



IN CITY COUNCIL

Marlborough, Mass., NOVEMBER 7, 2011

ORDERED:

DECISION FOR SPECIAL PERMIT IN CITY COUNCIL

Special Permit Application of:
AT & T Mobility Corporation
New Cingular Wireless PCS, LLC
550 Cochituate Rd., Suite 13 & 14
Framingham, MA 01701
Order No. 11-1003018C

Locus:
53 Brigham St.
Assessors Map 104, Parcel 2

DECISION ON A SPECIAL PERMIT CITY COUNCIL ORDER NO. 11-1003018C (X04-100527B)

The City Council of the City of Marlborough hereby **GRANTS** the application of AT & T Wireless, as provided in the **DECISION** and subject to Procedural Findings and Findings of Facts and Conditions.

Decision date: **November 22, 2011**

The Decision of the City Council was filed in the Office of the City Clerk of the City of Marlborough on the **22nd** day of **November, 2011**.

This is to certify that twenty (20) days have passed since the filing of the within decision and no appeal has been filed with this office.

Given at Marlborough this 13th day of December 2011.

Given under Chapter 40A sec. 11 of the General Laws.

A TRUE COPY
ATTEST

A handwritten signature in black ink, appearing to read "Lisa M. Shapiro".

City Clerk



IN CITY COUNCIL

NOVEMBER 7, 2011
Marlborough, Mass., PAGE 1

ORDERED:

**DECISION ON AN APPLICATION TO MODIFY
SPECIAL PERMIT NO. 04-100527B**

**NEW CINGULAR WIRELESS PCS, LLC
BY AT&T MOBILITY CORPORATION, ITS MANAGER**

CITY COUNCIL ORDER NO. 11-1003018C

Re: 53 Brigham Street

The City Council of the City of Marlborough hereby GRANTS the application to modify Special Permit No. 04-100527B to New Cingular Wireless PCS, LLC, by AT&T Mobility Corporation, Its Manager, having a usual place of business at 550 Cochituate Road, Suite 13 and 14, Framingham, MA 01701, as provided in the Decision and subject to the following Findings of Fact and Conditions.

EVIDENCE

1. The Applicant is New Cingular Wireless PCS, LLC, by AT&T Mobility Corporation, Its Manager, which has a business address of 550 Cochituate Road, Suite 13 and 14, Framingham, MA 01701 (hereinafter "Applicant").
2. On December 20, 2004, the City Council granted to Southwestern Bell Mobile Systems, LLC, d/b/a Cingular Wireless, a Special Permit to attach a set of antennas, behind camouflaged screening, to, and to install related equipment consisting of a prefabricated equipment shelter and emergency generator, and coaxial cables, at, the existing building located at 53 Brigham Street, Marlborough, MA (hereinafter, "the Original Special Permit"). The site is more particularly identified on the Assessor's Map of the City of Marlborough as Map 104, Lot 2 (hereinafter "Site"). The owner of record for the Site is Mountaintop Corporation.



IN CITY COUNCIL

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Marlborough, Mass.,

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ORDERED:

3. Through its Application for a Special Permit to Modify an Existing Wireless Communication Facility (hereinafter "Application"), the Applicant seeks permission to replace four (4) existing panel antennas and their stealth wall, and to replace the antennas with four (4) new UMTS/GSM panel antennas, three (3) LTE panel antennas; (6) remote radio heads mounted on the proposed cable trays along the rooftop; one (1) LTE GPS antenna mounted to the existing equipment shelter; one (1) 23" LTE rack inside of the existing equipment shelter (hereinafter "Proposed WCF Project"), all substantially as depicted on a set of plans entitled "MARLBOROUGH SOUTH RT 85 (MA-3239), 53 Brigham Street, Marlborough, MA 01752" by Pro Terra Design Group, LLC and dated 6/27/11, a copy of which were provided as Exhibit 10 to the Special Permit Application (hereinafter "Plans").
4. The Applicant is a lessee of the Site's owner for purposes of the Application.
5. The proposed WCF is located in the Business B Zoning District. Wireless communication devices are allowed by grant of Special Permit in Business B Zoning Districts.
6. The modification of the Original Special Permit is being sought pursuant to Article VI, Section 650-25 and Article VIII, Section 650-59 of the Zoning Code of the City of Marlborough.
7. Pursuant to the Rules and Regulations of Application for Special Permit ("Rules and Regulations"), the Building Inspector, on behalf of the City Planner, certified that the Special Permit application materials are complete and conform to said Rules and Regulations and that the Plans conform in all respects to the City Code.
8. The Applicant has complied with all of the applicable rules of the Rules and Regulations.
9. The City of Marlborough City Council held a public hearing on the Proposed WCF Project on October 3, 2011, for which proper notice had been published and for which proper notice had been given to all parties entitled to notice under the law.
10. The Applicant presented oral testimony and demonstrative evidence at the public hearing, demonstrating that the Proposed WCF Project meets all the applicable Special Permit criteria of Article VI, Section 650-25 and Article VIII, Section 650-59.



IN CITY COUNCIL

Marlborough, Mass., NOVEMBER 7, 2011

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ORDERED:

11. The Applicant provided further oral testimony and demonstrative evidence to the City Council's Wireless Communications Committee regarding the Proposed WCF Project's compliance with the applicable Special Permit criteria.
12. The Council, in reviewing the Application, considered the Review Standards and Development Requirements, as enumerated in Article VI, Section 650-25 and Article VIII, Section 650-59 of the City of Marlborough Zoning Ordinance, applicable to the Proposed WCF Project.

**BASED UPON THE ABOVE, THE MARLBOROUGH CITY
COUNCIL MAKES THE FOLLOWING FINDINGS OF FACT
AND TAKES THE FOLLOWING ACTIONS**

A) The Applicant has complied with all the Rules and Regulations promulgated by the Marlborough City Council pertaining to the said Application for a Special Permit.

B) The Site is an appropriate location for the Proposed WCF Project and the Proposed WCF Project is in harmony with the general purpose and intent of the Zoning Ordinance of the City of Marlborough when subject to the appropriate terms and conditions of this approval.

C) The Applicant has complied with the applicable Review Standards and Development Requirements pertaining to Wireless Communications Devices, enumerated in Article VI, Section 650-25 and Article VIII, Section 650-59 of the City of Marlborough Zoning Ordinance, by siting, designing and screening its Proposed WCF Project to minimize adverse impact on the abutting neighborhood and on nearby residential properties.

D) The Council, pursuant to its authority under M.G.L. Chapter 40A and the City of Marlborough Zoning Ordinances, **GRANTS** the Applicant a modification of the Original Special Permit (hereinafter, "Modified Special Permit"), **SUBJECT TO THE FOLLOWING CONDITIONS NUMBERED 1 THROUGH 8:**

- 1) Except as modified below, all conditions in the Original Special Permit shall apply to the Modified Special Permit.



IN CITY COUNCIL

Marlborough, Mass., NOVEMBER 7, 2011
PAGE 4

ORDERED:

- 2) The Proposed WCF Project shall be constructed, maintained and operated according to the specifications, terms and conditions of the Application, as amended during the application/hearing process, and in compliance with the conditions of the grant of this Modified Special Permit as well as with the conditions set forth in Chapter 650-25F of the Marlborough Zoning Ordinance.
- 3) All terms, conditions, requirements, approvals, plans and drawings required hereunder are hereby made a part of and incorporated herein as a condition to the issuance of this Special Permit.
- 4) Applicant shall minimize the visual impacts of the Proposed WCF Project by screening and/or color coordination as may be depicted on the Plans and other demonstrative evidence submitted as part of the Application.
- 5) Failure to pay in a timely manner the annual sum of One Thousand Five Hundred (\$1,500.00) dollars to the City of Marlborough Open Space Account #100-2410-44515, as conditioned in the Original Special Permit, shall constitute a violation of the Modified Special Permit, and the Applicant shall pay an additional sum of \$500 per quarter or portion thereof after the payment due date that the Applicant has failed to make payment.
- 6) Applicant shall not utilize a permanent electrical generator, of any type, in connection with the operation of the Proposed WCF Project. Applicant shall be permitted to use a temporary electrical generator in connection with the operation of the Proposed WCF Project only in cases of power outages to the Proposed WCF Project and for purposes of routine testing and maintenance. The temporary generator shall be operated in a safe manner and the noise produced by the temporary generator shall conform to the City's noise ordinance set forth in Chapter 431 of the City Code. Batteries used in operation of the facility shall be disposed of off-site at the expense of the Applicant.



