



FILL IN AND SIGN WITH INK

304 B029

# APPLICATION FOR PERMIT HEATING OR POWER EQUIPMENT

To the INSPECTOR OF BUILDINGS, PORTLAND, ME.

The undersigned hereby applies for a permit to install the following heating, cooking or power equipment in accordance with the Laws of Maine, the Building Code of the City of Portland, and the following specifications:

Location / CBL 425 WARREN Ave Use of Building Commercial Date 12-27  
 Name and address of owner of appliance SPRINGER 425 WARREN AVE  
Portland ME  
 Installer's name and address Johnson & Moran 18 Mussey Rd  
Scarborough Maine 04074 Telephone 201-883-8345

### Location of appliance:

- Basement
- Attic
- Floor
- Roof

### Type of Fuel:

- Gas
- Oil
- Solid

Appliance Name: Heating units (Cambridge)

U.L. Approved  Yes  No

Will appliance be installed in accordance with the manufacture's installation instructions?  Yes  No

IF NO Explain: \_\_\_\_\_

### The Type of License of Installer:

- Master Plumber # \_\_\_\_\_
- Solid Fuel # \_\_\_\_\_
- Oil # \_\_\_\_\_
- Gas # PN15911
- Other \_\_\_\_\_

### Type of Chimney: none

Masonry Lined  
Factory built \_\_\_\_\_

Metal  
Factory Built U.L. Listing # \_\_\_\_\_

Direct Vent  
Type \_\_\_\_\_ UL# \_\_\_\_\_

### Type of Fuel Tank

- Oil
- Gas

Size of Tank 1000 gal

Number of Tanks 2

Distance from Tank to Center of Flame 200 feet.

Cost of Work: \$ 60,000

Permit Fee: \$ \_\_\_\_\_

### Approved

### Approved with Conditions

Fire: \_\_\_\_\_

Ele.: \_\_\_\_\_

Bldg.: \_\_\_\_\_

See attached letter or requirement

Inspector's Signature

Date Approved

Signature of Installer [Signature]

White - Inspection

Yellow - File

Pink - Applicant's

Gold - Assessor's Copy

# 18128

# DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK CITY OF PORTLAND

Please Read Application And Notes, If Any, Attached

ENGINEERING SECTION

## PERMIT

Permit Number: 071528

This is to certify that W W GRAINGER INC / Johnson & Johnson

has permission to Install 2 Cambridge heating units w/two 100 gallon gas fuel tanks

AT 453 WARREN AVE 304 B029001

provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statutes of the State and of the Ordinances of the City of Portland regulating the construction, maintenance and use of buildings and structures, and of the application on file in this department.

Apply to Public Works for street line and grade if nature of work requires such information.

Notification of inspection must be given and when permission procured before this building or part thereof is altered or closed-in. 24 HOUR NOTICE IS REQUIRED.

A certificate of occupancy must be procured by owner before this building or part thereof is occupied.

### OTHER REQUIRED APPROVALS

Fire Dept. [Signature]

Health Dept. \_\_\_\_\_

Appeal Board \_\_\_\_\_

Other \_\_\_\_\_

Department Name

[Signature] 1/7/08  
Director - Building & Inspection Services

### PENALTY FOR REMOVING THIS CARD

JAN - 7 2008

**City of Portland, Maine - Building or Use Permit**

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

<b>Permit No:</b> 07-1528	<b>Date Applied For:</b> 12/27/2007	<b>CBL:</b> 304 B029001
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<b>Location of Construction:</b> 453 WARREN AVE	<b>Owner Name:</b> W W GRAINGER INC	<b>Owner Address:</b> 100 GRAINGER PKY	<b>Phone:</b>
<b>Business Name:</b>	<b>Contractor Name:</b> Johnson & Jordan	<b>Contractor Address:</b> 18 Mussey Road Scarborough	<b>Phone</b> (207) 883-8345
<b>Lessee/Buyer's Name</b>	<b>Phone:</b>	<b>Permit Type:</b> HVAC	

