Planning and Development Department
Zoning Board of Appeals
Conditional Use Appeal Application

DEPT. OF PLANNING AND DEVELOPMENT
CITY OF PORTLAND
AUG 28 2009

Applicant Information:

Portland Public Schools (Representing Billing)
Name Douglas Ritter Sherwood
196 Allen Avenue
Business Name
Portland, Me 04103
Address
(for East End Community School)
842-5342 756-8495
Telephone Fax

Subject Property Information:

195 North Street - 358 Eastern Prom
Property Address
008-A-4 / 015-A-5
Assessor's Reference (Chart-Block-Lot)

Property Owner (if different):
City of Portland
Name
EXPIRED
Address
756-8495
Telephone Fax

Applicant's Right, Title or Interest in Subject Property:
Owner's representative
(e.g. owner, purchaser, etc.):

Current Zoning Designation: R-3

Conditional Use Authorized by Section 14-88(d)4

Existing Use of Property:
Conditional Use - School → East End Community School w/ softball field

Type of Conditional Use Proposed:
Add temporary (as per text amendment & sited in attached) 100' foot tower with anemometer on top to record wind data to determine if the site has wind power generation potential

Standards:

Upon a showing that a proposed use is a conditional use under this article, a conditional use permit shall be granted unless the board determines that:

(a) There are unique or distinctive characteristics or effects associated with the proposed conditional use;

(b) There will be an adverse impact upon the health, safety, or welfare of the public or the surrounding area; and

(c) Such impact differs substantially from the impact which would normally occur from such a use in that zone.

Address each item in your cover letter

Budget transfer what account? Barbbi Godin 874-8100

NOTE: If site plan approval is required, attach preliminary or final site plan.

The undersigned hereby makes application for a conditional use permit as above described, and certified that all information herein supplied by his/her is true and correct to the best of his/her knowledge and belief.

Douglas Ritter Sherwood — August 28, 2009
Signature of Applicant — Date

842-5342-office
741-8468 pager
sherwd@portlandschools.org - email

August 26, 2009

Mr. Philip Saucier
Chair, Zoning Board of Appeals
City of Portland
389 Congress Street
Portland, Maine

Re: Portland Public Schools' Request for Installation of Temporary Wind Anemometer Tower at the East End Community School (195 North Street)

Chair Saucier:

The Portland Public Schools has worked aggressively and fervently for a number of years to reduce energy consumption and to seek sound, viable strategies for reducing its carbon footprint and impact on the environment. A combination of investments, policy and education have reaped significant benefits to the Portland taxpayer. When an opportunity arose to secure an equipment loan through Efficiency Maine's new Wind Turbine Site Survey program last summer, we applied and were ranked #1 statewide. Unfortunately, there was no ordinance or other mechanism for addressing alternative energy sources that weren't consistent with current City codes. We subsequently lost our place in line but continued to champion the cause locally. A meeting with City Planning staff in October, 2008 prompted us to file a zoning amendment application to allow a temporary (one year only) installation of a 100 foot tower with anemometer on top to determine if the East End Community School (our first green, LEED silver certified building) site has wind power generation potential. The first Planning Board workshop in January 2009 was followed by presentations to the Munjoy Hill Neighborhood Organization – a strong supporter – in February 2009 and to the Promenade Towers Board of Directors – a group of concerned residents – in March 2009. The second Planning Board Workshop in May 2009 drew significant public comment and brought additional clarity to the text amendment change. The June 2009 Planning Board Public Hearing on the wind text amendment included a staff presentation, petitions, thirty minutes of public comment and substantive deliberations that led to a unanimous recommendation to refer an amended amendment to the City Council for consideration. The July 20th first read drew no comments, but the August 3, 2009 second read with a request for emergency passage was well attended. Again, there was a unanimous 7-0 vote to approve which has brought us to today and yet another grant opportunity.

Bottom line: We remain resolute in our desire to assess the potential for wind generation at the East End Community School site and to use the data/information and experience to enhance student learning, especially their understanding of the benefits of renewable energy. Application standards, as well as the stipulations of the wind text amendment (section 14-88 (d) 4), are addressed in the attached narrative.

Respectfully submitted,

Douglas Ritter Sherwood

Douglas Ritter Sherwood
Facilities Director
Portland Public Schools
842-5342

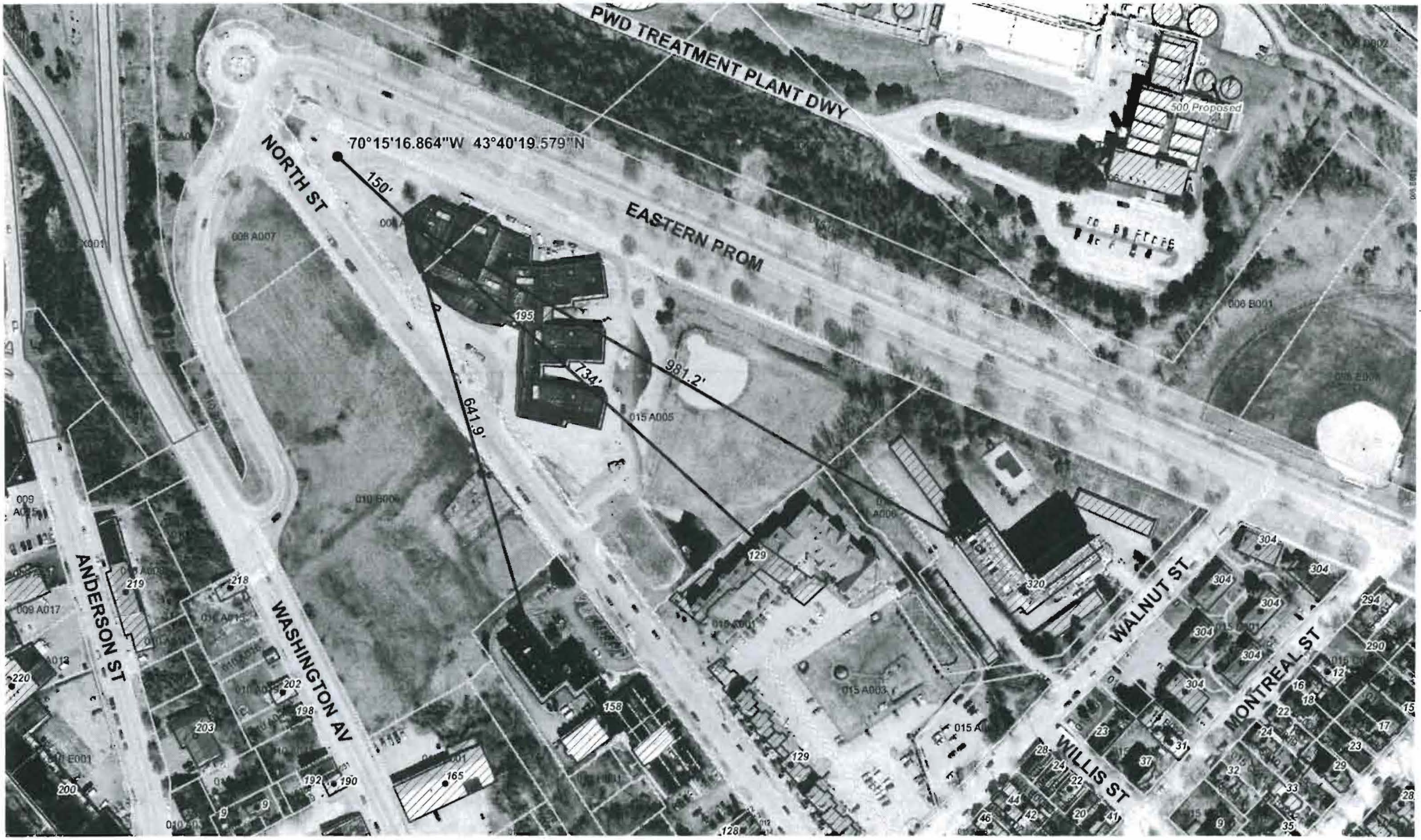
City of Portland
Zoning Board of Appeals
Application Standards and Wind Text Amendment (Section 14-88 (d) 4) Stipulations
Narrative

The Efficiency Maine Wind Turbine site survey program RFP required us to take a comprehensive look at the site and provide details similar to this application process (see attached.) We identified the proposed tower location to include latitude, longitude and elevation; height of and distance to the nearest structures; distance from property line; offset for power lines; and site description, along with photos and aerial views. We were upbeat regarding the Sustainable Portland plan, but honest regarding zoning and building permit requirements/challenges and stakeholder concerns regarding the installation of an actual wind turbine generator on site. We also noted that the government's wind models indicated winds at the site met the required minimum sustained speeds to warrant assessing the potential.

We subsequently received details regarding the installation itself (see attachment 2). The installation includes 3 anchors spaced 120 degrees apart, 80 feet from the base of the tower and supporting 3 guy wires; hence, the radius out from the base shown on the aerial view.

Why are the above details so important? They are critical in addressing the conditional use appeal application standard questions and the stipulations required by the new temporary wind anemometer tower zoning requirements (section 14-88 (d) 4). Properly located, constructed and protected, the temporary tower should have no more adverse impact upon the health, safety or welfare of the public or the surrounding area than other utility poles in the area. Though guy wires may not be aesthetically pleasing, they provide the margin of safety essential to protecting the public in this sparsely used area of the school site.

The grantor intends to collect one year's worth of data that may require up to 6 additional weeks for set up and removal ...significantly less than 2 years. The grantor's installer shall construct the tower in accordance with plans and specifications stamped by a licensed professional engineer, who shall also provide the required safety report. We hope to have these documents available for the Board's consideration on September 17, 2009 or we will withdraw our application. The current plan shows the tower 150 feet from the nearest inhabitable building, with little or no impact to the school's service drive. This is more than the 1:1.1 ratio; thus, allows us to consider other options the Zoning Board of Appeals may deem more appropriate due to other mitigating factors. If the grant request is approved and we erect the temporary tower, we shall obtain commercial general liability insurance coverage satisfactory to the Corporation Counsel. (Note: The Portland Public Schools already carries general liability insurance coverage for a number of circumstances/situations. As stated above, the anchors/guy wires will be placed to minimize their prominence from and impacts on public ways. The temporary tower shall be used for the sole purpose of collecting wind measurement and only devices required for this purpose shall be mounted on the tower. The grantor will be removing the tower and using it to collect data in other Maine locations, so a commitment to remove the facility at the end of the use period, which shall be acceptable to the City of Portland, shall not be an issue.


