New Cingular Wireless PCS, LLC
500 Enterprise Drive
Rocky Hill, Connecticut 06067

John Lawrence
Real Estate Consultant
95 Ryan Drive, Suite #1
Raynham, MA 02767
Phone: (781)715-5532
jlawrence@clinellc.com

August 22, 2014

Town of East Hartford
Mayor Marcia Leclerc
740 Main Street
East Hartford, CT 06108

Re: Request for Tower Share – Notice
New Cingular Wireless PCS, LLC ("AT&T") Request for Approval of the Shared Use of an Existing Wireless Facility at 886 Main Street, East Hartford CT 06108.
AT&T site number: CT2490

Dear Mayor Leclerc:

New Cingular Wireless PCS, LLC ("AT&T") intends to add antennas and associated equipment to the existing wireless facility located at 886 Main Street in East Hartford. The wireless facility is an existing rooftop and is owned by Hartford East Associates a Connecticut limited partnership, having a mailing address of 1704 Broad Street, Cranston RI 02905.

A Request for Tower Share is being filed with the Connecticut Siting Council as required by Regulations of Connecticut State Agencies ("R.C.S.A.") Section 16-50aa. Please accept this letter as notification to the Town of East Hartford under the Tower Share Application Guidelines.

The attached letter fully sets forth AT&T's proposal. However, if you have any questions or require any further information on the plans for the site or the Siting Council's procedures, please contact John Lawrence, Real Estate Consultant for AT&T, at (781) 715-5532 or the Connecticut Siting Council, at (860) 827-2935.

Sincerely,

John Lawrence
Real Estate Consultant
Enclosure
Honorable Robert Stein, Chairmen of the Connecticut Siting Council

New Cingular Wireless PCS, LLC
500 Enterprise Drive
Rocky Hill, Connecticut 06067

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jlawrence@clinellc.com

August 22, 2014

Chairman Robert Stein
and Members of the Connecticut Siting Council
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Re: **Request for Tower Share**
New Cingular Wireless PCS, LLC ("AT&T") Request for Approval of the Shared Use of an Existing Wireless Facility at 886 Main Street, East Hartford CT 06108.
AT&T site number: CT2490

Dear Chairman Stein and Members of the Council:

AT&T proposes to share an existing wireless facility located at 886 Main Street, East Hartford CT 06108 (the "Facility"). The subject parcel is identified by the Town of East Hartford as Map 13 Lot 332. The property is owned by Hartford East Associates and is roughly 1.19+/- acres.

Pursuant to Connecticut General Statues Section 16-50aa (the Statute), AT&T requests a finding from the Connecticut Siting Council that the shared use of this facility is technically, legally, environmentally and economically feasible, will meet safety concerns, will avoid the unnecessary proliferation of towers and is in the public interest. AT&T further requests an order approving the shared use of this Facility.

Siting Council Jurisdiction Over the Existing Facility

AT&T is a telecommunication provider licensed by the FCC to provide service in the State of Connecticut, including but not limited to Hartford County. AT&T has entered into an agreement with the owner of this Facility, Hartford East Associates for the location of this proposed equipment on the rooftop so that it may provide telecommunications services to the surrounding community.

Pursuant to Connecticut General Statutes § 16-50aa, the Council may approve the shared use of a telecommunications facility provided that such shared use is technically, legally, environmentally, and economically feasible and meets public safety concerns.

The Facility was originally approved in 1994 for Metro Mobile CTS of Hartford, Inc. (Metro Mobile)[1] as a wireless site including nine (9) antennas and equipment attached to and within different parts of the existing building at 886 Main Street. The Siting Council's jurisdiction over the Facility commenced at a time when the Siting Council's jurisdiction was based on technology (i.e. cellular systems) and not exclusively on towers. The Siting Council has since continued to exercise jurisdiction over this Facility including three (3) known antenna and equipment upgrades/changes.[2] This regulation of the Facility extended not only to the antennas on the roof but also the associated equipment and connections elsewhere in the building and on the site. In essence, the building was legally made the support structure for and part of the Facility as a whole. As such, we understand that AT&T's antennas and equipment at this Facility are also regulated by the Siting Council in this unique circumstance.[3]

I do note however that prior to learning of this unique jurisdictional circumstance AT&T first commenced consultation with the Town of East Hartford regarding site plan review. AT&T has incorporated the results of this municipal dialogue into the proposed collocation; notably the request for some new landscaping elements in the area of the proposed equipment shelter.

The purpose of this request is to use an existing Facility to develop AT&T's wireless broadband network to provide high speed wireless data and to develop wireless service within the State of Connecticut and in this part of East Hartford, CT: thus avoiding the need for an additional tower in East Hartford. As the Council is aware AT&T is licensed by the Federal Communications Commission ("FCC") to provide multiple technologies, including Global Systems for Mobile Communications ("GSM" or "2G"), Universal Mobile Telecommunications Service ("UMTS" or "3G") and long-term evolution ("4G" or "LTE") services in Hartford County. AT&T is building and enhancing its network to take advantage of its licensed spectrum, and improve its broadband high speed wireless voice and data services. By issuing an order approving AT&T's shared use of this Facility, AT&T will be able to proceed with obtaining a building permit for the proposed installation.

Existing Facility and Proposed Collocation

The existing Facility is a 100' building located at 886 Main Street in East Hartford. Verizon Wireless is currently located at this Facility. A site plan of the facility is included in the drawings, prepared by Hudson Design Group with a last revision date of August 21, 2014 attached hereto.

AT&T intends to install nine (9) OPA65R-LCUUH6 CCI panel antennas, twenty-seven (27) Ericsson RRUs and six (6) Surge arrestor mounted on new antenna frames on the existing rooftop. AT&T has leased space for an equipment shelter with emergency backup generator which will be installed at grade level adjacent to the existing building.

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[1] Cellco Partnership d/b/a/ Verizon Wireless has since obtained Metro Mobile's rights and operates the antennas and equipment at this Facility.

[2] As per the Siting Council's Database of CSC-Approved Telecommunications Sites, Last Updated July 7, 2014 *available at* http://www.ct.gov/csc/lib/csc/cscdatabases/facilits.xlsx.

[3] Of note, recent Federal law and FCC guidance is in alignment with this process as it determined a "base station" to include a structure that currently supports or houses an antenna, transceiver, or other associated equipment including a building such as the one at 886 Main Street and requires approvals of these types of collocations.

Consistent with the requirements of the Statute, it is feasible for AT&T to collocate at this facility. AT&T is proposing to add new equipment to an existing Facility. Included with this application is a Structural Analysis Report from Hudson Design with a last revision date of February 14, 2014, which shows that the existing rooftop can support AT&T's proposed equipment.

<u>The Proposed Facility Will Not Have a Substantial Adverse Environmental Impact</u>

Pursuant to Statute, the proposal will be environmentally feasible for the following reasons:

- There will be little increase in the visibility of the Facility with the addition of the antennas and associated equipment on the rooftop.

- There will be no increased impact on air quality because no air pollutants will be generated during normal operation of the facility.

- During construction, the proposed project will generate a small amount of traffic and noise as construction takes place. Upon completion, traffic will be limited to an average of one trip per month for maintenance and inspections.

- There will be no adverse impact to the health and safety of the surrounding community or workers at the facility due to the addition of AT&T's antennas to the Facility. AT&T has performed an analysis of the radio frequency field emanating from the transmitting antennas on the tower to ensure compliance with the National Council on Radiation Protection and measurements (NCRP) standard for maximum permissible exposure (MPE) adopted by the FCC. The analysis dated August 13, 2014 indicates that AT&T and other antennas on Facility will cumulatively emit 61.56% of the NCRP standard for maximum permissible exposure. The report indicates that maximum level of exposure will be well below the FCC's mandated radio frequency exposure limits. The report is attached hereto and the calculations are below.

Transmission Mode	Antenna Centerline AGL (ft)	Frequency (MHz)	Number of Channels	Effective Radiated Power per Channel (Watts)	Power Density (mW/cm^2)	Standard Limits (mW/cm^2)	% MPE (Uncontrolled/ General Public)
Verizon cellular	103	869	9	288.00	0.0878	0.579333333	15.16%
Verizon PCS	103	1970	11	307.00	0.1145	1	11.45%
Verizon AWS	103	2145	1	1,750.00	0.0593	1	5.93%
Verizon LTE	103	698	1	840.00	0.0285	0.465333333	6.12%
AT&T UMTS	107	850	2	500.00	0.0314	0.5667	5.54%
AT&T UMTS	107	1900	2	500.00	0.0314	1	3.14%
AT&T LTE 700 BC/DE	107	700	2	500.00	0.0314	0.4667	6.73%
AT&T LTE 850	107	850	1	500.00	0.0157	0.5667	2.77%
AT&T LTE 1900	107	1900	2	500.00	0.0314	1	3.14%
AT&T LTE WCS	107	2300	1	500.00	0.0157	1	1.57%
Total							61.56%

- AT&T expects to enhance safety in this portion of East Hartford by improving wireless telecommunications for local residents and travelers. AT&T continues to develop its network to provide its customers with quality and reliable coverage to comply with their FCC license, the site is a necessary part of AT&T's network development.

- The overall visual impact on the Town of East Hartford will be decreased with the sharing of a single Facility versus the proliferation in different locations.

- This proposal is designed to provide reliable wireless coverage for this section of East Hartford, Connecticut.

Conclusion:

For the reasons stated above, the collocation of AT&T's antennas and associated equipment to at this approved Facility would meet all the requirements set forth in the Statute. The proposal is legally, technically, economically and environmentally feasible and meets all public safety concerns. Therefore, AT&T respectfully requests that the Council approve this request for the shared use of this Facility located at 886 Main Street, East Hartford Connecticut.

Respectfully yours,

John Lawrence
Real Estate Consultant

CC: *Mayor Marcia Leclerc, Town of East Hartford*
Hartford East Associates
Michele Briggs, New Cingular Wireless PCS, LLC (via e-mail)

Michael Lawton
SAI Communications
260 Cedar Hill St.
Marlborough, MA 01752
Mike.Lawton@sai-comm.com

August 13, 2014

Connecticut Siting Council

Subject: AT&T Wireless, CT2490 – East Hartford

Dear Connecticut Siting Council:

At the request of AT&T Wireless, SAI Communications has performed an assessment of the RF Power Density at the proposed site located at 886 Main Street, East Hartford, CT.
Calculations were done in compliance with FCC OET Bulletin 65. This report provides an FCC compliance assessment based on a "worst-case" analysis that all transmitters are simultaneously operating at full power and pointing directly at the ground.

FCC OET Bulletin 65 formula:

$$S = \frac{2.56 * 1.64 * ERP}{4 * \pi * R^2}$$

Transmission Mode	Antenna Centerline AGL (ft)	Frequency (MHz)	Number of Channels	Effective Radiated Power per Channel (Watts)	Power Density (mW/cm^2)	Standard Limits (mW/cm^2)	% MPE (Uncontrolled/ General Public)
Verizon cellular	103	869	9	288.00	0.0878	0.579333333	15.16%
Verizon PCS	103	1970	11	307.00	0.1145	1	11.45%
Verizon AWS	103	2145	1	1,750.00	0.0593	1	5.93%
Verizon LTE	103	698	1	840.00	0.0285	0.465333333	6.12%
AT&T UMTS	107	850	2	500.00	0.0314	0.5667	5.54%
AT&T UMTS	107	1900	2	500.00	0.0314	1	3.14%
AT&T LTE 700 BC/DE	107	700	2	500.00	0.0314	0.4667	6.73%
AT&T LTE 850	107	850	1	500.00	0.0157	0.5667	2.77%
AT&T LTE 1900	107	1900	2	500.00	0.0314	1	3.14%
AT&T LTE WCS	107	2300	1	500.00	0.0157	1	1.57%
Total							61.56%

Conclusion: AT&T's proposed antenna installation is calculated to be within 61.56% of FCC Standard for General Public/Uncontrolled Maximum Permissible Exposure (MPE).

Sincerely,

Michael Lawton
SAI Communications

at&t

CT2490
EAST HARTFORD - 886 MAIN

886 MAIN STREET
EAST HARTFORD, CT 06108

SITE TYPE: ROOFTOP

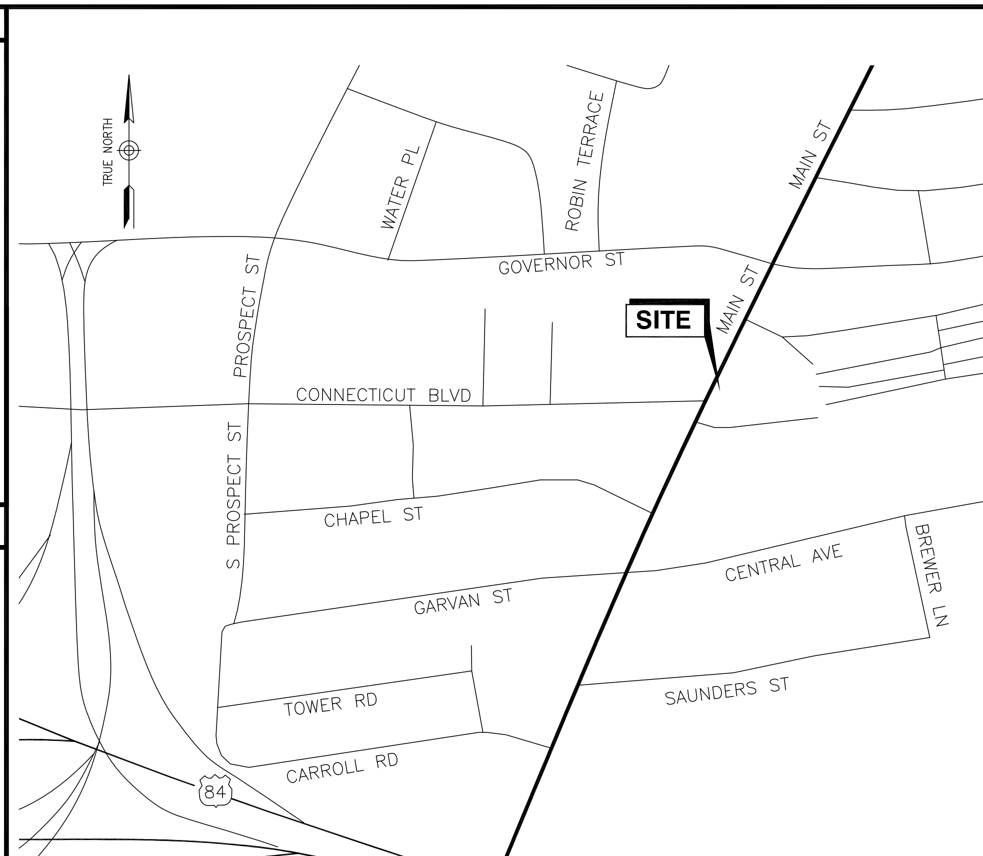
TOWN OF EAST HARTFORD PLANNING AND ZONING COMMISSION SITE PLAN CERTIFICATE OF APPROVAL
APPROVAL DATE ________________
EXPIRATION DATE ________________
________________ CHAIRMAN

SHEET INDEX

PROJECT INFORMATION:

PROPERTY OWNER:	TOWN OF EAST HARTFORD 740 MAIN STREET EAST HARTFORD, CT 06108
UNDER A 99 YEAR LEASE TO:	HARTFORD EAST ELDERLY APARTMENTS LIMITED PARTNERSHIP 1704 BROAD STREET CRANSTON, RI 02905
APPLICANT:	NEW CINGULAR WIRELESS PCS, LLC 550 COCHITUATE RD. SUITE 13 & 14 – 2ND FLOOR FRAMINGHAM, MA 01701
SITE ADDRESS:	886 MAIN STREET EAST HARTFORD, CT 06108
COUNTY:	HARTFORD
ZONING CLASSIFICATION:	B-5
ZONING JURISDICTION:	TOWN OF EAST HARTFORD
TAX ID PARCEL NUMBER:	MAP 13, LOT 332
ARCHITECT / ENGINEER:	HUDSON DESIGN GROUP LLC 1600 OSGOOD STREET BUILDING 20 NORTH, SUITE 2-101 N. ANDOVER, MA 01845
POWER COMPANY:	CONNECTICUT LIGHT & POWER 410 SHELDON STREET HARTFORD, CT 06106 (800) 286-2000
TELEPHONE COMPANY:	AT&T (866)-774-3125

VICINITY MAP



DRIVING DIRECTIONS

START OUT GOING NORTHEAST ON ENTERPRISE DR TOWARD CAPITOL BLVD. TURN LEFT ONTO CAPITOL BLVD. TURN LEFT ONTO WEST ST. MERGE ONTO I-91 N VIA THE RAMP ON THE LEFT TOWARD HATFORD 7.8 MILES. MERGE ONTO US-5 N/CT-15 N VIA EXIT 29 TOWARD I-84 E/E. HARTFORD/BOSTON. TAKE THE US-5 N/MAIN ST EXIT, EXIT 90. TURN LEFT ONTO MAIN ST/US-5. 886 MAIN ST IS ON THE RIGHT.

PROJECT DESCRIPTION

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

DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE PROJECT OWNER'S REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

3 WORKING DAYS

CALL BEFORE YOU DIG

800-922-4455 OR DIAL 811

UNDERGROUND SERVICE ALERT

APPROVALS:

SAI CM: ________________

AT&T CM: ________________

SAI RF: ________________

AT&T RF: ________________

at&t
500 ENTERPRISE DRIVE
ROCKY HILL, CT 06067

SAI
27 NORTHWESTERN DR
SALEM, NH 03079

Hudson Design Group LLC
1600 OSGOOD STREET
BLD 20 N, SUITE 3090
N. ANDOVER, MA 01845
TEL: (978)-557-5553
FAX: (978)-336-5586

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

Daniel P Hamm

LICENSED ENGINEER | DATE

REVISIONS		
REV. #	DATE	DESCRIPTION
5	08/20/14	REVISED FOR CONSTRUCTION
4	07/22/14	REVISED FOR CONSTRUCTION
3	06/23/14	REVISED FOR CONSTRUCTION
2	02/20/14	REVISED FOR CONSTRUCTION
1	05/29/13	ISSUED FOR CONSTRUCTION
0	04/18/13	ISSUED FOR REVIEW

PROJECT NO.	DESIGNED BY: AT	SCALE:
CT2490	DRAWN BY: SB	AS SHOWN
	CHECK'D BY: DPH	

SITE NAME:

CT2490
EAST HARTFORD - 886 MAIN

SITE ADDRESS:

886 MAIN ST
EAST HARTFORD, CT 06108

SHEET TITLE:

TITLE SHEET

SHEET NO:

T-1

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.

6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTIING HAVING 20 FT. OR MORE 1/2" OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR – SAI
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – AT&T MOBILITY

2. 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 CONTRACTOR.

3. 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.

4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.

10. 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 OWNER.

11. 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.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

16. CONSTRUCTION SHALL COMPLY WITH UMTS SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."

17. 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.

18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

20. APPLICABLE BUILDING CODES:
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: 2003 IBC WITH 2005 CT SUPPLEMENT & 2009 CT AMENDMENTS
   ELECTRICAL CODE: REFER TO ELECTRICAL DRAWINGS
   LIGHTNING CODE: REFER TO ELECTRICAL DRAWINGS

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-F, STRUCTURAL STANDARDS FOR STEEL

   ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

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.

**TOWN OF EAST HARTFORD
PLANNING AND ZONING COMMISSION
SITE PLAN CERTIFICATE
OF APPROVAL**

APPROVAL DATE ____________________

EXPIRATION DATE ____________________

____________________ **CHAIRMAN**

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	G.C.	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
AWG	AMERICAN WIRE GAUGE	MGB	MASTER GROUND BUS		
BCW	BARE COPPER WIRE	MIN	MINIMUM	TBD	TO BE DETERMINED
BTS	BASE TRANSCEIVER STATION	PROPOSED	NEW	TBR	TO BE REMOVED
EXISTING	EXISTING	N.T.S.	NOT TO SCALE	TBRR	TO BE REMOVED AND REPLACED
EG	EQUIPMENT GROUND	REF	REFERENCE	TYP	TYPICAL
EGR	EQUIPMENT GROUND RING	REQ	REQUIRED		

at&t
500 ENTERPRISE DRIVE
ROCKY HILL, CT 06067

SAI
27 NORTHWESTERN DR
SALEM, NH 03079

Hudson Design Group LLC
1600 OSGOOD STREET
BLD 20 N, SUITE 3090
N. ANDOVER, MA 01845
TEL: (978)-557-5553
FAX: (978)-336-5586

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

Daniel P Hamm

LICENSED ENGINEER DATE

REVISIONS

REV. #	DATE	DESCRIPTION
5	08/20/14	REVISED FOR CONSTRUCTION
4	07/22/14	REVISED FOR CONSTRUCTION
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0	04/18/13	ISSUED FOR REVIEW

PROJECT NO.		SCALE:
CT2490	DESIGNED BY: AT	AS SHOWN
	DRAWN BY: SB	
	CHECK'D BY: DPH	

SITE NAME:

CT2490
EAST HARTFORD -
886 MAIN

SITE ADDRESS:

886 MAIN ST
EAST HARTFORD, CT 06108

SHEET TITLE:

GENERAL NOTES

SHEET NO:

GN-1

SPECIAL INSPECTION CHECKLIST

BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	ENGINEER OF RECORD APPROVED SHOP DRAWINGS[1]
REQUIRED	MATERIAL SPECIFICATIONS REPORT[2]
N/A	FABRICATOR NDE INSPECTION
N/A	NDE REPORT OF MONOPOLE BASE PLATE (AS REQUIRED)
REQUIRED	PACKING SLIPS[3]
ADDITIONAL TESTING AND INSPECTIONS:	
DURING CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
REQUIRED	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
REQUIRED	POST INSTALLED ANCHOR ROD VERIFICATION
N/A	BASE PLATE GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT
ADDITIONAL TESTING AND INSPECTIONS:	
AFTER CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS[5]
N/A	POST INSTALLED ANCHOR ROD PULL-OUT TESTING
REQUIRED	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

NOTES:

1. REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
2. PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
3. PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
4. HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
5. AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

GENERAL: WHERE APPLICATION IS MADE FOR CONSTRUCTION, THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE INSPECTION CHECKLIST ABOVE.

THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS THE SPECIAL INSPECTOR FOR THE WORK DESIGNED BY THEM, PROVIDED THOSE PERSONNEL MEET THE QUALIFICATION REQUIREMENTS.

STATEMENT OF SPECIAL INSPECTIONS: THE APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 107.1 AS A CONDITION FOR ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH SECTION 1705.

REPORT REQUIREMENT: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS SHALL BE SUBMITTED.

IF PROJECT OWNER DOES NOT AUTHORIZE SPECIAL INSPECTIONS, THE PROJECT OWNER TAKES FULL RESPONSIBILITY AND OWNERSHIP OF ALL MATERIALS AND CONSTRUCTION.

