BECKER
structural engineers, inc.

Structural Special Inspections Report

Bayside Village – A Student Housing Complex

132 Marginal Way
Portland, Maine
July 31, 2008

Report prepared by:

Structural Engineer of Record
Becker Structural Engineers, Inc.
75 York Street
Portland, Maine 04101

Bayside Village – A Student Housing Complex

132 Marginal Way
Portland, Maine
June 29, 2007

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01000 Quality Assurance

01001 Seismic Resistance Checklist and Schedule of Special Inspections

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Statements of Responsibility.

EXHIBIT A

01000 Special Inspections - General

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.

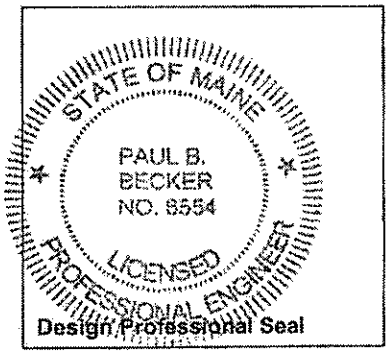
Job site safety and means and methods of construction are solely the responsibility of the Contractor.

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 — *6/15/2007* Date



Design Professional Seal

Owner's Authorization:

Signature Date

Building Code Official's Acceptance:

Signature Date

Project: Bayside Village – A Student Housing Project
Date Prepared: 11/14/ 2007

Structural Statement of Special Inspections

Project: *Bayside Village – A Student Housing Project*

Location: *120 Marginal Way, Portland, ME*

Owner: *Realty Resources,*

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

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.

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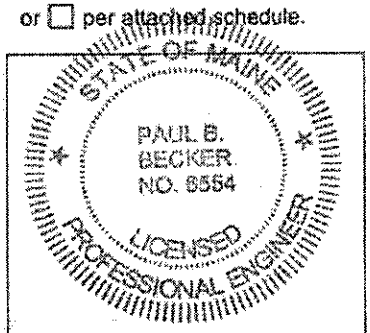
Job site safety and means and methods of construction are solely the responsibility of the Contractor.

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 — *November 14, 2007* Date



Design Professional Seal

Owner's Authorization:

Signature Date

Building Code Official's Acceptance:

Signature Date

Project: Bayside Village – A Student Housing Project
Date Prepared: July 13, 2007

Structural Statement of Special Inspections

Project: *Bayside Village – A Student Housing Project*

Location: *120 Marginal Way, Portland, ME*

Owner: *Realty Resources,*

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

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.

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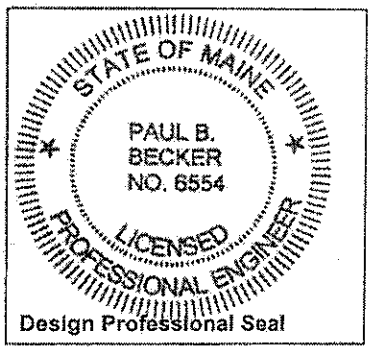
Interim Report Frequency: ☒ *Upon request of Building Official* _____ or ☐ per attached schedule.

Prepared by:

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

Signature — *July 13, 2007* Date



Design Professional Seal

Owner's Authorization:

Signature Date

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, ME*

Owner: *Realty Resources*

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

(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)**	*Becker Structural Engineers, Inc*	*75 York Street* *Portland, ME 04101* *(207) 879-1838* *paul@beckerstructural.com*
2. Special Inspector (SI 1)	*S.W. Cole Engineering, Inc.*	*286 Portland Road* *Gray, ME 04039* *(207) 657-2866*
3. Special Inspector (SI 2)	*N/A*	
4. Testing Agency (TA 1)	*S.W. Cole Engineering, Inc.*	*286 Portland Road* *Gray, ME 04039* *(207) 657-2866*
5. Testing Agency (TA 2)	*N/A*	
6. Other (O1)	*N/A*	

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)

List of Agents

Project: *Bayside Village - A Student Housing Project*

Location: *120 Marginal Way, Portland, ME*

Owner: *Realty Resources*

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

(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

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3. Special Inspector (SI 2)	*N/A*	
4. Testing Agency (TA 1)	*S.W. Cole Engineering, Inc.*	*286 Portland Road* *Gray, ME 04039* *(207) 657-2866*
5. Testing Agency (TA 2)	*N/A*	
6. Other (O1)	*N/A*	

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)

List of Agents

Project: *Bayside Village - A Student Housing Project*

Location: *120 Marginal Way, Portland, ME*

Owner: *Realty Resources*

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

(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)	*Becker Structural Engineers, Inc*	*75 York Street* *Portland, ME 04101* *(207) 879-1838* *paul@beckerstructural.com*
2. Special Inspector (SI 1)	*S.W. Cole Engineering, Inc.*	*286 Portland Road* *Gray, ME 04039* *(207) 657-2866*
3. Special Inspector (SI 2)	*N/A*	
4. Testing Agency (TA 1)	*S.W. Cole Engineering, Inc.*	*286 Portland Road* *Gray, ME 04039* *(207) 657-2866*
5. Testing Agency (TA 2)	*N/A*	
6. Other (O1)	*N/A*	

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, ME*
Owner: *Realty Resources*
Owner's Address: *247 Commercial Street, Suite 4*
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.

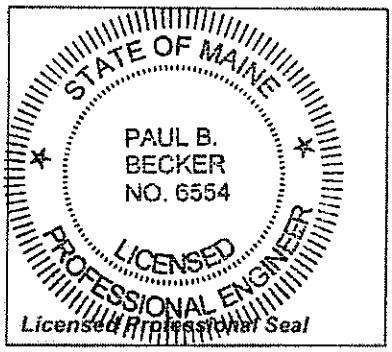
Interim reports submitted prior to this final report form a basis for and are to be considered an integral part of this final report.

Respectfully submitted,
Structural Special Inspection Coordinator

PAUL B. BECKER, P.E.
(Type or print name)

BECKER STRUCTURAL ENGINEERS, INC.
(Firm Name)

Signature 7/31/08 Date



Licensed Professional Seal

Project: Bayside Village A Student Housing Complex
Date Prepared: July 13, 2007

Statement of Special Inspections (Continued) - Exhibit A

Special Inspector's/Agent's Final Report

Project: *Bayside Village*

Special Inspector or Agent: *Roger Domingo* (name) *S.W. Cole Engineering* (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 other than the following:

Comments:

(Attach continuation sheets if required to complete the description of corrections.)

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:

Roger E Domingo
(Type or print name)

Signature 7/23/08 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

Disclaimers and Qualifications

The program of Structural/Special Tests and Inspections does not relieve the Contractor or its Subcontractors of their responsibilities and obligations for quality control of the work, for any design work which is included in the scope of services, and for full compliance with the requirements of the Construction Documents. Furthermore, the detection of, or the failure to detect, deficiencies or defects in work during testing and inspection conducted pursuant to the Program does not relieve the Contractor or its subcontractors of their responsibility to correct all deficiencies or defects, whether detected or undetected, in all parts of work, and to otherwise comply with all requirements of the Construction Documents. No warrantee is expressed or implied by the issuance of this document. Additional disclaimers and/or qualifications may be included in the Owner-Special Inspection agreement.

EXHIBIT B

02300 Soils and Foundation Construction

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	TAI	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	TAI	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	TAI	PE/GE, EIT or ETT	✓
2. Pile foundations:						
a. Observe and record procedures for static load testing of piles.	Y	C	IBC 1704.8	TAI	PE/GE, EIT or ETT	✓
b. Observe and record procedures for dynamic load testing of piles.	Y	C		TAI	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		TAI	PE/GE, EIT or ETT	✓
d. Test welded splices of steel piles	Y	C	AWS D1.1	TAI	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				

S.W.COLE ENGINEERING, INC.

Report of Field Density
ASTM D6938

Project: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Field Density Test Results

Test #	Test Date	Tech	Test Location	Elev Feet	Test Depth	Lab ID	Dry Density	Moisture Content Percent	Compaction Percent	Required Compaction
18	6/24/2008	VLT	CHILLER PAD - 10' S OF SW CNR	12.33	10	7938G	141.6	4.6	97.5	95
19	6/24/2008	VLT	CHILLER PAD 15' S OF SW CNR	12.33	10	7938G	141.4	4.6	97.3	95

Laboratory Compaction Test Reference

Lab ID	Date Received	Material Source	Material Type	Method	Max Dry Density PCF	Optimum Moisture Content (%)	Comments
7938G	1/3/2008	On Site Material	Aggregate Base	ASTM D-1557 Modified C	145.3	4.4	

Elevation Notes:

Comments:

Reviewed By

S.W.COLE ENGINEERING, INC.

Report of Field Density

ASTM D2922

Project: **PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING** Project Number: **05-1177.3**

Client: **PIZZAGALLI CONSTRUCTION COMPANY**

Field Density Test Results

Test #	Test Date	Tech	Test Location	Elev Feet	Test Depth	Lab ID	Dry Density	Moisture Content Percent	Compaction Percent	Required Compaction
1	9/19/2007	CKT	B - 9.5	99'	12	7174G	117.9	1.5	99.7	95
2	9/19/2007	CKT	A - 8.5	99'	12	7174G	117.5	1.5	99.3	95
3	9/19/2007	CKT	E - 6.5 SEWER LINE	94.75	12	7174G	115.7	2.0	97.8	95
4	9/19/2007	CKT	G - 6.5 SEWER LINE	94.75	12	7174G	117.5	2.0	99.3	95

Laboratory Compaction Test Reference

Lab ID	Date Received	Material Source	Material Type	Method	Max Dry Density PCF	Optimum Moisture Content (%)	Comments
7174G	7/27/2007	On-site	Structural Fill	ASTM D-1557 Modified A	118.3	10.5	

Elevation Notes:

Comments:

Reviewed By

S.W.COLE ENGINEERING, INC.

Report of Field Density
ASTM D2922

Project: **PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING** Project Number: **05-1177.3**

Client: **PIZZAGALLI CONSTRUCTION COMPANY**

Field Density Test Results

Test #	Test Date	Tech	Test Location	Elev Feet	Test Depth	Lab ID	Dry Density	Moisture Content Percent	Compaction Percent	Required Compaction
5	9/26/2007	DMR	STRUCTURAL SLAB 10-7.6	FG	10	7174G	115.2	1.8	97.4	95
6	9/26/2007	DMR	STRUCTURAL SLAB A TO B LINE	FG	10	7174G	118.4	2.0	100.1	95

Laboratory Compaction Test Reference

Lab ID	Date Received	Material Source	Material Type	Method	Max Dry Density PCF	Optimum Moisture Content (%)	Comments
7174G	7/27/2007	On-site	Structural Fill	ASTM D-1557 Modified A	118.3	10.5	

Elevation Notes:
FG = FINISH GRAVEL

Comments:

Reviewed By

S.W.COLE ENGINEERING, INC.

Report of Field Density
ASTM D2922

Project: **PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING** Project Number: **05-1177.3**

Client: **PIZZAGALLI CONSTRUCTION COMPANY**

Field Density Test Results

Test #	Test Date	Tech	Test Location	Elev Feet	Test Depth	Lab ID	Dry Density	Moisture Content Percent	Compaction Percent	Required Compaction
7	10/4/2007	DMR	7 + 10	FS	12	7174G	116.3	5.4	98.3	95
8	10/4/2007	DMR	9 + E	FS	12	7174G	115.6	6.2	97.7	95
9	10/4/2007	DMR	8 - BETWEEN F + G	FS	12	7174G	117.4	5.0	99.2	95

Laboratory Compaction Test Reference

Lab ID	Date Received	Material Source	Material Type	Method	Max Dry Density PCF	Optimum Moisture Content (%)	Comments
7174G	7/27/2007	On-site	Structural Fill	ASTM D-1557 Modified A	118.3	10.5	

Elevation Notes:

Comments:
FS- FINISH SAND

Reviewed By

S.W.COLE ENGINEERING, INC.

Report of Field Density
ASTM D2922

Project: **PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING** Project Number: **05-1177.3**

Client: **PIZZAGALLI CONSTRUCTION COMPANY**

Field Density Test Results

Test #	Test Date	Tech	Test Location	Elev Feet	Test Depth	Lab ID	Dry Density	Moisture Content Percent	Compaction Percent	Required Compaction
10	10/11/2007	DMR	BETWEEN 1 + 2 AND AA + BB	FG	10	7174G	113.6	4.8	96.0	95
11	10/11/2007	DMR	BETWEEN CC + DD AND 1 + 2	FG	10	7174G	115.4	5.6	97.5	95
12	10/11/2007	DMR	BETWEEN 3 + 4 AND AA + BB	FG	10	7174G	113.9	6.1	96.3	95
13	10/11/2007	DMR	FF LINE BETWEEN 1 + 2	FG	10	7174G	116.0	6.0	98.1	95

Laboratory Compaction Test Reference

Lab ID	Date Received	Material Source	Material Type	Method	Max Dry Density PCF	Optimum Moisture Content (%)	Comments
7174G	7/27/2007	On-site	Structural Fill	ASTM D-1557 Modified A	118.3	10.5	

Elevation Notes:

Comments:
FG- FINISH GRADE

Reviewed By

S.W.COLE ENGINEERING, INC.

Report of Field Density
ASTM D2922

Project: **PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING** Project Number: **05-1177.3**

Client: **PIZZAGALLI CONSTRUCTION COMPANY**

Field Density Test Results

Test #	Test Date	Tech	Test Location	Elev Feet	Test Depth	Lab ID	Dry Density	Moisture Content Percent	Compaction Percent	Required Compaction
14	10/17/2007	VLT	LINE DD & LINE 2.9	99.0	12	7174G	117.4	1.9	99.2	95
15	10/17/2007	VLT	LINE CC & LINE 2.9	99.0	12	7174G	117.7	2.6	99.5	95
16	10/17/2007	VLT	LINE EE & LINE 2.0	99.0	12	7174G	116.0	2.6	98.1	95
17	10/17/2007	VLT	LINE FF & LINE 2.0	99.0	12	7174G	116.9	1.7	98.8	95

Laboratory Compaction Test Reference

Lab ID	Date Received	Material Source	Material Type	Method	Max Dry Density PCF	Optimum Moisture Content (%)	Comments
7174G	7/27/2007	On-site	Structural Fill	ASTM D-1557 Modified A	118.3	10.5	

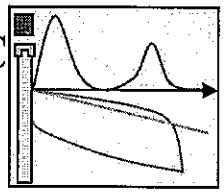
Elevation Notes:

Comments:

Reviewed By

GEOSCIENCES TESTING AND RESEARCH, INC

55 Middlesex Street, Suite 225, N. Chelmsford, MA 01863
Ph: (978)251-9395, Fx: (978)251-9396



August 15, 2007

GTR Project # - 07.145

Mr. Michael Lally
Sea and Shore Contracting
101 Messina Drive
Braintree, MA 02184

Re: Dynamic Testing Report
Bayside Village Housing
Portland, ME

Dear Mike:

At your request, we have performed dynamic pile testing at the above-referenced site on August 1, 3, 6, 7, 8 and 10, 2007. The dynamic testing was requested in order to evaluate pile capacity, driving stresses, and hammer performance during test pile installation. Testing was conducted using the Pile Driving Analyzer™ (PDA) Model 586 PAK, which records, digitizes, and processes the force and acceleration signals for use in the Case Method and CAPWAP analyses. The dynamic testing was carried out in general accordance with ASTM D4945, "Standard Test Method for High Strain Dynamic Testing of Piles."

Background and Site Description

A housing development consisting of a multi-story steel framed building is proposed to be constructed along Marginal Way in Portland, ME. Approximately two hundred fifty steel PP9-5/8" OD x .352" wall pipe piles are proposed to be driven for the support of the building. Seven test piles were driven and tested during end of drive (EOD) and/or upon restrike.

Field Details

The subsurface conditions under the proposed consist of approximately 15 feet of medium dense to very dense granular fill. The fill is composed of sand with minor amounts of silt and gravel. Over the lower portions, the fill contains large percentages of cobbles, ash, glass, and brick. A thin layer of organic silt (less than 5 feet thick) was encountered below the fill. A stiff silty clay layer underlies the organic silt to a depth of around 25 to 35 feet below grade. The silty clay is slightly overconsolidated in the upper portions, becomes soft and normally consolidated with depth and extends to depths of around 75 to 90 feet below grade. Below the clay is a dense to very dense glacial till deposit around 25 to 35 feet thick. The glacial till is composed of sand and gravel with minor amounts of silt. The lower half of the till layer is very dense. Bedrock was encountered below the glacial till at depths ranging from around 105 to 120 feet below ground surface. The bedrock was described at the 84 Marginal Way site as highly weathered, Sulfidic Schist.

Groundwater was observed around 5 feet below grade at the time of drilling. For a more detailed description of the subsurface conditions, refer to the Geotechnical Report and/or the boring logs.

Pile Details

Seven steel PP9-5/8" OD x .352" wall pipe piles sections were installed at various production pile locations across the site. The test piles were typically 110 feet long and consisted of two 55-foot long piles spliced together in the field, except, TP6 #90 and TP2 #47, which required an additional splice for a total length of 137.5 feet. The design load of the piles is 140 kips (70 tons). Including a negative skin friction load of 30 kips (15 tons) and using a F.S of 2, the ultimate capacity is 340 kips (170 tons). The cross-sectional area of the piles is 10.25 square inches. The maximum allowable compressive and tensile driving stresses were assumed to be 45 ksi, based on the AASHTO limit of 90% of the yield strength. Steel plates (1-1/4" thick) were attached to the tips of the piles.

Driving System

A Berminghammer B21 single acting diesel hammer with a maximum rated energy of 53.25 kip-ft, based on a maximum stroke of 11.5 feet and ram weight of 4.63 kips was used to drive the piles except TP5 #151 where a Berminghammer B3505 was used to drive the pile at the EOD. The Berminghammer B3505 single acting diesel hammer has a rated energy of 47.2 kip-ft (ram weight of 4 kips and a maximum stroke of 11.8 feet).

Instrumentation

The instrumentation consists of two strain gages and two accelerometer transducers attached approximately 3 feet below the pile top. One strain gage and one accelerometer were placed on opposite sides of the pile web to minimize the effects of uneven impact and pile bending. This instrumentation provides information about driving stresses (compressive and tensile), hammer performance (transferred energy), and pile bearing capacity.

The PDA is a computer fitted with a data acquisition and signal conditioning system. During driving, the strain and acceleration signals are recorded and processed for each hammer blow. The strain signal is converted to a force record and the acceleration signal is converted to a velocity record. The PDA saves selected hammer blows containing this information to disk and determines the compressive stresses, displacement, and energy at the point of measurement (pile top). In addition, the pile bearing capacity can be estimated in the field using the Case Method. This information can be viewed on the computer screen during driving. Selected blows can be further processed to predict the static pile capacity using the CAPWAP analysis. Refer to Appendix A for literature on the dynamic testing, the Case Method, and CAPWAP.

Results

General

The results of the dynamic testing program are summarized in Table 1, which include the driven depth, blow count, stroke, maximum transferred energy, maximum pile top displacement,

maximum compressive stress at the top, and maximum computed compressive stress at the pile tip. The blow count was recorded by others. The transferred energy, maximum pile top displacement, and maximum compressive stress are determined by the PDA at the gage locations.

Also included in Table 1 is the pile bearing capacity as determined by the Case Method in the field and CAPWAP analysis in the office. Three separate PDA plots of various parameters (maximum transferred energy and stroke - left plot, maximum measured compressive stress at the pile top and maximum computed compressive stress pile tip - middle plot, and RMX Case Method capacity with Jc=0.5 and Jc=0.7- right plot) are presented for the test piles in Appendix B. Appendix B also contains the above data, and additional data, in tabular form.

In Table 1, the Case Method capacity represents an average over the blow count (end of driving) or blow numbers (restrike). CAPWAP analyses were performed on a selected blow within the first few blows at the beginning of restrike (BOR), except TP10 #251 where a blow was selected from the last few blows of end of driving (EOD). Appendix C contains the full results of the CAPWAP analysis and Table 2 summarizes the CAPWAP results.

Field Observations and Hammer Performance

Test piles TP4 #104 and TP6 #90 were tested on August 7, 2007. TP6 #90 did not achieve the required blow count or ultimate capacity and required an additional splice. Test pile TP6 was redriven and tested on August 8, 2007 along with piles TP5 #151, TP7 #171, TP8 # 232 and TP10 #251 which were tested during EOD. Test piles TP4 #104, TP5 #151, TP6 #90 and TP7 #171 were restrike tested on August 10, 2007 along with test pile TP2 #47 which was tested during EOD. Please see attached figure for approximate locations of test piles.

The test piles were typically installed to a blow count of around 5 to 6 blows per inch (bpi) or approximately 70 to 105 feet below grade, at which point the dynamic testing instrumentation gages were attached to the piles. The final pile embedment ranged between 74 and 117 feet below grade. Test pile TP4 #104 was driven to a blow count of 8 to 9 bpi for the last two inches and stopped before the PDA gages were driven to below grade. Test piles TP2 #47, TP5 #151 and TP6 #90 were driven to a blow count averaging around 11 to 12 bpi for the last 4 inches. Test pile TP7 #171 was driven to a blow count averaging 15 bpi for the last several inches. Test piles TP8 #232 and TP10 #251 were both driven to practical refusal at the EOD. Test piles TP4 #104, TP5 #151, TP6 #90 and TP7 #171 were restrike tested and the blow counts ranged from 15 bpi to practical refusal during the restrike. Test pile TP4 #104 was redriven to a blow count averaging approximately 20 bpi for the last 4 inches after restrike testing.

The B21 hammer (at a gage pressure of 350 to 400 psi) and B3505 hammer operated typically at a stroke of around 9 to 10.5 feet during the EOD and EOR, corresponding to transferred energies ranging between 15 to 17 kip-ft. During restrike testing, the B21 hammer was operated at a gage pressure of 450 to 465 psi that resulted in a stroke of 12.5 to 13 feet and transferred energies of 20 to 25 kip-ft

Pile Integrity and Stresses

The maximum compressive and tensile driving stresses were below the allowable limit (45 ksi) throughout testing. The pile cap should be positioned directly over the pile axial center of gravity to maintain good hammer alignment during driving. This minimizes bending stresses and keeps local stress concentrations to a minimum. There were no signs of significant misalignment between the pile and hammer during testing.

Pile Bearing Capacity

The Case Method field capacity for TP4 #104 using the RMX relationship was approximately 300 kips during restrike testing after approximately 48 hours after initial driving when the blow count averaged around 8 bpi at the EOD. The corresponding CAPWAP capacity was determined to be 300 kips at BOR. The Case Method field capacity using the RMX relationship ranged between 350 and 390 kips during restrike testing after approximately 48 hours after initial driving when the blow count averaged around 11 to 12 bpi at the EOD. The corresponding CAPWAP capacity was determined to be 360 to 390 kips at BOR. The Case Method field capacity using the RMX was approximately 400 kips when practical refusal was obtained at EOD. The corresponding CAPWAP capacity was determined to be 395 kips based on TP10 #251 at practical refusal at the EOD. Table 2 presents the results of the CAPWAP analyses in more detail. The total capacity, frictional capacity, end bearing capacity, and percentage of end bearing are included. The quake and damping soil parameters as determined from the CAPWAP analyses are also presented in Table 2.

Conclusions

The presented data from the dynamic measurements and their analyses leads to the following findings and conclusions.

1. Based on the B21 hammer operating at a gage pressure of 350 to 400 psi , a 9 to 10 foot stroke (transferred energies from 15 to 17 kip-ft) and driving resistance of 10 to 13 bpi, the pile capacity ranged between 360 and 390 kips at BOR. Higher capacities were obtained at refusal blow counts.

2. The maximum compressive and tensile driving stresses were below the allowable limit during testing.

3. We recommend a final driving criterion of 12 bpi for 6 consecutive inches with the B21 hammer operating at a gage pressure of at least 400 psi to achieve an average long-term pile capacity of 340 kips. An abbreviated criterion of 20 blows per inch can be used where the piles take up abruptly. A minimum stroke of 10 feet should be obtained during the final driving criteria. The stroke can be verified in the field by observing the ram as it extends above the top of the hammer during driving

4. Any pile that is restruck after initial driving must be driven a minimum three inches before the above stated driving criteria can be used.

Static pile capacity evaluations determined from dynamic testing provide an estimate of the axial pile bearing capacity at the time of testing. At very high blow counts (low pile set), the Case Method and CAPWAP analyses tend to predict lower capacities, since not all of the soil resistance may be fully mobilized, particularly at the pile toe. Other factors not considered in this analysis are bending, downdrag, lateral and uplift requirements, cyclic loading, effective stress changes (e.g. due to changes in the water table, excavations, and/or fills), settlement, and pile group effects. The foundation designer should evaluate if any of these issues are applicable to the pile design.

This report has been prepared in accordance with generally accepted geotechnical engineering principles with specific application to this project. Our conclusions are based on applicable standards of practice, including any information reported to and/or prepared for us. No other warranty, expressed or implied, is made. If you have any questions regarding this report, please do not hesitate to contact us.

Sincerely,
Geosciences Testing and Research, Inc.

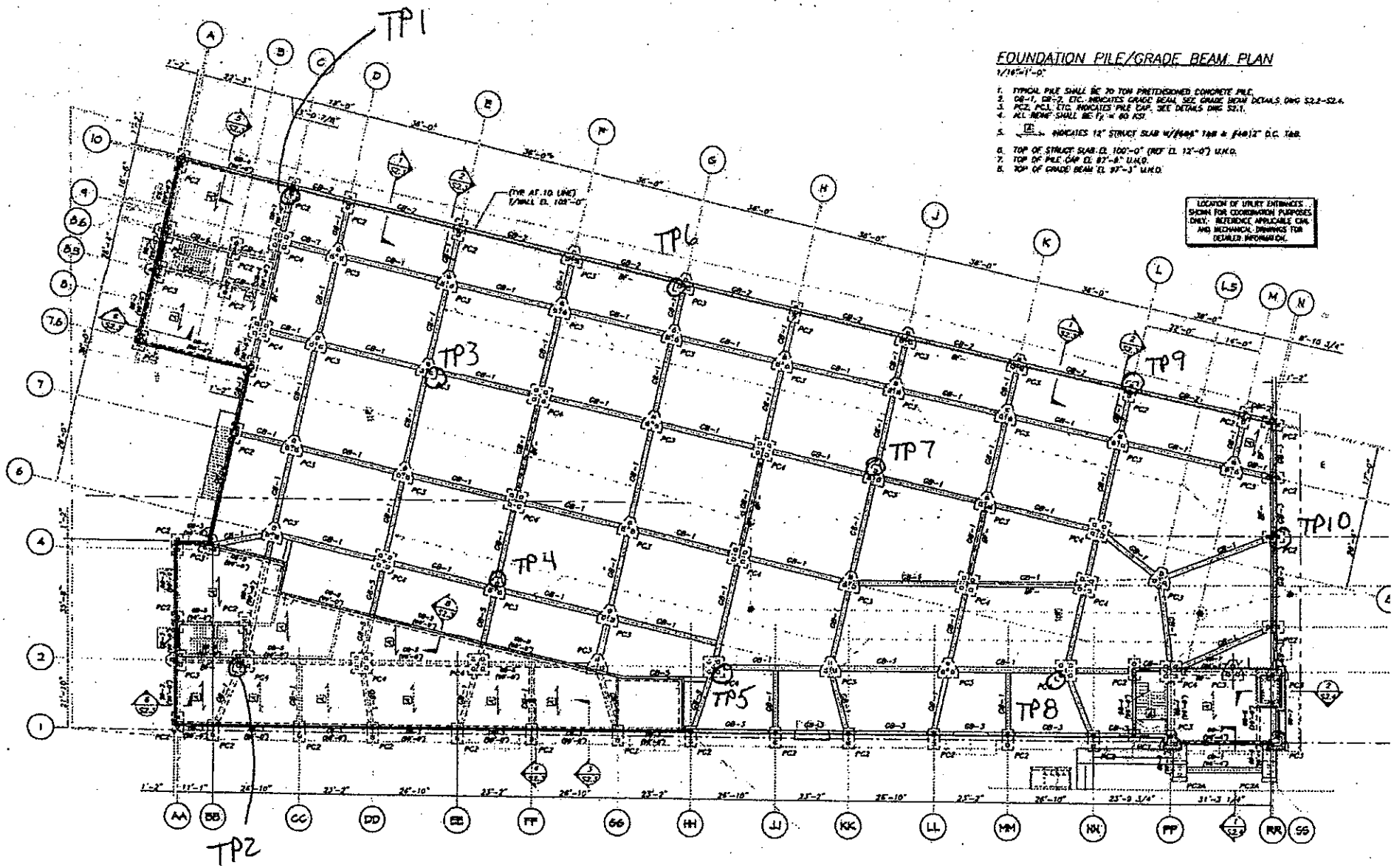
Curtis George
Project Engineer

Les R. Chernauskas
Principal Engineer

Attachments: Figure 1, Tables 1 and 2, Appendices A through C
07.145 Bayside Village- PDA Report.doc

FIGURE

PROPOSED TEST PILE PROGRAM
SEA & SHORE CONTRACTING, INC.
7/23/07



TABLES

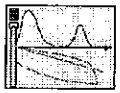
TABLE 1
SUMMARY OF DYNAMIC TESTING RESULTS
BAYSIDE VILLAGE - PORTLAND, ME
PP 9 5/8"OD x .352" WALL PIPE PILES

Indicator Pile	Time of[1] Testing	Hammer	Gage Pressure (psi)	Date of Testing	Driven[2] Depth (feet)	Blow Number(s)	Observed[3] Blow Count (bpi)	Stroke[4] (feet)	Maximum[4] Transferred Energy (kip-ft)	Maximum[4] Top Disp (inch)	Maximum[4] Comp. Stress (ksi)	Maximum Computed Tip Stress (ksi)	Case[5] Method Capacity (kips)	CAPWAP Capacity (kips)
TP1	Not Tested													
TP2 #47	EOD	B21	400	8/10/2007	117	490-520	10,10,12,14	9.3	15.0	1.15	27.7	17.1	257	--
TP3	Not Tested													
TP4 #104	EOD	B21	400	8/7/2007	106	177-202	9,8	10.3	15.9	1.08	31.1	18.1	250	--
	BOR	B21	465	8/10/2007	106	3	15	12.7	20.3	1.20	36.0	23.9	303	300
	EOR	B21	400		106.3	40-71	20,12 for 1/2"	10.5	17.1	1.13	30.4	21.4	279	--
TP5 #151	EOD	B3505	n/a	8/8/2007	90	230-260	10,10,10,13	9.6	15.6	1.03	35.0	27.4	268	--
	BOR	B21	465	8/10/2007	90	5	9 for 1/2"	13.2	24.7	1.28	38.7	26.8	359	367
TP6 #90	EOD	B21	400	8/7/2007	106	291-311	<1	7.9	16.0	1.56	26.7	15.7	100	--
	BOR1	B21	300	8/8/2007	106	4-16	~4's	7.9	12.4	0.95	27.5	15.8	182	--
	EOR	B21	350		110	184-227	10,10,10,13	9.1	15.9	1.16	30.2	19.0	256	--
	BOR2	B21	465	8/10/2007	110	10	14 for 1/4"	12.8	25.3	1.41	37.2	28.3	391	394
TP7 #171	EOD	B21	300	8/8/2007	101.7	50-76	13's	7.8	9.5	0.87	24.0	17.3	218	--
	EOD	B21	350		102.3	173-188	15's	8.8	11.9	0.97	26.5	21.2	266	--
	EOD	B21	400		102.33	190-194	8 for 1/2"	10.0	14.6	1.06	28.8	24.5	298	--
	BOR	B21	450	8/10/2007	102.33	6	12 for 1/2"	12.7	20.5	1.15	34.6	27.5	357	361
TP8 #232	EOD	B21	400	8/8/2007	76	4-9	8 <1/2"	11.6	18.5	1.19	33.6	31.2	401	--
TP9	Not Tested													
TP10 #251	EOD	B21	350	8/8/2007	74	130-143	14<1"	10.4	16.6	1.10	33.0	32.5	395	395

Notes:

1. Indicates that the data was obtained during the end of driving (EOD) or begining of restrike (BOR).
2. Depth is referenced from bottom of excavation.
3. The blow count was observed by others.
4. The stroke, transferred energy, displacement, and pile top compressive stress are determined by the PDA at the gage locations. These values represent an average over the blow(s) indicated.
5. The Case Method capacity was determined using the RMX method and a JC value of 0.5. These values represent an average over the blow(s) indicated.

TABLE 2
SUMMARY OF DYNAMIC TESTING RESULTS
BAYSIDE VILLAGE - PORTLAND, ME
PP 9 5/8"OD x .352" WALL PIPE PILES



Test Pile	Time of Driving	Blow Number	Ultimate Capacity			Percent End Bearing	Quake		Damping	
			Side (kips)	Tip (kips)	Total (kips)	(%)	Side (in)	Tip (in)	Side (sec/ft)	Tip (sec/ft)
TP4 (#104)	BOR	3	60	240	300	80	0.10	0.28	0.19	0.06
TP5 (#151)	BOR	5	77	290	367	79	0.11	0.19	0.21	0.05
TP6 (#90)	BOR	10	59	335	394	85	0.29	0.19	0.25	0.03
TP7 (#171)	BOR	6	71	290	361	80	0.15	0.16	0.22	0.05
TP10 (#251)	EOD	135	160	235	395	59	0.10	0.10	0.17	0.05

APPENDIX A
DYNAMIC ANALYSIS LITERATURE

GRL Software: CAse Pile Wave Analysis Programs

CAPWAPC™, P.I.T.WAP™

PROGRAM HISTORY AND BACKGROUND

In the late 1960's, under the sponsorship of the Ohio Department of Transportation, a program was developed at Case Institute of Technology in Cleveland, Ohio[1], which determined the Smith[2] soil resistance parameters from pile top measurements. Originally, a large computer automatically solved the problem for relatively short piles.

CAPWAP determines that set of soil resistance parameters which produces a best match between measured and computed pile top forces and velocity. Rather than modeling and analyzing the hammer, one of the two measured curves is used as a pile top boundary condition. The complementary quantity is computed and compared with the appropriate measured curve. CAPWAP is based on the premise that best agreement between measured and computed pile top curves is achieved with a set of soil resistance parameters which most closely approximates the actual soil behavior. The soil resistance model is represented by three parameters: ultimate resistance, quake and damping. The program can be run interactively by the engineer or in a completely automatic mode. Obviously, as in all pile testing, the resulting values represent the soil at the time of testing. Extensive correlations have been made and reported[3,4,5].

Features of the new CAPWAPC™ program which models the pile with Continuous segments include:

- SI, metric, imperial units
- **Case Method** bearing capacity based on a closed form solution
- Residual Stress Analysis
- Low Strain Record Matching (P.I.T.WAP)
- PEBWAP (Pile End Bearing Wave Analysis Procedure) calculates pile toe resistance vs pile toe movement for end bearing piles
- Comprehensive numerical and (color) graphics output
- CAPWEAP, a wave equation analysis using pile top measurements instead of a hammer model
- Static load-set curve based on the CAPWAPC results
- Matching of forces, velocities or upwards traveling waves

GRL offers CAPWAPC analyses by its experienced engineers. However, the program is compatible with the Pile Driving Analyzer™ and may be acquired by PDA owners in executable form. It requires the following hardware:

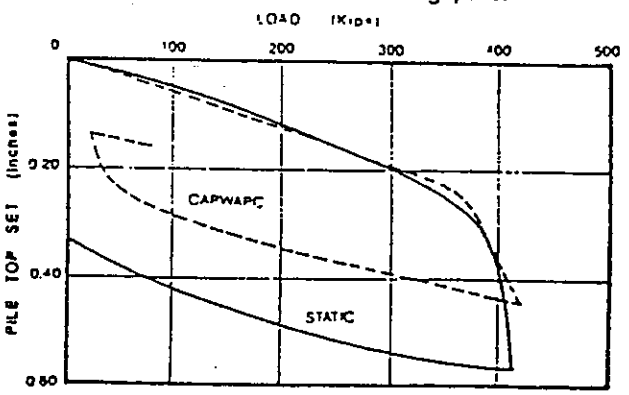
- IBM-PC, AT, 386 or other compatible with graphics, 640K ram, Hard disk and one floppy drive
- Serial Port for HP7400 Series Plotter or compatible
- Parallel Port for printer (graphics or Laser printer preferred)

The CAPWAPC Software System includes GRLWEAP (Wave Equation of Pile Driving), GRLIMAGE (Wave Equation Demonstrator), DATPRO, P.I.T.WAP and other utilities. Program updates are made available to users with current software support.

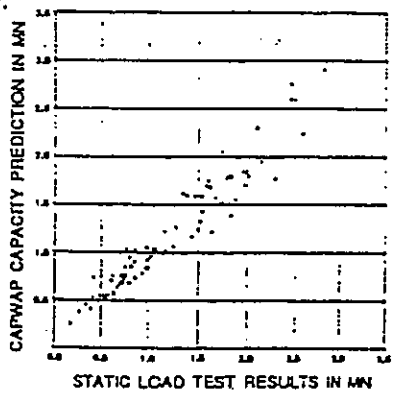
REFERENCES:

1. Goble, G.G., Rausche, F. and Moses, F., "Dynamic Studies on the Bearing Capacity of Piles, Phase III", SMSMD, Report No. 48, Case Western Reserve University, 1970.
2. Smith, E.A.L., "Pile Driving Analysis by the Wave Equation", *Journal of Soil Mechanics and Foundations*, ASCE, August 1960, pp. 35-61.
3. Mure, J.N., Kightley, M.L., Gravare, C.J. and Hermansson, L., "CAPWAP - An Economic and Comprehensive Alternative to Traditional Methods of Load Testing of Piles", *Piling and Ground Treatment For Foundations*, Paper 16, Thomas Telford, London, 1983, pp. 167-174.
4. Niyama, S., De A. Martins, J.A. de Medeiros, C., Jr. and Likins, G.E., Jr., "Dynamic Pile Instrumentation in a Calcareous Sand Close to PCR-2 Platform, Brazil", *Application of Stress-Wave Theory on Piles, Second International Conference*, Edited by G. Holm, H. Bredenbery, C.J. Gravare, Swedish Pile Commission, Stockholm, 1985, pp. 306-312.
5. Seidel, J. and Rausche F., "Correlation of Static and Dynamic Pile Tests on Large Diameter Drilled Shafts", *Application of Stress-Wave Theory*, Stockholm 1985, pp.313-318.

Correlation of CAPWAPC computed and measured static load test curves from a PDA and CAPWAPC demonstration at the 1988 DFI annual conference in Raleigh, NC.



Correlation of ultimate bearing capacity values from CAPWAP and load tests based on the research work at Case Institute of Technology.



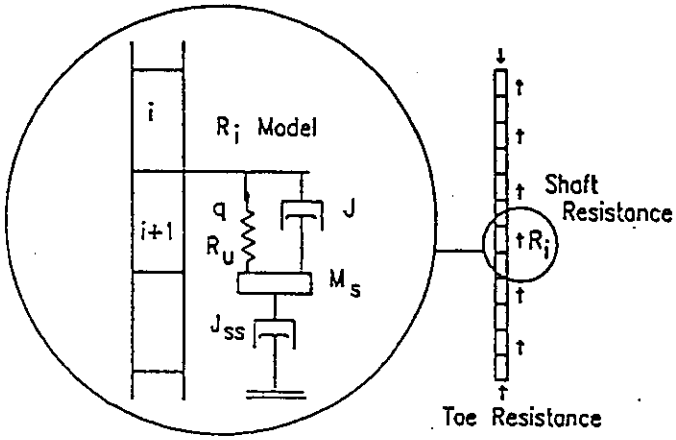
Goble Rausche Likins and Associates, Inc.

Cleveland (Main Office)	216-831-6131	Denver	303-494-0702	Orlando	407-826-9539
		Philadelphia	215-544-2770	Seattle	206-775-5785

CAPWAPC™

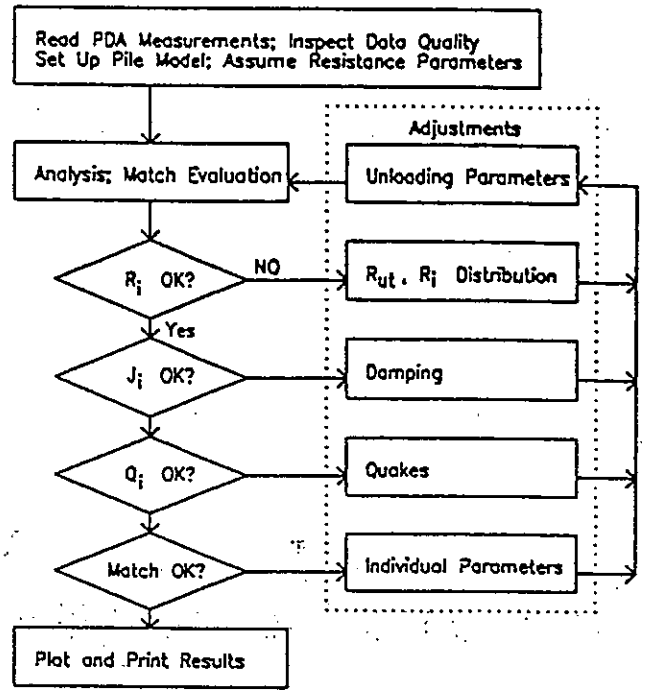
The CAPWAPC Pile and Soil Model

The pile is modeled as a series of continuous segments (with impedances matching pile cross sectional changes) of approximately 1 m (3.3 ft) length. Concentrated soil resistance forces are attached to each or every second pile segment along the embedded pile. Major parameters of this model include at each segment, i, the ultimate resistance, R_u, the quake, q, the damper, J, and the radiation damping model consisting of J_{ss} and mass, M_s.



The CAPWAP Procedure

The following block diagram outlines the basic procedure for iterative calculation of soil model parameters in CAPWAPC. Either the automatic or manual mode of CAPWAPC are utilized to perform the necessary calculations.



Final Results

For each shaft soil segment and the pile toe the CAPWAPC calculated results include ultimate capacities, R_u, Smith type damping factors, and soil quakes. The R_u-values are also presented in the form of unit skin friction both with respect to pile length and pile circumferential area. The "up" and "down" summations represent the forces in the pile at the predicted ultimate capacity and the total friction to a certain depth, respectively. The damping factors are also presented in the form of Case damping. Parameters which modify the basic elasto-plastic static soil resistance component are also appended to the table. They optionally include a soil plug at the pile toe, a toe resistance gap, unloading quakes, a negative ultimate capacity limit, consideration of residual stresses and radiation damping.

The Soil Parameter Summary Table

Final CAPWAPC Capacity: Ru 516.8, Skin 427.8, Toe 89.0 Kips

Soil Sgmnt No.	Depth Below Gages ft	Depth Below Grade ft	Ru Kips	Sum of Ru Up Kips	Sum of Ru Down Kips	Unit Resist. w. Respect to Depth Kips/ft	Unit Resist. w. Respect to Area Kips/ft	Smith Damping s/ft	Quake inch
				516.8					
1	6.7	6.7	5.4	511.4	5.4	.81	.09	.251	.120
2	13.3	13.3	8.6	502.8	14.0	1.29	.14	.251	.120
3	20.0	20.0	19.2	483.6	33.2	2.88	.31	.251	.120
4	26.7	26.7	22.0	461.6	55.2	3.30	.35	.251	.120
5	33.3	33.3	38.3	423.3	93.4	5.74	.61	.251	.120
6	40.0	40.0	41.2	382.1	134.6	6.18	.66	.251	.120
7	46.7	46.7	44.1	338.1	178.7	6.61	.70	.251	.120
8	53.3	53.3	47.9	290.2	226.6	7.18	.76	.251	.120
9	60.0	60.0	48.9	241.3	275.5	7.33	.78	.251	.120
10	66.7	66.7	47.9	193.4	323.3	7.18	.76	.251	.120
11	73.3	73.3	50.8	142.7	374.1	7.62	.81	.251	.120
12	80.0	80.0	53.7	89.0	427.8	8.05	.86	.251	.120
Average Skin Values			35.6			5.35	.57	.251	.120
Toe			89.0				26.33	.180	.285

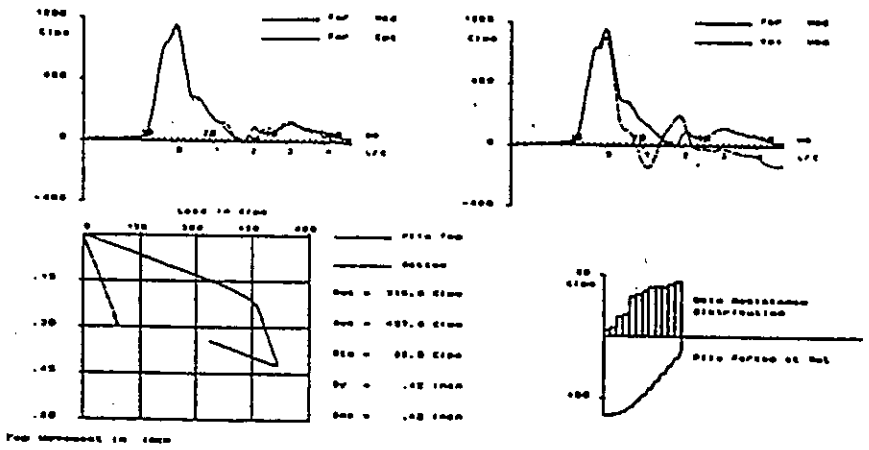
Soil Model Parameters/Extensions		Skin	Toe
Case Damping		.509	.076
Unloading Quake	(% of loading quake)	1	100
Reloading Level	(% of Ru)	100	0
Unloading Level	(% of Ru)	0	

CAPWAPC™

Final Summary Plot

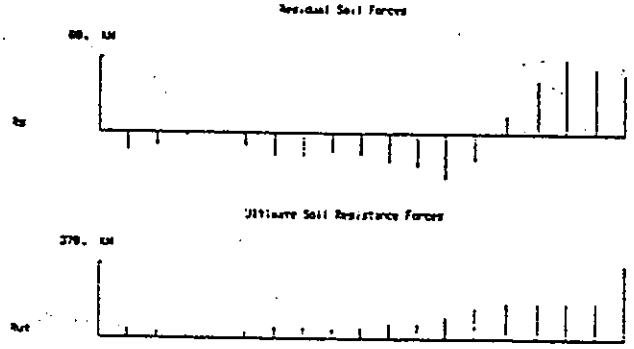
Computed and measured pile top forces and/or velocity matches (upper left) demonstrate the quality of the final result. The simulated static test (lower left) is calculated from pile and soil stiffness and CAPWAPC predicted R_u-values. The resulting pile top load set curve may be compared with actual static load tests.

The Resistance Distribution Plot (lower right) depicts the final results underneath **measured force and velocity** (upper right) with time and length scales chosen such that the impact time corresponds to the pile top and the pile toe reflection to the end bearing.



Residual Force Graph and Table

CAPWAPC includes the **residual stress analysis** (RSA) feature, earlier introduced into GRLWEAP™. The calculation process involves several dynamic trial analyses with intermediate static calculations which yield the state of equilibrium at the end of the hammer blow. The thus computed forces remaining in pile and soil are presented in both a table and bar graph (the ultimate soil resistance forces are also included for comparison).



Soil Sgmnt No.	Depth Below Gages m	Pile Residual Forces kN	Pile Stress kN /cm2	Soil Residual Forces kN	Displ. mm
Pile Top					3.101
1	4.0	14.08	.18	-14.08	3.101
2	6.0	24.18	.31	-10.10	3.083
3	8.0	28.08	.36	-3.90	3.054
4	10.0	30.52	.39	-2.44	3.019
5	12.0	40.56	.52	-10.04	2.981
6	14.0	59.52	.76	-18.96	2.931
7	16.0	78.57	1.00	-19.04	2.857
8	18.0	93.94	1.20	-15.38	2.760
9	20.0	111.42	1.42	-17.48	2.644
10	22.0	134.38	1.71	-22.96	2.506
11	24.0	161.76	2.06	-27.38	2.340
12	26.0	198.49	2.53	-36.73	2.140
13	28.0	220.10	2.80	-21.62	1.894
14	30.0	205.40	2.62	14.70	1.622
15	32.0	161.98	2.06	43.42	1.368
16	34.0	101.86	1.30	60.12	1.168
17	36.0	48.23	.61	53.63	1.042
Toe				48.23	

The Extrema Table

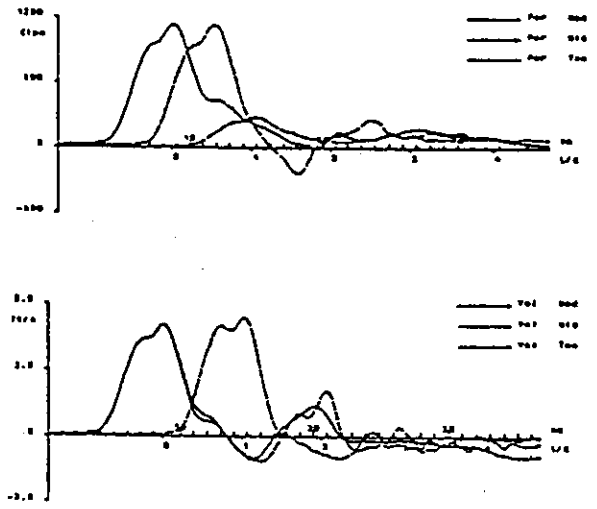
Maxima of compression and tension **forces** and **stresses, velocities, displacements** and **transferred energies** at a limited number of points are listed as part of the final output. The table also contains absolute stress maxima including their location and time of occurrence.

Pile Sgmnt No.	Depth below Gages m	max. Force kN	min. Force kN	max. Comp. Stress kN/cm2	max. Tension Stress kN/cm2	max. trnsfd. Energy kN - m	max. Veloc. m/s	max. Displ. cm
1	1.0	1821.8	-48.6	23.21	-.62	42.30	3.8	3.601
3	3.0	1923.1	-56.8	24.50	-.72	37.31	3.8	3.150
7	7.0	1843.3	-98.7	23.48	-1.26	31.07	3.7	2.710
10	10.0	1829.1	-148.7	23.30	-1.89	28.02	3.6	2.390
14	14.0	1786.2	-190.1	22.75	-2.42	23.65	3.5	1.970
17	17.0	1665.4	-188.9	21.22	-2.41	19.21	3.4	1.670
21	21.0	1569.5	-188.6	19.99	-2.40	15.02	3.3	1.290
25	25.0	1429.2	-151.0	18.21	-1.92	11.19	3.0	.940
28	28.0	1323.0	-118.9	16.85	-1.51	9.03	2.8	.700
32	32.0	1192.4	.0	15.19	.00	6.29	2.5	.460
35	35.0	956.3	.0	12.18	.00	4.29	2.6	.340
36	36.0	986.6	.0	12.57	.00	3.44	2.5	.306
Absolute	4.0			24.50		(T=	36.1 ms)	
	20.0				-2.60	(T=	64.8 ms)	

CAPWAPC™, P.I.T.WAPC™

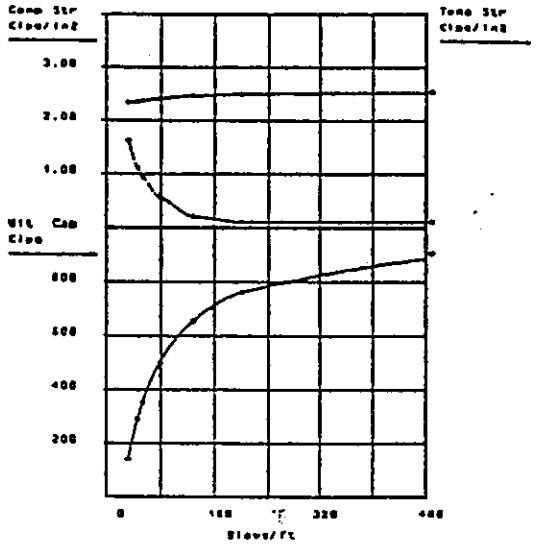
Pile Variable Histories

The example CAPWAPC output shows forces and velocities at three different locations. Displacements, resistance forces and transferred energies may also be graphed.



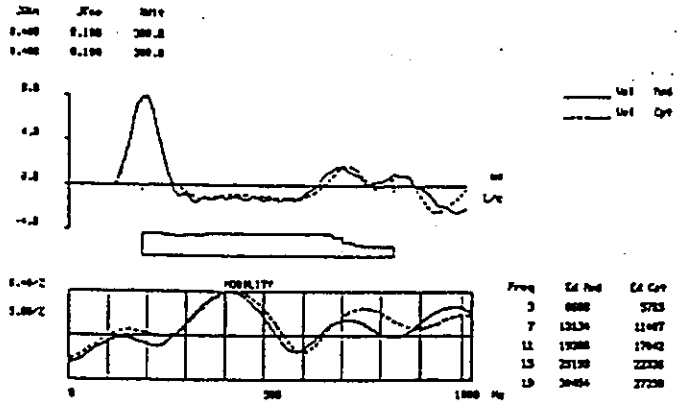
CAPWEAP

Similar to a conventional wave equation, CAPWEAP produces a bearing graph relating bearing capacity and pile stresses to blow count. The analysis uses the CAPWAPC predicted static and dynamic soil resistance parameters. The hammer is replaced by the measured pile top input.



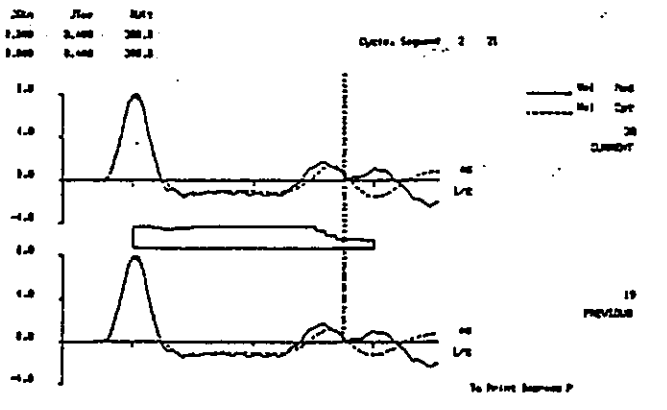
P.I.T.WAP

This program (related to CAPWAPC) matches pile top velocities based on low strain records (obtained from the impact of a small hand-held hammer). Program options include calculated and measured velocity *vs* time comparisons and Fast Fourier Transforms leading to the Mobility or Mechanical Admittance of the pile.



P.I.T.WAP Automatic Mode

The final result from P.I.T.WAP is the pile impedance as a function of depth. These values (typically every 250 mm or 10 inches) may be automatically calculated after the engineer has assigned certain soil resistance variables. The program displays the progress of adjustments as shown below. It indicates with a cursor the locations where the adjustments are being made in the current analysis cycle.



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PILES

Bengt H.Fellenius, Editor

Introduction to the Dynamics of Pile Testing

Garland Likins, Frank Rausche, and Mohamad Hussein

Piles are frequently required for a wide range of buildings, bridges, towers, dams,and other massive structures. A variety of pile types installed by different driving equipment of all types and even layered soils makes establishing a safe but economical installation difficult. Traditionally, static analysis, probe piles, dynamic formulae, and static testing are used to verify pile foundations. With computers and modern electronic measurements, improved techniques for analysis and construction control are now available to obtain a safe and economical solution.

Background

Pile capacity may be estimated from static analysis based on soil mechanics principles and CPT and/or SPT field tests. Unfortunately, different soil testing and evaluation methods produce widely different solutions.

Static testing involves the application and measurement of static loads and pile movements. In practice, static testing either proves the pile can safely hold the service load (proof test), or establishes an allowable load based on the capacity. Unfortunately, proof testing is more prevalent, resulting in greater foundation costs due to unnecessarily long piles. Because of the relatively high costs and time required for static test, generally only a few piles are tested. The capacity or failure definition is also the subject of considerable discussion and measurements often contain substantial errors (Fellenius, 1980).

For centuries, engineers have tried to use dynamic formulae to estimate capacity. Dynamic formulae are inaccurate due to their over-simplicity in modelling the hammer, driving system, pile, and soil. In fact, most foundation engineers today agree that dynamic formulae are dangerously unreliable.

Wave Equation Analysis of Piles (WEAP)

Taking advantage of wave propagation theories, in the 1950's, a discrete numerical solution with realistic hammer, pile and soil models was developed (Smith 1960) and became known as the "Wave Equation" to which various improvements have been added (Goble and Rausche, 1986). Based upon assumptions of hammer efficiency and soil properties, the computerized solution assumes a capacity and computes a penetration resistance (blow count) and stresses, producing a so-called bearing graph. Soil strength changes with time (set-up or relaxation) due to remolding or pore pressure dissipation, should be considered; at every site, some piles should be restruck and the penetration resistance recorded. Although the wave equation is an excellent tool, because the solution depends on assumptions, the only method to assure accurate results is the measurement of hammer and/or pile performance during pile driving or during restrike to confirm the input assumptions.

Dynamic Measurements

Pile hammers are complex devices. Extensive studies (Rausche et al., 1985b), show considerable scatter of efficiency values for different hammers making measurements a necessity. Observations of the ram travel during operation (stroke, blows per minute, etc.) is recommended. By detecting the sound of and time between hammer blows, the Saximeter calculates the blows per minute (or ram stroke for single acting diesel hammers). By employing radar technology, a Hammer Performance Analyzer can measure the ram velocity with time (Likins, 1988).

The techniques most widely employed today for both measurement and analysis of piles were developed by Professor G.G. Goble at Case Institute of Technology, hence collectively the Case Method (Rausche et al., 1985a). The Case Method requires the measurement of pile force and velocity during a hammer blow. Reusable transducers are quickly attached to any pile type; driven, drilled shaft, or caisson. These data are sufficient for evaluating pile driving stresses, pile integrity, hammer performance, and pile capacity. All these closed-form solution results are computed in a fraction of a second for each hammer blow by the Pile Driving Analyzer (PDA) in the field.

Capacity Methods

Using wave propagation theory and assuming a uniform elastic pile, the Case Method total soil resistance (R) active during pile driving can be calculated. This total resistance, R, is the sum of static, S, (displacement dependent) and dynamic, D, (velocity dependent) components. To extract the static resistance, the following must be carried out: (A) elimination of the damping component; (B) correction for early unloading of shaft resistance; (C) time dependent soil strength changes (i.e., set-up or relaxation); and (D) no, or very small, pile penetration will mobilize only a portion of the total resistance. The method and these considerations have been

thoroughly covered (Rausche et al., 1985a).

CAPWAP is a further numerical analysis method for confirming the PDA calculated pile capacity. To start the CAPWAP analysis, a wave equation soil model is assumed and entered with the hammer model replaced by the measured velocity. CAPWAP then calculates the force necessary to induce the imposed velocity. If the computed and measured forces do not agree, the soil model is changed and the analysis repeated (Rausche et al., 1972). This alternative process is repeated until no further improvement in the force match can be obtained. Results indicate the static soil resistance distribution, quake and damping factors, and stresses along the pile shaft. The CAPWAP analysis can therefore be used to confirm the wave equation soil assumptions.

Dynamic Pile Testing

The delays and expenses of static testing are leading reasons why dynamic testing is often requested as a replacement for or supplement to static tests. Several piles can be tested per day, and therefore dynamic testing is very cost effective. As many soils change strength with time, restriking the pile after a waiting period often results in more economical foundations for piles with set-up (capacity increase) or prevents major problems due to relaxation (capacity loss). "Refusal" driving may underpredict the capacity (similar analogy to static proof tests with small movement only indicting that part of the capacity has been mobilized). Dynamic testing also provides extra information on hammer performance, driving stresses, and pile integrity which is not available by static testing alone. The driving criterion is usually established with one particular hammer but can be extended to all types of other hammers, of the same make or different, by comparing capacity and transferred energy results from the PDA.

Most problems on a piling site are due to the hammer system since the installing equipment is also relied upon for construction control. Therefore, all larger projects should have a well planned programme of periodic dynamic monitoring to confirm consistent hammer performance and soil conditions across the site. In particular, since the trend in recent years has been to higher capacity piles. When hammer problems occur, early detection is critical to the foundation quality.

On many concrete pile projects, the pile shaft integrity is confirmed using Low Strain Testing by a small hand-held hammer (Rausche et al., 1988). The pile Integrity Tester™ hardware and software, developed for this function, present results in both time and frequency domain. This method is simple and quick but only investigates shaft integrity and is subject to some limitations. The test can be economically applied to a large number of piles to establish typical records, minimize misinterpretations of single results, and assure good quality control.

Dynamic pile testing methods have become widely accepted within the last decade and benefit all parties associated with a pile project. Since dynamic testing with the PDA and CAPWAP is so flexible, engineers are creatively adapting this technique to their specific projects. The engineer is presented with much more information to assist in design and construction control. The contractor obtains information on the performance of his hammer system which can be used to reduce driving time and lower his costs. Knowledge of stresses and pile integrity, can lead to procedures to reduce damage. The owner is assured of a higher quality foundation since more piles are tested. The faster dynamic testing reduces construction time and is less expensive than static tests. Testing indicator piles often verifies adequate capacity at smaller penetration depth for reduced time and cost of the foundation. If problems are detected, they can be corrected early in a project at comparatively modest cost and reduce legal problems or construction claims.

Because of the lower cost and additional information provided, dynamic pile testing has been rapidly gaining acceptance worldwide. The research begun in 1964 led to the formation of Pile Dynamics, Inc. in 1972 to further develop and promoted the equipment and methods. Through extensive efforts of education, training, and strong client support, over 200 PDA units have been placed into operation in 30 countries with about 2000 projects being tested yearly. As engineers have realized the benefits, this has further resulted in inclusion in specifications and codes of practice by many agencies governing pile testing.

Summary

Static testing to failure is ideal to assess static bearing capacity but is very expensive and time consuming, limiting the number of piles tested. Wave Equation is excellent for predicting the dynamics of pile driving if assumptions are realistic. Dynamic measurements and analysis can verify these assumptions. On site, the Case Method with a Pile Driving Analyzer can calculate pile capacity, monitor hammer performance and piles stresses, and investigate pile integrity. Because of their flexibility and low cost, dynamic testing methods may be applied to a relatively large percentage of the piles to cut costs, increase pile loads, or eliminate problems. The Pile Integrity Tester can evaluate shaft integrity of all piles at a reasonable cost.

A well conceived and properly executed testing programme will give engineers, contractors, and owners confidence in the behaviour of the foundation. Installation difficulties will be detected early in the project and corrected. Decisions and production driving will be kept on schedule, minimizing delays, unnecessary costs, and claims aiding the project toward timely completion to the satisfaction of the owner. Dynamic pile testing has become both routine and widespread as specifications and codes of practice recognize the value of this powerful technique.

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Frank Rausche and Mohamad Hussein, Goble Rausche Likins and Associates, Inc., Cleveland, Ohio, USA.