PWD TREATMENT PLANT DWY
500 Proposed
70°15'16.864"W 43°40'19.579"N
NORTH ST
150'
EASTERN PROM
195
734'
981.2'
641.9'
008 A007
015 A005
010 B006
008 B001
129
320
WALNUT ST
MONTREAL ST
WILLIS ST
ANDERSON ST
WASHINGTON AV
219
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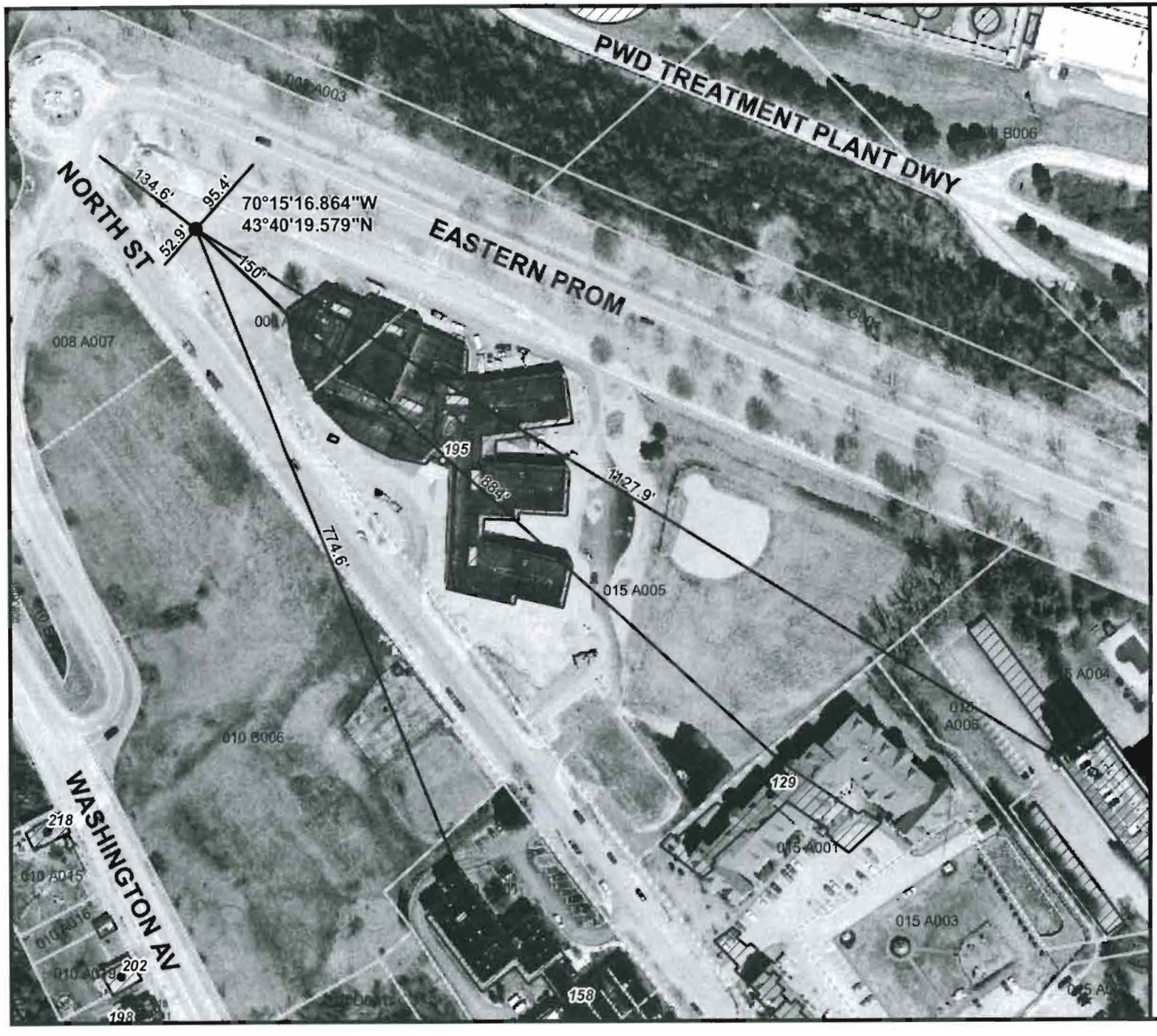


