

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK



CITY OF PORTLAND

BUILDING PERMIT

PERMIT ISSUED

This is to certify that BAYSIDE MAINE LLC

Located At 645 CONGRESS

APR 7 2011

Job ID: 2011-03-661-HVAC

CBL: 046 - - D - 022 - 001 - - - -

City of Portland

has permission to Add Chiller To roof including structural modifications and electrical installations(Separate HVAC Permit) provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statues of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance and use of the buildings and structures, and of the application on file in the department.

Notification of inspection and written permission procured before this building or part thereof is lathed or otherwise closed-in. 48 HOUR NOTICE IS REQUIRED.

A final inspection must be completed by owner before this building or part thereof is occupied. If a certificate of occupancy is required, it must be

AmB per B.W.

Fire Prevention Officer

Sam Runkle 4/6/11

Code Enforcement Officer / Plan Reviewer

THIS CARD MUST BE POSTED ON THE STREET SIDE OF THE PROPERTY.

PENALTY FOR REMOVING THIS CAR



PORTLAND MAINE

Strengthening a Remarkable City, Building a Community for Life • www.portlandmaine.gov

Director of Planning and Urban Development
Penny St. Louis

Job ID: 2011-03-661-HVAC

Located At: 645 CONGRESS

CBL: 046 - - D - 022 - 001 - - - -

Conditions of Approval:

Zoning

1. This permit is being approved on the basis of plans submitted. Any deviations shall require a separate approval before starting that work. Any violations of the maximum noise allowances for the B-3 Zone will be vigorously pursued.
2. ANY exterior work requires a separate review and approval thru Historic Preservation. This property is located within an Historic District.

Fire

1. Installation shall comply with City Code Chapter 10.
2. NFPA 90A, *Standard for the Installation of Air-Conditioning and Ventilating Systems*; NFPA 70, *National Electrical Code*; and the manufacturer's published instructions.

Building

1. Application approval based upon information provided by applicant. Any deviation from approved plans requires separate review and approval prior to work.
2. All penetrations through rated assemblies must be protected by an approved firestop system installed in accordance with ASTM 814 or UL 1479, per IBC 2009 Section 713.
3. Separate permits are required for any electrical, plumbing, sprinkler, fire alarm, HVAC systems, heating appliances, including pellet/wood stoves, commercial hood exhaust systems and fuel tanks. Separate plans may need to be submitted for approval as a part of this process.
4. The stamped structural plans For Construction shall be submitted to this office when the design is recorded.
5. Inspections of the installation of the steel beams, welding and shoring installations shall be conducted by a licensed engineer and a letter with his/her certification shall be submitted to this office stating compliance with the approved plans by the final inspection or CO.

BUILDING PERMIT INSPECTION PROCEDURES

Please call 874-8703 or 874-8693 (ONLY)

or email: buildinginspections@portlandmaine.gov

With the issuance of this permit, the owner, builder or their designee is required to provide adequate notice to the city of Portland Inspections Services for the following inspections. Appointments must be requested 48 to 72 hours in advance of the required inspection. The inspection date will need to be confirmed by this office.

- **Please read the conditions of approval that is attached to this permit!! Contact this office if you have any questions.**
 - **Permits expire in 6 months. If the project is not started or ceases for 6 months.**
 - **If the inspection requirements are not followed as stated below additional fees may be incurred due to the issuance of a "Stop Work Order" and subsequent release to continue.**
1. Close In Elec/Plmb/Framing
 2. Framing for structural modifications

The project cannot move to the next phase prior to the required inspection and approval to continue, REGARDLESS OF THE NOTICE OF CIRCUMSTANCES.

IF THE PERMIT REQUIRES A CERTIFICATE OF OCCUPANCY, IT MUST BE PAID FOR AND ISSUED TO THE OWNER OR DESIGNEE BEFORE THE SPACE MAY BE OCCUOPIED.

City of Portland, Maine - Building or Use Permit Application

389 Congress Street, 04101 Tel: (207) 874-8703, FAX: (207) 8716

Job No: 2011-03-661-HVAC	Date Applied: 3/18/2011	CBL: 046 - - D - 022 - 001 - - - - -	
Location of Construction: 645 CONGRESS ST	Owner Name: MAINE LLC BAYSIDE	Owner Address: 477 CONGRESS ST STE 1012 PORTLAND, ME - MAINE 04101	Phone:
Business Name:	Contractor Name: FAVREAU, Neil ELECTRIC	Contractor Address: 37 JORDAN AVE BRUNSWICK MAINE 04011	Phone: (207) 725-2005
Lessee/Buyer's Name:	Phone:	Permit Type: HVAC - HVAC	Zone: B-3
Past Use: 1 st floor retail spaces with 56 residential apartments above	Proposed Use: Same: 1 st floor retail with 56 residential apartments above - to add a chiller on the roof	Cost of Work: 1000.00	CEO District:
		Fire Dept: <input checked="" type="checkbox"/> Approved w/conditions <input type="checkbox"/> Denied <input type="checkbox"/> N/A	Inspection: Use Group: M/R Type: HVAC/BP IBC-2009 Signature: JMB
Proposed Project Description: 645 Congress Street - Add Chiller at Roof		Pedestrian Activities District (P.A.D.) 4/2/11	
Permit Taken By: Lannie		Zoning Approval	

<p>1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.</p> <p>2. Building Permits do not include plumbing, septic or electrical work.</p> <p>3. Building permits are void if work is not started within six (6) months of the date of issuance. False informatin may invalidate a building permit and stop all work.</p>	<p>Special Zone or Reviews</p> <p><input type="checkbox"/> Shoreland</p> <p><input type="checkbox"/> Wetlands</p> <p><input type="checkbox"/> Flood Zone</p> <p><input type="checkbox"/> Subdivision</p> <p><input type="checkbox"/> Site Plan</p> <p><input type="checkbox"/> Maj <input type="checkbox"/> Min <input type="checkbox"/> MM</p> <p>Date: <i>OK with conditions 3/25/11</i></p>	<p>Zoning Appeal</p> <p><input type="checkbox"/> Variance</p> <p><input type="checkbox"/> Miscellaneous</p> <p><input type="checkbox"/> Conditional Use</p> <p><input type="checkbox"/> Interpretation</p> <p><input type="checkbox"/> Approved</p> <p><input type="checkbox"/> Denied</p> <p>Date:</p>	<p>Historic Preservation <i>within</i></p> <p><input type="checkbox"/> Not in Dist or Landmark</p> <p><input type="checkbox"/> Does not Require Review</p> <p><input type="checkbox"/> Requires Review</p> <p><input checked="" type="checkbox"/> Approved</p> <p><input type="checkbox"/> Approved w/Conditions</p> <p><input type="checkbox"/> Denied</p> <p>Date: <i>3/31/11</i></p> <p><i>D. Andrews</i></p>
	CERTIFICATION		

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the appication is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

SIGNATURE OF APPLICANT	ADDRESS	DATE	PHONE
RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE		DATE	PHON



General Building Permit Application

If you or the property owner owes real estate or personal property taxes or user charges on any property within the City, payment arrangements must be made before permits of any kind are accepted.