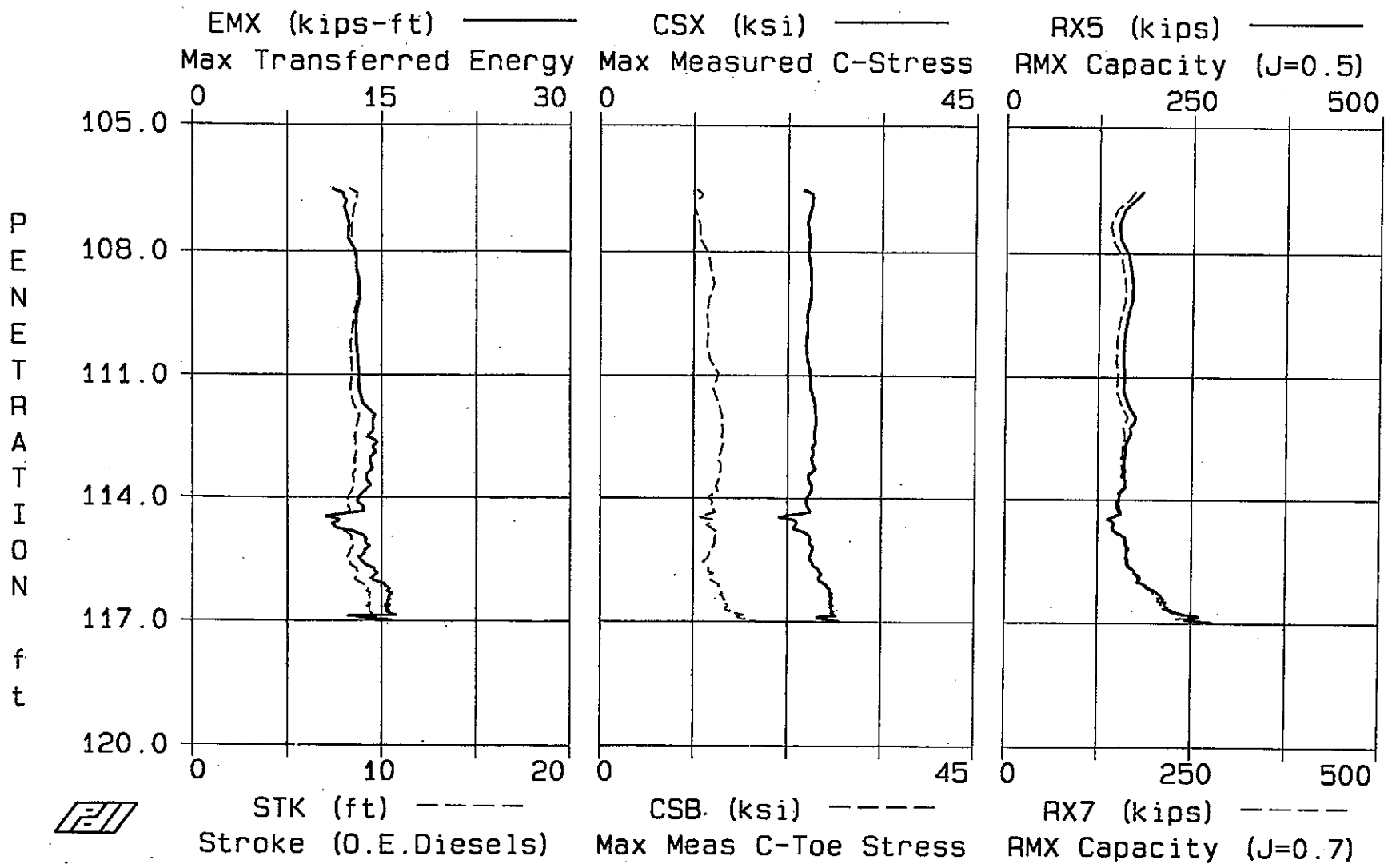
APPENDIX B
PDA VARIABLES

- **Plot 1 (left plot): Max Transferred Energy and Stroke**
- **Plot 2 (middle plot): Max Measured Compression Stress at Pile Top and Computed Compressive Stress at Pile Tip**
- **Plot 3 (right plot): Max Case Method Capacity (Jc=0.5 and Jc=0.7)**

GTR

14-Aug-07

Bayside Village, #47, PP9.63x.352"



Pile: #47
Info: PP9.63x.352"
AR: 10.3 in^2
LE: 134.5 ft

Proj: Bayside Village
SP: 0.492 k/ft^3
WS: 16810 ft/s
EM: 30000 KSI

RX5: RMX Capacity (J=0.5)
RX7: RMX Capacity (J=0.7)
RX9: RMX Capacity (J=0.9)
EMX: Max Transferred Energy
STK: Stroke (O.E.Diesels)

DMX: Max Meas'd Displacement
CSB: Max Meas C-Toe Stress
CSX: Max Measured C-Stress
BPM: Blows Per Minute

BL#	depth ft	RX5 kips	RX7 kips	RX9 kips	EMX kips-ft	STK ft	DMX inch	CSB ksi	CSX ksi	BPM bl/min	BLC bl/ft
490		235	229	225	15.4	9.34	1.18	16.09	27.68	38.7	133
491		236	231	228	15.3	9.31	1.17	15.75	27.78	38.8	133
492		241	235	231	15.4	9.39	1.18	15.96	27.84	38.6	133
493		243	238	233	15.6	9.43	1.19	16.27	27.71	38.5	133
494		245	239	234	15.5	9.36	1.19	16.35	27.73	38.7	133
495		250	245	240	15.6	9.44	1.18	16.68	28.09	38.5	133
496		253	245	241	15.5	9.43	1.19	16.55	27.88	38.5	133
497		259	249	244	15.9	9.55	1.20	16.99	28.31	38.3	133
498		259	249	243	15.4	9.44	1.18	17.07	27.75	38.5	133
499		263	252	246	16.1	9.53	1.21	17.46	28.42	38.3	133
500		259	251	247	15.9	9.56	1.19	16.73	28.18	38.3	133
501		258	251	247	16.0	9.58	1.21	17.08	28.29	38.2	133
502		259	250	246	16.0	9.56	1.21	16.97	28.01	38.3	133
503		260	251	246	16.3	9.63	1.22	17.75	28.52	38.1	133
504		249	241	235	13.5	9.61	1.02	17.31	28.20	38.2	133
506		239	229	222	12.6	8.24	1.05	16.46	25.86	41.1	133
507		251	239	230	13.3	8.54	1.08	16.99	26.24	40.4	133
508		253	241	234	13.7	8.73	1.09	17.10	26.46	40.0	133
509		256	243	233	13.6	8.68	1.10	16.49	26.08	40.1	133
510		252	240	234	13.5	8.76	1.06	17.04	26.62	39.9	133
511		256	243	234	13.6	8.71	1.10	16.83	26.54	40.0	133
512		255	243	235	13.9	8.73	1.12	17.47	26.68	40.0	133
513		257	246	237	14.0	8.84	1.09	17.56	27.02	39.7	133
514		268	256	246	14.9	9.28	1.14	17.84	27.75	38.8	133
515		275	262	251	15.6	9.48	1.18	18.06	28.18	38.4	133
516		275	262	251	15.4	9.48	1.17	18.05	27.98	38.4	133
517		273	260	253	15.5	9.60	1.17	18.09	28.22	38.2	133
518		277	264	255	15.7	9.68	1.17	18.23	28.40	38.0	133
519		281	267	257	15.8	9.75	1.17	17.93	28.37	37.9	133
520	117.00	271	260	253	14.5	9.75	1.08	18.78	28.75	37.9	133

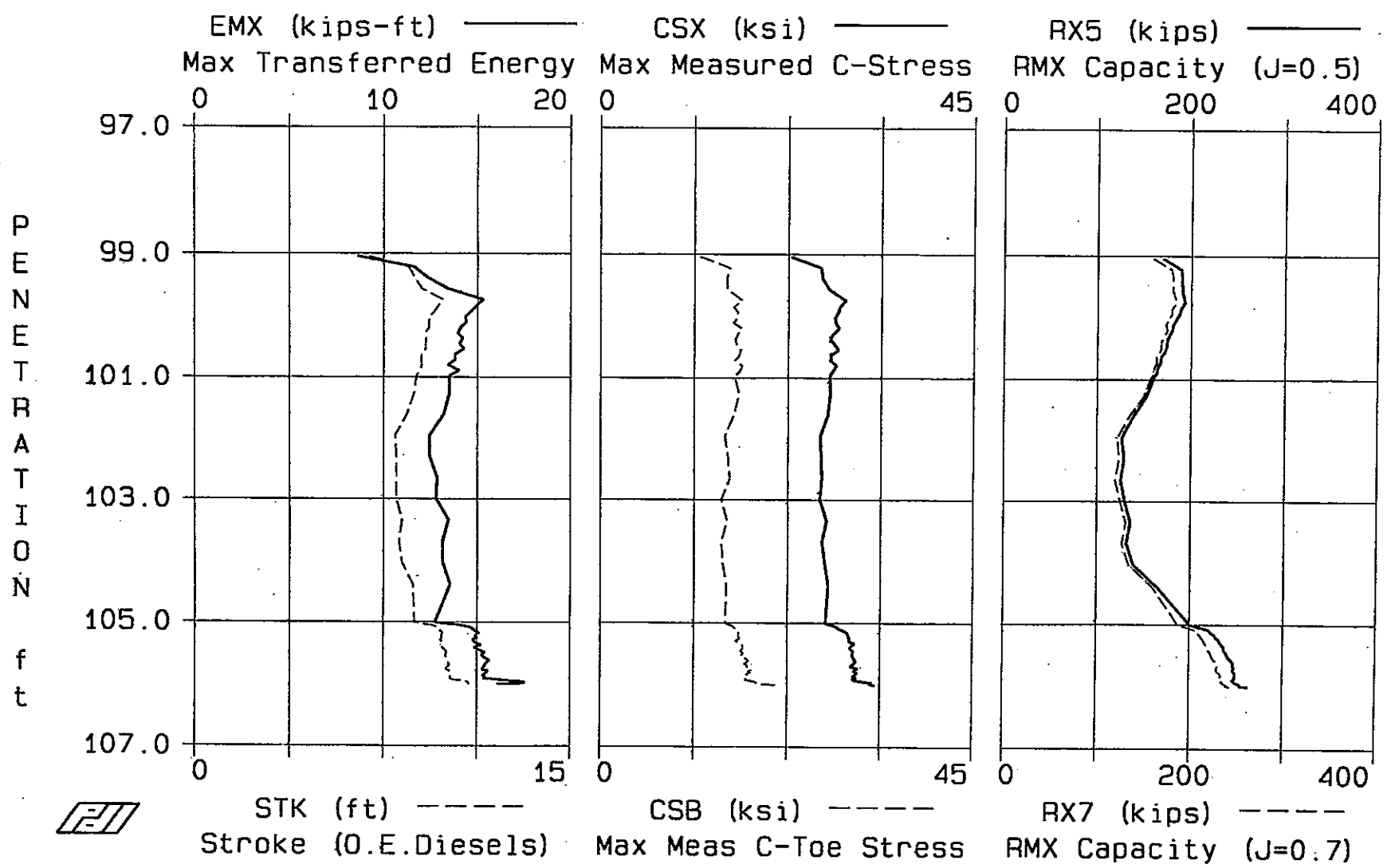
	RX5	RX7	RX9	EMX	STK	DMX	CSB	CSX	BPM
AVG	257	247	240	15.0	9.28	1.15	17.13	27.65	38.8
STD	12	10	9	1.0	0.41	0.06	0.74	0.81	0.9
MAX	281	267	257	16.3	9.75	1.22	18.78	28.75	41.1
MIN	235	229	222	12.6	8.24	1.02	15.75	25.86	37.9
#BLS	30	30	30	30	30	30	30	30	30

DRIVEN (14-Aug-07 : BV47TP2.Q01)

GTR

09-Aug-07

Bayside Village, #104, PP9.63x.352"



Pile: #104
Info: PP9.63x.352"
AR: 10.3 in^2
LE: 107.0 ft

Proj: Bayside Village
SP: 0.492 k/ft^3
WS: 16810 ft/s
EM: 30000 KSI

EMX: Max Transferred Energy
STK: Stroke (O.E.Diesels)
DMX: Max Meas'd Displacement
CSB: Max Meas C-Toe Stress
CSX: Max Measured C-Stress

BPM: Blows Per Minute
RX5: RMX Capacity (J=0.5)
RX7: RMX Capacity (J=0.7)
RX9: RMX Capacity (J=0.9)

BL#	depth ft	EMX kips-ft	STK ft	DMX inch	CSB ksi	CSX ksi	BPM bl/min	RX5 kips	RX7 kips	RX9 kips	BLC bl/ft
177	105.75	15.4	10.06	1.06	17.53	31.00	37.3	248	231	229	53
178		15.2	9.95	1.04	17.96	30.26	37.5	248	230	228	100
179		15.3	10.06	1.06	18.40	30.87	37.3	248	232	229	100
180		15.6	10.12	1.06	17.71	30.45	37.2	250	234	232	100
181		15.5	10.17	1.07	17.80	30.83	37.1	248	232	229	100
182		15.6	10.12	1.07	17.63	30.86	37.2	250	234	232	100
183		15.5	10.11	1.06	18.52	31.13	37.2	248	233	231	100
184		15.5	10.07	1.06	17.56	30.62	37.3	250	236	234	100
185		15.4	10.16	1.07	17.69	30.98	37.1	248	233	231	100
186		15.6	10.16	1.07	17.69	30.37	37.1	249	234	232	100
187		15.2	10.04	1.05	17.80	30.93	37.4	247	232	230	100
188		15.4	10.13	1.05	17.47	30.43	37.2	250	235	233	100
189		15.2	10.09	1.05	17.60	30.34	37.3	249	235	233	100
190		15.6	10.17	1.07	17.45	30.83	37.1	248	236	233	100
191		15.3	10.20	1.06	18.01	31.03	37.1	247	232	230	100
192		15.2	10.12	1.05	17.45	30.62	37.2	247	234	232	100
193		15.5	10.20	1.07	17.56	30.25	37.1	247	234	232	100
194		15.9	10.26	1.09	17.74	30.88	37.0	247	234	231	100
195		15.9	10.20	1.09	17.38	30.29	37.1	250	238	236	100
196		16.3	10.50	1.10	18.12	31.20	36.6	249	234	232	100
197		17.2	10.80	1.13	18.94	32.03	36.1	254	238	237	100
198		17.4	10.84	1.16	18.55	33.02	36.0	254	240	238	100
199		17.7	10.98	1.15	19.01	32.49	35.8	255	240	239	100
200		17.5	10.83	1.15	18.79	32.21	36.0	255	242	241	100
201		17.6	10.95	1.16	19.30	32.70	35.8	253	237	236	100
202	106.00	16.1	10.92	1.03	20.97	33.11	35.9	263	243	234	100

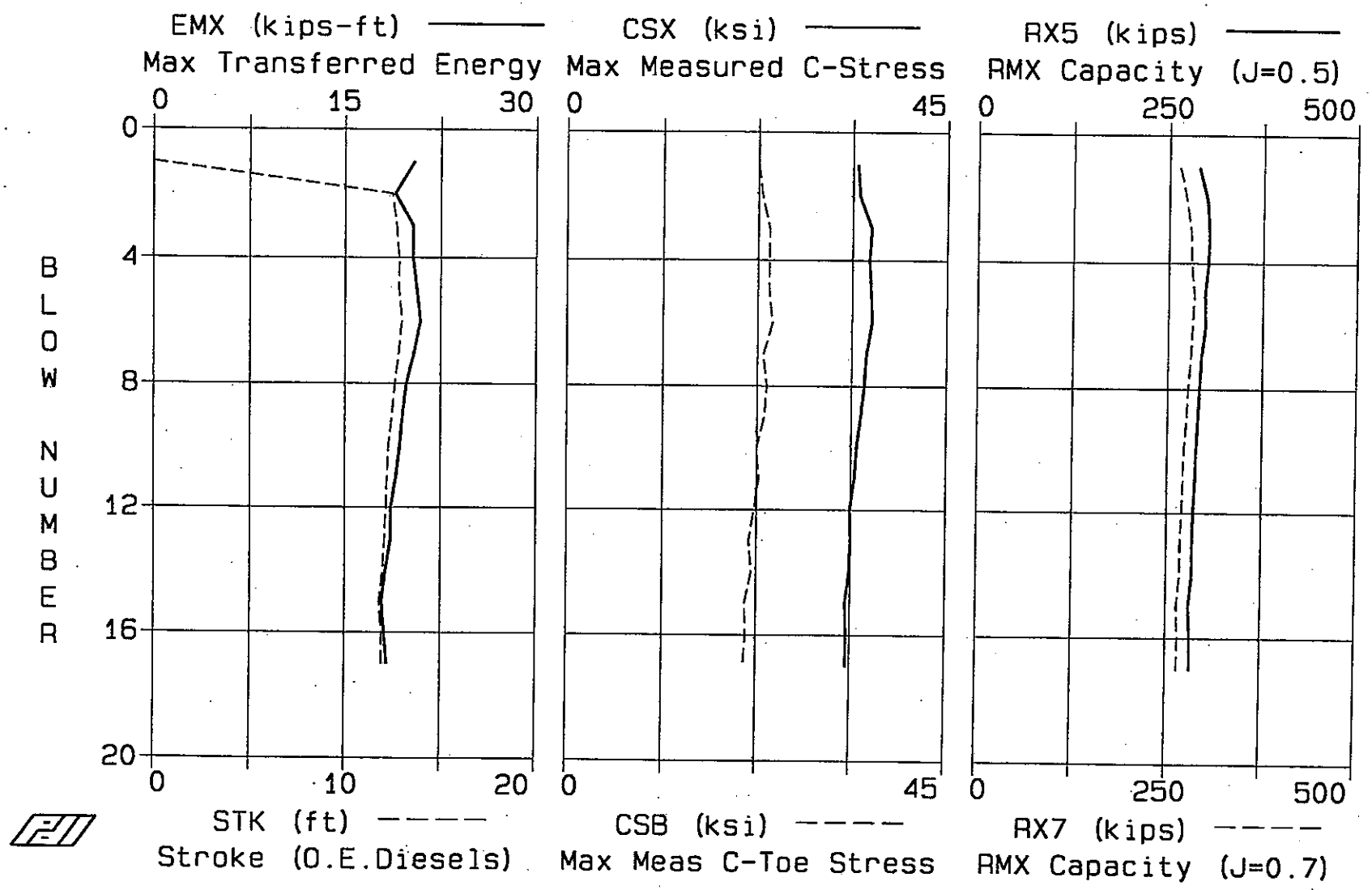
	EMX	STK	DMX	CSB	CSX	BPM	RX5	RX7	RX9
AVG	15.9	10.32	1.08	18.10	31.14	36.9	250	235	233
STD	0.8	0.33	0.04	0.80	0.88	0.6	4	3	3
MAX	17.7	10.98	1.16	20.97	33.11	37.5	263	243	241
MIN	15.2	9.95	1.03	17.38	30.25	35.8	247	230	228
#BLS	26	26	26	26	26	26	26	26	26

DRIVEN (09-Aug-07 : BV104.Q01)

GTR

14-Aug-07

Bayside Village, #104 Restrike, PP9.63x.352"



Pile: #104 Restrike
Info: PP9.63x.352"
AR: 10.3 in^2
LE: 107.0 ft

Proj: Bayside Village
SP: 0.492 k/ft^3
WS: 16810 ft/s
EM: 30000 KSI

EMX: Max Transferred Energy
STK: Stroke (O.E.Diesels)
DMX: Max Meas'd Displacement
CSB: Max Meas C-Toe Stress
CSX: Max Measured C-Stress

BPM: Blows Per Minute
RX5: RMX Capacity (J=0.5)
RX7: RMX Capacity (J=0.7)
RX9: RMX Capacity (J=0.9)

BL#	depth ft	EMX kips-ft	STK ft	DMX inch	CSB ksi	CSX ksi	BPM bl/min	RX5 kips	RX7 kips	RX9 kips	BLC bl/ft
1	106.00	20.4	0.00	1.30	22.49	34.29	0.0	289	264	248	0
2		18.9	12.45	1.15	22.98	34.58	33.6	300	273	265	0
3		20.3	12.67	1.20	23.86	35.99	33.4	303	279	270	0
4		20.3	12.81	1.21	23.83	35.76	33.2	302	280	273	0
5		20.6	12.80	1.23	23.85	35.97	33.2	298	284	276	0
6		20.9	12.96	1.25	24.28	36.09	33.0	299	282	272	0
7		20.4	12.80	1.23	23.19	35.46	33.2	294	280	273	0
8		19.8	12.60	1.21	23.63	35.25	33.5	292	277	271	0
9		19.5	12.45	1.21	23.36	34.85	33.6	290	275	268	0
10		19.3	12.27	1.20	22.46	34.38	33.9	288	272	266	0
11		19.0	12.20	1.20	22.75	34.16	34.0	287	271	266	0
12		18.6	12.15	1.20	22.20	33.64	34.0	285	270	264	0
13		18.6	12.07	1.19	21.59	33.75	34.2	284	268	263	0
14		18.2	11.98	1.17	21.92	33.60	34.3	284	268	262	0
15		17.9	11.79	1.16	21.14	33.16	34.6	280	264	257	0
16		18.1	11.91	1.18	21.28	33.29	34.4	282	266	260	0
17		18.3	11.93	1.18	21.02	33.29	34.4	282	265	259	0

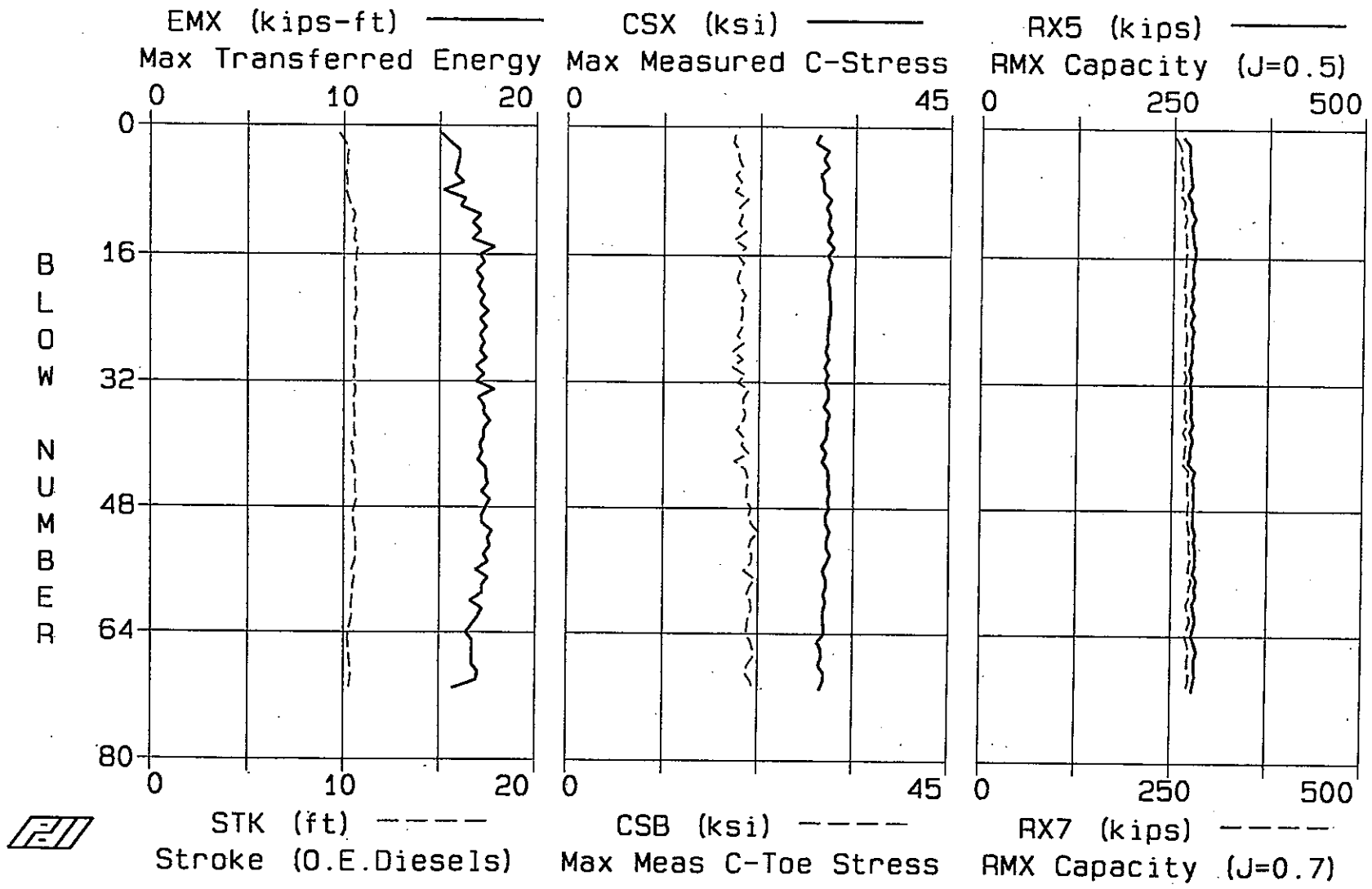
	EMX	STK	DMX	CSB	CSX	BPM	RX5	RX7	RX9
AVG	19.4	11.64	1.20	22.70	34.56	31.8	291	273	265
STD	1.0	3.02	0.04	1.05	1.03	8.2	8	7	7
MAX	20.9	12.96	1.30	24.28	36.09	34.6	303	284	276
MIN	17.9	0.00	1.15	21.02	33.16	0.0	280	264	248
#BLS	17	17	17	17	17	17	17	17	17

DRIVEN (14-Aug-07 : BV104R.Q01)

GTR

14-Aug-07

Bayside Village, 104 Redrive, PP9.63x.352"



Pile: 104 Redrive
Info: PP9.63x.352"
AR: 10.3 in^2
LE: 107.0 ft

Proj: Bayside Village
SP: 0.492 k/ft^3
WS: 16810 ft/s
EM: 30000 KSI

EMX: Max Transferred Energy
STK: Stroke (O.E.Diesels)
DMX: Max Meas'd Displacement
CSB: Max Meas C-Toe Stress
CSX: Max Measured C-Stress

BPM: Blows Per Minute
RX5: RMX Capacity (J=0.5)
RX7: RMX Capacity (J=0.7)
RX9: RMX Capacity (J=0.9)

BL#	depth ft	EMX kips-ft	STK ft	DMX inch	CSB ksi	CSX ksi	BPM bl/min	RX5 kips	RX7 kips	RX9 kips	BLC bl/ft
40		17.1	10.41	1.14	20.49	29.95	36.7	274	267	260	233
41		17.2	10.53	1.12	21.31	30.49	36.5	274	266	261	233
42		17.0	10.41	1.15	19.66	30.05	36.7	271	264	259	233
43		17.4	10.58	1.14	20.90	30.67	36.4	280	272	265	233
44		17.4	10.58	1.16	21.21	30.78	36.4	277	270	264	233
45		17.5	10.60	1.15	21.16	30.73	36.4	279	271	265	233
46		17.2	10.60	1.14	21.06	30.92	36.4	278	271	266	233
47		17.6	10.66	1.15	21.08	30.70	36.3	279	272	265	233
48		17.4	10.55	1.15	21.63	30.86	36.5	278	271	266	233
49		17.2	10.46	1.14	21.33	30.44	36.6	278	270	263	233
50		17.2	10.51	1.14	21.64	30.51	36.5	278	272	266	233
51		17.7	10.59	1.15	22.55	30.94	36.4	281	273	266	233
52		17.5	10.60	1.16	21.69	30.62	36.4	279	273	267	233
53		17.6	10.62	1.15	21.37	30.58	36.4	281	273	266	233
54		17.3	10.64	1.15	21.75	31.01	36.3	281	275	270	233
55		17.5	10.56	1.15	21.66	30.59	36.4	281	273	266	233
56		16.9	10.42	1.14	20.78	30.15	36.7	278	272	267	233
57		17.5	10.54	1.15	22.09	30.49	36.5	283	276	270	233
58		17.2	10.46	1.15	21.55	30.59	36.6	280	273	268	233
59		17.2	10.45	1.14	21.18	30.24	36.6	282	274	267	233
60		16.6	10.42	1.11	21.62	30.49	36.7	278	270	265	233
61		17.2	10.38	1.13	21.70	30.27	36.8	280	272	266	233
62		17.0	10.43	1.12	21.33	30.23	36.7	282	275	269	233
64		16.4	10.22	1.11	21.12	30.35	37.0	277	269	265	233
65		16.7	10.21	1.11	21.66	29.60	37.1	281	272	267	233
66		16.7	10.25	1.11	21.92	29.99	37.0	284	274	269	233
67		16.7	10.28	1.11	21.93	30.05	36.9	281	272	267	233
68		16.7	10.33	1.12	21.28	29.74	36.9	281	272	267	233
69		17.0	10.37	1.13	21.01	30.35	36.8	282	274	270	233
70		16.9	10.34	1.13	21.66	30.26	36.8	280	273	268	233
71	106.30	15.7	10.28	1.05	22.00	29.89	36.9	278	269	264	233

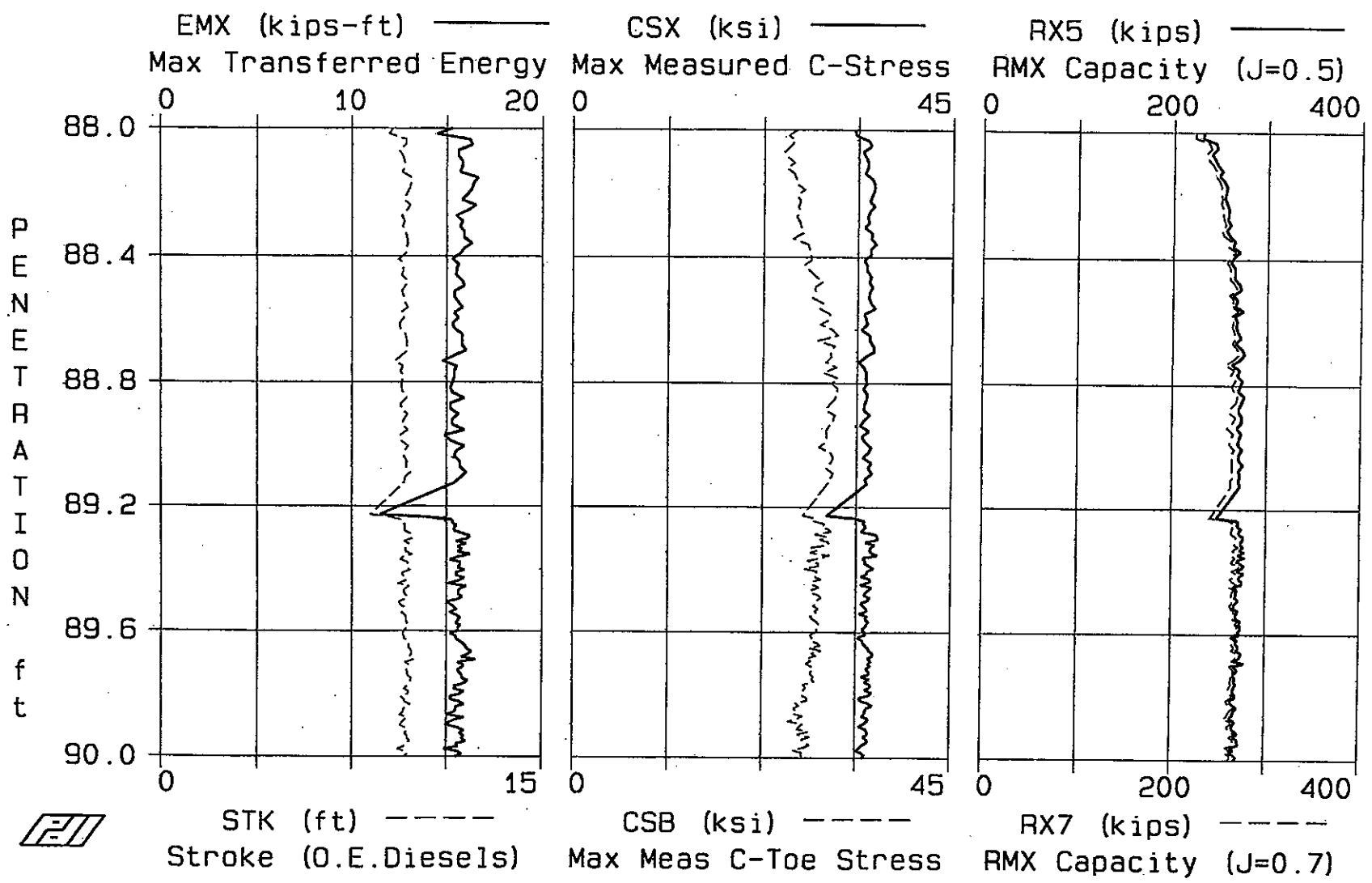
	EMX	STK	DMX	CSB	CSX	BPM	RX5	RX7	RX9
AVG	17.1	10.46	1.13	21.40	30.40	36.6	279	272	266
STD	0.4	0.13	0.02	0.53	0.36	0.2	3	3	3
MAX	17.7	10.66	1.16	22.55	31.01	37.1	284	276	270
MIN	15.7	10.21	1.05	19.66	29.60	36.3	271	264	259
#BLS	31	31	31	31	31	31	31	31	31

DRIVEN (14-Aug-07 : BV104RD.Q01)

GTR

09-Aug-07

Bayside Village, #151, PP9.63x.352"



Pile: #151
Info: PP9.63x.352"
AR: 10.3 in^2
LE: 107.0 ft

Proj: Bayside Village
SP: 0.492 k/ft^3
WS: 16810 ft/s
EM: 30000 KSI

EMX: Max Transferred Energy
STK: Stroke (O.E.Diesels)
DMX: Max Meas'd Displacement
CSB: Max Meas C-Toe Stress
CSX: Max Measured C-Stress

BPM: Blows Per Minute
RX5: RMX Capacity (J=0.5)
RX7: RMX Capacity (J=0.7)
RX9: RMX Capacity (J=0.9)

BL#	depth ft	EMX kips-ft	STK ft	DMX inch	CSB ksi	CSX ksi	BPM bl/min	RX5 kips	RX7 kips	RX9 kips	BLC bl/ft
230		15.8	9.85	1.03	28.56	35.37	37.7	268	264	261	120
231		16.1	9.84	1.05	28.81	34.89	37.7	270	265	261	120
232		15.9	9.75	1.05	27.47	35.54	37.9	268	263	259	120
233		15.5	9.70	1.02	27.81	35.47	38.0	267	262	257	120
234		15.4	9.58	1.02	27.57	34.93	38.2	267	263	259	120
235		15.9	9.77	1.04	27.58	35.70	37.9	269	266	262	120
236		15.7	9.72	1.03	27.32	35.32	37.9	269	265	260	120
237		15.2	9.47	1.02	27.94	34.22	38.4	264	260	257	120
238		15.2	9.58	1.01	27.98	34.42	38.2	265	261	258	120
239		15.7	9.61	1.04	26.60	35.27	38.2	268	265	262	120
240		15.9	9.82	1.04	27.02	35.79	37.8	271	267	264	120
241		15.5	9.61	1.03	26.41	35.08	38.2	268	264	259	120
242		15.5	9.56	1.03	26.63	34.95	38.3	267	262	258	120
243		15.4	9.55	1.03	26.31	34.88	38.3	266	261	257	120
244		15.0	9.41	1.01	27.42	34.57	38.6	263	257	254	120
245		15.9	9.71	1.05	26.82	35.32	38.0	269	264	259	120
246		15.4	9.58	1.02	25.73	35.16	38.2	268	265	262	120
247		15.1	9.49	1.01	27.49	34.79	38.4	266	261	257	120
248		15.1	9.44	1.01	27.10	34.24	38.5	266	262	258	120
249		15.6	9.62	1.03	26.85	35.02	38.1	270	265	261	120
250		15.9	9.73	1.04	28.15	35.20	37.9	272	269	265	120
251		15.7	9.61	1.04	26.87	35.23	38.2	268	264	260	120
252		15.9	9.70	1.05	28.26	34.77	38.0	272	267	262	120
253		15.8	9.72	1.04	27.37	35.22	37.9	272	268	265	120
254		16.0	9.81	1.05	27.91	35.18	37.8	273	269	265	120
255		15.5	9.61	1.04	28.26	34.62	38.2	265	260	255	120
256		15.6	9.57	1.03	27.59	34.33	38.2	268	264	260	120
257		14.9	9.33	1.00	26.36	33.98	38.7	264	259	255	120
258		15.6	9.61	1.03	27.40	34.53	38.2	269	264	259	120
259		15.8	9.71	1.04	27.27	34.92	38.0	271	264	260	120
260	90.00	15.5	9.58	1.02	27.73	34.58	38.2	268	263	259	120

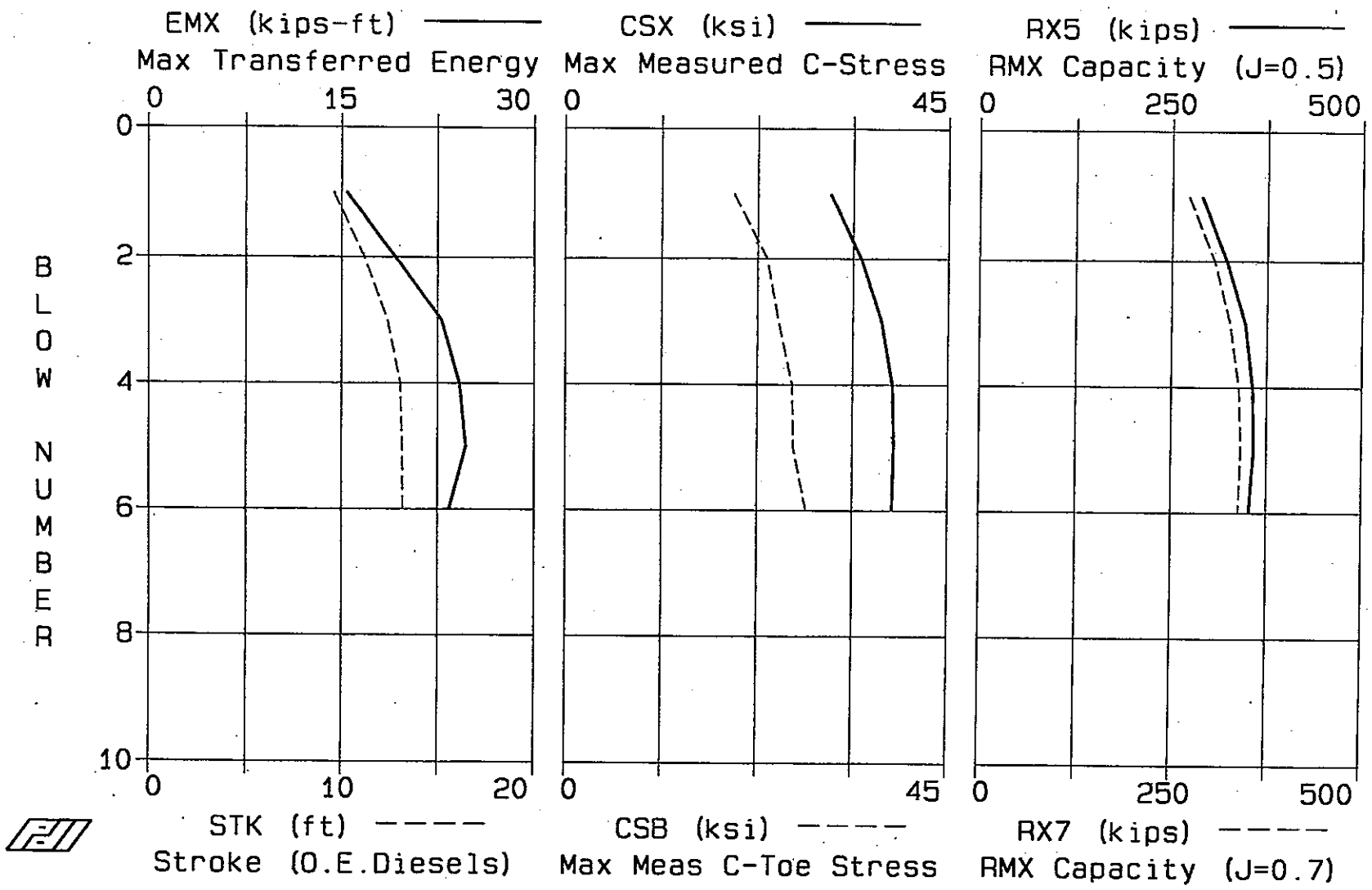
	EMX	STK	DMX	CSB	CSX	BPM	RX5	RX7	RX9
AVG	15.6	9.63	1.03	27.37	34.95	38.1	268	264	260
STD	0.3	0.13	0.01	0.71	0.45	0.2	3	3	3
MAX	16.1	9.85	1.05	28.81	35.79	38.7	273	269	265
MIN	14.9	9.33	1.00	25.73	33.98	37.7	263	257	254
#BLS	31	31	31	31	31	31	31	31	31

DRIVEN (09-Aug-07 : BV151C.Q01)

GTR

10-Aug-07

Bayside Village, #151 Restrike, PP9.63x.352"



Pile: #151 Restrike
Info: PP9.63x.352"
AR: 10.3 in^2
LE: 107.0 ft

Proj: Bayside Village
SP: 0.492 k/ft^3
WS: 16810 ft/s
EM: 30000 KSI

CSB: Max Meas C-Toe Stress
CSX: Max Measured C-Stress
BPM: Blows Per Minute
RX5: RMX Capacity (J=0.5)
RX7: RMX Capacity (J=0.7)
RX9: RMX Capacity (J=0.9)
EMX: Max Transferred Energy
STK: Stroke (O.E.Diesels)
DMX: Max Meas'd Displacement

BL#	CSB ksi	CSX ksi	BPM bl/min	RX5 kips	RX7 kips	RX9 kips	EMX kips-ft	STK ft	DMX inch
2	23.61	34.70	35.5	322	306	295	19.2	11.18	1.10
3	24.97	37.15	33.7	347	327	316	22.8	12.39	1.22
4	26.60	38.46	32.9	357	339	327	24.2	13.06	1.26
5	26.76	38.66	32.7	359	342	330	24.7	13.16	1.28
6	28.29	38.48	32.7	353	339	327	23.4	13.19	1.23

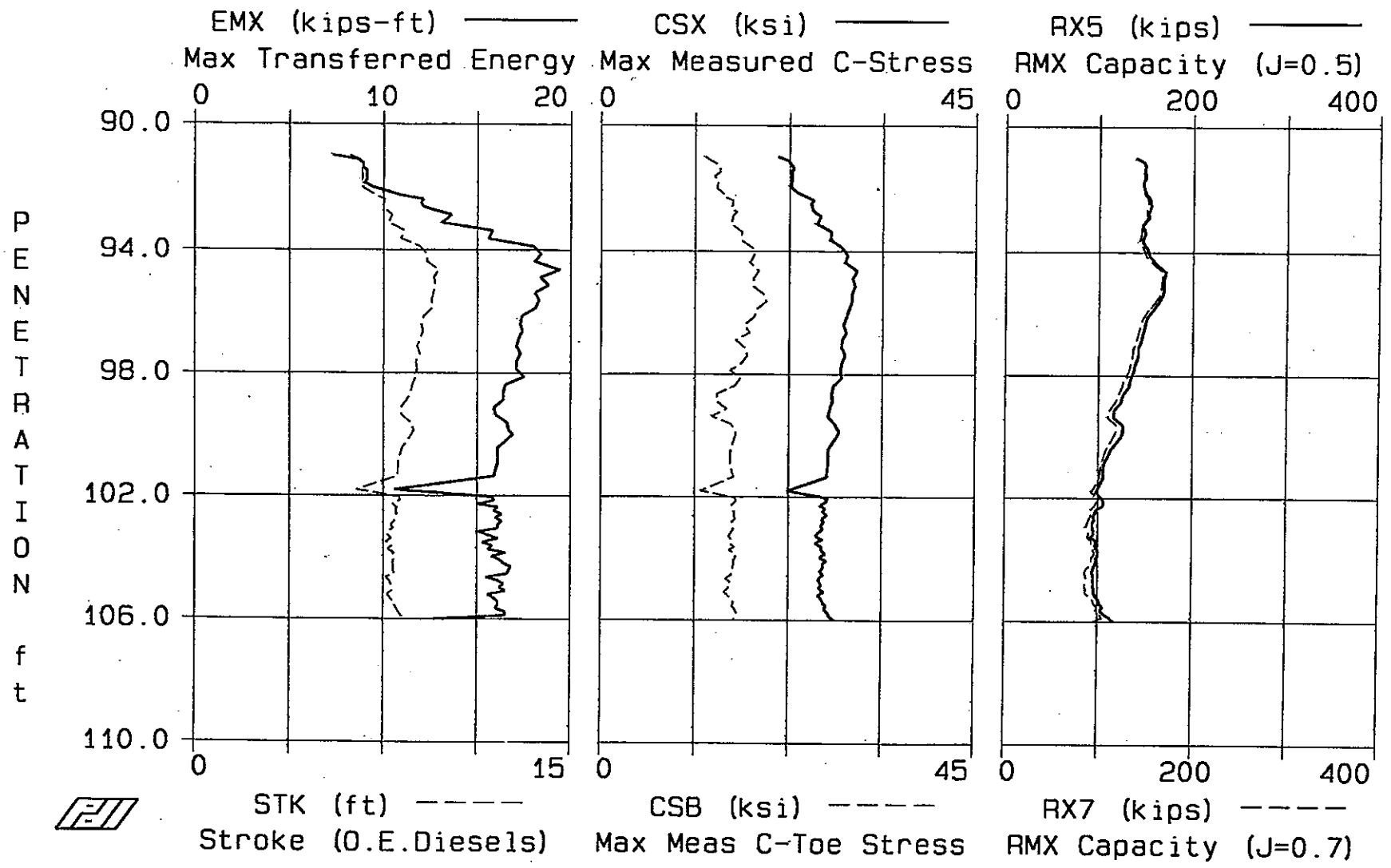
	CSB	CSX	BPM	RX5	RX7	RX9	EMX	STK	DMX
AVG	26.05	37.49	33.5	348	331	319	22.9	12.60	1.22
STD	1.80	1.67	1.2	15	15	14	2.2	0.86	0.07
MAX	28.29	38.66	35.5	359	342	330	24.7	13.19	1.28
MIN	23.61	34.70	32.7	322	306	295	19.2	11.18	1.10
#BLS	5	5	5	5	5	5	5	5	5

DRIVEN (10-Aug-07 : 151.Q01)

GTR

09-Aug-07

Bayside Village, #90, PP9.63x.352"



Pile: #90
Info: PP9.63x.352"
AR: 10.3 in^2
LE: 107.0 ft

Proj: Bayside Village
SP: 0.492 k/ft^3
WS: 16810 ft/s
EM: 30000 KSI

EMX: Max Transferred Energy
STK: Stroke (O.E.Diesels)
DMX: Max Meas'd Displacement
CSB: Max Meas C-Toe Stress
CSX: Max Measured C-Stress

BPM: Blows Per Minute
RX5: RMX Capacity (J=0.5)
RX7: RMX Capacity (J=0.7)
RX9: RMX Capacity (J=0.9)

BL#	depth ft	EMX kips-ft	STK ft	DMX inch	CSB ksi	CSX ksi	BPM bl/min	RX5 kips	RX7 kips	RX9 kips	BLC bl/ft
291		15.6	7.68	1.50	15.43	26.53	42.5	100	96	95	8
292		16.5	7.91	1.56	16.20	26.93	41.9	100	96	93	8
293		15.8	7.86	1.52	16.16	26.30	42.1	98	93	92	8
294		16.2	7.91	1.56	15.92	27.01	41.9	98	93	91	8
295		16.4	7.87	1.61	15.94	26.65	42.0	97	92	88	8
296		16.8	7.88	1.69	15.84	26.64	42.0	95	88	85	8
297		16.7	7.90	1.70	15.63	26.33	42.0	94	86	82	8
298		16.6	7.92	1.67	15.69	26.69	41.9	95	87	84	8
299		15.5	7.60	1.59	15.04	26.18	42.7	95	88	85	8
300		16.1	7.72	1.63	15.44	26.25	42.4	95	87	83	8
301		16.4	7.80	1.67	15.57	26.45	42.2	95	86	82	8
302		16.2	7.78	1.66	15.24	26.23	42.3	96	87	82	8
303		16.5	7.83	1.66	14.84	26.77	42.1	96	87	82	8
304		15.6	7.67	1.55	15.24	26.13	42.6	98	91	86	8
305		15.9	7.76	1.53	15.74	26.50	42.3	101	95	90	8
306		16.1	7.87	1.52	15.94	26.70	42.0	102	96	93	8
307		16.1	7.95	1.50	15.79	26.99	41.8	105	100	97	8
308		16.0	8.01	1.48	16.10	26.89	41.7	103	98	95	8
309		16.5	8.10	1.49	16.31	27.29	41.4	107	102	99	8
310		16.5	8.19	1.47	16.09	27.54	41.2	113	105	103	8
311	106.00	12.7	8.36	1.12	15.97	28.04	40.8	117	96	94	8

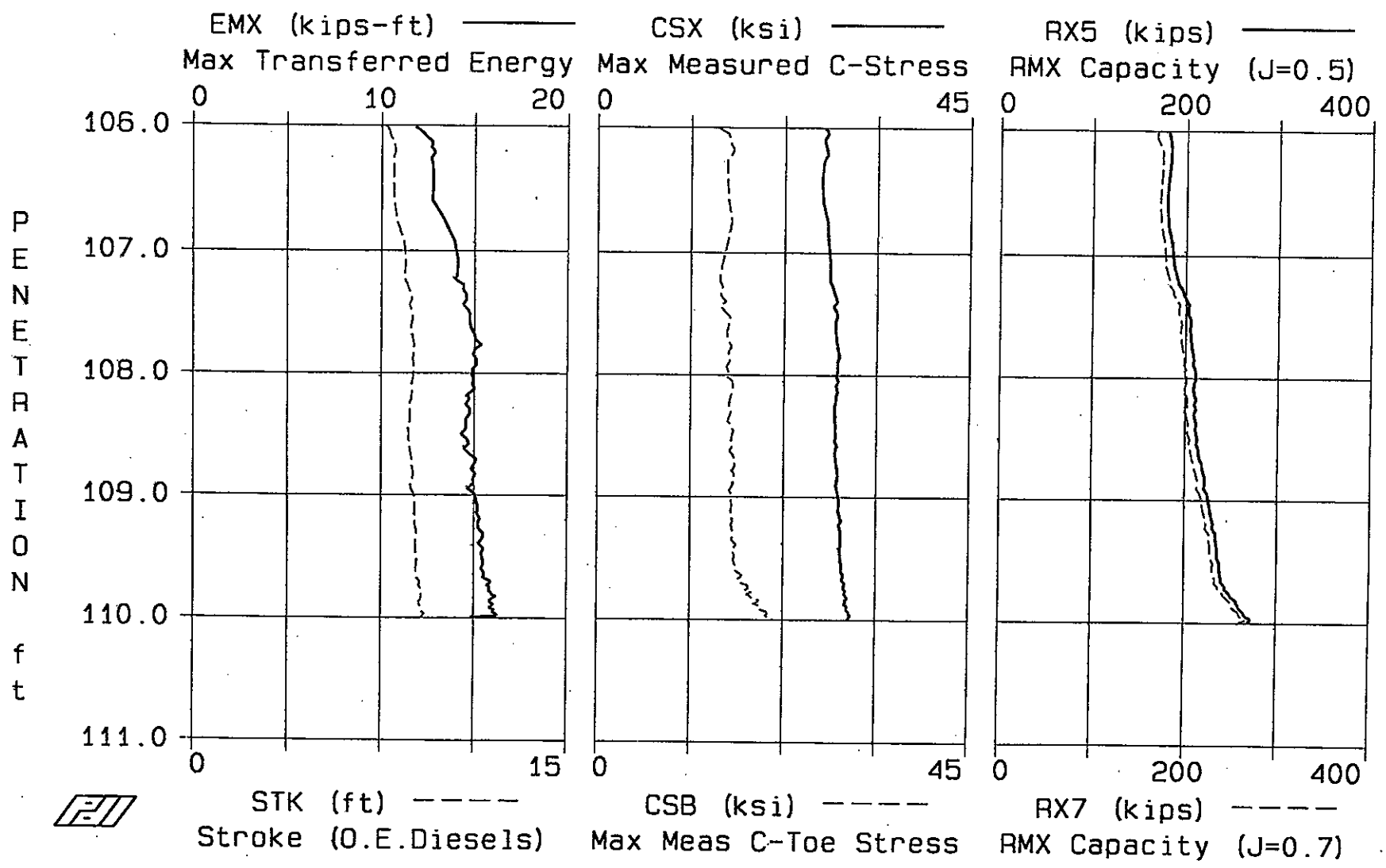
	EMX	STK	DMX	CSB	CSX	BPM	RX5	RX7	RX9
AVG	16.0	7.88	1.56	15.72	26.72	42.0	100	93	90
STD	0.8	0.18	0.13	0.40	0.48	0.5	6	6	6
MAX	16.8	8.36	1.70	16.31	28.04	42.7	117	105	103
MIN	12.7	7.60	1.12	14.84	26.13	40.8	94	86	82
#BLS	21	21	21	21	21	21	21	21	21

DRIVEN (09-Aug-07 : BV90A.Q01)

GTR

09-Aug-07

Bayside Village, #90 Redrive, PP9.63x.352"



Pile: #90 Redrive
Info: PP9.63x.352"
AR: 10.3 in^2
LE: 134.5 ft

Proj: Bayside Village
SP: 0.492 k/ft^3
WS: 16810 ft/s
EM: 30000 KSI

CSB: Max Meas C-Toe Stress
CSX: Max Measured C-Stress
BPM: Blows Per Minute
RX5: RMX Capacity (J=0.5)
RX7: RMX Capacity (J=0.7)
RX9: RMX Capacity (J=0.9)
EMX: Max Transferred Energy
STK: Stroke (O.E.Diesels)
DMX: Max Meas'd Displacement

BL#	depth ft	CSB ksi	CSX ksi	BPM bl/min	RX5 kips	RX7 kips	RX9 kips	EMX kips-ft	STK ft	DMX inch	BLC bl/ft
4	106.00	13.73	26.72	42.8	175	165	156	11.2	7.58	0.86	49
5		15.62	28.23	42.1	186	172	163	12.4	7.85	0.93	49
6		15.73	27.78	42.1	185	167	160	12.4	7.85	0.95	49
7		15.63	27.51	42.3	178	168	161	11.9	7.78	0.91	49
8		15.27	26.94	42.2	182	169	162	12.2	7.79	0.95	49
9		16.34	27.54	41.9	183	171	165	12.6	7.92	0.96	49
10		16.34	27.41	41.8	184	173	167	12.6	7.97	0.97	49
11		15.66	27.27	41.7	182	172	166	12.8	8.00	0.98	49
12		16.42	27.64	41.6	184	174	168	12.7	8.06	0.97	49
13		16.24	27.39	41.7	182	174	167	12.6	7.99	0.98	49
14		16.51	27.61	41.7	181	172	166	12.8	8.01	0.99	49
15		15.67	27.59	41.6	184	175	169	12.9	8.05	0.99	49
16		15.73	27.36	41.7	183	174	168	12.7	8.01	0.97	49

	CSB	CSX	BPM	RX5	RX7	RX9	EMX	STK	DMX
AVG	15.76	27.46	41.9	182	171	164	12.4	7.91	0.95
STD	0.73	0.37	0.4	3	3	4	0.5	0.14	0.04
MAX	16.51	28.23	42.8	186	175	169	12.9	8.06	0.99
MIN	13.73	26.72	41.6	175	165	156	11.2	7.58	0.86
#BLS	13	13	13	13	13	13	13	13	13

DRIVEN (09-Aug-07 : BV90ARD.Q01)

Pile: #90 Redrive
Info: PP9.63x.352"
AR: 10.3 in^2
LE: 134.5 ft

Proj: Bayside Village
SP: 0.492 k/ft^3
WS: 16810 ft/s
EM: 30000 KSI

CSB: Max Meas C-Toe Stress
CSX: Max Measured C-Stress
BPM: Blows Per Minute
RX5: RMX Capacity (J=0.5)
RX7: RMX Capacity (J=0.7)
RX9: RMX Capacity (J=0.9)
EMX: Max Transferred Energy
STK: Stroke (O.E.Diesels)
DMX: Max Meas'd Displacement

BL#	depth ft	CSB ksi	CSX ksi	BPM bl/min	RX5 kips	RX7 kips	RX9 kips	EMX kips-ft	STK ft	DMX inch	BLC bl/ft
184	109.67	16.63	29.31	39.6	239	232	226	15.2	8.89	1.14	49
185		17.45	30.07	39.4	242	235	230	15.8	8.97	1.17	130
186		17.31	29.92	39.4	242	234	228	15.9	8.97	1.17	130
187		17.03	29.60	39.4	243	234	228	15.6	9.01	1.15	130
188		17.45	30.07	39.3	244	236	231	15.9	9.05	1.17	130
189		17.38	29.88	39.3	245	237	232	15.9	9.06	1.17	130
190		17.80	30.18	39.3	244	236	231	16.0	9.05	1.18	130
191		18.53	29.68	39.3	244	237	231	15.7	9.06	1.16	130
192		18.96	30.08	39.4	245	238	233	15.8	9.01	1.16	130
193		17.58	29.66	39.4	245	237	232	15.6	9.01	1.16	130
194		17.49	29.68	39.3	247	241	236	15.7	9.05	1.16	130
195		19.11	29.99	39.2	247	240	235	16.0	9.07	1.17	130
196		17.54	29.92	39.2	250	243	238	15.7	9.07	1.16	130
197		18.29	30.32	39.1	249	242	237	16.0	9.12	1.17	130
198		19.18	30.24	39.2	251	244	240	15.9	9.08	1.16	130
199		18.20	29.68	39.3	249	242	237	15.7	9.02	1.17	130
200		17.91	29.99	39.2	252	245	240	16.0	9.11	1.17	130
201		18.37	30.02	39.1	252	245	239	15.9	9.12	1.16	130
202		18.51	30.12	39.2	254	247	243	15.8	9.10	1.16	130
203		18.68	30.24	39.1	256	248	243	16.1	9.13	1.17	130
204		18.70	30.26	39.2	257	249	245	16.0	9.10	1.17	130
205		18.82	30.28	39.0	258	251	246	16.4	9.17	1.19	130
206		19.55	30.20	39.1	256	250	246	16.0	9.12	1.18	130
207		19.57	29.94	39.2	257	250	245	16.0	9.08	1.18	130
208		19.99	30.28	39.2	260	252	248	16.0	9.10	1.16	130
209		19.03	29.98	39.2	259	252	247	15.8	9.07	1.16	130
210		18.95	29.99	39.3	258	251	247	15.7	9.04	1.15	130
211		18.98	29.91	39.3	260	254	250	16.0	9.02	1.17	130
212		19.47	30.16	39.2	261	254	249	16.1	9.07	1.18	130
213		19.89	30.35	39.4	261	254	249	16.0	9.00	1.18	130
214		19.96	30.39	39.3	263	257	252	16.0	9.05	1.17	130
215		19.57	30.16	39.2	263	258	252	16.0	9.11	1.17	130
216		19.97	30.40	39.2	266	259	254	15.9	9.11	1.15	130
217		19.51	30.06	39.3	264	260	255	15.8	9.06	1.15	130
218		20.97	30.68	39.2	265	259	254	16.1	9.11	1.16	130
219		20.05	30.29	39.2	266	261	256	16.1	9.10	1.17	130
220		20.77	30.13	39.1	266	260	255	16.0	9.13	1.16	130
221		20.55	30.95	39.1	269	263	257	16.0	9.13	1.16	130
222		20.38	30.80	38.9	272	267	261	16.3	9.23	1.17	130
223		20.50	30.62	38.9	272	266	262	16.1	9.25	1.16	130
224		20.42	30.38	39.0	272	266	261	16.2	9.21	1.17	130
225		20.87	30.69	39.0	272	266	260	16.3	9.18	1.17	130
226		20.38	30.27	39.0	272	266	262	16.0	9.20	1.16	130
227	110.00	22.22	30.66	39.2	267	254	251	13.7	9.07	0.96	130

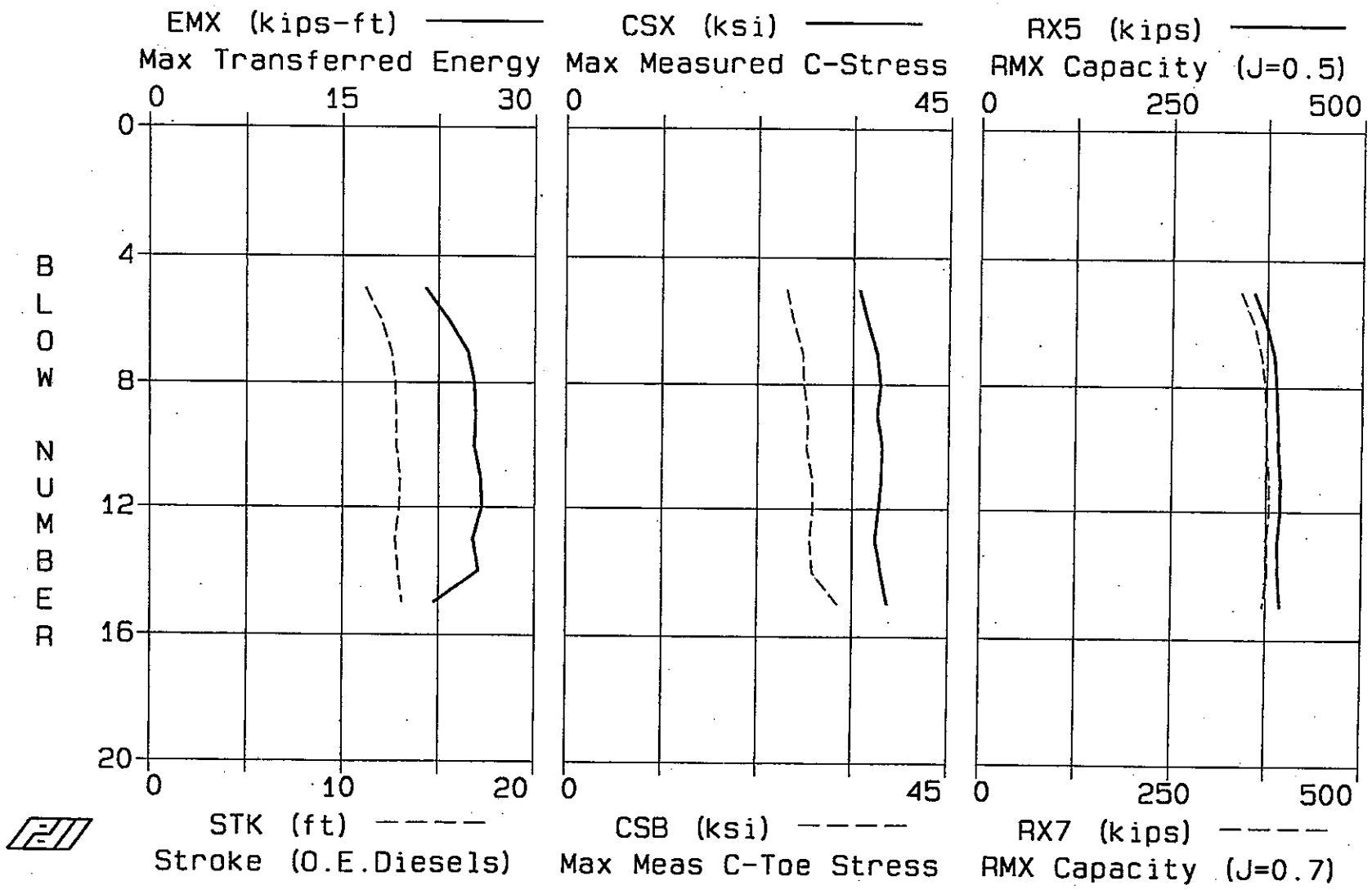
	CSB	CSX	BPM	RX5	RX7	RX9	EMX	STK	DMX
AVG	19.06	30.15	39.2	256	249	244	15.9	9.08	1.16
STD	1.26	0.33	0.1	10	10	11	0.4	0.07	0.03
MAX	22.22	30.95	39.6	272	267	262	16.4	9.25	1.19
MIN	16.63	29.31	38.9	239	232	226	13.7	8.89	0.96
#BLS	44	44	44	44	44	44	44	44	44