N

East End School

Map 1

Portland Maine

1 inch equals 150 feet

Feet

0 80 160

Map Produced by the City of Portland's MIS Division

6/25/08

N

East End School

Map 2

Portland Maine

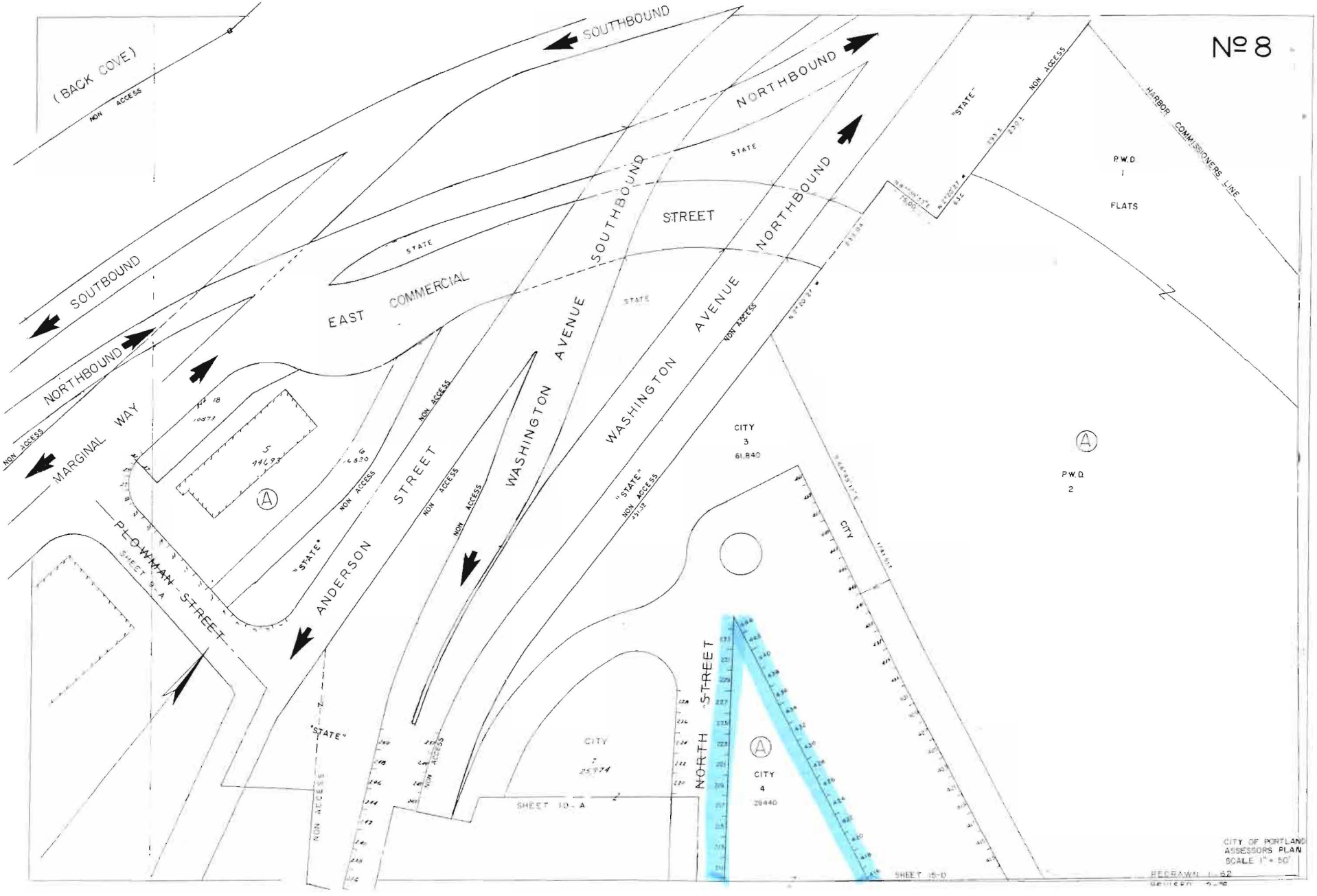
1 inch equals 1,000 feet

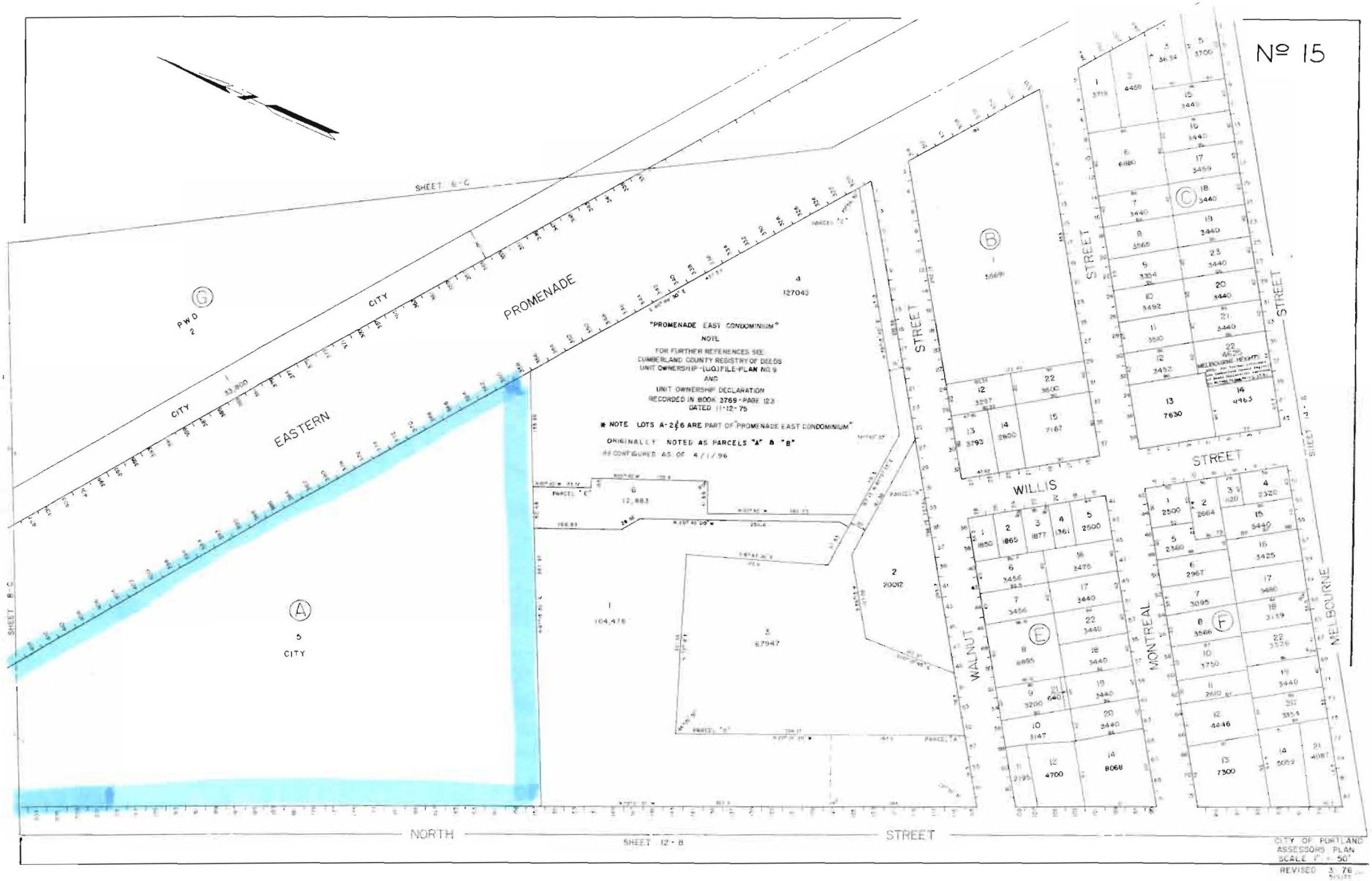
Feet

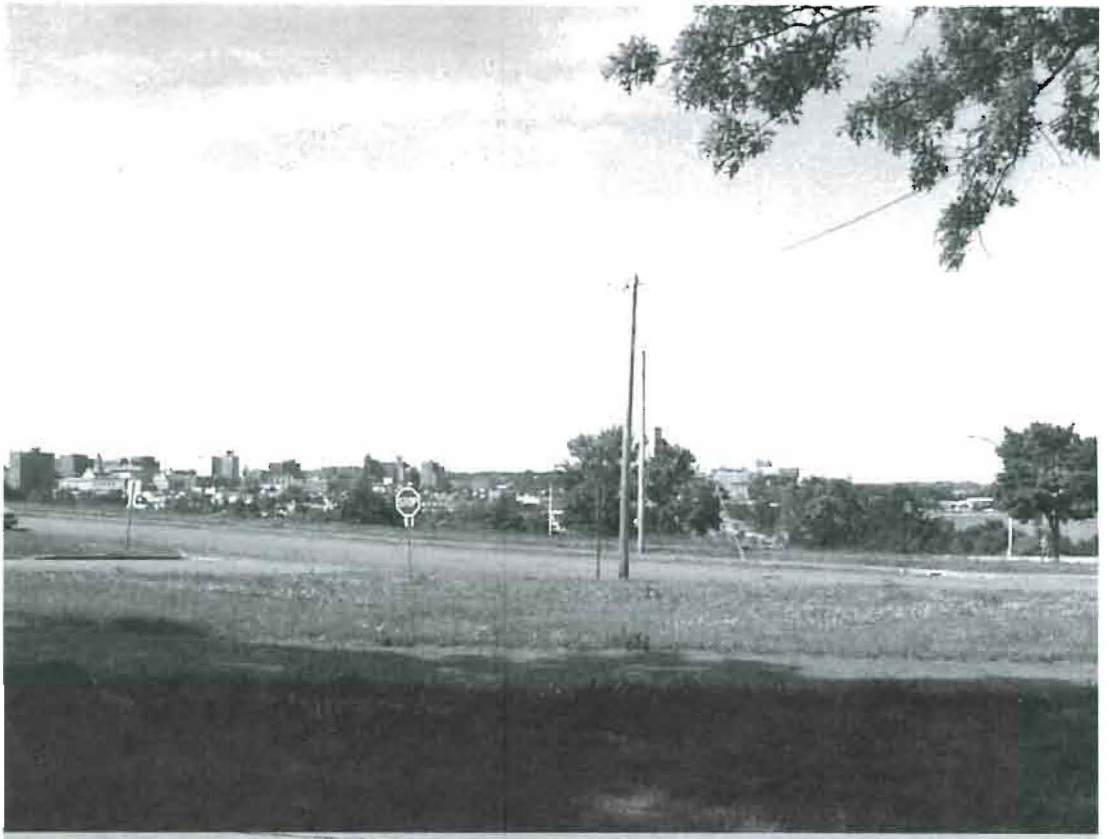
0 500 1,000

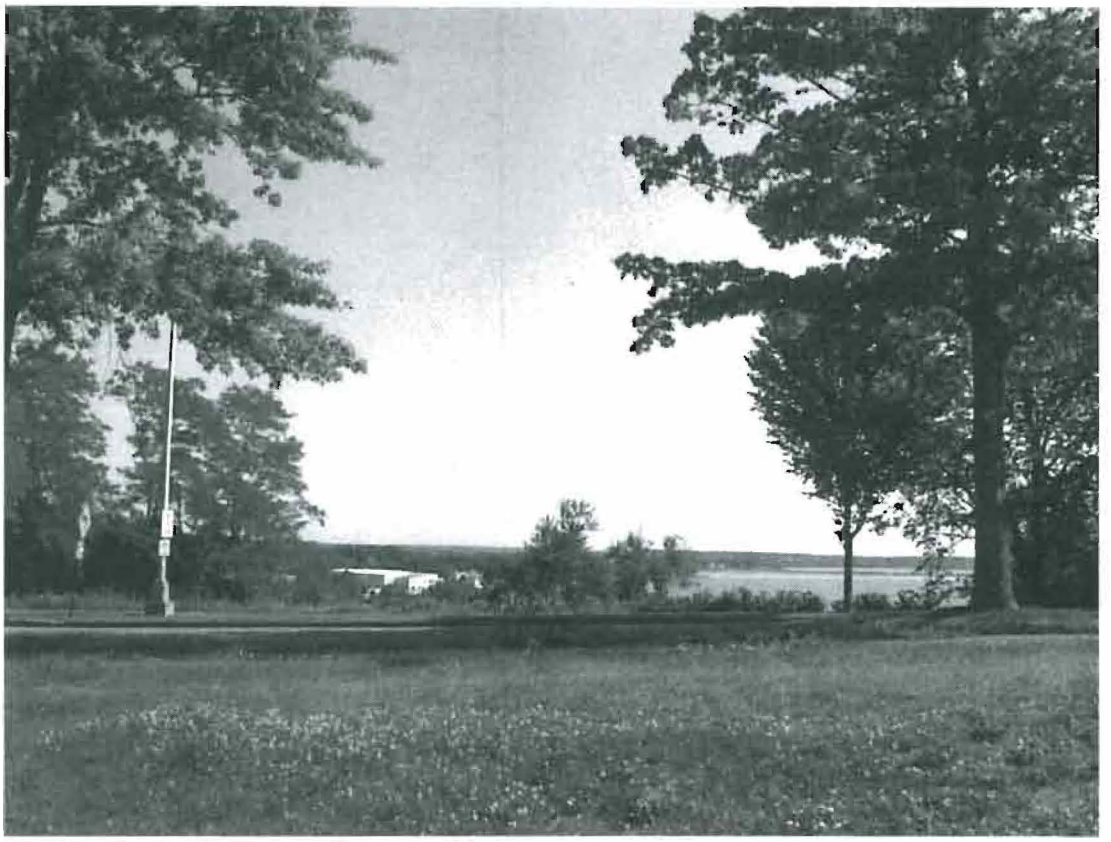
Map Produced by the City of Portland's MIS Division

6/25/08


№ 8
(BACK COVE)
NON ACCESS
SOUTHBOUND
NORTHBOUND
STATE
STREET
EAST COMMERCIAL
SOUTHBOUND
NORTHBOUND
WASHINGTON AVENUE
WASHINGTON AVENUE
NON ACCESS
"STATE"
HARBOR COMMISSIONERS LINE
P.W.D
1
FLATS
P.W.D
2
CITY
3
61,840
CITY
4
29440
CITY
2
25,924
MARGINAL WAY
ANDERSON STREET
NON ACCESS
"STATE"
PLOWMAN STREET
SHEET 9-A
NORTH STREET
SHEET 10-A
SHEET 15-D
CITY OF PORTLAND
ASSESSORS PLAN
SCALE 1" = 50'
REDRAWN 1-62


Nº 15
SHEET B-C
PROMENADE
CITY
PWD
2
EASTERN
CITY
5
CITY
A
G
"PROMENADE EAST CONDOMINIUM"
NOTE
FOR FURTHER REFERENCES SEE
CUMBERLAND COUNTY REGISTRY OF DEEDS
UNIT OWNERSHIP-(UO)FILE-PLAN NO 9
AND
UNIT OWNERSHIP DECLARATION
RECORDED IN BOOK 3769-PAGE 123
DATED 11-12-75
* NOTE LOTS A-2 & 6 ARE PART OF "PROMENADE EAST CONDOMINIUM"
ORIGINALLY NOTED AS PARCELS "A" & "B"
RE CONFIGURED AS OF 4/1/96
4
127043
6
12,883
1
104,478
3
67947
2
20012
STREET
WILLIS
WALNUT
MONTREAL
MELBOURNE
B
C
E
F
SHEET B-C
SHEET 12-B
NORTH
STREET
CITY OF PORTLAND
ASSESSORS PLAN
SCALE 1" = 50'
REVISED 3-76





WIND TURBINE SITE SURVEY APPLICATION
COVER PAGE

Applicant's Contact Information

Organization Name: City of Portland/Portland Public Schools

Type of Organization: Municipality/School Department

Contact Name: Douglas Ritter Sherwood Title: Facilities Director

Street Address: 196 Allen Avenue

Town, State, Zip: Portland, Maine 04103

Federal Tax ID: 04-3374427

Phone Numbers: Office: 842-5342 Pager: 741-8468 Secretary: 842-5353

Contact E-mail address: sherwd@portlandschools.org

Fax Number: (207) 756-8495

Attachments

1) Wind Turbine Site Survey Application
2) TrueWind's detail sheet for site offered for consideration
3) Location site plan (East End Community School at 195 North Street)/Map 1
4) Partial aerial view of the East End of Portland/Map 2
5) City of Portland's Department of Planning and Development march 18, 2008 Community Wind Power – Zoning Implications memorandum
6) Architect's sketch of building mounted wind turbine from original building design
7) Site and location photographs

Attach 1

Application Approval

We, the undersigned, accept services offered from Efficiency Maine through the Wind Turbine Site Survey Program as described on the first page of the RFP. If awarded an anemometer loan, we accept full responsibility for damage to the tower or resulting from the tower (excepting installer negligence).

Jeanne Whynot –Vickers — Portland Public Schools, Interim Superintendent — 6/26/08 Date

Patricia Finnigan — City of Portland, Acting City Manager — 6.26.08 Date

Edward Suslovic — City of Portland, Mayor — 6-26-08 Date

Site Information

Applicant/
Town name: Portland Public Schools/City of Portland (owners)

Applicant Contact: Douglas Ritter Sherwood Property Owner Contact: Same

Applicant contact number: 842-5342

Email and sherwd@portlandschools.org
Physical address: 196 Allen Avenue, Portland, ME 04103

Property physical address: 195 North Street, Portland, ME 04101

Responsible Agent for the periodic exchange of data cards and regularly checking on the equipment (name, contact number, e-mail and physical address):
Cindy Nilsen, 874-8228, nilsec@portlandschools.org, East End Community School, 195 North Street, Portland, ME 04101

Proposed Site

Site Name: East End Community School

Town: City of Portland

General site description & current land use: Elementary School with community space, joint school/public library, playground areas and softball field.

Building proper: Latitude: 43:40:17 N Longitude: 70:15:13 W Elevation: 113 feet

Proposed tower: Latitude: 43:40: 20 N Longitude: 70:15:17 W Elevation: 101 feet

Elevation of higher surroundings and distance (in feet) to proposed tower location:

Location	**Height** bldg/(roof line elevation)	**Distance**
East End Community School – café	18 (131)	150
East End Community School – gym	25 (138)	212
East End Community School – lobby	28 (141)	295
Bayview Heights (4 story @ 158 North Street)	40 (170)	775
Island View Apts. (4 story @ 129 North Street)	41 (195)	884
Condominiums (13/14 story @ 320 Eastern Prom)	150*(261)	1,128

* - estimate

Predicted annual mean wind speed @70m height from TrueWind Solutions map: 6.5 m/s

Cleared area (acres/SF): See aerial photo of built up (residential), landscaped, wooded and other areas surrounding the school site (attachment #3 – location site plan/Map 1).

Amount of space available for clearing: See attached photos showing proposed tower site and adjacent properties and streets. It is approximately 285 feet from the point of the cafeteria to the apex of the turn of the Eastern Promenade at the curb opposite Loring Memorial. The width across the property is approximately 150 feet. There are power lines (street lights) along the school side of North Street, but no power lines or poles along the Eastern Promenade.

Soil type: The proposed site is in close proximity to a new service drive, catch basin and water quality unit, so we asked Mr. William Hoffman of DeLuca-Hoffman Associates, the East End Community School civil engineer of record, for specific details regarding conditions found around these disturbed soils. The test boring from that end of the school site indicated compact brown sand with some silt and little organics in the first foot immediately below the topsoil; compact, olive-brown silty sand with trace gravel, moist, SM at 1.5 feet; compact to dense, olive brown sandy silt with little fine gravel and clay, moist, ML at 5 feet; and very dense, olive brown, silty sand to sandy silt, little gravel, little to some clay, moist, SM to SL at 10 feet. The test pit showed 4 inches of topsoil with grass, another foot of silty sand (SM) identified as fill for the next foot, silty sand with gravel and cobbles (12"-36" / SM) down to 4 feet identified as glacial till, and silty sand with cobbles (3"-12") and trace gravel (SM) below 4 feet to the depth of exploration (10.5 feet) identified as glacial fill. Seismic readings indicated bedrock around 30 feet down. (Note: The USDA Cumberland County Soil Survey maps indicate Hinckley gravelly sandy loam, outwash terraces, sandy-skeletal flaciofluvial deposits derived from granite and gneiss, 3 to 15 percent slope (actually greater in some locations), more than 80 inch depth to restrictive features and water table, excessively drained, and no flooding or ponding. The typical profile is as follows: 0 to 1 inch – moderately decomposed plant material; 1 to 11 inches - gravelly sandy loam; 11 to 25 inches – gravelly loamy sand; and 25 to 65 inches – very gravelly sand.)

Road access: Proposed site is just off the East End Community School's service drive (see attachment #1 – location site plan/Map 1).