<b>Proposed Use:</b> Commercial Building - With 2 Cambridge Heating units.	<b>Proposed Project Description:</b> Install 2 Cambridge heating units w/two 1,000 gallon gas fuel tanks
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<b>Dept:</b> Zoning	<b>Status:</b> Approved	<b>Reviewer:</b> Marge Schmuckal	<b>Approval Date:</b> 01/02/2008
<b>Note:</b>			<b>Ok to Issue:</b> <input checked="" type="checkbox"/>
<b>Dept:</b> Building	<b>Status:</b> Approved with Conditions	<b>Reviewer:</b> Tammy Munson	<b>Approval Date:</b> 01/07/2008
<b>Note:</b>			<b>Ok to Issue:</b> <input checked="" type="checkbox"/>
1) Separate permits are required for any electrical, plumbing, or HVAC systems. Separate plans may need to be submitted for approval as a part of this process.			
2) The installation must comply with the State of Maine Gas Regulations.			
<b>Dept:</b> Fire	<b>Status:</b> Approved with Conditions	<b>Reviewer:</b> Capt Greg Cass	<b>Approval Date:</b> 01/03/2008
<b>Note:</b>			<b>Ok to Issue:</b> <input checked="" type="checkbox"/>
1) No discription given for the location of fuel tanks. Install shall comply with NFPA 58, A compliance letter is required.			

**City of Portland, Maine - Building or Use Permit Application**

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

Permit No: 07-1528	Issue Date:	CBL: 304 B029001
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Location of Construction: 453 WARREN AVE	Owner Name: W W GRAINGER INC	Owner Address: 100 GRAINGER PKY	Phone:
Business Name:	Contractor Name: Johnson & Jordan	Contractor Address: 18 Mussey Road Scarborough	Phone 2078838345
Lessee/Buyer's Name	Phone:	Permit Type: HVAC	Zone: B-A

Past Use: Commercial Building	Proposed Use: Commercial Building - With 2 Cambridge Heating units.	Permit Fee: \$35.00	Cost of Work: \$0.00	CEO District: 5
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FIRE DEPT: <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied TO NFPA 58 w/ compliance	INSPECTION: Use Group: <i>J</i> Type: <i>WAC</i> <i>State Gas</i>
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Proposed Project Description:  
Install 2 Cambridge heating units w/two 1,000 gallon gas fuel tanks

Signature: <i>Cover Cass</i>	Signature: <i>[Signature]</i>
PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)	
Action: <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied	
Signature:	Date:

Permit Taken By: lmd	Date Applied For: 12/27/2007	<b>Zoning Approval</b>
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<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 information may invalidate a building permit and stop all work..</p>	<p><b>Special Zone or Reviews</b></p> <p><input type="checkbox"/> Shoreland</p> <p><input type="checkbox"/> Wetland</p> <p><input type="checkbox"/> Flood Zone</p> <p><input type="checkbox"/> Subdivision</p> <p><input type="checkbox"/> Site Plan</p> <p>Maj <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/></p> <p>Date: <i>OK 1/2/09</i></p>	<p><b>Zoning Appeal</b></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><b>Historic Preservation</b></p> <p><input checked="" type="checkbox"/> Not in District or Landmark</p> <p><input type="checkbox"/> Does Not Require Review</p> <p><input type="checkbox"/> Requires Review</p> <p><input type="checkbox"/> Approved</p> <p><input type="checkbox"/> Approved w/Conditions</p> <p><input type="checkbox"/> Denied</p> <p>Date: <i>[Signature]</i></p>
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**CERTIFICATION**