DRIVEN (09-Aug-07 : BV90ARD.Q01)

GTR

14-Aug-07

Bayside Village, #90 Restrike, PP9.63x.352"



Pile: #90 Restrike
Info: PP9.63x.352"
AR: 10.3 in^2
LE: 134.5 ft

Proj: Bayside Village
SP: 0.492 k/ft^3
WS: 16810 ft/s
EM: 30000 KSI

CSB: Max Meas C-Toe Stress
CSX: Max Measured C-Stress
BPM: Blows Per Minute
RX5: RMX Capacity (J=0.5)
RX7: RMX Capacity (J=0.7)
RX9: RMX Capacity (J=0.9)
EMX: Max Transferred Energy
STK: Stroke (O.E.Diesels)
DMX: Max Meas'd Displacement

BL#	CSB ksi	CSX ksi	BPM bl/min	RX5 kips	RX7 kips	RX9 kips	EMX kips-ft	STK ft	DMX inch
5	25.92	34.48	35.4	358	341	326	21.5	11.21	1.26
6	26.72	35.44	34.2	374	358	344	23.3	12.01	1.33
7	27.82	36.55	33.5	385	368	354	24.8	12.54	1.37
8	27.98	36.99	33.3	388	373	359	25.3	12.74	1.40
9	28.49	36.60	33.2	390	374	360	25.4	12.78	1.40
10	28.31	37.23	33.2	391	376	363	25.3	12.80	1.41
11	29.02	37.14	33.0	394	379	366	25.8	12.99	1.43
12	29.09	36.83	33.0	394	379	366	25.9	12.94	1.44
13	28.73	36.42	33.3	390	376	363	25.2	12.73	1.42
14	29.04	37.10	33.1	391	377	363	25.6	12.87	1.44
15	32.03	37.86	32.8	394	371	356	22.1	13.09	1.23

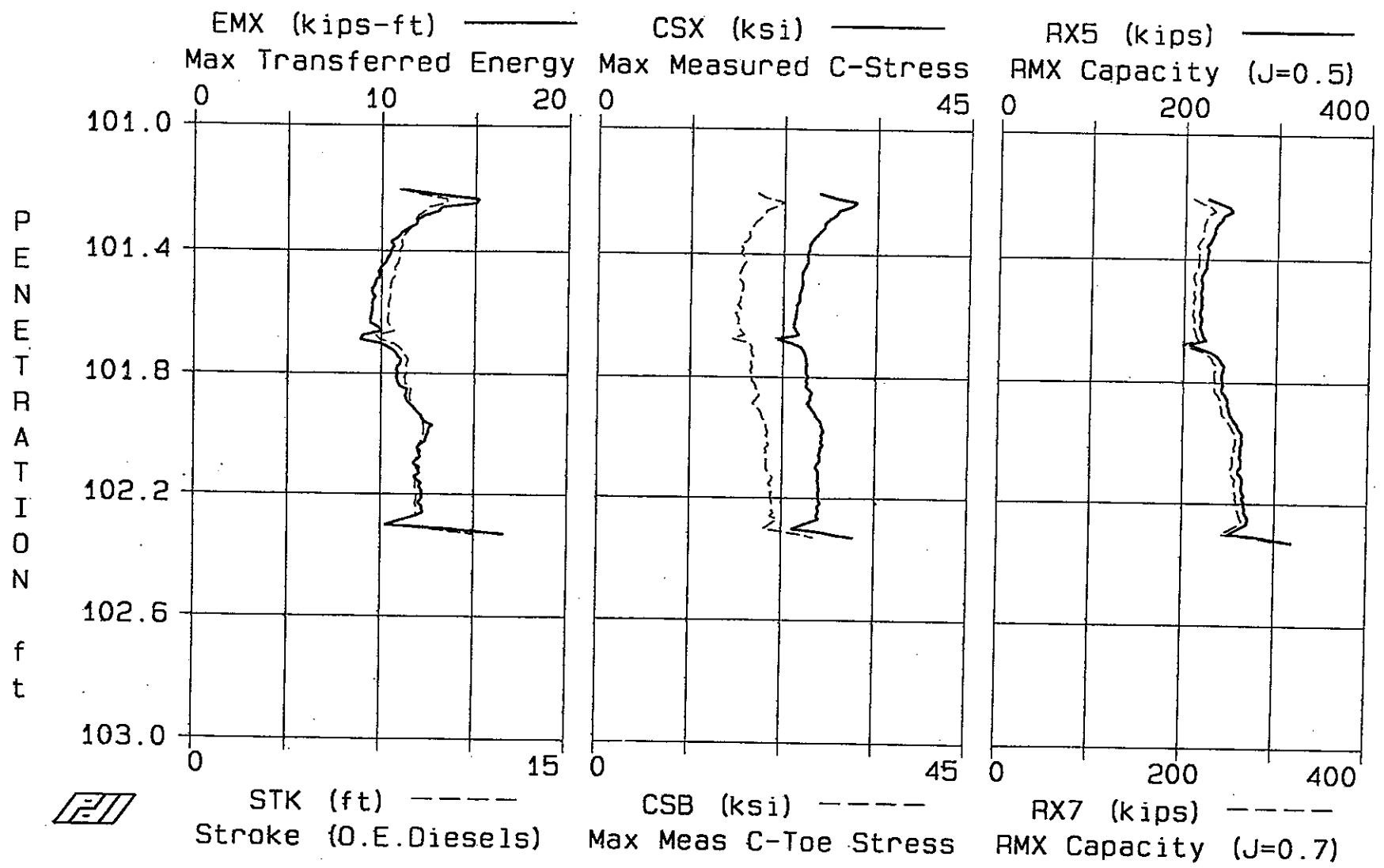
	CSB	CSX	BPM	RX5	RX7	RX9	EMX	STK	DMX
AVG	28.47	36.60	33.5	386	370	356	24.6	12.61	1.38
STD	1.55	0.93	0.7	11	11	12	1.5	0.55	0.07
MAX	32.03	37.86	35.4	394	379	366	25.9	13.09	1.44
MIN	25.92	34.48	32.8	358	341	326	21.5	11.21	1.23
#BLS	11	11	11	11	11	11	11	11	11

DRIVEN (14-Aug-07 : BV90R.Q01)

GTR

09-Aug-07

Bayside Village, #171, PP9.63x.352"



Pile: #171 Gage Pressure 300
Info: PP9.63x.352"
AR: 10.3 in^2
LE: 107.0 ft

Proj: Bayside Village
SP: 0.492 k/ft^3
WS: 16810 ft/s
EM: 30000 KSI

EMX: Max Transferred Energy
STK: Stroke (O.E.Diesels)
DMX: Max Meas'd Displacement
CSB: Max Meas C-Toe Stress
CSX: Max Measured C-Stress

BPM: Blows Per Minute
RX5: RMX Capacity (J=0.5)
RX7: RMX Capacity (J=0.7)
RX9: RMX Capacity (J=0.9)

BL#	depth ft	EMX kips-ft	STK ft	DMX inch	CSB ksi	CSX ksi	BPM bl/min	RX5 kips	RX7 kips	RX9 kips	BLC bl/ft
50		9.5	7.85	0.86	17.48	24.47	42.1	219	211	208	144
51		9.5	7.85	0.86	17.33	24.57	42.1	219	212	209	144
52		9.4	7.84	0.86	17.53	24.46	42.1	218	210	208	144
53		9.6	7.86	0.87	17.05	24.36	42.1	218	210	208	144
54		9.7	7.84	0.89	17.18	24.32	42.1	219	210	207	144
55		9.6	7.87	0.88	17.34	24.54	42.0	219	211	208	144
56		9.5	7.82	0.87	16.96	24.25	42.2	218	210	207	144
57		9.5	7.78	0.87	17.08	24.04	42.3	217	210	207	144
58		9.6	7.80	0.86	17.43	24.14	42.2	217	209	206	144
59		9.4	7.76	0.86	17.27	24.13	42.3	217	209	206	144
60		9.5	7.80	0.87	16.61	24.01	42.2	219	211	207	144
61		9.5	7.80	0.86	16.76	24.11	42.2	219	211	208	144
62		9.4	7.75	0.87	17.00	23.94	42.4	217	210	207	144
63		9.5	7.80	0.86	17.09	24.04	42.2	219	212	210	144
64		9.3	7.74	0.85	16.82	23.70	42.4	216	209	206	144
65		9.5	7.77	0.87	17.23	24.01	42.3	218	211	207	144
66		9.4	7.74	0.87	17.09	23.71	42.4	218	211	208	144
67		9.4	7.76	0.86	16.92	23.82	42.3	220	213	209	144
68		9.7	7.87	0.89	17.46	24.14	42.0	220	213	209	144
69		9.9	7.92	0.92	17.14	23.92	41.9	220	213	209	144
70		10.0	7.99	0.90	17.65	24.37	41.7	224	216	213	144
71		10.0	8.01	0.88	17.78	24.30	41.7	223	215	212	144
72		10.0	8.00	0.90	17.60	24.33	41.7	224	217	213	144
73		8.0	6.53	0.91	15.06	19.29	46.0	189	181	175	144
74		8.4	7.28	0.80	18.00	22.94	43.6	212	205	199	144
75		9.4	7.62	0.85	18.79	24.27	42.7	222	215	209	144
76	101.70	9.7	7.94	0.87	18.85	24.74	41.8	226	219	213	144

	EMX	STK	DMX	CSB	CSX	BPM	RX5	RX7	RX9
AVG	9.5	7.76	0.87	17.28	23.96	42.3	218	211	207
STD	0.4	0.28	0.02	0.69	1.00	0.8	6	7	7
MAX	10.0	8.01	0.92	18.85	24.74	46.0	226	219	213
MIN	8.0	6.53	0.80	15.06	19.29	41.7	189	181	175
#BLS	27	27	27	27	27	27	27	27	27

DRIVEN (09-Aug-07 : BV171E.Q02)

Pile: #171 Gage Pressure 350
Info: PP9.63x.352"
AR: 10.3 in^2
LE: 107.0 ft

Proj: Bayside Village
SP: 0.492 k/ft^3
WS: 16810 ft/s
EM: 30000 KSI

EMX: Max Transferred Energy
STK: Stroke (O.E.Diesels)
DMX: Max Meas'd Displacement
CSB: Max Meas C-Toe Stress
CSX: Max Measured C-Stress

BPM: Blows Per Minute
RX5: RMX Capacity (J=0.5)
RX7: RMX Capacity (J=0.7)
RX9: RMX Capacity (J=0.9)

BL#	depth ft	EMX kips-ft	STK ft	DMX inch	CSB ksi	CSX ksi	BPM bl/min	RX5 kips	RX7 kips	RX9 kips	BLC bl/ft
173		12.1	8.89	0.98	20.92	26.98	39.6	268	261	255	186
174		11.9	8.88	0.97	21.45	26.95	39.7	267	261	255	186
175		12.1	8.88	0.99	21.07	26.67	39.7	267	260	254	186
176		12.1	8.89	0.99	21.33	26.98	39.6	269	262	256	186
177		12.3	8.94	0.99	21.17	26.91	39.5	269	261	255	186
178		12.1	8.95	0.98	21.72	26.86	39.5	270	262	257	186
179		12.3	8.89	1.00	21.17	26.89	39.6	271	263	257	186
180		12.1	8.91	0.97	20.86	26.69	39.6	271	264	259	186
181		12.4	8.93	0.99	21.35	26.82	39.6	270	264	258	186
182		12.2	8.93	0.99	21.82	26.77	39.6	271	264	259	186
183		11.6	8.90	0.91	22.13	27.13	39.6	268	259	254	186
188	102.30	9.4	7.21	0.94	19.03	21.79	43.8	230	223	216	186

	EMX	STK	DMX	CSB	CSX	BPM	RX5	RX7	RX9
AVG	11.9	8.77	0.97	21.17	26.45	40.0	266	259	253
STD	0.8	0.49	0.03	0.77	1.47	1.2	11	11	12
MAX	12.4	8.95	1.00	22.13	27.13	43.8	271	264	259
MIN	9.4	7.21	0.91	19.03	21.79	39.5	230	223	216
#BLS	12	12	12	12	12	12	12	12	12

DRIVEN (09-Aug-07 : BV171E.Q02)

Pile: #171 Gage Pressure 400
Info: PP9.63x.352"
AR: 10.3 in^2
LE: 107.0 ft

Proj: Bayside Village
SP: 0.492 k/ft^3
WS: 16810 ft/s
EM: 30000 KSI

EMX: Max Transferred Energy
STK: Stroke (O.E.Diesels)
DMX: Max Meas'd Displacement
CSB: Max Meas C-Toe Stress
CSX: Max Measured C-Stress

BPM: Blows Per Minute
RX5: RMX Capacity (J=0.5)
RX7: RMX Capacity (J=0.7)
RX9: RMX Capacity (J=0.9)

BL#	depth ft	EMX kips-ft	STK ft	DMX inch	CSB ksi	CSX ksi	BPM bl/min	RX5 kips	RX7 kips	RX9 kips	BLC bl/ft
190		13.2	8.99	1.03	22.33	27.56	39.4	284	274	267	200
191		13.1	9.32	1.01	23.38	26.97	38.7	285	274	268	200
192		14.0	9.85	1.05	24.17	27.75	37.7	293	284	279	200
193		16.3	10.63	1.14	26.13	30.42	36.3	309	301	294	200
194	102.33	16.6	11.18	1.07	26.38	31.17	35.5	319	301	295	200

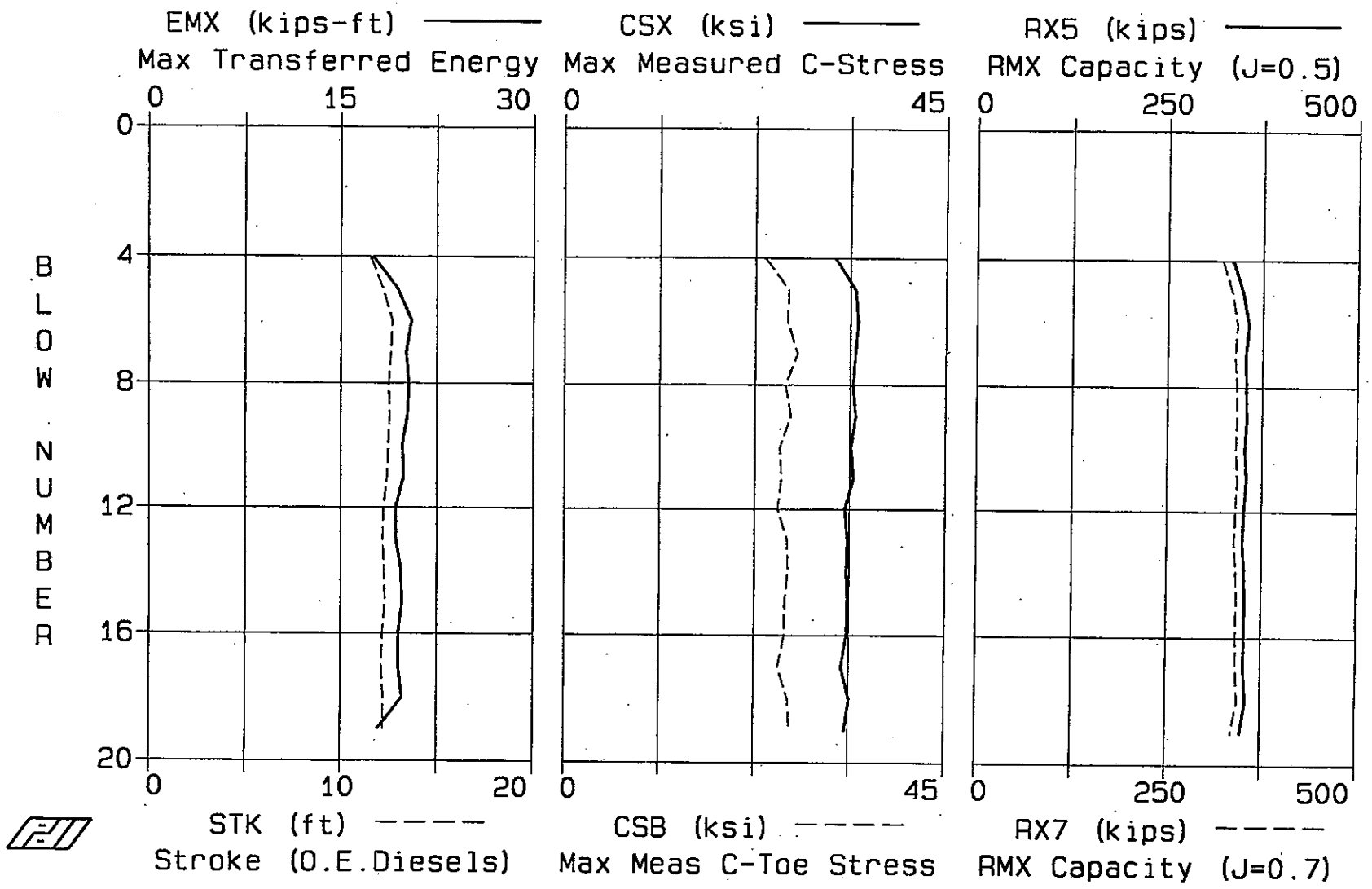
	EMX	STK	DMX	CSB	CSX	BPM	RX5	RX7	RX9
AVG	14.6	9.99	1.06	24.48	28.77	37.5	298	287	281
STD	1.7	0.91	0.05	1.75	1.89	1.6	15	14	14
MAX	16.6	11.18	1.14	26.38	31.17	39.4	319	301	295
MIN	13.1	8.99	1.01	22.33	26.97	35.5	284	274	267
#BLS	5	5	5	5	5	5	5	5	5

DRIVEN (09-Aug-07 : BV171E.Q02)

GTR

14-Aug-07

Bayside Village, #171 Restrike, PP9.63x.352"



Pile: #171 Restrike
Info: PP9.63x.352"
AR: 10.3 in^2
LE: 107.0 ft

Proj: Bayside Village
SP: 0.492 k/ft^3
WS: 16810 ft/s
EM: 30000 KSI

CSB: Max Meas C-Toe Stress
CSX: Max Measured C-Stress
BPM: Blows Per Minute
RX5: RMX Capacity (J=0.5)
RX7: RMX Capacity (J=0.7)
RX9: RMX Capacity (J=0.9)
EMX: Max Transferred Energy
STK: Stroke (O.E.Diesels)
DMX: Max Meas'd Displacement

BL#	depth ft	CSB ksi	CSX ksi	BPM bl/min	RX5 kips	RX7 kips	RX9 kips	EMX kips-ft	STK ft	DMX inch	BLC bl/ft
4	102.00	23.66	31.95	34.9	336	322	310	17.5	11.54	1.02	0
5		26.45	34.33	34.0	349	335	323	19.4	12.17	1.10	0
6		26.33	34.64	33.3	357	342	329	20.5	12.68	1.15	0
7		27.50	34.34	33.4	353	339	328	20.1	12.61	1.14	0
8		26.11	34.07	33.6	354	342	330	20.3	12.49	1.16	0
9		26.76	34.40	33.5	355	342	331	20.2	12.54	1.16	0
10		25.48	33.89	33.6	353	341	329	19.8	12.47	1.16	0
11		25.67	34.19	33.7	355	343	332	19.9	12.41	1.15	0
12		25.25	33.19	33.9	352	341	330	19.3	12.22	1.15	0
13		26.42	33.53	34.0	350	339	329	19.3	12.18	1.14	0
14		26.48	33.43	33.9	353	342	331	19.7	12.25	1.17	0
15		26.12	33.55	33.8	354	343	333	19.8	12.31	1.17	0
16		26.10	33.46	34.0	353	342	333	19.5	12.17	1.16	0
17		25.37	32.88	34.1	353	343	334	19.5	12.12	1.16	0
18		26.58	33.82	33.9	356	345	335	19.8	12.22	1.18	0
19		26.76	33.28	34.0	349	337	327	17.9	12.21	1.08	0

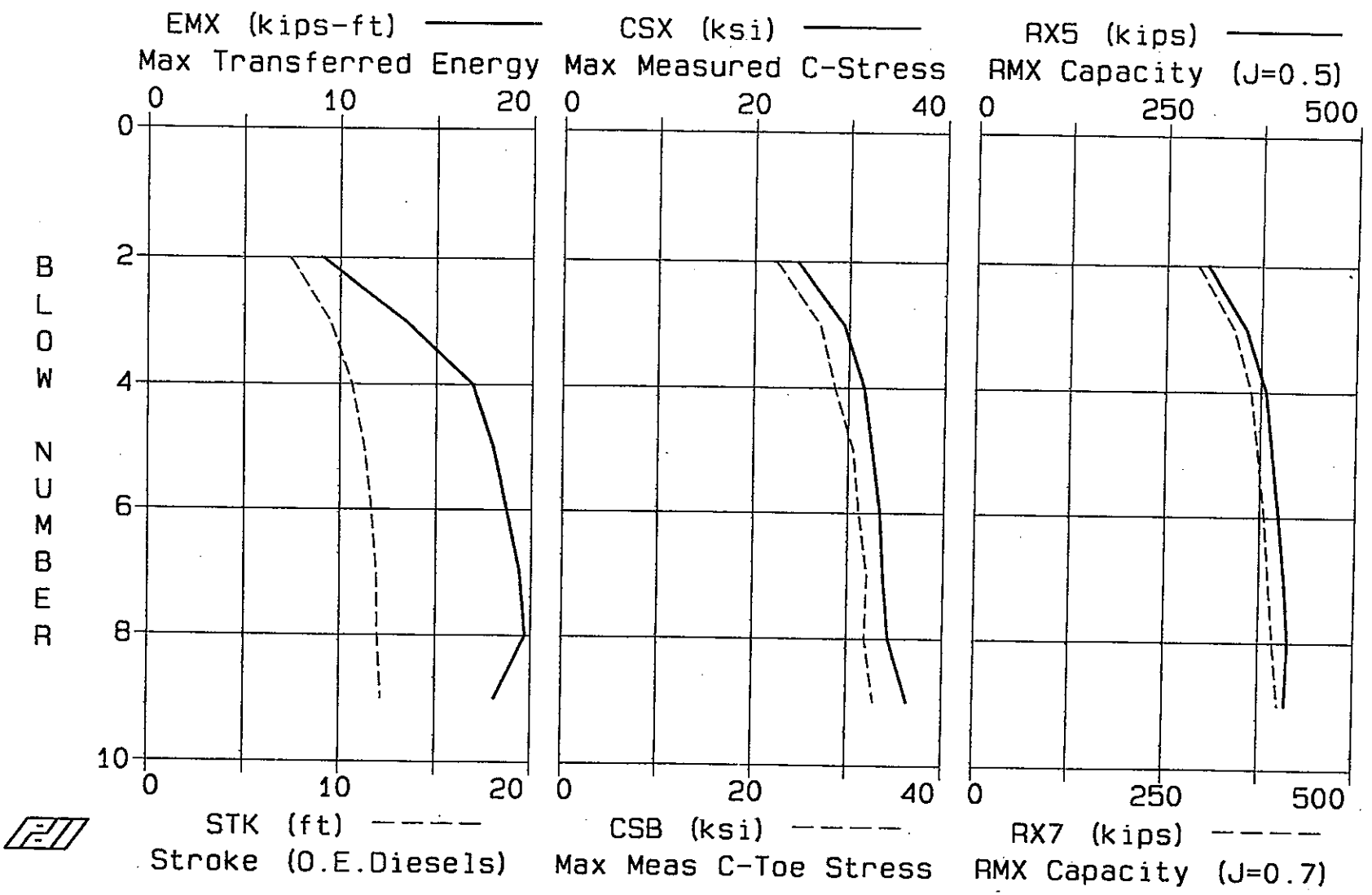
	CSB	CSX	BPM	RX5	RX7	RX9	EMX	STK	DMX
AVG	26.06	33.68	33.9	352	340	329	19.5	12.29	1.14
STD	0.87	0.68	0.4	5	5	6	0.8	0.27	0.04
MAX	27.50	34.64	34.9	357	345	335	20.5	12.68	1.18
MIN	23.66	31.95	33.3	336	322	310	17.5	11.54	1.02
#BLS	16	16	16	16	16	16	16	16	16

DRIVEN (14-Aug-07 : BV171R.Q01)

GTR

09-Aug-07

Bayside Village, #232, PP9.63x.352"



Pile: #232
Info: PP9.63x.352"
AR: 10.3 in^2
LE: 107.0 ft

Proj: Bayside Village
SP: 0.492 k/ft^3
WS: 16810 ft/s
EM: 30000 KSI

EMX: Max Transferred Energy
STK: Stroke (O.E.Diesels)
DMX: Max Meas'd Displacement
CSB: Max Meas C-Toe Stress
CSX: Max Measured C-Stress

BPM: Blows Per Minute
RX5: RMX Capacity (J=0.5)
RX7: RMX Capacity (J=0.7)
RX9: RMX Capacity (J=0.9)

BL#	depth ft	EMX kips-ft	STK ft	DMX inch	CSB ksi	CSX ksi	BPM bl/min	RX5 kips	RX7 kips	RX9 kips	BLC bl/ft
4		16.9	10.63	1.13	28.55	31.59	36.3	382	362	352	233
5		18.0	11.28	1.19	30.51	32.49	35.3	391	372	360	233
6		18.7	11.65	1.22	31.13	33.36	34.8	400	381	368	233
7		19.4	11.91	1.24	32.04	33.71	34.4	408	387	375	233
8		19.7	11.98	1.24	31.87	34.31	34.3	414	394	382	233
9	76.03	18.1	12.17	1.14	32.85	36.35	34.0	411	402	397	233

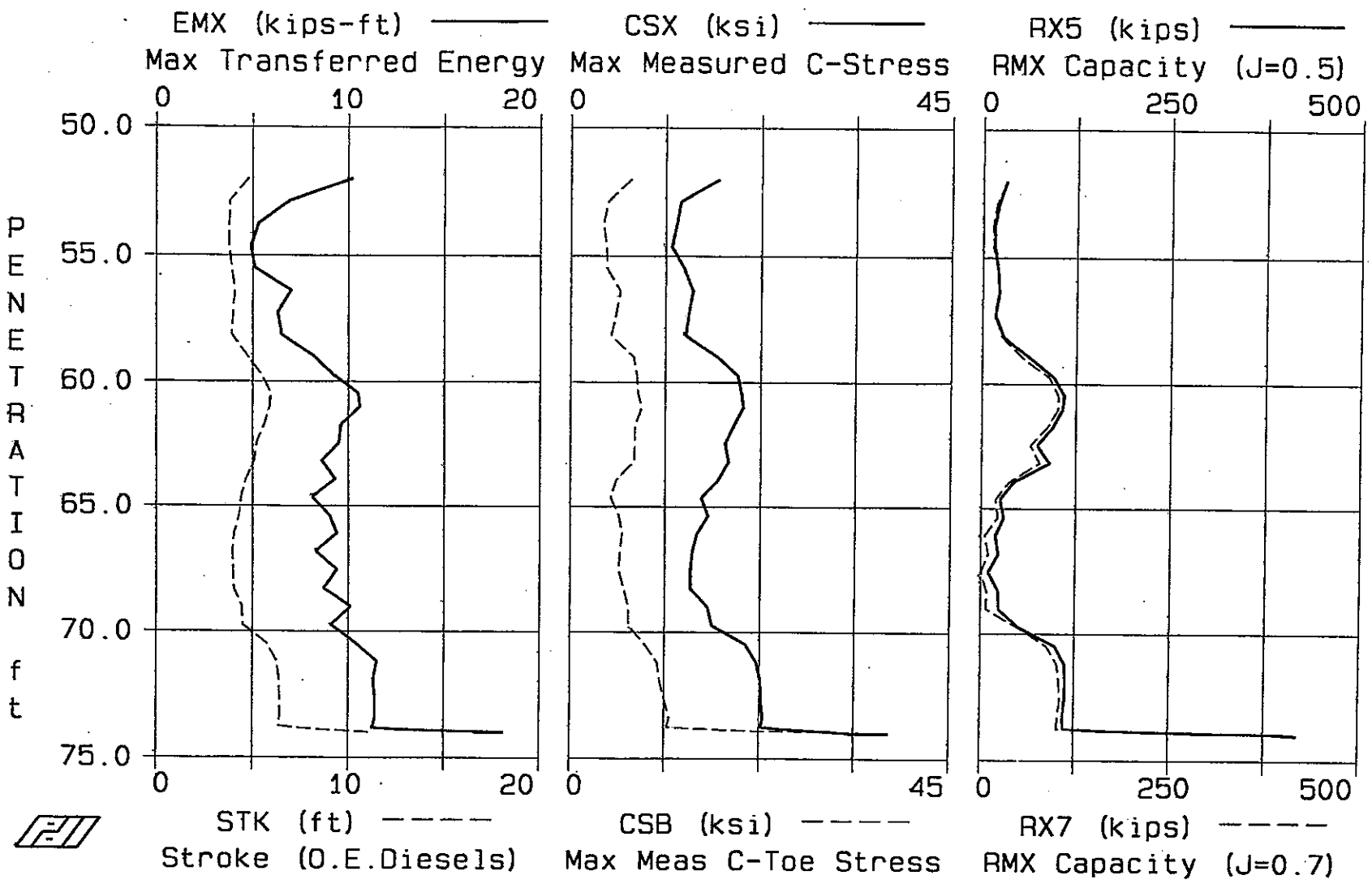
	EMX	STK	DMX	CSB	CSX	BPM	RX5	RX7	RX9
AVG	18.5	11.60	1.19	31.16	33.63	34.9	401	383	372
STD	1.0	0.57	0.05	1.51	1.64	0.8	12	15	16
MAX	19.7	12.17	1.24	32.85	36.35	36.3	414	402	397
MIN	16.9	10.63	1.13	28.55	31.59	34.0	382	362	352
#BLS	6	6	6	6	6	6	6	6	6

DRIVEN (09-Aug-07 : BV232D.MDF)

GTR

09-Aug-07

Bayside Village, #251, PP9.63x.352"



Pile: #251
Info: PP9.63x.352"
AR: 10.3 in^2
LE: 107.0 ft

Proj: Bayside Village
SP: 0.492 k/ft^3
WS: 16810 ft/s
EM: 30000 KSI

CSB: Max Meas C-Toe Stress
CSX: Max Measured C-Stress
BPM: Blows Per Minute
RX5: RMX Capacity (J=0.5)
RX7: RMX Capacity (J=0.7)

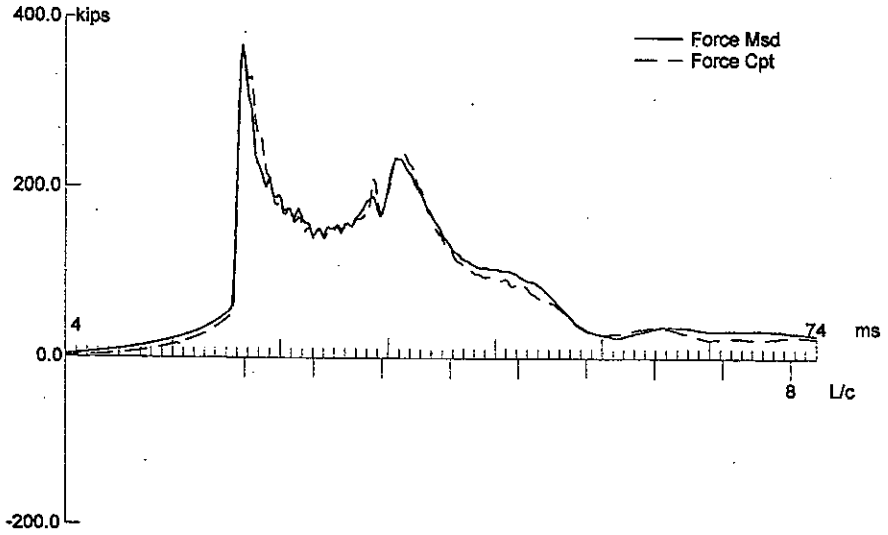
RX9: RMX Capacity (J=0.9)
EMX: Max Transferred Energy
STK: Stroke (O.E.Diesels)
DMX: Max Meas'd Displacement

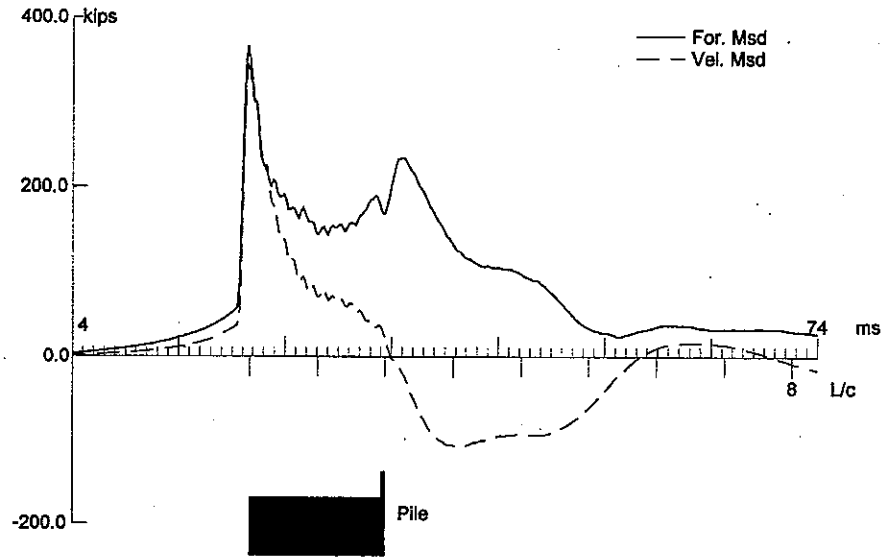
BL#	depth ft	CSB ksi	CSX ksi	BPM bl/min	RX5 kips	RX7 kips	RX9 kips	EMX kips-ft	STK ft	DMX inch	BLC bl/ft
130		27.12	30.90	38.5	343	335	328	14.8	9.43	1.03	174
131		28.84	31.18	38.1	359	352	345	15.0	9.66	1.05	174
132		30.02	31.33	37.8	375	368	361	15.4	9.82	1.05	174
133		30.76	31.54	37.6	382	372	365	15.6	9.93	1.06	174
134		32.51	31.79	37.2	392	381	373	16.3	10.12	1.10	174
135		32.52	31.38	37.1	395	382	374	16.3	10.16	1.09	174
136		33.16	32.00	36.9	397	383	375	16.5	10.33	1.11	174
137		34.00	32.35	36.5	403	389	379	17.2	10.53	1.12	174
138		34.69	32.83	36.3	407	393	382	17.5	10.66	1.14	174
139		34.84	32.68	36.1	409	394	382	17.5	10.78	1.15	174
140		35.46	33.17	35.8	416	401	389	18.1	10.95	1.16	174
141		35.81	33.36	35.7	415	399	387	18.0	11.03	1.15	174
142		35.98	33.11	35.7	418	404	391	17.9	11.01	1.15	174
143	74.00	36.34	37.86	35.9	419	410	406	16.6	10.87	1.07	174

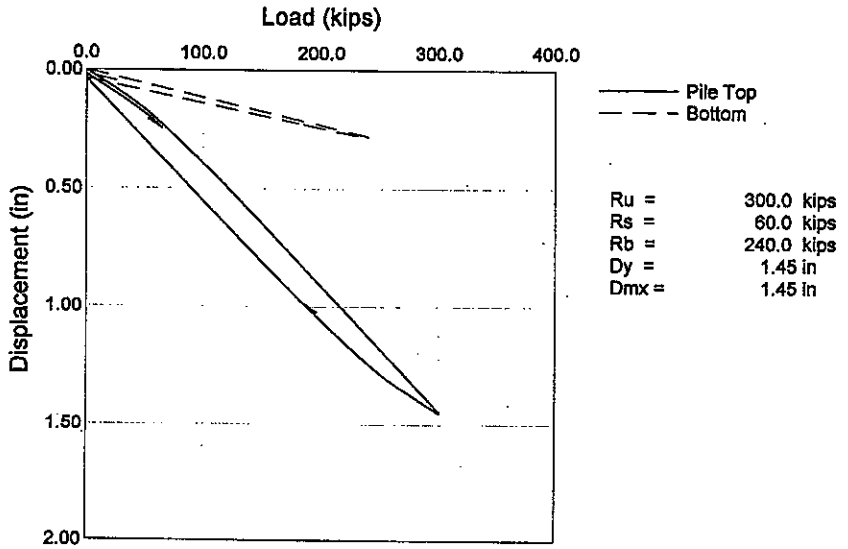
	CSB	CSX	BPM	RX5	RX7	RX9	EMX	STK	DMX
AVG	33.00	32.53	36.8	395	383	374	16.6	10.38	1.10
STD	2.88	1.73	0.9	23	21	20	1.1	0.53	0.04
MAX	36.34	37.86	38.5	419	410	406	18.1	11.03	1.16
MIN	27.12	30.90	35.7	343	335	328	14.8	9.43	1.03
#BLS	14	14	14	14	14	14	14	14	14

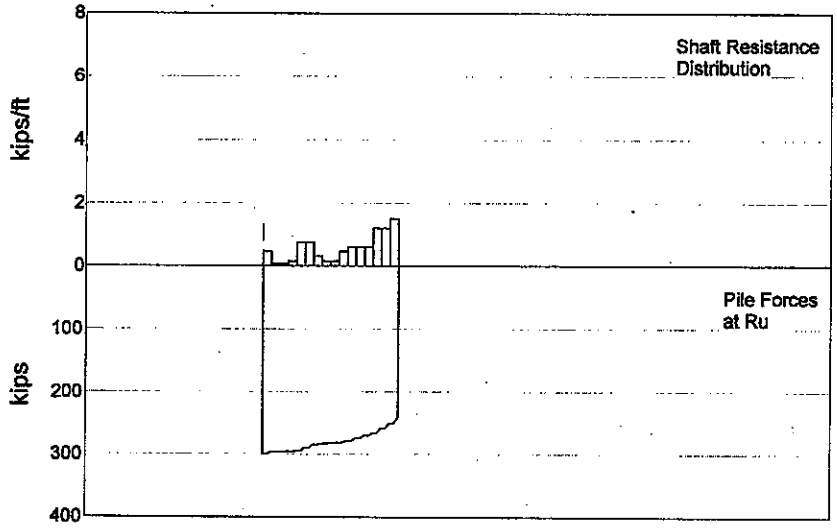
DRIVEN (09-Aug-07 : BV251F.Q01)

APPENDIX C
CAPWAP RESULTS


400.0 kips
200.0
0.0
-200.0
4
74 ms
8 L/c
Force Msd
Force Cpt


400.0 kips
200.0
0.0
-200.0
4
74 ms
8 L/c
For. Msd
Vel. Msd
Pile


Load (kips)
0.0
100.0
200.0
300.0
400.0
0.00
0.50
1.00
1.50
2.00
Displacement (in)
Pile Top
Bottom
Ru = 300.0 kips
Rs = 60.0 kips
Rb = 240.0 kips
Dy = 1.45 in
Dmx = 1.45 in


kips/ft
8
6
4
2
0
kips
100
200
300
400
Shaft Resistance Distribution
Pile Forces at Ru

CAPWAP FINAL RESULTS

Total CAPWAP Capacity: 300.0; along Shaft 60.0; at Toe 240.0 kips

Soil Sgmnt No.	Dist. Below Gages ft	Depth Below Grade ft	Ru kips	Force in Pile kips	Sum of Ru kips	Unit Resist. (Depth) kips/ft	Unit Resist. (Area) ksf	Smith Damping Factor s/ft	Quake in
				300.0					
1	6.7	5.7	3.0	297.0	3.0	0.45	0.18	0.190	0.100
2	13.4	12.4	0.5	296.5	3.5	0.07	0.03	0.190	0.100
3	20.1	19.1	0.5	296.0	4.0	0.07	0.03	0.190	0.100
4	26.7	25.8	1.0	295.0	5.0	0.15	0.06	0.190	0.100
5	33.4	32.4	5.0	290.0	10.0	0.75	0.30	0.190	0.100
6	40.1	39.1	5.0	285.0	15.0	0.75	0.30	0.190	0.100
7	46.8	45.8	2.0	283.0	17.0	0.30	0.12	0.190	0.100
8	53.5	52.5	1.0	282.0	18.0	0.15	0.06	0.190	0.100
9	60.2	59.2	1.0	281.0	19.0	0.15	0.06	0.190	0.100
10	66.9	65.9	3.0	278.0	22.0	0.45	0.18	0.190	0.100
11	73.6	72.6	4.0	274.0	26.0	0.60	0.24	0.190	0.100
12	80.3	79.3	4.0	270.0	30.0	0.60	0.24	0.190	0.100
13	86.9	85.9	4.0	266.0	34.0	0.60	0.24	0.190	0.100
14	93.6	92.6	8.0	258.0	42.0	1.20	0.47	0.190	0.100
15	100.3	99.3	8.0	250.0	50.0	1.20	0.47	0.190	0.100
16	107.0	106.0	10.0	240.0	60.0	1.50	0.59	0.190	0.100
Avg. Skin			3.8			0.57	0.22	0.190	0.100
Toe			240.0				474.73	0.061	0.280

Soil Model Parameters/Extensions		Skin	Toe
Case Damping Factor		0.621	0.799
Unloading Quake	(% of loading quake)	200	89
Reloading Level	(% of Ru)	98	99
Unloading Level	(% of Ru)	0	

CAPWAP match quality: 1.95(Force Match)
Observed: final set = 0.056 in; blow count = 216 b/ft
Computed: final set = 0.050 in; blow count = 242 b/ft

EXTREMA TABLE

Pile Sgmnt No.	Dist. Below Gages ft	max. Force kips	min. Force kips	max. Comp. Stress ksi	max. Tens. Stress ksi	max. Trnsfd. Energy kip-ft	max. Veloc. ft/s	max. Displ. in
1	3.3	366.6	0.0	35.752	0.000	20.11	18.9	1.151
2	6.7	372.1	0.0	36.295	0.000	20.07	18.7	1.126
4	13.4	360.2	0.0	35.128	0.000	18.82	18.5	1.069
6	20.1	359.7	0.0	35.085	0.000	18.15	18.4	1.011
8	26.7	360.4	0.0	35.153	0.000	17.56	18.1	0.956
10	33.4	364.7	0.0	35.567	0.000	16.87	17.6	0.901
12	40.1	351.3	0.0	34.268	0.000	15.42	17.1	0.847
14	46.8	334.0	0.0	32.579	0.000	14.04	16.8	0.795
16	53.5	328.0	0.0	31.992	0.000	13.28	16.6	0.744
18	60.2	326.8	-0.0	31.873	-0.000	12.69	16.3	0.692
20	66.9	328.2	-2.1	32.013	-0.204	12.09	16.0	0.639
22	73.6	323.6	-4.2	31.565	-0.412	11.19	15.5	0.585
23	76.9	311.5	-5.0	30.382	-0.483	10.42	15.2	0.557
24	80.3	315.5	-6.3	30.771	-0.616	10.16	15.0	0.528
25	83.6	303.9	-6.9	29.645	-0.672	9.42	14.7	0.498
26	86.9	308.4	-8.0	30.079	-0.785	9.11	14.5	0.467
27	90.3	301.9	-8.7	29.445	-0.844	8.43	14.1	0.437
28	93.6	310.6	-9.8	30.293	-0.951	8.12	13.7	0.405
29	97.0	295.3	-9.6	28.807	-0.934	7.13	13.3	0.373
30	100.3	315.9	-9.8	30.810	-0.958	6.80	11.9	0.341
31	103.7	284.0	-9.2	27.704	-0.895	5.95	12.5	0.309
32	107.0	306.1	-9.0	20.504	-0.603	5.56	12.4	0.287
Absolute	6.7			36.295			(T =	21.1 ms)
	100.3				-0.958		(T =	58.3 ms)

CASE METHOD

J =	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
RS1	429.6	400.3	370.9	341.6	312.3	283.0	253.6	224.3	195.0	165.7
RMX	429.6	400.3	370.9	345.6	325.6	305.6	290.8	282.4	276.1	273.1
RSU	429.6	400.3	370.9	341.6	312.3	283.0	253.6	224.3	195.0	165.7

RAU= 257.9 (kips); RA2= 306.1 (kips)

Current CAPWAP Ru= 300.0 (kips); Corresponding J(Rs)= 0.44; J(Rx)=0.54

VMX	VFN	VT1*Z	FT1	FMX	DMX	DFN	EMX	RLT
ft/s	ft/s	kips	kips	kips	in	in	kip-ft	kips
19.30	0.00	353.4	369.4	369.4	1.177	0.051	20.0	390.9

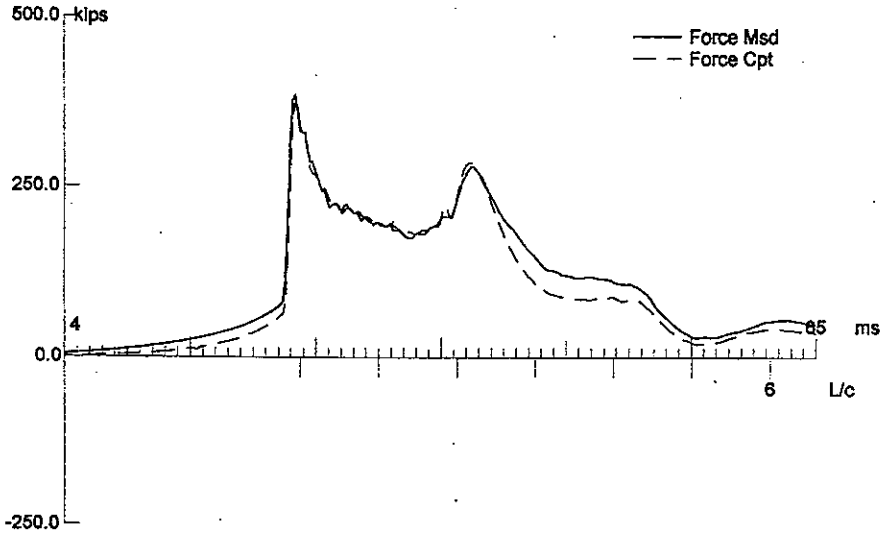
PILE PROFILE AND PILE MODEL

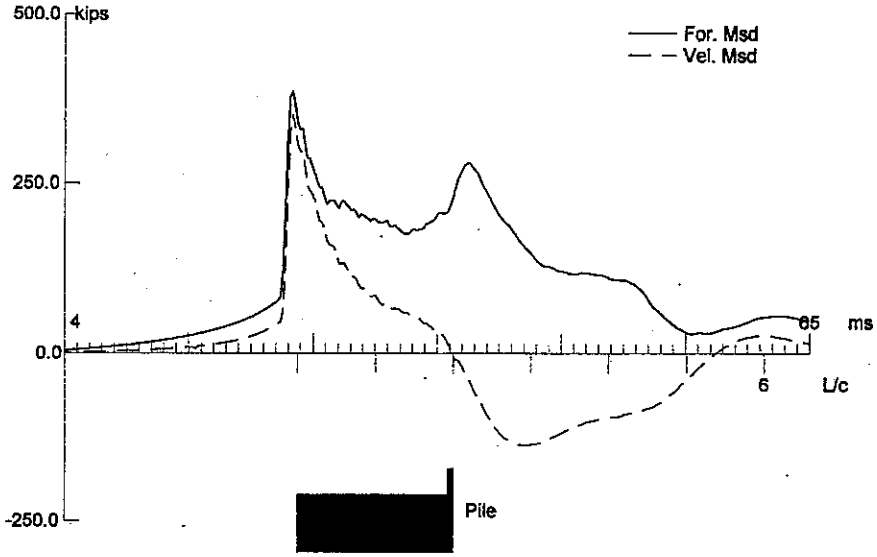
Depth ft	Area in^2	E-Modulus ksi	Spec. Weight lb/ft^3	Circumf. ft
0.00	10.25	30016.4	492.271	2.520
106.75	10.25	30016.4	492.271	2.520
106.75	72.80	30016.4	492.271	2.520
107.00	72.80	30016.4	492.271	2.520

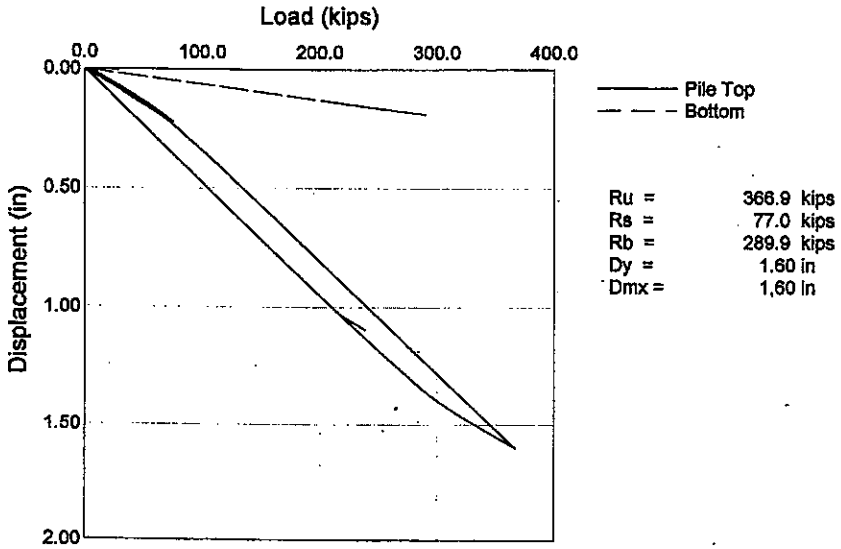
Toe Area 0.506 ft^2

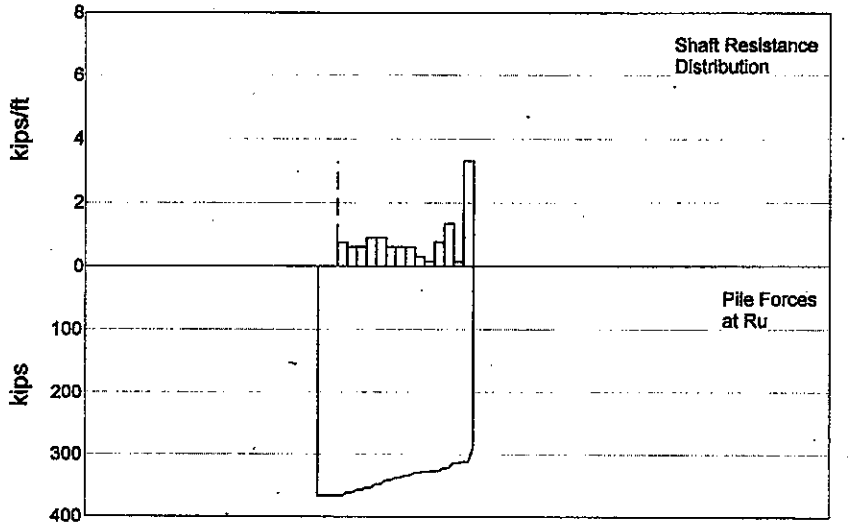
Segmnt Number	Dist. B.G. ft	Impedance kips/ft/s	Imped. Change %	Tension Slack in	Tension Eff.	Compression Slack in	Compression Eff.	Circ. ft
1	3.34	18.31	0.00	0.000	0.000	0.000	0.000	2.520
32	107.00	26.66	0.00	0.000	0.000	0.000	0.000	2.520

Pile Damping 1.0 %, Time Incr 0.199 ms, Wave Speed 16810.0 ft/s


500.0 kips
250.0
0.0
-250.0
4
6
L/c
65 ms
Force Msd
Force Cpt


500.0 kips
250.0
0.0
-250.0
4
6
L/c
65 ms
For. Msd
Vel. Msd
Pile


Load (kips)
0.0
100.0
200.0
300.0
400.0
0.00
0.50
1.00
1.50
2.00
Displacement (in)
Pile Top
Bottom
Ru = 366.9 kips
Rs = 77.0 kips
Rb = 289.9 kips
Dy = 1.60 in
Dmx = 1.60 in


kips/ft
8
6
4
2
0
kips
100
200
300
400
Shaft Resistance Distribution
Pile Forces at Ru

CAPWAP FINAL RESULTS

Total CAPWAP Capacity: 366.9; along Shaft 77.0; at Toe 289.9 kips

Soil Sgmnt No.	Dist. Below Gages ft	Depth Below Grade ft	Ru kips	Force in Pile kips	Sum of Ru kips	Unit Resist. (Depth) kips/ft	Unit Resist. (Area) ksf	Smith Damping Factor s/ft	Quake in
				366.9					
1	20.1	3.6	5.0	361.9	5.0	0.75	0.30	0.210	0.110
2	26.7	10.3	4.0	357.9	9.0	0.60	0.24	0.210	0.110
3	33.4	16.9	4.0	353.9	13.0	0.60	0.24	0.210	0.110
4	40.1	23.6	6.0	347.9	19.0	0.90	0.36	0.210	0.110
5	46.8	30.3	6.0	341.9	25.0	0.90	0.36	0.210	0.110
6	53.5	37.0	4.0	337.9	29.0	0.60	0.24	0.210	0.110
7	60.2	43.7	4.0	333.9	33.0	0.60	0.24	0.210	0.110
8	66.9	50.4	4.0	329.9	37.0	0.60	0.24	0.210	0.110
9	73.6	57.1	2.0	327.9	39.0	0.30	0.12	0.210	0.110
10	80.3	63.8	1.0	326.9	40.0	0.15	0.06	0.210	0.110
11	86.9	70.4	5.0	321.9	45.0	0.75	0.30	0.210	0.110
12	93.6	77.1	9.0	312.9	54.0	1.35	0.54	0.210	0.110
13	100.3	83.8	1.0	311.9	55.0	0.15	0.06	0.210	0.110
14	107.0	90.5	22.0	289.9	77.0	3.29	1.31	0.210	0.110
Avg. Skin			5.5			0.85	0.33	0.210	0.110
Toe			289.9				573.40	0.049	0.190

Soil Model Parameters/Extensions		Skin	Toe
Case Damping Factor		0.883	0.776
Reloading Level	(% of Ru)	0	1
Unloading Level	(% of Ru)	0	

CAPWAP match quality: 3.22 (Force Match)
Observed: final set = 0.056 in; blow count = 216 b/ft
Computed: final set = 0.007 in; blow count = 1744 b/ft

EXTREMA TABLE

Pile Sgmnt No.	Dist. Below Gages ft	max. Force kips	min. Force kips	max. Comp. Stress ksi	max. Tens. Stress ksi	max. Trnsfd. Energy kip-ft	max. Veloc. ft/s	max. Displ. in
1	3.3	374.2	-0.3	36.497	-0.029	22.88	19.1	1.202
2	6.7	376.3	-0.1	36.701	-0.014	22.74	19.0	1.172
4	13.4	378.8	-0.1	36.948	-0.014	22.11	18.8	1.109
6	20.1	389.0	-0.1	37.939	-0.014	21.50	18.2	1.047
8	26.7	373.5	-0.1	36.426	-0.014	19.70	17.7	0.986
10	33.4	363.3	-2.1	35.437	-0.204	18.22	17.2	0.926
12	40.1	356.5	-3.1	34.771	-0.302	16.78	16.5	0.864
14	46.8	340.3	-3.2	33.194	-0.311	15.01	15.8	0.802
16	53.5	322.3	-2.9	31.440	-0.282	13.35	15.3	0.741
18	60.2	313.2	-3.2	30.544	-0.311	12.08	14.9	0.679
20	66.9	304.2	-3.0	29.670	-0.291	10.84	14.4	0.615
22	73.6	292.8	-3.8	28.560	-0.374	9.61	14.1	0.549
23	76.9	286.6	-4.2	27.953	-0.411	9.02	14.0	0.515
24	80.3	288.7	-4.9	28.160	-0.473	8.63	13.8	0.481
25	83.6	289.5	-5.3	28.237	-0.513	8.15	13.5	0.446
26	86.9	294.8	-6.4	28.753	-0.621	7.73	13.2	0.410
27	90.3	290.5	-6.5	28.331	-0.635	6.87	12.8	0.373
28	93.6	296.1	-8.0	28.879	-0.778	6.42	12.3	0.335
29	97.0	294.6	-8.4	28.733	-0.815	5.37	12.1	0.297
30	100.3	302.3	-8.5	29.485	-0.826	4.88	10.9	0.258
31	103.7	312.5	-8.5	30.484	-0.829	4.33	10.7	0.218
32	107.0	339.0	-8.6	22.704	-0.575	3.65	10.2	0.190
Absolute	20.1			37.939			(T =	24.1 ms)
	103.7				-0.829		(T =	60.3 ms)

CASE METHOD

J =	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
RS1	468.1	440.6	413.1	385.5	358.0	330.5	302.9	275.4	247.9	220.3
RMX	468.1	440.6	413.8	395.6	377.4	364.0	354.9	347.3	341.7	336.3
RSU	468.1	440.6	413.1	385.5	358.0	330.5	302.9	275.4	247.9	220.3

RAU= 307.0 (kips); RA2= 383.6 (kips)

Current CAPWAP Ru= 366.9 (kips); Corresponding J(Rs)= 0.37; J(Rx)=0.48

VMX	VFN	VT1*Z	FT1	FMX	DMX	DFN	EMX	RLT
ft/s	ft/s	kips	kips	kips	in	in	kip-ft	kips
19.48	0.00	356.8	386.7	396.8	1.232	0.046	23.9	449.6

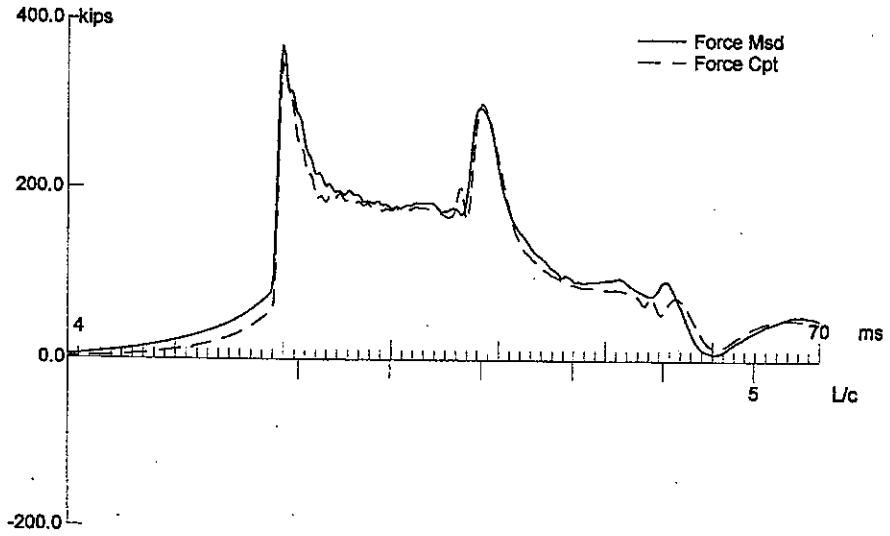
PILE PROFILE AND PILE MODEL

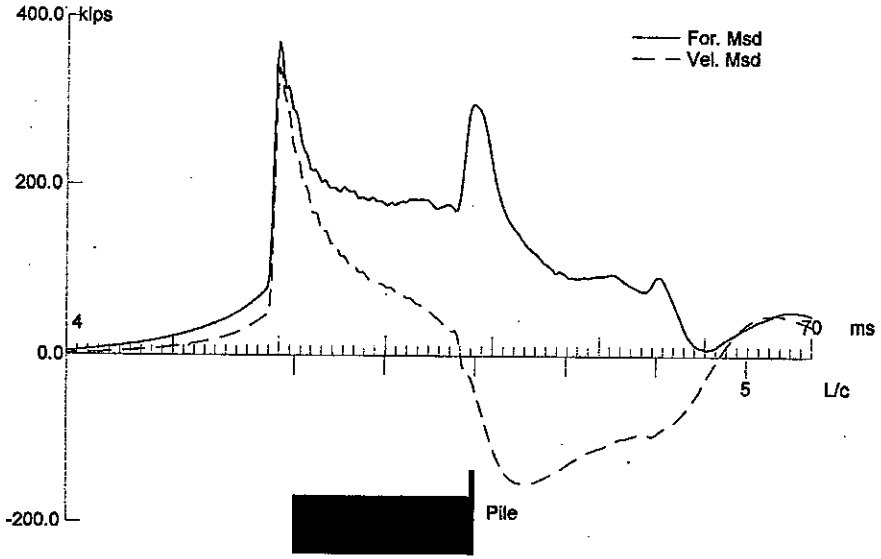
Depth ft	Area in^2	E-Modulus ksi	Spec. Weight lb/ft^3	Circumf. ft
0.00	10.25	30016.4	492.271	2.510
106.75	10.25	30016.4	492.271	2.510
106.75	72.80	30016.4	492.271	2.510
107.00	72.80	30016.4	492.271	2.510

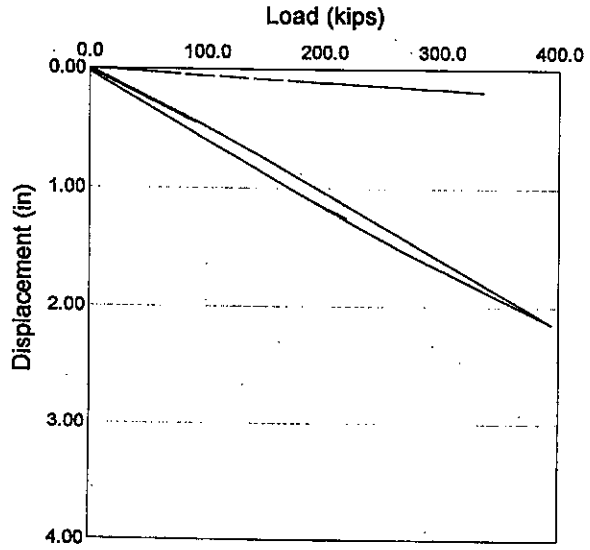
Toe Area 0.506 ft^2

Segmnt Number	Dist. B.G. ft	Impedance kips/ft/s	Imped. Change %	Tension Slack in	Tension Eff.	Compression Slack in	Compression Eff.	Circ. ft
1	3.34	18.31	0.00	0.000	0.000	0.000	0.000	2.510
32	107.00	26.66	0.00	0.000	0.000	0.000	0.000	2.510