Distance from Property Line to proposed tower location (in feet):

North	32 (96 feet to curb)
South	37 (53 feet to curb)
East	870
West	135

Nearest structures and distance (in feet):

East End Community School (195 North Street)	150
Bayview Heights (4 story @ 158 North Street)	775
Island View Apts. (4 story @ 129 North Street)	884
Condominiums (13/14 story @ 320 Eastern Promenade)	1,128

Obstacles that might influence wind flow: None

Proximity to airport: Portland Jetport – 2.74 miles

Method of protecting equipment from vandal or animal damage:
Enclosure at base of tower and periodic surveillance

Site description: The proposed tower location sits at the precipice on the lower side of the upper promontory overlooking the City of Portland, the Back Bay area and Portland Harbor – a very prominent location visible from I-295. In less than 200 feet (except easterly direction), the land drops off dramatically (see attachment #4). The 50 foot increase in elevation easterly toward the built up areas including Island View Apartments (129 North Street on Map #1) levels off and actually drops off about 10 feet at the base of the Observatory on Congress Street (145 foot elevation on Map #2).

Additional Information about the Proposed Site

High voltage transmission lines (distance, voltage and line owner): We are awaiting additional details from CMP, but the only above ground power in the immediate area of the site goes down the school side of North Street and supports street lights and a school zone warning light. The primary power for the school runs underground beyond the far side of the school to a transformer on the Eastern Promenade side of the school.

Other available wind data nearby: None, but could check with the airport (though 2.74 miles away) or the Portland Observatory if required.

Local restrictions on structure height or other requirements that may impact the tower or the eventual turbine installation:

> By strict interpretation of the current zoning of the school site, a stand-alone wind turbine generator would not be permitted. The maximum building height for the R-3 zone is only 35 feet. That said, a wind turbine generator with appropriate setbacks serving the school only could be considered an expansion of the school's conditional use that is reviewable by the Planning Board. In addition, given the recent drafting of the Sustainable Portland plan, creation of the City's Energy and Environmental Sustainability Committee, August 2007 School Committee approved Energy Policy, rising energy prices and neighborhood interest, the City Council may consider developing a Community Wind Energy ordinance as suggested in the City's Planning Division March 18, 2008 memo to Councilor John Anton (see attachment #5)

Project Status

Tower permitting status, discussions with town, discussions with neighbors, etc.:

The potential for wind power generation was discussed during the design development of the East End Community School that opened in September 2006 (see architect's sketch for building mounted turbine – attachment #6). Unfortunately, the construction budget for the LEED certified Silver facility was very, very tight (in fact, we had to cut over $1,000,000 from the project - > 10% of the total cost - at bid time) and the cost-benefit was too high, so the Building Committee had to abandon the opportunity.

Jump ahead 4 to 5 years: Due in part to escalating utility prices, global warming, desire to reduce energy consumption/our carbon footprint and embracing environmental stewardship, the City of Portland has written a Sustainable Portland plan; the City Council has established an Energy & Environmental Sustainability Committee; the School Committee has approved an Energy Policy; and the City's Planning Division is contemplating a Community Wind Power ordinance. You, also, see a population ready and willing to more aggressively pursue alternative energy sources. Unfortunately, fiscal limitations have forced us to slow our progress and seek private donations and grants such as this RFP to keep moving forward.

Major stakeholders have begun a dialogue around wind energy and the initial feedback is positive. The local neighborhood association and school parent-teacher organization are interested and aware. School staff has become more interested in incorporating energy conservation and environmental awareness topics into their lesson plans. In fact, a teacher at the East End Community School, Ms. Cindy Nilsen, would like to do an expedition around wind energy including measurements from the anemometer should we be a successful candidate for this loan.

Town or other requirement (i.e. zoning, variances, building permits, height, property line setback requirements, noise, FAA, etc.): The City of Portland Planning Board would need to approve the installation of the wind turbine generator. Yes, there are zoning and building permit requirements, height restrictions and other considerations that would need to be addressed before a wind turbine generator becomes a reality on the site. And, yes, some stakeholders have expressed concern regarding noise and vibration. Early dialogue with all the major stakeholders (school community, neighborhood, City Planning Department, School Committee, City Council, etc.) has been very positive. (Note: We will need to file a formal notice with the FAA regarding the specific tower location.)

Discussions with local utility: We have had very preliminary discussions with Central Maine Power regarding the proposed project.

Name of utility contact and phone number: CMP - Mr. Mike Erskine @ 621-7887 and Mr. Paul DuPerry @ 828-2882

Substantiation of Need (why survey is not possible without grant): Though the City of Portland recently adopted a Sustainable Portland plan emphasizing energy conservation and environmental stewardship, the School Committee adopted an energy policy in August 2007 and both entities have made strides in conserving energy over the years, the City of Portland and the Portland Public Schools have had to cut nearly 150 positions in the last two years due the gap between expenses and revenues and declining enrollment. The Portland Public Schools has been fortunate to make improvements and invest in alternative energy, but all of its major, recent initiatives (self-sustaining geodesic dome, solar panels, and lighting retrofits) have all been grant or partially grant funded or they would not happen due to rising energy rates which continue to more than offset conservation gains.

If the study shows wind feasibility, please be specific regarding amounts and sources of financing: The City of Portland has a $10,000,000 annual capital improvement program that could augment the installation of a wind turbine generator proven through this anemometer assessment, but would most likely seek grant funding and private donations to complete the project.

List all parties already involved with the project: Portland City Council, Portland School Committee, Assistant City Manager, Superintendent of Schools, City of Portland Planning Division, Portland Public Schools Facilities Department, Munjoy Hill Neighborhood Association, East End Community School PTO, State Department of Education Construction Team, the architect and engineers for the school site, outside consultants and interested citizens

Other information: We have contacted CMP, the FAA, and various wind energy manufacturers and sales representatives (including Lorax Energy Systems, Distributed Energy Systems (Northern Power), and Southwest Wind Power) to learn about regulatory issues; flight planning concerns; types, sizes, heights, efficiencies and costs of various wind turbine generators; and any third party EMF or noise assessments.

Wind Turbine Project Interest

-wind energy goals & projects: The City of Portland, through its Planning Division and Planning Board, will be developing a Community Wind Energy ordinance to support this project and future like endeavors. There is currently one small turbine located within the city limits, but that installation (off of Riverside) met current code restrictions so formal ordinance was required.

Why is the local municipality interested in wind? As stated previously, the City of Portland recently produced its Sustainable Portland plan that recognizes the importance of climate change and green buildings as critical elements in sustaining a vibrant community and strong sense of community. The City Council has, also, established an Energy & Environmental Sustainability Committee that has challenged City of Portland employees, Portland Public School staff and citizens alike to explore ways to reduce our energy consumption, explore alternative energy sources and reduce our carbon footprint...initiatives that were all part of recommendations of the Climate Change Working Group. We must reduce our reliance on fossil fuels and this would be another step in the right direction.

What kind of project does the application envision? Assessment and financing still to be determined, we envision a single wind turbine generator that could support the electrical load/demand of the LEED silver certified East End Community School.

Public or private ownership (if public, describe likely financing options): The City of Portland has an annual $10,000,000 capital improvement program. As is the case in most, if not all, municipalities, our requirements far exceed our financial capacity, so we would hope to secure grants and/or partner with firms or individuals willing to invest in Portland's future.

Describe public input/outreach relating to local municipality wind to date: Again, wind power generation at the East End Community School site is not a brand new topic. The Building Committee seriously considered the potential during the design of the school, but, due to a number of factors (including fiscal constraints), had to abandoned the prospect. The Munjoy Hill Neighborhood Association and the school's parent-teacher organization remain open to the potential and support this request. A teacher at the school, Ms. Cindy Nilsen, would like to use the wind measurement data as part of a learning expedition.

Does the local municipality have a by-law governing wind energy projects? There are no by-laws governing wind energy projects in the City of Portland, but there is one small wind turbine installed within the city limits. This project would most likely sparked interest in a Community Wind Energy ordinance as suggested in the March 18, 2008 memo from the City's Department of Planning and Development to Councilor John Anton.

Data Sheet:						
Latitude:	43:40:12	Longitude:	-70:15:0	Elevation:	0m.	(0) ft.
decimal:	43.67	decimal:	-70.25	Roughness:	0.001m.	
UTM Coordinates: 398900 x 4836500						

Wind by Time and Height

	Avg. Wind Speed (m/s)	Avg. Wind Power Density (W/m2)	Weibull Parameters	
			c	k
30m Annual	5.5			
50m Annual	6	253	7	1.99
70m Annual	6.4			
100m Annual	6.9			
50m Spring	6.1	252	7.1	2.11
50m Summer	4.9	124	5.5	2.16
50m Fall	6	263	7.2	2.01
50m Winter	6.9	374	7.9	2.05

Wind by Direction

	Frequency (Percent)	Power (Percent)	Avg. Wind Speed (m/s)	Weibull Parameters	
				c	k
N	5.7	3.9	5.6	0.9	2.33
NNE	4.2	2.9	5.5	0.9	2.1
NE	3.2	2.1	5.1	0.9	1.93
ENE	4	4.4	5.6	1	1.72
E	4.1	3	4.8	0.9	1.79
ESE	3	1.1	3.6	0.7	1.63
SE	3.4	2.8	4.3	0.8	1.42
SSE	5.5	5.4	5.2	0.9	1.78

S	8.9	11.1	6.2	1.1	2.1
SSW	9.1	9.6	6.2	1.1	2.33
SW	6.9	5.7	6.1	1	2.36
WSW	6.4	4.4	5.8	0.9	2.45
W	9	10.2	6.6	1.1	2.38
WNW	9.6	12	6.8	1.1	2.46
NW	9.7	15.5	7.2	1.2	2.24
NNW	7.4	6	6	1	2.51

Memorandum
Department of Planning and Development
Planning Division

To: John Anton, City Council
From: Bill Needelman, Senior Planner
Re: Community Wind Power – Zoning Implications
Date: March 18, 2008

CC: Kevin Donoghue, City Council
Marge Schmuckal, Zoning Administrator
Alex Jaegerman, Planning Division Director
Penny Littell, Associate Corporation Counsel
Barbara Barhydt, Development Review Services Manager
Troy Moon, Solid Waste Manager
Doug Sherwood, School Facilities Manager

Introduction:

The following is a brief introduction to zoning implications of community based wind power. This memo responds to a specific council request to explore siting a wind turbine at the East End Community School (EECS) for use by the City, the East End sewage treatment facility, and, potentially, other private users.

Readers should recognize that any future zoning interpretation will depend on the type, scale, and end user of each particular application.

Zoning Basics – Use and Height:

Use:

The basis of any zoning determination rests on whether the particular use – in this case, a wind power generator – is permitted in within the mapped zoning coverage for the subject site. In the case of the EECS, the zoning is R-3 in which schools are a conditional use. As a stand-a-lone use, a wind generator would not be permitted. If the wind generator were to be used solely by the school, it could be considered an accessory use. One assumes that back metering unused power to the grid, as is customary with small scale power generation, would be acceptable

as long as commercial power generation was not the primary purpose of the installation.

Expansions of conditional uses (the underlying school use) are reviewable by the Planning Board and any significant wind-generating apparatus should anticipate Planning Board review for external impacts such noise and visual impact.

Height:

Any structure is subject to the dimensional requirements of the zone in which it sits. The major hurdle for wind generation will be height. Sideline setbacks will also impact siting choices; but, given the potential for any tower structure to fail, set backs from abutting properties are probably best dictated by the height of the structure.