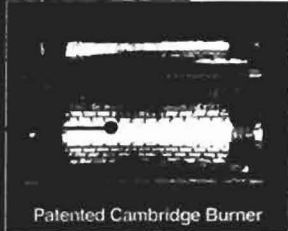
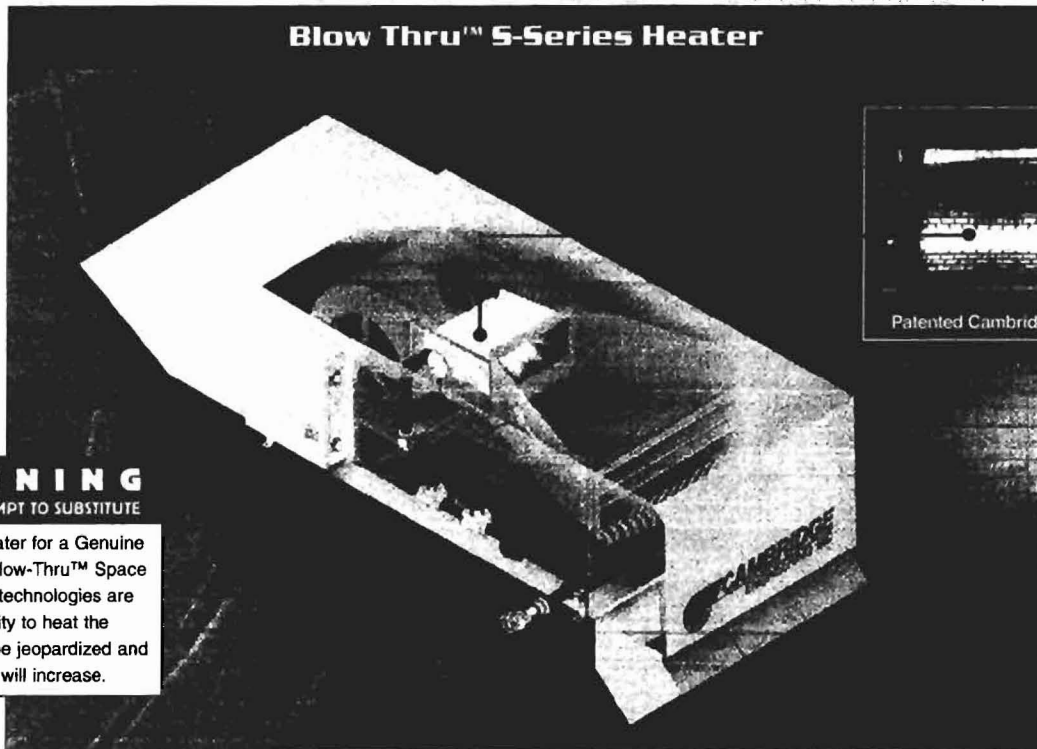
I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application 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	PHONE

**Direct Gas-Fired**

**Space Heating**

**Blow Thru™ S-Series Heater**



Patented Cambridge Burner

**WARNING**

DO NOT ATTEMPT TO SUBSTITUTE

any other heater for a Genuine Cambridge Blow-Thru™ Space Heater. The technologies are different. Ability to heat the building will be jeopardized and energy costs will increase.

**FAST START-UP AND EASY MAINTENANCE**

- Installation flexibility with rooftop, thru-wall, under roof, pad mount and indoor or outdoor vertical mounting options
- Compact, lightweight, pre-piped and pre-wired to make installation and start-up easier
- Blow-Thru™ design eliminates the time required during start-up for adjustment of a burner profile damper necessary with draw-thru heaters
- Multiple easy-access doors for quick start-up and maintenance
- Service and gas valve leak test switches are provided for easy installation and service
- Every heater is tested as a fully-assembled unit to minimize initial start-up problems

**RELIABILITY**

- Blow-Thru™ design puts burner downstream of blower so motor and other critical components are located in cool air stream for extended service life
- Low voltage hot surface igniter with Cambridge Low Fire Start (Patent Pending) provide the most dependable gas ignition system for direct gas-fired heaters
- Stainless steel burner & flame rod reduce maintenance and extend service life
- High quality polyester powder paint coating is a standard feature
- Closed cell, non-water absorbing insulation in the base of each unit eliminates condensation problems associated with less expensive fiberglass insulation
- The industry's best warranty package includes 2 years on the heater and 5 years on the patented Cambridge burner

**PERFORMANCE**

- More heat, less energy and better indoor air quality
- High performance, Blow-Thru™ technology provides more BTUs per CFM than draw-thru make-up air heaters. Less outside air and less energy are required for space heating
- Certified for both 160°F temperature rise and 160°F discharge temperature at 0°F outdoor
- Intermittent operation matches heat and air loads to reduce energy usage
- 100% fresh outside air is used to improve indoor air quality, help solve negative air pressure problems and eliminate cold drafts from open dock doors
- High 10-to-1 induction mixing ratio minimizes stratification and provides even temperatures throughout the building



**ENGINEERING INC**  
More heat, less energy

[www.cambridge-eng.com](http://www.cambridge-eng.com)

Cambridge Engineering, Inc.  
760 Long Road Crossing Dr.  
Chesterfield, MO 63005  
800.899.1989 • Fax 636.530.6133

Johnson & Jordan  
18 Mussey Road  
Scarborough, Maine 04074

December 4, 2007  
Job No. 2007-154  
Pg. 1 of 1

**Subject:** Structural evaluation of the W.W.Grainger Building's roof structure to support the weight of two new Roof Top Units.