Location/Address of Construction: <u>645 CONGRESS STREET</u>		
Total Square Footage of Proposed Structure/Area	Square Footage of Lot	Number of Stories
Tax Assessor's Chart, Block & Lot Chart# Block# Lot# <u>046 D 022</u>	Applicant * <u>must be owner, Lessee or Buyer*</u> Name <u>BAYSIDE MAINE</u> Address <u>477 CONGRESS SUITE 1012</u> City, State & Zip <u>PORTLAND ME 04101</u>	Telephone: <u>207 772 7070</u>
Lessee/DBA (If Applicable)	Owner (if different from Applicant) Name Address City, State & Zip	Cost Of Work: \$ <u>100</u> C of O Fee: \$ <u>30</u> Total Fee: \$ <u>130</u>
RECEIVED MAR 18 2011 Dept. of Building Inspections City of Portland Maine		
Current legal use (i.e. single family) _____	Number of Residential Units _____	
If vacant, what was the previous use? _____		<u>880</u>
Proposed Specific use: _____		
Is property part of a subdivision? _____	If yes, please name _____	
Project description: <u>INSTALLATION OF CHILLER AT ROOF</u>		
Contractor's name: <u>TBD</u>		
Address: _____		
City, State & Zip: _____		Telephone: _____
Who should we contact when the permit is ready: <u>GREG STANBERG</u>		Telephone: <u>207 653 7510</u>
Mailing address: <u>SAME AS ABOVE</u>		

Please submit all of the information outlined on the applicable Checklist. Failure to do so will result in the automatic denial of your permit.

In order to be sure the City fully understands the full scope of the project, the Planning and Development Department may request additional information prior to the issuance of a permit. For further information or to download copies of this form and other applications visit the Inspections Division on-line at www.portlandmaine.gov, or stop by the Inspections Division office, room 315 City Hall or call 874-8703.

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

Signature: [Signature] Date: 3/18/2011

This is not a permit; you may not commence ANY work until the permit is issued

Jeanie Bourke - 645 Congress St Chiller Permit

From: "Greg Shinberg" <gls@shinbergconsulting.com>
To: "Jeanie Bourke" <JMB@portlandmaine.gov>
Date: 4/6/2011 12:00 PM
Subject: 645 Congress St Chiller Permit
Attachments: 3-30-11 _ 645 Cong- Chiller Support.pdf

Hi Jeanie:

Attached is the file with the structural plans for the chiller at 645 Congress Street.

The additional cost for the steel and electrical work is a total of \$10,600.00. I will bring in the extra check for \$106.00.

Thanks

Greg

Shinberg Consulting, LLC
477 Congress Street, Suite 1012
Portland, Maine 04101
Office 207 772 7070
Fax 207 772 7080
Cell 207 653 7510
gls@shinbergconsulting.com
www.shinbergconsulting.com

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STRUCTURAL DESIGN OF CHILLER SUPPORT FRAME

**645 Congress Street
Portland, Maine**

STRUCTURAL NOTES and DETAILS

PSE Project No. 118-11

Structural Notes: Pages 1 - 5

Details: Pages S-1 thru S-4

Prepared for:

Greg Shinberg
Shinberg Consulting
577 Congress St. 5th Floor
Portland, ME 04101

Prepared by:

David A. Price, P.E.
Price Structural Engineers, Inc.
75 Farms Edge Road
North Yarmouth, ME 04097
Tel: (207) 846-0099
Fax: (207) 846-1633

March 29, 2011

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GENERAL STRUCTURAL NOTES

GENERAL REQUIREMENTS

1. Work and materials shall conform to the 2009 International Building Code, State of Maine Building Codes, and other applicable codes and standards and shall meet the requirements of local authorities having jurisdiction.
2. Reference to "Engineer" within these specifications refers to Price Structural Engineers, Inc.
3. Not all existing structural components within the existing building have been reviewed by the engineer. The improvements contained within the attached notes and details define the extent to which the structure has been reviewed.
4. Structural drawings and specifications do not include provisions for site-work, building set-back requirements, ventilation, plumbing, water-tightness of building, NFPA fire code requirements, Americans with Disabilities Act (ADA) requirements, handrails, guardrails, lighting, egress requirements, flashing, finishes, hazardous waste, or other architectural and environmental features. Coordinate these requirements with others as necessary.
5. The following list of drawings and sketches form a part of this specification:

S-1 through S-4
6. The structural design is based on the full interaction of all its connected parts. No provisions have been made for any temporary conditions that may arise during construction prior to the completion of the structure. The Contractor shall be responsible for adequate design and construction of all forms, shoring and temporary bracing during the progress of the project.
7. All work, including demolition, shall be performed by experienced workman and coordinated with adequate supervision by the contractor's project supervisor.
8. Alternate details may be used only if such details are submitted in writing to the Structural Engineer for review and written acceptance is granted prior to construction. However, the Structural Engineer shall be the sole judge of acceptability and the Contractor's Bid shall anticipate the use of those specific details shown on the Drawings.
9. The Contractor shall be completely responsible for the safety of adjacent structures, property, and the public. The Contractor shall comply with all federal, state and local safety requirements.

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10. Do not scale from Drawings. All materials shall be new except those labeled "EXG." (existing). Work not indicated on a part of the Drawings but reasonably implied to be similar to that shown at corresponding places shall be included.
11. Verifying assumed dimensions of existing materials shown on these drawings is the sole responsibility of the contractor.
12. Details indicating existing conditions are based on assumptions, some of which have not yet been field verified. It is critical that the contractor verify actual existing conditions prior to purchasing or fabricating new materials and notify the engineer immediately if actual conditions differ from those indicated on the structural details.
13. Pre-manufactured materials shall be installed in accordance with manufacturer's requirements and recommendations. Substitutions for specified pre-manufactured materials may be made but only after specific written approval has been provided by the owner's engineer prior to installation.
14. Except where slope is specified, new materials shall be installed plumb, level, and square.
15. Contractor shall not fabricate materials until interferences have been identified and resolved.
16. At areas where existing structural components are uncovered and found to be inadequate, the contractor shall either properly reinforce the components or contact the Engineer (PSE) for the structural design of the modifications.
17. Dimensions labeled "VIF" shall be verified in field by the contractor prior to fabricating new components. Any discrepancies shall be brought immediately to the attention of the owner's engineer.

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DIVISION 5 - METALS

Section 05120 - Structural Steel

1. All structural steel work shall conform to the recommendations and requirements contained in the "Manual of Steel Construction, Allowable Stress Design," AISC Ninth Edition (including AISC Code of Standard Practice for Steel Buildings and Bridges), and "Structural Steel Welding Code - Steel," (AWS D1.1, latest edition).
2. Contractor shall provide Owner with copies of welders' current AWS certification prior to construction.
3. Ends of columns shall have milled surfaces for bearing with shop welded cap plates and base plates.
4. No change in size or position of the structural elements shall be made without prior written approval of the Structural Engineer.
5. Holes for bolts shall be drilled to a diameter that is 1/16" larger than the nominal diameter of the bolt.
6. Temporary erection bracing shall be provided to hold structural steel securely in position. Contractor shall regard the steel beams and columns as a non-self-supporting steel frame requiring temporary lateral bracing until construction is complete.
7. Shop connections unless otherwise noted, shall be made by welding. Connect structural steel components together using high strength bolts, 3/4-inch diameter A325N "Tension-Control" type bolts (fully tensioned shear/bearing).
8. All shop and field welds shall be made by certified welders, and shall conform to the American Welding Society Code, AWS D1.1, latest edition, using E70-18 electrodes. Carefully control welding technique to avoid distortion, including clamping prior to welding. Minimum weld size shall be 3/16" fillet.
9. Shop drawings for steel shall be submitted for review and approval. Connections shown on these Drawings are generally schematic. They are intended to define the spatial relationship of the framed members and show a feasible method of making the connections.
10. Structural steel components shall be shop primed with fabricator's standard primer, except that structural steel exposed to weather shall be primed with Tnemec 90-97 primer (steel shall have SP-6 blast finish). Provide field touch-up as necessary.

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11. Structural steel rolled shapes, plates, bars and tubes shall conform to the following:

- ASTM A-572, Grade 50: All wide flange sections ("W" shapes), $F_y = 50$ ksi
- ASTM A-36: Other rolled shapes, plates and bars, $F_y = 36$ ksi
- ASTM A-500, Grade B: Steel Tubes ("TS" shapes), $F_y = 46$ ksi
- ASTM A-53, Grade B: Steel pipe, $F_y = 35$ ksi
- ASTM A-36: Threaded rods

Note: Bolts and rods exposed to weather shall be galvanized. Anchor bolts shall be galvanized.

