been driven. Alternatively, an uplift test program can be implemented by the contractor to assess actual uplift capacities.

Grade beams, pile caps and foundations exposed to freezing temperatures should extend at least 4.5 feet from finished grade. Piles should be spaced a minimum center-to-center distance of at least 3 pile diameters, but no less than 30 inches. Piles in groups should be driven from the interior outward to help preclude excessively hard driving conditions of the interior piles due to soil densification.

We recommend that lateral loads be resisted by passive earth pressures acting on the grade beams and pile caps. Passive lateral resistance acting on grade beams and pile caps backfilled with compacted Structural Fill should consider a total unit weight of granular backfill (γ_t) of 125 pcf, an angle of internal friction of 30 degrees with an ultimate passive lateral earth pressure coefficient (K_p) of 3.0. Additional resistance to lateral loads can be mobilized along the pile shafts and by battered piles, if needed. S. W. COLE ENGINEERING, INC. can assist with lateral pile capacities, as deemed necessary by the structural engineer. Alternatively, a lateral load test program can be implemented by the contractor to assess actual lateral pile shaft capacities.

Pile load tests are required to be performed on projects having piles with design capacities over 40 tons (80 kips). We understand that a 70 ton pile capacity is being considered for this project. A test pile program including monitoring of several piles with a Pile Driving Analyzer (PDA) to determine pile and driving equipment compatibility as well as to define the "set" criteria and allowable capacity should be implemented. The test pile program should include PDA monitoring of the test piles during re-strikes in order to assess pile capacity and driving resistance after pore water pressures have relaxed. The pile driving contractor should submit a WEAP analysis and information relative to pile driving equipment prior to beginning driving. S. W. COLE ENGINEERING, INC. should be on-site during pile driving to document the pile driving

4.3 Subgrade Preparation

Site preparation should begin with construction of an erosion control system to protect drainage ways and areas outside the construction limits. The soils that will be exposed will

be subject to erosion. As much existing pavement and vegetation as possible should remain adjacent to the construction site to lessen the potential for erosion.

Based on the information obtained at the test borings, subgrades will likely consist of uncontrolled loose to dense generally granular fill. Ash fill should also be expected in this area of Portland. Groundwater will be encountered in excavations, such as for foundations, elevator pits or site utilities. We recommend that all foundations, including pile cap and grade beam subgrades be overexcavated by about 12 inches and replaced with a layer of compacted crushed stone. The crushed stone will help to provide a stable working mat and a drainage media for dewatering. Pipe trench bottoms should also be overexcavated at least 12 inches and replaced with at least 12 inches of compacted crushed stone overlying a non-woven geotextile fabric such as Mirafi 160N. Utility structures such as manholes, vaults and catch basins should be overexcavated at least 24 inches and replaced with at least 24 inches of compacted crushed stone overlying a non-woven geotextile fabric. We recommend that excavation to subgrades be completed with a smooth-edged bucket to lessen disturbance of subgrade soils.

4.4 Excavation

Excavation work will encounter uncontrolled miscellaneous fills. The on-site fill soils are not suitable for reuse below slabs or backfill against foundations, but it may be possible to reuse the sandy on-site upper fill for trench backfill below paved areas provided they are screened of miscellaneous debris and are at a moisture content which is consistent with the required compaction. Existing asphalt pavement should be removed prior to foundation construction. The pavement may be crushed and blended with sand to create material suitable for reuse as pavement subbase.

Groundwater and wet soil conditions will likely be encountered in the foundation excavations deeper than about 5 feet below existing grades. In our opinion, ditching with sump and pump dewatering techniques should be adequate to control groundwater in shallow foundation excavations. It should be anticipated, however, that heavy rains and/or higher than normal tides will affect groundwater levels and may require significant sumping and pumping or other means of dewatering. We recommend a 12-inch layer of crushed stone be placed over foundation subgrades to act as a drainage media from which to sump and pump. Deeper excavation, such as for utilities, will likely require trench box or braced sheetpile shoring for groundwater cutoff and excavation stability. In any case, excavations must be properly shored and/or sloped in accordance with OSHA trenching regulations to prevent sloughing and caving of the sidewalls during construction.

4.5 Concrete Slabs in Heated Areas

We recommend that concrete slab floors in the retail / mechanical area be structurally supported. These slabs should be underlain by at least 12 inches of compacted Structural Fill or crushed stone. We have assumed these slabs will be in heated areas. The Structural Fill or crushed stone below the slabs should be hydraulically connected to foundation underdrains.

We recommend that a vapor retarder be placed directly below concrete slabs in enclosed spaces. The vapor retarder should have a permeance that is less than the floor covering being applied on the slab and should be installed according to the manufacturer's recommended methods including taping all joints and wall connections. Flooring suppliers should be consulted relative to acceptable vapor retarder systems for use with their products. The vapor retarder must have sufficient durability to withstand direct contact with the subslab fill and construction activity.

4.6 Foundation Drainage

We recommend that a perimeter foundation drain system as well as several interior sub-slab drains be provided for the retail / mechanical areas and other enclosed first floor areas of the structure. An underdrain should also be provided for any elevator pit areas. The foundation drains should be placed at least 4.5 feet from freezing temperatures and should consist of 4-inch diameter rigid underdrain pipe having perforations of ¼ to ½ inches. We recommend that at least 6 inches of crushed stone bedding be provided around the foundation drains and that the stone be wrapped with a geotextile filter fabric having an apparent opening size of at least 70. The foundation drainage system must have a positive gravity outlet.

Exterior foundation backfill should be sealed with a surficial layer of clayey or loamy soil in areas that are not to be paved or occupied by entrance slabs to reduce direct surface water infiltration into the backfill. Roof drains should be routed in separate non-perforated pipes, also placed below the frost depth. Utilities in non-heated areas, extending through slabs or asphalt paving into underlying soils, should have a gasket at grade to prevent surface water from entering the underlying fills and to allow some differential movement.

4.7 Entrances, Sidewalks, and Exterior Slabs

Entrance approaches, sidewalks and exterior slabs should be designed to reduce the effects of differential frost action between doorways and entrances. We recommend that excavations beneath the entire width of entrances, sidewalks, and exterior slabs continue to at least 4.5 feet below finish grade. These areas should be backfilled with compacted non-frost susceptible granular fill meeting the Structural Fill gradation to limit abrupt heave or differential movement. We recommend the structural fill be underlain by non-woven geotextile fabric. The zone of non-frost susceptible material adjacent to exterior foundations and below entrance slabs and sidewalks should transition up to any adjacent pavement subbase or loam at a 3H:1V slope or flatter.

4.8 Backfill and Compaction

The on-site fills are not suitable for reuse below pavements, slabs or adjacent to foundations. The sandy portions of the on-site upper fills may be suitable for reuse as compacted trench backfill below paved areas. Compacted granular fill below entrances, sidewalks, on-grade slabs (parking areas) and as backfill against all foundations (interior and exterior) should be clean granular material meeting the gradation for Structural Fill:

Structural Fill	
Sieve Size	Percent Passing
4 inch	100
3 inch	90 to 100
¼ inch	25 to 90
No. 40	0 to 30
No. 200	0 to 5

Crushed stone for drainage and use below pile caps and grade beams should meet the gradation given below. A nominal size ¾ inch crushed stone usually meets these gradation requirements.

Crushed Stone	
Sieve Size	Percent Finer by Weight
1 inch	100
3/4 inch	90 to 100
3/8 inch	0 to 75
No. 4	0 to 25
No. 10	0 to 5

Fill should be placed in horizontal lifts and be compacted. Lift thickness should be such that desired density is achieved throughout the lift thickness with 3 to 5 passes of the compaction equipment. Foundation backfill and fills placed beneath paved areas and walkways should be compacted to at least 95 percent of its maximum dry density as determined by the Modified Proctor (ASTM D1557). Backfill below pile-supported foundations should be compacted crushed stone. Because of the loose nature of the existing fills, it will be necessary to densify subgrades below grade beams and provide compacted structural fill or crushed stone bedding.

4.9 Asphalt Pavement

We have provided the following proposed pavement sections based on our experience with similar facilities and certain geotechnical assumptions. We offer the following new pavement sections for consideration:

Recommended Pavement Sections		
Pavement Layer	Thickness	
	Standard Duty (Parking)	Heavy Duty (Driveways)
MDOT 703.09 Type 9.5 mm Hot Mix Asphalt	1 ¼ inches	1 ¼ inches
MDOT 703.09 Type 19 mm Hot Mix Asphalt	1 ¾ inches	2 ¾ inches
MDOT 703.06 Type A Base Course Aggregate	6 inches	6 inches
MDOT 703.06 Type D Subbase Aggregate	12 inches	15 inches

All pavement sections need to be placed on properly prepared densified subgrades. All pavement subgrades should be densified by a vibratory roller compactor. Any areas that

are soft, wet and yielding should be assessed for the need for over-excavation and replacement with structural fill and/or underlain by woven geotextile filter fabric such as Mirafi 500X. Granular base and subbase material(s) should be compacted to at least 95 percent of their maximum dry densities as determined by ASTM D-1557 at a moisture content at or near optimum moisture. Bituminous pavement should be compacted to 92 to 97 percent of its theoretical maximum density (TMD) as determined by ASTM D-2041.

Since the native soils are frost susceptible, some frost heaving and distress of pavements must be anticipated unless all frost susceptible soils are removed to a depth of at least 4.5 feet below the pavement surface and backfilled with non-frost susceptible Structural Fill.

4.10 Weather Considerations

Subgrades, foundations and floor slabs must be protected from freezing conditions. Fill soils and concrete must not be placed on frozen soil and once placed, the soil beneath the structure must be protected from freezing. Further, the existing uncontrolled fill is moisture sensitive and as such subgrades will be susceptible to disturbance during wet conditions. Consequently, site work and construction activities should take appropriate measures to protect exposed subgrades, particularly when wet. This may require the use of temporary haul roads and staging areas to preclude subgrade damage due to construction traffic. Geotextile fabric may also be needed below haul roads and/or proposed slabs to help stabilize subgrades.

4.11 Construction Observation and Testing

S. W. COLE ENGINEERING, INC. should be retained to provide consultation and testing services for the piling, excavation and foundation phases of construction. This is to observe compliance with the design recommendations, drawings and specifications and to allow design changes in the event that subsurface conditions are found to differ from those anticipated prior to the start of construction. S. W. COLE ENGINEERING, INC. is available to provide vibration monitoring, pile installation monitoring, and testing of soils, concrete, steel, masonry, fireproofing and asphalt.

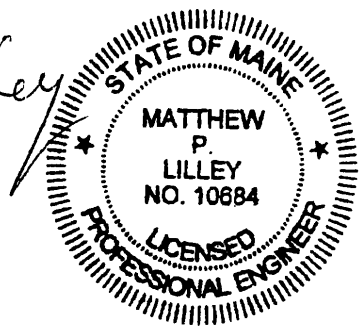
5.0 CLOSURE

S. W. COLE ENGINEERING, INC. should be retained to review the sitework and foundation design drawings to confirm that our recommendations have been appropriately interpreted and implemented. 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.

Sincerely,

S. W. COLE ENGINEERING, INC.

Matthew P. Lilley



Matthew P. Lilley, P. E.
Geotechnical Engineer

MPL:mpl/pfb

P:\2005\05-1177.2 S - Realty Resources Chartered - Portland - Housing - 84 Marginal Way - SSI - PFK\Reports and Letters\05-1177.2 Report.doc

Attachment A - Limitations

This report has been prepared for the exclusive use of Realty Resources Chartered for specific application to the proposed Proposed Housing located at 84 Marginal Way 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 other 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.

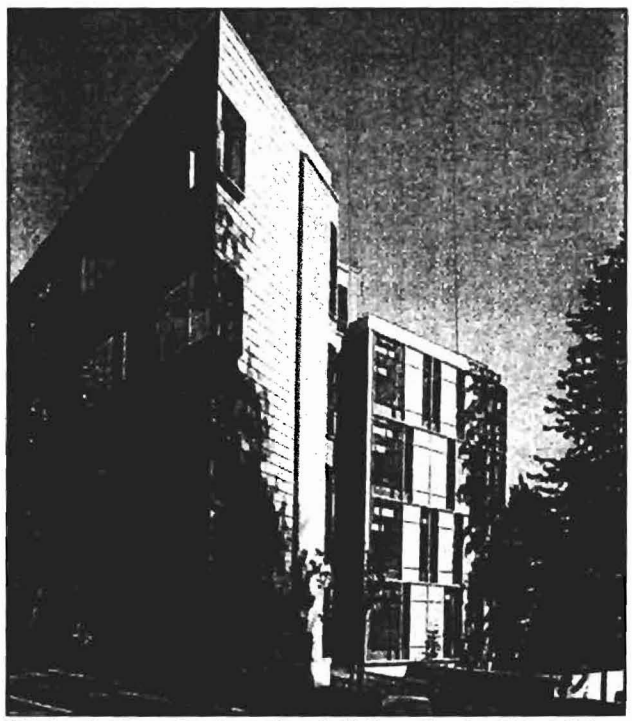
Recommendations contained in this report are based substantially upon information provided by others regarding the proposed project. In the event that any changes are made in the design, nature, or location of the proposed project, S. W. COLE ENGINEERING, INC. should review such changes as they relate 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.

The Denney Park Apartments, Seattle, Washington
50 Unit, Six Story Apartment Building
Runberg Architecture Group, Seattle, Washington

The Denney Park Apartments, Seattle, Washington
50 Unit, Six Story Apartment Building
Runberg Architecture Group, Seattle, Washington

Benham Building, Lowell, AR
Atkins Benham Architects, Lowell, AK

The Adelaide, Seattle, Washington
Mixed use with ground level commercial spaces and five stories of condominiums above. The building is contemporary in style with a palate of various metal siding and large glass bay windows.
Runberg Architecture Group, Seattle, Washington



UC Santa Cruz Engineering Building, Santa Cruz, CA
4 Story Metal Clad Building
CO Architects, Los Angeles, CA

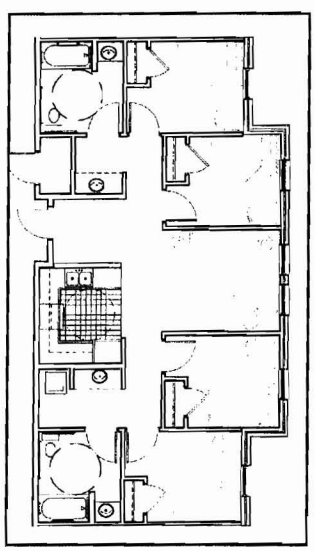
The Gold Dust Apartments, Missoula, MT
18 Unit, Three Story Affordable Apartment Building
MacArther, Means and Wells Architects, Missoula, MT

CWS
Architects
Architecture & Planning
434 Cumberland Avenue
Portland, ME 04101-2325
Phone: 207.774.4441
Fax: 207.774.4016
Web: www.CWSarch.com

Southern Maine Student Housing, LLC
Marginal Way Student Housing Project
Portland, Maine

Project Summary

CONFIDENTIAL



cfa | CORPORATE FINANCE ASSOCIATES

May 2006

8/9/06

Project Summary for Southern Maine Student Housing

May 2006

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*Financial information is confidential and intended for City Councilors only. It will be provided under separate cover.

PRIVATE AND CONFIDENTIAL

Marginal Way – Student Housing Project

Contact: Peter G. Moore
Email: pmoore@cfaw.com
Phone: 207-772-2221

Presentation to City of Portland
Community Development Committee
May 10, 2006

Project Sponsor:
Realty Resources Chartered, LLC
Joseph M. Cloutier, CEO
Edward Marsh, Senior Development Off.
Terrance Turner, Real Estate Dev. Mgr.

Architect:
Niles Bolton, Atlanta, Georgia

Marketing and Property Manager:
Joint Venture with Capstone Management of Birmingham, Alabama

Contractor:
Local General Contractor TBD

Land Planning & Civil Engineering:
Mitchell & Associates, Portland, Maine

Estimated Project Costs:
Over $25,000,000

Type of Project:
Private Off-Campus Student Housing

Land area:
2.53+/- acres

Property Description:
Two, four-story buildings totaling over 145,000 square feet

Housing Units Style:
Mix of 1-4 Bedroom Suites

Number of 4-Bedroom Suites:
100-105, depending on final layout

Parking:
120 on site spaces

Type of Construction:
Wood frame with masonry veneer fiber cement clapboards

Construction Schedule:
Ground Breaking: August 2006
Occupancy: August 2007

Overview:

The site is conveniently located within walking distance to the University of Southern Maine, Maine College of Art, retail stores, many employers and only four blocks from downtown Portland. The site is only a five minute drive to Andover College, and ten minutes to the University of New England and virtually everything Portland has to offer.

Realty Resources Chartered is an experienced, Maine based developer with over 50 multifamily projects as well as hotels and restaurants to its credit. Through its affiliated companies it also manages over 5,000 residential housing units.

This mixed use project will include 3,800 S.F. of first floor retail space to serve the student population with various services and food venues. It is the latest phase in the redevelopment of Portland's Bayside neighborhood. This successful effort has introduced new tenants to the area, such as: Wild Oats, Eastern Mountain Sports, Gorham Savings Bank, and Planet Fitness and others. Further commercial development is planned to make Bayside Portland's premier mixed use neighborhood.

The Company will partner with Capstone Management of Birmingham, Alabama, a national student housing management company, for initial marketing and management of the property.

The project is being designed by Niles Bolton Associates, a world-class architecture firm headquartered in Atlanta. They are widely regarded as experts in student housing design. Parking will be at street level underneath the building with 120 spaces.

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PROJECT SPONSOR'S DEVELOPMENT TEAM

Realty Resources Chartered, LLC ("RRC"), is a real estate development firm with 30 years of experience, primarily in the multi unit residential arena. They have developed over 2,000 affordable housing units among over 40 projects throughout New England.

In recent years, RRC has pioneered the development of affordable assisted living facilities for the Elderly in Maine. Since 1997 they have developed nearly 100 assisted living units. RRC utilizes innovative solutions to housing development, including the use of tax credits, and partnerships with the Maine State Housing Authority and the Maine Department of Human Services. RRC is experienced in working with nonprofit organizations and municipalities in the development of housing projects. The company has formed several public/private joint ventures, which have been integral to their success in the industry.

