Form # P 04

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK

CITY OF PORTLAND

INSPECTION

PERMIT

PERMIT ISSUED

Permit Number: 060655

MAY 15 2006

CITY OF PORTLAND

Please Read Application And Notes, If Any, Attached

This is to certify that University Of Maine/n/a

has permission to Install telecommunications facility, including 6 antennas.

AT 232 Deering Ave L 051 E001001

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 when permission proceed before this building or part thereof is closed-in 24 HOUR NOTICE IS REQUIRED.

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

OTHER REQUIRED APPROVALS

Fire Dept. _____

Health Dept. _____

Appeal Board _____

Other _____
Department Name

Director - Building & Inspection Services

PENALTY FOR REMOVING THIS CARD

City of Portland, Maine - Building or Use Permit Application

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

Permit No:	Issue Date:	CBL:
06-0655		051 E001001

PERMIT ISSUED
MAY
CITY OF PORTLAND

Location of Construction:	Owner Name:	Owner Address:	Phone:
232 Deering Ave	University Of Maine	107 Maine Ave	
Business Name:	**Contractor Name:**	**Contractor Address:**	**Phone**
n/a	n/a	n/a Portland	
Lessee/Buyer's Name	**Phone:**	**Permit Type:**	**Zone:**
n/a	n/a		USM overlay zone
Past Use:	**Proposed Use:**	**Permit Fee:**	**Cost of Work:**	**CEO District:**
University of Maine	University of Maine / Install a telecommunications facility, includes *6* antennas.	$606.00	$65,000.00	3

FIRE DEPT: ☐ Approved ☐ Denied

Signature

INSPECTION:
Use Group: U Type: 2B
ANTENNAE 5/8/06

Signature:

Proposed Project Description:
Install telecommunications facility, includes *6* antannas.

PEDESTRIAN ACIIVITIES DISTRICT (P.A.D.)

Action ☐ Approved ☐ Approved w/Conditions ☐ Denied

Signature: Date:

Permit Taken By:	Date Applied For:
GG	05/04/2006

Zoning Approval

Special Zone or Reviews	Zoning Appeal	Historic Preservation
☐ Shoreland OK per 14-430	☐ Variance	☑ Not in District or Landmark
☐ Wetland	☐ Miscellaneous	☐ Does Not Require Review
☐ Flood Zone	☐ Conditional Use	☐ Requires Review
☐ Subdivision	☐ Interpretation	☐ Approved
☐ Site Pian	☐ Approved	☐ Approved w/Conditions
Maj ☐ Minor ☐ MM ☐	☐ Denied	☐ Denied
Date: OK 5/4/06	late	Date:

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:	Date Applied For:	CBL:
06-0655	05/04/2006	051 E001001

Location of Construction:	(Owner Name:	Owner Address:	Phone:
232 Deering Ave	University Of Maine	107 Maine Ave	
Business Name:	**Contractor Name:**	**Contractor Address:**	**Phone**
n/a	n/a	n/a Portland	
Lessee/Buyer's Name	**Phone:**	**Permit Type:**	
n/a	n/a		

Proposed Use:	Proposed Project Description:
University of Maine / Install a telecommunications facility, includes	Install telecommunications facility, includes 6 antannas.

Dept: Zoning **Status:** Approved **Reviewer:** Marge Schmuckal **Approval Date:** 05/04/2006

Note: **Ok to Issue:** ☑

Dept: Building **Status:** Approved with Conditions **Reviewer:** Mike Nugent **Approval Date:** 05/08/2006

Note: **Ok to Issue:** ☑

1) The project engineer must provide a final inspection and report certifying the installation.

TOWER RESOURCE MANAGEMENT, INC.

412412006

Portland City Hall / Planning Department-Inspections Division
389 Congress St. Room 315
Portland, **ME** 04101

RE: Required Documents in reference to Building Permit Application for Cingular Wireless on Deering Ave, Portland, ME.

Please find the attached:

- Certificate of Design.
- Original Structural Calculations.
- Check Payable to the City of Portland in the amount of $606.00 for the building permit application fee.

Per your question regarding the Address:
The site proposal is for 246 Deering Ave. in Portland. **ME.**

Please feel free to contact me with any questions you might have regarding this application. Please send permit to myself at the following address.

Thanks for your attention to this matter,

Andy Candiello
Tower Resource Management
30 Lyman St. Suite 12
Westborough, **MA** 01581

DEPT. OF BUILDING INSPECTION
CITY OF PORTLAND, ME
APR 25 2006
RECEIVED

CITY OF PORTLAND
BUILDING CODE CERTFICATE
389 Congress St., Room **315**
Portland, Maine **04 101**

TO: Inspector of Buildings City of Portland, Maine
Department of Planning & Urban Development
Division of Housing & Community Service

FROM PAUL L. MUCCI, P.E. OF AERIAL SPECTRUM, INC.

RE: Certificate of Design

DATE: 7/2/46

These plans and/ or specifications covering construction work on:

LAW BUILDING AT UNIVERSITY OF SOUTHERN MAINE AT DEERING AVENUE, PORTLAND, ME

Have been designed and drawn up by the undersigned, a Maine registered Architect / Engineer according to the *2003 International Building Code* and local amendments.

(SEAL)

STATE OF MAINE
PAUL L. MUCCI
10479
REGISTERED PROFESSIONAL ENGINEER

Signature:

Title: DIRECTOR OF OPERATIONS

Firm: AERIAL SPECTRUM, INC.

Address: ONE GENERAL WAY - P.O. Box 373
READING, MA 01867

As per Maine State Law:

$50,000.00 or more in new construction, repair expansion, addition, or modification for Building or Structures, shall be prepared by a registered design Professional.

FROM DESIGNER: PAUL MUCCI, P.E. OF AERIAL SPECTRUM, INC.

DATE: 4/20/06

Job Name: CINGULAR WIRELESS "USM PORTLAND" (SITE # ME5045)

Address of Construction: LAW SCHOOL BLDG. OF USM ON DEERING AVE, PORTLAND, ME

2003 *International Building Code*

Construction project was designed according to the building code criteria listed below:

Building Code and Year IBC 2003 Use Group Classification(s) INDUSTRIAL F-1

Type of Construction PRE-CAST CONCRETE

Will the Structure have a Fire suppression system in Accordance with Section 903.3.1 of the 2003 IRC NO

Is the Structure mixed use? YES If yes, separated or non separated (see Section 302.3) SEPARATE

Supervisory alarm system? NO Geotechnical/Soils report required?(See Section 1802.2) NO

STRUCTURAL DESIGN CALCULATIONS

X Submitted for all structural members *(106.1, 106.1.1)*

DESIGN LOADS ON CONSTRUCTION DOCUMENTS (1603)

Uniformly distributed floor live loads *(7603.11, 1607)*

Floor Area Use	Loads Shown

Wind loads *(1603.1.4, 1609)*

- Design option utilized (1609.1. 1, 1609.5)
- Basic wind speed *(1609.3)*
- Building category and wind importance factor, I_w (Table *1604.5*, 1609.5)
- Wind exposure category *(1609.4)*
- Internal pressure coefficient *(ASCE 7)*
- Component and cladding pressures *(1609.1.1, 1609.6.2.2)*
- Main force wind pressures (7603.1. 1, *1609.6.2.1)*

Earthquake design data *(1603.1.5,* 1614- *1623)*

- Design option utilized *(1614.1)*
- Seismic use group ("Category") *(Table* 1604.5, *1616.2)*
- Spectral response coefficients, S_{DS} & S_{D1} *(1615.1)*
- Site class *(1615.1.5)*

- Live load reduction *(1603.1.1, 1607.9, 1607.10)*
- X Roof live loads *(1603.1.2,* 1607.11)

Roof snow loads *(7603.7.3,1606)*

- Ground snow load, P_g (1608.2)
- X If P_g > 10psf, flat-roof snow load, P_f *(1608.3)*
- If P_g > 10 psf, snow exposure factor, C_e *(Table 1608.3.1)*
- If P_g > 10 psf, snow load importance factor, I_s *(Table 1604.5)*
- Roof thermal factor, C_t *(Table 1608.3.2)*
- Sloped roof snowload, P_s *(1608.4)*
- Seismic design category *(1616.3)*
- Basic seismic-force-resisting system *(Table 1617.6.2)*
- Response modification coefficient, R_I, and deflection amplification factor, C_d *(Table 1617.6.2)*
- Analysis procedure *(1616.6,* 1617.5)
- Design base shear (1617.4, *1617.5.1)*

Flood loads *(1603.1.6, 1612)*

- Flood hazard area (1612.3)
- Elevation of structure

Other loads

- Concentrated loads (1607.4)
- Partition loads (1607.5)
- Impact loads *(1607.8)*
- Misc. loads *(Table 1607.8, 1607.8.1, 1607.7, 1607.12, 1607.13,* 1610, *1611, 2404)*

CITY OF PORTLAND
BUILDING CODE CERTIFICATE
389 Congress St., Room 315
Portland, Maine 04101

ACCESSIBILITY CERTIFICATE

Designer: AERIAL SPECTRUM, INC.
UNIVERSITY OF SOUTHERN MAINE

Address of Project: DEERING AVENUE, PORTLAND, ME

Nature of Project: INSTALLATION OF CINGULAR WIRELESS ANTENNA FACILITY AND RELATED EQUIPMENT ON ROOF OF LAW SCHOOL BLDG.

The technical submissions covering the proposed construction work as described above have boon designed in compliance with, applicable referenced standards found in the Maine Human Rights Law and Federal Americans with Disability Act.

Signature: [signature]

Title: DIRECTOR OF OPERATIONS

(SEAL)

STATE OF MAINE
PAUL L. MUCCI
10479
REGISTERED PROFESSIONAL ENGINEER

Firm: AERIAL SPECTRUM, INC.

Address: ONE GENERAL WAY - P.O. BOX 373
READING, MA 01867

Phone: (781) 942-0024

NOTE: If this project is a new Multi Family Structure of 4 units or more, this project must also be designed in compliance with the Federal Fair Housing Act. On a separate submission, please explain in narrative form the method of compliance.

AERIAL SPECTRUM
ONE GENERAL WAY
PO BOX 373
READING, MA 01867
P (781)942-0024
F: (781) 942-0551

CLIENT NAME: STATE OF MAINE LAW SCHOOL

DATE: | PAGE: 1/7

BY: M. MARTEL

SITE NAME:

NEW LOCATION FOR CABINETS

CHECK COLUMNS 76 & 75

COMMONWEALTH OF MASSACHUSETTS
MICHAEL E. MARTEL
STRUCTURAL
No. 41674
REGISTERED
PROFESSIONAL ENGINEER
4/16/01

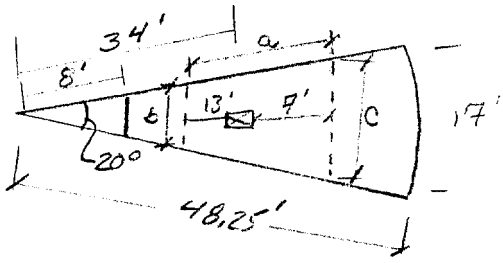
LOADS:

FROM DESIGN DRAWINGS

ROOF 60 #/ft²
7th FLOOR 100 #/ft²
6th FLOOR 100 #/ft²
5th FLOOR 100 #/ft²
4th FLOOR 100 #/ft² (BEAM LOAD ONLY)

LIGHT WT CONCRETE ON ALL FLOORS
115 #/ft³

CALCULATE TRIBUTARY AREA FOR COLUMN



STATE OF MAINE
PAUL
MUCCI
10479
REGISTERED
PROFESSIONAL ENGINEER

$C = 2(\tan 10\,(41')) = 14.4$

$b = 2(\tan 10\,(8)) = 2.8$

$a = 20'$

AREA $= (C+b)/2\,(a) = 172\ ft^2$

SLAB THICKNESS = 8" $\Rightarrow 8/12\,(172) = 114.7\ ft^3$

COLUMN WT = $(18")(18")/144\,(10') = 22.5\ ft^3$

LOAD TOTALS:

	LL	DL SLAB	COLUMN
ROOF	10.3 K	13.2 K	2.6 K
7th	17.2 K	13.2 K	2.6 K
6th	17.2 K	13.2 K	2.6 K
5th	17.2 K	13.2 K	2.6 K

AERIAL SPECTRUM
ONE GENERAL WAY
PO BOX 373
READING, MA 01867
P: (781) 942-0024
F: (781) 942-0551

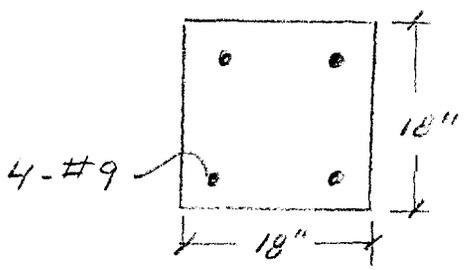
CLIENT NAME:	DATE:	PAGE: 2/7
STATE OF MAINE LAW SCHOOL	BY: M. MARTEL	
	SITE NAME:	

COLUMN LOAD

MAX COLUMN LOAD ON TOP OF 4TH FLOOR

$P = 10.3 + (17.2)(3) + (13.2)(4) + (2.6)(4) = 125^K$

CHECK COLUMN



$K = 0.5$

$\lambda = 10'$

TOTAL LOAD W/ CABINETS 10/2 = 5

$125^K + 5^K = 130^K$

SEE ATTACHED SPREADSHEET
(MATHCADD)

Input Column Properties

$f'c := 3000psi$ $As := 2in^2$ $d' := 2.564in$ $b := 18in$

$fy := 60000psi$ $A's := 2in^2$ $h := 18in$

$Ag := b \cdot h$ $Ag = 324\,in^2$ $y_{bar} := \frac{h}{2}$ $y_{bar} = 9\,in$

Maximum Vertical Loading

$Po := [0.85f'c \cdot (Ag - As - A's) + (As + A's) \cdot fy]$

$Po = 1056\,kip$ $\phi Po := 0.7 \cdot Po$ $\phi Po = 739.2\,kip$

$P_{nmax} := 0.8[0.85f'c \cdot (Ag - As - A's) + (As + A's) \cdot fy]$ $\phi P_{nmax} := 0.7 \cdot P_{nmax}$

$P_{nmax} = 844.8kip$ $\phi P_{nmax} = 591.36\,kip$ $\phi M_0 := 0$

Balance Condition

$d := h - d'$ $d = 15.44\,in$

$c_b := \frac{87000}{87000 + \frac{fy}{psi}} \cdot d$ $c_b = 9.14\,in$

$\varepsilon's := 0.003\left(\frac{c_b - d'}{c_b}\right)$ $\varepsilon's = 0.00216\,\frac{in}{in}$

$f's := 29000000psi \cdot \varepsilon's$ $f's = 62582.534\ psi$

$\beta_1 := 0.85 - \frac{0.05\left(\frac{f'c}{psi} - 4000\right)}{1000}$ $\beta_1 = 0.9$

$a_b := \beta_1 \cdot c_b$ $a_b = 8.22\,in$

$P_{nb} := 0.85 \cdot f'c \cdot b \cdot a_b + A's \cdot f's - As \cdot fy$ $\phi P_{nb} := 0.7 \cdot P_{nb}$

$P_{nb} = 382.556\,kip]$ $\phi P_{nb} = 267.789\,kip$

$M_{nb} := 0.85 \cdot f'c \cdot b \cdot a_b \cdot \left(y_{bar} - \frac{a_b}{2}\right) + A's \cdot f's \cdot \left(y_{bar} - d'\right) + As \cdot fy \cdot \left(d - y_{bar}\right)$ $\phi M_{nb} := 0.7 \cdot M_{nb}$

$M_{nb} = 3422.942\,in \cdot kip$ $\phi M_{nb} = 199.7\,ft \cdot kip$

$e_b := \frac{M_{nb}}{P_{nb}}$ $e_b = 8.95\,in$

Pure Bending Mno

$a := \frac{As \cdot fy}{0.85 \cdot f'c \cdot b}$ $a = 2.61\,in$

$c := \frac{a}{\beta_1}$ $c = 2.9\,in$

$\varepsilon's_m := 0.003 \cdot \left(\frac{c - d'}{c} \right)$ $\varepsilon's_m = 0.00035$ —

$f's_m := 29000000psi \cdot \varepsilon's_m$ $f's_m = 10208.841\,psi$

$M_{no} := As \cdot fy \cdot \left(d - \frac{a}{2} \right)$ $\phi M_{no} := 0.9 \cdot M_{no}$

$\boxed{M_{no} = 1695.5\,in \cdot kip}$ $\boxed{\phi M_{no} = 127.2\,ft \cdot kip}$ $\phi P_0 := 0kip$

Compression Controls

$c_1 := \frac{c_b + h}{2}$ $c_1 = 13.57\,in$

$\varepsilon's_1 := 0.003 \cdot \left(\frac{c_1 - d'}{c_1} \right)$ $\varepsilon_{y1} := \frac{\frac{fy}{psi}}{29000000}$ $\varepsilon_{s1} := 0.003 \cdot \frac{d - c_1}{c_1}$

$\varepsilon's_1 = 0.00243 \frac{in}{in}$ $\varepsilon_{y1} = 0.00207 \frac{in}{in}$ $\varepsilon_{s1} = 0.00041 \frac{in}{in}$ $\varepsilon's_{a1} := \min(\varepsilon's_1, \varepsilon_{y1})$

$fs_1 := \varepsilon_{s1} \cdot 29000000psi$ $f's_1 := \varepsilon's_{a1} \cdot 29000000psi$

$fs_1 = 11979.378\,psi$ $f's_1 = 60000\,psi$

$a_1 := \beta_1 \cdot c_1$ $a_1 = 12.21\,in$

$C_{c1} := 0.85 \cdot f'c \cdot b \cdot a_1$ $C_{s1} := A's \cdot fy$ $T_{s1} := As \cdot fs_1$

$C_{c1} = 560.49\,kip$ $C_{s1} = 120\,kip$ $T_{s1} = 23.96\,kip$

$P_{n1} := C_{c1} + C_{s1} - T_{s1}$ $\phi P_{n1} := 0.7 \cdot P_{n1}$

$\boxed{P_{n1} = 656.53\,kip}$ $\boxed{\phi P_{n1} = 459.57\,kip}$

$M_{n1} := C_{c1} \cdot \left(y_{bar} - \frac{a_1}{2} \right) + C_{s1} \cdot (y_{bar} - d') + T_{s1} \cdot (d - y_{bar})$ $\phi M_{n1} := 0.7 \cdot M_{n1}$