IN CITY COUNCIL

NOVEMBER 7, 2011
Marlborough, Mass., ~~_____~~ PAGE 5

ORDERED:

- 7) As soon as practicable but in any event within one (1) month after the date when a certificate of use and occupancy has been issued to the Applicant by the City of Marlborough's Building Inspector for the Proposed WCF Project, Applicant shall submit a written report to the City Council; provided, however, that if the Proposed WCF Project has not yet become operational within the one-month period after said issuance date, then the Applicant must immediately provide the City Council with written notification as to the date when the Proposed WCF Project does become operational and, further, must submit said written report within one (1) month after said operational date. The written report to the City Council shall i) provide measurements as to the actual output of radio frequency energy emitted by the Proposed WCF Project; ii) shall include a professional opinion by a qualified third party certifying that the Proposed WCF Project fully complies with all applicable health and safety standards; and iii) shall provide measurements of the actual output of the total radio frequency energy being emitted by all Wireless Communications Facilities (as defined in Section 650-25 of the Marlborough Zoning Ordinance) then located at the Site. The Applicant agrees to operate its Proposed WCF Project in compliance with all applicable health and safety standards. In the event that there are any changes in or upgrades to the Proposed WCF Project that may increase the actual output of radio frequency energy emitted by the Proposed WCF Project, the Applicant shall submit a letter to the City Council as soon as practicable but in any event within one (1) month after the date of completion of those changes or upgrades. The letter shall i) state what the changes or upgrades are; ii) shall provide measurements specifying how the actual output of radio frequency energy emitted by the Proposed WCF Project has been increased; iii) shall provide measurements of the actual output of all radio frequency energy being emitted by all hereinbefore-defined Wireless Communications Facilities then located at the Site; and iv) shall include a professional opinion by a qualified third party certifying that the Applicant's changes or upgrades have not caused the total radio frequency energy being emitted by all hereinbefore-defined Wireless Communications Facilities then located at the Site to exceed any applicable health and safety standards.



IN CITY COUNCIL

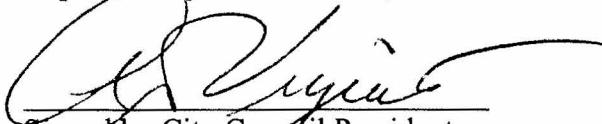
NOVEMBER 7, 2011
Marlborough, Mass., _____ PAGE 6

ORDERED:

- 8) In accordance with the provisions of M.G.L. c. 40A, § 11, the Applicant at its expense shall record this Modified Special Permit in the Middlesex South District Registry of Deeds after the City Clerk has certified that the twenty-day period for appealing this Modified Special Permit has elapsed with no appeal having been filed, and before the Applicant has applied to the Building Inspector for a building permit concerning the Proposed WCF Project. Applicant shall provide a copy of the recorded Modified Special Permit to the City Council's office and to the City Solicitor's office.

Yea: 11- Nay: 0

Yea: Delano, Ferro, Elder, Tunnera, Seymour, Clancy, Landers, Ossing, Vigeant, Pope & Levy



Signed by City Council President
Arthur G. Vigeant

ADOPTED
In City Council
Order No. 11-1003018C



at&t



MARLBOROUGH SOUTH RT 85 (MA-3239)

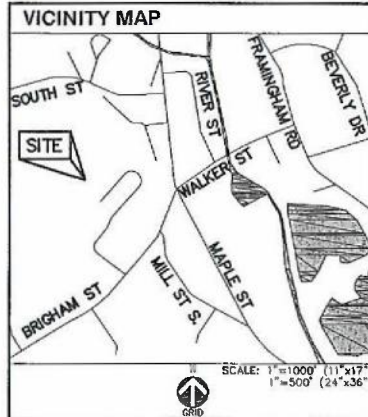
53 BRIGHAM STREET
MARLBOROUGH, MA 01752

SITE TYPE: ROOFTOP

PROJECT SUMMARY

SITE NAME: MARLBOROUGH SOUTH RT 85 (MA-3239)
SITE ADDRESS: 53 BRIGHAM STREET
MARLBOROUGH, MA 01752
COUNTY: MIDDLESEX
TAX ID: MAP 104, PARCEL 2
ZONING JURISDICTION: CITY OF MARLBOROUGH
ZONING CLASSIFICATION: (I) INDUSTRIAL
CONSTRUCTION TYPE: EXPANSION
LATITUDE: 42° 19' 53.51" N
LONGITUDE: 71° 32' 37.21" W
PROPERTY OWNER: MOUNTAINTOP CORP.
41-53 BRIGHAM STREET
MARLBOROUGH, MA 01752
APPLICANT: NEW CINGULAR WIRELESS PCS, LLC
LESSEE/LICENSEL
PROJECT OWNER: 550 COCHITUATE ROAD
FRAMMINGHAM, MA 01701
ARCHITECT/ENGINEER: PROTERRA DESIGN GROUP, LLC
1 SHORT STREET, SUITE 3
NORTHAMPTON, MA 01060

VICINITY MAP



SHEET INDEX

SHT.	DESCRIPTION	REV.
T-1	TITLE SHEET	0
GN-1	GENERAL NOTES	0
A-1	PLAN	0
A-2	PLAN AND ELEVATION	0
A-3	PLAN	0
A-4	PLAN	0
S-1	STRUCTURAL DETAILS	0
S-2	STRUCTURAL DETAILS	0
S-3	STRUCTURAL DETAILS	0
S-4	STRUCTURAL DETAILS	0
E-1	ELECTRICAL & GROUNDING DETAILS	0

SCALE NOTES

1. THIS SHEET SET WAS ORIGINALLY SETUP AS 11"x17".
2. PRINTING TO ARCH D (24"x36") WILL RESULT IN A DOUBLE SCALE SHEET SET WITH 2" MARGINS. RESULTING SCALES WILL BE THOSE NOTED IN TEXT. EXAMPLE: 1"=20' WILL CHANGE TO 1"=10'.
3. CONFIRM ALL SCALED DISTANCES WITH GRAPHICAL SCALES SHOWN HEREIN. GRAPHICAL SCALES WILL BE UNCHANGED BY ENLARGEMENT OR REDUCTION.

PROJECT DESCRIPTION

1. THIS PLAN SET DETAILS A MODIFICATION TO AN EXISTING AT&T COMMUNICATIONS FACILITY.
2. THIS IS UNMANNED & RESTRICTED-ACCESS EQUIPMENT AND WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNAL FOR THE PURPOSE OF PROVIDING PUBLIC CELLULAR SERVICE.
3. THIS FACILITY WILL CONSUME 10 UNRECOVERABLE ENERGY.
4. NO POTABLE WATER SUPPLY IS TO BE PROVIDED AT THIS LOCATION.
5. NO WASTE WATER WILL BE GENERATED AT THIS LOCATION.
6. NO SOLID WASTE WILL BE GENERATED AT THIS LOCATION.
7. AT&T MAINTENANCE CREW (TYPICALLY ONE PERSON) WILL MAKE AN AVERAGE OF ONE TRIP PER MONTH AT ONE HOUR PER VISIT.