RRC's hospitality division has handled site selection, permitting, and financial management for a number of Denny's franchise restaurants and small to mid-size lodging establishments. throughout New England.

RRC is one of several Maine-based businesses led by Joseph M. Cloutier. Mr. Cloutier has a proven track record as a real estate developer, restaurant franchisee, and practicing attorney. He is the leader of a multi-faceted business operation and is known for his ability to assemble, motivate, and manage teams of experts. His business enterprises currently employ over 750 people throughout New England. RRC currently has seven housing projects underway throughout New England. Their most recently completed local project Ocean East is an 86 unit townhouse apartment complex located on outer Ocean Avenue in Portland.

The Marginal Way Student Housing complex is attractive investors and lenders because of the experience and professionalism of Joseph Cloutier and his management team at RRC. RRC has developed thousands of residential housing units at dozens of locations throughout New England, currently managing over thousands of housing units.

Niles Bolton Associates - Architects
Niles Bolton Associates (NBA) is designing this new student housing project by Southern Maine Student Housing, LLC. NBA is a world-class architectural firm headquartered in Atlanta with offices around the globe. NBA was selected for this project because of their experience in the student housing market. NBA has designed over 18,000 university student beds and 15,000 privately-developed student beds. The firm has completed planning, architecture and interior design projects ranging from a 32 bed fraternity house to a 5,000 bed campus village. Their experience allows them to solve issues of specialized use, maintenance, security, and building efficiency for on and off-campus projects. Their experience in commercial, housing and hospitality design gives them insight into many of the same issues which impact student housing development including unit/room configuration, food service, parking, access and security, curb appeal, and building maintenance.

Capstone Management - Marketing and Property Management
Realty Resources Chartered has joined forces with Capstone Management to develop the operating strategy and budgets for Southern Maine Student Housing. Capstone Management is a division of Capstone, an Alabama-based firm that develops and manages student housing across the country. Their team comprises outstanding individuals with experience in student affairs and property management. Capstone has a proven track record of integrating all the functions of student housing such as student development, human resources, accounting and financial reporting systems, capital improvement programs, staff recruiting and retention programs, performance-based incentives, payroll and benefit

programs, preventative maintenance strategies, rent collection systems, crisis management programs, and risk management systems.

Capstone managers know how to develop and administer community standards and policies that are consistent with university values, and meet federal, state, and municipal requirements. They are well aware of the delicate balance between the student housing complex and the surrounding neighborhoods, and work diligently to establish and maintain good relationships.

Capstone managers are driven by a passion for working with students and for making their residential living experience supportive and positive. They know the design and management of student facilities must encourage personal and academic development.

Capstone is the only student housing management company led by a former university administrator (Doug Brown, President). Mr. Brown has more than twenty years of experience in student housing and auxiliary services management, giving him and the Capstone Management team the ability to guide the project through the development phase and beyond. When construction is complete, Capstone Management will continue with Realty Resources Chartered to manage the project successfully.

PROJECT DESCRIPTION

The City of Portland has approved the sale of property on the corner of Marginal Way and Preble Street to RRC and Capital, LLC (which will develop an office tower and parking complex) for the express purpose of developing a student housing and retail complex targeted at Portland's college student housing market. RRC anticipates the ground floor will be a steel reinforced concrete parking level with 3,800 sq. ft. of compatible retail space facing the street. The plan presently contains parking for 120 cars on site. RRC contemplates constructing this project using modular construction which will shorten the construction period and result in precision construction completed all undercover, and out of the weather.

MARKET & COMPETITION

The Marginal Way Student Housing complex will supply an underserved market with modern, high-quality housing that is designed specifically for college students. The area is host to over 15,000 college students. The University of Southern Maine (USM) is the State's second largest post-secondary institution with an enrollment of approximately 10,500 students, but its Portland campus lacks adequate housing. Rental units for college-age individuals are scattered throughout the city. Many are not conveniently located near campus and have too few units to foster the daily social interaction that college students desire.

In addition to USM The Greater Portland area is also home to the Maine College of Art, The University of New England's Westbrook College Campus, Andover College, Southern Maine Community College, and other institutions. Like USM, these institution have inadequate On-campus housing to accommodate their student populations.

The Marginal Way Student Housing Project's mix of four, three, two, and one bedroom apartments will provide a diverse range of living options for students who want to share accommodations with classmates. This property is sited across the street from a Wild Oats grocery store, a newly constructed Gorham Savings Bank branch, and a Planet Fitness gym facility. An eight-story office building and four-story garage will also be adjacent to the student housing complex at the corner of Preble Street and

Marginal Way. Other retail and commercial establishments are also planned or under construction in the neighborhood.

Through providing a combination of quality living amenities, 24 hour security, and proximity to many employment opportunities, shopping, recreation and Portland's downtown, the RRC expects to attract the top 5% of the student housing market, making the Marginal Way complex the most sought after address for college students attending Portland based colleges and Universities.

PRIVATE AND CONFIDENTIAL

Marginal Way Student Housing Complex

Purpose of the Facility:

- Provide the most modern, high quality, safe and secure college student housing in Portland
- Make it available to all college students in Greater Portland
- Market it directly to students at the University of Southern Maine, University of New England, Maine College of Art, Southern Maine Community College, and Andover College

Residential Amenities:

- Fully furnished suites (bedroom, living room, dining room and kitchen furniture and appliances)
- Fully equipped kitchen (appliances, pots, pans, dishes, silverware)
- Full laundry facilities in each suite (washer and dryer)
- Common areas on each floor, elevator service from parking garage to all floors
- Rent includes electricity, heating, air conditioning, wireless internet access, property maintenance, 24 hour security
- Telephone and cable television services available at tenants expense
- Secure landscaped private courtyard for residents
- USM shuttle stops at facility on regular campus route between Portland and Gorham
- On-site parking for 120 cars and On-site bicycle lock-up
- On-site retail spaces for student oriented needs (dry cleaning, coffee shop, healthcare etc.)

Building Facts:

- Lot size: 2.53 acres
- Building size: Over 145,000 Square Feet
- Parking Spaces: 120
- Number of Suites: 100 – 105 (400 to 405 beds) depending on final design configuration (Mostly 4 br/2 ba)
- Number of floors: 4 stories of housing; one story of ground level parking
- Construction materials: Wood frame, masonry exterior, structural concrete garage deck
- Parking entrance off Marginal Way

How is this facility different from current apartment housing in Portland?

- These will be brand-new units with institutional scale operating and maintenance requirements and expectations.
- Units will be fully furnished, carpeted, with fully equipped kitchen and laundry facilities
- Rent will include all electricity, heating, air-conditioning, wireless internet connection
- On-site staffing to include: Property manager, maintenance crew, janitorial crew, grounds keeping, security
- Rental contracts will be for one year and will require landlord to make annual improvements to most units for each new school year. (Furniture repairs, repaint walls, repair appliances, replace carpeting)
- On-site sheltered parking for 120 cars.

Benefits to Students:

- Modern residential suites designed with students needs in mind
- Private bedrooms; shared living, kitchen, dining, laundry and bathrooms
- Great location - walking distance to USM, MECA, downtown Portland, shopping, employment opportunities, healthcare, and recreation facilities.
- Walking distance to most of Portland's cultural venues
- Student centered safety and security will be an important feature of the property management
- Collegial atmosphere promoting healthy living, community spirit, and cooperation

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Benefits to City of Portland:

- 400+ new students living on the Portland peninsula
- Positive economic impact of their collective spending, employment and use of services
- Potential to free up "work-force" housing otherwise occupied by students
- Potential with added rental housing inventory supply to temper rising rental rate increases
- Satisfy local underserved student housing needs already identified by area colleges and universities as woefully inadequate
- Provide 24 hour presence to Bayside neighborhood
- Provide residential population base for merchants and service providers in Bayside
- Provides local employers with ready made pool of part time employees within walking distance to many employment opportunities
- Helps Portland to become a more appealing location for college bound students from out of state
- Takes some of the burden off local colleges and universities to provide their own new student housing facilities

Need for Tax Increment Financing (TIF):

- On-site development density requires parking deck under housing complex at substantial increased cost of development
- Facility requires 120 parking spaces at over $17,000 per space cost of development.
- Project is unable to command parking fees adequate to recover cost of capital
- The parking is essential to market these student housing units and in the unlikely event the property ever is converted to another housing use.
- Unlike most office buildings whose tenant leases are established well in advance of the building construction and provide for tenants to pay for all operating costs of the property (taxes, utilities, repairs and maintenance, management etc.) – student housing relies upon reasonably identified market need, one year student leases, and exposure to all variable costs absorbed by the property owner. The risks are clearly much higher and therefore require some form of incentive to project sponsors in order to obtain the necessary funding commitments from financial institutions.

TIF Protections to City of Portland:

- The Credit Enhancement Agreement (CEA) will include provisions that allow the City to curtail or reduce TIF benefits to the project if the property's economic performance exceeds agreed upon guidelines. This means that if the experience of the property owners are much better than expected, the City will be entitled to keep more tax dollars and will not find itself in the undesirable position of funding increased profits to developers and investors.

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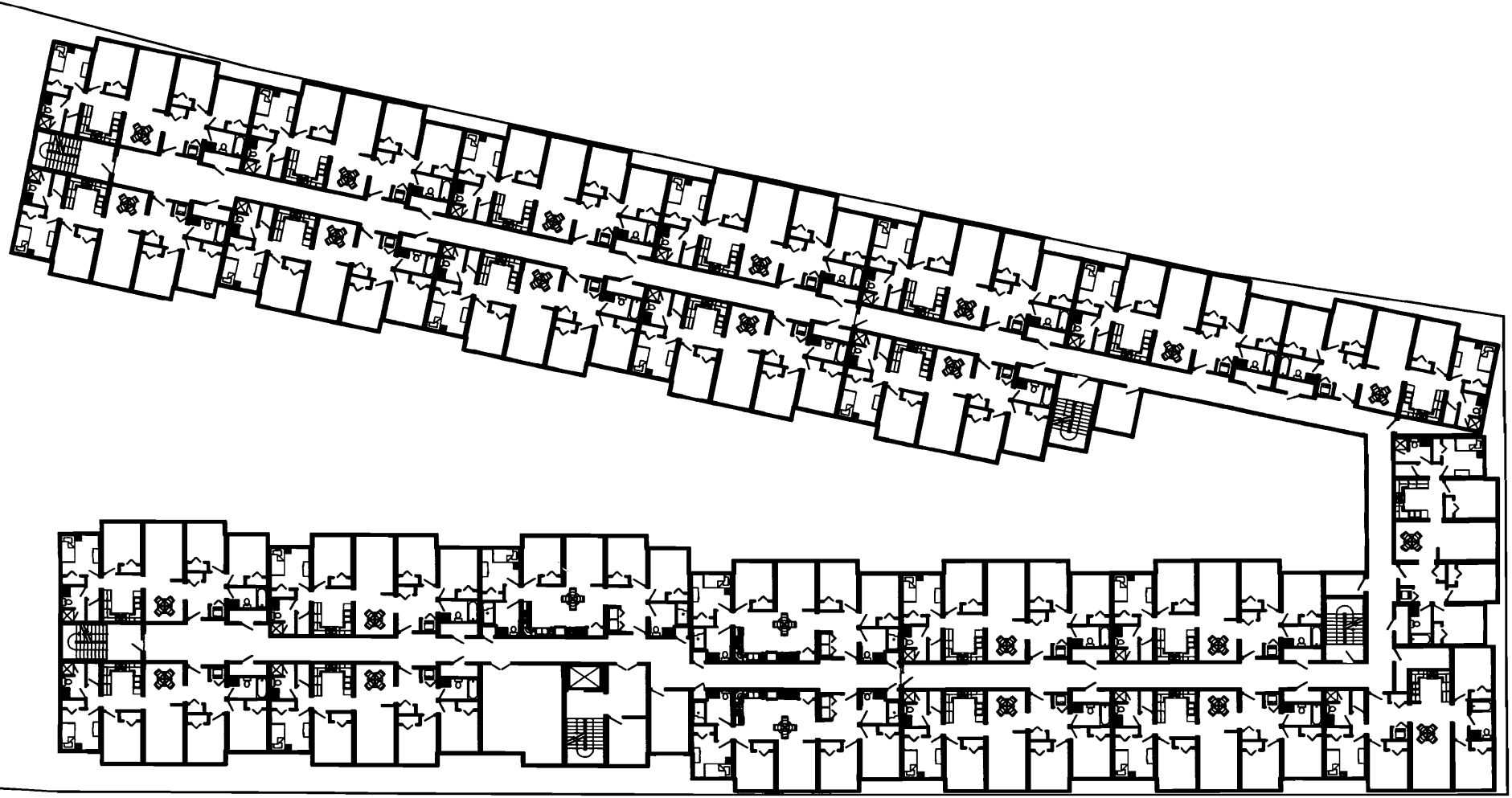

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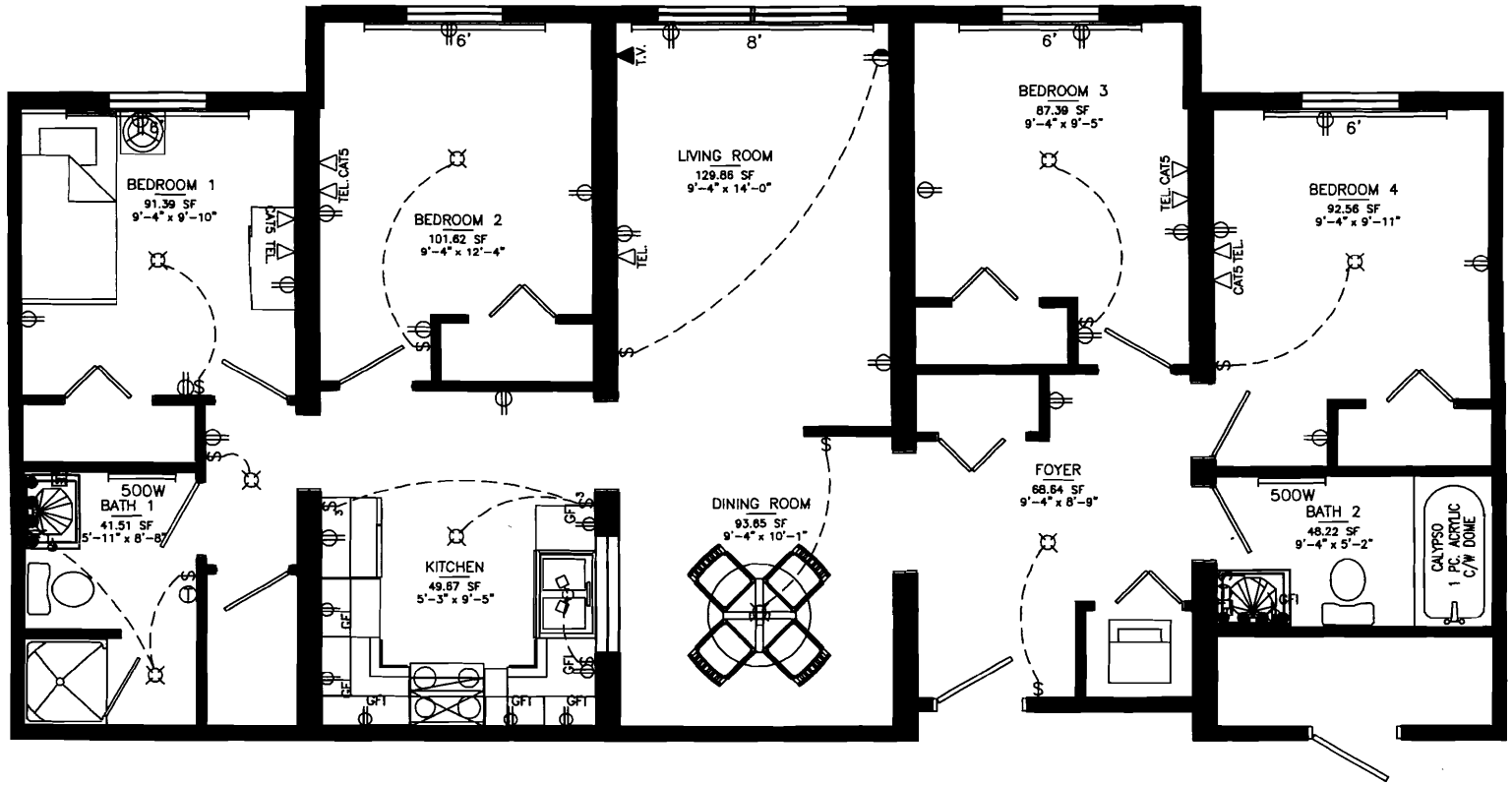