$\boxed{M_{n1} = 2548.84\,in \cdot kip}$ $\boxed{\phi M_{n1} = 148.682 ft \cdot kip}$

$e_1 := \frac{M_{n1}}{P_{n1}}$ $e_1 = 3.88\,in$

Tension Controls

$c_2 := \frac{c_b}{2}$ $c_2 = 4.57\,in$

$a_2 := \beta_1 \cdot c_2$

$\varepsilon's_2 := 0.003 \cdot \left(\frac{c_2 - d'}{c_2} \right)$ $a_2 = 4.11\,in$

$\varepsilon's_2 = 0.00132$

$f's_2 := \min(\varepsilon's_2 \cdot 29000000psi, 60000psi)$

$f's_2 = 38165.069\ psi$

$fs_2 := fy$

$fs_2 = 60000\ psi$

$C_{c2} := 0.85 \cdot f'c \cdot b \cdot a_2$ $C_{c2} = 188.7\,kip$

$C_{s2} := A's \cdot f's_2$ $C_{s2} = 76.33\,kip$

$T_{s2} := As \cdot fs_2$ $T_{s2} = 120\,kip$

$P_{n2} := C_{c2} + C_{s2} - T_{s2}$ $\phi P_{n2} := 0.7 \cdot P_{n2}$

$\boxed{P_{n2} = 145.03\,kip}$ $\boxed{\phi P_{n2} = 101.52\,kip}$

$M_{n2} := C_{c2} \cdot \left(y_{bar} - \frac{a_2}{2} \right) + C_{s2} \cdot (y_{bar} - d') + T_{s2} \cdot (d - y_{bar})$ $\phi M_{n2} := 0.7 \cdot M_{n2}$

$\boxed{M_{n2} = 2573.976\,in \cdot ki}$ $\boxed{\phi M_{n2} = 150.15\,ft \cdot kip}$

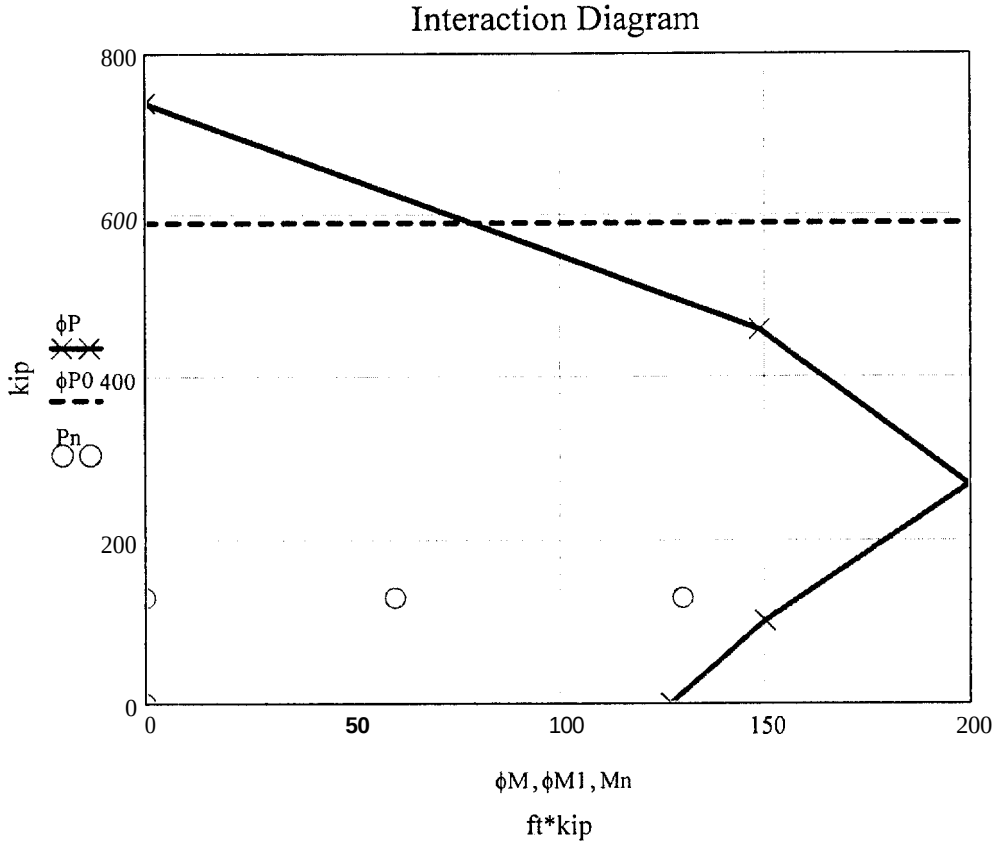
$e_2 := \frac{M_{n2}}{P_{n2}}$ $e_2 = 17.75\,in$

Interaction Diagram Loads and Moments

$$\phi M := \begin{pmatrix} \frac{\phi M_0}{ft \cdot kip} \\ \frac{\phi M_{n1}}{ft \cdot kip} \\ \frac{\phi M_{nb}}{ft \cdot kip} \\ \frac{\phi M_{n2}}{ft \cdot kip} \\ \frac{\phi M_{no}}{ft \cdot kip} \end{pmatrix} \qquad \phi P := \begin{pmatrix} \frac{\phi Po}{kip} \\ \frac{\phi P_{n1}}{kip} \\ \frac{\phi P_{nb}}{kip} \\ \frac{\phi P_{n2}}{kip} \\ \frac{\phi P_0}{kip} \end{pmatrix} \qquad \phi M1 := \begin{pmatrix} \frac{0}{ft \cdot kip} \\ \frac{\phi M_{nb}}{ft \cdot kip} \end{pmatrix} \qquad \phi P0 := \begin{pmatrix} \frac{\phi P_{nmax}}{kip} \\ \frac{\phi P_{nmax}}{kip} \end{pmatrix}$$

Loads and Moments from Structure **(kip** and **R-kip)**

$$Pn := \begin{pmatrix} 130 \\ 130 \\ 130 \\ 0 \end{pmatrix} \qquad Mn := \begin{pmatrix} 0 \\ 60 \\ 130 \\ 0 \end{pmatrix}$$



ONE GENERAL WAY
PO BOX 373
READING, MA 01867
P: (781) 942-0024
F: (781) 942-0551
AERIAL SPECTRUM

CLIENT NAME: STATE OF MAINE LAW SCHOOL

DATE:

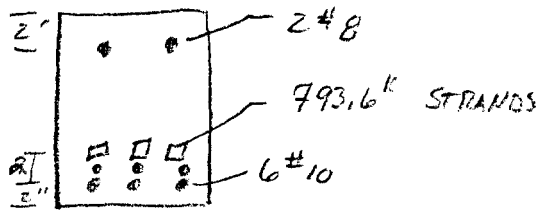
PAGE: 7/7

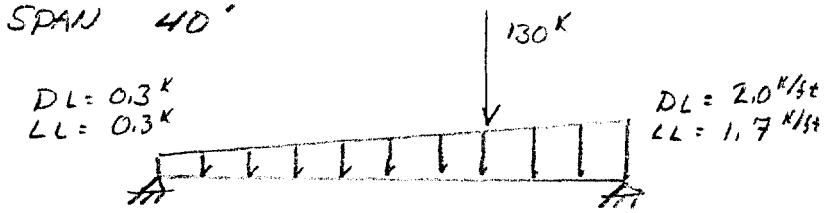
BY: M. MARTEL

SITE NAME:

CHECK BEAM ON 4th FLOOR

BEAM B-2 & B-2A





$M = 1831 \text{ ft KIPS} = 21972 \text{ in KIPS}$

$$f^t = -\frac{Pe}{AC}\left(1 + \frac{eC_T}{r^2}\right) + \frac{21972}{S_t}$$

$$= -\frac{793.6}{1260}\left(1 + \frac{17(21)}{12.12^2}\right) + \frac{21972}{8820} =$$

$$-0.63^{KSI}(1 + 2.43) + 2.49 = 0.329 \text{ KSI} \quad OK$$

$$f^b = -0.63(1 - 2.43) - 2.49 = 7.59^{KSI} \quad \underline{OK}$$

TRM

TOWER RESOURCE MANAGEMENT, INC.

April 18,2006

Inspections Division
389 Congress St. Room 315
Portland, ME 04101

RE: Building Permit Application for Deering Avenue, Portland, ME.

To Whom It May Concern:

On behalf of Cingular Wireless I am pleased to present this application for a building permit to install a telecommunications facility on the University of Maine Property on Deering Ave.

Plans and Specifications of proposed work are described further in the Construction Drawings.

Please find Attached to this Letter;

- Building Permit Application
- Construction Drawings for proposed work.(2 Sets)

Please review this material and contact me with any questions you might have regarding the application. After you have had a chance to review the application, please contact me with an appropriate filing fee.

Thanks for your attention to this,

Andy Candiello
Site Acquisition Specialist
Tower Resource Management
30 Lyman ST. Suite 12
Westborough, MA 01581
Mobile: 978-855-3644
Fax: 508-389-1749
Email: acandiello@trmcom.com

06 0655

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: ~~236~~ 232 Deering Avenue, Portland, ME.		
Total Square Footage of Proposed Structure: 21'0" x 3'1"	Square Footage of Lot: N/A	
Tax Assessor's Chart, Block & Lot — Chart# MAP-51 Block# Lot# E-1	Owner: University of Maine System.	Telephone:
Lessee/Buyer's Name (If Applicable): Cingular Wireless	Applicant name, address & telephone: Andy CANDIELLO, 30 Lyman St. Suite 12, Westborough, MA 01581	Cost Of Work: $ 65,000 Fee: $ C of O Fee: $ 606.00
Current Specific use:		
If vacant, what was the previous use?		
Proposed Specific use: Transmit + Recieve Radio Frequencies		
Project description: Installation of Cingular Equipment, Antennas (6), and Associated hardware at Deering Ave. Antennas will Both transmit an Recieve Radio Frequency		
Contractor's name, address & telephone:		
Who should we contact when the permit is ready: Andy CANDIELLO		
Mailing address: Phone: 978-855-3649		

RECEIVED
MAY - 4 2006
DEPT. OF BUILDING INSPECTION
CITY OF PORTLAND, ME

Please submit all of the information outlined in the Commercial Application Checklist
Failure to do *so* will result in the automatic denial of your permit;

In order to be sure the City fully understands the full scope of the project, the Planning and Development Department may request additional information prior to the issuance of a permit. For further information visit us on-line at www.portlandmaine.gov, stop by the Building Inspections 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 of applicant: Andy Candiello	Date: 4/18/06

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

CITY OF PORTLAND, MAINE

Department of Building Inspections

May 4 20

Received from

Location of Work 90 Danforth

Cost of Construction $

Permit Fee $ 106.00

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

Other

CBL:

Check #: 5063 **Total Collected** $

THIS IS NOT A PERMIT

No work is to be started until PERMIT CARD is actually posted upon the premises. Acceptance of fee is no guarantee that permit will be granted. PRESERVE THIS RECEIPT. In case permit cannot be granted the amount of the fee will be refunded upon return of the receipt less $10.00 or 10% whichever is greater.

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

BUILDING PERMIT INSPECTION PROCEDURES
Please call 874-8703 or 874-8693 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
____	**Re-Bar Schedule Inspection:**	Prior to pouring concrete
____	**Foundation Inspection:**	Prior to placing ANY backfill
____	**Framing/Rough Plumbing/Electrical:**	Prior to any insulating or drywalling
X	**Final/~~Certificate of Occupancy~~:**	Prior to any occupancy of the structure or use. NOTE: There is a $75.00 fee per inspection at this point.

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

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

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

X [signature] 5-19-06
Signature of Applicant/Designee Date

Donna Martin Admin 5-19-06
Signature of Inspections Official Date

CBL: 051 E001 Building Permit #: 060655

ME5045

cingular SM
WIRELESS

USM PORTLAND

DRAWING INDEX

		REV.
T-1	TITLE SHEET	C
GN-1	GENERAL NOTES	C
C-1	SITE PLAN & ROOF PLAN	C
C-2	ELEVATIONS & CONSTRUCTION DETAILS	C
C-3	CONSTRUCTION DETAILS	C
C-4	CONSTRUCTION DETAILS	C
G-1	GROUNDING DETAILS	C

DIRECTIONS

TAKE I-95 NORTH FOR TO EXIT# 44 I-295. TAKE I-295 FOR 5.4 MILES TO S. PORTLAND/PORTLAND DOWNTOWN EXIST. TAKE THE ME-100 N/US-1/US-302 W EXIT# 6B FOR 0.2 MILES. BEAR RIGHT AT 10TH MOUNTAIN DIVISION HWY/FOREST AVE/BLUE STAR MEMORIAL HWY FOR 0.2 MILES. TURN LEFT AT BEDFORD ST FOR 0.3 MI. TURN RIGHT AT BRIGHTON AVE FOR 0.1 MILES. SITE IS DIRECTLY ON THE LEFT AT THE INTERSECTION OF BRIGHTON AVE AND DEERING AVE.

VICINITY MAP

PROJECT INFORMATION

SCOPE OF WORK:	INSTALLATION OF CINGULAR EQUIPMENT, ANTENNAS, AND ASSOCIATED HARDWARE
SITE ADDRESS:	DEERING AVENUE PORTLAND, ME 03082
PROPERTY OWNER:	UNIVERSITY OF MAINE SYSTEM 107 MAINE AVE BANGOR ME 04401
APPLICANT/TOWER OWNER:	CINGULAR WIRELESS 580 MAIN STREET BOLTON, MA 01740 TEL. (781) 690-7422
LATITUDE : LONGITUDE : ELEVATION (AMSL):	N 43°-39'-39.61" (AERIAL PHOTOGRAPHY) W 70°-16'-44.81" (AERIAL PHOTOGRAPHY) 800'
JURISDICTION: TAX I.D. NUMBER: CURRENT USE: PROPOSED USE:	CITY OF PORTLAND MAP 51, LOT E-1 LITERARY & SCIENTIFIC INSTITUTION PROPOSED WIRELESS TELECOMMUNICATIONS FACILITY

SITE QUALIFICATION PARTICIPANTS

	NAME	COMPANY	NUMBER
A/E	EAMON KERNAN	AERIAL SPECTRUM INC.	(781) 942-0024
SAC	CHRIS DWIGHT	TRM	(508) 389-1734

AERIAL SPECTRUM INCORPORATED
One General Way
PO Box 373
Reading, MA 01880
tel. (781) 942 0024
fax (781) 942 0551
e-mail eamon@aerialspectrum.com

ME5045
USM PORTLAND
DEERING AVENUE
PORTLAND, ME 03082

cingular SM WIRELESS
CONSTRUCTION DEPARTMENT
580 MAIN STREET
BOLTON, MA 01740
PHONE: (781) 690-7422
FAX: (781) 690-7474

NO.	DATE	REVISIONS	BY	CHK	APP'D
C	04-13-06	FOR COMMENT	PRC	PLM	ETK
B	02-14-06	FOR COMMENT	PRC	PLM	ETK
A	11-01-05	FOR COMMENT	PRC	PLM	ETK

SCALE: AS SHOWN | DESIGNED: PRC | DRAWN: PRC

PROFESSIONAL STAMP
STATE OF MAINE · PAUL M. HUETS · REGISTERED PROFESSIONAL ENGINEER

CINGULAR WIRELESS

TITLE SHEET

DRAWING NUMBER	REV
T-1	C

GENERAL CONSTRUCTION NOTES

1. THIS PROPOSAL IS FOR AN UNMANNED TELECOMMUNICATIONS FACILITY CONSISTING OF PROPOSED PIPE MOUNTED ANTENNAS AND THE PLACEMENT OF OUTDOOR EQUIPMENT CABINETS ON THE EXISTING ROOF.
2. THE PROPOSED FACILITY WILL BE UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SEWER SERVICE.
3. THE PROPOSED FACILITY IS UNMANNED AND IS NOT FOR HUMAN HABITATION. (NO HANDICAP ACCESS IS REQUIRED).
4. OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION, APPROXIMATELY 2 TIMES PER MONTH, BY CINGULAR TECHNICIANS AND UNIVERSITY MAINTENANCE STAFF.
5. NO NOISE, SMOKE, DUST OR ODOR WILL RESULT FROM THIS PROPOSAL.
6. OUTDOOR STORAGE AND SOLID WASTE CONTAINERS ARE NOT PROPOSED.
7. ALL MATERIAL SHALL BE FURNISHED AND WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
8. SUBCONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE CAUSED BY THE CONSTRUCTION OPERATION.
9. SUBCONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTION REQUIRED FOR CONSTRUCTION.
10. SUBCONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE ON A DAILY BASIS.
11. INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM SITE VISITS AND DRAWINGS PROVIDED BY THE SITE OWNER. SUBCONTRACTOR SHALL NOTIFY BECHTEL OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
12. NO WHITE STROBIC LIGHTS ARE PERMITTED, LIGHTING, IF REQUIRED, WILL MEET FAA STANDARDS AND REQUIREMENTS.
13. SUBCONTRACTOR SHALL CALL DIG-SAFE FOR UNDERGROUND UTILITY MARKOUT PRIOR TO CONSTRUCTION. 1-800-DIG-SAFE.
14. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS CONTRACTOR IS BECHTEL. SUBCONTRACTOR IS THE GENERAL CONTRACTOR. CONSTRUCTION AND OWNER IS AT&T WIRELESS SERVICES.

SITE WORK GENERAL NOTES

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION. TELECOM/FIBER LINES ARE IN THE AREA OF THE PROPOSED UNDERGROUND UTILITY RUN.
2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & EXCAVATION.
3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
5. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE RBS EQUIPMENT AND TOWER AREAS.
6. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
7. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
8. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING, OWNER AND/OR LOCAL UTILITIES.
9. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
10. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

STRUCTURAL STEEL NOTES

1. ALL STEEL WORK SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND IN ACCORDANCE WITH ASTM A36 UNLESS OTHERWISE NOTED.
2. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 9TH EDITION. PAINTED SURFACES SHALL BE TOUCHED UP.
3. BOLTED CONNECTIONS SHALL USE BEARING TYPE ASTM A325 BOLTS (3/4" DIA) AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
4. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.
5. CONCRETE EXPANSION ANCHORS AND EPOXY ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. MANUFACTURER'S MINIMUM CONCRETE EDGE DISTANCE SHALL BE MAINTAINED DURING INSTALLATION.