TOWN OF EAST HARTFORD
PLANNING AND ZONING COMMISSION
SITE PLAN CERTIFICATE
OF APPROVAL

APPROVAL DATE ____________

EXPIRATION DATE ____________

____________ **CHAIRMAN**

at&t
500 ENTERPRISE DRIVE
ROCKY HILL, CT 06067

SAI
27 NORTHWESTERN DR
SALEM, NH 03079

Hudson Design Group LLC
1600 OSGOOD STREET
BLD 20 N, SUITE 3090
N. ANDOVER, MA 01845
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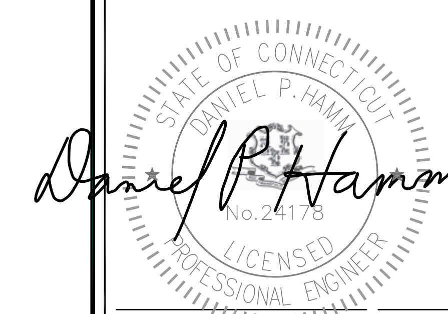

LICENSED ENGINEER DATE

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	CHECK'D BY: DPH	

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EAST HARTFORD -
886 MAIN

SITE ADDRESS:

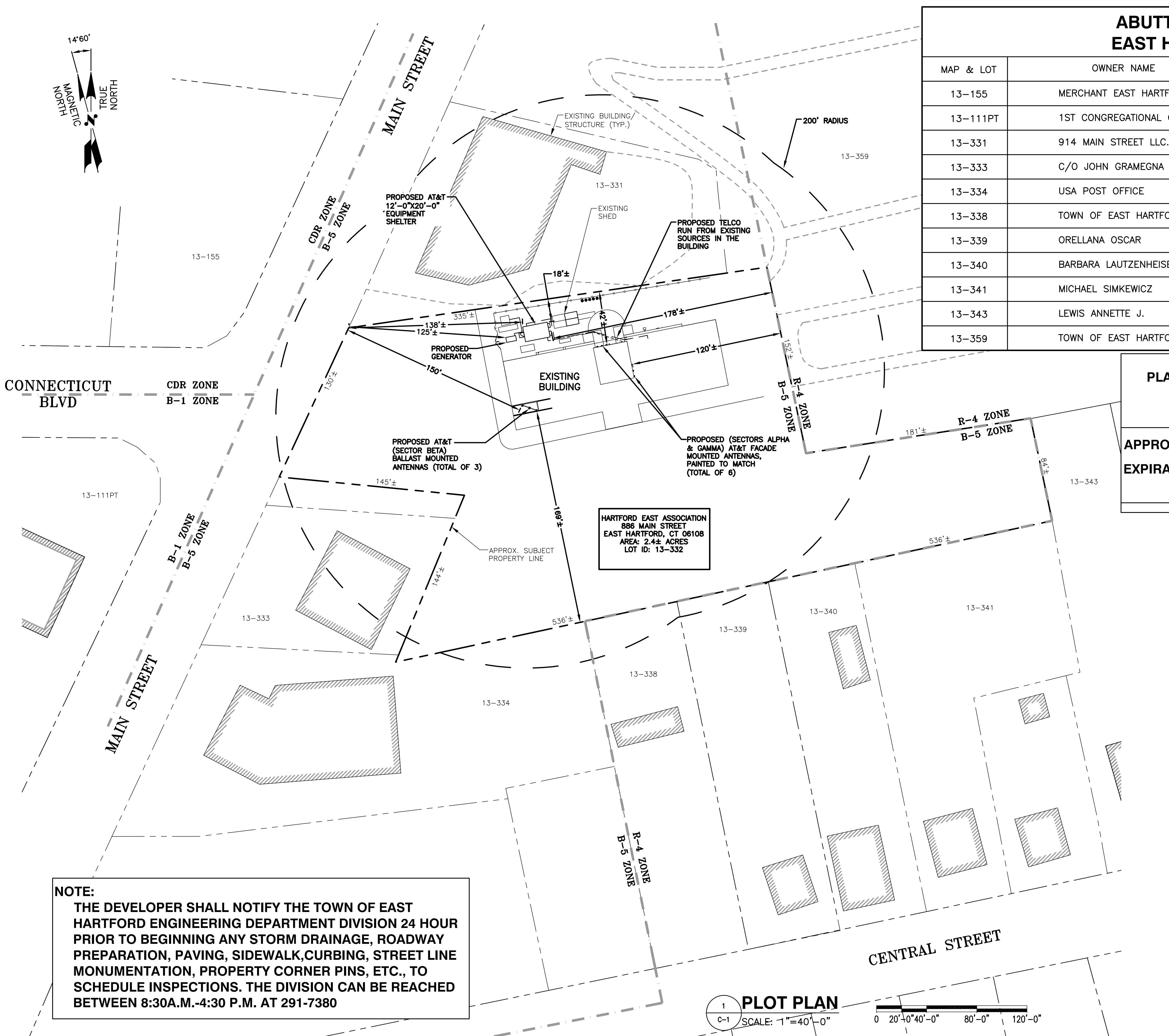
886 MAIN ST
EAST HARTFORD, CT 06108

SHEET TITLE:

SPECIAL INSPECTION

SHEET NO:

GN-2



NOTE:
THE DEVELOPER SHALL NOTIFY THE TOWN OF EAST HARTFORD ENGINEERING DEPARTMENT DIVISION 24 HOUR PRIOR TO BEGINNING ANY STORM DRAINAGE, ROADWAY PREPARATION, PAVING, SIDEWALK,CURBING, STREET LINE MONUMENTATION, PROPERTY CORNER PINS, ETC., TO SCHEDULE INSPECTIONS. THE DIVISION CAN BE REACHED BETWEEN 8:30A.M.-4:30 P.M. AT 291-7380

PLOT PLAN 1 / C-1
SCALE: 1"=40'-0"

0 20'-0" 40'-0" 80'-0" 120'-0"

ABUTTER'S LIST
EAST HARTFORD

MAP & LOT	OWNER NAME	MAILING ADDRESS
13-155	MERCHANT EAST HARTFORD I LLC.	ONE HARTFIELD BOULEVARD EAST WINDSOR, CT 06088
13-111PT	1ST CONGREGATIONAL CHURCH	831 MAIN STREET EAST HARTFORD, CT 06108
13-331	914 MAIN STREET LLC.	906 MAIN STREET EAST HARTFORD, CT 06108
13-333	C/O JOHN GRAMEGNA	235 EAST RIVER DRIVE UNIT 204 EAST HARTFORD, CT 06108
13-334	USA POST OFFICE	846 MAIN STREET EAST HARTFORD, CT 06108
13-338	TOWN OF EAST HARTFORD	740 MAIN STREET EAST HARTFORD, CT 06108
13-339	ORELLANA OSCAR	46 CENTRAL AVENUE EAST HARTFORD, CT 06108
13-340	BARBARA LAUTZENHEISER	17 HUNTINGRIDGE DRIVE SOUTH GLASTONBURY, CT 06073
13-341	MICHAEL SIMKEWICZ	58 CENTRAL AVENUE EAST HARTFORD, CT 06108
13-343	LEWIS ANNETTE J.	70 CENTRAL AVENUE EAST HARTFORD, CT 06108
13-359	TOWN OF EAST HARTFORD	749 MAIN STREET

TOWN OF EAST HARTFORD
PLANNING AND ZONING COMMISSION
SITE PLAN CERTIFICATE
OF APPROVAL

APPROVAL DATE ____________

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____________ **CHAIRMAN**

NOTES:
PLAN BASED ON TOWN OF EAST HARTFORD GIS INFORMATION & AERIAL PHOTOGRAPHY.
A FIELD SURVEY WAS NOT PERFORMED BY HUDSON DESIGN GROUP, LLC.

LEGEND

- PROPERTY LINE-SUBJECT PARCEL
- PROPERTY LINE-ABUTTERS
- ZONING DISTRICT BOUNDARY LINE
- 200 FEET RADIUS
- (E) SUBJECT BUILDING
- XXX-XXX-XXX ASSESSORS MAP-BLOCK-LOT NO.

ZONING INFORMATION

JURISDICTION: TOWN OF EAST HARTFORD, CT - HARTFORD COUNTY

ZONING DISTRICT TYPE: B-5 - BUSINESS

DIMENSION REQUIREMENTS:	REQUIRED	PROPOSED
EQUIPMENT SHELTER SETBACKS		
FRONT YARD SETBACK:	20	125'±
SIDE YARD SETBACK:	20	18'±
REAR YARD SETBACK:	30	178'±
ANTENNAS SETBACKS		
MAX. HEIGHT	10' ABOVE ROOF HEIGHT	12'
FRONT YARD SETBACK:	20	150'±
SIDE YARD SETBACK:	20	42'±
REAR YARD SETBACK:	30	120'±

(ALL MEASUREMENTS ARE IN FEET ± UNLESS OTHERWISE NOTED)
(SETBACKS TO PROPOSED EQUIPMENT UNLESS OTHERWISE NOTED)

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SALEM, NH 03079

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STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

Daniel P Hamm

LICENSED ENGINEER DATE

REVISIONS

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EAST HARTFORD - 886 MAIN

SITE ADDRESS:
886 MAIN ST
EAST HARTFORD, CT 06108

SHEET TITLE:
SITE PLAN

SHEET NO:
C-1

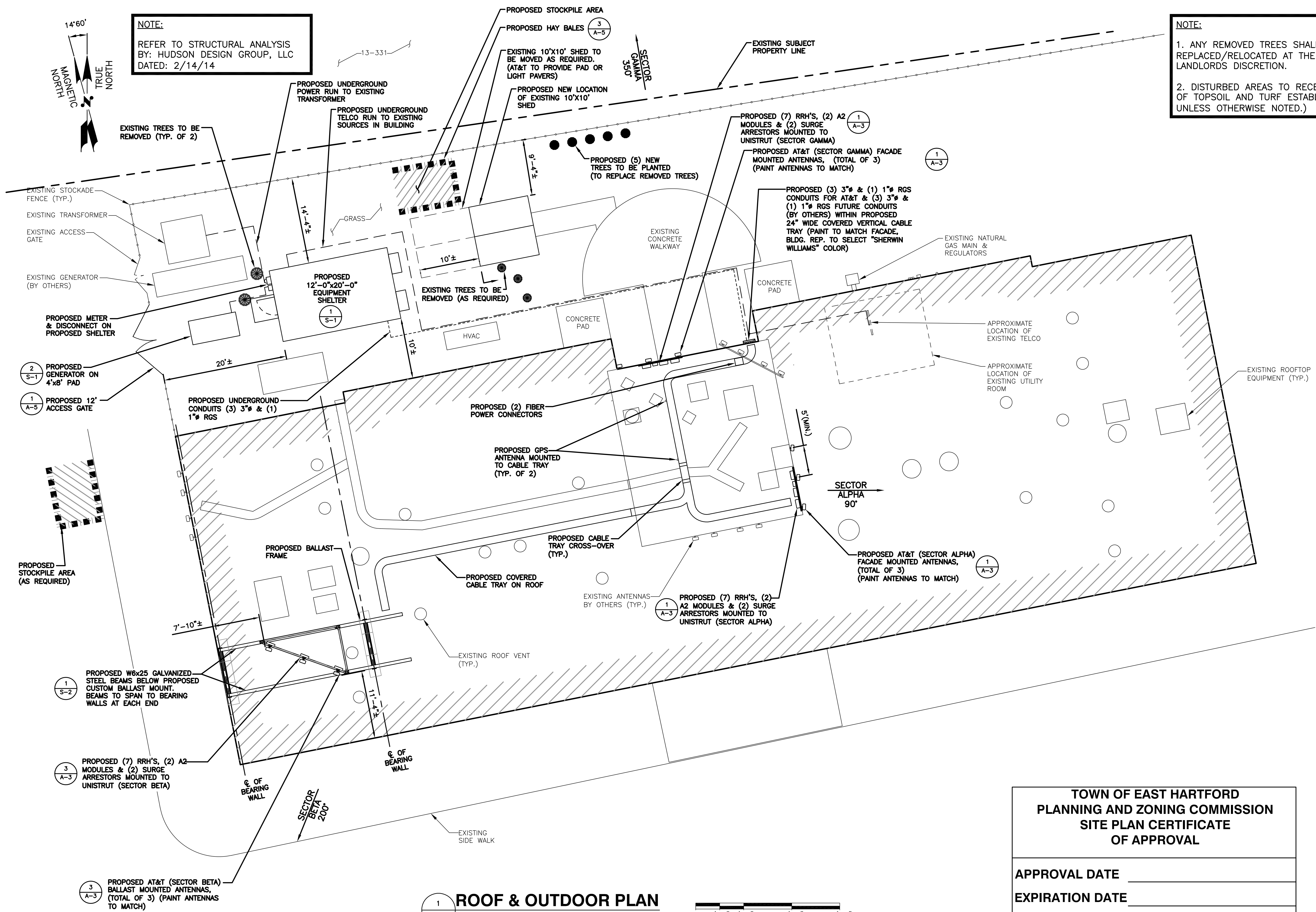
NOTE:

REFER TO STRUCTURAL ANALYSIS
BY: HUDSON DESIGN GROUP, LLC
DATED: 2/14/14

NOTE:

1. ANY REMOVED TREES SHALL BE REPLACED/RELOCATED AT THE LANDLORDS DISCRETION.

2. DISTURBED AREAS TO RECEIVE 6" OF TOPSOIL AND TURF ESTABLISHMENT UNLESS OTHERWISE NOTED.)



1 A-1 **ROOF & OUTDOOR PLAN**
SCALE: 1/8"=1'-0"

0 4'-0" 8'-0" 16'-0" 24'-0"

**TOWN OF EAST HARTFORD
PLANNING AND ZONING COMMISSION
SITE PLAN CERTIFICATE
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STATE OF CONNECTICUT DANIEL P. HAMM No.24178 LICENSED PROFESSIONAL ENGINEER

Daniel P Hamm

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CT2490
EAST HARTFORD -
886 MAIN

SITE ADDRESS:

886 MAIN ST
EAST HARTFORD, CT 06108

SHEET TITLE:

ROOF & OUTDOOR PLAN

SHEET NO:

A-1

RF TABLE						
SECTOR	SECTOR NAME	ANTENNA MAKE & MODEL	ANTENNA COUNT	AZIMUTH	RAD CENTER	# OF CABLES
1	ALPHA	CCI – OPA65R–LCUUH6	3 PROPOSED	90° *	117'±	(4) DC POWER & (2) FIBER
2	BETA	CCI – OPA65R–LCUUH6	3 PROPOSED	200°*	109'±	(4) DC POWER & (2) FIBER
3	GAMMA	CCI – OPA65R–LCUUH6	3 PROPOSED	350°*	117'±	(4) DC POWER & (2) FIBER

NOTE:

REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC DATED: 2/14/14

TOWN OF EAST HARTFORD
PLANNING AND ZONING COMMISSION
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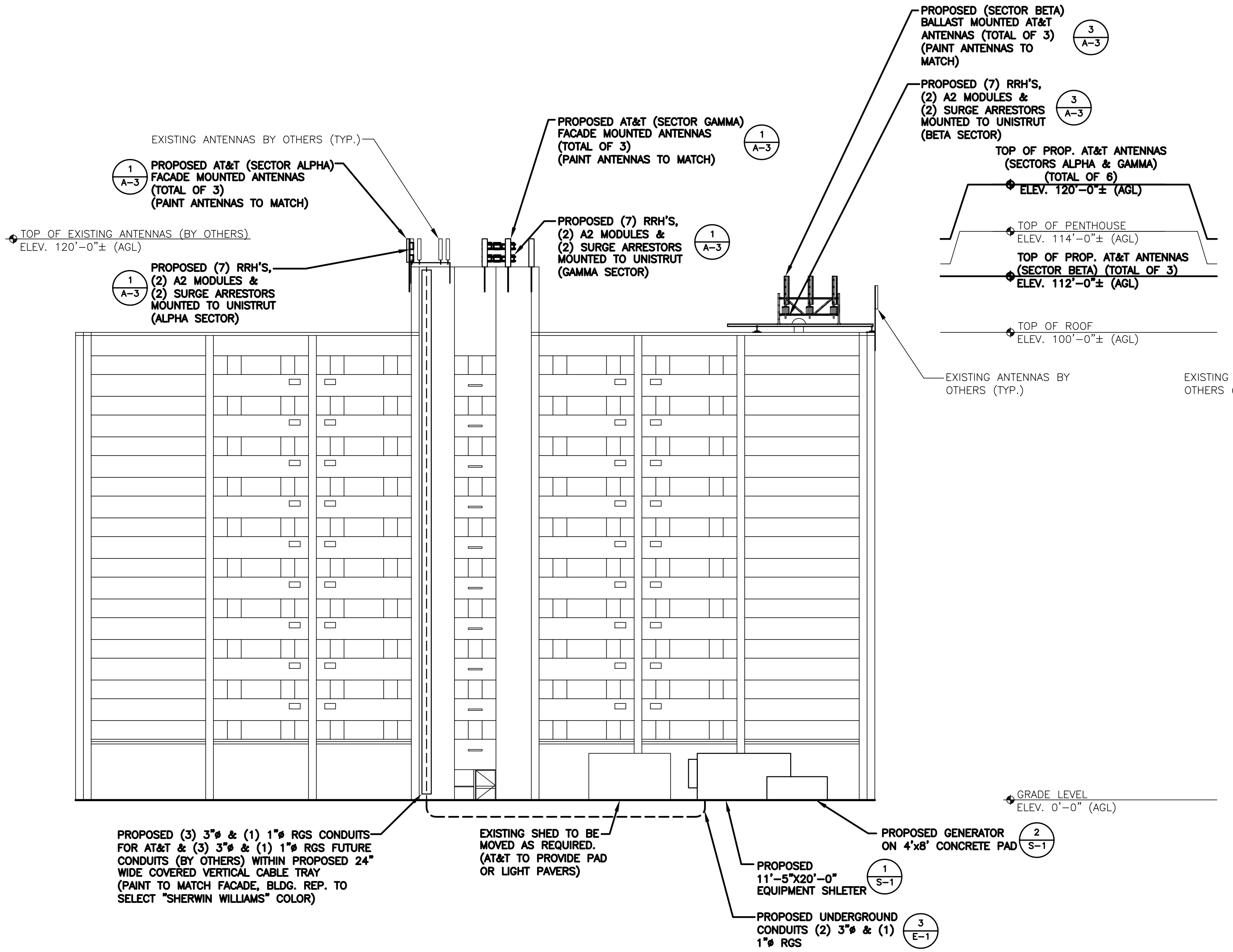
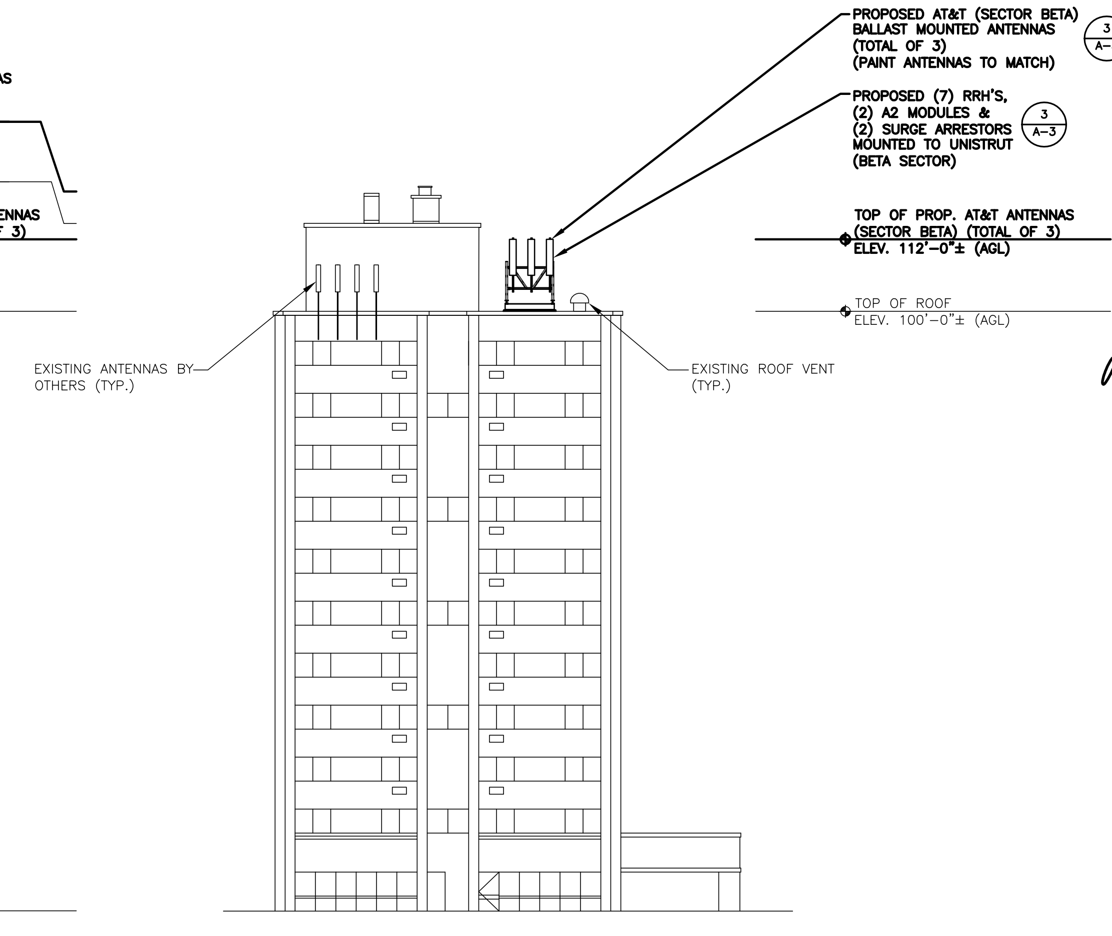
____________ **CHAIRMAN**



1 A-2 **NORTH ELEVATION**
SCALE: 1/16"=1'-0"

0 8'-0" 16'-0" 32'-0" 48'-0"



2 A-2 **WEST ELEVATION**
SCALE: 1/16"=1'-0"

0 8'-0" 16'-0" 32'-0" 48'-0"

NOTE:

ALL VERTICAL CABLE COVERS TO BE PAINTED OFF SITE. ALL APPLICABLE PROCEDURES TO BE USED WHILE PAINTING TO ASSURE OPTIMUM ADHESION. PAINT SYSTEM SHALL BE SHERWIN WILLIAMS PRODUCT DESIGNED FOR "DIRECT TO METAL" APPLICATION, THIS IS A TWO PART PROCESS WHICH INCLUDES AN ETCHING PRIMER. FINAL COLOR TO BE APPROVED BY THE LANDLORD.

at&t
500 ENTERPRISE DRIVE
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Daniel P Hamm

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EAST HARTFORD -
886 MAIN

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EAST HARTFORD, CT 06108

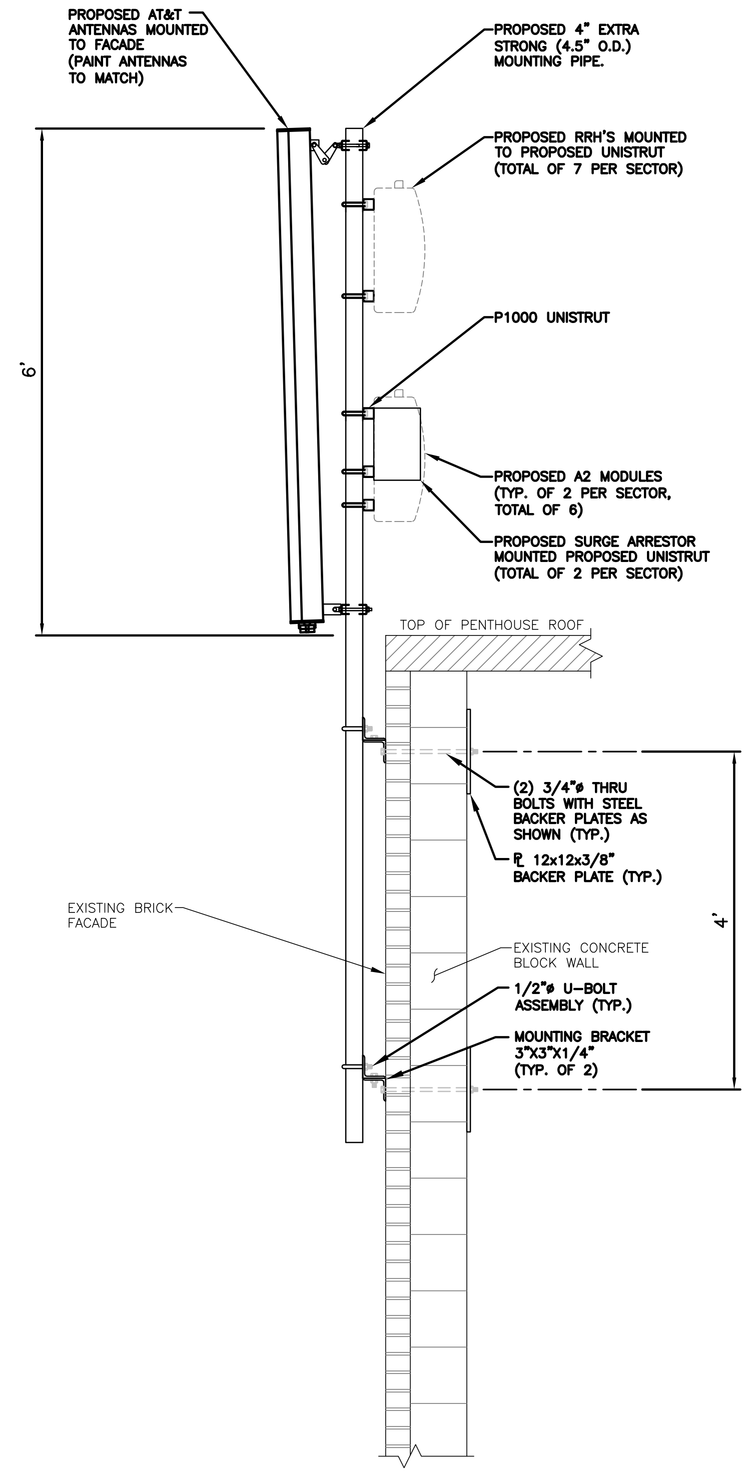
SHEET TITLE:

ELEVATIONS

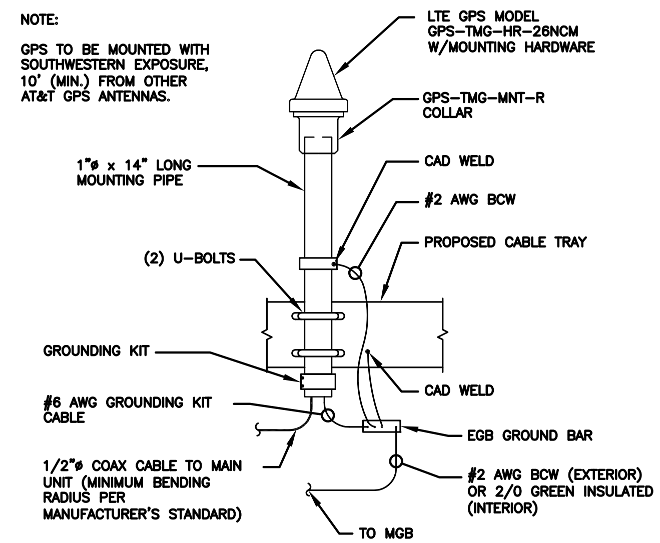
SHEET NO:

A-2

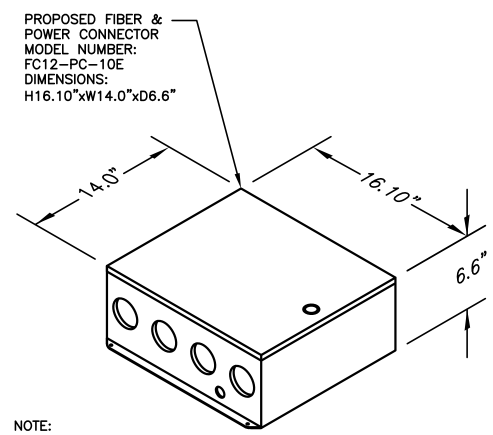
NOTE:
REFER TO STRUCTURAL ANALYSIS
BY: HUDSON DESIGN GROUP, LLC
DATED: 2/14/14



ANTENNA FACADE MOUNTING DETAIL
1 A-3 SCALE: N.T.S.