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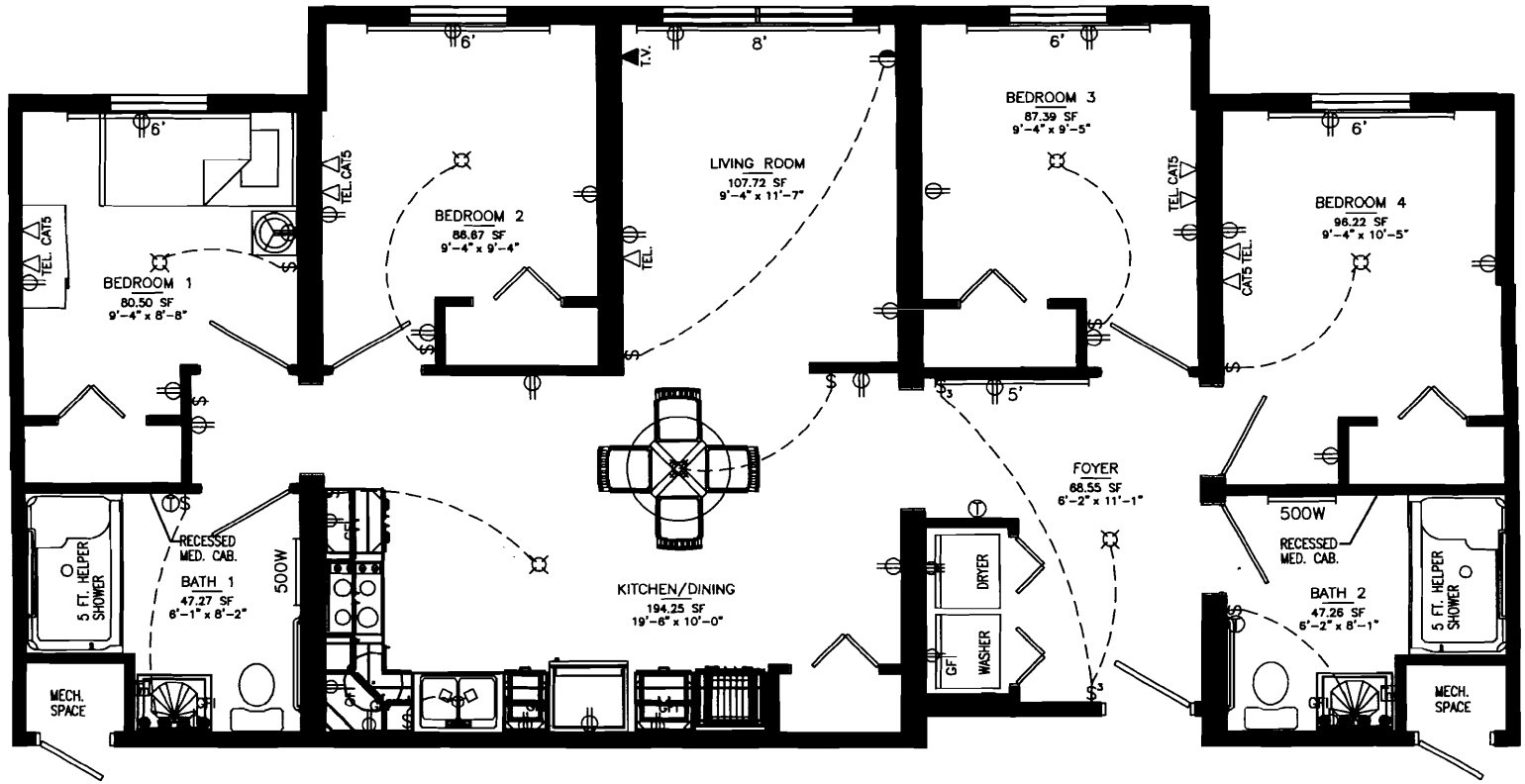

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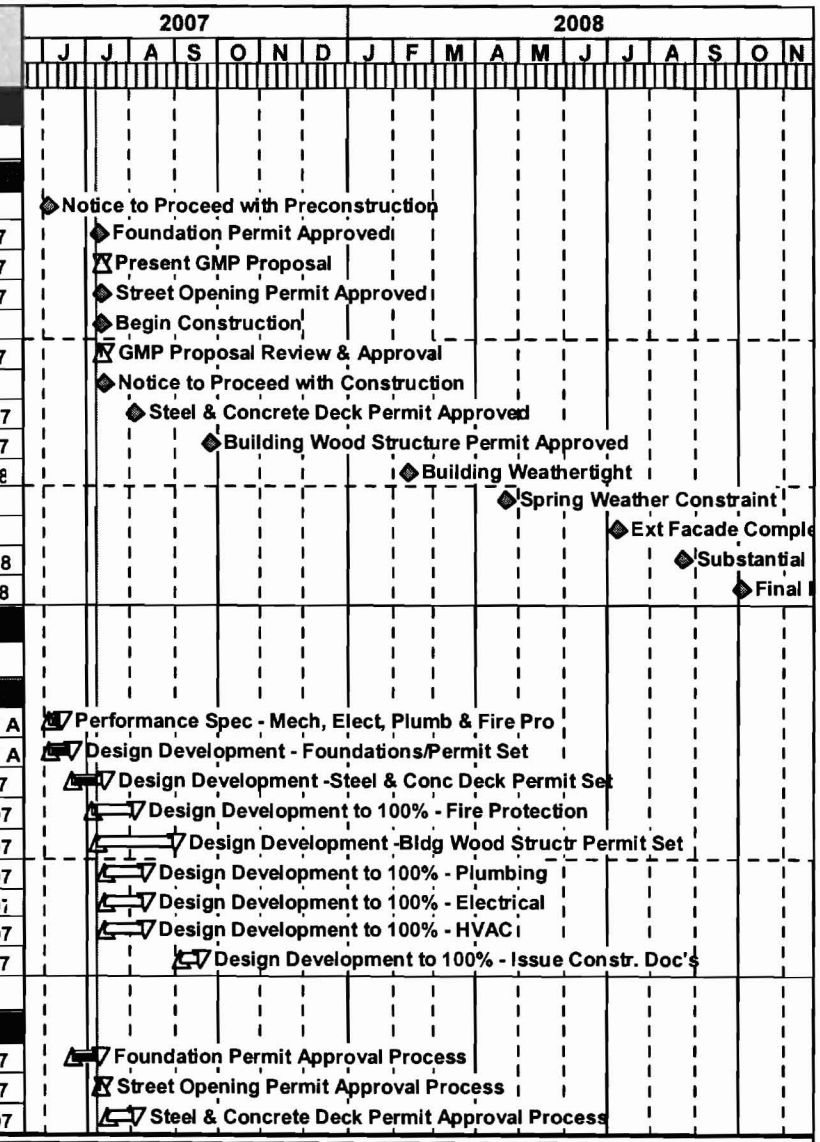
Act ID	Description	Orig Dur	Resp	Early Start	Early Finish
Milestones					
MI1000	Notice to Proceed with Preconstructio	0	MI	04JUN07 A	
MI1050	Foundation Permit Approved	0	MI		09JUL07
MI1070	Present GMP Proposal	1		11JUL07	11JUL07
MI1100	Street Opening Permit Approved	0	MI		11JUL07
MI1020	Begin Construction	0	MI	12JUL07	
MI1080	GMP Proposal Review & Approval	2		12JUL07	13JUL07
MI1010	Notice to Proceed with Construction	0	MI	13JUL07	
MI1110	Steel & Concrete Deck Permit Approved	0	MI		03AUG07
MI1120	Building Wood Structure Permit Approved	0	MI		24SEP07
MI1030	Building Weathertight	0	MI		12FEB08
MI1040	Spring Weather Constraint	0	MI	21APR08 *	
MI1090	Ext Facade Complete, Begin Ext Site Finishes	0	MI	08JUL08	
MI9995	Substantial Project Completion	0	MI		22AUG08
MI9999	Final Project Completion	0	MI		02OCT08
Construction Management					
Design Development					
DE1030	Performance Spec - Mech, Elect, Plumb & Fire Pro	7		04JUN07 A	13JUN07 A
DE1000	Design Development - Foundations/Permit Set	10		04JUN07 A	20JUN07 A
DE1010	Design Development -Steel & Conc Deck Permit	8		21JUN07 A	13JUL07
DE1050	Design Development to 100% - Fire Protection	21		05JUL07 A	02AUG07
DE1035	Design Development -Bldg Wood Structr Permit	5		09JUL07	31AUG07
DE1040	Design Development to 100% - Plumbing	21		13JUL07	10AUG07
DE1060	Design Development to 100% - Electrica	21		13JUL07	10AUG07
DE1070	Design Development to 100% - HVAC	21		13JUL07	10AUG07
DE1020	Design Development to 100% - Issue Constr.	21		04SEP07	17SEP07
Permit Approval Process					
PE1000	Foundation Permit Approval Process	14		21JUN07 A	09JUL07
PE1020	Street Opening Permit Approval Process	2		10JUL07	11JUL07
PE1010	Steel & Concrete Deck Permit Approval Process	15		16JUL07	03AUG07



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Bayside Village Student Housing Comp
GMP Project Schedule
July 11, 2007

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- Early bar
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- Critical bar
- Summary bar
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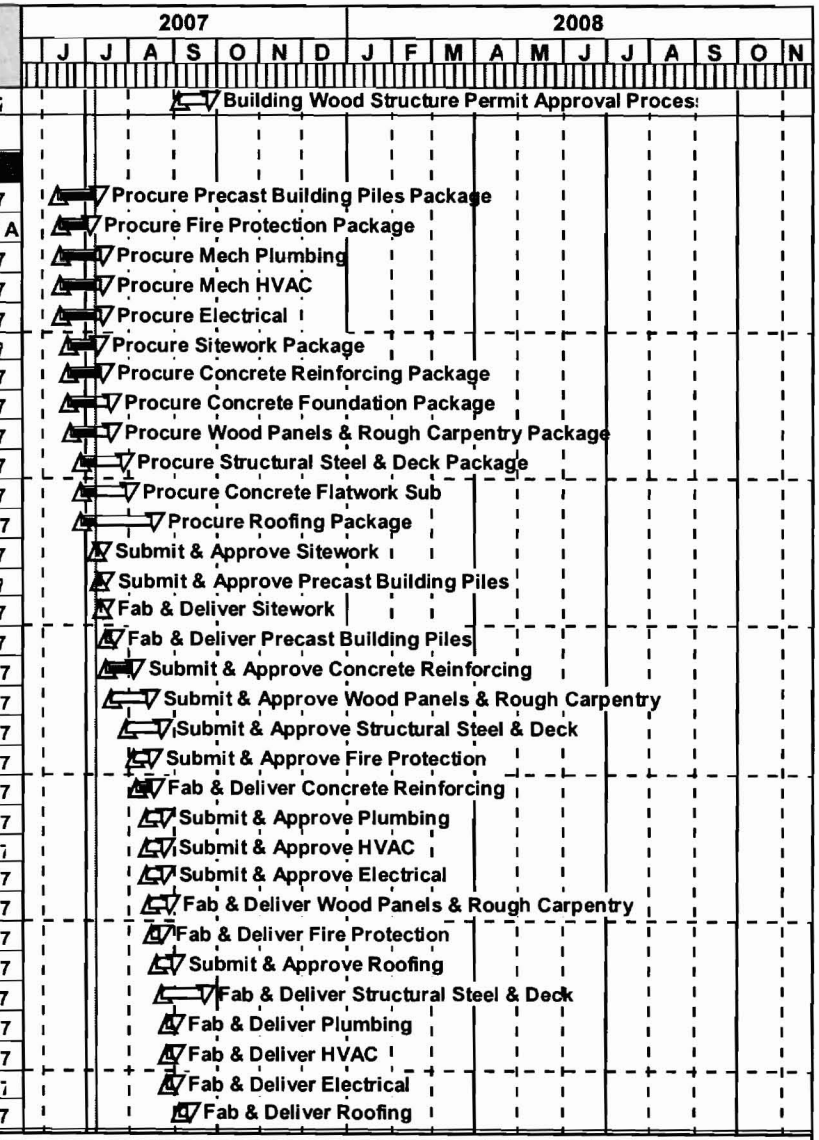
Act ID	Description	Orig Dur	Resp	Early Start	Early Finish
PE103(	Building Wood Structure Permit Approval	15		04SEP07	24SEP07
Project Procurement					
023000P	Procure Precast Building Piles Package	18	PM	12JUN07 A	09JUL07
153000P	Procure Fire Protection Package	15	PM	13JUN07 A	03JUL07 A
154000P	Procure Mech Plumbing	15	PM	13JUN07 A	12JUL07
156000P	Procure Mech HVAC	15	PM	13JUN07 A	12JUL07
160000P	Procure Electrical	15	PM	13JUN07 A	12JUL07
022000F	Procure Sitework Packac	11	PM	18JUN07 A	09JUL07
033300P	Procure Concrete Reinforcing Package	15	PM	18JUN07 A	13JUL07
033000P	Procure Concrete Foundation Package	15	PM	18JUN07 A	17JUL07
064000P	Procure Wood Panels & Rough Carpentry	12	PM	21JUN07 A	17JUL07
050000P	Procure Structural Steel & Deck Package	15	PM	28JUN07 A	27JUL07
033400P	Procure Concrete Flatwork Sub	16	PM	28JUN07 A	30JUL07
088000P	Procure Roofing Package	30	PM	28JUN07 A	17AUG07
022000S	Submit & Approve Sitework	3	PM	09JUL07	11JUL07
023000S	Submit & Approve Precast Building Pile	4	PM	10JUL07	13JUL07
022000F	Fab & Deliver Sitework	1	PM	12JUL07	12JUL07
023000F	Fab & Deliver Precast Building Piles	5	PM	16JUL07	20JUL07
033300S	Submit & Approve Concrete Reinforcing	15	PM	16JUL07	03AUG07
064000S	Submit & Approve Wood Panels & Rough	20	PM	18JUL07	14AUG07
050000S	Submit & Approve Structural Steel & Deck	19	PM	30JUL07	23AUG07
153000S	Submit & Approve Fire Protection	10	PM	03AUG07	16AUG07
033300F	Fab & Deliver Concrete Reinforcing	10	PM	06AUG07	17AUG07
154000S	Submit & Approve Plumbing	10	PM	13AUG07	24AUG07
156000S	Submit & Approve HVAC	10	PM	13AUG07	24AUG07
160000S	Submit & Approve Electrical	10	PM	13AUG07	24AUG07
064000F	Fab & Deliver Wood Panels & Rough Carpentry	10	PM	15AUG07	28AUG07
153000F	Fab & Deliver Fire Protection	5	PM	17AUG07	23AUG07
088000S	Submit & Approve Roofing	10	PM	20AUG07	31AUG07
050000F	Fab & Deliver Structural Steel & Deck	20	PM	24AUG07	21SEP07
154000F	Fab & Deliver Plumbing	5	PM	27AUG07	31AUG07
156000F	Fab & Deliver HVAC	5	PM	27AUG07	31AUG07
160000F	Fab & Deliver Electrica	5	PM	27AUG07	31AUG07
088000F	Fab & Deliver Roofing	5	PM	04SEP07	10SEP07



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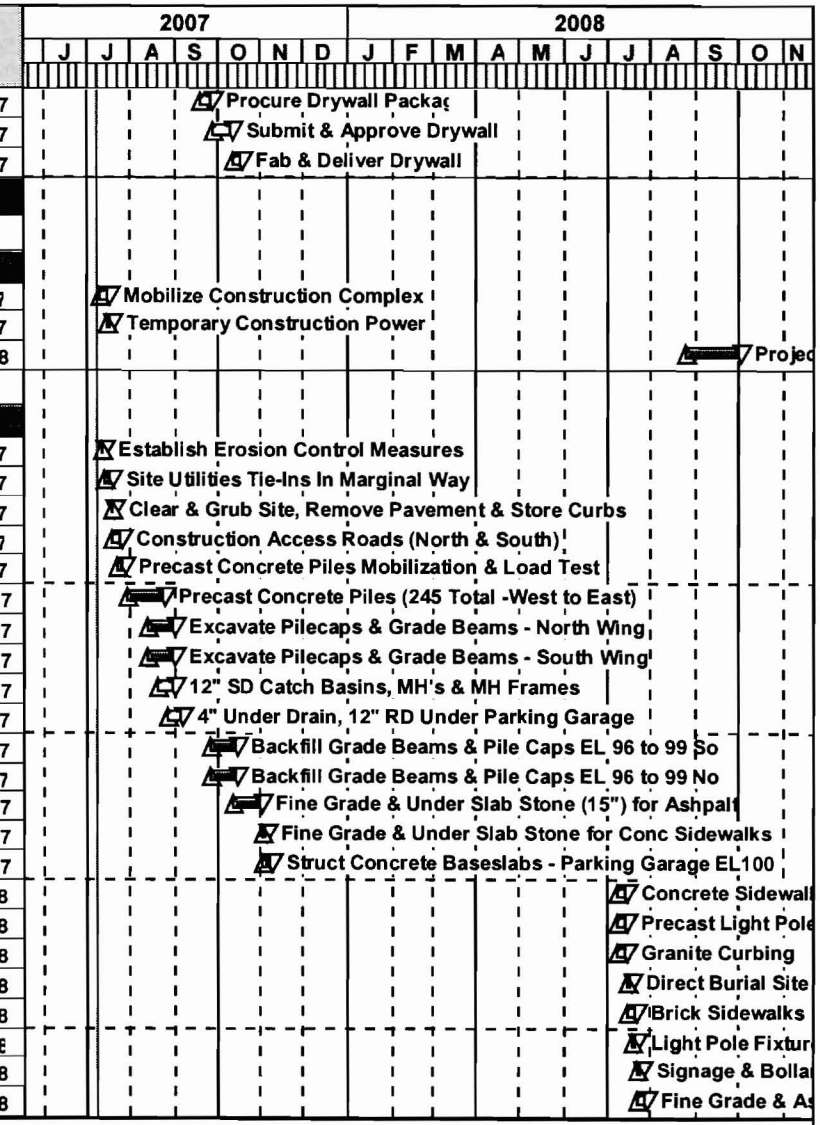
Act ID	Description	Orig Dur	Resp	Early Start	Early Finish
099000P	Procure Drywall Package	7	PM	18SEP07	26SEP07
099000S	Submit & Approve Drywall	10	PM	27SEP07	10OCT07
099000F	Fab & Deliver Drywall	5	PM	11OCT07	17OCT07
Construction					
Project General					
PG100(	Mobilize Construction Complex	5	PC	10JUL07	16JUL07
PG1020	Temporary Construction Power	3	EL	16JUL07 *	18JUL07
PG9999	Project Close-Out & Demobilization	28	PM	25AUG08	02OCT08
Site Work					
SI1000	Establish Erosion Control Measures	2	SI	12JUL07	13JUL07
SI1040	Site Utilities Tie-Ins In Marginal Way	3	YP	13JUL07	17JUL07
SI1010	Clear & Grub Site, Remove Pavement & Store	3	SI	18JUL07	20JUL07
SI113(	Construction Access Roads (North & South	5	SI	18JUL07	24JUL07
BC1000	Precast Concrete Piles Mobilization & Load Test	5	PILE	23JUL07	27JUL07
BC1010	Precast Concrete Piles (245 Total -West to East)	20	PILE	30JUL07	24AUG07
BN1000	Excavate Pilecaps & Grade Beams - North Wing	15	SI	13AUG07	31AUG07
BS1000	Excavate Pilecaps & Grade Beams - South Wing	15	SI	13AUG07	31AUG07
SI1050	12" SD Catch Basins, MH's & MH Frames	10	YP	20AUG07	31AUG07
SI1060	4" Under Drain, 12" RD Under Parking Garage	8	YP	27AUG07	06SEP07
SI1070	Backfill Grade Beams & Pile Caps EL 96 to 99 So	15	SI	25SEP07	15OCT07
SI108(	Backfill Grade Beams & Pile Caps EL 96 to 99 N	15	SI	25SEP07	15OCT07
SI1090	Fine Grade & Under Slab Stone (15") for Ashpalt	15	SI	12OCT07	01NOV07
SI1110	Fine Grade & Under Slab Stone for Conc	2	SI	02NOV07	05NOV07
SI1100	Struct Concrete Baseslabs - Parking Garage EL100	5	CO	02NOV07	08NOV07
SI1120	Concrete Sidewalks	5	SW	08JUL08	14JUL08
SI1140	Precast Light Pole Bases	5	SI	08JUL08	14JUL08
SI1200	Granite Curbing	5	SI	08JUL08	14JUL08
SI1150	Direct Burial Site Electric for Ext Lighting	3	EL	15JUL08	17JUL08
SI1230	Brick Sidewalks & Seating Walls	5	LAND	15JUL08	21JUL08
SI116(	Light Pole Fixturess & Termination:	3	EL	18JUL08	22JUL08
SI1240	Signage & Bollards	4	SIGN	22JUL08	25JUL08
SI1210	Fine Grade & Asphalt Paving Parking Lot & Roads	5	PAVE	22JUL08	28JUL08



