

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK

**CITY OF PORTLAND**

BUILDING DEPARTMENT

**PERMIT**

Permit Number: 081252

Please Read  
Application And  
Notes, If Any,  
Attached

This is to certify that 212 CANCO REALTY LLC / A. J. Johnson & S.  
has permission to install wind turbine for display training

AT 212 CANCO RD City of Portland 148 A007001

provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statutes of Maine 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 written permission procured before this building or part thereof is lath or other work is used-in. 2 HOURLY 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. \_\_\_\_\_

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

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

Other \_\_\_\_\_

**PERMIT ISSUED**

Department Name

OCT 30 2008

**CITY OF PORTLAND**

PENALTY FOR REMOVING THIS CARD

*10/30/08*

*[Signature]*

Director - Building & Inspection Services

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

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

**PERMIT ISSUED**

Permit No: 08-1252	Issue Date: OCT 9 2008	CBL: 148 A007001
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<b>Location of Construction:</b> 212 CANCO RD	<b>Owner Name:</b> 212 CANCO REALTY LLC	<b>Owner Address:</b> 212 CANCO RD	<b>Phone:</b>
<b>Business Name:</b>	<b>Contractor Name:</b> Nelson & Small	<b>Contractor Address:</b> P.O. Box 1420 Portland	<b>Phone:</b> 2077755666
<b>Lessee/Buyer's Name</b>	<b>Phone:</b>	<b>Permit Type:</b> Additions - Commercial	<b>Zone:</b> IM

<b>Past Use:</b> Commercial - Warehouse	<b>Proposed Use:</b> Commercial - Warehouse - install wind turbine for display & training	<b>Permit Fee:</b> \$140.00	<b>Cost of Work:</b> \$12,000.00	<b>CEO District:</b> 4
		<b>FIRE DEPT:</b> <input type="checkbox"/> Approved <input checked="" type="checkbox"/> Denied N/A	<b>INSPECTION:</b> Use Group: U Type: SB IBC 2003	

<b>Proposed Project Description:</b> install wind turbine for display & training	<b>PERMIT ISSUED</b> 2008	<b>Signature:</b> <i>Greg Clark</i>	<b>Signature:</b> <i>[Signature]</i>
		<b>PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.):</b>	
		<b>Action:</b> <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied	<b>Date:</b>

<b>Permit Taken By:</b> Idobson	<b>Date Applied For:</b> 10/06/2008	<b>CITY OF PORTLAND</b>	<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> <input type="checkbox"/> Shoreland <input type="checkbox"/> Wetland <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input checked="" type="checkbox"/> Site Plan Exemption 2008-0158 Maj <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/> OK w/condition Date: 10/15/08 <i>AKM</i>	<p><b>Zoning Appeal</b></p> <input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation <input type="checkbox"/> Approved <input type="checkbox"/> Denied Date:	<p><b>Historic Preservation</b></p> <input checked="" type="checkbox"/> Not in District or Landmark <input type="checkbox"/> Does Not Require Review <input type="checkbox"/> Requires Review <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Date: <i>AKM</i>
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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

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

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

Permit No: 08-1252	Date Applied For: 10/06/2008	CBL: 148 A007001
-----------------------	---------------------------------	---------------------

Location of Construction: 212 CANCO RD	Owner Name: 212 CANCO REALTY LLC	Owner Address: 212 CANCO RD	Phone:
Business Name:	Contractor Name: Nelson & Small	Contractor Address: P.O. Box 1420 Portland	Phone: (207) 775-5666
Lessee/Buyer's Name	Phone:	Permit Type: Additions - Commercial	

Proposed Use: Commercial - Warehouse Nelson & Small) - install wind turbine for display/teaching & as power source	Proposed Project Description: install wind turbine for display/training & as power source
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**Dept:** Zoning      **Status:** Approved with Conditions      **Reviewer:** Ann Machado      **Approval Date:** 10/15/2008

**Note:** **Ok to Issue:**

- 1) This permit is being approved on the basis of plans submitted. Any deviations shall require a separate approval before starting that work.

**Dept:** Building      **Status:** Approved with Conditions      **Reviewer:** Tammy Munson      **Approval Date:** 10/30/2008

**Note:** **Ok to Issue:**

- 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.

**Dept:** Fire      **Status:** Not Applicable      **Reviewer:** Capt Greg Cass      **Approval Date:** 10/17/2008

**Note:** **Ok to Issue:**

**Comments:**

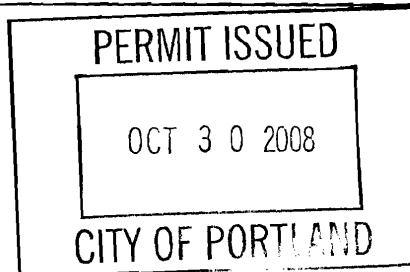
10/9/2008-amachado: Left voicemail for Mark Hellen. Need full siteplan that shows property lines, building location, parking & where the windturbine is located. Needs to be a minimum of 45' from the front property line since 45' high. We also need to know what the impervious surface is for the lot with the base of the wind turbine added. I also need a letter explaining exactly what the use is going to be. We talked about it on the phone, but I need it in writing. This also has to go to planning for a siteplan exemption.

10/15/2008-amachado: Received the necessary information from Mark Hellen.

10/15/2008-amachado: Gave siteplan exemption to Barbara.

10/23/2008-tmm: wait for site exemption approval /tmm

10/29/2008-amachado: Received siteplan exemption from planning. Gave it to Tammy who had the permit.



## BUILDING PERMIT INSPECTION PROCEDURES

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

to schedule your inspections as agreed upon

Permits expire in 6 months, if the project is not started or ceases for 6 months.

The Owner or their designee is required to notify the inspections office for the following inspections and provide adequate notice. Notice must be called in 48-72 hours in advance in order to schedule an inspection:

**By initializing at each inspection time, you are agreeing that you understand the inspection procedure and additional fees from a "Stop Work Order" and "Stop Work Order Release" will be incurred if the procedure is not followed as stated below.**

**A Pre-construction Meeting will take place upon receipt of your building permit.**

Footing/Building Location Inspection: Prior to pouring concrete or setting precast piers

Re-Bar Schedule Inspection: Prior to pouring concrete

Final inspection required at completion of work.

Certificate of Occupancy is not required for certain projects. Your inspector can advise you if your project requires a Certificate of Occupancy. All projects DO require a final inspection.

**If any of the inspections do not occur, the project cannot go on to the next phase, REGARDLESS OF THE NOTICE OR CIRCUMSTANCES.**

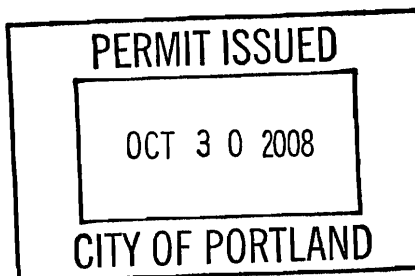
**CERIFICATE OF OCCUPANICES MUST BE ISSUED AND PAID FOR, BEFORE THE SPACE MAY BE OCCUPIED.**

  
\_\_\_\_\_  
Signature of Applicant/Designee

  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Signature of Inspections Official

  
\_\_\_\_\_  
Date



## STRUCTURAL TEST AND INSPECTIONS REPORT

FIELD REPORT NO: 1

Project: **53 Danforth Street**  
**Portland, ME 04101**

Contractor: **Wright-Ryan Construction**  
**10 Danforth Street**  
**Portland, ME 04101**

Client: **Archetype**  
**48 Union Wharf**  
**Portland, ME 04101**

Date: **10/12/08**

Temperature/ Weather: **Sunny, 65F**

**Present At Site:** Mr. Ross - Wright Ryan Construction

### **Work in Progress / Observations**

- 1.1 Inspected the steel reinforcing bars for the footings at J & K, 3, 4, 7, 8, 9, 11, 14 and 15. After making some minor corrections we found this work to be in general compliance with the corresponding drawings.

### **Action Required / Items to Verify**

40 A 13  
#080941

Blair Budka

**FIELD REPRESENTATIVE**

Linas J. Dabrila

**REVIEWED BY**



2008-0158

## Application for Exemption from Site Plan Review Portland, Maine

Department of Planning and Urban Development, Planning Division and Planning Board

**1. Applicant Information**

Nelson & Small Inc.  
Applicant/Owner

212 Carco Rd, Portland ME 04103  
Mailing Address

Mark Hellen  
Consultant/Agent

775-5161 / ext. 237 / 831-6051  
Phone / Fax / Cell

**2. Project Information**

10/15/08  
Application Date

install wind turbine  
Project Name/Description

212 Carco Rd  
Address of Proposed Site

14P-A-007  
Assessor's Reference (Chart-Block-Lot)

**Description of Proposed Development:**

build a install 45' wind turbine w/ 8' diameter base 2' above ground.