PLAN NOTES

1. EXISTING CONDITIONS BASED ON A FIELD VISIT BY PROTERRA DESIGN GROUP, LLC ON MARCH 2, 2011.
2. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION OR BE RESPONSIBLE FOR SAME. ENGINEER OF RECORD IS TO BE INFORMED OF ANY DISCREPANCIES PRIOR TO COMMENCING CONSTRUCTION ACTIVITY.
3. ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS AND EXISTING PLANS OF RECORD. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK. CALL THE FOLLOWING FOR ALL PRE-CONSTRUCTION NOTIFICATION 72-HOURS PRIOR TO ANY EXCAVATION ACTIVITY:
DIG SAFE SYSTEM (MA, ME, NH, RI, VT): 866-344-7233

ProTerra
DESIGN GROUP, LLC
1 Short Street
Suite 3
Northampton, MA 01060
Ph: (413)320-4918
Fax: (413)320-4917

SAI
communications
22 Keewaydin Drive
Salem, NH 03079

at&t
New Cingular Wireless PCS, LLC
550 Cochituate Road
Frammingham, MA 01701

SITE NUMBER
MA-3239
53 BRIGHAM STREET
MARLBOROUGH, MA 01752

REVISIONS

DESIGNED BY: JMM/TEJ JOB #: 11-023
 DRAWN BY: MJV REV. #: 0
 DATE: 6/27/11
 SCALE: AS NOTED

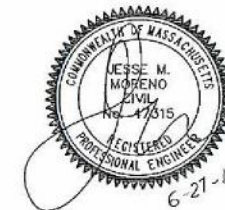
T-1

GENERAL NOTES

- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES, AND APPLICABLE REGULATIONS.
- DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
- UNLESS OTHERWISE NOTED, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDE IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
- THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.
- SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF POWER, TELCO, AND GROUNDING CABLES AND CONDUITS. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
- THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING, AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
- SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
- SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
- CONSTRUCTION SHALL COMPLY WITH LTE SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."
- SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
- SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUT DOWN PRIOR TO PERFORMING ANY WORK. THE COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORK TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
- SUBCONTRACTOR 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.
- SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:
 - 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-G, STRUCTURAL STANDARDS FOR STEEL
 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.

GROUNDING NOTES

- GROUNDING SHALL COMPLY WITH ARTICLE (250) OF THE NATIONAL ELECTRIC CODE.
- ALL GROUNDING DEVICES SHALL BE U.L. APPROVED OR LISTED FOR THEIR INTENDED USE.
- GROUND WIRES SHALL BE TINNED #2 AWG BARE SOLID COPPER UNLESS OTHERWISE NOTED.
- GROUNDING CONNECTIONS SHALL BE EXOTHERMIC (CADWELDED) UNLESS OTHERWISE NOTED. CLEAN SURFACES TO SHINY METAL WHERE GROUND WIRES ARE CADWELDED TO GALVANIZED SURFACES. SPRAY CADWELD WITH GALVANIZING PAINT.
- ROUTE GROUNDING CONNECTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. BEND GROUNDING LEADS WITH A MINIMUM 8" RADIUS.
- PRIOR TO INSTALLING LUGS ON GROUND WIRES, APPLY THOMAS & BETTS KOPR-SHIELD OR EQUAL PRIOR TO BOLTING GROUND WIRE LUGS TO GROUND BARS.
- GROUNDING WIRE CONNECTIONS SHALL BE THREE (3) CRIMP STYLE COMPRESSION FIT OR EQUAL NO SLIP BOLTS ARE ACCEPTABLE.
- CONNECTORS SHALL BE CRIMPED WITH HYDRAULIC CRIMPING TOOLS.
- COPPER BUSES SHALL BE CLEANED, POLISHED, AND A NON-OXIDIZING AGENT SHALL BE APPLIED. NO OILS OR FINGERPRINTS THAT WILL DISCOLOR THE COPPER WILL BE PERMITTED.
- HARDWARE (I.E. NUTS, BOLTS, WASHERS, ETC.) IS TO BE STAINLESS STEEL.
- EXOTHERMIC WELDS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
- GROUND BARS SHALL BE 1/2" THICK TINNED COPPER LARGE ENOUGH TO ACCOMMODATE THE REQUIRED NUMBER OF GROUND CONNECTIONS. THE HARDWARE SECURING THE GROUND BAR SHALL INSULATE IT FROM THE STRUCTURE TO WHICH IT IS FASTENED UNLESS OTHERWISE NOTED.
- ALL TERMINATIONS AT EQUIPMENT ENCLOSURES, PANELS, AND FRAMES OF EQUIPMENT AND WHERE EXPOSED FOR GROUNDING CONDUCTOR TERMINATION SHALL BE PERFORMED USING TWO HOLE BOLTED TONGUE COMPRESSION TYPE FITTINGS WITH STAINLESS STEEL HARDWARE.
- ALL CLAMPS AND SUPPORTS USED TO HOLD THE THE GROUNDING SYSTEM CONDUCTORS AND PVC CONDUITS SHALL BE NON-CONDUCTIVE. DO NOT USE A METAL RING OR BRACKET SUPPORT THAT WOULD FORM A COMPLETE RING AROUND ANY GROUNDING CONDUCTOR.
- ALL GROUNDING SYSTEM CONSTRUCTION, MATERIALS, AND COMPONENTS SHALL MEET AT&T GROUNDING STANDARDS.



ProTerra
DESIGN GROUP, LLC
1 Short Street
Suite 3
Northampton, MA 01060
Ph: (413)320-4918
Fax: (413)320-4917