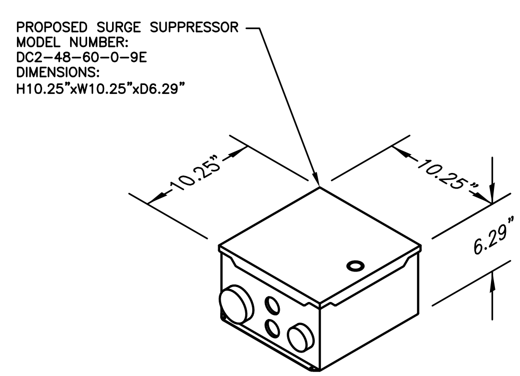


GPS MOUNTING DETAIL
2 A-3 SCALE: N.T.S.



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

FIBER & POWER CONNECTOR DETAIL
4 A-3 SCALE: N.T.S.

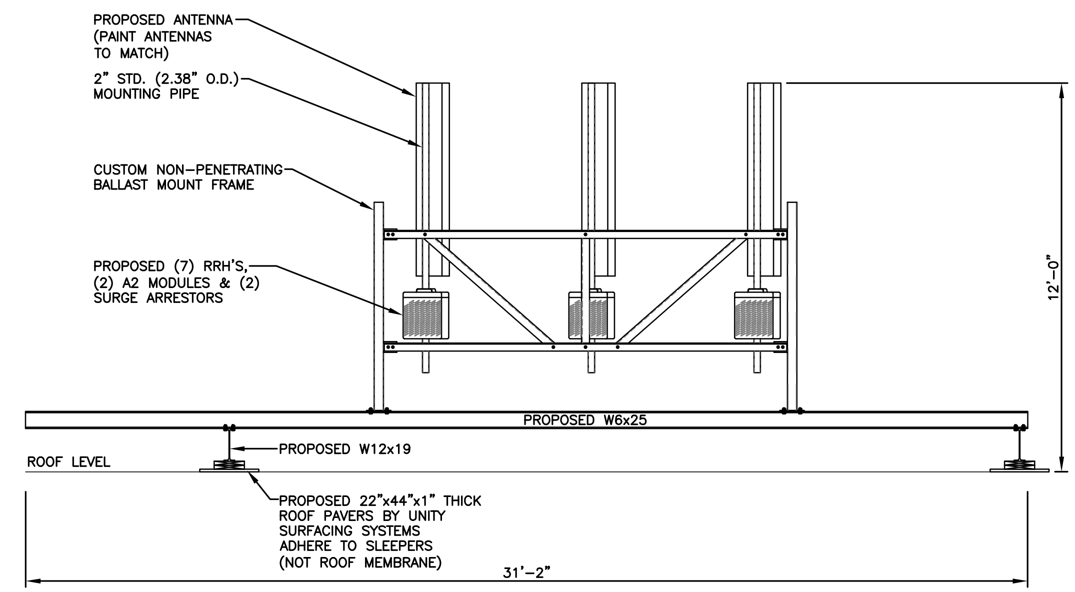


NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

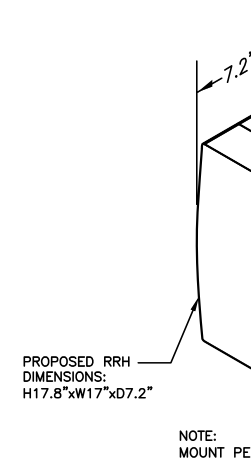
DC SURGE SUPPRESSOR DETAIL
5 A-3 SCALE: N.T.S.

TOWN OF EAST HARTFORD
PLANNING AND ZONING COMMISSION
SITE PLAN CERTIFICATE
OF APPROVAL

APPROVAL DATE ____________
EXPIRATION DATE ____________
____________ CHAIRMAN

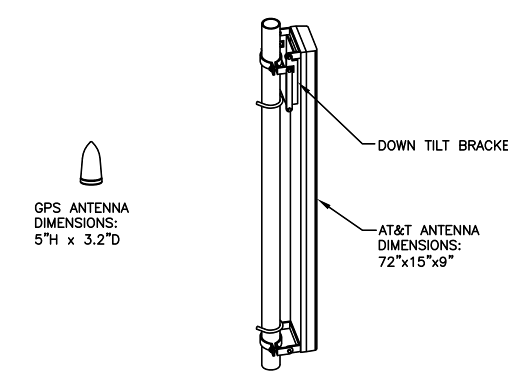


BALLAST MOUNT DETAIL BETA SECTOR
3 A-3 SCALE: N.T.S.

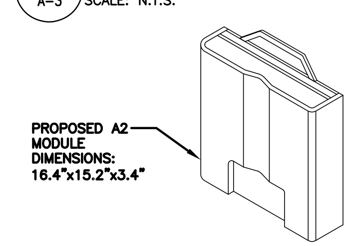


NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

RRH DETAIL
6 A-3 SCALE: N.T.S.



GPS AND ANTENNA DETAIL
7 A-3 SCALE: N.T.S.



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

A2 MODULE DETAIL
8 A-3 SCALE: N.T.S.

at&t
500 ENTERPRISE DRIVE
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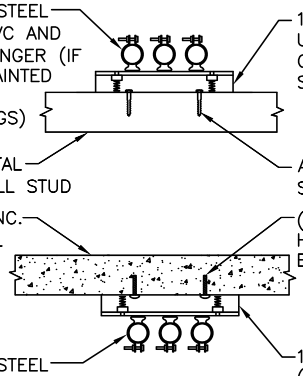
EAST HARTFORD -
886 MAIN

SITE ADDRESS:
886 MAIN ST
EAST HARTFORD, CT 06108

SHEET TITLE:
DETAILS

SHEET NO:
A-3



GALVANIZED STEEL CONDUIT/ PVC AND ANDREWS HANGER (IF EXTERIOR, PAINTED COLOR OF SURROUNDINGS)

1 ⅝" GALV. P1000 UNISTRUT (PAINTED COLOR OF SURROUNDINGS)

EXISTING METAL CEILING/ WALL STUD

ANCHORED W/ SHEET METAL SCREWS (2 PER UNISTRUT)

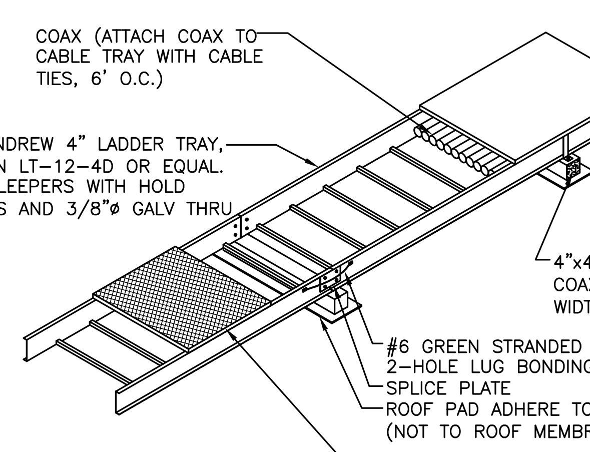
EXISTING CONC. CEILING/WALL

(2) ¼"⌀x1 ½" LG. HILTI HIT HY20 ANCHORS OR EQUAL

GALVANIZED STEEL CONDUIT AND ANDREWS HANGER (PAINTED COLOR OF SURROUNDINGS)

1 ⅝" GALV. P1000 UNISTRUT (PAINTED COLOR OF SURROUNDINGS)

1/A-4 CONDUIT RUN DETAIL
SCALE: N.T.S.



COAX (ATTACH COAX TO CABLE TRAY WITH CABLE TIES, 6' O.C.)

PROVIDE CABLE TRAY COVER (PAINTED WHITE, CONTINUOUS)

PROPOSED ANDREW 4" LADDER TRAY, 12" WIDE P/N LT-12-4D OR EQUAL. FASTEN TO SLEEPERS WITH HOLD DOWN CLAMPS AND 3/8"⌀ GALV THRU BOLTS

4"x4"x4' O.C. PVC SLEEPERS AND AT ALL COAX BRIDGE JOINTS. 6" LONGER THAN WIDTH OF CABLE TRAY. (SEE NOTE 1)

#6 GREEN STRANDED COPPER WITH 2-HOLE LUG BONDING JUMPER

SPLICE PLATE

ROOF PAD ADHERE TO SLEEPERS (NOT TO ROOF MEMBRANE)

4' LONG 3/4" MCNICHOLS GBB BAR GRATING W/(6) G-STYLE CLIP FASTENERS ((3) EA. SIDE). LOCATIONS OF GRATING TO BE SPECIFIED CONSTRUCTION MANAGER.

NUMBER OF COAXIAL CABLES	WIDTH OF CABLE TRAY	NOMINAL DEPTH OF CABLE TRAY
18	36"	4"
12	24"	4"
6	12"	4"

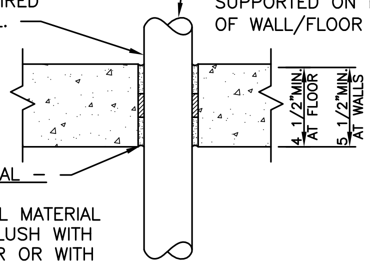
NOTE:
1. PVC SLEEPERS FILLED WITH CONCRETE EVERY 8'-0".

WORST CASE:
10' LONG COAX TRAY WEIGHT = 1.29 LB/FT x 10FT x 12 CABLES = 154.8 LB + (2) CONCRETE FILLED PVC SLEEPERS @ 25 LBS EACH = 50 LB. TOTAL = 204.8 LB APPROX.

2/A-4 CABLE TRAY DETAIL
SCALE: N.T.S.

PACKING MATERIAL: MIN 1-1/2 in. THICKNESS OF MIN 6 pcf MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.

ONE 2"⌀ SCHEDULE 40 PVC PIPE TO BE CENTERED WITHIN FIRESTOP SYSTEM. A NOM. ANNULAR SPACE OF 5/16" IS REQUIRED WITHIN THE FIRESTOP SYSTEM PIPE SHALL BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL/FLOOR ASSEMBLY



4 1/2"MIN AT FLOOR

5 1/2"MIN AT WALLS

FILL, VOID OR CAVITY MATERIAL – SEALANT: MIN 2 in. THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS, FLUSH WITH THE TOP SURFACE OF FLOOR OR WITH BOTH SURFACES OF WALL.

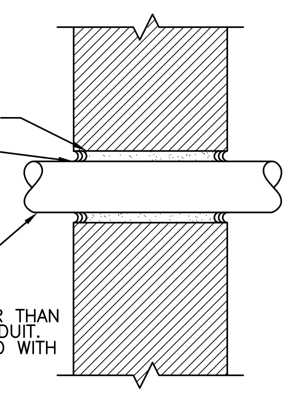
SPECIFIED TECHNOLOGIES INC: SPECSEAL SERIES SSS SEALANT OR SPECSEAL LCI SEALANT.

UL SYSTEM NUMBER: C-AJ-2057
F RATING - 2 HR.

PVC CONDUIT PENETRATION
DETAIL IN CONCRETE OR MASONRY

GROUT ALL VOIDS AROUND SLEEVES

SEALANT



CONDUIT

NOTE:
CORE HOLE 1 1/2" LARGER THAN THE DIAMETER OF THE CONDUIT. CORE DRILLS TO BE SEALED WITH ELASTOMERIC SEALANT.

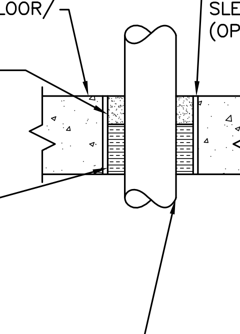
PIPE AND CONDUIT PENETRATION
DETAIL IN NON-RATED PARTITION

MAXIMUM PIPE DIAMETER (%)	MAXIMUM EMT	ANNULAR SPACE (in.)	FORMING MATERIAL THICKNESS (in.)	MINIMUM SEALANT THICKNESS (in.)	F RATING (HOURS)	T RATING (HOURS)
1-1/2	–	3/8 TO 2-1/8	2-1/2	2	3	1
6	4	3/8 TO 3/4	3-1/2	1	3	0
6	4	3/8 TO 1	2-1/2	2	3	0

CONCRETE FLOOR OR WALL ASSEMBLY, MINIMUM 4-1/2 in. THICKNESS FLOOR/ MINIMUM 6-1/2 in. WALL

STEEL SLEEVE (OPTIONAL)

TYPE AS OR TYPE SS: MINIMUM THICKNESS OF SEALANT AS SPECIFIED IN THE TABLE BELOW, APPLIED WITHIN THE OPENING, FLUSH WITH THE TOP SURFACE OF THE FLOOR OR BOTH SURFACES OF THE WALL.



FORMING MATERIAL: MINERAL WOOL INSULATION (MINIMUM 4.0 pcf) FIRMLY PACKED INTO THE OPENING AS A PERMANENT FORM; SEE TABLE FOR MINIMUM REQUIRED THICKNESS

METALLIC PIPE: STEEL PIPE: 6"⌀ (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE. CONDUIT: 4"⌀ (OR SMALLER) ELECTRICAL METALLIC TUBING (EMT) OR 6"⌀ RIGID STEEL CONDUIT.

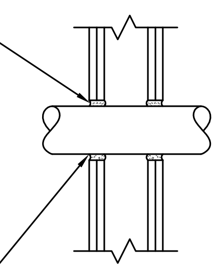
UL SYSTEM NUMBER: C-AJ-1020
F RATING - 3 HR.

PIPE AND CONDUIT PENETRATION
DETAIL IN CONCRETE OR MASONRY

WALL HR	MAX DIAM OF THROUGH PENETRANT in.	T RATING HR
1	2	1
1	1-1/4	1
2	2	1
2	1-1/4	1 1/2

THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED.

THROUGH PENETRANTS: ONE 2"⌀ NONMETALLIC PIPE, CONDUIT OR RACEWAY TO BE CENTERED WITHIN THE FIRESTOP SYSTEM. A NOM ANNULAR SPACE OF 5/16 in. IS REQUIRED WITHIN THE FIRESTOP SYSTEM. PIPE, CONDUIT OR RACEWAY TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF THE FLOOR OR WALL ASSEMBLY.



FILL, VOID OR CAVITY MATERIAL – SEALANT: MIN 5/8 in. THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. ADDITIONAL FILL MATERIAL TO BE INSTALLED SUCH THAT A MIN 1/4 in. THICK CROWN IS FORMED AROUND THE PENETRATING ITEM AND LAPPING 1 in. BEYOND THE PERIPHERY OF THE OPENING.

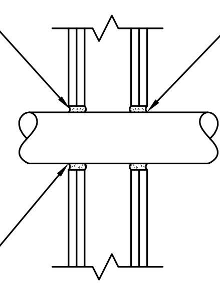
SPECIFIED TECHNOLOGIES INC: SPECSEAL SERIES SSS SEALANT, SPECSEAL LCI SEALANT.

UL SYSTEM NUMBER: W-L-2093
F RATING - 1 & 2 HR.

PVC CONDUIT PENETRATION
DETAIL IN GYPSUM WALLBOARD

PACKING MATERIAL: MIN. 1 in. THICKNESS OF MIN. 3.5 pcf FIBERGLASS INSULATION SHALL BE WRAPPED AROUND THE THROUGH-PENETRANT AND SECURED TOGETHER BY MEANS OF NO. 24 AWG STEEL TIE WIRE. PACKING MATERIAL SHALL BE CENTERED AT MID-DEPTH OF OPENING AND RECESSED FROM BOTH SURFACES OF WALL ASSEMBLY REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.

ONE 2"⌀ METALLIC PIPE OR CONDUIT TO BE CENTERED WITHIN FIRESTOP SYSTEM. PIPE SHALL BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL/FLOOR ASSEMBLY



FILL, VOID OR CAVITY MATERIAL – CAULK OR PUTTY: IN 2 HR FIRE RATED ASSEMBLIES MIN 3/4 IN. THICKNESS FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH BOTH SURFACES OF WALL. ADDITIONAL FILL MATERIAL TO BE INSTALLED SUCH THAT A MIN 1/4 in. CROWN IS FORMED AROUND THE PENETRATING ITEM. IN 1 HR FIRE RATED ASSEMBLIES, MIN 5/8 in. THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS ON BOTH SURFACES OF WALL. ADDITIONAL FILL MATERIAL TO BE INSTALLED SUCH THAT A MIN 3/8 in. CROWN IS FORMED AROUND THE PENETRATING ITEM AND LAPPING 1 in. BEYOND THE PERIPHERY OF THE OPENING.

UL SYSTEM NUMBER: W-L-1029
F RATING - 1 & 2 HR.

SPECIFIED TECHNOLOGIES INC: SPECSEAL SERIES SSS SEALANT, SPECSEAL LCI SEALANT OR SPECSEAL PUTTY.

PIPE AND CONDUIT PENETRATION
DETAIL IN GYPSUM WALLBOARD

3/A-4 PENETRATION DETAILS
SCALE: N.T.S.

ALL CORES THROUGH ELECTRIC ROOMS TO BE FIRE-STOPPED.

USE FULL CONDUIT RUNS THROUGH PENETRATIONS

TOWN OF EAST HARTFORD
PLANNING AND ZONING COMMISSION
SITE PLAN CERTIFICATE
OF APPROVAL

APPROVAL DATE ____________________

EXPIRATION DATE ____________________

____________________ **CHAIRMAN**

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500 ENTERPRISE DRIVE
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27 NORTHWESTERN DR
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FAX: (978)-336-5586

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

Daniel P Hamm

LICENSED ENGINEER   DATE

REVISIONS

REV. #	DATE	DESCRIPTION
5	08/20/14	REVISED FOR CONSTRUCTION
4	07/22/14	REVISED FOR CONSTRUCTION
3	06/23/14	REVISED FOR CONSTRUCTION
2	02/20/14	REVISED FOR CONSTRUCTION
1	05/29/13	ISSUED FOR CONSTRUCTION
0	04/18/13	ISSUED FOR REVIEW

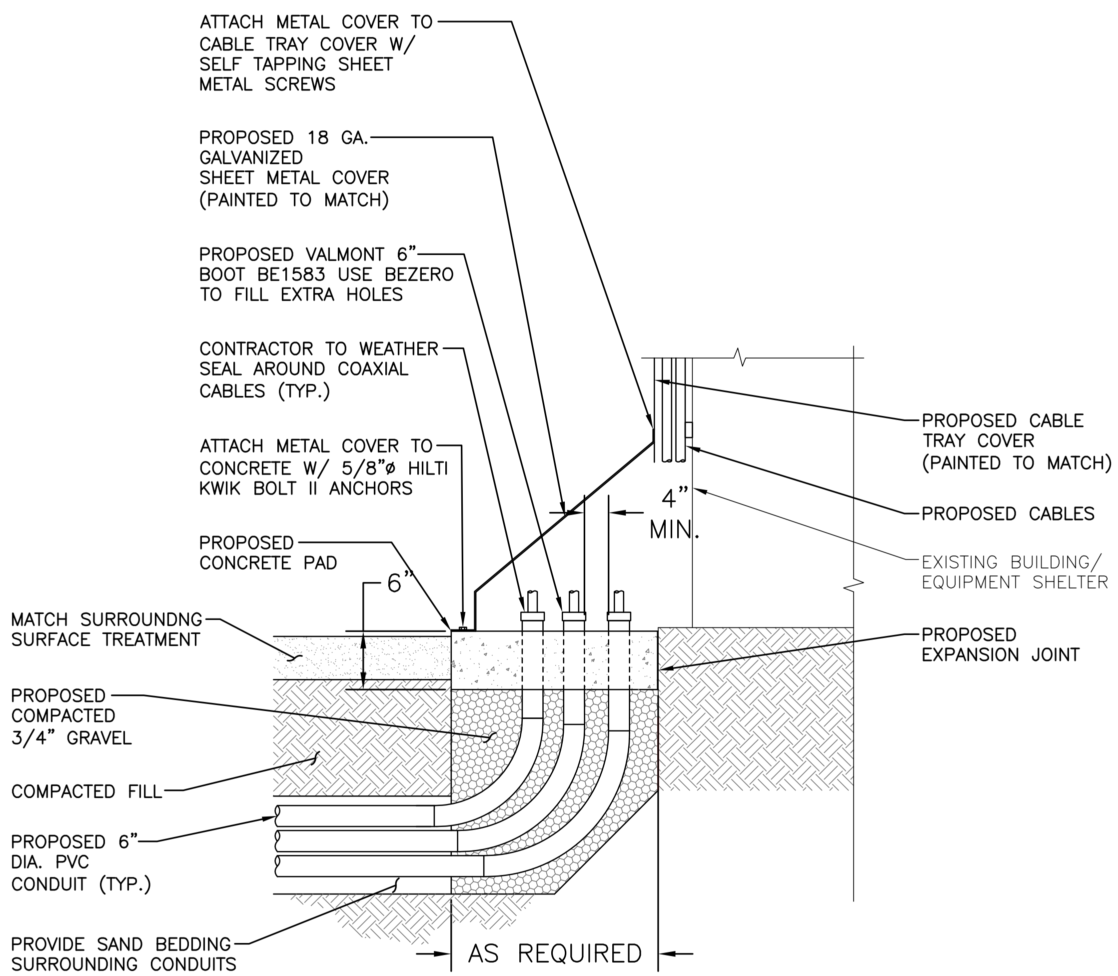
PROJECT NO.		SCALE:
CT2490	DESIGNED BY: AT DRAWN BY: SB CHECK'D BY: DPH	AS SHOWN