CONCRETE AND REINFORCING STEEL NOTES

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM TA184, ASTM A185 AND THE PROJECT SPECIFICATIONS.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE.
3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

   CONCRETE CAST AGAINST EARTH.....3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:

   #6 AND LARGER .....2 IN.
   #5 AND SMALLER & WWF

   CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:

   SLAB AND WALL .....3/4 IN.
   BEAMS AND COLUMNS .....1 1/2 IN.

5. A 1" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
6. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR ENGINEERING APPROVAL WHEN DRILLING HOLES IN CONCRETE. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.

APPLICABLE BUILDING CODES AND STANDARDS

SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
BUILDING CODE:
MAINE STATE BUILDING CODE LATEST EDITION
ELECTRICAL CODE:
NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 70 – 99SB, NATIONAL ELECTRICAL CODE
AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION
TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-F, STRUCTURAL STANDARD FOR STRUCTURAL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES
INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM
IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT
TIA 607 COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS
TELCORDIA GR-1503 COAXIAL CABLE CONNECTIONS
FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

CONCRETE PLACEMENT NOTES

1. REMOVE ALL ORGANIC MATERIAL PRIOR TO PLACEMENT OF STONE. IF FILLING IS REQUIRED, BACKFILL AND COMPACT WITH WELL-DRAINING GRAVEL.
2. IF SOUND ROCK IS ENCOUNTERED AT LESS THAN THE SPECIFIED FOUNDATION DEPTH, USE ALTERNATIVE FOUNDATION.
3. CONTACT ENGINEER IF SITE CONDITIONS VERY FROM STATED FOUNDATION DESIGN CRITERIA.
4. FOUNDATION DESIGN SUBJECT TO MODIFICATION BASED UPON SHELTER DESIGN CHANGES BY MANUFACTURER. VERIFY DESIGN ACCEPTANCE WITH PROJECT MANAGER PRIOR TO CONSTRUCTION.
5. CONCRETE SHALL BE CONSOLIDATED BY INTERNAL VIBRATION IN ACCORDANCE WITH ACI STANDARD 309-72: RECOMMENDED PRACTICE FOR CONSOLIDATION OF CONCRETE.
6. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 psi AT 28 DAYS AND SHALL BE INSTALLED IN ACCORDANCE WITH THE ACI-318-83 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE. SLUMP SHALL BE 2"-5" AND MAXIMUM AGGREGATE SHALL BE 3/4".
7. DETAILING, FABRICATION, PLACING, AND SUPPORTS SHALL BE IN ACCORDANCE WITH ACI 318-89 AND CRSI.
8. REINFORCING BARS SHALL CONFORM TO ASTM-A615-82 GRADE 60 SPECIFICATIONS AND BE DETAILED IN ACCORDANCE WITH AC1-318-83.
9. MAXIMUM PERMISSIBLE VARIATION OF PIER LOCATION SHALL BE 1". CONCRETE PIER VARIANCE FROM PLUMB SHALL NOT EXCEED 3/4".
10. TOPS OF CONCRETE PIERS SHALL BE WITHIN 0.02 FEET OF ELEVATION SPECIFIED. SHIM, AS REQUIRED, TO LEVEL THE SHELTER.
11. COLD WEATHER/HOT WEATHER CONCRETE PLACEMENT SHALL BE IN ACCORDANCE WITH ACI 305 AND 306.
12. PROVIDE CONCRETE TEST CYLINDERS: 1 AT 7 DAYS, 2 AT 28 DAYS. SUBMIT TEST DATA TO PROJECT MANAGER FOR REVIEW AND APPROVAL.
13. AS WITH ALL EXCAVATION, CARE TO BE TAKEN DUE TO EXISTENCE OF EXISTING UNDER-GROUND UTILITIES

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	G.C.	GENERAL CONTRACTOR
AWG	AMERICAN WIRE GAUGE	MGB	MASTER GROUND BUS
BCW	BARE COPPER WIRE	MIN	MINIMUM
BTS	BASE TRANSCEIVER STATION	(N)	NEW
(E)	EXISTING	N.T.S.	NOT TO SCALE

AERIAL SPECTRUM INCORPORATED
One General Way
PO Box 373
Reading, MA 01880
tel. (781) 942 0024
fax (781) 942 0551
e-mail eamon@aerialspectrum.com

ME5045
USM PORTLAND
DEERING AVENUE
PORTLAND, ME 03082

cingular SM WIRELESS
CONSTRUCTION DEPARTMENT
580 MAIN STREET
BOLTON, MA 01740
PHONE: (781) 690-7422
FAX: (781) 690-7474

NO.	DATE	REVISIONS	BY	CHK	APP'D
C	04-13-06	FOR COMMENT	PRC	PLM	ETK
B	02-14-06	FOR COMMENT	PRC	PLM	ETK
A	11-01-05	FOR COMMENT	PRC	PLM	ETK

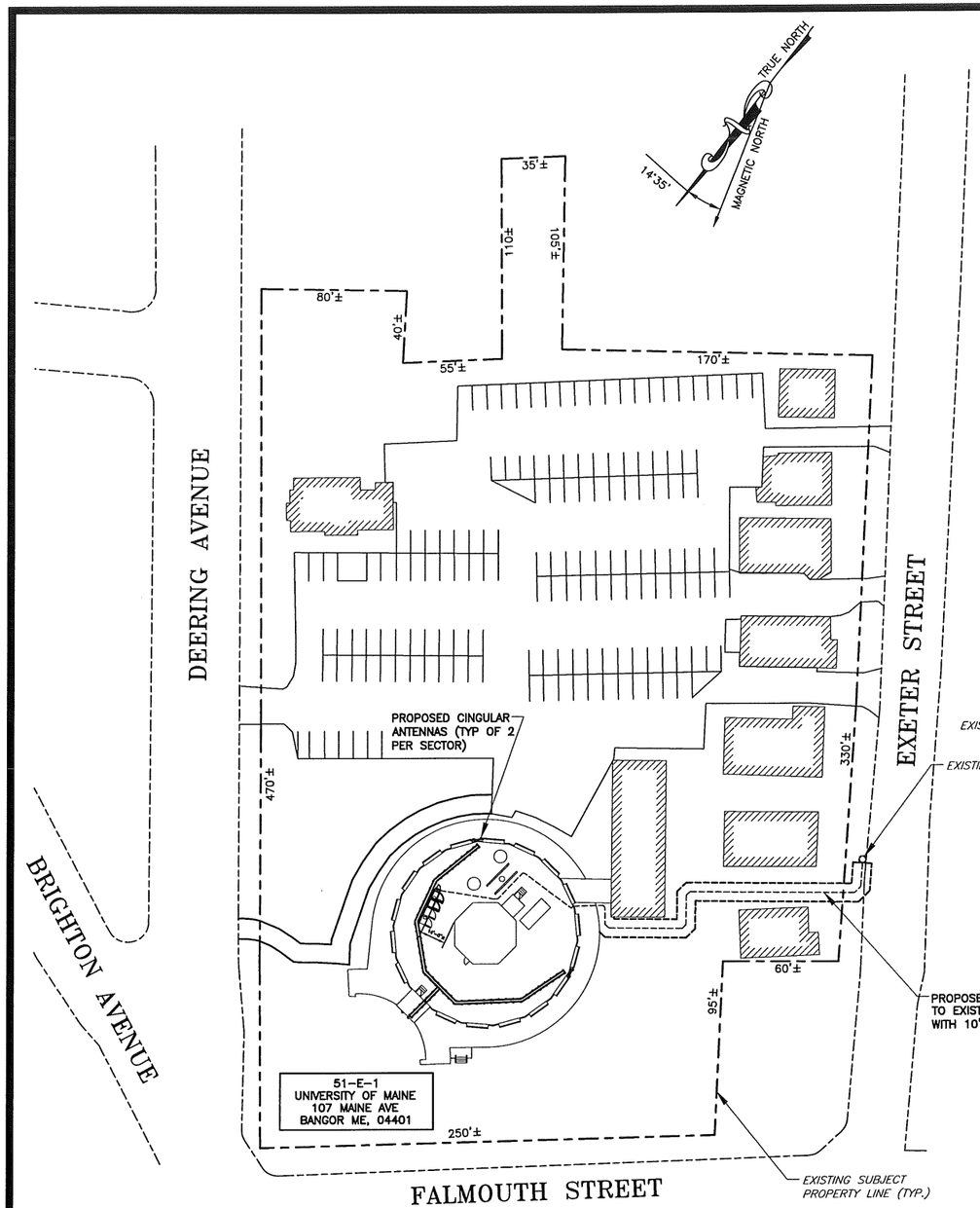
SCALE: AS SHOWN | DESIGNED: PRC | DRAWN: PRC

PROFESSIONAL STAMP
STATE OF MAINE — PAUL L. MOORE — 11479 — REGISTERED PROFESSIONAL ENGINEER

CINGULAR WIRELESS

GENERAL NOTES

DRAWING NUMBER	REV
GN-1	C

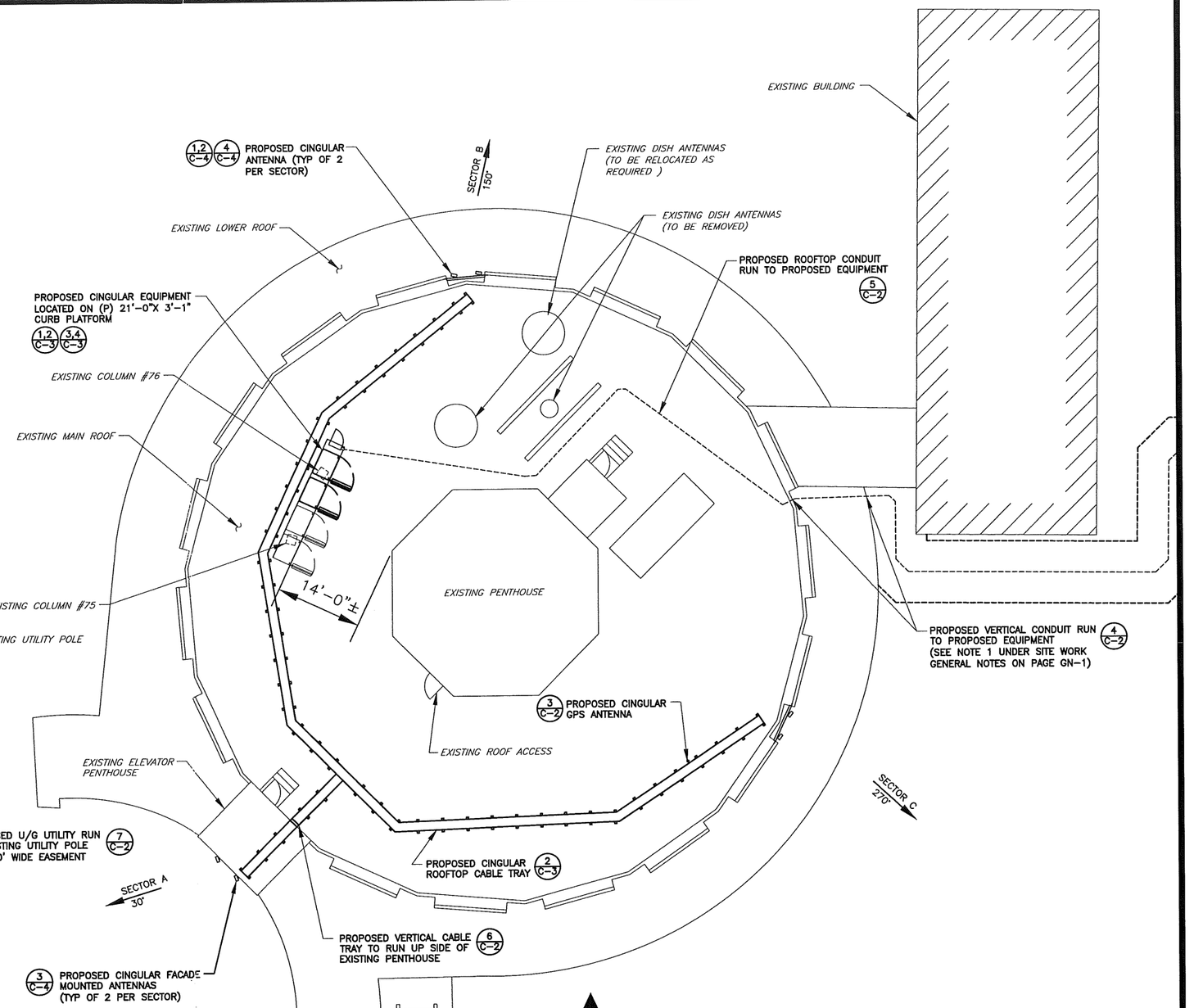


PLOT PLAN 1/– APPX. SCALE: 1"=40'-0"

40 0 20 40 80 160

NOTES:

-PLOT PLAN IS NOT THE RESULT OF A SURVEY. IT IS BASED ON FIELD MEASUREMENTS AND SCALED ASSESSORS MAPS AVAILABLE. ALL INFORMATION SHOWN IS APPROXIMATE ONLY AND SUBJECT TO ANY CONDITION THAT A SURVEY MAY REVEAL.



ROOF PLAN 2/– SCALE: 1/16"=1'-0"

8 0 4 8 16 32

AERIAL SPECTRUM INCORPORATED
One General Way
PO Box 373
Reading, MA 01880
tel. (781) 942 0024
fax (781) 942 0551
e-mail eamon@aerialspectrum.com

ME5045
USM PORTLAND
DEERING AVENUE
PORTLAND, ME 03082

cingular SM WIRELESS
CONSTRUCTION DEPARTMENT
580 MAIN STREET
BOLTON, MA 01740
PHONE: (781) 690-7422
FAX: (781) 690-7474

NO.	DATE	REVISIONS	BY	CHK	APP'D
C	04-13-06	FOR COMMENT	PRC	PLM	ETK
B	02-14-06	FOR COMMENT	PRC	PLM	ETK
A	11-01-05	FOR COMMENT	PRC	PLM	ETK

SCALE: AS SHOWN | DESIGNED: PRC ETK | DRAWN: PRC PRC

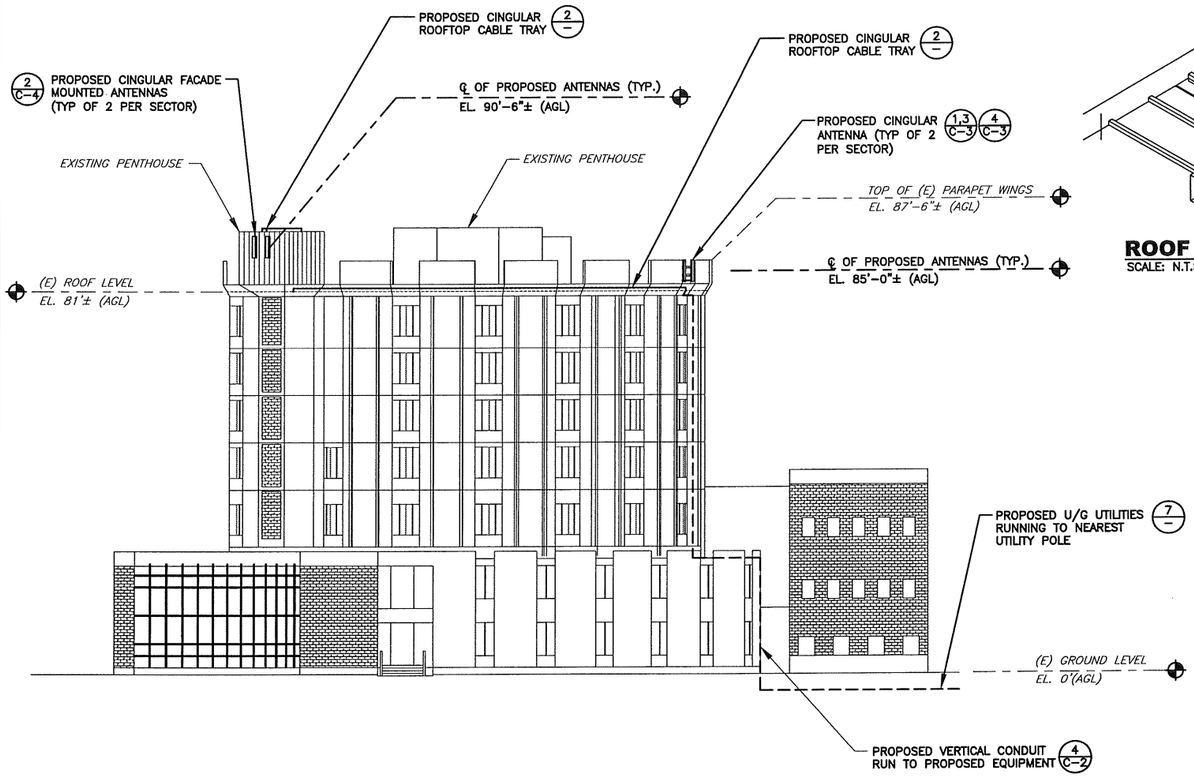
PROFESSIONAL STAMP

STATE OF MAINE PAUL R. LEVESQUE 10479 REGISTERED PROFESSIONAL ENGINEER

CINGULAR WIRELESS

SITE PLAN & ROOF PLAN

DRAWING NUMBER	REV
C-1	C



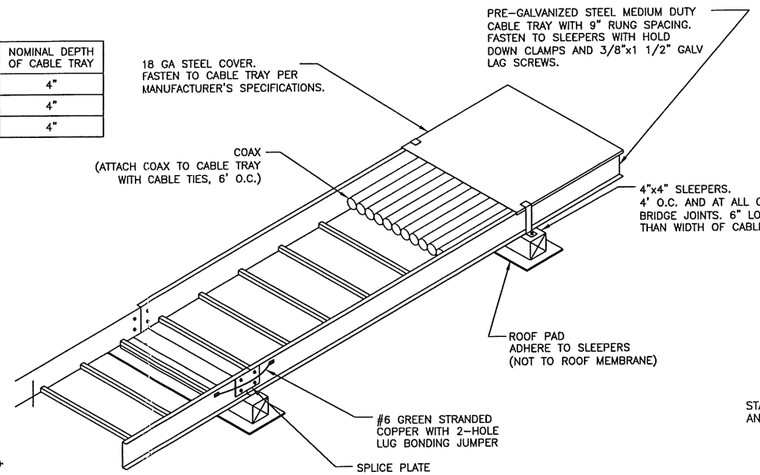
NORTHWEST ELEVATION

SCALE: 1/16"=1'-0"

1/C-1

16 0 8 16 32 64

NUMBER OF COAXIAL CABLES	WIDTH OF CABLE TRAY	NOMINAL DEPTH OF CABLE TRAY
12	24"	4"
8	18"	4"
4	12"	4"



ROOF MOUNTED COAX TRAY

SCALE: N.T.S.