**Attention:** Mr. Frank Merrifield, P.E.

Frank:

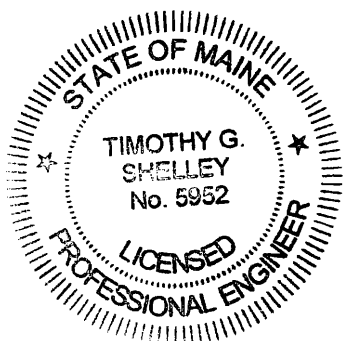
Per your request, I have analyzed the roof structure of the Grainger Building with regards to supporting the additional weight of two new Roof Top Units. The units to be installed are S800 Series units as manufactured by Cambridge. Each unit has a shipping weight of 804 pounds. I was provided a copy of the original structural drawings of the building. My analysis found the roof structure to be adequate to support the weight of the new units. Some minor framing will be required at the new roof penetrations and at the support points at the non-ducted end of the units. I have attached Sks 1 - 4 showing these requirements.

Please let me know if you have any questions.

Sincerely:



Timothy G. Shelley, P.E.



**STRUCTURAL DESIGN CRITERIA:**

- 1. BUILDING CODE: IBC 2006
- 2. WEIGHT OF CAMBRIDGE S800 SERIES RTU = 804 POUNDS,  
74 PERCENT OF UNIT LOAD SUPPORTED ON 2 LEGS,  
26 PERCENT OF UNIT LOAD SUPPORTED ON DUCTED END.
- 3. SNOW: GROUND SNOW LOAD = 60 PSF  
IMPORTANCE FACTOR, I = 1.0  
EXPOSURE FACTOR,  $C_e$  = 0.7  
FLAT ROOF SNOW LOAD = 42 PSF
- 4. ROOF DEAD LOAD = 10 PSF

**GENERAL NOTES:**

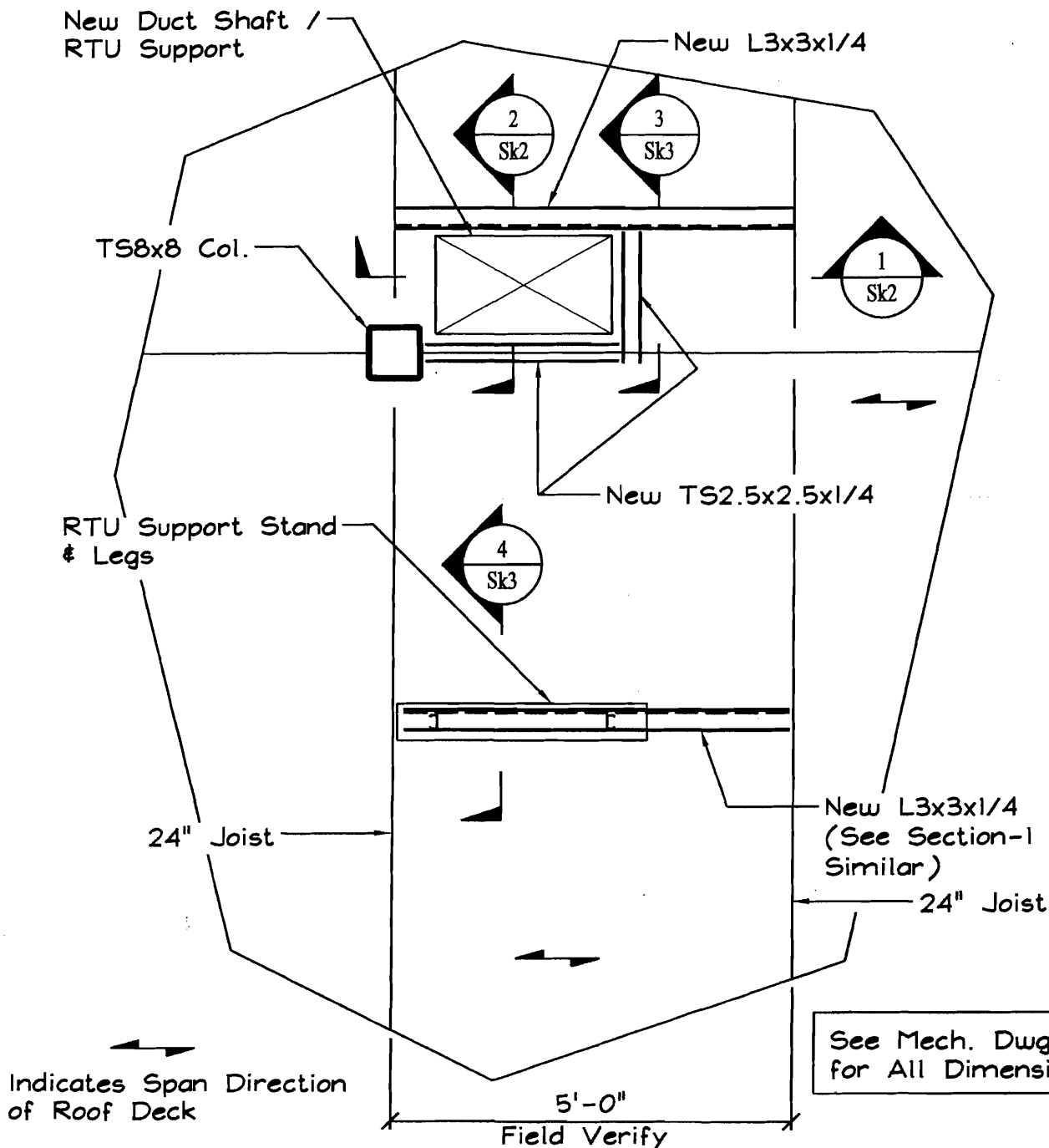
- 1. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH JOB SPECIFICATIONS AND MECHANICAL DRAWINGS FOR THE RTU.
- 2. ALL DIMENSIONS AND CONDITIONS MUST BE VERIFIED IN THE FIELD. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK.
- 3. ALL APPLICABLE FEDERAL, STATE, AND MUNICIPAL REGULATIONS SHALL BE FOLLOWED, INCLUDING THE FEDERAL DEPARTMENT OF LABOR OCCUPATIONAL SAFETY AND HEALTH ACT.