(Please Attach Sketch/Plan of Proposal/Development)

Criteria for Exemptions: (See Section 14-523 (4) on page 2 of this application)

	Applicant's Assessment (Yes, No, N/A)	Planning Division Use Only
a) Within Existing Structures: No New Buildings, Demolitions or Additions	<u>No</u>	<u>✓</u>
b) Footprint Increase Less Than 500 sq. ft.	<u>yes</u>	<u>✓</u>
c) No New Curb Cuts, Driveways, Parking Areas	<u>yes</u>	<u>✓</u>
d) Curbs and Sidewalks in Sound Condition/Comply with ADA	<u>yes</u>	<u>✓</u>
e) No Additional Parking/No Traffic Increase	<u>yes</u>	<u>✓</u>
f) No Known Stormwater Problems	<u>yes</u>	<u>✓</u>
g) Sufficient Property Screening Exists	<u>yes</u>	<u>✓</u>
h) Adequate Utilities	<u>yes</u>	<u>✓</u>

**Planning Division Use Only**

Exemption Granted X Partial Exemption \_\_\_ Exemption Denied \_\_\_

Planner's Signature

Barbara Bushyatt

Date

Oct. 29, 2008



# 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>212 CANCO ROAD</u>		
Total Square Footage of Proposed Structure/Area <u>SEE PRINTS INCLUDED</u>	Square Footage of Lot	Number of Stories
Tax Assessor's Chart, Block & Lot Chart# <u>148</u> Block# <u>A</u> Lot# <u>7</u>	Applicant * <b>must</b> be owner, Lessee or Buyer* Name <u>MARK J. HELLEN</u> Address <u>212 CANCO ROAD</u> City, State & Zip <u>PORTLAND, ME 04103</u>	Telephone: <u>207-775-5661</u> <u>EXT 237</u>
Lessee/DBA (If Applicable)	Owner (if different from Applicant) Name <u>NELSON &amp; SMALL, INC</u> Address <u>212 CANCO ROAD</u> City, State & Zip <u>PORTLAND, ME 04103</u>	Cost Of Work: \$ <u>12,000</u> C of O Fee: \$ _____ Total Fee: \$ <u>140</u>
Current legal use (i.e. single family) <u>WAREHOUSE</u> Number of Residential Units _____ If vacant, what was the previous use? _____ Proposed Specific use: _____ Is property part of a subdivision? <u>No</u> If yes, please name _____ Project description: <u>INSTALL WIND TURBINE FOR DISPLAY &amp; TRAINING</u>		
Contractor's name: <u>NELSON &amp; SMALL, INC</u> Address: <u>212 CANCO ROAD</u> City, State & Zip <u>PORTLAND, ME 04103</u> Telephone: <u>775-5661 EXT 237</u> Who should we contact when the permit is ready: <u>MARK J. HELLEN</u> Telephone: <u>"</u> Mailing address: <u>212 CANCO ROAD PORTLAND, ME 04103</u> <u>831-6051</u>		

Please submit all of the information outlined on the applicable Checklist. Failure to Call 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](http://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: [Handwritten Signature] Date: 10/6/08

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



# Application for Exemption from Site Plan Review Portland, Maine

Department of Planning and Urban Development, Planning Division and Planning Board

## 1. Applicant Information

Nelson's Small Inc.  
Applicant/Owner  
212 Carco Rd, Portland ME 04103  
Mailing Address  
Mark Hellen  
Consultant/Agent  
775-5161 / oct. 23rd / 831-6051  
Phone Fax Cell

## 2. Project Information

10/15/08  
Application Date  
install wind turbine  
Project Name/Description  
212 Carco Rd  
Address of Proposed Site  
14P-A-007  
Assessor's Reference (Chart-Block-Lot)

## Description of Proposed Development:

builder install 45' wind turbine w/ 8' diameter base 2' above ground

(Please Attach Sketch/Plan of Proposal/Development)

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b) Footprint Increase Less Than 500 sq. ft.	<u>yes</u>	<u>✓</u>
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d) Curbs and Sidewalks in Sound Condition/Comply with ADA	<u>yes</u>	<u>✓</u>
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g) Sufficient Property Screening Exists	<u>yes</u>	<u>✓</u>
h) Adequate Utilities	<u>yes</u>	<u>✓</u>

### Planning Division Use Only

Exemption Granted X Partial Exemption \_\_\_\_\_ Exemption Denied \_\_\_\_\_

Planner's Signature

Barbara Bushyatt

Date

Oct. 29, 2008





# General Building Permit Application

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Lessee/DBA (If Applicable)	Owner (if different from Applicant) Name <u>NELSON &amp; SMALL, INC</u> Address <u>212 CANCO ROAD</u> City, State & Zip <u>PORTLAND, ME 04103</u>	Cost Of Work: \$ <u>12,000</u> C of O Fee: \$ _____ Total Fee: \$ <u>140</u>
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Contractor's name: <u>NELSON &amp; SMALL, INC</u> Address: <u>212 CANCO ROAD</u> City, State & Zip <u>PORTLAND, ME 04103</u> Telephone: <u>775-5661 EXT 237</u> Who should we contact when the permit is ready: <u>MARK J. HELLEN</u> Telephone: <u>"</u> Mailing address: <u>212 CANCO ROAD PORTLAND, ME 04103</u> <u>831-6051</u>		

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Signature: [Signature] Date: 10/6/08

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

# Nelson & Small, Inc.

Import · Export · Manufacturing · Distribution of World Class Products

October 15, 2008

Ann Macharo  
Zoning Specialist  
City Of Portland  
Portland, Maine

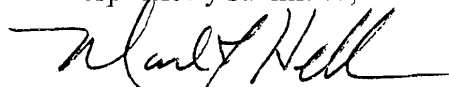
RE: Placement and Usage of Small Wind Turbine at 212 Canco Road, Portland, Maine

Dear Ms. Macharo:

We have taken on a line of small wind turbines that we will be distributing throughout New England and upstate New York. We would like to erect one on the front lawn of our property for use as a teaching tool. We would also be connecting this into our electrical panel and utilizing the energy produced.

Your time and consideration in this matter is greatly appreciated.

Respectfully submitted,



Mark J. Hellen  
Energy Service Manager  
775.5666 ext. 237

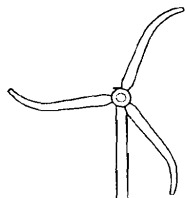
OCT 15 2008

PROPOSAL SITE FOR 45' WIND TURBINE PLACEMENT  
PROPOSAL FOR THABENNY

NELSON & SMALL, INC  
212 CANOCO ROAD  
PORTLAND, ME 04108  
207-775-5641 EXT 237



ELEV. (SEE CHART)  
T/ TOWER



PROPOSED TOWER  
BY OTHERS

PROPOSED FOUNDATION.  
SEE DETAILS ON SHEETS  
S-2 THRU S-4.

0'-0" (REFERENCE)  
T/ BASE PLATE

FOUNDATION  $\phi$   
SEE CHART

\*

CASE 4


### TOWER DESIGN CRITERIA

	ELEVATION (FT)	DESIGN WIND SPEED (MPH)	VERTICAL LOAD (LBS)	BASE MOMENT (FT-LBS)	BASE SHEAR (LBS)	FOUNDATION DIAMETER (FT)
CASE 1	≤ 33.5	≤ 110	761	18,486	677	5'-8"
CASE 2	≤ 33.5	≤ 150	761	31,156	1,179	6'-8"
CASE 3	≤ 45	≤ 110	998	27,612	828	6'-4"
CASE 4	≤ 45	≤ 150	998	47,513	1,459	7'-9"
CASE 5	≤ 50	≤ 110	1,000	35,500	1,100	7'-0"
CASE 6	≤ 50	≤ 150	1,000	66,000	2,000	8'-2"
CASE 7	≤ 55	≤ 110	1,543	43,995	1,129	7'-2"
CASE 8	≤ 55	≤ 150	1,543	76,681	2,020	8'-9"
CASE 9	≤ 60	≤ 110	1,543	43,995	1,129	7'-2"
CASE 10	≤ 60	≤ 150	1,543	76,681	2,020	8'-9"

### NOTES:

1. THE FOUNDATION DESIGNS ARE BASED ON AN IBC CLASS 5 (OR BETTER) SOIL CLASSIFICATION AND AN ALLOWABLE BEARING PRESSURE OF 1500 PSF AND A LATERAL BEARING OF 100 PSF/FT BELOW GRADE. IT IS THE RESPONSIBILITY OF THE OWNER TO VERIFY BY GEOTECHNICAL INVESTIGATION THAT ACTUAL SOIL PARAMETERS AT THE SITE EQUAL OR EXCEED THOSE GIVEN. IF CONDITIONS OTHER THAN THOSE DESCRIBED ARE ENCOUNTERED, A FOUNDATION ANALYSIS SHOULD BE PERFORMED TO DETERMINE THE STRUCTURAL ADEQUACY OF THE SUBSTRUCTURE. INSTALLATION SHALL NOT PROCEED UNTIL STRUCTURAL ADEQUACY HAS BEEN CONFIRMED.
2. IF THE FROST DEPTH IS KNOWN TO BE GREATER THAN 42 INCHES, THE 3" ABS PIPE STANCHION SHALL BE LENGTHENED SO THAT ITS BASE IS AT OR BELOW THE FROST DEPTH. THE LENGTH OF THE EXTENDER (INCHES) SHALL BE EQUAL TO THE FROST DEPTH MINUS 42, AND MAY BE ATTACHED WITH A 3" ABS COUPLING.
3. INSTALLATION SHALL NOT PROCEED IF THE WATER TABLE IS LESS THAN THE FOUNDATION DEPTH. CONSULT WITH DESIGN ENGINEER FOR FOUNDATION ANALYSIS OR REDESIGN. CONSTRUCTION SHALL NOT PROCEED UNTIL APPROVAL IS OBTAINED FROM THE DESIGN ENGINEER.