2/C-1

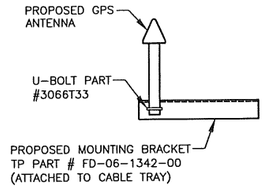
No. CABLES	MICROFLECT COAX SUPPORT KIT	No. OF ANCHORS	A
1 TO 4	B1589	2	11 1/2"
5 TO 8	B1590	3	21 1/2"
9 TO 12	B1591	3	30 1/2"

NOTE:
1. USE STAINLESS STEEL ANCHORS INTO CONCRETE. USE CARBON STEEL ANCHORS INTO BRICK OR MASONRY USE TOGGLE BOLTS INTO STUD WALLS.
2. ANCHOR TO BE INSTALLED IN 1/2"ø HOLES DRILLED W/ HILTI CARBIDE TIPPED DRILL BITS. ANCHORS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
3. DETAIL BASED ON THE USE OF MICROFLECT AND HILTI. CONTRACTOR MAY SUBSTITUTE EQUAL MATERIALS APPROVED BY LESSEE/LICENSEE.
4. PAINT ALL MOUNTING BRACKETS TO MATCH COLOR OF EXISTING BUILDING.

VERTICAL COAX CABLE TRAY

SCALE: N.T.S.

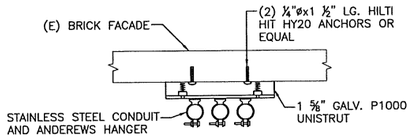
6/C-1



GPS SUPPORT

SCALE: N.T.S.

3/-

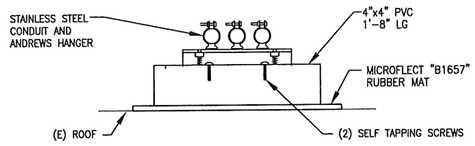


EXTERIOR CONDUIT RUN

SCALE: N.T.S.

4/-

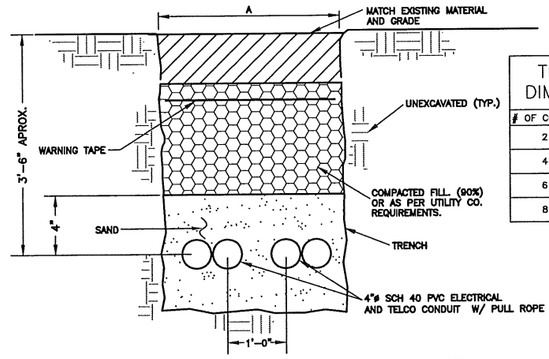
NOTE:
PAINT EXPOSED CONDUIT AND HARDWARE TO MATCH THE COLOR OF THE EXISTING SURROUNDINGS.



CONDUIT RUN ON ROOF

SCALE: N.T.S.

5/-



TRENCH DIMENSION	
# OF CONDUIT	A
2	2'-0"
4	2'-8"
6	3'-2"
8	3'-10"

TRENCH DETAIL- ELEC/TELCO

SCALE: N.T.S.

7/-

NOTE:
1. IF FREE OF ORGANIC OR OTHER DELETERIOUS MATERIAL, EXCAVATED MATERIAL MAY BE USED FOR BACKFILL. IF NOT, PROVIDE CLEAN, COMPACTIBLE MATERIAL. COMPACT IN 8" LIFTS. REMOVE ANY LARGE ROCKS PRIOR TO BACKFILLING.
2. CONDUITS SHOWN DO NOT NEED TO BE IN SAME TRENCH HOWEVER, ALL DIMENSIONS SHOWN ARE FOR ALL CONDUIT TRENCHING REGARDLESS OF THE NUMBER OF CONDUITS PER TRENCH.
3. CARE TO BE TAKEN TO AVOID EXISTING UNDERGROUND UTILITIES

AERIAL SPECTRUM INCORPORATED
One General Way
PO Box 373
Reading, MA 01880
tel. (781) 942 0024
fax (781) 942 0551
e-mail eamon@aerialspectrum.com

ME5045
USM PORTLAND
DEERING AVENUE
PORTLAND, ME 03082

cingular WIRELESS
CONSTRUCTION DEPARTMENT
580 MAIN STREET
BOLTON, MA 01740
PHONE: (781) 690-7422
FAX: (781) 690-7474

NO.	DATE	REVISIONS	BY	CHK	APP'D
C	04-13-06	FOR COMMENT	PRC	PLM	ETK
B	02-14-06	FOR COMMENT	PRC	PLM	ETK
A	11-01-05	FOR COMMENT	PRC	PLM	ETK

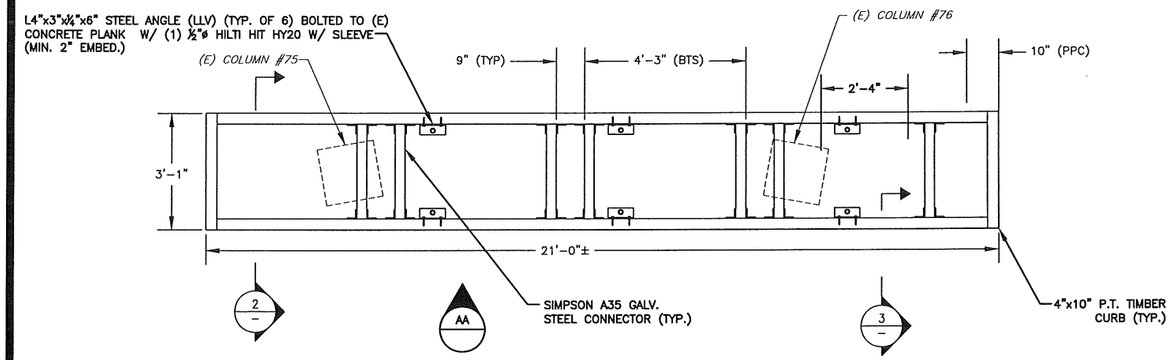
SCALE: AS SHOWN DESIGNED: PRC ETK DRAWN: PRC PRC

PROFESSIONAL STAMP
STATE OF MAINE PAUL R. CHASE 10479 REGISTERED PROFESSIONAL ENGINEER

CINGULAR WIRELESS

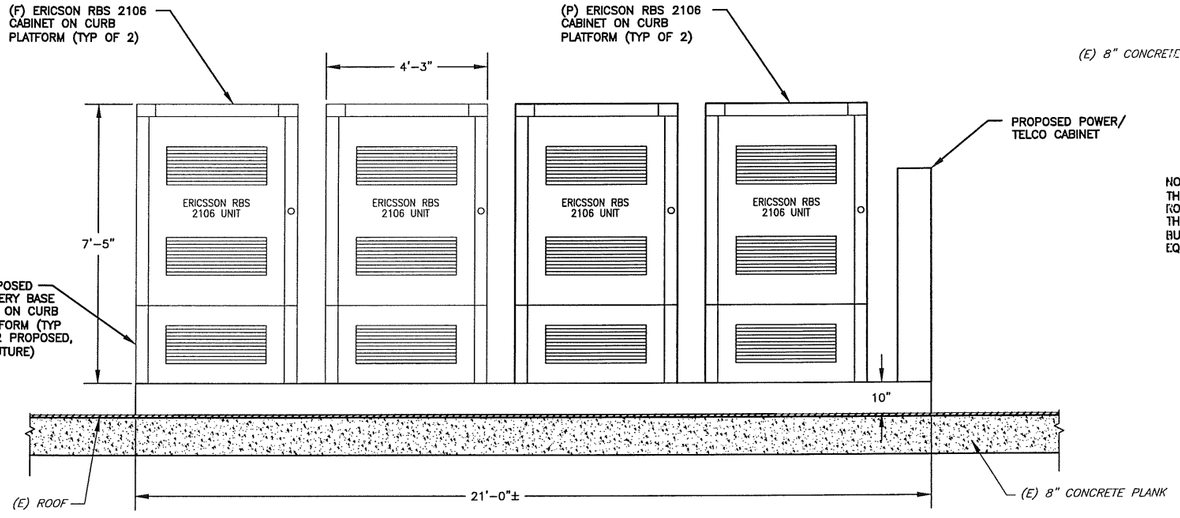
ELEVATION AND CONSTRUCTION DETAILS

DRAWING NUMBER	REV
C-2	C



PLAN

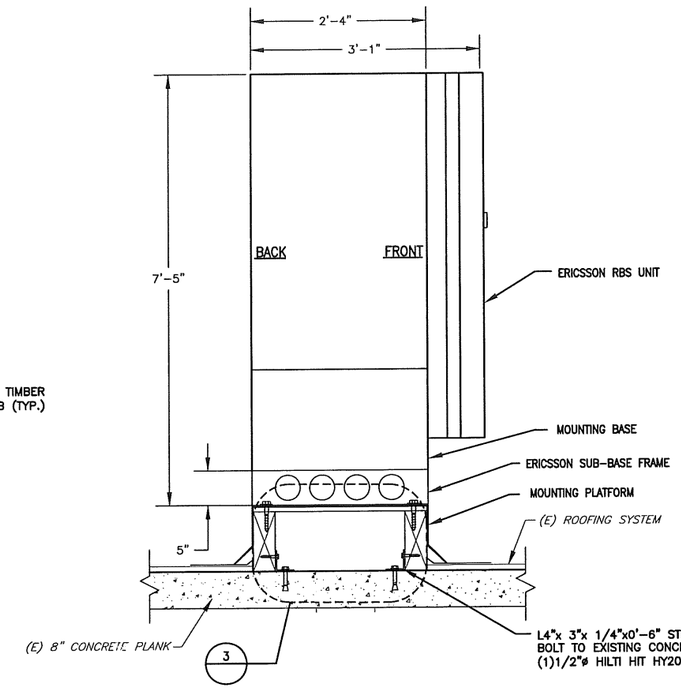
NOTE:
LOCATION OF PROPOSED CURB PLATFROM DESIGNED FROM EXISTING BUILDING PLANS OBTAINED FROM USM PORTLAND MAINTENANCE DEPARTMENT. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF EXISTING SUPPORT COLUMNS PRIOR TO CONSTRUCTION.



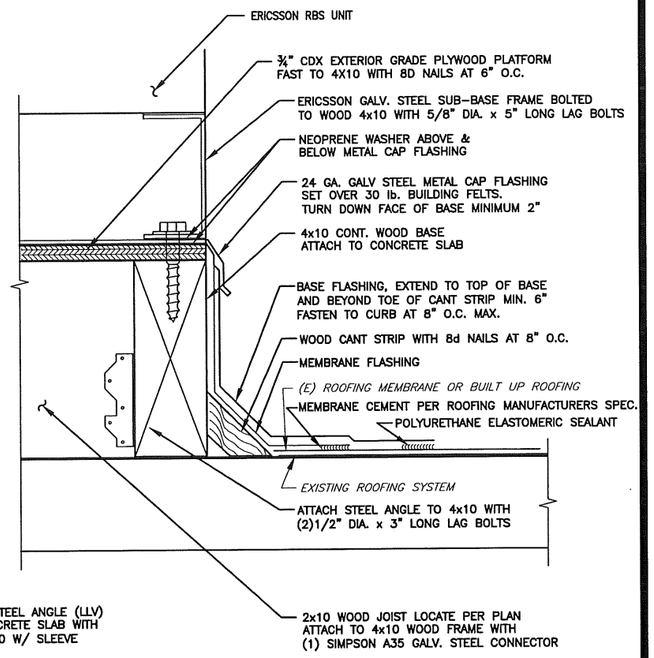
ELEVATION A-A

PROPOSED CURB PLATFORM 1/–
SCALE: 1/2" = 1'-0"

2 0 1 2 4 8

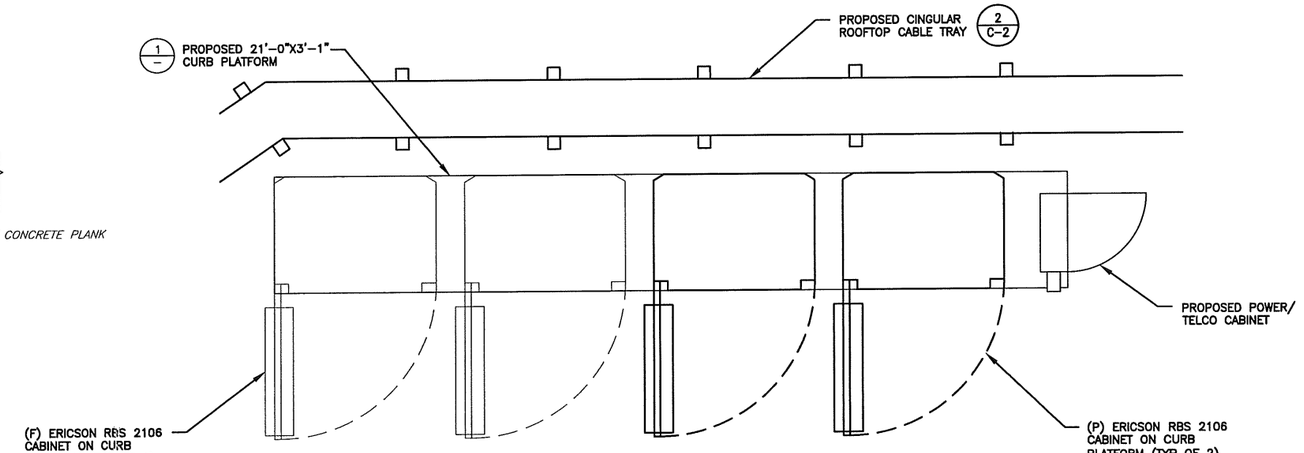


SECTION AT RBS UNIT 2/–
SCALE: N.T.S.



DETAIL AT PLATFORM CURB 3/–
SCALE: N.T.S.

NOTE:
THE CONTRACTOR SHALL COORDINATE ALL WORK WITH BUILDING OWNER'S ROOFING CONTRACTOR WHO WILL COMPLETE ALL WORK ASSOCIATED WITH THE ROOF. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FROM THE BUILDING OWNER'S ROOFING CONTRACTOR BEFORE INSTALLATION OF EQUIPMENT CURB PLATFORM.



EQUIPMENT PLATFORM PLAN 4/–
SCALE: 1/2" = 1'-0"

2 0 1 2 4 8

AERIAL SPECTRUM INCORPORATED
One General Way
PO Box 373
Reading, MA 01880
tel. (781) 942 0024
fax (781) 942 0551
e-mail eamon@aerialspectrum.com

ME5045
USM PORTLAND
DEERING AVENUE
PORTLAND, ME 03082

cingular SM WIRELESS
CONSTRUCTION DEPARTMENT
580 MAIN STREET
BOLTON, MA 01740
PHONE: (781) 690-7422
FAX: (781) 690-7474

NO.	DATE	REVISIONS	BY	CHK	APP'D
C	04-13-06	FOR COMMENT	PRC	PLM	ETK
B	02-14-06	FOR COMMENT	PRC	PLM	ETK
A	11-01-05	FOR COMMENT	PRC	PLM	ETK

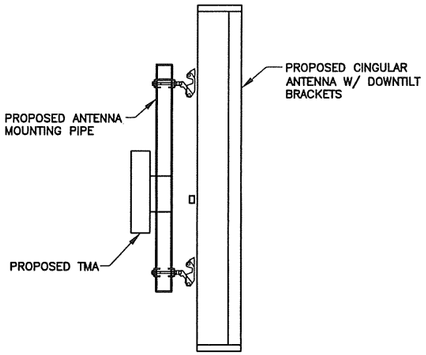
SCALE: AS SHOWN | DESIGNED: PRC | DRAWN: PRC

PROFESSIONAL STAMP
STATE OF MAINE · PAUL L. MOTT · 10479 · REGISTERED PROFESSIONAL ENGINEER

CINGULAR WIRELESS

CONSTRUCTION DETAILS

DRAWING NUMBER	REV
C-3	C

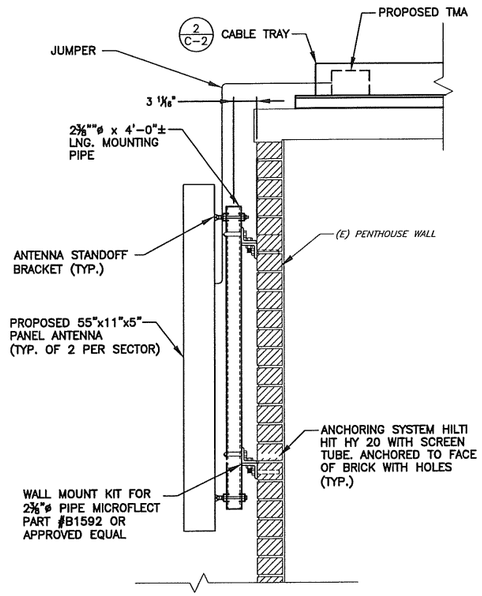


TMA NOTE:
THE REQUIRED NUMBER OF TMA'S PER ANTENNA BASED ON RF REQUIREMENTS. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION

ANTENNA DETAIL

SCALE: N.T.S.