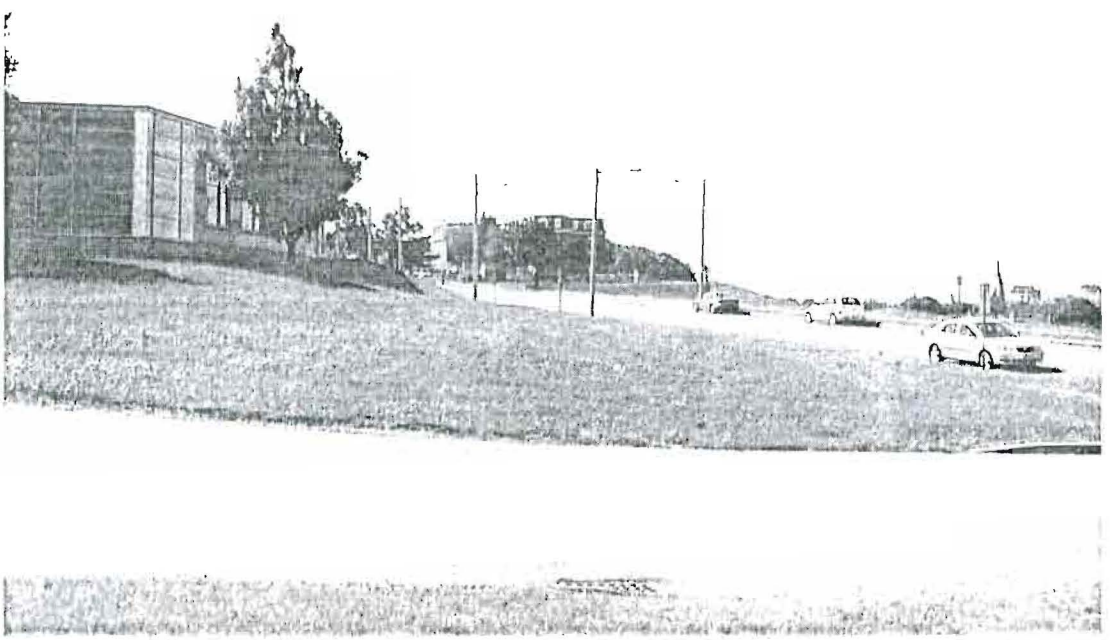
Assuming that the use issues above are satisfied, any free-standing structure will need to meet the maximum building height requirement. While a wind tower is not a "building" per se, as a structure, the building height requirement will apply. In the R-3, the Maximum Building Height is 35 feet, which will not be practical for most wind generation applications.

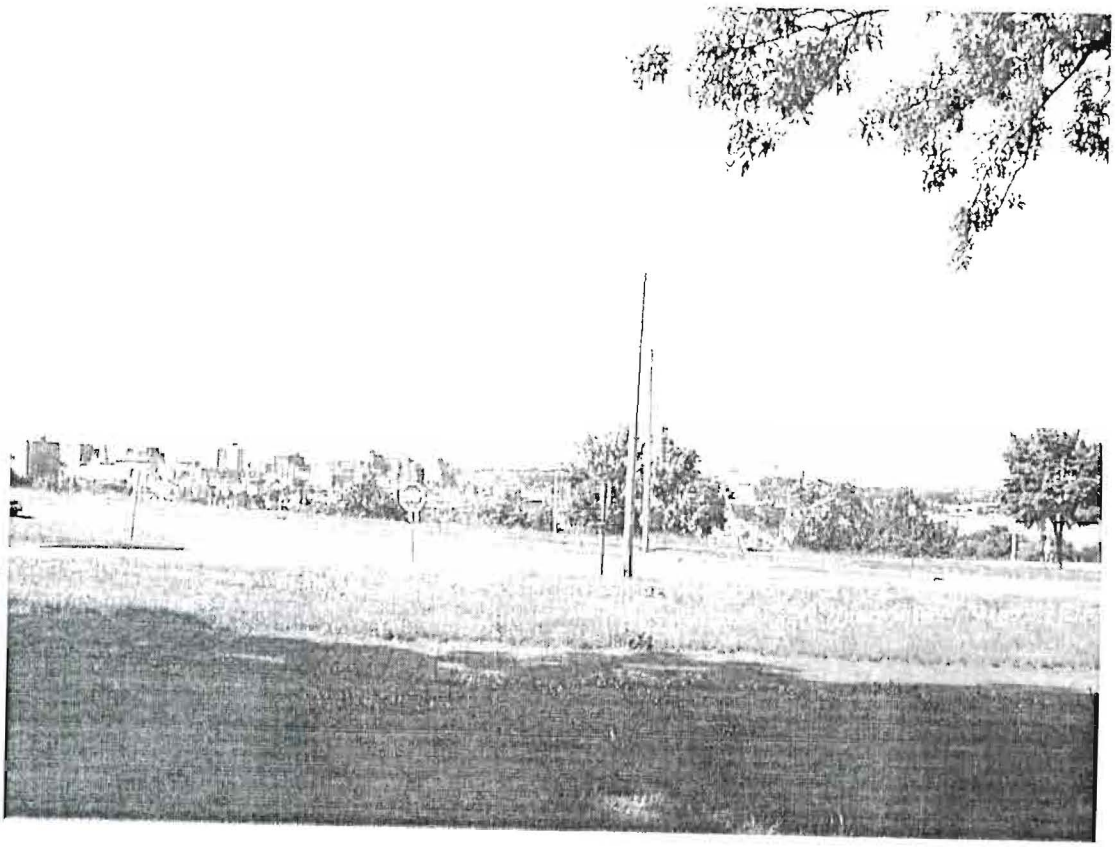
Building mounted appurtenances are regulated differently from free standing structures and are generally exempt from building height requirements. Assuming that structural and building code standards can be addressed, a building-mounted fixture may be the regulatory path of least resistance.

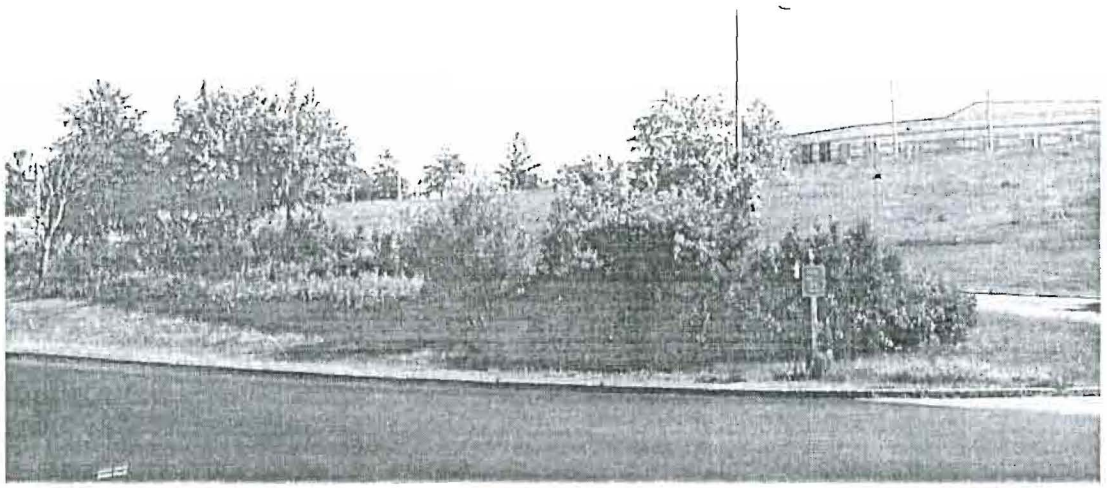
Summary:

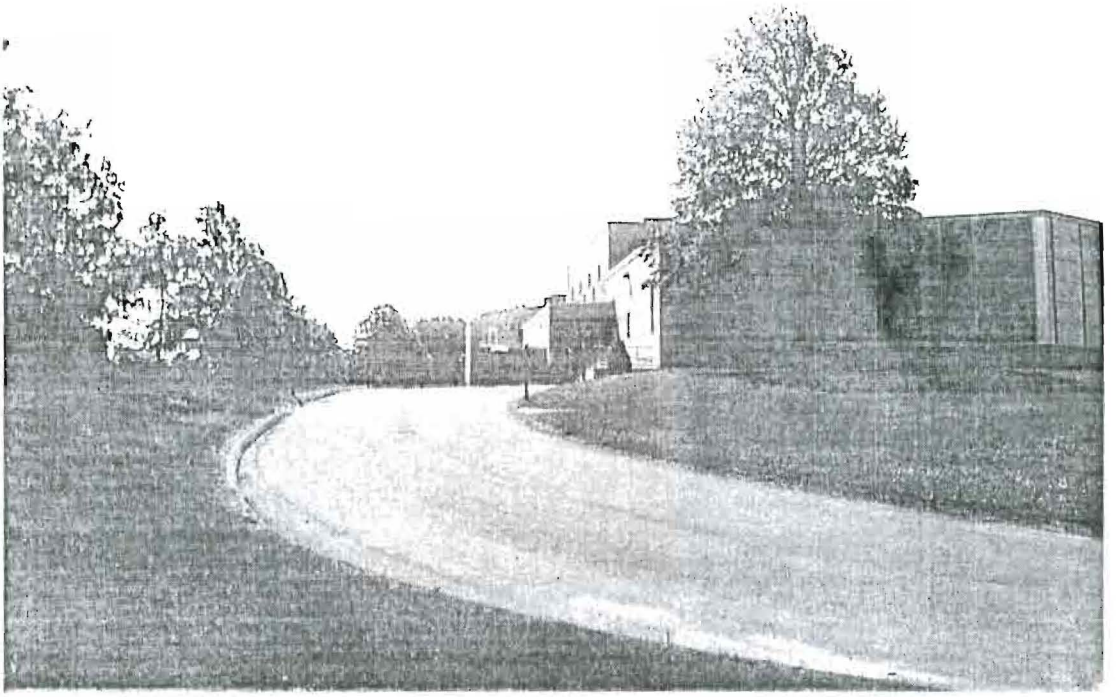
A building-mounted wind generator for the sole use of the EECS could be processed as an amendment to the existing conditional use approval for the school. A determination would be provided based on the scale of the proposal as to whether the installation would be an expansion of a conditional use, subject to planning board review.
Ground-mounted structures and/or turbines generating power intended for off-site use would in all likelihood require some change in zoning to be permitted. Given that community based wind generation may become a feasible and attractive alternative local energy source and that more than one neighborhood in the city may want to explore such an alternative, the Council may want to consider developing Community Wind Energy ordinance to address these opportunities.

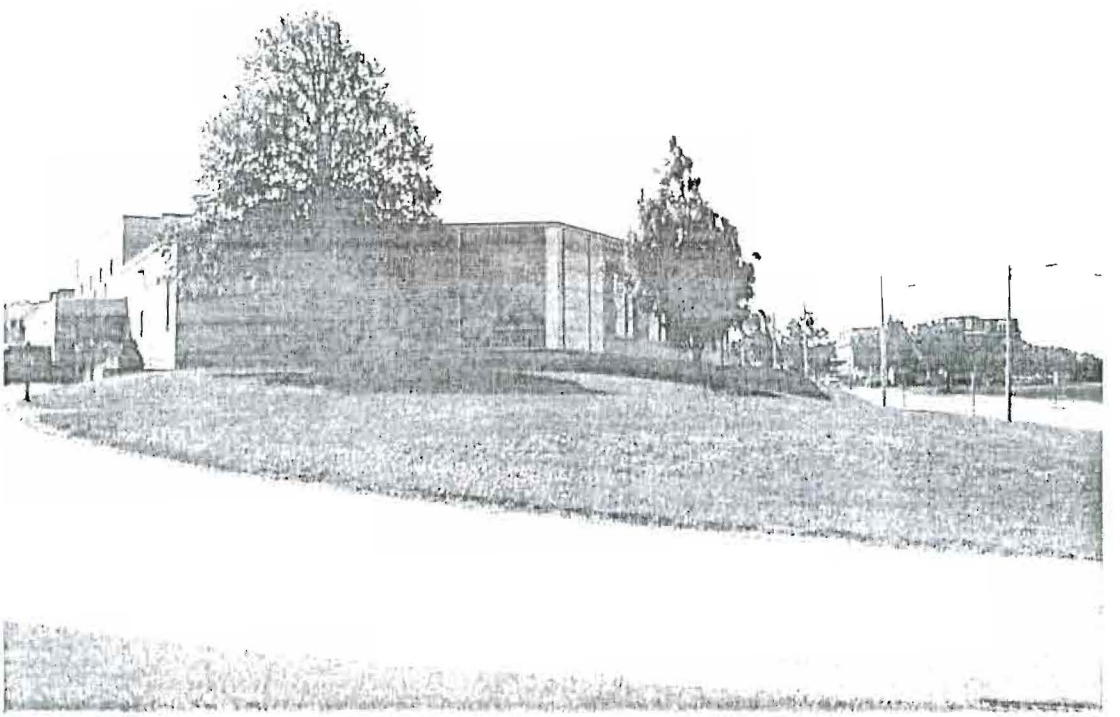
The external impacts of wind generation will vary widely according to the scale, placement, turbine specifications, and height of the structures, and the City as of yet has little to no experience regulating these installations.