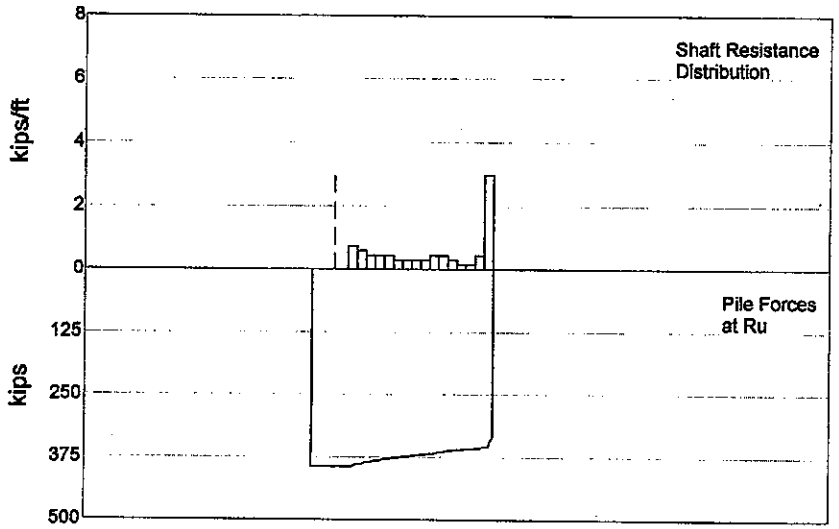
Pile Damping 1.0 %, Time Incr 0.199 ms, Wave Speed 16810.0 ft/s







Ru = 393.9 kips
Rs = 59.0 kips
Rb = 334.9 kips
Dy = 2.15 in
Dmx = 2.15 in



CAPWAP FINAL RESULTS

Total CAPWAP Capacity: 393.9; along Shaft 59.0; at Toe 334.9 kips

Soil Sgmnt No.	Dist. Below Gages ft	Depth Below Grade ft	Ru kips	Force in Pile kips	Sum of Ru kips	Unit Resist. (Depth) kips/ft	Unit Resist. (Area) ksf	Smith Damping Factor s/ft	Quake in
				393.9					
1	33.6	14.1	5.0	388.9	5.0	0.74	0.30	0.245	0.350
2	40.4	20.9	4.0	384.9	9.0	0.59	0.24	0.245	0.350
3	47.1	27.6	3.0	381.9	12.0	0.45	0.18	0.245	0.350
4	53.8	34.3	3.0	378.9	15.0	0.45	0.18	0.245	0.350
5	60.5	41.0	3.0	375.9	18.0	0.45	0.18	0.245	0.350
6	67.2	47.8	2.0	373.9	20.0	0.30	0.12	0.245	0.350
7	74.0	54.5	2.0	371.9	22.0	0.30	0.12	0.245	0.350
8	80.7	61.2	2.0	369.9	24.0	0.30	0.12	0.245	0.350
9	87.4	67.9	2.0	367.9	26.0	0.30	0.12	0.245	0.350
10	94.2	74.7	3.0	364.9	29.0	0.45	0.18	0.245	0.350
11	100.9	81.4	3.0	361.9	32.0	0.45	0.18	0.245	0.350
12	107.6	88.1	2.0	359.9	34.0	0.30	0.12	0.245	0.350
13	114.3	94.8	1.0	358.9	35.0	0.15	0.06	0.245	0.350
14	121.1	101.6	1.0	357.9	36.0	0.15	0.06	0.245	0.350
15	127.8	108.3	3.0	354.9	39.0	0.45	0.18	0.245	0.262
16	134.5	115.0	20.0	334.9	59.0	2.97	1.18	0.245	0.172
Avg. Skin			3.7			0.51	0.22	0.245	0.285
Toe			334.9				662.39	0.031	0.190

Soil Model Parameters/Extensions		Skin	Toe
Case Damping Factor		0.789	0.567
Reloading Level	(% of Ru)	100	100
Unloading Level	(% of Ru)	24	

CAPWAP match quality: 2.68(Force Match)
Observed: final set = 0.018 in; blow count = 672 b/ft
Computed: final set = 0.019 in; blow count = 631 b/ft

EXTREMA TABLE

Pile Sgmnt No.	Dist. Below Gages ft	max. Force kips	min. Force kips	max. Comp. Stress ksi	max. Tens. Stress ksi	max. Trnsfd. Energy kip-ft	max. Veloc. ft/s	max. Displ. in
1	3.4	349.7	-0.3	34.107	-0.029	24.11	18.5	1.450
2	6.7	350.4	-0.1	34.177	-0.014	24.02	18.4	1.422
4	13.5	350.7	-0.1	34.203	-0.014	23.49	18.3	1.365
6	20.2	351.1	-4.2	34.249	-0.413	23.01	18.2	1.310
8	26.9	352.0	-7.5	34.333	-0.734	22.47	18.0	1.251
10	33.6	362.1	-9.7	35.315	-0.950	21.87	17.3	1.190
12	40.4	345.9	-9.5	33.741	-0.922	19.88	16.8	1.128
14	47.1	333.3	-8.9	32.505	-0.872	18.25	16.4	1.066
16	53.8	325.7	-8.5	31.767	-0.828	16.92	16.0	1.004
18	60.5	318.5	-8.9	31.068	-0.868	15.65	15.5	0.943
20	67.2	310.6	-9.7	30.294	-0.944	14.43	15.2	0.882
22	74.0	306.7	-10.5	29.915	-1.024	13.44	15.0	0.821
24	80.7	303.6	-10.6	29.616	-1.032	12.45	14.7	0.758
26	87.4	300.9	-10.2	29.352	-0.996	11.49	14.3	0.695
28	94.2	299.8	-9.6	29.243	-0.936	10.52	14.0	0.630
30	100.9	299.1	-8.6	29.170	-0.838	9.40	13.6	0.563
32	107.6	304.3	-7.4	29.676	-0.724	8.31	13.3	0.495
34	114.3	306.0	-6.7	29.844	-0.653	7.34	13.0	0.425
36	121.1	310.1	-7.0	30.246	-0.687	6.38	12.6	0.351
38	127.8	329.4	-10.3	32.127	-1.002	5.22	11.0	0.268
39	131.1	344.3	-10.2	33.577	-0.991	4.46	11.6	0.223
40	134.5	371.9	-9.9	24.954	-0.667	3.77	11.0	0.192
Absolute	33.6			35.315			(T =	25.0 ms)
	80.7				-1.032		(T =	61.0 ms)

CASE METHOD

J =	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
RS1	453.9	426.4	399.0	371.5	344.1	316.6	289.2	261.7	234.3	206.8
RMX	458.5	443.6	428.6	414.5	400.6	387.8	379.5	371.8	364.3	357.8
RSU	453.9	426.4	399.0	371.5	344.1	316.6	289.2	261.7	234.3	206.8

RAU= 157.1 (kips); RA2= 392.0 (kips)

Current CAPWAP Ru= 393.9 (kips); Corresponding J(Rs)= 0.22; J(Rx)=0.45

VMX	VFN	VT1*Z	FT1	FMX	DMX	DFN	EMX	RLT
ft/s	ft/s	kips	kips	kips	in	in	kip-ft	kips
18.91	0.00	346.3	382.1	382.1	1.474	0.018	26.3	423.0

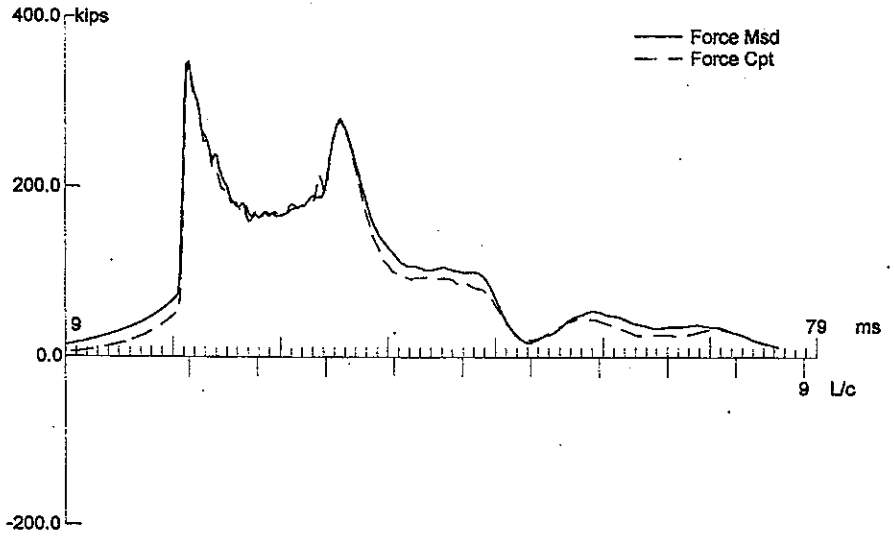
PILE PROFILE AND PILE MODEL

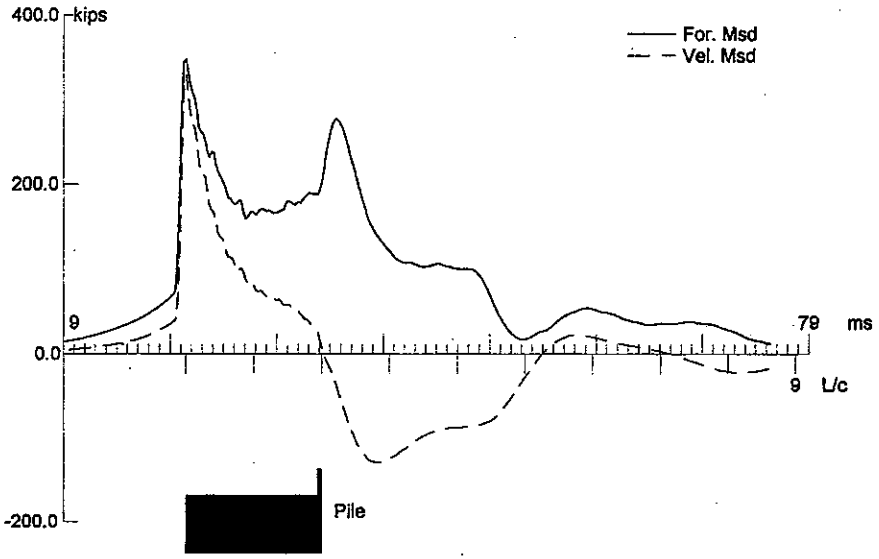
Depth ft	Area in^2	E-Modulus ksi	Spec. Weight lb/ft^3	Circumf. ft
0.00	10.25	30016.4	492.271	2.510
134.25	10.25	30016.4	492.271	2.510
134.25	72.80	30016.4	492.271	2.510
134.50	72.80	30016.4	492.271	2.510

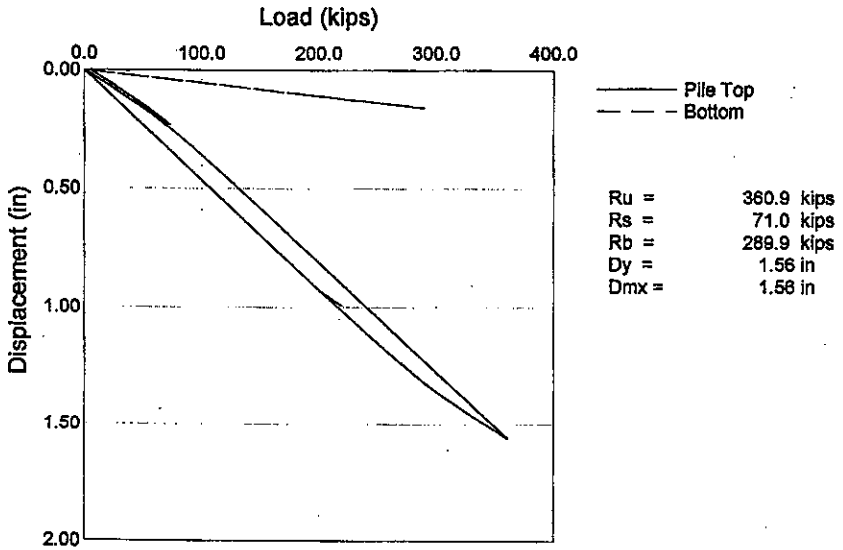
Toe Area 0.506 ft^2

Segmnt Number	Dist. B.G. ft	Impedance kips/ft/s	Imped. Change %	Tension Slack in	Tension Eff.	Compression Slack in	Compression Eff.	Circ. ft
1	3.36	18.31	0.00	0.000	0.000	0.000	0.000	2.510
40	134.50	26.61	0.00	0.000	0.000	0.000	0.000	2.510

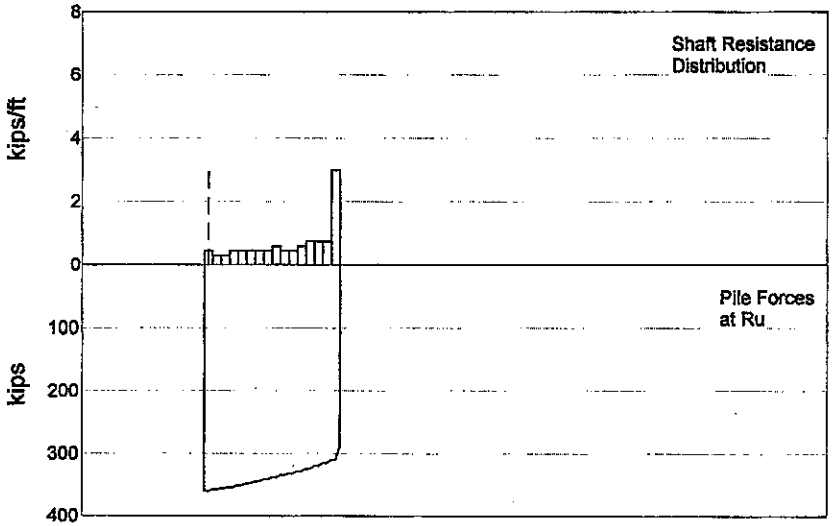
Pile Damping 1.0 %, Time Incr 0.200 ms, Wave Speed 16810.0 ft/s







Ru = 360.9 kips
Rs = 71.0 kips
Rb = 289.9 kips
Dy = 1.56 in
Dmx = 1.56 in



CAPWAP FINAL RESULTS

Total CAPWAP Capacity: 360.9; along Shaft 71.0; at Toe 289.9 kips

Soil Sgmnt No.	Dist. Below Gages ft	Depth Below Grade ft	Ru kips	Force in Pile kips	Sum of Ru kips	Unit Resist. (Depth) kips/ft	Unit Resist. (Area) ksf	Smith Damping Factor s/ft	Quake in
				360.9					
1	6.7	1.7	3.0	357.9	3.0	0.45	0.18	0.223	0.150
2	13.4	8.4	2.0	355.9	5.0	0.30	0.12	0.223	0.150
3	20.1	15.1	2.0	353.9	7.0	0.30	0.12	0.223	0.150
4	26.7	21.8	3.0	350.9	10.0	0.45	0.18	0.223	0.150
5	33.4	28.4	3.0	347.9	13.0	0.45	0.18	0.223	0.150
6	40.1	35.1	3.0	344.9	16.0	0.45	0.18	0.223	0.150
7	46.8	41.8	3.0	341.9	19.0	0.45	0.18	0.223	0.150
8	53.5	48.5	3.0	338.9	22.0	0.45	0.18	0.223	0.150
9	60.2	55.2	4.0	334.9	26.0	0.60	0.24	0.223	0.150
10	66.9	61.9	3.0	331.9	29.0	0.45	0.18	0.223	0.150
11	73.6	68.6	3.0	328.9	32.0	0.45	0.18	0.223	0.150
12	80.3	75.3	4.0	324.9	36.0	0.60	0.24	0.223	0.150
13	86.9	81.9	5.0	319.9	41.0	0.75	0.30	0.223	0.150
14	93.6	88.6	5.0	314.9	46.0	0.75	0.30	0.223	0.150
15	100.3	95.3	5.0	309.9	51.0	0.75	0.30	0.223	0.150
16	107.0	102.0	20.0	289.9	71.0	2.99	1.19	0.223	0.150
Avg. Skin			4.4			0.70	0.26	0.223	0.150
Toe			289.9				573.71	0.052	0.160

Soil Model Parameters/Extensions		Skin	Toe
Case Damping Factor		0.864	0.819
Reloading Level	(% of Ru)	92	97
Unloading Level	(% of Ru)	0	

CAPWAP match quality: 2.26(Force Match)
Observed: final set = 0.042 in; blow count = 288 b/ft
Computed: final set = 0.019 in; blow count = 621 b/ft

EXTREMA TABLE

Pile Sgmnt No.	Dist. Below Gages ft	max. Force kips	min. Force kips	max. Comp. Stress ksi	max. Tens. Stress ksi	max. Trnsfd. Energy kip-ft	max. Veloc. ft/s	max. Displ. in
1	3.3	347.0	-0.3	33.840	-0.029	19.22	17.7	1.106
2	6.7	353.9	-0.1	34.514	-0.014	19.10	17.5	1.076
4	13.4	344.1	-0.1	33.564	-0.014	17.79	17.2	1.017
6	20.1	339.5	-0.1	33.113	-0.014	16.80	16.9	0.960
8	26.7	336.6	-0.1	32.835	-0.014	15.83	16.5	0.902
10	33.4	329.3	-0.1	32.118	-0.014	14.70	16.1	0.845
12	40.1	322.2	-0.1	31.423	-0.014	13.62	15.7	0.788
14	46.8	315.3	-0.1	30.752	-0.014	12.58	15.3	0.732
16	53.5	308.7	-0.1	30.112	-0.014	11.60	14.9	0.676
18	60.2	304.1	-0.1	29.660	-0.014	10.65	14.4	0.620
20	66.9	294.0	-0.2	28.679	-0.021	9.57	14.0	0.562
22	73.6	289.0	-1.1	28.185	-0.106	8.65	13.6	0.503
23	76.9	281.9	-1.6	27.491	-0.152	8.02	13.4	0.472
24	80.3	285.9	-2.7	27.882	-0.259	7.71	13.1	0.441
25	83.6	276.4	-3.0	26.962	-0.297	7.00	12.8	0.408
26	86.9	281.1	-4.3	27.419	-0.421	6.64	12.6	0.375
27	90.3	278.9	-4.9	27.201	-0.482	5.89	12.3	0.340
28	93.6	285.3	-6.1	27.824	-0.600	5.47	12.0	0.304
29	97.0	291.6	-5.9	28.441	-0.574	4.74	11.6	0.267
30	100.3	301.9	-5.8	29.443	-0.567	4.27	10.3	0.228
31	103.7	310.7	-5.4	30.305	-0.525	3.58	10.1	0.189
32	107.0	330.6	-5.4	22.150	-0.361	3.09	9.4	0.161
Absolute	6.7			34.514			(T =	21.1 ms)
	93.6				-0.600		(T =	56.9 ms)

CASE METHOD

J =	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
RS1	441.3	416.6	391.9	367.2	342.5	317.8	293.1	268.4	243.7	219.0
RMX	441.3	416.6	395.7	381.1	367.2	358.6	351.2	344.4	337.7	331.1
RSU	441.3	416.6	391.9	367.2	342.5	317.8	293.1	268.4	243.7	219.0

RAU= 281.1 (kips); RA2= 368.3 (kips)

Current CAPWAP Ru= 360.9 (kips); Corresponding J(Rs)= 0.33; J(Rx)=0.47

VMX	VFN	VT1*Z	FT1	FMX	DMX	DFN	EMX	RLT
ft/s	ft/s	kips	kips	kips	in	in	kip-ft	kips
18.31	0.00	335.3	353.1	355.6	1.133	0.041	20.3	414.8

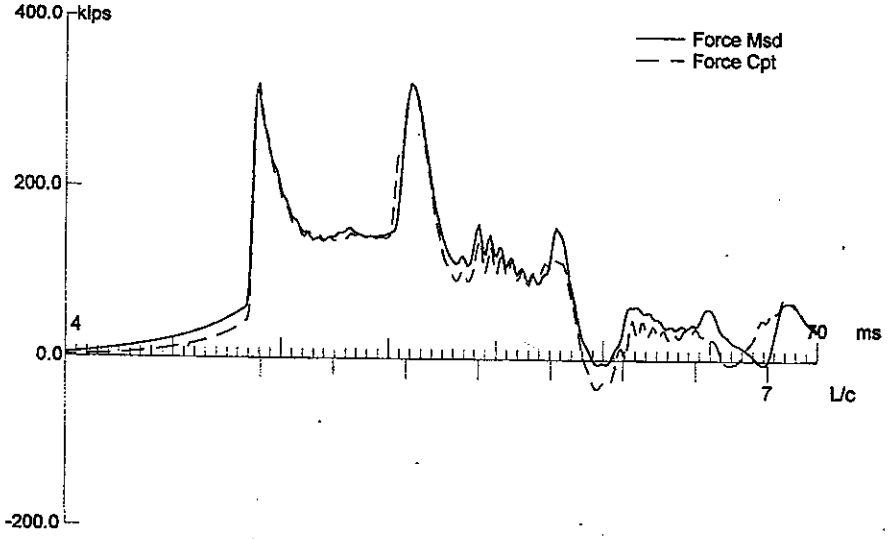
PILE PROFILE AND PILE MODEL

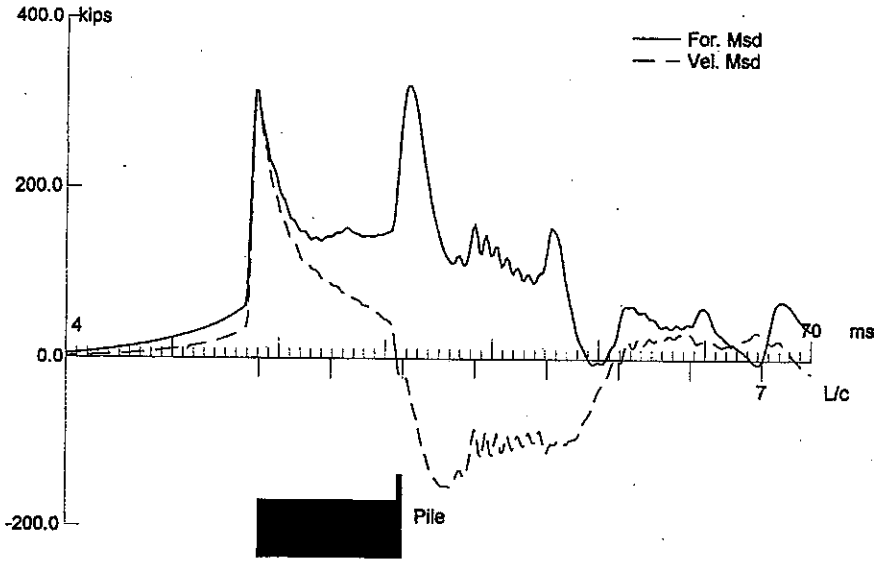
Depth ft	Area in^2	E-Modulus ksi	Spec. Weight lb/ft^3	Circumf. ft
0.00	10.25	30016.4	492.271	2.520
106.75	10.25	30016.4	492.271	2.520
106.75	72.76	30016.4	492.271	2.520
107.00	72.76	30016.4	492.271	2.520

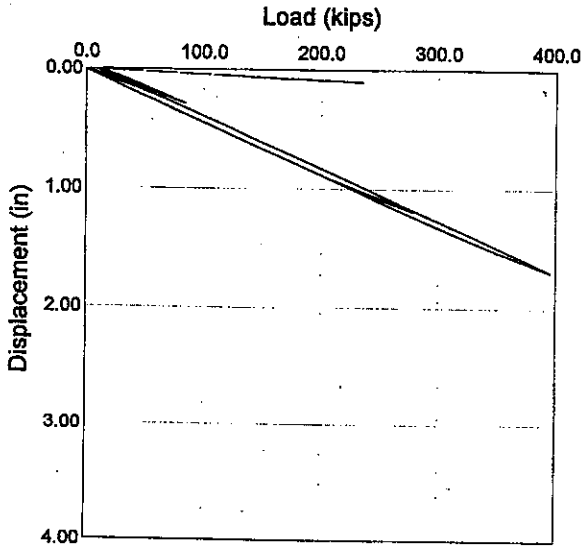
Toe Area 0.505 ft^2

Segmnt Number	Dist. B.G. ft	Impedance kips/ft/s	Imped. Change %	Tension Slack in	Tension Eff.	Compression Slack in	Compression Eff.	Circ. ft
1	3.34	18.31	0.00	0.000	0.000	0.000	0.000	2.520
32	107.00	26.66	0.00	0.000	0.000	0.000	0.000	2.520

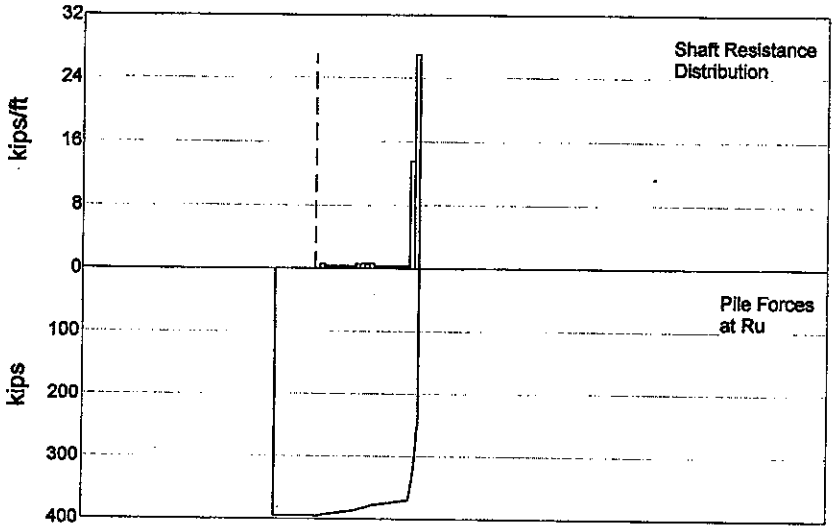
Pile Damping 1.0 %, Time Incr 0.199 ms, Wave Speed 16810.0 ft/s







Ru =	395.0 kips
Rs =	160.0 kips
Rb =	235.0 kips
Dy =	1.69 in
Dmx =	1.69 in



CAPWAP FINAL RESULTS

Total CAPWAP Capacity: 395.0; along Shaft 160.0; at Toe 235.0 kips

Soil Sgmnt No.	Dist. Below Gages ft	Depth Below Grade ft	Ru kips	Force in Pile kips	Sum of Ru kips	Unit Resist. (Depth) kips/ft	Unit Resist. (Area) ksf	Smith Damping Factor s/ft	Quake in
				395.0					
1	36.8	3.8	2.0	393.0	2.0	0.60	0.24	0.170	0.100
2	40.1	7.1	1.0	392.0	3.0	0.30	0.12	0.170	0.100
3	43.5	10.5	1.0	391.0	4.0	0.30	0.12	0.170	0.100
4	46.8	13.8	1.0	390.0	5.0	0.30	0.12	0.170	0.100
5	50.2	17.2	1.0	389.0	6.0	0.30	0.12	0.170	0.100
6	53.5	20.5	1.0	388.0	7.0	0.30	0.12	0.170	0.100
7	56.8	23.8	1.0	387.0	8.0	0.30	0.12	0.170	0.100
8	60.2	27.2	1.0	386.0	9.0	0.30	0.12	0.170	0.100
9	63.5	30.5	2.0	384.0	11.0	0.60	0.24	0.170	0.100
10	66.9	33.9	2.0	382.0	13.0	0.60	0.24	0.170	0.100
11	70.2	37.2	2.0	380.0	15.0	0.60	0.24	0.170	0.100
12	73.6	40.6	2.0	378.0	17.0	0.60	0.24	0.170	0.100
13	76.9	43.9	1.0	377.0	18.0	0.30	0.12	0.170	0.100
14	80.3	47.3	1.0	376.0	19.0	0.30	0.12	0.170	0.100
15	83.6	50.6	1.0	375.0	20.0	0.30	0.12	0.170	0.100
16	86.9	53.9	1.0	374.0	21.0	0.30	0.12	0.170	0.100
17	90.3	57.3	1.0	373.0	22.0	0.30	0.12	0.170	0.100
18	93.6	60.6	1.0	372.0	23.0	0.30	0.12	0.170	0.100
19	97.0	64.0	1.0	371.0	24.0	0.30	0.12	0.170	0.100
20	100.3	67.3	1.0	370.0	25.0	0.30	0.12	0.170	0.100
21	103.7	70.7	45.0	325.0	70.0	13.46	5.36	0.170	0.100
22	107.0	74.0	90.0	235.0	160.0	26.91	10.72	0.170	0.100
Avg. Skin			7.3			2.16	0.87	0.170	0.100
Toe			235.0				464.79	0.050	0.100

Soil Model Parameters/Extensions		Skin	Toe
Case Damping Factor		1.485	0.641
Reloading Level	(% of Ru)	98	99
Unloading Level	(% of Ru)	10	

CAPWAP match quality:	4.23 (Force Match)	
Observed: final set =	0.050 in; blow count =	240 b/ft
Computed: final set =	0.004 in; blow count =	3048 b/ft

EXTREMA TABLE

Pile Sgmnt No.	Dist. Below Gages ft	max. Force kips	min. Force kips	max. Comp. Stress ksi	max. Tens. Stress ksi	max. Trnsfd. Energy kip-ft	max. Veloc. ft/s	max. Displ. in
1	3.3	321.8	-35.0	31.382	-3.415	15.82	16.8	1.090
2	6.7	326.3	-44.0	31.824	-4.291	15.73	16.8	1.063
4	13.4	322.2	-50.1	31.426	-4.884	15.31	16.7	1.013
6	20.1	323.3	-46.1	31.531	-4.493	14.87	16.7	0.960
8	26.7	324.5	-41.3	31.655	-4.027	14.39	16.6	0.905
10	33.4	327.7	-40.7	31.958	-3.965	13.87	16.4	0.848
12	40.1	324.5	-42.0	31.653	-4.100	13.02	16.1	0.790
14	46.8	321.1	-43.1	31.322	-4.202	12.18	15.8	0.732
16	53.5	317.6	-43.9	30.980	-4.281	11.34	15.6	0.673
18	60.2	315.5	-43.4	30.771	-4.230	10.51	15.3	0.613
20	66.9	312.0	-41.1	30.428	-4.009	9.55	14.8	0.551
22	73.6	304.4	-40.1	29.690	-3.916	8.50	14.4	0.488
23	76.9	299.9	-38.3	29.248	-3.731	7.97	14.3	0.455
24	80.3	300.6	-38.1	29.324	-3.712	7.51	14.1	0.421
25	83.6	303.2	-39.6	29.571	-3.859	7.04	14.0	0.386
26	86.9	309.2	-42.5	30.163	-4.143	6.53	13.8	0.349
27	90.3	317.0	-48.1	30.915	-4.696	5.97	13.6	0.310
28	93.6	325.0	-54.3	31.700	-5.292	5.38	13.4	0.269
29	97.0	340.9	-56.4	33.251	-5.504	4.73	13.1	0.225
30	100.3	353.4	-57.9	34.468	-5.649	4.02	11.0	0.180
31	103.7	379.2	-59.2	36.985	-5.771	3.30	8.7	0.133
32	107.0	350.9	-45.2	23.500	-3.028	1.52	7.4	0.104
Absolute	103.7			36.985			(T =	28.0 ms)
	103.7				-5.771		(T =	56.7 ms)

CASE METHOD

J =	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
RS1	452.7	434.0	415.3	396.6	377.9	359.1	340.4	321.7	303.0	284.3
RMX	453.4	436.6	421.7	408.0	400.1	393.2	386.3	379.8	375.0	371.0
RSU	448.6	429.5	410.4	391.3	372.1	353.0	333.9	314.8	295.6	276.5

RAU= 311.5 (kips); RA2= 379.3 (kips)

Current CAPWAP Ru= 395.0 (kips); Corresponding J(Rs)= 0.31; J(Rx)=0.47

VMX	VFN	VT1*Z	FT1	FMX	DMX	DFN	EMX	RLT
ft/s	ft/s	kips	kips	kips	in	in	kip-ft	kips
17.35	0.00	317.7	322.1	322.1	1.123	0.050	16.7	341.4

PILE PROFILE AND PILE MODEL

Depth ft	Area in^2	E-Modulus ksi	Spec. Weight lb/ft^3	Circumf. ft
0.00	10.25	30016.4	492.271	2.510
106.75	10.25	30016.4	492.271	2.510
106.75	72.80	30016.4	492.271	2.510
107.00	72.80	30016.4	492.271	2.510

Toe Area 0.506 ft^2

Segmnt Number	Dist. B.G. ft	Impedance kips/ft/s	Imped. Change %	Tension Slack in	Tension Eff.	Compression Slack in	Compression Eff.	Circ. ft
1	3.34	18.31	0.00	0.000	0.000	0.000	0.000	2.510
32	107.00	26.66	0.00	0.000	0.000	0.000	0.000	2.510

Pile Damping 1.0 %, Time Incr 0.199 ms, Wave Speed 16810.0 ft/s

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

05-1177.3

October 3, 2007

Pizzagalli Construction Company
Attention: Dan Noblet
131 Presumpscot Street
Portland, ME 04103

Subject: Pile Completion Letter
Proposed Bayside Village Student Housing Project
120 Marginal Way
Portland, Maine

Dear Dan:

In accordance with our Agreement dated July 9, 2007, we have observed the installation of steel pipe piles for the Proposed Bayside Village project at 120 Marginal Way in Portland, Maine. The observations were conducted between August 8, 2007 and September 12, 2007.

Based on our observations during driving, the piles for the building were installed in accordance with the final set criteria established by Sea & Shore Contracting (the pile installation contractor) and their subcontractor Geosciences Testing and Research, Inc. A total of 256 piles were installed by driving the steel pipe sections with a Berminghammer B-21 diesel hammer. A summary of the pile installation data is attached. The pile numbers are consistent with the pile numbering plan provided by the project surveyors (working under contract to Pizzagalli).

We trust this letter meets your needs. Please call if you have any questions or require additional assistance.

Sincerely,

S.W.COLE ENGINEERING, INC.

Matthew P. Lilley, P.E.
Geotechnical Engineer

Enc.

P:\2005\05-1177.3 - M- Pizzagalli Construction - Portland,ME - Bayside Village Student Housing - RED\Pile Information\05-1177.3 Pile Completion Letter.doc

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

S.W.COLE ENGINEERING, INC.

PILE DRIVING SUMMARY

Client: Pizzagalli Construction Company
General Contractor: Pizzagalli Construction Company
Pile Contractor: Sea & Shore Contracting
Pile Hammer: Berminghammer B-21
Pile Type: 9 5/8" Steel Pipe

SWCE Job # 05-1177.3
Project: Bayside Village
Location: Portland, Maine
Rated Energy (ft-lbs): 53,200 ft-lb
Design Capacity: 70 tons

Pile #	Net Length (feet)	Cut-off Elev. (USGS)	Pile Tip Elev. (USGS)	Final Set (blows/inch) Last 6 inches						Date Driven	Remarks
1	101.3	7.0	-94.3	12	12	12	15	15	15	8/9/2007	
2	104.3	7.0	-97.3	12	15	12	12	14	12	8/9/2007	
3	105.5	7.1	-98.4	15	12	12	12	12	12	8/13/2007	
4	104.2	7.1	-97.1	12	12	12	12	12	18	8/9/2007	Test pile #1
5	105.8	7.1	-98.7	12	12	12	12	12	20	8/13/2007	
6	104.0	7.1	-96.9	10	12	12	14	15	20	8/13/2007	
7	105.9	7.1	-98.8	10	12	12	12	12	20	8/13/2007	
8	104.2	7.1	-97.1	5	5	6	15	15	20	8/9/2007	
9	106.3	7.1	-99.2	15	15	15	15	15	15	8/9/2007	
10	105.7	7.1	-98.6	15	15	15	15	15	20	8/9/2007	
11	104.8	7.1	-97.7	12	12	12	12	16	16	8/17/2007	
12	106.1	7.1	-99.0	12	12	15	15	15	15	8/17/2007	
13	106.7	7.1	-99.6	9	9	12	12	16	20	8/17/2007	
14	100.2	7.1	-93.1	2	2	4	6	6	20	8/9/2007	
15	103.0	7.1	-95.9	15	15	15	15	15	15	8/9/2007	
16	114.7	7.1	-107.6	12	12	12	12	16	12	8/10/2007	
17	116.3	7.1	-109.2	12	15	12	12	12	12	8/10/2007	
18	116.2	7.1	-109.1	10	12	12	12	12	20	8/14/2007	
19	116.6	7.1	-109.5	12	12	12	12	12	20	8/13/2007	
20	119.0	7.1	-111.9	5	5	6	6	7	20	8/13/2007	
21	119.1	7.1	-112.0	6	6	12	12	12	20	8/13/2007	
22	118.0	7.1	-110.9	12	15	12	12	12	12	8/13/2007	
23	117.5	7.1	-110.4	10	12	12	12	12	20	8/14/2007	
24	117.3	7.1	-110.2	12	10	10	12	16	20	8/14/2007	

S.W.COLE ENGINEERING, INC.

PILE DRIVING SUMMARY

Client:	**Pizzagalli Construction Company**	**SWCE Job #**	**05-1177.3**
General Contractor:	**Pizzagalli Construction Company**	**Project:**	**Bayside Village**
Pile Contractor:	**Sea & Shore Contracting**	**Location:**	**Portland, Maine**
Pile Hammer:	**Berminghammer B-21**	**Rated Energy (ft-lbs):**	**53,200 ft-lb**
Pile Type:	**9 5/8" Steel Pipe**	**Design Capacity:**	**70 tons**

Pile #	Net Length (feet)	Cut-off Elev. (USGS)	Pile Tip Elev. (USGS)	Final Set (blows/inch) Last 6 inches						Date Driven	Remarks
25	117.9	7.1	-110.8	10	10	12	12	12	20	8/14/2007	
26	117.7	7.1	-110.6	12	12	12	12	12	12	8/14/2007	
27	116.8	7.1	-109.7	7	7	7	7	7	20	8/14/2007	
28	117.3	7.1	-110.2	12	12	12	12	12	20	8/14/2007	
29	106.3	7.1	-99.2	6	6	10	12	12	20	8/15/2007	
30	106.1	7.1	-99.0	5	5	10	12	14	20	8/15/2007	
31	106.5	7.1	-99.4	5	10	10	12	12	20	8/15/2007	
32	106.9	7.1	-99.8	7	10	10	10	10	20	8/15/2007	
33	107.0	7.1	-99.9	6	6	6	6	12	20	8/15/2007	
34	106.7	7.3	-99.5	10	12	12	12	12	20	8/15/2007	
35	105.5	7.3	-98.3	8	12	12	12	12	12	8/15/2007	
36	106.5	7.3	-99.3	10	10	12	12	12	20	8/15/2007	
37	106.5	7.3	-99.3	8	12	12	12	12	20	8/15/2007	
38	100.1	7.1	-93.0	10	12	12	12	12	20	8/15/2007	
39	100.3	7.1	-93.2	12	12	12	12	12	20	8/14/2007	
40	104.5	7.1	-97.4	12	12	12	12	12	12	8/15/2007	
41	115.3	7.1	-108.2	12	12	12	12	12	20	8/14/2007	
42	115.3	7.1	-108.2	12	10	10	12	12	20	8/14/2007	
43	114.7	7.1	-107.6	12	12	12	12	12	20	8/14/2007	
44	116.8	7.3	-109.6	7	7	8	14	14	20	8/21/2007	
45	118.0	7.3	-110.8	10	12	12	14	12	20	8/21/2007	
46	116.6	7.3	-109.4	12	11	11	12	12	20	8/14/2007	
47	117.6	7.3	-110.4	10	10	10	12	14	refusal	8/10/2007	Test pile #2

S.W.COLE ENGINEERING, INC.

PILE DRIVING SUMMARY

Client: Pizzagalli Construction Company
General Contractor: Pizzagalli Construction Company
Pile Contractor: Sea & Shore Contracting
Pile Hammer: Berminghammer B-21
Pile Type: 9 5/8" Steel Pipe

SWCE Job # 05-1177.3
Project: Bayside Village
Location: Portland, Maine
Rated Energy (ft-lbs): 53,200 ft-lb
Design Capacity: 70 tons

Pile #	Net Length (feet)	Cut-off Elev. (USGS)	Pile Tip Elev. (USGS)	Final Set (blows/inch) Last 6 inches						Date Driven	Remarks
48	117.5	7.1	-110.4	12	12	15	15	16	20	8/21/2007	
49	117.0	7.1	-109.9	7	10	10	14	16	20 / 3/4"	8/21/2007	
50	117.5	7.1	-110.4	10	12	14	16	16	20 / 1/2"	8/21/2007	
51	117.5	7.1	-110.4	10	12	15	15	15	20 / 1/4"	8/21/2007	
52	114.5	7.1	-107.4	7	10	16	16	17	20	8/21/2007	
53	104.4	7.1	-97.3	12	12	16	16	16	16	8/20/2007	
54	104.4	7.1	-97.3	12	12	12	12	12	12	8/20/2007	
55	105.4	7.1	-98.3	12	15	15	15	15	15	8/20/2007	
56	106.9	7.1	-99.8	12	12	15	15	15	15	8/20/2007	
57	105.9	7.1	-98.8	12	12	14	14	14	14	8/20/2007	
58	106.6	7.1	-99.5	12	12	12	12	12	12	8/17/2007	
59	106.1	7.1	-99.0	12	12	12	14	12	12	8/17/2007	
60	107.4	7.1	-100.3	14	12	14	14	14	20	8/17/2007	
61	106.9	7.1	-99.8	12	12	18	16	16	18	8/17/2007	
62	107.0	7.1	-99.9	12	12	12	12	12	12	8/17/2007	
63	109.0	7.1	-101.9	12	14	14	12	14	12	8/17/2007	
64	111.5	7.1	-104.4	10	10	12	12	12	20	8/13/2007	Test Pile #3
65	108.0	7.1	-100.9	12	14	17	17	17	20	8/22/2007	
66	106.0	7.1	-98.9	12	12	12	12	15	20 / 1/4"	8/22/2007	
67	105.6	7.3	-98.4	3	3	3	12	16	20	8/22/2007	
68	107.2	7.3	-100.0	12	12	13	13	12	12	8/21/2007	
69	108.7	7.1	-101.6	15	15	15	15	14	15	8/22/2007	
70	107.0	7.1	-99.9	14	14	14	15	15	20	8/22/2007	

S.W.COLE ENGINEERING, INC.

PILE DRIVING SUMMARY

Client: Pizzagalli Construction Company
General Contractor: Pizzagalli Construction Company
Pile Contractor: Sea & Shore Contracting
Pile Hammer: Berminghammer B-21
Pile Type: 9 5/8" Steel Pipe

SWCE Job # 05-1177.3
Project: Bayside Village
Location: Portland, Maine
Rated Energy (ft-lbs): 53,200 ft-lb
Design Capacity: 70 tons

Pile #	Net Length (feet)	Cut-off Elev. (USGS)	Pile Tip Elev. (USGS)	Final Set (blows/inch) Last 6 inches						Date Driven	Remarks
71	113.0	7.1	-105.9	10	10	10	10	13	20	8/23/2007	
72	111.7	7.1	-104.6	9	11	12	13	15	17	8/22/2007	
73	112.5	7.1	-105.4	9	9	10	10	18	20	8/23/2007	
74	114.2	7.1	-107.1	7	7	12	12	20 / 1/2"	refusal	8/30/2007	
75	114.5	7.1	-107.4	10	10	11	11	11	20	8/30/2007	
76	113.8	7.1	-106.7	12	16	16	17	17	20	8/30/2007	
77	112.1	7.1	-105.0	12	12	14	12	12	14	8/30/2007	
78	118.3	7.1	-111.2	12	12	12	12	12	12	8/29/2007	
79	117.0	7.1	-109.9	12	12	12	12	14	12	8/29/2007	
80	118.0	7.1	-110.9	12	12	12	12	14	12	8/29/2007	
81	118.3	7.3	-111.1	9	10	10	12	14	20	8/29/2007	
82	116.6	7.1	-109.5	12	12	12	12	12	12	8/28/2007	
83	116.9	7.1	-109.8	12	15	15	15	14	15	8/28/2007	
84	117.8	7.1	-110.7	7	7	9	9	20	refusal	8/29/2007	
85	112.0	7.1	-104.9	12	12	12	12	12	12	8/29/2007	
86	111.5	7.1	-104.4	13	12	15	14	15	15	8/23/2007	
87	111.1	7.1	-104.0	12	12	12	13	15	15	8/23/2007	
88	110.0	7.1	-102.9	12	12	12	13	13	15	8/23/2007	
89	109.6	7.1	-102.5	12	12	12	12	14	14	8/23/2007	
90	110.9	7.1	-103.8	6	5	10	10	10	13	8/8/2007	Test Pile #6
91	109.7	7.1	-102.6	5	5	7	10	15	20	8/23/2007	
92	109.2	7.1	-102.1	12	12	12	12	12	13	8/23/2007	
93	108.5	7.1	-101.4	12	12	12	12	13	12	8/23/2007	

S.W.COLE ENGINEERING, INC.

PILE DRIVING SUMMARY

Client: Pizzagalli Construction Company
General Contractor: Pizzagalli Construction Company
Pile Contractor: Sea & Shore Contracting
Pile Hammer: Berminghammer B-21
Pile Type: 9 5/8" Steel Pipe

SWCE Job # 05-1177.3
Project: Bayside Village
Location: Portland, Maine
Rated Energy (ft-lbs): 53,200 ft-lb
Design Capacity: 70 tons

Pile #	Net Length (feet)	Cut-off Elev. (USGS)	Pile Tip Elev. (USGS)	Final Set (blows/inch) Last 6 inches						Date Driven	Remarks
94	109.5	7.1	-102.4	10	11	12	12	14	15	8/23/2007	
95	109.8	7.1	-102.7	14	14	14	14	12	12	8/22/2007	
96	109.2	7.1	-102.1	8	10	10	10	12	20	8/22/2007	
97	108.7	7.1	-101.6	12	14	12	16	15	15	8/22/2007	
98	112.8	7.1	-105.7	10	10	10	13	18	20	8/31/2007	
99	107.4	7.1	-100.3	15	16	16	16	16	20	8/31/2007	
100	112.3	7.1	-105.2	12	12	16	16	16	20	8/31/2007	
101	110.7	7.1	-103.6	12	12	12	14	16	15	9/4/2007	
102	104.5	7.1	-97.4	15	15	14	15	16	14	9/4/2007	
103	104.3	7.1	-97.2	14	14	14	15	14	14	9/4/2007	
104	107.5	7.1	-100.4	9	15	19	21	20	12 / 1/2"	8/8/2007	Test pile #4
105	106.0	7.1	-98.9	12	12	17	15	17	20 / 3/4"	8/27/2007	
106	110.0	7.1	-102.9	7	7	7	7	7		8/21/2007	Damaged
107	109.1	7.1	-102.0	10	10	15	16	20	refusal	9/5/2007	
108	115.6	7.1	-108.5	12	14	12	12	12	12	9/5/2007	
109	113.7	7.1	-106.6	12	12	12	14	16	20	9/5/2007	
110	109.6	7.1	-102.5	12	12	12	12	12	12	9/5/2007	
111	112.5	7.1	-105.4	14	18	18	14	14	14	8/21/2007	
112	116.1	7.1	-109.0	8	8	8	12	15	20	8/21/2007	
113	111.9	7.1	-104.8	9	10	12	14	17	20	8/28/2007	
114	112.7	7.1	-105.6	12	14	14	18	18	20 / 3/4"	8/28/2007	
115	112.1	7.1	-105.0	15	14	15	14	15	15	8/28/2007	
116	110.4	7.1	-103.3	8	8	8	12	16	20	8/28/2007	

S.W.COLE ENGINEERING, INC.

PILE DRIVING SUMMARY

Client:	**Pizzagalli Construction Company**	**SWCE Job #**	**05-1177.3**
General Contractor:	**Pizzagalli Construction Company**	**Project:**	**Bayside Village**
Pile Contractor:	**Sea & Shore Contracting**	**Location:**	**Portland, Maine**
Pile Hammer:	**Berminghammer B-21**	**Rated Energy (ft-lbs):**	**53,200 ft-lb**
Pile Type:	**9 5/8" Steel Pipe**	**Design Capacity:**	**70 tons**

Pile #	Net Length (feet)	Cut-off Elev. (USGS)	Pile Tip Elev. (USGS)	Final Set (blows/inch) Last 6 inches						Date Driven	Remarks
117	108.7	7.1	-101.6	10	10	12	14	16	20	8/23/2007	
118	107.5	7.1	-100.4	7	7	7	10	10	20	8/23/2007	
119	103.0	7.1	-95.9	12	12	12	13	16	14	8/23/2007	
120	108.1	7.1	-101.0	12	12	12	13	13	17	8/23/2007	
121	106.7	7.1	-99.6	12	12	12	12	13	14	8/23/2007	
122	108.7	7.1	-101.6	9	9	12	14	14	15	8/23/2007	
123	108.3	7.1	-101.2	12	14	14	14	14	20 / 3/4"	8/27/2007	
124	107.0	7.1	-99.9	12	13	13	13	14	15	8/27/2007	
125	107.2	7.1	-100.1	10	10	14	15	15	20 / 1/2"	8/27/2007	
126	105.0	7.1	-97.9	12	12	14	12	12	12	8/30/2007	
127	106.5	7.1	-99.4	12	12	12	12	13	12	8/30/2007	
128	107.5	7.1	-100.4	12	12	14	12	15	15	8/29/2007	
129	108.5	7.1	-101.4	12	12	12	14	14	14	9/6/2007	
130	108.0	7.1	-100.9	8	9	9	9	10	20	9/6/2007	
131	108.5	7.1	-101.4	10	10	12	12	12	20	9/6/2007	
132	104.5	7.1	-97.4	4	4	4	15	15	20	9/6/2007	
133	105.9	7.1	-98.8	12	12	12	12	14	12	8/31/2007	
134	105.5	7.1	-98.4	15	14	15	15	15	20 / 1/2"	8/31/2007	
135	105.5	7.1	-98.4	12	12	12	12	12	16	9/4/2007	
136	108.1	7.1	-101.0	8	8	8	10	10	20	9/4/2007	
137	103.9	7.1	-96.8	12	12	12	12	14	14	9/4/2007	
138	106.7	7.1	-99.6	8	9	9	10	16	20	9/4/2007	
139	105.1	7.1	-98.0	2	2	2	2	2	20	9/4/2007	

S.W.COLE ENGINEERING, INC.

PILE DRIVING SUMMARY

Client:	**Pizzagalli Construction Company**	**SWCE Job #**	**05-1177.3**
General Contractor:	**Pizzagalli Construction Company**	**Project:**	**Bayside Village**
Pile Contractor:	**Sea & Shore Contracting**	**Location:**	**Portland, Maine**
Pile Hammer:	**Berminghammer B-21**	**Rated Energy (ft-lbs):**	**53,200 ft-lb**
Pile Type:	**9 5/8" Steel Pipe**	**Design Capacity:**	**70 tons**

Pile #	Net Length (feet)	Cut-off Elev. (USGS)	Pile Tip Elev. (USGS)	Final Set (blows/inch) Last 6 inches						Date Driven	Remarks
140	105.8	7.1	-98.7	10	11	10	14	14	20	8/24/2007	
141	106.8	7.1	-99.7	10	10	11	12	15	20	8/24/2007	
142	100.9	6.3	-94.6	5	5	12	12	14	20	8/24/2007	
143	99.9	6.3	-93.6	12	12	12	12	12	12	8/24/2007	
144	101.3	7.1	-94.2	5	5	5	5	5	20	9/6/2007	
145	101.0	7.1	-93.9	12	13	14	14	16	20	9/6/2007	
146	102.8	7.1	-95.7	9	9	12	12	12	20	9/6/2007	
147	101.5	7.1	-94.4	12	13	12	12	12	12	9/6/2007	
148	92.7	7.1	-85.6	12	12	12	12	12	20	8/24/2007	
149	96.2	7.1	-89.1	8	9	9	9	15	20	8/24/2007	
150	94.1	7.1	-87.0	12	12	12	12	12	12	8/24/2007	
151	92.1	7.1	-85.0	12	10	10	10	10	10	8/8/2007	Test pile #5
152	92.2	6.3	-85.9	3	3	3	12	15	refusal	8/24/2007	
153	96.0	6.3	-89.7	6	6	7	7	7	20	8/24/2007	
154	87.6	6.3	-81.3	8	8	10	10	14	20	8/24/2007	
155	87.3	6.3	-81.0	3	3	3	12	12	20	8/24/2007	
156	73.4	6.3	-67.1	2	2	2	2	2	2	8/28/2007	Planter
157	84.5	6.3	-78.2	1	2	2	2	2	2	8/28/2007	Planter
158	71.2	6.3	-64.9	1	1	1	1	1	1	8/28/2007	Planter
159	102.8	7.1	-95.7	12	12	12	15	16	16	8/28/2007	
160	103.5	7.1	-96.4	10	10	12	14	16	20	8/28/2007	
161	101.7	7.1	-94.6	12	12	12	12	15	16	8/28/2007	
162	101.5	7.1	-94.4	12	15	14	13	16	14	8/21/2007	

S.W.COLE ENGINEERING, INC.

PILE DRIVING SUMMARY

Client:	**Pizzagalli Construction Company**	**SWCE Job #**	**05-1177.3**
General Contractor:	**Pizzagalli Construction Company**	**Project:**	**Bayside Village**
Pile Contractor:	**Sea & Shore Contracting**	**Location:**	**Portland, Maine**
Pile Hammer:	**Berminghammer B-21**	**Rated Energy (ft-lbs):**	**53,200 ft-lb**
Pile Type:	**9 5/8" Steel Pipe**	**Design Capacity:**	**70 tons**

Pile #	Net Length (feet)	Cut-off Elev. (USGS)	Pile Tip Elev. (USGS)	Final Set (blows/inch) Last 6 inches						Date Driven	Remarks
163	101.9	7.1	-94.8	9	10	10	12	18	20	8/21/2007	
164	103.0	7.1	-95.9	7	7	7	7	12	20	8/21/2007	
165	104.7	7.1	-97.6	12	12	12	15	15	15	8/28/2007	
166	104.6	7.1	-97.5	12	12	12	12	12	12	8/28/2007	
167	101.0	7.1	-93.9	12	12	12	14	12	15	8/28/2007	
168	98.5	7.1	-91.4	12	12	16	16	17	20	8/21/2007	
169	98.0	7.1	-90.9	12	13	16	16	16	16	8/21/2007	
170	97.0	7.1	-89.9	16	15	14	15	15	15	8/21/2007	
171	102.3	7.1	-95.2	14	14	15	15	15	12 / 3/4"	8/8/2007	Test pile #7
172	102.7	7.1	-95.6	14	14	15	16	16	20	8/30/2007	
173	103.3	7.1	-96.2	12	12	14	14	14	20	8/30/2007	
174	103.1	7.1	-96.0	10	10	12	15	16	20 / 1/2"	8/30/2007	
175	90.3	7.1	-83.2	12	12	12	12	12	20	8/9/2007	Test pile #9
176	91.1	7.1	-84.0	12	14	12	12	14	14	8/21/2007	
177	83.9	7.1	-76.8	11	12	12	12	14	20	8/15/2007	
178	84.9	7.1	-77.8	2	2	2	6	6	20	8/15/2007	
179	83.7	7.1	-76.6	12	12	12	12	12	20	8/15/2007	
180	83.1	7.1	-76.0	2	2	2	3	20	refusal	9/7/2007	
181	88.0	7.1	-80.9	7	7	10	10	10	20 / 3/4"	8/21/2007	
182	87.5	7.1	-80.4	4	5	12	12	16	20	8/15/2007	
183	87.5	7.1	-80.4	2	3	12	12	15	20	8/20/2007	
184	80.2	7.1	-73.1	6	6	6	6	10	20	8/16/2007	
185	80.5	7.1	-73.4	2	2	2	2	15	20	8/15/2007	

S.W.COLE ENGINEERING, INC.

PILE DRIVING SUMMARY

Client: Pizzagalli Construction Company
General Contractor: Pizzagalli Construction Company
Pile Contractor: Sea & Shore Contracting
Pile Hammer: Berminghammer B-21
Pile Type: 9 5/8" Steel Pipe

SWCE Job # 05-1177.3
Project: Bayside Village
Location: Portland, Maine
Rated Energy (ft-lbs): 53,200 ft-lb
Design Capacity: 70 tons

Pile #	Net Length (feet)	Cut-off Elev. (USGS)	Pile Tip Elev. (USGS)	Final Set (blows/inch) Last 6 inches						Date Driven	Remarks
186	83.0	7.1	-75.9	3	3	7	7	7	20	8/15/2007	
187	78.6	7.1	-71.5	5	5	5	5	20	refusal	8/16/2007	
188	79.2	7.1	-72.1	10	10	10	15	20	refusal	8/16/2007	
189	97.0	7.1	-89.9	5	6	6	6	16 / 1/4"	refusal	9/10/2007	
190	97.0	7.1	-89.9	8	8	10	10	15	20	9/10/2007	
191	96.8	7.1	-89.7	7	7	7	16	16	20	9/10/2007	
192	96.3	7.1	-89.2	6	6	6	6	12	20	9/7/2007	
193	90.2	7.1	-83.1	7	7	8	10	15	20 / 1/14"	9/8/2007	
194	89.8	7.1	-82.7	9	10	11	14	18	refusal	9/7/2007	
195	88.9	7.1	-81.8	4	5	5	5	5	20	9/8/2007	
196	93.4	7.1	-86.3	3	3	3	3	14	20	9/4/2007	
197	92.1	7.1	-85.0	3	3	3	4	20	refusal	9/4/2007	
198	92.4	7.1	-85.3	7	7	10	10	14	20	9/4/2007	
199	87.5	7.1	-80.4	3	3	4	4	15	20	9/4/2007	
200	87.0	7.1	-79.9	12	12	12	14	18	20	9/4/2007	
201	85.8	7.1	-78.7	3	3	3	12	12	20	9/6/2007	
202	86.0	6.3	-79.7	6	6	6	6	11	20	8/24/2007	
203	85.3	6.3	-79.0	3	3	3	3	3	20	8/24/2007	
204	75.3	6.3	-69.0	1	1	2	2	2	2	8/28/2007	Planter
205	75.8	6.3	-69.5	14	16	14	14	14	14	8/24/2007	
206	75.2	6.3	-68.9	12	12	12	12	15	15	8/24/2007	
207	73.5	6.3	-67.2	4	7	7	12	20	refusal	9/6/2007	
208	70.5	6.3	-64.2	13	10	10	11	10	20	9/6/2007	Damaged

S.W.COLE ENGINEERING, INC.

PILE DRIVING SUMMARY

Client: Pizzagalli Construction Company
General Contractor: Pizzagalli Construction Company
Pile Contractor: Sea & Shore Contracting
Pile Hammer: Berminghammer B-21
Pile Type: 9 5/8" Steel Pipe

SWCE Job # 05-1177.3
Project: Bayside Village
Location: Portland, Maine
Rated Energy (ft-lbs): 53,200 ft-lb
Design Capacity: 70 tons

Pile #	Net Length (feet)	Cut-off Elev. (USGS)	Pile Tip Elev. (USGS)	Final Set (blows/inch) Last 6 inches						Date Driven	Remarks
209	71.7	6.3	-65.4	4	5	5	6	6	20	9/6/2007	
210	70.9	6.3	-64.6	3	3	7	10	20	refusal	9/6/2007	
211	70.2	6.3	-63.9	4	6	8	9	12	20	9/6/2007	
212	67.9	6.0	-61.9	6	7	7	7	7	20	9/6/2007	
213	67.9	6.0	-61.9	3	3	3	3	20	refusal	9/6/2007	
214	68.4	6.0	-62.4	3	3	7	10	20	refusal	9/6/2007	
215	62.7	6.0	-56.7	2	4	4	4	15	refusal	9/12/2007	
216	62.9	6.0	-56.9	3	4	4	4	15	refusal	9/12/2007	
217	62.8	6.0	-56.8	3	3	3	4	15	refusal	9/12/2007	
218	67.9	6.0	-61.9	3	5	5	5	20	refusal	9/6/2007	
219	67.4	6.0	-61.4	3	3	10	12	16	20	9/6/2007	
220	61.8	6.0	-55.8	1	1	1	2	15	refusal	9/8/2007	
221	61.6	6.0	-55.6	1	1	1	1	15	refusal	9/10/2006	
222	95.9	7.1	-88.8	8	10	11	10	10	20 / 3/4"	8/30/2007	
223	93.6	7.1	-86.5	12	16	14	14	16	15	8/30/2007	
224	94.0	7.1	-86.9	10	10	12	14	16	20 / 3/4"	8/30/2007	
225	87.7	7.1	-80.6	7	7	7	9	8	20	8/30/2007	
226	87.4	7.1	-80.3	2	2	3	3	3	20	8/30/2007	
227	84.3	7.1	-77.2	4	4	4	5	5	20	9/7/2007	
228	82.0	7.1	-74.9	3	3	3	3	15	refusal	9/12/2007	
229	82.6	7.1	-75.5	2	3	3	3	15	refusal	9/12/2007	
230	81.0	7.1	-73.9	3	3	3	3	15	refusal	9/12/2007	
231	77.0	7.1	-69.9	10	12	16	16	20	refusal	8/28/2007	

S.W.COLE ENGINEERING, INC.

PILE DRIVING SUMMARY

Client:	**Pizzagalli Construction Company**	**SWCE Job #**	**05-1177.3**
General Contractor:	**Pizzagalli Construction Company**	**Project:**	**Bayside Village**
Pile Contractor:	**Sea & Shore Contracting**	**Location:**	**Portland, Maine**
Pile Hammer:	**Berminghammer B-21**	**Rated Energy (ft-lbs):**	**53,200 ft-lb**
Pile Type:	**9 5/8" Steel Pipe**	**Design Capacity:**	**70 tons**

Pile #	Net Length (feet)	Cut-off Elev. (USGS)	Pile Tip Elev. (USGS)	Final Set (blows/inch) Last 6 inches						Date Driven	Remarks
232	78.4	7.1	-71.3	4	4	3	4	6	8 < 1/2"	8/7/2007	Test pile #8
233	75.9	7.1	-68.8	5	5	5	5	12	20 / 1/2"	8/28/2007	
234	73.2	7.3	-66.0	3	5	5	5	15	refusal	9/10/2007	
235	72.8	7.3	-65.6	3	3	3	7	15 / 1/2"	refusal	9/10/2007	
236	73.0	7.1	-65.9	4	6	5	6	15 / 1/2"	refusal	9/10/2007	
237	73.3	7.1	-66.2	9	10	10	12	16 / 3/4"	refusal	9/10/2007	
238	72.4	7.1	-65.3	8	8	10	10	15	refusal	9/10/2007	
239	71.9	7.1	-64.8	9	10	12	12	15 / 1/2"	refusal	9/10/2007	
240	63.5	4.2	-59.3	3	3	3	4	15 / 1/2"	refusal	9/12/2007	
241	63.5	4.2	-59.3	2	2	2	2	4	15 / 1/2"	9/12/2007	
242	63.0	4.2	-58.8	3	3	3	4	15 / 1/2"	refusal	9/12/2007	
243	63.0	4.2	-58.8	6	3	4	4	15	refusal	9/12/2007	
244	73.5	4.2	-69.3	12	12	12	12	3	3	9/12/2007	Damaged
245	78.4	7.1	-71.3	2	2	4	4	15 / 1/2"	refusal	9/8/2007	
246	78.2	7.1	-71.1	2	2	3	3	15	refusal	9/8/2007	
247	77.3	7.1	-70.2	2	2	2	2	15	refusal	9/8/2007	
248	68.0	7.1	-60.9	3	4	4	4	15	refusal	9/12/2007	
249	67.4	7.1	-60.3	2	2	2	2	15	refusal	9/12/2007	
250	73.0	7.1	-65.9	7	7	7	7	12	20	8/15/2007	
251	73.8	7.1	-66.7	5	5	6	6	15	refusal	8/8/2007	Test pile #10
252	118.3	7.3	-111.1	9	9	12	12	12	20	8/29/2007	
253	106.7	7.1	-99.6	8	8	8	13	14	20	8/30/2007	Replaced #106
254	110.4	7.1	-103.3	10	10	14	14	16	17	8/30/2007	Replaced #106

S.W.COLE ENGINEERING, INC.