SITE NAME:
CT2490
EAST HARTFORD - 886 MAIN

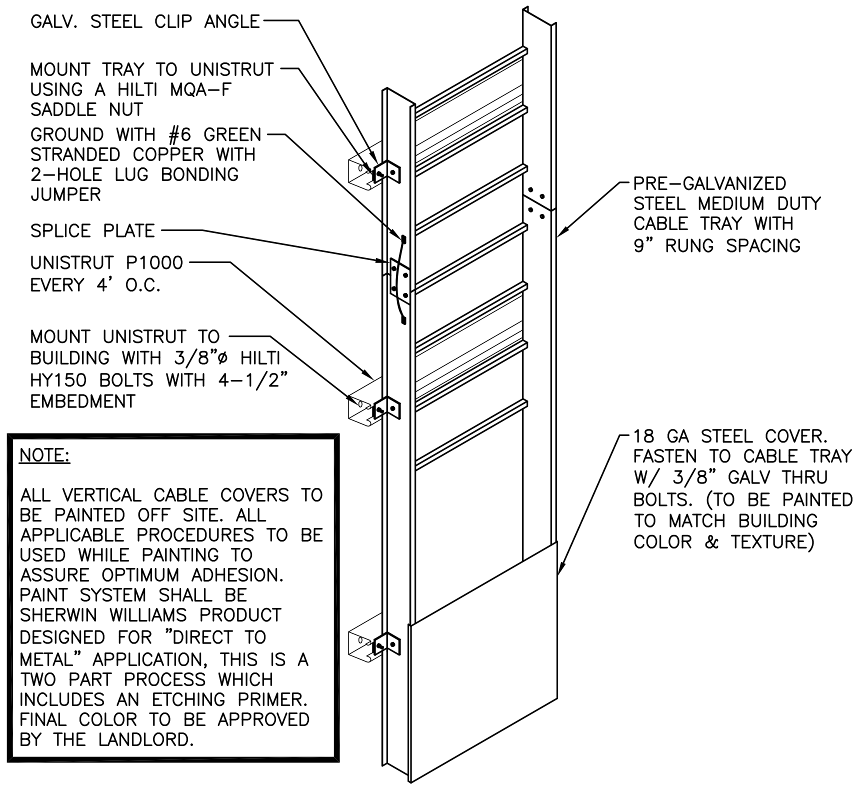
SITE ADDRESS:
886 MAIN ST
EAST HARTFORD, CT 06108

SHEET TITLE:
DETAILS

SHEET NO:
A-4



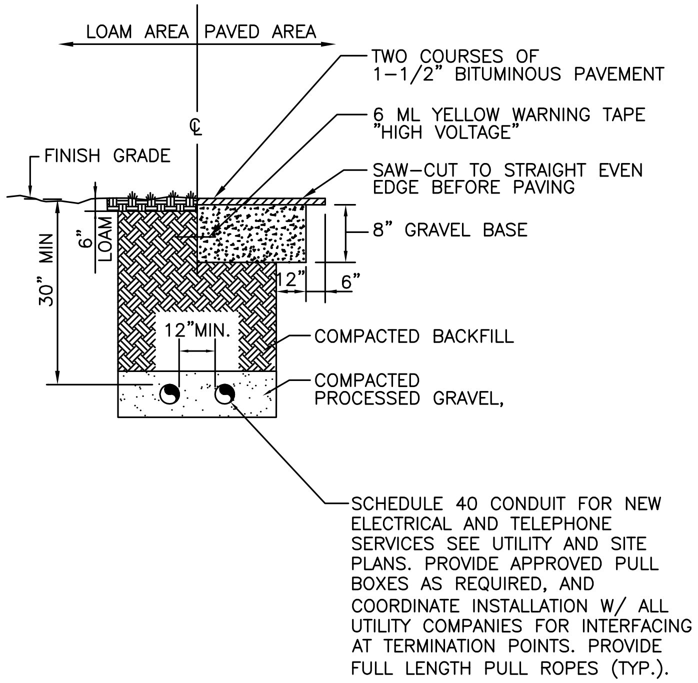
1 / A-5 **CABLE TRANSITION @ BUILDING**
SCALE: N.T.S.



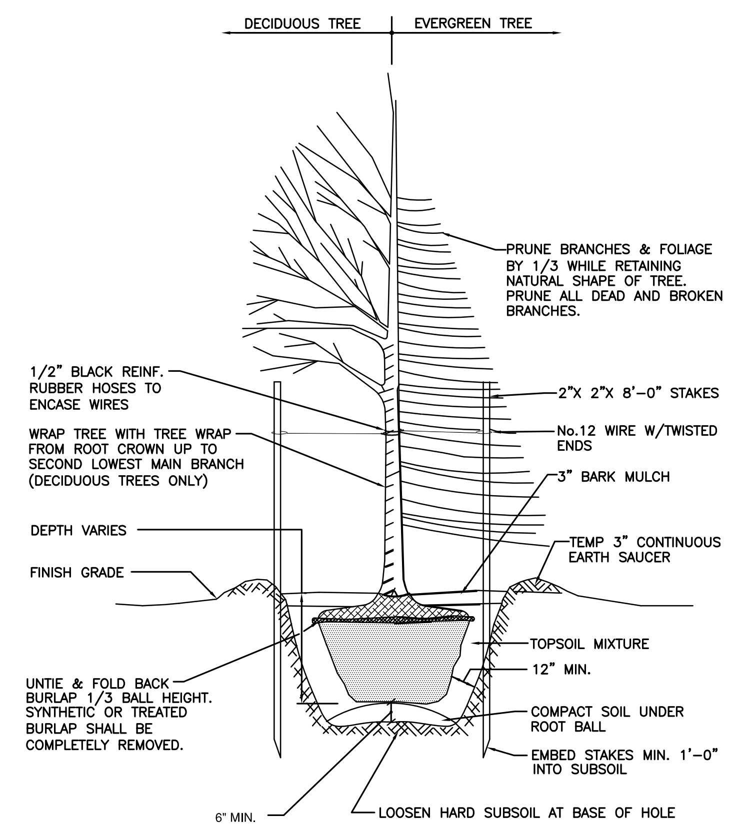
NOTE:

ALL VERTICAL CABLE COVERS TO BE PAINTED OFF SITE. ALL APPLICABLE PROCEDURES TO BE USED WHILE PAINTING TO ASSURE OPTIMUM ADHESION. PAINT SYSTEM SHALL BE SHERWIN WILLIAMS PRODUCT DESIGNED FOR "DIRECT TO METAL" APPLICATION, THIS IS A TWO PART PROCESS WHICH INCLUDES AN ETCHING PRIMER. FINAL COLOR TO BE APPROVED BY THE LANDLORD.

3 / A-5 **VERTICAL CABLE TRAY DETAIL**
SCALE: N.T.S.



3 / A-5 **BURIED CONDUIT DETAIL**
SCALE: N.T.S.



NOTES:
1. LANDSCAPE TREES SHALL BE A MINIMUM OF 6'-0" IN HEIGHT WHEN PLANTED.
2. SPECIES PROPOSED THUJA OCCIDENTALIS PYRAMIDAL (PYRAMIDAL ARBORVITAE)

4 / A-5 **PLANTING DETAIL**
SCALE: N.T.S.

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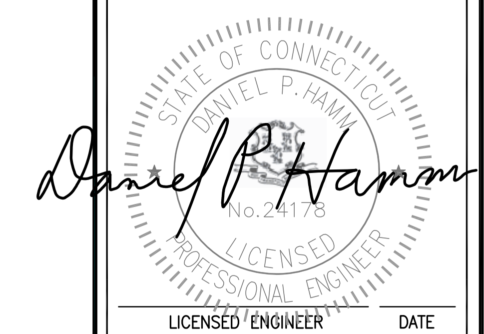

LICENSED ENGINEER DATE

REVISIONS

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CT2490	DRAWN BY: SB	AS SHOWN
	CHECK'D BY: DPH	

SITE NAME:

CT2490
EAST HARTFORD - 886 MAIN

SITE ADDRESS:

886 MAIN ST
EAST HARTFORD, CT 06108

SHEET TITLE:

DETAILS

SHEET NO:

A-5

EROSION CONTROL

CONSTRUCTION SEQUENCE

1) NOTIFY THE TOWN INLAND WETLANDS AGENT AT LEAST ONE WEEK PRIOR TO THE PRE-CONSTRUCTION MEETING.
2) COMPLETE A "CALL BEFORE YOU DIG" PRIOR TO ANY ON SITE ACTIVITY. RECALL EVERY 30 DAYS.
3) CUT AND STUMP AREAS OF PROPOSED CONSTRUCTION.
4) INSTALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES AS REQUIRED.
5) WOOD CHIPS GENERATED FROM CLEARING ACTIVITIES MAY BE USED AS A TEMPORARY STABILIZATION MEASURE IN ADDITION TO SILT FENCING & HAY BALES.
6) INSTALL HAY BALES TO "BACK UP" SILTATION FENCE ALONG ALL DOWNGRADIENT WETLANDS BOUNDARIES.
7) ESTABLISH ROADWAY CENTERLINE WITH GRADE STAKES AND OFF SETS.
8) STOCKPILE EXCAVATED SOILS A MINIMUM OF 75 FEET FROM ANY WETLAND AREA.
9) CONSTRUCT CLOSED DRAINAGE SYSTEM. PROTECT CULVERT INLETS WITH SEDIMENTATION BARRIERS.
10) ROUGH GRADE DITCH STARTING FROM THE DOWNGRADIENT LOCATION
11) INSTALL STONE LINING AND LEVEL SPREADERS AT CULVERT OUTLETS
12) STABILIZE GRADED SLOPES.
13) CONSTRUCT ROADWAYS AND PERFORM SITE GRADING, PLACING HAY BALES AND SILTATION FENCES AS REQUIRED TO CONTROL SOIL EROSION.
14) EXCAVATE FOR ANY SUBSURFACE UTILITIES.
15) STOCKPILE EXCAVATED SOILS A MINIMUM OF 75 FEET FROM ANY WETLAND AREA.
16) ESTABLISH SEDIMENT AND EROSION CONTROLS AROUND STOCKPILE SOILS.
17) INSTALL UTILITY SERVICES
18) INSTALL STORM DRAINAGE STARTING AT THE MOST DOWNGRADIENT LOCATION.
19) INSTALL ALL RIP RAP AT OUTLETS FOR STORM DRAINAGE.
20) INSTALL HAY BALE PROTECTION TO STORM DRAINAGE INLETS.
21) INSTALL ROAD
22) BEGIN TEMPORARY AND PERMANENT SEEDING AND MULCHING. ALL CUT AND FILL SLOPES SHALL BE SEEDED OR MULCHED IMMEDIATELY AFTER THEIR CONSTRUCTION. NO AREA SHALL BE LEFT UNSTABILIZED FOR A TIME PERIOD OF MORE THAN 30 DAYS.
23) DAILY, OR AS REQUIRED, CONSTRUCT, INSPECT, AND IF NECESSARY, RECONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, SILT FENCES AND SEDIMENT TRAPS INCLUDING MULCHING AND SEEDING.
24) BEGIN EXCAVATION FOR AND CONSTRUCTION OF TOWERS AND PLATFORMS.
25) FINISH PAVING ALL ROADWAYS, DRIVES, AND PARKING AREAS.
26) COMPLETE PERMANENT SEEDING AND LANDSCAPING.
27) NO FLOW SHALL BE DIVERTED TO ANY WETLANDS UNTIL A HEALTHY STAND OF GRASS HAS BEEN ESTABLISHED IN REGRADED AREAS.
28) AFTER GRASS HAS BEEN FULLY GERMINATED IN ALL SEEDED AREAS, REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.

IMPACT OF STORMWATER DURING CONSTRUCTION ACTIVITY

ALL SEDIMENT CONTROLS, INCLUDING SILTATION FENCES AND HAY BALES MUST BE INSPECTED WEEKLY OR IMMEDIATELY AFTER A STORMWATER RUNOFF GENERATING EVENT. ALL SEDIMENT CONTROLS MUST BE MAINTAINED IN AN EFFECTIVE CONDITION.

IN THE EVENT THAT STORMWATER IS FLOWING IN THE EXISTING/PROPOSED DRAINAGE SWALE, THE FOLLOWING MUST BE NOTED:

1) BY INSTALLING THE STORM DRAINAGE STARTING AT THE MOST DOWNGRADIENT LOCATION, AND BY CONSTRUCTION THE DITCH STARTING AT THE MOST DOWNGRADIENT LOCATION, STORMWATER FLOW WILL NOT BE IMPOUNDED DURING THE CONSTRUCTION ACTIVITY.
2) ADDITIONAL MEASURES MUST BE TAKEN DURING TIMES OF RAIN OR FLOW. THESE INCLUDE THE CESSATION OF ALL CONSTRUCTION ACTIVITY IN THE DRAINAGE SWALES AT TIMES OF "HEAVY RAIN" OR "SIGNIFICANT FLOW" WHICH HAVE THE POTENTIAL TO CAUSE SOIL SCOURING. IN THE ABSENCE OF AN ON SITE AGREEMENT WITH THE TOWN INLAND WETLANDS AGENT.

CONSTRUCTION SPECIFICATIONS - SILT FENCE

1) THE GEOTEXTILE FABRIC SHALL MEET THE DESIGN CRITERIA FOR SILT FENCES.
2) THE FABRIC SHALL BE EMBEDDED A MINIMUM OF 8 INCHES INTO THE GROUND AND THE SOIL COMPACTED OVER THE EMBEDDED FABRIC.
3) WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES OR STAPLES.
4) FILTER CLOTH SHALL BE FASTENED SECURELY TO THE WOVEN WIRE FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP, MID-SECTION AND BOTTOM.
5) WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED.
6) FENCE POSTS SHALL BE A MINIMUM OF 36 INCHES LONG AND DRIVEN A MINIMUM OF 16 INCHES INTO THE GROUND. WOOD POSTS SHALL BE OF SOUND QUALITY HARDWOOD AND SHALL HAVE A MINIMUM CROSS SECTIONAL AREA OF 3.0 SQUARE INCHES.
7) MAINTENANCE SHALL BE PERFORMED AS NEEDED TO PREVENT BULGES IN THE SILT FENCE DUE TO DEPOSITION OF SEDIMENT.

MAINTENANCE - SILT FENCE

1) SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS THAT ARE REQUIRED SHALL BE MADE IMMEDIATELY.
2) IF THE FABRIC ON A SILT FENCE SHOULD DECOMPOSE OR BECOME INEFFECTIVE DURING THE EXPECTED LIFE OF THE FENCE, THE FABRIC SHALL BE REPLACED PROMPTLY.
3) SEDIMENT SHOULD BE INSPECTED AFTER EVERY STORM EVENT. THE DEPOSITS SHOULD BE REMOVED WHEN THEY REACHED APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
4) SEDIMENT DEPOSITS THAT ARE REMOVED OR LEFT IN PLACE AFTER THE FABRIC HAS BEEN REMOVED SHALL BE GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VEGETATED.

EROSION CONTROL MEASURES:

THE CONTRACTOR (TO BE NAMED PRIOR TO ANY WORK BEING PERFORMED) IS ASSIGNED THE RESPONSIBILITY FOR IMPLEMENTING THIS EROSION AND SEDIMENT CONTROL PLAN. THIS RESPONSIBILITY INCLUDES THE INSTALLATION AND MAINTENANCE OF CONTROL MEASURES, INFORMING ALL PARTIES ENGAGED ON THE CONSTRUCTION SITE OF THE REQUIREMENTS AND OBJECTIVES OF THE PLAN, NOTIFYING THE PLANNING AND ZONING OFFICE OF ANY TRANSFER OF THIS RESPONSIBILITY, AND FOR CONVEYING A COPY OF THE EROSION AND SEDIMENT CONTROL PLAN IF THE TITLE TO THE LAND IS TRANSFERRED.

1) DISTURBED AREAS SHALL BE KEPT TO THE MINIMUM AREA NECESSARY TO CONSTRUCT THE ROADWAYS AND ASSOCIATED DRAINAGE FACILITIES.
2) HAY BALE BARRIERS AND SEDIMENT TRAPS SHALL BE INSTALLED AS REQUIRED. BARRIERS AND TRAPS ARE TO BE MAINTAINED AND CLEANED UNTIL ALL SLOPES HAVE A HEALTHY STAND OF GRASS.
3) BALED HAY AND MULCH SHALL BE MOWINGS OF ACCEPTABLE HERBACEOUS GROWTH, FREE FROM NOXIOUS WEEDS OR WOODY STEMS, AND SHALL BE DRY. NO SALT HAY SHALL BE USED.
4) FILL MATERIAL SHALL BE FREE FROM STUMPS, WOOD, ROOTS, ETC.
5) STOCKPILED MATERIALS SHALL BE PLACED ONLY IN NON RESTRICTED WETLAND AREAS ON PLANS. STOCKPILES SHALL BE PROTECTED BY SILTATION FENCE AND SEEDED TO PREVENT EROSION. THESE MEASURES SHALL REMAIN UNTIL ALL MATERIAL HAS BEEN PLACED OR DISPOSED OFF SITE.
6) ALL DISTURBED AREAS SHALL BE LOAMED AND SEEDED. A MINIMUM OF 4 INCHES OF LOAM SHALL BE INSTALLED WITH NOT LESS THAN ONE POUND OF SEED PER 50 SQUARE YARDS OF AREA. SLOPES 2:1 OR GRATED TO BE STABILISED WITH TURF REINFORCEMENT MAT TYPE P300P NORTH AMERICAN GREEN (1-800-772-2040), OR ENGINEER APPROVED EQUAL.
7) APPLICATION OF GRASS SEED, FERTILIZERS AND MULCH SHALL BE ACCOMPLISHED BY BROADCAST SEEDING OR HYDROSEEDING AT THE RATES OUTLINED BELOW:

LIMESTONE: 75-100 LBS./1,000 SQUARE FEET.
FERTILIZER: RATE RECOMMENDED BY MANUFACTURER.
MULCH: HAY MULCH APPROXIMATELY 3 TONS/ACRE UNLESS EROSION CONTROL MATTING IS USED.

SEED MIX (SLOPES LESS THAN 4:1)	LBS./ACRE
CREEPING RED FESCUE	20
TALL FESCUE	20
RED TOP	2
	42

SLOPE MIX (SLOPES GREATER TAN 4:1)	LBS./ACRE
CREEPING RED FESCUE	20
TALL FESCUE	20
BIRDSFOOT TREEFOIL	8
	48

8) AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED THE TEMPORARY EROSION CONTROL MEASURES ARE TO BE REMOVED.
9) PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.
10) ALL CATCH BASIN INLETS WILL BE PROTECTED WITH LOW POINT SEDIMENTATION BARRIER.
11) ALL STORM DRAINAGE OUTLETS WILL BE STABILIZED AND CLEANED AS REQUIRED, BEFORE THE DISCHARGE POINTS BECOME OPERATIONAL.
12) ALL DEWATERING OPERATIONS MUST DISCHARGE DIRECTLY INTO A SEDIMENT FILTER AREA.
13) NO DISCHARGE SHALL BE DIRECTED TOWARDS ANY PROPOSED DITCHES, SWALES, OR PONDS UNTIL THEY HAVE BEEN PROPERLY STABILIZED.

CONSTRUCTION SPECIFICATIONS - STRAW OR HAY BALES

1) BALES SHALL BE PLACED IN A ROW WITH THE ENDS TIGHTLY ADJOINING.
2) EACH BALE SHALL BE EMBEDDED IN THE GROUND A MINIMUM OF 4 INCHES.
3) BALES SHALL BE ANCHORED IN PLACE BY AT LEAST TWO STAKES DRIVEN THROUGH THE BALE. THE STAKES SHALL BE DRIVEN AT LEAST 18 INCHES INTO THE GROUND.
4) BARRIERS SHALL BE INSPECTED AFTER EVERY RAINFALL AND PROMPTLY REPAIRED FOR REPLACED AS NECESSARY.
5) BALES SHALL BE REMOVED WHEN NO LONGER NEEDED AND THE SEDIMENT COLLECTED SHALL BE DISPOSED OF PROPERLY.

MAINTENANCE - STRAW OR HAY BALES

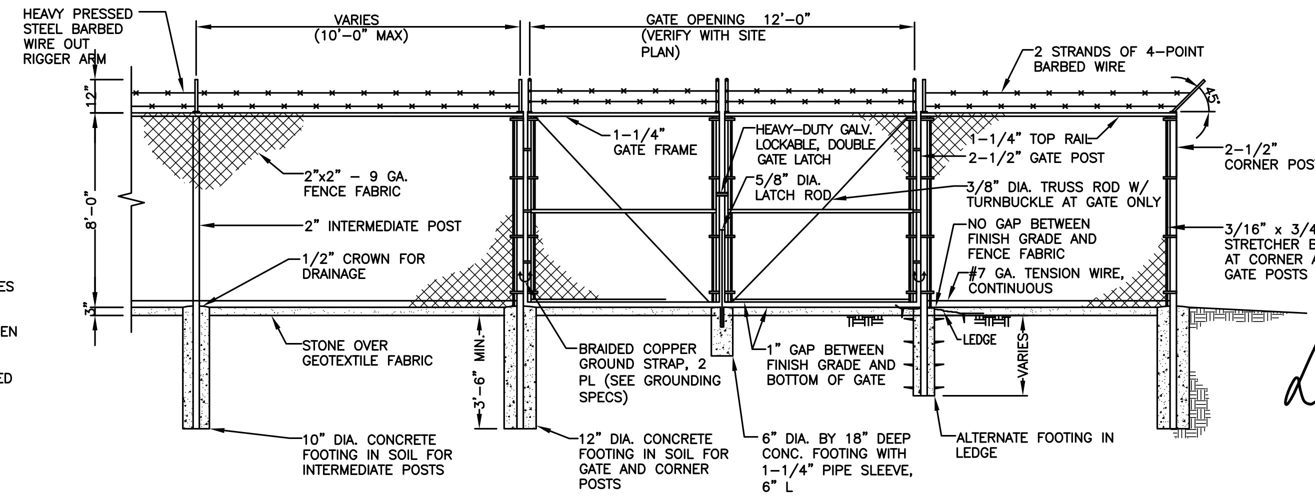
1) STRAW OR HAY BALES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.
2) CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED BALES, UNDERCUTTING BENEATH THE BALES, AND FLOW AROUND THE END OF THE BALES.
3) NECESSARY REPAIRS OR REPLACEMENT OF BALES SHALL BE ACCOMPLISHED PROMPTLY.
4) SEDIMENT DEPOSITS SHOULD BE CHECKED AFTER EACH RAINFALL. THE DEPOSITS SHOULD BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF OF THE HEIGHT OF THE TABLE.
5) SEDIMENT DEPOSITS THAT ARE REMOVED OR LEFT IN PLACE AFTER THE BARRIER HAS BEEN DISMANTLED SHALL BE GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VEGETATED USING THE APPROPRIATE VEGETATIVE BMP.

TOWN OF EAST HARTFORD
PLANNING AND ZONING COMMISSION
SITE PLAN CERTIFICATE
OF APPROVAL

APPROVAL DATE ____________

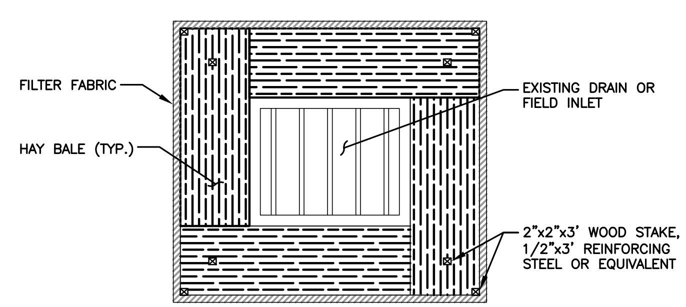
EXPIRATION DATE ____________

____________ CHAIRMAN

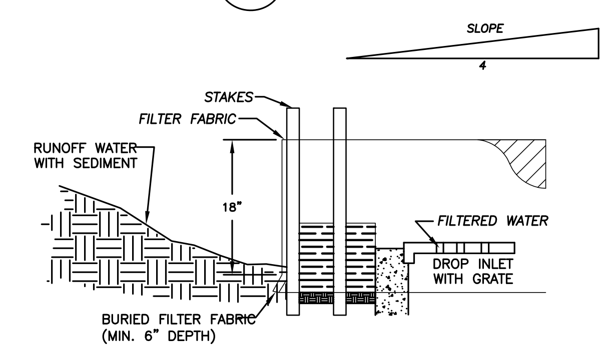


CHAIN LINK FENCE DETAIL (1 / A-5)

SCALE: N.T.S.