**TOWER ENGINEERING PROFESSIONALS**  
3703 JUNCTION BOULEVARD  
RALEIGH, NC 27603-5263  
(919) 661-6351

 **AnemErgonics, LLC**  
(303) 940-7530  
www.anemergonics.com

PROJECT INFORMATION:

**SMarT Foundation**  
[Simple Modular Technology]

REV	DATE
7	08-13-08
6	06-25-08
5	06-12-08
4	03-18-08

DRAWN BY: KMM CHECKED BY: MLG

SHEET NUMBER:

**S-1**

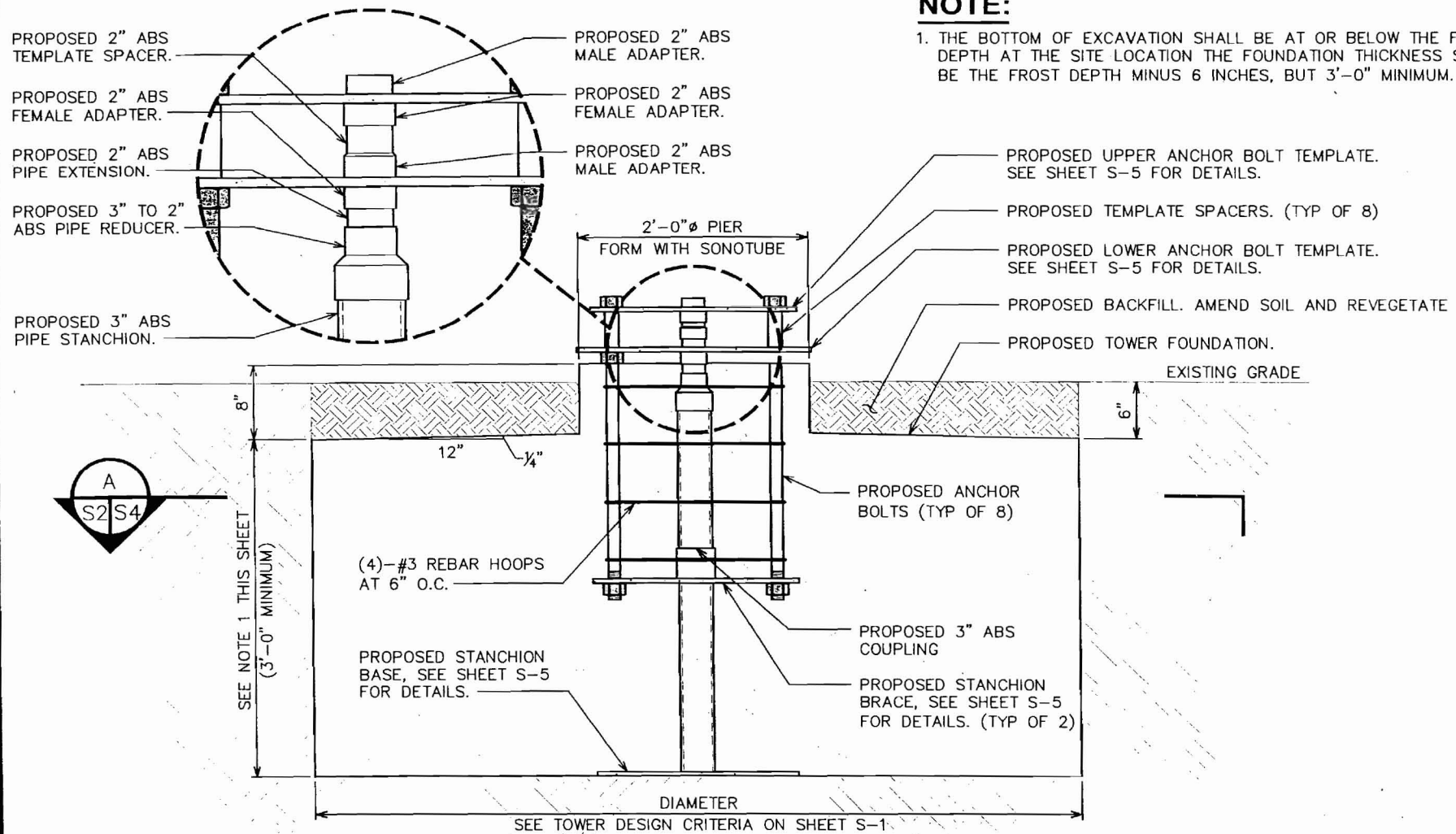
REVISION:

**7**


TEP #: 081330

**NOTE:**

1. THE BOTTOM OF EXCAVATION SHALL BE AT OR BELOW THE FROST DEPTH AT THE SITE LOCATION THE FOUNDATION THICKNESS SHALL BE THE FROST DEPTH MINUS 6 INCHES, BUT 3'-0" MINIMUM.

**FOUNDATION ELEVATION (ASSEMBLY)**SCALE:  $\frac{3}{4}$ " = 1'-0"

**TOWER ENGINEERING PROFESSIONALS**  
3703 JUNCTION BOULEVARD  
RALEIGH, NC 27603-5263  
(919) 661-6351

 **AnemErgonics, LLC**  
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PROJECT INFORMATION:

**SMarT Foundation**  
[Simple Modular Technology]

7	08-13-08
6	06-25-08
5	06-12-08
4	03-18-08
REV	DATE

DRAWN BY: WHM CHECKED BY: MLG

SHEET NUMBER:

**S-2**

REVISION:

**7**

TEP #: 081330

FOUNDATION  $\phi$   
SEE SHEET S-1

PROPOSED STANCHION  
BRACE ORIENT AS  
DEPICTED. SEE SHEET  
S-5 FOR DETAILS.  
(TYP OF 2)

PROPOSED STANCHION  
BASE (BELOW). SEE SHEET  
S-5 FOR DETAILS.

(4) - #3 REBAR HOOPS  
AT 6" O.C.

PROPOSED ANCHOR  
BOLTS. (TYP OF 8)

STRUCTURAL PLAIN CONCRETE  
UNIFORMLY REINFORCED WITH  
1.5 - 2.0 LBS OF POLYPROPYLENE  
TAPE FIBER PER CUBIC YARD.

## SECTION


A  
S2 | S4

SCALE: 1" = 1'-0"



SCALE IN FEET

**TOWER ENGINEERING PROFESSIONALS**  
3703 JUNCTION BOULEVARD  
RALEIGH, NC 27603-5263  
(919) 661-6351

 **AnemErgonics, LLC**  
(303) 940-7530  
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### PROJECT INFORMATION:

**SMarT Foundation**  
[Simple Modular Technology]

7	08-13-08
6	06-25-08
5	06-12-08
4	03-18-08
REV	DATE

DRAWN BY: WHM | CHECKED BY: MLG

SHEET NUMBER:

**S-4**

REVISION:

**7**

TEP #: 081330

## FOUNDATION NOTES:

### GENERAL NOTES:

1. FOUNDATION INSTALLATION SHALL BE SUPERVISED BY PERSONNEL KNOWLEDGEABLE AND EXPERIENCED WITH THE PROPOSED FOUNDATION TYPE. CONSTRUCTION SHALL BE IN ACCORDANCE WITH GENERALLY ACCEPTED PRACTICES AND IN A GOOD AND WORKMANLIKE MANNER.
2. FOUNDATION DESIGN ASSUMES LEVEL GRADE AT THE SITE.
3. THE FOUNDATION DESIGN IS IN ACCORDANCE WITH GENERALLY ACCEPTED PROFESSIONAL ENGINEERING PRINCIPLES AND PRACTICES WITHIN THE LIMITS OF THE ASSUMED SUBSURFACE DATA.
4. FOUNDATION DESIGN MODIFICATIONS MAY BE REQUIRED IN THE EVENT THE DESIGN PARAMETERS ARE NOT APPLICABLE FOR THE SUBSURFACE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.
5. THE FOUNDATION DESIGN ASSUMES INSPECTIONS WILL BE PERFORMED TO VERIFY THAT CONSTRUCTION MATERIALS, INSTALLATION METHODS, AND ASSUMED DESIGN PARAMETERS ARE ACCEPTABLE BASED ON THE CONDITIONS AT THE SITE.
6. THE FOUNDATION DESIGN ASSUMES NO CONSTRUCTION JOINTS. HOWEVER, CONSTRUCTION JOINTS SHALL BE PERMITTED UPON APPROVAL BY THE ENGINEER.

### EXCAVATION & GRADING:

1. WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES AND SAFETY REGULATIONS. PROCEDURES FOR THE PROTECTION OF EXCAVATIONS, EXISTING CONSTRUCTION, AND UTILITIES SHALL BE ESTABLISHED AND PERFORMED PRIOR TO BEGINNING WORK.
2. ALL CUT AND FILL SLOPES SHALL BE 3:1 MAXIMUM, UNLESS OTHERWISE NOTED.
3. ALL EXCAVATIONS ON WHICH CONCRETE IS TO BE PLACED SHALL BE SUBSTANTIALLY HORIZONTAL ON UNDISTURBED AND UNFROZEN SOIL AND BE FREE FROM LOOSE MATERIAL AND EXCESS GROUND WATER. DEWATERING FOR EXCESS GROUND WATER SHALL BE PROVIDED IF REQUIRED.
4. ANY EXCAVATION OVER THE REQUIRED DEPTH SHALL BE FILLED WITH EITHER MECHANICALLY COMPACTED GRANULAR MATERIAL OR CONCRETE OF THE SAME QUALITY SPECIFIED FOR THE FOUNDATION. CRUSHED STONE MAY BE USED TO STABILIZE THE BOTTOM OF THE EXCAVATION. STONE, IF USED, SHALL NOT BE USED AS COMPRISING CONCRETE THICKNESS.
5. THE BOTTOM OF THE EXCAVATION SHOULD BE APPROXIMATELY LEVEL. LOOSE MATERIAL SHALL BE REMOVED BEFORE PLACING CONCRETE AND THE STANCHION SHOULD BE CENTERED IN THE BOTTOM OF THE EXCAVATION.
6. AFTER COMPLETION OF THE FOUNDATION AND BEFORE BACKFILLING, ALL EXCAVATIONS SHALL BE CLEAN OF UNSUITABLE MATERIAL SUCH AS VEGETATION, TRASH, DEBRIS, ETC.
7. BACKFILLING SHALL:
  - A. USE APPROVED MATERIALS CONSISTING OF EARTH, LOAM, SANDY CLAY, SAND, AND GRAVEL OR SOFT SHALE.
  - B. BE FREE FROM CLODS OR STONES OVER 2-1/2" MAXIMUM DIMENSIONS.
  - C. BE PLACED IN LAYERS OF 6" MAXIMUM AND COMPACTED.
8. FILL MATERIAL AND BACKFILL SHALL BE PLACED IN LAYERS, MAXIMUM 6" DEEP BEFORE COMPACTION. EACH LAYER SHALL BE SPRINKLED IF REQUIRED AND COMPACTED BY HAND OR MACHINE TAMPERS TO 90% OF MAXIMUM DRY DENSITY. AT THE OPTIMUM MOISTURE CONTENT  $\pm$  5% AS DETERMINED BY ASTM DESIGNATION D-698, UNLESS OTHERWISE APPROVED. SUCH BACKFILL SHALL NOT BE PLACED WITHIN 3 DAYS OF CONCRETE PLACEMENT.