PILE DRIVING SUMMARY

Client:	**Pizzagalli Construction Company**	**SWCE Job #**	**05-1177.3**
General Contractor:	**Pizzagalli Construction Company**	**Project:**	**Bayside Village**
Pile Contractor:	**Sea & Shore Contracting**	**Location:**	**Portland, Maine**
Pile Hammer:	**Berminghammer B-21**	**Rated Energy (ft-lbs):**	**53,200 ft-lb**
Pile Type:	**9 5/8" Steel Pipe**	**Design Capacity:**	**70 tons**

Pile #	Net Length (feet)	Cut-off Elev. (USGS)	Pile Tip Elev. (USGS)	Final Set (blows/inch) Last 6 inches						Date Driven	Remarks
255	69.9	6.3	-63.6	2	6	6	6	15 / 1/2"	refusal	9/10/2007	Replaced #208
256	62.3	4.2	-58.1	2	3	3	3	15	refusal	9/12/2007	Replaced #244

Total Length **25240.5**

BECKER
structural engineers, inc.

Memorandum

TO: Dan Noblet – Pizzagalli Construction
FROM: Matthew J. Miller, P.E.
DATE/TIME: 01/21/08
SUBJECT: Bayside Village

Dan,

In review of the as-built pile submittals, it was noted that there were no records of a location survey for the pile groups at the five following locations: H/7, H/8, J/8, K/8 and L/8. This represents 17 piles of the 256 total piles on the project, 7 % of the total piles driven. The remaining 239 piles were driven and surveyed.

Based on our previous discussions, it was likely that the survey of the pile locations at these locations was missed due to the pile caps being placed prior to scheduling the survey based on the speed of construction during this project.

Our review of the as-built pile locations indicated that, for the 239 piles surveyed, the locations were within installation tolerances. Based on this review, it is our opinion that the locations of the piles at the groups listed above are likely to be within tolerance, and therefore no additional testing of these locations is required.

If you have any questions, please do not hesitate to call me at (207) 879-1838

Sincerely,

BECKER Structural Engineers, Inc.

Matthew J. Miller, P.E.
Project Engineer

75 York Street, Portland, ME 04101-4550 ■ Tel. 207-879-1838 ■ Fax 207-879-1822

Quality Assurance Labs Inc.
NON-DESTRUCTIVE TESTING AND INSPECTION SERVICES
80 PLEASANT AVENUE • SOUTH PORTLAND, MAINE 04106 • TEL: (207) 799-8911 • FAX: (207) 799-7251

9/11/07

S.W. Cole
286 Portland Rd.
Gray Maine 04039

Ref: Bayside Village Student Housing - Project 05-1177.3
QAL-07-1639

Attn: Roger Domingo

Dear Sir,

On 8/27/07 thru 9/10/07, a site visit was made to Bayside Village Project to perform visual inspection on pile welds. The numbers below were the pile splices inspected. All splices were acceptable to AWS D1.1. If you should have any further question, please advise.

Best Regards,
Arthur Gallant
CWI# 90100091

Pile Splice # 98, 84, 99, 100, 76, 74, 75, 126, 127, 128, 138, 139, 253, 254, 98-2, 99-2, 100-2, 136, 135, 107, 110, 107-2, 109-2, 227, 98-2, 99-2, 136, 137, 201, 207, 208, 210, 211, 220, 221, 255, 236, 237, 234, 235, 238, 239,

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ULTRASONIC INSPECTION REPORT

CUSTOMER:	SW COLE
ATTENTION:	CRAIG / FAX 657-3134
PROJECT:	BAYSIDE VILLAGE STUDENT HOUSING // 120 MARGINAL WAY
COMPONENT INSPECTED:	PILES
AREA OF INTEREST:	WELDED SPLICE AREA
COMPONENT LOCATION:	PORTLAND BAYSIDE VILLAGE
CUSTOMER WORK ORDER No.:	PART No.:
MATERIAL: CARBON STEEL	HEAT No.:
COMPONENT SURFACE CONDITION:	AS WELDED

DATE OF INSPECTION	M 09 / D 14 / Y 07
REPORT No.	QAL-07-1748
PAGE	1 OF 1
JOB No.	0511772
P.O. No.	05-1177-2

EXAMINATION DATA

Project Code/Spec	AWS D1.1
U.T. Procedure No.	QC-TOP-UT-1 (REV. 0)
U.T. Technique No.	UT-1
RESULTS:	ACCEPTABLE
INDICATIONS:	NONE

REMARKS:

PERFORMED ULTRASONIC INSPECTION ON THE FOLLOWING PILE SPLICE WELDS IAW AWS D1.1.

PILES#S

215,216,217, AND 244

ACCEPT: NO CRACKS, CRACKLIKE, OR RELEVANT INDICATIONS NOTED.

// LAST ITEM //

FAA REPAIR STATION NUMBER RX5R187N
METHOD(S),PROCESS(ES),PROCEDURE(S) MERCURY FREE

INSTRUMENT

MAKE:	PANAMETRICS
MODEL:	EPOCH 4
EQUIPMENT NO.:	
MATERIAL THICKNESS:	.365
SCREEN RANGE:	10"
COUPLANT:	ECHOGEL

TRANSDUCERS

MAKE: PANAMETRICS	
FREQ.: 2.25 MHz	ANGLE: 70°
SIZE: 19.05 mm (0.750 in.)	
STYLE:	SHAPE: SQUARE
EQUIPMENT No.:	
MAKE: PANAMETRICS	
FREQ.: 2.25 MHz	ANGLE: 0°
SIZE: 12.7 mm (0.500 in.)	
STYLE:	SHAPE: ROUND
EQUIPMENT No.:	
MAKE:	
FREQ.:	ANGLE:
SIZE:	
STYLE:	SHAPE:
EQUIPMENT No.:	

REFERENCE BLOCKS

MAKE:	
TYPE:	
MATERIAL:	
EQUIPMENT No.:	
SENSITIVITY:	
TRANSFER VALUE:	

ADDITIONAL INFORMATION - SEE ATTACHED: ☐ SKETCH(ES) ☐ SUPPLEMENTARY SHEET(S) ☐ VIDEO

SIGNATURES	CERTIFICATION	LEVEL	DATE M	D	Y
INSPECTOR R. Strout #2569060 [signature]	ASNT	III	09	18	07
SUPERVISOR					
AUTHORIZED INSPECTOR					
CUSTOMER REPRESENTATIVE					

Quality Assurance Labs Inc.
NON-DESTRUCTIVE TESTING AND INSPECTION SERVICES
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9/11/07

S.W. Cole
286 Portland Rd.
Gray Maine 04039

Ref: Bayside Village Student Housing - Project 05-1177.3
QAL-07-1639

Attn: Roger Domingo

Dear Sir,

On 8/27/07 thru 9/10/07, a site visit was made to Bayside Village Project to perform visual inspection on pile welds. The numbers below were the pile splices inspected. All splices were acceptable to AWS D1.1. If you should have any further question, please advise.

Best Regards,
Arthur Gallant
CWI# 90100091

Pile Splice # 98, 84, 99, 100, 76, 74, 75, 126, 127, 128, 138, 139, 253, 254, 98-2, 99-2, 100-2, 136, 135, 107, 110, 107-2, 109-2, 227, 98-2, 99-2, 136, 137, 201, 207, 208, 210, 211, 220, 221, 255, 236, 237, 234, 235, 238, 239,

Quality Assurance Labs Inc.
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8/17/07

S.W. Cole
286 Portland Rd.
Gray Maine 04039

Ref: Bayside Village Student Housing - Project 05-1177.3
QAL-07-1485

Attn: Roger Domingo

Dear Sir,

On 8/10/07, 8/13/07 , 8/16/07 and 8/17/07 a site visit was made to Bayside Village Project to perform visual inspection on pile welds. The numbers below were the pile splices inspected. All splices were acceptable to AWS D1.1. If you should have any further question, please advise.

Best Regards,
Andrzej Gebarski
CWI# 90100091

8/10/07 – Pile Splice# 3,5,6,7,16,17,18,19

8/13/07 – Pile Splice# 20,21,22,23,25,26,27,28,46,47

8/16/07 – Pile Splice# 12,44,45,48,49,50,51,52,111,112

8/17/07 – Pile Splice# 44,45,48,49,50,51,52,58,59,60,112

Quality Assurance Labs Inc.
NON-DESTRUCTIVE TESTING AND INSPECTION SERVICES
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8/17/07

S.W. Cole
286 Portland Rd.
Gray Maine 04039

Ref: Bayside Village Student Housing - Project 05-1177.3
QAL-07-1522

Attn: Roger Domingo

Dear Sir,

On 8/14/07, a site visit was made to Bayside Village Project to perform visual inspection on pile welds. The numbers below were the pile splices inspected. All splices were acceptable to AWS D1.1. If you should have any further question, please advise.

Best Regards,
Arthur Gallant
CWI# 90100091

Pile Splice # 18-2, 19-2, 22-2, 23-2, 24-2, 25-2, 26-2, 27-2, 28-2, 31,32,33,34,35,36,37,38,39,40,41,42,43.

Quality Assurance Labs Inc.
NON-DESTRUCTIVE TESTING AND INSPECTION SERVICES
60 PLEASANT AVENUE • SOUTH PORTLAND, MAINE 04106 • TEL: (207) 799-8911 • FAX: (207) 799-7251

8/27/07

S.W. Cole
286 Portland Rd.
Gray Maine 04039

Ref: Bayside Village Student Housing - Project 05-1177.3
QAL-07-1581

Attn: Roger Domingo

Dear Sir,

On 8/17/07 thru 8/24, a site visit was made to Bayside Village Project to perform visual inspection on pile welds. The numbers below were the pile splices inspected. All splices were acceptable to AWS D1.1. If you should have any further question, please advise.

Best Regards,
Arthur Gallant
CWI# 00100691

Pile Splice # 44, 45, 48, 49, 50, 51, 52, 58, 59, 60,68, 69, 70, 69-2, 82, 83, 89, 91, 92, 93, 94, 95, 96, 97, 105, 106, 111, 112, 113, 114, 117, 118, 119, 120, 121, 122, 123, 124, 125, 141, 148, 149, 150,152, 153, 154, 155, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 172, 173, 174, 176, 180, 181, 182, 183, 202, 203, 205, 206.

Quality Assurance Labs Inc.
NON-DESTRUCTIVE TESTING AND INSPECTION SERVICES
80 PLEASANT AVENUE • SOUTH PORTLAND, MAINE 04106 • TEL: (207) 799-8911 • FAX: (207) 799-7251

ULTRASONIC INSPECTION REPORT

CUSTOMER: SW COLE	DATE OF INSPECTION: M 08 D 07 Y 07
ATTENTION: CRAIG	REPORT No.: QAL-07-1461
PROJECT: BAYSIDE VILLAGE STUDENT HOUSING	PAGE 1 OF 1
COMPONENT INSPECTED: TEST PILES 4, 47, 64, 90, 104 FAB SHOP WELDS 1,2,3 1/3 DIA. OF SEAM WELD	JOB No.: 0511772
AREA OF INTEREST: WELDED AREA	P.O. No.: 05-1177.2
COMPONENT LOCATION: PORTLAND BAYSIDE VILLAGE	**INSTRUMENT**
CUSTOMER WORK ORDER No: / PART No.:	MAKE: PANAMETRICS
MATERIAL: CARBON STEEL / HEAT No.:	MODEL: EPOCH 4
COMPONENT SURFACE CONDITION: AS WELDED	EQUIPMENT NO.:
EXAMINATION DATA	MATERIAL THICKNESS: .365
Project Code/Spec: AWS D1.1	SCREEN RANGE: 10"
U.T. Procedure No.: QC-TOP-UT-1 (REV. 0) / U.T. Technique No.: UT-1	COUPLANT: ECHOGEL
RESULTS: ACCEPTABLE / INDICATIONS: NONE	**TRANSDUCERS**

REMARKS:

PERFORMED ULTRASONIC INSPECTION ON THE FOLLOWING TEST PILE WELDS IAW AWS D1.1.

PILES#S

4, 47, 64, 90, 104

ALSO INSPECTED 3 SHOP FAB SEAM WELDS 1/3 DIA. OF PIPE INSPECTED # 1, 2, 3.

ACCEPT: NO CRACKS, CRACKLIKE, OR RELEVANT INDICATIONS NOTED.

// LAST ITEM //

FAA REPAIR STATION NUMBER RX6R187N
METHOD(S),PROCESS(ES),PROCEDURE(S) MERCURY FREE

MAKE: PANAMETRICS	
FREQ.: 2.25 MHz	ANGLE: 70°
SIZE: 19.05 mm (0.750 in.)	
STYLE:	SHAPE: SQUARE
EQUIPMENT No.:	
MAKE: PANAMETRICS	
FREQ.: 2.25 MHz	ANGLE: 0°
SIZE: 12.7 mm (0.500 in.)	
STYLE:	SHAPE: ROUND
EQUIPMENT No.:	
MAKE:	
FREQ.:	ANGLE:
SIZE:	
STYLE:	SHAPE:
EQUIPMENT No.:	
REFERENCE BLOCKS	
MAKE:	
TYPE:	
MATERIAL:	
EQUIPMENT No.:	
SENSITIVITY:	
TRANSFER VALUE:	

ADDITIONAL INFORMATION - SEE ATTACHED: ☐ SKETCH(ES) ☐ SUPPLEMENTARY SHEET(S) ☐ VIDEO

SIGNATURES	CERTIFICATION	LEVEL	DATE M D Y
INSPECTOR S. Watson	ASNT	II	08 07 07
SUPERVISOR			
AUTHORIZED INSPECTOR			
CUSTOMER REPRESENTATIVE			

(FORM Q500 REV 2)

EXHIBIT B

03300 Concrete Construction

Project: Bayside Village – A Student Housing Project
Date Prepared: July 13, 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		PE/SE or EIT	✓
2. Inspection of reinforcing steel welding in accordance with Table 1704.3, Item 5B	N		Welding of Reinf Not Allowed		AWS-CWI	—
3. Inspect bolts to be installed in concrete prior to and during placement of concrete where allowable loads have been increased	N	C	IBC 1912.5		PE/SE or EIT	—
4. Verifying use of required design mix	Y	P	ACI 318: Ch 4, 5.2-5.4		PE/SE or EIT	✓
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		ACI-CFTT or ACI-STT	✓
6. Inspection of concrete and shotcrete placement for proper application techniques	Y	C	ACI 318: 5.9, 5.10		PE/SE or EIT	—
7. Inspection for maintenance of specified curing temperature and techniques	Y	P	ACI 318: 5.11-5.13		PE/SE or EIT	✓
8. Inspection of Prestressed Concrete						
a. Application of prestressing force.	N/A	C	ACI 318: 18.20		PE/SE or EIT	—
b. Grouting of bonded prestressing tendons in seismic force resisting system	N/A	C	ACI 318: 18.18.4		PE/SE or EIT	—
9. Erection of precast concrete members	N/A	P	ACI 318: Ch 16		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/A	P	ACI 318: 6.2		ACI-STT	—

BECKER
structural engineers, inc.

03300

Project:	Bayside Village
Location:	Portland, Maine
Becker Job No:	SI1724

OBSERVATION REPORT
Cast in Place Concrete

Date:	9/05/07
Time:	4:30 PM to 6:00 PM
Temp:	Low 70's
Weather:	Sunny

Observation Location: Grade Beams - A-D / 7.6-10

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☐	☒	☐	☐	See Notes
Embed/Anchors	☐	☐	☒	☐	
Lap Splices	☒	☐	☐	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
Bond Beams	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☐	
Additional Items	☐	☐	☐	☐	

Notes:
Inadequate size clear distance at GB-3 along Line A 7.6-8.3. Issue was brought to the attention of Tim Street of Pizzagalli and Newman Concrete.

Signed: Matthew J. Miller, P.E.

75 York Street, Portland, ME 04101-4701 ■ Tel 207-879-1838 ■ Fax 207-879-1822

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Project:	Bayside Village
Location:	Portland, Maine
Becker Job No:	SI1724

OBSERVATION REPORT
Cast in Place Concrete

Date:	9/19/07
Time:	3:30 PM to 4:15 PM
Temp:	Low 70's
Weather:	Sunny

Observation Location: Grade Beams - C-E / 7-10

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☒	☐	☐	☐	
Embed/Anchors	☐	☐	☒	☐	
Lap Splices	☒	☐	☐	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
Bond Beams	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☐	
Additional Items	☐	☐	☐	☐	

Notes:

Signed: Nathan Merrill, E.I.

75 York Street, Portland, ME 04101-4701 ■ Tel 207-879-1838 ■ Fax 207-879-1822

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03300

Project:	Bayside Village
Location:	Portland, Maine
Becker Job No:	SI1724

OBSERVATION REPORT
Cast in Place Concrete

Date:	9/26/07
Time:	4:00 PM to 4:30 PM
Temp:	Low 80's
Weather:	Sunny

Observation Location: Grade Beams / Pile Caps - E-G/ 7-10

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☒	☐	☐	☐	
Embed/Anchors	☐	☐	☒	☐	
Lap Splices	☒	☐	☐	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
Bond Beams	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☐	
Additional Items	☐	☐	☐	☐	

Notes:

Signed: Matthew J. Miller, P.E.

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03300

Project:	Bayside Village
Location:	Portland, Maine
Becker Job No:	SI1724

OBSERVATION REPORT
Cast in Place Concrete

Date:	9/27/07
Time:	2:30 PM to 3:30 PM
Temp:	High 60's
Weather:	Mostly Sunney

Observation Location: Grade Beams / Pile Caps - AA-DD/ 1-7

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☒	☐	☐	☐	
Embed/Anchors	☐	☐	☒	☐	
Lap Splices	☒	☐	☐	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
Bond Beams	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☐	
Additional Items	☐	☐	☐	☐	

Notes:

Signed: Matthew J. Miller, P.E.

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03300

Project:	Bayside Village
Location:	Portland, Maine
Becker Job No:	SI1724

OBSERVATION REPORT
Cast in Place Concrete

Date:	10/02/07
Time:	2:30 PM to 3:30 PM
Temp:	High 60's
Weather:	Mostly Sunney

Observation Location: Grade Beams / Pile Caps - DD-GG/ 1-6

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☒	☐	☐	☐	
Embed/Anchors	☒	☐	☒	☐	Anchor Rods were not complete, however those already installed appeared satisfactory.
Lap Splices	☒	☐	☐	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
Bond Beams	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☐	
Additional Items	☐	☐	☐	☐	

Notes:

Signed: Matthew J. Miller, P.E.

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Project:	Bayside Village
Location:	Portland, Maine
Becker Job No:	SI1724

OBSERVATION REPORT
Cast in Place Concrete

Date:	10/03/07
Time:	1:00 PM to 1:30 PM
Temp:	Low 70's
Weather:	Overcast

Observation Location: Grade Beams - H-J / 7-10

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☐	☐	☒	☐	wall dowels at Line 10 not completed at time of visit
Condition	☒	☐	☐	☐	
Placement	☒	☐	☐	☐	
Embed/Anchors	☒	☐	☐	☐	
Lap Splices	☒	☐	☐	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
Bond Beams	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☐	
Additional Items	☐	☐	☐	☐	

Notes:

Signed: Nathan Merrill, E.I.

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03300

Project:	Bayside Village
Location:	Portland, Maine
Becker Job No:	SI1724

OBSERVATION REPORT
Cast in Place Concrete

Date:	10/04/07
Time:	4:30 PM to 5:00 PM
Temp:	Mid 70's
Weather:	Sunny

Observation Location: Stuctural Slab Lines A-C & 7.6-10

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☒	☐	☐	☐	
Embed/Anchors	☒	☐	☐	☐	
Lap Splices	☒	☐	☐	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
Bond Beams	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☐	
Additional Items	☐	☐	☐	☐	

Notes:

Signed: Nathan Merrill, E.I.

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Project:	Bayside Village
Location:	Portland, Maine
Becker Job No:	SI1724

OBSERVATION REPORT
Cast in Place Concrete

Date:	10/05/07
Time:	12:30 PM to 1:30 PM
Temp:	Low 80's
Weather:	Sunny

Observation Location: Grade Beam Lines E-F & 1-6

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☒	☐	☐	☐	
Embed/Anchors	☐	☐	☒	☐	Placing of anchor bolts not completed at time of visit @ Grid E-6 and F-6
Lap Splices	☒	☐	☐	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
Bond Beams	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☐	
Additional Items	☐	☐	☐	☐	

Notes:

Signed: Nathan Merrill, E.I.

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03300

Project:	Bayside Village
Location:	Portland, Maine
Becker Job No:	SI1724

OBSERVATION REPORT
Cast in Place Concrete

Date:	10/15/07
Time:	11:00 AM to 12:00 PM
Temp:	Low 60's
Weather:	Sunny

Observation Location: Grade Beam Lines K-N & 7-10

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☒	☐	☐	☐	
Embed/Anchors	☐	☐	☒	☐	Anchor Rods not set @N-10, RR-9 & M-9 at time of visit
Lap Splices	☒	☐	☐	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
Bond Beams	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☐	
Additional Items	☐	☐	☐	☐	

Notes:

Signed: Nathan Merrill, E.I.

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03300

Project:	Bayside Village
Location:	Portland, Maine
Becker Job No:	SI1724

OBSERVATION REPORT
Cast in Place Concrete

Date:	10/19/07
Time:	8:00 AM to 8:30 AM
Temp:	Low 60's
Weather:	Mostly Cloudy

Observation Location: Slab AA-BB.5/1-4

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☒	☐	☐	☐	
Embed/Anchors	☐	☐	☒	☐	
Lap Splices	☒	☐	☐	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
Bond Beams	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☐	
Additional Items	☐	☐	☐	☐	

Notes:

Signed: Matthew J. Miller, P.E.

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03300

Project:	Bayside Village
Location:	Portland, Maine
Becker Job No:	SI1724

OBSERVATION REPORT
Cast in Place Concrete

Date:	10/31/07
Time:	9:00 AM to 10:00 AM
Temp:	Upper 50's
Weather:	Sunny\

Observation Location: Slab at Entry Lobby - Grid Lines PP-SS from 1-2

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☒	☐	☐	☐	
Embed/Anchors	☐	☐	☐	☒	
Lap Splices	☒	☐	☐	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
Bond Beams	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☐	
Additional Items	☐	☐	☐	☐	

Notes:

Signed: Matthew J. Miller, P.E.

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03300

Project:	Bayside Village
Location:	Portland, Maine
Becker Job No:	SI1724

OBSERVATION REPORT
Cast in Place Concrete

Date:	11/01/07
Time:	7:30 AM to 8:30 AM
Temp:	Low 50's
Weather:	Sunny

Observation Location: Slab at Main Entrance - Grid Lines PP-SS from 1-2

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☐	☐	☐	☒	
Quantity	☐	☐	☐	☒	
Condition	☐	☐	☐	☒	
Placement	☐	☐	☐	☒	
Embed/Anchors	☐	☐	☐	☒	
Lap Splices	☐	☐	☐	☒	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
Bond Beams	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☒	

Notes:
Observation was for placment and finishing procedures. Concrete was placed directly from a shoot, and appeared to be adequately transported and vibrated. The start of the finish procedures were observed, and were in general conformance with specifications.

Signed: Matthew J. Miller, P.E.

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03300

Project:	Bayside Village
Location:	Portland, Maine
Becker Job No:	SI1724

OBSERVATION REPORT
Cast in Place Concrete

Date:	11/30/07
Time:	9:15 am to 10:00 am
Temp:	35 F
Weather:	Sunny\

Observation Location: First Floor Slab on Deck

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☐	☐	☒	☐	
Embed/Anchors	☐	☐	☒	☐	
Lap Splices	☒	☐	☐	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☒	☐	
Bond Beams	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☐	
Additional Items	☐	☐	☐	☐	

Notes:
Review of reinforcing placement for slab on deck. W.W.F. had started to be placed. The work in progress was in general conformance with the structural drawings.

Signed: Matthew J. Miller, P.E.

75 York Street, Portland, ME 04101-4701 ■ Tel 207-879-1838 ■ Fax 207-879-1822

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client Contract Number:

Client: PIZZAGALLI CONSTRUCTION COMPANY

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 8/18/2007 **Time Cast:** 9:30 **Date Received:** 8/20/2007

Placement Location: CONCRETE FILLED INTERIOR OF STEEL PIPE PILES LINE A TO D, 10-7.6 LINE A-BB.4, 1-4 LINE 10, 9, 5-M, N

Placement Method: PUMP

Placement Vol. (yd³): 110

Cylinders Made By: VLT

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 1020, POZZOLITH 100XR

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 4.5

Air Content (%) (C-231): **Air WR:** 2.6

Air Temp (°F): 60

Conc. Temp (°F) (C-1064): 71

Load Number: 3

Mixer Number: 116

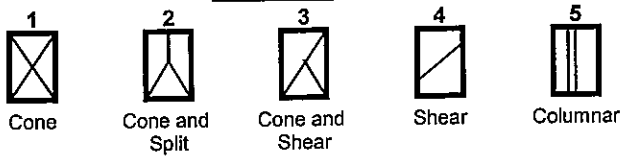
Ticket Number: 134118

Cubic Yards: 10

Design (psi): 4000

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-1A		6.00	28.27	8/27/2007	Lab	**9**	4	96.5	**3410**
790-1B		6.00	28.27	9/15/2007	Lab	**28**	4	130.0	**4600**
790-1C		6.00	28.27	9/15/2007	Lab	**28**	4	128.5	**4550**
790-1D				Hold	Lab				

Fracture Types



Remarks:

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S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 8/25/2007 **Time Cast:** 8:10

Date Received: 8/26/2007

Placement Location: PIPE PILE FILL

Placement Method: PUMP

Cylinders Made By: DMR

Placement Vol. (yd³): 40

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures:

TEST RESULTS

Slump (in) (C-143): 5

Air Content (%) (C-231): 5.8

Air Temp (°F): 60

Conc. Temp (°F) (C-1064): 72

Load Number: 3

Mixer Number: 117

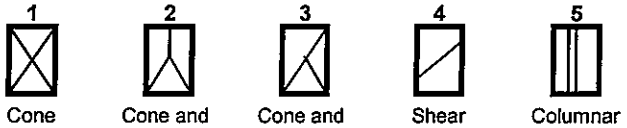
Ticket Number: 13430

Cubic Yards: 10

Design (psi): 4000

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-2A		6.00	28.27	9/3/2007	Lab	**9**	4	121.0	**4280**
790-2B		6.00	28.27	9/22/2007	Lab	**28**	4	147.5	**5220**
790-2C		6.00	28.27	9/22/2007	Lab	**28**	4	139.0	**4920**
790-2D				Hold	Lab				

Fracture Types



Remarks:

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S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 8/31/2007 **Time Cast:** 11:00 **Date Received:** 9/1/2007

Placement Location: CONCRETE PILE FILL E/7, F&G/8, G/6, GG/1, HH/1, L/10, H/8, J LINE 8 THROUGH 10, K/8, N/5 & PLANTER

Placement Method: TAILGATE

Placement Vol. (yd^3): 10

Cylinders Made By: DAC

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures:

TEST RESULTS

Slump (in) (C-143): 4.25

Air Content (%) (C-231): 2.4

Air Temp (°F): 70

Conc. Temp (°F) (C-1064): 74

Load Number: 1

Mixer Number: 77

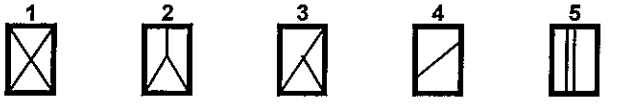
Ticket Number: 136627

Cubic Yards: 10

Design (psi): 4000

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-3A		6.00	28.27	9/7/2007	Lab	**7**	4	108.0	**3820**
790-3B		6.00	28.27	9/28/2007	Lab	**28**	4	136.0	**4810**
790-3C		6.00	28.27	9/28/2007	Lab	**28**	4	145.5	**5150**
790-3D				Hold	Lab				

Fracture Types



Remarks:

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S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 9/13/2007 **Time Cast:** 12:30 **Date Received:** 9/14/2007

Placement Location: GRADE BEAMS AND PILE CAPS LINE A TO C, LINE 7.6 TO 10

Placement Method: CONVEYOR

Cylinders Made By: VLT

Placement Vol. (yd³): 97.5

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 6

Air Content (%) (C-231): **Air WR:** 7.2

Air Temp (°F): 70

Conc. Temp (°F) (C-1064): 71

Load Number: 1

Mixer Number: 176

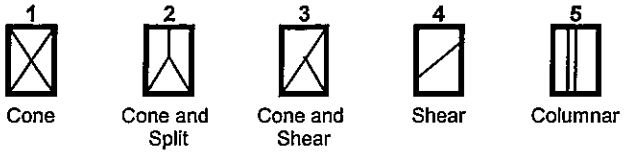
Ticket Number: 4528359

Cubic Yards: 1

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	**Age (days)**	Fracture Type	Load (kips)	**Strength (psi)**
790-4A		6.00	28.27	9/20/2007	Lab	**7**	4	77.0	**2720**
790-4B		6.00	28.27	10/11/2007	Lab	**28**	4	138.5	**4900**
790-4C		6.00	28.27	10/11/2007	Lab	**28**	4	120.5	**4260**
790-4D				Hold	Lab				

Fracture Types



Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 9/13/2007 **Time Cast:** 2:00 **Date Received:** 9/14/2007

Placement Location: GRADE BEAMS AND PILE CAPS LINE A TO C, LINE 7.6 TO 10

Placement Method: CONVEYOR

Placement Vol. (yd^3): 97.5

Cylinders Made By: VLT

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 6

Air Content (%) (C-231): **Air WR:** 7.1

Air Temp (°F): 68

Conc. Temp (°F) (C-1064): 73

Load Number: 6

Mixer Number: 177

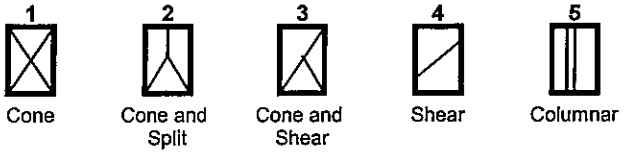
Ticket Number: 4528367

Cubic Yards: 10

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)^2	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-5A		6.00	28.27	9/20/2007	Lab	**7**	4	79.0	**2800**
790-5B		6.00	28.27	10/11/2007	Lab	**28**	4	124.5	**4400**
790-5C		6.00	28.27	10/11/2007	Lab	**28**	4	125.5	**4440**
790-5D				Hold	Lab				

Fracture Types



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Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 9/13/2007 **Time Cast:** 4:00 **Date Received:** 9/15/2007

Placement Location: CONCRETE FILL FOR PIPE PILES LINE RR - SS, 1-3

Placement Method: TAILGATE

Placement Vol. (yd^3): 18

Cylinders Made By: VLT

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 1020

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 5.5

Air Content (%) (C-231): **Air WR:** 2.3

Air Temp (°F): 67

Conc. Temp (°F) (C-1064): 75

Load Number: 1

Mixer Number: 96

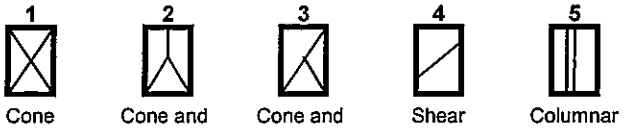
Ticket Number: 132552

Cubic Yards: 9

Design (psi): **4000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-6A		6.00	28.27	9/20/2007	Lab	**7**	4	89.0	**3150**
790-6B		6.00	28.27	10/11/2007	Lab	**28**	4	120.0	**4250**
790-6C		6.00	28.27	10/11/2007	Lab	**28**	4	123.5	**4370**
790-6D				Hold	Lab				

Fracture Types



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Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 9/20/2007 **Time Cast:** 12:30 **Date Received:** 9/21/2007

Placement Location: PILE CAPS / GRADE BEAMS LINE D-F, 10-6

Placement Method: CONVEYOR

Cylinders Made By: VLT

Placement Vol. (yd^3): 86

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 5.0

Air Content (%) (C-231): **Air WR:** 5.8

Air Temp (°F): 69

Conc. Temp (°F) (C-1064): 72

Load Number: 2

Mixer Number: 170

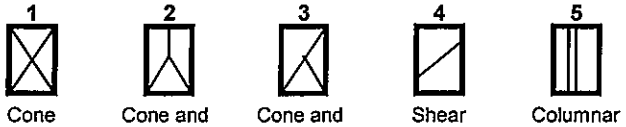
Ticket Number: 4528500

Cubic Yards: 10

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	**Age (days)**	Fracture Type	Load (kips)	**Strength (psi)**
790-7A		6.00	28.27	9/27/2007	Lab	**7**	4	91.5	**3240**
790-7B		6.00	28.27	10/18/2007	Lab	**28**	4	119.5	**4230**
790-7C		6.00	28.27	10/18/2007	Lab	**28**	4	140.0	**4950**
790-7D				Hold	Lab				

Fracture Types



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Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 9/20/2007 **Time Cast:** 2:00 **Date Received:** 9/21/2007

Placement Location: PILE CAPS / GRADE BEAMS LINE D-F, 10-6

Placement Method: CONVEYOR

Placement Vol. (yd³): 86

Cylinders Made By: VLT

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 6 1/4

Air Content (%) (C-231): **Air WR:** 6.2

Air Temp (°F): 75

Conc. Temp (°F) (C-1064): 71

Load Number: 6

Mixer Number: 156

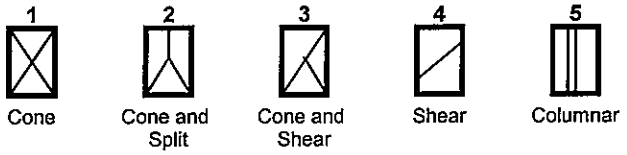
Ticket Number: 4528507

Cubic Yards: 10

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-8A		6.00	28.27	9/27/2007	Lab	**7**	4	89.5	**3170**
790-8B		6.00	28.27	10/18/2007	Lab	**28**	4	125.0	**4420**
790-8C		6.00	28.27	10/18/2007	Lab	**28**	4	122.0	**4320**
790-8D				Hold	Lab				

Fracture Types



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Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING
Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY
Client Contract Number:

General Contractor:
Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 9/26/2007 **Time Cast:** 12:40 **Date Received:** 9/27/2007

Placement Location: PILE CAPS / GRADE BEAMS LINE F-H, 10-8

Placement Method: CONVEYOR
Cylinders Made By: VLT
Placement Vol. (yd³): 92
Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997

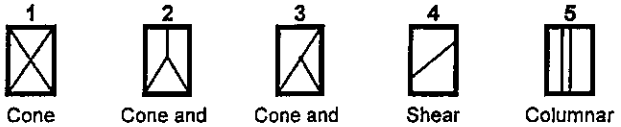
TEST RESULTS

Slump (in) (C-143): **Slump WR:** 5.5
Air Content (%) (C-231): **Air WR:** 7.3
Air Temp (°F): 87
Conc. Temp (°F) (C-1064): 76

Load Number: 2
Mixer Number: 177
Ticket Number: 4528577
Cubic Yards: 10
Design (psi): 3000

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-9A		6.00	28.27	10/3/2007	Lab	**7**	4	84.0	**2970**
790-9B		6.00	28.27	10/24/2007	Lab	**28**	4	115.0	**4070**
790-9C		6.00	28.27	10/24/2007	Lab	**28**	4	112.0	**3960**
790-9D				Hold	Lab				

Fracture Types



Remarks:

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Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client Contract Number:

Client: PIZZAGALLI CONSTRUCTION COMPANY

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 9/26/2007 **Time Cast:** 1:50 **Date Received:** 9/27/2007

Placement Location: PILE CAPS / GRADE BEAMS LINE F-H, 10-8

Placement Method: CONVEYOR

Placement Vol. (yd³): 92

Cylinders Made By: VLT

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 5.75

Air Content (%) (C-231): **Air WR:** 7

Air Temp (°F): 90

Conc. Temp (°F) (C-1064): 79

Load Number: 6

Mixer Number: 190

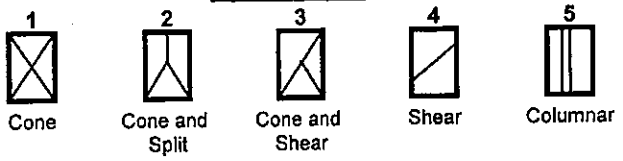
Ticket Number: 4528582

Cubic Yards: 10

Design (psi): 3000

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-10A		6.00	28.27	10/3/2007	Lab	**7**	4	85.0	**3010**
790-10B		6.00	28.27	10/24/2007	Lab	**28**	4	105.0	**3710**
790-10C		6.00	28.27	10/24/2007	Lab	**28**	4	109.5	**3870**
790-10D				Hold	Lab				

Fracture Types



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Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 9/27/2007 **Time Cast:** 1:40 **Date Received:** 9/28/2007

Placement Location: AA TO CC, 1 - 7 - GRADE BEAMS, PILE CAPS

Placement Method: PUMP

Cylinders Made By: VLT

Placement Vol. (yd³): 138

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 5 3/4

Air Content (%) (C-231): **Air WR:** 7.4

Air Temp (°F): 72

Conc. Temp (°F) (C-1064): 77

Load Number: 1

Mixer Number: 173

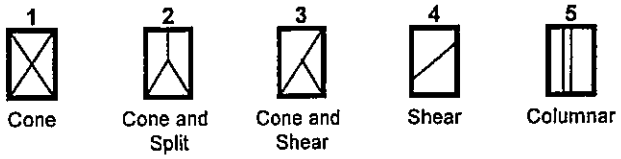
Ticket Number: 4528596

Cubic Yards: 10

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	**Age (days)**	Fracture Type	Load (kips)	**Strength (psi)**
790-11A		6.00	28.27	10/4/2007	Lab	**7**	4	81.0	**2870**
790-11B		6.00	28.27	10/25/2007	Lab	**28**	4	111.0	**3930**
790-11C		6.00	28.27	10/25/2007	Lab	**28**	4	113.0	**4000**
790-11D				Hold	Lab				

Fracture Types



Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 9/27/2007 **Time Cast:** 2:35 **Date Received:** 9/28/2007

Placement Location: AA TO CC, 1 - 7 - GRADE BEAMS, PILE CAPS

Placement Method: PUMP

Cylinders Made By: VLT

Placement Vol. (yd³): 138

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 5.5

Air Content (%) (C-231): **Air WR:** 6.6

Air Temp (°F): 74

Conc. Temp (°F) (C-1064): 78

Load Number: 6

Mixer Number: 180

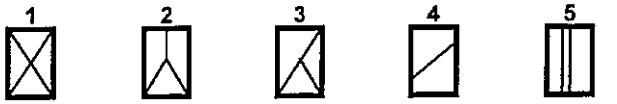
Ticket Number: 3109383

Cubic Yards: 10

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	**Age (days)**	Fracture Type	Load (kips)	**Strength (psi)**
790-12A		6.00	28.27	10/4/2007	Lab	**7**	4	82.5	**2920**
790-12B		6.00	28.27	10/25/2007	Lab	**28**	4	118.0	**4170**
790-12C		6.00	28.27	10/25/2007	Lab	**28**	4	121.0	**4280**
790-12D				Hold	Lab				

Fracture Types



1 Cone; 2 Cone and Split; 3 Cone and Shear; 4 Shear; 5 Columnar

Remarks:

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Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 9/27/2007 **Time Cast:** 3:40 **Date Received:** 9/28/2007

Placement Location: AA TO CC, 1 - 7 - GRADE BEAMS, PILE CAPS

Placement Method: PUMP

Placement Vol. (yd³): 138

Cylinders Made By: VLT

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 6

Air Content (%) (C-231):

Air Temp (°F): 67

Conc. Temp (°F) (C-1064): 76

Load Number: 12

Mixer Number: 180

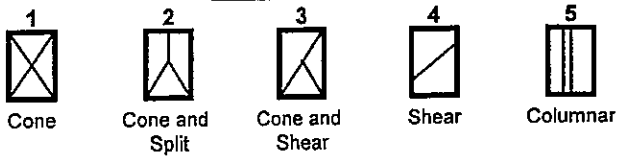
Ticket Number: 4528606

Cubic Yards: 10

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-13A		6.00	28.27	10/4/2007	Lab	**7**	4	71.5	**2530**
790-13B		6.00	28.27	10/25/2007	Lab	**28**	4	97.0	**3430**
790-13C		6.00	28.27	10/25/2007	Lab	**28**	4	98.0	**3470**
790-13D				Hold	Lab				

Fracture Types



1 Cone; 2 Cone and Split; 3 Cone and Shear; 4 Shear; 5 Columnar

Remarks:

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S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 10/3/2007 **Time Cast:** 2:20 **Date Received:** 10/4/2007

Placement Location: PILE CAPS - GRADE BEAMS H TO J, 10 TO 7

Placement Method: CONVEYOR *

Placement Vol. (yd^3): 95

Cylinders Made By: VLT

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 5 3/4

Air Content (%) (C-231): **Air WR:** 7.2

Air Temp (°F): 67

Conc. Temp (°F) (C-1064): 71

Load Number: 1

Mixer Number: 170

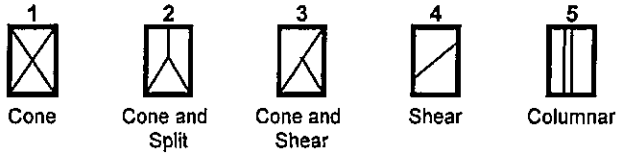
Ticket Number: 4528662

Cubic Yards: 10

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-14A		6.00	28.27	10/10/2007	Lab	**7**	4	76.0	**2690**
790-14B		6.00	28.27	10/31/2007	Lab	**28**	4	111.5	**3940**
790-14C		6.00	28.27	10/31/2007	Lab	**28**	4	110.5	**3910**
790-14D				11/28/2007	Lab	**56**			

Fracture Types



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Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 10/3/2007 **Time Cast:** 4:00 **Date Received:** 10/4/2007

Placement Location: PILE CAPS - GRADE BEAMS H TO J, 10 TO 7

Placement Method: CONVEYOR *

Placement Vol. (yd^3): 95

Cylinders Made By: VLT

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 5.5

Air Content (%) (C-231): **Air WR:** 7.3

Air Temp (°F): 64

Conc. Temp (°F) (C-1064): 70

Load Number: 6

Mixer Number: 180

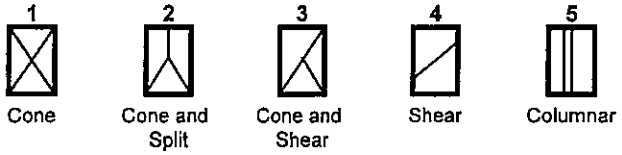
Ticket Number: 4528670

Cubic Yards: 10

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-15A		6.00	28.27	10/10/2007	Lab	**7**	4	75.0	**2650**
790-15B		6.00	28.27	10/31/2007	Lab	**28**	4	111.0	**3930**
790-15C		6.00	28.27	10/31/2007	Lab	**28**	4	110.0	**3890**
790-15D				11/28/2007	Lab	**56**			

Fracture Types



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S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client Contract Number:

Client: PIZZAGALLI CONSTRUCTION COMPANY

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 10/5/2007 **Time Cast:** 8:20 **Date Received:** 10/8/2007

Placement Location: STRUCTURAL SLAB A+ TO C, 10 TO 7.6

Placement Method: CONVEYOR *

Placement Vol. (yd^3): 82

Cylinders Made By: VLT

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: FIBERMESH, POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 5

Air Content (%) (C-231): **Air WR:** 2.4

Air Temp (°F): 61

Conc. Temp (°F) (C-1064): 68

Load Number: 4

Mixer Number: 169

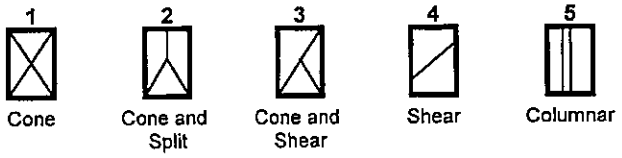
Ticket Number: 4528698

Cubic Yards: 10

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-16A		6.00	28.27	10/12/2007	Lab	**7**	4	94.5	**3340**
790-16B		6.00	28.27	11/2/2007	Lab	**28**	4	127.0	**4490**
790-16C		6.00	28.27	11/2/2007	Lab	**28**	4	135.0	**4780**
790-16D				Hold	Lab				

Fracture Types



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S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 10/5/2007 **Time Cast:** 9:30 **Date Received:** 10/8/2007

Placement Location: STRUCTURAL SLAB A+ TO C, 10 TO 7.6

Placement Method: CONVEYOR *

Placement Vol. (yd³): 82

Cylinders Made By: VLT

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: FIBERMESH, POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 4.5

Air Content (%) (C-231): **Air WR:** 3.0

Air Temp (°F): 73

Conc. Temp (°F) (C-1064): 69

Load Number: 6

Mixer Number: 180

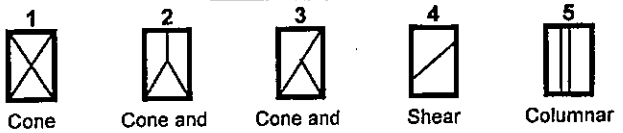
Ticket Number: 4528700

Cubic Yards: 10

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-17A		6.00	28.27	10/12/2007	Lab	**7**	4	86.5	**3060**
790-17B		6.00	28.27	11/2/2007	Lab	**28**	4	123.5	**4370**
790-17C		6.00	28.27	11/2/2007	Lab	**28**	4	133.5	**4720**
790-17D				Hold	Lab				

Fracture Types



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S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 10/5/2007 **Time Cast:** 12:50 **Date Received:** 10/8/2007

Placement Location: DD TO GG, 1 TO 6 PILE CAPS, GRADE BEAMS

Placement Method: CONVEYOR *

Cylinders Made By: VLT

Placement Vol. (yd^3): 110

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 5

Air Content (%) (C-231): **Air WR:** 6

Air Temp (°F): 77

Conc. Temp (°F) (C-1064): 73

Load Number: 1

Mixer Number: 183

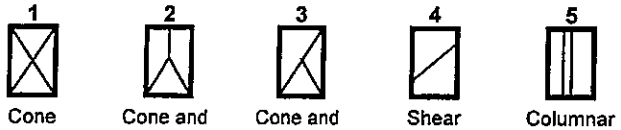
Ticket Number: 4528711

Cubic Yards: 10

Design (psi): 3000

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-18A		6.00	28.27	10/12/2007	Lab	**7**	4	114.5	**4050**
790-18B		6.00	28.27	11/2/2007	Lab	**28**	4	139.5	**4930**
790-18C		6.00	28.27	11/2/2007	Lab	**28**	4	130.0	**4600**
790-18D				Hold	Lab				

Fracture Types



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Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING
Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY
Client Contract Number:

General Contractor:
Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 10/5/2007 **Time Cast:** 3:05 **Date Received:** 10/8/2007

Placement Location: DD TO GG, 1 TO 6 PILE CAPS, GRADE BEAMS

Placement Method: CONVEYOR *
Cylinders Made By: VLT

Placement Vol. (yd^3): 110
Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997

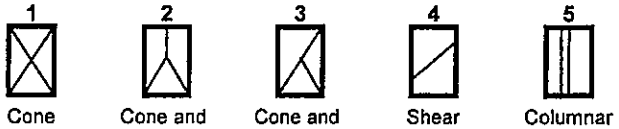
TEST RESULTS

Slump (in) (C-143): **Slump WR:** 6
Air Content (%) (C-231): **Air WR:** 6.8
Air Temp (°F): 77
Conc. Temp (°F) (C-1064): 75

Load Number: 6
Mixer Number: 176
Ticket Number: 4528721
Cubic Yards: 10
Design (psi): 3000

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-19A		6.00	28.27	10/12/2007	Lab	7	4	91.0	3220
790-19B		6.00	28.27	11/2/2007	Lab	28	4	111.0	3930
790-19C		6.00	28.27	11/2/2007	Lab	28	4	120.0	4250
790-19D				Hold	Lab				

Fracture Types



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Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 10/15/2007 **Time Cast:** 1:00

Date Received: 10/16/2007

Placement Location: K, L, M, N 10-7 WALLS

Placement Method: PUMP

Cylinders Made By: CKT

Placement Vol. (yd³): 112

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLY 997

TEST RESULTS

Slump (in) (C-143): 5.5

Air Content (%) (C-231): 6.6

Air Temp (°F): 58

Conc. Temp (°F) (C-1064): 59

Load Number: 3

Mixer Number: 180

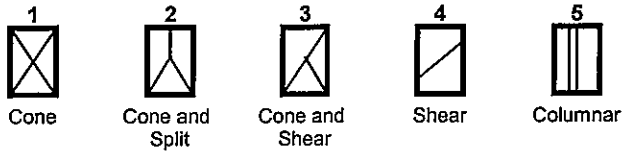
Ticket Number: 4528777

Cubic Yards: 10

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-22A		6.00	28.27	10/22/2007	Lab	**7**	4	83.0	**2940**
790-22B		6.00	28.27	11/12/2007	Lab	**28**	4	111.0	**3930**
790-22C		6.00	28.27	11/12/2007	Lab	**28**	4	116.0	**4100**
790-22D				Hold	Lab				

Fracture Types



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Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client Contract Number:

Client: PIZZAGALLI CONSTRUCTION COMPANY

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 10/15/2007 **Time Cast:** 2:05 **Date Received:** 10/16/2007

Placement Location: K, L, M, N 10-7 WALLS

Placement Method: PUMP

Placement Vol. (yd³): 112

Cylinders Made By: CKT

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLY 997

TEST RESULTS

Slump (in) (C-143): 5.75

Air Content (%) (C-231): 6.7

Air Temp (°F): 58

Conc. Temp (°F) (C-1064): 57

Load Number: 7

Mixer Number: 181

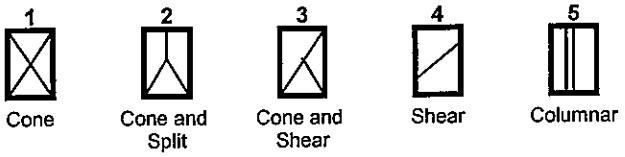
Ticket Number: 4528781

Cubic Yards: 10

Design (psi): 3000

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-23A		6.00	28.27	10/22/2007	Lab	7	4	79.5	2810
790-23B		6.00	28.27	11/12/2007	Lab	28	4	102.0	3610
790-23C		6.00	28.27	11/12/2007	Lab	28	4	111.0	3930
790-23D				Hold	Lab				

Fracture Types



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S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING
Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY
Client Contract Number:

General Contractor:
Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 10/17/2007 **Time Cast:** 2:10 **Date Received:** 10/18/2007

Placement Location: LINE FF TO KK PILE CAPS & GRADE BEAMS

Placement Method: CONVEYOR *
Placement Vol. (yd^3): 89

Cylinders Made By: VLT
Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997

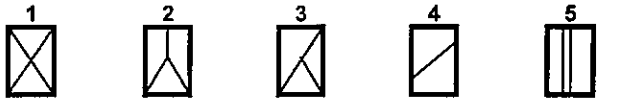
TEST RESULTS

Slump (in) (C-143): **Slump WR:** 6
Air Content (%) (C-231): **Air WR:** 6.9
Air Temp (°F): 63
Conc. Temp (°F) (C-1064): 63

Load Number: 2
Mixer Number: 192
Ticket Number: 555032
Cubic Yards: 10
Design (psi): 3000

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)^2	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-26A		6.00	28.27	10/24/2007	Lab	**7**	4	84.5	**2990**
790-26B		6.00	28.27	11/14/2007	Lab	**28**	4	114.0	**4030**
790-26C		6.00	28.27	11/14/2007	Lab	**28**	4	110.0	**3890**
790-26D				Hold	Lab				

Fracture Types



1 Cone; 2 Cone and Split; 3 Cone and Shear; 4 Shear; 5 Columnar

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Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client Contract Number:

Client: PIZZAGALLI CONSTRUCTION COMPANY

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 10/17/2007 **Time Cast:** 3:50 **Date Received:** 10/18/2007

Placement Location: LINE FF TO KK PILE CAPS & GRADE BEAMS

Placement Method: CONVEYOR *

Placement Vol. (yd³): 89

Cylinders Made By: VLT

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 6 1/4

Air Content (%) (C-231): **Air WR:** 6.9

Air Temp (°F): 58

Conc. Temp (°F) (C-1064): 66

Load Number: 7

Mixer Number: 183

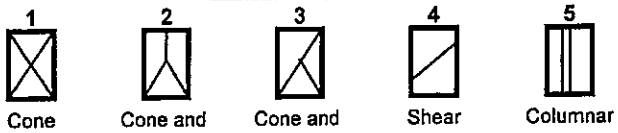
Ticket Number: 555040

Cubic Yards: 10

Design (psi): 3000

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-27A		6.00	28.27	10/24/2007	Lab	**7**	4	74.0	**2620**
790-27B		6.00	28.27	11/14/2007	Lab	**28**	4	112.5	**3980**
790-27C		6.00	28.27	11/14/2007	Lab	**28**	4	97.5	**3450**
790-27D				Hold	Lab				

Fracture Types



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Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 10/19/2007 **Time Cast:** 9:30 **Date Received:** 10/20/2007

Placement Location: STRUCTURAL SLAB - STAIR TOWER #2 LINE 4 TO 1.2, AA TO CC

Placement Method: PUMP

Cylinders Made By: VLT

Placement Vol. (yd³): 48.5

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997; FIBERMESH

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 5.25

Air Content (%) (C-231): **Air WR:** 2.7

Air Temp (°F): 52

Conc. Temp (°F) (C-1064): 67

Load Number: 2

Mixer Number: 176

Ticket Number: 4528870

Cubic Yards: 10

Design (psi): 3000

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-28A		6.00	28.27	10/26/2007	Lab	**7**	4	96.0	**3400**
790-28B		6.00	28.27	11/16/2007	Lab	**28**	4	114.0	**4030**
790-28C		6.00	28.27	11/16/2007	Lab	**28**	4	116.5	**4120**
790-28D				Hold	Lab				

Fracture Types

1 Cone; 2 Cone and Split; 3 Cone and Shear; 4 Shear; 5 Columnar

Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 10/26/2007 **Time Cast:** 7:31

Date Received: 10/27/2007

Placement Location: STRUCTURAL SLAB 1 TO 3, CC TO G

Placement Method: PUMP *

Cylinders Made By: VLT

Placement Vol. (yd³): 148

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997 FIBER MESH

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 5.5

Air Content (%) (C-231): **Air WR:** 2.8

Air Temp (°F): 40

Conc. Temp (°F) (C-1064): 62

Load Number: 2

Mixer Number: 183

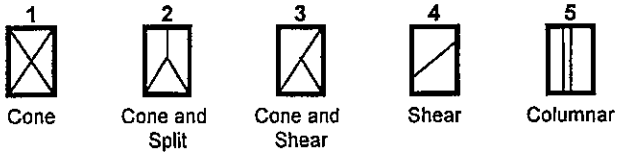
Ticket Number: 2

Cubic Yards: 10

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-30A		6.00	28.27	11/2/2007	Lab	**7**	4	70.0	**2480**
790-30B		6.00	28.27	11/23/2007	Lab	**28**	4	115.5	**4090**
790-30C		6.00	28.27	11/23/2007	Lab	**28**	4	122.5	**4330**
790-30D				Hold	Lab				

Fracture Types



Remarks: * NORTHEAST CONCRETE

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S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 10/26/2007 **Time Cast:** 8:20

Date Received: 10/27/2007

Placement Location: STRUCTURAL SLAB 1 TO 3, CC TO G

Placement Method: PUMP *

Cylinders Made By: VLT

Placement Vol. (yd³): 148

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997
FIBERMESH

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 5 3/4

Air Content (%) (C-231): **Air WR:** 3.0

Air Temp (°F): 43

Conc. Temp (°F) (C-1064): 59

Load Number: 6

Mixer Number: 170

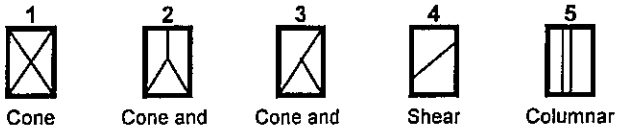
Ticket Number: 3928115

Cubic Yards: 10

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-31A		6.00	28.27	11/2/2007	Lab	**7**	4	76.0	**2690**
790-31B		6.00	28.27	11/23/2007	Lab	**28**	4	123.5	**4370**
790-31C		6.00	28.27	11/23/2007	Lab	**28**	4	122.5	**4330**
790-31D				Hold	Lab				

Fracture Types



1 Cone; 2 Cone and Split; 3 Cone and Shear; 4 Shear; 5 Columnar

Remarks: * NORTHEAST CONCRETE

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S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING
Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY
Client Contract Number:

General Contractor:
Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 10/26/2007 **Time Cast:** 9:26 **Date Received:** 10/27/2007

Placement Location: STRUCTURAL SLAB LINE 1 TO 3, CC TO G

Placement Method: PUMP
Cylinders Made By: VLT

Placement Vol. (yd^3): 148
Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997
FIBERMESH

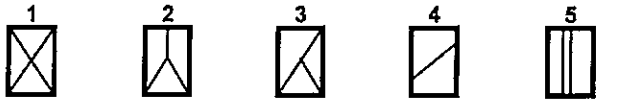
TEST RESULTS

Slump (in) (C-143): **Slump WR:** 6
Air Content (%) (C-231): **Air WR:** 2.8
Air Temp (°F): 46
Conc. Temp (°F) (C-1064): 59

Load Number: 12
Mixer Number: 177
Ticket Number: 3928121
Cubic Yards: 10
Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-32A		6.00	28.27	11/2/2007	Lab	**7**	4	75.0	**2650**
790-32B		6.00	28.27	11/23/2007	Lab	**28**	4	130.0	**4600**
790-32C		6.00	28.27	11/23/2007	Lab	**28**	4	128.5	**4550**
790-32D				Hold	Lab				

Fracture Types



1 Cone · 2 Cone and Split · 3 Cone and Shear · 4 Shear · 5 Columnar

Remarks:

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S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING
Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY
Client Contract Number:

General Contractor:
Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 10/26/2007 **Time Cast:** 12:48 **Date Received:** 10/27/2007

Placement Location: PILE CAPS.A GRADE BEAMS

Placement Method: PUMP *
Cylinders Made By: VLT

Placement Vol. (yd^3): 215
Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997

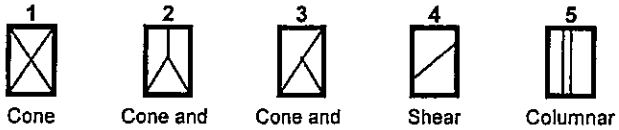
TEST RESULTS

Slump (in) (C-143): **Slump WR:** 6 1/4
Air Content (%) (C-231): **Air WR:** 5.9
Air Temp (°F): 58
Conc. Temp (°F) (C-1064): 63

Load Number: 1
Mixer Number: 169
Ticket Number: 3928136
Cubic Yards: 10
Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-33A		6.00	28.27	11/2/2007	Lab	**7**	4	85.0	**3010**
790-33B		6.00	28.27	11/23/2007	Lab	**28**	4	126.0	**4460**
790-33C		6.00	28.27	11/23/2007	Lab	**28**	4	126.5	**4480**
790-33D				Hold	Lab				

Fracture Types



1 Cone; 2 Cone and Split; 3 Cone and Shear; 4 Shear; 5 Columnar

Remarks: * NORTHEAST CONCRETE PUMPING

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S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING
Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY
Client Contract Number:

General Contractor:
Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 10/26/2007 **Time Cast:** 1:45 **Date Received:** 10/27/2007

Placement Location: PILE CAPS A GRADE BEAMS

Placement Method: PUMP *
Cylinders Made By: VLT

Placement Vol. (yd³): 215
Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997

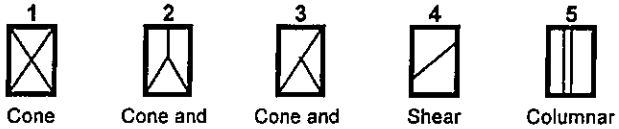
TEST RESULTS

Slump (in) (C-143): **Slump WR:** 5 3/4
Air Content (%) (C-231): **Air WR:** 6.5
Air Temp (°F): 56
Conc. Temp (°F) (C-1064): 63

Load Number: 7
Mixer Number: 181
Ticket Number: 3928143
Cubic Yards: 10
Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-34A		6.00	28.27	11/2/2007	Lab	**7**	4	84.0	**2970**
790-34B		6.00	28.27	11/23/2007	Lab	**28**	4	125.0	**4420**
790-34C		6.00	28.27	11/23/2007	Lab	**28**	4	117.5	**4160**
790-34D				Hold	Lab				

Fracture Types



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S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 10/26/2007 **Time Cast:** 2:50

Date Received: 10/27/2007

Placement Location: PILE CAPS A GRADE BEAMS

Placement Method: PUMP *

Cylinders Made By: VLT

Placement Vol. (yd³): 215

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 6

Air Content (%) (C-231): **Air WR:** 7.0

Air Temp (°F): 56

Conc. Temp (°F) (C-1064): 63

Load Number: 13

Mixer Number: 192

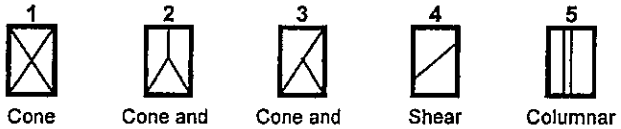
Ticket Number: 3928150

Cubic Yards: 10

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-35A		6.00	28.27	11/2/2007	Lab	**7**	4	74.0	**2620**
790-35B		6.00	28.27	11/23/2007	Lab	**28**	4	121.0	**4280**
790-35C		6.00	28.27	11/23/2007	Lab	**28**	4	119.5	**4230**
790-35D				Hold	Lab				

Fracture Types



1 Cone; 2 Cone and Split; 3 Cone and Shear; 4 Shear; 5 Columnar

Remarks: * NORTHEAST CONCRETE PUMPING

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Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING
Project Number: 05-1177.3
Client Contract Number:
Client: PIZZAGALLI CONSTRUCTION COMPANY
General Contractor:
Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 10/26/2007 **Time Cast:** 3:45 **Date Received:** 10/27/2007
Placement Location: PILE CAPS A GRADE BEAMS

Placement Method: PUMP *
Cylinders Made By: VLT
Placement Vol. (yd³): 215
Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures
Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

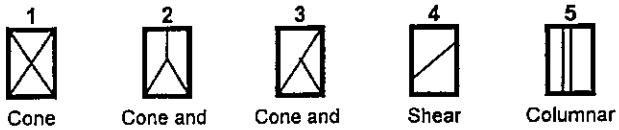
Admixtures: POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 6
Air Content (%) (C-231): **Air WR:** 6.8
Air Temp (°F): 55
Conc. Temp (°F) (C-1064): 64
Load Number: 17
Mixer Number: 183
Ticket Number: 3928156
Cubic Yards: 10
Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-36A		6.00	28.27	11/2/2007	Lab	**7**	4	89.5	**3170**
790-36B		6.00	28.27	11/23/2007	Lab	**28**	4	130.5	**4620**
790-36C		6.00	28.27	11/23/2007	Lab	**28**	4	126.0	**4460**
790-36D				Hold	Lab				