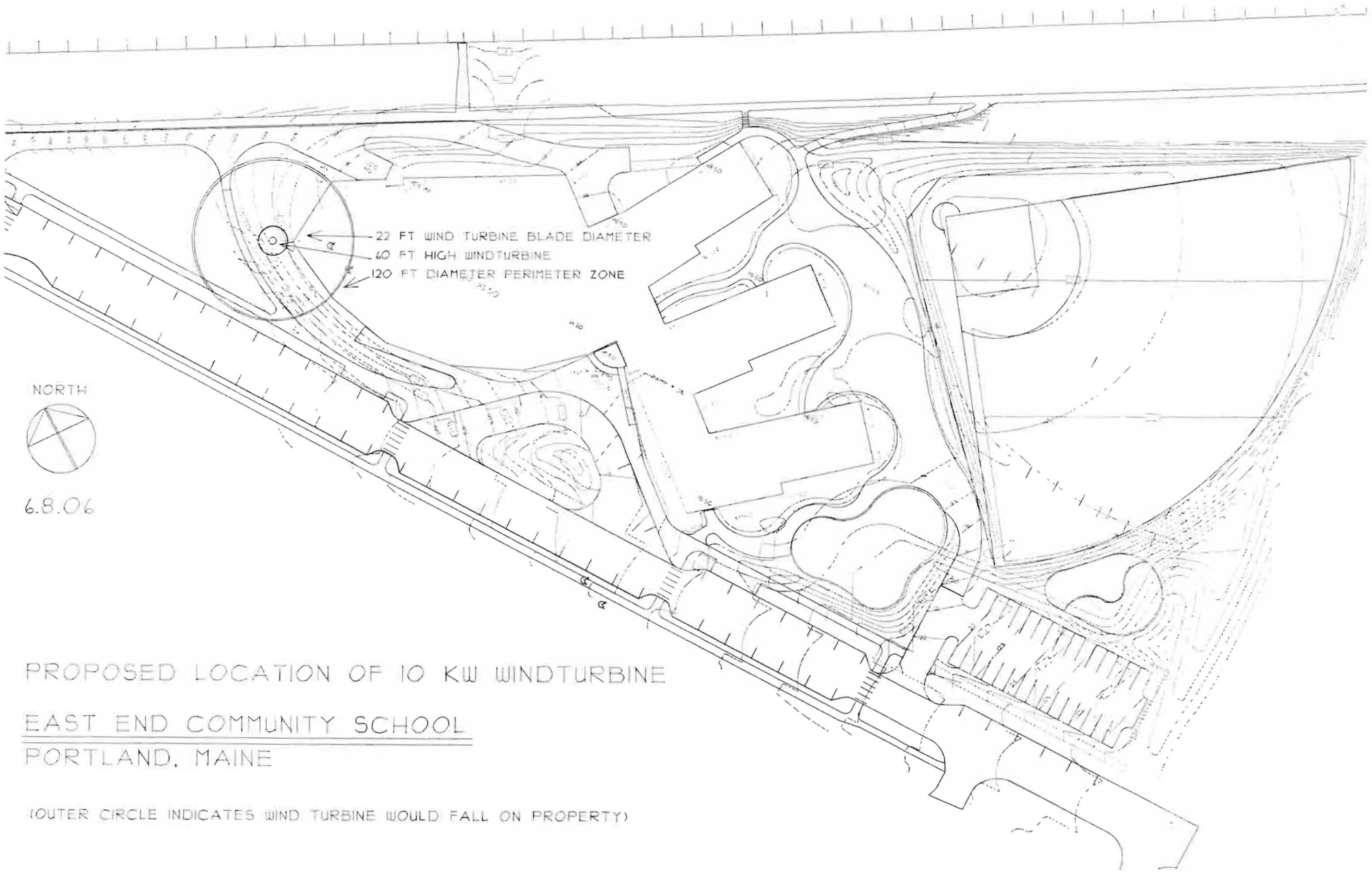












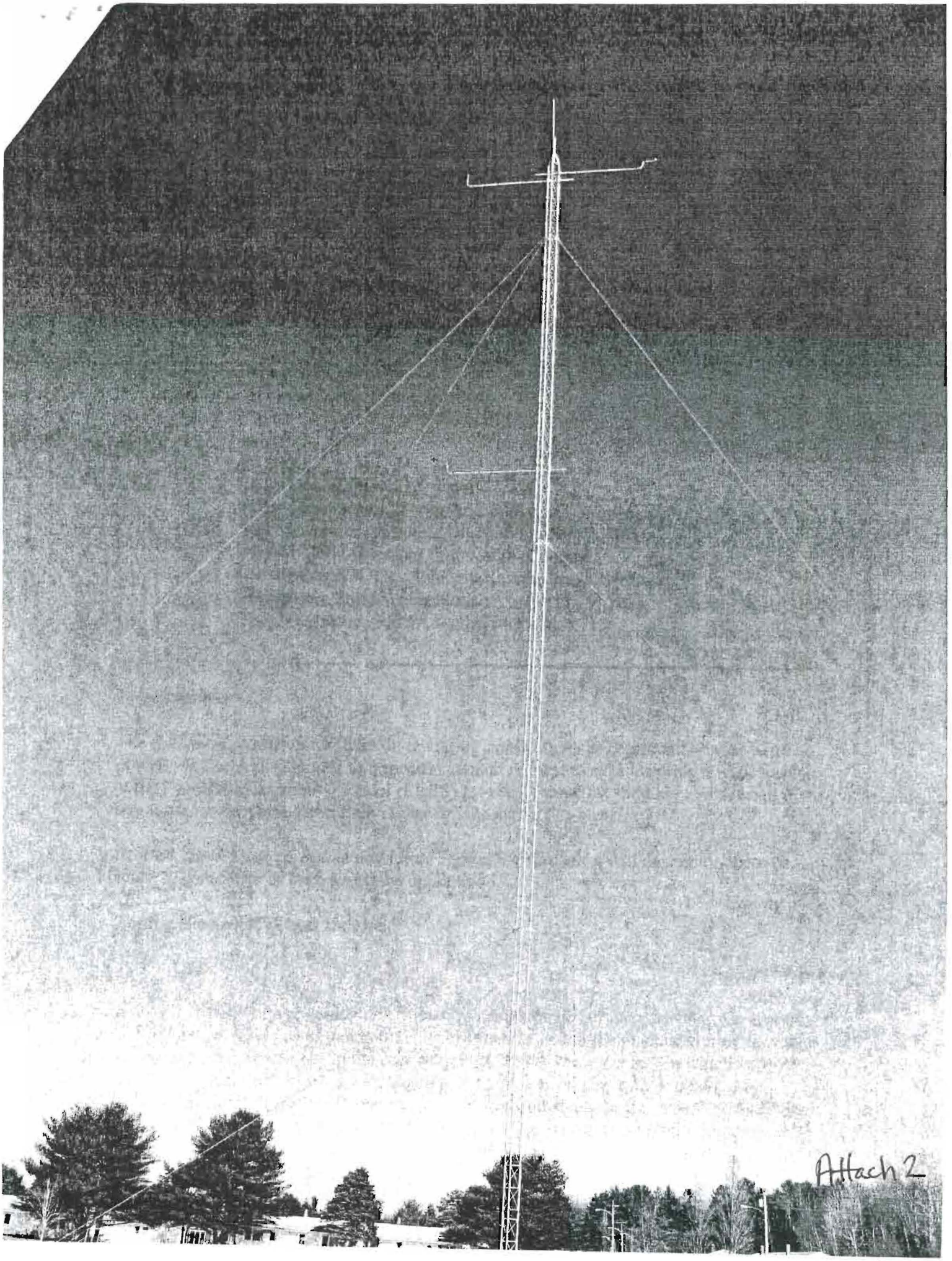
6.8.06

PROPOSED LOCATION OF 10 KW WINDTURBINE

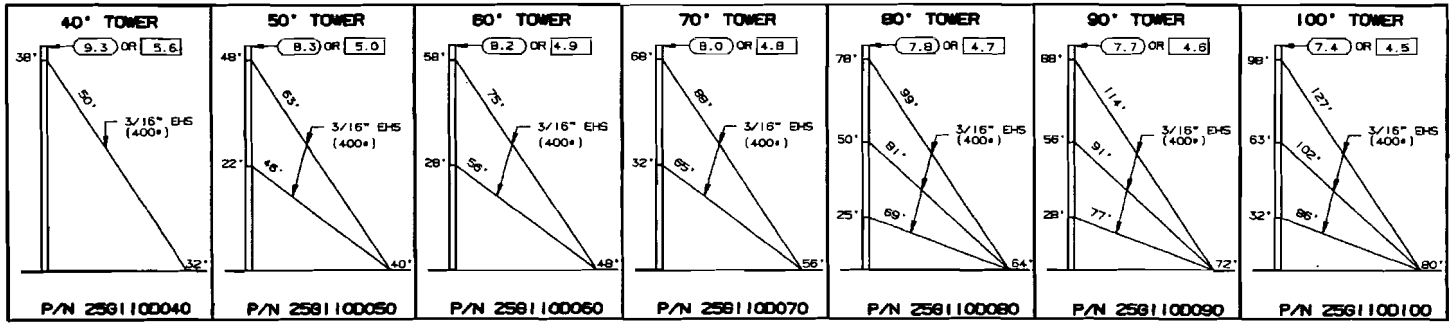
EAST END COMMUNITY SCHOOL

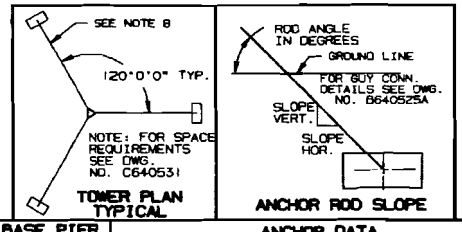
PORTLAND, MAINE

(OUTER CIRCLE INDICATES WIND TURBINE WOULD FALL ON PROPERTY)



Attach 2





TOWER HT.	BASE PIER REF. DWG. C610621 NO.	REAC. LBS.	ANCHOR DATA REF. DWG.: BLOCK-C620643; ROD-C660415 BLOCK NO.	ROD NO.	ROD ANGLE	SLOPE HOR.	SLOPE VERT.	REAC. LBS. HOR.	REAC. LBS. VERT.
40'	CB1	2,650	4A	GAR30	49.8	10.1	12	1,030	1,210
50'	CB1	3,120	4A	GAC303	41.3	12	10.6	1,680	1,480
60'	CB1	3,490	4A	GAC303	41.6	12	10.7	1,830	1,630
70'	CB1	3,890	4A	GAC303	41.2	12	10.5	2,050	1,800
80'	CB1	4,650	4A	GAC303	39.2	12	9.8	2,690	2,190
90'	CB1	5,040	4A	GAC303	39.0	12	9.7	2,960	2,400
100'	CB1	5,400	4A	GAC303	39.1	12	9.8	3,150	2,560