12. Non-shrink grout shall be 5000 psi (minimum) compression strength.

13. Coordinate final painting of steel components with owner's requirements. Clean and prime steel at field welded locations.

14. All holes in steel components shall be drilled. Use of cutting torches for holes is not permitted.

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DIVISION 6 – WOOD

Section 06000 – Rough Carpentry (General)

1. Lumber shall bear the grade and trademark of the association under whose rules it is produced and a mark of mill identification. Except for heavy timbers and pressure treated wood, lumber shall be kiln-dried to a moisture content not exceeding 19%.
2. Except as noted below or designated otherwise, lumber used for beams, rafters, joists, plates, columns or posts shall be No. 2 grade or better Spruce, Pine, Fir (SPF) and surfaced four sides.
3. Holes for bolts shall be drilled to a diameter that is 1/16" larger than the nominal diameter of the bolt.
4. Holes for the unthreaded portion of lag screws shall be drilled to a diameter that is the same as the nominal diameter of the lag screw shank. A pilot hole for the threaded portion of the lag screw shall be drilled and shall have a diameter that is half the nominal diameter of the lag screw shank.
5. Where joists (or rafters) are framed to the sides of beams, the gap between the ends of joists (or rafters) and the beam to which they are connected shall not exceed 1/16 inch.
6. At locations where portions of wood floor or roof deck are added or replaced, the finish floor elevation of the new wood deck shall match the adjacent existing wood floor elevation.
7. Reference to "Versalam" or "BCI Joist" indicates products manufactured by Boise Cascade Company.
8. Reference to "Simpson" on Drawings indicates metal connectors manufactured by Simpson Strong-Tie.

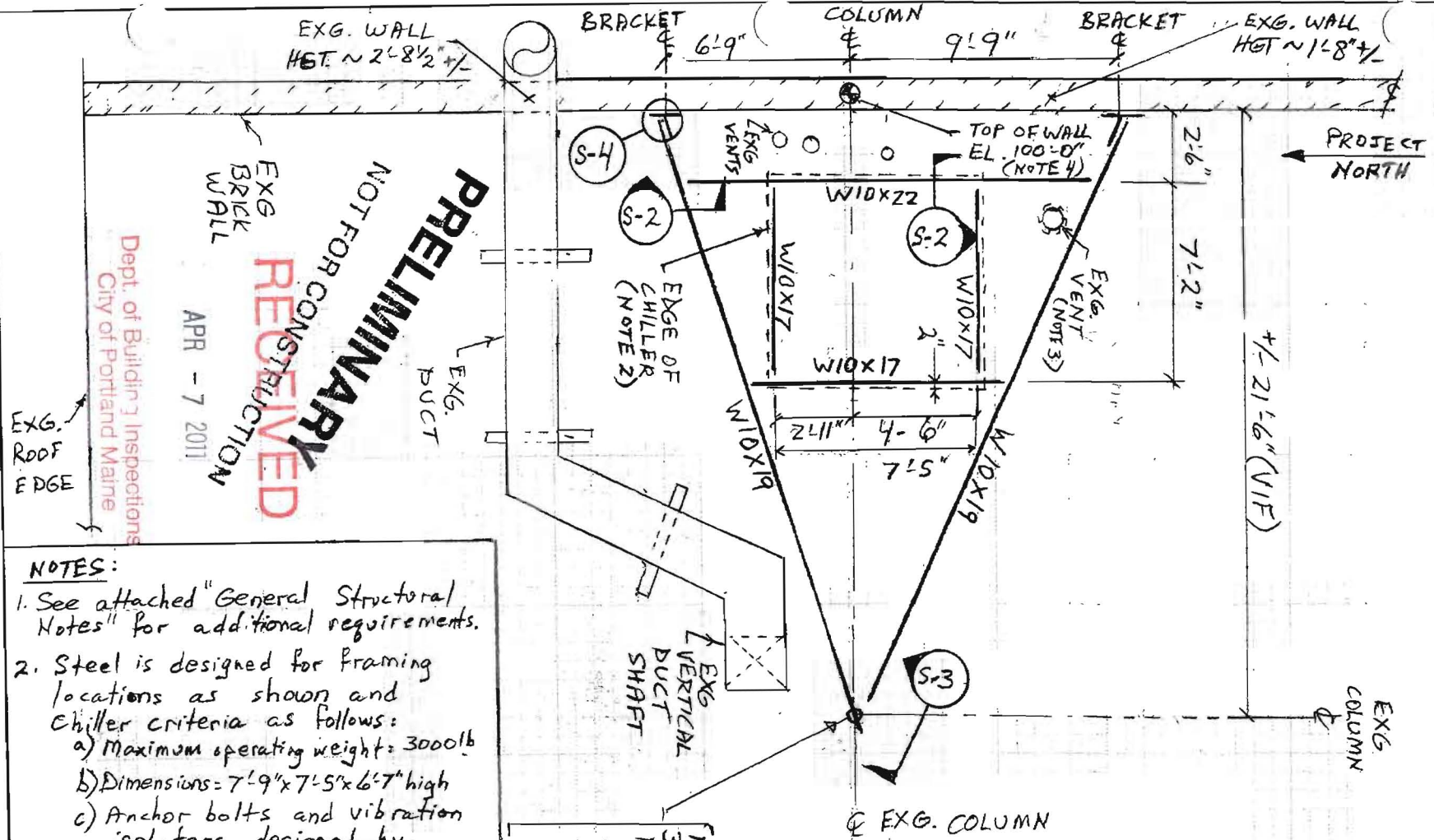
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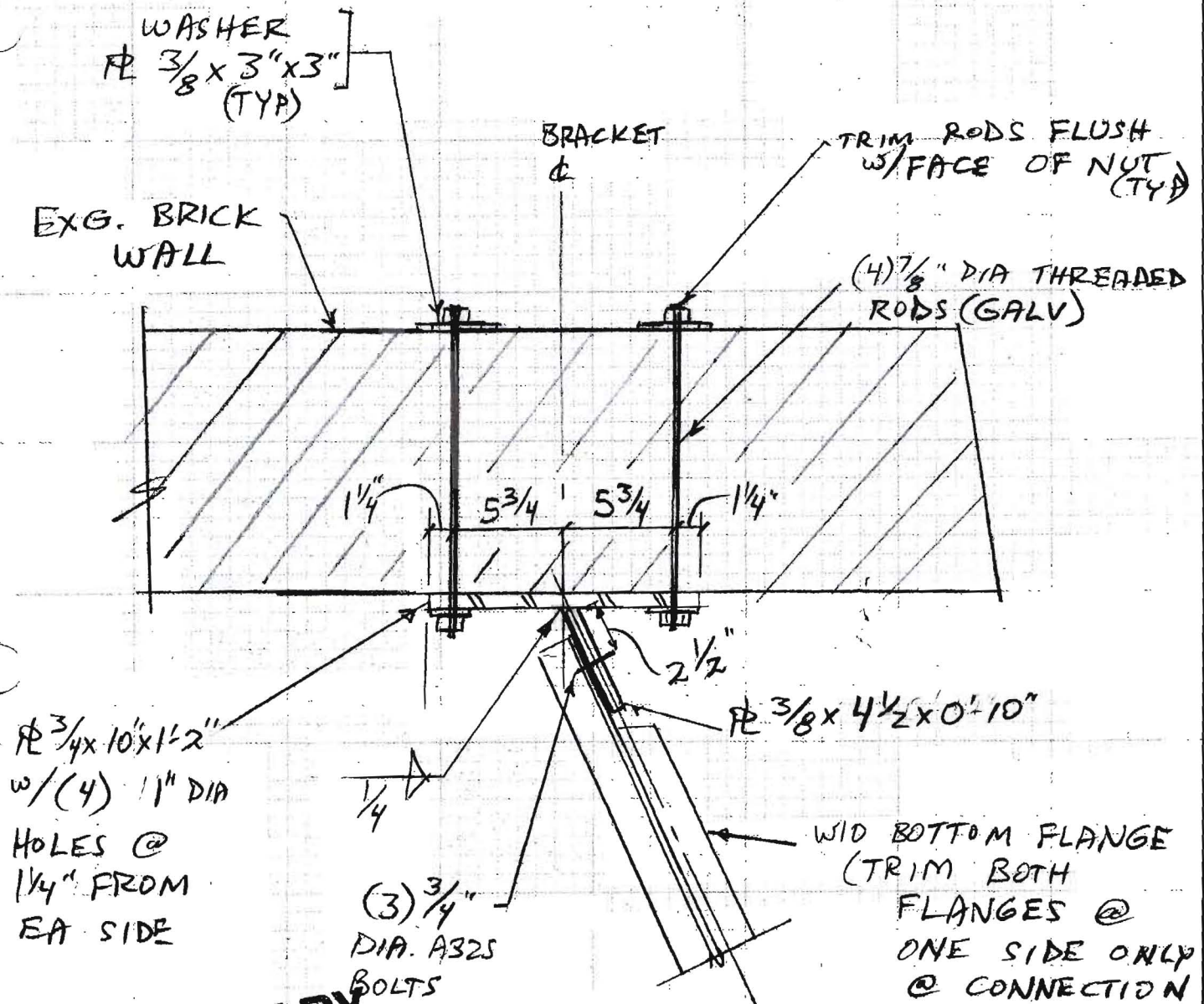