### REINFORCING STEEL:

1. THE REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A-615, GRADE 60. IT SHALL BE DEFORMED AND SPLICES SHALL NOT BE ALLOWED UNLESS OTHERWISE NOTED.
2. WELDING IS PROHIBITED ON REINFORCING STEEL AND EMBEDMENTS.
3. MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF ACI 318-05, SECTION 7.7.1, "CAST-IN-PLACE CONCRETE (NONPRESTRESSED)." CONCRETE COVER SHALL BE AS FOLLOWS:
  - A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH ..... 3 IN. MINIMUM COVER
  - B. CONCRETE EXPOSED TO EARTH OR WEATHER:
    - NO. 6 BARS THROUGH NO. 18 BARS ..... 2 IN. MINIMUM COVER
    - NO. 6 BARS AND SMALLER ..... 1-1/2 IN. MINIMUM COVER

### CONCRETE:

1. WORK SHALL BE IN ACCORDANCE WITH ACI 318-05, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE."
2. THE CONCRETE SHALL BE APPROPRIATELY VIBRATED DURING CONSTRUCTION.
3. THE CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI IN 28-DAYS.
4. THE CONCRETE SHALL BE UNIFORMLY REINFORCED WITH 1.5 LBS. MIN. TO 2.0 LBS. MAX. POLYPROPYLENE TAPE FIBER PER CUBIC YARD OF CONCRETE. FIBERS SHALL BE ACCORDANCE WITH ASTM C1116, "STANDARD SPECIFICATION FOR FIBER-REINFORCED CONCRETE." FIBERS SHALL BE PROCONF AS MANUFACTURED BY NYCON, INC., FIBERMESH 300 AS MANUFACTURED BY PROPEX CORP., OR APPROVED EQUIVALENT.
5. PROPORTIONS OF CONCRETE MATERIALS SHALL BE SUITABLE FOR THE INSTALLATION METHOD UTILIZED AND SHALL RESULT IN DURABLE CONCRETE FOR RESISTANCE TO LOCAL ANTICIPATED AGGRESSIVE ACTIONS. THE DURABILITY REQUIREMENTS OF ACI 318-05 SHALL BE SATISFIED BASED ON THE CONDITIONS EXPECTED AT THE SITE.
6. CONCRETE SHALL BE PLACED IN A MANNER THAT WILL PREVENT SEGREGATION OF CONCRETE MATERIALS, INFILTRATION OF WATER OR SOIL, AND OTHER OCCURRENCES THAT MAY DECREASE THE STRENGTH OR DURABILITY OF THE FOUNDATION.
7. FREE FALL CONCRETE MAY BE USED PROVIDED FALL IS VERTICAL DOWN MINIMIZING CONTACT WITH THE SIDES OF THE EXCAVATION. UNDER NO CIRCUMSTANCES SHALL CONCRETE FALL THROUGH WATER.

### FINISHING:

1. THE TOP OF THE FOUNDATION SHALL BE SLOPED TO DRAIN WITH A FLOATED FINISH.
2. THE EXPOSED EDGES OF THE CONCRETE SHALL BE CHAMFERED 3/4" x 3/4".



**TOWER ENGINEERING PROFESSIONALS**  
3703 JUNCTION BOULEVARD  
RALEIGH, NC 27603-5263  
(919) 661-6351



**AnemErgonics, LLC**  
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www.anemergonics.com

### PROJECT INFORMATION:

**SmarT Foundation**  
[Simple Modular Technology]

7	08-13-08
6	06-25-08
5	06-12-08
4	03-18-08
REV	DATE

DRAWN BY: KMM CHECKED BY: MLG

SHEET NUMBER:

**S-6**

REVISION:

**7**

TEP #: 081330

# SMarT\_Foundation™ [Simple Modular Technology] Terms and Conditions of Sale

## AnemErgonics™

A Colorado Limited Liability Company  
www.anemergonics.com

These Terms and Conditions of Sale (the “Terms and Conditions”) form part of the Agreement between Supplier and User related to User’s ownership, use and/or purchase of the Product. By owning, using and/or purchasing (whether directly from Supplier or otherwise) the Product, User agrees to each and every condition, provision, and term of the Agreement. The capitalized terms used in these Terms and Conditions are defined below.

### 1) Definitions

- a) “Agreement” means these Terms and Conditions and the Warranty.
- b) “Claim” has the meaning set forth in Section 6 (e).
- c) “Drawings” means the “AnemErgonics, LLC SMarT\_Foundation™ [Simple Modular Technology] Drawings” provided by Supplier and includes any supplemental written Drawings Supplier may provide from time-to-time.
- d) “Force Majeure Event” means: act of God; extreme weather condition; labor dispute; natural disaster; terrorist act; theft; vandalism; war; or, any other cause or condition beyond the control of a person.
- e) “Installation” means installation of the Kit in conformance with the Instructions.
- f) “Instructions” means the “AnemErgonics, LLC SMarT\_Foundation™ [Simple Modular Technology] Assembly and Installation Instructions” provided by Supplier and includes any supplemental written Instructions Supplier may provide from time-to-time.
- g) “Intellectual Property” has the meaning set forth in Section 5.
- h) “Kit” means the Parts that make up the “AnemErgonics, LLC SMarT\_Foundation™ [Simple Modular Technology] Kit” provided by Supplier and includes any supplemental Parts Supplier may provide from time-to-time.
- i) “Law” or “Laws” includes all county, local, state, and federal codes, laws, licenses, orders, permit requirements, regulations, rules, and zoning requirements.
- j) “Parts” means the equipment, materials, parts, and/or tools supplied by Provider and that make up the Kit.
- k) “Parties” means User and Supplier, and “Party” means User or Supplier.
- l) “Product” means the Drawings, Instructions, Kit, Parts, Terms and Conditions, and Warranty.
- m) “Supplier” means AnemErgonics, LLC, a Colorado limited liability company.
- n) “Supplier Indemnified Parties” has the meaning set forth in Section 6 (e).
- o) “Terms and Conditions” means these “AnemErgonics, LLC SMarT\_Foundation™ [Simple Modular Technology] Terms and Conditions of Sale.”
- p) “Tower” means the specific tower referenced on the first page of the Instructions.
- q) “Turbine” means the specific wind turbine referenced on the first page of the Instructions.
- r) “User” means the purchaser or user of the Product.
- s) “Warranty” means the “AnemErgonics, LLC SMarT\_Foundation™ [Simple Modular Technology] Limited Warranty” attached to these Terms and Conditions. (If not attached, contact Supplier to request a copy of the Warranty.)



- vii) fault, failure(s), or negligence of any third party
- viii) damage to any Parts during Installation
- ix) loss of any Parts
- x) modification of the Kit, Tower, or Turbine
- xi) any defect or failure of the Tower or Turbine
- xii) erection of the Tower and installation of the Turbine
- xiii) grounding
- xiv) electrical injury
- xv) electricity production (including intermittent production, lost production, and non-production)
- xvi) damage or injury to animals, buildings, crops, fences, gates, plants, structures, and trees
- xvii) damage or injury to or caused by any above-ground or underground electric lines, gas lines, phone lines, sewer lines, water lines, or similar structures or utilities
- xviii) damage or injury caused by any Force Majeure Event

The fact of one or more of the foregoing will preclude Supplier's liability, obligation or responsibility.

- 4) Risk of loss; shipping; title: Risk of damage or loss for all or any of the Product transfers to User upon Supplier's loading the Product at its facility.
- 5) Intellectual property: All interest, right, and title in and to all: a) copyrights; b) patents, patent applications, and patentable ideas, inventions, and/or improvements; c) trade secrets, proprietary information, and know-how; d) trademarks; and, e) all other intellectual property, proprietary rights, or other rights related to intangible property comprising or developed, embodied, or practiced in connection with, or used in connection with any of the Product or this Agreement ("Intellectual Property," which includes the Product) are owned by Supplier. User will not make any claim of development of, interest in, or ownership of any such Intellectual Property. No license or title to the Intellectual Property is transferred to User, and User does not obtain any rights, express or implied, in the Intellectual Property, other than the limited rights to a one-time use, in connection with a single Installation, of the Drawings, Instructions and Kit. To the extent User creates any derivative work of any Intellectual Property, such derivative work will be owned by Supplier, and all interest, right and title in and to each such derivative work will automatically vest in Supplier, with no rights in favor of User. Supplier will have no obligation to grant User any right in any such derivative work. User will not copy, decompile, disassemble, distribute, reproduce, re-use, reverse engineer, sell or otherwise transfer Intellectual Property without Supplier's prior written consent, which consent Supplier may unreasonably withhold. In the case of any breach of the provisions of this Section, User will be liable to Supplier for all actual damages sustained and authorized by Law (including, but not limited to, consequential and exemplary damages).
- 6) Miscellaneous:
  - a) Amendment: No term or provision of this Agreement may be amended or modified in any way except in a writing signed by both Parties that is denominated as an "Amendment."
  - b) Cumulative rights: Supplier's rights under this Agreement are cumulative and are in addition to any other rights Supplier may have under contract, at law or in equity, all or any of which Supplier may enforce concurrently or individually.
  - c) Dispute resolution:
    - i) Arbitration: The Parties will attempt amicable resolution of any disputes. If amicable resolution fails, then the Parties will submit the dispute to binding arbitration pursuant to the rules of the American Arbitration Association before a single arbitrator in Denver, Colorado.
    - ii) Injunctive relief: Notwithstanding the foregoing amicable resolution and arbitration obligations, User acknowledges and agrees Supplier has invested substantial effort, money and time in developing its Intellectual Property and that the actual or threatened disclosure, transfer or use of this Intellectual Property in violation of this Agreement will cause Supplier significant economic and non-economic irreparable damage and injury that is not susceptible of economic quantification. Therefore, User agrees that in the case of its actual or threatened violation of Supplier's In-

# SMarT\_Foundation™ [Simple Modular Technology] Limited Warranty

## AnemErgonics™

A Colorado Limited Liability Company  
[www.anemergonics.com](http://www.anemergonics.com)

Capitalized terms used in this Warranty have the meanings given them in the “SMarT Foundation Kit Terms and Conditions” applicable to Purchaser’s purchase of the Product.