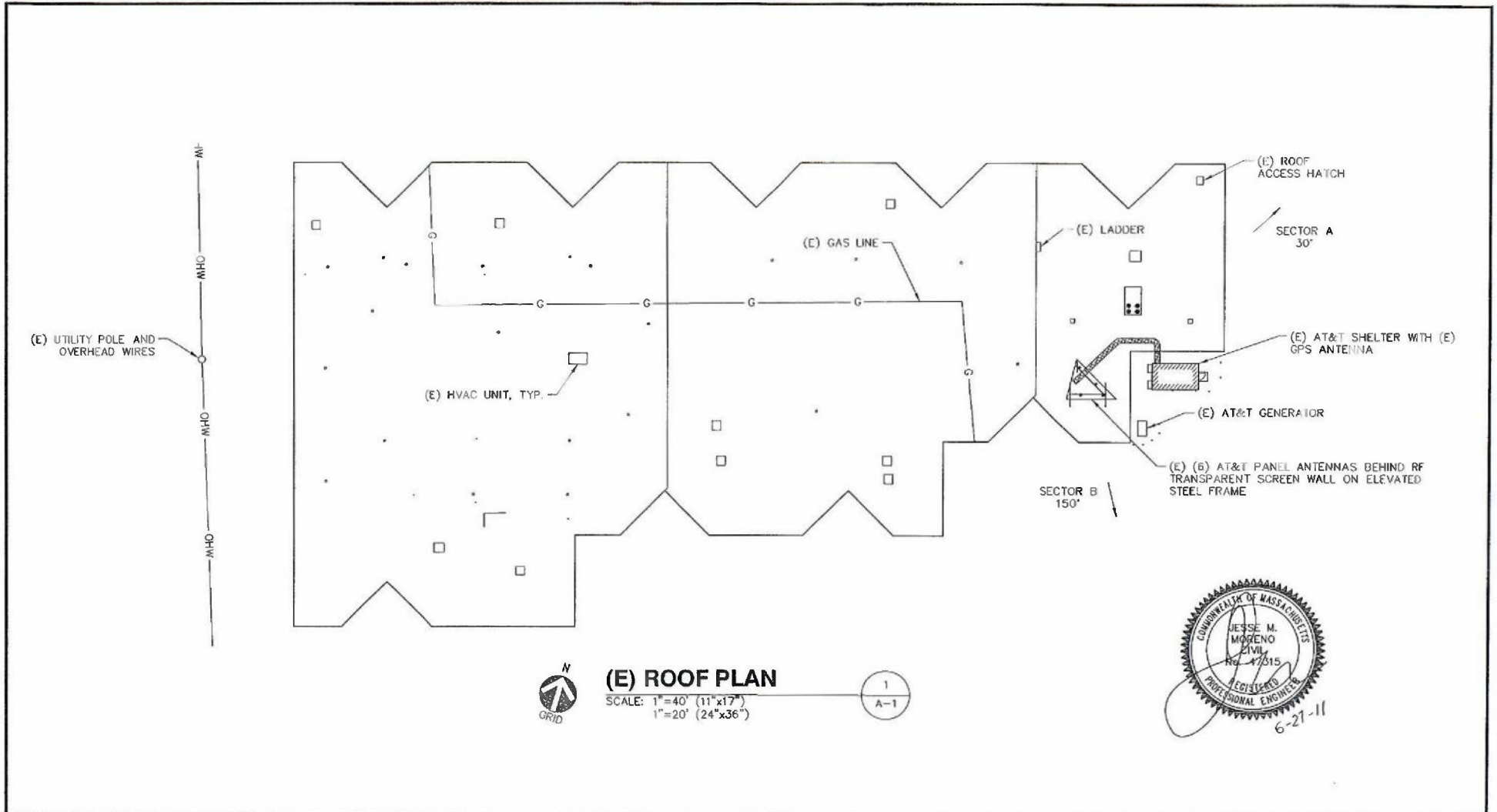
S&I
communications
22 Keeseydin Drive
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New England Wireless PCS, LLC
550 Cochichewick Road
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SAT
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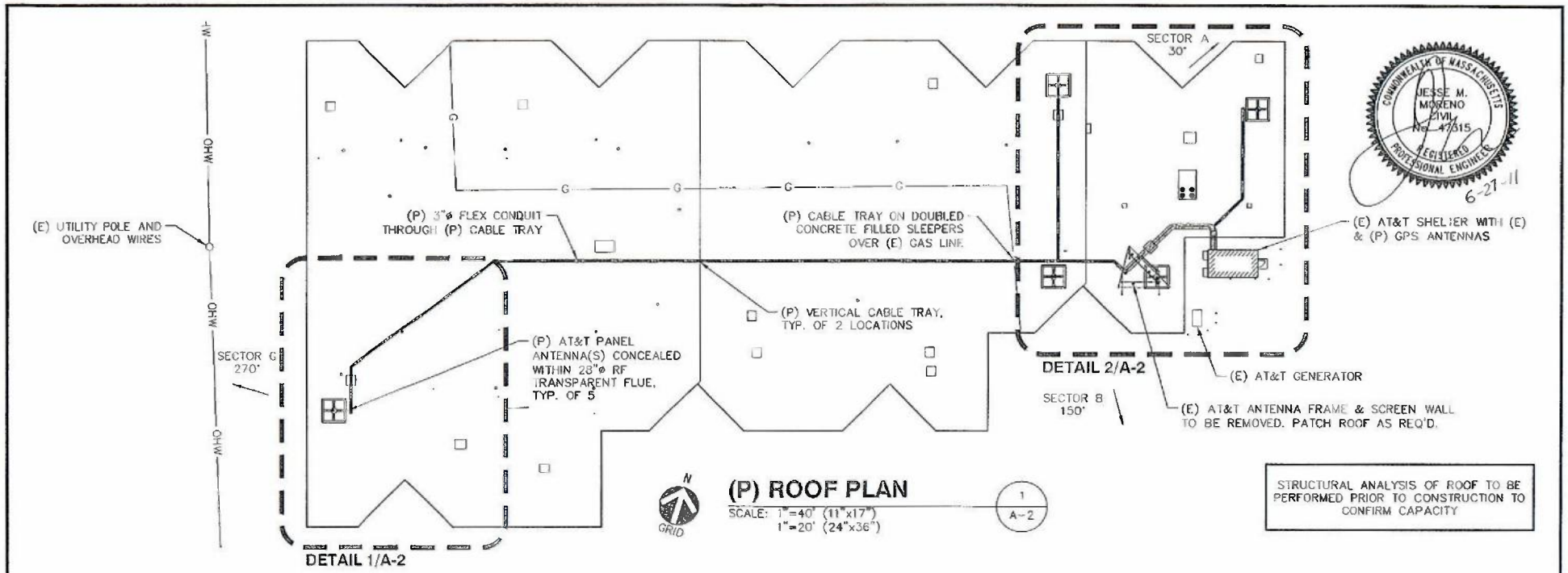
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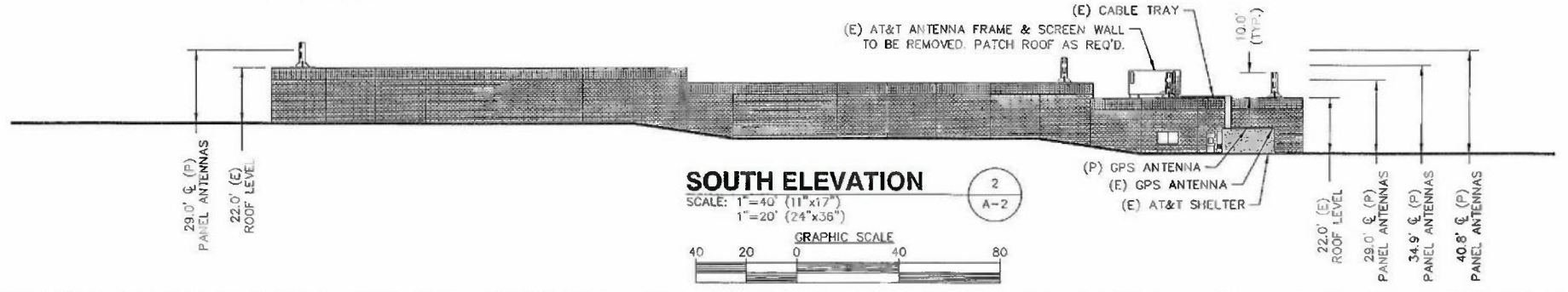
REVISIONS	

