| City of Portland, M                         | Iaine - Buildi          | ng or Use      | Permi             | t Applicatio        | n Per       | mit No:        | Issue Date      | :        | CBL:           |                              |
|---|-------------------------|----------------|-------------------|---------------------|-------------|----------------|-----------------|----------|----------------|------------------------------|
| 389 Congress Street, (                      |                         | _              |                   |                     | 1           | 09-0150        | 3/41            | 09       | 425 10         | 04001                        |
| Location of Construction:                   | Ov                      | vner Name:     |                   | <u> </u>            | Owner       | r Address:     | <del>-711</del> |          | Phone:         |                              |
| 142 PRESUMPSCOT S                           | ST 14                   | 42 PRESUM      | IPSCO1            | LIMITED LI          | 142 I       | PRESUMPS       | COT ST          |          |                |                              |
| Business Name:                              | Co                      | ntractor Name  | :                 |                     | Contra      | actor Address: |                 |          | Phone          |                              |
|   | R                       | evision Ener   | gy LLC            |                     | 109 I       | Fox Street Po  | ortland         |          | 2072216        | 342                          |
| Lessee/Buyer's Name                         | Ph                      | one:           |                   | T                   | Permit      | t Type:        |                 |          |                | Zone:                        |
|   |                         |                |                   | ]                   | HV          | AC             |                 |          |                | I-1/25                       |
| Past Use:                                   | Pr                      | oposed Use:    |                   | <del></del>         | Permi       | it Fee:        | Cost of Wor     | k:       | CEO District:  | 7                            |
| Commercial - office, lig                    | ght C                   | ommercial -    | Office,           | light               | Ì           | \$100.00       | \$8,0           | 00.00    | 4              |                              |
| manufacturing & wareh                       |                         |                |                   | ehouse -Install     | FIRE        | DEPT:          | Approved        |          | CTION:         |                              |
|   |                         | rood boiler ai | nd Solai          | Hot water w/        | }           |                | Denied          | Use G    | roup: B        | Type: 5D                     |
|   | 2                       | root panets    |                   |                     |             | _              | _               |          | T.B            | Type: 50<br>C-2607<br>C-2017 |
|   |                         |                |                   |                     | <u></u> ≯ ? | See Con        | ditions         |          | PM             | c-2007                       |
| Proposed Project Descriptio                 |                         |                |                   |                     |             |                | 7               |          | ~ 1            |                              |
| Install wood boiler and                     |                         |                |                   | oling Turbo         | Signat      |                | <u> </u>        | Signati  |                |                              |
| 3000 Woodboiler & apr                       | ricus AP20 Solar        | Thermal col    | lectors           |                     | PEDE        | STRIAN ACT     | IVITIES DIS     | TRICT (  | P.A.D.)        |                              |
|   |                         |                |                   |                     | Action      | n: Appro       | ved Ap          | proved w | /Conditions    | Denied                       |
|   |                         |                |                   |                     | G:          |                |                 |          | Data           |                              |
|   |                         |                |                   |                     | Signat      |                |                 |          | Date:          |                              |
| Permit Taken By: Ldobson                    | Date Applie<br>02/24/20 |                |                   |                     |             | Zoning         | Approva         | al       |                |                              |
|   |                         |                | Sne               | cial Zone or Revi   | ews         | Zoni           | ng Appeal       |          | Historic Pre   | servation                    |
| 1. This permit applica                      |                         |                | l                 |                     |             |                |                 | -        |                |                              |
| Applicant(s) from r<br>Federal Rules.       | neeting applicabl       | e State and    |                   | noreland            |             | Uariano        | e               |          | Not in Distr   | ict or Landmai               |
|   |                         |                | l                 |                     |             |                |                 |          |                | t a Decision                 |
| 2. Building permits do                      |                         | nbing,         | '                 | etland              |             | Miscell        | aneous          |          | Does Not Re    | equire Review                |
| septic or electrical                        |                         | 1              |                   | ood Zone            |             | Com disti      | onal Use        |          | Daguiros Da    | viou.                        |
| 3. Building permits ar within six (6) month |                         |                |                   | ood Zone            |             | Conditi        | oliai OSC       |          | Requires Re    | VICW                         |
| False information n                         |                         |                | $  \Box_{S_1}$    | ıbdivision          |             | Interpre       | tation          |          | Approved       |                              |
| permit and stop all                         |                         | . 0            |                   | 1041131011          |             | merpre         | tation          |          | Пррготса       |                              |
|   |                         |                | $  _{\square Si}$ | te Plan             | Ì           | Approv         | ed              |          | Approved w     | /Conditions                  |
|   |                         |                |                   |                     |             |                | -               |          | r.pp.o.co      | Conuntions                   |
| rmade                                       | TIESHED                 |                | Mai [             | ☐ Minor ☐ MM        |             | Denied         |                 |          | Denied         |                              |
| \$ 15 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   | TISSUEU                 |                | 1 '               | _                   |             |                |                 |          |                |                              |
|   |                         |                | Date:             | ludition            | n           | Date:          |                 |          | Date:          |                              |
| 11.00                                       | 2.27                    |                | <u></u>           | [ ] L1              |             |                |                 |          |                |                              |
|   |                         |                |                   |                     |             |                |                 |          |                |                              |
|   |                         |                |                   |                     |             |                |                 |          |                |                              |
|   | į.                      |                |                   |                     |             |                |                 |          |                |                              |
|   |                         |                |                   |                     |             |                |                 |          |                |                              |
|   |                         |                | C                 | CERTIFICATI         | ON          |                |                 |          |                |                              |
| I hereby certify that I am                  | the owner of rec        | ord of the na  | med pro           | operty, or that the | he prop     | osed work is   | s authorized    | by the   | owner of reco  | rd and that                  |
| I have been authorized b                    |                         |                |                   |                     |             |                |                 |          |                |                              |
| jurisdiction. In addition,                  |                         |                |                   |                     |             |                |                 |          |                |                              |
| shall have the authority to<br>such permit. | o enter all areas o     | covered by si  | ich pern          | nit at any reaso    | nable n     | our to enforc  | ce the provi    | ision of | tne code(s) ap | oplicable to                 |
| out permit.                                 |                         |                |                   |                     |             |                |                 |          |                |                              |
|   |                         |                |                   |                     |             |                |                 |          |                |                              |
| SIGNATURE OF APPLICAN                       | NT.                     |                |                   | ADDRES              | S           |                | DATE            |          | PHO            | ONE                          |
|   |                         |                |                   |                     |             |                |                 |          |                |                              |
| RESPONSIBLE PERSON IN                       | CHARGE OF WOD           | K TITI E       |                   |                     |             |                | DATE            |          | PHC            | ONE                          |
|   | THE PROPERTY OF MOST    | ,              |                   |                     |             |                | שלוב            |          | 111            | / 1 1 L                      |