GENERAL NOTES

1. TOWER DESIGNS ARE IN ACCORDANCE WITH APPROVED NATIONAL STANDARD ANSI/EIA-222-E-1991 (NO ICE).
2. ▭ ALLOWABLE PROJ. AREA (SQ. FT.) FOR ROUND MEMBER ANTENNAS.
   ▭ ALLOWABLE PROJ. AREA (SQ. FT.) FOR FLAT MEMBER ANTENNAS.
3. EQUIVALENT FLAT-PLATE ANTENNA AREAS, BASED ON EIA RS-222-C, MUST NOT EXCEED THE AREAS SHOWN FOR FLAT MEMBER ANTENNAS.
4. ANTENNA AND MOUNTS ARE ASSUMED SYMMETRICALLY PLACED AT THE TOWER APEX.
5. DESIGN ASSUME ONE 5/8" DIA. LINES ON EACH TOWER FACE.
6. ANCHOR RADIUS IS FROM TOWER BASE TO INTERSECTION OF ROD WITH GROUND.
7. FOR GUY HARDWARE INSTALLATION DETAILS SEE DWG. A871382.
8. TOWER DESIGNS AND GUY CHORD LENGTHS SHOWN ARE BASED ON LEVEL GROUND. ADD 6 PERCENT TO CHORD LENGTHS (FOR SAG AND CONNECTIONS) FOR FINAL CUT LENGTHS. ( ) INDICATES INITIAL TENSION FOR GUY WIRES IN POUNDS AT 60 DEGREES FAHRENHEIT.
9. DO NOT INSTALL OR DISMANTLE TOWERS WITHIN FALLING DISTANCE OF ELECTRICAL AND/OR TELEPHONE LINES.
10. TOWER ERECTION AND DISMANTLING MUST BE BY QUALIFIED AND EXPERIENCED PERSONNEL.
11. TEMPORARY STEEL GUYS, WHEN REQUIRED DURING ERECTION OR DISMANTLING, MUST BE SUPPLIED AND INSTALLED BY THE ERECTOR.
12. INSTALL WARNING PLATE (P/N ACWS) IN A HIGHLY VISIBLE LOCATION.
13. ALL ANTENNA INSTALLATIONS MUST BE GROUNDED IN ACCORDANCE WITH LOCAL AND NATIONAL CODES.
14. EXTRA CABLE CLAMPS HAVE BEEN PROVIDED FOR TURNBUCKLE SAFETY REQUIREMENTS. FOR DETAILS SEE DWG. 8680324 LATEST REVISION.

No.	Revision Description	Date	Rev By	Chd By	Appd By
R3	CHANGED REACTIONS	10-4-95	BRT	WDU	HA
R2	REV NOTE NO. 3	5-21-92	RKB	WDU	TS
R1	EIA-222-E-1991 WAS EIA-222-D	12-9-91	RKB	WDU/KTL	TS

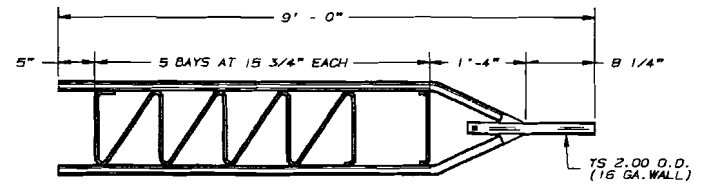
ROHN

	By	Date
Scale: NONE		
Drawn:	RKB	12-27-90
Checked:	KKG	1-28-91
App. Eng.:	TS	2-21-91
App. Sales:	AE	2-21-91

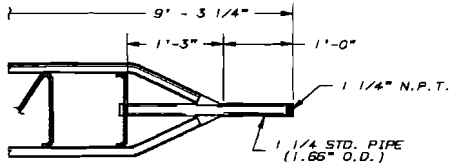
Title: GUYING DETAILS FOR 40'-100' 25G TOWERS 110 MPH BASIC WIND SPEED (NO ICE)

ENG. FILE:

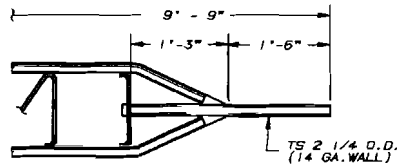
DRAWING NO.: C902041 R3



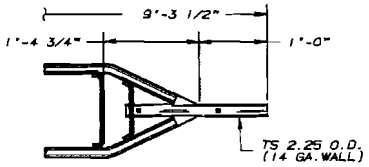
25AG



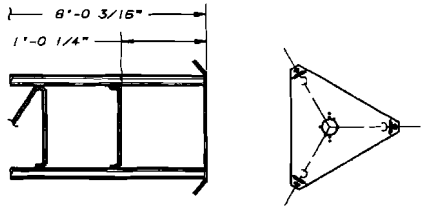
25AG1



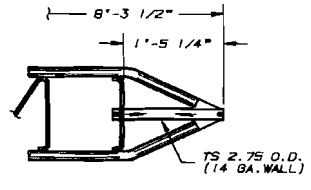
25AG2



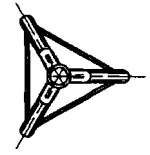
25AG3



25AG4

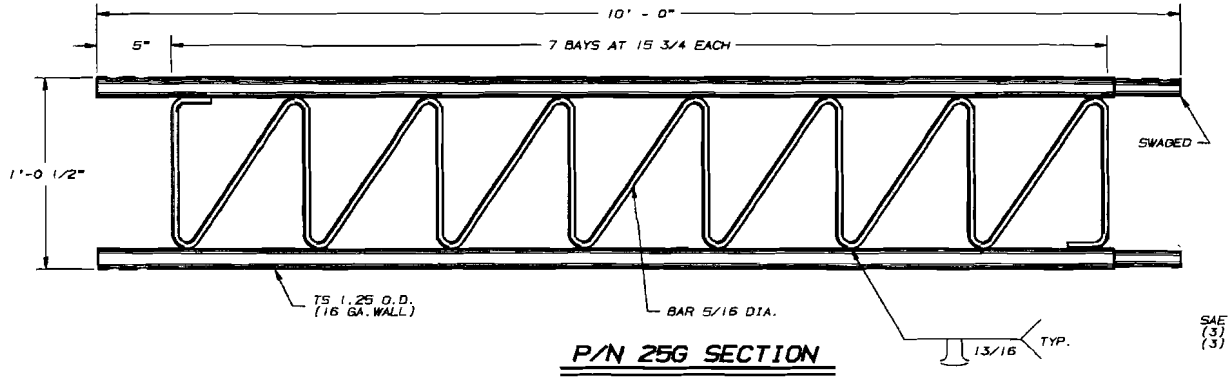


25AG5

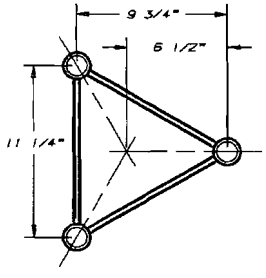


TYPICAL PLAN VIEW
(FOR ALL SECTIONS EXCEPT 25AG4)

NOTE: SPECIFICATIONS OF TOP SECTIONS ARE THE SAME AS SECTION NO.25G EXCEPT AS NOTED ABOVE.



P/N 25G SECTION



SAE GRADE 5 BOLT ASSY'S REQUIRED
(3) 1/4" DIA. X 1 1/2" LG. (NF BOLTS)
(3) 5/16" DIA. X 1 1/2" LG. (NF BOLTS)

SEC. >>	25G TOWER SECTION PROPERTIES		
ITEM	LEGS	BRACES	SECTION
SIZE	TS 1.25 ODX.065 WALL	BAR 5/16 DIA.	N/A
Fy	50.0	36.0	N/A
A	0.2420	0.0770	0.726
S	0.0682	0.0030	2.15
I	0.0426	0.00047	15.3
r	0.4196	0.0781	4.59
L	15.7500	18.7	VARIES
K	1.0	0.70	1.0
KL/r	37.5	167.6	VARIES
C	8.43	0.55	N/A
T	8.28	N/A	N/A
M	N/A	N/A	6.72
W	0.82	0.261	4.0
Ws	26.0	14.0	40.0

NOMENCLATURE

A = CROSS SECTIONAL AREA (SQUARE INCHES)
C = COMPRESSION CAPACITY WITH 1/3 INCREASE IN ALLOWABLE STRESS (KIPS)
I = MOMENT OF INERTIA ABOUT CENTROIDAL AXIS (INCHES**4)
Fy = MINIMUM YIELD STRENGTH (KSI)
K = EFFECTIVE LENGTH FACTOR (DIMENSIONLESS)
L = UNBRACED LENGTH (INCHES)
M = MOMENT CAPACITY WITH 1/3 INCREASE IN ALLOWABLE STRESS (FT.-KIPS).
N/A = NOT APPLICABLE
S = ELASTIC SECTION MODULUS (INCHES**3)
T = TENSION CAPACITY WITH 1/3 INCREASE IN ALLOWABLE STRESS (KIPS)
r = RADIUS OF GYRATION (INCHES)
W = WEIGHT PER FOOT (POUNDS)
Ws = WEIGHT PER SECTION (POUNDS)

NOTE: CAPACITIES SHOWN ARE BASED ON ANSI/EIA-222-E-1991.

No.	Revision Description	Date	Rev By	Ckd By	Appd By
R9	REV'D EIA-222-D-1986 TO EIA-222-E-1991	8-10-91	RKB		
R8	REDRAWN AND REVISED	6/13/91	CSR	RKB	TS
R7	REDRAWN AND REVISED SPEC.	2/15/88	GPW	WDU	RAM

ROHN

Scale: NONE	By	Date
Drawn:	GPW	2/15/88
Checked:	WDU	2/24/88
App. Eng.:	RAM	2/25/88
App. Sales:	AE	2/25/88

Title: 25G SECTION ASSEMBLY

DRAWING NO.: C630625 R9

Ann Machado - Re: Zoning Board of Appeals

From: Douglas Sherwood
To: Ann Machado
Date: 9/9/2009 1:09 PM
Subject: Re: Zoning Board of Appeals
CC: Barbara Barhydt; Carol Dayn; Cindy Nilsen; David Pinkham; James Morse; Marge Schmuckal; Susan Ward; Tim Dean; Timothy Vrabel; William Needelman

Ann,

Good afternoon!

Thanks for the reminders and followup!

As much as I would like to be presenting our proposal at the September 17th ZBA meeting, I must regretfully withdraw our application for that meeting for the reasons stipulated in your email. Once I have plans/drawings from the grantor and have them reviewed by an engineer, I will be able to resubmit. Unfortunately, that probably means late October or November at the earliest.

Sincerely,
Doug

>>> Ann Machado 9/9/2009 12:22 PM >>>
Doug -

I left you a voicemail yesterday morning and this morning. The agenda for the September 17, 2009 Zoning Board of appeals had to be sent to the paper by noon today. Also the notices to the property owners within 500' had to be sent out today. Since your application is incomplete at this time, we could not put you on the September 17, 2009 agenda.

Your appeal has been moved to the October 1, 2009 agenda. The submittal date for that agenda is September 14, 2009. To be on that agenda we need the required information (the plans & specifications of the tower construction stamped by a licensed professional engineer and a safety report prepared and stamped by a licensed professional engineer demonstrating that the tower will be safe) by Monday, September 21 at noon, so the notices can be created to send to the abutters etc.

Please call or email me if you have any questions.

Ann Machado
Zoning Specialist
(207) 874-8709

From: Douglas Sherwood
To: Machado, Ann
Date: 9/21/2009 3:20:49 PM
Subject: Re: ZBA apeal for East End School temporary wind anemometer

Ann,

Good afternoon!

Thanks yet again for the followup!

Our application will be timed such that we have all the required information, but also a realistic expectation of securing a grantor to install within 6 months of approval. When I have the pieces lined up, I will advise.

Best regards,
Doug

P.S. Could I review the approved Peaks Island application some time in the near future? Please advise.

-----Original Message-----
From: Ann Machado
To: Sherwood, Douglas <SHERWD@portlandschools.org>

Sent: 9/21/2009 11:29:13 AM
Subject: ZBA apeal for East End School temporary wind anemometer

Doug -

When I sent you an email on 9/9/09, I told you that to be on the October 1, 2009 agenda, we needed all the required information to be submitted by noon today, September 21, 2009. In your response, you said that you probably won't be able to get all the required information until late October or November. I just wanted to confirm that you won't be on the October 1, 2009 agenda.