**Warranty scope and term:** Supplier warrants the Product against defects in design and Parts only and for a period of one (1) year from the date of Installation or eighteen (18) months after the date of purchase, whichever is sooner. Warranty claims outside this term and for other than design and Parts defects are void.

**Notice of Warranty claim:** Purchaser will immediately, but not later than three (3) business days after discovery, notify Supplier (pursuant to the notice provision of the Terms and Conditions) of any Warranty claim. Purchaser’s failure to timely notify Supplier will void this Warranty.

**Warranty process:** Supplier will within twenty (20) days after notice from Purchaser contact Purchaser to discuss the claim. Purchaser will no later than ten (10) business days after Supplier’s request(s) provide Supplier with all documents and information requested. Purchaser’s failure to timely provide Supplier with all requested documents and information will void this Warranty.

**Covered Warranty claims; Warranty limit:** In the case of a claim covered by this Warranty, Supplier will, in its discretion, refund the Price or, at no additional charge, provide a replacement Product. If the particular Product purchased has been discontinued or is otherwise not available, then Supplier may (if in its discretion it chooses to provide a replacement Product) offer Purchaser, at no additional charge, a different product it determines in its discretion is comparable to the Product purchased. If Purchaser chooses to not accept such offered, comparable product, then Supplier will refund the Price.

Supplier’s liability under this Warranty is limited to its refunding the Price or providing a replacement Product as described above.

**Warranty exclusion:** This Warranty will have no application and Warranty claims will be void:

- a) in the case of any breach of any condition, provision, or term of the Agreement,
- b) if Purchaser or any third party has attempted repairs without Supplier’s prior written approval or instruction,
- c) in the case of damage due to a Force Majeure Event, or
- d) in the case of any damage due to out-of-the-ordinary or negligent operation or use, including out-of-the-ordinary or negligent operation or use of the Tower or Turbine.

# Nelson & Small, Inc.

Import · Export · Manufacturing · Distribution of World Class Products

October 15, 2008

Ann Macharo  
Zoning Specialist  
City Of Portland  
Portland, Maine

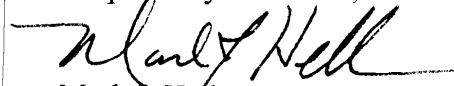
RE: Placement and Usage of Small Wind Turbine at 212 Canco Road, Portland, Maine

Dear Ms. Macharo:

We have taken on a line of small wind turbines that we will be distributing throughout New England and upstate New York. We would like to erect one on the front lawn of our property for use as a teaching tool. We would also be connecting this into our electrical panel and utilizing the energy produced.

Your time and consideration in this matter is greatly appreciated.

Respectfully submitted,

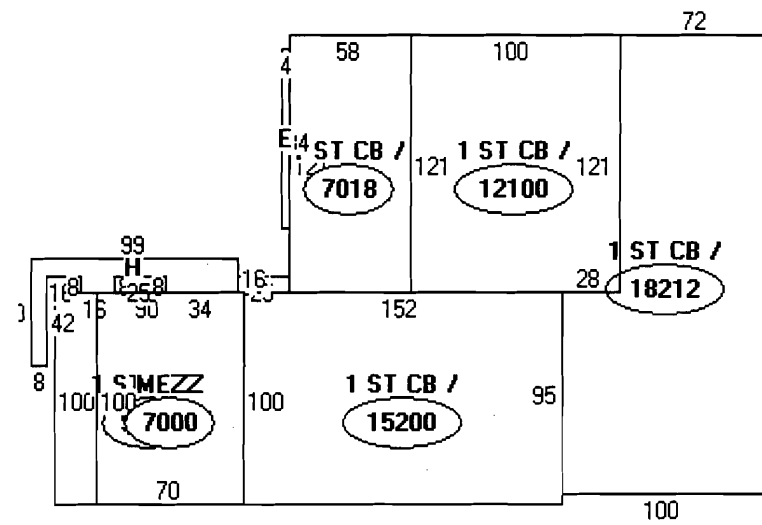


Mark J. Hellen  
Energy Service Manager  
775.5666 ext. 237

100





Descriptor/Area

A: 1 ST CB /  
15200 sqft

B: 1 ST CB /  
18212 sqft

C: 1 ST CB /  
12100 sqft

D: 1 ST CB /  
7018 sqft

E: CANOPY  
336 sqft

F: 1 ST CB /  
200 sqft

G: 1 ST CB /  
9000 sqft

H: CANOPY  
1528 sqft

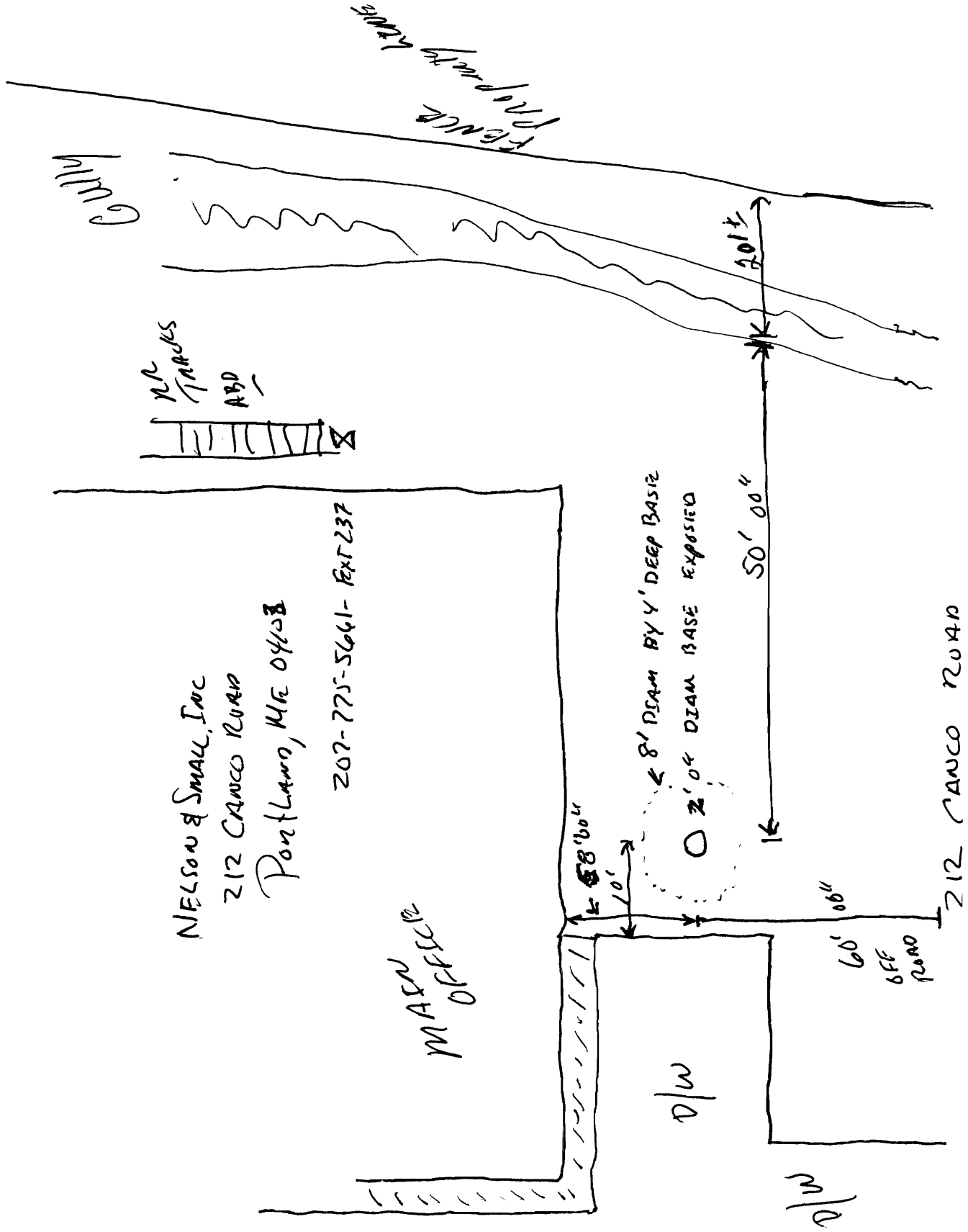
I: MEZZ  
7000 sqft

PROPOSAL SITE FOR 45' WIND TURBINE PLACEMENT  
FOR TRASHING

NELSON & SMALL, INC  
212 CANCO ROAD

PORTLAND, ME 04108

207-775-5661 - EXT 237





# 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>212 CANCO ROAD</u>		
Total Square Footage of Proposed Structure/Area <u>SEE PRINTS INCLUDED</u>	Square Footage of Lot	Number of Stories
Tax Assessor's Chart, Block & Lot Chart# <u>148</u> Block# <u>A</u> Lot# <u>7</u>	Applicant * <b>must</b> be owner, Lessee or Buyer* Name <u>MARK J. HELLEN</u> Address <u>212 CANCO ROAD</u> City, State & Zip <u>PORTLAND, ME 04103</u>	Telephone: <u>207-775-5661</u> <u>EXT 237</u>
Lessee/DBA (If Applicable)	Owner (if different from Applicant) Name <u>NELSON &amp; SMALL, INC</u> Address <u>212 CANCO ROAD</u> City, State & Zip <u>PORTLAND, ME 04103</u>	Cost Of Work: \$ <u>12,000</u> C of O Fee: \$ _____ Total Fee: \$ <u>140</u>
Current legal use (i.e. single family) <u>WAREHOUSE</u> Number of Residential Units _____ If vacant, what was the previous use? _____ Proposed Specific use: _____ Is property part of a subdivision? <u>NO</u> If yes, please name _____ Project description: <u>INSTALL WIND TURBINE FOR DISPLAY &amp; TRAINING</u>		
Contractor's name: <u>NELSON &amp; SMALL, INC</u> Address: <u>212 CANCO ROAD</u> City, State & Zip <u>PORTLAND, ME 04103</u> Telephone: <u>775-5661 EXT 237</u> Who should we contact when the permit is ready: <u>MARK J. HELLEN</u> Telephone: <u>"</u> Mailing address: <u>212 CANCO ROAD PORTLAND, ME 04103</u> <u>831-6051</u>		

Please submit all of the information outlined on the applicable Checklist. Failure to Call 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](http://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: [Handwritten Signature]

Date: 10/6/08

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



Applicant: Nelson & Small Inc (Mark Heller)

Date: 10/8/05

Address: 212 Concord Rd

C-B-L: 148-A-007

permit # 05-1212

CHECK-LIST AGAINST ZONING ORDINANCE

Date - building built 1960

Zone Location - I-M

Interior or corner lot -

Proposed Use/Work - build 45' wind turbine for family power - base 8' diameter.