**STRUCTURAL STEEL NOTES - GENERAL**

- 1. STRUCTURAL STEEL FABRICATION, ERECTION, AND CONNECTION DESIGN SHALL CONFORM TO AISC "SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL" 9th EDITION.
- 2. ALL STEEL TO BE A-36 MATERIAL.
- 3. WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1 - LATEST EDITION. ALL WELDS SHALL BE MADE WITH E70XX ELECTRODES.
- 4. STRUCTURAL STEEL SHALL BE PAINTED WITH A SHOP APPLIED COAT OF THE FABRICATOR'S RUST INHIBITIVE PRIMER AND FIELD FINISH COAT TO MATCH EXIST. STEEL.

M:\2007-154\2007-154S1.dwg PLOTTED: Dec 04, 2007 - 9:56am

—SEI—	SHELLEY ENGINEERING, INC.	RTU SUPPORT		
	STRUCTURAL CONSULTANTS 90 BRIDGE STREET WESTBROOK, MAINE 04092 PHONE (207) 854-5465 FAX (207) 854-8706 WWW.SHELLEYENGINEERING.COM	W.W. GRAINGER INC.		
	DRAWN BY: TGS	DATE: 12/3/07	SKETCH: Sk4 OF 4	
CHECKED BY: TGS	SCALE: AS NOTED	JOB No.: 2007-154		