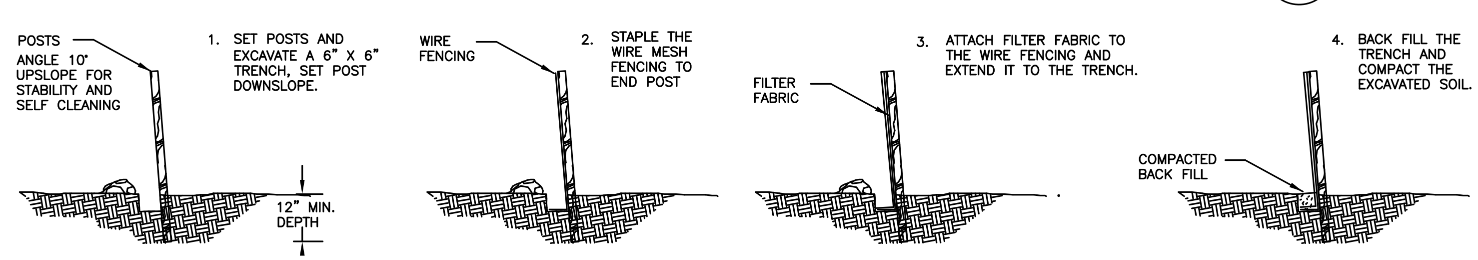
PLAN VIEW



ELEVATION

INLET PROTECTION (TYPE 3) (2 / A-5)

SCALE: N.T.S.



SEDIMENTATION CONTROL BARRIER (3 / A-5)

SCALE: N.T.S.

at&t
500 ENTERPRISE DRIVE
ROCKY HILL, CT 06067

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27 NORTHWESTERN DR
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FAX: (978)-336-5586

STATE OF CONNECTICUT · DANIEL P. HAMM · No. 24178 · LICENSED PROFESSIONAL ENGINEER

Daniel P Hamm

LICENSED ENGINEER   DATE

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CT2490	AT / SB / DPH	AS SHOWN

SITE NAME:

CT2490
EAST HARTFORD -
886 MAIN

SITE ADDRESS:

886 MAIN ST
EAST HARTFORD, CT 06108

SHEET TITLE:

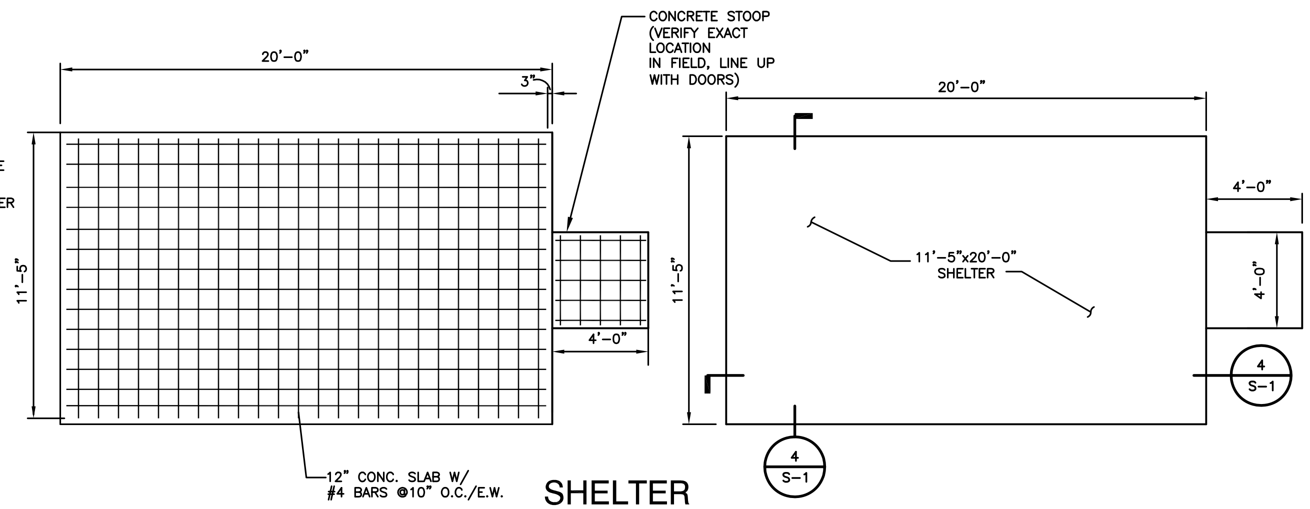
EROSION CONTROL
DETAILS & NOTES

SHEET NO:

A-6

FOUNDATION NOTES & CONCRETE SPECIFICATIONS

1. FOUNDATION AREA SHALL BE EXCAVATED TO THE DEPTH AND DIMENSIONS SHOWN ON THE PLANS. EXISTING LEDGE AND ALL OTHER EXISTING UNSUITABLE MATERIAL SHALL BE REMOVED AND LEGALLY DISPOSED OF OFF-SITE. THE SUBGRADE SHALL BE ROLLED WITH A 1-TON, VIBRATORY, WALK-BEHIND ROLLER AT A SPEED OF LESS THAN 2 FPS, 6 PASSES MINIMUM, TO PROVIDE UNYIELDING SURFACE.
2. UNDERCUT SOFT OR "WEAVING" AREAS A MINIMUM OF 12 INCHES DEEP. BACKFILL UNDERCUT AREA WITH FILL MEETING THE SPECIFICATIONS OF STRUCTURAL FILL. (SEE NOTE #3)
3. CONCRETE TO HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH (f'c)=4000 psi. CONCRETE TO BE AIR ENTRAINED, DESIRED AIR CONTENT TO BE 6% (PLUS OR MINUS 2%)
4. BAR REINFORCING TO BE ASTM A615 GRADE 60.
5. WELDED WIRE FABRIC TO CONFORM TO THE REQUIREMENTS OF ASTM A185. WIRES FOR FABRIC TO CONFORM TO THE REQUIREMENTS OF ASTM A82.
6. COORDINATE WITH MANUFACTURER OF PREFABRICATED SHELTER FOR LOCATION OF ATTACHMENTS TO BASE SLAB.
7. ALL REINFORCING TO HAVE 2" MINIMUM CONCRETE COVER.
8. ALL CONCRETE MATERIALS AND WORKMANSHIP SHALL CONFORM TO LATEST EDITION OF ACI 318 BUILDING CODE, AND IBC 2009.



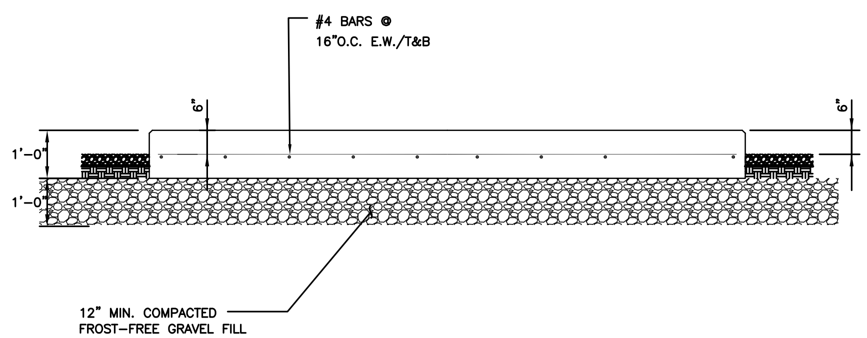
1 S-1 SHELTER FOUNDATION PLAN
NOT TO SCALE

TOWN OF EAST HARTFORD PLANNING AND ZONING COMMISSION SITE PLAN CERTIFICATE OF APPROVAL

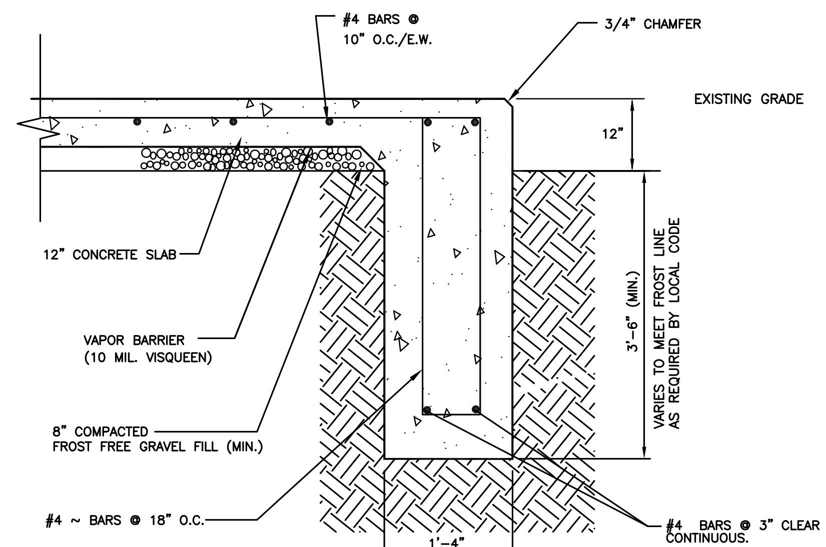
APPROVAL DATE ____________

EXPIRATION DATE ____________

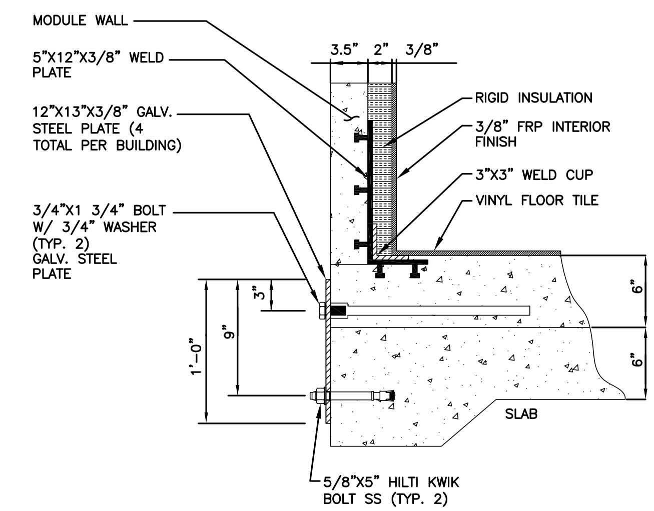
____________ **CHAIRMAN**



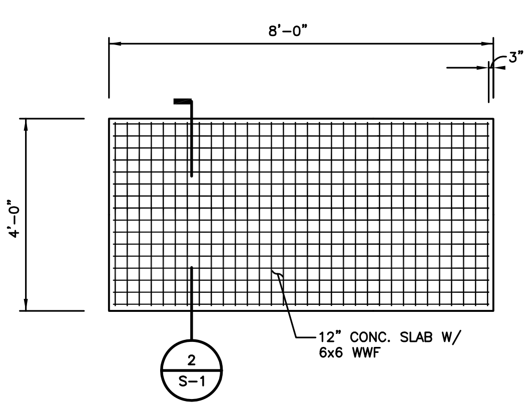
2 S-1 GENERATOR CONCRETE SLAB DETAIL
NOT TO SCALE



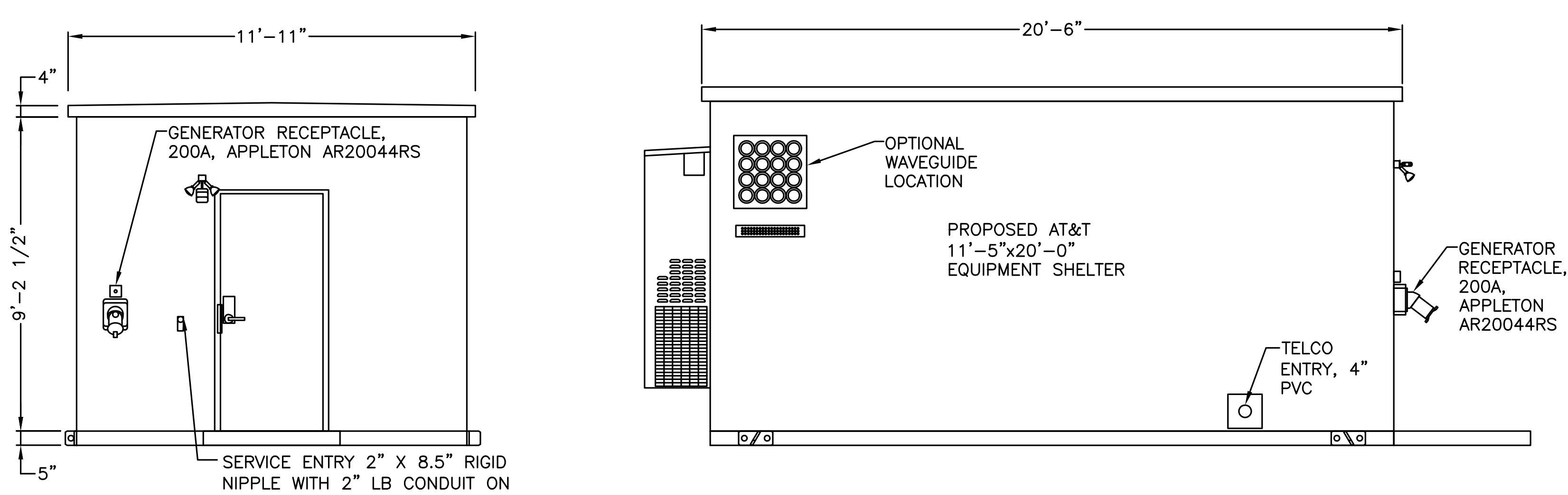
4 S-1 SECTION @ CONCRETE SLAB
SCALE: 3/4" = 1'-0"
0 0'-8" 1'-4" 2'-8" 4'-0"



5 S-1 FLOOR TO SLAB CONNECTION
NOT TO SCALE



3 S-1 GENERATOR FOUNDATION PLAN
SCALE: 1/2" = 1'-0"



6 S-1 TYPICAL SHELTER DETAILS
SCALE: N.T.S

at&t
500 ENTERPRISE DRIVE
ROCKY HILL, CT 06067

SAI
27 NORTHWESTERN DR
SALEM, NH 03079

Hudson Design Group LLC
1600 OSGOOD STREET
BLD 20 N, SUITE 3090
N. ANDOVER, MA 01845
TEL: (978)-557-5553
FAX: (978)-336-5586

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

Daniel P Hamm

LICENSED ENGINEER DATE

REVISIONS

REV. #	DATE	DESCRIPTION
5	08/20/14	REVISED FOR CONSTRUCTION
4	07/22/14	REVISED FOR CONSTRUCTION
3	06/23/14	REVISED FOR CONSTRUCTION
2	02/20/14	REVISED FOR CONSTRUCTION
1	05/29/13	ISSUED FOR CONSTRUCTION
0	04/18/13	ISSUED FOR REVIEW

PROJECT NO.	DESIGNED BY / DRAWN BY / CHECK'D BY	SCALE:
CT2490	DESIGNED BY: AT DRAWN BY: SB CHECK'D BY: DPH	AS SHOWN

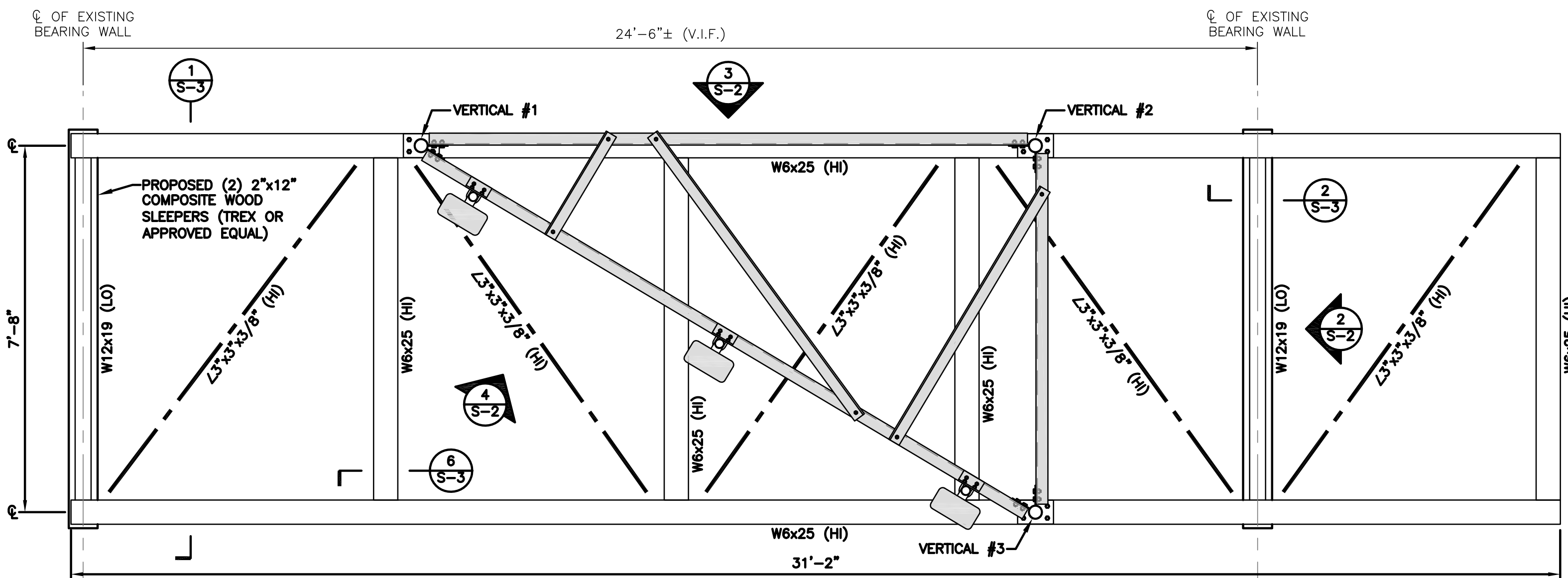
SITE NAME:
CT2490
EAST HARTFORD - 886 MAIN

SITE ADDRESS:
886 MAIN ST
EAST HARTFORD, CT 06108

SHEET TITLE:
STRUCTURAL DETAILS

SHEET NO:
S-1

TOWN OF EAST HARTFORD PLANNING AND ZONING COMMISSION SITE PLAN CERTIFICATE OF APPROVAL
APPROVAL DATE
EXPIRATION DATE
CHAIRMAN

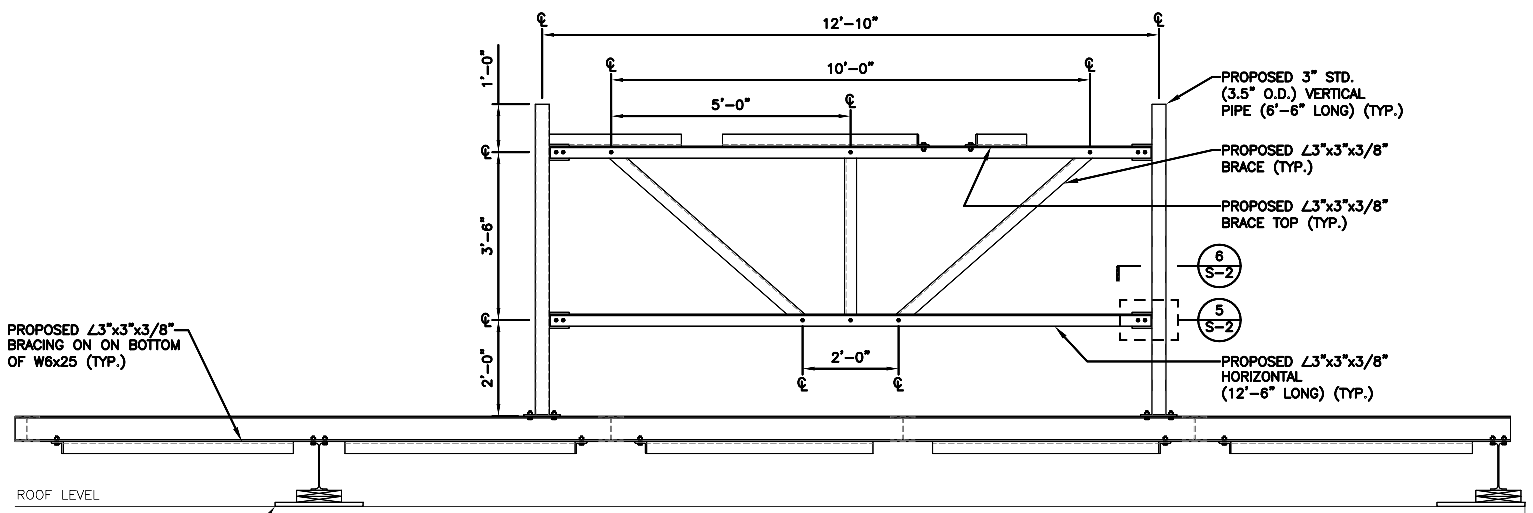


1 S-2 PROPOSED ANTENNA FRAME PLAN
SCALE: 1/2"=1'-0"

0 1'-0" 2'-0" 4'-0" 6'-0"

NOTE:

TOTAL WEIGHT OF PROPOSED ANTENNA MOUNTING FRAME EXCEEDS REQUIRED BALLAST REQUIRED. ADDITIONAL BALLAST IS NOT REQUIRED



3 S-2 ANTENNA FRAME ELEVATION
SCALE: 1/2"=1'-0"

0 1'-0" 2'-0" 4'-0" 6'-0"

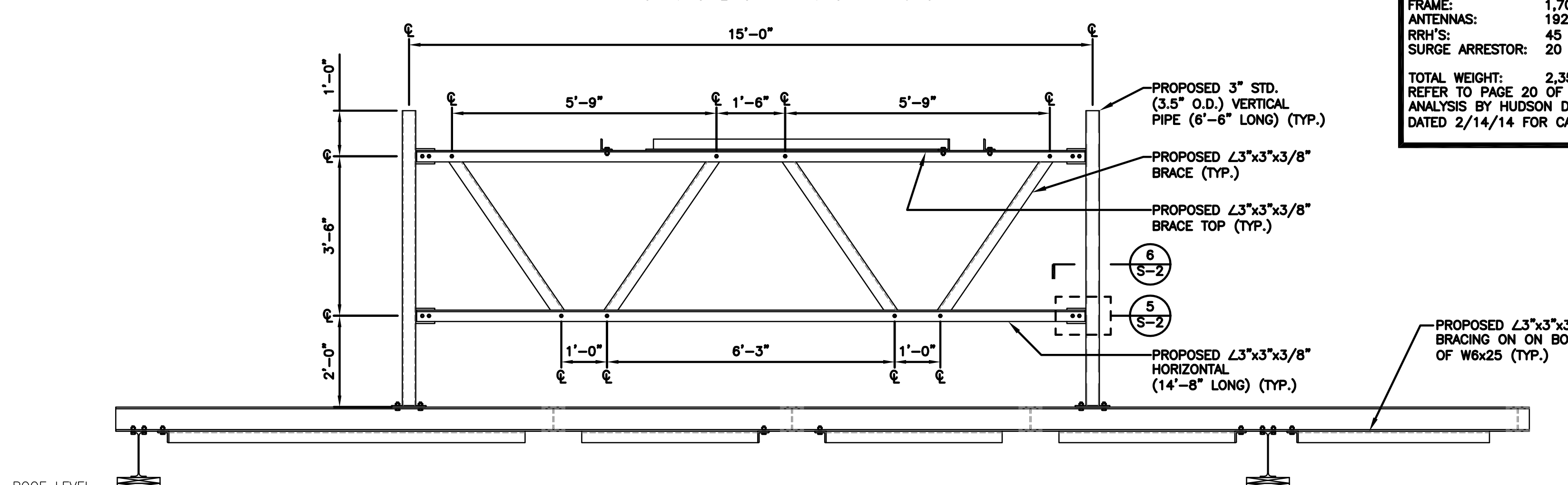
TOTAL ANTENNA FRAME HOLD DOWN FORCE REQUIRED: 2,308.33 LBS.