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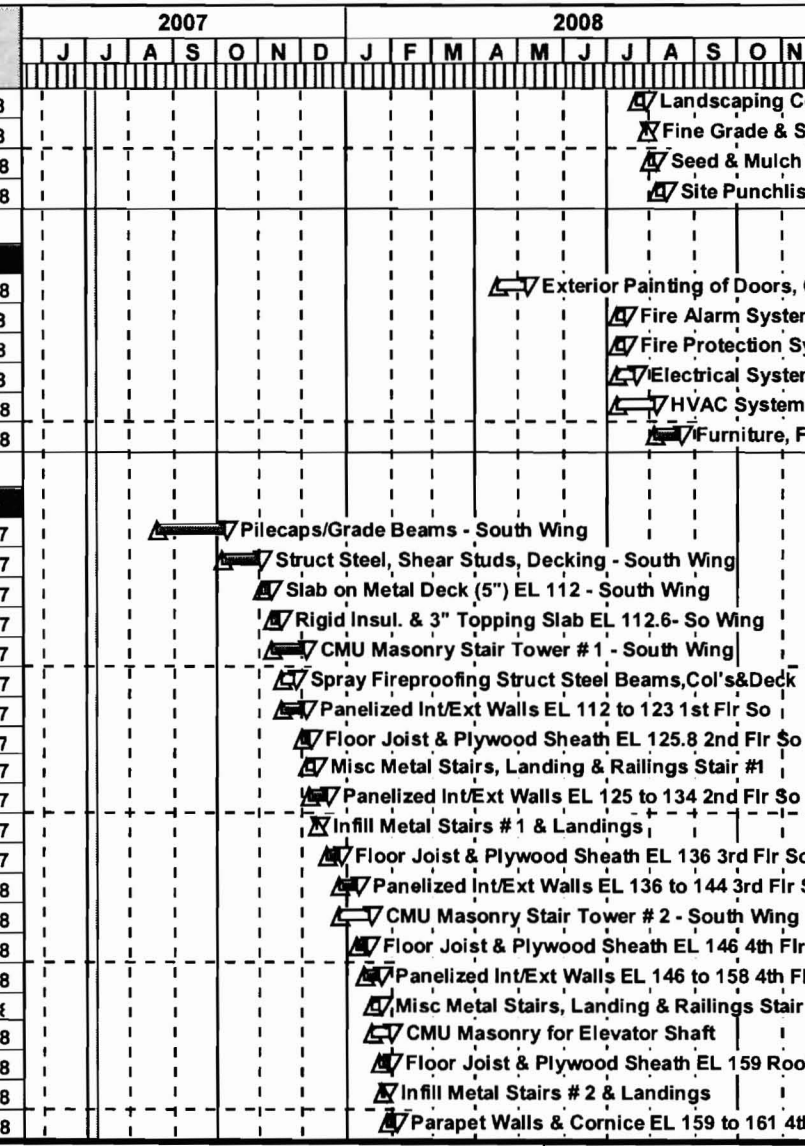
Act ID	Description	Orig Dur	Resp	Early Start	Early Finish
SI1220	Landscaping Courtyard and Site	5	LAND	23JUL08	29JUL08
SI1180	Fine Grade & Spread Topsoil	2	SI	29JUL08	30JUL08
SI1190	Seed & Mulch Site	3	LAND	31JUL08	04AUG08
SI1170	Site Punchlist	5	TEAM	05AUG08	11AUG08
Building General, Commissioning & Occupancy					
BC1040	Exterior Painting of Doors, Columns, Rails Ect.	15	PA	16APR08	06MAY08
BC1020	Fire Alarm System Check-out & Commissioning	5	SU	08JUL08	14JUL08
BC9990	Fire Protection System Check-out &	5	SU	08JUL08	14JUL08
BC9992	Electrical System Check-out & Commissioning	10	SU	08JUL08	21JUL08
BC9994	HVAC System Check-out,Test Balan &	21	SU	08JUL08	05AUG08
BC9996	Furniture, Fixtures & Equipment (By Others)	15	OTHR	04AUG08	22AUG08
Building Constr South Wing Col 1 to 7 & AA to QQ					
South Wing General					
BS1010	Pilecaps/Grade Beams - South Wing	35	CO	20AUG07	08OCT07
BS1020	Struct Steel, Shear Studs, Decking - South Wing	20	SS	05OCT07	01NOV07
BS1030	Slab on Metal Deck (5") EL 112 - South Wing	5	CO	02NOV07	08NOV07
BS1040	Rigid Insul. & 3" Topping Slab EL 112.6- So Wing	5	CO	09NOV07	15NOV07
BS1170	CMU Masonry Stair Tower # 1 - South Wing	15	MA	09NOV07	03DEC07
BS1160	Spray Fireproofing Struct Steel Beams,Col's&Deck	5	SFP	16NOV07	26NOV07
BS1050	Panelized Int/Ext Walls EL 112 to 123 1st Flr So	10	RGCA	16NOV07	03DEC07
BS1060	Floor Joist & Plywood Sheath EL 125.8 2nd Flr S	6	RGCA	30NOV07	07DEC07
BS1180	Misc Metal Stairs, Landing & Railings Stair #1	5	MM	04DEC07	10DEC07
BS1070	Panelized Int/Ext Walls EL 125 to 134 2nd Flr So	10	RGCA	06DEC07	19DEC07
BS1190	Infill Metal Stairs # 1 & Landings	2	CO	11DEC07	12DEC07
BS1080	Floor Joist & Plywood Sheath EL 136 3rd Flr So	6	RGCA	18DEC07	27DEC07
BS1090	Panelized Int/Ext Walls EL 136 to 144 3rd Flr So	10	RGCA	26DEC07	09JAN08
BS1200	CMU Masonry Stair Tower # 2 - South Wing	15	MA	27DEC07	17JAN08
BS1100	Floor Joist & Plywood Sheath EL 146 4th Flr So	6	RGCA	08JAN08	15JAN08
BS1110	Panelized Int/Ext Walls EL 146 to 158 4th Flr So	10	RGCA	14JAN08	25JAN08
BS1210	Misc Metal Stairs, Landing & Railings Stair #	5	MM	18JAN08	24JAN08
BS1230	CMU Masonry for Elevator Shaft	10	MA	18JAN08	31JAN08
BS1120	Floor Joist & Plywood Sheath EL 159 Roof So	6	RGCA	24JAN08	31JAN08
BS1220	Infill Metal Stairs # 2 & Landings	2	CO	25JAN08	28JAN08
BS1130	Parapet Walls & Cornice EL 159 to 161 4th Flr So	5	RGCA	30JAN08	05FEB08



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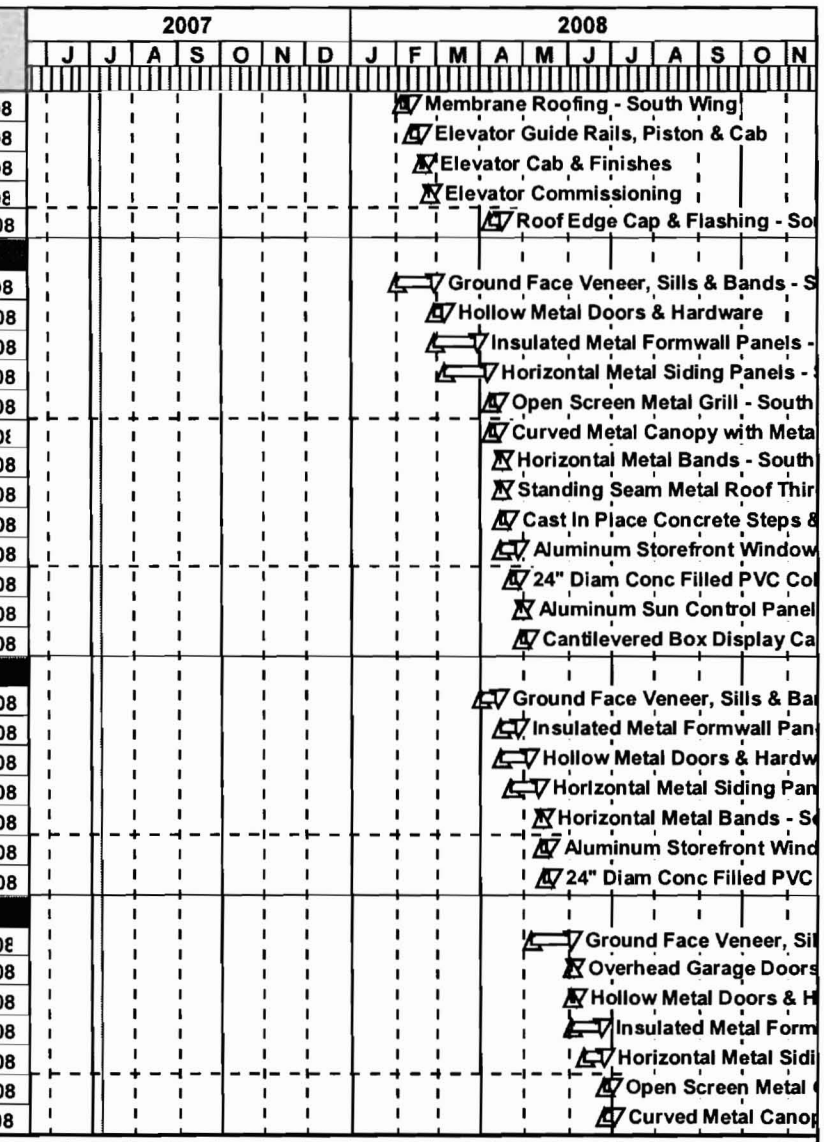
PIZZAGALLI CONSTRUCTION

Early bar
Early start point
Early finish point
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone poin

Act ID	Description	Orig Dur	Resp	Early Start	Early Finish
BS1140	Membrane Roofing - South Wing	5	RO	06FEB08	12FEB08
BS1240	Elevator Guide Rails, Piston & Cab	5	ELEV	13FEB08	19FEB08
BS1260	Elevator Cab & Finishes	3	ELEV	20FEB08	22FEB08
BS125C	Elevator Commissioning	2	ELEV	25FEB08	26FEB08
BS1150	Roof Edge Cap & Flashing - South Wing	7	RO	07APR08	15APR08
Ext Facade South Wing (Viewed from Marginal Way)					
FS1000	Ground Face Veneer, Sills & Bands - South View	20	MA	01FEB08	28FEB08
FS1010	Hollow Metal Doors & Hardware	5	DH	29FEB08	06MAR08
FS1020	Insulated Metal Formwall Panels - South View	20	MS	29FEB08	28MAR08
FS1030	Horizontal Metal Siding Panels - South View	20	MS	07MAR08	04APR08
FS1040	Open Screen Metal Grill - South View Grnd Flr	5	MS	07APR08	11APR08
FS105C	Curved Metal Canopy with Metal Roofing Soutt	5	MS	07APR08	11APR08
FS1060	Horizontal Metal Bands - South View EL 112	3	MS	14APR08	16APR08
FS1070	Standing Seam Metal Roof Third Floor South View	3	RO	14APR08	16APR08
FS1080	Cast In Place Concrete Steps & Pedestal Bases So	5	CO	14APR08	18APR08
FS1090	Aluminum Storefront Window System -South	10	WI	14APR08	25APR08
FS1100	24" Diam Conc Filled PVC Columns (4 Total) So Vi	5	CO	21APR08	25APR08
FS1110	Aluminum Sun Control Panel South View	3	WI	28APR08	30APR08
FS1120	Cantilevered Box Display Case & Bus Stop So	5	WI	28APR08	02MAY08
Ext Facade South West Wing (Viewed from 84 Marg)					
SW1000	Ground Face Veneer, Sills & Bands - So West View	10	MA	31MAR08	11APR08
SW1020	Insulated Metal Formwall Panels - So We View	10	MS	14APR08	25APR08
SW1010	Hollow Metal Doors & Hardware - South West	15	DH	14APR08	02MAY08
SW1030	Horizontal Metal Siding Panels - South West View	15	MS	21APR08	09MAY08
SW1040	Horizontal Metal Bands - South West View EL 112	3	MS	12MAY08	14MAY08
SW1050	Aluminum Storefront Window System -South	5	WI	12MAY08	16MAY08
SW1060	24" Diam Conc Filled PVC Columns (2 Total) So	3	CO	15MAY08	19MAY08
Ext Facade East-So & No Wing(Frm Miss Portl Din)					
SE100C	Ground Face Veneer, Sills & Bands - East Vi	20	MA	05MAY08	02JUN08
SE1090	Overhead Garage Doors East View	2	OHD	03JUN08	04JUN08
SE1010	Hollow Metal Doors & Hardware - East View	3	DH	03JUN08	05JUN08
SE1020	Insulated Metal Formwall Panels - East View	15	MS	03JUN08	23JUN08
SE1030	Horizontal Metal Siding Panels - East View	10	MS	12JUN08	25JUN08
SE1040	Open Screen Metal Grill - East View	3	MS	26JUN08	30JUN08
SE1050	Curved Metal Canopy with Metal Roofing East	4	MS	26JUN08	01JUL08



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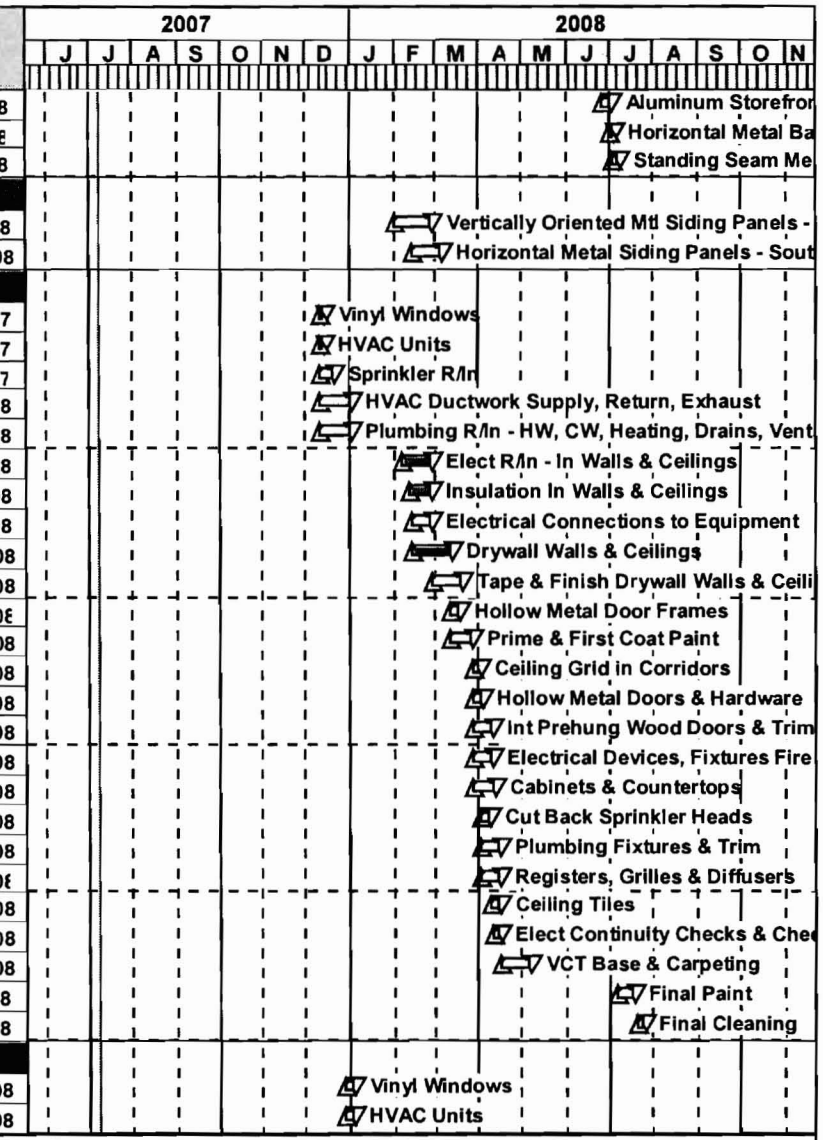
Act ID	Description	Orig Dur	Resp	Early Start	Early Finish
SE1080	Aluminum Storefront Window System -East View	5	WI	26JUN08	02JUL08
SE106(	Horizontal Metal Bands - East Vie\	3	MS	01JUL0E	03JUL0E
SE1070	Standing Seam Metal Roof Third Floor East View	3	RO	02JUL08	07JUL08
Ext Facade South Wing (Viewed from Courtyard)					
CS1000	Vertically Oriented Mtl Siding Panels - So View	20	MS	01FEB08	28FEB08
CS1010	Horizontal Metal Siding Panels - South View	15	MS	15FEB08	06MAR08
First Floor - EL 112					
S11000	Vinyl Windows	5	WI	10DEC07	14DEC07
S11010	HVAC Units	5	HVAC	10DEC07	14DEC07
S1102(	Sprinkler R/In	10	FP	10DEC07	21DEC07
S11030	HVAC Ductwork Supply, Return, Exhaust	15	HVAC	10DEC07	02JAN08
S11050	Plumbing R/In - HW, CW, Heating, Drains, Vents	15	PLMB	10DEC07	02JAN08
S11040	Elect R/In - In Walls & Ceilings	15	EL	08FEB08	28FEB08
S11080	Insulation In Walls & Ceilings	12	INSU	13FEB08	28FEB08
S11060	Electrical Connections to Equipment	10	EL	15FEB08	28FEB08
S11070	Drywall Walls & Ceilings	20	DW	15FEB08	13MAR08
S11100	Tape & Finish Drywall Walls & Ceilings	15	DW	29FEB08	20MAR08
S1111(	Hollow Metal Door Frame:	5	DH	11MAR0E	17MAR0E
S11090	Prime & First Coat Paint	10	PA	12MAR08	26MAR08
S11120	Ceiling Grid in Corridors	4	AC	27MAR08	01APR08
S11130	Hollow Metal Doors & Hardware	5	DH	27MAR08	02APR08
S11140	Int Prehung Wood Doors & Trim	10	FNCA	27MAR08	09APR08
S11170	Electrical Devices, Fixtures Fire Alarm & Trim	10	EL	27MAR08	09APR08
S11150	Cabinets & Countertops	12	FNCA	27MAR08	11APR08
S11180	Cut Back Sprinkler Heads	5	FP	02APR08	08APR08
S11160	Plumbing Fixtures & Trim	10	PLMB	02APR08	15APR08
S1200(	Registers, Grilles & Diffuser	10	HVAC	02APR0E	15APR0E
S11190	Ceiling Tiles	5	AC	09APR08	15APR08
S11210	Elect Continuity Checks & Check-Out	5	EL	10APR08	16APR08
S11200	VCT Base & Carpeting	15	FL	16APR08	06MAY08
S19990	Final Paint	10	PA	07JUL08	18JUL08
S19995	Final Cleaning	5	FC	21JUL08	25JUL08
Second Floor - EL 125					
S21000	Vinyl Windows	5	WI	28DEC07	04JAN08
S21010	HVAC Units	5	HVAC	28DEC07	04JAN08