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| City of Portland, Mai                             | ne - Building or Use Permit                      | i                     | Permit No:             | Date Applied For:     | CRT:                  |
|---|--|-----------------------|------------------------|-----------------------|-----------------------|
| 389 Congress Street, 041                          | 01 Tel: (207) 874-8703, Fax: (                   | 207) 874-871 <i>6</i> | 09-0150                | 02/24/2009            | 425 1004001           |
| Location of Construction:                         | Owner Name:                                      |                       | Owner Address:         |                       | Phone:                |
| 142 PRESUMPSCOT ST                                | 142 PRESUMPSCOT                                  | LIMITED LI            | 142 PRESUMPSC          | OT ST                 |                       |
| Business Name:                                    | Contractor Name:                                 |                       | Contractor Address:    |                       | Phone                 |
|   | Revision Energy LLC                              |                       | 109 Fox Street Por     | tland                 | (207) 221-6342        |
| Lessee/Buyer's Name                               | Phone:   |                       | Permit Type:           |                       |                       |
|   |  |                       | HVAC                   |                       |                       |
| Proposed Use:                                     |  | Propose               | d Project Description: |                       |                       |
| Commercial - Office, light                        | manufacturing & warehouse -Insta                 | ll Install            | wood boiler and So     | olar Hot water w/ 2 r | roof panels - Froling |
| wood boiler and Solar Hot                         | water w/ 2 roof panels                           | Turbo                 | 3000 Woodboiler &      | & apricus AP20 Sola   | ar Thermal collectors |
|   |  |                       |                        |                       |                       |
|   |  |                       |                        |                       |                       |
|   |  |                       |                        |                       |                       |
| Dept: Zoning                                      | Status: Approved with Condition                  | s Reviewer:           | Ann Machado            | Approval D            | ate: 02/25/2009       |
| Note:   | ••   |                       |                        | • •                   | Ok to Issue:          |
| 1) This permit is being ap                        | proved on the basis of plans submit              | tted Any devia        | tions shall require a  | senarate annroval h   |                       |
| work.   | proved on the busis of plans submit              | ned. They devia       | irons shan require a   | separate approvar o   | ctore starting that   |
| Dept: Building                                    | Status: Approved with Condition                  | s Reviewer:           | Chris Hanson           | Approval D            | ate: 03/04/2009       |
| Note: called for spec's of                        | wood boiler CSH 03/02/2009                       |                       |                        |                       | Ok to Issue:          |
| Separate permits are re approval as a part of the | quired for any electrical, plumbing, is process. | , HVAC or exha        | ust systems. Separa    | te plans may need to  | be submitted for      |
| 2) Installation shall comp                        | ly with 2003 International Mechani               | cal Code and St       | ate of Maine Oil an    | d Solid Fuel Board I  | Laws and Rules        |
| Dept: Fire  | Status: Approved with Condition                  | s Reviewer:           | Capt Keith Gautre      | eau Approval D        | ate: 02/27/2009       |
| Note:   |  |                       |                        |                       | Ok to Issue:          |