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- NOTES:**
1. See attached "General Structural Notes" for additional requirements.
 2. Steel is designed for framing locations as shown and Chiller criteria as follows:
 - a) Maximum operating weight = 3000lb
 - b) Dimensions = 7'-9" x 7'-5" x 6'-7" high
 - c) Anchor bolts and vibration isolaters designed by others
 3. Verify -in -Field (VIF) locations of existing materials and notify engineer of interferences prior to purchasing or fabricating materials.
 4. Top of steel (TOS) is based on an assumed top of wall height of 100'-0" where shown.
 5. Top of steel shall be EL. 99'-8" (U.D.N.)

CHILLER SUPPORT FRAME
S-1 PARTIAL ROOF PLAN - 645 CONGRESS ST.
3/16" = 1'-0"

David A. Price has reviewed this drawing for the structural adequacy of the structural components only and has not reviewed this drawing with regard to adequacy of soils, site drainage, electrical, ventilation, plumbing, fire code requirements, building egress, ADA or handicap accessibility, flashing, watertightness requirements, building finishes, architectural features or environmental requirements.



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(S-4) PLAN
1/2" = 1'-0"

CL SHEAR TAB

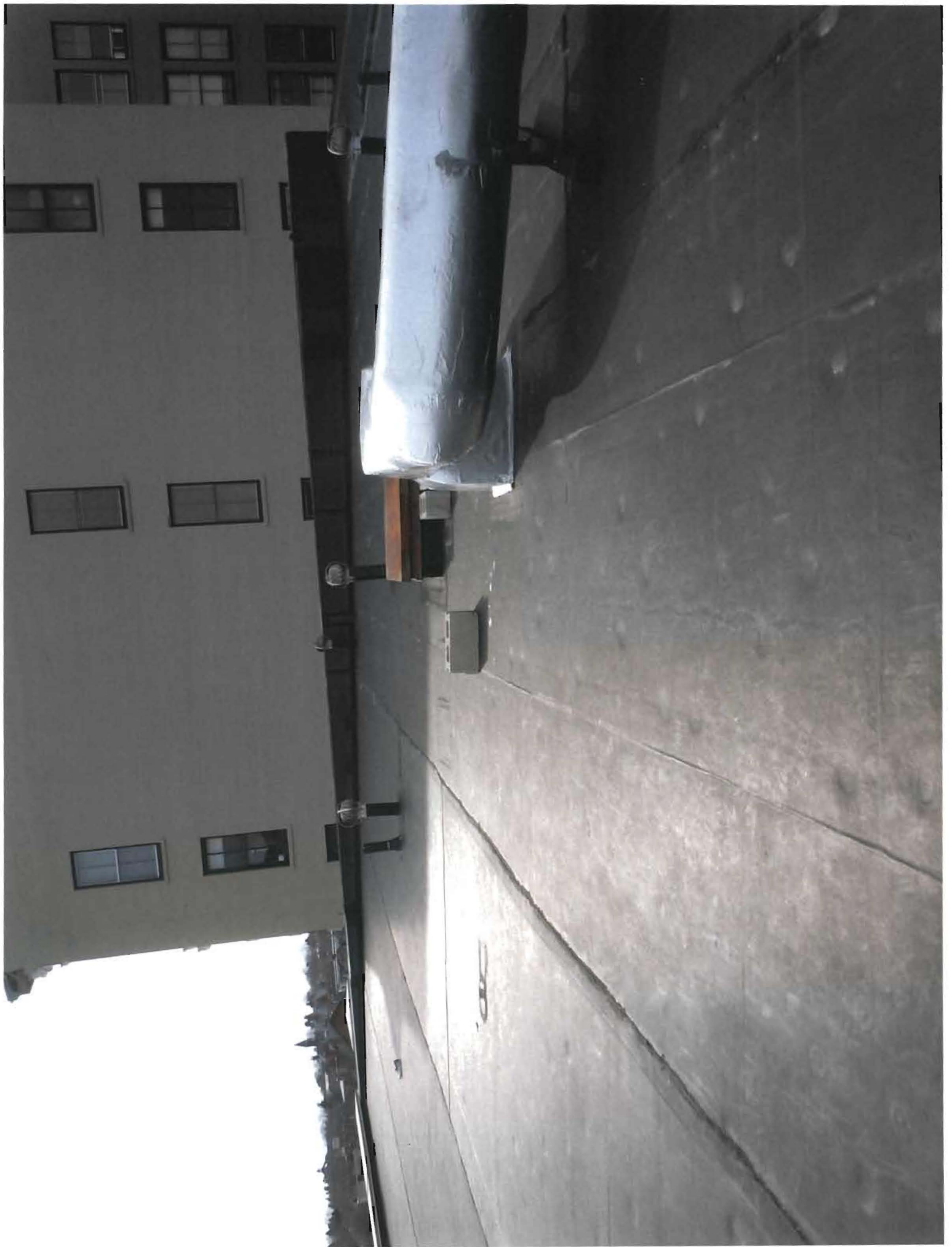
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City of Portland Maine











MEMO TO THE BOARD OF BUILDING INSPECTION



CITY OF PORTLAND, MAINE

Division of Building Inspections

Original Receipt

March 18, 2011

Received from Bayside Maine LLC

Location of Work 645 Congress St

Cost of Construction \$ _____ Building Fee \$ _____

Permit Fee \$ _____ Site Fee \$ _____

Certificate of Occupancy Fee \$ _____

Total: _____

Building (IL) Plumbing (I5) _____ Electrical (I2) _____ Site Plan (U2) _____

Other _____

Bldg Fee 30.00
Ins. Fee 50.00

80.00

CBL: 046 D032

Check #: 0885 Total Collected _____

No work is to be started until permit issued.

Please keep original receipt for you records.

Taken by: [Signature]

BAYSIDE MAINE, LLC
477 CONGRESS STREET, SUITE 1012
PORTLAND, ME 04101

TD BANK
America's Most Convenient Bank
52-7445-2112



0885

PAY TO THE ORDER OF:

[Signature]

\$ 80-

3/18/2011

DOLLARS

Security features. Details on back.