DESIGNED BY: JMM/TEJ
 DRAWN BY: MJV
 DATE: 6/27/11
 SCALE: AS NOTED

JOB #: 11-023
 REV. #: 0
A-1



STRUCTURAL ANALYSIS OF ROOF TO BE PERFORMED PRIOR TO CONSTRUCTION TO CONFIRM CAPACITY



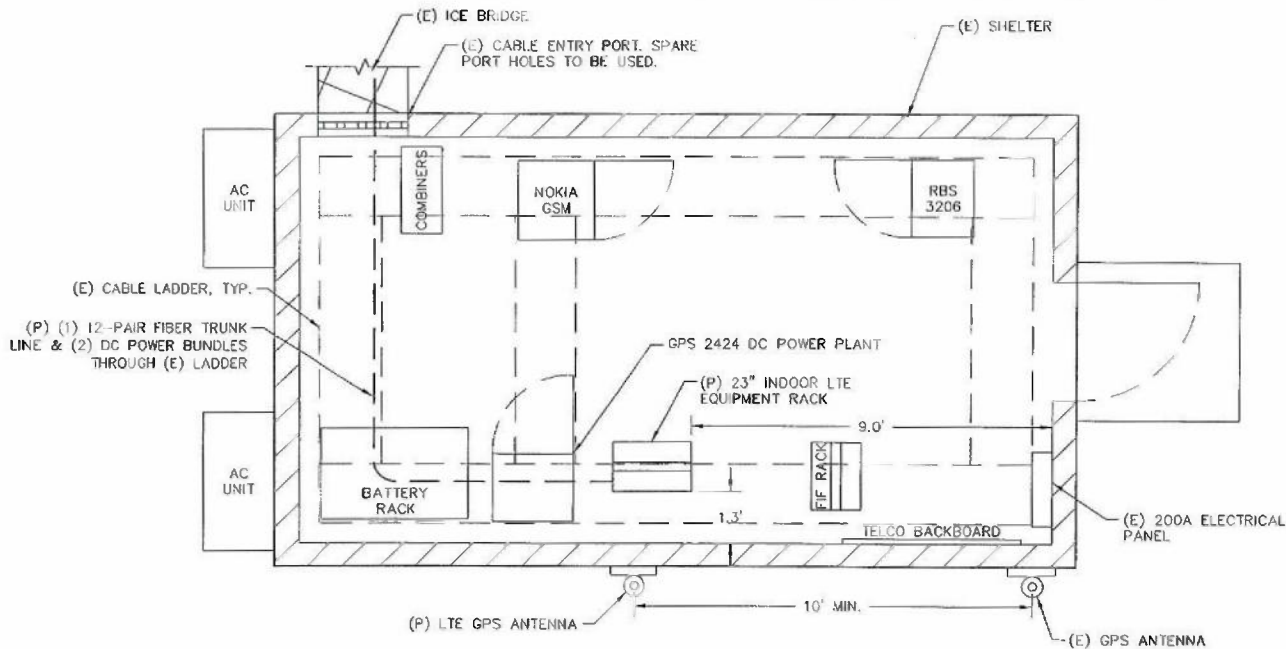
SOUTH ELEVATION
 SCALE: 1"=40' (11"x17")
 1"=20' (24"x36")
 GRAPHIC SCALE
 40 20 0 40 80

 1 Short Street Suite 3 Northampton, MA 01060 Ph: (413)320-4918 Fax: (413)320-4917	 22 Keewaydin Drive Salem, NH 03079	 New England Wireless PCS, LLC 550 Cochituate Road Frammingham, MA 01701	SITE NUMBER MA-3239 53 BRIGHAM STREET MARLBOROUGH, MA 01752		DESIGNED BY: JMM/TEJ JOB #: 11-023
			REVISIONS		DRAWN BY: MJV REV. #: 0
			DATE: 6/27/11		A-2
			SCALE: AS NOTED		

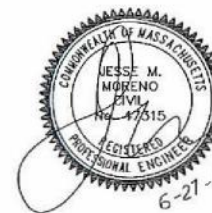
BASED UPON RFDS DATED 1/19/2011

LTE ANTENNA INFORMATION TABLE

SECTOR	PANEL ANTENNAS					FROM FIBER POWER CONNECTOR				REMOTE RADIO UNIT		FROM REMOTE RADIO UNIT		
	AZIMUTH	QTY.	MAKE & MODEL	RAD. CENTER (AGL)	DOWN TILT	DC BUNDLE QTY.	DC BUNDLE SIZE	FIBER QTY.	DC BUNDLE & FIBER LENGTH	QTY.	MAKE & MODEL	JUMPER QTY.	JUMPER SIZE	RET QTY.
ALPHA	30°	1	KMW AM-X-CD-14-65-001-RET	40.8'	0° MECH. 2° ELEC.	2	6mm ² PAIR	2	180'±	2	TBA	4	1/2" ∅	1
BETA	150°	1	KMW AM-X-CD-14-65-001-RET	29.0'	2° MECH. 0° ELEC.	2	6mm ² PAIR	2	80'±	2	TBA	4	1/2" ∅	1
GAMMA	270°	1	KMW AM-X-CD-14-65-001-RET	34.9'	TBD MECH. TBD ELEC.	2	6mm ² PAIR	2	450'±	2	TBA	4	1/2" ∅	1



SHELTER PLAN
SCALE: 1"=3' (11"x17")
1"=1.5' (24"x36")



6-21-11

ProTerra
DESIGN GROUP, LLC
1 Short Street
Suite 3
Northampton, MA 01080
Ph: (413)320-4818
Fax: (413)320-4817

SAD
communications
22 Keewaydin Drive
Salem, NH 03079

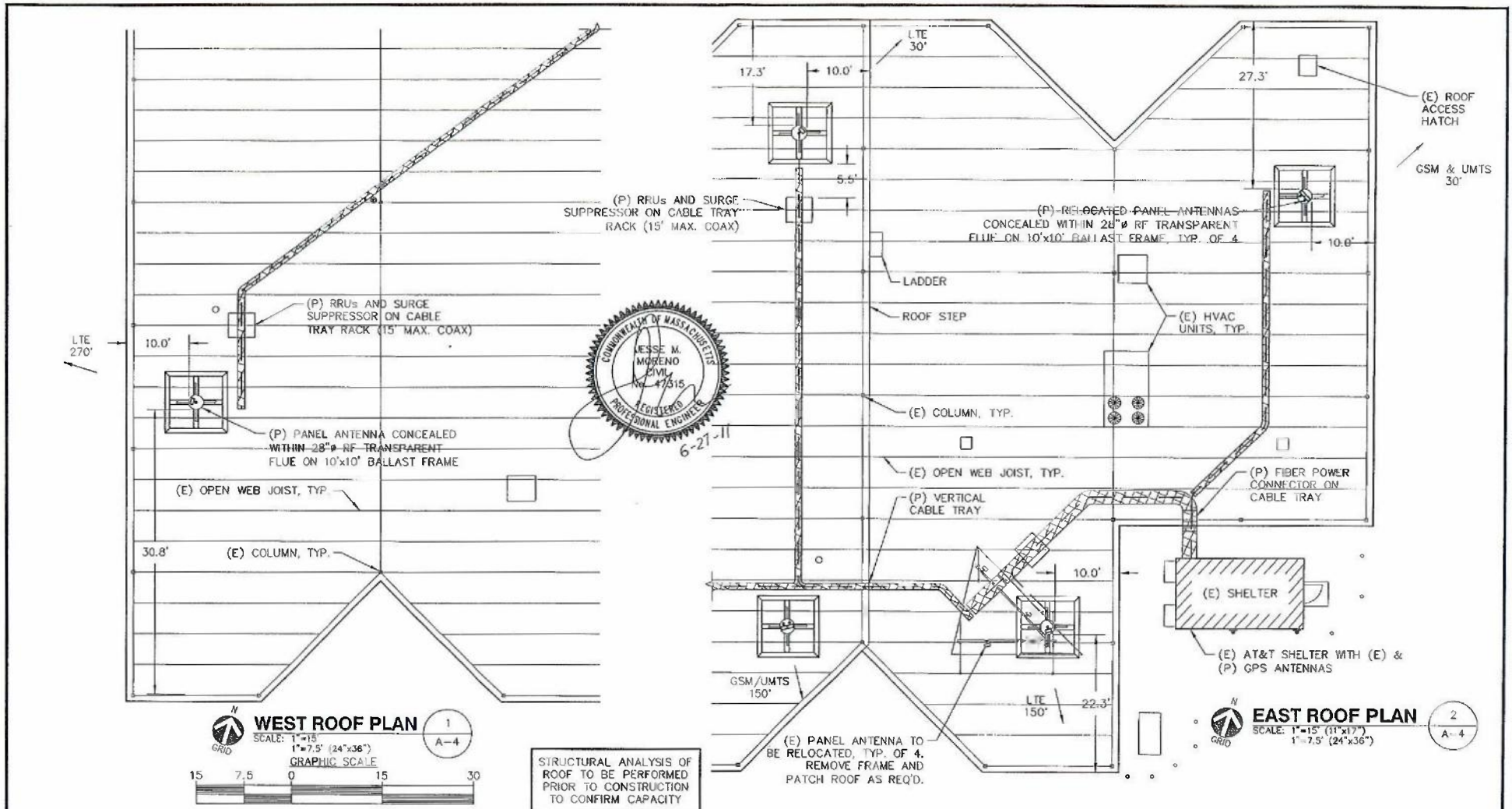
at&t
New Cingular Wireless PCS, LLC
550 Cochituate Road
Framingham, MA 01701