Fracture Types



Remarks: * NORTHEAST CONCRETE PUMPING

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S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 10/26/2007 **Time Cast:** 4:30

Date Received: 10/27/2007

Placement Location: PILE CAPS A GRADE BEAMS

Placement Method: PUMP *

Cylinders Made By: VLT

Placement Vol. (yd³): 215

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 6

Air Content (%) (C-231): **Air WR:** 7.2

Air Temp (°F): 53

Conc. Temp (°F) (C-1064): 61

Load Number: 21

Mixer Number: 173

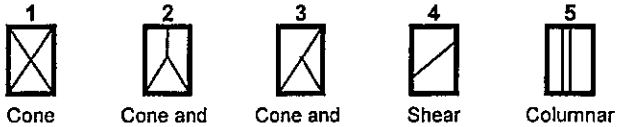
Ticket Number: 3928160

Cubic Yards: 10

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-37A		6.00	28.27	11/2/2007	Lab	**7**	4	87.0	**3080**
790-37B		6.00	28.27	11/23/2007	Lab	**28**	4	122.5	**4330**
790-37C		6.00	28.27	11/23/2007	Lab	**28**	4	118.0	**4170**
790-37D				Hold	Lab				

Fracture Types



Remarks: * NORTHEAST CONCRETE PUMPING

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 10/30/2007 **Time Cast:** 10:30 **Date Received:** 10/31/2007

Placement Location: SONAR TUBES ON FRONT SIDE OF BUILDING ADJACENT TO MARGINAL WAY

Placement Method: TAILGATE

Cylinders Made By: DMR

Placement Vol. (yd³): 7.5

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997

TEST RESULTS

Slump (in) (C-143): 5.5

Air Content (%) (C-231): 5.8

Air Temp (°F): 50

Conc. Temp (°F) (C-1064): 58

Load Number: 1

Mixer Number: 169

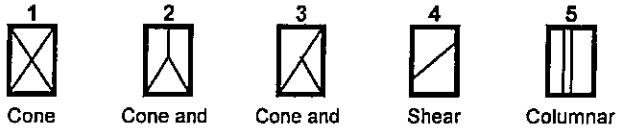
Ticket Number: 3928191

Cubic Yards: 7.5

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-38A		6.00	28.27	11/2/2007	Lab	**3**	4	121.0	**4280**
790-38B		6.00	28.27	11/27/2007	Lab	**28**	4	156.0	**5520**
790-38C		6.00	28.27	11/27/2007	Lab	**28**	4	161.0	**5700**
790-38D				Hold	Lab				

Fracture Types



1 Cone; 2 Cone and Split; 3 Cone and Shear; 4 Shear; 5 Columnar

Remarks: 3000 PLACED 5000

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Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 11/1/2007 **Time Cast:** 7:55 **Date Received:** 11/2/2007

Placement Location: STRUCTURAL SLAB STAIR TOWER NN.5-SS, 1-2, N & M 10-9

Placement Method: PUMP

Cylinders Made By: VLT

Placement Vol. (yd^3): 40

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: FIBERMESH, POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 6

Air Content (%) (C-231): **Air WR:** 2.4

Air Temp (°F): 52

Conc. Temp (°F) (C-1064): 66

Load Number: 2

Mixer Number: 170

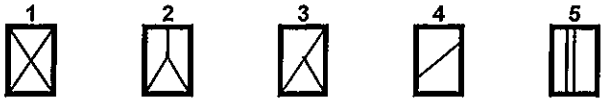
Ticket Number: 3928230

Cubic Yards: 10

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-39A		6.00	28.27	11/8/2007	Lab	**7**	4	77.5	**2740**
790-39B		6.00	28.27	11/29/2007	Lab	**28**	4	126.5	**4480**
790-39C		6.00	28.27	11/29/2007	Lab	**28**	4	126.5	**4480**
790-39D				Hold	Lab				

Fracture Types



1 Cone; 2 Cone and Split; 3 Cone and Shear; 4 Shear; 5 Columnar

Remarks:

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S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 11/20/2007 **Time Cast:** 7:50 **Date Received:** 11/21/2007

Placement Location: 1ST FLOOR SLAB ON DECK A TO E, 1 TO 10

Placement Method: PUMP

Cylinders Made By: VLT

Placement Vol. (yd^3): 250

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POZZUTEC 20 2%, POLY 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 5

Air Content (%) (C-231): **Air WR:** 5.5

Air Temp (°F): 36

Conc. Temp (°F) (C-1064): 61

Load Number: 2

Mixer Number: 190

Ticket Number: 3928441

Cubic Yards: 10

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-41A		6.00	28.27	11/27/2007	Lab	**7**	4	96.5	**3410**
790-41B		6.00	28.27	12/18/2007	Lab	**28**	4	125.5	**4440**
790-41C		6.00	28.27	12/18/2007	Lab	**28**	4	128.5	**4550**
790-41D				Hold	Lab				

Fracture Types

1 Cone; 2 Cone and Split; 3 Cone and Shear; 4 Shear; 5 Columnar

Remarks:

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Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 11/20/2007 **Time Cast:** **Date Received:** 11/21/2007

Placement Location: 1ST FLOOR SLAB ON DECK A TO E, 1 TO 10

Placement Method: PUMP

Cylinders Made By: VLT

Placement Vol. (yd^3): 250

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POZZUTEC 20 2%, POLY 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 5.5

Air Content (%) (C-231): 4.0

Air Temp (°F): 38

Conc. Temp (°F) (C-1064): 57

Load Number: 7

Mixer Number: 191

Ticket Number: 3928446

Cubic Yards: 10

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-42A		6.00	28.27	11/27/2007	Lab	**7**	4	94.0	**3330**
790-42B		6.00	28.27	12/18/2007	Lab	**28**	4	146.5	**5180**
790-42C		6.00	28.27	12/18/2007	Lab	**28**	4	138.5	**4900**
790-42D				Hold	Lab				

Fracture Types

1 Cone; 2 Cone and Split; 3 Cone and Shear; 4 Shear; 5 Columnar

Remarks:

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Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 11/20/2007 **Time Cast:** 9:23

Date Received: 11/21/2007

Placement Location: 1ST FLOOR SLAB ON DECK

Placement Method: PUMP

Cylinders Made By: VLT

Placement Vol. (yd^3): 250

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997, POZZUTEC 20 2%

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 5.5

Air Content (%) (C-231): **Air WR:** 4.0

Air Temp (°F): 38

Conc. Temp (°F) (C-1064): 58

Load Number: 12

Mixer Number: 173

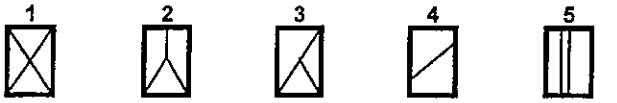
Ticket Number: 3928451

Cubic Yards: 10

Design (psi): 3000

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-43A		6.00	28.27	11/27/2007	Lab	7	4	96.0	3400
790-43B		6.00	28.27	12/18/2007	Lab	28	4	133.0	4700
790-43C		6.00	28.27	12/18/2007	Lab	28	4	137.5	4860
790-43D				Hold	Lab				

Fracture Types



Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 11/20/2007 **Time Cast:** 9:55

Date Received: 11/21/2007

Placement Location: 1ST FLOOR SLAB ON DECK

Placement Method: PUMP

Cylinders Made By: VLT

Placement Vol. (yd³): 250

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997, POZZUTEC 20 2%

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 5.75

Air Content (%) (C-231): **Air WR:** 3.5

Air Temp (°F): 38

Conc. Temp (°F) (C-1064): 58

Load Number: 16

Mixer Number: 185

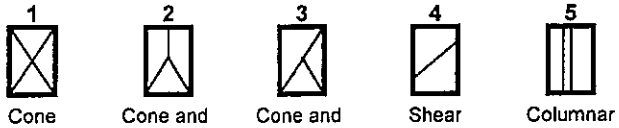
Ticket Number: 3928457

Cubic Yards: 10

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-44A		6.00	28.27	11/27/2007	Lab	**7**	4	95.0	**3360**
790-44B		6.00	28.27	12/18/2007	Lab	**28**	4	141.0	**4990**
790-44C		6.00	28.27	12/18/2007	Lab	**28**	4	139.0	**4920**
790-44D				Hold	Lab				

Fracture Types



1 Cone; 2 Cone and Split; 3 Cone and Shear; 4 Shear; 5 Columnar

Remarks:

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S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 11/20/2007 **Time Cast:** 10:38

Date Received: 11/21/2007

Placement Location: 1ST FLOOR SLAB ON DECK

Placement Method: PUMP

Cylinders Made By: VLT

Placement Vol. (yd^3): 250

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures:

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 6

Air Content (%) (C-231): **Air WR:** 3.5

Air Temp (°F): 39

Conc. Temp (°F) (C-1064): 60

Load Number: 22

Mixer Number: 194

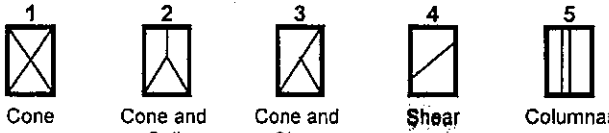
Ticket Number: 3928464

Cubic Yards: 10

Design (psi): 3000

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-45A		6.00	28.27	11/27/2007	Lab	7	4	81.0	2870
790-45B		6.00	28.27	12/18/2007	Lab	28	4	138.0	4880
790-45C		6.00	28.27	12/18/2007	Lab	28	4	133.0	4700
790-45D				Hold	Lab				

Fracture Types



Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING
Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY
Client Contract Number:

General Contractor:
Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 11/30/2007 **Time Cast:** 8:52 **Date Received:** 12/1/2007

Placement Location: DECK SLAB - 1ST FLOOR

Placement Method: PUMP
Cylinders Made By: VLT

Placement Vol. (yd³): 240
Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 6.5
Air Content (%) (C-231):
Air Temp (°F): 32
Conc. Temp (°F) (C-1064): 57

Load Number: 2
Mixer Number: 189
Ticket Number: 3928588
Cubic Yards: 10
Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	**Age (days)**	Fracture Type	Load (kips)	**Strength (psi)**
790-46A		6.00	28.27	12/7/2007	Lab	**7**	4	99.0	**3500**
790-46B		6.00	28.27	12/28/2007	Lab	**28**	4	133.0	**4700**
790-46C		6.00	28.27	12/28/2007	Lab	**28**	4	135.5	**4790**
790-46D				Hold	Lab				

Fracture Types

1 Cone; 2 Cone and Split; 3 Cone and Shear; 4 Shear; 5 Columnar

Remarks:

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Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 11/30/2007 **Time Cast:** 9:18

Date Received: 12/1/2007

Placement Location: DECK SLAB - 1ST FLOOR

Placement Method: PUMP

Cylinders Made By: VLT

Placement Vol. (yd³): 240

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 6

Air Content (%) (C-231): **Air WR:** 2.3

Air Temp (°F): 35

Conc. Temp (°F) (C-1064): 61

Load Number: 7

Mixer Number: 192

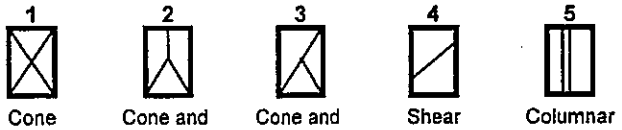
Ticket Number: 3928594

Cubic Yards: 10

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-47A		6.00	28.27	12/7/2007	Lab	**7**	4	117.5	**4160**
790-47B		6.00	28.27	12/28/2007	Lab	**28**	4	140.5	**4970**
790-47C		6.00	28.27	12/28/2007	Lab	**28**	4	144.5	**5110**
790-47D				Hold	Lab				

Fracture Types



Remarks:

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Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING
Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY
Client Contract Number:

General Contractor:
Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 11/30/2007 **Time Cast:** 9:40
Date Received: 12/1/2007

Placement Location: DECK SLAB - 1ST FLOOR

Placement Method: PUMP
Cylinders Made By: VLT

Placement Vol. (yd³): 240
Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 6
Air Content (%) (C-231): **Air WR:** 2.1
Air Temp (°F): 36
Conc. Temp (°F) (C-1064): 61

Load Number: 10
Mixer Number: 185
Ticket Number: 3928597
Cubic Yards: 10
Design (psi): 3000

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-48A		6.00	28.27	12/7/2007	Lab	**7**	4	102.5	**3630**
790-48B		6.00	28.27	12/28/2007	Lab	**28**	4	141.0	**4990**
790-48C		6.00	28.27	12/28/2007	Lab	**28**	4	143.5	**5080**
790-48D				Hold	Lab				

Fracture Types

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Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 11/30/2007 **Time Cast:** 11:08 **Date Received:** 12/1/2007

Placement Location: DECK SLAB - 1ST FLOOR

Placement Method: PUMP

Cylinders Made By: VLT

Placement Vol. (yd³): 240

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 6.25

Air Content (%) (C-231): **Air WR:** 2.3

Air Temp (°F): 36

Conc. Temp (°F) (C-1064): 61

Load Number: 20

Mixer Number: 183

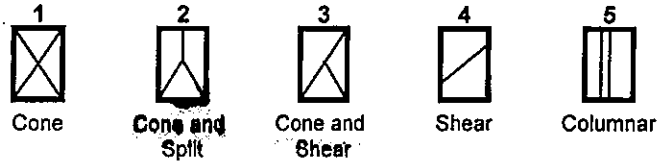
Ticket Number: 3928609

Cubic Yards: 10

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-49A		6.00	28.27	12/7/2007	Lab	**7**	4	109.5	**3870**
790-49B		6.00	28.27	12/28/2007	Lab	**28**	4	133.5	**4720**
790-49C		6.00	28.27	12/28/2007	Lab	**28**	4	136.0	**4810**
790-49D				Hold	Lab				

Fracture Types



Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 11/30/2007 **Time Cast:** 11:50 **Date Received:** 12/1/2007

Placement Location: DECK SLAB - 1ST FLOOR

Placement Method: PUMP

Cylinders Made By: VLT

Placement Vol. (yd^3): 240

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 6.5

Air Content (%) (C-231): **Air WR:** 2.3

Air Temp (°F): 35

Conc. Temp (°F) (C-1064): 60

Load Number: 23

Mixer Number: 169

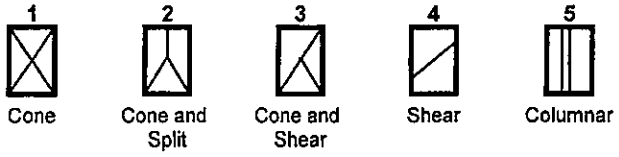
Ticket Number: 3928612

Cubic Yards: 10

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-50A		6.00	28.27	12/7/2007	Lab	**7**	4	94.5	**3340**
790-50B		6.00	28.27	12/28/2007	Lab	**28**	4	145.0	**5130**
790-50C		6.00	28.27	12/28/2007	Lab	**28**	4	141.5	**5010**
790-50D				Hold	Lab				

Fracture Types



Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 12/6/2007 **Time Cast:** 7:53

Date Received: 12/7/2007

Placement Location: SLAB ON DECK - 1ST FLOOR

Placement Method: PUMP*

Placement Vol. (yd³): 146

Cylinders Made By: VLT

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POZZUTEC 20 2%, POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 5.5

Air Content (%) (C-231): **Air WR:** 2.4

Air Temp (°F): 17

Conc. Temp (°F) (C-1064): 68

Load Number: 2

Mixer Number: 180

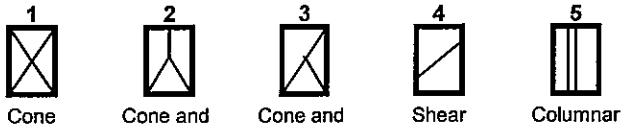
Ticket Number: 3928640

Cubic Yards: 10.5

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-51A		6.00	28.27	12/13/2007	Lab	**7**	4	81.5	**2880**
790-51B		6.00	28.27	1/3/2008	Lab	**28**	4	117.0	**4140**
790-51C		6.00	28.27	1/3/2008	Lab	**28**	4	125.0	**4420**
790-51D				1/31/2008	Lab	**56**			

Fracture Types



Remarks: *INDEPENDENT

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Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 12/6/2007 **Time Cast:** 8:55

Date Received: 12/7/2007

Placement Location: SLAB ON DECK - 1ST FLOOR

Placement Method: PUMP*

Placement Vol. (yd³): 146

Cylinders Made By: VLT

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POZZUTEC 20 2%, POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 5.5

Air Content (%) (C-231): **Air WR:** 2.3

Air Temp (°F): 20

Conc. Temp (°F) (C-1064): 60

Load Number: 7

Mixer Number: 190

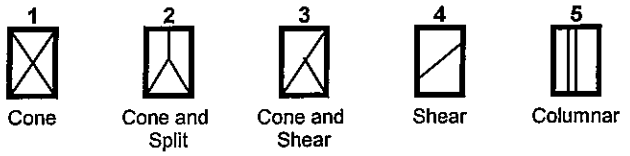
Ticket Number: 3928647

Cubic Yards: 10.5

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-52A		6.00	28.27	12/13/2007	Lab	**7**	4	102.0	**3610**
790-52B		6.00	28.27	1/3/2008	Lab	**28**	4	118.0	**4170**
790-52C		6.00	28.27	1/3/2008	Lab	**28**	4	122.0	**4320**
790-52D				Hold	Lab				

Fracture Types



Remarks: *INDEPENDENT

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Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 12/6/2007 **Time Cast:** 9:57

Date Received: 12/7/2007

Placement Location: SLAB ON DECK - 1ST FLOOR

Placement Method: PUMP*

Cylinders Made By: VLT

Placement Vol. (yd³): 146

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POZZUTEC 20 2%, POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 5 3/4

Air Content (%) (C-231): **Air WR:** 2.3

Air Temp (°F): 20

Conc. Temp (°F) (C-1064): 61

Load Number: 12

Mixer Number: 185

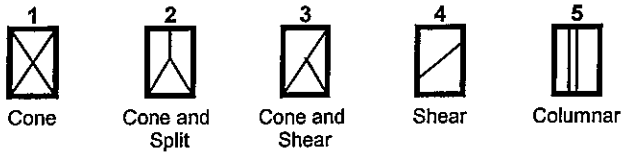
Ticket Number: 3928653

Cubic Yards: 10.5

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	**Age (days)**	Fracture Type	Load (kips)	**Strength (psi)**
790-53A		6.00	28.27	12/13/2007	Lab	**7**	4	103.0	**3640**
790-53B		6.00	28.27	1/3/2008	Lab	**28**	4	121.0	**4280**
790-53C		6.00	28.27	1/3/2008	Lab	**28**	4	125.0	**4420**
790-53D				1/31/2008	Lab	**56**			

Fracture Types



Remarks: *INDEPENDENT

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Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client Contract Number:

Client: PIZZAGALLI CONSTRUCTION COMPANY

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 12/11/2007 **Time Cast:** 10:20 **Date Received:** 12/12/2007

Placement Location: STEM WALL - 100'

Placement Method: TAILGATE

Placement Vol. (yd³): 21

Cylinders Made By: VLT

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 6.5

Air Content (%) (C-231): **Air WR:** 5.5

Air Temp (°F): 30

Conc. Temp (°F) (C-1064): 56

Load Number: 2

Mixer Number: 177

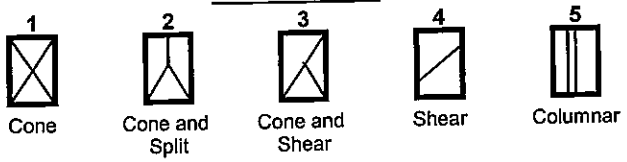
Ticket Number: 3928709

Cubic Yards: 10.5

Design (psi): 3000

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-54A		6.00	28.27	12/18/2007	Lab	7	4	80.0	2830
790-54B		6.00	28.27	1/8/2008	Lab	28	4	117.5	4160
790-54C		6.00	28.27	1/8/2008	Lab	28	4	115.0	4070
790-54D				Hold	Lab				

Fracture Types



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Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client Contract Number:

Client: PIZZAGALLI CONSTRUCTION COMPANY

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 12/19/2007 **Time Cast:** 11:05 **Date Received:** 12/20/2007

Placement Location: STEM WALL LINE H-M

Placement Method: TAILGATE

Placement Vol. (yd^3): 22.5

Cylinders Made By: VLT

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 997
POZZUTEC 20 1%

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 6.25

Air Content (%) (C-231): **Air WR:** 6.6

Air Temp (°F): 21

Conc. Temp (°F) (C-1064): 52

Load Number: 2

Mixer Number: 177

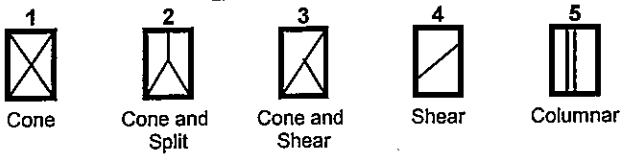
Ticket Number: 3928790

Cubic Yards: 16

Design (psi): 3000

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)^2	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-55A		6.00	28.27	12/26/2007	Lab	**7**	4	74.0	**2620**
790-55B		6.00	28.27	1/16/2008	Lab	**28**	4	120.5	**4260**
790-55C		6.00	28.27	1/16/2008	Lab	**28**	4	114.5	**4050**

Fracture Types



1 Cone; 2 Cone and Split; 3 Cone and Shear; 4 Shear; 5 Columnar

Remarks: CYLINDER D DAMAGED

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S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 1/23/2008 **Time Cast:** 8:50

Date Received: 1/24/2008

Placement Location: AREAS A+C 2ND FLOOR

Placement Method: PUMPED

Cylinders Made By: DMR

Placement Vol. (yd³): 70

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED997
FIBER MESH
1% POZZUTEC 20

TEST RESULTS

Slump (in) (C-143): 5 3/4

Air Content (%) (C-231): 1.8

Air Temp (°F): 30

Conc. Temp (°F) (C-1064): 53

Load Number: 4

Mixer Number: 191

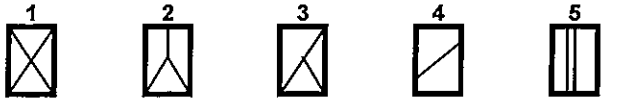
Ticket Number: 3929103

Cubic Yards: 10

Design (psi): 3000

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-56A		6.00	28.27	1/30/2008	Lab	**7**	4	55.5	**1960**
790-56B		6.00	28.27	2/20/2008	Lab	**28**	4	102.5	**3630**
790-56C		6.00	28.27	2/20/2008	Lab	**28**	4	114.0	**4030**
790-56D				Hold	Lab				

Fracture Types



Remarks:

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S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 2/4/2008 **Time Cast:** 8:10

Date Received: 2/5/2008

Placement Location: AREAS 2ND FLOOR

Placement Method: PUMPED

Cylinders Made By: DMR

Placement Vol. (yd³): 150

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: FIBERMESH
POLYHEED997
1% POZZUTEC 20

TEST RESULTS

Slump (in) (C-143): 6

Air Content (%) (C-231): 1.8

Air Temp (°F): 35

Conc. Temp (°F) (C-1064): 54

Load Number: 3

Mixer Number: 184

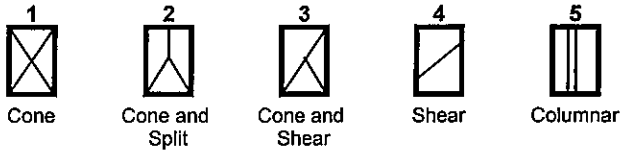
Ticket Number: 3929247

Cubic Yards: 10

Design (psi): 3000

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	**Age (days)**	Fracture Type	Load (kips)	**Strength (psi)**
790-57A		6.00	28.27	2/11/2008	Lab	**7**	4	62.5	**2210**
790-57B		6.00	28.27	3/3/2008	Lab	**28**	4	112.5	**3980**
790-57C		6.00	28.27	3/3/2008	Lab	**28**	4	100.5	**3560**
790-57D				Hold	Lab				

Fracture Types



Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 2/4/2008 **Time Cast:**

Date Received: 2/5/2008

Placement Location: AREAS 2ND FLOOR

Placement Method: PUMPED

Cylinders Made By: DMR

Placement Vol. (yd³): 150

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: FIBERMESH
POLYHEED997
1% POZZUTEC 20

TEST RESULTS

Slump (in) (C-143): 6.5

Air Content (%) (C-231): 1.9

Air Temp (°F): 40

Conc. Temp (°F) (C-1064): 56

Load Number: 8

Mixer Number: 182

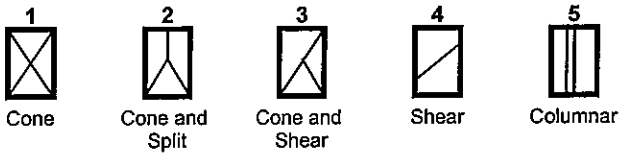
Ticket Number: 3929255

Cubic Yards: 10

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-58A		6.00	28.27	2/11/2008	Lab	**7**	4	64.5	**2280**
790-58B		6.00	28.27	3/3/2008	Lab	**28**	4	105.0	**3710**
790-58C		6.00	28.27	3/3/2008	Lab	**28**	4	95.5	**3380**
790-58D				Hold	Lab				

Fracture Types



Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client Contract Number:

Client: PIZZAGALLI CONSTRUCTION COMPANY

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 2/4/2008 **Time Cast:**

Date Received: 2/5/2008

Placement Location: AREAS 2ND FLOOR

Placement Method: PUMPED

Placement Vol. (yd³): 150

Cylinders Made By: DMR

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: FIBERMESH
POLYHEED997
1% POZZUTEC 20

TEST RESULTS

Slump (in) (C-143): 6

Air Content (%) (C-231): 1.9

Air Temp (°F): 46

Conc. Temp (°F) (C-1064): 59

Load Number: 12

Mixer Number: 182

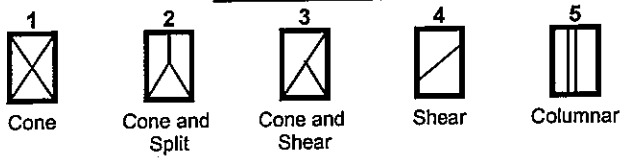
Ticket Number: 3929264

Cubic Yards: 10

Design (psi): 3000

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-59A		6.00	28.27	2/11/2008	Lab	7	4	58.5	2070
790-59B		6.00	28.27	3/3/2008	Lab	28	4	102.5	3630
790-59C		6.00	28.27	3/3/2008	Lab	28	4	99.5	3520
790-59D				Hold	Lab				

Fracture Types



Remarks:

S.W.COLE ENGINEERING, INC.

Report of Grout Compressive Strength

ASTM C109

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Supplier:

PLACEMENT INFORMATION

Date Cast: 10/5/2007 **Time Cast:** 2:30 **Date Received:** 10/8/2007

Placement Location: LEVELING PLATES FOR ANCHOR BOLTS ALONG LINE C

Placement Method:

Cylinders Made By: VLT

Placement Vol. (yd^3):

Aggregate Size (in):

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures:

TEST RESULTS

Slump (in) (C-143):

Air Temp (°F): 78

Grout Temp (°F) (C-1064): 75

Batch Number: 1

Mixer Number:

Ticket Number:

Design (psi): 5000

Cube Designation	Area(In)²	Date Of Test	Age (days)	Load (kips)	Strength (psi)
790-20A	4.00	10/12/2007	7	39.2	9800
790-20B	4.00	10/12/2007	7	38.9	9720
790-20C	4.00	11/2/2007	28	42.4	10600
790-20D	4.00	11/2/2007	28	44.6	11150
790-20E					
790-20F					

Remarks: SUPPLIER IS A.H. HARRIS / NON-METALLIC, NON-SHRINK GROUT

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Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 3/26/2008 **Time Cast:** 8:15

Date Received: 3/27/2008

Placement Location: STAIRWALLS - STAIR TOWER #1

Placement Method: PUMP*

Cylinders Made By: VLT

Placement Vol. (yd³): 5

Aggregate Size (in): 3/8

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: NA

TEST RESULTS

Slump (in) (C-143):

Slump WR: 6 1/4

Air Content (%) (C-231):

Air WR: 6.0

Air Temp (°F): 36

Conc. Temp (°F) (C-1064): 61

Load Number: 1

Mixer Number: 190

Ticket Number: 3929705

Cubic Yards: 5

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	**Age (days)**	Fracture Type	Load (kips)	**Strength (psi)**
790-61A		6.00	28.27	4/2/2008	Lab	**7**	4	56.0	**1980**
790-61B				4/23/2008	Lab	**28**			
790-61C				4/23/2008	Lab	**28**			
790-61D				Hold	Lab				

Fracture Types

1 Cone; 2 Cone and Split; 3 Cone and Shear; 4 Shear; 5 Columnar

Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 3/26/2008 **Time Cast:** 8:15 **Date Received:** 3/27/2008

Placement Location: STAIRWALLS - STAIR TOWER #1

Placement Method: PUMP*

Cylinders Made By: VLT

Placement Vol. (yd³): 5

Aggregate Size (in): 3/8

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: NA

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 6 1/4

Air Content (%) (C-231): **Air WR:** 6.0

Air Temp (°F): 36

Conc. Temp (°F) (C-1064): 61

Load Number: 1

Mixer Number: 190

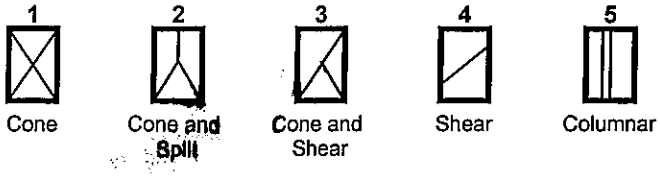
Ticket Number: 3929705

Cubic Yards: 5

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	**Age (days)**	Fracture Type	Load (kips)	**Strength (psi)**
790-61A		6.00	28.27	4/2/2008	Lab	**7**	4	56.0	**1980**
790-61B		6.00	28.27	4/23/2008	Lab	**28**	4	90.0	**3180**
790-61C		6.00	28.27	4/23/2008	Lab	**28**	4	92.5	**3270**
790-61D				Hold	Lab				

Fracture Types



Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 3/31/2008 **Time Cast:** 7:40 **Date Received:** 4/2/2008

Placement Location: STAIR PIERS ON MARGINAL WAY SITE

Placement Method: PUMPED

Cylinders Made By: DMR

Placement Vol. (yd³): 10

Aggregate Size (in): 3/8

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures:

TEST RESULTS

Slump (in) (C-143): 5

Air Content (%) (C-231): 2.1

Air Temp (°F): 35

Conc. Temp (°F) (C-1064): 58

Load Number: 1

Mixer Number: 177

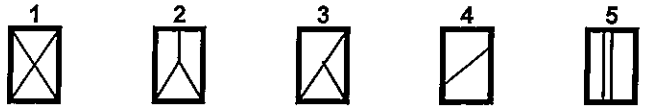
Ticket Number: 3929751

Cubic Yards: 10

Design (psi): 3000

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-62A		6.00	28.27	4/7/2008	Lab	**7**	4	58.5	**2070**
790-62B		6.00	28.27	4/28/2008	Lab	**28**	4	117.0	**4140**
790-62C		6.00	28.27	4/28/2008	Lab	**28**	4	115.0	**4070**
790-62D				Hold	Lab				

Fracture Types



1 Cone; 2 Cone and Split; 3 Cone and Shear; 4 Shear; 5 Columnar

Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 4/2/2008 **Time Cast:** 8:55 **Date Received:** 4/3/2008

Placement Location: STAIR TOWER #3

Placement Method: PUMP*

Cylinders Made By: VLT

Placement Vol. (yd³): 10

Aggregate Size (in): 3/8

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: NA

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 4 3/4

Air Content (%) (C-231): **Air WR:** 5.7

Air Temp (°F): 30

Conc. Temp (°F) (C-1064): 59

Load Number: 1

Mixer Number: 183

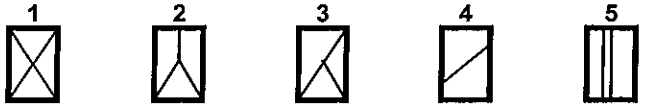
Ticket Number: 3929768

Cubic Yards: 10

Design (psi): 3000

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
790-63A		6.00	28.27	4/9/2008	Lab	**7**	4	72.0	**2550**
790-63B		6.00	28.27	4/30/2008	Lab	**28**	4	117.0	**4140**
790-63C		6.00	28.27	4/30/2008	Lab	**28**	4	122.5	**4330**
790-63D				Hold	Lab				

Fracture Types



Remarks: * MAINELY CONCRETE PUMPING

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S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 5/13/2008 **Time Cast:** 8:40

Date Received: 5/15/2008

Placement Location: DUMPSTER PAD

Placement Method: TAILGATE

Cylinders Made By: DMR

Placement Vol. (yd^3): 20

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: 1% POZZUTEC

TEST RESULTS

Slump (in) (C-143): 5

Air Content (%) (C-231): 5.4

Air Temp (°F): 60

Conc. Temp (°F) (C-1064): 62

Load Number: 2

Mixer Number: 176

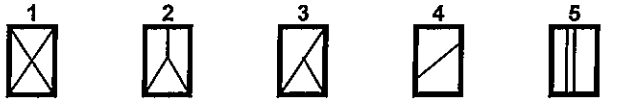
Ticket Number: 4528936

Cubic Yards: 10

Design (psi): **3500**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area($In)^2$	Date Of Test	Cure Type	**Age (days)**	Fracture Type	Load (kips)	**Strength (psi)**
790-64A		6.00	28.27	5/20/2008	Lab	**7**	4	95.5	**3380**
790-64B				6/10/2008	Lab	**28**			
790-64C				6/10/2008	Lab	**28**			
790-64D				Hold	Lab				

Fracture Types



Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Concrete Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 5/13/2008 **Time Cast:** 8:40

Date Received: 5/15/2008

Placement Location: DUMPSTER PAD

Placement Method: TAILGATE

Cylinders Made By: DMR

Placement Vol. (yd³): 20

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: 1% POZZUTEC

TEST RESULTS

Slump (in) (C-143): 5

Air Content (%) (C-231): 5.4

Air Temp (°F): 60

Conc. Temp (°F) (C-1064): 62

Load Number: 2

Mixer Number: 176

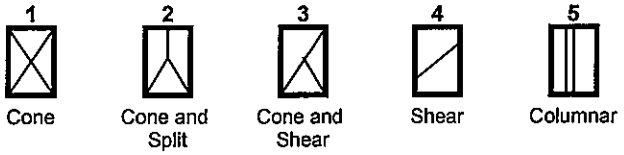
Ticket Number: 4528936

Cubic Yards: 10

Design (psi): **3500**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	**Age (days)**	Fracture Type	Load (kips)	**Strength (psi)**
790-64A		6.00	28.27	5/20/2008	Lab	**7**	4	95.5	**3380**
790-64B		6.00	28.27	6/10/2008	Lab	**28**	4	125.5	**4440**
790-64C		6.00	28.27	6/10/2008	Lab	**28**	4	130.0	**4600**
790-64D				Hold	Lab				

Fracture Types



Remarks:

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EXHIBIT B

04200 Masonry Construction

Project: Bayside Village – A Student Housing Project
Date Prepared: July 13, 2007

Structural Schedule of Special Inspections

MASONRY CONSTRUCTION – LEVEL 1 (NON-ESSENTIAL FACILITY)

VERIFICATION AND INSPECTION IBC Section 1704.5	Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
1. As masonry construction begins, the following shall be verified to ensure compliance:						
a. Proportions of site-prepared mortar.	Y	P	ACI530.1, 2.6A		PE/SE or EIT	✓
b. Construction of mortar joints.	Y	P	ACI530.1, 3.3B		PE/SE or EIT	✓
c. Location of reinforcement and connectors.	Y	P	ACI530.1, 3.4, 3.6A		PE/SE or EIT	✓
d. Prestressing technique.	N/A	P	ACI530.1, 3.6B		PE/SE or EIT	—
e. Grade and size of prestressing tendons and anchorages.	N/A	P	ACI530.1, 2.4B, 2.4H		PE/SE or EIT	—
2. The inspection program shall verify:						
a. Size and location of structural elements.	Y	P	ACI530.1, 3.3G		PE/SE or EIT	✓
b. Type, size and location of anchors, including other details of anchorage of masonry to structural members, frames or other construction.	Y	P	ACI530, 1.2.2(e), 2.1.4, 3.1.6		PE/SE or EIT	✓
c. Specified size, grade and type of reinforcement.	Y	P	ACI530, 1.12, ACI530.1, 2.4, 3.4		PE/SE or EIT	✓
d. Welding of reinforcing bars.	Y	C	AC530, 2.1.10.6.2, 3.2..4 (b)		AWS-CWI	—
e. Protection of masonry during cold weather (temperature below 40°F) or hot weather (temperature above 90°F).	Y	P	IBC 2104.3, 2104.4; ACI530.1, 1.8C, 1.8D		PE/SE or EIT	✓
f. Application and measurement of prestressing force.	N/A	P	ACI530.1, 3.6B		PE/SE or EIT	—
3. Prior to grouting, the following shall be verified to ensure compliance:						
a. Grout space is clean.	Y	P	ACI530.1, 3.2D		PE/SE or EIT	✓
b. Placement of reinforcement and connectors and prestressing tendons and anchorages.	Y	P	ACI530, 1.12, ACI530.1, 3.4		PE/SE or EIT	✓
c. Proportions of site-prepared grout and prestressing grout for bonded tendons.	Y	P	ACI530.1, 2.6B		PE/SE or EIT	✓
d. Construction of mortar joints.	Y	P	ACI530.1, 3.3B		PE/SE or EIT	✓
4. Grout placement shall be verified to ensure compliance with code and construction document provisions.	Y	C	ACI530.1, 3.5		PE/SE or EIT	✓
a. Grouting of prestressing bonded tendons.	N/A	C	ACI530.1, 3.6C		PE/SE or EIT	—
5. Preparation of any required grout specimens, mortar specimens and/or prisms shall be observed.	Y	C	IBC 2105.2.2, 2105.3; ACI530.1, 1.4		PE/SE or EIT	✓
6. Compliance with required inspection provisions of the construction documents and the approved submittals shall be verified.	Y	P	ACI530.1, 1.5		PE/SE or EIT	✓

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OBSERVATION REPORT
CMU

Date:	October 17, 2007
Time:	1:30 PM to 2:00 PM
Temp:	High 50's
Weather:	Sunny

Project:	Bayside Village
Location:	Portland, ME
Becker Job No:	SI1724

Observation Location: Stair Tower 3 Between 3rd and 4th floors

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☒	☐	☐	☐	
Embed/Anchors	☐	☐	☐	☒	
Lap Splices	☐	☐	☒	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
CMU Size	☒	☐	☐	☐	
Layout/Fit-up/Plumbness	☒	☐	☐	☐	
Mortar/Grouting Procedure	☐	☐	☒	☐	
Lift Height	☐	☐	☒	☐	
Clean Outs	☐	☐	☐	☒	
Bond Beams	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☐	

Notes:

Signed: Matthew J. Miller, P.E.

75 York Street, Portland, ME 04101-4701 ■ Tel 207-879-1838 ■ Fax 207-879-1822

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OBSERVATION REPORT
CMU

Date:	October 22, 2007
Time:	11:15 AM -11:45 AM
Temp:	Low 70's
Weather:	Sunny

Project:	Bayside Village
Location:	Portland, ME
Becker Job No:	SI1724

Observation Location: Stair Tower 2 Garage Level - First (4) courses

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☒	☐	☐	☐	
Embed/Anchors	☐	☐	☐	☒	
Lap Splices	☐	☐	☒	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
CMU Size	☒	☐	☐	☐	
Layout/Fit-up/Plumbness	☒	☐	☐	☐	
Mortar/Grouting Procedure	☐	☐	☒	☐	
Lift Height	☐	☐	☒	☐	
Clean Outs	☐	☐	☐	☒	
Bond Beams	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☐	

Notes:

Signed: Matthew J. Miller, P.E.

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OBSERVATION REPORT
CMU

Date:	October 24, 2007
Time:	9:00 AM -10:00 AM
Temp:	Low 60's
Weather:	Overcast

Project:	Bayside Village
Location:	Portland, ME
Becker Job No:	SI1724

Observation Location: Stair Tower 2 Garage Level

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☒	☐	☐	☐	
Embed/Anchors	☐	☐	☐	☒	
Lap Splices	☒	☐	☐	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
CMU Size	☒	☐	☐	☐	
Layout/Fit-up/Plumbness	☒	☐	☐	☐	
Mortar/Grouting Procedure	☐	☐	☒	☐	
Lift Height	☒	☐	☐	☐	
Clean Outs	☒	☐	☐	☐	
Bond Beams	☒	☐	☐	☐	
Additional Items	☐	☐	☐	☐	

Notes:

Signed: Nathan Merrill, E.I.

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OBSERVATION REPORT
CMU

Date:	October 31, 2007
Time:	9:00 AM -10:00 AM
Temp:	Upper 50's
Weather:	Sunny

Project:	Bayside Village
Location:	Portland, ME
Becker Job No:	SI1724

Observation Location: Stair Tower 2 - Third Floor

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☒	☐	☐	☐	
Embed/Anchors	☐	☐	☐	☒	
Lap Splices	☐	☐	☐	☐	Not-Verified
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
CMU Size	☒	☐	☐	☐	
Layout/Fit-up/Plumbness	☒	☐	☐	☐	
Mortar/Grouting Procedure	☐	☐	☒	☐	
Lift Height	☐	☐	☒	☐	
Clean Outs	☐	☐	☒	☐	
Bond Beams	☒	☐	☐	☐	Not-Verified
Additional Items	☐	☐	☐	☐	

Notes:
While on site, the lift was at ground level, therefore review at the level of the masonry was not possible. Based on review from ground level, the spacing of the bars and the plumbness of the masonry was verified and found to be in general conformance with the structural drawings.

Signed: Matthew J. Miller, P.E.

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OBSERVATION REPORT
CMU

Date:	November 01, 2007
Time:	7:30 am to 8:30 am
Temp:	Upper 50's
Weather:	Sunny

Project:	Bayside Village
Location:	Portland, ME
Becker Job No:	SI1724

Observation Location: Stair Tower 2 Third Floor

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☒	☐	☐	☐	
Embed/Anchors	☒	☐	☐	☐	
Lap Splices	☒	☐	☐	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
CMU Size	☒	☐	☐	☐	
Layout/Fit-up/Plumbness	☒	☐	☐	☐	
Mortar/Grouting Procedure	☒	☐	☐	☐	
Lift Height	☒	☐	☐	☐	
Clean Outs	☐	☐	☐	☒	
Bond Beams	☒	☐	☐	☐	
Additional Items	☐	☐	☐	☐	

Notes:

Signed: Matthew J. Miller, P.E.

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OBSERVATION REPORT
CMU

Date:	December 6, 2007
Time:	9:00 AM -10:00 AM
Temp:	Low 20's
Weather:	Sunny

Project:	Bayside Village
Location:	Portland, ME
Becker Job No:	SI1724

Observation Location: Wall between parking and retail parallel to line 6

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☒	☐	☐	☐	
Embed/Anchors	☐	☐	☐	☒	
Lap Splices	☒	☐	☐	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
CMU Size	☒	☐	☐	☐	
Layout/Fit-up/Plumbness	☒	☐	☐	☐	
Mortar/Grouting Procedure	☐	☐	☒	☐	
Lift Height	☒	☐	☐	☐	
Clean Outs	☒	☐	☐	☐	
Bond Beams	☒	☐	☐	☐	
Additional Items	☐	☐	☐	☐	

Notes:

Signed: Nathan Merrill, E.I.

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S.W.COLE ENGINEERING, INC.

Report of Mortar Compressive Strength

ASTM C109

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client Contract Number:

Client: PIZZAGALLI CONSTRUCTION COMPANY

General Contractor:

Supplier: DRAGON PRODUCTS

PLACEMENT INFORMATION

Date Cast: 10/17/2007 **Time Cast:** 12:00 **Date Received:** 10/18/2007

Placement Location: STAIR TOWER #3 INBETWEEN BLOCKS 2NS & 3RD FLOOR

Placement Method:

Placement Vol. (yd^3):

Cylinders Made By: VLT

Aggregate Size (in): NA

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: NA

TEST RESULTS

Air Temp (°F): 63

Mortar Temp (°F) (C-1064) 60

Batch Number: 1

Mixer Number:

Ticket Number:

Design (psi): 2500

Cube Designation	Area(In)²	Date Of Test	Age (days)	Load (kips)	Strength (psi)
790-25A	4.00	10/24/2007	7	6.5	1620
790-25B	4.00	10/24/2007	7	7.5	1880
790-25C	4.00	11/14/2007	28	11.1	2780
790-25D	4.00	11/14/2007	28	11.0	2750
790-25E	4.00	12/12/2007	56	8.7	2180
790-25F	4.00	12/12/2007	56	9.5	2380

Remarks: MATERIAL TYPE: DRAGON BLEND HIGH STRENGTH - TYPE S
AMENDED-- PLEASE DISCARD PREVIOUS REPORTS

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S.W.COLE ENGINEERING, INC.

Report of Grout Specimen Compressive Strength

ASTM C1019

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 10/9/2007 **Time Cast:** 4:06 **Date Received:** 10/10/2007

Placement Location: STAIRWAY TOWER #3 - 1ST FLOOR CELLS

Placement Method: PUMP *

Cylinders Made By: VLT

Placement Vol. (yd^3): 4

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: POLYHEED 1020

TEST RESULTS

Slump (in) (C-143):

Air Temp (°F): 61

Grout Temp (°F) (C-1064): 71

Batch Number: 1

Mixer Number: 95

Ticket Number: 118997

Design (psi): **2500**

Specimen Designation	Area(In)²	Date Of Test	Age (days)	Load (kips)	Strength (psi)
790-21A	10.56	10/16/2007	**7**	27.3	**2580**
790-21B	10.16	11/6/2007	**28**	43.1	**4240**
790-21C	10.56	11/6/2007	**28**	41.6	**3940**
790-21D					

Remarks: * COASTAL MASONRY AMENDED DESIGN STRENGTH

S.W.COLE ENGINEERING, INC.

Report of Grout Compressive Strength

ASTM C109

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 10/17/2007 **Time Cast:** 10:50 **Date Received:** 10/18/2007

Placement Location: STAIR TOWER #3 (CELLS) BETWEEN 2ND & 3RD FLOOR

Placement Method: PUMP *

Cylinders Made By: VLT

Placement Vol. (yd^3): 4

Aggregate Size (in): NA

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: NA

TEST RESULTS

Slump (in) (C-143):

Air Temp (°F): 61

Grout Temp (°F) (C-1064): 61

Batch Number: 1

Mixer Number: 93

Ticket Number: 134900

Design (psi): **2500**

Cube Designation	Area(In)²	Date Of Test	Age (days)	Load (kips)	Strength (psi)
790-24A	10.56	10/24/2007	**7**	34.9	**3300**
790-24B	10.56	11/14/2007	**28**	47.5	**4500**
790-24C	10.97	11/14/2007	**28**	33.6	**3060**
790-24D					

Remarks: * COASTAL MASONRY AMENDED DESIGN STRENGTH

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S.W.COLE ENGINEERING, INC.

Report of Grout Specimen Compressive Strength

ASTM C1019

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 10/24/2007 **Time Cast:** 10:45

Date Received: 10/25/2007

Placement Location: STAIRWELL #2

Placement Method: PUMP

Cylinders Made By: CKT

Placement Vol. (yd³): 4

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures:

TEST RESULTS

Slump (in) (C-143): 7

Air Temp (°F): 53

Grout Temp (°F) (C-1064): 66

Batch Number: 1

Mixer Number: 95

Ticket Number: 135164

Design (psi): **2500**

Specimen Designation	Area(In)²	Date Of Test	Age (days)	Load (kips)	Strength (psi)
790-29A	10.56	10/31/2007	**7**	29.0	**2750**
790-29B	10.56	11/21/2007	**28**	29.9	**2830**
790-29C	10.56	11/21/2007	**28**	27.5	**2600**
790-29D	10.16	12/19/2007	**56**	40.0	**3940**

Remarks: AMENDED DESIGN STRENGTH

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Report of Grout Specimen Compressive Strength

ASTM C1019

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client Contract Number:

Client: PIZZAGALLI CONSTRUCTION COMPANY

General Contractor:

Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 11/9/2007 **Time Cast:** 7:50 **Date Received:** 11/10/2007

Placement Location: STAIRWELL 1

Placement Method: PUMP

Placement Vol. (yd^3): 4

Cylinders Made By: CKT

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures:

TEST RESULTS

Slump (in) (C-143): 8

Air Temp (°F): 34

Grout Temp (°F) (C-1064): 61

Batch Number: 1

Mixer Number: 78

Ticket Number: 121420

Design (psi): 2500

Specimen Designation	Area(In)²	Date Of Test	Age (days)	Load (kips)	Strength (psi)
790-40A	10.97	11/16/2007	7	23.3	2120
790-40B	10.97	12/7/2007	28	46.0	4190
790-40C	11.39	12/7/2007	28	32.3	2840
790-40D	10.56	1/4/2008	56	26.8	2540

Remarks: AMENDED DESIGN STRENGTH

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Report of Grout Specimen Compressive Strength

ASTM C1019

Project Name: PORTLAND - BAYSIDE VILLAGE STUDENT HOUSING - 120 MARGINAL WAY - MATERIALS TESTING

Project Number: 05-1177.3

Client: PIZZAGALLI CONSTRUCTION COMPANY

Client Contract Number:

General Contractor:

Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 3/10/2008 **Time Cast:** 3:57 **Date Received:** 3/12/2008

Placement Location: STAIR TOWER #2 FINAL COURSE - 1 1/2 COURSES

Placement Method: PUMP*

Cylinders Made By: VLT

Placement Vol. (yd^3): 6

Aggregate Size (in): SAND

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: NA

TEST RESULTS

Slump (in) (C-143):

Air Temp (°F): 33

Grout Temp (°F) (C-1064): 70

Batch Number: 1

Mixer Number: 116

Ticket Number: 140319

Design (psi): **2500**

Specimen Designation	Area(In)²	Date Of Test	Age (days)	Load (kips)	Strength (psi)
790-60A	10.56	3/17/2008	7	40.0	3790
790-60B		4/7/2008	28		
790-60C		4/7/2008	28		
790-60D					

Remarks: *COASTAL MASONRY

EXHIBIT B

05120 Steel Construction

Project: Bayside Village – A Student Housing Project
Date Prepared: July 13, 2007

Structural Schedule of Special Inspections - STEEL CONSTRUCTION

VERIFICATION AND INSPECTION IBC Section 1704.3	Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
1. Material verification of high-strength bolts, nuts and washers:						
a. Identification markings to conform to ASTM standards specified in the approved construction documents.	Y	S	Applicable ASTM material specifications; AISC 335, Section A3.4; AISC LRFD, Section A3.3		PE/SE or EIT	✓
b. Manufacturer's certificate of compliance required.	Y	S			PE/SE or EIT	✓
2. Inspection of high-strength bolting						
a. Bearing-type connections.	Y	P	AISC LRFD Section M2.5 IBC Sect 1704.3.3		AWS/AISC-SSI	✓
b. Slip-critical connections.	Y	C or P (method dependent)			AWS/AISC-SSI	✓
3. Material verification of structural steel (IBC Sect 1708.4):						
a. Identification markings to conform to ASTM standards specified in the approved construction documents.	Y	S	ASTM A 6 or ASTM A 568 IBC Sect 1708.4		PE/SE or EIT	✓
b. Manufacturers' certified mill test reports.	Y	S	ASTM A 6 or ASTM A 568 IBC Sect 1708.4		PE/SE or EIT	✓
4. Material verification of weld filler materials:						
a. Identification markings to conform to AWS specification in the approved construction documents.	Y	S	AISC, ASD, Section A3.6; AISC LRFD, Section A3.5		PE/SE or EIT	✓
b. Manufacturer's certificate of compliance required.	Y	S			PE/SE or EIT	✓
5. Submit current AWS D1.1 welder certificate for all field welders who will be welding on this project.	Y	S	AWS D1.1		PE/SE or EIT	✓
6. Inspection of welding (IBC 1704.3.1): a. Structural steel:						
1) Complete and partial penetration groove welds.	Y	C	AWS D1.1		AWS-CWI	✓
2) Multipass fillet welds.	Y	C			AWS-CWI	✓
3) Single-pass fillet welds> 5/16"	Y	C			AWS-CWI	✓
4) Single-pass fillet welds< 5/16"	Y	P			AWS-CWI	✓
5) Floor and deck welds.	Y	P	AWS D1.3		AWS-CWI	✓
b. Reinforcing steel (IBC Sect 1903.5.2):						
1) Verification of weldability of reinforcing steel other than ASTM A706.	Y	C				✓
2) Reinforcing steel-resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special reinforced concrete shear walls and shear reinforcement.	N/A	C	AWS D1.4 ACI 318: 3.5.2		AWS-CWI	—
3) Shear reinforcement.	Y	C			AWS-CWI	✓
4) Other reinforcing steel.	Y	P			AWS-CWI	✓
7. Inspection of steel frame joint details for compliance (IBC Sect 1704.3.2) with approved construction documents:						
a. Details such as bracing and stiffening.	Y	P			PE/SE or EIT	✓
b. Member locations.	Y	P			PE/SE or EIT	✓
c. Application of joint details at each connection.	Y	P			PE/SE or EIT	✓

Project: Bayside Village – A Student Housing Project
Date Prepared: July 13, 2007

Structural Schedule of Special Inspection Services

FABRICATION AND IMPLEMENTATION PROCEDURES – STRUCTURAL STEEL

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. AISC Certification	Y	S	Fabricator shall submit one of the two qualifications		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		PE/SE or EIT	✓

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structural engineers, inc.

05120

OBSERVATION REPORT
Structural Steel

Date:	11/19/07
Time:	3:30 PM
Temp:	35 F
Weather:	Overcast

Project:	Bayside Village
Location:	Portland, Maine
Becker Job No:	1724

Observation Location:
concrete composite deck south of expansion joint

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Bolt Condition	☐	☐	☐	☒	
Weld Condition	☐	☐	☐	☒	
Anchor Bolts, Nuts, & Washers	☐	☐	☐	☒	
Grout/Leveling Plates	☐	☐	☐	☒	
Fit Up/Plumbness	☐	☐	☐	☒	
Metal Deck Welds	☐	☐	☐	☒	
Pour Stops	☐	☐	☐	☒	
Bracing	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☒	

Notes:
Visit was performed in order to observe WWF placement prior to composite concrete slab placement. It was observed to be in satisfactory condition.

Signed: Nathan Merrill, E.I.

75 York Street, Portland, ME 04101-4701 ■ Tel 207-879-1838 ■ Fax 207-879-1822

BECKER
structural engineers, inc.

05120

OBSERVATION REPORT
Structural Steel

Date:	12/6/07
Time:	9:00 AM
Temp:	20 F
Weather:	Sunny

Project:	Bayside Village
Location:	Portland, Maine
Becker Job No:	1724

Observation Location:
concrete composite deck north of expansion joint

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Bolt Condition	☐	☐	☐	☒	
Weld Condition	☐	☐	☐	☒	
Anchor Bolts, Nuts, & Washers	☐	☐	☐	☒	
Grout/Leveling Plates	☐	☐	☐	☒	
Fit Up/Plumbness	☐	☐	☐	☒	
Metal Deck Welds	☐	☐	☐	☒	
Pour Stops	☐	☐	☐	☒	
Bracing	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☒	

Notes:
Visit was performed in order to observe WWF placement prior to composite concrete slab placement. It was observed to be in satisfactory condition. Cold weather placement procedures appeared to be in use.

Signed: Nathan Merrill, E.I.

75 York Street, Portland, ME 04101-4701 ■ Tel 207-879-1838 ■ Fax 207-879-1822

Quality Assurance Labs Inc.
NON-DESTRUCTIVE TESTING AND INSPECTION SERVICES
80 PLEASANT AVENUE • SOUTH PORTLAND, MAINE 04106 • TEL: (207) 799-8911 • FAX: (207) 799-7251

INSPECTION REPORT

CUSTOMER: S. W. COLE ENG.			PAGE 1 OF 1
ADDRESS: GRAY, ME.			
ATTENTION: ROGER DOMINGO			
COPIES: -			
PROJECT: 132 MARGINAL WAY, BAYSIDE VILLAGE			
OWNER:			
CONTRACTOR: PIZZAGALLI CONSTRUCTION			
JOB No.: 05-1177.3	REPORT No.: QAL-07-2185	P. O. NUMBER:	DATES INSPECTED: 11-16-07

REMARKS

VISUAL INSPECTION OF STRUCTURAL STEEL CONNECTIONS: GRID LINES 1 - 10, A - F.6.

> INSPECTION REVEALS THE FOLLOWING:

A) LOCATION LINE 10 - E, F SHOWS INCOMPLETE DIAGONAL WIND BRACE WELDS. LOCATION LINE (2) ALSO SHOWS INCOMPLETE DIAGONAL BRACE WELDS.

B) VARIOUS LOCATIONS SHOW UNTORQUED T/C BOLTS AT BEAM TO COLUMN CONNECTIONS.

C) LOCATION ROOF AREA GRID LINES E - 2.4 SHOWS DECKING WELDS AT CROSS BEAM THAT REQUIRES ADDITIONAL PUDDLE WELDS.

D) ROOF DECKING LOCATIONS (PERIMETER) REQUIRES 6" O/C AT LINES 6 - 7.6 AND 1 - 4. REMAINING DECK ATTACHMENTS COMPLETE FOR PUDDLE WELDS AND SIDE LAP SCREWS.

E) SHEAR STUD INSPECTION SHOWS APPROX. 30% OF ABOVE LISTED AREA COMPLETE. (1) FAILED STUD NOTED AT LOCATION 8.3 - C.5.

COMPLETED ITEMS COMPLY WITH SITE DOCUMENTS AND AWS D1.1, D1.3 REQUIREMENTS FOR VISUAL ACCEPTANCE.

END ITEMS ///

FAA REPAIR STATION NUMBER RX5R187N
METHOD(S),PROCESS(ES),PROCEDURE(S) MERCURY FREE

ADDITIONAL INFORMATION - SEE ATTACHED: ☐ SKETCH(ES) ☐ SUPPLEMENTARY SHEET(S) ☐ NDT REPORTS ☐ VIDEO

SIGNATURES	CERTIFICATION LEVEL	DATE M D Y
INSPECTOR MICHAEL DREW CWI# 99050211		11 | 16 | 07
SUPERVISOR		

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INSPECTION REPORT

CUSTOMER: S. W. COLE ENG.			PAGE 1 OF 1
ADDRESS: GRAY , ME.			
ATTENTION: ROGER DOMINGO			
COPIES:			
PROJECT: 132 MARGINAL WAY- BAYSIDE VILLAGE			
OWNER:			
CONTRACTOR: PIZZAGALLI CONSTRUCTION INC.			
JOB No.: 05-1177.3	REPORT No.: QAL-07-2219	P. O. NUMBER:	DATES INSPECTED: 11-19-07

REMARKS

RE-INSPECTION OF ITEMS LISTED ON FIELD REPORT DATED 11-16-07 :AREA 1 - 10 , A - F.6 .

> ROOF PERIMETER WELDS COMPLETE.

> SHEAR STUDS COMPLETE .

> DIAGONAL BRACE CONNECTIONS SHOW LOCATION LINE 10 , E - F REQUIRES WELDING PRIOR TO DECK LOADS . REMAINING DIAGONAL BRACE CONNECTIONS COMPLETE .

> HIGH STRENGTH T/C BOLTED CONNECTIONS APPROX. 98% COMPLETE - ONE LOCATION SHOWS (8) UN-TORQUED BOLTS AT BEAM TO COLUMN CONNECTION .

COMPLETED ITEMS COMPLY WITH SITE DOCUMENTS AND AWS D1.1, D1.3 REQUIREMENTS FOR VISUAL ACCEPTANCE .

END ITEMS ///

FAA REPAIR STATION NUMBER RX5R187N
METHOD(S),PROCESS(ES),PROCEDURE(S) MERCURY FREE

ADDITIONAL INFORMATION - SEE ATTACHED: ☐ SKETCH(ES) ☐ SUPPLEMENTARY SHEET(S) ☐ NDT REPORTS ☐ VIDEO

SIGNATURES	CERTIFICATION LEVEL	DATE M D Y
INSPECTOR MICHAEL DREW CWI # 99050211		11 | 28 | 07
SUPERVISOR		

(FORM Q703 REV 0)

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INSPECTION REPORT

CUSTOMER: S. W. COLE ENG.
ADDRESS: GRAY, ME. PAGE 1 OF 1
ATTENTION: ROGER DOMINGO
COPIES:
PROJECT: BAYSIDE VILLAGE 132 MARGINAL WAY
OWNER:
CONTRACTOR: PIZZAGALLI CONSTRUCTION

JOB No.:	REPORT No.:	P. O. NUMBER:	DATES INSPECTED:
05-1177.3	QAL-07-2262		11-29-07

REMARKS

VISUAL INSPECTION OF STRUCTURAL STEEL CONNECTIONS : SECOND LEVEL FRAMING PLAN : IN-PROCESS INSPECTION OF AREA 1 - 10 , F - N .

> COLUMN LOCATIONS MARKED WITH BLUE FLAG TAPE TO INDICATE UN-TORQUED T/C BOLTS FOR BEAM TO BEAM OR COLUMN CONNECTIONS . 1" BOLTS

> G-LINE SHOWS DIAGONAL BRACE WELDS INCOMPLETE AS MARKED WITH FLAG TAPE . ALSO SHOWS OVERHEAD WELD TO BE UNDERSIZE FOR 3/8" DRAWING REQUIREMENTS AS MARKED . BRACES AT J & RR LINE SHOW BRACE CONNECTIONS IN-PROGRESS .

> LOCATIONS AT BLD. PERIMETER SHOWS ANGLE KICKER BRACES IN-PROGRESS .

> ROOF AREA SHOWS (20) FAILED STUDS AT LOCATION H - 9 - 10 . REMAINING DECK AREA IN-PROGRESS APPROX. 50% COMPLETE FOR SHEAR STUDS . DECK LAP SCREWS MISSING AT 2 - 9 , K - M . LOCATION G - 7.8 SHOWS 1 1/8" UN-TORQUED T/C BOLTS AT W27X146 . DECKING PUDDLE WELDS COMPLETE .

COMPLETED ITEMS COMPLY WITH CONTRACT DOCUMENTS AND AWS D1.1 , D1.3 REQUIREMENTS FOR VISUAL ACCEPTANCE .