Job Summary Report
Job ID: 2011-03-661-HVAC

Report generated on Mar 24, 2011 3:30:12 PM

Page 1

Job Type:	HVAC	Job Description:	Add Chiller at Roof	Job Year:	2011
Building Job Status Code:	Initiate Plan Review	Pin Value:	959	Tenant Name:	
Job Application Date:		Public Building Flag:	N	Tenant Number:	
Estimated Value:	1,000	Square Footage:			
Related Parties:		MAINE BAYSIDE		<i>Property Owner</i>	

Job Charges

Fee Code Description	Charge Amount	Permit Charge Adjustment	Net Charge Amount	Payment Date	Receipt Number	Payment Amount	Payment Adjustment Amount	Net Payment Amount	Outstanding Balance
----------------------	---------------	--------------------------	-------------------	--------------	----------------	----------------	---------------------------	--------------------	---------------------

Location ID: 7344

Location Details

Alternate Id	Parcel Number	Census Tract	GIS X	GIS Y	GIS Z	GIS Reference	Longitude	Latitude
977810	046 D 022 001		M				-70.265518	43.653883
Location Type			Subdivision Code	Subdivision Sub Code	Related Persons	Address(es)		
			1			645 CONGRESS STREET WEST		
Location Use Code	Variance Code	Use Zone Code	Fire Zone Code	Inside Outside Code	District Code	General Location Code	Inspection Area Code	Jurisdiction Code
		DOWNTOWN BUSINESS			Historic District		DISTRICT 3	CENTRAL BUSINESS DISTRICT

Structure Details

Structure: Loc id 000046388 Alt id 977810

Occupancy Type Code:

Structure Type Code	Structure Status Type	Square Footage	Estimated Value	Address
Commerical Mixed Use	6	0		645 CONGRESS STREET WEST

Longitude	Latitude	GIS X	GIS Y	GIS Z	GIS Reference	User Defined Property	Value
0	0	M					

Structure: Loc id 000051058 Alt id 977810

Occupancy Type Code:

*3 retail spaces
56 APF*

LA...

Not in Que

Job Summary Report
Job ID: 2011-03-661-HVAC

Report generated on Mar 24, 2011 3:30:12 PM

Structure Type Code	Structure Status Type	Square Footage	Estimated Value	Address
CONVERSION	6	0		645 CONGRESS STREET WEST

Longitude	Latitude	GIS X	GIS Y	GIS Z	GIS Reference	User Defined Property	Value
0	0	M					

Permit #: 20112158

Permit Data						
Location Id	Structure Description	Permit Status	Permit Description	Issue Date	Reissue Date	Expiration Date
7344	Ground Floor Retail Upper floors living space	Initialized	add Chiller To roof			

Inspection Details						
Inspection Id	Inspection Type	Inspection Result Status	Inspection Status Date	Scheduled Start Timestamp	Result Status Date	Final Inspection Flag

Fees Details								
Fee Code Description	Charge Amount	Permit Charge Adjustment	Permit Charge Adj Remark	Payment Date	Receipt Number	Payment Amount	Payment Adjustment Amount	Payment Adj Comment
Historic Review - Administrative	\$50.00							
Job Valuation Fees	\$30.00							

Projects in Historic Districts

How a lot?
P.
D.

If your project affects a property located within a designated historic district, please provide the following supplemental information, *as applicable to your project*. Keep in mind that the information you provide Historic Preservation staff is the only description they will have of your project or design. Therefore, it should precisely illustrate the proposed alteration(s).

- Exterior photographs (required for all applications.) Include general streetscape view, view of entire building & close-ups of affected area.
- * Sketches or elevation drawings at a minimum 1/4" scale. Please label relevant dimensions. 11" x 17" plans are recommended for legibility.
- N/A Details or sections, where applicable.
- N/A Floor plans, where applicable.
- Site plan showing relative location of adjoining structures.
- Catalog cuts or product information (e.g. proposed windows, doors, lighting fixtures)
- Materials - list all visible exterior materials. Samples are helpful.

Other(explain) THE SCOPE OF WORK INCLUDES
ADDING ONE CHILLER UNIT ON TOP OF THE
6TH FLOOR ROOF. THE LOCATION IS CLOSE TO
THE MIDDLE OF THE ROOF.

If you have any questions or need assistance in completing this form, please contact Historic Preservation staff: Deb Andrews (874-8726) or by e-mail at dga@portlandmaine.gov

*NOTE 1/8" SCALE



SUBMITTAL

Project

~Untitled27

Date

General Contractor

Mechanical Contractor

Mechanical Engineer

Table Of Contents

Project: ~Untitled27
Prepared By:

01/25/2011
02:23PM

60 ton	3
Unit Report	4
Certified Drawing	5
Field Wiring Diagram	6
Acoustic Summary	8

60 ton

Project: ~Untitled27
Prepared By:

01/25/2011
02:23PM

60 ton

**Tag Cover Sheet
Unit Report
Certified Drawing
Wiring Diagram
Performance Report
Acoustic Summary
Detailed Performance Output Report**

Unit Report For 60 ton

Project: ~Untitled27
Prepared By:

01/25/2011
02:23PM

Unit Information

Tag Name: **60 ton**
 Model Number: **30RAP060**
 Condenser Type: **Air Cooled**
 Compressor Type: **Scroll**
 Nameplate Voltage: **208/230-3-60** V-Ph-Hz
 Quantity: **1**
 Manufacturing Source: **Charlotte, NC USA**
 Refrigerant: **R410A**
 Independent Refrigerant Circuits: **2**
 Capacity Control Steps: **4**
 Minimum Capacity: **25.0** %
 Shipping Weight: **2924** lb
 Operating Weight: **2719** lb
 Unit Length: **89** in
 Unit Width: **93** in
 Unit Height: **79** in

Accessories and Installed Options

Cooler Heater
 Micro Channel, E-Coat
 Ultra Low Sound
 Single Pump, 7.5 HP
 Low Sound Compressor Blankets
 Vibration Isolation Package

Warranty Information (Note: for US & Canada only)

First Year - Parts Only (Standard)
 Compressor Years 2-5 Parts & Carrier CCS Labor