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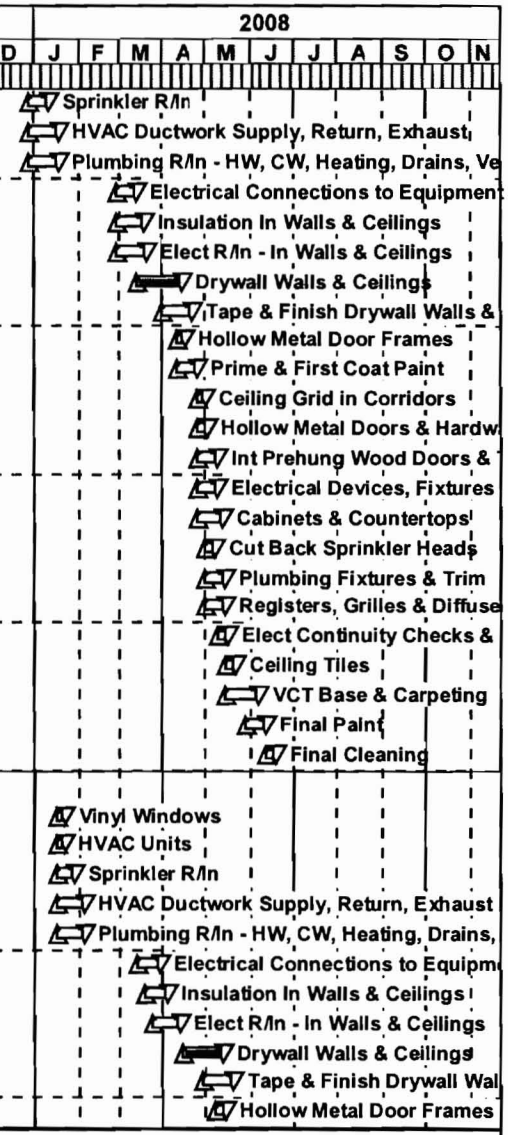
Act ID	Description	Orig Dur	Resp	Early Start	Early Finish
S21020	Sprinkler R/In	10	FP	28DEC07	11JAN08
S21030	HVAC Ductwork Supply, Return, Exhaust	15	HVAC	28DEC07	18JAN08
S21050	Plumbing R/In - HW, CW, Heating, Drains, Vents	15	PLMB	28DEC07	18JAN08
S21060	Electrical Connections to Equipment	10	EL	29FEB08	13MAR08
S21070	Insulation In Walls & Ceilings	12	INSU	29FEB08	17MAR08
S21040	Elect R/In - In Walls & Ceilings	15	EL	29FEB08	20MAR08
S21080	Drywall Walls & Ceilings	21	DW	14MAR08	14APR08
S2109(	Tape & Finish Drywall Walls & Ceilinc	15	DW	01APR0(	21APR0(
S21110	Hollow Metal Door Frames	5	DH	10APR08	16APR08
S21100	Prime & First Coat Paint	10	PA	11APR08	24APR08
S21120	Ceiling Grid in Corridors	4	AC	25APR08	30APR08
S21130	Hollow Metal Doors & Hardware	5	DH	25APR08	01MAY08
S21140	Int Prehung Wood Doors & Trim	10	FNCA	25APR08	08MAY08
S21170	Electrical Devices, Fixtures Fire Alarm & Trim	10	EL	25APR08	08MAY08
S21150	Cabinets & Countertops	12	FNCA	25APR08	12MAY08
S21180	Cut Back Sprinkler Heads	5	FP	01MAY08	07MAY08
S2116(	Plumbing Fixtures & Trim	10	PLMB	01MAY0(	14MAY0(
S22000	Registers, Grilles & Diffusers	10	HVAC	01MAY08	14MAY08
S21200	Elect Continuity Checks & Check-Out	5	EL	09MAY08	15MAY08
S21190	Ceiling Tiles	5	AC	15MAY08	21MAY08
S21210	VCT Base & Carpeting	15	FL	15MAY08	05JUN08
S29990	Final Paint	10	PA	28MAY08	10JUN08
S29995	Final Cleaning	5	FC	11JUN08	17JUN08
Third Floor - EL 136					
S3100(	Vinyl Windows	5	WI	16JAN0(	22JAN0(
S31010	HVAC Units	5	HVAC	16JAN08	22JAN08
S31020	Sprinkler R/In	10	FP	16JAN08	29JAN08
S31030	HVAC Ductwork Supply, Return, Exhaust	15	HVAC	16JAN08	05FEB08
S31050	Plumbing R/In - HW, CW, Heating, Drains, Vents	15	PLMB	16JAN08	05FEB08
S31060	Electrical Connections to Equipment	10	EL	14MAR08	28MAR08
S31070	Insulation In Walls & Ceilings	12	INSU	18MAR08	03APR08
S31040	Elect R/In - In Walls & Ceilings	15	EL	24MAR08	11APR08
S3108(	Drywall Walls & Ceiling	20	DW	15APR0(	12MAY0(
S31090	Tape & Finish Drywall Walls & Ceilings	15	DW	29APR08	19MAY08
S31110	Hollow Metal Door Frames	5	DH	08MAY08	14MAY08



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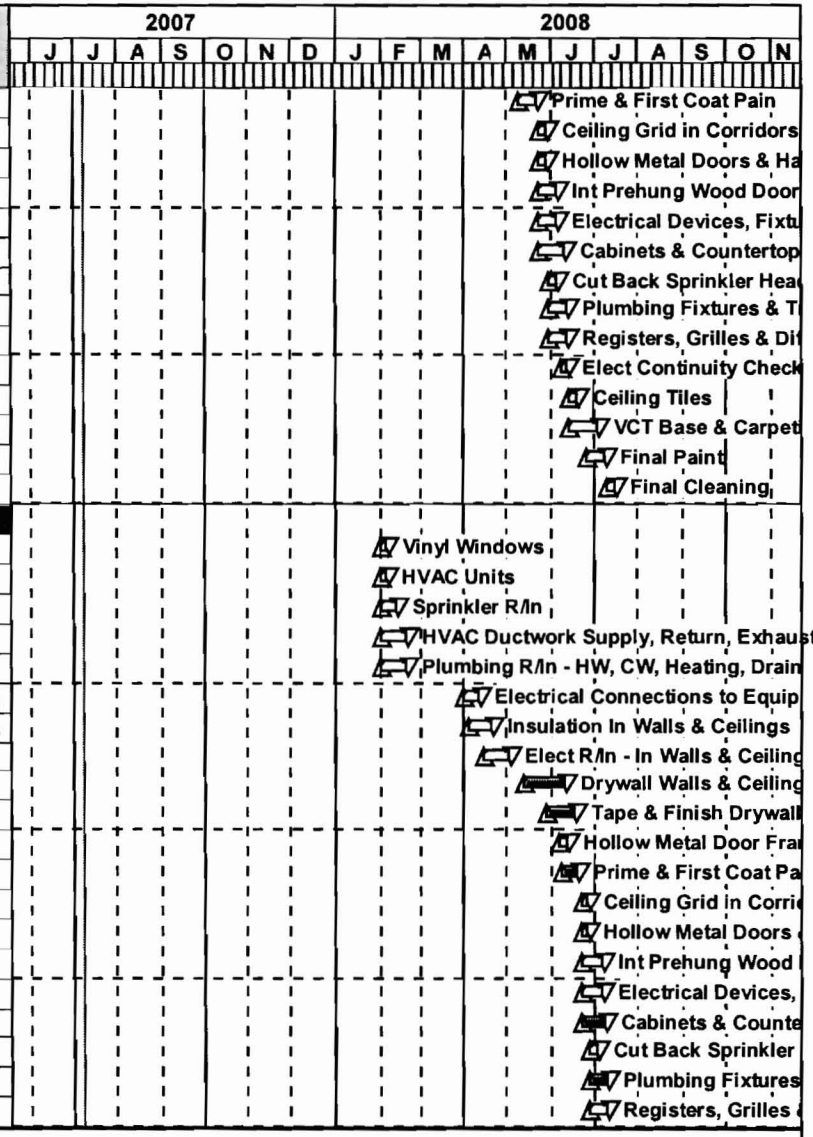
Act ID	Description	Orig Dur	Resp	Early Start	Early Finish
S31100	Prime & First Coat Paint	10	PA	09MAY08	22MAY08
S31120	Ceiling Grid in Corridors	4	AC	23MAY08	29MAY08
S31130	Hollow Metal Doors & Hardware	5	DH	23MAY08	30MAY08
S31140	Int Prehung Wood Doors & Trim	10	FNCA	23MAY08	06JUN08
S31170	Electrical Devices, Fixtures Fire Alarm & Trim	10	EL	23MAY08	06JUN08
S31150	Cabinets & Countertops	12	FNCA	23MAY08	10JUN08
S3118(	Cut Back Sprinkler Heads	5	FP	30MAY0(	05JUN0(
S31160	Plumbing Fixtures & Trim	10	PLMB	30MAY08	12JUN08
S32000	Registers, Grilles & Diffusers	10	HVAC	30MAY08	12JUN08
S31200	Elect Continuity Checks & Check-Out	5	EL	09JUN08	13JUN08
S31190	Ceiling Tiles	5	AC	13JUN08	19JUN08
S31210	VCT Base & Carpeting	15	FL	13JUN08	03JUL08
S39990	Final Paint	10	PA	25JUN08	09JUL08
S39995	Final Cleaning	5	FC	10JUL08	16JUL08
Fourth Floor - EL 146					
S41000	Vinyl Windows	5	WI	01FEB08	07FEB08
S41010	HVAC Units	5	HVAC	01FEB08	07FEB08
S41020	Sprinkler R/In	10	FP	01FEB08	14FEB08
S41030	HVAC Ductwork Supply, Return, Exhaust	15	HVAC	01FEB08	21FEB08
S41050	Plumbing R/In - HW, CW, Heating, Drains, Vents	15	PLMB	01FEB08	21FEB08
S41060	Electrical Connections to Equipment	10	EL	31MAR08	11APR08
S41070	Insulation In Walls & Ceilings	12	INSU	04APR08	21APR08
S4104(	Elect R/In - In Walls & Ceilings	15	EL	14APR0(	02MAY0(
S41080	Drywall Walls & Ceilings	20	DW	13MAY08	10JUN08
S41090	Tape & Finish Drywall Walls & Ceilings	15	DW	28MAY08	17JUN08
S41110	Hollow Metal Door Frames	5	DH	06JUN08	12JUN08
S41100	Prime & First Coat Paint	10	PA	09JUN08	20JUN08
S41120	Ceiling Grid in Corridors	4	AC	23JUN08	26JUN08
S41130	Hollow Metal Doors & Hardware	5	DH	23JUN08	27JUN08
S41140	Int Prehung Wood Doors & Trim	10	FNCA	23JUN08	07JUL08
S41170	Electrical Devices, Fixtures Fire Alarm & Trim	10	EL	23JUN08	07JUL08
S4115(	Cabinets & Countertops	12	FNCA	23JUN0(	09JUL0(
S41180	Cut Back Sprinkler Heads	5	FP	27JUN08	03JUL08
S41160	Plumbing Fixtures & Trim	10	PLMB	27JUN08	11JUL08
S42000	Registers, Grilles & Diffusers	10	HVAC	27JUN08	11JUL08



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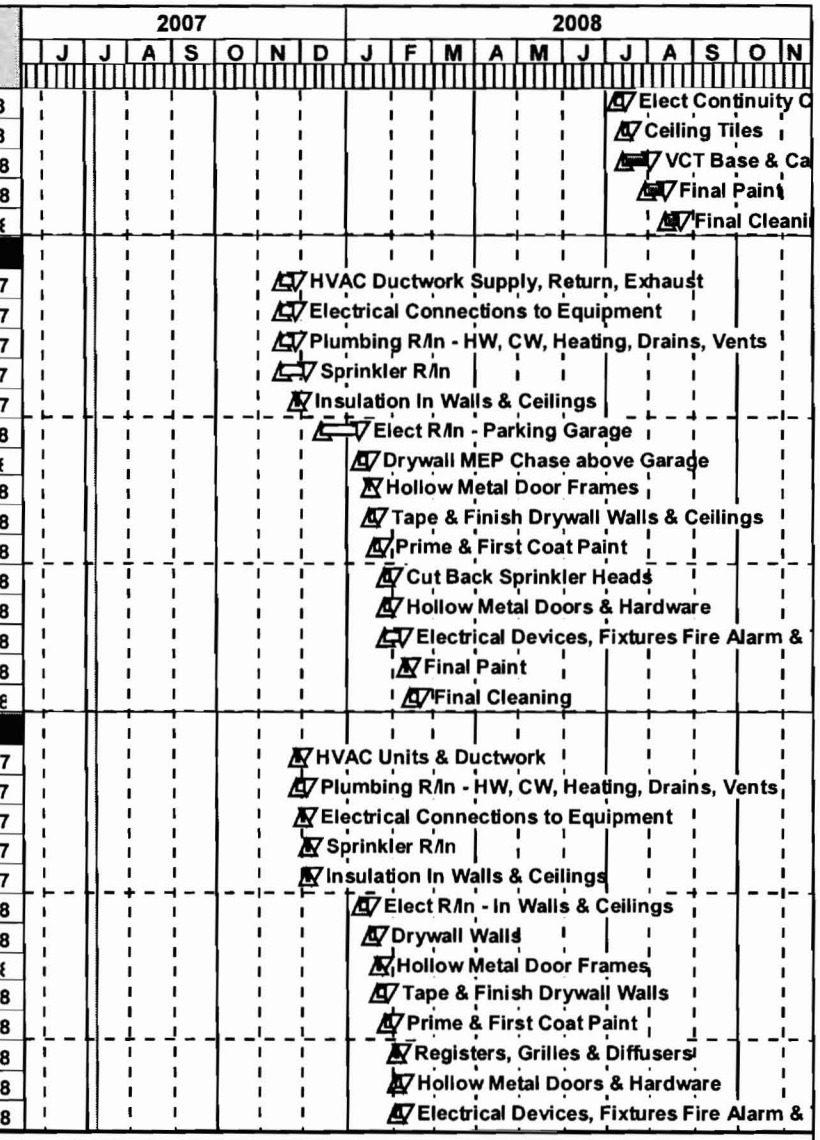
Act ID	Description	Orig Dur	Resp	Early Start	Early Finish
S41200	Elect Continuity Checks & Check-Out	5	EL	08JUL08	14JUL08
S41190	Ceiling Tiles	5	AC	14JUL08	18JUL08
S41210	VCT Base & Carpeting	15	FL	14JUL08	01AUG08
S49990	Final Paint	10	PA	30JUL08	12AUG08
S49995	Final Cleaning	8	FC	13AUG08	22AUG08
Parking Garage (102 Spaces) Lower Level EL 100					
GA1010	HVAC Ductwork Supply, Return, Exhaust	5	HVAC	16NOV07	26NOV07
GA1020	Electrical Connections to Equipment	5	EL	16NOV07	26NOV07
GA1040	Plumbing R/In - HW, CW, Heating, Drains, Vents	5	PLMB	16NOV07	26NOV07
GA1000	Sprinkler R/In	10	FP	16NOV07	03DEC07
GA1050	Insulation In Walls & Ceilings	3	INSU	27NOV07	29NOV07
GA1030	Elect R/In - Parking Garage	15	EL	14DEC07	08JAN08
GA1060	Drywall MEP Chase above Garag	5	DW	09JAN08	15JAN08
GA1070	Hollow Metal Door Frames	2	DH	16JAN08	17JAN08
GA1080	Tape & Finish Drywall Walls & Ceilings	5	DW	16JAN08	22JAN08
GA1090	Prime & First Coat Paint	5	PA	21JAN08	25JAN08
GA1100	Cut Back Sprinkler Heads	5	FP	28JAN08	01FEB08
GA1110	Hollow Metal Doors & Hardware	5	DH	28JAN08	01FEB08
GA1120	Electrical Devices, Fixtures Fire Alarm & Trim	10	EL	28JAN08	08FEB08
GA1130	Final Paint	4	PA	11FEB08	14FEB08
GA1140	Final Cleaning	5	FC	15FEB08	21FEB08
Entry Lobby, Dumpster Rm EL 100					
EL1010	HVAC Units & Ductwork	3	HVAC	27NOV07	29NOV07
EL1040	Plumbing R/In - HW, CW, Heating, Drains, Vents	5	PLMB	27NOV07	03DEC07
EL1020	Electrical Connections to Equipment	2	EL	30NOV07	03DEC07
EL1000	Sprinkler R/In	3	FP	04DEC07	06DEC07
EL1050	Insulation In Walls & Ceilings	3	INSU	04DEC07	06DEC07
EL1030	Elect R/In - In Walls & Ceilings	5	EL	09JAN08	15JAN08
EL1060	Drywall Walls	5	DW	16JAN08	22JAN08
EL1070	Hollow Metal Door Frames	2	DH	23JAN08	24JAN08
EL1080	Tape & Finish Drywall Walls	5	DW	23JAN08	29JAN08
EL1090	Prime & First Coat Paint	5	PA	28JAN08	01FEB08
EL1200	Registers, Grilles & Diffusers	3	HVAC	04FEB08	06FEB08
EL1100	Hollow Metal Doors & Hardware	5	DH	04FEB08	08FEB08
EL1110	Electrical Devices, Fixtures Fire Alarm & Trim	5	EL	04FEB08	08FEB08