SITE NUMBER
MA-3239
53 BRIGHAM STREET
MARLBOROUGH, MA 01752

REVISIONS

DESIGNED BY:	JMM/TEJ	JOB #:	11-023
DRAWN BY:	MJV	REV. #:	0
DATE:	6/27/11		
SCALE:	AS NOTED		

A-3



ProTerra
 DESIGN GROUP, LLC
 1 Short Street
 Suite 3
 Northampton, MA 01060
 Ph: (413)320-4916
 Fax: (413)320-4917

SAT
 communications
 22 Keenwood Drive
 Salem, NH 03079

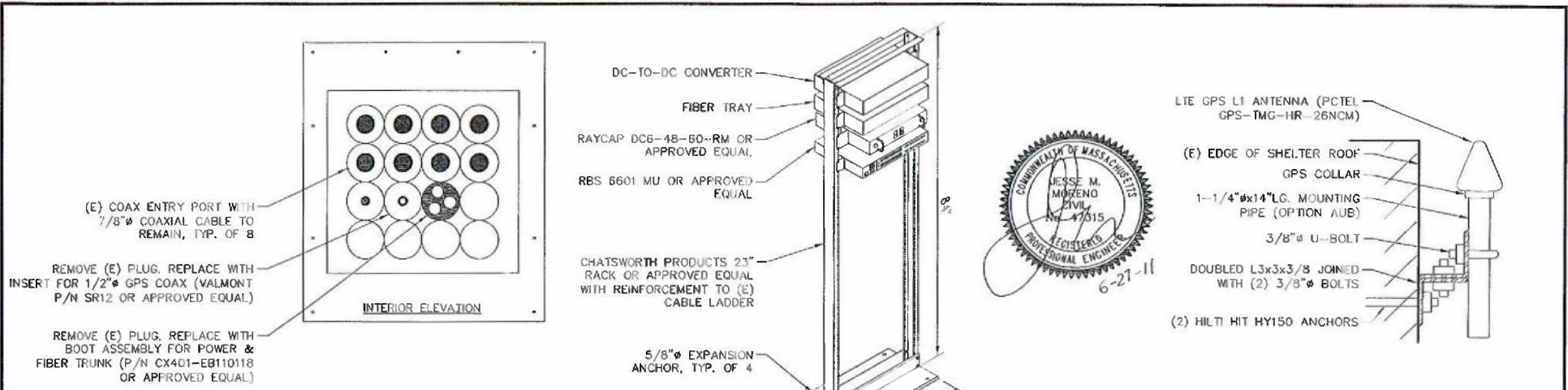
at&t
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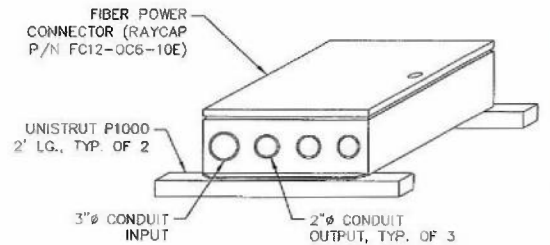
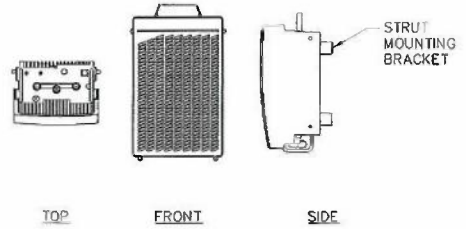
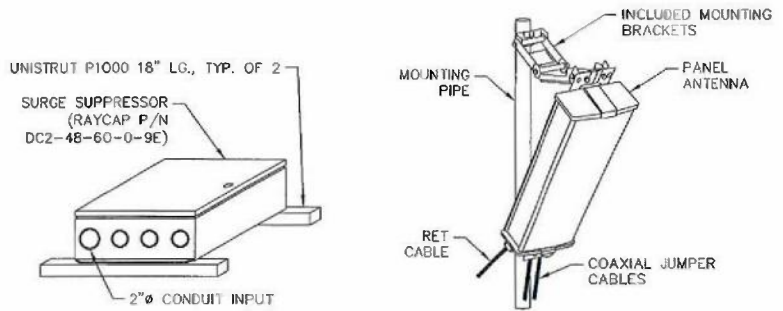
A-4



CABLE ENTRY PORT
SCALE: NONE

RACK DETAIL
SCALE: NONE

GPS ANTENNA
SCALE: NONE



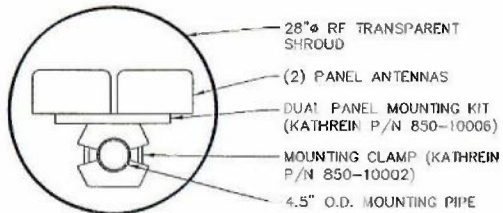
SURGE SUPPRESSOR
SCALE: NONE

PANEL ANTENNA
SCALE: NONE

REMOTE RADIO UNIT
SCALE: NONE

FIBER POWER CONNECTOR
SCALE: NONE

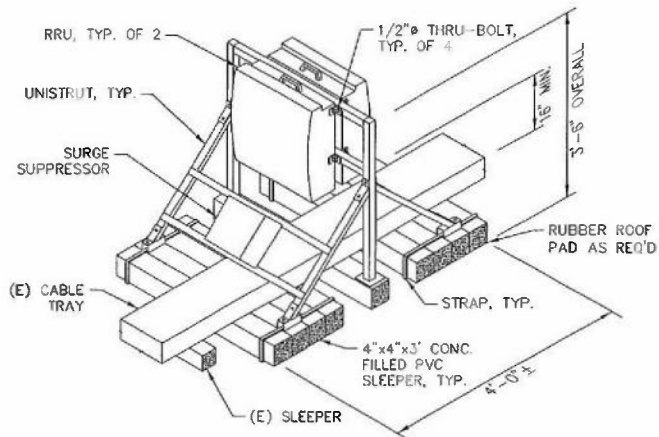
ProTerra DESIGN GROUP, LLC 1 Short Street Suite 3 Northampton, MA 01060 Ph: (413)320-4918 Fax: (413)320-4917	 22 Keewoydn Drive Solem, NH 03079	 New England Wireless PCS, LLC 550 Cochituate Road Framingham, MA 01701	SITE NUMBER MA-3239	REVISIONS	DESIGNED BY: JMM/TEJ JOB #: 11-023
			53 BRIGHAM STREET MARLBOROUGH, MA 01752	DRAWN BY: MJV REV. #: 0	DATE: 6/27/11
			SCALE: AS NOTED	S-1	



ANTENNA MOUNTING PLAN

SCALE: NONE

1
S-2

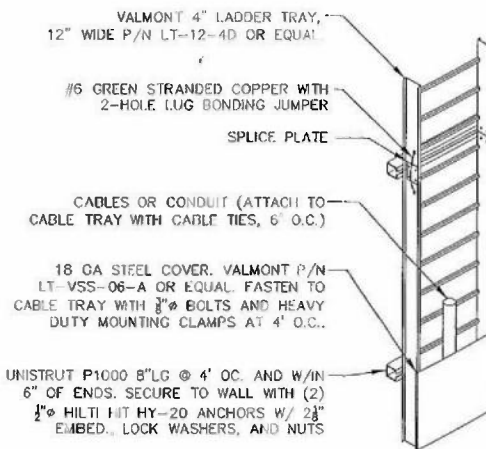


1. CONTRACTOR TO ADAPT STRUT STAND TO FIELD CONDITIONS
2. ALL HARDWARE SHALL BE GALVANIZED.
3. PROVIDE WORKING CLEARANCE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
4. REMOVE BALLAST FROM 6'x6' AREA AROUND RACK. REDISTRIBUTE REMOVED BALLAST AT LEAST 10' FROM CABLE TRAY RACK AND ANTENNA FRAME.