1 / –



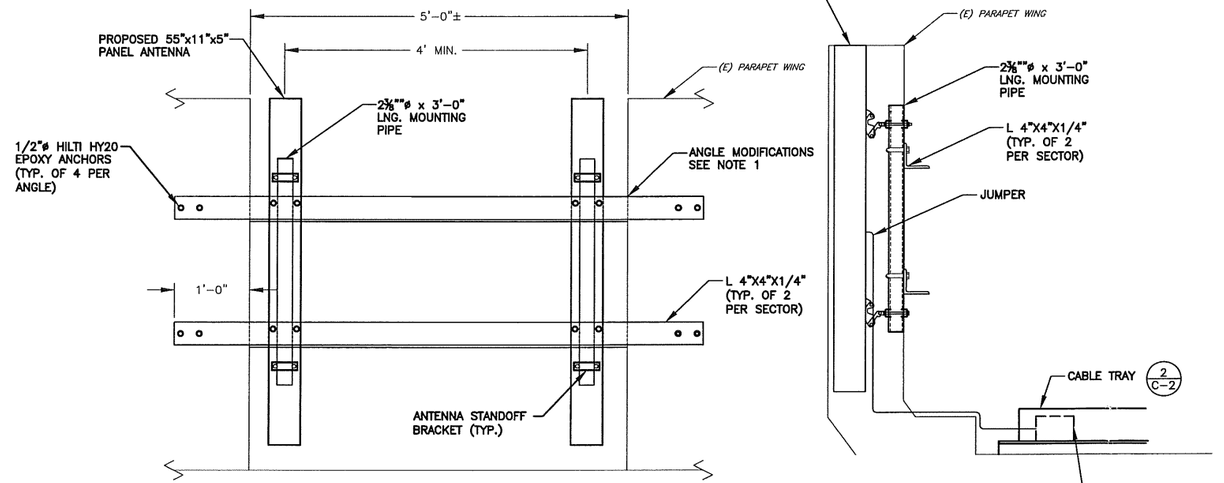
NOTES:

1. PRIME AND PAINT ALL MOUNTING BRACKETS AND ANTENNAS TO MATCH (E) BUILDING FACADE W/GROUT LINES.

FACADE ANTENNA MOUNTING DETAIL

SCALE: N.T.S.

2 / –



NOTES:

1. CUT AND BEND ANGLE FLUSH WITH PARAPET WING. (TYP. OF 2 PER ANGLE)

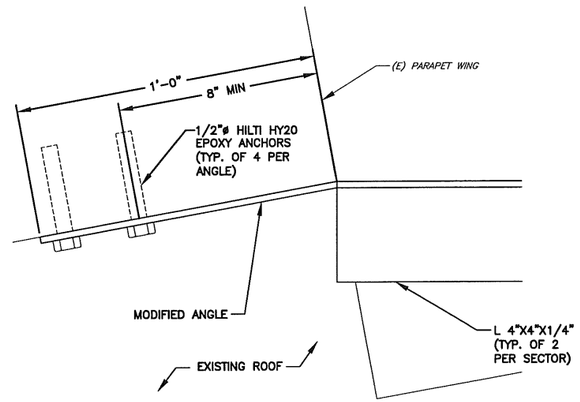
NOTES:

1. PRIME AND PAINT ALL MOUNTING BRACKETS AND ANTENNAS TO MATCH (E) BUILDING FACADE W/GROUT LINES.

ANTENNA MOUNTING DETAILS

SCALE: N.T.S.

2 / –



ANGLE MOUNTING DETAIL

SCALE: N.T.S.

4 / –

AERIAL SPECTRUM INCORPORATED
One General Way
PO Box 373
Reading, MA 01880
tel. (781) 942 0024
fax (781) 942 0551
e-mail eamon@aerialspectrum.com

ME5045
USM PORTLAND
DEERING AVENUE
PORTLAND, ME 03082

cingular SM WIRELESS
CONSTRUCTION DEPARTMENT
580 MAIN STREET
BOLTON, MA 01740
PHONE: (781) 690–7422
FAX: (781) 690–7474

NO.	DATE	REVISIONS	BY	CHK	APP'D
C	04–13–06	FOR COMMENT	PRC	PLM	ETK
B	02–14–06	FOR COMMENT	PRC	PLM	ETK
A	11–01–05	FOR COMMENT	PRC	PLM	ETK

SCALE: AS SHOWN | DESIGNED: PRC ETK | DRAWN: PRC PR

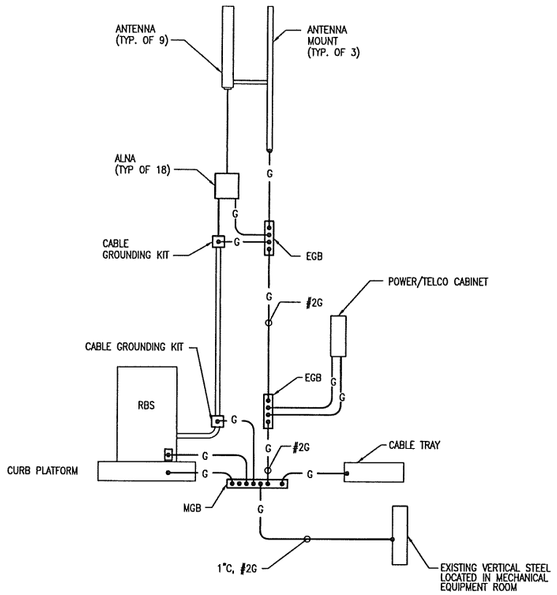
PROFESSIONAL STAMP

STATE OF MAINE PAUL L. MUSCO 10479 REGISTERED PROFESSIONAL ENGINEER

CINGULAR WIRELESS

CONSTRUCTION DETAILS

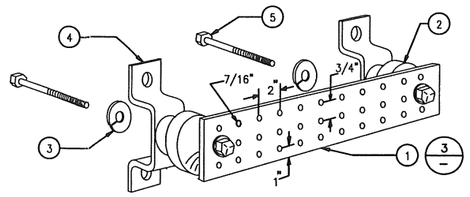
DRAWING NUMBER	REV
C–4	C



GROUNDING RISER DIAGRAM

SCALE: N.T.S.

(1)



LEGEND

1- COPPER GROUND BAR 1/4 "X 4"X 20", NEWTON INSTRUMENT CO. CAT. NO. B-6142. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION

2- INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4

3- 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8

4- WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A-6056

5- 5/8-11 X 1" H.H.C.S.BOLTS, NEWTON INSTRUMENT CO. CAT NO. 3012-1

GROUND BAR

SCALE: N.T.S.

(2)

GROUNDING LEGEND

- G — GROUND COPPER WIRE, SIZE AS NOTED
- 5/8" X 10' COPPER CLAD STEEL GROUNDING ELECTRODE
- EXOTHERMIC (CADWELD) CONNECTION
- MECHANICAL CONNECTION
- 5/8" X 10' COPPER CLAD STEEL GROUNDING ELECTRODE AND TEST WELL

GENERAL GROUNDING NOTES

1. CONTRACTOR SHALL HAND-DIG IN AREAS AROUND EXISTING UTILITIES.

CONNECTIONS

2. ALL UNDERGROUND (BELOW GRADE) GROUNDING CONNECTIONS SHALL BE EXOTHERMICALLY WELDED (CAD WELDED). THESE CONNECTIONS INCLUDE ALL CABLE TO GROUND ROD, GROUND ROD SPLICES, CABLE TO CABLE SPLICES, TEES, CROSS CONNECTIONS, LIGHTNING PROTECTION SYSTEMS, ETC..

3. GRIND OFF GALVANIZING IN AREAS TO BE EXOTHERMICALLY WELDED. COLD-GALVANIZE AFFECTED AREAS AFTER CAD WELD IS COMPLETE.

4. FOR CAD WELD CONNECTIONS ABOVE GRADE, CONNECTION IS TO BE 6" ABOVE GRADE OR FOUNDATION, WHICHEVER IS HIGHER.

5. ALL ABOVE GRADE OR INTERIOR GROUNDING AND BONDING CONDUCTORS SHALL BE RECONNECTED BY TWO-HOLE CRIMP COMPRESSION TYPE MECHANICAL CONNECTIONS UNLESS OTHERWISE NOTED.

6. AC SERVICE ELECTRICAL GROUND SHALL BE A MINIMUM #2 AWG SOLID TINNED COPPER WIRE OR AS REQUIRED BY THE NEC. ELECTRICAL SERVICE GROUND WIRE SHALL BE RUN CONTINUOUS.

GROUND RODS

7. ALL GROUND RODS SHALL BE 5/8" DIAMETER BY 10 FT. IN LENGTH COPPER CLAD STEEL BY HARGER, T&B, ERICO OR APPROVED EQUAL.

8. GROUND RODS SHALL BE DRIVEN FULL LENGTH VERTICAL IN UNDISTURBED EARTH AND SHALL BE A MINIMUM OF 12" BELOW GRADE. IF LEDGE IS ENCOUNTERED INSTALL GROUND ROD AT AN ANGLE EXCEPT FOR ELECTRICAL METER GROUND ROD.

9. ALL GROUND RODS SHALL BE SPACED 10 FT. MAXIMUM UNLESS OTHERWISE NOTED.

GROUND BARS

10. ALL GROUND BARS SHALL BE 1/4" THICK BARE COPPER PLATE AND OF SIZE AS REQUESTED.

CABLES

11. ALL GROUND CABLES SHALL BE STANDARD TINNED COPPER AND OF SIZE INDICATED ON THE DRAWINGS. IF NOT INDICATED ON THE DRAWINGS, SIZES ARE AS FOLLOWS:
A. BURIED GROUND RING- 2/0 AWG STRANDED
B. GROUNDING OF ANTENNA CABLES- #6 AWG STRANDED
C. INDOOR HALO RING- #2 AWG STRANDED GREEN INSULATED
D. OUTDOOR EQUIPMENT GROUNDS- #2 AWG SOLID
E. COPPER WIRE-OUTDOOR SYSTEM GROUND- 2/0 AWG SOLID OR 4/0 AWG STRANDED.

GROUND RING

12. CONDUCTOR BENDS SHALL HAVE A MINIMUM BEND RADIUS OF 8" AND BE A MINIMUM OF 24 INCHES FROM ANY FOUNDATION UNLESS OTHERWISE NOTED.

13. GROUND RING TO GROUND RING CONNECTIONS ARE TO BE CAD WELDED ONLY. LUGS, CLAMPS OR OTHER MECHANICAL CONNECTIONS IS PROHIBITED.

FENCE GROUNDING

14. GROUND FENCE AND GATES AS INDICATED ON THE DRAWINGS.

15. GROUND EACH FENCE POST CORNER AND GATE POSTS.

16. GROUND CONNECTIONS OF FENCE POSTS ARE TO BE CAD WELDED ONLY OR PER MANUFACTURER RECOMMENDATIONS.

GROUND TESTING

17. THE FOLLOWING GROUND TESTING METHODS MAY BE USED:
A. THE BIDDLE GROUND OHM METER METHOD
B. THE METHOD OF USING TWO AUXILIARY GROUND RODS AS DESCRIBED IN I.E.E.E. STD. #81-1983, PART 1. THIS METHOD REQUIRES THE USE OF A.C. TEST CURRENT. THE AUXILIARY TEST RODS MUST HAVE SUFFICIENT DISTANCE FROM THE TEST ROD SO THAT THE REGIONS IN WHICH THEIR RESISTANCE IS LOCALIZED AND DO NOT OVERLAP.
C. OTHER APPROVED METHODS.

18. THE CONTRACTOR SHALL SUBMIT A GROUNDING RESISTANCE TEST REPORT TO THE OWNER.

19. AFTER THE EXTERNAL GROUND RINGS ARE CONNECTED BUT BEFORE THE EQUIPMENT CABINET IS PERMANENTLY INSTALLED, A "MEGGER" CHECK OF THE GROUND SYSTEM SHOULD BE PERFORMED.

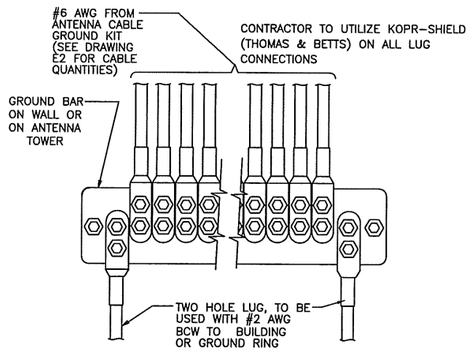
GROUNDING RESISTANCE TEST REPORT

20. TESTING SHALL BE PERFORMED BY THE CONTRACTOR AND TWO SETS OF TEST REPORTS ARE TO BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.

21. A TEST REPORT SHOWING RESISTANCE (OHMS) WITH AUXILIARY POTENTIAL ELECTRODES AT 5' AND 10' INTERVALS, UNTIL THE AVERAGE RESISTANCE STARTS INCREASING, MUST BE PROVIDED.

22. 10-15 PHOTOS MUST BE TAKEN TO PROVE THE ENTIRE SITE GROUNDING SYSTEM BEFORE BACK FILLING OR NOTIFY THE OWNER NO LESS THAN 48 HRS. IN ADVANCE OF BACKFILL.

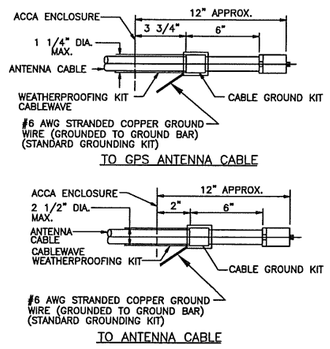
23. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF THERE ARE ANY DIFFICULTIES INSTALLING GROUNDING SYSTEM DUE TO SITE SOIL CONDITIONS.



GROUND WIRE INSTALLATION

SCALE: N.T.S.

(3)

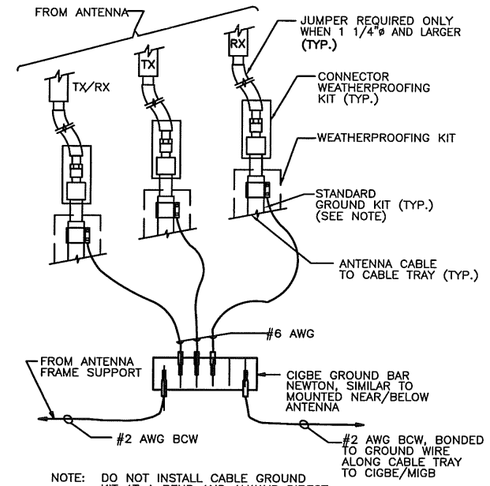


NOTE: DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.

CABLE GROUNDING

SCALE: N.T.S.

(4)



NOTE: DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE

ANTENNA GROUNDING

SCALE: N.T.S.

(5)

AERIAL SPECTRUM INCORPORATED
One General Way
PO Box 373
Reading, MA 01880
tel. (781) 942 0024
fax (781) 942 0551
e-mail eamon@aerialspectrum.com

ME5045
USM PORTLAND
DEERING AVENUE
PORTLAND, ME 03082

cingular SM WIRELESS
CONSTRUCTION DEPARTMENT
580 MAIN STREET
BOLTON, MA 01740
PHONE: (781) 690-7422
FAX: (781) 690-7474

NO.	DATE	REVISIONS	BY	CHK	APP'D
C	04-13-06	FOR COMMENT	PRC	PLM	ETK
B	02-14-06	FOR COMMENT	PRC	PLM	ETK
A	11-01-05	FOR COMMENT	PRC	PLM	ETK

SCALE: AS SHOWN | DESIGNED: PRC ETK | DRAWN: PRC PRC

PROFESSIONAL STAMP

STATE OF MAINE · PAUL R. CUEVAS · 10419 · REGISTERED PROFESSIONAL ENGINEER

CINGULAR WIRELESS

GROUNDING DETAILS

DRAWING NUMBER	REV
E-1	C

ME5045

cingular SM WIRELESS

USM PORTLAND

DRAWING INDEX

		REV.
T-1	TITLE SHEET	C
GN-1	GENERAL NOTES	C
C-1	SITE PLAN & ROOF PLAN	C
C-2	ELEVATIONS & CONSTRUCTION DETAILS	C
C-3	CONSTRUCTION DETAILS	C
C-4	CONSTRUCTION DETAILS	C
G-1	GROUNDING DETAILS	C

DIRECTIONS

TAKE I-95 NORTH FOR TO EXIT# 44 I-295. TAKE I-295 FOR 5.4 MILES TO S. PORTLAND/PORTLAND DOWNTOWN EXIST. TAKE THE ME-100 N/US-1/US-302 W EXIT# 6B FOR 0.2 MILES. BEAR RIGHT AT 10TH MOUNTAIN DIVISION HWY/FOREST AVE/BLUE STAR MEMORIAL HWY FOR 0.2 MILES. TURN LEFT AT BEDFORD ST FOR 0.3 MI. TURN RIGHT AT BRIGHTON AVE FOR 0.1 MILES. SITE IS DIRECTLY ON THE LEFT AT THE INTERSECTION OF BRIGHTON AVE AND DEERING AVE.

VICINITY MAP

PROJECT INFORMATION

SCOPE OF WORK:	INSTALLATION OF CINGULAR EQUIPMENT, ANTENNAS, AND ASSOCIATED HARDWARE
SITE ADDRESS:	DEERING AVENUE PORTLAND, ME 03082
PROPERTY OWNER:	UNIVERSITY OF MAINE SYSTEM 107 MAINE AVE BANGOR ME 04401
APPLICANT/TOWER OWNER:	CINGULAR WIRELESS 580 MAIN STREET BOLTON, MA 01740 TEL. (781) 690-7422
LATITUDE : LONGITUDE : ELEVATION (AMSL):	N 43°-39'-39.61" (AERIAL PHOTOGRAPHY) W 70°-16'-44.81" (AERIAL PHOTOGRAPHY) 800'
JURISDICTION: TAX I.D. NUMBER: CURRENT USE: PROPOSED USE:	CITY OF PORTLAND MAP 51, LOT E-1 LITERARY & SCIENTIFIC INSTITUTION PROPOSED WIRELESS TELECOMMUNICATIONS FACILITY

SITE QUALIFICATION PARTICIPANTS

	NAME	COMPANY	NUMBER
A/E	EAMON KERNAN	AERIAL SPECTRUM INC.	(781) 942-0024
SAC	CHRIS DWIGHT	TRM	(508) 389-1734

AERIAL SPECTRUM INCORPORATED
One General Way
PO Box 373
Reading, MA 01880
tel. (781) 942 0024
fax (781) 942 0551
e-mail eamon@aerialspectrum.com

ME5045
USM PORTLAND
DEERING AVENUE
PORTLAND, ME 03082

cingular SM WIRELESS
CONSTRUCTION DEPARTMENT
580 MAIN STREET
BOLTON, MA 01740
PHONE: (781) 690-7422
FAX: (781) 690-7474

NO.	DATE	REVISIONS	BY	CHK	APP'D
C	04-13-06	FOR COMMENT	PRC	PLM	ETK
B	02-14-06	FOR COMMENT	PRC	PLM	ETK
A	11-01-05	FOR COMMENT	PRC	PLM	ETK

SCALE: AS SHOWN | DESIGNED: PRC | DRAWN: PRC

PROFESSIONAL STAMP

STATE OF MAINE · PAUL L. MACKEY · REGISTERED PROFESSIONAL ENGINEER

CINGULAR WIRELESS

TITLE SHEET

DRAWING NUMBER	REV
T-1	C

GENERAL CONSTRUCTION NOTES

1. THIS PROPOSAL IS FOR AN UNMANNED TELECOMMUNICATIONS FACILITY CONSISTING OF PROPOSED PIPE MOUNTED ANTENNAS AND THE PLACEMENT OF OUTDOOR EQUIPMENT CABINETS ON THE EXISTING ROOF.
2. THE PROPOSED FACILITY WILL BE UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SEWER SERVICE.
3. THE PROPOSED FACILITY IS UNMANNED AND IS NOT FOR HUMAN HABITATION. (NO HANDICAP ACCESS IS REQUIRED).
4. OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION, APPROXIMATELY 2 TIMES PER MONTH, BY CINGULAR TECHNICIANS AND UNIVERSITY MAINTENANCE STAFF.
5. NO NOISE, SMOKE, DUST OR ODOR WILL RESULT FROM THIS PROPOSAL.
6. OUTDOOR STORAGE AND SOLID WASTE CONTAINERS ARE NOT PROPOSED.
7. ALL MATERIAL SHALL BE FURNISHED AND WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
8. SUBCONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE CAUSED BY THE CONSTRUCTION OPERATION.
9. SUBCONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTION REQUIRED FOR CONSTRUCTION.
10. SUBCONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE ON A DAILY BASIS.
11. INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM SITE VISITS AND DRAWINGS PROVIDED BY THE SITE OWNER. SUBCONTRACTOR SHALL NOTIFY BECHTEL OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
12. NO WHITE STROBIC LIGHTS ARE PERMITTED, LIGHTING, IF REQUIRED, WILL MEET FAA STANDARDS AND REQUIREMENTS.
13. SUBCONTRACTOR SHALL CALL DIG-SAFE FOR UNDERGROUND UTILITY MARKOUT PRIOR TO CONSTRUCTION. 1-800-DIG-SAFE.
14. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS CONTRACTOR IS BECHTEL. SUBCONTRACTOR IS THE GENERAL CONTRACTOR. CONSTRUCTION AND OWNER IS AT&T WIRELESS SERVICES.