## PART ROOF FRAMING PLAN

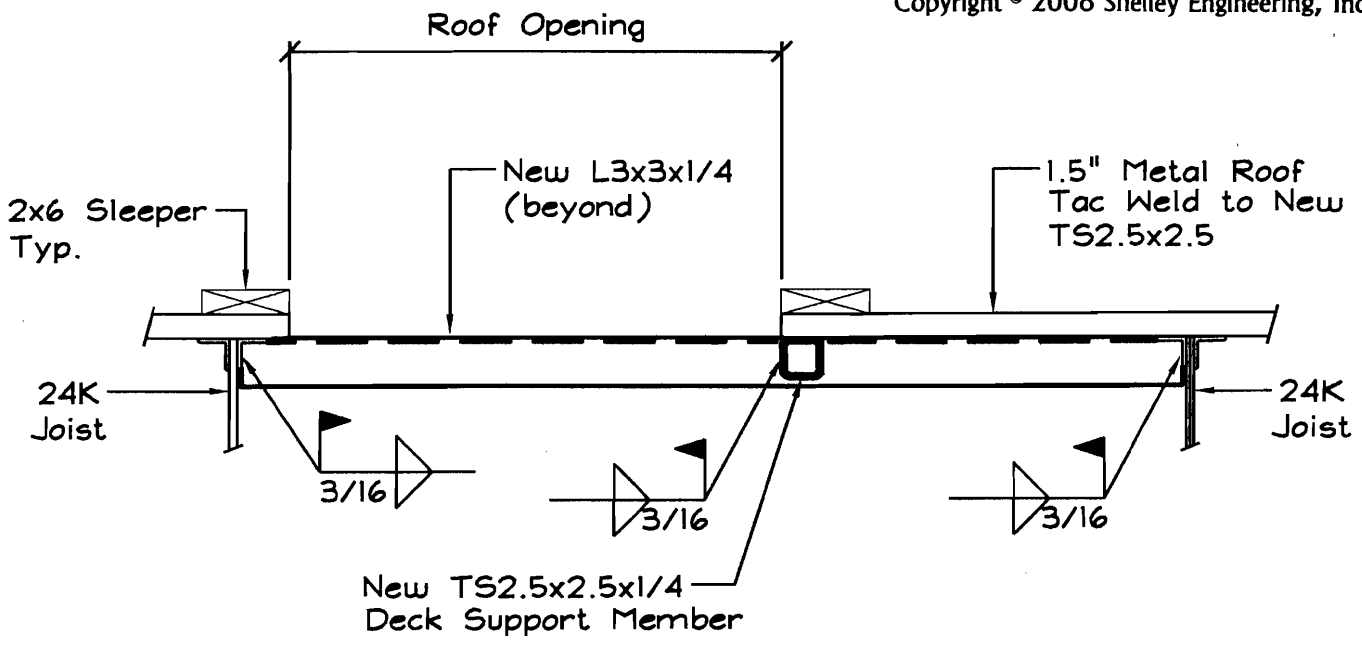
SCALE: 1/2" = 1'-0"

Typ. Cambridge S800 Series  
RTU Support Framing

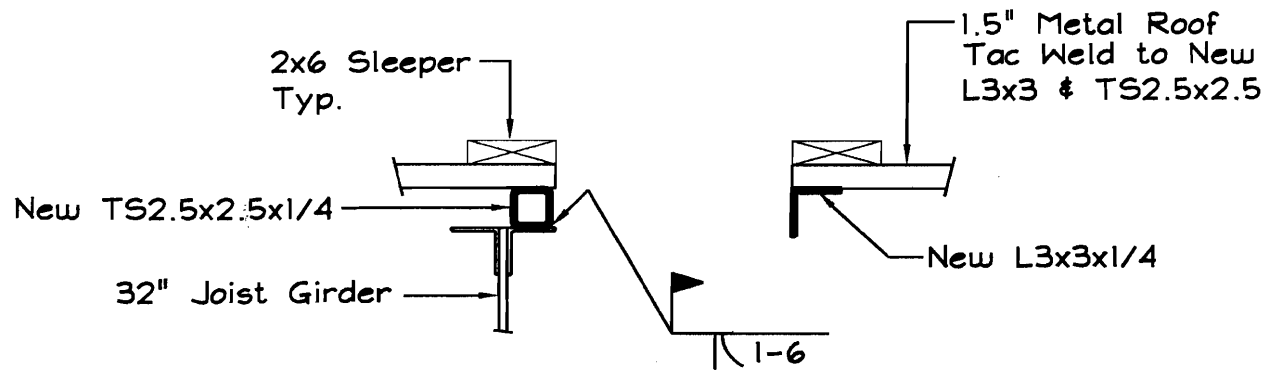
SEI SHELLEY ENGINEERING, INC. STRUCTURAL CONSULTANTS 90 BRIDGE STREET WESTBROOK, MAINE 04092 PHONE (207) 854-5465 FAX (207) 854-8706 WWW.SHELLEYENGINEERING.COM	RTU SUPPORT W.W. GRAINGER INC.		
	DRAWN BY: TGS	DATE: 12/3/07	SKETCH: SK1 OF 4
	CHECKED BY: TGS	SCALE: AS NOTED	JOB No.: 2007-154