If you know when you might have the information by, we could tentatively schedule for the closest appeal date.

Thanks,

Ann B. Machado
Zoning Specialist
207.874.8709

Ann Machado - RE:Proposed Anemometer Tower - Portland's East End Community School

From: Douglas Sherwood
To: Paul Villeneuve
Date: 10/6/2009 9:41 AM
Subject: RE:Proposed Anemometer Tower - Portland's East End Community School
CC: Barbara Barhydt; Carol Dayn; Cindy Nilsen; James Morse; Jeanie Bourke; Jill Blackwood; Marge Schmuckal; Shirley.Bartlett@maine.gov; Susan Ward; Tim Dean; Timothy Vrabel

Paul,

Good morning!

Thank you for continued support, encouragement and commitment to the proposed wind assessment on the Eastern Promenade here in Portland!

Unfortunately, we will not be able to submit a formal application by the October 31, 2009 deadline However, please note that we remain resolute in our desire to conduct the wind assessment and will be working with our neighbors and the City's Zoning Board of Appeals and Inspections' Department to secure the appropriate documents and be ready for the next round.

Do you have any idea when the next round might occur? For us, late Spring would be ideal.

Much appreciated.

Thanks,
Doug

>>> "Paul Villeneuve" <paul@eece.maine.edu> 9/30/2009 1:08 PM >>>
Doug,

I can provide a commitment letter. Please let me know who you would like the commitment letter addressed to. In terms of the installer, we don't have one selected. It will depend upon the award location and availability. I have already sent you installation details on the tower but have attached them to this e-mail.

Paul L. Villeneuve, P.E.
Associate Professor
University of Maine
School of Engineering Technology

-----Original Message-----
From: Douglas Sherwood [mailto:SHERWD@portlandschools.org]
Sent: Wednesday, September 30, 2009 12:52 PM
To: paul@eece.maine.edu; Shirley.Bartlett@maine.gov; Paul Villeneuve
Subject: Re: Anemometer Tower

Shirley,

Good afternoon!

Duly noted and agreed on all points!

Best of luck!

Sincerely,
Doug

-----Original Message-----
From: "Bartlett, Shirley" <Shirley.Bartlett@maine.gov>
To: Sherwood, Douglas <SHERWD@portlandschools.org>
To: <paul@eece.maine.edu>

Sent: 9/30/2009 12:15:12 PM
Subject: RE: Anemometer Tower

Doug, a commitment on UMO letterhead will suffice, since they are our agent for this grant award. However, the letter cannot promise you that you will receive the anemometer loan, unless you get all of your permits in place by October 30th.

Shirley I. Bartlett
Efficiency Maine Program Manager
MPUC Energy Programs Division
#18 State House Station
Augusta, ME 04333-0018
207-287-3318
www.efficiencymaine.com <http://www.efficiencymaine.com>

So great has been the endurance, so incredible the achievement, that, as long as the sun keeps a set course in heaven, it would be foolish to despair of the human race. -- Ernest L. Woodward

-----Original Message-----
From: Douglas Sherwood [mailto:SHERWD@portlandschools.org]
Sent: Wednesday, September 30, 2009 12:04 PM
To: paul@eece.maine.edu
Cc: Bartlett, Shirley
Subject: Re: Anemometer Tower

Paul,

Good morning!

The last time I spoke to Efficiency Maine they were projecting a deadline of September 30th so I held back so that my Zoning Board of Appeals approval would not lapse. I will contact key city staff to see if we can make the October 30th deadline. To have a chance, I will need a commitment letter from Efficiency Maine that the tower will be removed at the end of the assessment and information from your installer so that we can hire an engineer to prepare sealed drawings and a safety assessment - all three items being conditions of local approval. If you and Efficiency Maine can assist with these items, I can make the deadline.

Please advise.

Thanks for the encouragement!

Sincerely,

Doug

-----Original Message-----

From: "Paul Villeneuve" <paul@eece.maine.edu>

To: Sherwood, Douglas <SHERWD@portlandschools.org>

Cc: Bartlett, Shirley <Shirley.Bartlett@maine.gov>

Sent: 9/29/2009 10:12:41 AM

Subject: Anemometer Tower

Doug,

Unique or distinctive characteristics of the use
adverse impact on health, safety or welfare.
- impact differs substantially from
impact that normally occur.

358 Eastern Prom.

CITY OF PORTLAND
APPLICATION PROCESS FOR THE
ZONING BOARD OF APPEALS

Attached you will find the schedule for the Zoning Board of Appeals meetings. The deadline for the submissions is on the left hand side; the meeting dates are on the right hand side.

Eleven (11) separate packets of the following must be submitted to hold a place on the Agenda:

a. ✓ Copy of Appeal application.
b. ✓ Cover letter addressed to the Zoning Board of Appeals stating what you want to do.
c. ✓ Plot plan showing the site and location of all structures, existing and proposed, in relation to the lot lines and, if applicable, indicate parking. Lot size and setback dimensions must be shown.
d. N/A Floor plan, if applicable, showing dimensions of existing and proposed rooms and/or structures.
e. ✓ Copy of the tax map (obtained in the Assessors Office) with the property highlighted.
f. ✓ Photos of property.
g. OK → Deed, sales agreement, lease or intent to lease.
h. Owner, lessee, prospective purchase or legal representation must sign the application
i. OK → A letter from the property owner giving permission to the applicant to represent the property if applicable.
j. All plans must also be folded neatly with each packet and banded.

If additional information is needed to complete the packet for the Zoning Board of Appeals you will be notified. Please make sure you include a contact phone number on your cover letter. If we cannot contact you, the item may be tabled until the next regular meeting.

The application fee is $100.00 to appear before the Zoning Board of Appeals. Please note that the applicant is also responsible for the cost of the legal ad in the Portland Press Herald, and the cost of sending abutters notification within 500' of the subject property. The City will bill you for the legal ad and abutters notification.

You may apply for an appeal/permit at City Hall, Room 315 Monday through Friday between 8:00 am and 4:00 pm. **If you choose to file on the deadline date, please note that applications are accepted only until noon on that day.**

You will be sent a letter confirming the time and date of the scheduled meeting along with an Agenda.

zoned site;

vii. The maximum number of children in a day care facility, home babysitting service, nursery school or kindergarten located in a residential or existing accessory structure shall be twenty-four (24); and

viii. Any additions or exterior alterations such as facade materials, building form, roof pitch, and exterior doors shall be designed to be compatible with the architectural style of the building and preserve the residential appearance of the building.

4. Temporary wind anemometer towers, as defined in Sec 14-47, are permitted provided the following standards are met in addition to Sec 14-430:

a. Towers may be installed for the purpose of wind data collection for no more than two (2) years after the issuance of a Certificate of Occupancy for the tower. At the conclusion of the aforementioned two (2) years, the tower must be dismantled and removed from the site within sixty (60) days; and

b. Towers shall be constructed according to plans and specifications stamped by a licensed professional engineer, which shall be provided to the Board of Appeals with the application; and

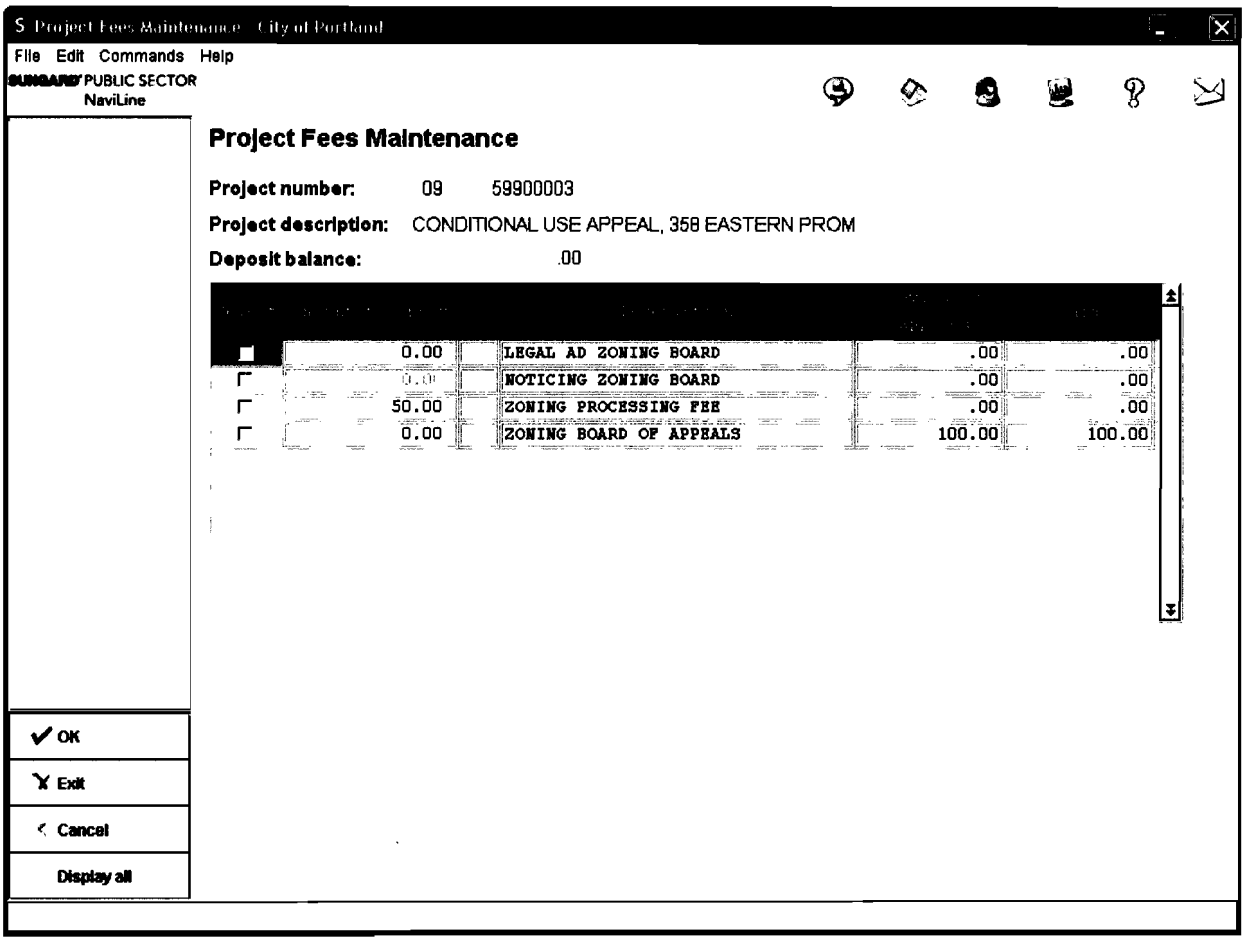
not have this yet.

c. Towers shall be set back from habitable buildings by a distance equal to 1.1 times the tower height; and

says 150'
tower 100. needs 110'

d. The applicant shall provide a safety report prepared and stamped by a licensed professional engineer to the Board of Appeals with their application for conditional use, which demonstrates how

not have yet


Project Fees Maintenance - City of Portland
File Edit Commands Help
SUNGARD PUBLIC SECTOR
NaviLine
Project Fees Maintenance
Project number: 09 59900003
Project description: CONDITIONAL USE APPEAL, 358 EASTERN PROM
Deposit balance: .00
0.00 LEGAL AD ZONING BOARD .00 .00
0.00 NOTICING ZONING BOARD .00 .00
50.00 ZONING PROCESSING FEE .00 .00
0.00 ZONING BOARD OF APPEALS 100.00 100.00
OK
Exit
Cancel
Display all

City of Portland
DATE: 12/14/09
TIME: 10:51:51

PZ CASH RECEIPT

PROJECT #: 09-59900003
PROJECT DESC: CONDITIONAL USE APPEAL, 358 EASTERN PROM
RECEIVED FROM: CITY OF PORTLAND
RECEIPT NUMBER:

FEE	DESCRIPTION	CREDIT	PAYMENT
Z1	ZONING BOARD OF APPEALS		100.00
		TOTAL AMOUNT:	100.00