SITE WORK GENERAL NOTES

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION. TELECOM/FIBER LINES ARE IN THE AREA OF THE PROPOSED UNDERGROUND UTILITY RUN.
2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & EXCAVATION.
3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
5. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE RBS EQUIPMENT AND TOWER AREAS.
6. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
7. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
8. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING, OWNER AND/OR LOCAL UTILITIES.
9. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
10. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

STRUCTURAL STEEL NOTES

1. ALL STEEL WORK SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND IN ACCORDANCE WITH ASTM A36 UNLESS OTHERWISE NOTED.
2. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 9TH EDITION. PAINTED SURFACES SHALL BE TOUCHED UP.
3. BOLTED CONNECTIONS SHALL USE BEARING TYPE ASTM A325 BOLTS (3/4" DIA) AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
4. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.
5. CONCRETE EXPANSION ANCHORS AND EPOXY ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. MANUFACTURER'S MINIMUM CONCRETE EDGE DISTANCE SHALL BE MAINTAINED DURING INSTALLATION.

CONCRETE AND REINFORCING STEEL NOTES

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM TA184, ASTM A185 AND THE PROJECT SPECIFICATIONS.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE.
3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

   CONCRETE CAST AGAINST EARTH.....3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:

   #6 AND LARGER .....2 IN.
   #5 AND SMALLER & WWF

   CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:

   SLAB AND WALL .....3/4 IN.
   BEAMS AND COLUMNS .....1 1/2 IN.

5. A 1" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
6. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR ENGINEERING APPROVAL WHEN DRILLING HOLES IN CONCRETE. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.

APPLICABLE BUILDING CODES AND STANDARDS

SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
BUILDING CODE:
MAINE STATE BUILDING CODE LATEST EDITION
ELECTRICAL CODE:
NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 70 – 99SB, NATIONAL ELECTRICAL CODE
AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION
TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-F, STRUCTURAL STANDARD FOR STRUCTURAL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES
INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM
IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT
TIA 607 COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS
TELCORDIA GR-1503 COAXIAL CABLE CONNECTIONS
FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

CONCRETE PLACEMENT NOTES

1. REMOVE ALL ORGANIC MATERIAL PRIOR TO PLACEMENT OF STONE. IF FILLING IS REQUIRED, BACKFILL AND COMPACT WITH WELL-DRAINING GRAVEL.
2. IF SOUND ROCK IS ENCOUNTERED AT LESS THAN THE SPECIFIED FOUNDATION DEPTH, USE ALTERNATIVE FOUNDATION.
3. CONTACT ENGINEER IF SITE CONDITIONS VERY FROM STATED FOUNDATION DESIGN CRITERIA.
4. FOUNDATION DESIGN SUBJECT TO MODIFICATION BASED UPON SHELTER DESIGN CHANGES BY MANUFACTURER. VERIFY DESIGN ACCEPTANCE WITH PROJECT MANAGER PRIOR TO CONSTRUCTION.
5. CONCRETE SHALL BE CONSOLIDATED BY INTERNAL VIBRATION IN ACCORDANCE WITH ACI STANDARD 309-72: RECOMMENDED PRACTICE FOR CONSOLIDATION OF CONCRETE.
6. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 psi AT 28 DAYS AND SHALL BE INSTALLED IN ACCORDANCE WITH THE ACI-318-83 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE. SLUMP SHALL BE 2"-5" AND MAXIMUM AGGREGATE SHALL BE 3/4".
7. DETAILING, FABRICATION, PLACING, AND SUPPORTS SHALL BE IN ACCORDANCE WITH ACI 318-89 AND CRSI.
8. REINFORCING BARS SHALL CONFORM TO ASTM-A615-82 GRADE 60 SPECIFICATIONS AND BE DETAILED IN ACCORDANCE WITH AC1-318-83.
9. MAXIMUM PERMISSIBLE VARIATION OF PIER LOCATION SHALL BE 1". CONCRETE PIER VARIANCE FROM PLUMB SHALL NOT EXCEED 3/4".
10. TOPS OF CONCRETE PIERS SHALL BE WITHIN 0.02 FEET OF ELEVATION SPECIFIED. SHIM, AS REQUIRED, TO LEVEL THE SHELTER.
11. COLD WEATHER/HOT WEATHER CONCRETE PLACEMENT SHALL BE IN ACCORDANCE WITH ACI 305 AND 306.
12. PROVIDE CONCRETE TEST CYLINDERS: 1 AT 7 DAYS, 2 AT 28 DAYS. SUBMIT TEST DATA TO PROJECT MANAGER FOR REVIEW AND APPROVAL.
13. AS WITH ALL EXCAVATION, CARE TO BE TAKEN DUE TO EXISTENCE OF EXISTING UNDER-GROUND UTILITIES

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	G.C.	GENERAL CONTRACTOR
AWG	AMERICAN WIRE GAUGE	MGB	MASTER GROUND BUS
BCW	BARE COPPER WIRE	MIN	MINIMUM
BTS	BASE TRANSCEIVER STATION	(N)	NEW
(E)	EXISTING	N.T.S.	NOT TO SCALE

AERIAL SPECTRUM INCORPORATED
One General Way
PO Box 373
Reading, MA 01880
tel. (781) 942 0024
fax (781) 942 0551
e-mail eamon@aerialspectrum.com

ME5045
USM PORTLAND
DEERING AVENUE
PORTLAND, ME 03082

cingular WIRELESS
CONSTRUCTION DEPARTMENT
580 MAIN STREET
BOLTON, MA 01740
PHONE: (781) 690-7422
FAX: (781) 690-7474

NO.	DATE	REVISIONS	BY	CHK	APP'D
C	04-13-06	FOR COMMENT	PRC	PLM	ETK
B	02-14-06	FOR COMMENT	PRC	PLM	ETK
A	11-01-05	FOR COMMENT	PRC	PLM	ETK

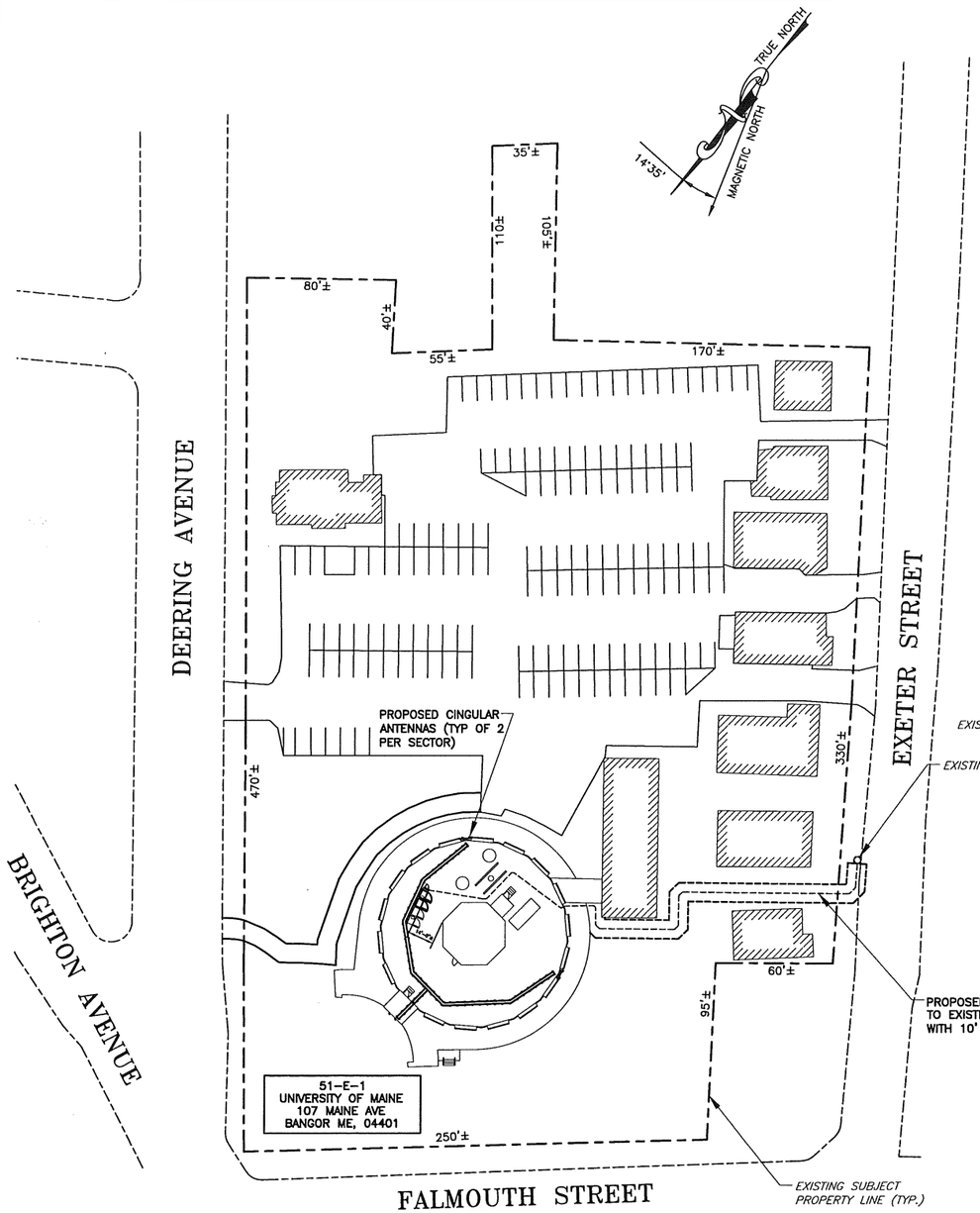
SCALE: AS SHOWN | DESIGNED: PRC | DRAWN: PRC

PROFESSIONAL STAMP
STATE OF MAINE REGISTERED PROFESSIONAL ENGINEER PAUL R. CLEMENT

CINGULAR WIRELESS

GENERAL NOTES

DRAWING NUMBER	REV
GN-1	C

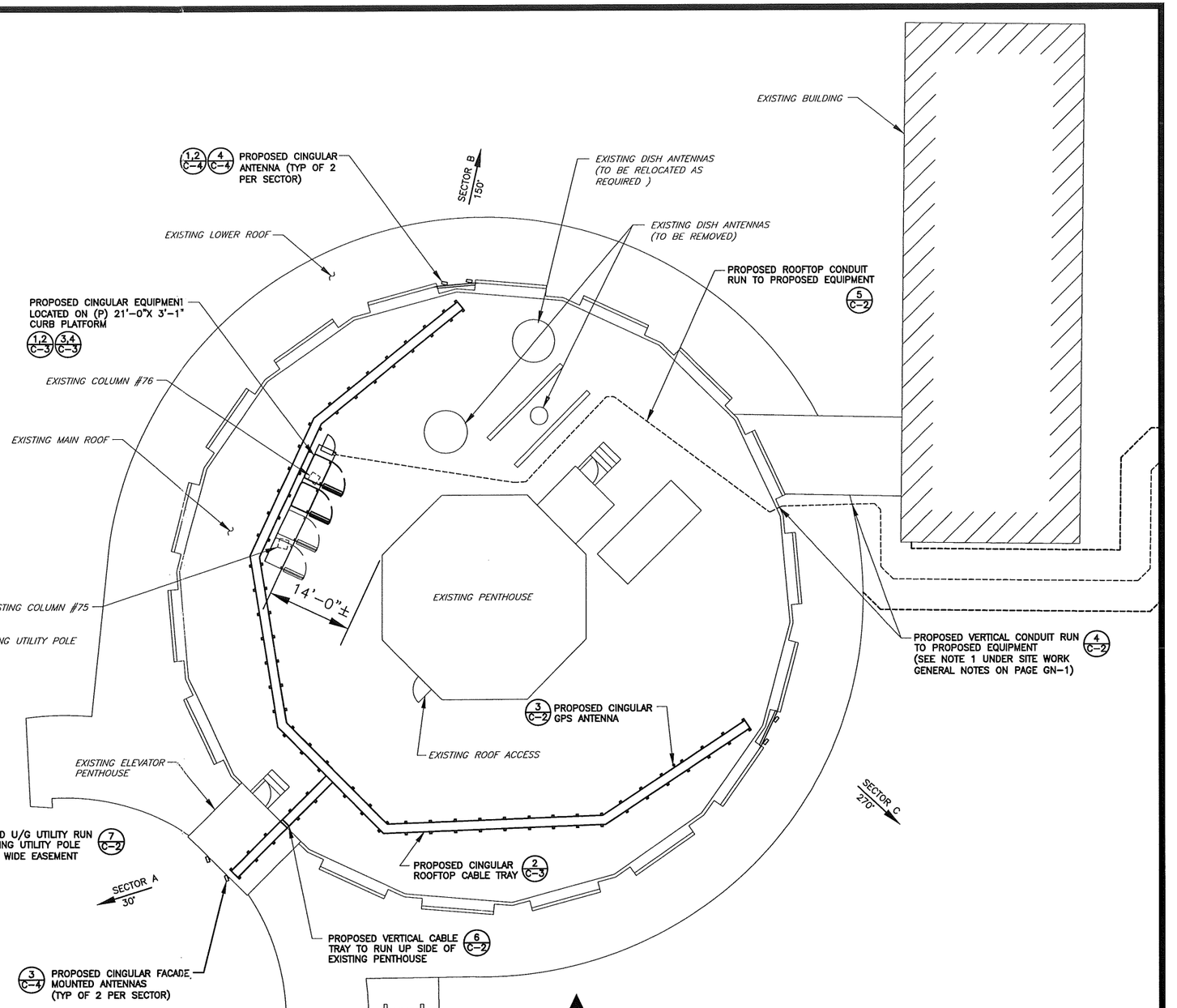


PLOT PLAN 1/– APPX. SCALE: 1"=40'-0"

40 0 20 40 80 160

NOTES:

-PLOT PLAN IS NOT THE RESULT OF A SURVEY. IT IS BASED ON FIELD MEASUREMENTS AND SCALED ASSESSORS MAPS AVAILABLE. ALL INFORMATION SHOWN IS APPROXIMATE ONLY AND SUBJECT TO ANY CONDITION THAT A SURVEY MAY REVEAL.