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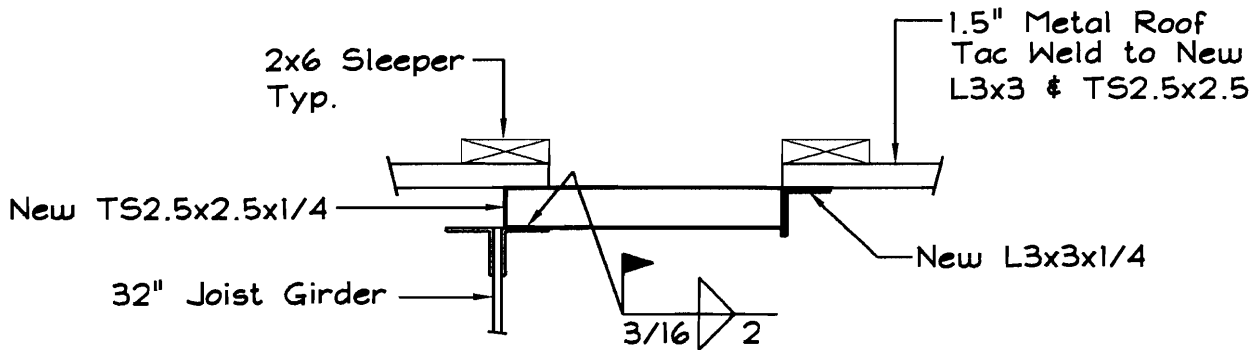
**SECTION 1**  
SCALE: 1" = 1'-0"  
Sk1



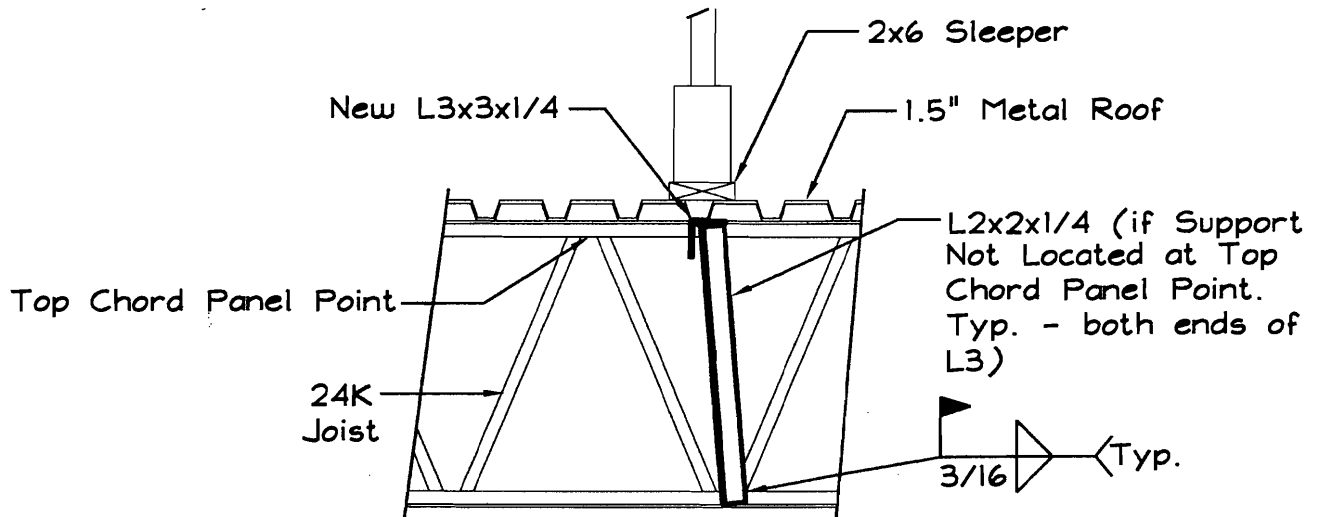
**SECTION 2**  
SCALE: 1" = 1'-0"  
Sk1

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SEI <b>SHELLEY ENGINEERING, INC.</b> STRUCTURAL CONSULTANTS 90 BRIDGE STREET WESTBROOK, MAINE 04092 PHONE (207) 854-5465 FAX (207) 854-8706 WWW.SHELLEYENGINEERING.COM	<b>RTU SUPPORT</b> <b>W.W. GRAINGER INC.</b>		
	DRAWN BY: TGS	DATE: 12/3/07	SKETCH: Sk2 of 4
	CHECKED BY: TGS	SCALE: AS NOTED	JOB NO.: 2007-154