1) Install shall comply with all manufacture's specifications.



# APPLICATION FOR PERMIT HEATING OR POWER EQUIPMENT

|   | Marie - 1 | <br> | 4,000 | * * ** *** | -   |   |
|---|-----------|------|-------|------------|-----|---|
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|   |           |      |       |            | 1   |   |

| To the INSPECTOR OF BUILDINGS, PORTLAND, ME.   |  |
|--|--|
| The undersigned hereby applies for a permit to insta-<br>accordance with the Laws of Maine, the Building Code of the | all the following heating, cooking or power equipment in |
|  |  |
| Name and address of owner of appliance Revision Energy   | Use of Building Corprocis Didy Date Feb                  |
| Name and address of owner of appliance Revision Energy   | 142 Presumpsicot   |
| 0 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \  | 0  |
| Installer's name and address <u>Revision Energy 142</u>  | Telephone 323-1805                                       |
|  | Telebuoue 773 1803                                       |
| Location of appliance:   | Type of Chimney:   |
| □ Basement □ Floor Wood Doily  | ☐ Masonry Lined  |
| □ Attic □ Roof Swler Hut Unter   | Factory built  |
| Type of Fuel:  | Metal  |
| ☐ Gas ☐ Oil ☐ Solid  | Factory Built U.L. Listing #_ [1] - 103                  |
|  | ractory Bain C.E. Elisting "                             |
| Appliance Name: Froling Turbo 3000 Northill  | ☐ Direct Vent  |
| U.L. Approved & Yes D No Apricus AP20  | Type UL#   |
| Silem Thermal  |  |
| Will appliance be installed in accordance with the manufacture's   | Type of Fuel Tank  |
| installation instructions?   | Oil Oil  |
|  | □ Gas NA   |
| IF NO Explain:   | 1/2  |
|  | Size of Tank   |
| The Type of License of Installer:  | Number of Tanks Number                                   |
| ☐ Master Plumber #   | •  |
| Solid Fuel # M S 3000 8870   | Distance from Tank to Center of Flame feet.              |
| □ Oil #  |  |
| ☐ Gas #  | Cost of Work: \$ \( \frac{\chi}{\chi} \)                 |
| □ Other  | Permit Fee: \$   |
| Approved   | Approved with Conditions                                 |
| Fire:  | See attached letter or requirement                       |
| Ele ·  | $\mathcal{L}(\mathcal{A})$ 101                           |
| Bldg.:   | Muy 119 2/1/09   |
| 77111  | Inspector's Signature Tate Approved                      |