END ITEMS ///

FAA REPAIR STATION NUMBER RX5R187N
METHOD(S),PROCESS(ES),PROCEDURE(S) MERCURY FREE

ADDITIONAL INFORMATION - SEE ATTACHED: ☐ SKETCH(ES) ☐ SUPPLEMENTARY SHEET(S) ☐ NDT REPORTS ☐ VIDEO

SIGNATURES

		CERTIFICATION LEVEL	DATE M D Y
INSPECTOR	MICHAEL DREW CWI# 9905021		11 | 30 | 07
SUPERVISOR			

(FORM 0700 REV 0)

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INSPECTION REPORT

CUSTOMER: S. W. COLE ENG.			PAGE 1 OF 1
ADDRESS: GRAY , ME.			
ATTENTION: ROGER DOMINGO			
COPIES:			
PROJECT: BAYSIDE VILLAGE , 132 MARGINAL WAY			
OWNER:			
CONTRACTOR: PIZZAGALLI CONSTRUCTION			
JOB No.: 05-1177.3	REPORT No.: QAL-07-2281	P. O. NUMBER:	DATES INSPECTED: 12-03-07

REMARKS

IN-PROCESS VISUAL INSPECTION OF STRUCTURAL STEEL CONNECTIONS : ITEMS IDENTIFIED AS INCOMPLETE .

> LOCATION COLUMN TO W33X141 AT 2 - PP SHOWS (9) UNTORQUED T/C BOLTS .

> LOCATION G-LINE SHOWS INCOMPLETE OVERHEAD BRACE WELD PLUS UNDERSIZED WELD AT OTHERSIDE OF BRACE AS MARKED WITH BLUE MARKER TAPE .

> LOCATION G - 8.3 MARKED FOR MISALIGNED WEB CLIP BOLT HOLES .

> SHEAR STUDS IN-PROGRESS.

RE-INSPECTION OF ABOVE LISTED ITEMS UPON COMPLETION OF WORK .

FAA REPAIR STATION NUMBER RX5R187N
METHOD(S),PROCESS(ES),PROCEDURE(S) MERCURY FREE

ADDITIONAL INFORMATION - SEE ATTACHED: ☐ SKETCH(ES) ☐ SUPPLEMENTARY SHEET(S) ☐ NDT REPORTS ☐ VIDEO

SIGNATURES	CERTIFICATION LEVEL	DATE M D Y
INSPECTOR MICHAEL DREW CWI# 99050211		12 | 03 | 07
SUPERVISOR		

(FORM Q703 REV 0)

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INSPECTION REPORT

CUSTOMER: S. W. COLE ENG.			PAGE 1 OF 1
ADDRESS: GRAY, ME.			
ATTENTION: ROGER DOMINGO			
COPIES:			
PROJECT: BAYSIDE VILLAGE, 132 MARGINAL WAY			
OWNER:			
CONTRACTOR: PIZZAGALLI CONSTRUCTION			
JOB No.: 05-117.3	REPORT No.: QAL-07-2296	P. O. NUMBER:	DATES INSPECTED: 12-05-07, 12-13-07

REMARKS

CONTINUED IN-PROCESS INSPECTION OF STRUCTURAL STEEL CONNECTIONS :

REF. PREVIOUS FIELD REPORT DATED 12-03-07 FOR WORK ITEMS :
A) ALL T/C BOLTED CONNECTIONS COMPLETE EXCEPT LINTEL CONNECTIONS .
B) ALL DIAGONAL BRACE WELDS COMPLETE . (G-LINE)
C) WEB CLIP AT LOCATION G - 8.3 COMPLETE .
D) ALL SHEAR STUDS AND DECKING COMPLETE.

> WAITING FOR ENGINEER DISPOSITION FOR KICKER WELD DETAIL VERSES DRAWING REQUIREMENTS FOR PERIMETERS AND 4 X 4 X 5/8 UPPER AND LOWER ATTACHMENTS .

COMPLETED ITEMS COMPLY WITH CONTRACT DOCUMENTS AND AWS D1.1 REQUIREMENTS FOR VISUAL ACCEPTANCE .

FAA REPAIR STATION NUMBER RX5R187N
METHOD(S),PROCESS(ES),PROCEDURE(S) MERCURY FREE

ADDITIONAL INFORMATION - SEE ATTACHED: ☐ SKETCH(ES) ☐ SUPPLEMENTARY SHEET(S) ☐ NDT REPORTS ☐ VIDEO

SIGNATURES	CERTIFICATION: LEVEL	DATE M D Y
INSPECTOR MICHAEL DREW CWI # 99050211		12 | 13 | 07
SUPERVISOR		

(FORM Q703 REV 0)

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INSPECTION REPORT

CUSTOMER: S. W. COLE ENG. PAGE 1 OF 1

ADDRESS: GRAY , ME.

ATTENTION: ROGER DOMINGO

COPIES:

PROJECT: 132 MARGINAL WAY . BAYSIDE STUDENT HOUSING

OWNER:

CONTRACTOR: PIZZAGALLI CONSTRUCTION

JOB No.:	REPORT No.:	P. O. NUMBER:	DATES INSPECTED:
05-1177.3	QAL-08-0124		01-22-08 , 01-24-08

REMARKS

VISUAL INSPECTION OF SECOND LEVEL INTERIOR WALL THREADED ROD TO TOP BEAM FLANGE WELDS . (ALL LOCATIONS LISTED ON SITE DRAWINGS)

>>> VISUAL INSPECTION OF ALL FIELD WELDS MEETS DRAWING AND AWS D1.1 REQUIREMENTS FOR VISUAL ACCEPTANCE .

NOTE : IN-PROCESS INSPECTION OF ABOVE LISTED CONNECTIONS REQUIRED (2) SEPARATE SITE VISITS.

END ITEMS //

FAA REPAIR STATION NUMBER RX5R187N
METHOD(S),PROCESS(ES),PROCEDURE(S) MERCURY FREE

ADDITIONAL INFORMATION - SEE ATTACHED: ☐ SKETCH(ES) ☐ SUPPLEMENTARY SHEET(S) ☐ NDT REPORTS ☐ VIDEO

SIGNATURES	CERTIFICATION		DATE M D Y
INSPECTOR MICHAEL DREW CWI# 99050211			01 | 25 | 08
SUPERVISOR			/ /

(FORM Q703 REV 0)

BECKER
structural engineers, inc.

Memorandum

TO: Dan Noblet – Pizzagalli Construction
FROM: Matthew J. Miller, P.E.
DATE/TIME: 12-19-07
SUBJECT: Bayside Village

Dan,

This memo is a follow up to the Inspection Report from Quality Assurance Labs, Inc. dated 12/13/07. According to this report, there was a discrepancy between the as designed and as build welds for the kicker attachments.

On Friday, December 14th, I met with Tim Street of Pizzagalli Construction on site to go over the as built details for these kicker welds. Based on this discussion and field observations of the visible welds, the as built condition was determined to be acceptable.

If you have any questions, please do not hesitate to call with any questions.

Matt

75 York Street, Portland, ME 04101-4701 ■ Tel 207-879-1838 ■ Fax 207-879-1822

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INSPECTION REPORT

CUSTOMER: S. W. COLE ENG.			PAGE 1 OF 1
ADDRESS: GRAY, ME.			
ATTENTION: ROGER DOMINGO			
COPIES:			
PROJECT: 132 MARGINAL WAY, BAYSIDE VILLAGE			
OWNER:			
CONTRACTOR: PIZZAGALLI CONSTRUCTION			
JOB No.: 05-1177.3	REPORT No.: QAL-08-1289	P.O. NUMBER:	DATES INSPECTED: 07 - 03 - 08

REMARKS

>>>>> VISUAL INSPECTION OF REWORK OF (3) SETS OF STAIRS: REF. PREVIOUS FIELD REPORT DATED 04-24-08 FOR LISTED ITEMS FOR ADDITIONAL WORK.

> ITEM (B) AS LISTED ON FIELD REPORT FOR INCOMPLETE STAIR STRINGERS TO HEADERS PER SITE DRAWING DETAIL MK-303SKP1. PER BMC LETTER DATED JULY 1, 08 WELDING OF VERTICLE EDGES OF CLOSURE PLATES WILL BE AT THE DISCRETION OF THE INSTALLER.

THIS COMPLETES ANY OUTSTANDING ISSUES FROM ITEMS LISTED ON PREVIOUS REPORT DATED 04-24-08.

END ITEMS ////

FAA REPAIR STATION NUMBER RX5R187N
METHOD(S),PROCESS(ES),PROCEDURE(S) MERCURY FREE

ADDITIONAL INFORMATION - SEE ATTACHED: ☐ SKETCH(ES) ☐ SUPPLEMENTARY SHEET(S) ☐ NDT REPORTS ☐ VIDEO

SIGNATURES	CERTIFICATION LEVEL		DATE M D Y
INSPECTOR MICHAEL DREW CWI # 99050211			07 | 03 | 08
SUPERVISOR			| |

(FORM QA03 REV 01

BMC ENGINEERING, L.L.C.

STRUCTURAL ENGINEERING CONSULTANTS
333 NORTH MAIN STREET, SUITE #1 · MIDDLETON, MA 01949
(978) 774-1884 · FAX (978) 774-1885

BMC Project #07-209

July 1, 2008

Capco Steel Corporation
33 Acorn Street
Providence, R.I. 02903-1028

Subject: Bayside Village – Student Housing
Portland, ME
CSC Project No. 07-0098
Stair Closure Plate

Attn: Mike Gomes, Project Manager

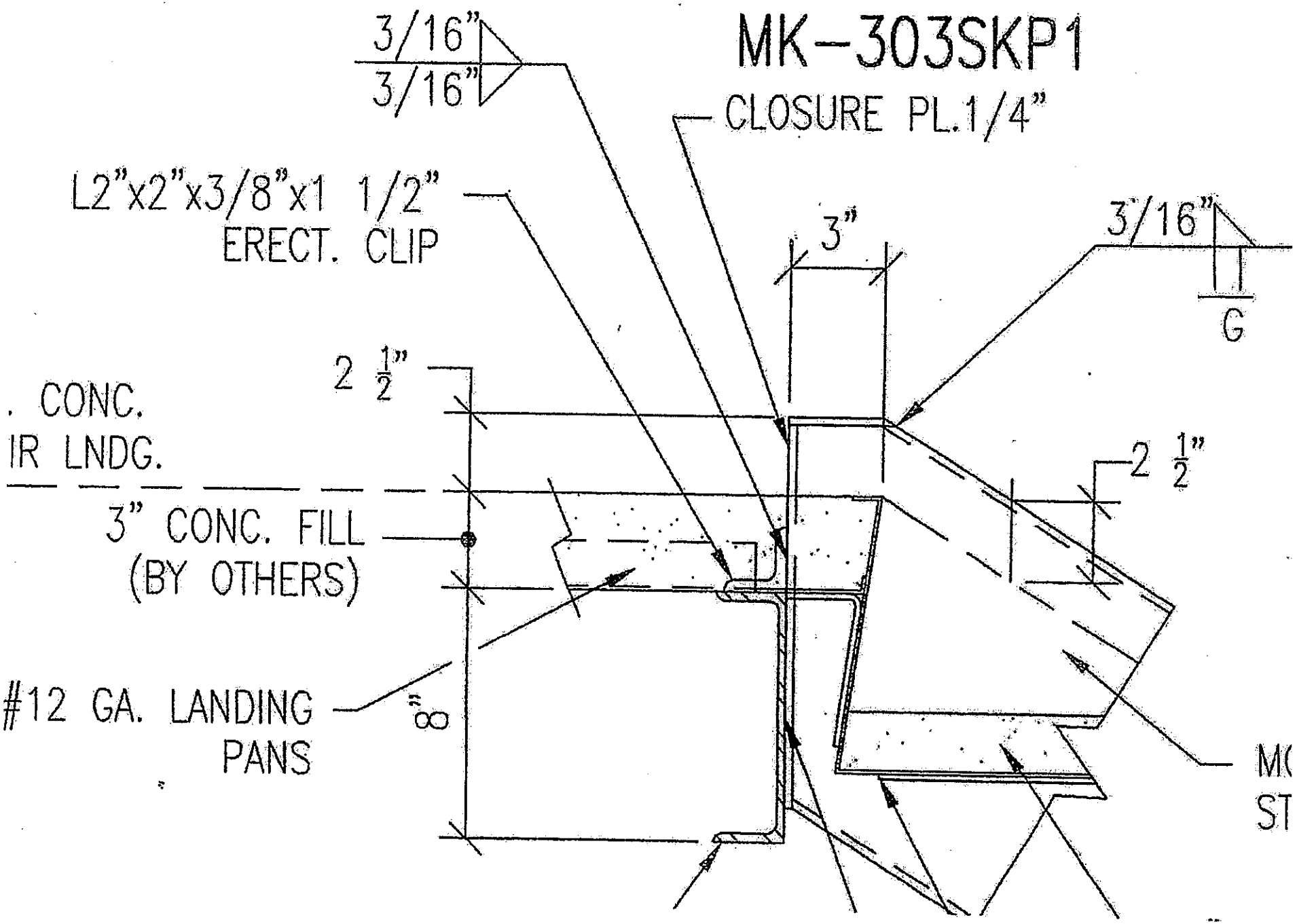
Dear Mr. Gomes,

As requested, this letter is written to confirm that the stair closure plate shown in the attached sketch serves as a pour stop and kick plate between stair stringers on adjacent flights. The ¼" closure plate is not required structurally to support the stair stringer during erection or after completed erection of the stair.

Thus, the welding of the vertical edges of the closure plate is at the discretion of the stair installer, since it does not affect the structural integrity of the stairs.

VERY TRULY YOURS,
BMC ENGINEERING, L.L.C.

Thomas J. Quinlan, P.E.
Principal


MK-303SKP1
3/16"
3/16"
CLOSURE PL.1/4"
L2"x2"x3/8"x1 1/2"
ERECT. CLIP
3"
3/16"
G
2 1/2"
. CONC.
IR LNDG.
3" CONC. FILL
(BY OTHERS)
2 1/2"
#12 GA. LANDING
PANS
8"

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INSPECTION REPORT

CUSTOMER:	S. W. COLE ENG.
ADDRESS:	GRAY . ME
ATTENTION:	ROGER DOMINGO
COPIES:	
PROJECT:	132 BAYSIDE STUDENT HOUSING
OWNER:	
CONTRACTOR:	PIZZAGALLI CONSTRUCTION

PAGE 1 OF 1

JOB No.:	REPORT No.:	P. O. NUMBER:	DATES INSPECTED:
05-1177.3	QAL-08-0781		04-24-08

REMARKS

>>>> VISUAL INSPECTION OF STAIR INSTALATION FOR (3) SETS OF STAIRS .

> NOTE · ALL (3) STAIR LOCATIONS ARE REJECTED VISUALLY FOR THE FOLLOWING :
A) SLAG ON WELDS
B) INCOMPLETE FIELD CONNECTIONS FOR STRINGERS TO HEADER ATTACHMENTS PER DRAWING DETAILS .
C) OVERALL POOR QUALITY WORKMANSHIP

NOTE : WELDER MUST PROVIDE PROOF OF CERTIFICATION FOR ALL POSITION FILLET WELDING WITH CURRENT STATUS . WELDER MUST ALSO DEMONSTRATE HIS ABILITY TO PERFORM WITHIN HIS SCOPE OF CURRENT CERTIFICATION OR RE-CERTIFY PER AWS D1.1 REQUIREMENTS .

END ITEMS ///

FAA REPAIR STATION NUMBER RX5R187N
METHOD(S),PROCESS(ES),PROCEDURE(S) MERCURY FREE

ADDITIONAL INFORMATION - SEE ATTACHED: ☐ SKETCH(ES) ☐ SUPPLEMENTARY SHEET(S) ☐ NDT REPORTS ☐ VIDEO

SIGNATURES	CERTIFICATION	LEVEL	DATE M D Y
INSPECTOR MICHAEL DREW CWI# 99050211			04 | 24 | 08
SUPERVISOR			

(FORM Q703 REV 0)

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INSPECTION REPORT

CUSTOMER: S. W. COLE ENG. PAGE 1 OF 1

ADDRESS: GRAY , ME.

ATTENTION: ROGER DOMINGO

COPIES:

PROJECT: 132 MARGINAL WAY , BAYSIDE STUDENT HOUSING

OWNER:

CONTRACTOR: PIZZAGALLI CONSTRUCTION

JOB No.: 05-1177.3	REPORT No.: QAL-08-0124	P. O. NUMBER:	DATES INSPECTED: 01-22-08 , 01-24-08

REMARKS

VISUAL INSPECTION OF SECOND LEVEL INTERIOR WALL THREADED ROD TO TOP BEAM FLANGE WELDS . (ALL LOCATIONS LISTED ON SITE DRAWINGS)

>>> VISUAL INSPECTION OF ALL FIELD WELDS MEETS DRAWING AND AWS D1.1 REQUIREMENTS FOR VISUAL ACCEPTANCE .

NOTE : IN-PROCESS INSPECTION OF ABOVE LISTED CONNECTIONS REQUIRED (2) SEPARATE SITE VISITS.

END ITEMS ///

FAA REPAIR STATION NUMBER RX5R187N
METHOD(S),PROCESS(ES),PROCEDURE(S) MERCURY FREE

ADDITIONAL INFORMATION - SEE ATTACHED: ☐ SKETCH(ES) ☐ SUPPLEMENTARY SHEET(S) ☐ NDT REPORTS ☐ VIDEO

SIGNATURES	CERTIFICATION	LEVEL	DATE M D Y
INSPECTOR MICHAEL DREW CWI# 99050211			01 | 28 | 08
SUPERVISOR			

(FORM Q703 REV 0)

Manz, David

From: Mike Drew [michaelwdrew@gmail.com]
Sent: Friday, February 01, 2008 6:24 AM
To: Manz, David
Subject: Re: Bayside Village Test report dated 12/3/07

02/01/08
David,
Please be advised, item#12 of your log to ref. un-torqued t/c bolts at column to beam w33x141 location 2-pp was completed and visually verified .

Thank You,
Mike Drew CWI#99050211

On 1/31/08, **Manz, David** <DManz@pizzagalli.com> wrote:

Mike,

Upon review of our inspection issues log could you please confirm that item 12 on our log from test report dated 12/03/08 which states "Location – column to W33x141 @ 2-PP shows un-torqued T/C's (9)" has been completed. Once you confirm this I believe that we will be up to date for items from Quality Assurance. Please let me know if you have any questions.

David Manz

Pizzagalli Construction

dmanz@pizzagalli.com

207-761-1535 EXT. 104

Manz, David

From: Mike Drew [michaelwdrew@gmail.com]
Sent: Tuesday, January 15, 2008 8:48 AM
To: Manz, David
Subject: Re: FW: phone conversation on 1-14-08

01/15/08
subject:Bayside Housing
Ref. Pizzagalli E-mail dated 01/14/08.

David,
Please be advised,the following listed items have been completed and re-inspected .
item#3- location 1-10,A-F.6 shows all t/c bolted connections complete .
item#7- location 1-10, F-N shows all beam to column t/c bolts complete .
item#8- location 1-10-G show all diagonal brace welds complete .
item#9- roof area required shear stud replacement at H,9-10 .completed.
item#10- location 2-9,K-M deck lap screws completed .
item#11- location G-7-8 show 1 1/8" t/c bolts complete.
item#12- location G-line shows completed diagonal brace welds .
All completed items comply with contract documents and AWS D1.1 visual requirements.

Best Reguards,
M. Drew CWI# 99050211

On 1/14/08, **Manz, David** <DManz@pizzagalli.com > wrote:

Mike,

Thank you for taking the time to sign off on our Issues Log, items 13 and 14 at all set. What I need is for you to sign off on the following line items, 3, 7,8,9,10,11,12, stating that these items have been completed. Thanks, feel free to give me a call if you have any questions on what I am looking for.

David Manz

Pizzagalli Construction

dmanz@pizzagalli.com

07-761-1535 EXT. 104

From: Manz, David
Sent: Wednesday, January 09, 2008 6:24 PM
To: 'michaelwdrew@gmail.com'
Cc: Street, Tim; Martin, Erica; Noblet, Daniel; 'tgallagher@pizzagalli.com'
Subject:

Mike,

I have attached our inspection issues log, what I need from you is a report stating that all the items that are on the log and not closed have been completed. Before we can close these items out I need written verification from you stating that the items have been completed. In regards to the weld details that you had some concerns with, we did meet with Matt Miller out structural engineer and I have attached the memo that he sent. Please let me know if you have any questions the sooner we can get these items closed out the better. Thank you.

David Manz

Pizzagalli Construction

dmanz@pizzagalli.com

207-761-1535 EXT. 104

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INSPECTION REPORT

PAGE 1 OF 1

CUSTOMER: S. W. COLE ENG.

ADDRESS: GRAY , ME.

ATTENTION: ROGER DOMINGO

COPIES:

PROJECT: BAYSIDE VILLAGE , 132 MARGINAL WAY

OWNER:

CONTRACTOR: PIZZAGALLI CONSTRUCTION

JOB No.:	REPORT No.:	P. O. NUMBER:	DATES INSPECTED:
05-117.3	QAL-07-2296		12-05-07 , 12-13-07

REMARKS

CONTINUED IN-PROCESS INSPECTION OF STRUCTURAL STEEL CONNECTIONS :

REF. PREVIOUS FIELD REPORT DATED 12-03-07 FOR WORK ITEMS :
A) ALL T/C BOLTED CONNECTIONS COMPLETE. EXCEPT LINTEL CONNECTIONS .
B) ALL DIAGONAL BRACE WELDS COMPLETE . (G-LINE)
C) WEB CLIP AT LOCATION G - 8.3 COMPLETE .
D) ALL SHEAR STUDS AND DECKING COMPLETE.

> WAITING FOR ENGINEER DISPOSITION FOR KICKER WELD DETAIL VERSES DRAWING REQUIREMENTS FOR PERIMETERS AND 4 X 4 X 5/8 UPPER AND LOWER ATTACHMENTS .

COMPLETED ITEMS COMPLY WITH CONTRACT DOCUMENTS AND AWS D1.1 REQUIREMENTS FOR VISUAL ACCEPTANCE .

FAA REPAIR STATION NUMBER RX5R187N
METHOD(S),PROCESS(ES),PROCEDURE(S) MERCURY FREE

ADDITIONAL INFORMATION - SEE ATTACHED: ☐ SKETCH(ES) ☐ SUPPLEMENTARY SHEET(S) ☐ NDT REPORTS ☐ VIDEO

SIGNATURES	CERTIFICATION (LVL)	DATE M D Y
INSPECTOR MICHAEL DREW CWI # 99050211		12 | 13 | 07
SUPERVISOR		

(FORM Q703 REV 0)

BECKER
structural engineers, inc.

Memorandum

TO:	Dan Noblet – Pizzagalli Construction
FROM:	Matthew J. Miller, P.E.
DATE/TIME:	12-19-07
SUBJECT:	Bayside Village

Dan,

This memo is a follow up to the Inspection Report from Quality Assurance Labs, Inc. dated 12/13/07. According to this report, there was a discrepancy between the as designed and as build welds for the kicker attachments.

On Friday, December 14th, I met with Tim Street of Pizzagalli Construction on site to go over the as built details for these kicker welds. Based on this discussion and field observations of the visible welds, the as built condition was determined to be acceptable.

If you have any questions, please do not hesitate to call with any questions.

Matt

75 York Street, Portland, ME 04101-4701 ▪ Tel 207-879-1838 ▪ Fax 207-879-1822

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NON-DESTRUCTIVE TESTING AND INSPECTION SERVICES
80 PLEASANT AVENUE • SOUTH PORTLAND, MAINE 04106 • TEL: (207) 799-8911 • FAX: (207) 799-7251

INSPECTION REPORT

PAGE 1 OF 1

CUSTOMER: S. W. COLE ENG.

ADDRESS: GRAY , ME.

ATTENTION: ROGER DOMINGO

COPIES:

PROJECT: BAYSIDE VILLAGE , 132 MARGINAL WAY

OWNER:

CONTRACTOR: PIZZAGALLI CONSTRUCTION

JOB No.:	REPORT No.:	P. O. NUMBER:	DATES INSPECTED:
05-1177.3	QAL-07-2281		12-03-07

REMARKS

IN-PROCESS VISUAL INSPECTION OF STRUCTURAL STEEL CONNECTIONS : ITEMS IDENTIFIED AS INCOMPLETE .

> LOCATION COLUMN TO W33X141 AT 2 - PP SHOWS (9) UNTORQUED T/C BOLTS .

> LOCATION G-LINE SHOWS INCOMPLETE OVERHEAD BRACE WELD PLUS UNDERSIZED WELD AT OTHERSIDE OF BRACE AS MARKED WITH BLUE MARKER TAPE .

> LOCATION G - 8.3 MARKED FOR MISALIGNED WEB CLIP BOLT HOLES .

> SHEAR STUDS IN-PROGRESS.

RE-INSPECTION OF ABOVE LISTED ITEMS UPON COMPLETION OF WORK .

FAA REPAIR STATION NUMBER RX5R187N

METHOD(S),PROCESS(ES),PROCEDURE(S) MERCURY FREE

ADDITIONAL INFORMATION - SEE ATTACHED: ☐ SKETCH(ES) ☐ SUPPLEMENTARY SHEET(S) ☐ NDT REPORTS ☐ VIDEO

SIGNATURES	CERTIFICATION LEVEL	DATE M D Y
INSPECTOR MICHAEL DREW CWI# 99050211		12 | 03 | 07
SUPERVISOR		

(FORM Q703 REV 0)

132 Marginal Way (Bayside Village)
Punch List As of 12-3-07
(Structural Connections)

> Location - Column to W33X141 @ 2-PP
Shows untorqued T/C's (9)

> Location - Brace @ G-Line shows Incomplete
overhead welds @ one side Plus undersize
overhead weld @ other side.

> Location - G-8.3 Marked For W18X35
to W30 X116 For misaligned web slip Bolt
Holes - weld Bottom 2" Return plus verti

— Previous Item complete For Framing Plan
IE: Bolts & Items In-Progress

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INSPECTION REPORT

CUSTOMER: S. W. COLE ENG.			PAGE 1 OF 1
ADDRESS: GRAY , ME.			
ATTENTION: ROGER DOMINGO			
COPIES:			
PROJECT: BAYSIDE VILLAGE 132 MARGINAL WAY			
OWNER:			
CONTRACTOR: PIZZAGALLI CONSTRUCTION			
JOB No.: 05-1177.3	REPORT No.: QAL-07-2262	P. O. NUMBER:	DATES INSPECTED: 11-29-07

REMARKS

VISUAL INSPECTION OF STRUCTURAL STEEL CONNECTIONS : SECOND LEVEL FRAMING PLAN : IN-PROCESS INSPECTION OF AREA 1 - 10 , F - N .

> COLUMN LOCATIONS MARKED WITH BLUE FLAG TAPE TO INDICATE UN-TORQUED T/C BOLTS FOR BEAM TO BEAM OR COLUMN CONNECTIONS . 1" BOLTS

> G-LINE SHOWS DIAGONAL BRACE WELDS INCOMPLETE AS MARKED WITH FLAG TAPE . ALSO SHOWS OVERHEAD WELD TO BE UNDERSIZE FOR 3/8" DRAWING REQUIREMENTS AS MARKED . BRACES AT J & RR LINE SHOW BRACE CONNECTIONS IN-PROGRESS .

> LOCATIONS AT BLD. PERIMETER SHOWS ANGLE KICKER BRACES IN-PROGRESS .

> ROOF AREA SHOWS (20) FAILED STUDS AT LOCATION H - 9 - 10 . REMAINING DECK AREA IN-PROGRESS APPROX. 50% COMPLETE FOR SHEAR STUDS . DECK LAP SCREWS MISSING AT 2 - 9 , K - M . LOCATION G - 7.8 SHOWS 1 1/8" UN-TORQUED T/C BOLTS AT W27X146 . DECKING PUDDLE WELDS COMPLETE .

COMPLETED ITEMS COMPLY WITH CONTRACT DOCUMENTS AND AWS D1.1 , D1.3 REQUIREMENTS FOR VISUAL ACCEPTANCE .

END ITEMS ///

FAA REPAIR STATION NUMBER RX5R187N
METHOD(S),PROCESS(ES),PROCEDURE(S) MERCURY FREE

ADDITIONAL INFORMATION - SEE ATTACHED: ☐ SKETCH(ES) ☐ SUPPLEMENTARY SHEET(S) ☐ NDT REPORTS ☐ VIDEO

SIGNATURES	CERTIFICATION LEVEL		DATE M D Y
INSPECTOR MICHAEL DREW CWI# 99050211			11 | 30 | 07
SUPERVISOR			

(FORM Q703 REV 0)

Nov. 28. 2007 9:25AM No. 0001 P. 1

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INSPECTION REPORT

CUSTOMER: S. W. COLE ENG. PAGE 1 OF 1

ADDRESS: GRAY , ME.

ATTENTION: ROGER DOMINGO

COPIES:

PROJECT: 132 MARGINAL WAY- BAYSIDE VILLAGE

OWNER:

CONTRACTOR: PIZZAGALLI CONSTRUCTION INC.

JOB No.:	REPORT No.:	P. O. NUMBER:	DATES INSPECTED:
05-1177.3	QAL-07-2219		11-19-07

REMARKS

RE-INSPECTION OF ITEMS LISTED ON FIELD REPORT DATED 11-16-07 :AREA 1 - 10 , A - F.6 .

> ROOF PERIMETER WELDS COMPLETE.

> SHEAR STUDS COMPLETE .

> DIAGONAL BRACE CONNECTIONS SHOW LOCATION LINE 10 , E - F REQUIRES WELDING PRIOR TO DECK LOADS . REMAINING DIAGONAL BRACE CONNECTIONS COMPLETE .

> HIGH STRENGTH T/C BOLTED CONNECTIONS APPROX. 98% COMPLETE - ONE LOCATION SHOWS (8) UN-TORQUED BOLTS AT BEAM TO COLUMN CONNECTION .

COMPLETED ITEMS COMPLY WITH SITE DOCUMENTS AND AWS D1.1, D1.3 REQUIREMENTS FOR VISUAL ACCEPTANCE .

END ITEMS ///

FAA REPAIR STATION NUMBER RX5R187N
METHOD(S),PROCESS(ES),PROCEDURE(S) MERCURY FREE

ADDITIONAL INFORMATION - SEE ATTACHED: ☐ SKETCH(ES) ☐ SUPPLEMENTARY SHEET(S) ☐ NDT REPORTS ☐ VIDEO

SIGNATURES	CERTIFICATION LEVEL	DATE M D Y
INSPECTOR MICHAEL DREW CWI # 99050211		11 | 28 | 07
SUPERVISOR		

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INSPECTION REPORT

CUSTOMER: S. W. COLE ENG.			PAGE 1 OF 1
ADDRESS: GRAY, ME.			
ATTENTION: ROGER DOMINGO			
COPIES: -			
PROJECT: 132 MARGINAL WAY . BAYSIDE VILLAGE			
OWNER:			
CONTRACTOR: PIZZAGALLI CONSTRUCTION			
JOB No.: 05-1177.3	REPORT No.: QAL-07-2185	P. O. NUMBER:	DATES INSPECTED: 11-16-07

REMARKS

VISUAL INSPECTION OF STRUCTURAL STEEL CONNECTIONS : GRID LINES 1 - 10 , A - F.6 .

> INSPECTION REVEALS THE FOLLOWING :

A) LOCATION LINE 10 - E , F SHOWS INCOMPLETE DIAGONAL WIND BRACE WELDS . LOCATION LINE (2) ALSO SHOWS INCOMPLETE DIAGONAL BRACE WELDS .

B) VARIOUS LOCATIONS SHOW UNTORQUED T/C BOLTS AT BEAM TO COLUMN CONNECTIONS .

C) LOCATION ROOF AREA GRID LINES E - 2,4 SHOWS DECKING WELDS AT CROSS BEAM THAT REQUIRES ADDITIONAL PUDDLE WELDS .

D) ROOF DECKING LOCATIONS (PERIMETER) REQUIRES 6" O/C AT LINES 6 - 7.6 AND 1 - 4 . REMAINING DECK ATTACHMENTS COMPLETE FOR PUDDLE WELDS AND SIDE LAP SCREWS.

E) SHEAR STUD INSPECTION SHOWS APPROX. 30% OF ABOVE LISTED AREA COMPLETE . (1) FAILED STUD NOTED AT LOCATION 8.3 - C.5 .

COMPLETED ITEMS COMPLY WITH SITE DOCUMENTS AND AWS D1.1 , D1.3 REQUIREMENTS FOR VISUAL ACCEPTANCE .

END ITEMS ///

FAA REPAIR STATION NUMBER RX5R187N
METHOD(S),PROCESS(ES),PROCEDURE(S) MERCURY FREE

ADDITIONAL INFORMATION - SEE ATTACHED: ☐ SKETCH(ES) ☐ SUPPLEMENTARY SHEET(S) ☐ NDT REPORTS ☐ VIDEO

SIGNATURES	CERTIFICATION LEVEL	DATE M O Y
INSPECTOR MICHAEL DREW CWI# 99050211		11 | 16 | 07
SUPERVISOR		

(FORM Q703 REV 0)

American Institute of Steel Construction, Inc.

is proud to recognize

Ocean Steel & Construction, Ltd

Saint John, NB

for successfully meeting the quality certification requirements for

Standard for Steel Building Structures

Sophisticated Paint Coating Endorsement-Enclosed

Roger E. Ferch

Bobbi Marstellar

Certification valid through July 2008

Fabricator's Certificate of Compliance – Exhibit D

Each approved fabricator that is exempt from Special Inspection of shop fabrication and implementation procedures per section 1704.2 of the International Building Code must submit a *Fabricator's Certificate of Compliance* at the completion of fabrication.

Project: Bayside Village Student Housing

Fabricator's Name: Ocean Steel & Construction Ltd.

Address: 400 Chesley Drive, Saint John NB E2K 5L6

Certification or Approval Agency: American Institute of Steel Construction Inc

Certification Number:

Date of Last Audit or Approval: July 24, 2007

Description of structural members and assemblies that have been fabricated:

Structural steel members as shown on contract documents S1.2 and S1.3 and per approved shop drawings.

I hereby certify that items described above were fabricated in strict accordance with the ~~approved construction~~ contrac documents.

SIGN HERE

Signature

July 8, 2008
Date

Harrison Wilson

General Manager
Title

Attach copies of fabricator's certification or building code evaluation service report and fabricator's quality control manual

EXHIBIT B

06100 Wood Construction

Project: Bayside Village – A Student Housing Project
Date Prepared: 11/14/ 2007

Schedule of Special Inspections

WOOD CONSTRUCTION

VERIFICATION AND INSPECTION IBC Section 1704.6	Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	DATE	REV
1. Wood Shearwalls and Diaphragms							
a. Verify wood structural panel sheathing for grade and thickness	Y	P	IBC 1704.6	SII	PE/SE or EIT	✓	
b. Verify the nominal size of framing members at adjoining panel edges	Y	P	IBC 1704.6	SII	PE/SE or EIT	✓	
b. Verify the nail or staple diameter and length	Y	P	IBC 1704.6	SII	PE/SE or EIT	✓	
b. Verify the spacing of fasteners at panel edges and diaphragm boundaries	Y	P	IBC 1704.6	SII	PE/SE or EIT	✓	

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OBSERVATION REPORT
Rough Carpentry

Date:	1/22/08
Time:	1:00pm
Temp:	20's
Weather:	Overcast

Project:	Bayside Village
Location:	Portland, ME
Becker Job No:	1575

Observation Location: 1st floor wall panels

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Member Sizes	☒	☐	☐	☐	
Material Quality	☐	☐	☒	☐	Damaged plywood was observed at multiple locations.
Bearing Condition	☐	☐	☒	☐	Floor truss and wall studs did not align properly at multiple locations.
Connections	☐	☐	☒	☐	Shearwall holddowns were not installed at all areas at time of visit.
Nailing Pattern	☐	☐	☒	☐	Plywood edge nailing at exterior walls was less than 6" O.C. in multiple locations.
Bridging/Bracing	☐	☐	☒	☐	Blocking fix at SW-4 was not complete at time of visit, also some areas with damaged or missing blocking.
Other:	☐	☐	☐	☐	
Other:	☐	☐	☐	☐	

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Notes:

The following is a list of items found during the visit on Tuesday, January 22, 2008:

1. There were many locations where plywood wall sheathing has been delaminated, damaged or cut. The plywood in these locations must be removed and replaced.

2. There were many locations in the exterior walls where truss bearing did not align directly with wall studs. Studs must be added at these locations to provide direct load path from truss bearing to bottom plate. Note: At corridor truss bearing provide fix detailed in attached SKS-44 in accordance with memo to Dan Noblet issued on 12/20/07.

3. All SW-4 and SW-6 locations this level currently have 2" nominal blocking. These shearwalls must have 3" nominal blocking in both horizontal and vertical directions per the shearwall schedule on S4.2. See the field report from 1-22-08 for fix.

4. There were areas in the exterior wall sheathing where the panel edges were not fastened at 6" on center. Fasteners must be added at all of these locations to achieve minimum 6" on center spacing.

Feel free to email or call with any questions or comments, thank you.

Signed: James D. Hughes, E.I.

BECKER
structural engineers, inc.

06100

OBSERVATION REPORT
Rough Carpentry

Date:	2/1/08
Time:	11:00am
Temp:	20's
Weather:	Overcast

Project:	Bayside Village
Location:	Portland, ME
Becker Job No:	1575

Observation Location: 2nd floor wall panels

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Member Sizes	☒	☐	☐	☐	
Material Quality	☐	☐	☒	☐	Damaged plywood was observed at multiple locations.
Bearing Condition	☐	☐	☒	☐	Floor truss and wall studs did not align properly at multiple locations.
Connections	☐	☐	☒	☐	Shearwall holddowns were missing or not completely fastened at some locations
Nailing Pattern	☐	☐	☒	☐	Plywood edge nailing at exterior walls was less than 6" O.C. in multiple locations.
Bridging/Bracing	☐	☐	☒	☐	Some locations with damaged or missing blocking, most marked for fix by contractor
Other:	☐	☐	☐	☐	
Other:	☐	☐	☐	☐	

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Notes:

At the time of this visit, the third floor framing was in place throughout most of the building, some trusses remained to be placed and some fourth floor sheathing had not yet installed. The following is a list of items found during the visit on Friday, February 1, 2008:

1. There were many locations where plywood wall sheathing has been delaminated, damaged or cut. The plywood in these locations must be removed and replaced.

2. There were areas in the exterior wall sheathing where the panel edges were not fastened at 6" on center. Fasteners must be added at all of these locations to achieve minimum 6" on center spacing.

3. Items from report issued after January 22 visit have not yet been completed.

Feel free to email or call with any questions or comments, thank you.

Signed: James D. Hughes, E.I.

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structural engineers, inc.

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OBSERVATION REPORT
Rough Carpentry

Date:	2/8/08
Time:	9:30am
Temp:	20's
Weather:	Snow

Project:	Bayside Village
Location:	Portland, ME
Becker Job No:	1575

Observation Location: 2nd level framing

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Member Sizes	☒	☐	☐	☐	
Material Quality	☒	☐	☐	☐	
Bearing Condition	☒	☐	☐	☐	
Connections	☐	☐	☒	☐	Shearwall holddowns were missing or not completely fastened at some locations
Nailing Pattern	☐	☐	☒	☐	Plywood edge nailing at exterior walls was less than 6" O.C. in multiple locations.
Bridging/Bracing	☐	☐	☒	☐	Some locations with damaged or missing blocking, most marked for fix by contractor, double 2x blocking missing at shearwall horizontal panel edges
Other:	☐	☐	☐	☐	
Other:	☐	☐	☐	☐	

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Notes:

At the time of this visit, the second level framing was fully installed. The third level floor trusses, wall panels and plywood sheathing were partially installed. The following is a list of items found during the visit on Friday, February 8, 2008:

1. Blocking at interior shearwall locations (first and second levels) consisted of only a single 2x at horizontal panel edges. Per Shearwall Schedule, plan S4.2, addendum S-2, all SW-3 locations must have a nominal 3x piece of blocking. At these shearwalls, either new horizontal blocking must be installed above and below the existing blocking or existing blocking must be removed and relpaced.

2. Beam bearing at 3B4 at the fourth floor framing level (shown S1.4) must be addressed as the column ends just below beam bearing and must be exteneded to pick up 4B2 at the fifth floor level per Section 9, S3.2.

Feel free to email or call with any questions or comments, thank you.

Signed: James D. Hughes, E.I.

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structural engineers, inc.

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OBSERVATION REPORT
Rough Carpentry

Date:	3/3/08
Time:	2:00am
Temp:	30's
Weather:	Overcast

Project:	Bayside Village
Location:	Portland, ME
Becker Job No:	1575

Observation Location: 1st through 4th level framing

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Member Sizes	☒	☐	☐	☐	
Material Quality	☒	☐	☐	☐	
Bearing Condition	☒	☐	☐	☐	Stud bearing blocks installed at first floor at observed locations in north wing
Connections	☐	☐	☒	☐	Shearwall holddowns and joist hangers still in the process of being installed at various locations. Plywood nailing ledger is missing at east stair tower, will require fix.
Nailing Pattern	☐	☐	☒	☐	Some shearwalls had nails/sheathing removed for holddown installation, most areas had been marked for fix by contractor.
Bridging/Bracing	☐	☐	☒	☐	Blocking between truss seats had been added at the second floor framing at the time of the visit.
Other:	☐	☐	☐	☐	
Other:	☐	☐	☐	☐	

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Notes:

At the time of this visit, the fourth level framing was erected. The roof trusses, fourth level walls and plywood sheathing were partially erected. The following is a list of items found during the visit on Monday, March 3, 2008:

1. Additional horizontal blocking at interior shearwall locations was installed at the first level, and bearing block detail was installed at first floor walls where trusses and studs were misaligned.

2. Blocking between truss seats was installed at the second floor framing.

3. There is no connection between the floor sheathing and the eastern cmu stair tower. The intended connection detail is shown in Section 7, S4.1. See attached SKS-65 for fix.

4. Exterior sheathing nailing pattern was not reviewed at the time of the visit but must be checked prior to covering (nails spaced @ 6" o.c. min @ panel edges)

Feel free to email or call with any questions or comments, thank you.

Signed: James D. Hughes, E.I.

BECKER
structural engineers, inc.

06100

OBSERVATION REPORT
Rough Carpentry

Date:	3/5/08
Time:	9:00 am to 10:30 am
Temp:	36 F
Weather:	Sunny

Project:	Bayside Village
Location:	Portland, ME
Becker Job No:	1575

Observation Location: Exterior Wall Sheathing and Nailing

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Member Sizes	☒	☐	☐	☐	
Material Quality	☒	☒	☐	☐	In general, the sheathing was in good condition, however, there were isolated areas of damaged sheathing that shall be replaced.
Bearing Condition	☐	☐	☐	☒	Stud bearing blocks installed at first floor at observed locations in north wing
Connections	☐	☐	☐	☒	
Nailing Pattern	☐	☐	☒	☐	In general, the nailing pattern was in general conformance with the structural drawings. Nailing at isolated areas were either missing or overdriven. Contractor shall review the exterior walls and re-nail deficient panels.
Bridging/Bracing	☐	☐	☐	☒	
Other:	☐	☐	☐	☐	
Other:	☐	☐	☐	☐	

Notes:

At the time of the visit, the majority of the exterior walls has been erected, however the nailing at the corners of the panelized walls had not been completed. The majority of the panel edge nailing in the panelized walls appeared to be satisfactory, however at isolated areas missing and/or overdriven nails were noted. Representative areas of these deficiencies were brought to the attention of Dave Manz of Pizzagalli Construction. Prior to the installation of the wall covering, the nailing pattern of the exterior walls should be reviewed by the contractor, re-nailed and reinspected as required.

Signed: Matthew J. Miller, P.E.

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OBSERVATION REPORT
Rough Carpentry

Date:	3/10/08
Time:	2:00 pm to 3:45 pm
Temp:	Low 30's
Weather:	Sunny

Project:	Bayside Village
Location:	Portland, ME
Becker Job No:	1575

Observation Location: 1st and 2nd Floor Walls

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Member Sizes	☒	☐	☐	☐	
Material Quality	☒	☐	☐	☐	
Bearing Condition	☐	☐	☐	☒	
Connections	☐	☐	☐	☒	
Nailing Pattern	☐	☐	☒	☐	
Bridging/Bracing	☐	☐	☐	☒	
Other:	☐	☐	☐	☐	
Other:	☐	☐	☐	☐	

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Notes:

I visited the site and performed a general review of the 1st and 2nd floor shear walls. Continued work in these areas was ongoing. The following items were noted:

First Floor Walls
1. In the first floor corridor, the nailing of shear wall between Unit 105 and 107 was noted to be at 6" oc. This wall should be nailied at 4" oc. Additional nails should be added between every other existing nail.

Second Floor Walls
1. Additional blocking was noted to be added in the walls. The blocking was not nailed together is accordance with Field Report No. 1575-01-22.
2. At the wall separating units 210-212, and 212-Management Office the sheathing had not been re-nailed to the added blocking.
3. The base fastening at the two walls indicated in item 2 was not in conformance with the structural drawings.
4. In the wall separating unit 212 and the management office, additional studs at the first panel joint nearest the courtyard had not been added. Additional studs shall be added and nailed in accordance with Field Report No. 1575-01-22.

Signed: Matthew J. Miller, P.E.

75 York Street, Portland, ME 04101-4701 ▪ Tel 207-879-1838 ▪ Fax 207-879-1822

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structural engineers, inc.

OBSERVATION REPORT
Rough Carpentry

Date:	3/13/08
Time:	3:00 pm to 4:45 pm
Temp:	Low 30's
Weather:	Sunny

Project:	Bayside Village
Location:	Portland, ME
Becker Job No:	1724

Observation Location: 1st and 2nd Floor Corridor Walls North Wing (295 side)

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Member Sizes	☒	☐	☐	☐	
Material Quality	☒	☐	☐	☐	
Bearing Condition	☐	☐	☐	☒	
Connections	☐	☐	☒	☐	
Nailing Pattern	☐	☐	☒	☐	
Bridging/Bracing	☐	☐	☐	☒	
Other:	☐	☐	☐	☐	
Other:	☐	☐	☐	☐	

Notes:

I visited the site and performed a detailed review of the 1st and 2nd floor corridor shear walls in the North wing. The following items were noted:

First Floor:

1. The panel edge nailing varied from 4" oc to 6" oc. The required nailing is 4" oc in accordance with the structural drawings. The majority of the issues were noted in the walls between Units 123 and 125 and 115 to 117. Where the panel edge nailing is at 6" oc, an additional nail shall be added every other nail space.
2. In a number of locations at adjacent wall panels, the sheathing nails were not nailed to a common stud. In order to properly transfer the loads between plywood sheets, the nailing at sheathing joints shall be nailed to the same stud. Alternately, the adjacent studs shall be nailed together with 2-12d nails at 6" oc. See attached sketch for additional information. These areas can be identified where the nail spacing between panels is greater that approximately 1"

Second Floor:

1. The base nailing was not in conformance with the structural drawings. The bottom plate shall be nailed in accordance with the structural drawings.
2. The panel edge nailing varied from 4" oc to 6" oc. At isolated areas, there were panel joints without nails. One location was to the east of the mechanical closet in the wall between Unit 221 and 223. A second location was approximately half way between Units 223 and 225.
3. The sheathing nailing between wall panels did not share a common stud. See First Floor item 2 for additional information.

Signed: Matthew J. Miller, P.E.

75 York Street, Portland, ME 04101-4701 ■ Tel 207-879-1838 ■ Fax 207-879-1822

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structural engineers, inc.

06100

OBSERVATION REPORT
Rough Carpentry

Date:	3/17/08
Time:	2:00 PM to 4:00 PM
Temp:	Upper 30's
Weather:	Sunny

Project:	Bayside Village
Location:	Portland, ME
Becker Job No:	1724

Observation Location: Corridor Shear Walls (North and South Wings - 1st to 4th Floors), Exterior Walls along 295 and along Marginal Way

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Member Sizes	☒	☐	☐	☐	
Material Quality	☒	☐	☐	☐	
Bearing Condition	☐	☐	☐	☒	
Connections	☐	☐	☒	☐	
Nailing Pattern	☐	☐	☒	☐	
Bridging/Bracing	☒	☐	☐	☐	
Other:	☐	☐	☐	☐	
Other:	☐	☐	☐	☐	

75 York Street, Portland, ME 04101-4701 ■ Tel 207-879-1838 ■ Fax 207-879-1822

Notes:

I visited the site and performed a detailed review of the corridor shear walls in both the North and South wings. The following items were noted:

Exterior Walls:

1. The nailing was observed in isolated areas, and appeared to be in conformance with the structural drawings.

First Floor North Wing:

1. The majority of the items noted in SI report from 03/13/2008 had been completed.
2. At two locations, the nails driven for re-nailing of the sheathing were overdriven. Both of these occurred at wall panel joints. At these locations, the studs from the adjoining panels shall be nailed together with 2-12d nails at 6" oc. The locations are as follows:
   a. 19' to the West of the door to unit 123.
   b. 16' to te East of the door to unit 117.

Second Floor North Wing:

1. The base nailing had not been completed in accordance with the SI report from 03/13/08.
2. The majority of the additional items noted from the 03/13/08 report had been completed with the exception of the following:
   a. The wall between the entrances to Units 225 and 227 had not been completed.
   b. There was a gap in the sheathing between two adjacent panels so that the sheathing from the adjacent wall panels could not be fastened to a common stud. At this location the studs at adjacent wall panels shall be nailed together with 2-12d nails at 6" oc. The location of this panel joint is approximately 10' to the West of the door to unit 215.

Third Floor North Wing:

1. The base nailing had not been completed. The base nailing shall be in accordance with the structural draiwngs.
2. The nailing of the sheathing joint at adjoining wall panels were not nailed to a common stud. At these locations the sheathing shall be re-nailed so that the nails from the sheathing on both sides of the joint are fastened to a common stud. Alternately, the studs from adjoining wall panels shall be nailed together with 2-12d nails at 6" oc.

Fourth Floor North Wing:

1. The base nailing had not been completed. The base nailing shall be in accordance with the structural draiwngs.
2. The nailing of the sheathing joint at adjoining wall panels were not nailed to a common stud. At these locations the sheathing shall be re-nailed so that the nails from the sheathing on both sides of the joint are fastened to a common stud. Alternately, the studs from adjoining wall panels shall be nailed together with 2-12d nails at 6" oc.

South Wing:

General:

1. The nailing of the sheathing joint at adjoining wall panels were not nailed to a common stud. At these locations the sheathing shall be re-nailed so that the nails from the sheathing on both sides of the joint are fastened to a common stud. Alternately, the studs from adjoining wall panels shall be nailed together with 2-12d nails at 6" oc.

2. The base nailing at the second through fourth floors had not been completed.

First Floor South Wing:
1. The nail spacing of the portion of the wall between Units 105 and 107 was 6" oc. The nail spacing at this location was to be at 4" oc. These panel edges should be re-nailed with 1 nail added every other existing nail space.

Second Floor South Wing:
1. The nail spacing of the portion of the wall between Units 205 and 207 was 6" oc. The nail spacing at this location was to be at 4" oc. These panel edges should be re-nailed with 1 nail added every other existing nail space.

Third Floor South Wing:
1. The nail spacing of the portion of the wall between Units 303 and 307 was 6" oc. The nail spacing at this location was to be at 4" oc. These panel edges should be re-nailed with 1 nail added every other existing nail space.

Fourth Floor South Wing:
1. The panel joint approximately 7' to the west of the door to unit 411 was not completely nailed. This joint should be nailed so that the spacing is approximately 6" oc.

North South Corridor wall adjacent to Units 113, 213, 313 and 413.

1. At the first floor the nailing was at 6" oc. The nailing was to be at 4" oc. Additional nails shall be added so that 1 nail is added every other existing nail space.

2. At the second floor, the was one row of 2x nominal blocking. The blocking at this location should be 3x nominal. Additional blocking and nailing shall be provided in accordance with Field Report No. 1575-01-22.

3.The base anchorage at floor 2, 3, and 4 had not been completed.

Additional Items:

1. Blocking between truss seats at the third floor was complete.

Signed:

Matthew J. Miller, P.E.

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06100

OBSERVATION REPORT
Rough Carpentry

Date:	3/25/08 - 3/26/08
Time:	1:45 PM to 3:30 PM on 03/25/08 9:45 AM to 11:00 AM on 03/26/08
Temp:	Low 30's
Weather:	Sunny

Project:	Bayside Village
Location:	Portland, ME
Becker Job No:	1724

Observation Location: First floor unit partition shear walls, Courtyard exterior walls, third floor framing at unit Manager's Apartment.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Member Sizes	☒	☐	☐	☐	
Material Quality	☒	☒	☐	☐	Isolated areas of damaged sheathing in exterior courtyard wall at Unit 110
Bearing Condition	☐	☐	☐	☒	
Connections	☐	☒	☐	☐	Joist hangers at roof level above corridor 452 missing nails
Nailing Pattern	☐	☐	☒	☐	See Comments below
Bridging/Bracing	☐	☐	☒	☐	
Other:	☐	☒	☐	☐	Third floor framing at Manager's Apartment not in conformance with Structural Drawings
Other:	☐	☐	☐	☐	

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Notes:

- The nailing at the unit partition between unit 125 and 127 had several joints missing nails.
- A joint at approximately 6" from the South end of the unit partition between Units 124 and 126 (on the 126 side) appears to have been saw cut. There were no nails on either side of this joint. This joint need to be nailed in accordance with the shear wall schedule.
- A number of panel joints in the first floor exterior sheathing in the courtyard were inadequately nailed. These were noted outside units 124, 112, 108, and 106.
- The third floor framing around the stair at the Manager's apartment was not framed in accordance with the structural drawings. According the structural drawings the stair opening was to be framed with 11 7/8" and 14" deep LVL's. The as-build condition uses the 2x4 wall at the south side of the stair as a bearing wall. In review of the Truss Shop drawings, the trusses at the second floor did not appear to be designed to support a bearing wall at this location. Additionally, the 2x4 studs are spaced at 16" oc, and do not align over the trusses below, therefore imposing a point load on the second floor sheathing. Refer to the sketches attached for the location of the non-conforming framing. There are several options for fixing this condition, the first would be to add the LVL framing in accordance with the Structural Drawings. A second alternative would be to have the truss designer provide certification that the Second floor trusses (F07) can support the load from the bearing wall. This wall would need to be reframed so that the studs align with the trusses ablve and below. Blocking at of this wall would be required at 4'-0" oc max.
- The bearing wallsbetween the Managers Apartment and corridor 244, 251, 344 and 351 require blocking at 4'-0" oc vertically max.
- At the 4th floor level above the door the managers apartment, a 2x beam was stacked over the lvl beam. As discussed on site with Tim Street and Leo of Rankin Construction, the top of the lvl should be tied to the 2x beam with Simpson Clips on the corridor side, and a flat 2x4 on the unit side nailed to both members.
- At the roof level, the Joist hangers were not nailed to the trusses at the connection to RB1 at the North end of the long trusses over Corridor 452.
- The head joints in the masonry wall at the fourth floor level at the South side of the elevator shaft were not fully mortared. These joints should be re-pointed or injected at the contractors option.

Signed:

Matthew J. Miller, P.E.

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OBSERVATION REPORT
Rough Carpentry

Date:	3/31/2008
Time:	1:00 PM to 3:30 PM
Temp:	Low 30's
Weather:	Wintry Mix

Project:	Bayside Village
Location:	Portland, ME
Becker Job No:	1724

Observation Location: Walkthrough of the entire building

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Member Sizes	☒	☐	☐	☐	
Material Quality	☒	☐	☐	☐	
Bearing Condition	☒	☐	☐	☐	
Connections	☐	☐	☒	☐	
Nailing Pattern	☐	☐	☒	☐	
Bridging/Bracing	☐	☐	☒	☐	See Comments
Other:	☐	☐	☐	☐	
Other:	☐	☐	☐	☐	

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Notes:

I visited the site and performed a walk-through of the rough carpentry with Dave Manz of Pizzagalli and Leo of Rankin Construction. The purpose of this walk-through was to review the status of the items noted in previous inspection reports, and to identify any additional items requiring work. The following items were noted.

- At unit 115, sheathing had not been installed at the holdown location. Sheathing shall be installed at this location and panel edges shall be blocked. The nail spacing at the panel edges shall be in accordance with the shear wall schedule.
- Nailing at the field installed sheathing in Unit 127 at the separation wall between Unit 127 and 125 was unsatisfactory due to overdriven fasteners. These walls shall be re-nailed in accordance with the shear wall schedule.
- An area of damaged sheathing was noted between units 107 and 109. This portion of sheathing shall be removed and replaced. All panel edges shall be blocked and nailed in accordance with the shear wall schedule.
- The corridor wall between Unit 103 and 109 had not been renailed in accordance with the shear wall schedule (Refer to SI Report dated 03/10/2008.)
- The blocking that was added at the Unit separation walls between Unit 208/210 and 210/212 were not nailed in accordance with Field Report No. 1575-01-22. The field installed blocking shall be nailed to the existing blocking in accordance with this Field Report. A copy of this report is attached. Note: The nailing of the blocking was noted to be deficient at areas in addition to the Units noted above. Rankin construction should review this nailing and make any necessary repairs.
- Additional vertical studs had not been added at the sheathing joints in the separation wall between the Manager's apartment and 212. Additional studs shall be added in accordance with Field Report 1575-01-22. The nailing between the field installed blocking and the original blocking.
- The studs behind a sheathing joint to the left of the entry to Unit 321 need to be nailed together.
- Timberlok's were not installed between the Second Floor walls and First Floor walls at the building expansion joint between units 124 and 126.
- 3" Nominal Blocking is required at the sheathing joints at the Corridor wall outside Unit 213. Refer to Field Report 1575-01-22 for required nailing. The sheathing shall be re-nailed to the new blocking.
- At the East side of the janitors closet at each floor, full depth blocking is required in accordance with the note on the plans. In lieu of full depth blocking, horizontal bridging at the top and bottom of the truss for the first two truss spaces with Diagonal bracing is acceptable.
- The parapet bracing at the East end of the Janitors closet at the fourth floor need to be installed in accordance with SKS-59. Additionally only (1) twist strap had been installed at each brace location where as SKS-59 requires (2) twist straps.
- The bottom plate attachment at the corridor walls and many of the unit separation walls had not been nailed in accordance with the shear wall schedule. Rankin shall verify the base plate fastening at all shear walls is in accordance with the schedule and re-fasten walls as necessary.

Signed:

Matthew J. Miller, P.E.

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structural engineers, inc.

OBSERVATION REPORT
Rough Carpentry

Date:	4/03/2008
Time:	8:00 AM to 10:00 AM
Temp:	Low 40's
Weather:	Sunny

Project:	Bayside Village
Location:	Portland, ME
Becker Job No:	1724

Observation Location: Walkthrough of the entire building

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Member Sizes	☒	☐	☐	☐	
Material Quality	☒	☐	☐	☐	
Bearing Condition	☒	☐	☐	☐	
Connections	☐	☐	☒	☐	
Nailing Pattern	☐	☐	☒	☐	
Bridging/Bracing	☐	☐	☒	☐	
Other:	☐	☐	☐	☐	
Other:	☐	☐	☐	☐	

Notes:

I visited the site and performed a walk-through to observe the rough carpentry work.The purpose of this walk-through was to review the status of the items noted in previous inspection reports, and to identify any additional items requiring work. The following items were noted.

- The corridor wall between Units 103 and 109 had been re-nailed in accordance with the previous SI report.
- The base nailing at the corridors appeared to have been re-nailed in accordance the structural drawings.
- The vertical studs between Unit 212 and the Management Office had been installed and re-nailed in accordance with the SI report from 03/31/08
- No sheathing had been installed at the holdown location at the Unit Separation walls at Units 103, 115 and 120.
- No sheathing had been installed at the holdown location at the Unit separation wall at Unit 104. Additionally, the nut for the holdown had not been tightened.
- At unit 106 the sheathing over the holdown location was not nailed at 4" oc.
- At the unit separation wall between Unit 105 and 107 and the wall between Units 108 and 110, the vertical studs at the panel joints were not adequately fastened together. Refer to Field Report 1575-01-22 for nailing requirements.
- Additional blocking at the shearwall at Unit 113 had not been installed.
- The wall bracing at the Janitors closet at the 1st, 2nd and 3rd floor was not spaced at 4'-0" oc as indicated on the structural drawings. Additionally, the work was not as discussed on site on 03/31/2008. BSE will provide a sketch for this detail
- At the janitors closet at the 4th floor, the exterior wall/parapet bracing was not installed in accordance with SKS-59. Re-work in accordance with this sketch is required.
- The fasteners in the sheathing that was field installed in Unit 117 was overdriven. Overdriven nails are not acceptable. This sheathing shall be re-nailed in accordance with the shear wall schedule.
- At Units 210, 212 and 213. the blocking was not nailed together in accordance with Field Report 1575-01-22
- The base nailing at units 228 and 227 was not in accordance with the shear wall schedule.
- At Unit 117, the holdown at the 295 end of the wall had not been installed. In lieu of the double strap indicated in the construction documents a Simpson CMST14 strap can be installed between floors. This strap shall have 30" end length above and below the floor and be nailed with 66 - 16d nails (33 ea. end).
- At the (6) walls located adjacent to the fire wall and expansion joint, the timberloks were not installed between the first and second floor. At two of these locations, due to site conditions the installation of these screws would be difficult. It is acceptable to omit the screws at these locations, however at the other (4) location these need to be installed. As discussed with Dave Manz of Pizzagalli, it is acceptable to install these screws from the underside to aid in installation.
- At a number of location in the North wing, the drywall had been installed over the field applied sheathing, therefore the nailing at these locations could not be confirmed.

Signed:

Matthew J. Miller, P.E.

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BECKER
structural engineers, inc.

Memorandum

TO: Dave Manz – Pizzagalli Construction
FROM: Matthew J. Miller, P.E.
DATE/TIME: 04/07/08
SUBJECT: Bayside Village Special Inspections

Dave,

As discussed on site during my visit to the site on March 31st, 2008, the following item numbers were reviewed and appeared to be in conformance with the structural drawings:

SI Report Date	Pizzagalli Item Number
01/22/08	21, 23
02/08/08	24 (Holdown at Unit 117 between 1st and 2nd not installed), 25, 28
03/03/08	31, 34
03/05/08	35, 36
03/10/08	37 (Note: This did not include the field installed sheathing at the walls with sheathing on both sides.
03/13/08	43, 44, 45, 48, 49, 50
03/17/08	49, 51, 53, 54, 55
03/25/08 – 03/26/08	60,62, 63, 65, 66, 67, 68

These item numbers correspond to the Inspection Issues Log dated 03-26-2008 prepared by Pizzagalli Construction Company. A copy of this log is attached.

If you have any questions, please do not hesitate to call me at (207) 879-1838

Sincerely,

BECKER Structural Engineers, Inc.