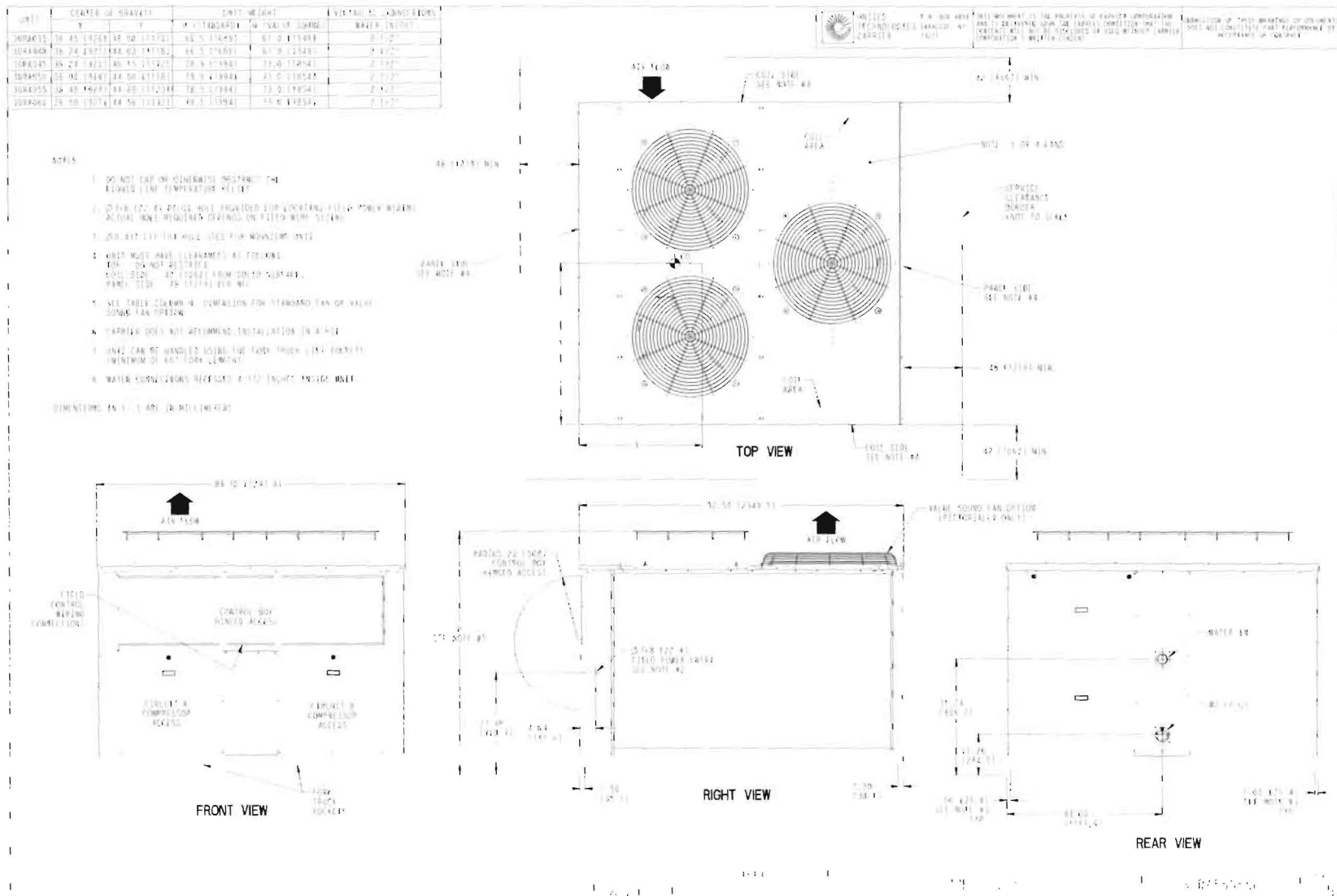
Ordering Information

Part Number	Description	Quantity
30RAP0605K-70100	Packaged Chiller	1
	Base Unit	
	Cooler Heater	
	Micro Channel, E-Coat	
	Ultra Low Sound	
	Single Pump, 7.5 HP	
38AP-900---009	Low Sound Compressor Blankets	4
30RA-900---005	Vibration Isolation Package	1

Certified Drawing for 60 ton

Project: ~Untitled27
Prepared By:

01/25/2011
02:23PM



Field Wiring Diagram for 60 ton

Project: ~Untitled27
Prepared By:

01/25/2011
02:23PM

NOTES:

1. FACTORY WIRING IS IN ACCORDANCE WITH UL 1995 STANDARDS. FIELD MODIFICATIONS OR ADDITIONS MUST BE IN COMPLIANCE WITH ALL APPLICABLE CODES.
2. ALL UNITS OR MODULES HAVE SINGLE POINT PRIMARY POWER CONNECTION. MAIN POWER MUST BE SUPPLIED FROM A FIELD OR FACTORY SUPPLIED DISCONNECT.
3. WIRING FOR MAIN FIELD SUPPLY MUST BE RATED 75C. USE COPPER CONDUCTORS ONLY.
 - a. INCOMING WIRE SIZE RANGE FOR TERMINAL BLOCK WITH MCA UP TO 175 AMPS IS 14 AWG (AMERICAN WIRE GAGE) TO 2/0
 - b. INCOMING WIRE SIZE RANGE FOR TERMINAL BLOCK WITH MCA FROM 175.1 AMPS TO 420 AMPS IS 2 AWG (AMERICAN WIRE GAGE) TO 600 KCMIL
 - c. INCOMING WIRE SIZE RANGE FOR NON-FUSED DISCONNECT WITH MCA UP TO 100 AMPS IS 14 AWG (AMERICAN WIRE GAGE) TO 1/0
 - d. INCOMING WIRE SIZE RANGE FOR NON-FUSED DISCONNECT WITH MCA FROM 100.1 AMPS TO 200 AMPS IS 6 AWG (AMERICAN WIRE GAGE) TO 350 KCMIL
 - e. INCOMING WIRE SIZE RANGE FOR NON-FUSED DISCONNECT WITH MCA FROM 200.1 AMPS TO 450 AMPS IS 1/0 TO 500 KCMIL.
4. REFER TO CERTIFIED DIMENSIONAL DRAWINGS FOR EXACT LOCATIONS OF THE MAIN POWER AND CONTROL POWER ENTRANCE LOCATIONS.
5. TERMINALS 21 AND 25 OF THE LVT ARE FOR CONTROL OF CHILLED WATER PUMP1 (CWP1) STARTER. TERMINALS 21 AND 24 OF THE LVT ARE FOR CONTROL OF CHILLED WATER PUMP2 (CWP2) STARTER. THE MAXIMUM LOAD ALLOWED FOR THE CHILLED WATER PUMP RELAY IS 5 VA SEALED, 10 VA INRUSH AT 24 V. FIELD POWER SUPPLY IS NOT REQUIRED.
6. TERMINALS 18 AND 21 OF LVT ARE FOR AN ALARM RELAY. THE MAXIMUM LOAD ALLOWED FOR THE ALARM RELAY IS 5 VA SEALED, 10 VA INRUSH AT 24V. FIELD POWER SUPPLY IS NOT REQUIRED.
7. MAKE APPROPRIATE CONNECTIONS TO LVT AS SHOWN FOR ENERGY MANAGEMENT BOARD OPTIONS. THE CONTACTS FOR DEMAND LIMIT AND ICE DONE OPTIONS MUST BE RATED FOR DRY CIRCUIT APPLICATION CAPABLE OF HANDLING A 24VAC LOAD UP TO 50 MA. INSTALLATION OF OPTIONAL ENERGY MANAGEMENT BOARD REQUIRED.
8. REMOVE JUMPER BETWEEN TERMINALS 11 AND 17 WHEN FIELD CWP IS INSTALLED.
9. TERMINALS 13 & 14 OF TBS ARE FOR FIELD EXTERNAL CONNECTIONS FOR REMOTE ON-OFF. THE CONTACTS MUST BE RATED FOR DRY CIRCUIT APPLICATION CAPABLE OF HANDLING A 24VAC LOAD UP TO 50MA.

UNITED TECHNOLOGIES ENRAGEE, NY
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CARRIER 13221