White - Inspection

Signature of Installer

Yellow - File

Pink - Applicant's

Gold - Assessor's Copy



February 24, 2009

Fortunat Mueller ReVision Energy 109 Fox street Portland, ME 04101

RE: ReVision Energy Solar Installation

Address: 142 Presumpscott St, Portland, Maine

#### To Whom it May Concern:

I have reviewed the condition of the existing roof structure at the project site, and the installation method described in the attachment and find them to be sufficient and in accordance with applicable codes and standards.

Respectfully,

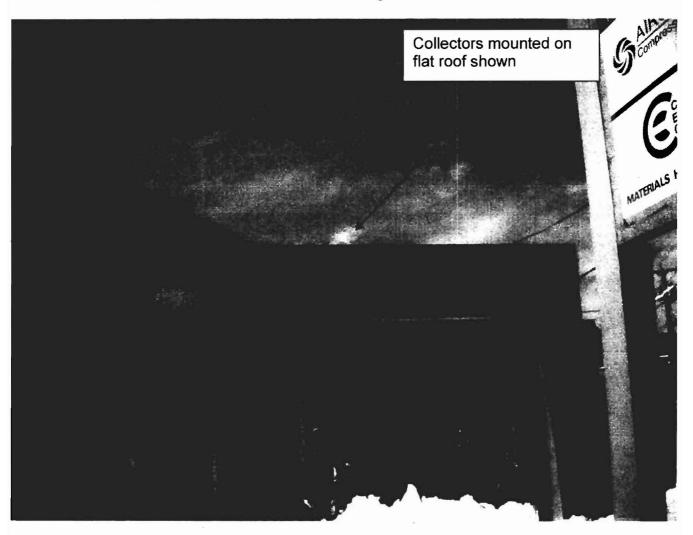
Fortunat Mueller Maine PE # 11246



#### Professional design, installation and service of renewable energy systems

#### ReVision Energy Presumpscott Street solar collector installation:

Collector Placement; on North East corner of building

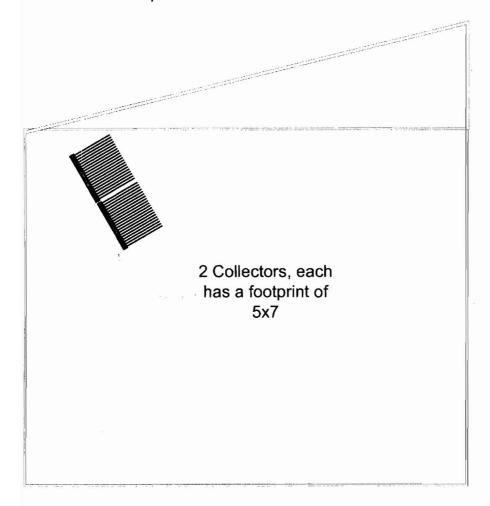


Tank: One Stiebel Eltron SBB 400 Collectors: 2 Apricus AP 20's

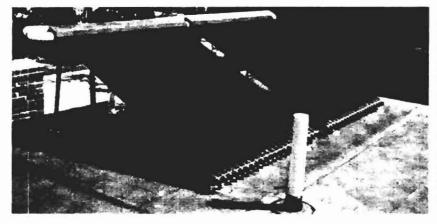
Mounting System; Mounted on High angle lift kit (see attached for dimensional information).