TOTAL EQUIPMENT WEIGHTS

FRAME:	1,701 LBS
ANTENNAS:	192 LBS
RRH'S:	45 LBS
SURGE ARRESTOR:	20 LBS

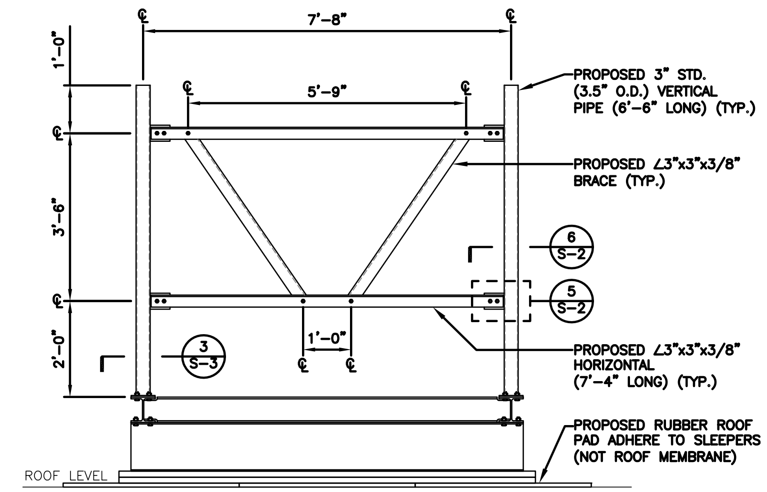
TOTAL WEIGHT: 2,358 LBS

REFER TO PAGE 20 OF STRUCTURAL ANALYSIS BY HUDSON DESIGN GROUP DATED 2/14/14 FOR CALCULATIONS



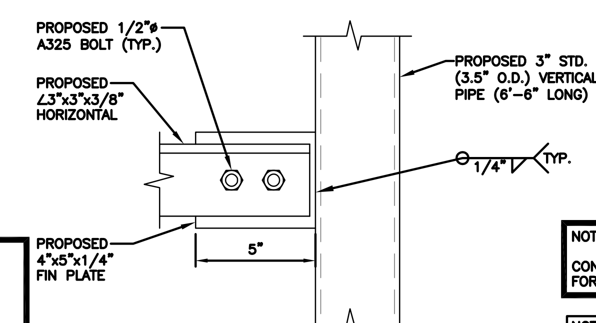
4 S-2 ANTENNA FRAME ELEVATION
SCALE: 1/2"=1'-0"

0 1'-0" 2'-0" 4'-0" 6'-0"



2 S-2 ANTENNA FRAME ELEVATION
SCALE: 1/2"=1'-0"

0 1'-0" 2'-0" 4'-0" 6'-0"



5 S-2 CONNECTION DETAIL
SCALE: 3"=1'-0"

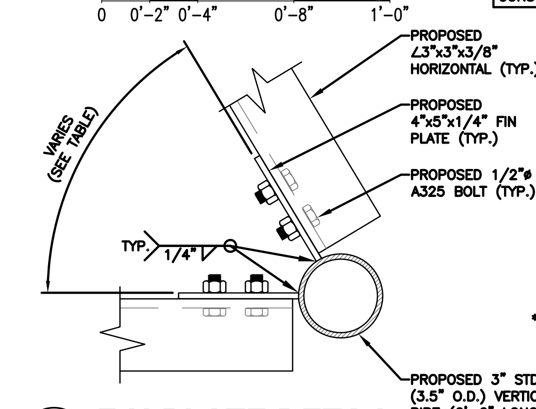
0 0'-2" 0'-4" 0'-8" 1'-0"

NOTE:

CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR APPROVAL PRIOR TO CONSTRUCTION

NOTES:

1. PROPOSED ANTENNAS & APPURTENANCES NOT SHOWN FOR CLARITY
2. CONTRACTOR TO VERIFY DEPTH OF ROOF INSULATION/ROOF MEMBRANE PRIOR TO CONSTRUCTION



6 S-2 FIN PLATE DETAIL
SCALE: 3"=1'-0"

0 0'-2" 0'-4" 0'-8" 1'-0"

FIN PLATE	
VERTICAL	ANGLE
1	31°
2	90°
3	59°

*SEE PROPOSED ANTENNA FRAME PLAN FOR VERTICAL LOCATIONS

at&t
500 ENTERPRISE DRIVE
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STATE OF CONNECTICUT DANIEL P. HAMM No. 24178 LICENSED PROFESSIONAL ENGINEER

Daniel P Hamm

LICENSED ENGINEER DATE

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EAST HARTFORD -
886 MAIN

SITE ADDRESS:

886 MAIN ST
EAST HARTFORD, CT 06108

SHEET TITLE:

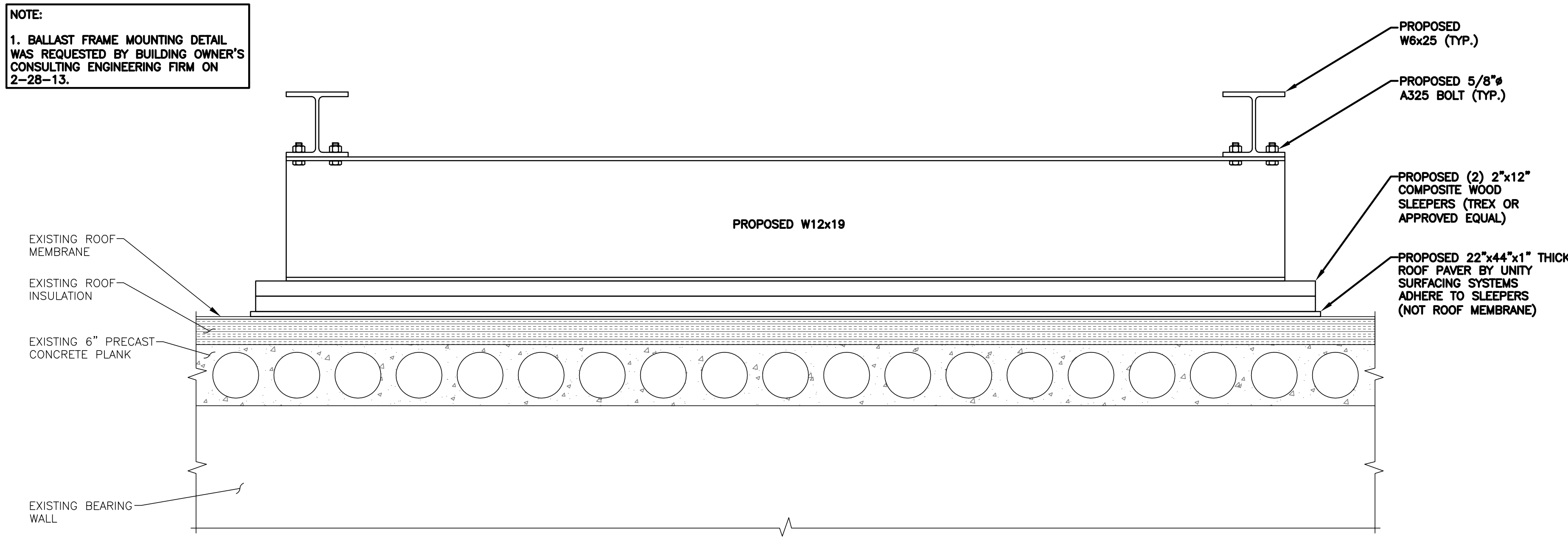
STRUCTURAL DETAILS

SHEET NO:

S-2

NOTE:

1. BALLAST FRAME MOUNTING DETAIL WAS REQUESTED BY BUILDING OWNER'S CONSULTING ENGINEERING FIRM ON 2-28-13.

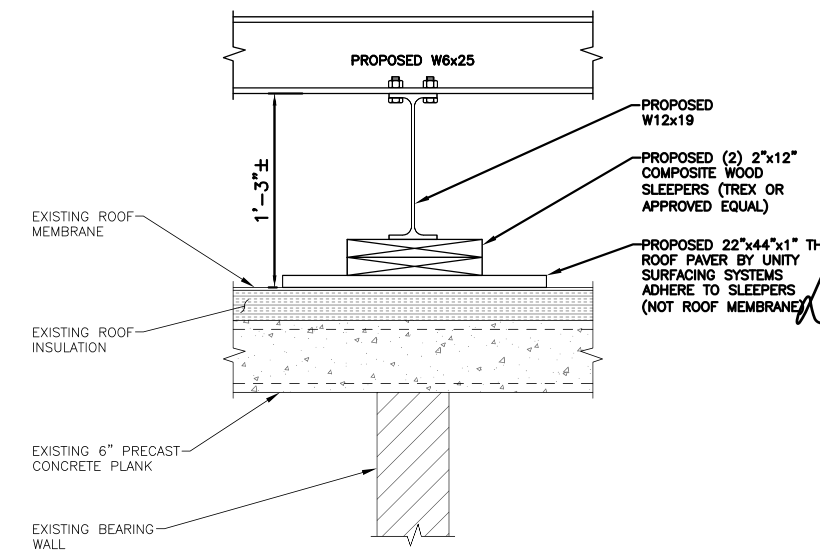


1 S-3 **ANTENNA FRAME SECTION**

SCALE: 1-1/2"=1'-0"

0 0'-4" 0'-8" 1'-4" 2'-0"

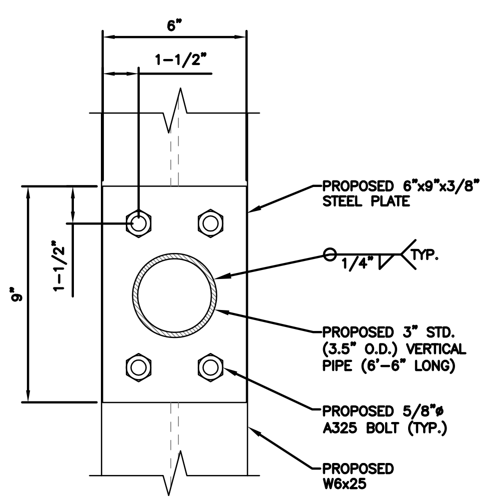
TOWN OF EAST HARTFORD PLANNING AND ZONING COMMISSION SITE PLAN CERTIFICATE OF APPROVAL
APPROVAL DATE ______
EXPIRATION DATE ______
______ CHAIRMAN



2 S-3 **ANTENNA FRAME SECTION**

SCALE: 1-1/2"=1'-0"

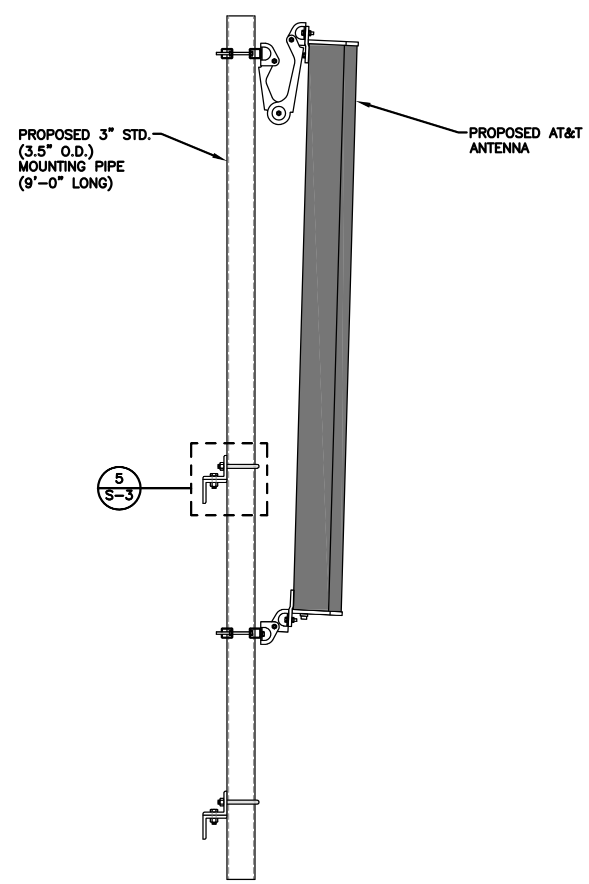
0 0'-4" 0'-8" 1'-4" 2'-0"



3 S-3 **BOTTOM PLATE DETAIL**

SCALE: 3"=1'-0"

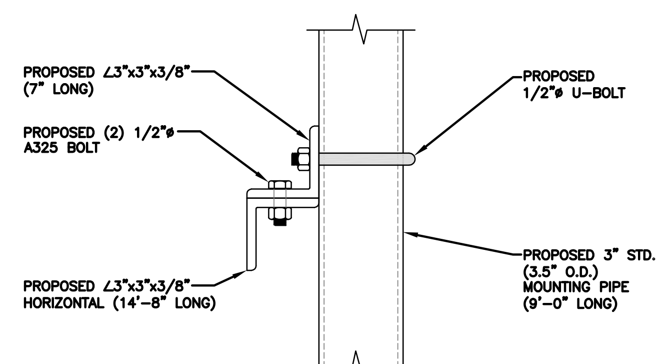
0 0'-2" 0'-4" 0'-8" 1'-0"



4 S-3 **ANTENNA MOUNTING DETAIL**

SCALE: 1"=1'-0"

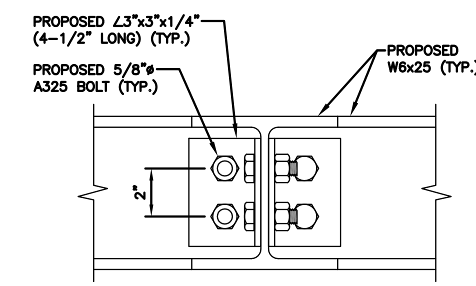
0 0'-6" 1'-0" 2'-0" 3'-0"



5 S-3 **CONNECTION DETAIL**

SCALE: 3"=1'-0"

0 0'-2" 0'-4" 0'-8" 1'-0"



6 S-3 **W6x25 CONNECTION DETAIL**

SCALE: 1/2"=1'-0"

0 1'-0" 2'-0" 4'-0" 6'-0"

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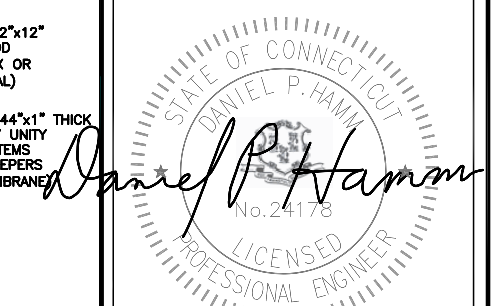

LICENSED ENGINEER DATE

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CT2490		AS SHOWN

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CT2490
EAST HARTFORD -
886 MAIN

SITE ADDRESS:

886 MAIN ST
EAST HARTFORD, CT 06108

SHEET TITLE:

STRUCTURAL DETAILS

SHEET NO:

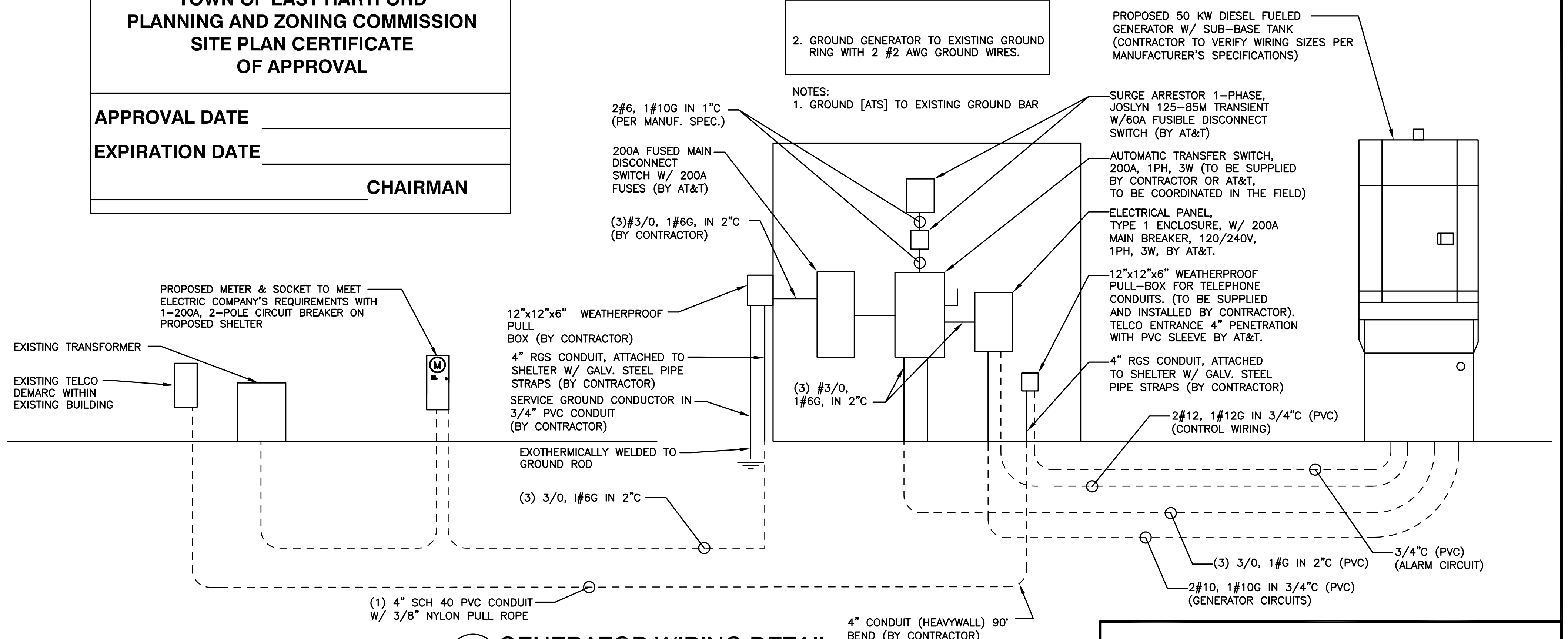
S-3

TOWN OF EAST HARTFORD
PLANNING AND ZONING COMMISSION
SITE PLAN CERTIFICATE
OF APPROVAL

APPROVAL DATE ____________

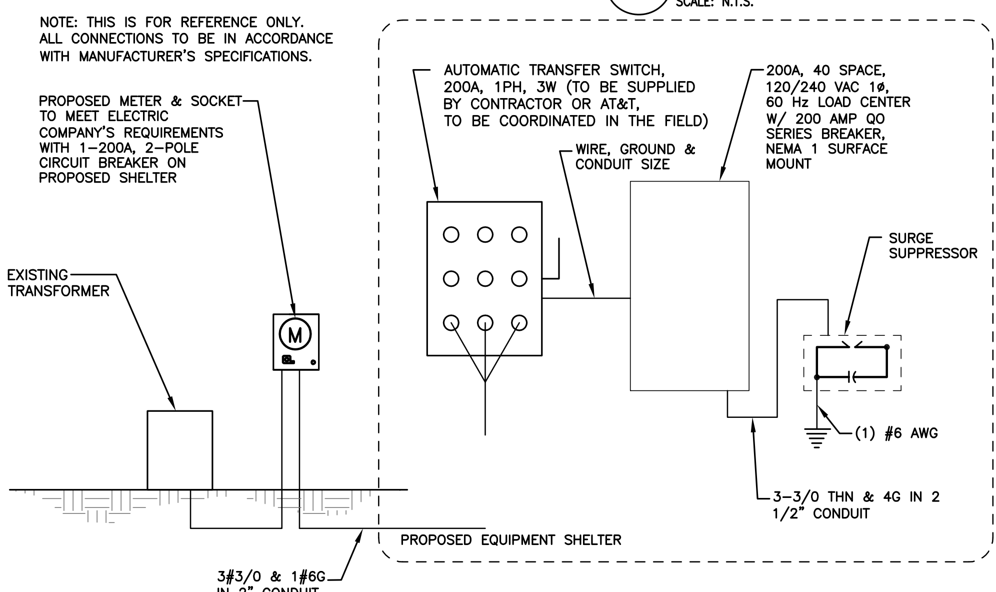
EXPIRATION DATE ____________

____________ CHAIRMAN

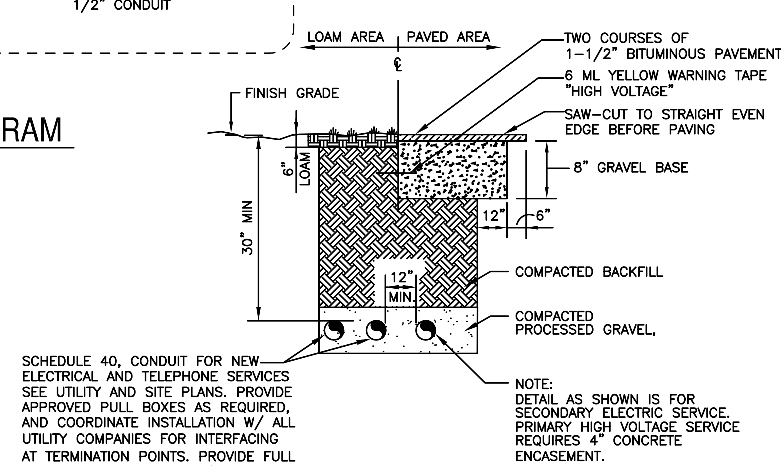


1
E-1
GENERATOR WIRING DETAIL
SCALE: N.T.S.

NOTE: THIS IS FOR REFERENCE ONLY. ALL CONNECTIONS TO BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.



2
E-1
TYPICAL ONE-LINE DIAGRAM
SCALE: N.T.S.



3
E-1
BURIED CONDUIT DETAIL
SCALE: N.T.S.

OPEN CUT UTILITY TRENCH BACKFILL NOTES

SURFACING:

1. ALL A.C.P SHALL BE SAW CUT TO PROVIDE A STRAIGHT, CLEAN EDGE PRIOR TO PAVING.
2. THE CUT LINE SHALL BE ONE CONTINUOUS STRAIGHT LINE FROM THE OUTER EXCAVATION LIMITS OF MANHOLE, VALVE BOX, ETC. T MANHOLE, VALVE BOX, ETC.
3. PAVE WITH AN 0.35 FT. MINIMUM COMPACTED DEPTH HMA CLASS OR MATCH EXISTING, WHICHEVER IS GREATER.
4. LIFTS FOR HMA CLASS SHALL BE AN 0.15 FT. MINIMUM AND 0.35 FT. MAXIMUM FOR NON-SURFACE LIFTS (0.25' MAXIMUM FOR SURFACE LIFT); THE TEMPERATURE SHALL BE 250 DEGREE MINIMUM, 350 DEGREE MAXIMUM, COMPACTED TO THE SATISFACTION OF THE ENGINEER.
5. ALL JOINTS SHALL BE TACKED, SEALED AND SANDED.
6. WHEN SURFACING EXISTS ON BOTH SIDES OF THE TRENCH, NEW A.C.P. WILL BE A MINIMUM OF 40" WIDE.
7. TRENCH SHALL BE PLATED UNTIL PAVED.

TOP COURSE:

1. 0.20 FT. MINIMUM DEPTH (5/8" MINUS) C.S.T.C.
2. COMPACTED TO 95% OF MAXIMUM DENSITY. SEE TRENCH ZONE.
3. EQUIVALENT DEPTH OF A.T.B. MAY BE SUBSTITUTED.

BASE COURSE:

1. 0.80 FT. MINIMUM DEPTH (1-1/4" MINUS) C.S.B.C.
2. COMPACTED TO 95% OF MAXIMUM DENSITY. SEE TRENCH ZONE.
3. EQUIVALENT DEPTH OF A.T.B. MAY BE SUBSTITUTED.

TRENCH ZONE:

1. GRANULAR BACKFILL AS APPROVED BY LOCAL AGENCY. SPECIFICATIONS FOR GRANULAR BACKFILL. COMPACTED TO 95% OF MAXIMUM DENSITY IN THE TRENCH ZONE USING METHOD C COMPACTION AS PER SECTION 2-03.3 (14)C.
2. NATIVE MATERIAL MAY BE USED IF APPROVED PRIOR TO CONSTRUCTION BY COUNTY.
3. TRENCH ZONE WIDTH -- SEE BELOW.