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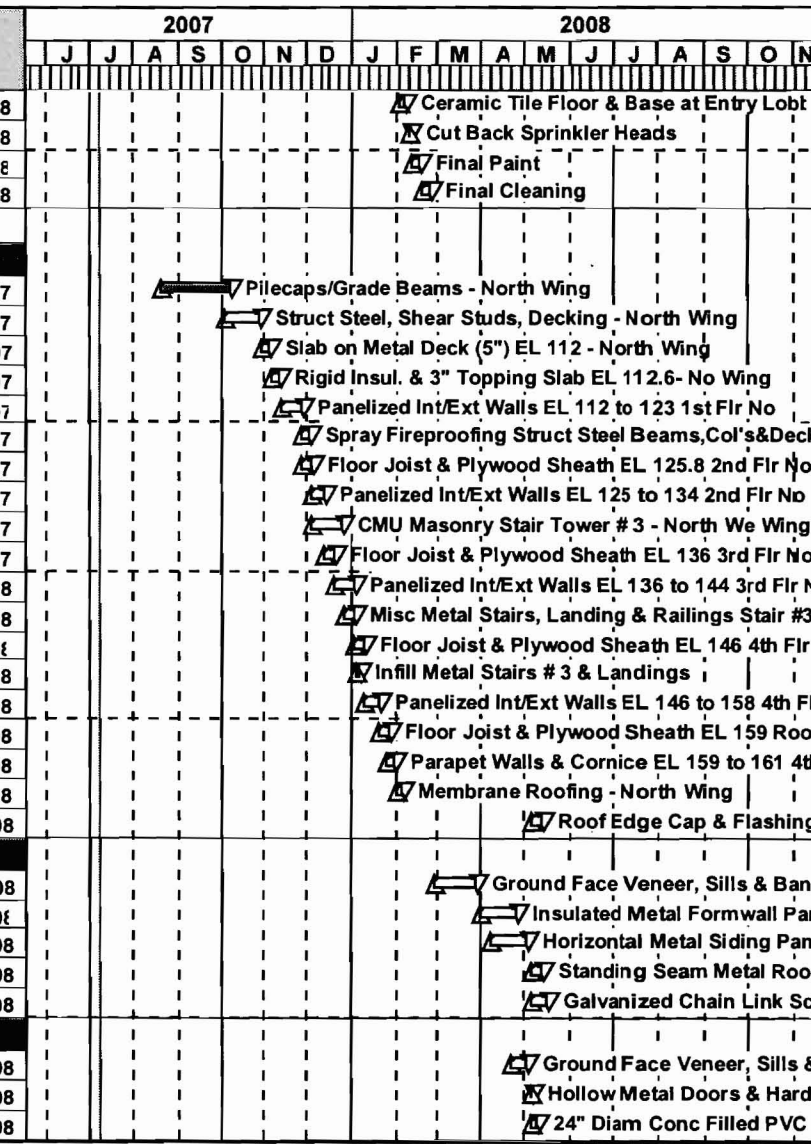
Act ID	Description	Orig Dur	Resp	Early Start	Early Finish
EL1120	Ceramic Tile Floor & Base at Entry Lobby	5	CT	04FEB08	08FEB08
EL1130	Cut Back Sprinkler Heads	2	FP	11FEB08	12FEB08
EL114C	Final Paint	4	PA	13FEB08	18FEB08
EL1150	Final Cleaning	5	FC	19FEB08	25FEB08
Building Constr. North Wing Col 7 to 10 & A to R					
North Wing General					
BN1010	Pilecaps/Grade Beams - North Wing	35	CO	20AUG07	08OCT07
BN1020	Struct Steel, Shear Studs, Decking - North Wing	20	SS	02OCT07	29OCT07
BN1030	Slab on Metal Deck (5") EL 112 - North Wing	5	CO	30OCT07	05NOV07
BN1040	Rigid Insul. & 3" Topping Slab EL 112.6- No Wing	5	CO	06NOV07	12NOV07
BN1050	Panelized Int/Ext Walls EL 112 to 123 1st Flr N	10	RGCA	13NOV07	28NOV07
BN1160	Spray Fireproofing Struct Steel Beams,Col's&Deck	5	SFP	27NOV07	03DEC07
BN1060	Floor Joist & Plywood Sheath EL 125.8 2nd Flr No	6	RGCA	27NOV07	04DEC07
BN1070	Panelized Int/Ext Walls EL 125 to 134 2nd Flr No	10	RGCA	03DEC07	14DEC07
BN1170	CMU Masonry Stair Tower # 3 - North We Wing	15	MA	04DEC07	26DEC07
BN1080	Floor Joist & Plywood Sheath EL 136 3rd Flr No	6	RGCA	13DEC07	20DEC07
BN1090	Panelized Int/Ext Walls EL 136 to 144 3rd Flr No	10	RGCA	19DEC07	04JAN08
BN1180	Misc Metal Stairs, Landing & Railings Stair #3	5	MM	27DEC07	03JAN08
BN1100	Floor Joist & Plywood Sheath EL 146 4th Flr N	6	RGCA	03JAN08	10JAN08
BN1190	Infill Metal Stairs # 3 & Landings	2	CO	04JAN08	07JAN08
BN1110	Panelized Int/Ext Walls EL 146 to 158 4th Flr No	10	RGCA	09JAN08	22JAN08
BN1120	Floor Joist & Plywood Sheath EL 159 Roof No	6	RGCA	21JAN08	28JAN08
BN1130	Parapet Walls & Cornice EL 159 to 161 4th Flr No	5	RGCA	25JAN08	31JAN08
BN1140	Membrane Roofing - North Wing	5	RO	01FEB08	07FEB08
BN1150	Roof Edge Cap & Flashing - North Wing	7	RO	05MAY08	13MAY08
Ext Facade North Wing (Viewed from Rd 295)					
FN1000	Ground Face Veneer, Sills & Bands - North View	20	MA	29FEB08	28MAR08
FN1010	Insulated Metal Formwall Panels - North Vie	20	MS	31MAR08	25APR08
FN1020	Horizontal Metal Siding Panels - North View	20	MS	07APR08	02MAY08
FN1040	Standing Seam Metal Roof Third Floor North View	7	RO	05MAY08	13MAY08
FN1030	Galvanized Chain Link Scrn - North View Grnd Flr	10	MS	05MAY08	16MAY08
Ext Facade North West Wing (Viewed from 84 Marg)					
NW1000	Ground Face Veneer, Sills & Bands - No West View	10	MA	21APR08	02MAY08
NW1010	Hollow Metal Doors & Hardware - North West	3	DH	05MAY08	07MAY08
NW1060	24" Diam Conc Filled PVC Columns (2 Total) No	5	CO	05MAY08	09MAY08



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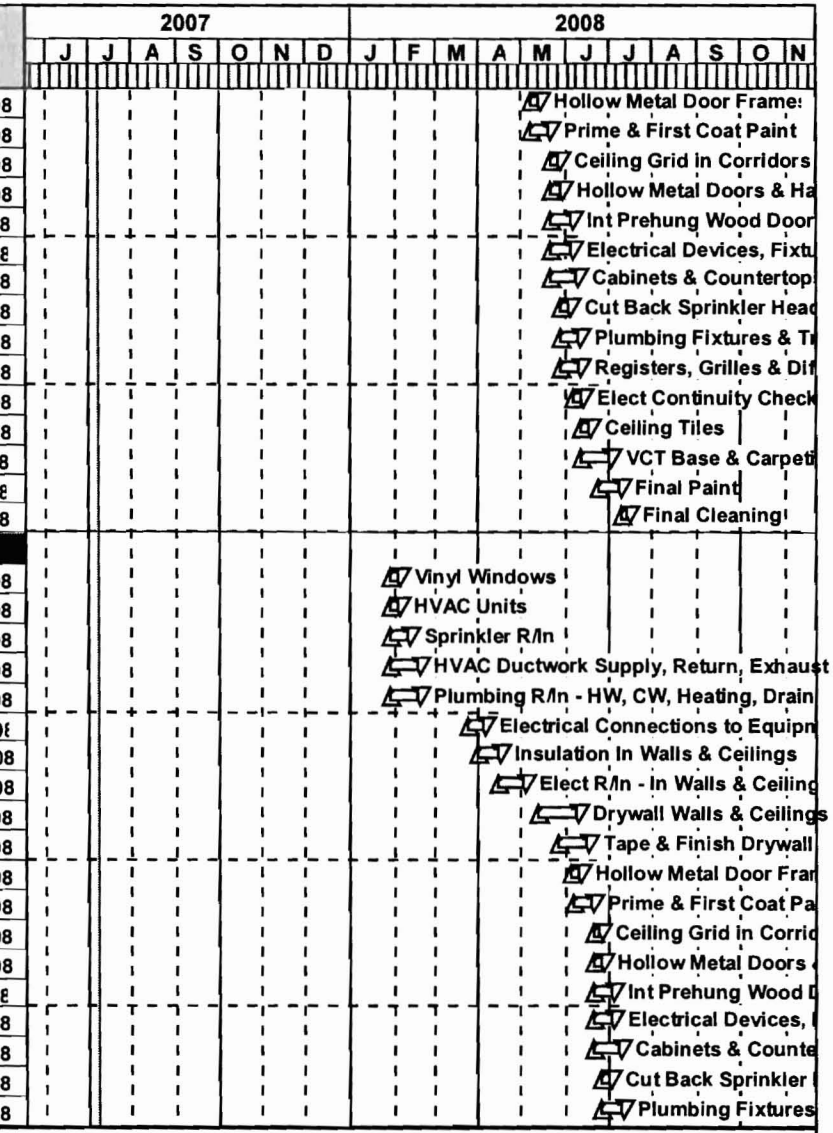
Act ID	Description	Orig Dur	Resp	Early Start	Early Finish
N31110	Hollow Metal Door Frames	5	DH	07MAY08	13MAY08
N31100	Prime & First Coat Paint	10	PA	08MAY08	21MAY08
N31120	Ceiling Grid in Corridors	4	AC	22MAY08	28MAY08
N31130	Hollow Metal Doors & Hardware	5	DH	22MAY08	29MAY08
N31140	Int Prehung Wood Doors & Trim	10	FNCA	22MAY08	05JUN08
N3117C	Electrical Devices, Fixtures Fire Alarm & Tr	10	EL	22MAY0E	05JUN0E
N31150	Cabinets & Countertops	12	FNCA	22MAY08	09JUN08
N31180	Cut Back Sprinkler Heads	5	FP	29MAY08	04JUN08
N31160	Plumbing Fixtures & Trim	10	PLMB	29MAY08	11JUN08
S32005	Registers, Grilles & Diffusers	10	HVAC	29MAY08	11JUN08
N31200	Elect Continuity Checks & Check-Out	5	EL	06JUN08	12JUN08
N31190	Ceiling Tiles	5	AC	12JUN08	18JUN08
N31210	VCT Base & Carpeting	15	FL	12JUN08	02JUL08
N3999C	Final Paint	10	PA	24JUN0E	08JUL0E
N39995	Final Cleaning	5	FC	09JUL08	15JUL08
Fourth Floor - EL 146					
N41000	Vinyl Windows	5	WI	29JAN08	04FEB08
N41010	HVAC Units	5	HVAC	29JAN08	04FEB08
N41020	Sprinkler R/In	10	FP	29JAN08	11FEB08
N41030	HVAC Ductwork Supply, Return, Exhaust	15	HVAC	29JAN08	18FEB08
N41050	Plumbing R/In - HW, CW, Heating, Drains, Vents	15	PLMB	29JAN08	18FEB08
N4106C	Electrical Connections to Equipmen	10	EL	24MAR0E	04APR0E
N41070	Insulation In Walls & Ceilings	12	INSU	01APR08	16APR08
N41040	Elect R/In - In Walls & Ceilings	15	EL	14APR08	02MAY08
N41080	Drywall Walls & Ceilings	20	DW	12MAY08	09JUN08
N41090	Tape & Finish Drywall Walls & Ceilings	15	DW	27MAY08	16JUN08
N41110	Hollow Metal Door Frames	5	DH	05JUN08	11JUN08
N41100	Prime & First Coat Paint	10	PA	06JUN08	19JUN08
N41120	Ceiling Grid in Corridors	4	AC	20JUN08	25JUN08
N41130	Hollow Metal Doors & Hardware	5	DH	20JUN08	26JUN08
N4114C	Int Prehung Wood Doors & Trim	10	FNCA	20JUN0E	03JUL0E
N41170	Electrical Devices, Fixtures Fire Alarm & Trim	10	EL	20JUN08	03JUL08
N41150	Cabinets & Countertops	12	FNCA	20JUN08	08JUL08
N41180	Cut Back Sprinkler Heads	5	FP	26JUN08	02JUL08
N41160	Plumbing Fixtures & Trim	10	PLMB	26JUN08	10JUL08



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Southern Maine Student Housing LLC
Bayside Village Student Housing Comp
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July 11, 2007

PIZZAGALLI CONSTRUCTION

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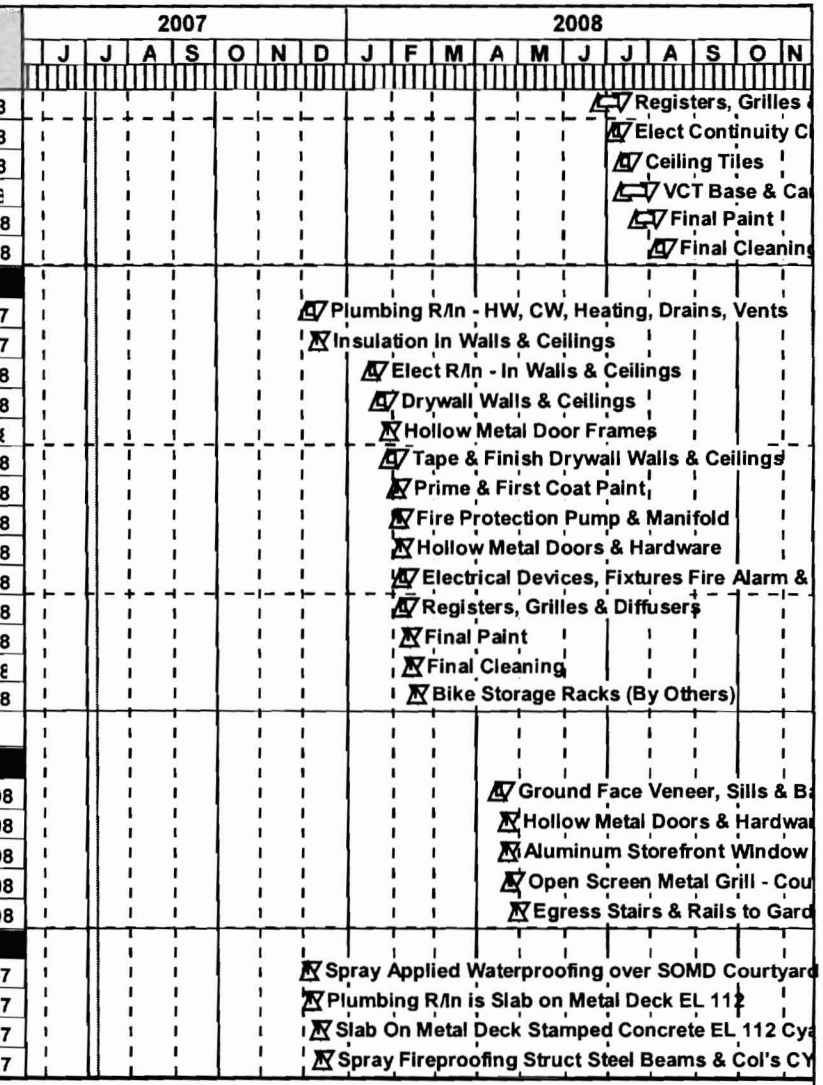
Act ID	Description	Orig Dur	Resp	Early Start	Early Finish
N42000	Registers, Grilles & Diffusers	10	HVAC	26JUN08	10JUL08
N41200	Elect Continuity Checks & Check-Out	5	EL	07JUL08	11JUL08
N41190	Ceiling Tiles	5	AC	11JUL08	17JUL08
N4121C	VCT Base & Carpeting	15	FL	11JUL08	31JUL08
N49990	Final Paint	10	PA	23JUL08	05AUG08
N49995	Final Cleaning	5	FC	06AUG08	12AUG08
Bike Storage, Elect Rm, Mech Space EL 100					
NL1010	Plumbing R/In - HW, CW, Heating, Drains, Vents	5	PLMB	04DEC07	10DEC07
NL1020	Insulation In Walls & Ceilings	2	INSU	11DEC07	12DEC07
NL1000	Elect R/In - In Walls & Ceilings	5	EL	16JAN08	22JAN08
NL1030	Drywall Walls & Ceilings	5	DW	23JAN08	29JAN08
NL1060	Hollow Metal Door Frames	1	DH	30JAN08	30JAN08
NL1040	Tape & Finish Drywall Walls & Ceilings	4	DW	30JAN08	04FEB08
NL1050	Prime & First Coat Paint	4	PA	04FEB08	07FEB08
NL1120	Fire Protection Pump & Manifold	4	FP	05FEB08	08FEB08
NL1070	Hollow Metal Doors & Hardware	1	DH	08FEB08	08FEB08
NL1080	Electrical Devices, Fixtures Fire Alarm & Trim	2	EL	08FEB08	11FEB08
NL1200	Registers, Grilles & Diffusers	2	HVAC	08FEB08	11FEB08
NL1090	Final Paint	2	PA	12FEB08	13FEB08
NL1100	Final Cleaning	2	FC	14FEB08	15FEB08
NL1110	Bike Storage Racks (By Others)	1	OTHR	18FEB08	18FEB08
Building Constr Courtyard Area					
Ext Facade CourtyWest Wing (Viewed from 84 Marg)					
CW1000	Ground Face Veneer, Sills & Bands - Courtyard	5	MA	14APR08	18APR08
CW1010	Hollow Metal Doors & Hardware - CY West	2	DH	21APR08	22APR08
CW1030	Aluminum Storefront Window System -CY West	2	WI	21APR08	22APR08
CW1020	Open Screen Metal Grill - Courtyard West	3	MS	23APR08	25APR08
CW1040	Egress Stairs & Rails to Garden Plaza	3	MM	28APR08	30APR08
CY1000	Spray Applied Waterproofing over SOMD	2	WPRF	04DEC07	05DEC07
CY1010	Plumbing R/In is Slab on Metal Deck EL 112	2	PLMB	06DEC07	07DEC07
CY1030	Slab On Metal Deck Stamped Concrete EL 112	2	CO	10DEC07	11DEC07
CY1040	Spray Fireproofing Struct Steel Beams & Col's CY	2	SFP	12DEC07	13DEC07