ROOF PLAN 2/– SCALE: 1/16"=1'-0"

8 0 4 8 16 32

AERIAL SPECTRUM INCORPORATED
One General Way
PO Box 373
Reading, MA 01880
tel. (781) 942 0024
fax (781) 942 0551
e-mail eamon@aerialspectrum.com

ME5045
USM PORTLAND
DEERING AVENUE
PORTLAND, ME 03082

cingular SM WIRELESS
CONSTRUCTION DEPARTMENT
580 MAIN STREET
BOLTON, MA 01740
PHONE: (781) 690-7422
FAX: (781) 690-7474

NO.	DATE	REVISIONS	BY	CHK	APP'D
C	04-13-06	FOR COMMENT	PRC	PLM	ETK
B	02-14-06	FOR COMMENT	PRC	PLM	ETK
A	11-01-05	FOR COMMENT	PRC	PLM	ETK

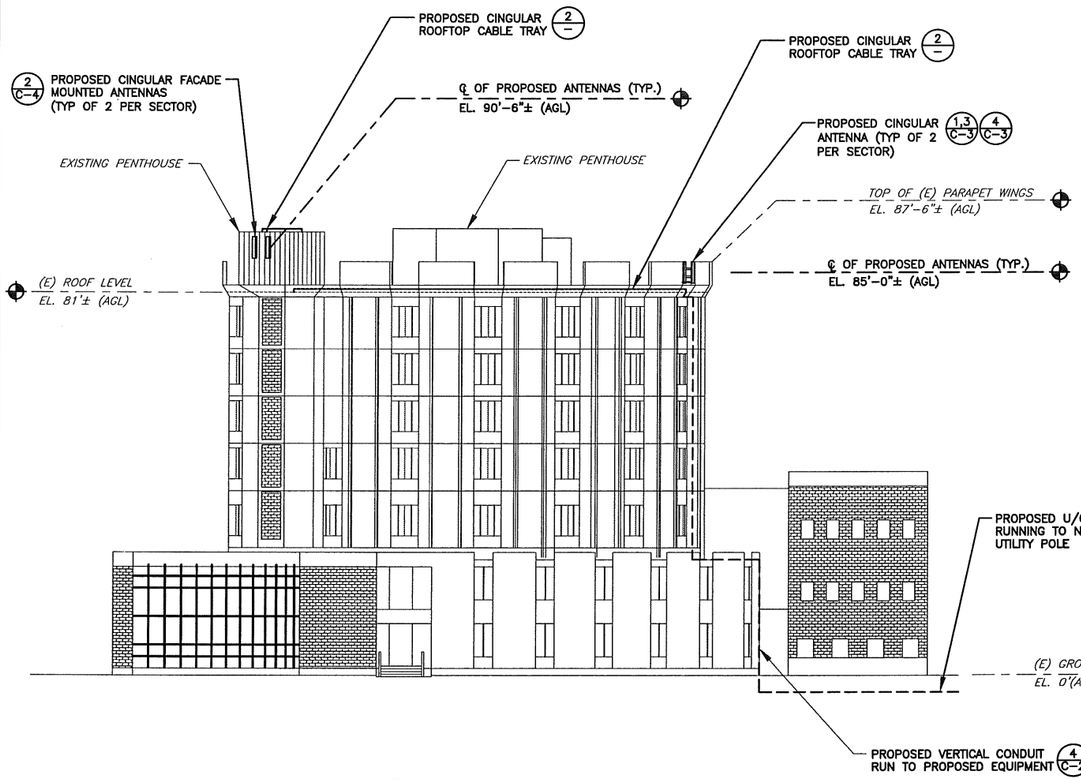
SCALE: AS SHOWN DESIGNED: PRC ETK DRAWN: PRC PRC

PROFESSIONAL STAMP
STATE OF MAINE · REGISTERED PROFESSIONAL ENGINEER

CINGULAR WIRELESS

SITE PLAN & ROOF PLAN

DRAWING NUMBER	REV
C-1	C

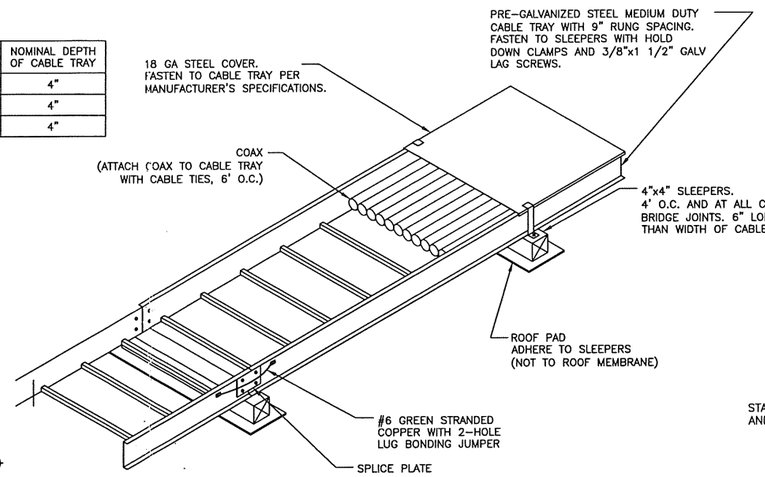


NORTHWEST ELEVATION 1/–

SCALE: 1/16"=1'–0"

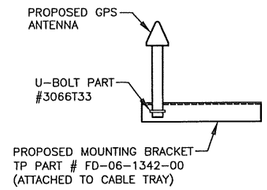
16 0 8 16 32 64

NUMBER OF COAXIAL CABLES	WIDTH OF CABLE TRAY	NOMINAL DEPTH OF CABLE TRAY
12	24"	4"
8	18"	4"
4	12"	4"



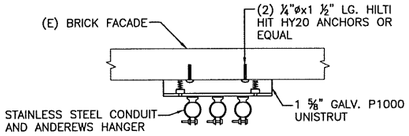
ROOF MOUNTED COAX TRAY 2/–

SCALE: N.T.S.



GPS SUPPORT 3/–

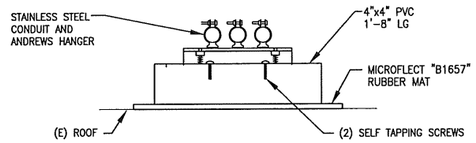
SCALE: N.T.S.



EXTERIOR CONDUIT RUN 4/–

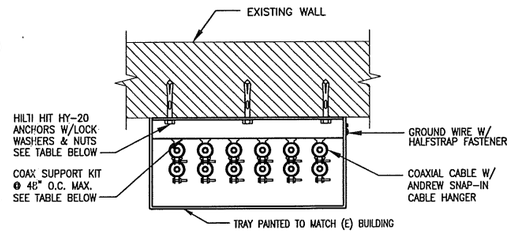
SCALE: N.T.S.

NOTE:
PAINT EXPOSED CONDUIT AND HARDWARE TO MATCH THE COLOR OF THE EXISTING SURROUNDINGS.



CONDUIT RUN ON ROOF 5/–

SCALE: N.T.S.

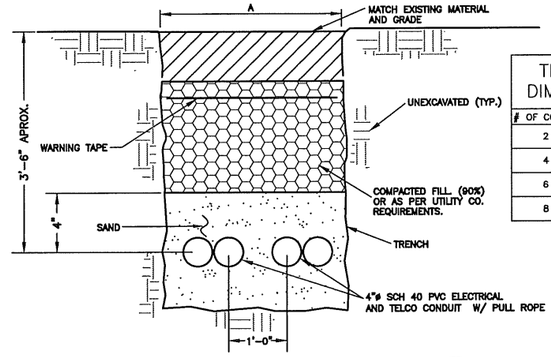


No. CABLES	MICROFLECT COAX SUPPORT KIT	No. OF ANCHORS	A
1 TO 4	B1589	2	11 1/2"
5 TO 8	B1590	3	21 1/2"
9 TO 12	B1591	3	30 1/2"

NOTE:
1. USE STAINLESS STEEL ANCHORS INTO CONCRETE. USE CARBON STEEL ANCHORS INTO BRICK OR MASONRY USE TOGGLE BOLTS INTO STUD WALLS.
2. ANCHOR TO BE INSTALLED IN 1/2"ø HOLES DRILLED W/ HILTI CARBIDE TIPPED DRILL BITS. ANCHORS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
3. DETAIL BASED ON THE USE OF MICROFLECT AND HILTI. CONTRACTOR MAY SUBSTITUTE EQUAL MATERIALS APPROVED BY LESSEE/LICENSEE.
4. PAINT ALL MOUNTING BRACKETS TO MATCH COLOR OF EXISTING BUILDING.

VERTICAL COAX CABLE TRAY 6/–

SCALE: N.T.S.



TRENCH DIMENSION	
# OF CONDUIT	A
2	2'–0"
4	2'–8"
6	3'–2"
8	3'–10"

TRENCH DETAIL- ELEC/TELCO 7/–

SCALE: N.T.S.

NOTE:
1. IF FREE OF ORGANIC OR OTHER DELETERIOUS MATERIAL, EXCAVATED MATERIAL MAY BE USED FOR BACKFILL. IF NOT, PROVIDE CLEAN, COMPACTIBLE MATERIAL. COMPACT IN 8" LIFTS. REMOVE ANY LARGE ROCKS PRIOR TO BACKFILLING.
2. CONDUITS SHOWN DO NOT NEED TO BE IN SAME TRENCH HOWEVER, ALL DIMENSIONS SHOWN ARE FOR ALL CONDUIT TRENCHING REGARDLESS OF THE NUMBER OF CONDUITS PER TRENCH.
3. CARE TO BE TAKEN TO AVOID EXISTING UNDERGROUND UTILITIES

AERIAL SPECTRUM INCORPORATED
One General Way
PO Box 373
Reading, MA 01880
tel. (781) 942 0024
fax (781) 942 0551
e-mail eamon@aerialspectrum.com

ME5045
USM PORTLAND
DEERING AVENUE
PORTLAND, ME 03082

cingular SM WIRELESS
CONSTRUCTION DEPARTMENT
580 MAIN STREET
BOLTON, MA 01740
PHONE: (781) 690–7422
FAX: (781) 690–7474

NO.	DATE	REVISIONS	BY	CHK	APP'D
C	04–13–06	FOR COMMENT	PRC	PLM	ETK
B	02–14–06	FOR COMMENT	PRC	PLM	ETK
A	11–01–05	FOR COMMENT	PRC	PLM	ETK

SCALE: AS SHOWN DESIGNED: PRC ETK DRAWN: PRC PR

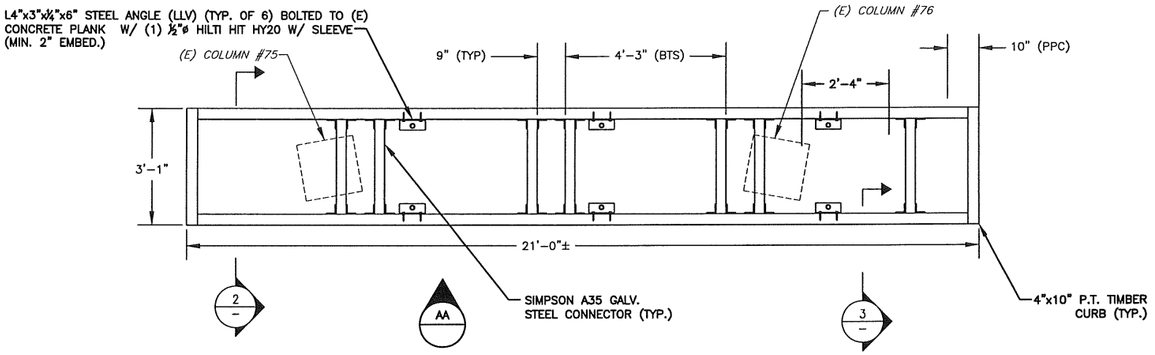
PROFESSIONAL STAMP

STATE OF MAINE PAUL R. MUSE 10475 REGISTERED PROFESSIONAL ENGINEER

CINGULAR WIRELESS

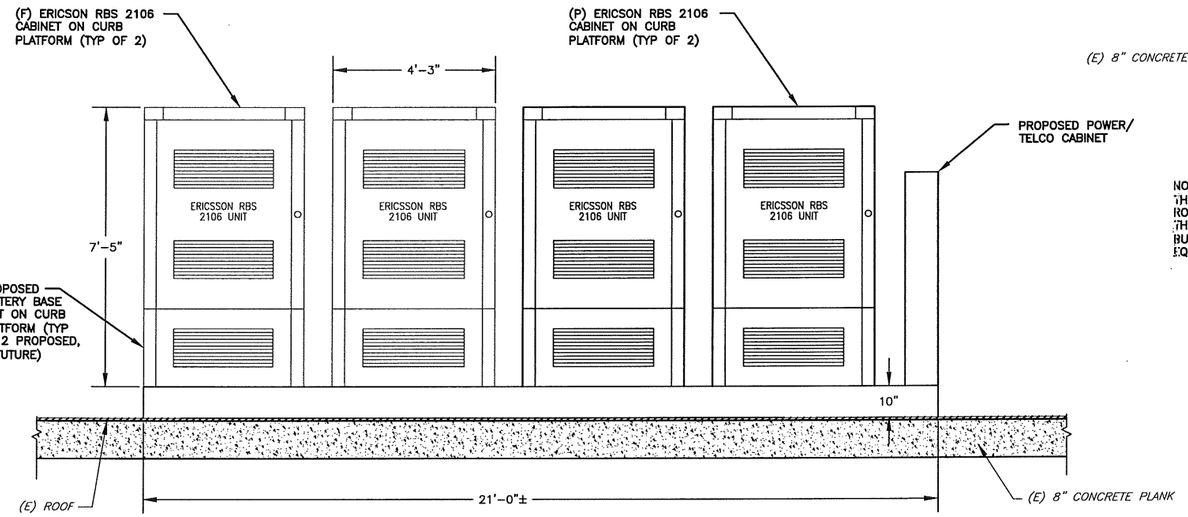
ELEVATION AND CONSTRUCTION DETAILS

DRAWING NUMBER	REV
C–2	C



PLAN

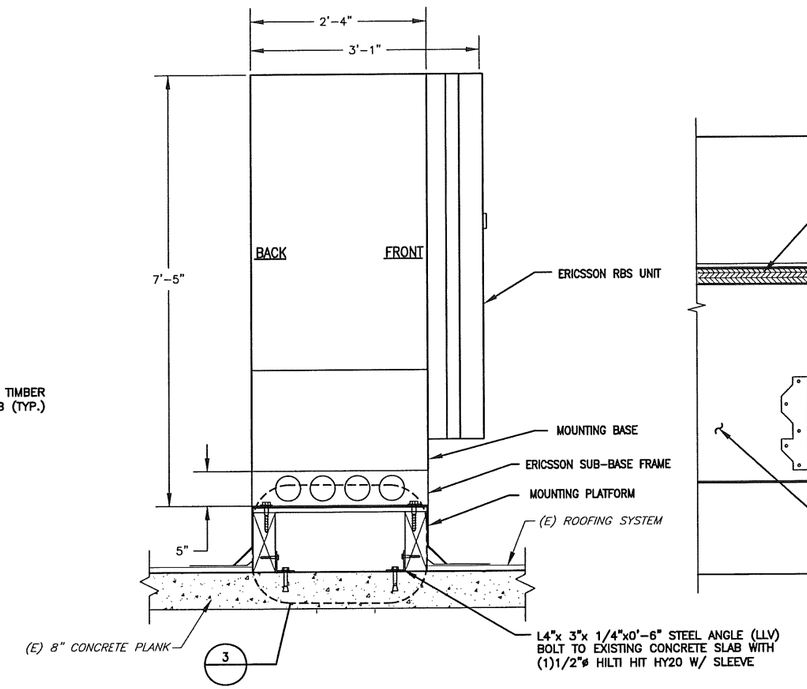
NOTE:
LOCATION OF PROPOSED CURB PLATFROM DESIGNED FROM EXISTING BUILDING PLANS OBTAINED FROM USM PORTLAND MAINTENANCE DEPARTMENT. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF EXISTING SUPPORT COLUMNS PRIOR TO CONSTRUCTION.



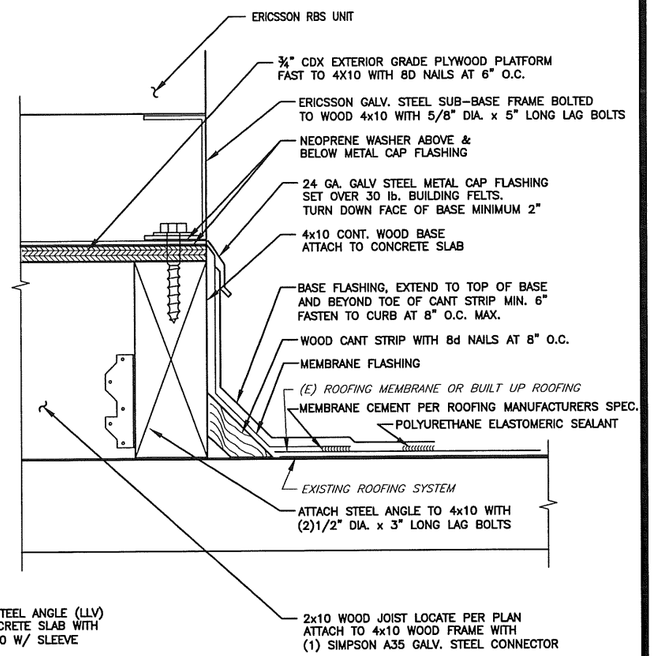
ELEVATION A-A

PROPOSED CURB PLATFORM (1/–)
SCALE: 1/2" = 1'-0"

2 0 1 2 4 8

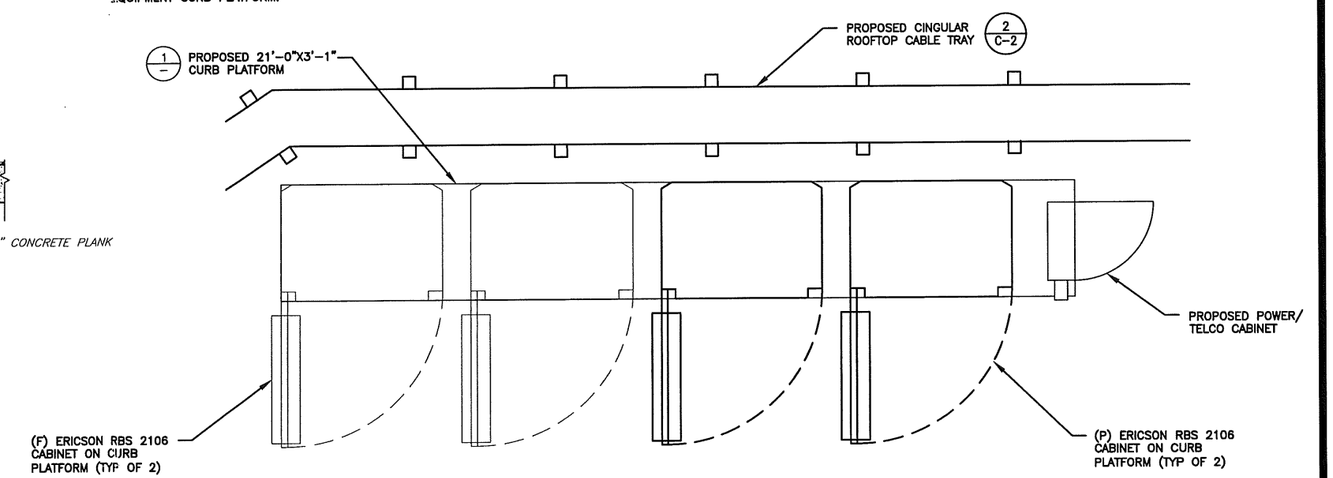


SECTION AT RBS UNIT (2/–)
SCALE: N.T.S.



DETAIL AT PLATFORM CURB (3/–)
SCALE: N.T.S.

NOTE:
THE CONTRACTOR SHALL COORDINATE ALL WORK WITH BUILDING OWNER'S ROOFING CONTRACTOR WHO WILL COMPLETE ALL WORK ASSOCIATED WITH THE ROOF. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FROM THE BUILDING OWNER'S ROOFING CONTRACTOR BEFORE INSTALLATION OF EQUIPMENT CURB PLATFORM.