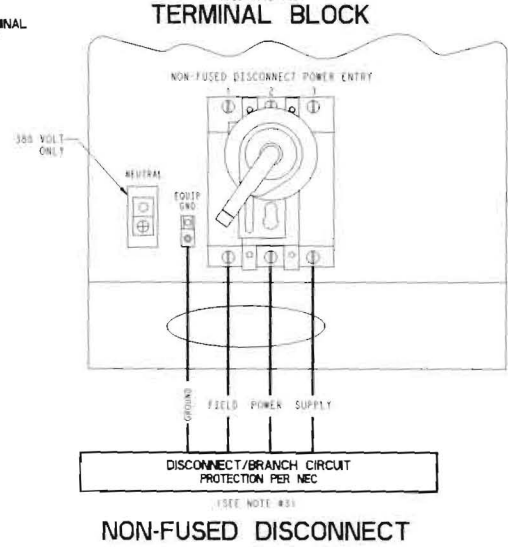
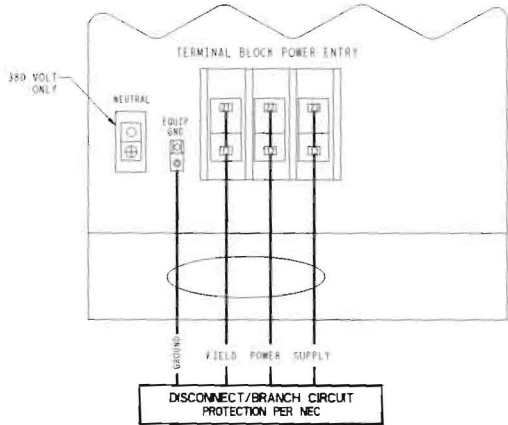
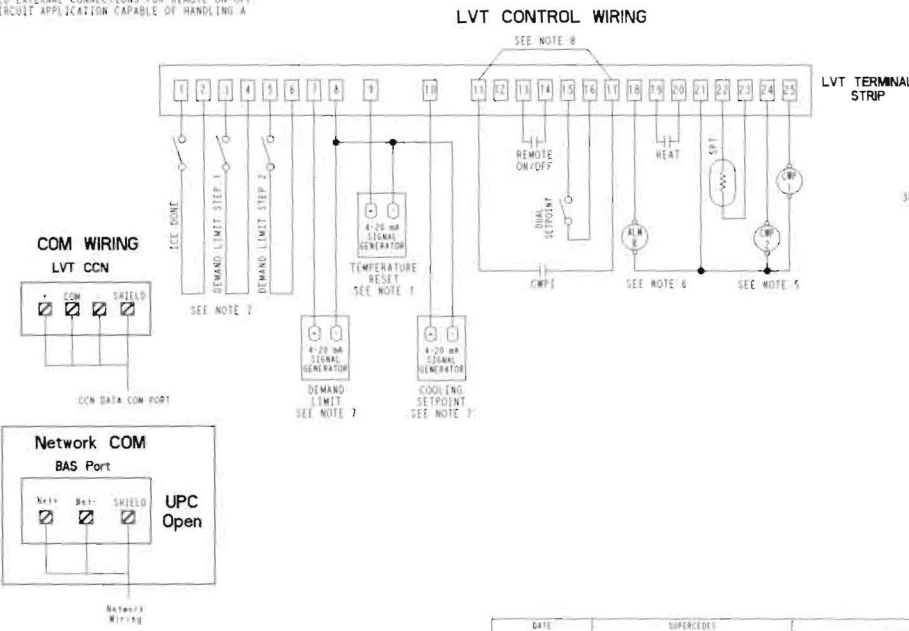
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LEGEND:

- ALM-R ALARM RELAY (24V) 5 VA MAX
- AWG AMERICAN WIRE GAUGE
- CWP CHILLED WATER PUMP
- CWP1 CHILLED WATER PUMP INTERLOCK
- EMM ENERGY MANAGEMENT MODULE
- LVT LOW VOLTAGE TERMINAL STRIP
- SPT SPACE TEMPERATURE

- FIELD POWER WIRING
- FIELD CONTROL WIRING
- FACTORY INSTALLED WIRING
- FACTORY INSTALLED OPTION



DATE 10/20/10	SUPERSEDES 04-22-10	30RAP010-060 ELECTRICAL	30RA555560
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Summary Performance Report For 60 ton

Project: ~Untitled27
Prepared By:

01/25/2011
02:23PM



AquaSnap™ Air-Cooled Scroll Chiller



Unit Information

Tag Name: **60 ton**
 Model Number: **30RAP060**
 Quantity: **1**
 Manufacturing Source: **Charlotte, NC USA**
 Refrigerant: **R410A**
 Independent Refrigerant Circuits: **2**
 Shipping Weight: **2924 lb**
 Operating Weight: **2719 lb**
 Unit Length: **89 in**
 Unit Width: **93 in**
 Unit Height: **79 in**

Evaporator Information

Fluid Type: **Fresh Water**
 Fouling Factor: **0.00010** (hr-sqft-F)/BTU
 Leaving Temperature: **44.0 °F**
 Entering Temperature: **54.0 °F**
 Fluid Flow: **132.7 gpm**
 Pressure Drop: **39.2 ft**

Condenser Information

Altitude: **0 ft**
 Number of Fans: **4**
 Total Condenser Fan Air Flow: **38800 CFM**
 Entering Air Temperature: **95.0 °F**

Integrated Pump Information

Dynamic Head At Pump: **101.9 ft**
 Internal Chiller Head Loss: **39.2 ft**
 Dynamic Head External To Chiller: **62.7 ft**

Performance Information

Cooling Capacity: **55.5 Tons**
 Total Compressor Power: **61.8 kW**
 Total Fan Motor Power: **5.36 kW**
 Pump Power: **5.68 kW**
 Total Unit Power (without pump): **67.1 kW**
 Total Unit Power (with pump): **72.8 kW**
 Efficiency (without pump): **9.92 EER**
 A-Weighted Sound Power Level: **88 dbA**

Accessories and Installed Options

Cooler Heater
 Micro Channel, E-Coat
 Ultra Low Sound
 Single Pump, 7.5 HP
 Low Sound Compressor Blankets
 Vibration Isolation Package

Electrical Information

Unit Voltage: **208/230-3-60 V-Ph-Hz**
 Connection Type: **Single Point**

Amps	Electrical Circuit 1	Electrical Circuit 2
MCA	279.7	---
MOCP	300.0	---
ICF	525.9	---

B-3/15
55 after 9:00 pm
60 7am-9pm
see other info on pg 8

All performance efficiency data are without pump.

Certified in accordance with the AHRI Water-Chilling Packages using the Vapor Compression Cycle Certification Program, which is based on AHRI Standard 550/590-2003.

Sound power measured in accordance with ANSI/AHRI Standard 370-2001.

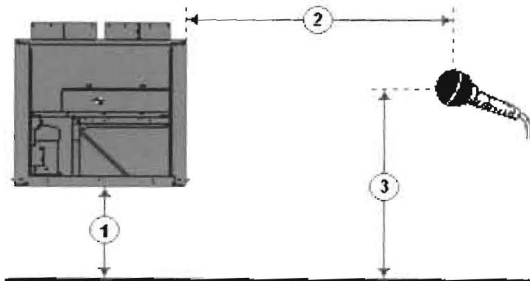
Acoustic Summary For 60 ton

Project: ~Untitled27
Prepared By:

01/25/2011
02:23PM

Unit Parameters

Tag Name:	60 ton	
Model Number:	30RAP060	
Condenser Type:	Air Cooled	
Compressor Type:	Scroll	
Chiller Nameplate Voltage:	208/230-3-60	V-Ph-Hz
Quantity:	1	
Manufacturing Source:	Charlotte, NC USA	
Refrigerant:	R410A	
Shipping Weight:	2924	lb
Operating Weight:	2719	lb
Unit Length:	89	in
Unit Width:	93	in
Unit Height:	79	in



- 1 - Chiller Height Above Ground
- 2 - Horizontal Distance From Chiller to Receiver
- 3 - Receiver Height Above Ground

Accessories and Installed Options

Cooler Heater	Single Pump, 7.5 HP
Micro Channel, E-Coat	38AP-900---009
Ultra Low Sound	30RA-900---005

Acoustic Information (Full Load)

Octave Band Center Frequency, Hz	31	63	125	250	500	1k	2k	4k	8k	Total
Sound pressure at specified distance in a free field, dB	43	55	55	52	53	53	48	43	36	61
A-Weighted Sound Pressure Level, dBA	4	28	39	44	49	53	49	44	35	56
Sound Power at Chiller Acoustic Center, dB	75	87	87	84	85	85	80	75	68	93
A-Weighted Sound Power, dBA	36	60	71	76	82	85	81	76	67	88

Notes

- 1 - Chiller Height Above Ground = 0.0 ft
- 2 - Horizontal Distance From Chiller to Receiver = 50.0 ft
- 3 - Receiver Height Above Ground = 0.0 ft
- Estimated Sound Power levels - dB re: 1 picowatt
- Estimated Sound Pressure levels - dB re: 20 micropascal
- Estimated sound levels given above are assumed to originate at the acoustic center of the chiller.