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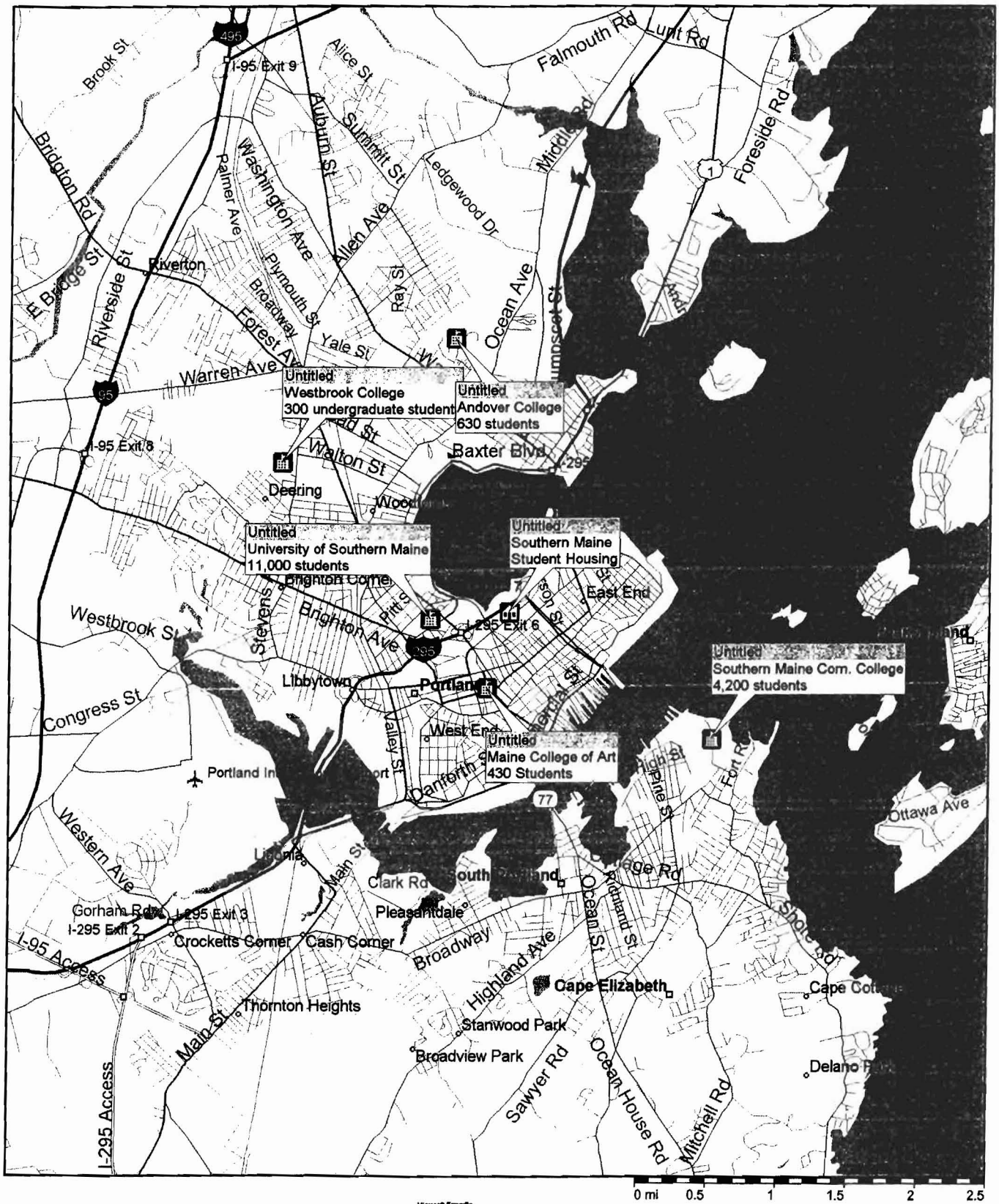
Marginal Way Student Housing Project

Portland, Maine



Microsoft Expedia

Streets98

Detailed Development Budget and Pro Forma Operating Statements
Southern Maine Student Housing, LLC
Portland, Maine
CONFIDENTIAL

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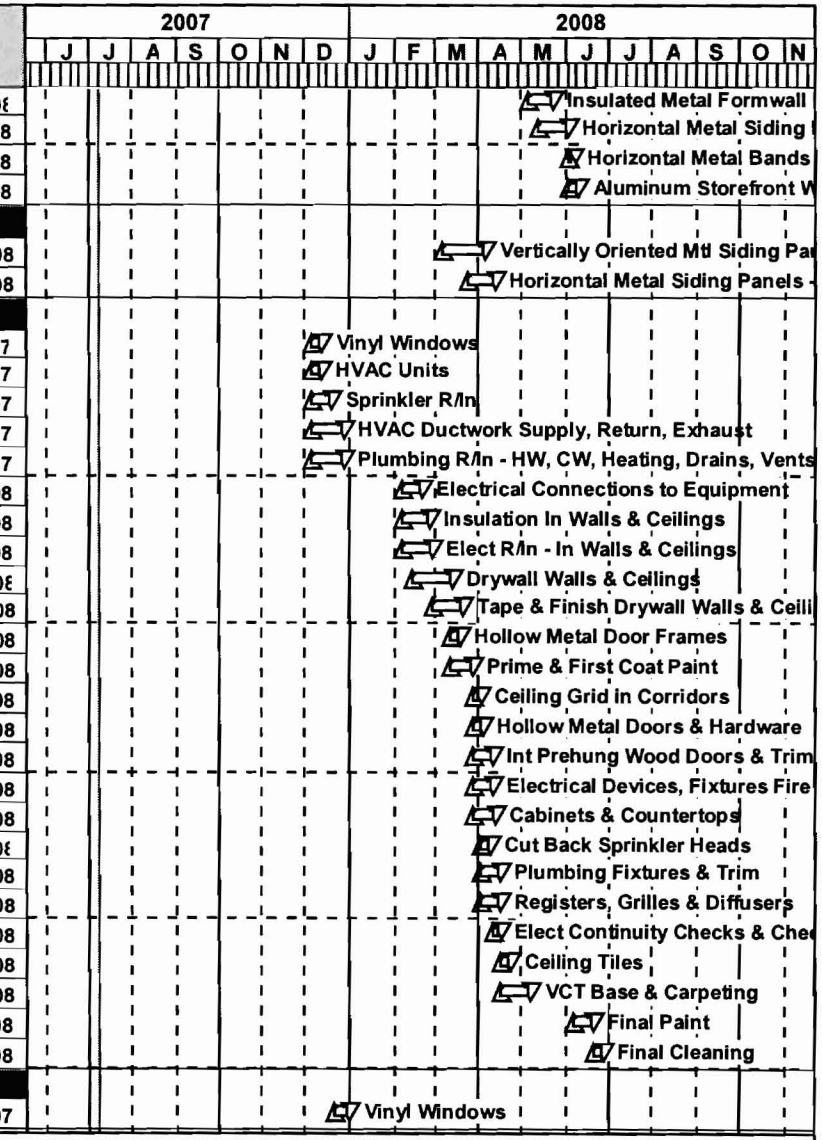
Financial information is confidential and intended for City Councilors only. It will be provided to Councilors under separate cover. Please address any questions regarding project financial information to:

Peter G. Moore
Corporate Finance Associates
22 Monument Square, Suite 504
Portland, ME 04101
207-772-4496
pmoore@cfaw.com

Act ID	Description	Orig Dur	Resp	Early Start	Early Finish
NW1020	Insulated Metal Formwall Panels - NSo We Vie	15	MS	05MAY0E	23MAY0E
NW1030	Horizontal Metal Siding Panels - Nouth West View	15	MS	12MAY08	02JUN08
NW1040	Horizontal Metal Bands - North West View EL 112	3	MS	03JUN08	05JUN08
NW1050	Aluminum Storefront Window System -North	5	WI	03JUN08	09JUN08
Ext Facade North Wing (Viewed from Courtyard)					
CN1000	Vertically Oriented Mtl Siding Panels - No View	20	MS	07MAR08	04APR08
CN1010	Horizontal Metal Siding Panels - North View	15	MS	24MAR08	11APR08
First Floor - EL 112					
N11100	Vinyl Windows	5	WI	05DEC07	11DEC07
N11010	HVAC Units	5	HVAC	05DEC07	11DEC07
N11020	Sprinkler R/In	10	FP	05DEC07	18DEC07
N11030	HVAC Ductwork Supply, Return, Exhaust	15	HVAC	05DEC07	27DEC07
N11050	Plumbing R/In - HW, CW, Heating, Drains, Vents	15	PLMB	05DEC07	27DEC07
N11060	Electrical Connections to Equipment	10	EL	08FEB08	21FEB08
N11070	Insulation In Walls & Ceilings	12	INSU	08FEB08	25FEB08
N11040	Elect R/In - In Walls & Ceilings	15	EL	08FEB08	28FEB08
N11080	Drywall Walls & Ceiling	20	DW	15FEB0E	13MAR0E
N11090	Tape & Finish Drywall Walls & Ceilings	15	DW	29FEB08	20MAR08
N11110	Hollow Metal Door Frames	5	DH	11MAR08	17MAR08
N11100	Prime & First Coat Paint	10	PA	12MAR08	26MAR08
N11120	Ceiling Grid in Corridors	4	AC	27MAR08	01APR08
N11130	Hollow Metal Doors & Hardware	5	DH	27MAR08	02APR08
N11140	Int Prehung Wood Doors & Trim	10	FNCA	27MAR08	09APR08
N11170	Electrical Devices, Fixtures Fire Alarm & Trim	10	EL	27MAR08	09APR08
N11150	Cabinets & Countertops	12	FNCA	27MAR08	11APR08
N11180	Cut Back Sprinkler Heads	5	FP	02APR0E	08APR0E
N11160	Plumbing Fixtures & Trim	10	PLMB	02APR08	15APR08
N12000	Registers, Grilles & Diffusers	10	HVAC	02APR08	15APR08
N11200	Elect Continuity Checks & Check-Out	5	EL	10APR08	16APR08
N11190	Ceiling Tiles	5	AC	16APR08	22APR08
N11210	VCT Base & Carpeting	15	FL	16APR08	06MAY08
N19990	Final Paint	10	PA	06JUN08	19JUN08
N19995	Final Cleaning	5	FC	20JUN08	26JUN08
Second Floor - EL 125					
N21000	Vinyl Windows	5	WI	21DEC07	31DEC07



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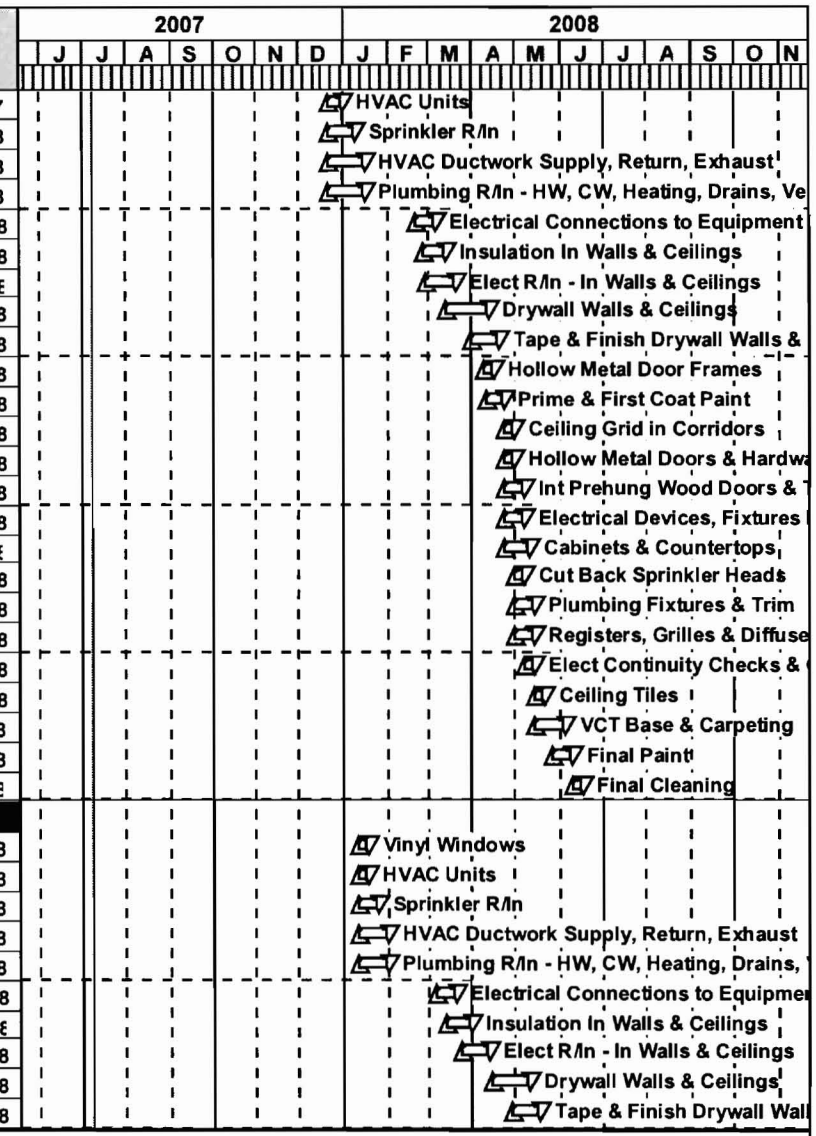
Act ID	Description	Orig Dur	Resp	Early Start	Early Finish
N21010	HVAC Units	5	HVAC	21DEC07	31DEC07
N21020	Sprinkler R/In	10	FP	21DEC07	08JAN08
N21030	HVAC Ductwork Supply, Return, Exhaust	15	HVAC	21DEC07	15JAN08
N21050	Plumbing R/In - HW, CW, Heating, Drains, Vents	15	PLMB	21DEC07	15JAN08
N21060	Electrical Connections to Equipment	10	EL	22FEB08	06MAR08
N21070	Insulation In Walls & Ceilings	12	INSU	26FEB08	12MAR08
N2104C	Elect R/In - In Walls & Ceilings	15	EL	29FEB08	20MAR08
N21080	Drywall Walls & Ceilings	20	DW	14MAR08	11APR08
N21090	Tape & Finish Drywall Walls & Ceilings	15	DW	31MAR08	18APR08
N21110	Hollow Metal Door Frames	5	DH	09APR08	15APR08
N21100	Prime & First Coat Paint	10	PA	10APR08	23APR08
N21120	Ceiling Grid in Corridors	4	AC	24APR08	29APR08
N21130	Hollow Metal Doors & Hardware	5	DH	24APR08	30APR08
N21140	Int Prehung Wood Doors & Trim	10	FNCA	24APR08	07MAY08
N21170	Electrical Devices, Fixtures Fire Alarm & Trim	10	EL	24APR08	07MAY08
N2115C	Cabinets & Countertops	12	FNCA	24APR08	09MAY08
N21180	Cut Back Sprinkler Heads	5	FP	30APR08	06MAY08
N21160	Plumbing Fixtures & Trim	10	PLMB	30APR08	13MAY08
N22000	Registers, Grilles & Diffusers	10	HVAC	30APR08	13MAY08
N21200	Elect Continuity Checks & Check-Out	5	EL	08MAY08	14MAY08
N21190	Ceiling Tiles	5	AC	14MAY08	20MAY08
N21210	VCT Base & Carpeting	15	FL	14MAY08	04JUN08
N29990	Final Paint	10	PA	27MAY08	09JUN08
N29995	Final Cleaning	5	FC	10JUN08	16JUN08
Third Floor - EL 136					
N31000	Vinyl Windows	5	WI	11JAN08	17JAN08
N31010	HVAC Units	5	HVAC	11JAN08	17JAN08
N31020	Sprinkler R/In	10	FP	11JAN08	24JAN08
N31030	HVAC Ductwork Supply, Return, Exhaust	15	HVAC	11JAN08	31JAN08
N31050	Plumbing R/In - HW, CW, Heating, Drains, Vents	15	PLMB	11JAN08	31JAN08
N31060	Electrical Connections to Equipment	10	EL	07MAR08	20MAR08
N3107C	Insulation In Walls & Ceilings	12	INSU	13MAR08	31MAR08
N31040	Elect R/In - In Walls & Ceilings	15	EL	24MAR08	11APR08
N31080	Drywall Walls & Ceilings	20	DW	14APR08	09MAY08
N31090	Tape & Finish Drywall Walls & Ceilings	15	DW	28APR08	16MAY08