PIPE ZONE:

1. PIPE ZONE MATERIAL AS SPECIFIED BY UTILITY OWNER.
2. 1.0 FT. MAX. FROM TOP OF THE PIPE.

CONDITIONS:

1. A COPY OF THE PERMIT AND REQUIREMENTS SHALL BE ON THE JOB SITE AT ALL TIMES.
2. THE PERMIT HOLDER SHALL BE RESPONSIBLE FOR ALL RESTORATION AND MAINTENANCE OF DITCHES, SHOULDERS, DRIVEWAYS, LANDSCAPING, ECT.
3. ALL PAVEMENT CUTS, AT A MIN. BE TEMP PATCHED @ THE END OF EACH DAY W/PERM PATCH TO BE DONE ON THE 1ST SUITABLE DAY.
4. WORK SHALL BE DONE IN A TIMELY MANNER TO MINIMIZE THE IMPACT TO THE PUBLIC.

ELECTRICAL LEGEND

NEW PANEL BOARD, SURFACE MOUNTED
EXISTING PANEL BOARD, SURFACE MOUNTED
DRY TYPE TRANSFORMER
METER
CIRCUIT BREAKER
NON-FUSIBLE DISCONNECT SWITCH, MOUNTED 54" A.F.F.
FUSIBLE DISCONNECT SWITCH, MOUNTED 54"A.F.F.
TVSS TRANSIENT VOLTAGE SURGE SUPPRESSOR WITH BUILT-IN FUSES, SURFACE MOUNTED
DUPLEX OUTLET, SURFACE MOUNTED, 20 AMPS, 125 VOLTS, SINGLE PHASE
J JUNCTION BOX, SURFACE MOUNTED 18" A.F.F.
EXPOSED WIRING
HOME RUNS, MINIMUM 2#10 + 1#10G IN 3/4" CONDUIT U.O.N.
A.F.F. ABOVE FINISHED FLOOR
U.O.N. UNLESS OTHERWISE NOTED
WP WEATHERPROOF
GFI GROUND FAULT INTERRUPTER
A AMPERE
V VOLT
KWH KILOWATT - HOUR
C CONDUIT
GRC GALVANIZED RIGID CONDUIT
G GROUND
GROUND
MGB MASTER GROUND BAR ○ MECHANICAL CONNECTION ● CADWELD CONNECTION
EGB EQUIPMENT GROUND BAR
—G— GROUND COPPER WIRE, SIZE AS NOTED
EXPOSED WIRING
COAXIAL CABLE
5/8"x8' COPPER CLAD STAINLESS STEEL GROUND ROD
● EXOTHERMIC (CAD WELD) OR ○ MECHANICAL (COMPRESSION TYPE) CONNECTION
PPC POWER PROTECTION CABINET
OMNI-DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALL

ELECTRICAL AND GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
5. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
6. BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
7. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THININSULATION.
8. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
9. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
10. WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
11. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
12. PPC SUPPLIED BY PROJECT OWNER.
13. GROUNDING SHALL COMPLY WITH NEC ART. 250.
14. GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
15. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
16. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
17. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
18. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
19. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
20. BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, AND ALNA TO EGB PLACED NEAR THE ANTENNA LOCATION.
21. BOND ANTENNA EGB'S AND MGB TO GROUND RING.
22. CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMS MINIMUM RESISTANCE REQUIRED.
23. CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE-TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.
24. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2" OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL, MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50.

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Daniel P. Hamm
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3	06/23/14	REVISED FOR CONSTRUCTION
2	02/20/14	REVISED FOR CONSTRUCTION
1	05/29/13	ISSUED FOR CONSTRUCTION
0	04/18/13	ISSUED FOR REVIEW

PROJECT NO.	DESIGNED BY:	AT	SCALE:
CT2490	DRAWN BY:	SB	AS SHOWN
	CHECK'D BY:	DPH	

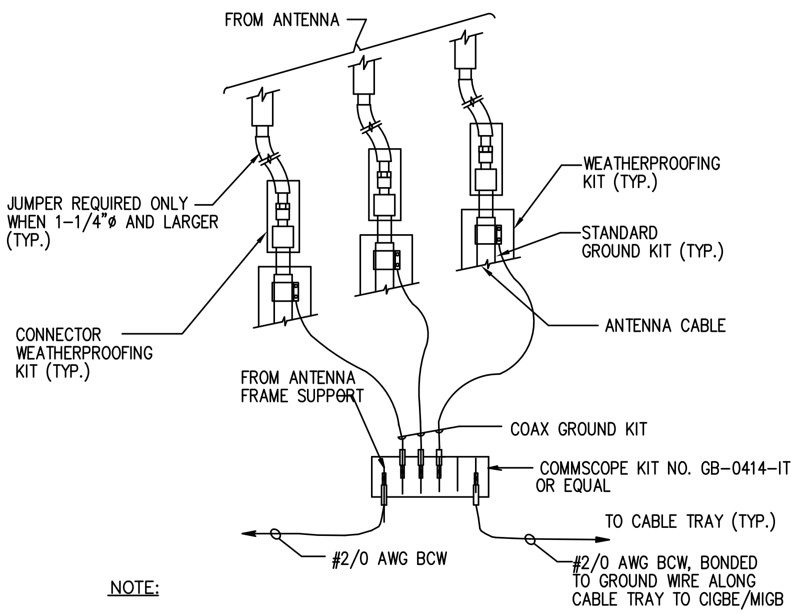
SITE NAME:
CT2490
EAST HARTFORD - 886 MAIN

SITE ADDRESS:
886 MAIN ST
EAST HARTFORD, CT 06108

SHEET TITLE:
ELECTRICAL ONE LINE DIAGRAM & DETAILS

SHEET NO:
E-1

TOWN OF EAST HARTFORD PLANNING AND ZONING COMMISSION SITE PLAN CERTIFICATE OF APPROVAL
APPROVAL DATE ______
EXPIRATION DATE ______
______ CHAIRMAN

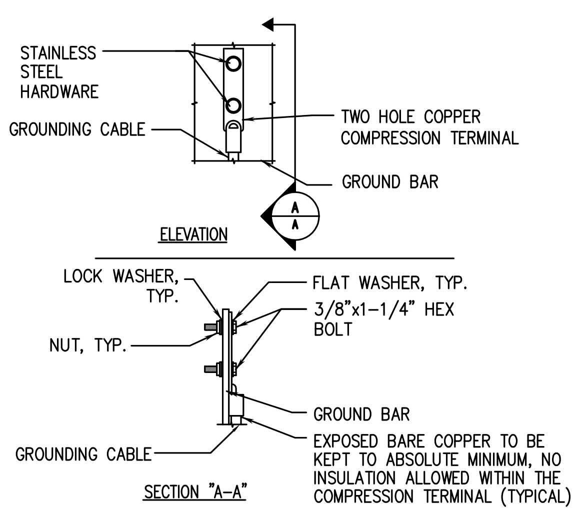


NOTE:

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

GROUND WIRE TO GROUND BAR CONNECTION DETAIL

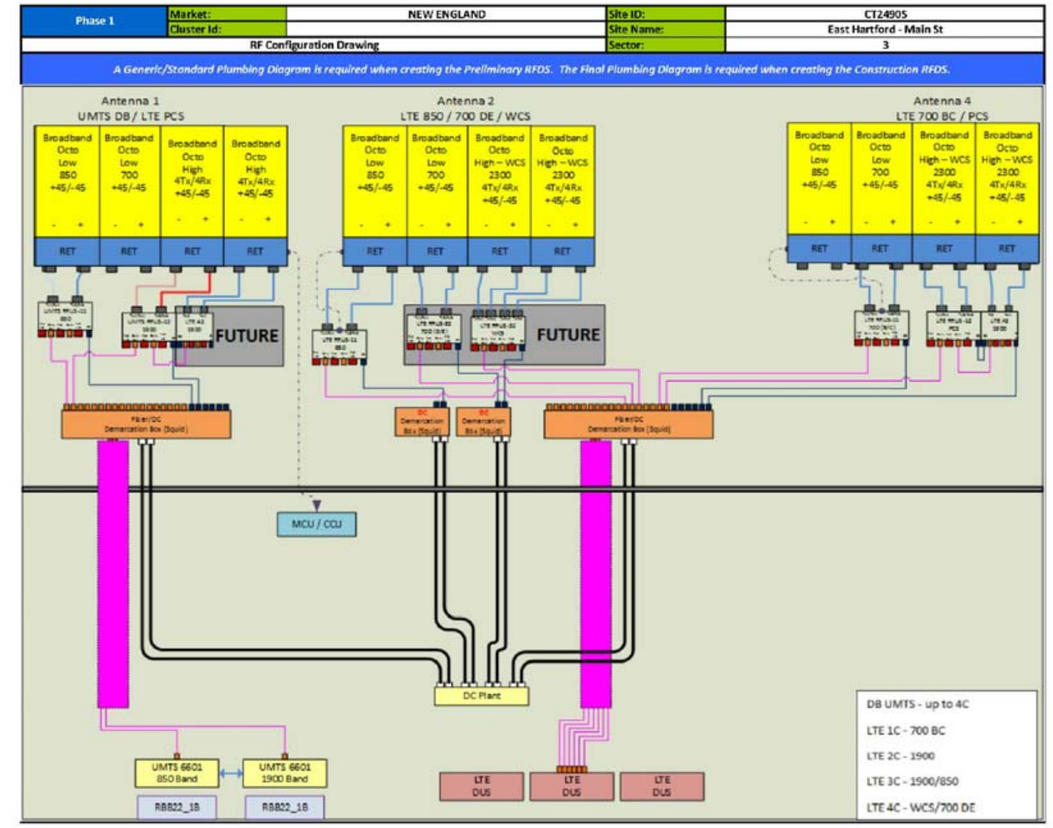
1 G-1 N.T.S.



NOTE:
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.

TYPICAL GROUND BAR CONNECTION DETAIL

3 G-1 N.T.S.



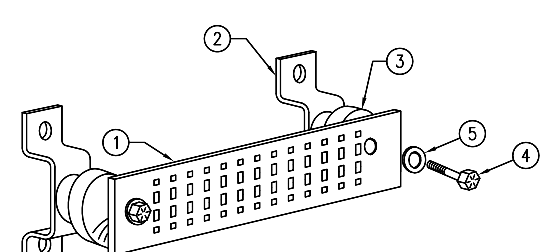
NOTE:

CONTRACTOR TO CONFIRM ALL PARTS & INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS.

PLUMBING DIAGRAM

2 G-1 N.T.S.

WIRELESS SOLUTIONS INC.			
NO.	REQ.	PART NO.	DESCRIPTION
1	1	HLGB-0420-IS	SOLID GND. BAR (20"x4"x1/4")
2	2	——	WALL MTG. BRKT.
3	2	——	INSULATORS
4	4	——	5/8"-11x1" H.H.C.S.
5	4	——	5/8 LOCKWASHER



GROUND BAR - DETAIL

4 G-1 N.T.S.

EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" – SURGE PRODUCERS

CABLE ENTRY PORTS (HATCH PLATES) (#2)
GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
TELCO GROUND BAR
COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
+24V POWER SUPPLY RETURN BAR (#2)
-48V POWER SUPPLY RETURN BAR (#2)
RECTIFIER FRAMES.

SECTION "A" – SURGE ABSORBERS

INTERIOR GROUND RING (#2)
EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
BUILDING STEEL (IF AVAILABLE) (#2)

at&t
500 ENTERPRISE DRIVE
ROCKY HILL, CT 06067

SAI
27 NORTHWESTERN DR
SALEM, NH 03079

Hudson Design Group LLC
1600 OSGOOD STREET
BLD 20 N, SUITE 3090
N. ANDOVER, MA 01845
TEL: (978)-557-5553
FAX: (978)-336-5586

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

LICENSED ENGINEER   DATE

REVISIONS

REV. #	DATE	DESCRIPTION
5	08/20/14	REVISED FOR CONSTRUCTION
4	07/22/14	REVISED FOR CONSTRUCTION
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PROJECT NO.	DESIGNED BY: AT	SCALE:
CT2490	DRAWN BY: SB	AS SHOWN
	CHECK'D BY: DPH	

SITE NAME:

CT2490
EAST HARTFORD - 886 MAIN

SITE ADDRESS:

886 MAIN ST
EAST HARTFORD, CT 06108

SHEET TITLE:

PLUMBING DIAGRAM & GROUNDING DETAILS

SHEET NO:

G-1

Revised
STRUCTURAL ANALYSIS REPORT

For

CT 2490

EAST HARTFORD – 886 MAIN
886 Main Street
East Hartford, Connecticut 06108

Equipment Shelter on the Ground; Antennas Mounted on the Facade and on the Roof

Prepared for:

SAI

at&t

500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

Dated: February 14, 2014 (Rev. 2)
December 10, 2012 (Rev. 1)
July 29, 2012

STATE OF CONNECTICUT
DANIEL HAMM
24178
LICENSED
PROFESSIONAL ENGINEER

2-14-2014

Prepared by:

Hudson Design Group LLC
HDG

1600 Osgood Street Building 20 North, Suite 3090
North Andover, MA 01845
Phone: (978) 557-5553
www.hudsondesigngroupllc.com

SCOPE OF WORK:

Hudson Design Group LLC (HDG) has been authorized by AT&T to conduct a structural evaluation of the structure supporting the proposed AT&T equipment located in the areas depicted in the latest HDG's drawings.

This report represents this office's findings, conclusions and recommendations pertaining to the support of AT&T's proposed Equipment.

This office conducted an on-site visual survey of the above areas on June 14, 2012. Attendees included Jose Xavier (HDG-Sr. Project Manager).

CONCLUSION SUMMARY:

Limited Building plans were available for our use. A limited visual survey of the structure was completed in or near the areas of the Proposed Work.

Based on our evaluation, we have determined that, in general, structural designs to support the proposed AT&T Equipment within or near the Proposed Location can be completed and components installed with **NO STRUCTURAL UPGRADES REQUIRED** to the existing structure. Reference the attached HDG's drawings for all equipment locations.

However, HDG recommends locating the proposed roof top ballast mount on steel beams spanning over bearing walls to adequately distribute the proposed load as shown in the attached sketch. If field conditions differ from what is assumed in this report, then the engineer of record is to be notified as soon as possible.

APPURTENACE/EQUIPMENT CONFIGURATION:

(9) OPA-65R-LCUU-H6 Antennas (72"x15"x9" - Wt. = 64 lbs. /each) (Three per sector)

(3) Surge Suppressor (Wt. = 20 lbs. / each) (One per sector)

(6) A2 Module (16.4"x15.2"x3.4" – W. = 22 lbs. /each) (Two per sector)

(9) RRH (RRUS-11) (19.7"x17"x7.2" – Wt. = 50 lbs. /each) (Three per sector)

(6) RRH (RRUS-12) (20.4"x18.5"x7.5" – Wt. = 58 lbs. /each) (Two per sector)

(3) RRH (RRUS-E2) (20.4"x18.5"x7.5" – Wt. = 58 lbs. /each) (One per sector)

(3) RRH (RRUS-32) (29.9"x13.3"x9.5" – Wt. = 77 lbs. /each) (One per sector)

(1) 11.5 FT x 20 FT Equipment Shelter (Designed by others)

Referenced documents are attached.

Hudson Design Group LLC

DESIGN CRITERIA:

1. International Building Code with 2005 Connecticut Supplement with 2009 Amendments

   Wind Analysis:

Basic Wind Speed:	95 MPH	(includes 3-second gust)
Exposure:	C	

   Roof:

Ground Snow, Pg: 30 psf	
Importance Factor, I: 1.0	(Category II)
Exposure Factor, Ce: 0.9	(Exposure B- Fully Exposed)
Thermal Factor, Ct: 1.0	
Calculated Flat Roof Snow Load: 30 psf	(Pf=0.7*Ce*Ct*I*Pg)

2. EIA/TIA -222- F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures

County:	Hartford
Wind Load:	80 mph
Ice Thickness:	1 Inch

3. Approximate height above grade to the center of the Antennas:

117'-"+/-	(Alpha and Gamma sectors)
109'-0"+/-	(Beta sector)

EXISTING ROOF CONSTRUCTION:

The existing roof construction appears to consist of a roofing membrane over rigid insulation, on hollow precast concrete slabs supported by a system of bearing walls. (Building plans were not available at the time of our site visit).

EQUIPMENT SHELTER SUPPORT RECOMMENDATIONS:

HDG recommends that the proposed 11.5' x 20' equipment shelter (designed by others) be located at ground level and supported by a concrete slab.

RRH's / SURGE SUPPRESSOR SUPPORT RECOMMENDATIONS:

- The new AT&T Alpha and Gamma sectors' RRH's and surge suppressors are proposed to be mounted on unistrut components, secured to the new antenna mounting pipes.

- The new AT&T Beta sector's RRH's and surge suppressors are proposed to be mounted on unistrut components secured to the non-penetrating roof top sled mounts.

ANTENNA SUPPORT RECOMMENDATIONS:

- The new AT&T Alpha and Gamma sectors' antennas are proposed to be mounted on steel pipes and mounting brackets secured to the building façade using thru-bolts and backer plates.

- T The new AT&T Beta sector's antennas are proposed to be mounted on steel pipes, supported by the non-penetrating roof top sled mounts.

OTHER SUPPORT RECOMMENDATIONS:

- HDG recommends installing the new sled mount on steel beams spanning over bearing walls to adequately distribute the proposed load.

- Secure the sled mount to the new steel beams.

<u>Limitations and Assumptions:</u>

1. Reference the latest HDG construction drawings for all the equipment locations.

2. All detail requirements will be designed and furnished in the construction drawings.

3. Mount all equipment per manufacturer's specifications.

4. If field conditions differ from what is assumed in this report, then the engineer of record is to be notified as soon as possible.

LOCATION OF PROPOSED EQUIPMENT:

Photo 1: Sample photo illustrating the area where the equipment shelter is proposed to be located.

Photo 2: Sample photo illustrating the sector B antennas are proposed to be located.

Photo 3: Sample photo illustrating the existing penthouse where the new sector C antennas are proposed to be located.

Hudson Design Group LLC

Alpha and Gamma Sectors' Calculations

Site Name:	East Hartford - 886 Main		
Site No.	CT2490		
Done by:	EC	Checked by:	MSC
Date:	2/14/2014		

Hudson Design Group LLC

References:

* Structural Standards for Steel Antenna Towers and Antenna Supporting Structures (TIA/EIA-222-F).

Material Reference Notes:

2.3.1 Wind and Ice Loads

The total design wind load shall include the sum of he horizontal forces applied to the structure in the direction of the wind and the design wind load on guys and discrete appurtenances.

Ice loading, depending on tower height, elevation, and exposure, may be a significant load on the structure in most parts of the United States. If the structure is to be located where ice accumulation is expected, consideration shall be given to an ice load when specifying the requirements for the structure.

2.3.2 Horizontal Force Applied to each Section of the Structure

$\mathbf{F=q_z*G_H\,[C_F*A_E+\sum(C_A*A_A)]}$ (Not to exceed $2*q_z*G_H*A_G$)

where A_G = Gross area of one tower face (ft^2)

2.3.3 Velocity Pressure (q_z) and Exposure Coefficient (K_Z)

$q_z=.00256*K_Z*V^2$ V=Basic Wind Speed for the Structure Location (mph)

$K_Z=(z/33)^{2/7}$ z=Ht. above avg. ground level to midpoint of section (ft.)

$1.00 \leq K_Z \leq 2.58$ A_E=effective projected area of structural components in one face

2.3.4 Gust Response Factors (G_H)

2.3.4.1 For latticed structures , gust response factor (G_H) shall be calculated from the equation:

$G_H=0.65+0.60/(h/33)^{1/7}$ (h in (ft.)) $1.0 < G_H < 1.25$

2.3.4.2 For Tubular pole structures, the gust response factor (G_H) shall be 1.69

2.3.4.3 One gust response factor shall apply for the entire structure.

2.3.4.4 When Cantilevered tubular or latticed pole structures are mounted on latticed structures, the gust response factor the the pole and the latticed structure shall be based on the height of the latticed structure without the pole. The stresses calculated for the pole structures and their connections to latticed structures shall be multiplied by 1.25 to compensate for the greater gust response for the mounted pole structures.

2.3.5 Structure Force Coefficients (Reference Table 1)

Site Name: East Hartford - 886 Main
Site No. CT2490
Done by: EC Checked by: MSC
Date: 2/14/2014

Hudson Design Group LLC

Existing T-Mobile Feeder Lines

=Input Values

V= **80** (mph)
z= **117** (ft)

K_Z= **1.44**

Velocity Pressure: **qz= 23.52 psf** [2.3.3]

Is member analyzing a tube pole structure? If yes, then: Gh= 1.69

If no, then use value below:
Gh= 1.15 [2.3.4.1]

Gh= 1.69

Determine Cf:

If lattice structure see manual...

If cantlevered tube pole, then: Use Correct Value form Table 1 Below:

TABLE 1

Coefficients (Cf) for Cantilevered Tubular Pole Structures

C (mph ft)	Round	16 Sided r<0.26	16 Sided r≥0.26	12 Sides	8 Sided
<32	1.2	1.2	1.2	1.2	1.2
32 to 64	$130/C^{1.3}$	1.78+1.40r-C/91.5-Cr/22.9	.72+(64-C)/44.8	$12.5/C^{.6}$	1.2
>64	0.59	1.08-1.40r	0.72	1.03	1.2

Derivation of Structure Coefficient (Cf):

Dp = Avg. Diam. or Avg. Least width of Tubular Pole Structure: 1.2 feet

Site Name:	East Hartford - 886 Main		
Site No.	CT2490		
Done by:	EC	Checked by:	MSC
Date:	2/14/2014		

Hudson Design Group LLC

$C= (K_z)^{1/2} * V * Dp$ (for Dp in ft [m]

C= 115.03

C (mph ft)	Round Only Member
<32	1.2
32 < 64	0.27
> 64	0.59

(Max Cf= 1.2) Cf= 1.2

(Min Cf= 0.59)

Determine Ae: **[2.3.6]**

If tube structure, then use projected area including ice:

If not a tube structure, then see manual.

Ae= 0.00 sf

Determine Ca: **[2.3.7]**

2.3.7 The force coefficient (C_A) applied to the projected area (ft^2) [m^2] of a linear appurtenance (A_A) not considered as a structural component shall be determined from Table 3. The force coefficient for cylindrical members may be applied to the additional projected area of radial ice when specified. (Refer to Figure 1.)

TABLE 3

Appurtenance Force Coefficients

Member Type	**Aspect Ratio ≤ 7**	**Aspect Ratio ≥ 25**
	C_A	C_A
Flat	1.4	2
Cylindrical	0.8	1.2

Aspect Ratio=Overall length/width ratio in plane normal to wind direction. (Aspect ratio is not a function of the spacing between support points of a linear appurtenance, nor the section length considered to have a uniformly distributed force.)

Note: Linear interpolation may be used to aspect ratios other than shown

2.3.8 Regardless of location, linear appurtenances not considered as structural components in accordance with 2.3.6.3 shall be included in the term $\Sigma C_A A_A$.

2.3.9 The horizontal force (F) applied to a section of the structure may be assumed to be uniformly distributed based on the wind pressure at the mid-height of the section.