Matthew J. Miller, P.E.
Project Engineer

75 York Street, Portland, ME 04101-4550 ■ Tel. 207-879-1838 ■ Fax 207-879-1822

	Field Report	Date	Item Number	Description	Responsible Party	Actions Taken	Verified by	Date
1	SW Cole	11/8/2007	-	B mix gradation does not meet specifications	Shaw			
2	Quality Assurance	11/16/2007	A	Location line 10-E, F shows incomplete diagonal wind brace welds. Location line (2) also shows incomplete diagonal brace welds.	Ocean/CCS	Remaining diagonal brace connections complete	Quality Assurance	11/19/2007
3	Quality Assurance	11/16/2007	B	Grid lines 1-10, A-F.6. Various locations show untorqued T/C bolts at beam to column connections. Followup visit on 11/19/07- high strength T/C bolted connections approx. 98% complete. One location shows (8) un-torqued bolts at beam to column connection.	Ocean/CCS	Location 1-10, A-F.6 shows all t/c bolted connections complete	Quality Assurance	1/15/2008
4	Quality Assurance	11/16/2007	C	Location roof area grid lines E-2, 4 shows decking welds at cross beam that requires additional puddle welds.	Ocean/CCS	Welds complete to include Area E, 2 -4 for beam puddle welds.	Quality Assurance	11/19/2007
5	Quality Assurance	11/16/2007	D	Roof decking locations (perimeter) requires 6" o.c. at lines 6-7.6 and 1-4. Remaining deck attachments complete for puddle welds and side lap screws.	Ocean/CCS	Roof perimeter welds complete	Quality Assurance	11/19/2007
6	Quality Assurance	11/16/2007	E	Shear stud inspection shows approximately 30% of grid lines 1-10, A-F.6 area complete. (1) failed stud noted at location 8.3, C.5.	Ocean/CCS	Shear studs complete	Quality Assurance	11/19/2007
7	Quality Assurance	11/29/2007	-	Location Area 1-10, F-N. Column locations marked with blue flag tape to indicate un-torqued T/C bolts for beam to beam or column connections. 1" bolts.	Ocean/CCS	Location 1-10, F-N shows all beam to column t/c bolts complete	Quality Assurance	1/15/2008
8	Quality Assurance	11/29/2007	-	Area 1-10, G line shows diagonal brace welds incomplete as marked with flag tape. Also shows overhead weld to be undersize for 3/8" drawing requirements as marked.	Ocean/CCS	Location 1-10, G show all diagonal brace welds complete	Quality Assurance	1/15/2008
9	Quality Assurance	11/29/2007	-	Roof area shows (20) failed studs at location H-9-10.	Ocean/CCS	Roof area required shear stud replacement at H, 9-10. complete	Quality Assurance	1/15/2008
10	Quality Assurance	11/29/2007	-	Deck lap screws missing at 2-9, K-M.	Ocean/CCS	Location 2-9,K-M deck lap screws completed.	Quality Assurance	1/15/2008
11	Quality Assurance	11/29/2007	-	Location G-7.8 shows 1 1/8" un-torqued T/C bolts at W27 x 146.	Ocean/CCS	Location G-7-8 show 1 1/8" t/c bolts complete	Quality Assurance	1/15/2008
12	Quality Assurance	12/3/2007	-	Location - column to W33 x 141 @ 2-PP shows un-torqued T/C's (9)	Ocean/CCS	All T/C bolted connections complete except lintel connections.	Quality Assurance	12/5/07 12/13/07 2/1/08
13	Quality Assurance	12/3/2007	-	Location - brace at G-line shows incomplete overhead welds @ one side plus undersize overhead weld at other side as marked with blue marker tape.	Ocean/CCS	All diagonal brace welds complete. (G Line)	Quality Assurance	12/5/07 12/13/07
14	Quality Assurance	12/3/2007	-	Location - G - 8.3 marked for W18 x 35 to W30 x 116 for misaligned web clip bolt holes - weld bottom 2" return plus vertical	Ocean/CCS	Web clip at location G-8.3 complete.	Quality Assurance	12/5/07 12/13/07
15	Tim Street	12/12/2007	-	The seismic clips at stair towers 1, 2 and 3 need to be replaced with the proper size clips or we need a proposed fix ASAP, where they are a little short. They also need to be welded so the mason can fasten them to the CMU walls.	Ocean/CCS			
16	Tim Street	12/12/2007	-	The seismic clips at the elevator shaft need to be replaced with the proper length clips and again all need to be welded for the mason. I believe this only happens on the South side of the shaft.	Ocean/CCS			
17	Tim Street	12/12/2007	-	The welding details for the kickers. There was some confusion to how much weld was expected from the drawings and the inspectors interpretation.	Ocean/CCS	As-built conditions are acceptable per memo from Becker Structural on 12/19/07	Becker Structural	12/19/2007
18	Poulin Engineering	12/28/2007	-	The required bridging within 12" of the top of the stud at deflection track locations has not been met. Bridging has been installed at approximately 24" from the top of the stud. This condition is not acceptable. Continuous stud bridging in the form of spazzer bar or flat strap and solid blocking must be installed as shown on the shop drawings.	Dirigo			
19	Poulin Engineering	12/28/2007	-	Due to interference with structural steel components, deflection tracks have been installed in 4ft lengths at many locations. Where wall stud fall within 6" of deflection track ends, provide a 12" long piece of 16 guage flat stock bridging the gap between deflection tracks over the inside deflection track leg centered and attach w/ (3) #10-16 screws each side. Provide similar action on outside face of deflection track leg where walls have not yet been sheathed.	Dirigo			
20	Becker Structural	1/22/2008	1	There were many locations where plywood wall sheathing has been delaminated, damaged or cut. The plywood in these locations must be removed and replaced.	Rankin			
21	Becker Structural	1/22/2008	2	There were many locations in the exterior walls where truss bearing did not align directly with wall studs. Studs must be added at these locations to provide direct load path from truss bearing to bottom plate. Note: At corridor truss bearing provide fix detailed in attached SKS-44 in accordance with memo to Dan Noblet issued on 12/20/07.	Rankin			
22	Becker Structural	1/22/2008	3	All SW-4 and SW-6 locations this level currently have 2" nominal blocking. These shearwalls must have 3" nominal blocking in both horizontal and vertical directions per the shearwall schedule on S4.2. See the field report from 1-22-08 for fix	Rankin			
23	Becker Structural	1/22/2008	4	There were areas in the exterior wall sheathing where the panel edges were not fastened at 6" on center. Fasteners must be added at all of these locations to achieve minimum 6" on center spacing.	Rankin			
24	Becker Structural	2/8/2008		2nd level framing - Shearwall holddowns were missing or not completely fastened at some locations	Rankin			
25	Becker Structural	2/8/2008		2nd level framing - Plywood edge nailing at exterior walls was less than 6" O.C. in multiple locations.	Rankin			
26	Becker Structural	2/8/2008		2nd level framing - Some locations with damaged or missing blocking, most marked for fix by contractor, double 2x blocking missing at shearwall horizontal panel edges	Rankin			
27	Becker Structural	2/8/2008		Blocking at interior shearwall locations (first and second levels) consisted of only a single 2x at horizontal panel edges. Per Shearwall Schedule, plan S4.2, addendum S-2, all SW-3 locations must have a nominal 3x piece of blocking. At these shearwalls, either new horizontal blocking must be installed above and below the existing blocking or existing blocking must be removed and relpaced.	Rankin	(3/3/08 Notes # 1) Additional horizontal blocking was installed at the first level, and bearing block detail was installed at first floor walls where trusses and studs were misaligned		
28	Becker Structural	2/8/2008		Beam bearing at 3B4 at the fourth floor framing level (shown S1.4) must be addressed as the column ends just below beam bearing and must be exteneded to pick up 4B2 at the fifth floor level per Section 9, S3.2.	Rankin			
29	Becker Structural	3/3/2008		1st through 4th level framing - Shearwall holddowns and joist hangers still in the process of being installed at various locations. Plywood nailing ledger is missing at east stair tower, will require fix	Rankin			

	Field Report	Date	Item Number	Description	Responsible Party	Actions Taken	Verified by	Date
30	Becker Structural	3/3/2008		1st through 4th level framing - Some shearwalls had nails/sheating removed for holdown installation, most areas had been marked for fix by contractor	Rankin			
31	Becker Structural	3/3/2008		1st through 4th level framing - Blocking between truss seats had been added to the second floor framing at the time of the visit	Rankin			
32	Becker Structural	3/3/2008	2	Blocking between truss seats was installed at the second floor framing	Rankin		Becker Structural	3/3/2008
33	Becker Structural	3/3/2008	3	There is no connection between the floor sheathing and the eastern cmu stair tower. The intended connection detail is shown in Section 7, S4.1. See attached SKS-65 for fix.	Rankin			
34	Becker Structural	3/3/2008	4	Exterior sheating nailing pattern was not reviewed at the time of the visit but must be checked prior to covering (nails spaced @ 6" o.c. min @ panel edges)	Rankin			
35	Becker Structural	3/5/2008		Exterior Wall Sheathing and Nailing - In general, the sheathing was in good condition, however, there were isolated areas of damaged sheathing that shall be replaced	Rankin			
36	Becker Structural	3/5/2008		Exterior Wall Sheathing and Nailing - In general, the nailing pattern was in general conformance with the structural drawings. Nailing at isolated areas were either missing or overdriven. Contractor sahll review the exterior walls and re-mail deficient panels.	Rankin			
37	Becker Structural	3/10/2008		1st and 2nd Floor Walls - Nailing pattern not completed	Rankin			
38	Becker Structural	3/10/2008	1	First Floor - In the first floor corridor, the nailing of shear wall between Unit 105 and 107 was noted to be at 6" oc. This wall should be nailed at 4" oc. Additional nails should be added between every other existing nail.	Rankin			
39	Becker Structural	3/10/2008	1	Second Floor - Additional blocking was noted to be added in the walls. The blocking was not nailed together in accordance with Field Report No. 1575-01-22.	Rankin			
40	Becker Structural	3/10/2008	2	At the wall separating units 210-212, and 212-Managers Office the sheathing had not been re-nailed to the added blocking.	Rankin			
41	Becker Structural	3/10/2008	3	The base fastening at the two walls indicated in item 2 was not in conformance with the structual drawings.	Rankin			
42	Becker Structural	3/10/2008	4	In the wall separating unit 212 and the managerment office, additional studs at the first panel joint nearest the courtyard had not been added. Additional studs shall be added and nailed in accordance with Field Report No. 1575-01-22	Rankin			
43	Becker Structural	3/13/2008		1st and 2nd Floor Corridor Walls North Wing (295 side) - Connections not completed	Rankin			
44	Becker Structural	3/13/2008		1st and 2ns Floor Corridor Walls North Wing (295 side) - Nailing Pattern not completed	Rankin			
45	Becker Structural	3/13/2008	1	First Floor - The panel edge nailing varied from 4" oc to 6" oc. The required nailing is 4" oc in accordance with the structural drawings. The majority of the issues were noted in the walls between Units 123 and 125 and 115 and 117. Where the panel edge nailing is at 6" oc, an additional nail shall be added every other nail space	Rankin	The nail spacing of the portion of the wall between Units 105 and 107 was 6" oc. The nail spacing at this location was to be at 4"OC. These panel edges should be re-nailed with 1 nail added every other existing nail space.	Becker Structural	
46	Becker Structural	3/13/2008	2	First Floor - In a number of locations at adjacent wall panels, the sheathing nails were not nailed to a common stud. In order to properly transfer the loads between plywood sheets, the nailing at sheathing joints shall be nailed to the same stud. Alternately, the adjacent studs shall be nailed together with 2-12d nails at 6" oc. See attached sketch for additional information. These areas can be indentified where the nail spacing between panels is greater than approximately 1"	Rankin	(Report 3/17/08 First floor No. Wing) The majority of the items noted in SI report from 3/13/08 had been completed. At two locations, the nails driven for re-nailing of the sheathginwere overdriven. Both of these occurred at wall panel joints. At these locations, the studs from the adjoining panels shall be nailed together with 2-12d nails at 6" oc. The locations are as follows 1) 19' to the west of the door to unit 123 2) 16' to the east of the door to unit 117	Becker Structural	
47	Becker Structural	3/13/2008	1	Second Floor - The base nailing was not in conformance with the structrual drawings. The bottom plate shall be nailed in accordance with the structural drawings	Rankin			
48	Becker Structural	3/13/2008	2	Second Floor - The panel edge nailing varied from 4" oc to 6" oc. At isolated areas, there were panel joints without nails. One location was to the east of the mechanical closet in the wall between Unit 221 and 223. A second location was approximately half way between Units 223 and 225.	Rankin	(Report 3/17/08 Second Floor So. Wing) The nail spacing of the portion of the wall between Inits 205 and 207 was 6" oc. The nail spacing at this location was to be at 4" oc. These panel edges should be re-nailed with 1 nail added every other existing nail space.	Becker Structural	
49	Becker Structural	3/13/2008	3	Second Floor - The sheathing nailing between wall panels did not share a common stud. See First Floor item 2 for additional information.	Rankin			
50	Becker Structural	3/13/2008		Trusses framing Second Floor at North Wing - Strongbacks not tied to end walls in accordance with note on Detail 1/S4.1 "Unsatisfactory"	Rankin			
48	Becker Structural	3/17/2008	1	Second Floor - The base nailing had not been completed in accordance with the SI report from 3/13/08	Rankin			
49	Becker Structural	3/17/2008	2	Second Floor North Wing - The majority of the additional items noted from the 3/13/08 report had been completed with the exception of the following: A. The wall between the entrances to Units 225 and 227 had not been completed. B. There was a gap in the sheathing between two adjacent wall panels could not be fastened to a common stud. At this location the studs at adjacent wall panels shall be nailed together with 2-12d nails at 6" oc. The location of this panel joint is approximately 10' to the west of the door to unit 215.				

	Field Report	Date	Item Number	Description	Responsible Party	Actions Taken	Verified by	Date
50	Becker Structural	3/17/2008	1	Third Floor North Wing - The base nailing had not been completed. The base nailing shall be in accordance with the structural drawings.	Rankin			
51	Becker Structural	3/17/2008	2	Third Floor North Wing - The nailing of the sheathing joint at adjoining wall panels were not nailed to a common stud. At these locations the sheathing shall be re-nailed so that the nails from the sheathing on both sides of the joint are fastened to a common stud. Alternately, the studs from adjoining wall panels shall be nailed together with 2-12d nails at 6" oc.	Rankin			
52	Becker Structural	3/17/2008	1	Fourth Floor North Wing - The base nailing had not been completed. The base nailing shall be in accordance with the structural drawings.	Rankin			
53	Becker Structural	3/17/2008	2	Fourth Floor North Wing - The nailing of the sheathing joint at adjoining wall panels were not nailed to a common stud. At these locations the sheathing shall be re-nailed so that the nails from the sheathing on both sides of the joint are fastened to a common stud. Alternately, the studs from adjoining wall panels shall be nailed together with 2-12d nails at 6' oc.	Rankin			
54	Becker Structural	3/17/2008	1	Third Floor South Wing - The nail spacing of the portion of the wall between Units 303 and 307 was 6" oc. The nail spacing at this location was to be at 4" oc. These panel edges should be renailed with 1 nail added every other existing nail space.	Rankin			
55	Becker Structural	3/17/2008	1	Fourth Floor South Wing - The panel joint approximately 7' to the west of the door to unit 411 was not completely nailed. This joint should be nialed so that the spacing is approximately 6" oc.	Rankin			
56	Becker Structural	3/17/2008	1	North South Corridor wall adjacent to Units 113, 213, 313, and 413 - At the first floor the nailing was at 6" oc. The nailing was to be at 4" oc. Additional nails shall be added so that 1 nail is added every other existing nail space	Rankin			
57	Becker Structural	3/17/2008	2	North South Corridor wall adjacent to Units 113, 213, 313, and 413 - At the second floor, there was one row of 2x nominal blocking. The blocking at this location should be 3x nominal. Additional blocking and nailing shall be provided in accordance with Field Report No. 1575-01-22.	Rankin			
58	Becker Structural	3/17/2008	3	North South Corridor wall adjacent to Units 113, 213, 313, 413 - The base anchorage at floor 2, 3, and 4 had not been completed.	Rankin			
59	Becker Structural	3/17/2008	1	Blocking between truss seats at the third floor was complete.	Rankin		Becker Structural	3/17/2008
60	Becker Structural	3/25/2008, 3/26/2008		Isolated areas of damaged sheathing in exterior courtyard wall at Unit 110 (Unsatisfactory)	Rankin			
61	Becker Structural	3/25/2008, 3/26/2008		Joinst hangers at roof level above corridor 452 missing nails (Unsatisfactory)	Rankin			
62	Becker Structural	3/25/2008, 3/26/2008		Third Floor framing at Manager's Apartment not in conformance with Structrual Drawings	Rankin			
63	Becker Structural	3/25/2008, 3/26/2008		The nailing at the unit partition between unit 125 and 127 had several joints missing nails.	Rankin			
64	Becker Structural	3/25/2008, 3/26/2008		A joint at approximately 6" from the South end of the unit partition between Units 124 and 126 (on the 126 side) appears to have been saw cut. There were no nails on either side of this joint. This joint needs to be nailed in accordance with the shear wall schedule	Rankin			
65	Becker Structural	3/25/2008, 3/26/2008		A number of panel joints in the first floor exterior sheathing in the courtyard were inadequately nailed. These were noted outside units 124, 112, 108, and 106.	Rankin			
66	Becker Structural	3/25/2008, 3/26/2008		The third floor framing around the stair at the Mnager's apartment was not framed in accordance with the structural drawings. According to the structural drawings the stair opening was to be framed with 11 7/8" and 14" deep LVL's. The as-build condition uses the 2x4 wall at the south side of the stair as a bearing wall. In review of the truss shop drawings, the trusses at the second floor did not appear to be designed to support a bearing wall at this location. Additionally, the 2x4 studs are spaced at 16" oc, and do not align over the trusses below,therefore imposing point load on the second floor sheathing. Refer to the sketches attached for the location of the non-conforming framing. There are several options for fixing this condition, the first would be to have the truss designer provide certification that the second floor trusses (F07) can support the load from the bearing wall. This wall would need to be reframed so that the studs align with the trusses above and below. Blocking at this wall would be required at 4'-0" oc max	Rankin			
67	Becker Structural	3/25/2008, 3/26/2008		The bearing walls between the Managers Apartment and corridor 244, 251, 344 and 351 require blocking at 4'-0" oc vertically max.	Rankin			
68	Becker Structural	3/25/2008, 3/26/2008		At the 4th floor level above the door the managers apartment, a 2x beam was stacked over the lvl beam. As discussed on site with Tim Street and Leo of Rankin Construction, the top of the lvl should be tied to the 2x beam with Simpson Clips on the corridor side, and a flat 2x4 on the unit side nailed to both members.	Rankin			
69	Becker Structural	3/25/2008, 3/26/2008		At the roof level, the Joist hangers were not nailed to the trusses at the connection to RB1 at the North end of the long trusses over the Corridor 452.	Rankin			
70	Becker Structural	3/25/2008, 3/26/2008		The head joints in the masonry wall at the fourth floor level at the South side of the elevator shaft were not fully mortared These joints should be re-pointed or injected at the contractors option.	Coastal			

BECKER
structural engineers, inc.

OBSERVATION REPORT
Rough Carpentry

Date:	4/09/2008
Time:	1:00 PM to 2:15:00 PM
Temp:	Upper 40's
Weather:	Sunny

Project:	Bayside Village
Location:	Portland, ME
Becker Job No:	1724

Observation Location: Walkthrough of the entire building

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Member Sizes	☒	☐	☐	☐	
Material Quality	☒	☐	☐	☐	
Bearing Condition	☒	☐	☐	☐	
Connections	☒	☐	☐	☐	
Nailing Pattern	☒	☐	☐	☐	
Bridging/Bracing	☒	☐	☐	☐	
Other:	☐	☒	☒	☐	See Notes
Other:	☐	☐	☐	☐	

Notes:

I visited the site and performed a walk-through to observe the rough carpentry work.The purpose of this walk-through was to review the status of the items noted in previous inspection reports, and to identify any additional items requiring work. The following items were noted.

Items from Previous Reports:

Report Date	Item	Notes
01/22/08	Delaminated or Damaged Sheathing	Areas appeared to be adequately replaced
01/22/08	Blocking at SW-4 and SW-5 did not have 3" Nominal Blocking	Blocking was added and nailed and sheathing was re-nailed in accordance with Field Report 1575-01-22
02/08/08	Damaged or Missing Blocking, blocking missing at horizontal panel edges at 2nd level framing	Blocking replaced. Horizontal blocking added.
02/08/08	Blocking at First and Second levels at unit partition walls	Blocking installed in accordance with FR 1575-01-22
03/03/08	Shear wall holdowns and joist hangers	Holdowns and hangers have been installed in general conformance with the structural drawings
03/03/08	Shear walls with nails/sheathing removed for holdown installation	Sheathing installed and re-nailed
03/10/08	Nailing of shear wall between units 105 and 107 at 6" oc.	Shear wall had been re-nailed in accordance with SI Report
03/10/08	Additional blocking not nailed together	Blocking had been nailed together
03/10/08	Sheathing at Unit Separation Wall between 210/212 and 212/Manager's Apartment not nailed to added blocking	Sheathing had been re-nailed in accordance with Field Report 1575-01-22
03/10/08	Base fastening of walls indicated in above item not in conformance	Base fastening had been added and was in conformance with structural drawings.
03/10/08	Unit separation wall between 212 and Manager's apartment additional vertical studs not added at panel joints	Additional Blocking had been added.
03/13/08	Nailing at Pre-Fabricated panel edges not nailed to a common stud	Panels had been re-nailed.
03/13/08	Second Floor base nailing not in conformance	Base nailing had been re-nailed in accordance with structural drawings
03/17/08	Base nailing at Second Floor not complete as indicated in SI report from 03/13/08	Base nailing had been re-nailed in accordance with structural drawings
03/17/08	Third Floor base nailing at shear walls	Base nailing had been re-nailed
03/17/08	Fourth Floor base nailing at shear walls	Base nailing had been re-nailed
03/17/08	First Floor corridor wall at Unit 113 not in conformance	First floor sheathing re-nailed and was in conformance with structural drawings
03/17/08	Second Floor corridor at Unit 213 blocking not in conformance	Blocking had been added and re-nailed in conformance with structural drawings

03/17/08	Base anchorage at Corridor wall adjacent to Units 213,313 and 413 not in conformance	Base nailing had been added and appeared to be in conformance with structural drawings
03/25/2008 03/26/2008	Joist Hanger nails missing over Corridor 452	Nails added
03/25/2008 03/26/2008	Wall joint at 6" from south at Unit Separation wall between 124 and 126 not nailed	Wall had been covered with gypsum so nailing could not be verified.

New Items:

- Sheathing at the first floor along the Marginal Way wing had been installed in several units where sheathing is required on both sides of the wall. At these locations, the panels were being laid horizontally. These horizontal joints did not align with the blocking in the wall. This is not acceptable. Blocking is required at all panel joints. Either additional blocking needs to be added or the panels should be installed so that the field installed sheathing joints align with the existing wall blocking.
- At stair 2, the holdown strap for the parapet bracing at the South side of the stair had not been nailed to the blocking.
- The detail at the fourth floor janitors' closet was not in conformance with sketch SKS-59. Horizontal blocking at the underside of the sheathing between the exterior wall and the LVL shall be installed, and the roof sheathing nailed to this blocking. Additionally, the existing diagonal brace shall be nailed to the horizontal blocking.

Signed:

Matthew J. Miller, P.E.

pizzagalli
construction company

04-17-08

Matt Miller
Becker Structural
75 York Street
Portland ME
04101-4550

Re: Bayside Village Special Inspections.

Dear Matt,

For your record the following items from your Special Inspections report have been observed and verified by the Pizzagalli to be in conformance with the contract documents.

From memorandum dated 4/07/08

Item 37 "*(Note: This did not include the field installed sheathing at the walls with sheathing on both sides)*"

From report dated 3/03/08

"There is no connection between the floor sheathing and the eastern cmu stair tower. The intended connection detail is shown in Section 7, S4.1. See attached SKS-65 for fix."

This item has been completed see attached pictures.

From report dated 3/25/08-3/26/08

"A joint at approximately 6" from the South end of the unit partition between Units 124 and 126 (on the 126 side) appears to have been saw cut. There were no nails on either side of this"

Response on 4/09/08 "*Wall had been covered with gypsum so nailing could not be verified*"

From report dated 3/31/08

"At two locations damage to the truss chords was noted. At one location, damage to the top chord was noted from a boring bit. At this location, approximately 3/4 of the truss top chord of the truss has been drilled through. This location was marked from above by Leo of Rankin Construction with Orange paint. The second location was in the ceiling of Unit 306. At this location the bottom chord was damaged due to drill from the electrical services. Field fixes for these trusses should be designed and provided by the Truss supplier"

Response on 4/11/08 "*The truss chord at Unit 306 had not been repaired. At unit 307, the repair was not complete*"

This item has been completed and the attached pictures are the two locations mentioned

From report dated 3/31/08

"*Nailing at the field installed sheathing in Unit 127 at the separation wall between Unit 127 and 125 was unsatisfactory due to the overdriven fasteners. These walls shall be re-nailed in*"

Response on 4/11/08 "*The wall had been covered with drywall so the re-nailing of the wall could not be verified*"

From report 4/03/08

"*At unit 106 the sheathing over the holdown location was not nailed at 4" oc.*"

Response "*None*"

From report 4/03/08

"*The fasteners in the sheathing that was field installed in Unit 117 was overdriven. Overdriven nails are not acceptable. This sheathing shall be re-nailed in accordance with the shear wall*"

Response "*Wall finishes were in place therefore re-nailing could not be verified.*"

From report 4/03/08

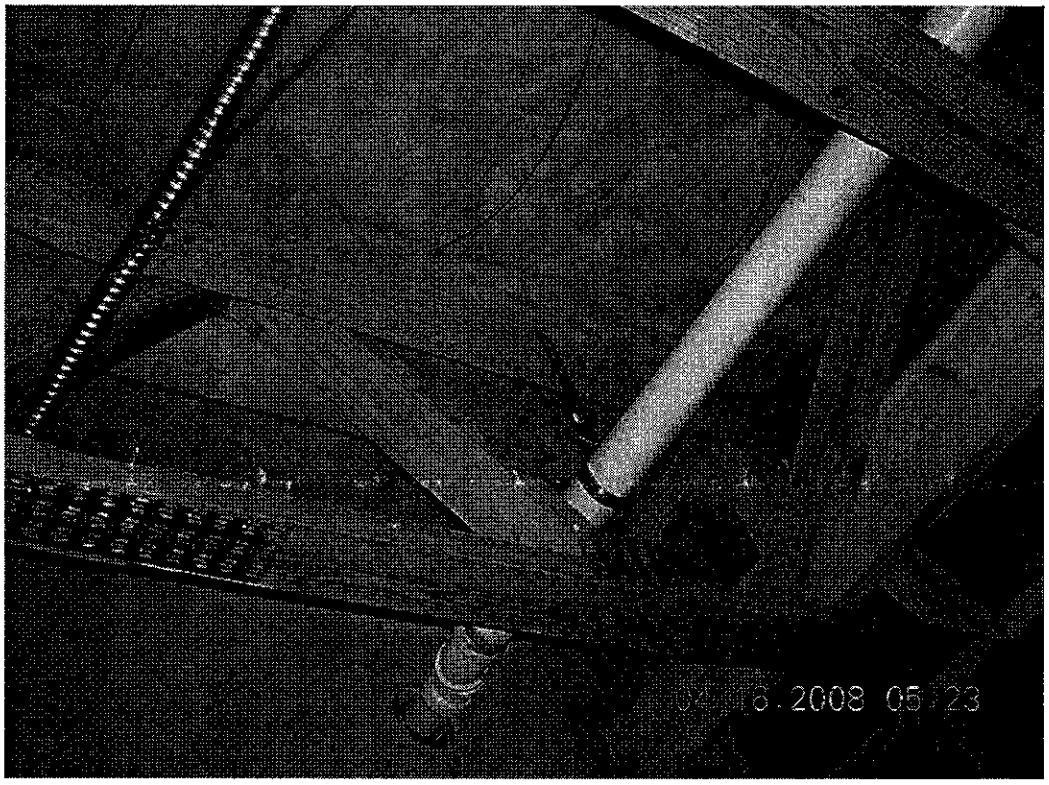
"*At a number of locations in the North wing, the drywall had been installed over the field applied sheathing, therefore the nailing at these location could not be confirmed.*"

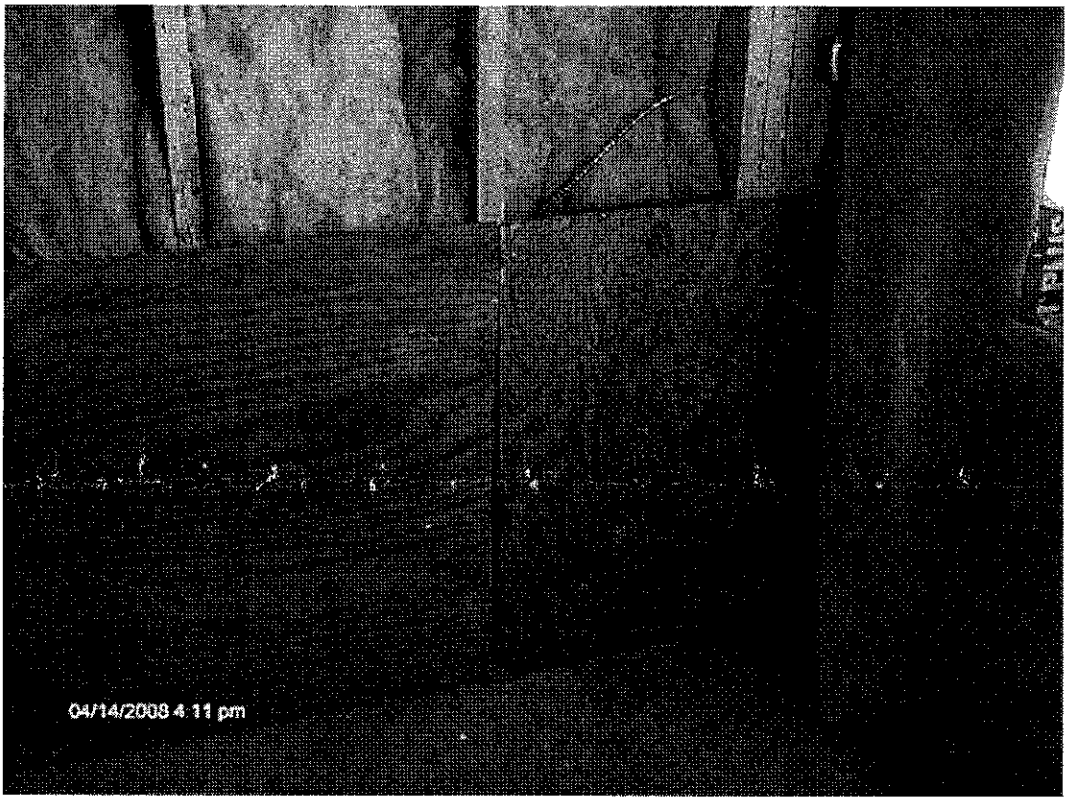
Response "*None*"

Sincerely,

Dave Manz

Construction Coordinator
Pizzagalli Construction




04/14/2008 4:11 pm

BECKER
structural engineers, inc.

06190

OBSERVATION REPORT
Wood Trusses

Date:	03-13-08
Time:	3:00 - 4:45 pm
Temp:	Low 30's
Weather:	Sunny

Project:	Bayside Village
Location:	Portland, ME
Becker Job No:	1724

Observation Location: Trusses framing Second Floor at North Wing

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Overall Condition	☒	☐	☐	☐	
Truss Spacing	☒	☐	☐	☐	
Bearing Ends Correct	☒	☐	☐	☐	
Connections/Hold Downs	☒	☐	☐	☐	
Truss Plate Condition	☒	☐	☐	☐	
Permanent Lateral Bracing	☐	☒	☐	☐	Strongbacks not tied to end walls in accordance with note on Detail 1/S4.1
Bearing End Over Studs	☒	☐	☐	☐	
Other:	☐	☐	☐	☐	

Notes:

Signed: Matthew J. Miller, P.E.

75 York Street, Portland, ME 04101-4701 ■ Tel 207-879-1838 ■ Fax 207-879-1822

BECKER
structural engineers, inc.

06190

OBSERVATION REPORT
Wood Trusses

Date:	03-31-08
Time:	1:00 - 3:30 pm
Temp:	Low 30's
Weather:	Wintry Mix

Project:	Bayside Village
Location:	Portland, ME
Becker Job No:	1724

Observation Location: Pre-Fabricated Wood Trusses - All levels

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Overall Condition	☒	☒	☐	☐	see comments
Truss Spacing	☒	☐	☐	☐	
Bearing Ends Correct	☒	☐	☐	☐	
Connections/Hold Downs	☒	☐	☐	☐	
Truss Plate Condition	☒	☐	☐	☐	
Permanent Lateral Bracing	☒	☐	☐	☐	
Bearing End Over Studs	☒	☐	☐	☐	
Other:	☐	☐	☐	☐	

Notes:

At two locations damage to the truss chords was noted. At one location, damage to the top chord was noted from a boring bit. At this location, approximately 3/4 of the truss top chord of the has been drilled through. This location was marked from above by Leo of Rankin Construction with Orange paint.

The second location was in the ceiling of Unit 306. At this location the bottom chord was damaged due to drill for the electrical services.

Field fixes for these trusses should be designed and provided by the Truss supplier.

Signed: Matthew J. Miller, P.E.

75 York Street, Portland, ME 04101-4701 ▪ Tel 207-879-1838 ▪ Fax 207-879-1822

Fabricator's Certificate of Compliance – Exhibit D

Each approved fabricator that is exempt from Special Inspection of shop fabrication and implementation procedures per section 1704.2 of the International Building Code must submit a *Fabricator's Certificate of Compliance* at the completion of fabrication.

Project: BAYSIDE VILLAGE

Fabricator's Name: VALENTE BUILDERS INC.

Address: 1075 DIX AVE, HUDSON FALLS, NY, 12839

Certification or Approval Agency: NA.

Certification Number: NA.

Date of Last Audit or Approval:

Description of structural members and assemblies that have been fabricated:

WALL PANELS

I hereby certify that items described above were fabricated in strict accordance with the approved construction documents.

Signature

6-26-08
Date

PRESIDENTE
Title

Attach copies of fabricator's certification or building code evaluation service report and fabricator's quality control manual

Project: Bayside Village – A Student Housing Project
Date Prepared: 11/14/ 2007

Schedule of Special Inspection Services

FABRICATION AND IMPLEMENTATION PROCEDURES – WOOD TRUSSES

VERIFICATION AND INSPECTION IBC Section 1704.2	Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	DATE	REV
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. TPI Inspection Program: Fabricator shall participate in the TPI Quality Assurance Inspection Program, and maintain a copy of the Quality Assurance Procedures Manual, QAP-90. Submit copy of certificate. All trusses shall bear the TPI Registered Mark.	Y	S	Fabricator shall submit one of the two qualifications	SII	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	SII	PE/SE or EIT	✓	

TIMBER PRODUCTS INSPECTION

March 10, 2008

Trussway, LTD
11540 Shannon Drive
Fredericksburg, VA 22408

To Whom It May Concern,

Timber Products Inspection, Inc. is proud to announce that the following truss manufacturing facility, Trussway, LTD, is a subscriber to our nationally accredited "Truss Quality Auditing Program".

The TP Truss Quality Auditing Program is accredited under the IAS AA696 Evaluation Report and conforms to requirements for independent inspection of trusses under the International Building Code and International Residential Code.

The TP program involves daily in-plant quality control checks by plant personnel and monthly unannounced inspections by TP personnel for conformance to engineering and industry standards for fabricators. The TP quality stamp on each truss bearing the registered GTI logo is your assurance that the trusses were fabricated in accordance with the TP Truss Quality Auditing Program and applicable sections of the IBC and IRC. Specific design loads and installation requirements are not covered by the TP Auditing Program.

Any questions about this program or the use of the TP registered quality stamps may be directed to the truss plant or to Timber Products Inspection, Inc. at (770) 922-8000.

Sincerely,
Timber Products Inspection

Patrick C. Edwards, P.E.
Director of Engineering

P.O.Box 919 • 1641 Sigman Road • Conyers, Georgia 30012 • 770/922-8000 • FAX: 770/922-1290
105 S.E. 124th Avenue • Vancouver, WA 98684 • 360/449-3138 • FAX: 360/449-3953

International Building Code/International Residential Code Inspection & Quality Assurance Requirements for Metal Plate Connected Wood Trusses

Released May 7, 2008

Introduction:

WTCA has developed this *Technical Note* to provide a clear perspective on truss plant quality assurance and third party inspections as they relate to the requirements developed by the International Code Council (ICC) within the *International Building Code* (*IBC*) and the *International Residential Code* (*IRC*). The same perspective outlined in this *Technical Note* should be applied when discussing how all structural building component third party inspections relate to Chapter 17 special inspection requirements. The analysis is based on the 2003, 2006, and 2007 supplement editions of the *IBC* and *IRC* as well as the referenced industry design standard *ANSI/TPI 1-2002* (*TPI 1*)[1].

Issue:

WTCA has been involved in several markets and with several members of the code compliance/ inspection community regarding confusion over exactly how the (*IBC*) requirements from Chapter 17 (Structural Tests and Special Inspection) are applied to the metal plate connected wood truss manufacturing industry. The confusion stems from an interpretation of how in-plant manufacturing quality control (QC) relates to fabricator approval (Section 1704.2.2) and the third party inspection process, which is the process that has been used by the structural building components industry as the means to comply with Building Code inspection requirements.

Analysis/Recommendation:

The *IBC* and *IRC* are designed to provide implementation language with respect to building code compliance of built construction. A significant role of all building departments is the installation inspection process.

> **2003/2006 IBC 109.3 Required inspections.** The building official, upon notification, shall make the inspections set forth in Sections 109.3.1 through 109.3.10...
>
> **IBC 109.3.4 Frame inspection.** Framing inspections shall be made after the roof deck or sheathing, all framing, fireblocking and bracing are in place...
>
> **IBC 109.4 Inspection agencies.** The building official is authorized to accept reports of approved inspection agencies, provided such agencies satisfy the requirements as to qualifications and reliability.

[1] *TPI 1* is the National Design Standard for Metal Plate Connected Wood Trusses and has been adopted as a referenced standard in Chapter 35 of the 2003 and 2006 editions of the *IBC* and the *IRC*.

WTCA • 6300 Enterprise Lane • Madison, WI 53719
608/274-4849 • 608/274-3329 (fax) • www.sbcindustry.com

2003/2006 R109.1.4 Frame and masonry inspection. Inspection of framing and masonry construction shall be made after the roof, masonry, all framing, firestopping, draftstopping and bracing are in place....

R109.2 Inspection agencies. The building official is authorized to accept reports of approved agencies, provided such agencies satisfy the requirements as to qualifications and reliability.

The code language and industry third party inspection concepts show that metal plate connected wood trusses explicitly comply with the *IBC* and *IRC* requirements for supplying structural building components to the building construction marketplace without falling into the special inspection requirements.

To specifically deal with the confusion on this special inspection issue, the following code change was made to Section 1702 with respect to the definition of *"Fabricated Items"* and was approved by the ICC consensus process in the 2007 *IBC* Supplement. The following language forms the basis of the current *IBC*:

CHAPTER 17
STRUCTURAL TESTS AND
SPECIAL INSPECTIONS

Section 1702 Change the definition of "Fabricated Item" to read as shown: (S28-06/07)

FABRICATED ITEM. Structural, load-bearing or lateral load-resisting assemblies consisting of materials assembled prior to installation in a building or structure, or subjected to operations such as heat treatment, thermal cutting, cold working or reforming after manufacture and prior to installation in a building or structure. Materials produced in accordance with standard specifications referenced by this code, such as rolled structural steel shapes, steel-reinforcing bars, masonry units, and wood structural panels or in accordance with a standard, listed in Chapter 35, which provides requirements for quality control done under the supervision of a third party quality control agency shall not be considered "fabricated items."

TPI 1 is a Chapter 35 listed standard and is the design and quality control standard that is used by the structural building components industry with respect to Truss manufacturing performed under the supervision of a third party quality control agency. These relate directly back to *IBC* and *IRC* Section 109 where framing inspections are to be performed by the Building Official or an approved inspection agency.

TPI 1-2002 Chapter 3 (Quality Criteria for the Manufacture of Metal Plate Connected Wood Trusses) implements the in-plant quality control process as follows:

ANSI/TPI 1-2002 Section 3.1 GENERAL

3.1.1 Chapter 3 is the quality standard for the manufacturing processes of metal plate connected wood trusses, and shall be used in conjunction with a manufacturing quality assurance procedure and a truss design. These provisions shall be included in the quality assurance program of each Truss Manufacturer...

3.1.3 Truss Manufacturers and inspection agencies shall establish methods that document the application of these quality assurance procedures throughout the manufacturing process. The Truss Manufacturers' methods shall be subject to periodic audit for compliance with the requirements of this standard by an approved inspection agency, where required by local authorities having jurisdiction, or other means...

3.2 IN-PLANT QUALITY ASSURANCE

3.2.1 An in-plant quality control manual shall be maintained for each truss manufacturing facility, which will include the requirements for daily quality control and any audits that will be performed.

The traditional third party inspection process that has been used in the structural building components industry for the last fifty years complies with all the inspection requirements defined within the *IBC* and *IRC*.

Appendix A:
Additional Background and Analysis

TPI 1 Requirements

The 2003 and 2006 editions of the *IBC* and *IRC* include the following language regarding the use of Trusses:

> **2003 IBC 2303.4 Trusses.** Metal-plate-connected wood trusses shall be manufactured as required by TPI 1. Each manufacturer of trusses using metal plate connectors shall retain an approved agency to make unscheduled inspections of truss manufacturing and delivery operations. The inspection shall cover all phases of truss operations, including lumber storage, handling, cutting fixtures, passes or rollers, manufacturing, bundling and banding.
>
> **2006 IBC 2303.4.2 Metal-plate-connected trusses.** In addition to Sections 2303.4.1 through 2303.4.1.7, the design, manufacture and quality assurance of metal-plate-connected wood trusses shall be in accordance with TPI 1.....
>
> **2003/2006 IRC R502.11.1 Design.** Wood trusses shall be designed in accordance with approved engineering practice. The design and manufacture of metal plate connected wood trusses shall comply with ANSI/TPI 1. The truss design drawings shall be prepared by a registered professional where required by the statutes of the jurisdiction in which the project is to be constructed in accordance with Section R106.1.
>
> **2003/2006 IRC R802.10.2 Design.** Wood trusses shall be designed in accordance with accepted engineering practice. The design and manufacture of metal-plate-connected wood trusses shall comply with ANSI/TPI 1. The truss design drawings shall be prepared by a registered professional where required by the statutes of the jurisdiction in which the project is to be constructed in accordance with Section R106.1.

Chapter 3 (Quality Criteria for the Manufacture of Metal Plate Connected Wood Trusses) of *TPI 1-2002* implements the in-plant quality control process as follows:

> **ANSI/TPI 1-2002 Section 3.1 GENERAL**
>
> **3.1.1** Chapter 3 is the quality standard for the manufacturing processes of metal plate connected wood trusses, and shall be used in conjunction with a manufacturing quality assurance procedure and a truss design. These provisions shall be included in the quality assurance program of each Truss Manufacturer.
>
> **3.1.2** Metal plate connected wood trusses shall meet the minimum manufacturing quality requirements specified in this chapter, so that design assumptions are met.
>
> **3.1.3** Truss Manufacturers and inspection agencies shall establish methods that document the application of these quality assurance procedures throughout the manufacturing process. The Truss Manufacturers' methods shall be subject to periodic audit for compliance with the requirements of this standard by an approved inspection agency, where required by local authorities having jurisdiction, or other means.
>
> **3.1.4** Manufacturing inaccuracies exceeding the allowable tolerances described in this section are acceptable upon approval and follow-up documentation by a Truss Designer. Any necessary repair authorization shall be prepared by a Truss Designer.
>
> **3.2 IN-PLANT QUALITY ASSURANCE**
>
> **3.2.1** An in-plant quality control manual shall be maintained for each truss manufacturing facility, which will include the requirements for daily quality control and any audits that will be performed.

The 2007 edition of *TPI 1* added the following language to clarify that metal plate connected wood Trusses conform to the Building Code requirements through *IBC* Section 109 and *IRC* Section R109:

> **ANSI/TPI 1-2007 Section 3.1.3 Documentation.** Truss Manufacturers and inspection agencies shall establish methods that document the application of these quality assurance procedures throughout the manufacturing process. The Truss Manufacturer's methods shall be subject to periodic audit for compliance with the requirements of this Standard by an approved inspection agency per Section R109 *Inspections* of the International Residential Code / Section 109 *Inspections* of the International Building Code, where required by local authorities having Jurisdiction, or other means.

Finally, in-plant inspection process has been clarified in the 2007 edition of *ANSI/TPI 1*, which will be referenced by the 2009 editions of both the *IBC* and *IRC* as follows:

> **ANSI/TPI 1-2007 Sections 2.3.6.11 & 2.4.6.11 In-Plant Truss Inspections.** Truss inspections, as required by the Jurisdiction, shall be performed at the manufacturer's facility using the manufacturer's In-Plant Quality Assurance Program (see Section 3.2) monitored by an inspection agency approved by the Jurisdiction, and shall satisfy any quality control/quality assurance requirements for the Trusses, and shall satisfy any designated in-plant special inspection requirements for the Trusses.

In-Plant Quality Control Manual

AC-10 is the Acceptance Criteria that the ICC-ES has created to provide a template for what is reasonable to include in a manufactured product's quality control manual as follows:

> **Acceptance Criteria for Quality Control Manuals (AC 10) Cover Page:** This acceptance criteria has been issued to provide all interested parties with guidelines for demonstrating compliance with performance features of the applicable codes referenced in the acceptance criteria.

AC-10 is a tool or guide to help the manufacturer meet the Building Code and inspection agency requirements that each plant have a quality control program and an accompanying quality control process. All the requirements of *AC-10* have been incorporated into the latest version of the *In-Plant WTCA QC* program so that any component manufacturer that desires to use *In-Plant WTCA QC* as its in-plant quality control manual as well as its quality management information system will meet the requirements of *AC-10*. For more information on *In-Plant WTCA QC* please visit: www.sbcindustry.com/wtcaqc.php.

Concluding Thoughts

- The traditional third party inspection process that the structural building components industry has used for the last 50 years to comply with code requirements satisfies both the *IBC* and *IRC* requirements. The structural building components industry has voluntarily set up these QC procedures in order for the products to receive the recognition they deserve.

- Truss manufacturing falls outside the definition of *Fabricated Item* for which Chapter 17 applies and rather must conform to *TPI 1*, which is a Chapter 35 listed design and quality control standard used by the structural building components industry with respect to Truss manufacturing.

- *TPI 1* has followed the *IBC* and IRC requirements for third party inspections, thus requiring Truss Manufacturers to have third party inspection agencies regularly audit and inspect their manufacturing process in order to evaluate their compliance with *TPI 1*. There is no requirement to have an on-site "special inspection" of the Trusses.

Appendix B:
Key Issues – Fabricated Items, Reference Codes, Fabricator Approval and Compliance with the IBC/IRC

The *IBC* and *IRC* use reference codes and standards to provide specific information that would be impossible to fully include in the Building Code without making it unwieldy. The intent of the Building Code is to move toward referencing ANSI-based consensus codes and standards for all material interests, trusses included. The following is the implementing language in the *IBC* and *IRC* for the use of the referenced standard, *TPI 1*.

> **2003/2006 IBC 102.4 & IRC R102.4 Referenced codes and standards.** The codes and standards referenced in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference. Where differences occur between provisions of this code and referenced codes and standards, the provisions of this code shall apply.

Chapter 35 of the IBC and Chapter 43 of the *IRC* provide a list of the standards referenced by these sections.

The Building Official (authority having Jurisdiction) is responsible for all the required inspections of Buildings or this role can be delegated to approved agencies or individuals. This is the first reference to the third party inspection process. Ultimately, the Building Official or their delegate is responsible for inspecting the structural framing for each Building which includes all of the Trusses.

> **2003/2006 IBC 104.4 Inspections.** The building official shall make all of the required inspections, or the building official shall have the authority to accept reports of inspection by approved agencies or individuals. Reports of such inspections shall be in writing and be certified by a responsible officer of such approved agency or by the responsible individual. The building official is authorized to engage such expert opinion as deemed necessary to report upon unusual technical issues that arise, subject to the approval of the appointing authority.

> **2003/2006 IRC R104.4 Inspections.** The building official is authorized to make all of the required inspections, or the building official shall have the authority to accept reports of inspection by approved agencies or individuals. Reports of such inspections shall be in writing and be certified by a responsible officer of such approved agency or by the responsible individual. The building official is authorized to engage such expert opinion as deemed necessary to report upon unusual technical issues that arise, subject to the approval of the appointing authority.

What follows is the first time in the Building Code that "special inspections" are referred to and references the permitting process and that the Registered Design Professional (RDP), if required, is to submit a list of the required inspections. If requested, this would implement Chapter 17 of the *IBC*. But based on the information contained in this *Technical Note*, Trusses should not be listed as requiring "special inspections."

> **2003/2006 IBC 106.1 Submittal documents.** Construction documents, statement of special inspections and other data shall be submitted in one or more sets with each permit application. The construction documents shall be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed. Where special conditions exist, the building official is authorized to require additional construction documents to be prepared by a registered design professional.

> **2003/2006 IRC R106.1 Submittal documents.** Construction documents, special inspection and structural observation programs and other data shall be submitted in one or more sets with each application for a permit. The construction documents shall be prepared by a registered design professional where required by the statutes if the jurisdiction in which the project is to be constructed. Where special conditions exist, the

building official is authorized to require additional construction documents to be prepared by a registered design professional.

This is the first time that the "structural observation requirements" of Chapter 17 of Building Code are referenced.

2003/2006 IBC 106.3.4.1 General. When it is required that documents be prepared by a registered design professional, the building official shall be authorized to require the owner to engage and designate on the building permit application a registered design professional who shall act as the registered design professional in responsible charge...

Where structural observation is required by Section 1709, the statement of special inspections shall name the individual or firms who are to perform structural observation and describe the stages of construction at which structural observation is to occur (see also duties specified in Section 1704).

The special inspections are generally intended to be applied to special occupancies and circumstances that fall under critical seismic and wind conditions where the application of any Structural Element is deemed critical from a life safety perspective.

2003/2006 IBC 1709.1 General. Where required by the provisions of Section 1709.2 or 1709.3 the owner shall employ a registered design professional to perform structural observations as defined in Section 1702. At the conclusion of the work included in the permit, the structural observer shall submit to the building official a written statement that the site visits have been made and identify any reported deficiencies that, to the best of the structural observer's knowledge, have not been resolved.

IBC 1709.2 Structural observations for seismic resistance.
Structural observations shall be provided for those structures included in Seismic Design Category D, E or F, as determined in Section 1613, where one or more of the following conditions exist:...

IBC 1709.3 Structural observations for wind requirements.
Structural observations shall be provided for those structures sited where the basic wind speed exceeds 110 mph (49 m/s), determined from Figure 1609, where one or more of the following conditions exist:...

IBC Section 1704 provides additional special inspection focus as it lists all the inspections required for structural steel and concrete applications under the critical seismic and wind conditions defined in Section 1709. There are no special inspections required for metal plate connected wood Trusses or structural building components in Section 1709. There is also an exemption for all R-3 single family permanent residential occupancies, which is the majority of construction that metal plate connected wood Trusses and other structural building components are deployed in.

2003/2006 IBC 1704.1 General. Where application is made for construction as described in this section, the owner or the registered design professional in responsible charge acting as the owner's agent shall employ one or more special inspectors to provide inspections during construction on the types of work listed under Section 1704. The special inspector shall be a qualified person who shall demonstrate competence, to the satisfaction of the building official, for inspection of the particular type of construction or operation requiring special inspection. These inspections are in addition to the inspections specified in Section 109.

Exceptions:
1. Special inspections are not required for work of a minor nature or as warranted by conditions in the jurisdiction as approved by the building official.
2. Special inspections are not required for building components unless the design involves the practice of professional engineering or architecture as defined by applicable state statutes and regulations governing the professional registration and certification of engineers or architects.

3. Unless otherwise required by the building official, special inspections are not required for occupancies in Group R-3 as applicable in Section 101.2 and occupancies in Group U that are accessory to a residential occupancy including, but not limited to, those listed in Section 312.1.

To clarify this further, the following code change was made to Section 1702 with respect to the definition of *Fabricated Items* and was approved by the ICC consensus process in the 2007 *IBC* Supplement. This language forms the basis of the current *IBC*.

CHAPTER 17
STRUCTURAL TESTS AND
SPECIAL INSPECTIONS

Section 1702 Change the definition of "Fabricated Item" to read as shown: (S28-06/07)

FABRICATED ITEM. Structural, load-bearing or lateral load-resisting assemblies consisting of materials assembled prior to installation in a building or structure, or subjected to operations such as heat treatment, thermal cutting, cold working or reforming after manufacture and prior to installation in a building or structure. Materials produced in accordance with standard specifications referenced by this code, such as rolled structural steel shapes, steel reinforcing bars, masonry units, and wood structural panels or in accordance with a standard, listed in Chapter 35, which provides requirements for quality control done under the supervision of a third party quality control agency shall not be considered "fabricated items."

TPI 1 is a Chapter 35 listed standard and is the design and quality control standard that is used by the structural building components industry with respect to Truss manufacturing that is performed under the supervision of a third party quality control agency. The third party QC process that many Truss Manufacturer's employ is done at the manufacturing facility and per *IBC* Section 1704.2.2 takes the place of any special inspection requirements.

2003/2006 IBC 1704.2.2 Fabricator approval. Special inspections required by this code are not required where the work is done on the premises of a fabricator registered and approved to perform such work without special inspection. Approval shall be based upon review of the fabricator's written procedural and quality control manuals and periodic auditing of fabrication practices by an approved special inspection agency. At completion of fabrication, the approved fabricator shall submit a certificate of compliance to the building official stating that the work was performed in accordance with the approved construction documents.

Finally, the entire inspection process for metal plate connected wood Trusses goes back to *IBC* Section 109 where the framing inspections are to be performed by the Building Official. If the Trusses are manufactured in a manufacturing facility, the inspection process needs to be performed by an approved inspection agency.

2003/2006 IBC 109.1 General. Construction or work for which a permit is required shall be subject to inspection by the building official and such construction or work shall remain accessible and exposed for inspection purposes until approved. Approval as a result of an inspection shall not be construed to be an approval of a violation of the provisions of this code or of other ordinances of the jurisdiction. Inspections presuming to give authority to violate or cancel the provisions of this code or of other ordinances of the jurisdiction shall not be valid. It shall be the duty of the permit applicant to cause the work to remain accessible and exposed for inspection purposes. Neither the building official nor the jurisdiction shall be liable for expense entailed in the removal or replacement of any material required to allow inspection...

IBC 109.3 Required inspections. The building official, upon notification, shall make the inspections set forth in Sections 109.3.1 through 109.3.10...

IBC 109.3.4 Frame inspection. Framing inspections shall be made after the roof deck or sheathing, all framing, fireblocking and bracing are in place and pipes, chimneys and vents to be concealed are complete and the rough electrical, plumbing, heating wires, pipes and ducts are approved.

IBC 109.3.9 Special inspections. For special inspections, see Section 1704...

IBC 109.4 Inspection agencies. The building official is authorized to accept reports of approved inspection agencies, provided such agencies satisfy the requirements as to qualifications and reliability.

IRC R109.1 Types of inspections. For onsite construction, from time to time the building official, upon notification from the permit holder or his agent, shall make or cause to be made any necessary inspections and shall either approve that portion of the construction as completed or shall notify the permit holder or his or her agent wherein the same fails to comply with this code...

R109.1.4 Frame and masonry inspection. Inspection of framing and masonry construction shall be made after the roof, masonry, all framing, firestopping, draftstopping and bracing are in place and after the plumbing, mechanical and electrical rough inspections are approved...

R109.2 Inspection agencies. The building official is authorized to accept reports of approved agencies, provided such agencies satisfy the requirements as to qualifications and reliability.

Appendix C:
Key Definitions:[2]

BUILDING:
Structure used or intended for supporting or sheltering any use or occupancy.

BUILDING CODE:
As it applies to a Building, any set of standards set forth and enforced by a Jurisdiction for the protection of public safety.

BUILDING OFFICIAL:
Officer or other designated authority charged with the administration and enforcement of the Building Code, or a duly authorized representative.[3]

BUILDING PERMIT:
Certificate of permission issued by a Jurisdiction to an Owner to construct, enlarge, or alter a Building.

FRAMING STRUCTURAL SYSTEM:
Completed combination of Structural Elements, Trusses, connections and other systems, which serve to support the Building's self-weight and the specified loads.

CONSTRUCTION DOCUMENTS:
Written, graphic and pictorial documents prepared or assembled for describing the design (including the Framing Structural System), location and physical characteristics of the elements of a Building necessary to obtain a Building Permit and construct a Building.

JURISDICTION:
Governmental unit that is responsible for adopting and enforcing the Building Code.

LEGAL REQUIREMENTS:
Any applicable provisions of all statutes, laws, rules, regulations, ordinances, codes, or orders of the governing Jurisdiction.

REGISTERED DESIGN PROFESSIONAL (RDP):
Architect or engineer, who is licensed to practice their respective design profession as defined by the Legal Requirements of the Jurisdiction in which the Building is to be constructed.[4]

STRUCTURAL ELEMENT:
Single structural member (other than a Truss) that is specified in the Construction Documents.

TRUSS:
Individual metal-plate-connected wood component manufactured for the construction of a Building.

TRUSS MANUFACTURER:
Person engaged in the fabrication of Trusses.

[2] Definitions taken from *IBC 2006, ANSI/TPI 1-2002* Chapter 2, adopted by reference *in IBC 2006* (See IBC 102.4, 2303.4, 2306.1, Chapter 35), or the *Metal Plate Connected Wood Truss Handbook* published by WTCA.

[3] IBC Section 104 for definition of a Building Official's responsibilities in the context of the code.
[4] IBC Section 106.3.4.1 for definition of a Registered Design Professional's responsibilities in the context of the code.

Trussway, Ltd.
8850 Trussway Boulevard
Orlando, Florida 32824
Ph: (407) 857-2777
Fax: (407) 851-7899
Eng. Fax. (407) 386 7595

July 2, 2008

RE: "Notice of Compliance for Job 9325, Bayside Village Student Housing, Portland Maine. "

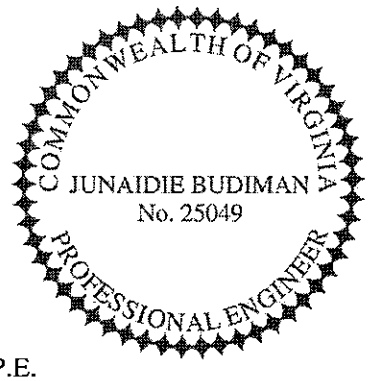
To whom it may Concern:

In compliance to the IBC 1704.2, Trussway quality control processes involved third party inspection agency and internal quality control personnel.

Trussway facilities build truss components based upon the approved truss drawings provided by truss engineer.

If you have any additional questions, or need any additional information please contact Trussway.

Sincerely,



Junaidie Budiman, P.E.
Director of Engineering

EXHIBIT C

01000 Quality Assurance

Project: Bayside Village – A Student Housing Project
Date Prepared: July 13, 2007

Quality Assurance Plan – Seismic and Wind

QUALITY ASSURANCE FOR SEISMIC RESISTANCE CHECK LIST [IBC 1705]

Seismic Design Category C

☒ 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:

July 13, 2007

Signature Date

Building Code Official's Acceptance:

Signature Date

Project: Bayside Village – A Student Housing Project
Date Prepared: July 13, 2007

Structural Schedule of Special Inspections

SEISMIC RESISTANCE - STRUCTURAL

VERIFICATION AND INSPECTION IBC Section 1707	Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
1. Special inspections for seismic resistance. Special inspection as specified in this section is required for the following:			Seismic Design Category C			
a. The seismic-force-resisting systems in structures assigned to Seismic Design Category C, D, E or F	Y	P	IBC 1707.1		PE/SE or EIT	✓
2. Structural steel: Continuous special inspection for structural welding in accordance with AISC 341.	Y	P	IBC 1702.2		AWS-CWI	✓
3. Structural wood:						
a. Continuous special inspection during field gluing operations of elements of the seismic-force-resisting system.	N/A	C	IBC 1702.3		PE/SE or EIT	
b. Periodic special inspections for nailing, bolting, anchoring and other fastening of components within the seismic-force-resisting system, including drag struts, braces and hold-downs	N/A	P	IBC 1702.3		PE/SE or EIT	
4. Cold-formed steel framing: Periodic special inspections during welding operations of elements of the seismic-force-resisting system. Periodic special inspections for screw attachment, bolting, anchoring and other fastening of components within the seismic-force-resisting system, including struts, braces, and hold-downs	N/A	N				
4. Seismic isolation system. Provide periodic special inspection during the fabrication and installation of isolator units and energy dissipation devices if used as part of the seismic isolation system	N/A	N	IBC 1707.8			

Project: Bayside Village – A Student Housing Project
Date Prepared: 11/14/ 2007

Quality Assurance Plan – Seismic and Wind

QUALITY ASSURANCE FOR SEISMIC RESISTANCE CHECK LIST [IBC 1705]

Seismic Design Category C

☒ 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:

November 14, 2007
Signature Date

Building Code Official's Acceptance:

Signature Date

Project: Bayside Village – A Student Housing Project
Date Prepared: 11/14/ 2007

Structural Schedule of Special Inspections

SEISMIC RESISTANCE - STRUCTURAL

VERIFICATION AND INSPECTION IBC Section 1707	Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
1. Special inspections for seismic resistance. Special inspection as specified in this section is required for the following:			Seismic Design Category: B			
a. The seismic-force-resisting systems in structures assigned to Seismic Design Category C, D, E or F	Y	P	IBC 1707.1		PE/SE or EIT	✓
2. Structural steel: Continuous special inspection for structural welding in accordance with AISC 341.	Y	P	IBC 1702.2		AWS-CWI	✓
3. Structural wood:						
a. Continuous special inspection during field gluing operations of elements of the seismic-force-resisting system.	N/A	C	IBC 1702.3		PE/SE or EIT	
b. Periodic special inspections for nailing, bolting, anchoring and other fastening of components within the seismic-force-resisting system, including drag struts, braces and hold-downs	Y	P	IBC 1702.3		PE/SE or EIT	✓
4. Cold-formed steel framing: Periodic special inspections during welding operations of elements of the seismic-force-resisting system. Periodic special inspections for screw attachment, bolting, anchoring and other fastening of components within the seismic-force-resisting system, including struts, braces, and hold-downs	N/A	N				
4. Seismic isolation system. Provide periodic special inspection during the fabrication and installation of isolator units and energy dissipation devices if used as part of the seismic isolation system	N/A	N	IBC 1707.8			

EXHIBIT D

Statements of Responsibility

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 - A Student Housing Project

Contractor's Name: Pizzagalli Construction Company

Address:131 Presumpscot St. Portland, ME

License No.:

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

ERECTION OF STRUCTURAL COLUMNS AND BEAMS. AND METAL DECK.

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 6/25/08
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.

Project: Bayside Village – A Student Housing Project
Date Prepared: 11/14/ 2007

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 - A Student Housing Project

Contractor's Name: Pizzagalli Construction Company

Address:131 Presumpscot St. Portland, ME

License No.:

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

Supplier of WALL PANELS INCLUDING MANUFACTURING OF SHEARWALLS. NOT RESPONSIBLE FOR ANY FIELD MODIFICATION'S

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

6-24-08
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.

Project: Bayside Village – A Student Housing Project
Date Prepared: 11/14/2007

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 - A Student Housing Project

Contractor's Name: Pizzagalli Construction Company

Address:131 Presumpscot St. Portland, ME

License No.:

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

Installation of shear wall panels

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 _____ 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.

End of Special Inspections Report