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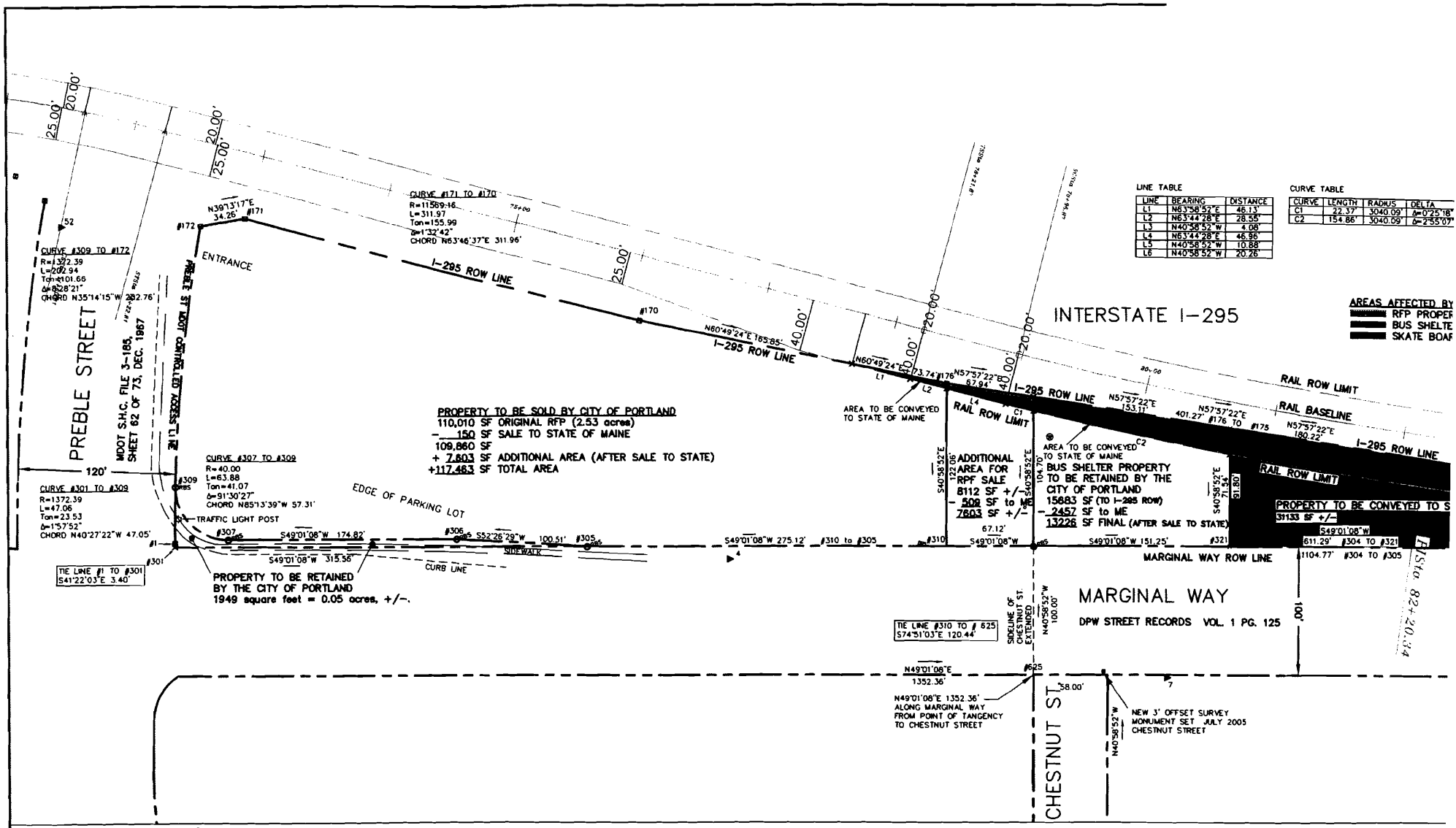
W/F
ATLANTIC BAYSIDE
SQUARE, LLC
PREBLE STREET EXT.
INTERSTATE 295 - SOUTH
INTERSTATE 295 - NORTHBOUN



LINE	BEARING	DISTANCE
L1	N63°58'52"E	46.13'
L2	N63°44'28"E	28.55'
L3	N40°58'52"W	4.08'
L4	N63°44'28"E	46.96'
L5	N40°58'52"W	10.88'
L6	N40°58'52"W	20.26'

CURVE	LENGTH	RADIUS	DELTA
C1	22.37'	3040.09'	Δ=0°25'18"
C2	154.86'	3040.09'	Δ=2°55'07"

GENERAL NOTES

1. TITLE REFERENCES
   Portland Terminal Company to the City of Portland
   Cumberland County Registry of Deeds Book 1797 page 446.
   Dated November 8, 1945
   Subject to reversionary rights for Park and Recreation Purposes, and for the deposit of snow. They were released by the Portland Terminal Company and Canal National Bank (see below).

   Portland Terminal Company to the City of Portland
   Cumberland County Registry of Deeds Book 3391 Page 314.
   Dated May 4, 1973
   Release of reversionary rights in Book 1797 Page 446.

   Canal National Bank to the City of Portland
   Cumberland County Registry of Deeds Book 3391 Page 315.
   Dated May 3, 1973.
   Release of reversionary rights in Book 1797 Page 446.

2. MDOT CONTROLLED ACCESS LINE ALONG PREBLE STREET EXTENSION
   Maine Department of Transportation Right of Way Map S.H.C. File No. 3-185 Sheet 62 of 73 shows both sides of Preble Street between Marginal Way and I-295 as "Controlled Access Limit Lines". In a phone conversation on November 20, 2003 Joseph Washburn of MDOT told William Clark of Portland DPW Engineering that the MDOT record drawing had a notation dated August 8, 2001 stating that the entrances to the City property off Preble Street and the AAA Building land

9. PARCEL AREAS

   Property to be sold by RFP between Preble Street and the 122.06 foot long property line to be established is 109,860 square feet, 2.52 acres, more or less.

   Property to be sold by RFP (in addition) between 122.06 and 104.70 foot long property lines to be established is 7,603 square feet, 0.18 acres, more or less.

   Property to be retained by the City of Portland along the northerly line of Marginal Way and easterly line of Preble Street is 1,949 square feet, 0.05 acres, more or less.

   Property to be retained by the City of Portland along and easterly of the 104.70 foot line to be established, including the existing bus stop building, is 13,226 square feet, 0.30 acre, more or less.

   Property to be sold to the State of Maine (AKA Skate Board Park) along and easterly of the 91.80 and 20.26 foot lines is 31,133 square feet, 0.72 acre, more or less.

   Property to be sold to the State of Maine (for Rail Line Only) along Interstate I-295 150 SF (along lines L1 & L2) + 509 SF (along line L4 & curve C1) + 2457 SF (along curve C5) = 3,116 SF, 0.07 acre, more or less.

   Total area of site is 166887 square feet, 3.83 acres, more or less.

10. MDOT Right of Way Map (Plan Ref. #9) was translated to the DPW Engineering Coordinate Network

SURVEY MONUMENTATION FOUND

#1 Concrete Highway Monument Destroyed. See Note 3
#4 PK nail set in bituminous sidewalk. TB110-73-4.
#6 PK nail found in front of Miss Portland Diner. TB116
#7 PK nail set. TB134-15-7.
#9 PK nail set. TB134-18-9.
#14 MDOT Brass Disc Control Point "POR-14". TB110-7
#52 PK nail found in bituminous sidewalk. TB134-62-5
#170 Concrete Highway Monument Found. 6"x6". Buried 7'
#171 Concrete Highway Monument Found. 6"x6". Buried 5'
#172 Concrete Highway Monument Found. 6"x6". Buried 6'
#173 Concrete Highway Monument Found. 6"x6". Buried 2'
#174 Concrete Highway Monument Found. 6"x6". Buried 2'
#175 Concrete Highway Monument Found. 6"x6". Flush in
#176 Concrete Highway Monument Found. 6"x6". Buried 2'

Color	Building

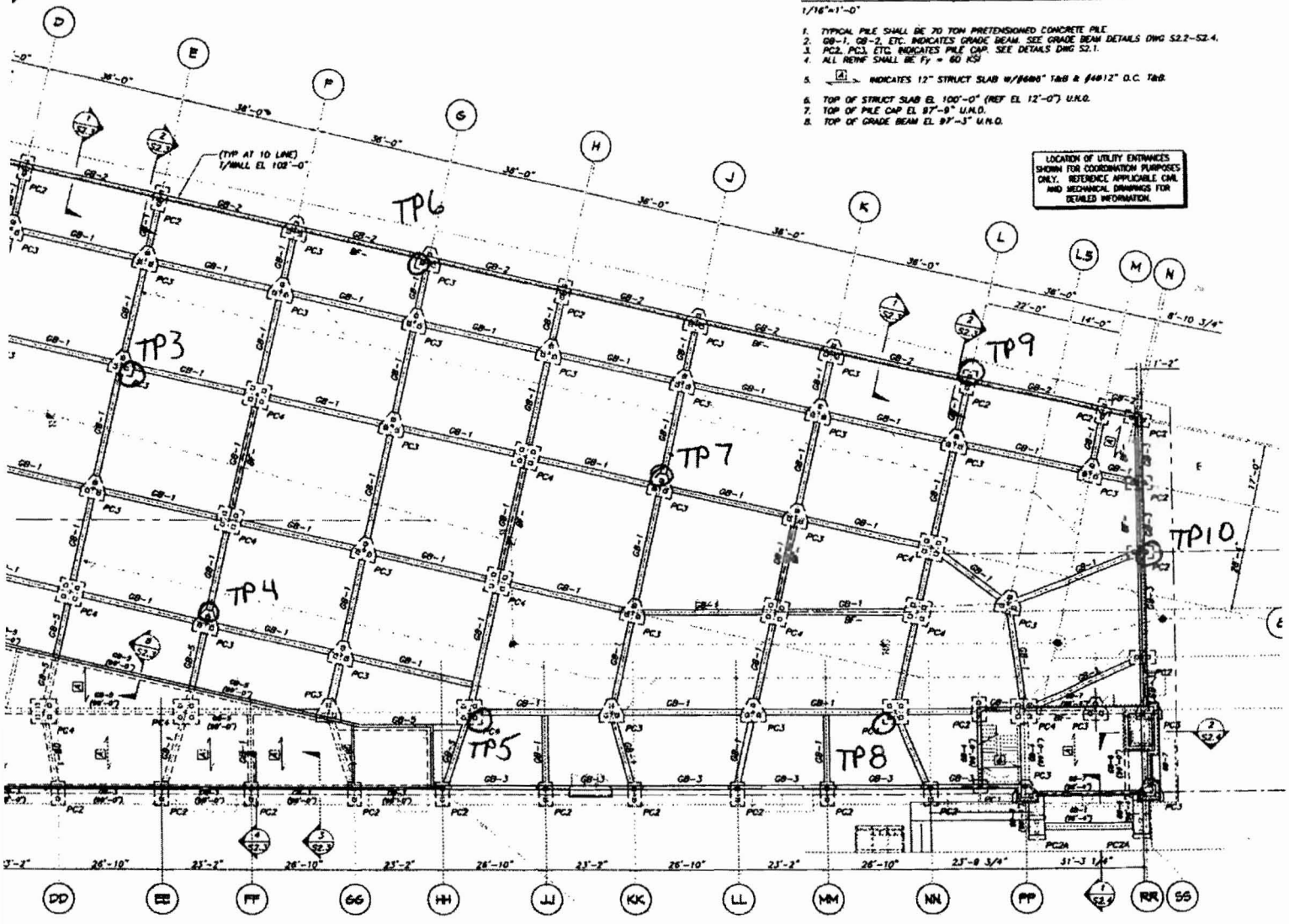
TP1

FOUNDATION PILE/GRADE BEAM PLAN

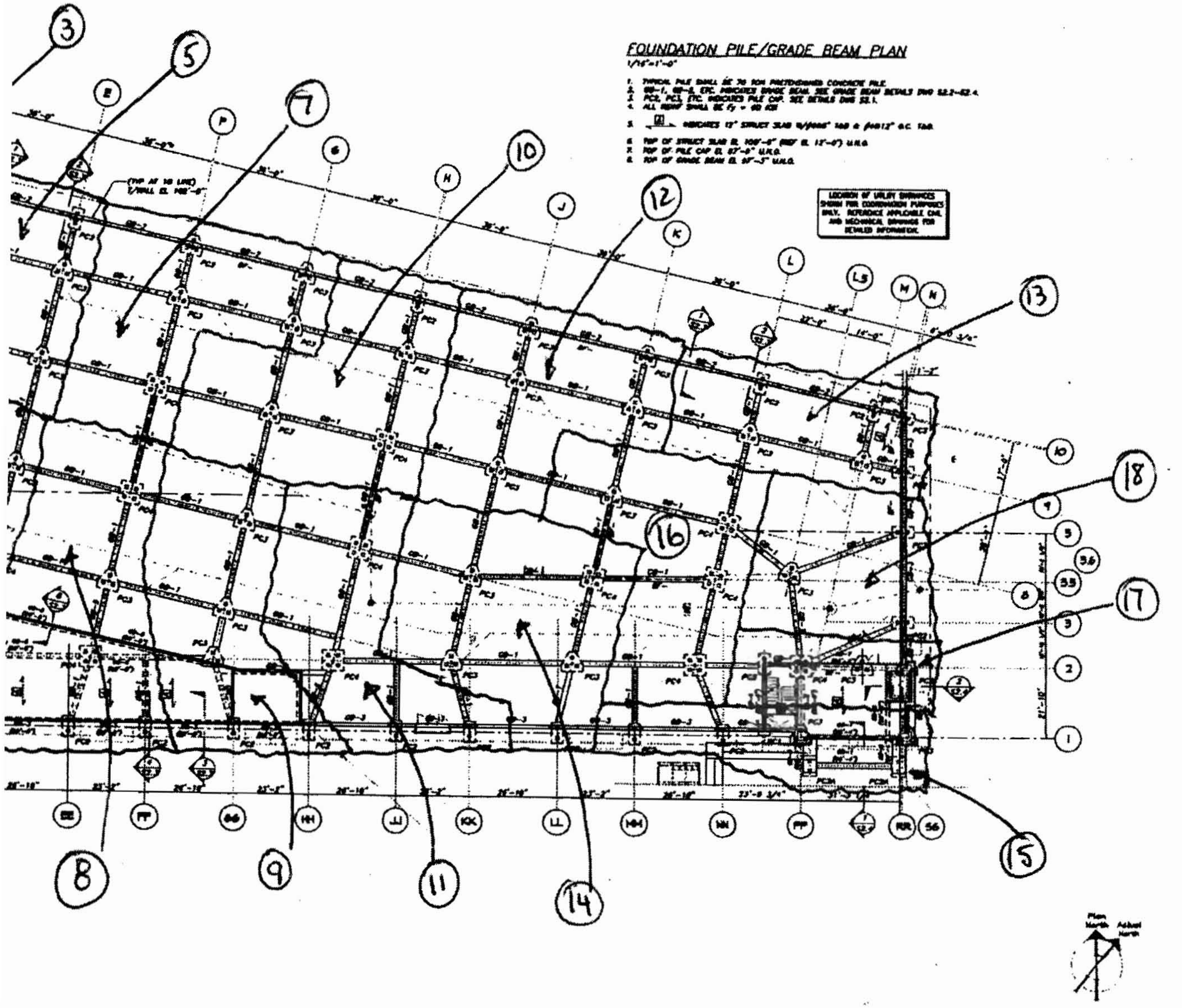
1/16"=1'-0"

1. TYPICAL PILE SHALL BE 70 TON PRETENSIONED CONCRETE PILE.
2. GB-1, GB-2, ETC. INDICATES GRADE BEAM. SEE GRADE BEAM DETAILS DWG S2.2-S2.4.
3. PC2, PC3, ETC. INDICATES PILE CAP. SEE DETAILS DWG S2.1.
4. ALL REINF SHALL BE Fy = 60 KSI
5. [4] INDICATES 12" STRUCT SLAB w/#6@8" T&B & #4@12" O.C. T&B.
6. TOP OF STRUCT SLAB EL 100'-0" (REF EL 12'-0") U.N.O.
7. TOP OF PILE CAP EL 87'-9" U.N.O.
8. TOP OF GRADE BEAM EL 97'-3" U.N.O.

LOCATION OF UTILITY ENTRANCES SHOWN FOR COORDINATION PURPOSES ONLY. REFERENCE APPLICABLE CIVIL AND MECHANICAL DRAWINGS FOR DETAILED INFORMATION.



7/23/07



FOUNDATION PILE/GRADE BEAM PLAN

1/16"=1'-0"

1. TYPICAL PILE SHALL BE 70 TON PRETENSIONED CONCRETE PILE.
2. GB-1, GB-2, ETC. INDICATES GRADE BEAM. SEE GRADE BEAM DETAILS DWG S2.2–S2.4.
3. PC2, PC3, ETC. INDICATES PILE CAP. SEE DETAILS DWG S2.1.
4. ALL REBAR SHALL BE Fy = 60 KSI
5. INDICATES 12" STRUCT SLAB W/#5 TOP & #5@12" O.C. TOP
6. TOP OF STRUCT SLAB EL. 100'-0" (REF EL. 12'-0") U.N.O.
7. TOP OF PILE CAP EL. 97'-0" U.N.O.
8. TOP OF GRADE BEAM EL. 97'-3" U.N.O.

LOCATION OF UTILITY ENTRANCES SHOWN FOR COORDINATION PURPOSES ONLY. REFERENCE APPLICABLE CIVIL AND MECHANICAL DRAWINGS FOR DETAILED INFORMATION.

CWS Architects

Architecture
Space Planning
Value Design

434 Cumberland Avenue
Portland, ME 04101
Phone: (207)774-4441
Fax: (207)774-4016

www.CWSarch.com

BECKER
structural engineers, inc.

Owner:
SOUTHERN MAINE STUDENT HOUSING LLC
247 COMMERCIAL STREET
ROCKPORT, MAINE 04856
TEL: (207) 236-4697

Contractor:
PIZZAGALLI CONSTRUCTION
400 FOGG ROAD WEST, SUITE 300
SOUTH PORTLAND, ME 04106
TEL: (207) 817-2312
FAX: (207) 894-7917

BAYSIDE VILLAGE - A STUDENT HOUSING COMPLEX

PORTLAND, MAINE

Project Nr: 2006-026BV

Drawing Title:
FOUNDATION/PILE /GRADE BEAM PLAN

Scale: 1/16" = 1'
Date: 06/15/2007
Revisions:

Drawing Numbers:
S1.1