**RRU & SURGE SUPPRESSOR
CABLE TRAY RACK**

SCALE: NONE

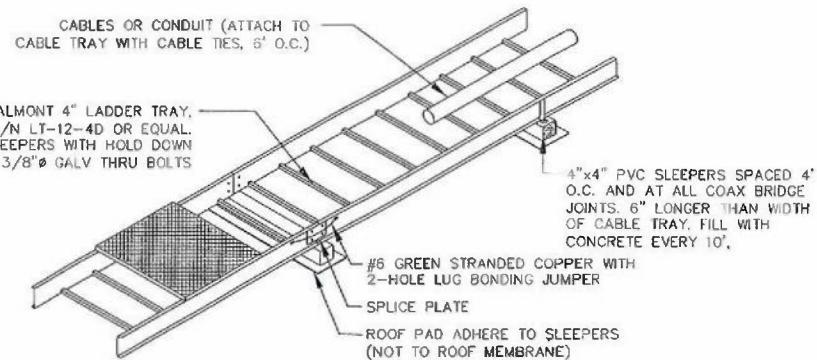
2
S-2



VERTICAL CABLE TRAY

SCALE: NONE

3
S-2



ROOFTOP CABLE TRAY

SCALE: NONE

4
S-2



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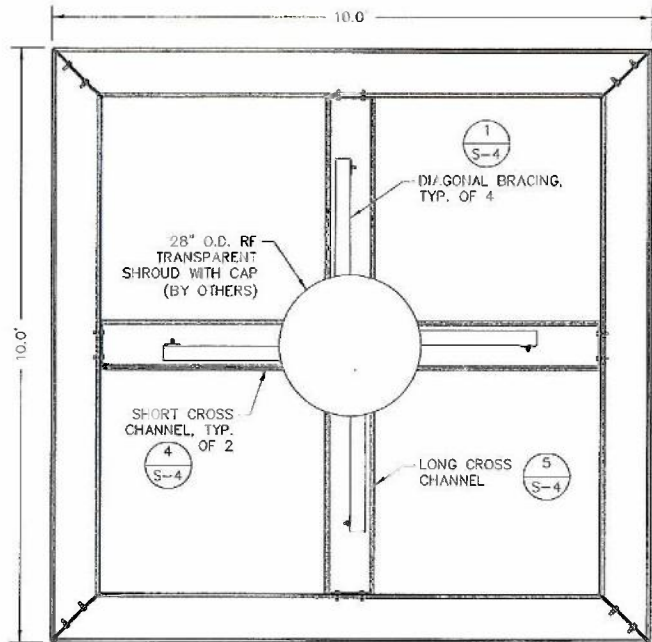
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22 Keebowdin Drive
Salem, NH 03079

at&t
New Circular Wireless PCS, LLC
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Framingham, MA 01701

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	SCALE:	AS NOTED		

S-2



ANTENNA FRAME PLAN (1)
 SCALE: 1"=2' (11"x17")
 1"=1' (24"x36") (S-3)

SEE SHEET S-4 FOR
 DETAILED PARTS &
 ASSEMBLY DETAILS

PERIMETER CHANNEL,
 TYP. OF 4

(1)
 S-4



RF TRANSPARENT CAP

28"Ø RF TRANSPARENT
 SHROUD (BY OTHERS)
 SHROUD MINIMALLY CUT TO
 ACCOMMODATE DIAGONAL BRACING

(1)
 S-4
 DIAGONAL BRACING,
 TYP. OF 4

(1)
 S-4
 PERIMETER CHANNEL,
 TYP. OF 4

ROOF SURFACE

RUBBER ROOF PAD. REMOVE BALLAST
 FROM 12'x12' AREA AROUND FRAME.
 REDISTRIBUTE REMOVED BALLAST AT
 LEAST 10' FROM CABLE TRAY RACK
 AND ANTENNA FRAME.

ANTENNA FRAME ELEVATION (2)
 SCALE: 1"=2' (11"x17")
 1"=1' (24"x36") (S-3)

TOTAL WEIGHT INCLUDING
 BALLAST, EXCLUDING RF
 EQUIPMENT = 1250 LBS

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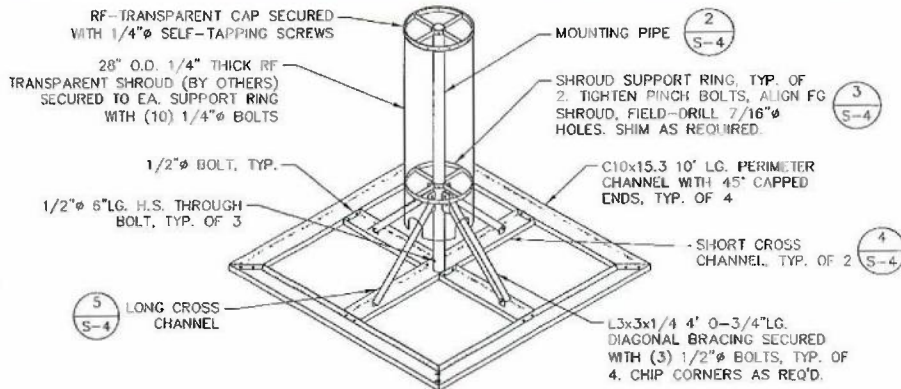
SAI
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 22 Kenoydin Drive
 Salem, NH 03079

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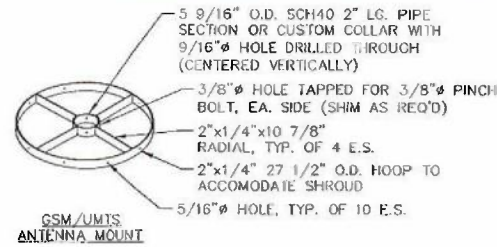
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	DRAWN BY:	MJV	REV. #:	0
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	SCALE:	AS NOTED		

S-3

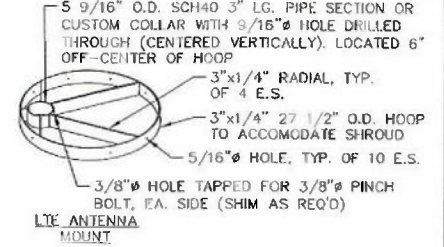


ANTENNA FRAME ISOMETRIC

SCALE: 1"=2' (11"x17")
1"=1' (24"x36")