EQUIPMENT PLATFORM PLAN (4/–)
SCALE: 1/2" = 1'-0"

2 0 1 2 4 8

AERIAL SPECTRUM INCORPORATED
One General Way
PO Box 373
Reading, MA 01880
tel. (781) 942 0024
fax (781) 942 0551
e-mail eamon@aerialspectrum.com

ME5045
USM PORTLAND
DEERING AVENUE
PORTLAND, ME 03082

cingular SM WIRELESS
CONSTRUCTION DEPARTMENT
580 MAIN STREET
BOLTON, MA 01740
PHONE: (781) 690-7422
FAX: (781) 690-7474

NO.	DATE	REVISIONS	BY	CHK	APP'D
C	04-13-06	FOR COMMENT	PRC	PLM	ETK
B	02-14-06	FOR COMMENT	PRC	PLM	ETK
A	11-01-05	FOR COMMENT	PRC	PLM	ETK

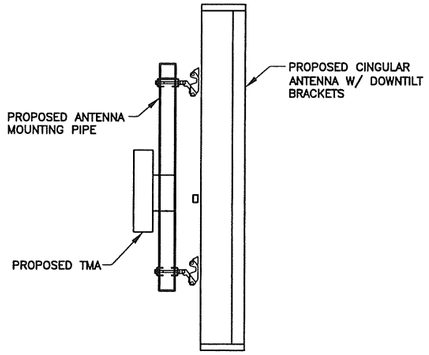
SCALE: AS SHOWN | DESIGNED: PRC | DRAWN: PRC

PROFESSIONAL STAMP
STATE OF MAINE PAUL L. MOTTS REGISTERED PROFESSIONAL ENGINEER

CINGULAR WIRELESS

CONSTRUCTION DETAILS

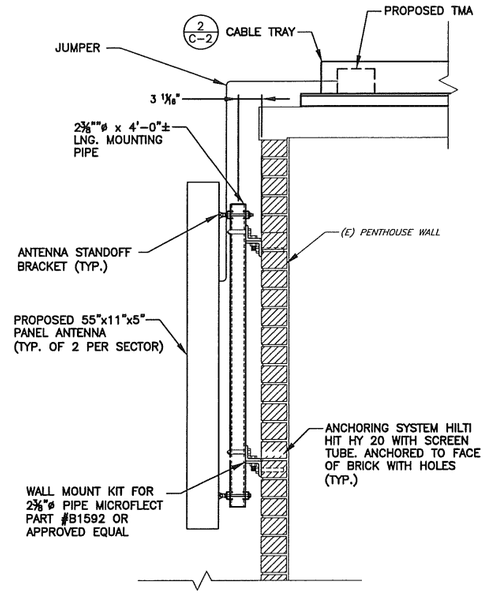
DRAWING NUMBER	REV
C-3	C



TMA NOTE:
THE REQUIRED NUMBER OF TMA'S PER ANTENNA BASED ON RF REQUIREMENTS. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION

ANTENNA DETAIL
SCALE: N.T.S.

1 / –

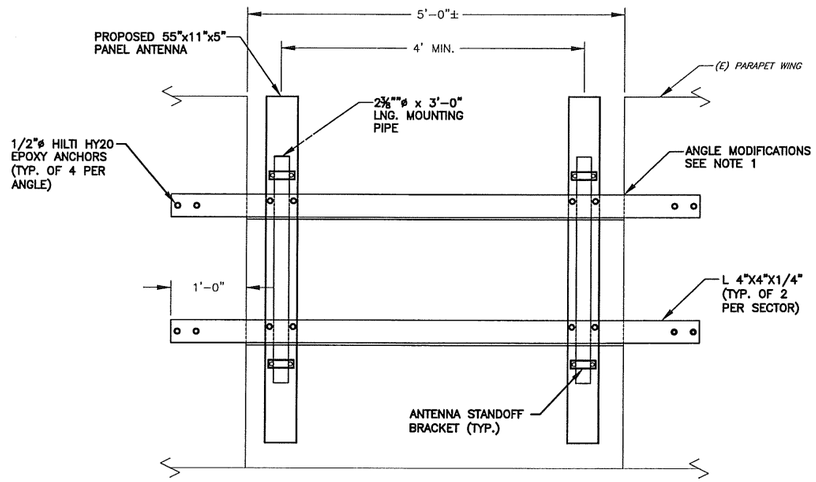


NOTES:

1. PRIME AND PAINT ALL MOUNTING BRACKETS AND ANTENNAS TO MATCH (E) BUILDING FACADE W/GROUT LINES.

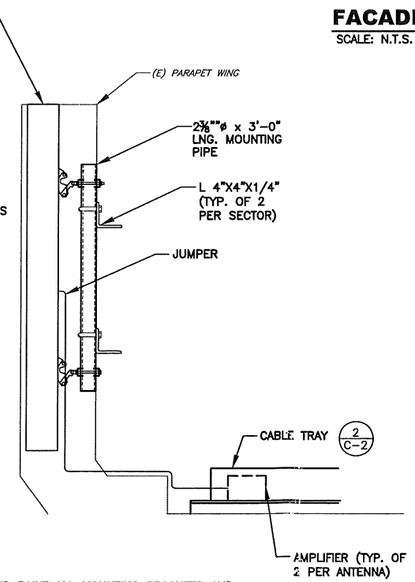
FACADE ANTENNA MOUNTING DETAIL
SCALE: N.T.S.

2 / –



NOTES:

1. CUT AND BEND ANGLE FLUSH WITH PARAPET WING. (TYP. OF 2 PER ANGLE)

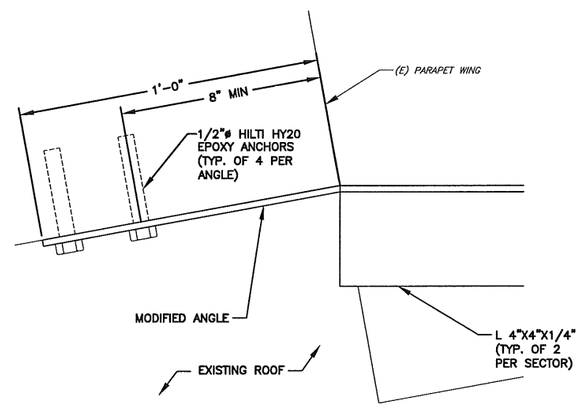


NOTES:

1. PRIME AND PAINT ALL MOUNTING BRACKETS AND ANTENNAS TO MATCH (E) BUILDING FACADE W/GROUT LINES.

ANTENNA MOUNTING DETAILS
SCALE: N.T.S.

2 / –



ANGLE MOUNTING DETAIL
SCALE: N.T.S.

4 / –

AERIAL SPECTRUM INCORPORATED
One General Way
PO Box 373
Reading, MA 01880
tel. (781) 942 0024
fax (781) 942 0551
e-mail eamon@aerialspectrum.com

ME5045
USM PORTLAND
DEERING AVENUE
PORTLAND, ME 03082

cingular SM WIRELESS
CONSTRUCTION DEPARTMENT
580 MAIN STREET
BOLTON, MA 01740
PHONE: (781) 690-7422
FAX: (781) 690-7474

NO.	DATE	REVISIONS	BY	CHK	APP'D
C	04-13-06	FOR COMMENT	PRC	PLM	ETK
B	02-14-06	FOR COMMENT	PRC	PLM	ETK
A	11-01-05	FOR COMMENT	PRC	PLM	ETK

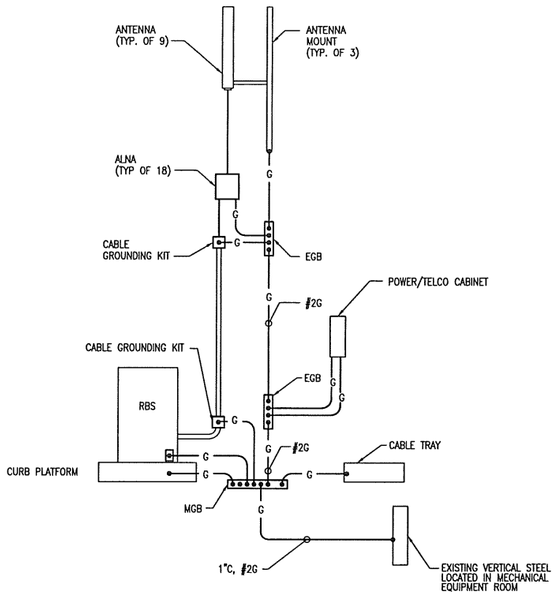
SCALE: AS SHOWN DESIGNED: PRC ETK DRAWN: PRC PR

PROFESSIONAL STAMP
STATE OF MAINE PAUL REGISTERED PROFESSIONAL ENGINEER

CINGULAR WIRELESS

CONSTRUCTION DETAILS

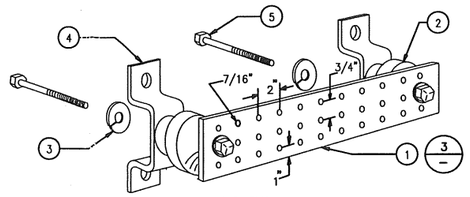
DRAWING NUMBER	REV
C-4	C



GROUNDING RISER DIAGRAM

SCALE: N.T.S.

1 / –



LEGEND

1– COPPER GROUND BAR 1/4 "X 4"X 20", NEWTON INSTRUMENT CO. CAT. NO. B–6142. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION

2– INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061–4

3– 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015–8

4– WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A–6056

5– 5/8–11 X 1" H.H.C.S.BOLTS, NEWTON INSTRUMENT CO. CAT NO. 3012–1

GROUND BAR

SCALE: N.T.S.

2 / –

GROUNDING LEGEND

—— G —— GROUND COPPER WIRE, SIZE AS NOTED

5/8" X 10' COPPER CLAD STEEL GROUNDING ELECTRODE

EXOTHERMIC (CADWELD) CONNECTION

MECHANICAL CONNECTION

5/8" X 10' COPPER CLAD STEEL GROUNDING ELECTRODE AND TEST WELL

GENERAL GROUNDING NOTES

1. CONTRACTOR SHALL HAND–DIG IN AREAS AROUND EXISTING UTILITIES.

CONNECTIONS

2. ALL UNDERGROUND (BELOW GRADE) GROUNDING CONNECTIONS SHALL BE EXOTHERMICALLY WELDED (CAD WELDED). THESE CONNECTIONS INCLUDE ALL CABLE TO GROUND ROD, GROUND ROD SPLICES, CABLE TO CABLE SPLICES, TEES, CROSS CONNECTIONS, LIGHTNING PROTECTION SYSTEMS, ETC..

3. GRIND OFF GALVANIZING IN AREAS TO BE EXOTHERMICALLY WELDED. COLD–GALVANIZE AFFECTED AREAS AFTER CAD WELD IS COMPLETE.

4. FOR CAD WELD CONNECTIONS ABOVE GRADE, CONNECTION IS TO BE 6" ABOVE GRADE OR FOUNDATION, WHICHEVER IS HIGHER.

5. ALL ABOVE GRADE OR INTERIOR GROUNDING AND BONDING CONDUCTORS SHALL BE RECONNECTED BY TWO–HOLE CRIMP COMPRESSION TYPE MECHANICAL CONNECTIONS UNLESS OTHERWISE NOTED.

6. AC SERVICE ELECTRICAL GROUND SHALL BE A MINIMUM #2 AWG SOLID TINNED COPPER WIRE OR AS REQUIRED BY THE NEC. ELECTRICAL SERVICE GROUND WIRE SHALL BE RUN CONTINUOUS.

GROUND RODS

7. ALL GROUND RODS SHALL BE 5/8" DIAMETER BY 10 FT. IN LENGTH COPPER CLAD STEEL BY HARGER, T&B, ERICO OR APPROVED EQUAL.

8. GROUND RODS SHALL BE DRIVEN FULL LENGTH VERTICAL IN UNDISTURBED EARTH AND SHALL BE A MINIMUM OF 12" BELOW GRADE. IF LEDGE IS ENCOUNTERED INSTALL GROUND ROD AT AN ANGLE EXCEPT FOR ELECTRICAL METER GROUND ROD.

9. ALL GROUND RODS SHALL BE SPACED 10 FT. MAXIMUM UNLESS OTHERWISE NOTED.

GROUND BARS

10. ALL GROUND BARS SHALL BE 1/4" THICK BARE COPPER PLATE AND OF SIZE AS REQUESTED.

CABLES

11. ALL GROUND CABLES SHALL BE STANDARD TINNED COPPER AND OF SIZE INDICATED ON THE DRAWINGS. IF NOT INDICATED ON THE DRAWINGS, SIZES ARE AS FOLLOWS:
A. BURIED GROUND RING– 2/0 AWG STRANDED
B. GROUNDING OF ANTENNA CABLES– #6 AWG STRANDED
C. INDOOR HALO RING– #2 AWG STRANDED GREEN INSULATED
D. OUTDOOR EQUIPMENT GROUNDS– #2 AWG SOLID
E. COPPER WIRE–OUTDOOR SYSTEM GROUND– 2/0 AWG SOLID OR 4/0 AWG STRANDED.

GROUND RING

12. CONDUCTOR BENDS SHALL HAVE A MINIMUM BEND RADIUS OF 8" AND BE A MINIMUM OF 24 INCHES FROM ANY FOUNDATION UNLESS OTHERWISE NOTED.

13. GROUND RING TO GROUND RING CONNECTIONS ARE TO BE CAD WELDED ONLY. LUGS, CLAMPS OR OTHER MECHANICAL CONNECTIONS IS PROHIBITED.

FENCE GROUNDING

14. GROUND FENCE AND GATES AS INDICATED ON THE DRAWINGS.

15. GROUND EACH FENCE POST CORNER AND GATE POSTS.

16. GROUND CONNECTIONS OF FENCE POSTS ARE TO BE CAD WELDED ONLY OR PER MANUFACTURER RECOMMENDATIONS.

GROUND TESTING

17. THE FOLLOWING GROUND TESTING METHODS MAY BE USED:
A. THE BIDDLE GROUND OHM METER METHOD
B. THE METHOD OF USING TWO AUXILIARY GROUND RODS AS DESCRIBED IN I.E.E.E. STD. #81–1983, PART 1. THIS METHOD REQUIRES THE USE OF A.C. TEST CURRENT. THE AUXILIARY TEST RODS MUST HAVE SUFFICIENT DISTANCE FROM THE TEST ROD SO THAT THE REGIONS IN WHICH THEIR RESISTANCE IS LOCALIZED AND DO NOT OVERLAP.
C. OTHER APPROVED METHODS.

18. THE CONTRACTOR SHALL SUBMIT A GROUNDING RESISTANCE TEST REPORT TO THE OWNER.

19. AFTER THE EXTERNAL GROUND RINGS ARE CONNECTED BUT BEFORE THE EQUIPMENT CABINET IS PERMANENTLY INSTALLED, A "MEGGER" CHECK OF THE GROUND SYSTEM SHOULD BE PERFORMED.

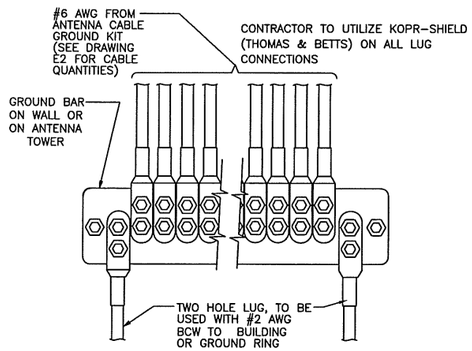
GROUNDING RESISTANCE TEST REPORT

20. TESTING SHALL BE PERFORMED BY THE CONTRACTOR AND TWO SETS OF TEST REPORTS ARE TO BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.

21. A TEST REPORT SHOWING RESISTANCE (OHMS) WITH AUXILIARY POTENTIAL ELECTRODES AT 5' AND 10' INTERVALS, UNTIL THE AVERAGE RESISTANCE STARTS INCREASING, MUST BE PROVIDED.

22. 10–15 PHOTOS MUST BE TAKEN TO PROVE THE ENTIRE SITE GROUNDING SYSTEM BEFORE BACK FILLING OR NOTIFY THE OWNER NO LESS THAN 48 HRS. IN ADVANCE OF BACKFILL.

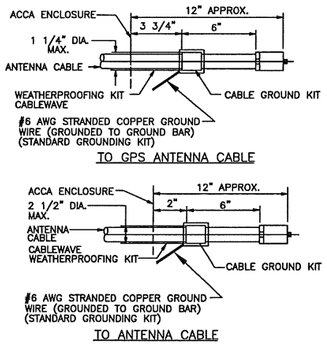
23. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF THERE ARE ANY DIFFICULTIES INSTALLING GROUNDING SYSTEM DUE TO SITE SOIL CONDITIONS.



GROUND WIRE INSTALLATION

SCALE: N.T.S.

3 / –

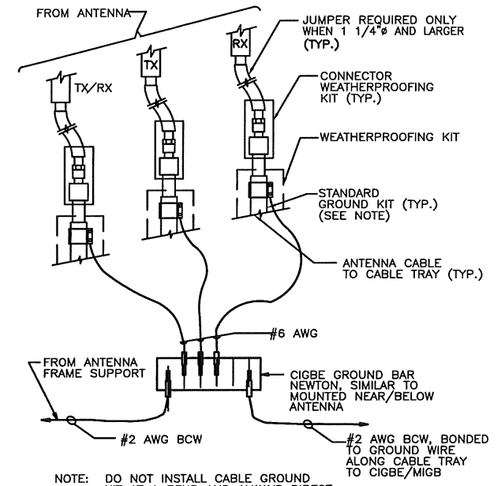


NOTE: DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.

CABLE GROUNDING

SCALE: N.T.S.

4 / –



NOTE: DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE

ANTENNA GROUNDING

SCALE: N.T.S.

5 / –

AERIAL SPECTRUM INCORPORATED
One General Way
PO Box 373
Reading, MA 01880
tel. (781) 942 0024
fax (781) 942 0551
e-mail eamon@aerialspectrum.com

ME5045
USM PORTLAND
DEERING AVENUE
PORTLAND, ME 03082

cingular SM WIRELESS
CONSTRUCTION DEPARTMENT
580 MAIN STREET
BOLTON, MA 01740
PHONE: (781) 690–7422
FAX: (781) 690–7474

NO.	DATE	REVISIONS	BY	CHK	APP'D
C	04–13–06	FOR COMMENT	PRC	PLM	ETK
B	02–14–06	FOR COMMENT	PRC	PLM	ETK
A	11–01–05	FOR COMMENT	PRC	PLM	ETK

SCALE: AS SHOWN DESIGNED: PRC ETK DRAWN: PRC PRC

PROFESSIONAL STAMP

STATE OF MAINE PAUL R. CUTLER 10470 REGISTERED PROFESSIONAL ENGINEER

CINGULAR WIRELESS

GROUNDING DETAILS

DRAWING NUMBER	REV
E–1	C