Sewage Disposal -

Lot Street Frontage -

Front Yard - 1' for each 1' of building height - (45') - ~~60' from road~~ 85' from edge of building

Rear Yard - N/A

Side Yard - 1' for each 1' of building height up to (25') - ~~50' given~~ 30' to edge of building

Projections -

Width of Lot -

Height - 75' max - 45' given ok

Lot Area - 183,762 existing

Lot Coverage Impervious Surface 75% = 137,821.5 (45,940.5) rough calculation from plot plan 48,190 ok.

Area per Family -

Off-street Parking -

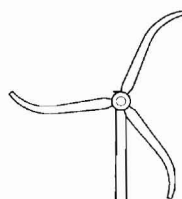
Loading Bays -

Site Plan - exemption

Shoreland Zoning/ Stream Protection -

Flood Plains -

ELEV. (SEE CHART)  
T/ TOWER



PROPOSED TOWER  
BY OTHERS

PROPOSED FOUNDATION.  
SEE DETAILS ON SHEETS  
S-2 THRU S-4.

0'-0" (REFERENCE)  
T/ BASE PLATE

FOUNDATION  $\phi$   
SEE CHART

CASE 4

### TOWER DESIGN CRITERIA

	ELEVATION (FT)	DESIGN WIND SPEED (MPH)	VERTICAL LOAD (LBS)	BASE MOMENT (FT-LBS)	BASE SHEAR (LBS)	FOUNDATION DIAMETER (FT)
CASE 1	≤ 33.5	≤ 110	761	18,486	677	5'-8"
CASE 2	≤ 33.5	≤ 150	761	31,156	1,179	6'-8"
CASE 3	≤ 45	≤ 110	998	27,612	828	6'-4"
CASE 4	≤ 45	≤ 150	998	47,513	1,459	7'-9"
CASE 5	≤ 50	≤ 110	1,000	35,500	1,100	7'-0"
CASE 6	≤ 50	≤ 150	1,000	66,000	2,000	8'-2"
CASE 7	≤ 55	≤ 110	1,543	43,995	1,129	7'-2"
CASE 8	≤ 55	≤ 150	1,543	76,681	2,020	8'-9"
CASE 9	≤ 60	≤ 110	1,543	43,995	1,129	7'-2"
CASE 10	≤ 60	≤ 150	1,543	76,681	2,020	8'-9"

### NOTES:

1. THE FOUNDATION DESIGNS ARE BASED ON AN IBC CLASS 5 (OR BETTER) SOIL CLASSIFICATION AND AN ALLOWABLE BEARING PRESSURE OF 1500 PSF AND A LATERAL BEARING OF 100 PSF/FT BELOW GRADE. IT IS THE RESPONSIBILITY OF THE OWNER TO VERIFY BY GEOTECHNICAL INVESTIGATION THAT ACTUAL SOIL PARAMETERS AT THE SITE EQUAL OR EXCEED THOSE GIVEN. IF CONDITIONS OTHER THAN THOSE DESCRIBED ARE ENCOUNTERED, A FOUNDATION ANALYSIS SHOULD BE PERFORMED TO DETERMINE THE STRUCTURAL ADEQUACY OF THE SUBSTRUCTURE. INSTALLATION SHALL NOT PROCEED UNTIL STRUCTURAL ADEQUACY HAS BEEN CONFIRMED.
2. IF THE FROST DEPTH IS KNOWN TO BE GREATER THAN 42 INCHES, THE 3" ABS PIPE STANCHION SHALL BE LENGTHENED SO THAT ITS BASE IS AT OR BELOW THE FROST DEPTH. THE LENGTH OF THE EXTENDER (INCHES) SHALL BE EQUAL TO THE FROST DEPTH MINUS 42, AND MAY BE ATTACHED WITH A 3" ABS COUPLING.
3. INSTALLATION SHALL NOT PROCEED IF THE WATER TABLE IS LESS THAN THE FOUNDATION DEPTH. CONSULT WITH DESIGN ENGINEER FOR FOUNDATION ANALYSIS OR REDESIGN. CONSTRUCTION SHALL NOT PROCEED UNTIL APPROVAL IS OBTAINED FROM THE DESIGN ENGINEER.



**TOWER ENGINEERING PROFESSIONALS**  
3703 JUNCTION BOULEVARD  
RALEIGH, NC 27603-5263  
(919) 661-6351



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7	08-13-08
6	06-25-08
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DRAWN BY: KMM CHECKED BY: MLG

SHEET NUMBER:

**S-1**

REVISION:

**7**

TEP #: 081330

PROPOSED 2" ABS  
TEMPLATE SPACER.

PROPOSED 2" ABS  
FEMALE ADAPTER.

PROPOSED 2" ABS  
PIPE EXTENSION.

PROPOSED 3" TO 2"  
ABS PIPE REDUCER.

PROPOSED 3" ABS  
PIPE STANCHION.

PROPOSED 2" ABS  
MALE ADAPTER.

PROPOSED 2" ABS  
FEMALE ADAPTER.

PROPOSED 2" ABS  
MALE ADAPTER.

### NOTE:

1. THE BOTTOM OF EXCAVATION SHALL BE AT OR BELOW THE FROST DEPTH AT THE SITE LOCATION THE FOUNDATION THICKNESS SHALL BE THE FROST DEPTH MINUS 6 INCHES, BUT 3'-0" MINIMUM.

PROPOSED UPPER ANCHOR BOLT TEMPLATE.  
SEE SHEET S-5 FOR DETAILS.

PROPOSED TEMPLATE SPACERS. (TYP OF 8)

PROPOSED LOWER ANCHOR BOLT TEMPLATE.  
SEE SHEET S-5 FOR DETAILS.

PROPOSED BACKFILL. AMEND SOIL AND REVEGETATE

PROPOSED TOWER FOUNDATION.

EXISTING GRADE



SEE NOTE 1 THIS SHEET  
(3'-0" MINIMUM)

(4)-#3 REBAR HOOPS  
AT 6" O.C.

PROPOSED STANCHION  
BASE, SEE SHEET S-5  
FOR DETAILS.

PROPOSED ANCHOR  
BOLTS (TYP OF 8)

PROPOSED 3" ABS  
COUPLING

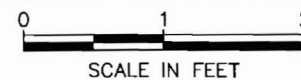
PROPOSED STANCHION  
BRACE, SEE SHEET S-5  
FOR DETAILS. (TYP OF 2)

DIAMETER

SEE TOWER DESIGN CRITERIA ON SHEET S-1

## FOUNDATION ELEVATION (ASSEMBLY)

SCALE: 3/4" = 1'-0"



SCALE IN FEET

**TOWER ENGINEERING PROFESSIONALS**  
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DRAWN BY: WHM CHECKED BY: MLG

SHEET NUMBER:

**S-2**

REVISION:

**7**

TEP #: 081330

FOUNDATION  $\phi$   
SEE SHEET S-1

PROPOSED STANCHION  
BRACE ORIENT AS  
DEPICTED. SEE SHEET  
S-5 FOR DETAILS.  
(TYP OF 2)

PROPOSED STANCHION  
BASE (BELOW). SEE SHEET  
S-5 FOR DETAILS.

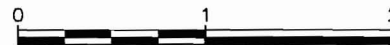
(4)-#3 REBAR HOOPS  
AT 6" O.C.

PROPOSED ANCHOR  
BOLTS. (TYP OF 8)

STRUCTURAL PLAIN CONCRETE  
UNIFORMLY REINFORCED WITH  
1.5 - 2.0 LBS OF POLYPROPYLENE  
TAPE FIBER PER CUBIC YARD.


## SECTION

SCALE: 1" = 1'-0"



SCALE IN FEET

**TOWER ENGINEERING PROFESSIONALS**  
3703 JUNCTION BOULEVARD  
RALEIGH, NC 27603-5263  
(919) 661-6351

 **AnemErgonics, LLC**  
(303) 940-7530  
www.anemergonics.com

### PROJECT INFORMATION:

**SMarT Foundation**  
[Simple Modular Technology]

REV	DATE
7	08-13-08
6	06-25-08
5	06-12-08
4	03-18-08

DRAWN BY: WHM CHECKED BY: MLG

SHEET NUMBER:

**S-4**

REVISION:

**7**

TEP #: 081330

## FOUNDATION NOTES:

### GENERAL NOTES:

1. FOUNDATION INSTALLATION SHALL BE SUPERVISED BY PERSONNEL KNOWLEDGEABLE AND EXPERIENCED WITH THE PROPOSED FOUNDATION TYPE. CONSTRUCTION SHALL BE IN ACCORDANCE WITH GENERALLY ACCEPTED PRACTICES AND IN A GOOD AND WORKMANLIKE MANNER.
2. FOUNDATION DESIGN ASSUMES LEVEL GRADE AT THE SITE.
3. THE FOUNDATION DESIGN IS IN ACCORDANCE WITH GENERALLY ACCEPTED PROFESSIONAL ENGINEERING PRINCIPLES AND PRACTICES WITHIN THE LIMITS OF THE ASSUMED SUBSURFACE DATA.
4. FOUNDATION DESIGN MODIFICATIONS MAY BE REQUIRED IN THE EVENT THE DESIGN PARAMETERS ARE NOT APPLICABLE FOR THE SUBSURFACE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.
5. THE FOUNDATION DESIGN ASSUMES INSPECTIONS WILL BE PERFORMED TO VERIFY THAT CONSTRUCTION MATERIALS, INSTALLATION METHODS, AND ASSUMED DESIGN PARAMETERS ARE ACCEPTABLE BASED ON THE CONDITIONS AT THE SITE.
6. THE FOUNDATION DESIGN ASSUMES NO CONSTRUCTION JOINTS. HOWEVER, CONSTRUCTION JOINTS SHALL BE PERMITTED UPON APPROVAL BY THE ENGINEER.