**SECTION 3**  
SCALE: 1" = 1'-0"  
Sk1



**SECTION 4**  
SCALE: 3/4" = 1'-0"  
Sk1

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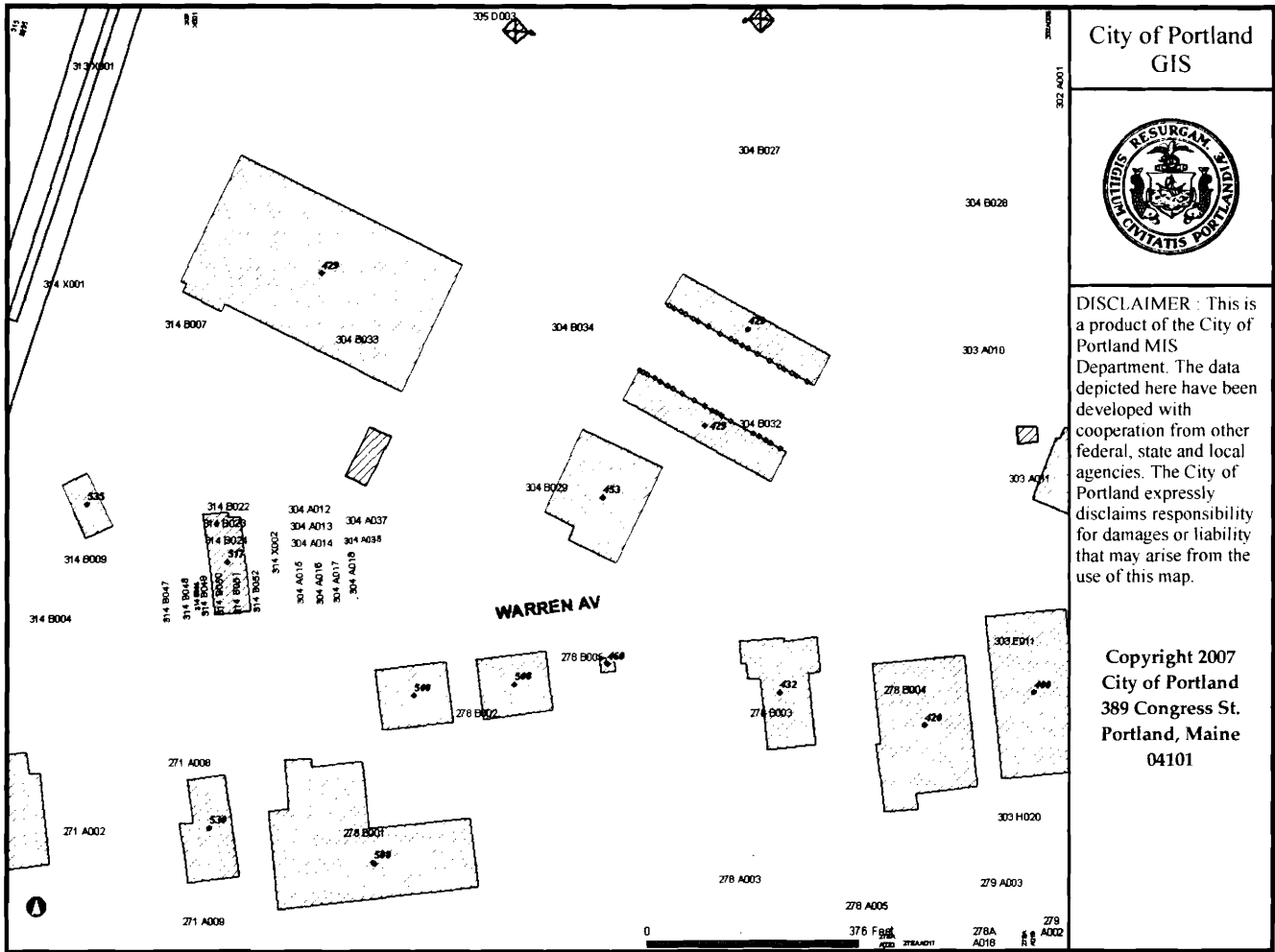
SEI  
**SHELLEY ENGINEERING, INC.**  
 STRUCTURAL CONSULTANTS  
 90 BRIDGE STREET  
 WESTBROOK, MAINE 04092  
 PHONE (207) 854-5465  
 FAX (207) 854-8706  
 WWW.SHELLEYENGINEERING.COM

**RTU SUPPORT**  
**W.W. GRAINGER INC.**

DRAWN BY: TGS	DATE: 12/3/07	SKETCH: Sk3 OF 4
CHECKED BY: TGS	SCALE: AS NOTED	JOB No.: 2007-154



WW Granger  
304-B-24



City of Portland  
GIS



DISCLAIMER : This is a product of the City of Portland MIS Department. The data depicted here have been developed with cooperation from other federal, state and local agencies. The City of Portland expressly disclaims responsibility for damages or liability that may arise from the use of this map.

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Portland, Maine  
04101