B3. Inc 55 dBA 9:00pm - 7:00 AM
60 dBA 7:00 AM - 9:00 PM

Sound pressure level data used to develop this program was determined in accordance with AHRI Standard 575 for water chillers in a free field and ANSI/AHRI Standard 370 for air cooled chillers.

Calculation methods used in this program are patterned after the ASHRAE Guide; other ASHRAE Publications and the AHRI Acoustical Standards. While a very significant effort has been made to insure the technical accuracy of this program, it is assumed that the user is knowledgeable in the art of system sound estimation and is aware of the tolerances involved in real world acoustical estimation. This program makes certain assumptions as to the dominant sound sources and sound paths which may not always be appropriate to the real system being estimated. Because of this, no assurances can be offered that this software will always generate an accurate sound prediction from user supplied input data. If in doubt about the estimation of expected sound levels in a space, an Acoustical Engineer or a person with sound prediction expertise should be consulted.

Detailed Performance Summary For 60 ton

Project: ~Untitled27
Prepared By:

01/25/2011
02:23PM

Unit Information

Tag Name: **60 ton**
 Model Number: **30RAP060**
 Condenser Type: **Air Cooled**
 Compressor Type: **Scroll**
 Nameplate Voltage: **208/230-3-60** V-Ph-Hz
 Quantity: **1**
 Manufacturing Source: **Charlotte, NC USA**
 Refrigerant: **R410A**
 Capacity Control Steps: **4**
 Minimum Capacity: **25.0** %
 Shipping Weight: **2924** lb
 Operating Weight: **2719** lb
 Unit Length: **89** in
 Unit Width: **93** in
 Unit Height: **79** in
 Minimum Outdoor Operating Temp: **32** °F

Performance Information

Cooling Capacity: **55.5** Tons
 Total Compressor Power: **61.8** kW
 Total Fan Motor Power: **5.36** kW
 Pump Power: **5.68** kW
 Total Unit Power (without pump): **67.1** kW
 Total Unit Power (with pump): **72.8** kW
 Efficiency (without pump): **9.92** EER

Acoustics Information

A-Weighted Sound Power Level: **88** dbA

Evaporator Information

Fluid Type: **Fresh Water**
 Fouling Factor: **0.00010** (hr-sqft-F)/BTU
 Leaving Temperature: **44.0** °F
 Entering Temperature: **54.0** °F
 Fluid Flow: **132.7** gpm
 Pressure Drop: **39.2** ft

Condenser Information

Altitude: **0** ft
 Number of Fans: **4**
 Total Condenser Fan Air Flow: **38800** CFM
 Entering Air Temperature: **95.0** °F

Electrical Information

Unit Voltage: **208/230-3-60** V-Ph-Hz
 Connection Type: **Single Point**

Amps	Electrical Circuit 1	Electrical Circuit 2
MCA	279.7	---
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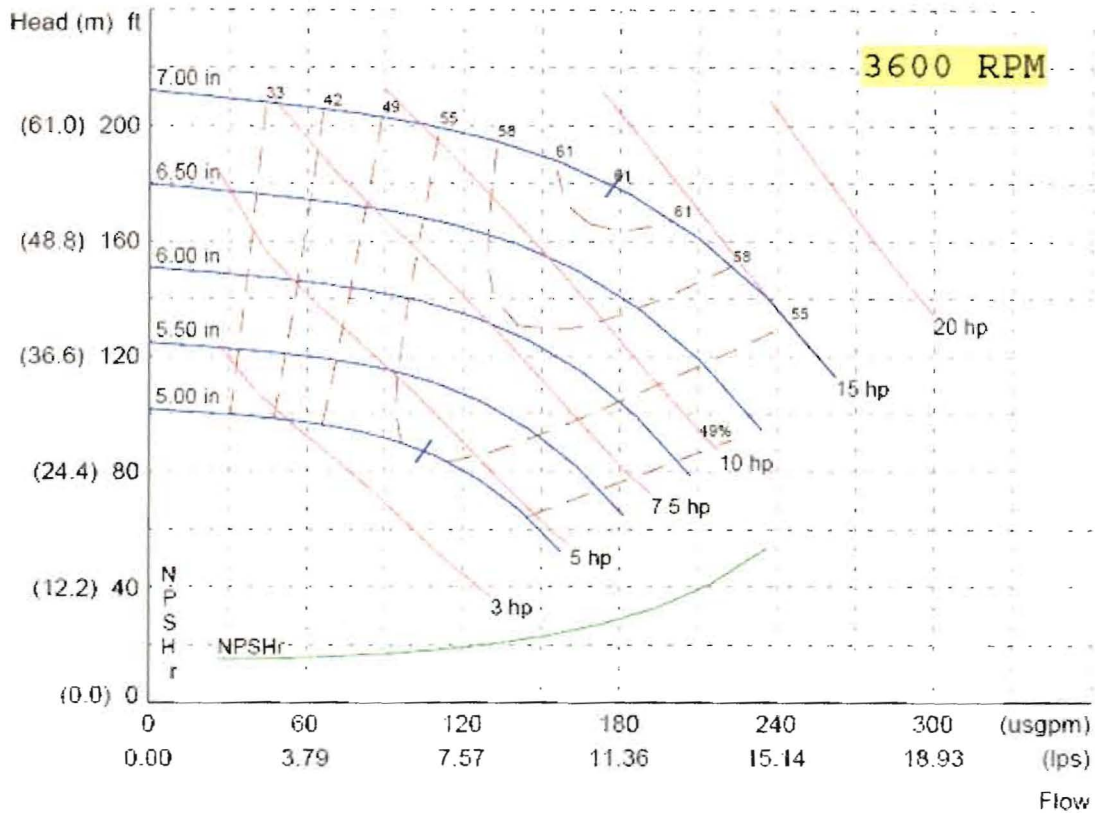
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Dynamic Head At Pump: **101.9** ft
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 Dynamic Head External To Chiller: **62.7** ft

Detailed Performance Summary For 60 ton

Project: ~Untitled27
Prepared By:

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Accessories and Installed Options

- Cooler Heater
- Micro Channel, E-Coat
- Ultra Low Sound
- Single Pump, 7.5 HP
- Low Sound Compressor Blankets
- Vibration Isolation Package

Integrated Part Load Value (ARI)

IPLV: **14.28** EER

Unit Performance				
Percent of Full Load Capacity, %	100	75	50	25
Percent of Full Load Power, %	100.0	69.8	52.2	24.9
Unloading Sequence	A	A	A	A
Cooling Capacity, Tons	55.5	41.6	27.7	13.9
Total Unit Power, kW	67.1	46.8	35.0	16.7
Efficiency, EER	9.92	13.50	15.16	14.08
Evaporator Data				
Fluid Entering Temperature, °F	54.0	51.5	49.0	46.5
Fluid Leaving Temperature, °F	44.0	44.0	44.0	44.0
Fluid Flow Rate, gpm	133.1	133.1	133.1	133.1
Fouling Factor, (hr-sqft-F)/BTU	0.0001	0.0001	0.0001	0.0001
Condenser Data				
Entering Air Temperature, °F	95.0	80.0	65.0	55.0

Detailed Performance Summary For 60 ton

Project: ~Untitled27
Prepared By:

01/25/2011
02:23PM

For some 75% operating points, the efficiency may be calculated at a condenser inlet air operating temperature as much as 0.8 degrees higher.

All performance efficiency data are without pump.

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Sound power measured in accordance with ANSI/AHRI 370-2001.