### EXCAVATION & GRADING:

1. WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES AND SAFETY REGULATIONS. PROCEDURES FOR THE PROTECTION OF EXCAVATIONS, EXISTING CONSTRUCTION, AND UTILITIES SHALL BE ESTABLISHED AND PERFORMED PRIOR TO BEGINNING WORK.
2. ALL CUT AND FILL SLOPES SHALL BE 3:1 MAXIMUM, UNLESS OTHERWISE NOTED.
3. ALL EXCAVATIONS ON WHICH CONCRETE IS TO BE PLACED SHALL BE SUBSTANTIALLY HORIZONTAL ON UNDISTURBED AND UNFROZEN SOIL AND BE FREE FROM LOOSE MATERIAL AND EXCESS GROUND WATER. DEWATERING FOR EXCESS GROUND WATER SHALL BE PROVIDED IF REQUIRED.
4. ANY EXCAVATION OVER THE REQUIRED DEPTH SHALL BE FILLED WITH EITHER MECHANICALLY COMPACTED GRANULAR MATERIAL OR CONCRETE OF THE SAME QUALITY SPECIFIED FOR THE FOUNDATION. CRUSHED STONE MAY BE USED TO STABILIZE THE BOTTOM OF THE EXCAVATION. STONE, IF USED, SHALL NOT BE USED AS COMPRISING CONCRETE THICKNESS.
5. THE BOTTOM OF THE EXCAVATION SHOULD BE APPROXIMATELY LEVEL. LOOSE MATERIAL SHALL BE REMOVED BEFORE PLACING CONCRETE AND THE STANCHION SHOULD BE CENTERED IN THE BOTTOM OF THE EXCAVATION.
6. AFTER COMPLETION OF THE FOUNDATION AND BEFORE BACKFILLING, ALL EXCAVATIONS SHALL BE CLEAN OF UNSUITABLE MATERIAL SUCH AS VEGETATION, TRASH, DEBRIS, ETC.
7. BACKFILLING SHALL:
  - A. USE APPROVED MATERIALS CONSISTING OF EARTH, LOAM, SANDY CLAY, SAND, AND GRAVEL OR SOFT SHALE.
  - B. BE FREE FROM CLODS OR STONES OVER 2-1/2" MAXIMUM DIMENSIONS.
  - C. BE PLACED IN LAYERS OF 6" MAXIMUM AND COMPACTED.
8. FILL MATERIAL AND BACKFILL SHALL BE PLACED IN LAYERS, MAXIMUM 6" DEEP BEFORE COMPACTION. EACH LAYER SHALL BE SPRINKLED IF REQUIRED AND COMPACTED BY HAND OR MACHINE TAMPERS TO 90% OF MAXIMUM DRY DENSITY. AT THE OPTIMUM MOISTURE CONTENT  $\pm$  5% AS DETERMINED BY ASTM DESIGNATION D-698, UNLESS OTHERWISE APPROVED. SUCH BACKFILL SHALL NOT BE PLACED WITHIN 3 DAYS OF CONCRETE PLACEMENT.

### REINFORCING STEEL:

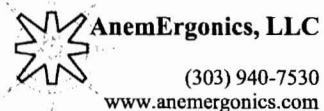
1. THE REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A-615, GRADE 60. IT SHALL BE DEFORMED AND SPLICES SHALL NOT BE ALLOWED UNLESS OTHERWISE NOTED.
2. WELDING IS PROHIBITED ON REINFORCING STEEL AND EMBEDMENTS.
3. MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF ACI 318-05, SECTION 7.7.1, "CAST-IN-PLACE CONCRETE (NONPRESTRESSED)." CONCRETE COVER SHALL BE AS FOLLOWS:
  - A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH ..... 3 IN. MINIMUM COVER
  - B. CONCRETE EXPOSED TO EARTH OR WEATHER:
    - NO. 6 BARS THROUGH NO. 18 BARS ..... 2 IN. MINIMUM COVER
    - NO. 6 BARS AND SMALLER ..... 1-1/2 IN. MINIMUM COVER

### CONCRETE:

1. WORK SHALL BE IN ACCORDANCE WITH ACI 318-05, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE."
2. THE CONCRETE SHALL BE APPROPRIATELY VIBRATED DURING CONSTRUCTION.
3. THE CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI IN 28-DAYS.
4. THE CONCRETE SHALL BE UNIFORMLY REINFORCED WITH 1.5 LBS. MIN. TO 2.0 LBS. MAX. POLYPROPYLENE TAPE FIBER PER CUBIC YARD OF CONCRETE. FIBERS SHALL BE ACCORDANCE WITH ASTM C1116, "STANDARD SPECIFICATION FOR FIBER-REINFORCED CONCRETE." FIBERS SHALL BE PROCONF AS MANUFACTURED BY NYCON, INC., FIBERMESH 300 AS MANUFACTURED BY PROPEX CORP., OR APPROVED EQUIVALENT.
5. PROPORTIONS OF CONCRETE MATERIALS SHALL BE SUITABLE FOR THE INSTALLATION METHOD UTILIZED AND SHALL RESULT IN DURABLE CONCRETE FOR RESISTANCE TO LOCAL ANTICIPATED AGGRESSIVE ACTIONS. THE DURABILITY REQUIREMENTS OF ACI 318-05 SHALL BE SATISFIED BASED ON THE CONDITIONS EXPECTED AT THE SITE.
6. CONCRETE SHALL BE PLACED IN A MANNER THAT WILL PREVENT SEGREGATION OF CONCRETE MATERIALS, INFILTRATION OF WATER OR SOIL, AND OTHER OCCURRENCES THAT MAY DECREASE THE STRENGTH OR DURABILITY OF THE FOUNDATION.
7. FREE FALL CONCRETE MAY BE USED PROVIDED FALL IS VERTICAL DOWN MINIMIZING CONTACT WITH THE SIDES OF THE EXCAVATION. UNDER NO CIRCUMSTANCES SHALL CONCRETE FALL THROUGH WATER.

### FINISHING:

1. THE TOP OF THE FOUNDATION SHALL BE SLOPED TO DRAIN WITH A FLOATED FINISH.
2. THE EXPOSED EDGES OF THE CONCRETE SHALL BE CHAMFERED 3/4" x 3/4".



### PROJECT INFORMATION:

**SMarT Foundation**  
[Simple Modular Technology]

7	08-13-08
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DRAWN BY: KMM CHECKED BY: MLG

SHEET NUMBER:

**S-6**

REVISION:

**7**

TEP #: 081330

# SMarT\_Foundation™ [Simple Modular Technology] Terms and Conditions of Sale

## AnemErgonics™

A Colorado Limited Liability Company  
[www.anemergonics.com](http://www.anemergonics.com)

These Terms and Conditions of Sale (the “Terms and Conditions”) form part of the Agreement between Supplier and User related to User’s ownership, use and/or purchase of the Product. By owning, using and/or purchasing (whether directly from Supplier or otherwise) the Product, User agrees to each and every condition, provision, and term of the Agreement. The capitalized terms used in these Terms and Conditions are defined below.

### 1) Definitions

- a) “Agreement” means these Terms and Conditions and the Warranty.
- b) “Claim” has the meaning set forth in Section 6 (e).
- c) “Drawings” means the “AnemErgonics, LLC SMarT\_Foundation™ [Simple Modular Technology] Drawings” provided by Supplier and includes any supplemental written Drawings Supplier may provide from time-to-time.
- d) “Force Majeure Event” means: act of God; extreme weather condition; labor dispute; natural disaster; terrorist act; theft; vandalism; war; or, any other cause or condition beyond the control of a person.
- e) “Installation” means installation of the Kit in conformance with the Instructions.
- f) “Instructions” means the “AnemErgonics, LLC SMarT\_Foundation™ [Simple Modular Technology] Assembly and Installation Instructions” provided by Supplier and includes any supplemental written Instructions Supplier may provide from time-to-time.
- g) “Intellectual Property” has the meaning set forth in Section 5.
- h) “Kit” means the Parts that make up the “AnemErgonics, LLC SMarT\_Foundation™ [Simple Modular Technology] Kit” provided by Supplier and includes any supplemental Parts Supplier may provide from time-to-time.
- i) “Law” or “Laws” includes all county, local, state, and federal codes, laws, licenses, orders, permit requirements, regulations, rules, and zoning requirements.
- j) “Parts” means the equipment, materials, parts, and/or tools supplied by Provider and that make up the Kit.
- k) “Parties” means User and Supplier, and “Party” means User or Supplier.
- l) “Product” means the Drawings, Instructions, Kit, Parts, Terms and Conditions, and Warranty.
- m) “Supplier” means AnemErgonics, LLC, a Colorado limited liability company.
- n) “Supplier Indemnified Parties” has the meaning set forth in Section 6 (e).
- o) “Terms and Conditions” means these “AnemErgonics, LLC SMarT\_Foundation™ [Simple Modular Technology] Terms and Conditions of Sale.”
- p) “Tower” means the specific tower referenced on the first page of the Instructions.
- q) “Turbine” means the specific wind turbine referenced on the first page of the Instructions.
- r) “User” means the purchaser or user of the Product.
- s) “Warranty” means the “AnemErgonics, LLC SMarT\_Foundation™ [Simple Modular Technology] Limited Warranty” attached to these Terms and Conditions. (If not attached, contact Supplier to request a copy of the Warranty.)