Site Name:	East Hartford - 886 Main		
Site No.	CT2490		
Done by:	EC	Checked by:	MSC
Date:	2/14/2014		

Hudson Design Group LLC

	Item #1	Item #2	Item #3	Item #4	Item #5
Member Length (Inches):	72	20.4	19.7	29.9	23.5
Member Width (Inches):	15	18.5	17	13.3	9.7
Calculated Aspect Ratio:	5	1	1	2	2

From Table 3 Above:

	Item #1	Item #2	Item #3	Item #4	Item #5
Ca=	1.4	1.4	1.4	1.4	1.4

Determine Aa: (sf)

	Item #1	Item #2	Item #3	Item #4	Item #5
From above: Aa=	7.50	2.62	2.33	2.76	1.58
Calculated Ca*Aa:	10.50	3.67	3.26	3.87	2.22

Calculated Sums of Ca*Aa: 23.51 sf

Item 1 calculated force F:	**Antenna**	417.392906
Item 2 calculated force F:	**RRUS-12/E2**	145.855632
Item 3 calculated force F:	**RRUS-11**	129.430448
Item 4 calculated force F:	**RRUS-32**	153.689479
Item 5 calculated force F:	**Surge Suppressor**	88.0969564

Wind Force F= qz*Gh [Cf*Ae+∑(Ca*Aa)]

F= 934.47 Pounds

Project: CT2490
Location: Antenna Support Pipe (Alpha and Gamma)
Multi-Loaded Multi-Span Beam
[2009 International Building Code(AISC 13th Ed ASD)]
Pipe 4 Std. x 11.5 FT (7 + 4 + 0.5) / ASTM A53-GR.B
Section Adequate By: 12.4%
Controlling Factor: Deflection

Ethan Carrier
Hudson Design Group LLC
1600 Osgood Street, Suite 3090, Bldg 20N
North Andover, MA 01845

StruCalc Version 8.0.113.0   2/14/2014 1:09:12 PM

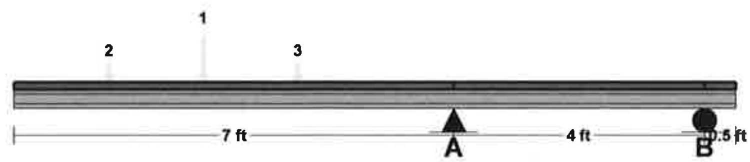
DEFLECTIONS	Left		Center		Right	
Live Load	0.57	IN 2L/292	-0.03	IN L/1716	0.01	IN 2L/1320
Dead Load	0.05	in	0.00	in	0.00	in
Total Load	0.62	IN 2L/270	-0.03	IN L/1596	0.01	IN 2L/1232

Live Load Deflection Criteria: L/240   Total Load Deflection Criteria: L/240

REACTIONS	A		B	
Live Load	1560	lb	0	lb
Dead Load	164	lb	-39	lb
Total Load	1724	lb	-39	lb
Uplift (1.5 F.S)	**0**	**lb**	**-819**	**lb**
Bearing Length	0.44	in	0.00	in

BEAM DATA	Left		Center		Right	
Span Length	7	ft	4	ft	0.5	ft
Unbraced Length-Top	0	ft	0	ft	0	ft
Unbraced Length-Bottom	7	ft	4	ft	0.5	ft

LOADING DIAGRAM



UNIFORM LOADS	Left		Center		Right	
Uniform Live Load	0	plf	0	plf	0	plf
Uniform Dead Load	0	plf	0	plf	0	plf
Beam Self Weight	11	plf	11	plf	11	plf
Total Uniform Load	11	plf	11	plf	11	plf

POINT LOADS - LEFT SPAN			
Load Number	One	Two	Three
Live Load	418 lb	181 lb	181 lb
Dead Load	0 lb	0 lb	0 lb
Location	3 ft	1.5 ft	4.5 ft

STEEL PROPERTIES

Pipe 4 Std. - A53-GR.B

Properties:

Steel Yield Strength:	Fy =	35	ksi
Modulus of Elasticity:	E =	29000	ksi
Tube Steel Section (X Axis):	dx =	4.5	in
Tube Steel Section (Y Axis):	dy =	4.5	in
Tube Steel Wall Thickness:	t =	0.221	in
Area:	A =	2.97	in2
Moment of Inertia (X Axis):	Ix =	6.82	in4
Section Modulus (X Axis):	Sx =	3.03	in3
Plastic Section Modulus:	Z =	4.05	in3

Design Properties per AISC 13th Edition Steel Manual:

Flange Buckling Ratio:	FBR =	20.36	
Allowable Flange Buckling Ratio:	AFBR =	58	
Allowable Flange Buckling Ratio non-compact:	AFBR_NC =	256.86	
Nominal Flexural Strength w/ Safety Factor:	Mn =	7073	ft-lb
Controlling Equation:	F8-1		
Shear Buckling Stress Coefficient Eqn. G6-2a:	Fcr =	21	ksi
Nominal Shear Strength w/ Safety Factor:	Vn =	18674	lb

Controlling Moment: -3386 ft-lb
Over right support of span 1 (Left Span)
Created by combining all dead loads and live loads on span(s) 1, 2, 3
Controlling Shear: 868 lb
At left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s

Comparisons with required sections:	Req'd	Provided
Moment of Inertia (deflection):	6.07 in4	6.82 in4
Moment:	-3386 ft-lb	7073 ft-lb
Shear:	868 lb	18674 lb

NOTES

ICE WEIGHT CALCULATIONS

Project: CT2490 (Alpha & Gamma) * Density of ice used = 56 PCF

Thickness of ice: 1

Weight of ice based on total radial SF area:			**Antenna**
Depth (in):	9		
height (in):	72		
Width (in):	15		
Total weight of ice on object:		112 pounds ice	
Weight of object:	64 pounds		
Combined weight of ice and object:		176 pounds	

Per foot weight of ice:			**Pipe**
pipe weight per foot:	10.8		
pipe length (ft):	12	= (7.5')	
diameter (in):	4.5		
Per foot weight of ice on object:		6 pounds ice /ft	
Total weight of ice on object:		66 pounds	
Total weight of pipe:		129.6 pounds	
Combined weight of pipe and ice:		196 pounds	

Weight of ice based on total radial SF area:			**RRH-11**
Depth (in):	7.2		
height (in):	19.7		
Width (in):	17		
Total weight of ice on object:		31 pounds ice	
Weight of object:	50 pounds		
Combined weight of ice and object:		81 pounds	x 3/2

Weight of ice based on total radial SF area:			**RRH-32**
Depth (in):	9.5		
height (in):	29.9		
Width (in):	13.3		
Total weight of ice on object:		44 pounds ice	
Weight of object:	77 pounds		
Combined weight of ice and object:		121 pounds	/2

Weight of ice based on total radial SF area:			**RRH-12**
Depth (in):	7.5		
height (in):	20.4		
Width (in):	18.5		
Total weight of ice on object:		34 pounds ice	
Weight of object:	58 pounds		
Combined weight of ice and object:		92 pounds	x2/2

Weight of ice based on total radial SF area:			**A2**
Depth (in):	3.4		
height (in):	16.4		
Width (in):	15.2		
Total weight of ice on object:		20 pounds ice	
Weight of object:	22 pounds		
Combined weight of ice and object:		42 pounds	x2/2

Weight of ice based on total radial SF area:			**Surge**
Depth (in):	9.7		
height (in):	23.5		
Width (in):	9.7		
Total weight of ice on object:		30 pounds ice	
Weight of object:	20 pounds		
Combined weight of ice and object:		50 pounds	/2

Total Weight:	713 pounds

Hudson Design Group LLC

Beta Sector's Calculations

Site Name:	East Hartford - 886 Main		
Site No.	CT2490		
Done by:	EC	Checked by:	MSC
Date:	2/14/2014		

Hudson Design Group LLC

References:

* Structural Standards for Steel Antenna Towers and Antenna Supporting Structures (TIA/EIA-222-F).

Material Reference Notes:

2.3.1 **Wind and Ice Loads**

The total design wind load shall include the sum of he horizontal forces applied to the structure in the direction of the wind and the design wind load on guys and discrete appurtenances.

Ice loading, depending on tower height, elevation, and exposure, may be a significant load on the structure in most parts of the United States. If the structure is to be located where ice accumulation is expected, consideration shall be given to an ice load when specifying the requirements for the structure.

2.3.2 **Horizontal Force Applied to each Section of the Structure**

$\mathbf{F=q_z*G_H\,[C_F*A_E+\sum(C_A*A_A)]}$ (Not to exceed $2*q_z*G_H*A_G$)

where A_G = Gross area of one tower face (ft^2)

2.3.3 **Velocity Pressure (q_z) and Exposure Coefficient (K_Z)**

$q_z=.00256*K_Z*V^2$ V=Basic Wind Speed for the Structure Location (mph)

$K_Z=(z/33)^{2/7}$ z=Ht. above avg. ground level to midpoint of section (ft.)

$1.00 \le K_Z \le 2.58$ A_E=effective projected area of structural components in one face

2.3.4 **Gust Response Factors (G_H)**

2.3.4.1 For latticed structures , gust response factor (G_H) shall be calculated from the equation:

$G_H=0.65+0.60/(h/33)^{1/7}$ (h in (ft.)) $1.0 < G_H < 1.25$

2.3.4.2 For Tubular pole structures, the gust response factor (G_H) shall be 1.69

2.3.4.3 One gust response factor shall apply for the entire structure.

2.3.4.4 When Cantilevered tubular or latticed pole structures are mounted on latticed structures, the gust response factor the the pole and the latticed structure shall be based on the height of the latticed structure without the pole. The stresses calculated for the pole structures and their connections to latticed structures shall be multiplied by 1.25 to compensate for the greater gust response for the mounted pole structures.

2.3.5 **Structure Force Coefficients** (Reference Table 1)

Site Name:	East Hartford - 886 Main
Site No.	CT2490
Done by:	EC Checked by: MSC
Date:	2/14/2014

Hudson Design Group LLC

Existing T-Mobile Feeder Lines

=Input Values

V= **80** (mph)

z= **109** (ft)

K_Z= **1.41**

Velocity Pressure: **qz= 23.05 psf** [2.3.3]

Is member analyzing a tube pole structure? If yes, then: Gh= 1.69

If no, then use value below:

Gh= 1.16 [2.3.4.1]

Gh= 1.69

Determine Cf:

If lattice structure see manual...

If cantlevered tube pole, then: Use Correct Value form Table 1 Below:

TABLE 1

Coefficients (Cf) for Cantilevered Tubular Pole Structures

C (mph ft)	**Round**	**16 Sided r<0.26**	**16 Sided r≥0.26**	**12 Sides**	**8 Sided**
<32	1.2	1.2	1.2	1.2	1.2
32 to 64	$130/C^{1.3}$	1.78+1.40r-C/91.5-Cr/22.9	.72+(64-C)/44.8	$12.5/C^{.6}$	1.2
>64	0.59	1.08-1.40r	0.72	1.03	1.2

Derivation of Structure Coefficient (Cf):

Dp = Avg. Diam. or Avg. Least width of Tubular Pole Structure: 1.2 feet

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Date:	2/14/2014		

$C = (K_z)^{1/2} * V * Dp$ (for Dp in ft [m]) C= 113.87

C (mph ft)	Round Only Member
<32	1.2
32 < 64	0.28
> 64	0.59

(Max Cf= 1.2) Cf= 1.2
(Min Cf= 0.59)

Determine Ae: **[2.3.6]**
If tube structure, then use projected area including ice:
If not a tube structure, then see manual.

Ae= 0.00 sf

Determine Ca: **[2.3.7]**

2.3.7 The force coefficient (C_A) applied to the projected area (ft^2) [m^2] of a linear appurtenance (A_A) not considered as a structural component shall be determined from Table 3. The force coefficient for cylindrical members may be applied to the additional projected area of radial ice when specified. (Refer to Figure 1.)

TABLE 3		
Appurtenance Force Coefficients		
Member Type	**Aspect Ratio ≤ 7**	**Aspect Ratio ≥ 25**
	C_A	**C_A**
Flat	1.4	2
Cylindrical	0.8	1.2
Aspect Ratio=Overall length/width ratio in plane normal to wind direction. (Aspect ratio is not a function of the spacing between support points of a linear appurtenance, nor the section length considered to have a uniformly distributed force.)		

Note: Linear interpolation may be used to aspect ratios other than shown

2.3.8 Regardless of location, linear appurtenances not considered as structural components in accordance with 2.3.6.3 shall be included in the term $\Sigma C_A A_A$.

2.3.9 The horizontal force (F) applied to a section of the structure may be assumed to be uniformly distributed based on the wind pressure at the mid-height of the section.

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	Item #1	Item #2	Item #3	Item #4	Item #5
Member Length (Inches):	72	20.4	19.7	29.9	23.5
Member Width (Inches):	15	18.5	17	13.3	9.7
Calculated Aspect Ratio:	5	1	1	2	2

From Table 3 Above:

	Item #1	Item #2	Item #3	Item #4	Item #5
Ca=	1.4	1.4	1.4	1.4	1.4

Determine Aa: (sf)

	Item #1	Item #2	Item #3	Item #4	Item #5
From above: Aa=	7.50	2.62	2.33	2.76	1.58
Calculated Ca*Aa:	10.50	3.67	3.26	3.87	2.22

Calculated Sums of Ca*Aa: 23.51 sf

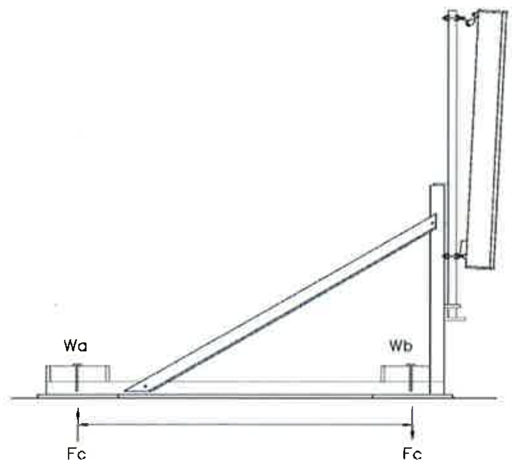
Item 1 calculated force F:	**Antenna**	409.031424
Item 2 calculated force F:	**RRUS-12/E2**	142.933759
Item 3 calculated force F:	**RRUS-11**	126.837615
Item 4 calculated force F:	**RRUS-32**	150.610672
Item 5 calculated force F:	**Surge Suppressor**	86.3321417

Wind Force F= qz*Gh [Cf*Ae+∑(Ca*Aa)] F= 915.75 Pounds

Site Name: East Hartford - 886 Main
Site No. CT2490
Done by: EC **Checked by:** MSC
Date: 2/14/2014

Calculate Total Ballast Required for Ballast Mount

WIND FORCES



F antenna =	1230	lbs.
F rrh =	961	lbs.
F surge =	87	lbs.
Antenna Height =	7	ft
RRH & Surge Height =	5	ft

Length = 7.5 ft

Overturning at Ballast

S.F. 1.25

Moment =	17312.5	lbs.-ft	
Hold Down Force =	2308.33	lbs.	Per Side

Wa Ballast

Use Steel Frame
25 x [31.2+((7.5/2)x6)]
19 x [(7.5/2)x2]

Equipment

Frame =	1485	lbs.

Total Ballast Required Wa= **823.33** lbs.

Blocks Required Wa = **22** Assumed 38lbs Block (4"x8"x16" Solid)

Wb Ballast

Use Steel Frame
25 x [31.2+((7.5/2)x6)]
19 x [(7.5/2)x2]
7.2 x 15 x 2 (ANGLES)

Equipment

Frame	1701	lbs.
Antennas	192	lbs.
RRH's	445	lbs.
Surge Arrestor	20	lbs.
Total =	2358	lbs.

Total Ballast Required Wb = **-49.67** lbs.

Blocks Required Wb= **-2** Assumed 38lbs Block (4"x8"x16" Solid)

Prepared For:
AT&T MOBILITY
Site Name:
EAST HARTFORD
886 MAIN STREET
EAST HARTFORD, CT 06108

SITE NO: CT2490
SITE NAME: EAST HARTFORD
ADDRESS: 886 MAIN STREET
EAST HARTFORD, CT 06108

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SITE TYPE: RT
DATE: 08/18/14
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SCALE: N.T.S.
REV: 1

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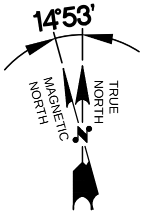
LOCUS MAP

TAKEN FROM GOOGLE MAPS ON 08-10-14



SITE LOCATION

PHOTO LOCATION

SITE NO: CT2490

SITE NAME: EAST HARTFORD

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EAST HARTFORD, CT 06108

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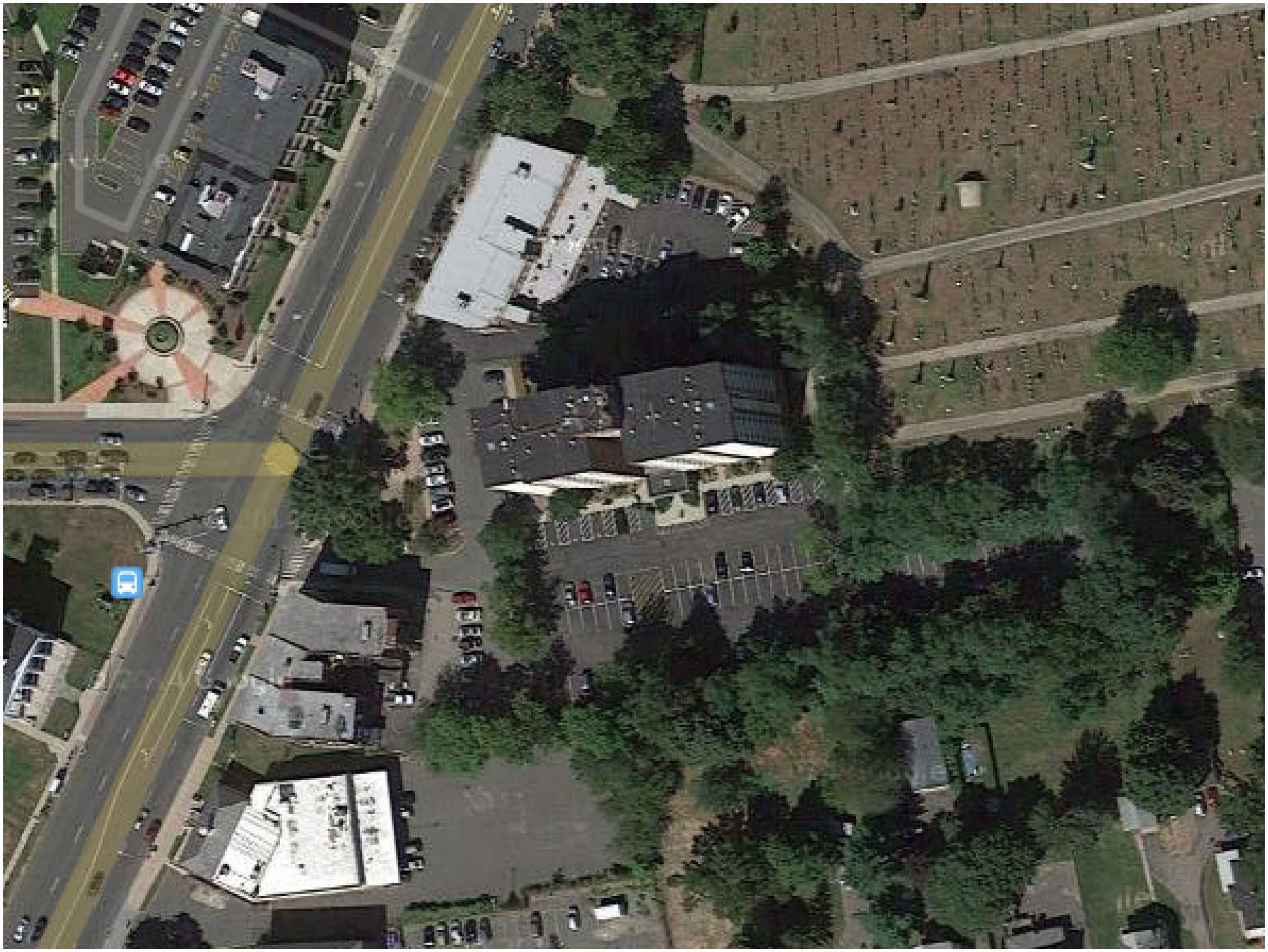
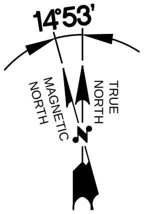
BIRD'S EYE VIEW - EXISTING

TAKEN FROM GOOGLE MAPS ON 08-10-14

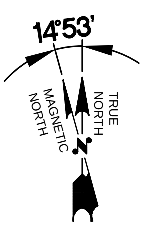




SITE NO: CT2490 SITE NAME: EAST HARTFORD ADDRESS: 886 MAIN STREET EAST HARTFORD, CT 06108	at&t 550 COCHITUATE ROAD FRAMINGHAM, MA 01701	SAI 27 NORTHWESTERN DR SALEM, NH 03079	Hudson Design Group LLC 75 SUMMIT STREET PHILMONT, NY 12565 1600 OSGOOD STREET BUILDING 20 NORTH, SUITE 3090 N. ANDOVER, MA 01845 TEL: (978) 557-5553 FAX: (978) 336-5586	SITE TYPE: RT DATE: 08/18/14 DRAWN BY: VP SCALE: N.T.S. REV: 1	THIS STUDY DOES NOT CLAIM IN ANY WAY TO SHOW THE ONLY AREAS OF VISIBILITY. IT IS MEANT TO SHOW A BROAD REPRESENTATION OF AREAS WHERE THE PROPOSED INSTALLATION MAY BE VISIBLE BASED UPON THE BEST INFORMATION FOR TOPOGRAPHY AND VEGETATION LOCATIONS AVAILABLE TO DATE.

BIRD'S EYE VIEW - PROPOSED

TAKEN FROM GOOGLE MAPS ON 08-10-14



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EXISTING CONDITIONS

LOCATION # 1

DATE OF PHOTO: 08-10-14

VIEW EAST FROM CONNECTICUT BOULEVARD

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PROPOSED CONDITIONS LOCATION # 1 DATE OF PHOTO: 08-10-14

VIEW EAST FROM CONNECTICUT BOULEVARD

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PROPOSED CONDITIONS   LOCATION # 1   DATE OF PHOTO: 08-10-14

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EXISTING CONDITIONS | LOCATION # 2 | DATE OF PHOTO: 08-10-14

VIEW SOUTHEAST FROM GOVERNOR ST.

SITE NO: CT2490
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PROPOSED CONDITIONS LOCATION # 2 DATE OF PHOTO: 08-10-14

VIEW SOUTHEAST FROM GOVERNOR ST.

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PROPOSED CONDITIONS

LOCATION # 2

DATE OF PHOTO: 08-10-14

PROPOSED (3) AT&T ANTENNAS, (7) RRH'S, (2) A2 MODULES & (2) SURGE ARRESTORS MOUNTED TO UNISTRUT ON BUILDING FACADE (PAINT ANTENNAS TO MATCH) (GAMMA SECTOR)

PROPOSED (3) AT&T ANTENNAS, (7) RRH'S, (2) A2 MODULES & (2) SURGE ARRESTORS MOUNTED TO PROPOSED BALLAST MOUNT (PAINT ANTENNAS TO MATCH) (BETA SECTOR)

VIEW SOUTHEAST FROM GOVERNOR ST.

SITE NO: CT2490
SITE NAME: EAST HARTFORD
ADDRESS: 886 MAIN STREET
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EXISTING CONDITIONS   LOCATION # 3   DATE OF PHOTO: 08-10-14

VIEW SOUTHWEST FROM ELM ST.

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PROPOSED CONDITIONS LOCATION # 3 DATE OF PHOTO: 08-10-14

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PROPOSED CONDITIONS

LOCATION # 3

DATE OF PHOTO: 08-10-14

PROPOSED (3) AT&T ANTENNAS, (7) RRH'S, (2) A2 MODULES & (2) SURGE ARRESTORS MOUNTED TO UNISTRUT ON BUILDING FACADE (PAINT ANTENNAS TO MATCH) (ALPHA SECTOR)

VIEW SOUTHWEST FROM ELM ST.

SITE NO: CT2490 **SITE NAME:** EAST HARTFORD **ADDRESS:** 886 MAIN STREET EAST HARTFORD, CT 06108	at&t 550 COCHITUATE ROAD FRAMINGHAM, MA 01701	SAI 27 NORTHWESTERN DR SALEM, NH 03079	Hudson Design Group LLC HDG 75 SUMMIT STREET PHILMONT, NY 12565 1600 OSGOOD STREET BUILDING 20 NORTH, SUITE 3090 N. ANDOVER, MA 01845 TEL: (978) 557-5553 FAX: (978) 336-5586	SITE TYPE: RT DATE: 08/18/14 DRAWN BY: VP SCALE: N.T.S. REV: 1	THIS STUDY DOES NOT CLAIM IN ANY WAY TO SHOW THE ONLY AREAS OF VISIBILITY. IT IS MEANT TO SHOW A BROAD REPRESENTATION OF AREAS WHERE THE PROPOSED INSTALLATION MAY BE VISIBLE BASED UPON THE BEST INFORMATION FOR TOPOGRAPHY AND VEGETATION LOCATIONS AVAILABLE TO DATE.

EXISTING/PROPOSED CONDITIONS   LOCATION # 4   DATE OF PHOTO: 08-10-14

VIEW NORTHWEST FROM CENTRAL AVE.
(EQUIPMENT NOT VISIBLE)

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SITE NAME: EAST HARTFORD
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