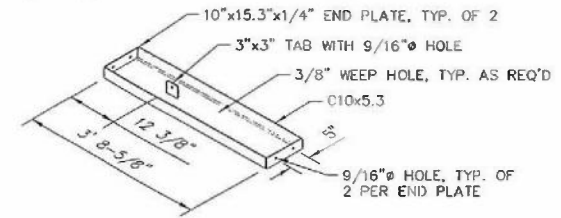
GSM/UMTS ANTENNA MOUNT



LTE ANTENNA MOUNT

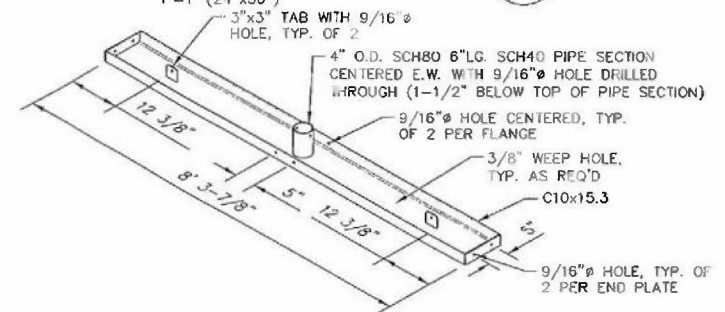
SHROUD SUPPORT RING

SCALE: 1"=2' (11"x17")
1"=1' (24"x36")



SHORT CROSS CHANNEL

SCALE: 1"=2' (11"x17")
1"=1' (24"x36")



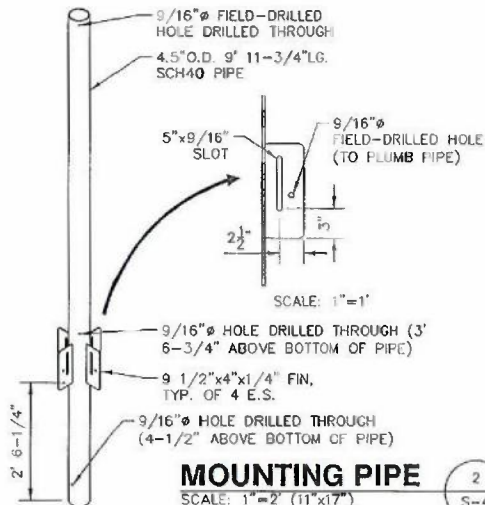
LONG CROSS CHANNEL

SCALE: 1"=2' (11"x17")
1"=1' (24"x36")



STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL SHALL BE ASTM A-36 UON. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".
2. ALL STEEL SHALL BE GALVANIZED.
3. ALL MEMBERS NOT SHOWN AS BOLTED ARE WELDED WITH 1/4" FILLET WELDS ALL BOLTS TO BE A-325 GALVANIZED
4. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1.
5. BOLTED CONNECTIONS SHALL USE BEARING TYPE ASTM A325 BOLTS. ALL BOLTS SHALL BE GALVANIZED OR STAINLESS STEEL
6. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL



MOUNTING PIPE

SCALE: 1"=2' (11"x17")
1"=1' (24"x36")

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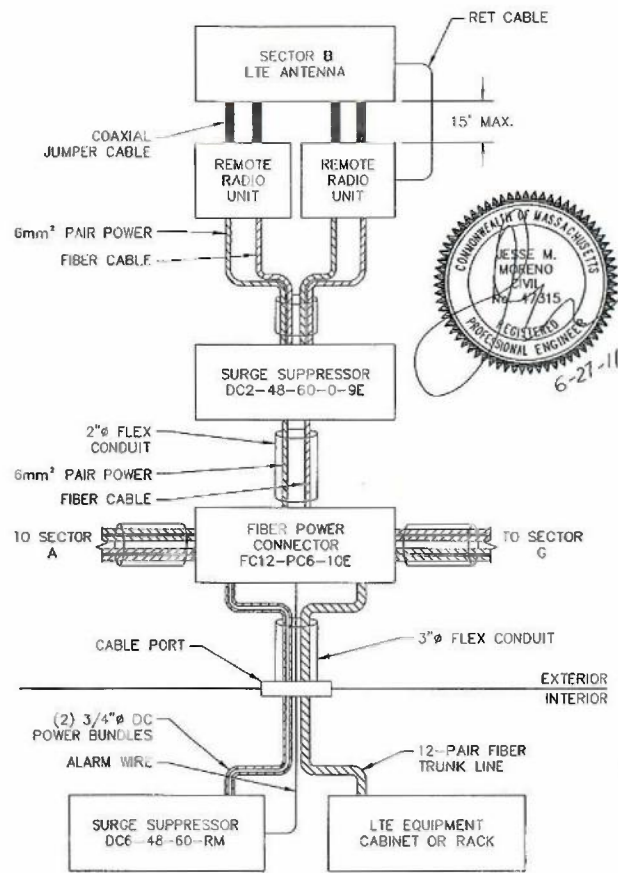
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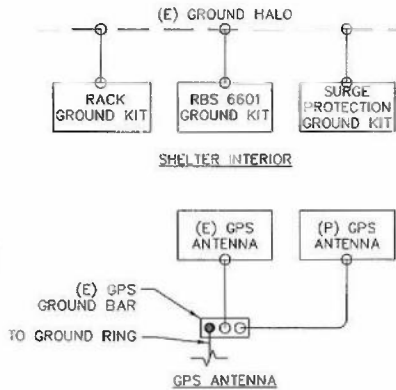
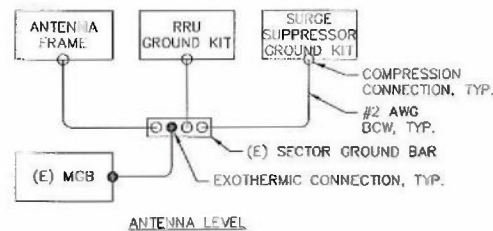
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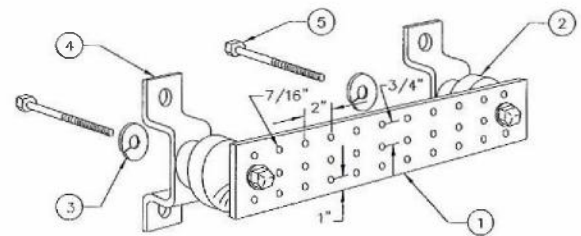
S-4



LTE PLUMBING DIAGRAM 1
SCALE: NONE E-1



GROUNDING ONE-LINE 2
SCALE: NONE E-1

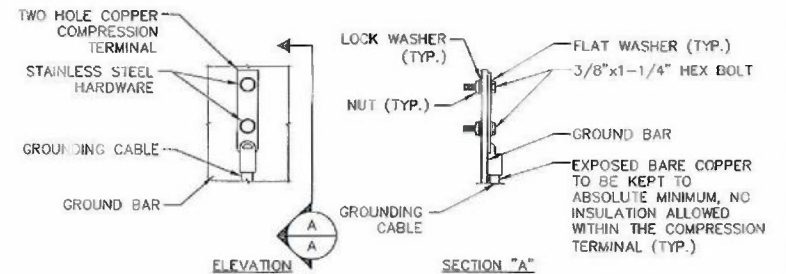


1. SOLID COPPER GROUND BAR, 1/4"x4"x20", BY WIRELESS SOLUTIONS, INC. OR EQUAL. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION. (ACTUAL GROUND BAR SIZE WILL VARY BASED ON NUMBER OF GROUND CONNECTIONS)
2. INSULATORS SHALL BE ELIMINATED WHEN BONDING DIRECTLY TO TOWER/MONOPOLE STRUCTURE. CONNECTION TO TOWER/MONOPOLE STRUCTURE SHALL BE PER MANUFACTURERS RECOMMENDATIONS.
3. 5/8" LOCK WASHERS OR EQUAL
4. WALL MOUNTING BRACKET
5. 5/8-11x1" HHCS BOLTS

GROUND BAR DETAIL

SCALE: NONE

3
E-1



1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB.
4. EACH GROUND CONDUCTOR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END IDENTIFYING ITS ORIGIN AND DESTINATION.

GROUND BAR CONNECTION 4
SCALE: NONE E-1