Collector weight: **145 lbs each** Collector foot print: 31 sq ft Resultant roof load: **4.64 psf** 

#### Professional design, installation and service of renewable energy systems Presumpscot St



Old, lower portion of building shown

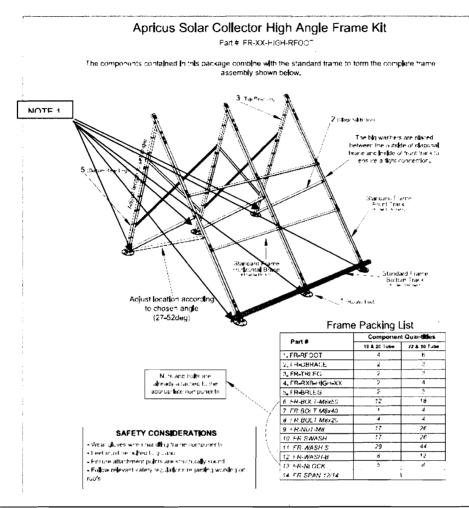


At left is a 44-tube rack mounted collector array installed by ReVision Energy on a flat roof in Brunswick.

We are proposing a similar installation, though at a slightly steeper installation angle.



#### Apricus structural mounting detail:



#### Notes:

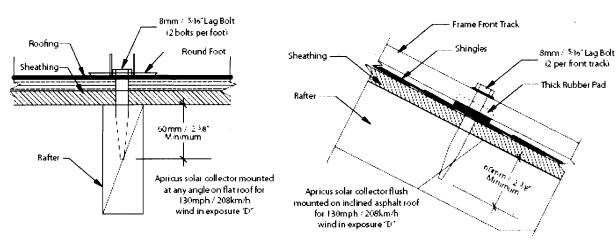
- 1. Fasten to roof framing using (12) 5/16" stainless steel Lag Bolt.
- 1a.If roof is metal deck without wood framing below, use self tapping screw with minimum 150 pound pull out strength per fastener.
- 2. Drill pilot hole for lag bolt 60-75% of lag shank diameter.
- 3. Seal all penetrations using manufacturer supplied Rubber pad and Geocell 2300 tripolymer sealant or equivalent



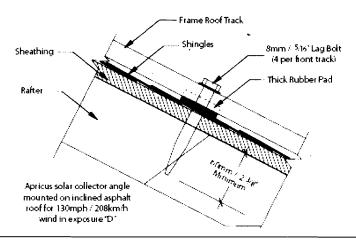
#### Lag bolt details:

### Mount on Flat Roof using Round Feet

### Flush Mount on Pitched Asphalt Shingle Roof

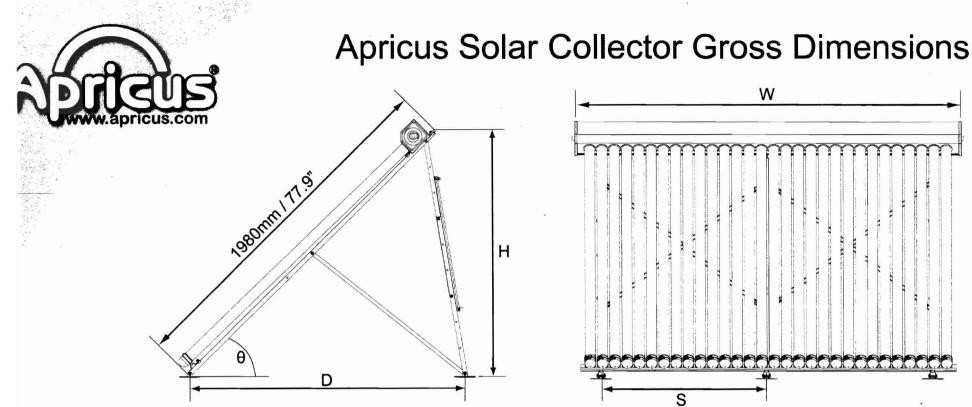


## Angle Mount on Pitched Asphalt Shingle Roof



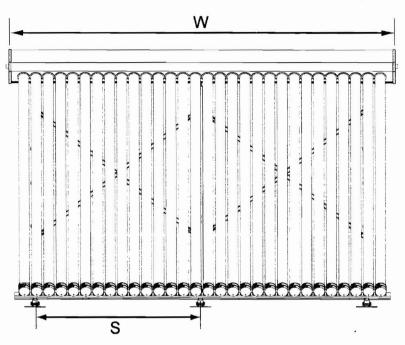
#### Notes:

- 1. Lag Bolt and washer should be stainless steel
- 2. Drill pilot hole for lag bolt 60-75% of lag shank diameter.
- 3. Seal all penetrations using manufacturer supplied Rubber pad and Geocell 2300 tripolymer sealant or equivalent



| Angle       | Туре                     | D              | Н               |
|-------------|--------------------------|----------------|-----------------|
| 52°         |                          | 1406mm / 55.4" | 1539mm / 60.6"  |
| 45°         | High Angle               | 1565mm / 61.6" | 1389mm / 54.7"  |
| 38°         | (Round Foot)             | 1688mm / 66.5" | 1231mm / 48.5"  |
| 33°         |                          | 1792mm / 70.6" | 1074mm / 42.3"  |
| 46°         |                          | 1900mm / 74.8" | 1436mm / 56.5"  |
| 42°         | High Angle               | 1900mm / 74.8" | 1315mm / 51.8"  |
| 37°         | (Roof Track)             | 1900mm / 74.8" | 1186mm / 46.7"  |
| 33°         |                          | 1900mm / 74.8" | 1051mm / 41.4"  |
| 27°         | Mid Angle (Round Feet) * | Variable       | ~ 911mm / 35.9" |
| <b>27</b> ° | Mid Angle (Roof Track)   | 1900mm / 74.8" | 911mm / 35.9"   |
| 130         | Low Angle (Round Feet) * | Variable       | ~ 447mm / 17.6" |
| 130         | Low Angle (Roof Track)   | 1900mm / 74.8" | 447mm / 17.6"   |

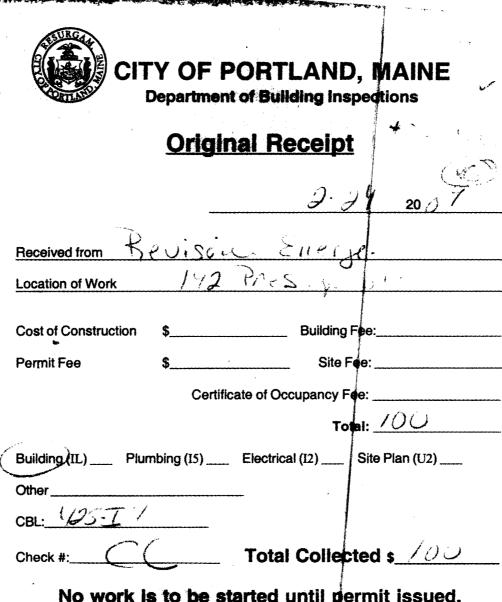
Low and Mid engle frame kits do not have a diagonal brace. When using round feet the rear leas can be freely positioned, and therefore the angle and height are slightly variable.



| Size      | S               | W              |
|-----------|-----------------|----------------|
| 10 tubes* | 490mm / 19.29"  | 796mm / 31.3"  |
| 20 tubes* | 1190mm / 46.85" | 1496mm / 58.8" |
| 22 tubes  | 665mm / 26.18"  | 1636mm / 64.4" |
| 30 tubes  | 945mm / 37.2"   | 2196mm / 86.4" |

<sup>\* 10 &</sup>amp; 20 tube collectors only have 2 sets of legs

- 1. The frame should be aligned with the roof rafters where possible.
- 2. The front tracks can be adjusted left and right slightly to match roof structure
- 3. When possible position the front tracks behind tubes so they are hidden
- 4. Always refer the the installation manual regarding mounting guidelines, in particular regarding mounting strength and wind loading issues.
- 5. Seek engineer approval for non standard installations, or if at all in doubt of mounting strength or safety.



No work is to be started until permit issued.

If permit is Withdrawn or Denied, amount of the Refund is based on \$20.00 or 20% of the fee, (whichever is greater) In order to receive a refund, you MUST present the Original Receipt.

Taken by:

WHITE - Applicant's Copy YELLOW - Office Copy PINK - Permit Copy