- vii) fault, failure(s), or negligence of any third party
- viii) damage to any Parts during Installation
- ix) loss of any Parts
- x) modification of the Kit, Tower, or Turbine
- xi) any defect or failure of the Tower or Turbine
- xii) erection of the Tower and installation of the Turbine
- xiii) grounding
- xiv) electrical injury
- xv) electricity production (including intermittent production, lost production, and non-production)
- xvi) damage or injury to animals, buildings, crops, fences, gates, plants, structures, and trees
- xvii) damage or injury to or caused by any above-ground or underground electric lines, gas lines, phone lines, sewer lines, water lines, or similar structures or utilities
- xviii) damage or injury caused by any Force Majeure Event

The fact of one or more of the foregoing will preclude Supplier's liability, obligation or responsibility.

- 4) Risk of loss; shipping; title: Risk of damage or loss for all or any of the Product transfers to User upon Supplier's loading the Product at its facility.
- 5) Intellectual property: All interest, right, and title in and to all: a) copyrights; b) patents, patent applications, and patentable ideas, inventions, and/or improvements; c) trade secrets, proprietary information, and know-how; d) trademarks; and, e) all other intellectual property, proprietary rights, or other rights related to intangible property comprising or developed, embodied, or practiced in connection with, or used in connection with any of the Product or this Agreement ("Intellectual Property," which includes the Product) are owned by Supplier. User will not make any claim of development of, interest in, or ownership of any such Intellectual Property. No license or title to the Intellectual Property is transferred to User, and User does not obtain any rights, express or implied, in the Intellectual Property, other than the limited rights to a one-time use, in connection with a single Installation, of the Drawings, Instructions and Kit. To the extent User creates any derivative work of any Intellectual Property, such derivative work will be owned by Supplier, and all interest, right and title in and to each such derivative work will automatically vest in Supplier, with no rights in favor of User. Supplier will have no obligation to grant User any right in any such derivative work. User will not copy, decompile, disassemble, distribute, reproduce, re-use, reverse engineer, sell or otherwise transfer Intellectual Property without Supplier's prior written consent, which consent Supplier may unreasonably withhold. In the case of any breach of the provisions of this Section, User will be liable to Supplier for all actual damages sustained and authorized by Law (including, but not limited to, consequential and exemplary damages).
- 6) Miscellaneous:
  - a) Amendment: No term or provision of this Agreement may be amended or modified in any way except in a writing signed by both Parties that is denominated as an "Amendment."
  - b) Cumulative rights: Supplier's rights under this Agreement are cumulative and are in addition to any other rights Supplier may have under contract, at law or in equity, all or any of which Supplier may enforce concurrently or individually.
  - c) Dispute resolution:
    - i) Arbitration: The Parties will attempt amicable resolution of any disputes. If amicable resolution fails, then the Parties will submit the dispute to binding arbitration pursuant to the rules of the American Arbitration Association before a single arbitrator in Denver, Colorado.
    - ii) Injunctive relief: Notwithstanding the foregoing amicable resolution and arbitration obligations, User acknowledges and agrees Supplier has invested substantial effort, money and time in developing its Intellectual Property and that the actual or threatened disclosure, transfer or use of this Intellectual Property in violation of this Agreement will cause Supplier significant economic and non-economic irreparable damage and injury that is not susceptible of economic quantification. Therefore, User agrees that in the case of its actual or threatened violation of Supplier's In-

# SMarT\_Foundation™ [Simple Modular Technology] Limited Warranty

## AnemErgonics™

A Colorado Limited Liability Company  
[www.anemergonics.com](http://www.anemergonics.com)

Capitalized terms used in this Warranty have the meanings given them in the “SMarT Foundation Kit Terms and Conditions” applicable to Purchaser’s purchase of the Product.

**Warranty scope and term:** Supplier warrants the Product against defects in design and Parts only and for a period of one (1) year from the date of Installation or eighteen (18) months after the date of purchase, whichever is sooner. Warranty claims outside this term and for other than design and Parts defects are void.

**Notice of Warranty claim:** Purchaser will immediately, but not later than three (3) business days after discovery, notify Supplier (pursuant to the notice provision of the Terms and Conditions) of any Warranty claim. Purchaser’s failure to timely notify Supplier will void this Warranty.

**Warranty process:** Supplier will within twenty (20) days after notice from Purchaser contact Purchaser to discuss the claim. Purchaser will no later than ten (10) business days after Supplier’s request(s) provide Supplier with all documents and information requested. Purchaser’s failure to timely provide Supplier with all requested documents and information will void this Warranty.

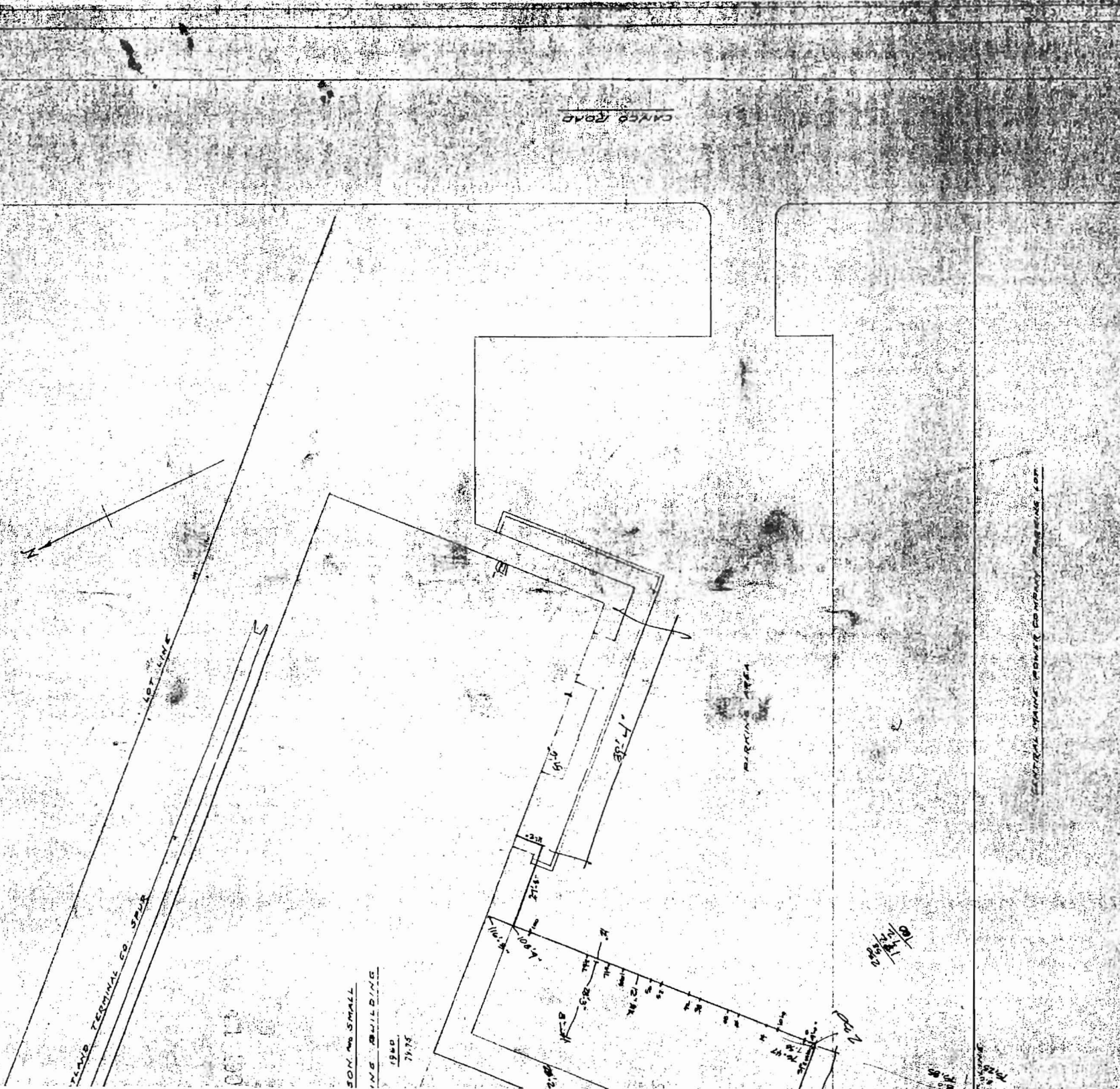
**Covered Warranty claims; Warranty limit:** In the case of a claim covered by this Warranty, Supplier will, in its discretion, refund the Price or, at no additional charge, provide a replacement Product. If the particular Product purchased has been discontinued or is otherwise not available, then Supplier may (if in its discretion it chooses to provide a replacement Product) offer Purchaser, at no additional charge, a different product it determines in its discretion is comparable to the Product purchased. If Purchaser chooses to not accept such offered, comparable product, then Supplier will refund the Price.

Supplier’s liability under this Warranty is limited to its refunding the Price or providing a replacement Product as described above.

**Warranty exclusion:** This Warranty will have no application and Warranty claims will be void:

- a) in the case of any breach of any condition, provision, or term of the Agreement,
- b) if Purchaser or any third party has attempted repairs without Supplier’s prior written approval or instruction,
- c) in the case of damage due to a Force Majeure Event, or
- d) in the case of any damage due to out-of-the-ordinary or negligent operation or use, including out-of-the-ordinary or negligent operation or use of the Tower or Turbine.





LAND TERMINAL CO. SPUR

LOT LINE

CAMP ROAD

PARKING AREA

CENTRAL TRAMWAY POWER COMPANY BUILDING LOT

WAREHOUSE ANNEX

SOX. No. 51111

ING. BUILDING

1950

7/75